

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
WE - 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
RIGHT-OF-WAY
SANITARY SEWER MAIN
SANITARY SEWER MAIN - EXIST.
STORM SEWER
STORM SEWER - EXISTING
CABLE TV - EXISTING
FIBER OPTIC CABLE - EXISTING
TELEPHONE LINE - EXIST.
ELECTRIC LINE - EXISTING
OVERHEAD POWER LINE - EXIST.
UNDERGROUND ELECTRIC - EX.
GAS LINE - EXISTING
WATERLINE - EXISTING
LIGHT - EXISTING
EXISTING MANHOLE
CLEANOUT
EXISTING SANITARY MANHOLE
PROPOSED SANITARY MANHOLE
EXISTING AREA INLET
EXISTING CURB INLET
EXISTING GRATE INLET
EXISTING JUNCTION BOX
EXISTING STORM MANHOLE

UTILITY CONTACTS:

MISSOURI DEPARTMENT OF TRANSPORTATION (MODOT)

Steve Holloway
600 NE Colbern Road
Lee's Summit, MO 64086
(816) 607-2186

SPIRE

Brent Jones
3025 SE Clover Drive
Lee's Summit, MO 64082
(816) 399-0663
brent.jones@spireenergy.com

EVERGY

Philip Ingram
1300 SE Hamblin Road
Lee's Summit, MO 64081
Office: (816) 347-347-4339
philip.ingram@evergy.com

CITY OF LEE'S SUMMIT PUBLIC WORKS

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

AT&T

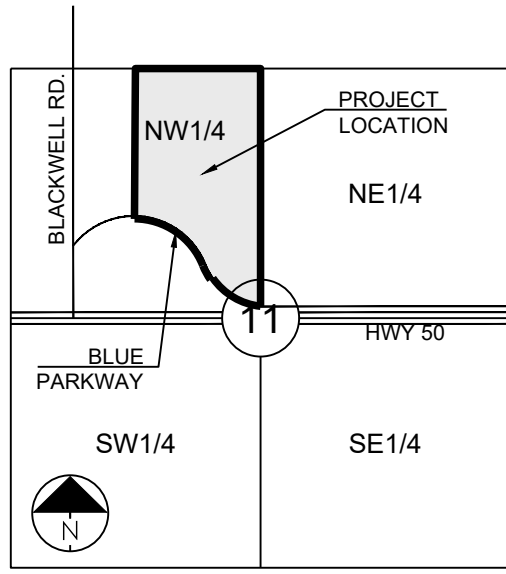
Mark Manion or Marty Loper
500 E. 8th Street, Room 370
Kansas City, MO 64108
(816) 275-2341 or (816) 275-1550

COMCAST CABLE

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

CITY OF LEE'S SUMMIT WATER UTILITIES

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



SECTION 11-47-31

LOCATION MAP

SCALE 1" = 2000'

SUMMARY OF QUANTITIES

	ITEM	QUANTITY	UNITS
1	COMMON EXCAVATION	87,591	CY
2	EMBANKMENT	26,953	CY
3	INSTALL 6" AGGREGATE BASE	22,556	SY
4	INSTALL 4" AGGREGATE BASE	3,350	SY
5	INSTALL 9" SUBGRADE STABILIZATION	22,556	SY
6	INSTALL ACC SURFACE	2,271	TONS
7	INSTALL ACC BASE	3,918	TONS
8	INSTALL CURB & GUTTER	7,235	LF
9	INSTALL 7" PCC TRASH PAD	230	SY
10	INSTALL 6' x 5' CURB INLET	1	EA
11	INSTALL 6' x 4' CURB INLET	13	EA
12	INSTALL 4' x 4' AREA INLET	2	EA
13	INSTALL 5' x 5' JUNCTION BOX	2	EA
14	INSTALL 4' DIA. JUNCTION BOX	2	EA
15	INSTALL 3' x 3' GRATE INLET	1	EA
16	INSTALL 5' x 5' EWDB OUTLET STRUCTURE	1	EA
17	INSTALL 36" HDPE	370	LF
18	INSTALL 30" RCP	73	LF
19	INSTALL 30" HDPE	130	LF
20	INSTALL 24" HDPE	903	LF
21	INSTALL 18" HDPE	167	LF
22	INSTALL 15" HDPE	940	LF
23	INSTALL 36" HDPE FLARED END SECTION W/ TOEWALL	1	EA
24	INSTALL 30" RCP FLARED END SECTION W/ TOEWALL	1	EA
25	INSTALL 24" HDPE FLARED END SECTION W/ TOEWALL	1	EA
26	INSTALL STONE RIP-RAP	35	CY
27	INSTALL 8" PVC C900 DR18	60	LF
28	INSTALL 4" PVC C900 DR18	35	LF
29	INSTALL 8" GATE VALVE	6	EA
30	INSTALL BACKFLOW PREVENTER VAULT	2	EA
31	INSTALL FIRE HYDRANT ASSEMBLY	6	EA
32	INSTALL 4' DIA. MANHOLE	9	EA
33	EXTRA DEPTH IN MANHOLE	26	VF
34	INSTALL 8" PVC SDR-26	1546	LF
35	INSTALL 6" PVC SDR-26	219	LF
36	INSTALL HYDROSEED	2.20	AC
37	SILT FENCE	5,450	LF
38	INLET PROTECTION (SILT FENCE)	18	EA
39	INLET PROTECTION (GRAVEL FILTER BAGS)	15	EA
40	CONSTRUCTION ENTRANCE & STAGING AREA	1	EA
41	CONCRETE WASHOUT	1	EA



811 or
1-800-344-7483
mo1call.com

FEMA NOTE:

NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBERS 29095C0441G, 29095C0445G, 29095C0437G AND 29095C0439G DATED JANUARY 20TH, 2017.

OIL/GAS NOTE:

THERE ARE NOT OIL/GAS WELLS PRESENT ON THE PROJECT PER MISSOURI DEPARTMENT OF NATURAL RESOURCES - MISSOURI GEOLOGICAL SURVEY GeoSTRAT MAPPING.

GENERAL NOTES:

- ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
- LINEAL FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS. ALL PAYMENTS SHALL BE MADE ON HORIZONTAL MEASUREMENTS.
- NO GEOLOGICAL INVESTIGATION HAS BEEN PERFORMED ON THE SITE.
- THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND APPARENT FIELD LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL ADHERE TO THE PROVISIONS OF THE SENATE BILL NUMBER 583, 78TH GENERAL ASSEMBLY OF THE STATE OF MISSOURI. THE BILL REQUIRES THAT ANY PERSON OR FIRM DOING EXCAVATION ON PUBLIC RIGHT OF WAY DO SO ONLY AFTER GIVING NOTICE TO, AND OBTAINING INFORMATION FROM, UTILITY COMPANIES. STATE LAW REQUIRES 48 HOURS ADVANCE NOTICE. THE CONTRACTOR MAY ALSO UTILIZE THE FOLLOWING TOLL FREE PHONE NUMBER PROVIDED BY "MISSOURI ONE CALL SYSTEM, INC.": 1-800-DIG-RITE. THIS PHONE NUMBER IS APPLICABLE ANYWHERE WITHIN THE STATE OF MISSOURI. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED. PRIOR TO ORDERING PRECAST STRUCTURES, SHOP DRAWING SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL.
- THE CONTRACTOR SHALL PROTECT ALL MAJOR TREES FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE.
- CLEARING AND GRUBBING OPERATIONS AND DISPOSAL OF ALL DEBRIS THEREFROM SHALL BE PERFORMED BY THE CONTRACTOR IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.
- ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, OR AS DIRECTED BY THE OWNER AT NO ADDITIONAL COST.
- ALL EXCAVATIONS SHALL BE UNCLASSIFIED. NO SEPARATE PAYMENT WILL BE MADE FOR ROCK EXCAVATION.
- THE CONTRACTOR SHALL CONTROL THE EROSION AND SILTATION DURING ALL PHASED OF CONSTRUCTION AND SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
- THE CONTRACTOR SHALL CONTACT DEVELOPMENT SERVICES INSPECTIONS AT: 816-969-1800 TO OBTAIN A DEVELOPMENT SERVICES CONSTRUCTION PERMIT. A MINIMUM 48 HOUR NOTICE SHALL BE GIVEN PRIOR TO PERMIT ISSUANCE.
- 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.
- 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).
- ALL SANITARY SEWER LATERALS SHALL HAVE A TRENCH CHECK, CONSISTING OF FLOWABLE BACKFILL, INSTALLED DURING CONSTRUCTION. TRENCH CHECK SHALL EXTEND TO BOTTOM OF TRENCH, TO WIDTH OF TRENCH, TO 12 INCHES ABOVE PIPE, FOR A MINIMUM LENGTH OF 12 INCHES. TRENCH CHECK SHALL BE LOCATED AT LEAST 5 FEET FROM SANITARY MAIN.

EARTHWORK:

- PRIOR TO EARTHWORK ACTIVITIES, PRE-DISTURBANCE EROSION AND SEDIMENT CONTROL DEVICES SHALL BE IN PLACE PER THE STORM WATER POLLUTION PREVENTION PLAN AND/OR THE EROSION AND SEDIMENT CONTROL PLAN PREPARED FOR THIS SITE.
- ALL BACKFILL MATERIAL 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).
- BACKFILL MATERIALS SHALL NOT INCLUDE ORGANIC MATTER, DEBRIS OR TOPSOIL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REDISTRIBUTING THE TOPSOIL OVER PROPOSED TURF AND LANDSCAPED AREAS TO A MINIMUM DEPTH OF 6-INCHES BELOW FINAL GRADE.
- ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE, UNLESS NOTED OTHERWISE THE FOLLOWING GRADES SHALL APPLY:
 - TURF AREAS - 2.5% MINIMUM, 4H:1V MAXIMUM
- ALL DISTURBED AREAS SHALL BE FERTILIZED, SEEDED AND MULCHED IMMEDIATELY AFTER EXCAVATION 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 PIPE INSTALLATION. CONTRACTOR SHALL ADHERE TO THE REPORTING REQUIREMENTS OUTLINED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED FOR THIS PROJECT. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE PROPERLY MAINTAINED AND KEPT CLEAN OF SILT AND DEBRIS AND IN GOOD WORKING ORDER. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AS REQUIRED.

UTILITIES:

- EXISTING UTILITIES HAVE BEEN SHOWN TO THE GREATEST EXTENT POSSIBLE BASED UPON INFORMATION PROVIDED TO THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES AND FIELD LOCATING UTILITIES PRIOR TO CONSTRUCTION AND IDENTIFYING ANY POTENTIAL CONFLICTS. ALL CONFLICTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY REQUIRED UTILITY RELOCATIONS. UTILITIES DAMAGED THROUGH THE NEGLIGENCE OF THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL VERIFY FLOW-LINES AND STRUCTURE TOPS PRIOR TO CONSTRUCTION, AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES. PROVIDE SHOP DRAWINGS FOR ALL PRECAST AND MANUFACTURED UTILITY STRUCTURES FOR REVIEW BY THE ENGINEER PRIOR TO CONSTRUCTION OF THE STRUCTURES.
- UTILITY SEPARATION: WATERLINES SHALL HAVE A MINIMUM OF 10 FEET HORIZONTAL AND 2 FEET (MINIMUM OF 1.5 FEET) VERTICAL SEPARATION FROM ALL SANITARY AND STORM SEWER LINES. IF MINIMUM SEPARATIONS CAN NOT BE OBTAINED, DUCTILE IRON PIPE, DIP, SHALL BE REQUIRED 10 FEET IN EACH DIRECTION OF THE CONFLICT ON THE WATER LINE.
- PAYMENT FOR TRENCHING, BACKFILLING, PIPE EMBEDMENT, FLOWABLE FILL, BACKFILL MATERIALS, CLEAN UP, SEEDING, SODDING AND ANY OTHER ITEMS NECESSARY FOR THE CONSTRUCTION OF THE UTILITY LINE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE UTILITY INSTALLATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING RESPECTIVE UTILITY COMPANIES 48-HOURS IN ADVANCE FOR THE INSPECTION OF ANY PROPOSED UTILITY MAIN EXTENSION OR SERVICE LINE OR SERVICE CONNECTION TO ANY EXISTING MAIN.
- TRENCH SPOILS SHALL BE NEATLY PLACED ONSITE ADJACENT TO THE TRENCH, AND COMPACTED TO PREVENT SATURATION AND EXCESS SEDIMENT RUNOFF. UNSUITABLE MATERIALS, ROCK AND SHALE, ASPHALT, CONCRETE, TREES, BRUSH ETC. SHALL BE PROPERLY DISPOSED OF OFFSITE. MATERIALS MAY BE WASHED ONSITE AT THE DIRECTION OF THE OWNER OR HIS APPOINTED REPRESENTATIVE.

DESCRIPTION:

A tract of land lying in the Northwest One-Quarter of Section 11, Township 47 North, Range 31 West in the City of Lee's Summit, Jackson County, Missouri being more particularly described as follows:

Commencing at the Northeast Corner of said Northwest One-Quarter, thence along the East line of said Northwest One-Quarter, South 02 degrees 19 minutes 49 seconds West, a distance of 958.03 feet to the Point of Beginning, thence continuing along the East line of said Northwest One-Quarter South 02 degrees 19 minutes 49 seconds West, a distance of 1556.23 to a point of curvature on the Northerly right-of-way line of North Outer Road of existing East Bound Route 50 as described in General Warranty Deed, Instrument Number 201600694MS recorded in the Jackson County Recorder of Deeds, thence on said Northerly right-of-way line the following four courses: 1) to the right having an initial tangent bearing of North 80 degrees 17 minutes 46 seconds West, a radius of 708.50 feet, a central angle of 47 degrees 20 minutes 45 seconds and an arc length of 585.46 feet; thence South 57 degrees 03 minutes 00 seconds West, a distance of 31.00 feet to a point of curvature; thence Northwesterly on a curve to the right having an initial tangent bearing of North 32 degrees 57 minutes 00 seconds West, a radius of 739.50 feet, a central angle of 13 degrees 17 minutes 24 seconds and an arc length of 171.53 feet to a point of reverse curvature; thence Northwesterly on a curve to the left having an initial tangent bearing of North 19 degrees 39 minutes 36 seconds West, a radius of 784.50 feet, a central angle of 35 degrees 14 minutes 40 seconds and an arc distance of 542.47 feet; thence North 30 degrees 43 minutes 14 seconds East, a distance of 11.28 feet to a point of curvature; thence Northeasterly on a curve to the left having an initial tangent bearing of South 59 degrees 16 minutes 46 seconds East, a radius of 236 feet, a central angle of 33 degrees 54 minutes 06 seconds and an arc length of 139.64 feet to a point of reverse curvature; thence Northeasterly on a curve to the right having an initial tangent bearing of North 89 degrees 52 minutes 21 seconds East, a radius of 88.00 feet, a central angle of 54 degrees 52 minutes 35 seconds and an arc length of 65.12 feet; thence North 34 degrees 59 minutes 51 seconds East, a distance of 246.04 feet; thence North 09 degrees 59 minutes 26 seconds West, a distance of 7.22 feet; thence North 54 degrees 59 minutes 26 seconds West, a distance of 12.90 feet; thence North 35 degrees 00 minutes 34 seconds East, a distance of 50.00 feet; thence South 54 degrees 59 minutes 26 seconds East, a distance of 12.91 feet; thence North 79 degrees 59 minutes 47 seconds East, a distance of 7.20 feet; thence North 34 degrees 59 minutes 47 seconds East, a distance of 349.20 feet to a point of curvature; thence Northeasterly on a curve to the right being tangent to the previous course having a radius of 365.00 feet, a central angle of 45 degrees 16 minutes 22 seconds and an arc length of 288.41 feet; thence North 41 degrees 25 minutes 38 seconds East, a distance of 7.75 feet; thence North 02 degrees 11 minutes 34 seconds East, a distance of 28.69 feet; thence South 57 degrees 45 minutes 26 seconds East, a distance of 50.00 feet; thence South 02 degrees 11 minutes 34 seconds West, a distance of 18.39 feet; thence South 44 degrees 03 minutes 48 seconds East, a distance of 12.45 feet to a point of curvature; thence Southeasterly on a curve to the left having an initial tangent bearing of South 89 degrees 37 minutes 04 seconds East, a radius of 385.00 feet, a central angle of 01 degree 52 minutes 36 seconds and an arc length of 11.95 feet; thence South 87 degrees 44 minutes 22 seconds East, a distance of 88.60 feet to the Point of Beginning and containing 19.21 acres more or less.

Sheet List Table	
Sheet Number	Sheet Title
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C101	GENERAL LAYOUT - OVERALL
C102	GENERAL LAYOUT - NORTH
C103	GENERAL LAYOUT - SOUTH
C200	GRADING PLAN - NORTH
C201	GRADING PLAN - SOUTH
C202	SPOT ELEVATION & WALL PLAN - NORTH
C203	SPOT ELEVATION & WALL PLAN - SOUTH
C204	LIMESTONE WALL & PEDESTRIAN BRIDGE DETAILS
C300	UTILITY PLAN - NORTH
C301	UTILITY PLAN - SOUTH
C302	FIRE PROTECTION PLAN
C400	DRAINAGE MAP
C401	STORM CALCS
C402	STORM SEWER LINE 100
C403	STORM SEWER LINE 300
C404	STORM SEWER LINE 400
C405	STORM SEWER LINES 500 & 600
C406	STORM SEWER LINES 700 & 900
C407	STORM DETAILS
C408	STORM DETAILS
C409	STORM DETAILS
C500	PRE-CONSTRUCTION EROSION CONTROL PLAN
C501	EROSION CONTROL PLAN
C502	POST-CONSTRUCTION EROSION CONTROL PLAN
C503	EROSION CONTROL DETAILS
C504	EROSION CONTROL DETAILS
C505	OUTLET STRUCTURE 801
C600	SANITARY SEWER LINE A (PRIVATE)
C601	SANITARY SEWER LINE A (PRIVATE)
C602	SANITARY SEWER DETAILS
C700	WATER LINE A
C701	WATER LINE A
C702	WATER LINE B
C703	WATER DETAILS
C704	WATER DETAILS
C800	GENERAL DETAILS
C801	GENERAL DETAILS
L100	LANDSCAPE COVER
L101	OVERALL LANDSCAPE PLAN
L102	BUILDING A LANDSCAPE PLAN
L103	BUILDING B LANDSCAPE PLAN
L104	BUILDING C LANDSCAPE PLAN
L105	BUILDING D LANDSCAPE PLAN
L106	CLUBHOUSE LANDSCAPE PLAN
L107	LAKE LANDSCAPE PLAN
L108	MONUMENT SIGN LANDSCAPE PLAN
L109	LANDSCAPE DETAILS
L110	LANDSCAPE DETAILS

OWNER/DEVELOPER:

GRIFFIN RILEY PROPERTY GROUP
JAKE LOVELESS, VICE PRESIDENT
21 SE 29TH TERRACE
LEE'S SUMMIT
p 816-366-7900
JAKE@GRIFFINRILEY.COM

MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD. N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY. N:996874.9690, E:2840937.1365

ELEV. 1005.719



PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL
FINAL DEVELOPMENT PLAN

HERITAGE STREET LEE'S SUMMIT, MO

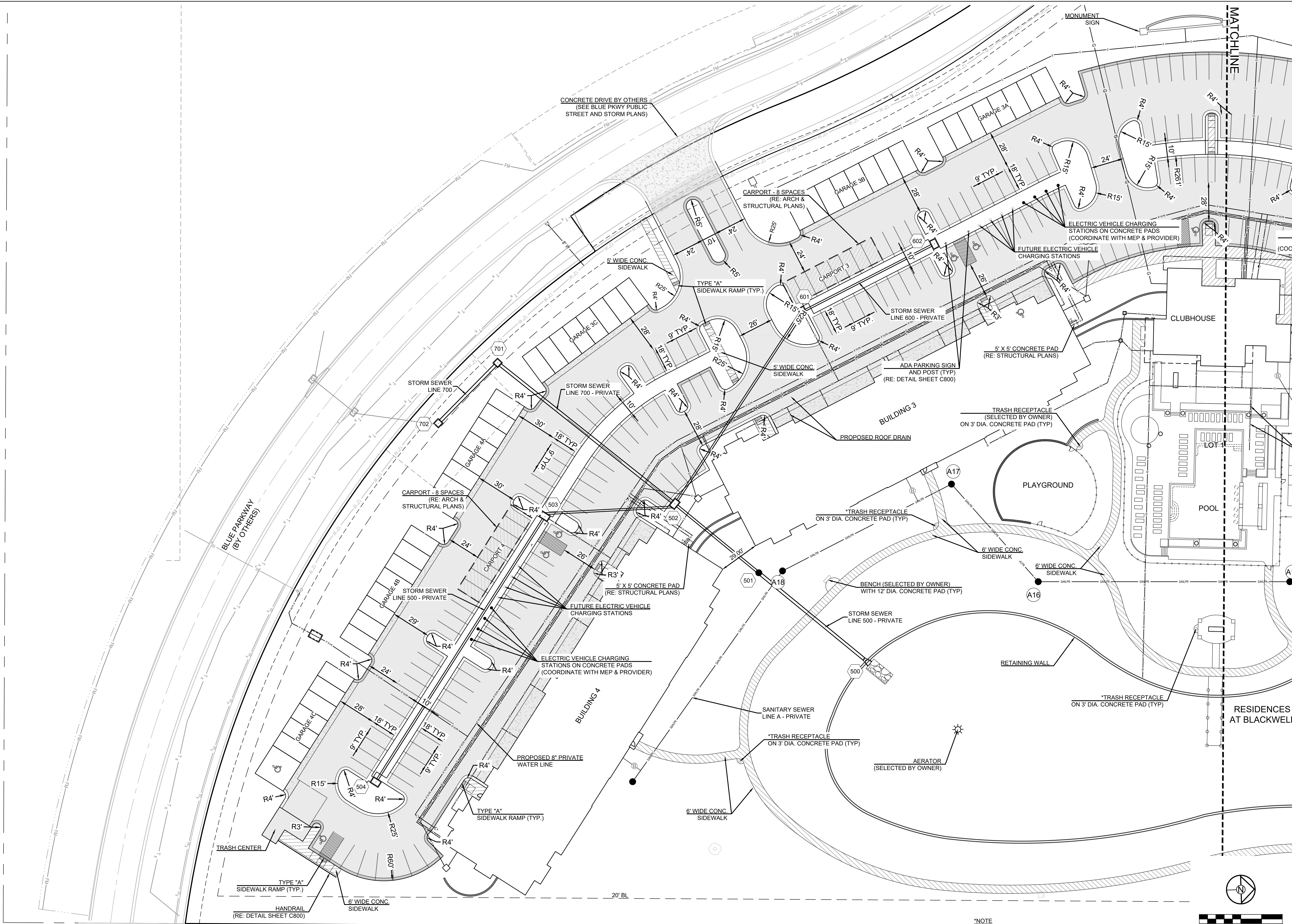
REVISION DATE	DESCRIPTION
1 01/23/23	PER CITY COMMENTS
2 03/24/2023	PER CITY COMMENTS
3 04/28/2023	PER CITY COMMENTS
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GENERAL NOTES

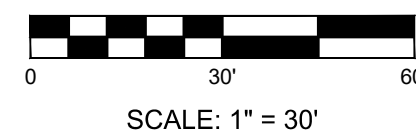
SHEET

C100

I:\PROJECTS\2022\22-102\3.0 Design\3.0 DWG Plans\4.0 SDP\22-102 - SDP - GEN.dwg, C103 GENERAL LAYOUT - SOUTH, 1:1



*NOTE
ALL TRASH RECEPTACLES AND
PAD LOCATIONS TO BE FIELD
COORDINATED WITH OWNER.



PREPARED BY:



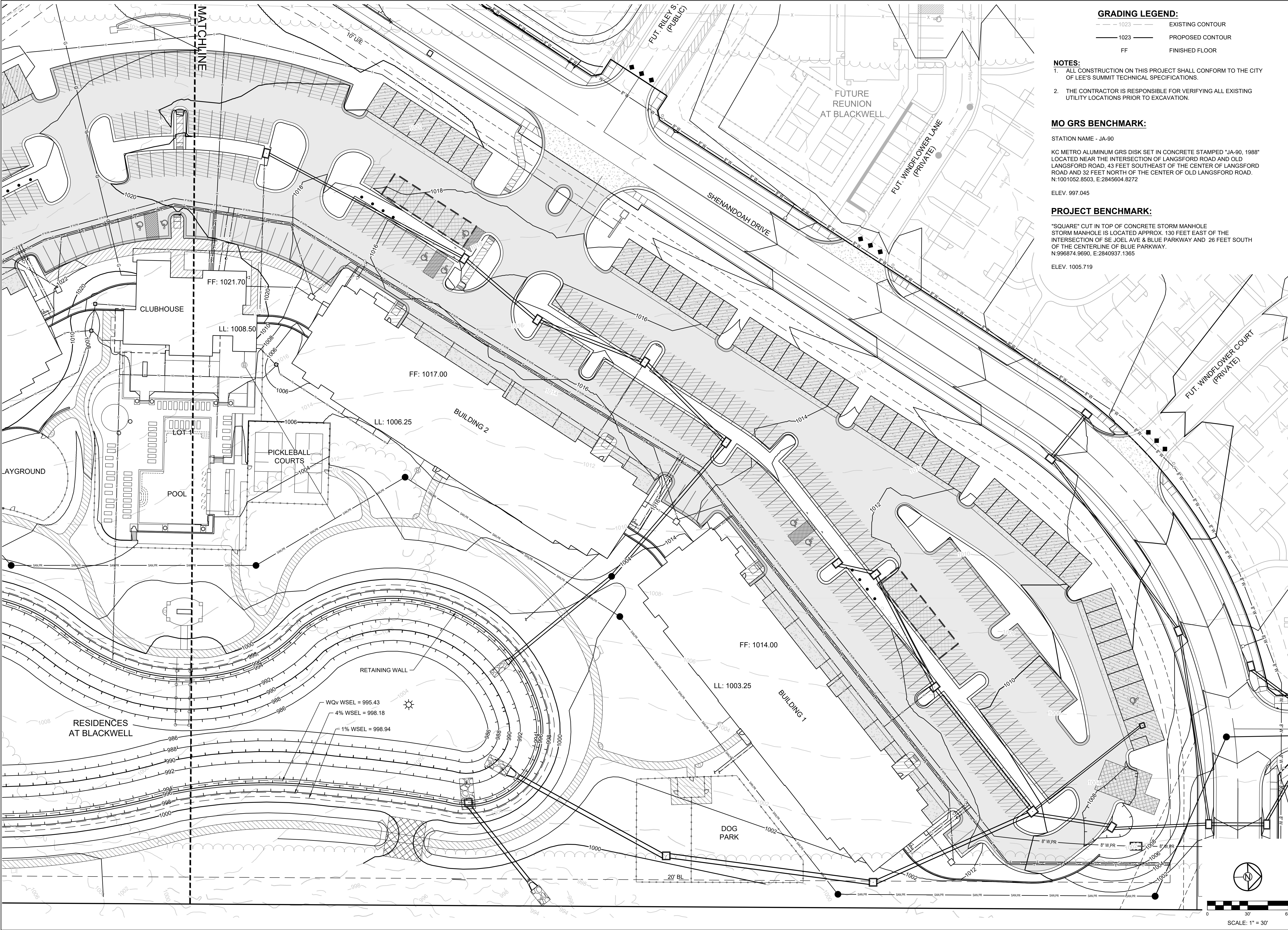
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FINAL DEVELOPMENT PLAN
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GENERAL
LAYOUT - SOUTH

SHEET
C103



GRADING LEGEND:

- 1023 --- EXISTING CONTOUR
— 1023 — PROPOSED CONTOUR
FF FINISHED FLOOR

NOTES:

- ALL CONSTRUCTION ON THIS PROJECT SHALL CONFORM TO THE CITY OF LEE'S SUMMIT TECHNICAL SPECIFICATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.

MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD. N:1001052.8503, E:2845604.8272

ELEV. 997.045

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ELEV. 1005.719



PREPARED BY:



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RESIDENCES AT BLACKWELL
FINAL DEVELOPMENT PLAN

HERITAGE STREET LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
01/23/23	PER CITY COMMENTS
03/24/2023	PER CITY COMMENTS
04/28/2023	PER CITY COMMENTS
05/01/2023	DATE PREPARED
22-102	PROJ. NUMBER

DRAWN BY:	TRC
CHECKED BY:	MAB
DATE PREPARED:	2/6/2023
PROJ. NUMBER:	22-102

GRADING PLAN - NORTH
SHEET C200

GRADING LEGEND:

- 1023 --- EXISTING CONTOUR
—— 1023 —— PROPOSED CONTOUR
FF FINISHED FLOOR

NOTES:

- ALL CONSTRUCTION ON THIS PROJECT SHALL CONFORM TO THE CITY OF LEE'S SUMMIT TECHNICAL SPECIFICATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.

MO GRS BENCHMARK:

STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD. N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY. N:996874.9690, E:2840937.1365

ELEV. 1005.719

BLUE PARKWAY
(BY OTHERS)

MATCHLINE

FF: 1023.00

LL: 1012.25

PLAYGROUND

CLUBHOUSE

POOL

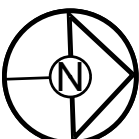
LL: 1008.50

FF: 1021.00

LL: 1010.25

RESIDENCES
AT BLACKWELL

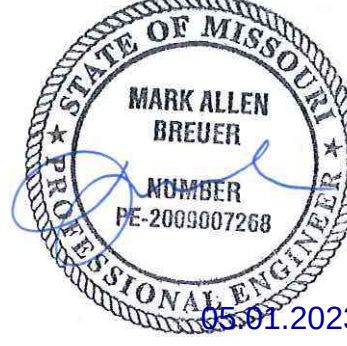
WQv WSEL = 995.43
4% WSEL = 998.18
1% WSEL = 998.94



0 30' 60'
SCALE: 1" = 30'

SCHLAGEL
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Missouri State Certificate of Authority
#E2002003609-F #LAC2001006237 #LS2002008659-F

PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL
FINAL DEVELOPMENT PLAN

HERITAGE STREET LEE'S SUMMIT, MO

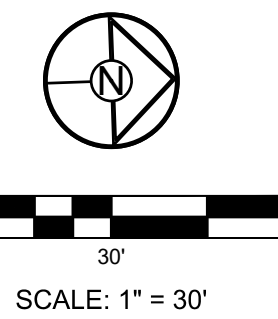
REVISION DATE	DESCRIPTION
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3 04/28/2023	PER CITY COMMENTS
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Legend:

- 1000 --- EXISTING CONTOUR
- 1000 ——— PROPOSED CONTOUR (FINISHED GRADE)
- 1000.00 PROPOSED ELEVATION
- TW 1000.00 PROPOSED TOP OF WALL ELEVATION (TW)
- BW 1000.00 PROPOSED BOTTOM OF WALL ELEVATION (BW)
- 1.5% PROPOSED ASPHALT/SIDEWALK SLOPE
- FF: 1000.00 PROPOSED FIRST FLOOR ELEVATION
- LL: 1000.00 PROPOSED LOWER LEVEL ELEVATION

1. ALL CONSTRUCTION ON THIS PROJECT SHALL CONFORM TO THE CITY OF LEE'S SUMMIT TECHNICAL SPECIFICATIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.



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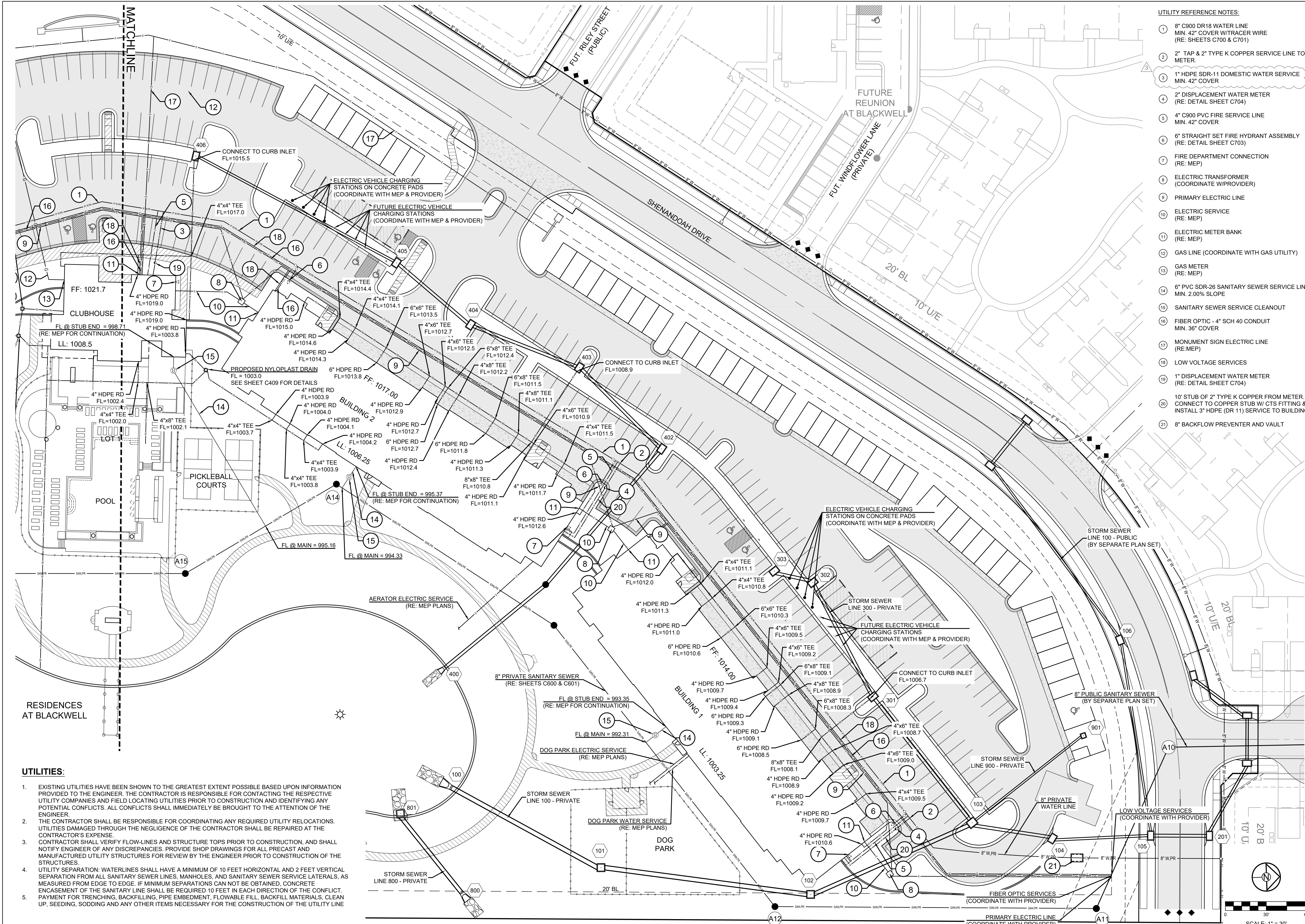
RESIDENCES AT BLACKWELL
FINAL DEVELOPMENT PLAN

HERITAGE STREET LEE'S SUMMIT, MO

DRAWN BY:	REVISION DATE	DESCRIPTION
####	/A/ 01/23/23	PER CITY COMMENTS
	/B/ 03/24/2023	PER CITY COMMENTS
CHECKED BY:	/C/ 04/28/2023	PER CITY COMMENTS
###	/A/	
DATE PREPARED:	/B/	
	/C/	
	/D/	
PROJ. NUMBER:	/E/	
	/F/	
22-102	/G/	

SPOT ELEVATION
& WALL PLAN -
SOUTH

SHEET
C203



UTILITIES:

- EXISTING UTILITIES HAVE BEEN SHOWN TO THE GREATEST EXTENT POSSIBLE BASED UPON INFORMATION PROVIDED TO THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES AND FIELD LOCATING UTILITIES PRIOR TO CONSTRUCTION AND IDENTIFYING ANY POTENTIAL CONFLICTS. ALL CONFLICTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY REQUIRED UTILITY RELOCATIONS. UTILITIES DAMAGED THROUGH THE NEGLIGENCE OF THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL VERIFY FLOW-LINES AND STRUCTURE TOPS PRIOR TO CONSTRUCTION, AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES. PROVIDE SHOP DRAWINGS FOR ALL PRECAST AND MANUFACTURED UTILITY STRUCTURES FOR REVIEW BY THE ENGINEER PRIOR TO CONSTRUCTION OF THE STRUCTURES.
- UTILITY SEPARATION: WATERLINES SHALL HAVE A MINIMUM OF 10 FEET HORIZONTAL AND 2 FEET VERTICAL SEPARATION FROM ALL 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. 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
-

UTILITY REFERENCE NOTES:

- 8" C900 DR18 WATER LINE
MIN. 42" COVER W/TRACER WIRE
(RE: SHEETS C700 & C701)
- 2" TAP & 2" TYPE K COPPER SERVICE LINE TO METER.
- 1" HDPE SDR-11 DOMESTIC WATER SERVICE
MIN. 42" COVER
- 2" DISPLACEMENT WATER METER
(RE: DETAIL SHEET C704)
- 4" C900 PVC FIRE SERVICE LINE
MIN. 42" COVER
- 6" STRAIGHT SET FIRE HYDRANT ASSEMBLY
(RE: DETAIL SHEET C703)
- FIRE DEPARTMENT CONNECTION
(RE: MEP)
- ELECTRIC TRANSFORMER
(COORDINATE W/PROVIDER)
- PRIMARY ELECTRIC LINE
- ELECTRIC SERVICE
(RE: MEP)
- ELECTRIC METER BANK
(RE: MEP)
- GAS LINE (COORDINATE WITH GAS UTILITY)
- GAS METER
(RE: MEP)
- 6" PVC SDR-26 SANITARY SEWER SERVICE LINE
MIN. 2.00% SLOPE
- SANITARY SEWER SERVICE CLEANOUT
- FIBER OPTIC - 4" SCH 40 CONDUIT
MIN. 36" COVER
- MONUMENT SIGN ELECTRIC LINE
(RE:MEP)
- LOW VOLTAGE SERVICES
- 1" DISPLACEMENT WATER METER
(RE: DETAIL SHEET C704)
- 10' STUB OF 2" TYPE K COPPER FROM METER.
CONNECT TO COPPER STUB W/ CTS FITTING &
INSTALL 3" HDPE (DR 11) SERVICE TO BUILDING.
- 8" BACKFLOW PREVENTER AND VAULT

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Missouri State Certificate of Authority
#E200203606F #LAC201005237 #LS200208659F

PREPARED BY:

STATE OF MISSOURI

MARK ALLEN BREUER

REGISTERED PROFESSIONAL ENGINEER

NUMBER
PE-2003007268

EXPIRATION
05-31-2023

SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL
FINAL DEVELOPMENT PLAN

HERITAGE STREET LEE'S SUMMIT, MO

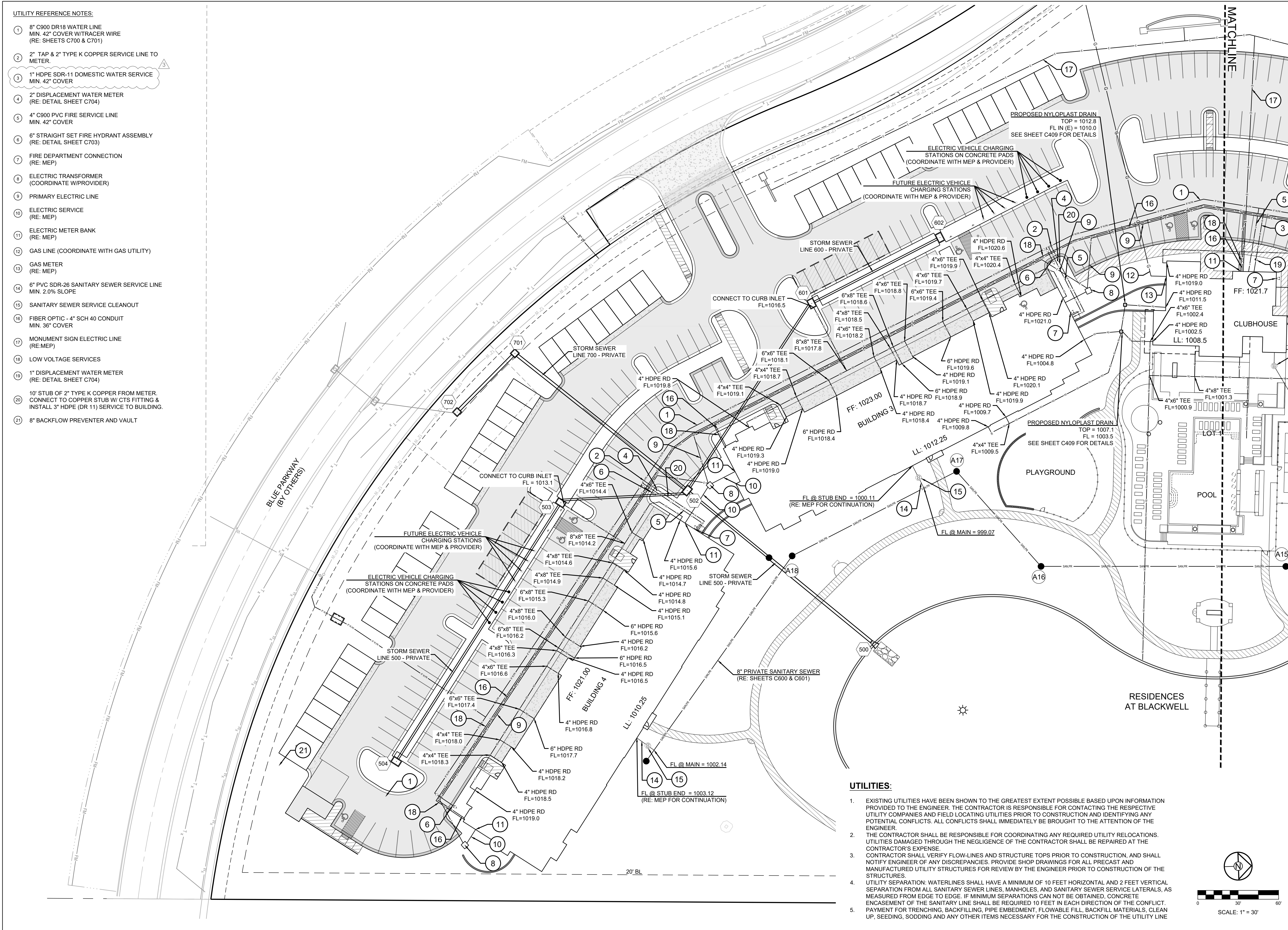
REVISION DATE	DESCRIPTION
01/23/23	PER CITY COMMENTS
03/24/2023	PER CITY COMMENTS
04/28/2023	PER CITY COMMENTS
2/6/2023	DATE PREPARED
22-102	PROJ. NUMBER

UTILITY PLAN - NORTH

SHEET
C300

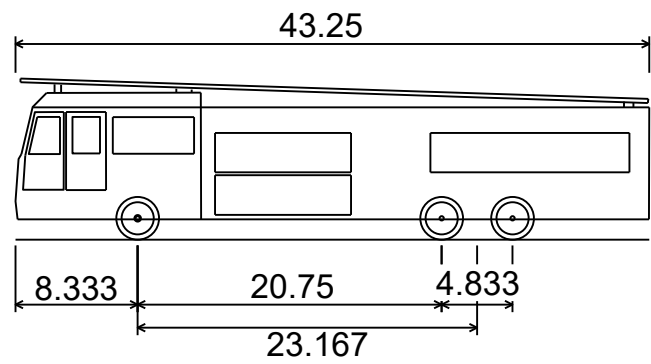
SHEET
C301

- ① 8" C900 DR18 WATER LINE
MIN. 42" COVER W/TRACER WIRE
(RE: SHEETS C700 & C701)
- ② 2" TAP & 2" TYPE K COPPER SERVICE LINE TO METER.
- ③ 1" HDPE SDR-11 DOMESTIC WATER SERVICE
MIN. 42" COVER
- ④ 2" DISPLACEMENT WATER METER
(RE: DETAIL SHEET C704)
- ⑤ 4" C900 PVC FIRE SERVICE LINE
MIN. 42" COVER
- ⑥ 6" STRAIGHT SET FIRE HYDRANT ASSEMBLY
(RE: DETAIL SHEET C703)
- ⑦ FIRE DEPARTMENT CONNECTION
(RE: MEP)
- ⑧ ELECTRIC TRANSFORMER
(COORDINATE W/PROVIDER)
- ⑨ PRIMARY ELECTRIC LINE
- ⑩ ELECTRIC SERVICE
(RE: MEP)
- ⑪ ELECTRIC METER BANK
(RE: MEP)
- ⑫ GAS LINE (COORDINATE WITH GAS UTILITY)
- ⑬ GAS METER
(RE: MEP)
- ⑭ 6" PVC SDR-26 SANITARY SEWER SERVICE LINE
MIN. 2.0% SLOPE
- ⑮ SANITARY SEWER SERVICE CLEANOUT
- ⑯ FIBER OPTIC - 4" SCH 40 CONDUIT
MIN. 36" COVER
- ⑰ MONUMENT SIGN ELECTRIC LINE
(RE:MEP)
- ⑱ LOW VOLTAGE SERVICES
- ⑲ 1" DISPLACEMENT WATER METER
(RE: DETAIL SHEET C704)
- ⑳ 10' STUB OF 2" TYPE K COPPER FROM METER,
CONNECT TO COPPER STUB W/ CTS FITTING &
INSTALL 3" HDPE (DR 11) SERVICE TO BUILDING
- ㉑ 8" BACKFLOW PREVENTER AND VAULT

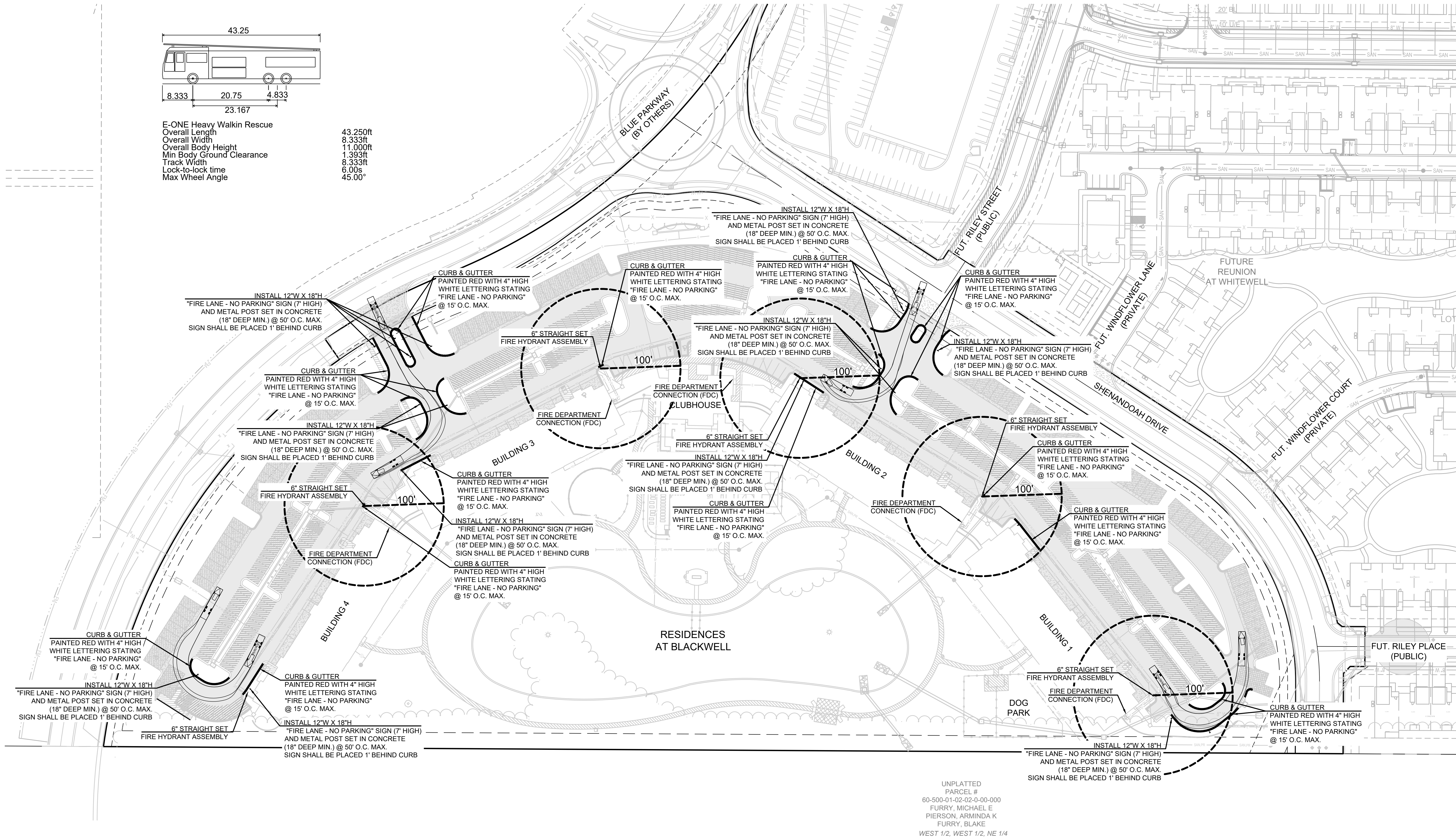


1. EXISTING UTILITIES HAVE BEEN SHOWN TO THE GREATEST EXTENT POSSIBLE BASED UPON INFORMATION PROVIDED TO THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES AND FIELD LOCATING UTILITIES PRIOR TO CONSTRUCTION AND IDENTIFYING ANY POTENTIAL CONFLICTS. ALL CONFLICTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY REQUIRED UTILITY RELOCATIONS. UTILITY DAMAGE 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 INSURED FROM EDGE TO EDGE. IF MINIMUM SEPARATIONS CAN NOT BE OBTAINED, CONCRETE ENCLOSURE 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

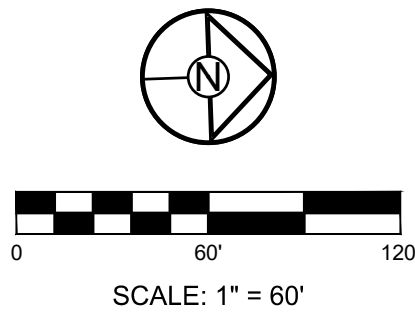




E-ONE Heavy Walkin Rescue
Overall Length 43.25ft
Overall Width 8.333ft
Overall Body Height 20.75ft
Min Body Ground Clearance 4.833ft
Track Width 23.167ft
Lock-to-lock time 6.00s
Max Wheel Angle 45.00°



UNPLATTED
PARCEL #
60-500-01-02-02-0-00-000
FURRY, MICHAEL E
PIERSON, ARMINDA K
FURRY, BLAKE
WEST 1/2, WEST 1/2, NE 1/4



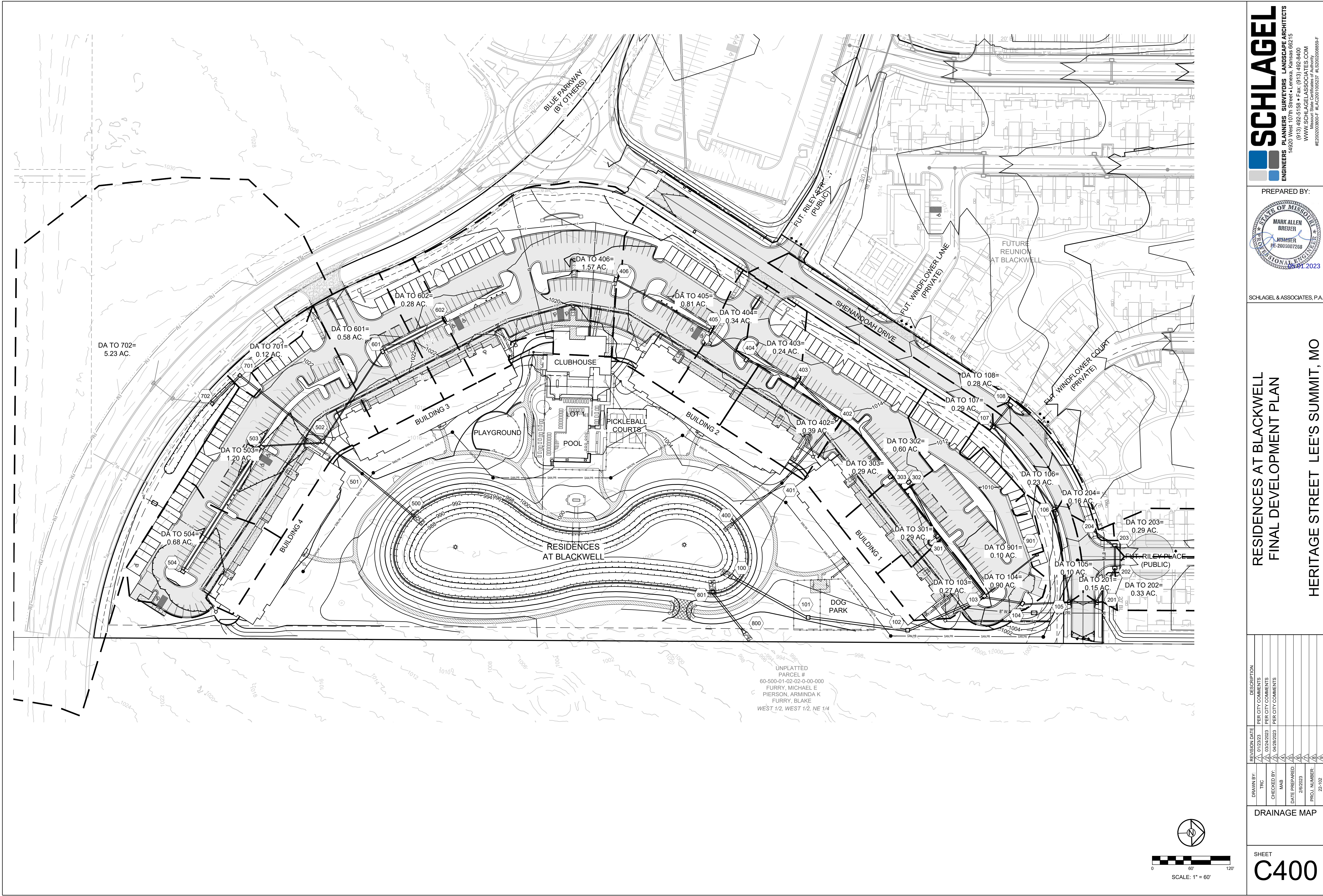
NOTE:
ALL "FIRE LANE - NO PARKING" SIGNS SHALL BE REFLECTIVE
MATERIAL WITH WHITE COLOR BACKGROUND WITH SYMBOLS,
LETTERS AND BORDER IN RED COLOR.

RESIDENCES AT BLACKWELL
FINAL DEVELOPMENT PLAN
HERITAGE STREET LEE'S SUMMIT, MO

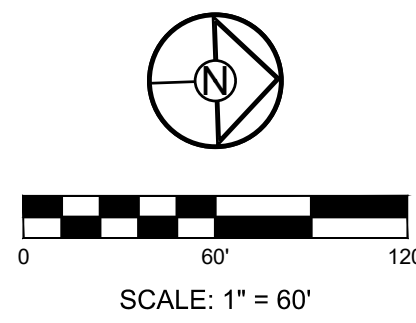
REVISION DATE	DESCRIPTION
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FIRE
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SHEET
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UNPLATTED
PARCEL #
60-500-01-02-02-0-00-000
FURRY, MICHAEL E
PIERSON, ARMINDA K
FURRY, BLAKE
WEST 1/2, WEST 1/2, NE 1/4



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WWW.SCHLAGELASSOCIATES.COM
Missouri State Certificates of Authority
#E2002003600-F #LAC2001005237 #LS200200859-F

PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL
FINAL DEVELOPMENT PLAN

HERITAGE STREET LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
01/23/23	PER CITY COMMENTS
03/24/23	PER CITY COMMENTS
04/28/23	PER CITY COMMENTS

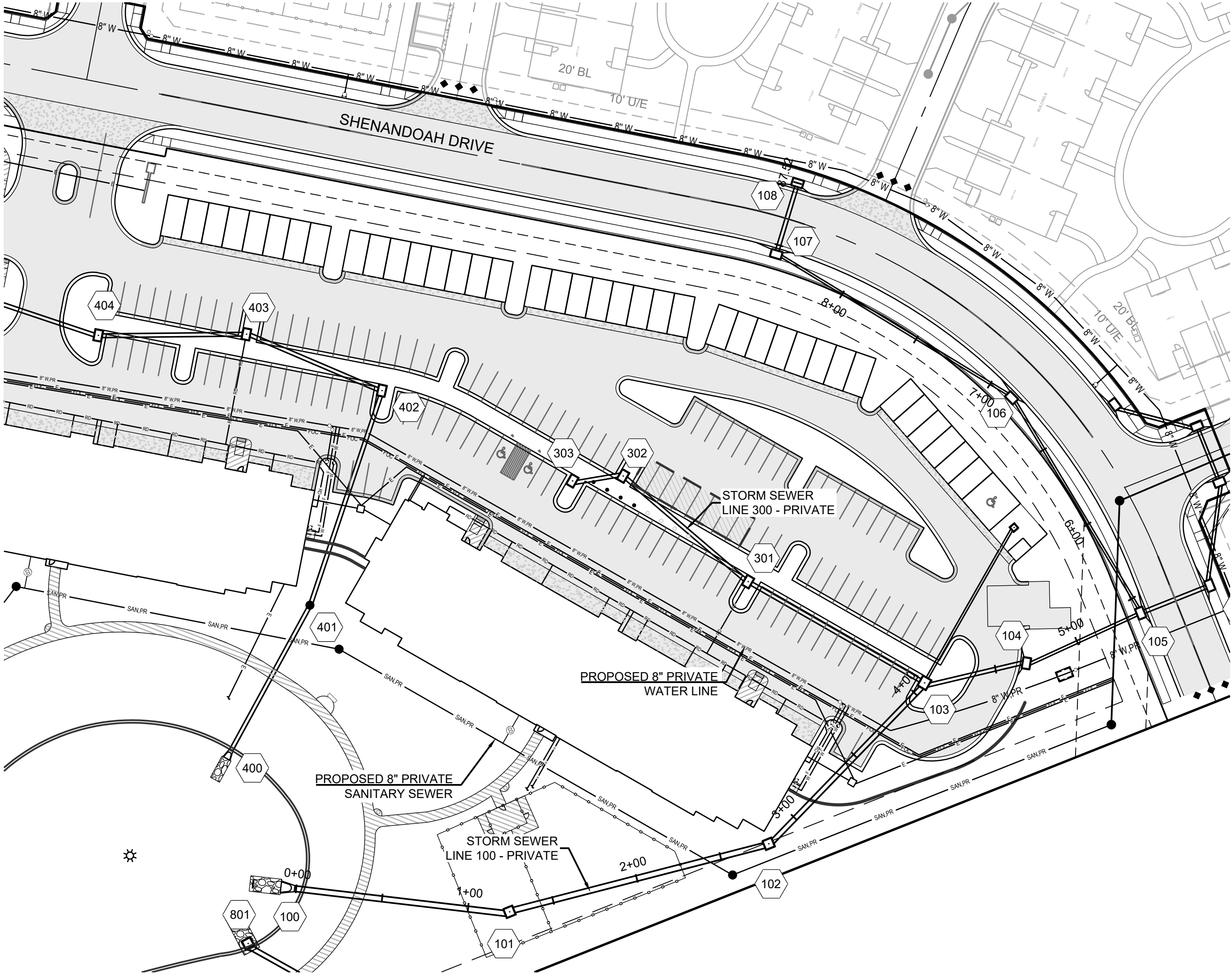
DRAINAGE MAP

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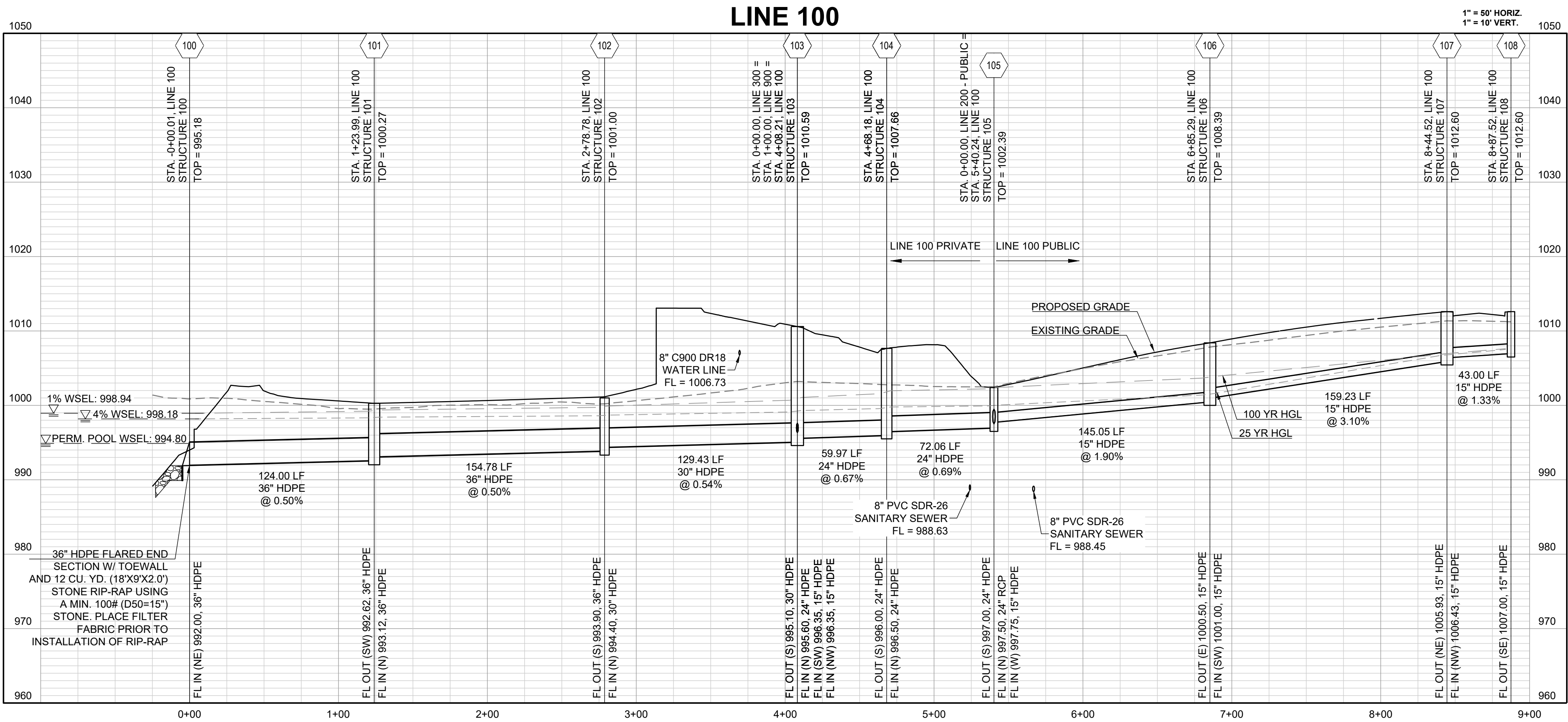
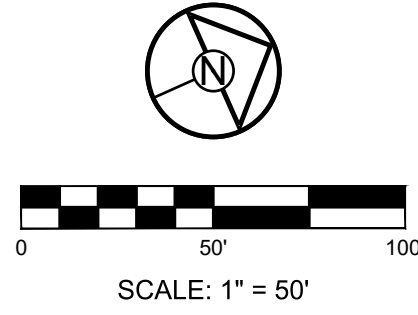
DRAWN BY:		REVISION DATE	DESCRIPTION
TRC		1/ 01/23/23	PER CITY COMMENTS
		2/ 03/24/2023	PER CITY COMMENTS
CHECKED BY:		3/ 04/28/2023	PER CITY COMMENTS
MAB		4/	
		5/	
DATE PREPARED:		6/	
2/6/2023		7/	
PROJ. NUMBER:		8/	
22, 100			

SHEET
C401

Design Storm:	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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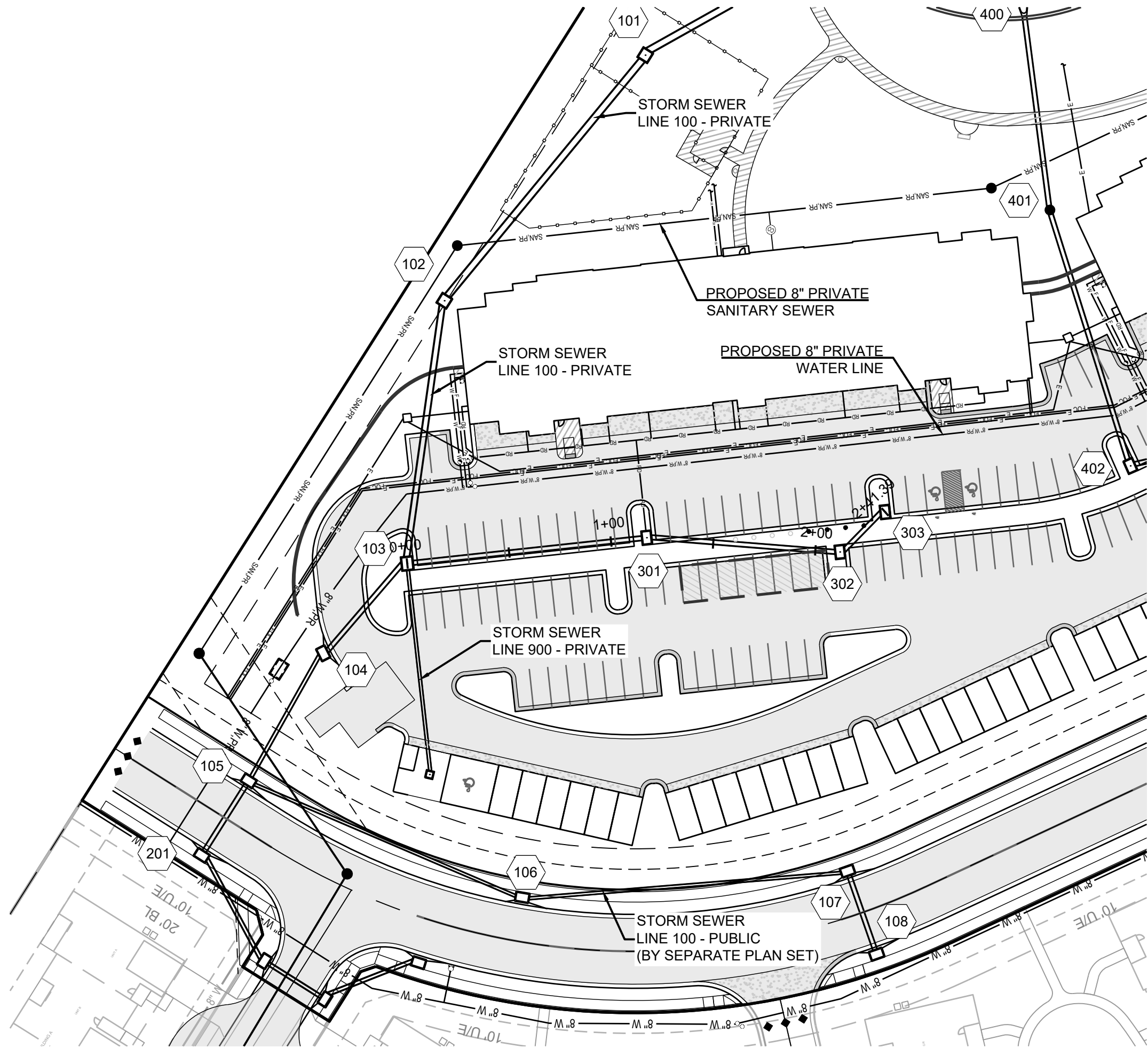


Storm Sewer Construction Notes	
Structure	Notes
PRIVATE STORM SEWER	100 STA 0+00.01, LINE 100 INSTALL 36" HDPE FLARED END SECTION W/ TOEWALL AND 12 CU. YD. (18'X9'X2.0') STONE RIP-RAP USING A MIN. 100# (D50=15") STONE. PLACE FILTER FABRIC PRIOR TO INSTALLATION OF RIP-RAP N 996948.1080 E 2842165.5474
	101 STA 1+23.99, LINE 100 INSTALL 5 X 5 JUNCTION BOX N 997055.3212 E 2842227.8473
	102 STA 2+78.78, LINE 100 INSTALL 5 X 5 JUNCTION BOX N 997208.0735 E 2842252.8332
	103 STA 4+08.21, LINE 100 INSTALL 6 X 5 CURB INLET N 997328.1257 E 2842204.4665
	104 STA 4+68.18, LINE 100 INSTALL 6 X 4 CURB INLET N 997386.5369 E 2842218.0616
PUBLIC STORM SEWER	105 STA 5+40.24, LINE 100 INSTALL 6 X 4 CURB INLET N 997458.5932 E 2842218.4336
	106 STA 6+85.29, LINE 100 INSTALL 6 X 4 CURB INLET N 997441.0920 E 2842074.4403
	107 STA 8+44.52, LINE 100 INSTALL 6 X 4 CURB INLET N 997350.6401 E 2841943.3993
	108 STA 8+87.52, LINE 100 INSTALL 6 X 4 CURB INLET N 997378.6818 E 2841910.8017
	201 STA 0+43.00, LINE 200 - PUBLIC INSTALL 6 X 4 CURB INLET N 997501.5596 E 2842220.1297
	202 STA 1+02.95, LINE 200 - PUBLIC INSTALL 6 X 4 CURB INLET N 997530.9285 E 2842167.8656
	203 STA 1+37.95, LINE 200 - PUBLIC INSTALL 6 X 4 CURB INLET N 997532.2676 E 2842132.8913
	204 STA 1+86.96, LINE 200 - PUBLIC INSTALL 6 X 4 CURB INLET N 997493.9804 E 2842102.2912

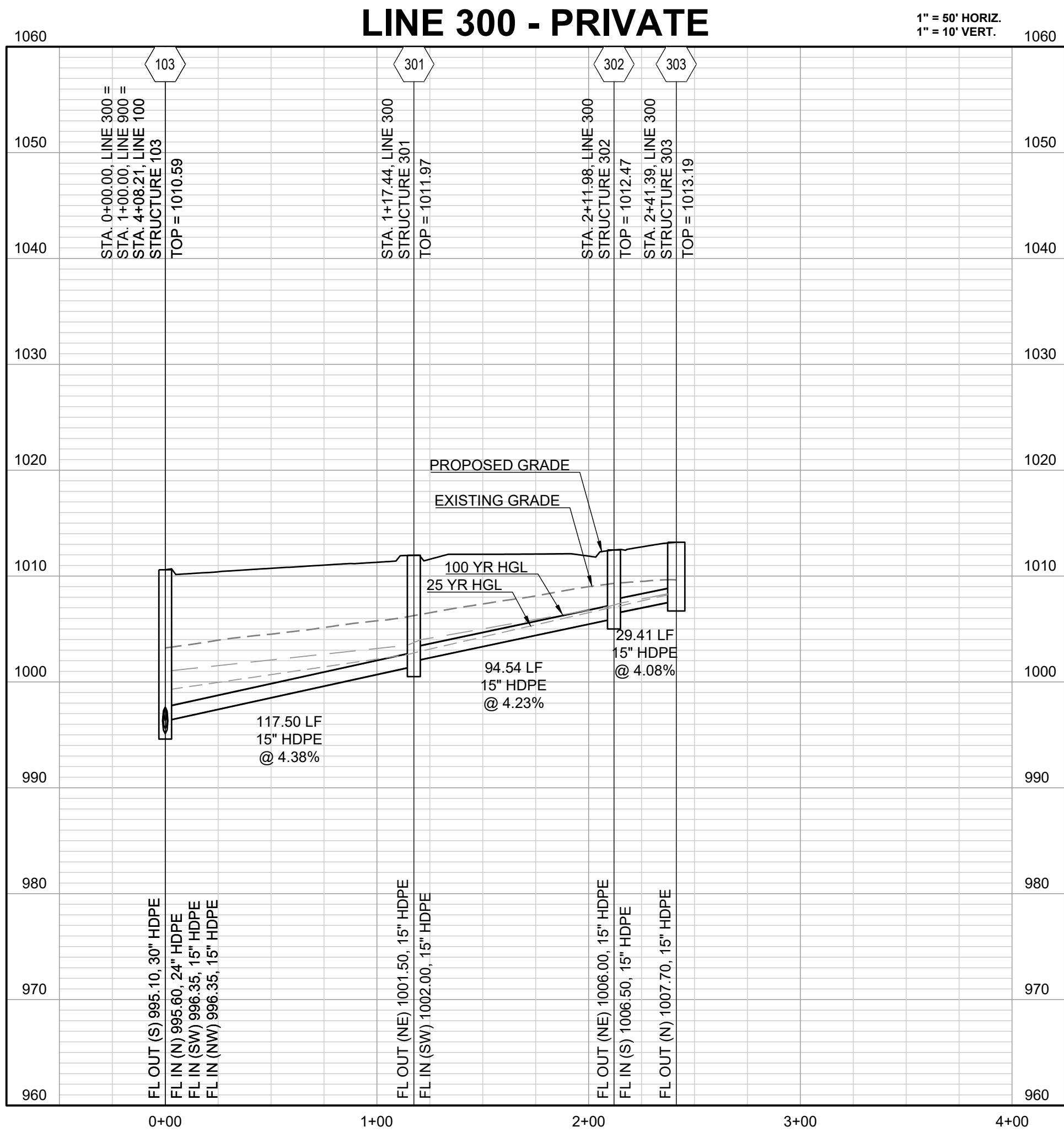


REVISION DATE	DESCRIPTION
1 01/23/23	PER CITY COMMENTS
2 03/24/2023	PER CITY COMMENTS
3 04/28/2023	PER CITY COMMENTS
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STORM SEWER
LINE 100



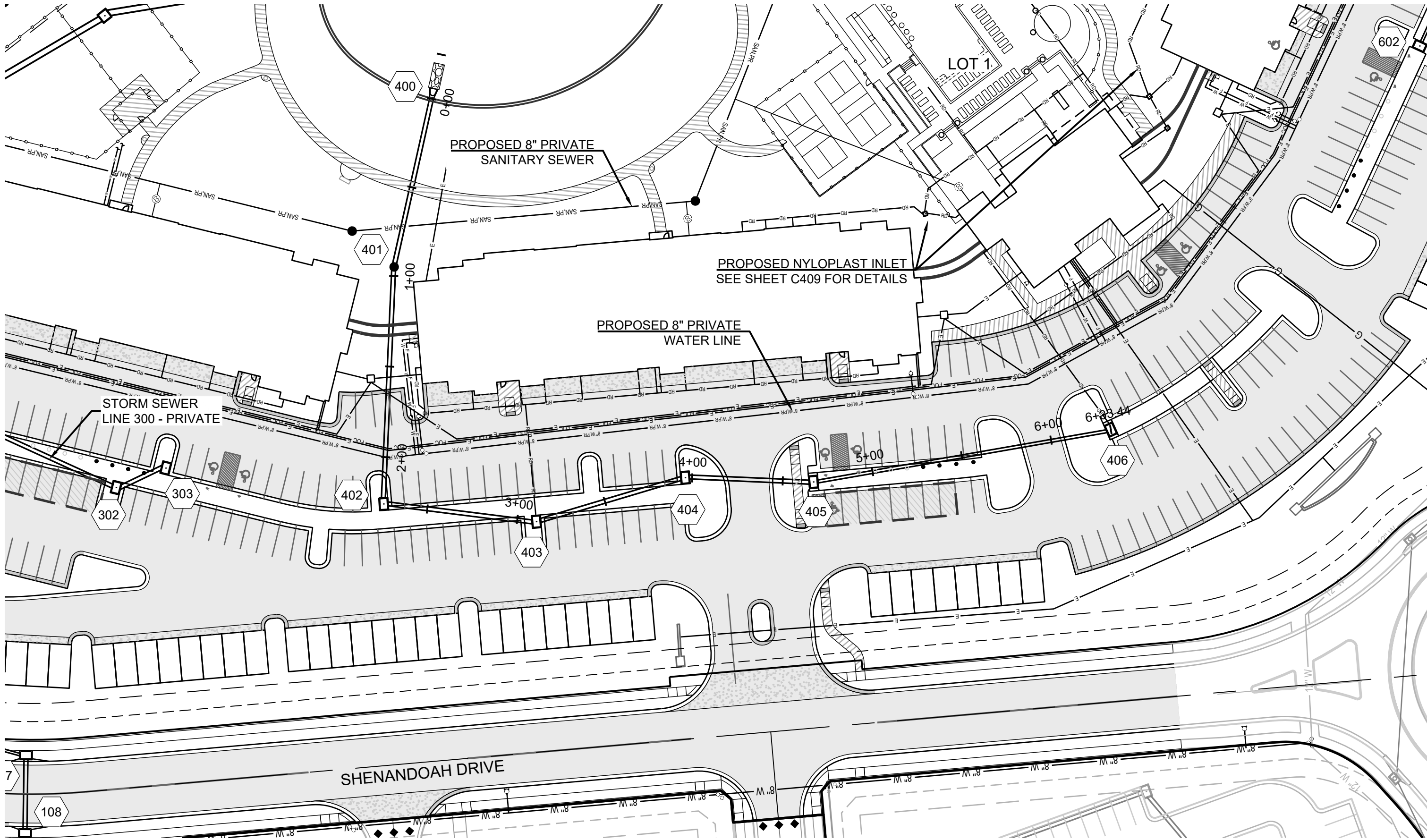
Storm Sewer Construction Notes	
Structure	Notes
301	STA 1+17.44, LINE 300 INSTALL 6 X 4 CURB INLET N 997258.8225 E 2842109.5806
302	STA 2+11.98, LINE 300 INSTALL 6 X 4 CURB INLET N 997217.6979 E 2842024.4527
303	STA 2+41.39, LINE 300 INSTALL 6 X 4 CURB INLET N 997189.8142 E 2842015.0986



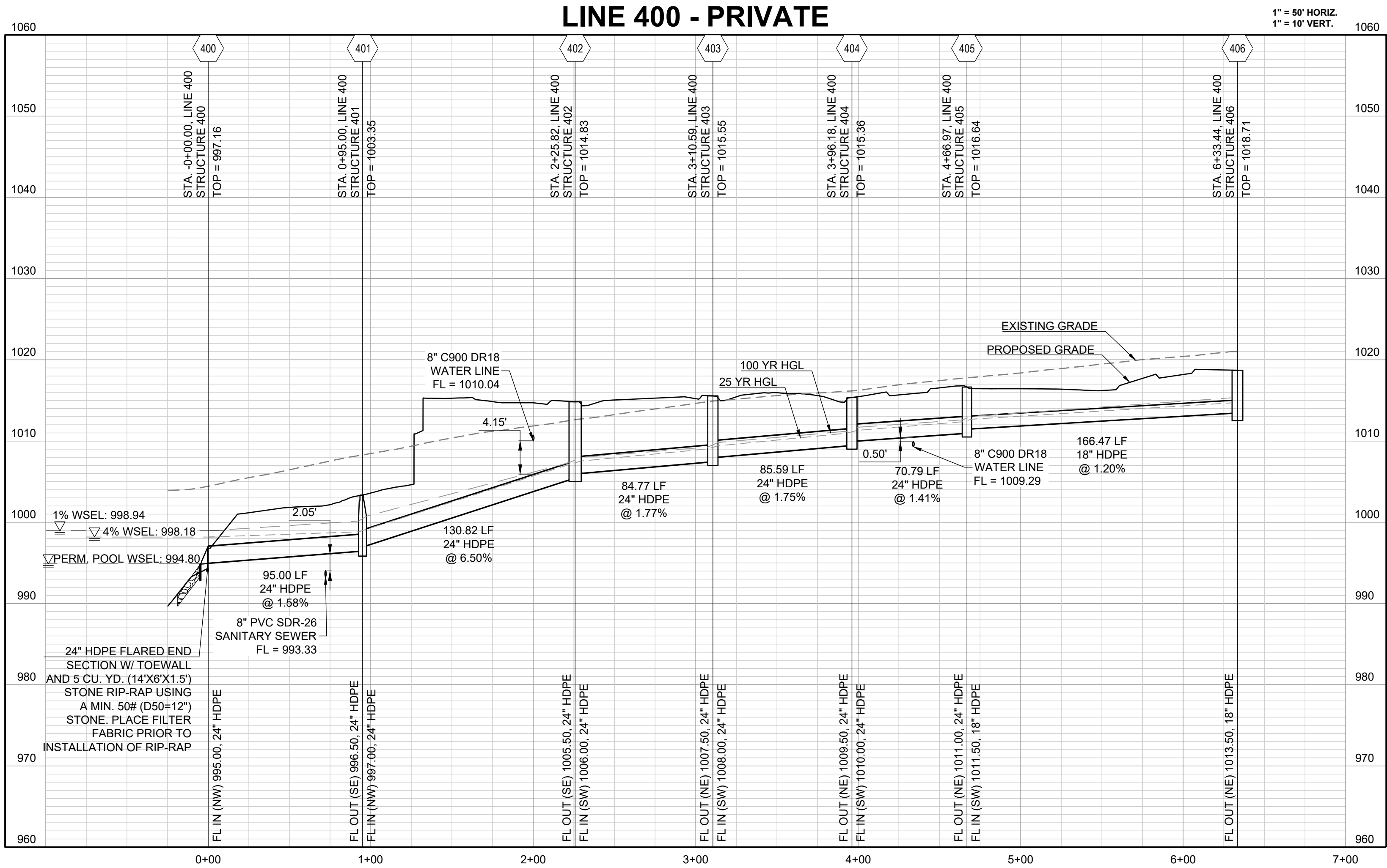
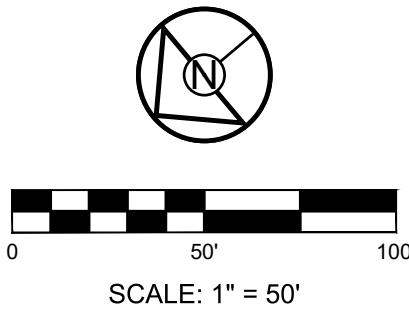
REVISION DATE	DESCRIPTION
1 01/23/23	PER CITY COMMENTS
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3 04/28/2023	PER CITY COMMENTS
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STORM SEWER
LINE 300



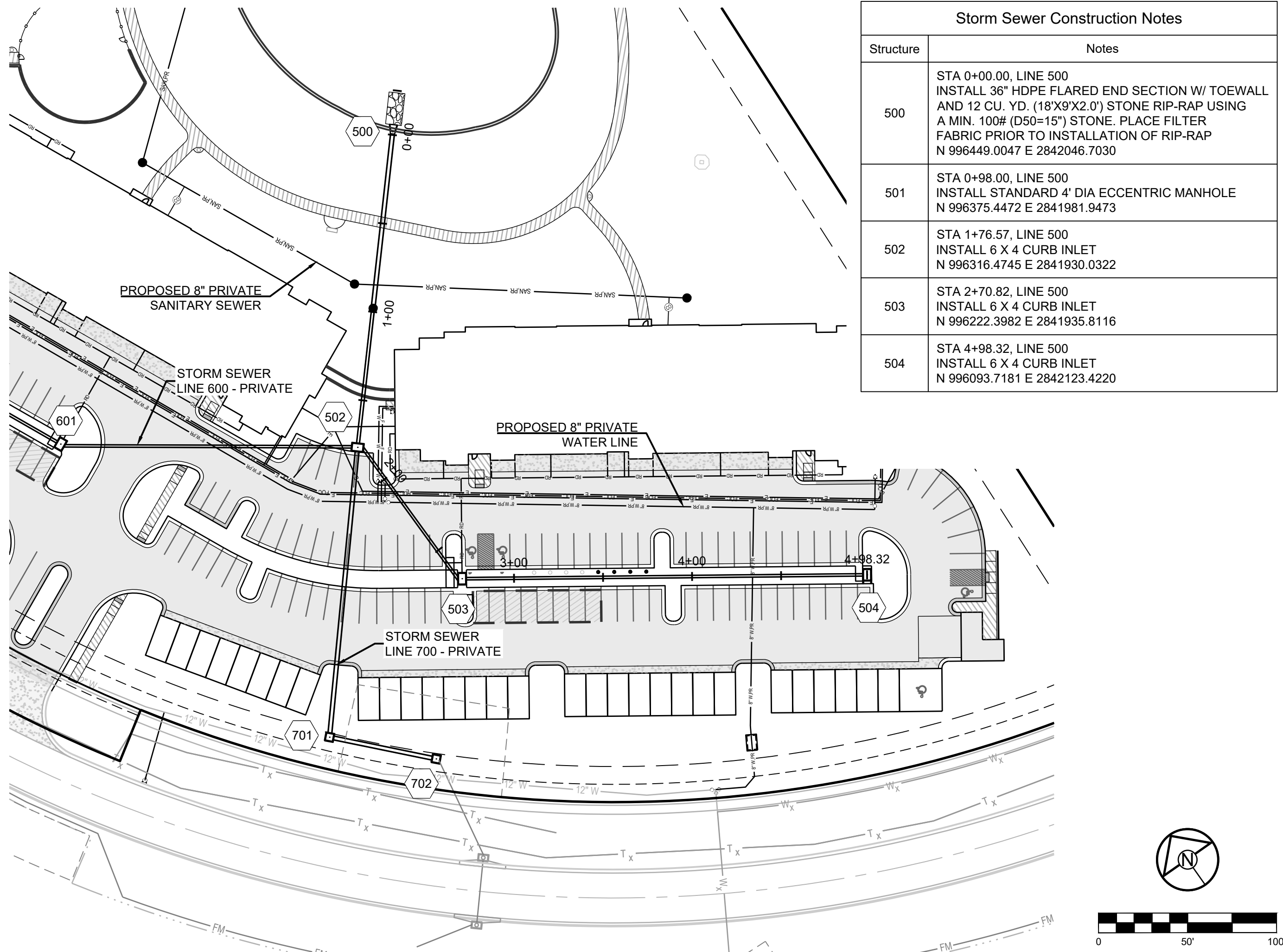
Storm Sewer Construction Notes	
Structure	Notes
400	STA 0+00.00, LINE 400 INSTALL 24" HDPE FLARED END SECTION W/ TOEWALL AND 5 CU. YD. (14'X6'X1.5') STONE RIP-RAP USING A MIN. 50# (D50=12") STONE. PLACE FILTER FABRIC PRIOR TO INSTALLATION OF RIP-RAP N 996946.6755 E 2842076.9140
401	STA 0+95.00, LINE 400 INSTALL STANDARD 4' DIA ECCENTRIC MANHOLE N 997022.0637 E 2842019.1072
402	STA 2+25.82, LINE 400 INSTALL 6 X 4 CURB INLET N 997110.4795 E 2841922.6841
403	STA 3+10.59, LINE 400 INSTALL 6 X 4 CURB INLET N 997052.2404 E 2841861.0868
404	STA 3+96.18, LINE 400 INSTALL 6 X 4 CURB INLET N 996973.7770 E 2841826.9058
405	STA 4+66.97, LINE 400 INSTALL 6 X 4 CURB INLET N 996921.0799 E 2841779.6358
406	STA 6+33.44, LINE 400 INSTALL 6 X 4 CURB INLET N 996776.9387 E 2841696.3656



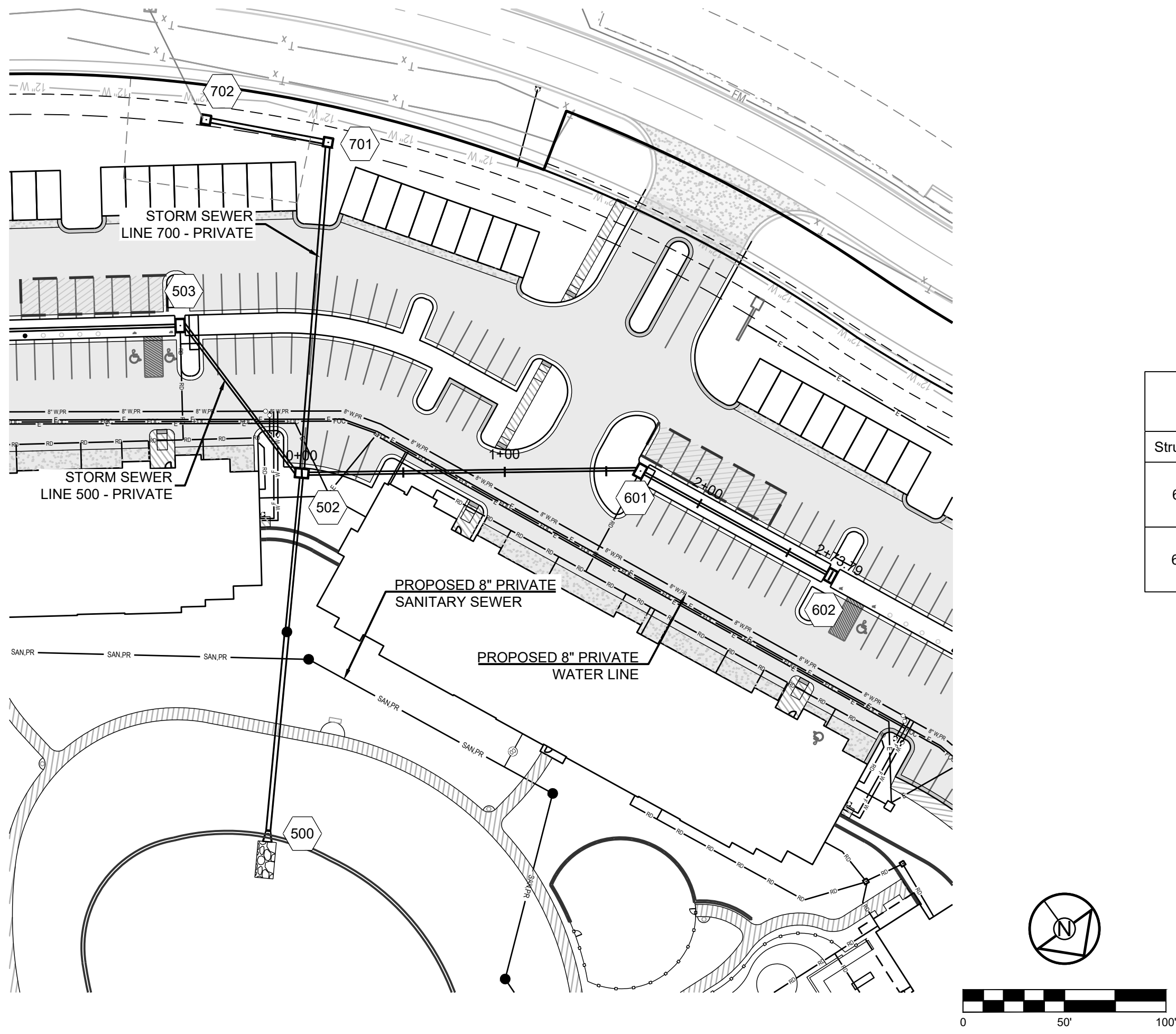
REVISION DATE	DESCRIPTION
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CHECKED BY:	MAB
DATE PREPARED:	2/9/2023
PROJ. NUMBER:	22-102

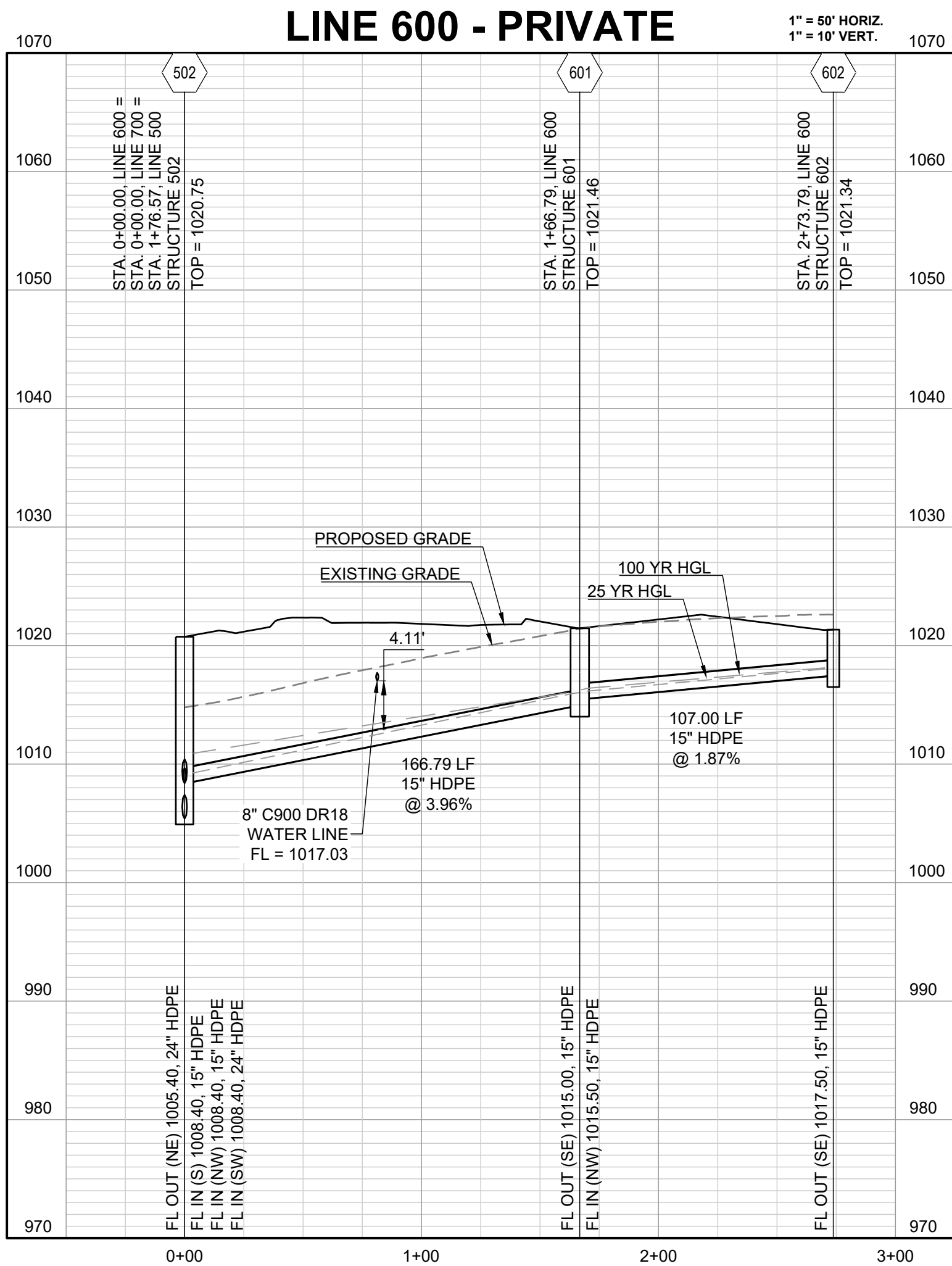
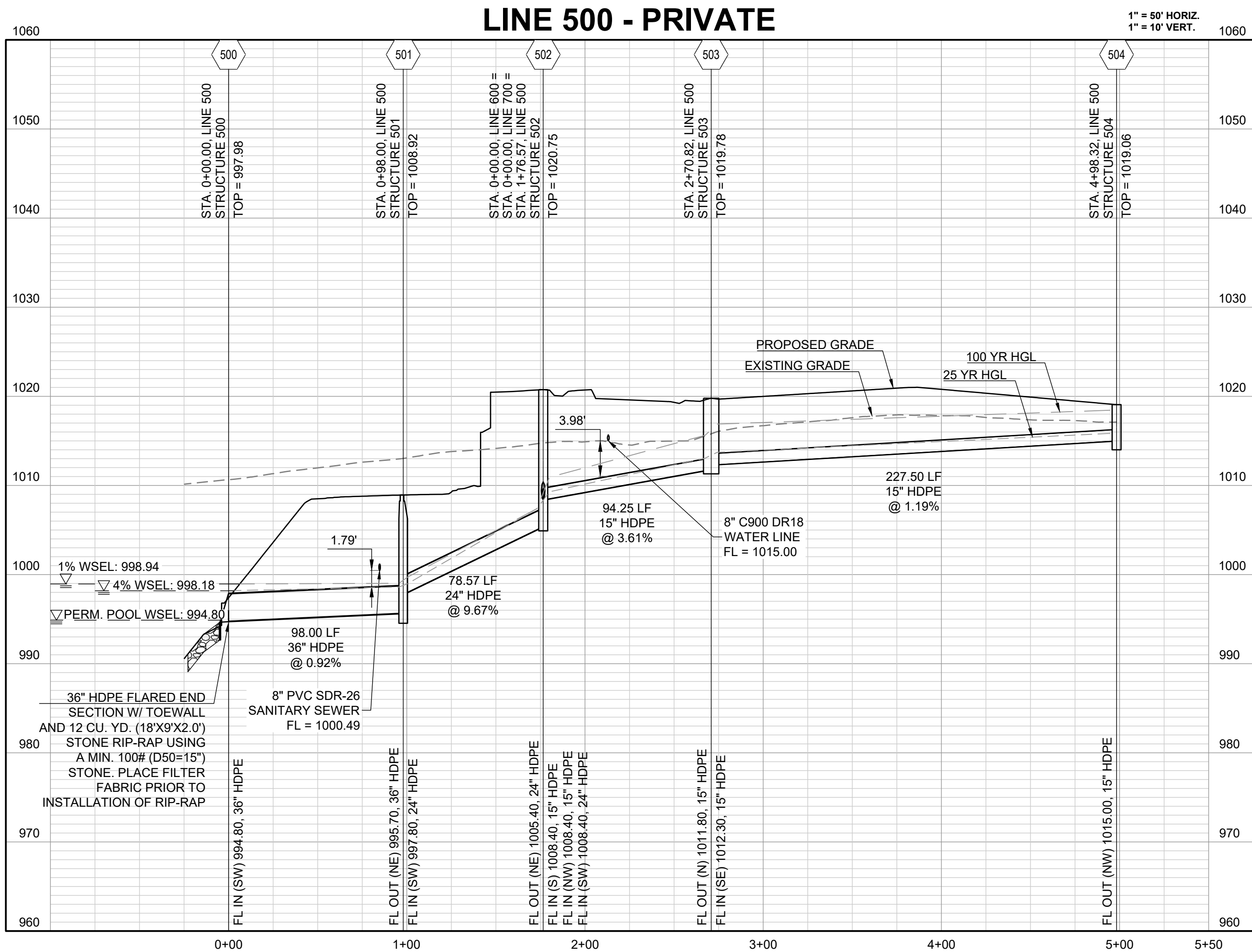
STORM SEWER
LINE 400



Storm Sewer Construction Notes	
Structure	Notes
500	STA 0+00.00, LINE 500 INSTALL 36" HDPE FLARED END SECTION W/ TOEWALL AND 12 CU. YD. (18'X9'X2.0') STONE RIP-RAP USING A MIN. 100# (D50=15") STONE. PLACE FILTER FABRIC PRIOR TO INSTALLATION OF RIP-RAP N 996449.0047 E 2842046.7030
501	STA 0+98.00, LINE 500 INSTALL STANDARD 4" DIA ECCENTRIC MANHOLE N 996375.4472 E 2841981.9473
502	STA 1+76.57, LINE 500 INSTALL 6 X 4 CURB INLET N 996316.4745 E 2841930.0322
503	STA 2+70.82, LINE 500 INSTALL 6 X 4 CURB INLET N 996222.3982 E 2841935.8116
504	STA 4+98.32, LINE 500 INSTALL 6 X 4 CURB INLET N 996093.7181 E 2842123.4220



Storm Sewer Construction Notes	
Structure	Notes
601	STA 1+66.79, LINE 600 INSTALL 6 X 4 CURB INLET N 996413.6646 E 2841794.4908
602	STA 2+73.79, LINE 600 INSTALL 6 X 4 CURB INLET N 996510.4804 E 2841748.9310

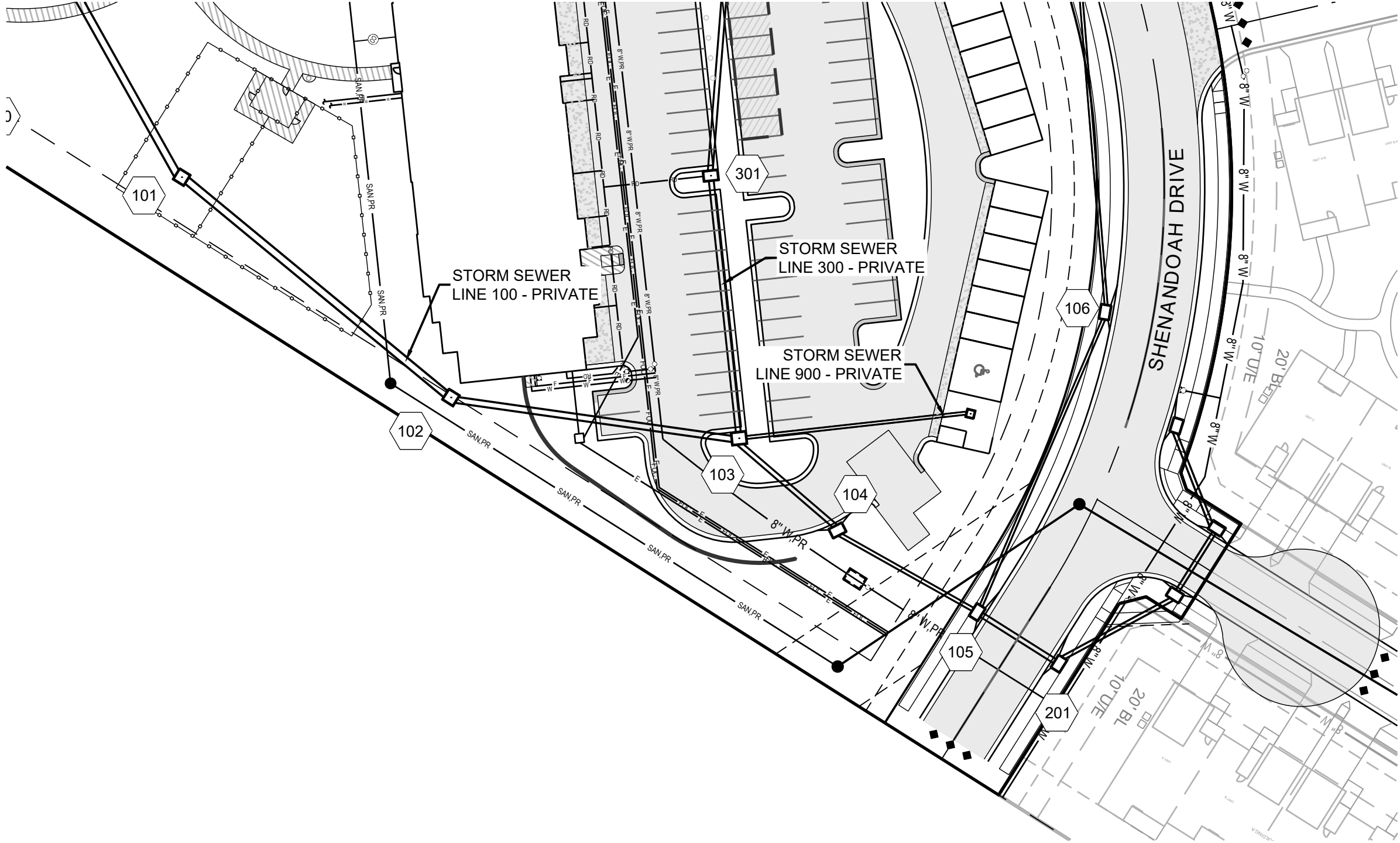
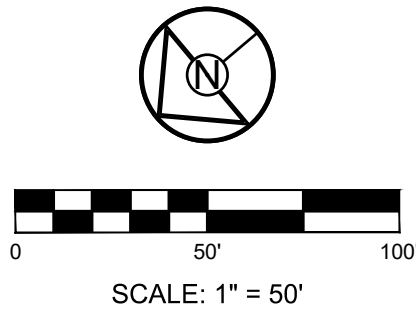


REVISION DATE	DESCRIPTION
01/23/23	PER CITY COMMENTS
03/24/2023	PER CITY COMMENTS
04/28/2023	PER CITY COMMENTS
05/01/2023	DATE PREPARED
25/2023	PROJ. NUMBER
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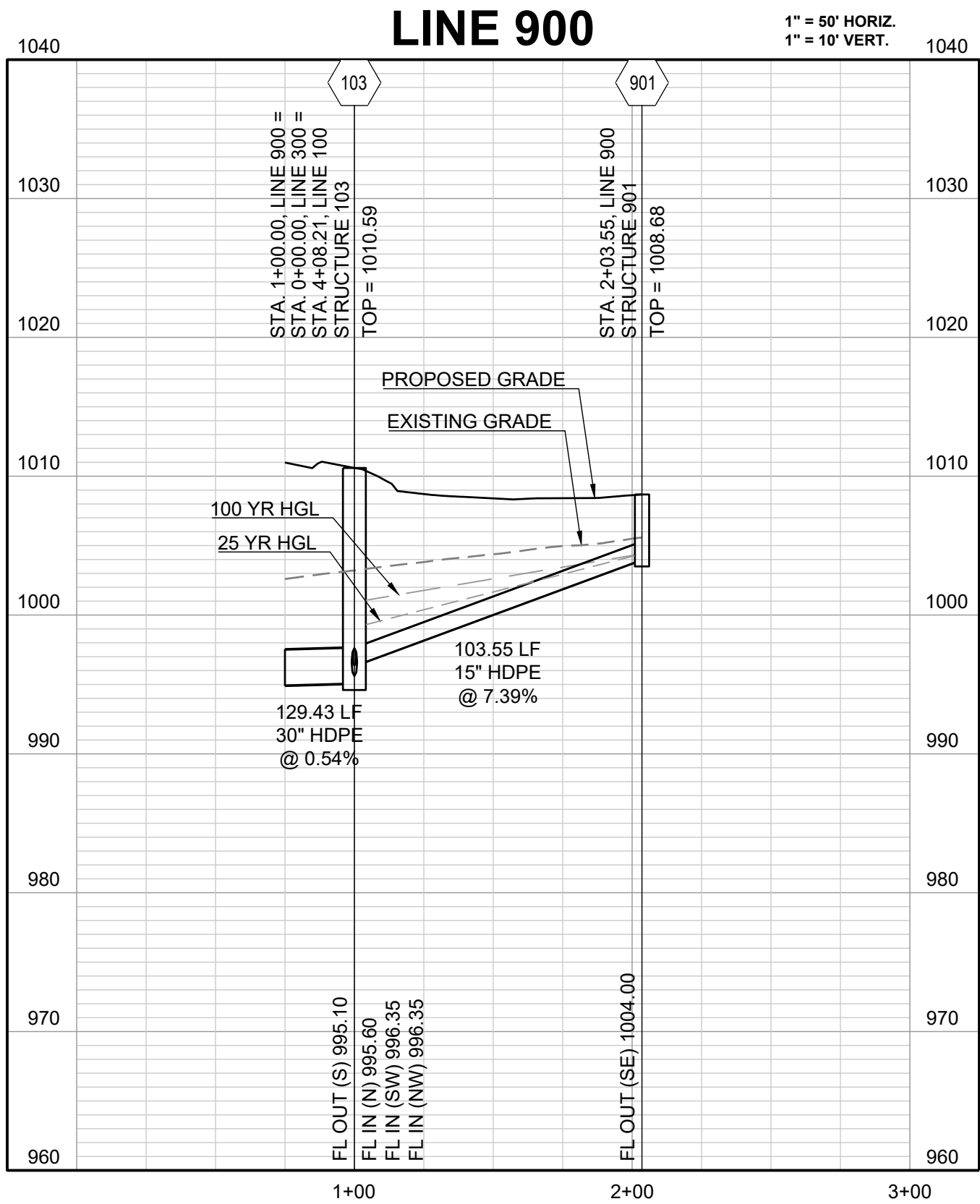
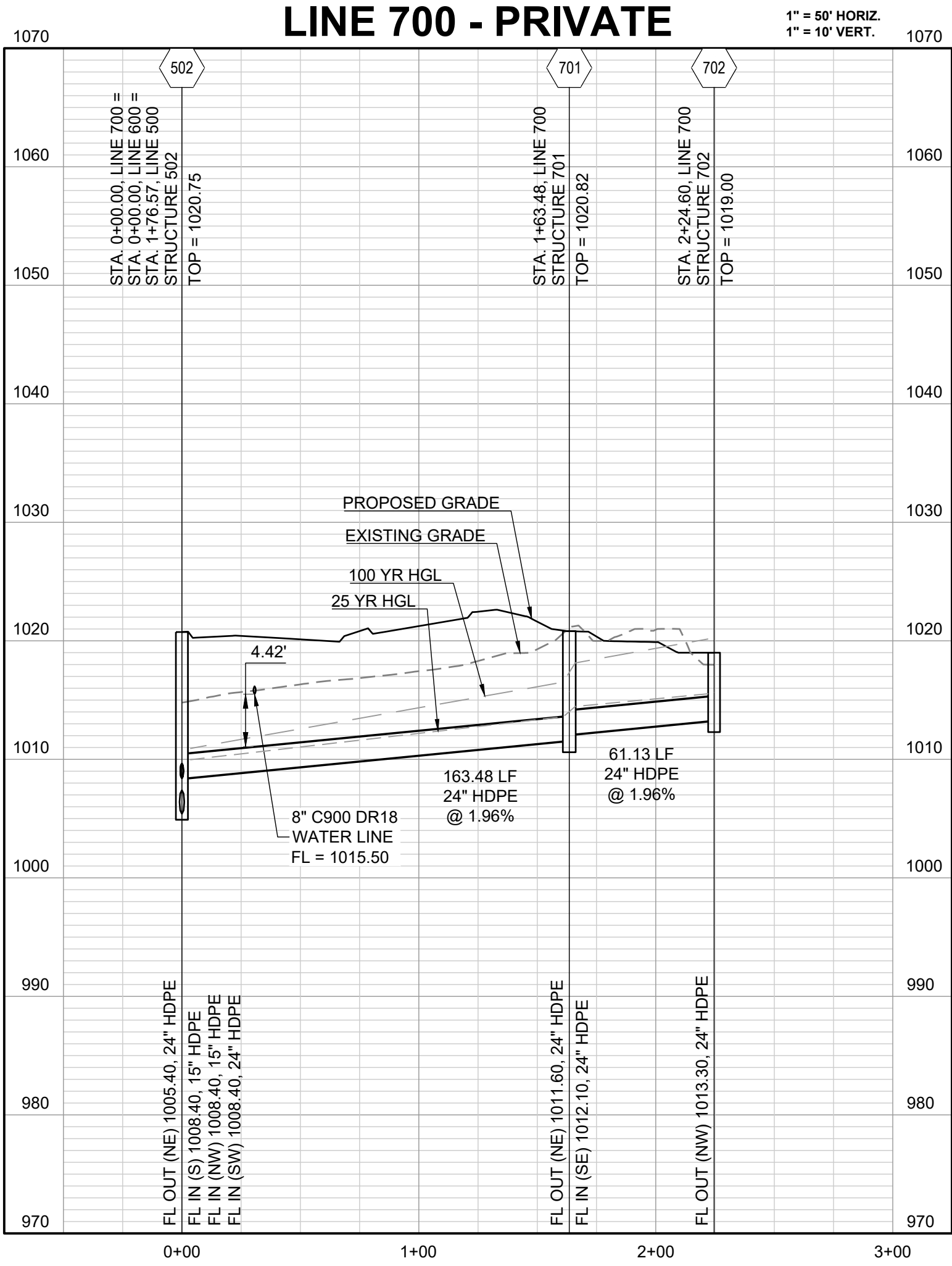
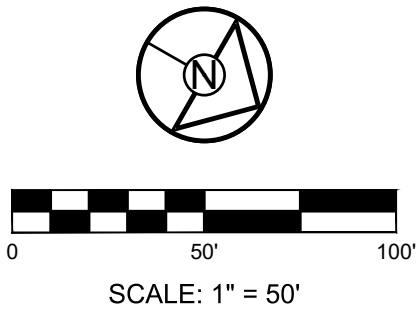
STORM SEWER
LINES 500 & 600



Storm Sewer Construction Notes	
Structure	Notes
701	STA 1+63.48, LINE 700 INSTALL 4 X 4 AREA INLET N 996192.2134 E 2841823.8047
702	STA 2+24.60, LINE 700 INSTALL 4 X 4 AREA INLET N 996147.8564 E 2841865.8612



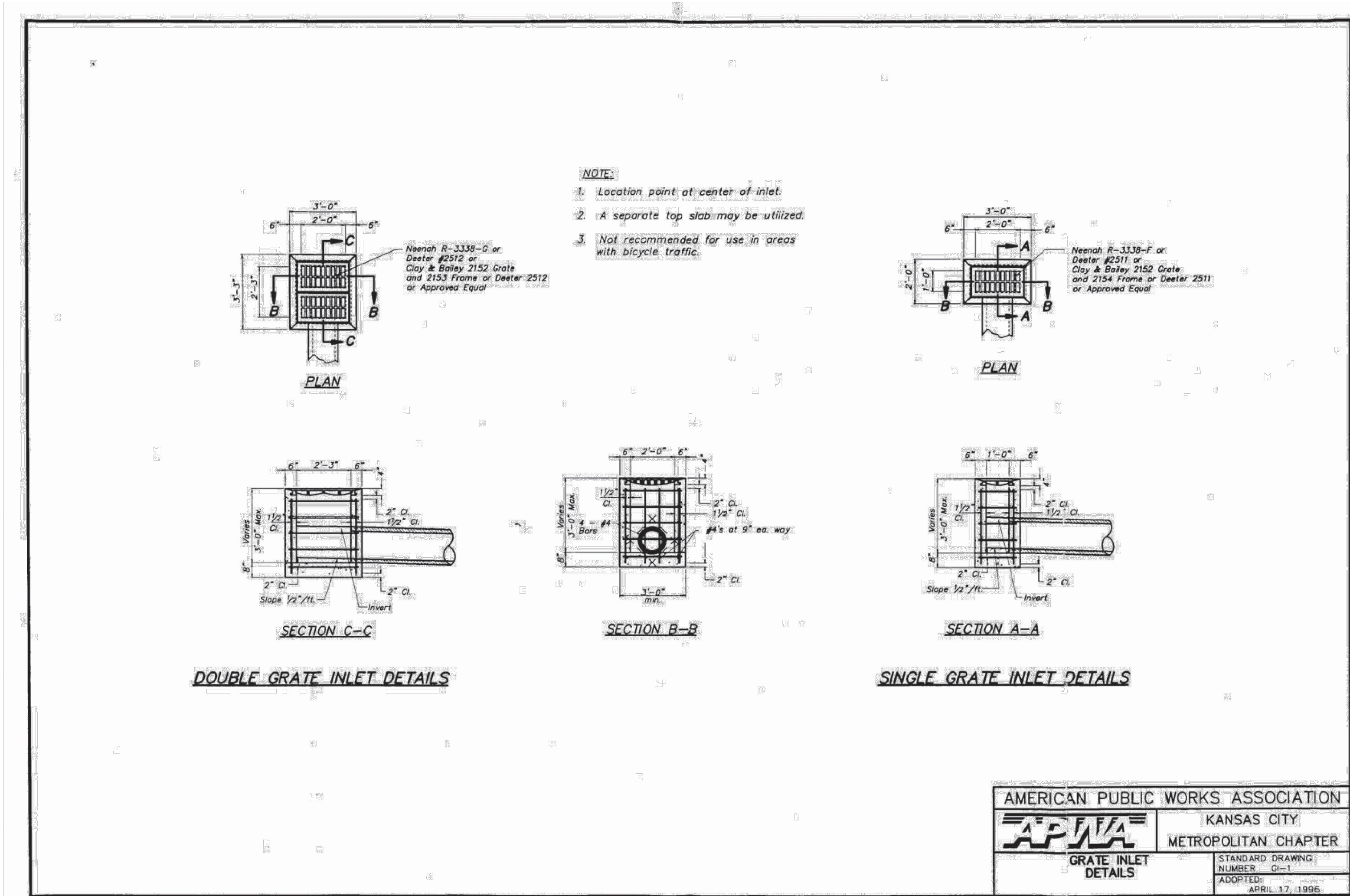
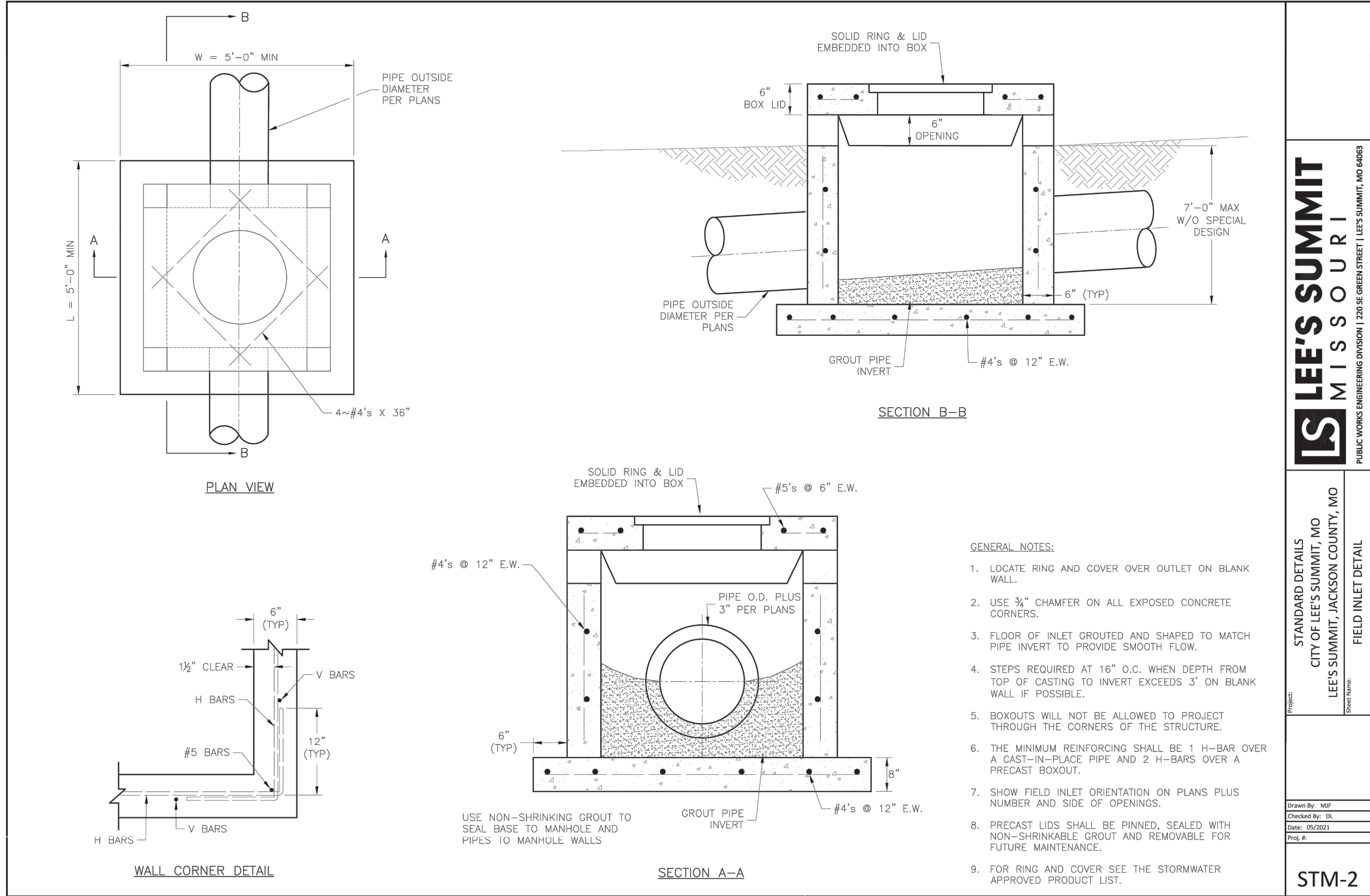
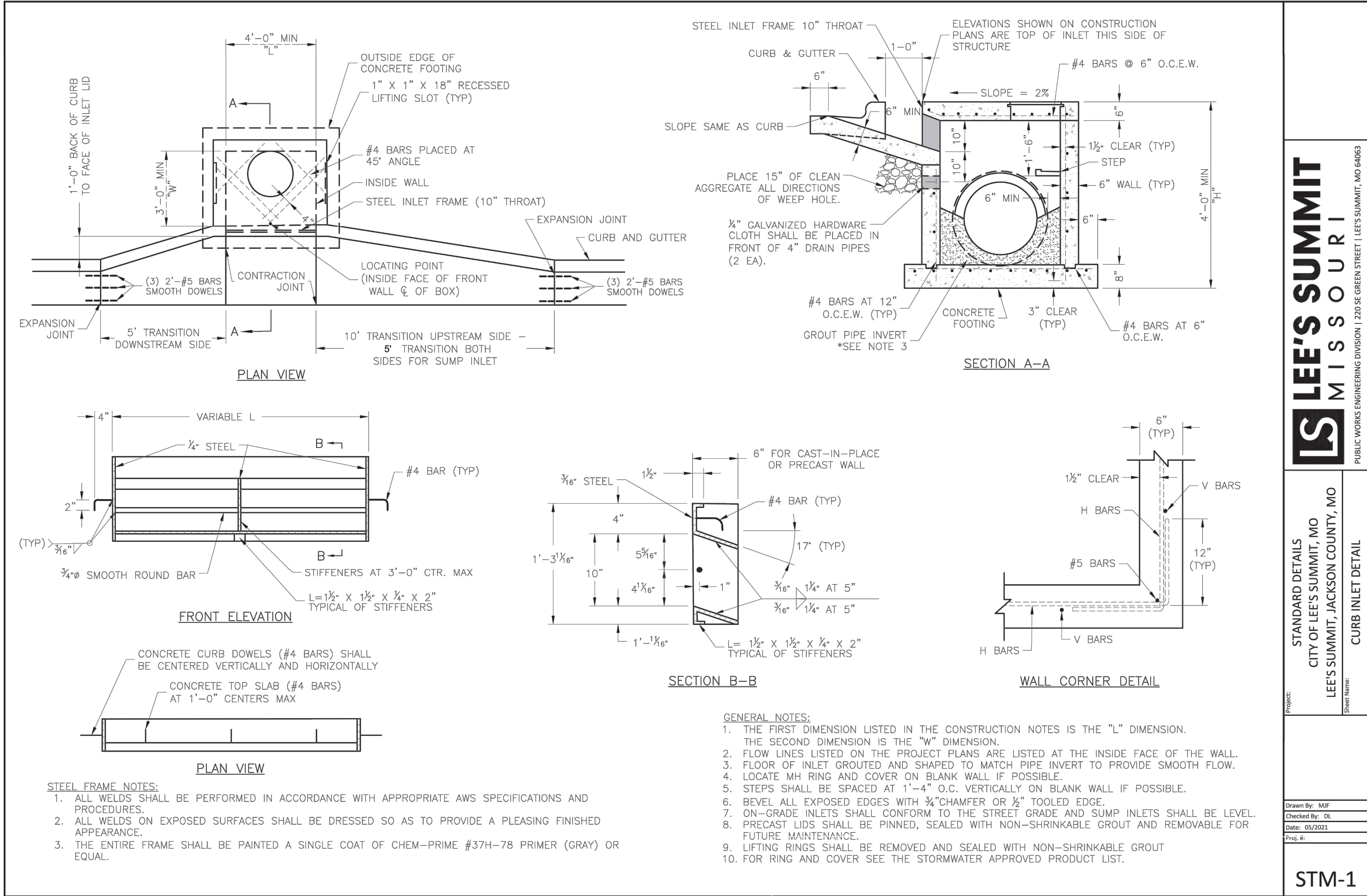
Storm Sewer Construction Notes	
Structure	Notes
901	STA 2+03.55, LINE 900 INSTALL 3 X 3 GRATE INLET N 997411.8528 E 2842143.5436



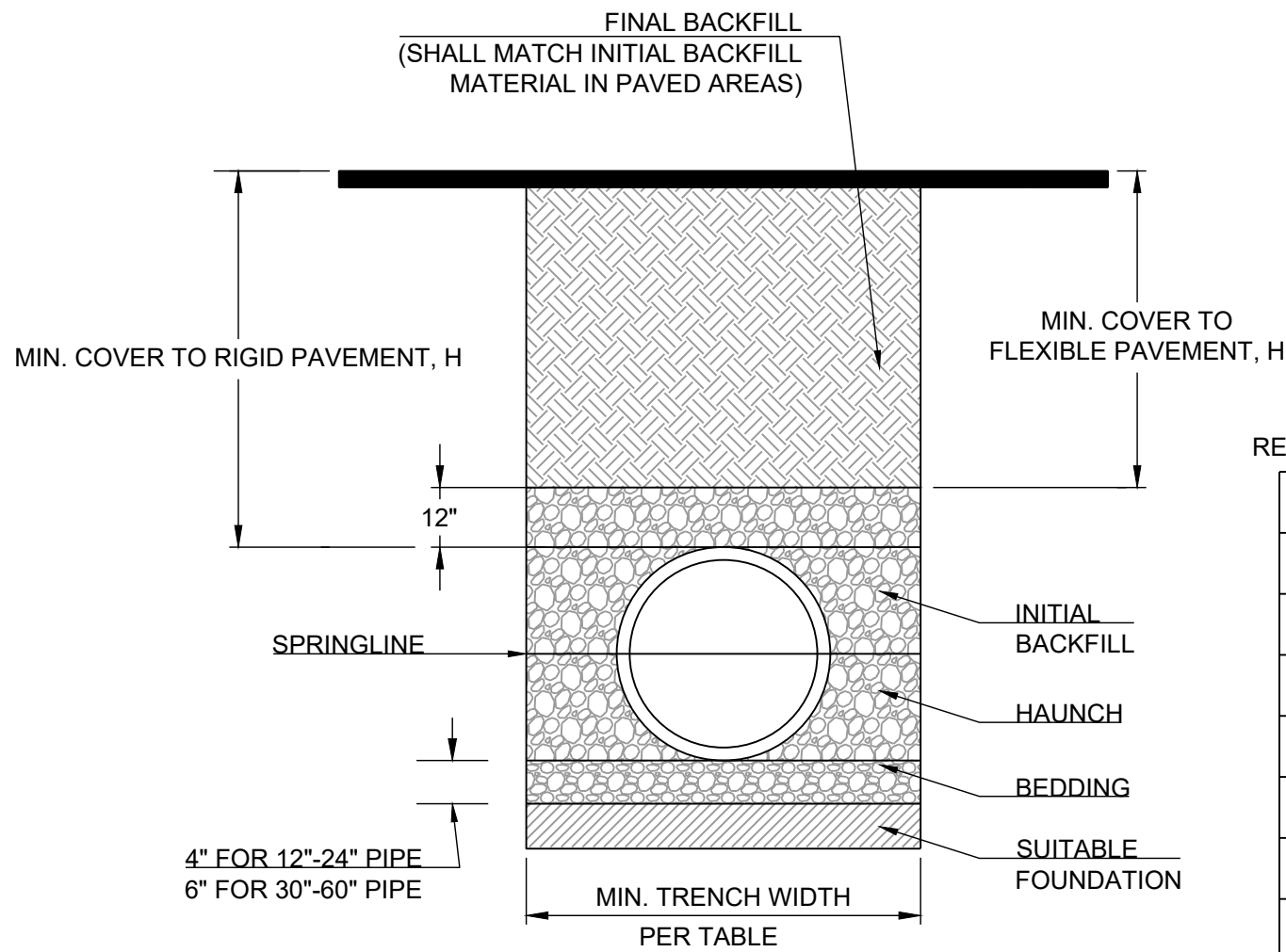
REVISION DATE	DESCRIPTION
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STORM SEWER
LINES 700 & 900

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REVISION DATE	DESCRIPTION
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03/24/2023	PER CITY COMMENTS
04/28/2023	PER CITY COMMENTS
2/9/2023	DATE PREPARED
22-102	PROJ. NUMBER



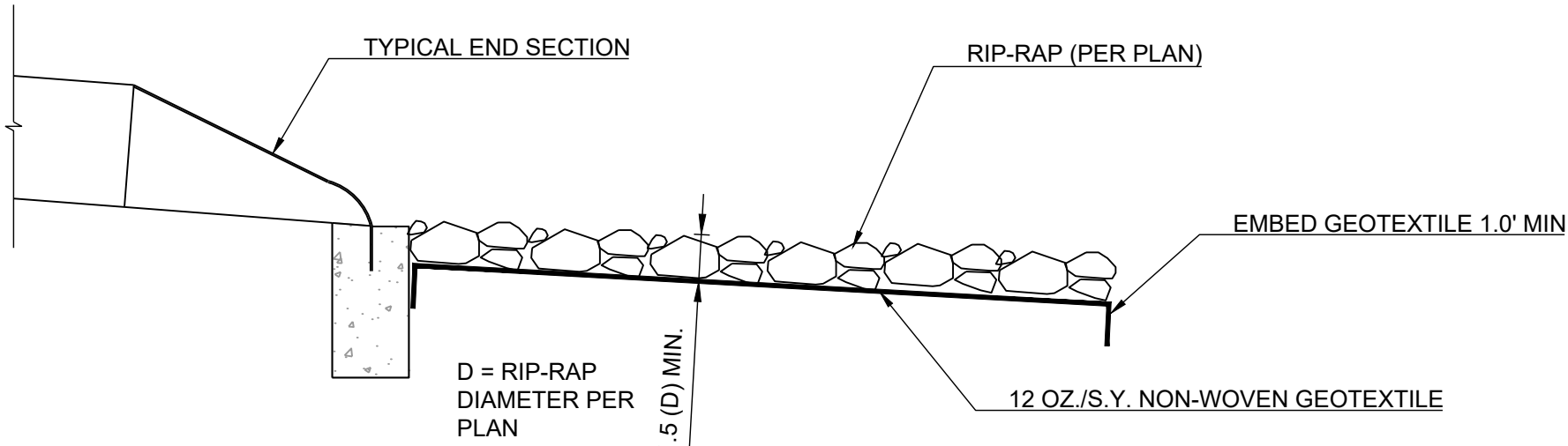
PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS SURFACE LIVE LOADING CONDITION		
PIPE DIAM.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

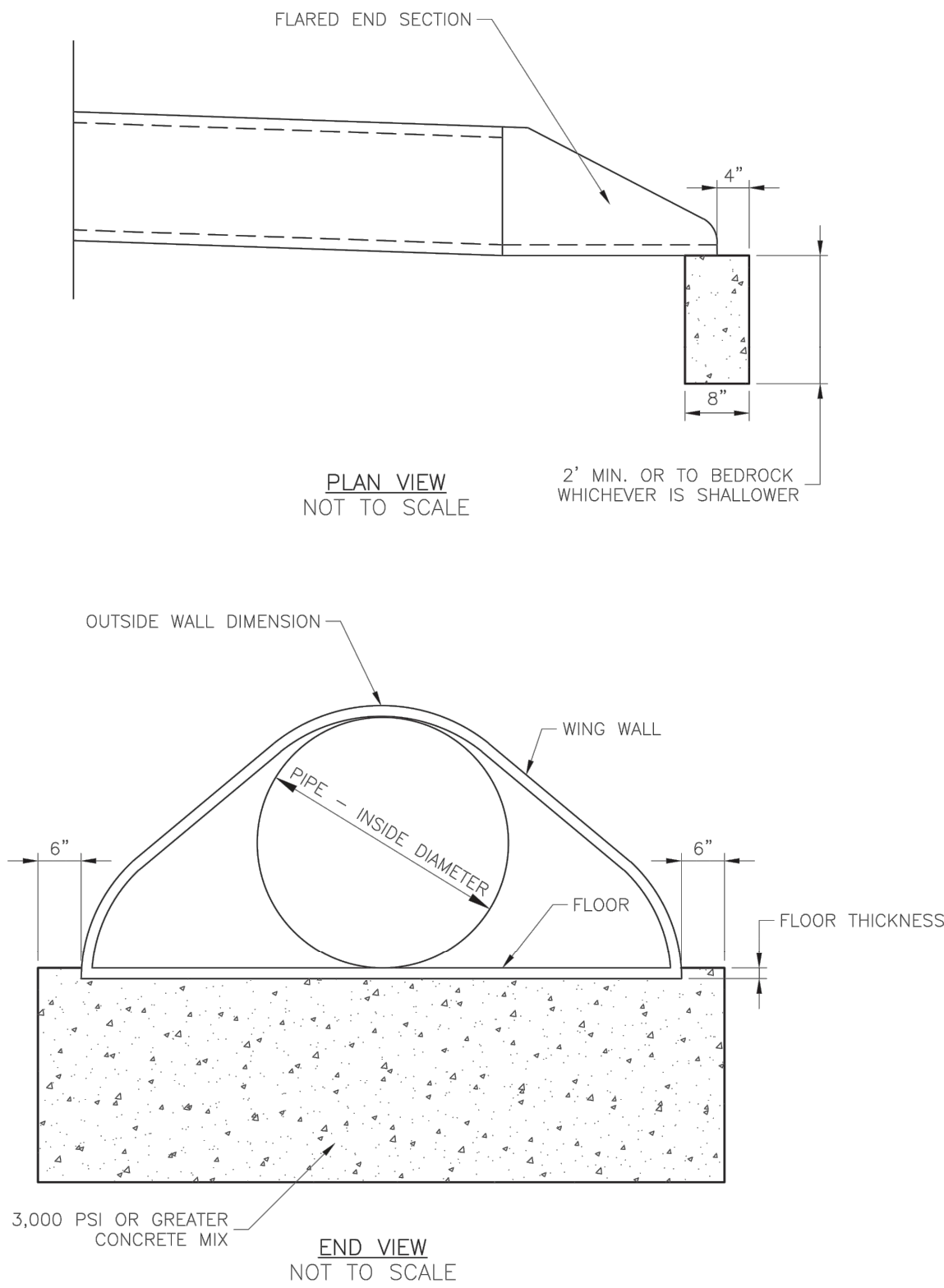
* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

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 FLOATATION. 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.
7. TESTING: CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL MATERIAL TESTING REQUIRED FOR THEIR WORK. THIS INCLUDES SCHEDULING OF TESTS, COORDINATING AND PROVIDING ACCESS TO SAMPLE LOCATIONS, AND SATISFYING ALL TEST RESULT REPORTING REQUIREMENTS.



RIP-RAP AT OUTLET

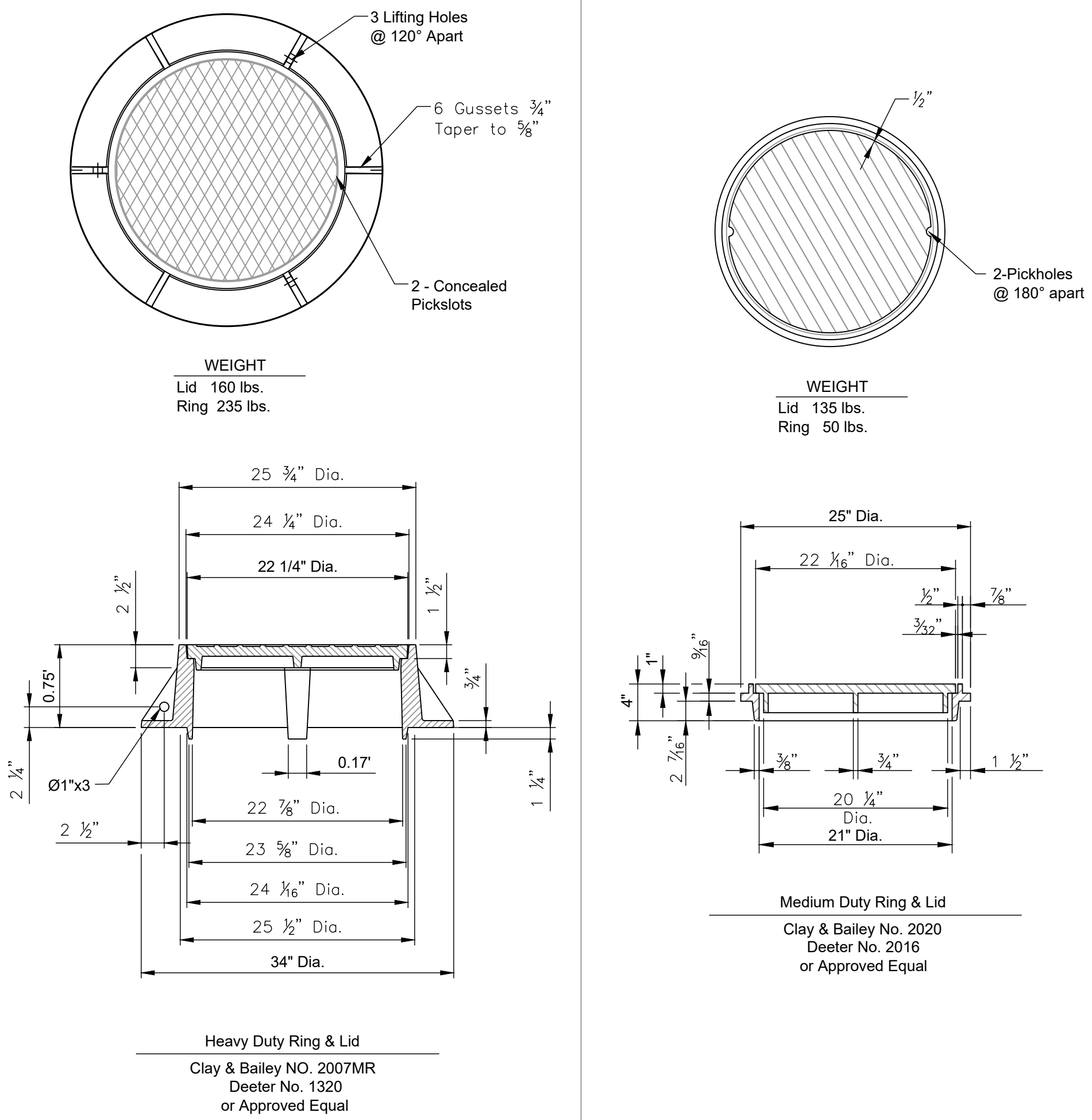


**LEE'S SUMMIT
MISSOURI**
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64083

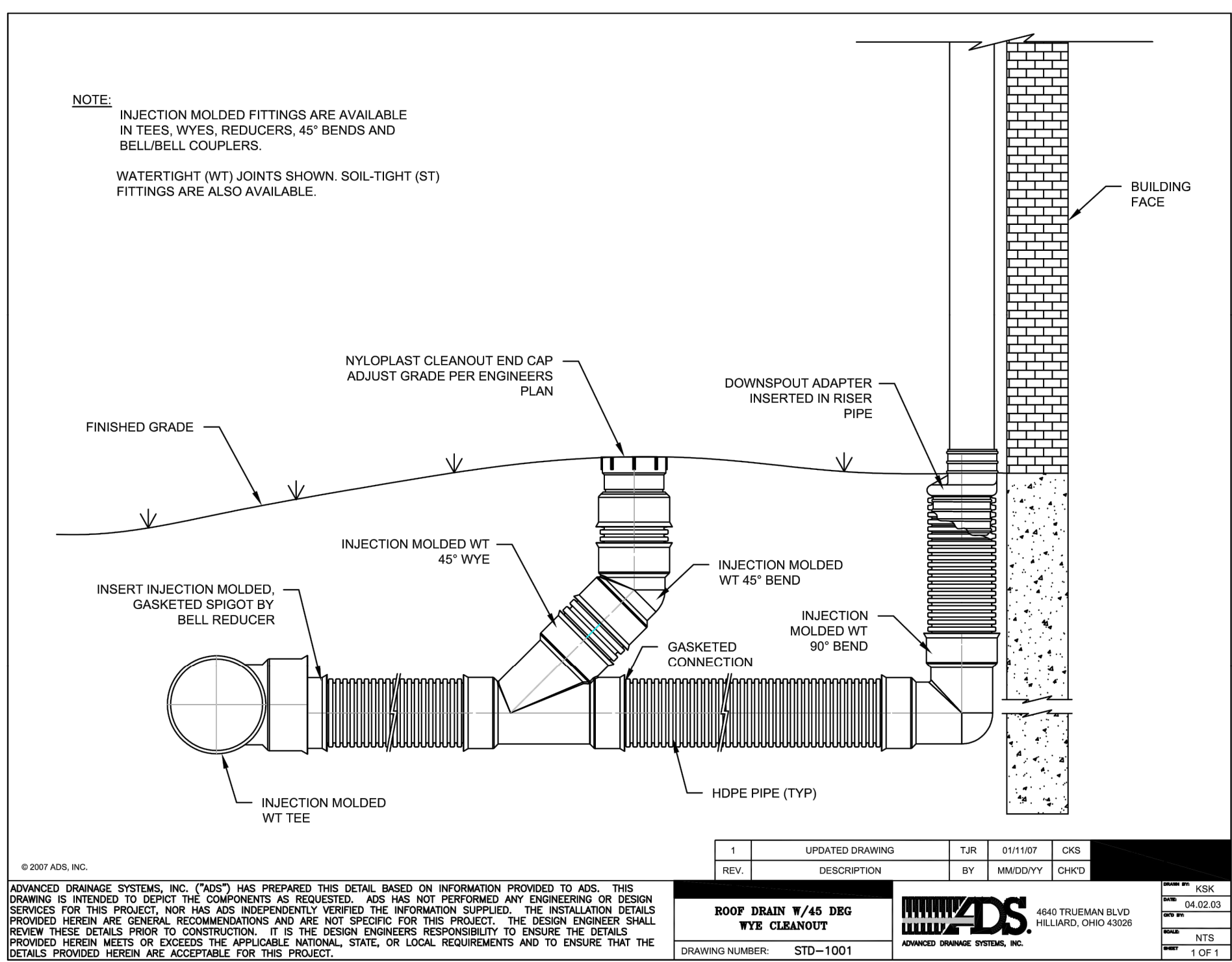
FLARED END SECTION SUPPORT DETAIL

Date: 05/2021
Drawn By: MJF
Checked By: DL

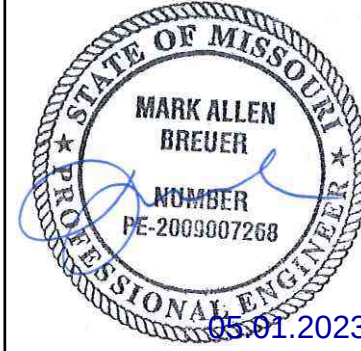
STM-5



MANHOLE RING AND COVER



PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL
FINAL DEVELOPMENT PLAN

HERITAGE STREET LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
01/23/23	PER CITY COMMENTS
03/24/2023	PER CITY COMMENTS
04/28/2023	PER CITY COMMENTS
2/9/2023	DATE PREPARED
22-102	PROJ. NUMBER

STORM DETAILS

SHEET

C408

Engineered Surface Drainage Products

PVC surface drainage inlets shall be of the inline drain type as indicated on the contract drawing and referenced within the contract specifications. The ductile iron grates for each of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer. The surface drainage inlets shall be as manufactured by Nyloplast a division of Advanced Drainage Systems, Inc., or prior approved equal.

The inline drain required for this contract shall be manufactured from PVC pipe stock, utilizing a thermo-forming process to reform the pipe stock to the furnished configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and molded to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The flexible elastomeric seals shall conform to ASTM F477. The pipe bell gasket shall be joined to the inline drain body by use of a **swage mechanical joint**. The raw material used to manufacture the pipe stock that is used to manufacture the inline drain body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.

The grates furnished for all surface drainage inlets shall be ductile iron grates for sizes 8", 10", 12", 15", 18", 24" and 30" shall be made specifically for each fitting so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Grates for inline drains shall be capable of supporting H-20 wheel loading for traffic areas or H-10 loading for pedestrian areas. 12" and 15" square grates will be hinged to the frame using pins. Metal used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05 for ductile iron. Grates shall be provided painted black.

The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 1, class 2, or class 3 material as defined in [ASTM D2321](#). Bedding and backfill for surface drainage inlets shall be well placed and compacted uniformly in accordance with [ASTM D2321](#). The drain basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height. For H-20 load rated installations, a concrete ring will be poured under and around the grate and frame. The concrete slab must be designed taking into consideration local soil conditions, traffic loading, and other applicable design factors. For other installation considerations such as migration of fines, ground water, and soft foundations refer to [ASTM D2321](#) guidelines.

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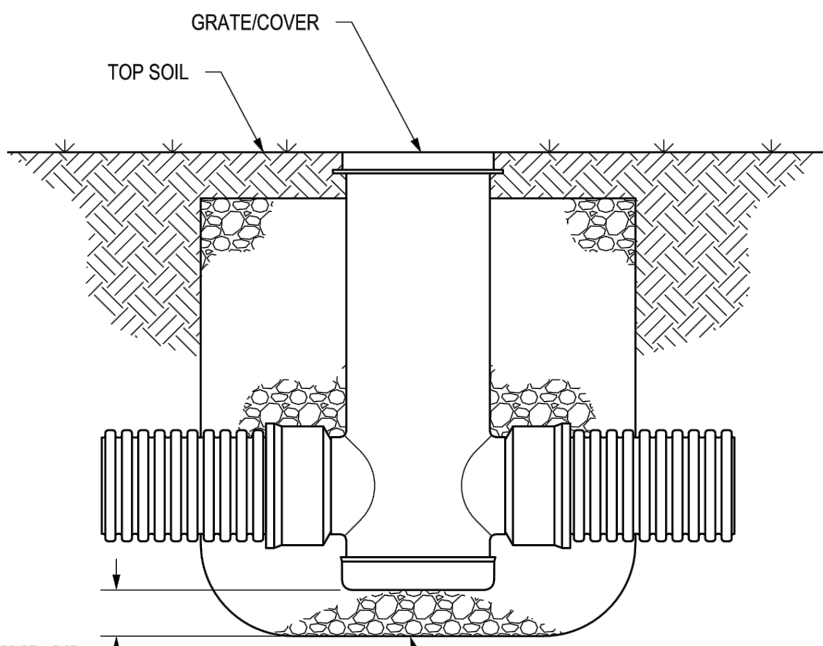
Nyloplast®

TITLE

8 IN - 30 IN INLINE DRAIN SPECIFICATIONS

DWG NO. 7003-110-009 REV H

DRAIN BASIN



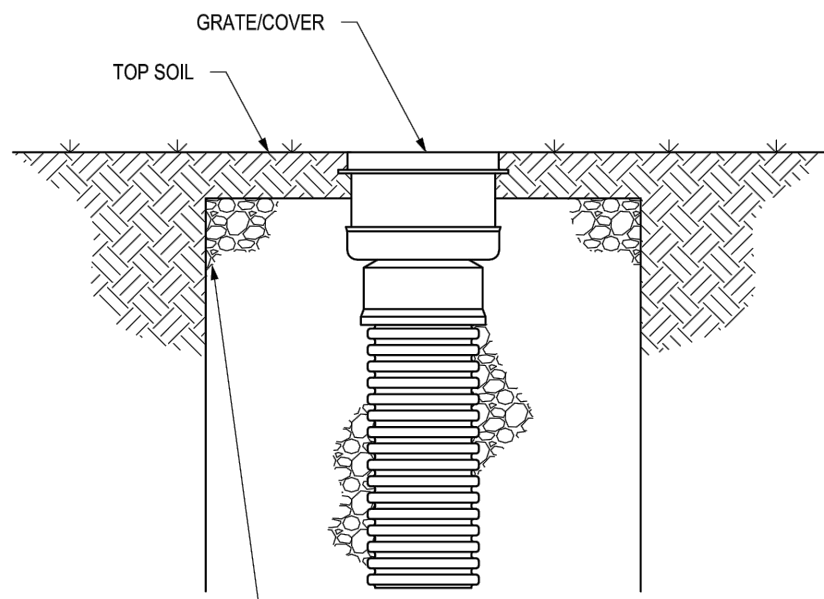
THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

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TITLE
 DRAIN BASIN & INLINE DRAIN
 NON TRAFFIC INSTALLATION

DWG NO. 7001-110-111 **REV** F

INLINE DRAIN



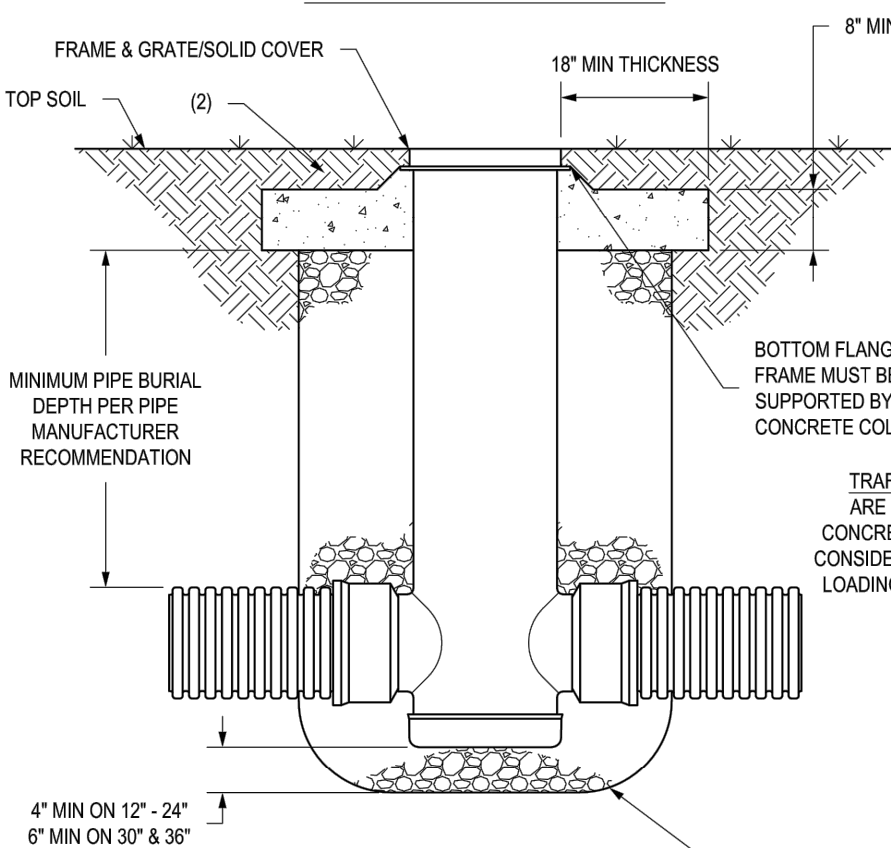
THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321

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TITLE
**DRAIN BASIN & INLINE DRAIN
 NON TRAFFIC INSTALLATION**

DWG NO. 7001-110-111 REV F

12" - 36" DRAIN BASIN

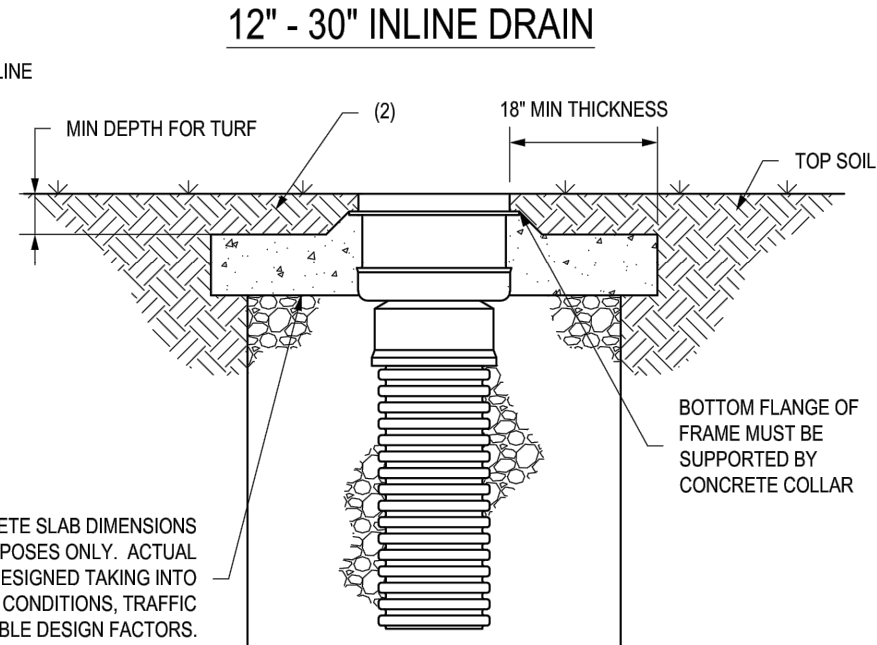


1. GRATES/SOLID COVERS SHALL MEET H-20 LOAD RATING FOR 30' PEDESTRIAN & 12" - 30" STANDARD & SOLID
2. DESIGN SHOULD ACCOUNT FOR ROOT DEPTH TO ALLOW TURF TO GROW AND PREVENT EROSION AROUND GRATE SO THAT HAZARDS DO NOT FORM.

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**DRAIN BASIN & INLINE DRAIN
 TURF TRAFFIC INSTALLATION**

7001-110-340 REV G

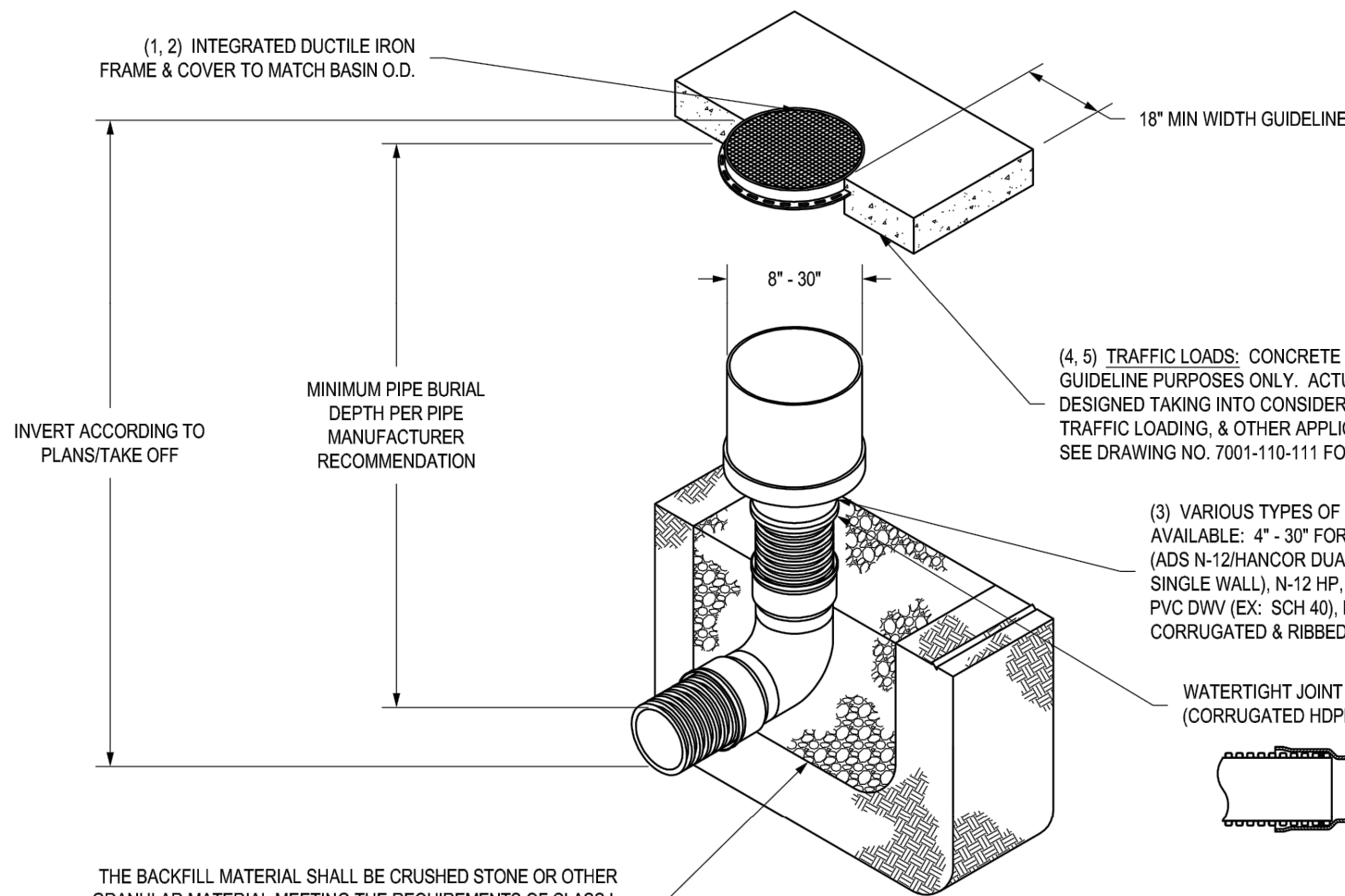


TRAFFIC LOADS: CONCRETE SLAB DIMENSIONS ARE FOR GUIDELINE PURPOSES ONLY. ACTUAL CONCRETE SLAB MUST BE DESIGNED TAKING INTO CONSIDERATION LOCAL SOIL CONDITIONS, TRAFFIC LOADING, & OTHER APPLICABLE DESIGN FACTORS.

THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM

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 DRAIN BASIN & INLINE DRAIN
 TURF TRAFFIC INSTALLATION
 7001-110-340 REV G

NYLOPLAST INLINE DRAIN WITH SOLID COVER



THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

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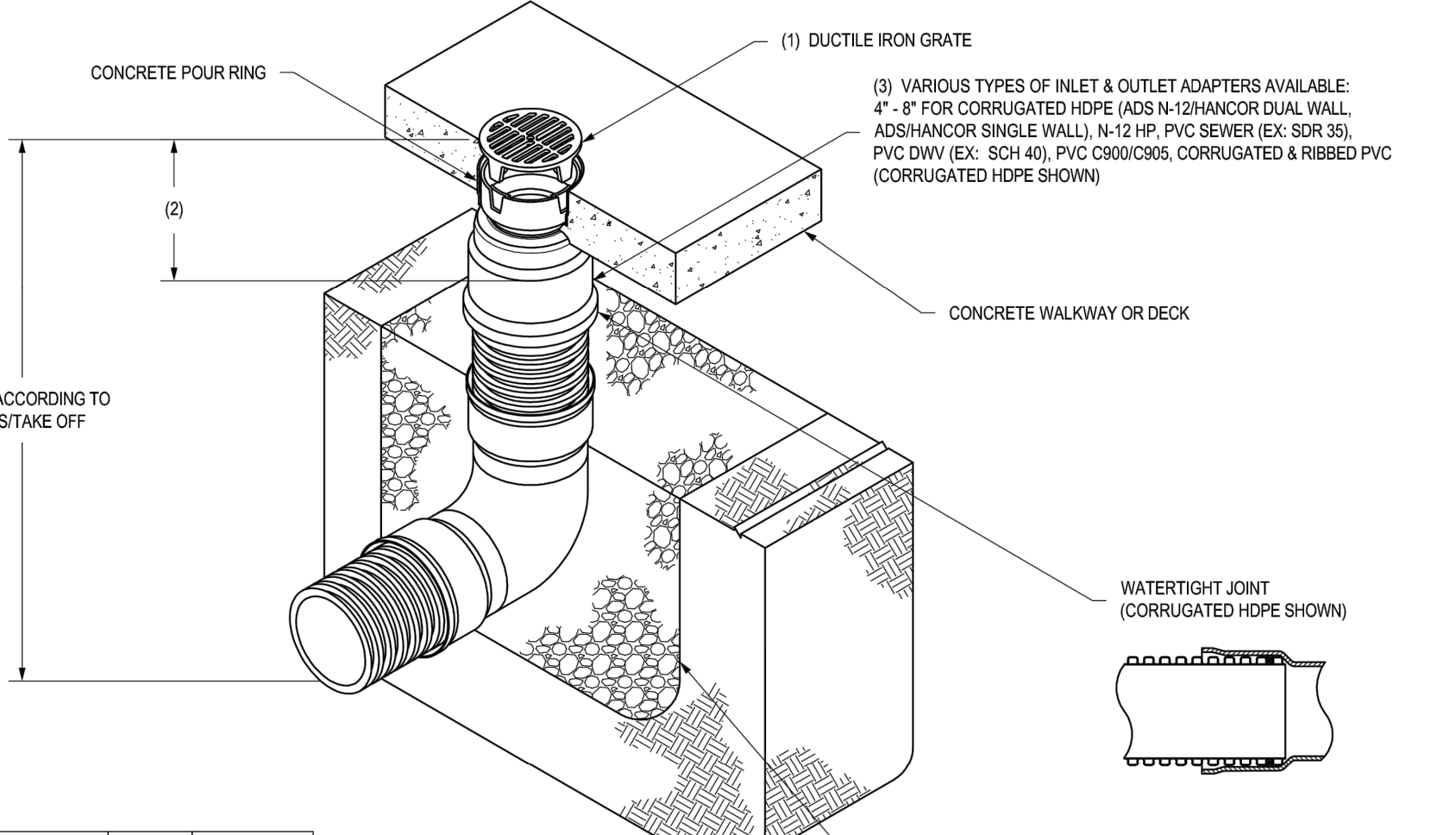
Nyloplast®

TITLE

**INLINE DRAIN WITH SOLID COVER
QUICK SPEC INSTALLATION DETAIL**

DWG NO. 7003-110-055 REV C

NYLOPLAST 8" INLINE DRAIN: 2708AG X



D STONE OR OTHER
REMENTS OF CLASS I,
D IN ASTM D2321.
GE INLETS SHALL BE
ORDNANCE WITH ASTM D2321

GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN/STANDARD	LIGHT DUTY	0899CGS	7001-110-194
SOLID COVER	LIGHT DUTY	0899CGC	7001-110-195
Bronze	N/A	0899CGB	7001-110-196
DOME	N/A	0899CGD	7001-110-197

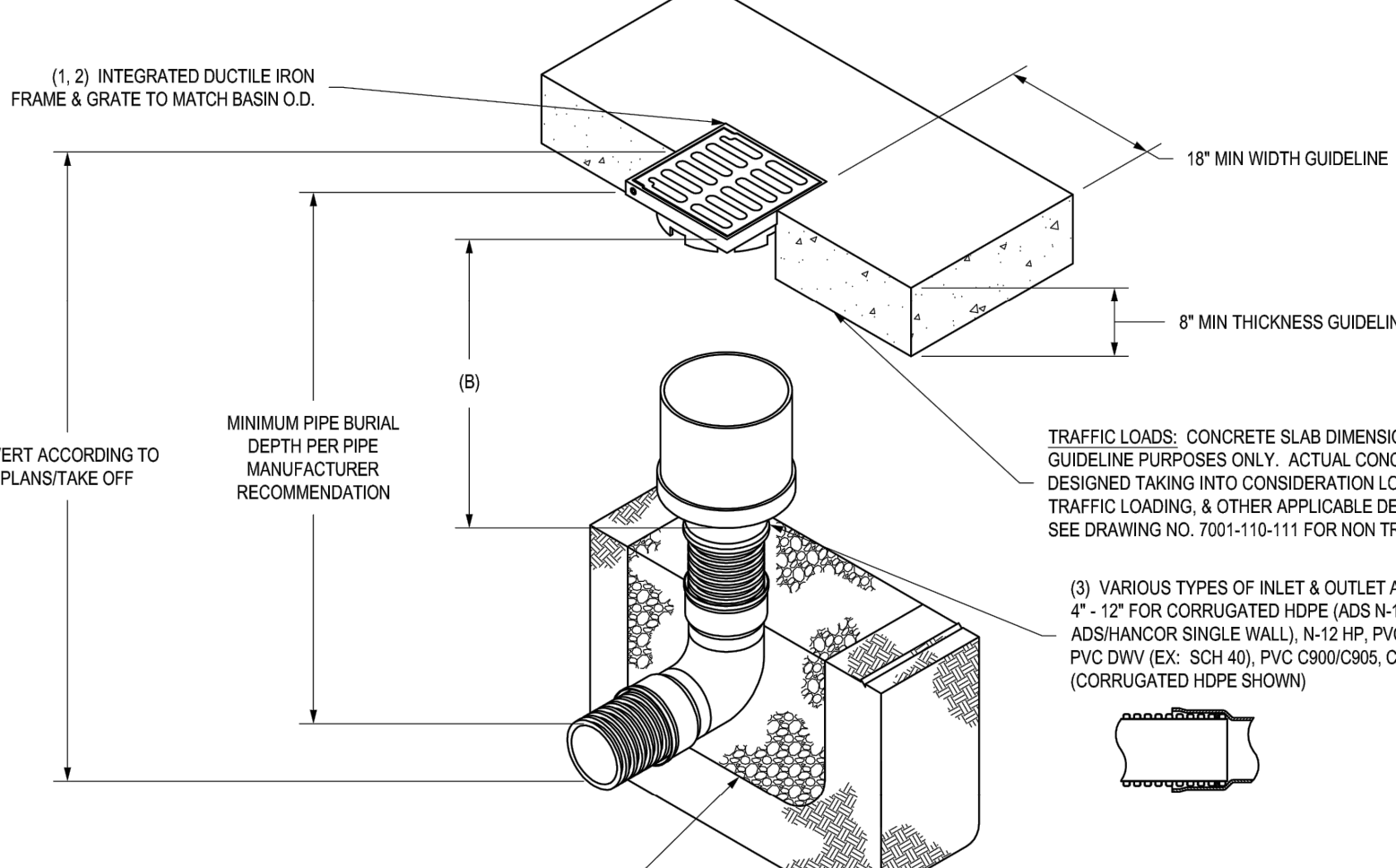
- 1 - GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05 WITH THE EXCEPTION OF THE BRONZE GRATE.
- 2 - FOR COMPLETE DESIGN DETAILS SEE DRAWING NO. 7003-110-000.
- 3 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL) & PVC SEWER

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TITLE
8 IN INLINE DRAIN QUICK SPEC INSTALLATION DETAIL

DWG NO. 7063-110-033 REV F

NYLOPLAST 12" INLINE DRAIN: 2712AG X



THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	1299CGP	7001-110-202
STANDARD	MEETS H-20	1299CGS	7001-110-203
SOLID COVER	MEETS H-20	1299CGC	7001-110-204
PEDESTRIAN BRONZE	N/A	1299CGPB	7001-110-205
DOME	N/A	1299CGD	7001-110-206
DROP IN GRATE	LIGHT DUTY	1201DI	7001-110-021

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DRAIN QUICK SPEC INSTALLATION DETAIL

7003-110-025 REV E

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PREPARED BY



SCHLAGEL & ASSOCIATES, P.

RESIDENCES AT BLACKWELL
FINAL DEVELOPMENT PLAN

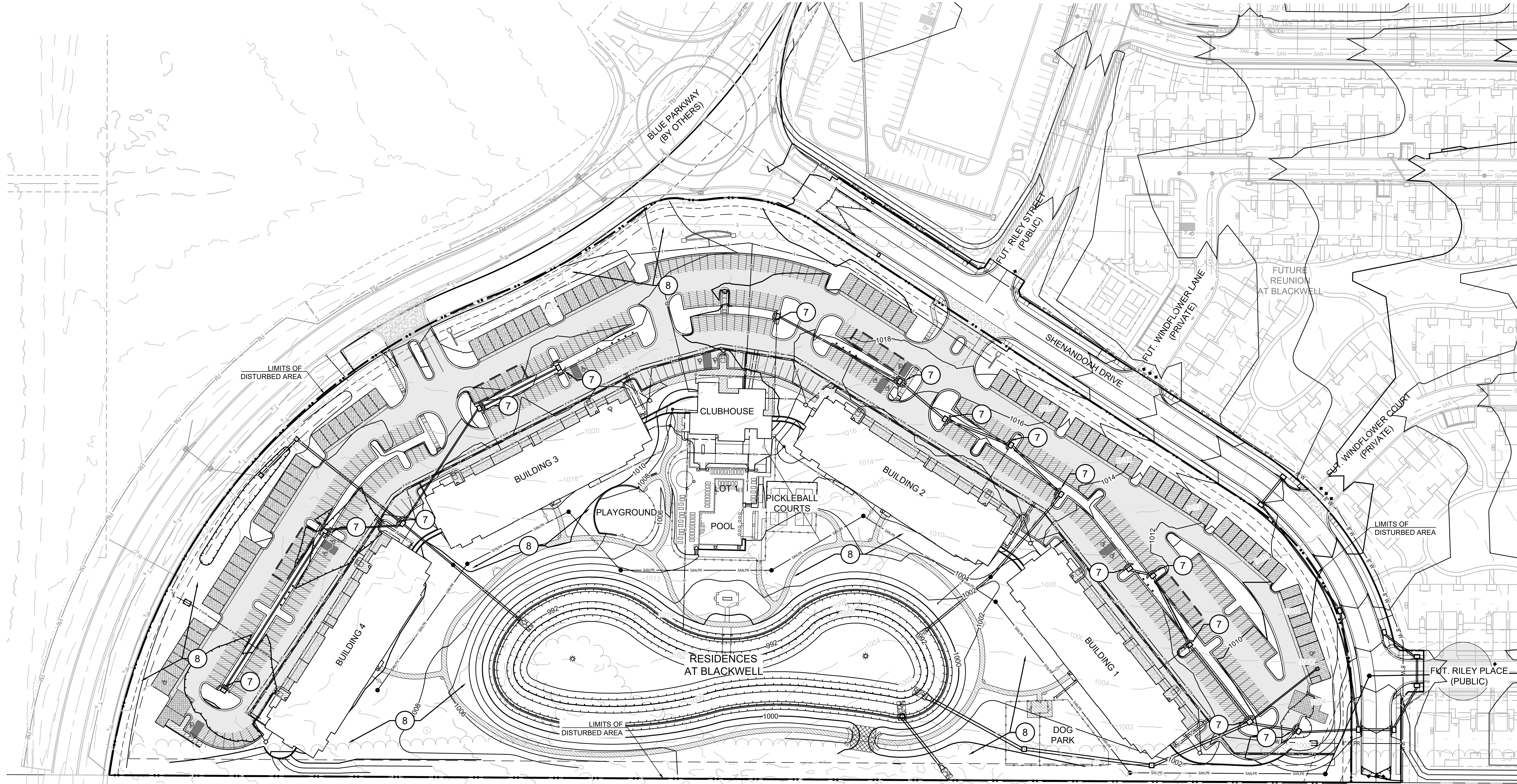
HERITAGE STREET LEE'S SUMMIT, MO

REVISION	REVISION DATE	DESCRIPTION
1	01/23/23	PER CITY COMMENTS
2	03/24/2023	PER CITY COMMENTS
3	04/28/2023	PER CITY COMMENTS
4		
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DATE PREPARED:	2/8/2023	
PROJ. NUMBER:		

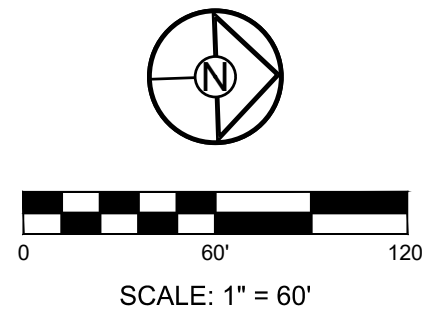
STORM DETAILS

SHEET
C409

I:\PROJECTS\2022\22-102\3.0 Design\3.0 DWG Plans\4.0 SDP\22-102 - SDP - EROS.Awg C500 POST-CONSTRUCTION EROSION CONTROL PLAN 11



- NOTES:
- ALL CONSTRUCTION ON THIS PROJECT SHALL CONFORM TO THE CITY OF LEE'S SUMMIT TECHNICAL SPECIFICATIONS.
 - THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATION.
 - SEE SHEET C500 FOR EROSION CONTROL NOTES, LEGEND AND STAGING CHART.



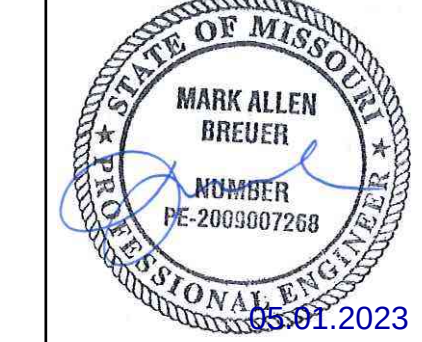
POST-CONSTRUCTION
EROSION
CONTROL PLAN

SHEET
C502

REVISION DATE	DESCRIPTION
01/23/23	PER CITY COMMENTS
03/24/2023	PER CITY COMMENTS
04/28/2023	PER CITY COMMENTS
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22-102	

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FINAL DEVELOPMENT PLAN
HERITAGE STREET LEE'S SUMMIT, MO

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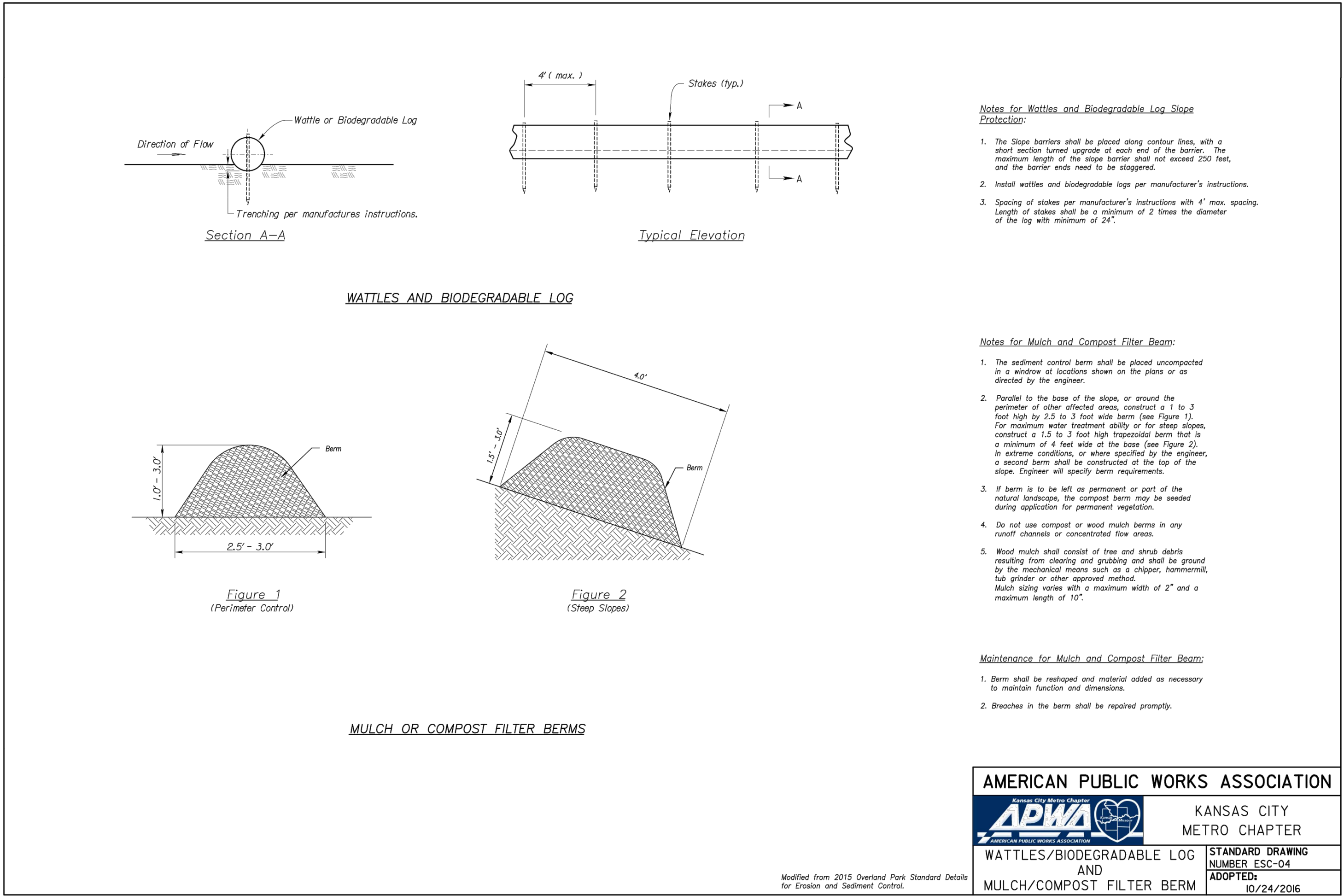
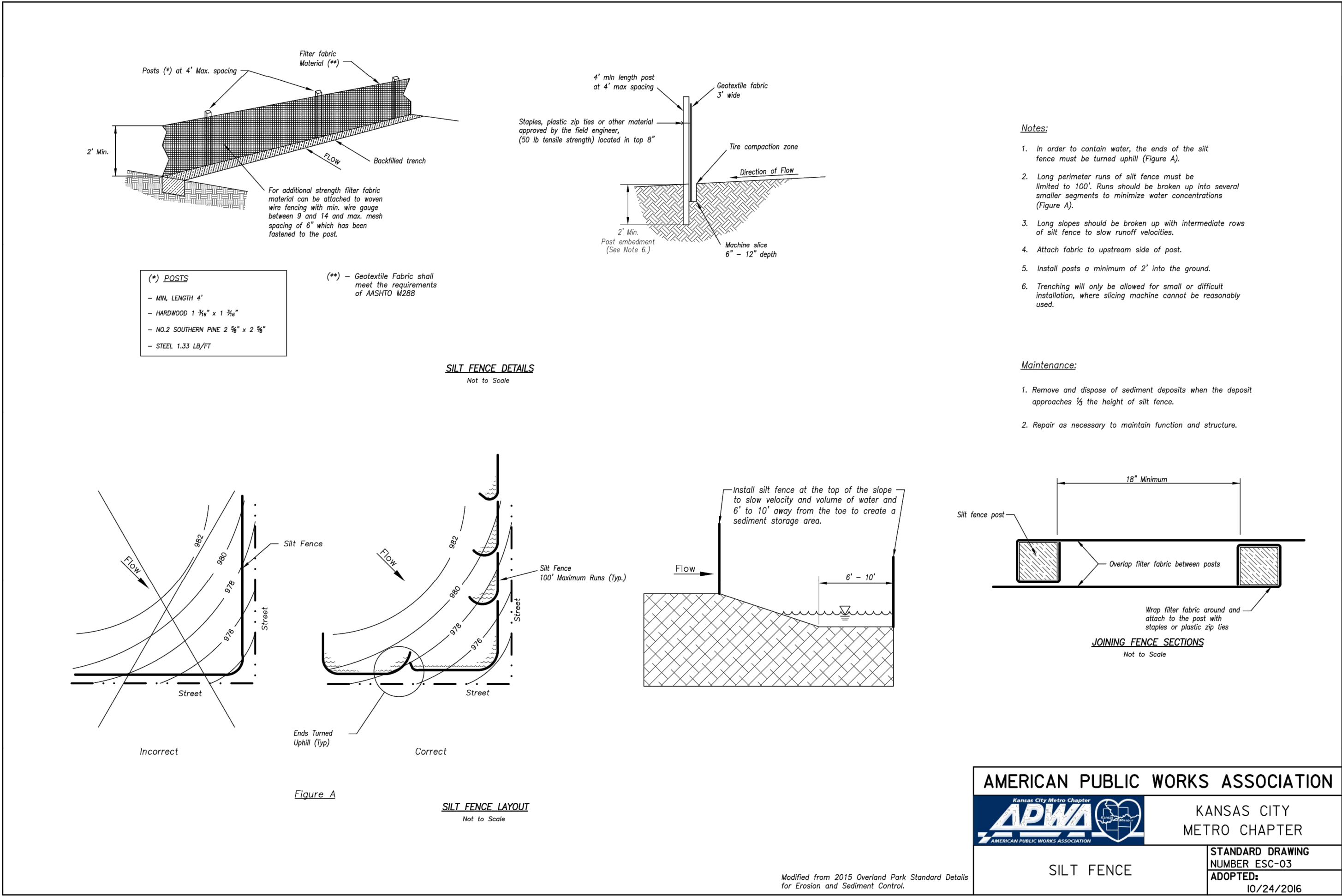
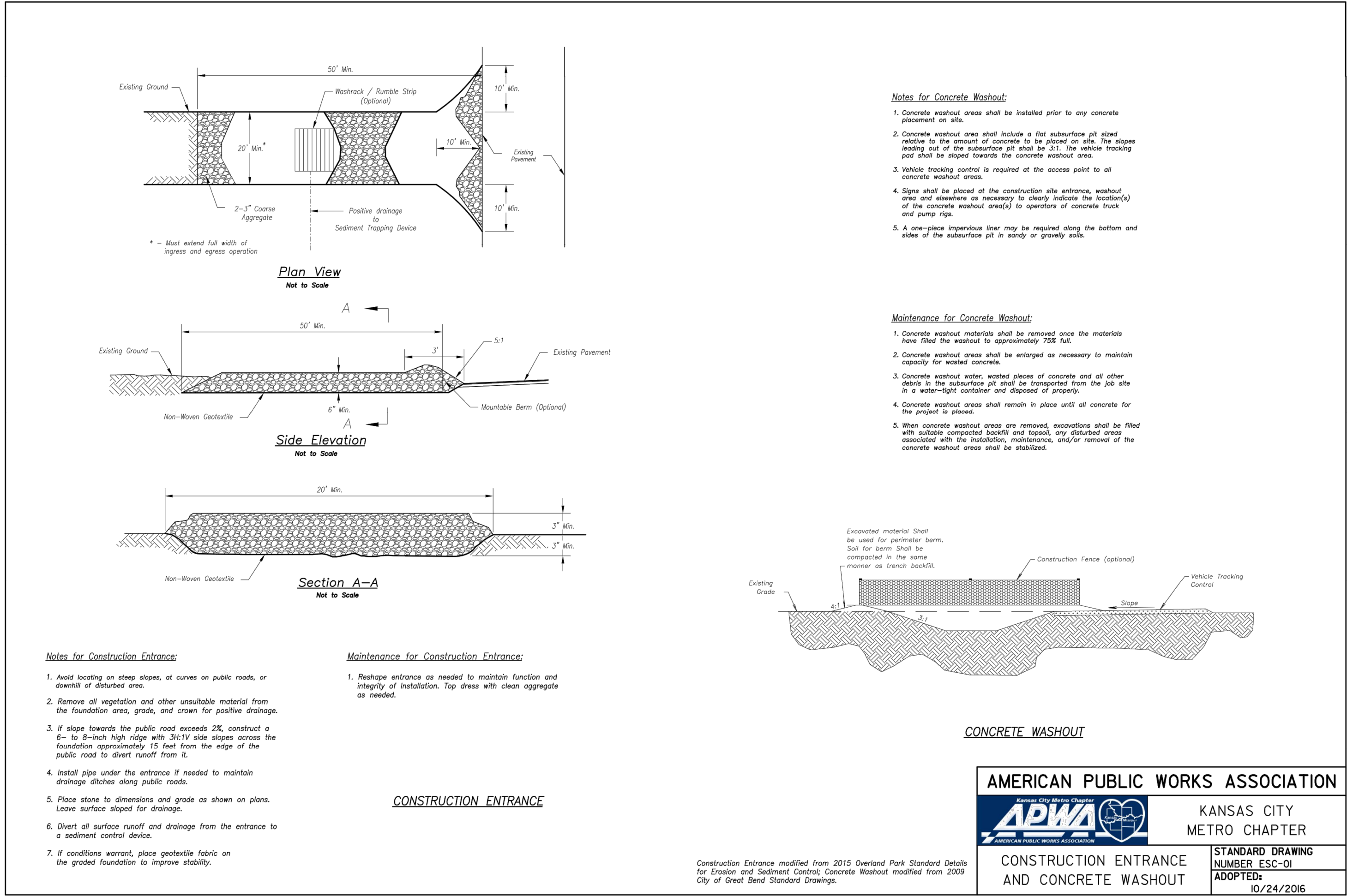
ENGINEERS

PLANNERS

SURVEYORS

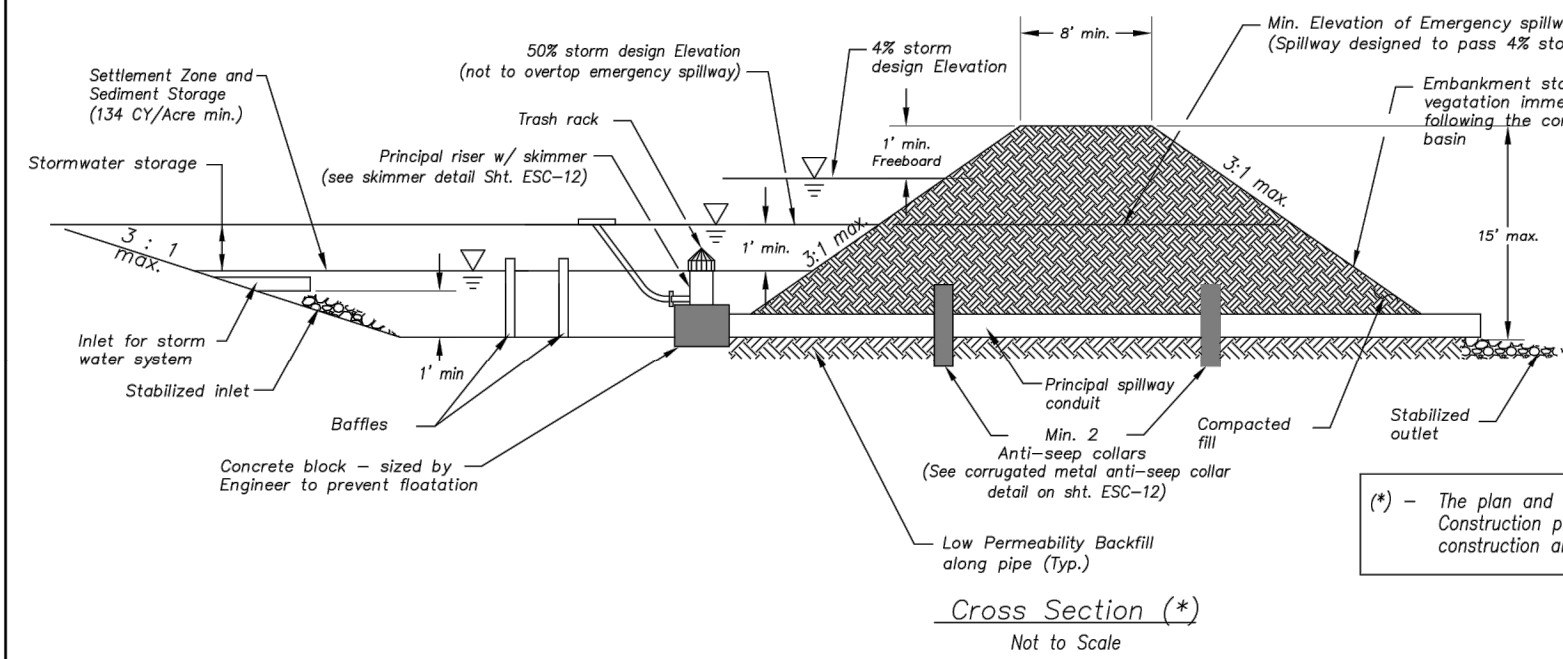
LANDSCAPE ARCHITECTS

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DRAWN BY:	TRC
CHECKED BY:	MAB
DATE PREPARED:	2/9/2023
PROJ. NUMBER:	22-102



Sediment Basin Notes:

1. Interior baffles shall be provided to reduce short-circuiting of the basin. See Sh. ESC-12 for approved baffle options.
2. Emergency spillways shall be located in a non-fill location when feasible and shall be lined with a non-erodible material such as Riprap or Tuff Reinforcement Mat.
3. When directed, sediment basins shall be fenced using construction fence or other material for safety reasons and include warning signs, reading: "Danger – Keep Out".

Maintenance:

1. Check temporary sediment basins after periods of significant runoff.
2. Remove sediment and restore the basin to its original dimensions when sediment accumulates to 20% of the storage capacity.
3. Immediately repair any erosion damage to the embankment and outlets.
4. Repair and/or replace baffles as necessary to maintain function and integrity of installation.
5. Keep outlet, skimmer and pool area free of all trash and other debris.

is section are schematic in nature. must provide specific site details.

Modified by 2015 Overland Park Standard Details for Erosion and Sediment Control

AMERICAN PUBLIC WORKS ASSOCIATION

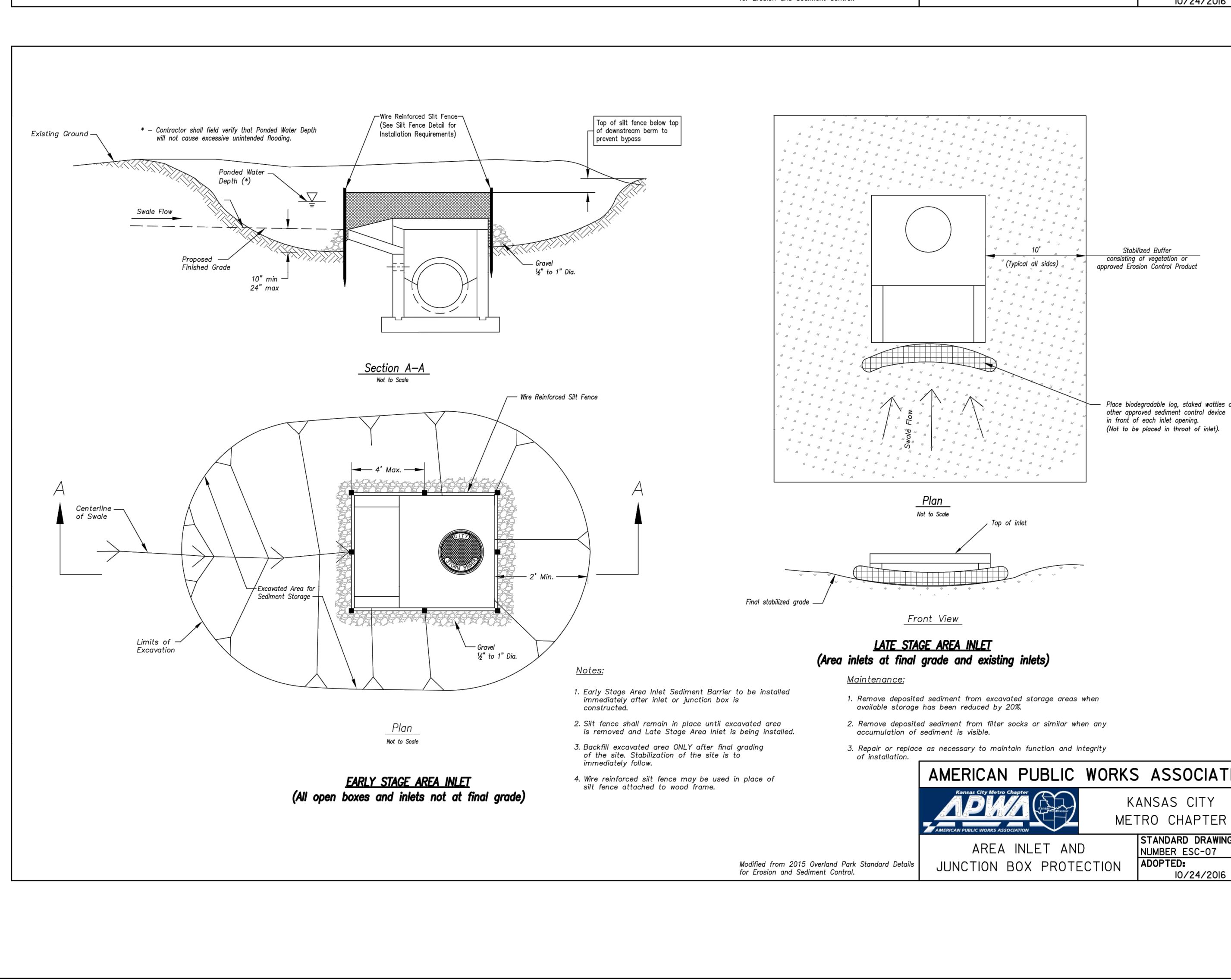
AMERICAN CITY AND COUNTY

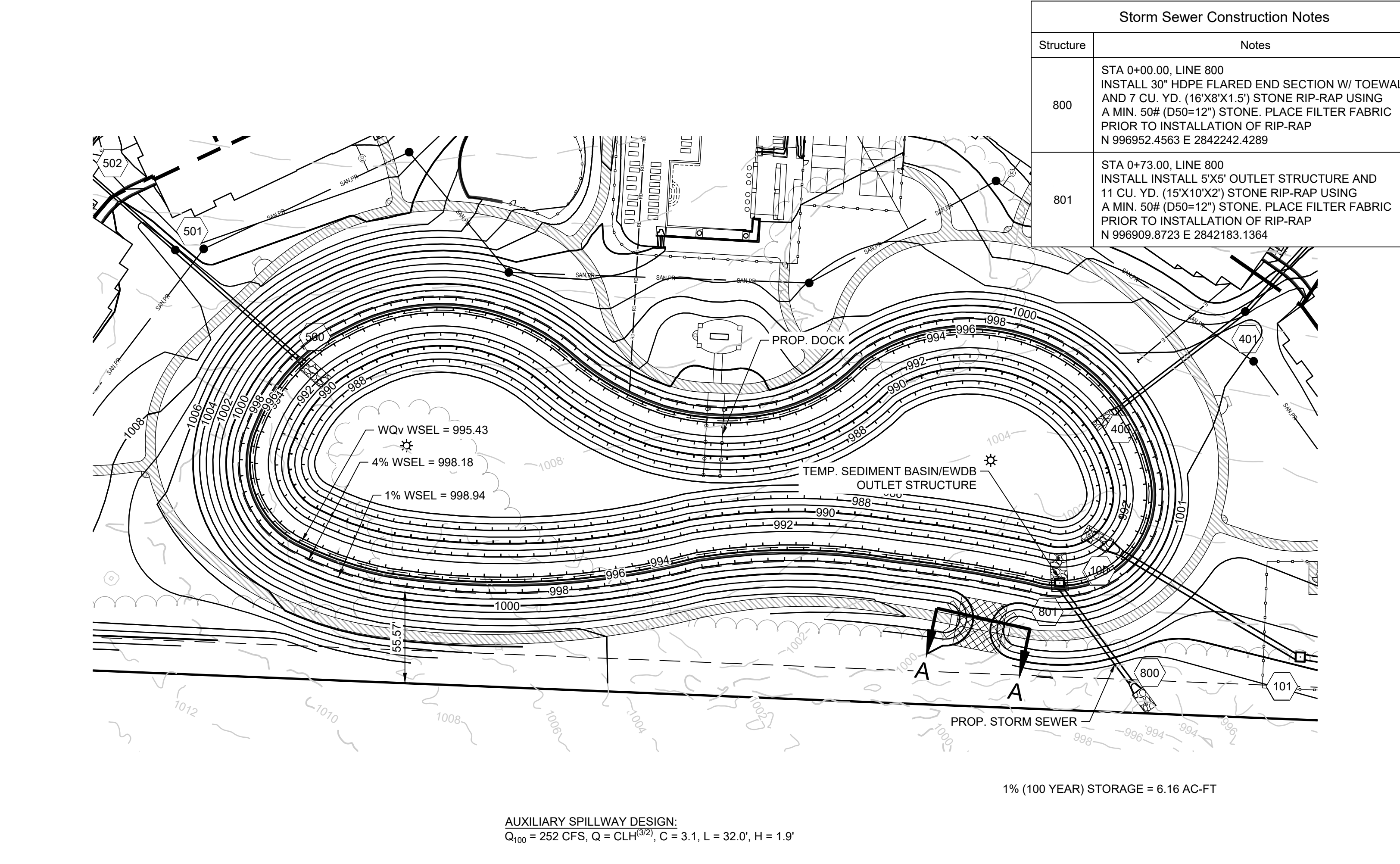
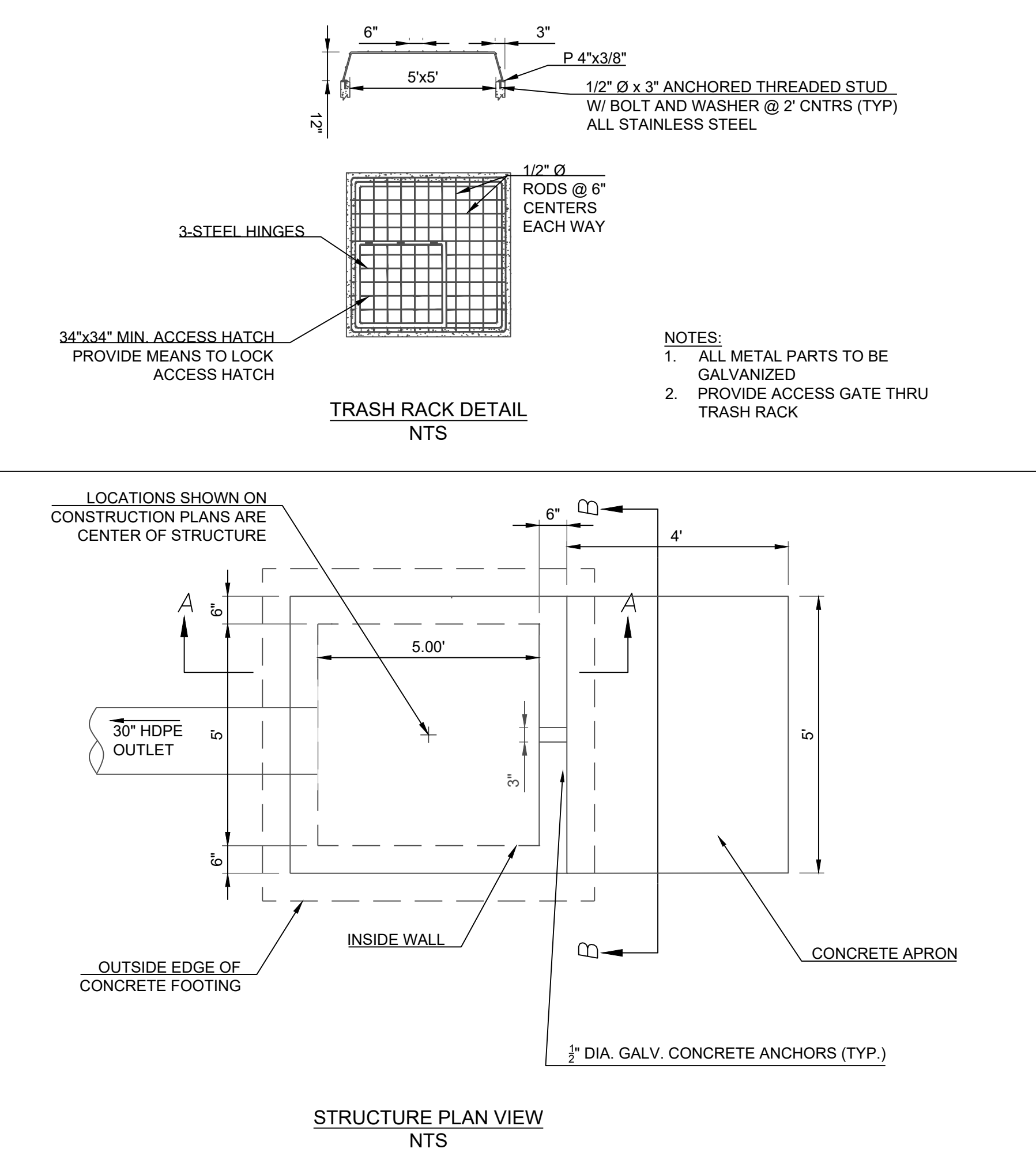


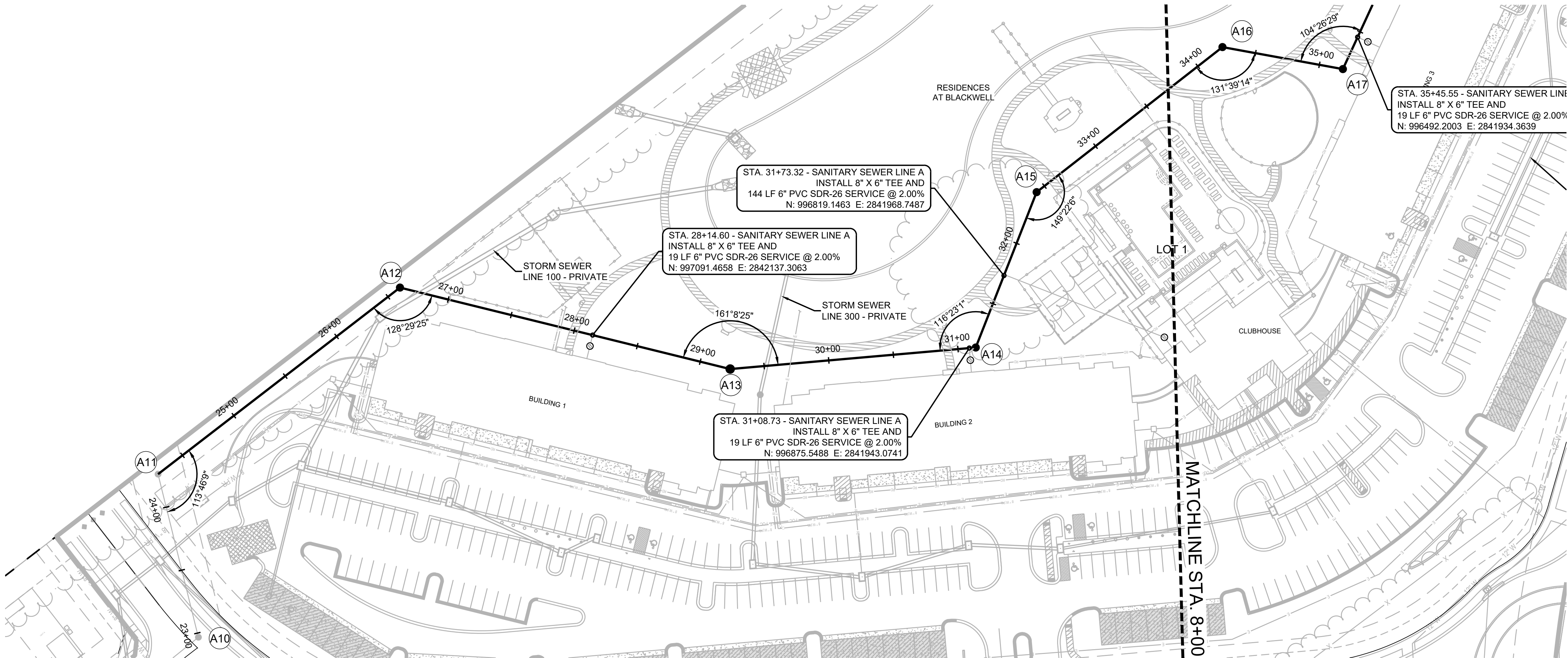
**KANSAS CITY
METRO CHAPTER**

SEDIMENT BASIN

**STANDARD DRAWING
NUMBER ESC-II
ADDITIONS**







Structure Table		
Structure Name	Structure Northing	Structure Easting
A11	997416.9097	2842270.4633
A12	997181.6820	2842260.8249
A13	997027.0949	2842049.1734
A14	996871.4528	2841940.2065
A15	996758.5509	2842001.8141

MO GRS BENCHMARK:

STATION NAME - JA-90

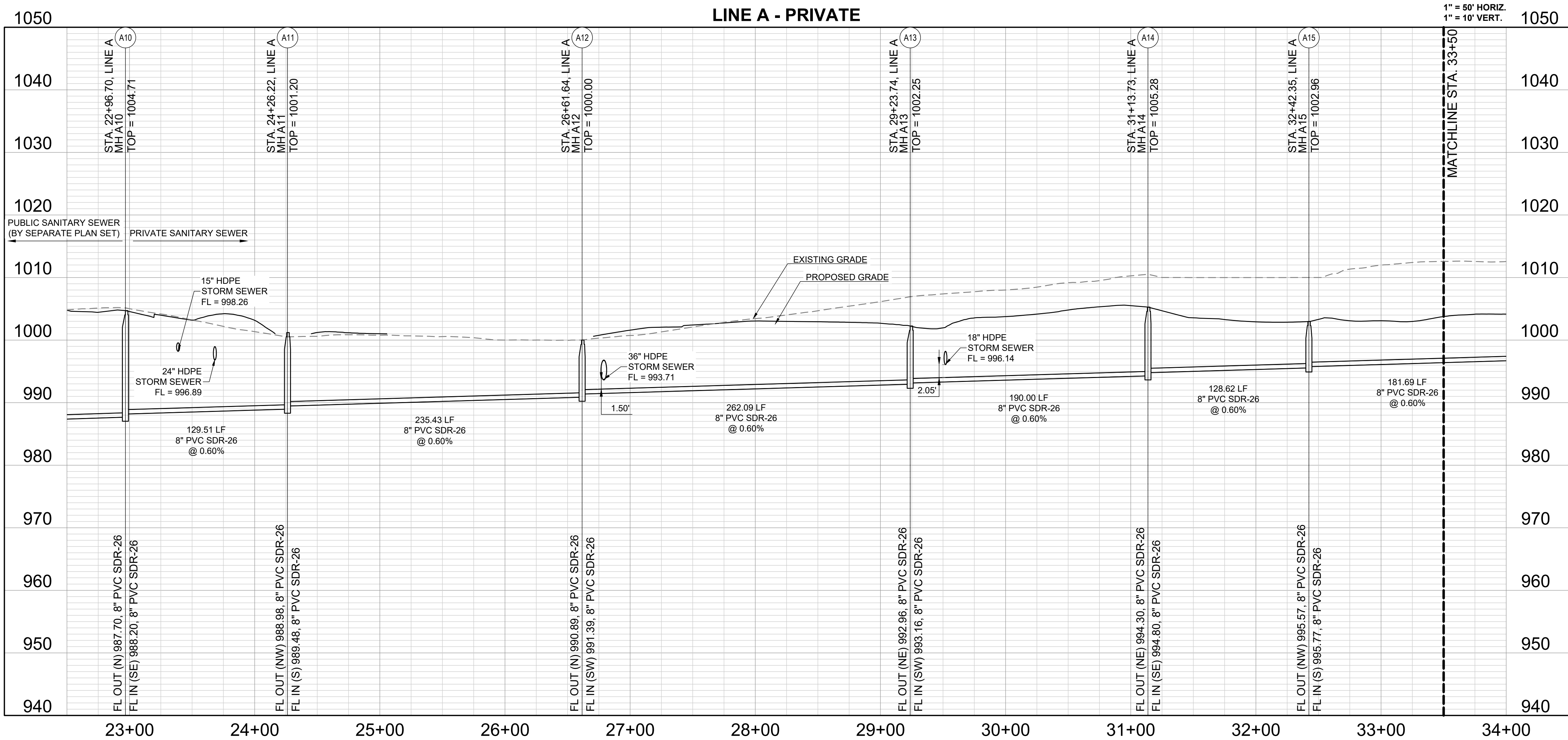
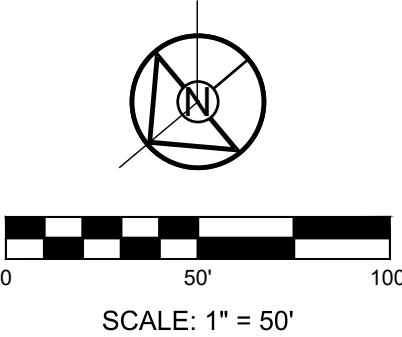
KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD. N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY. N:996874.9690, E:2840937.1365

ELEV. 1005.719



PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

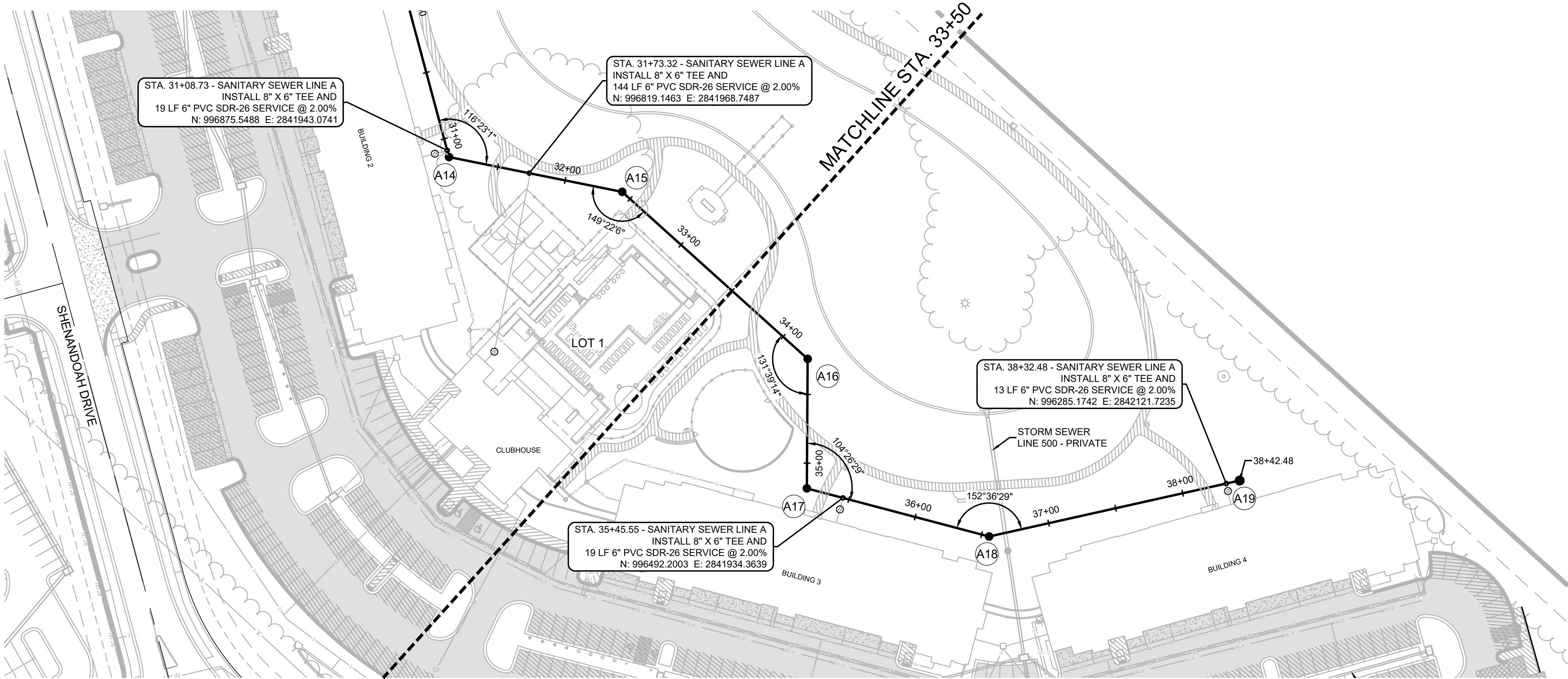
RESIDENCES AT BLACKWELL
FINAL DEVELOPMENT PLAN

HERITAGE STREET LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
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2 03/24/2023	PER CITY COMMENTS
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5	
6	
DATE PREPARED:	2/6/2023
PROJ. NUMBER:	22-102

SANITARY
SEWER LINE A
(PRIVATE)

SHEET
C600



Structure Table		
Structure Name	Structure Northing	Structure Easting
A16	996576.9718	2841995.4362
A17	996516.7867	2841922.7940
A18	996392.6234	2841981.2230
A19	996279.0995	2842129.6669

MO GRS BENCHMARK:

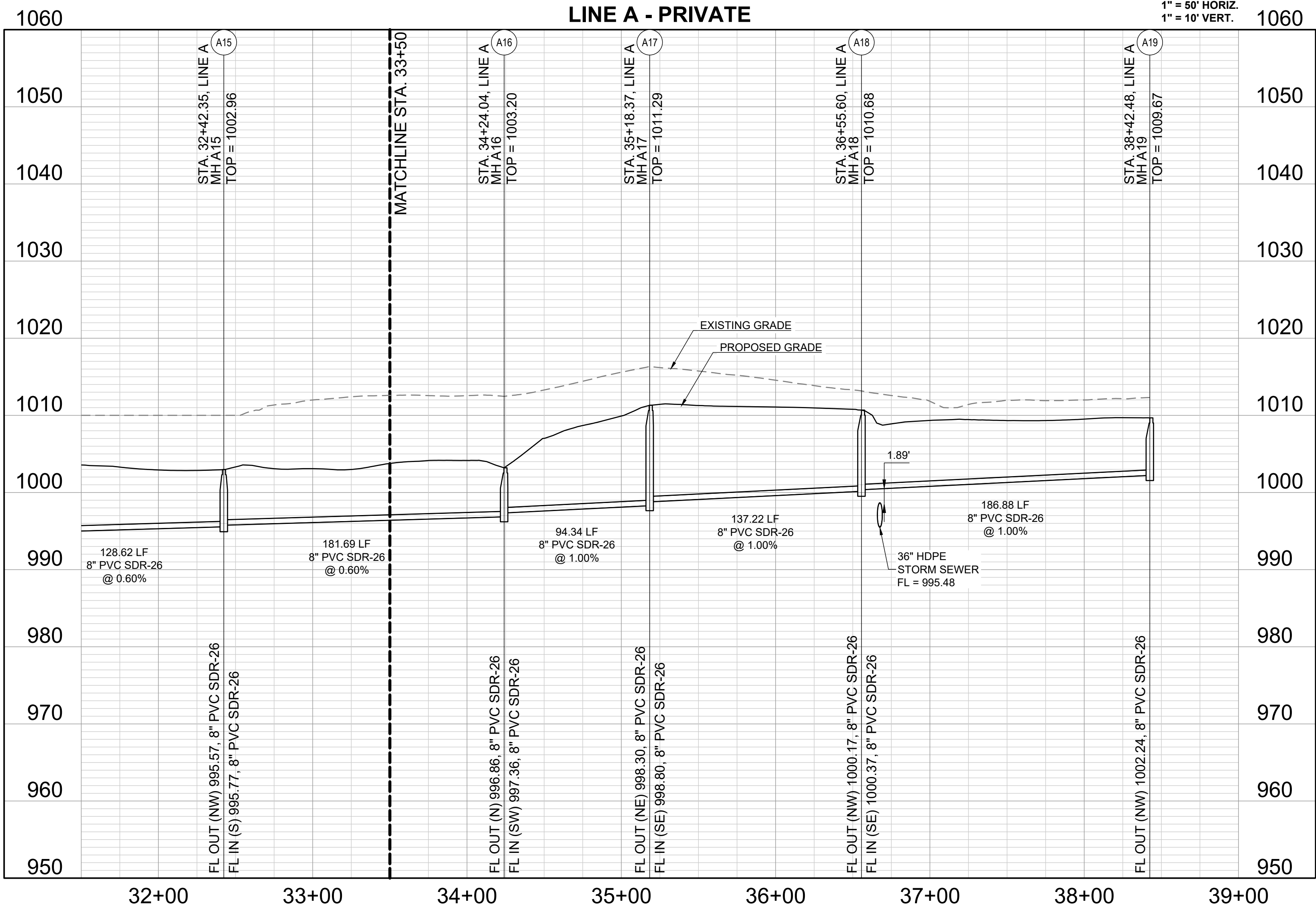
STATION NAME - JA-90
KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988"
LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.
N:1001052.8503, E:2845604.8272

ELEV. 997.045

PROJECT BENCHMARK:

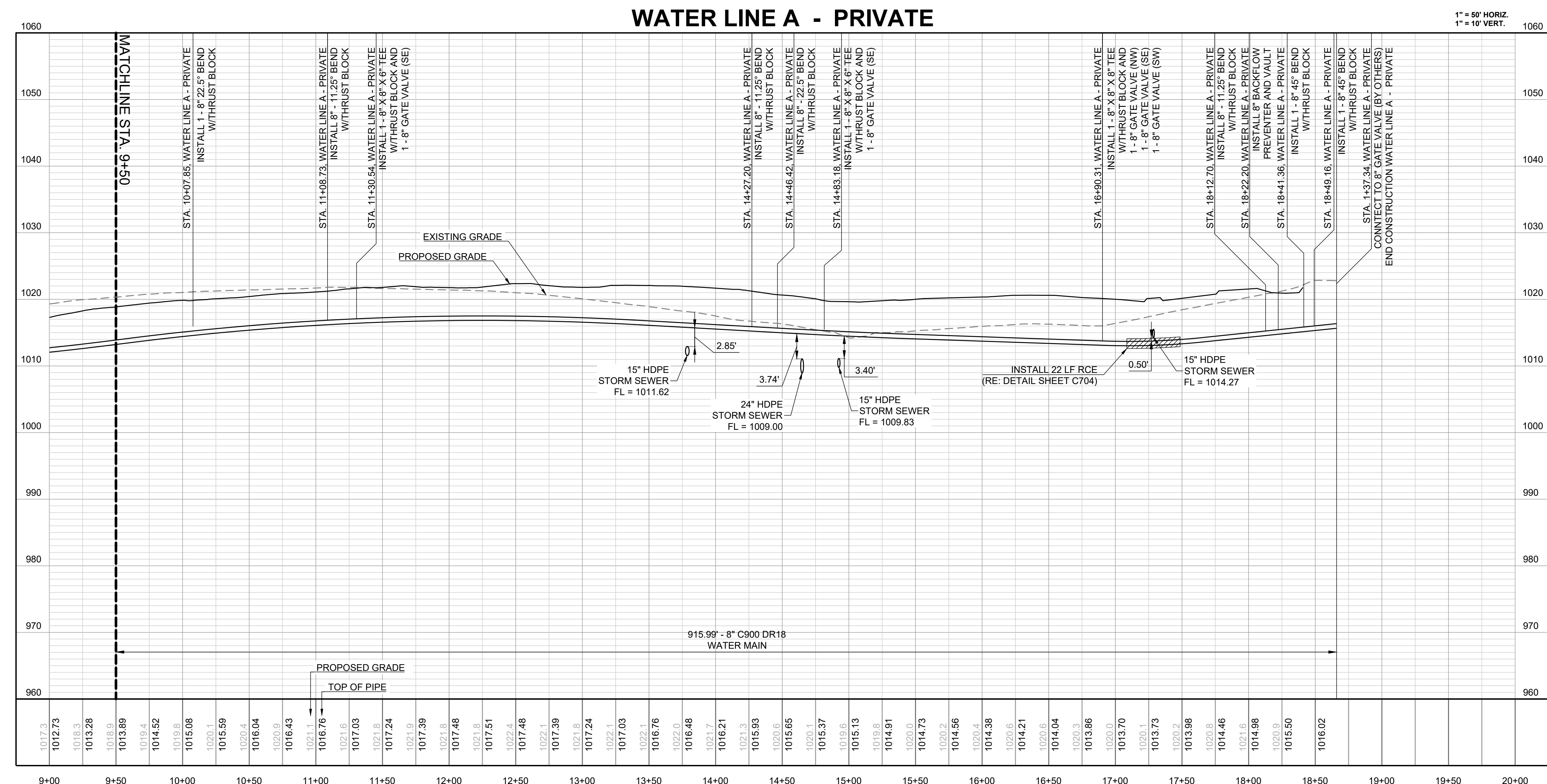
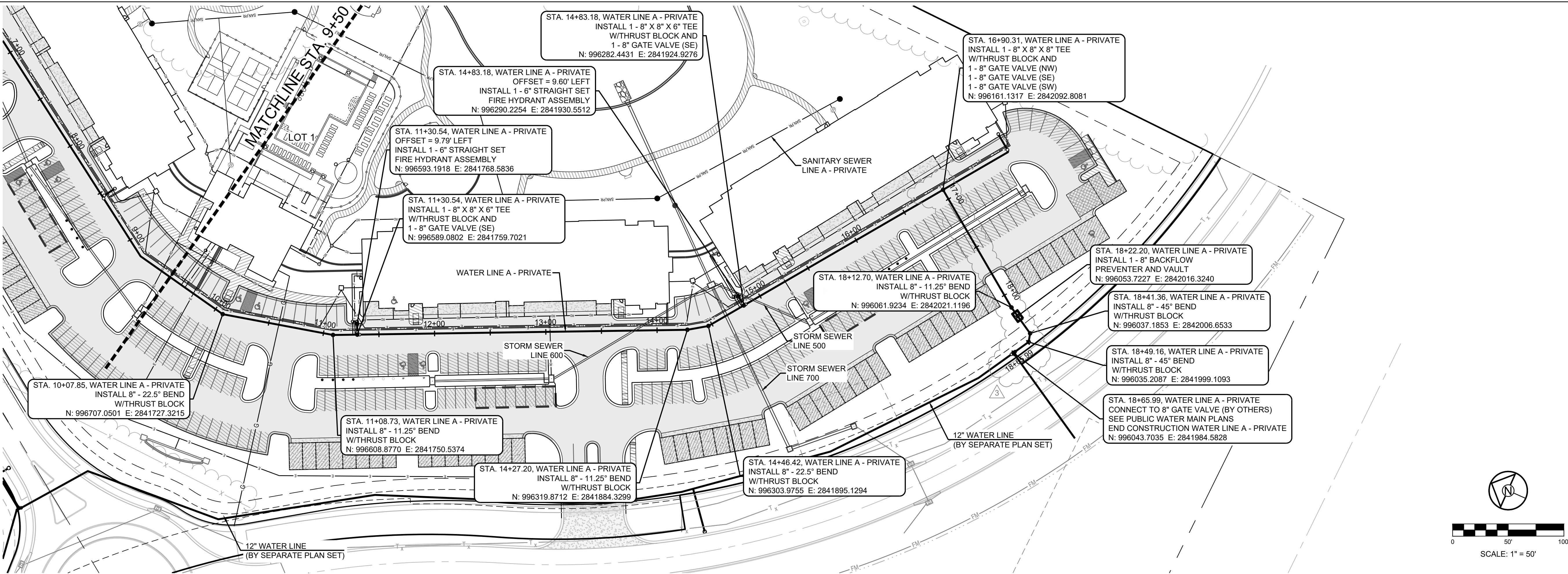
"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY.
N:996874.9690, E:2840937.1365

ELEV. 1005.719



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SANITARY
SEWER LINE A
(PRIVATE)



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Missouri State Certified of Authority

#E2002003600-F #LAC2001005237 #LS200200859-F

PREPARED BY:

STATE OF MISSOURI

MARK ALLEN BREUER

NUMBER

PE-2003007268

DATE

05-01-2023

SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL

FINAL DEVELOPMENT PLAN

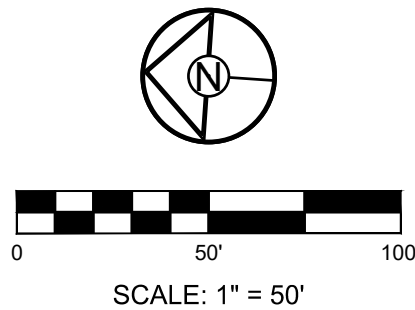
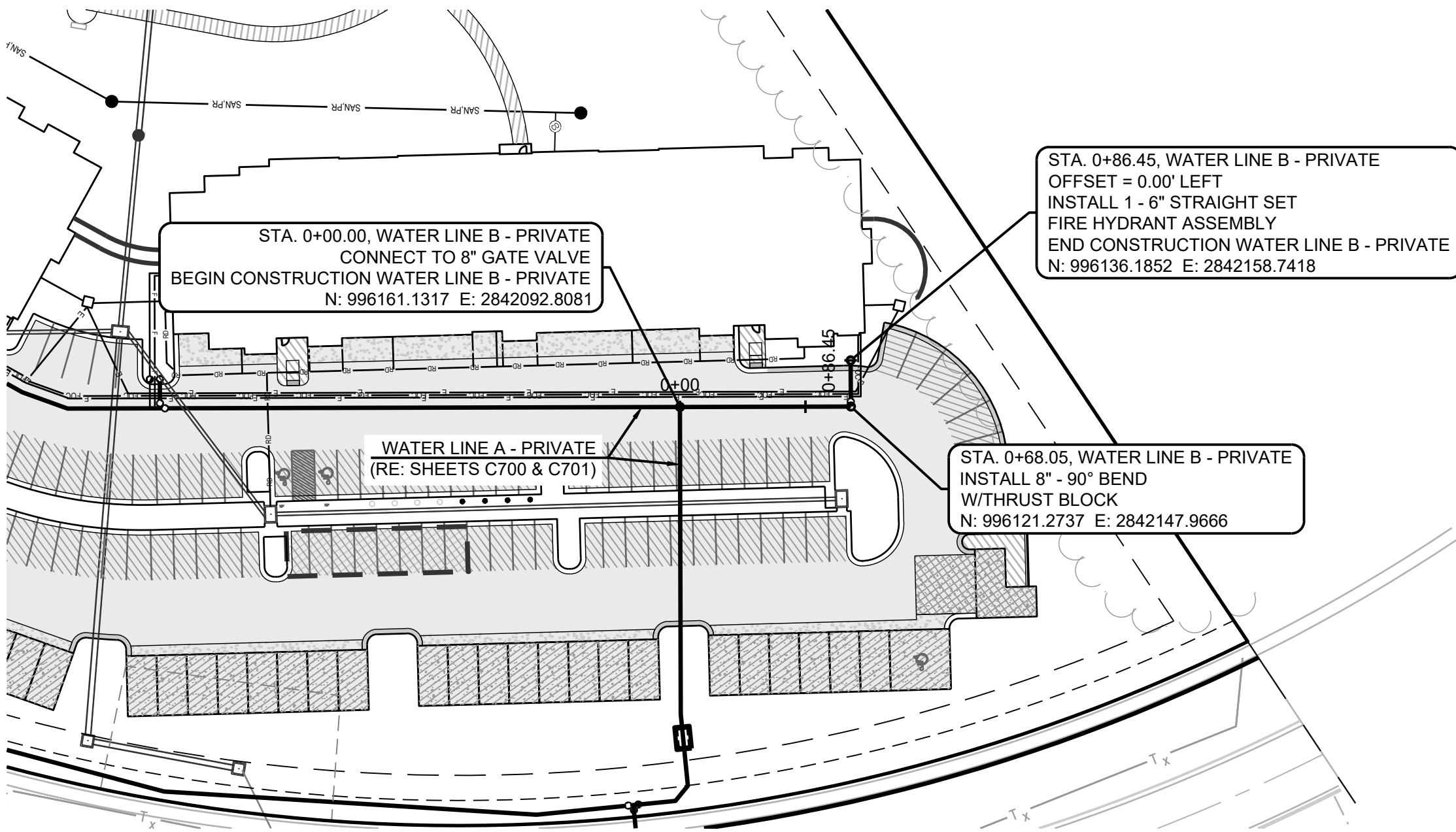
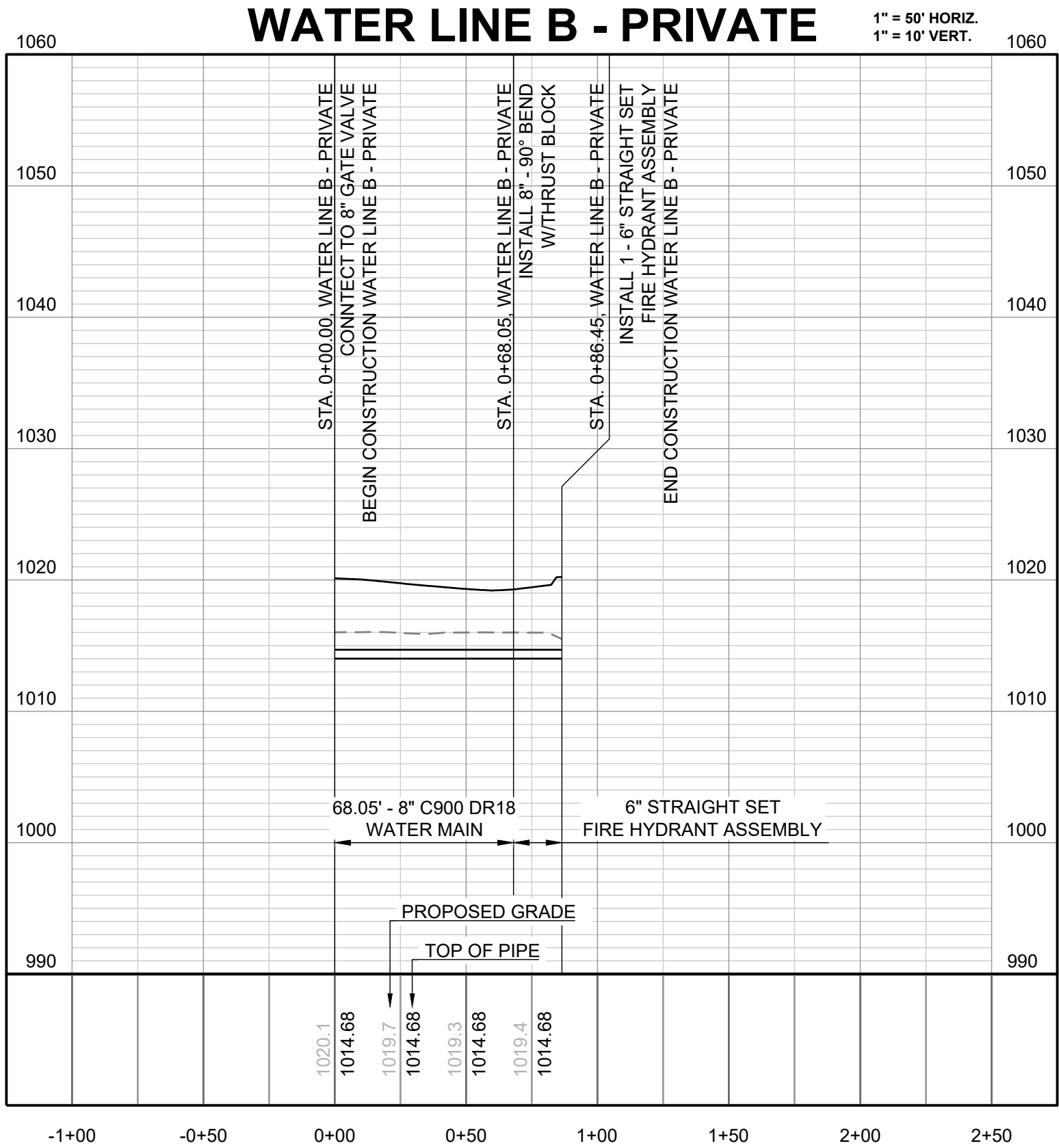
HERITAGE STREET LEE'S SUMMIT, MO

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WATER LINE A

SHEET

C701



DRAWN BY: TRC		REVISION DATE 1 01/23/23	DESCRIPTION PER CITY COMMENTS
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RESIDENCES AT BLACKWELL
FINAL DEVELOPMENT PLAN

HERITAGE STREET LEE'S SUMMIT, MO



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ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS

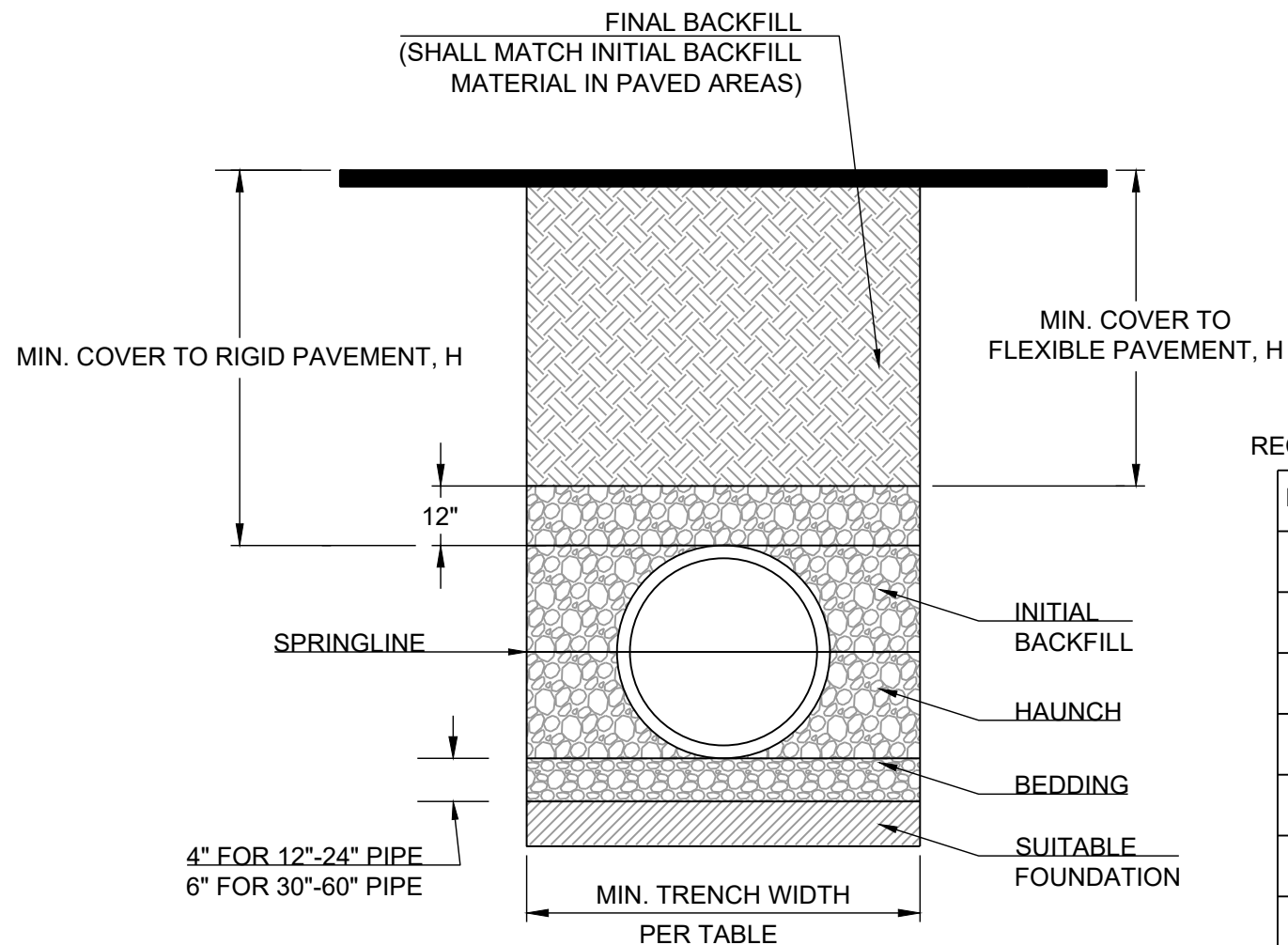
14920 West 107th Street • Lenexa, Kansas 66215
(913) 492-5158 • Fax: (913) 492-8400
WWW.SCHLAGELASSOCIATES.COM
Missouri State Certificates of Authority
#E2002003600-F #LAC2001005237 #LS2002008659-F

PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

SHEET
C702

WATER LINE B



MINIMUM RECOMMENDED COVER BASED ON VEHICLE 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

RECOMMENDED MINIMUM TRENCH WIDTHS

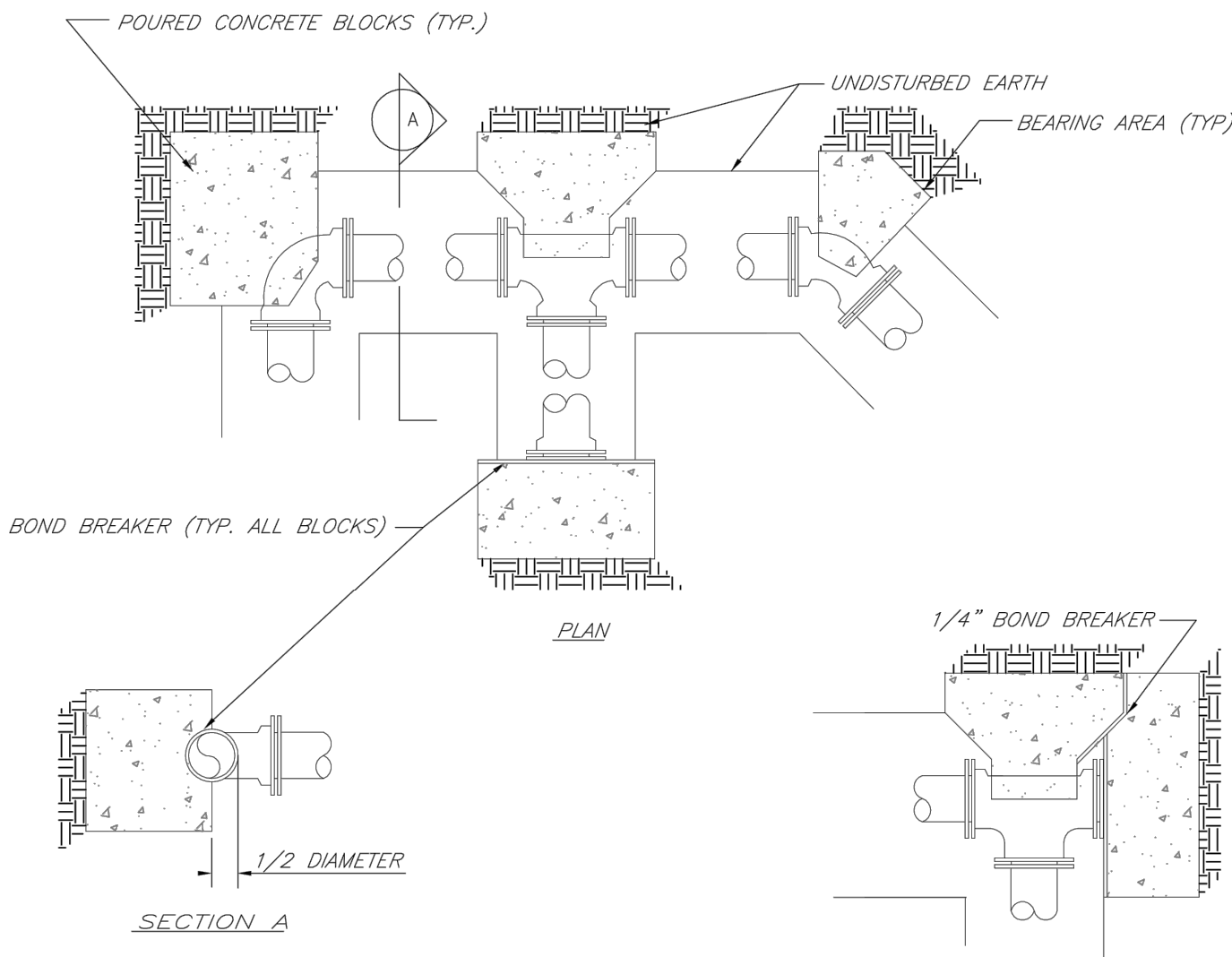
PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

NOTES:

- 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
- MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
- 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.
- 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).
- 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.
- 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 FLOATATION. 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.
- TESTING: CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL MATERIAL TESTING REQUIRED FOR THEIR WORK. THIS INCLUDES SCHEDULING OF TESTS, COORDINATING AND PROVIDING ACCESS TO SAMPLE LOCATIONS, AND SATISFYING ALL TEST RESULT REPORTING REQUIREMENTS.

REQUIRED CONCRETE BEARING AREA (SQUARE FEET - SF)							
NOM. DIA. (INCHES)	180	90	45	22.5	11.25		
	TEE, PLUG	BEND	BEND	BEND	BEND		
6	4.7	6.7	4.0	4.0	4.0		
8	8.4	11.8	6.4	4.0	4.0		
10	13.1	18.5	10.0	5.1	4.0		
12	18.8	26.7	14.4	7.4	4.0		
14	25.7	36.3	19.6	10.0	5.0		
16	33.5	47.4	25.6	13.1	6.6		
18	42.4	REST. JT.	32.5	16.5	8.3		
20	REST. JT.	REST. JT.	40.1	20.4	10.3		
24	REST. JT.	REST. JT.	REST. JT.	29.4	14.8		

- NOTES:
- ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
 - MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
 - BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
 - DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



LEE'S SUMMIT
MISSOURI

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HORIZONTAL THRUST BLOCKS

Date: 02/13

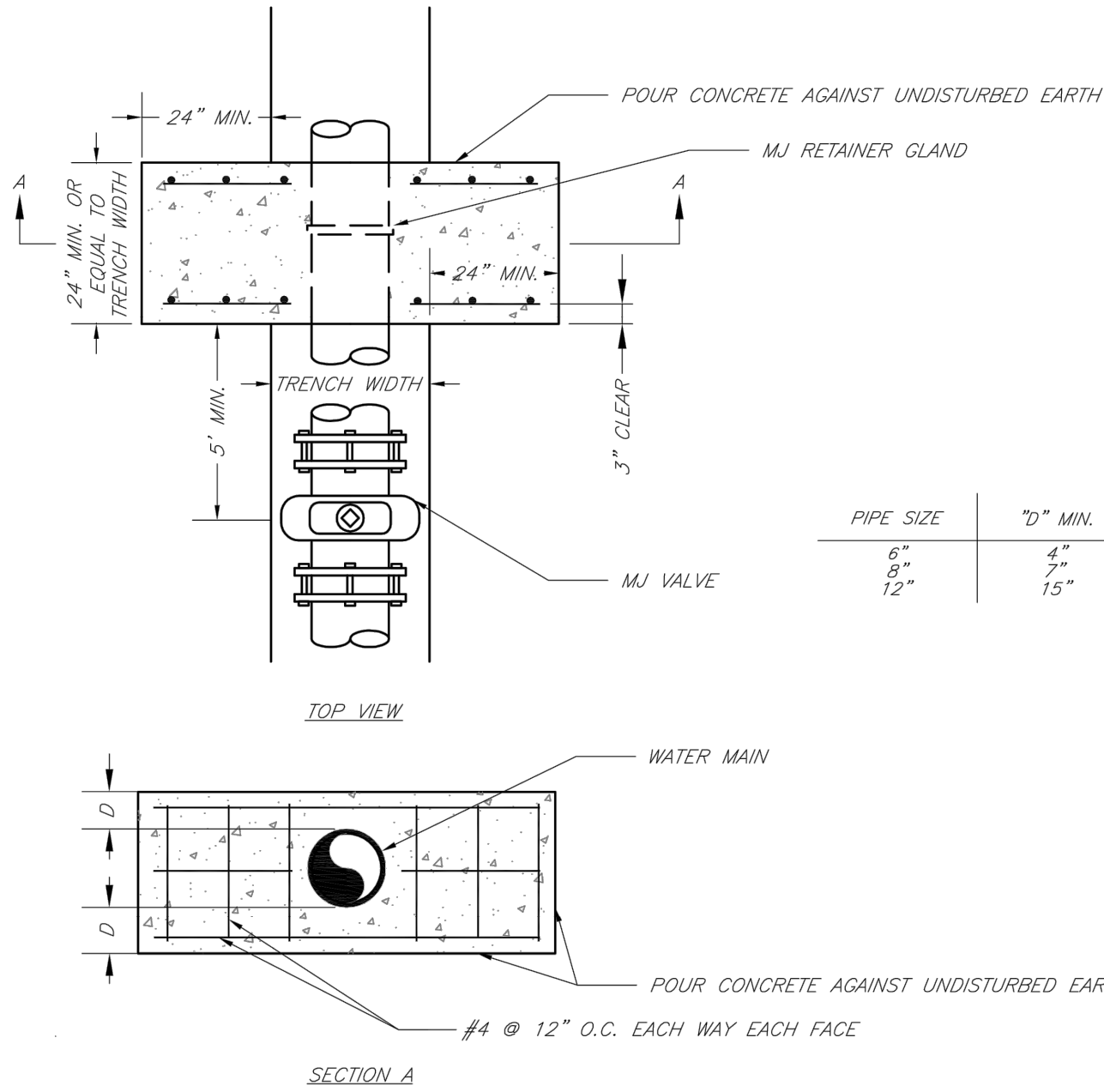
Drawn By: JN

Checked By: DL

FILE: WAT-1

Rev: 1/14

Rev:



NOTE:

THIS DETAIL NOT TO BE USED FOR PIPE GREATER THAN 12"



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STRADDLE BLOCK

Date: 02/13

Drawn By: JN

Checked By: DL

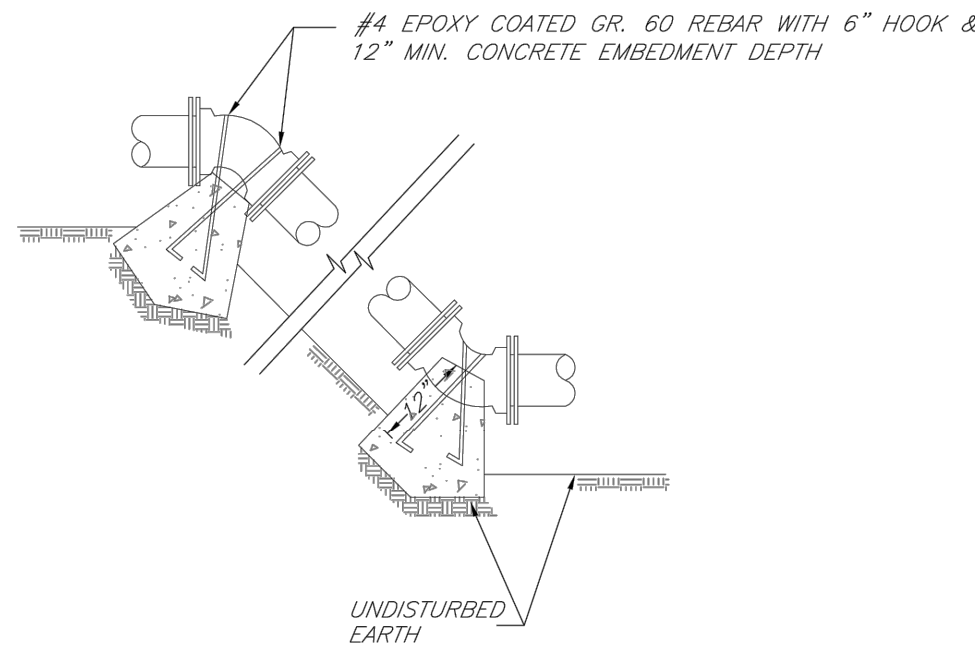
FILE: WAT-3

Rev: 1/14

Rev:

REQUIRED CONCRETE VOLUME (CUBIC FEET - CF)							
NOM. DIA. (INCHES)	180	90	45	22.5	11.25		
	TEE, PLUG	BEND	BEND	BEND	BEND		
6	50.5	71.4	38.6	19.7	9.9		
8	89.9	126.9	68.7	35.0	17.6		
10	140.2	198.3	107.3	54.7	27.5		
12	202.0	REST. JT.	154.6	78.8	39.6		
14	REST. JT.	REST. JT.	210.4	107.3	53.9		
16	REST. JT.	REST. JT.	REST. JT.	140.1	70.4		
18	REST. JT.	REST. JT.	REST. JT.	177.3	89.1		
20	REST. JT.	REST. JT.	REST. JT.	REST. JT.	110.0		
24	REST. JT.	REST. JT.	REST. JT.	REST. JT.	158.4		

- NOTES:
- ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
 - MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
 - BEARING MUST BE AGAINST UNDISTURBED SOIL.
 - DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



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VERTICAL THRUST BLOCKS

Date: 02/13

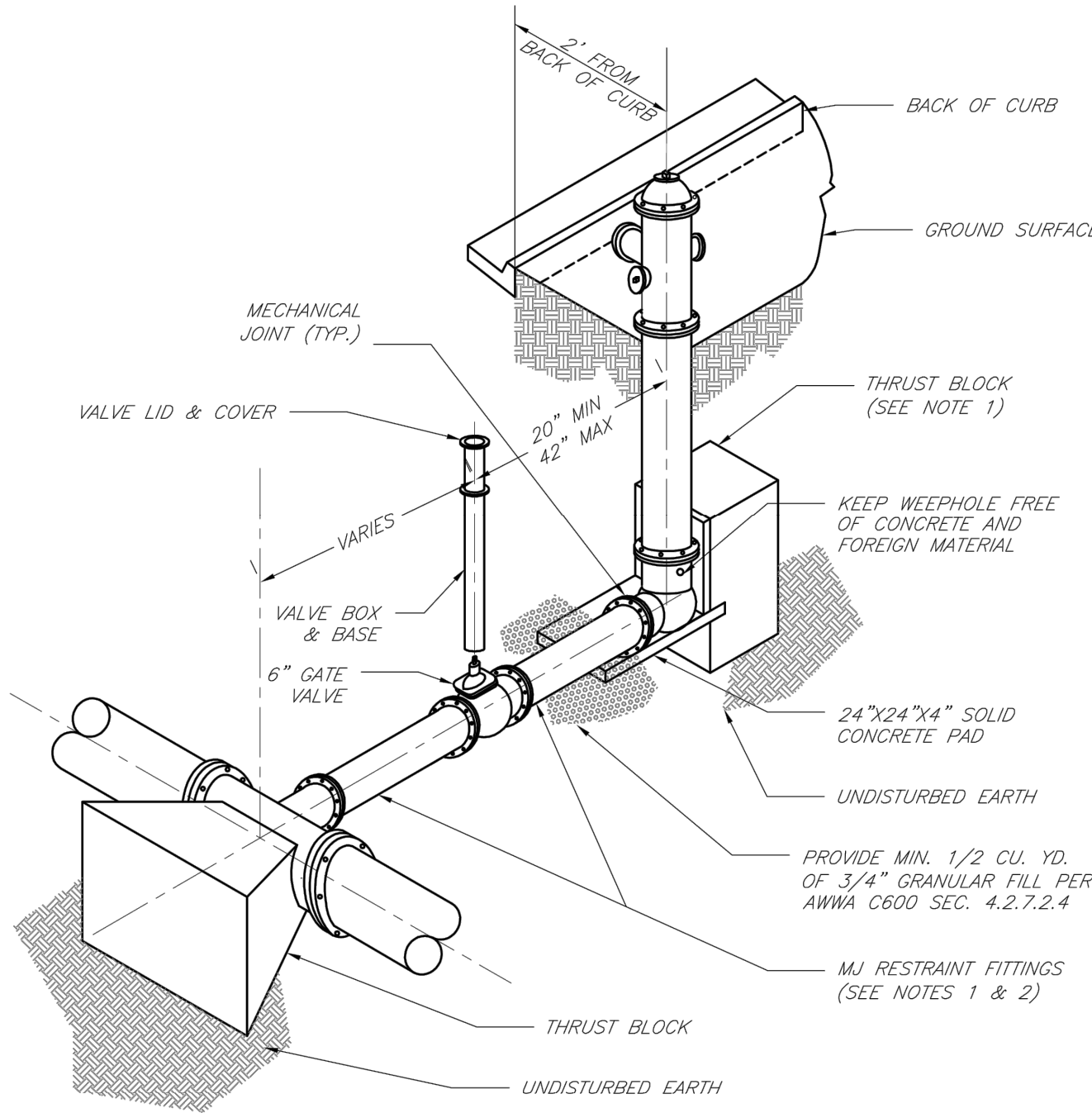
Drawn By: JN

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FILE: WAT-2

Rev: 1/14

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NOTES:

- WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
- GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
- SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
- BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE FINISHED GRADE.
- FOR STREETS WITHOUT CURBS FIRE HYDRANTS SHALL BE PLACED WITHIN 1 FOOT OF THE R/W LINE, BUT NOT MORE THAN 10' FROM EDGE OF PAVEMENT. FIRE HYDRANT SHALL NOT BE PLACED IN BOTTOM OF DITCH.
- HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.



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HYDRANT INSTALLATION - STRAIGHT SET

Date: 02/13

Drawn By: JN

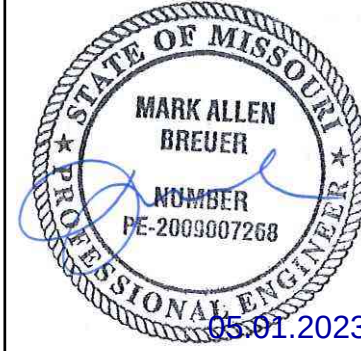
Checked By: DL

FILE: WAT-7

Rev: 1/14

Rev:

PREPARED BY:



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RESIDENCES AT BLACKWELL
FINAL DEVELOPMENT PLAN
HERITAGE STREET LEE'S SUMMIT, MO

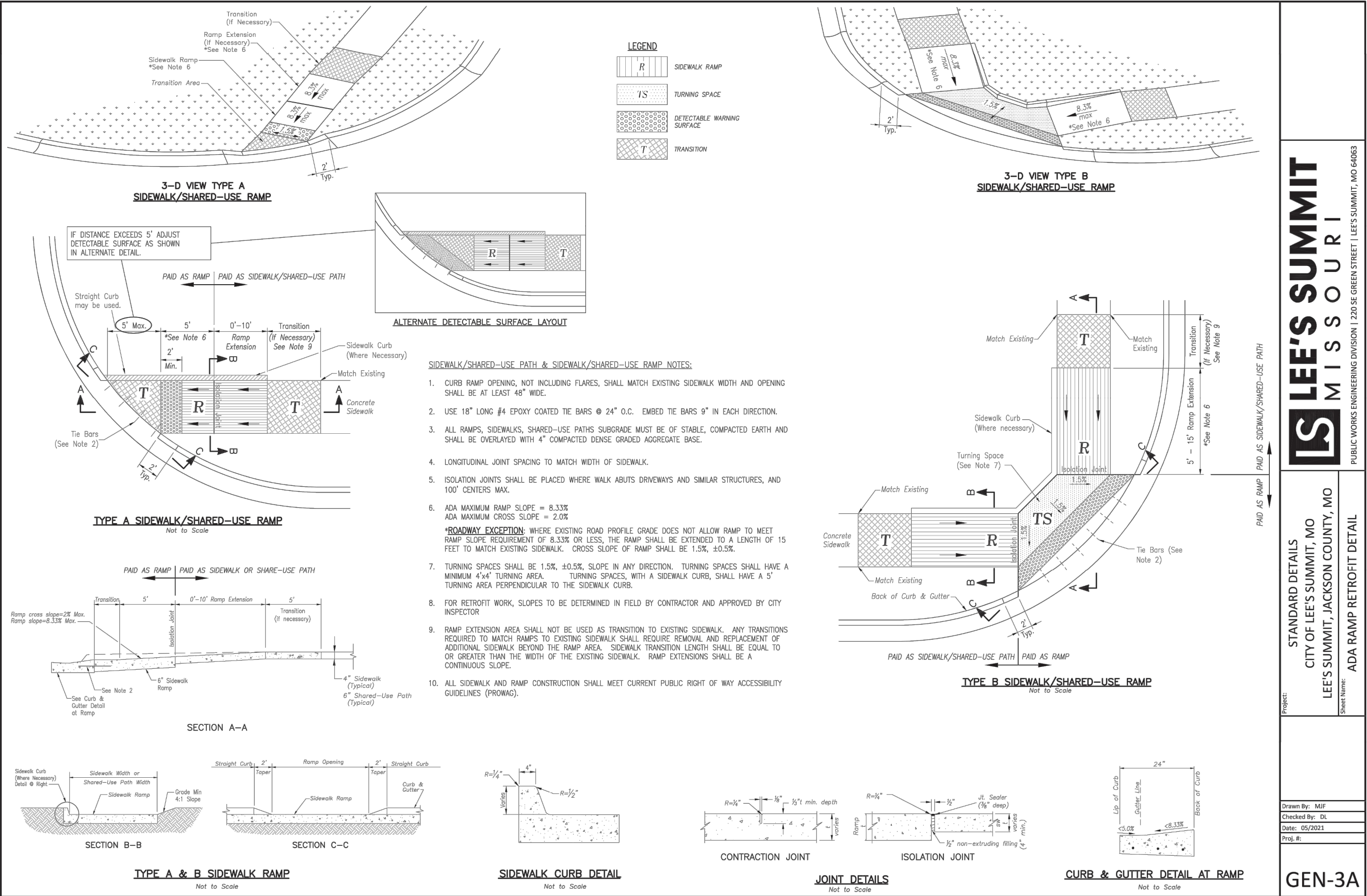
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1 01/23/23	PER CITY COMMENTS
2 03/24/2023	PER CITY COMMENTS
3 04/28/2023	PER CITY COMMENTS
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DRAWN BY:	TRC
CHECKED BY:	MAB
DATE PREPARED:	2/6/2023
PROJ. NUMBER:	22-102

WATER DETAILS

SHEET

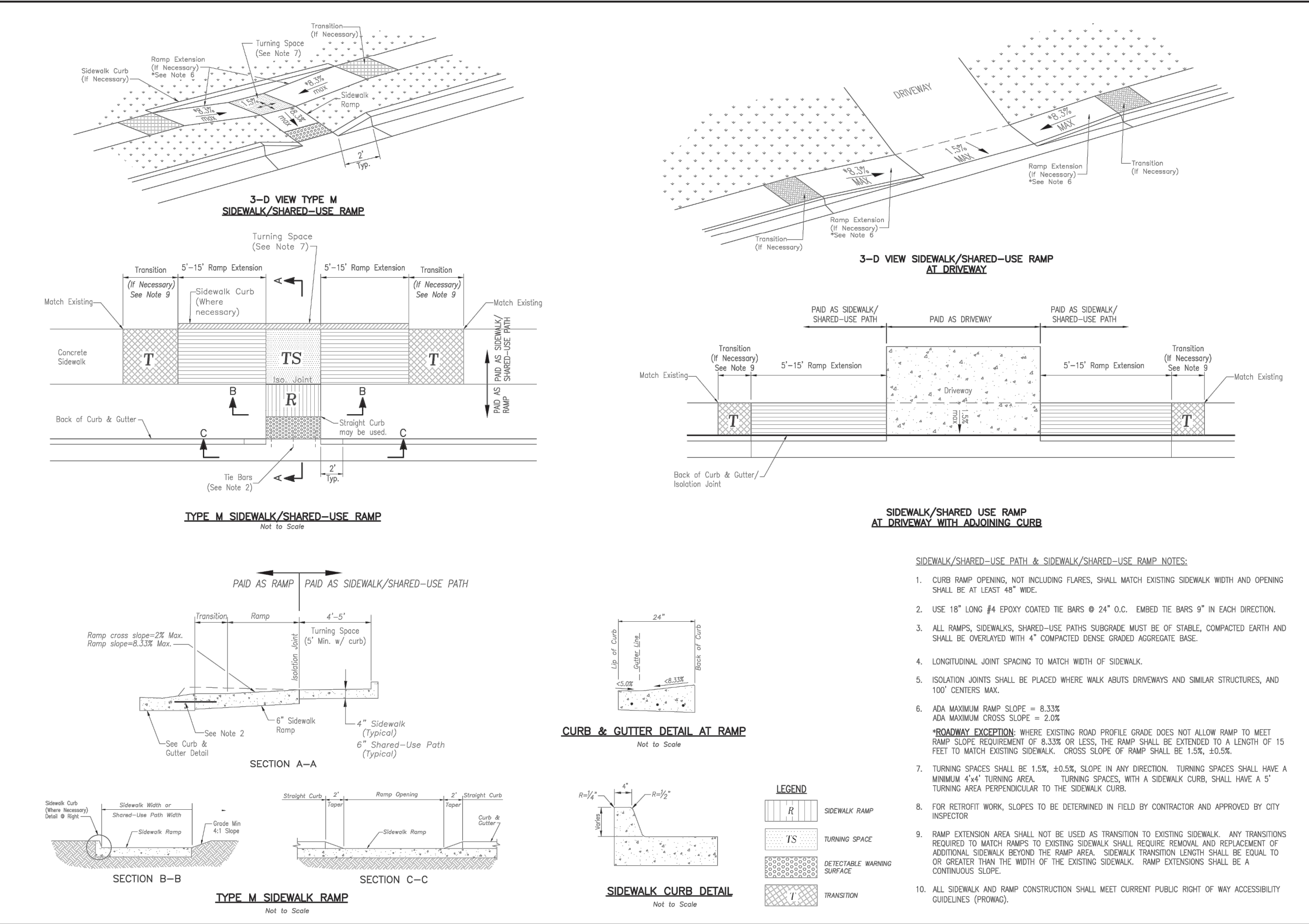
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LEE'S SUMMIT MISSOURI

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

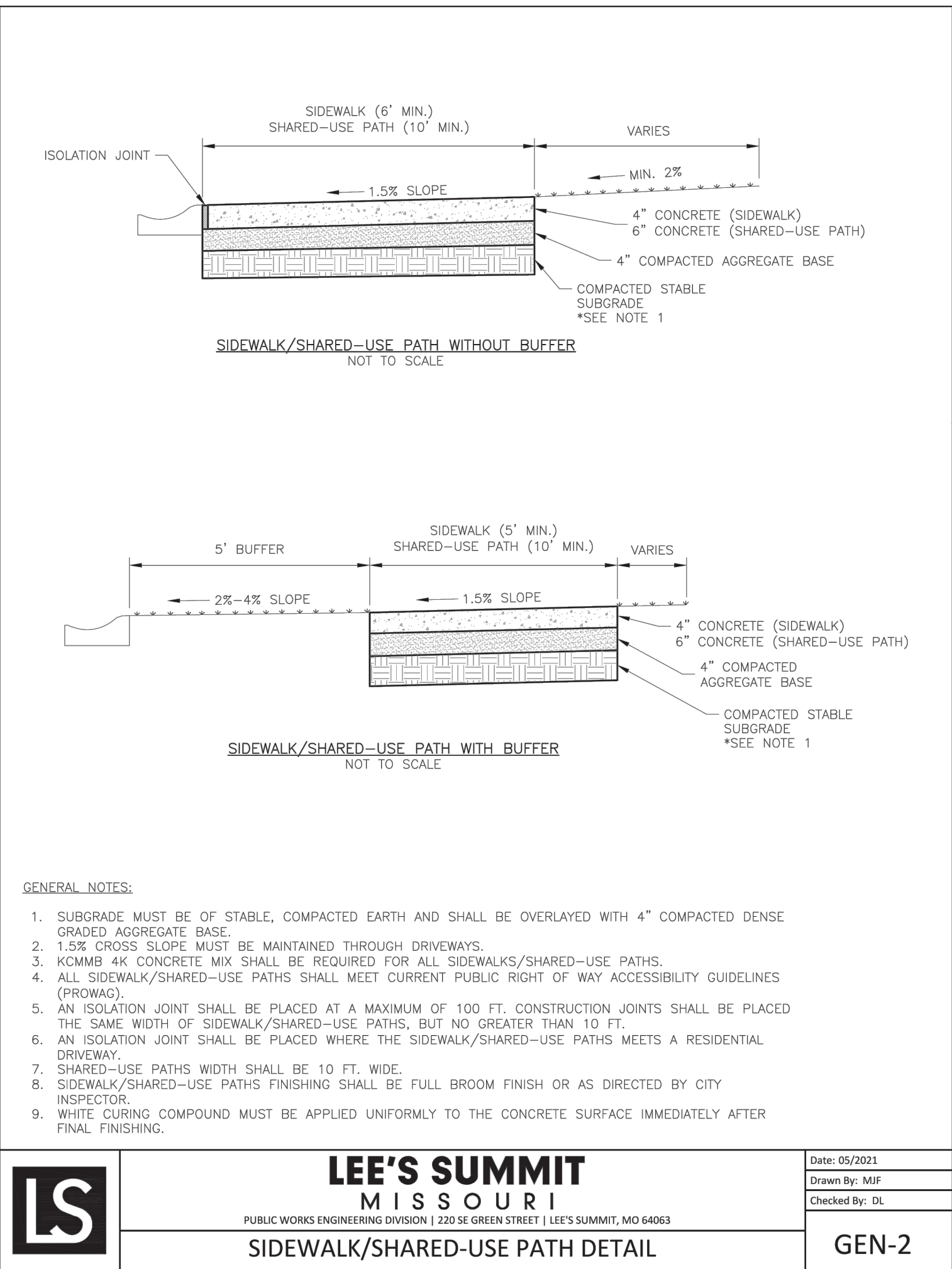
GEN-3A



LEE'S SUMMIT MISSOURI

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

GEN-3B



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Missouri State Certificates of Authority

#E2002003600-F #LAC001005237 #LS2002008659-F

PREPARED BY:

MARK ALLEN BREUER

REGISTERED PROFESSIONAL ENGINEER

NO. 000007268

EXPIRATION DATE 05-31-2023

SCHLAGEL & ASSOCIATES, P.A.

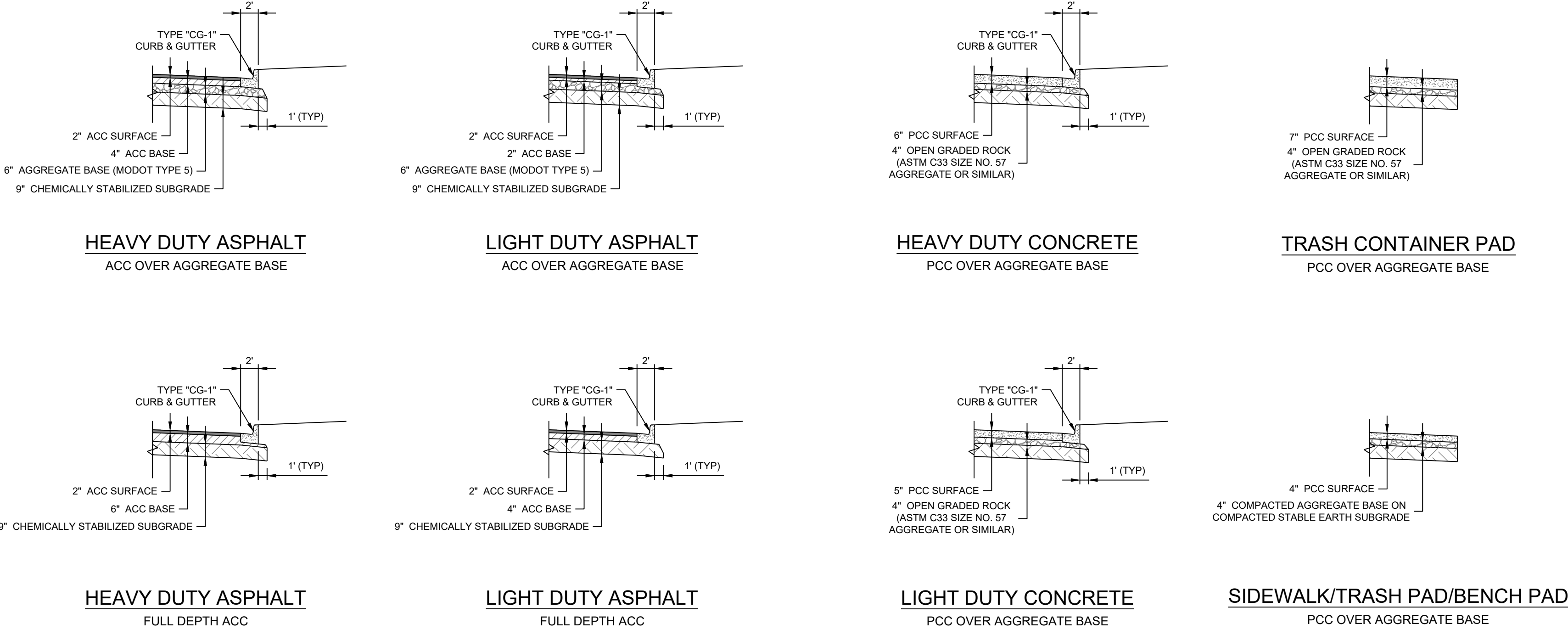
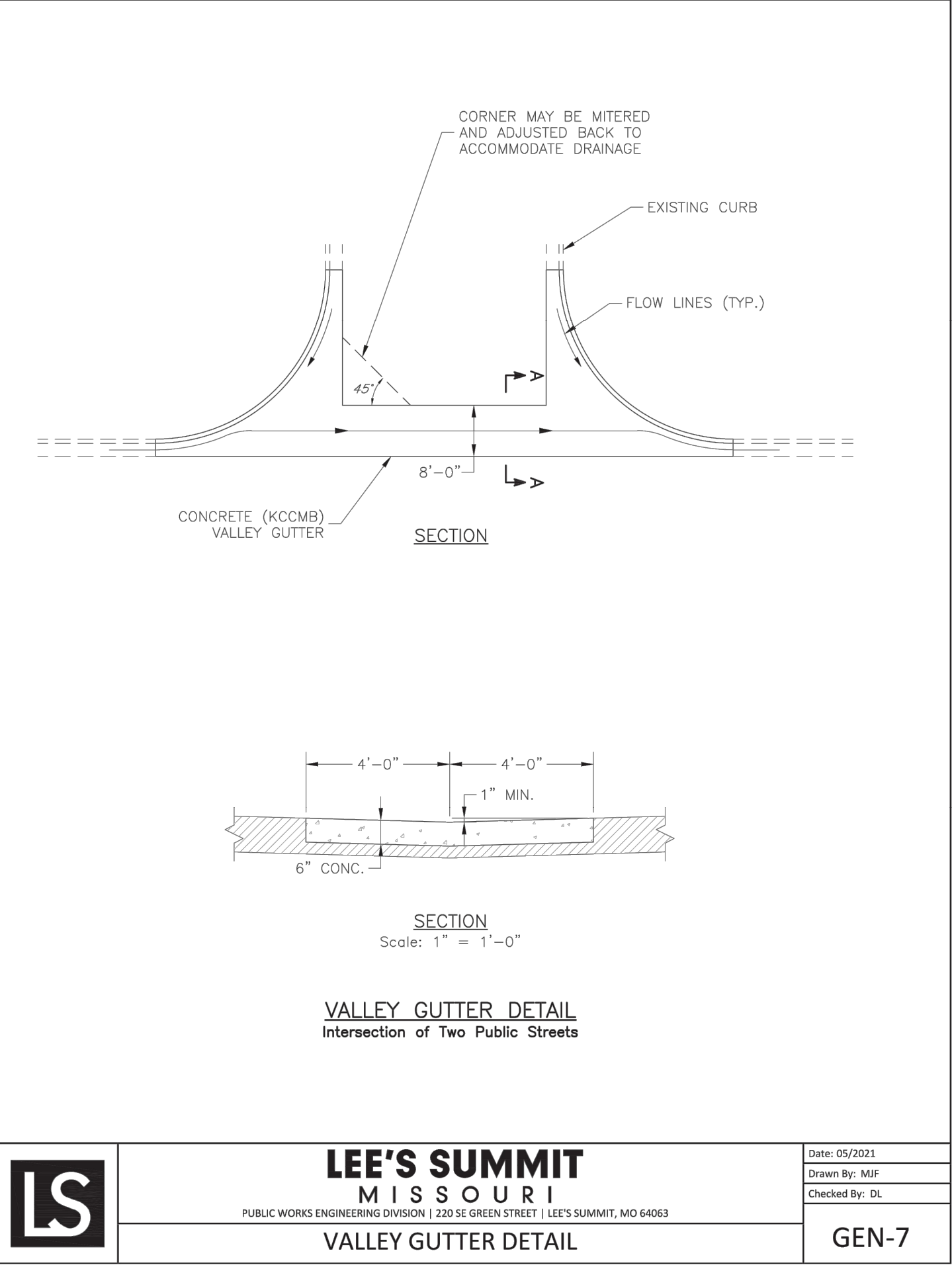
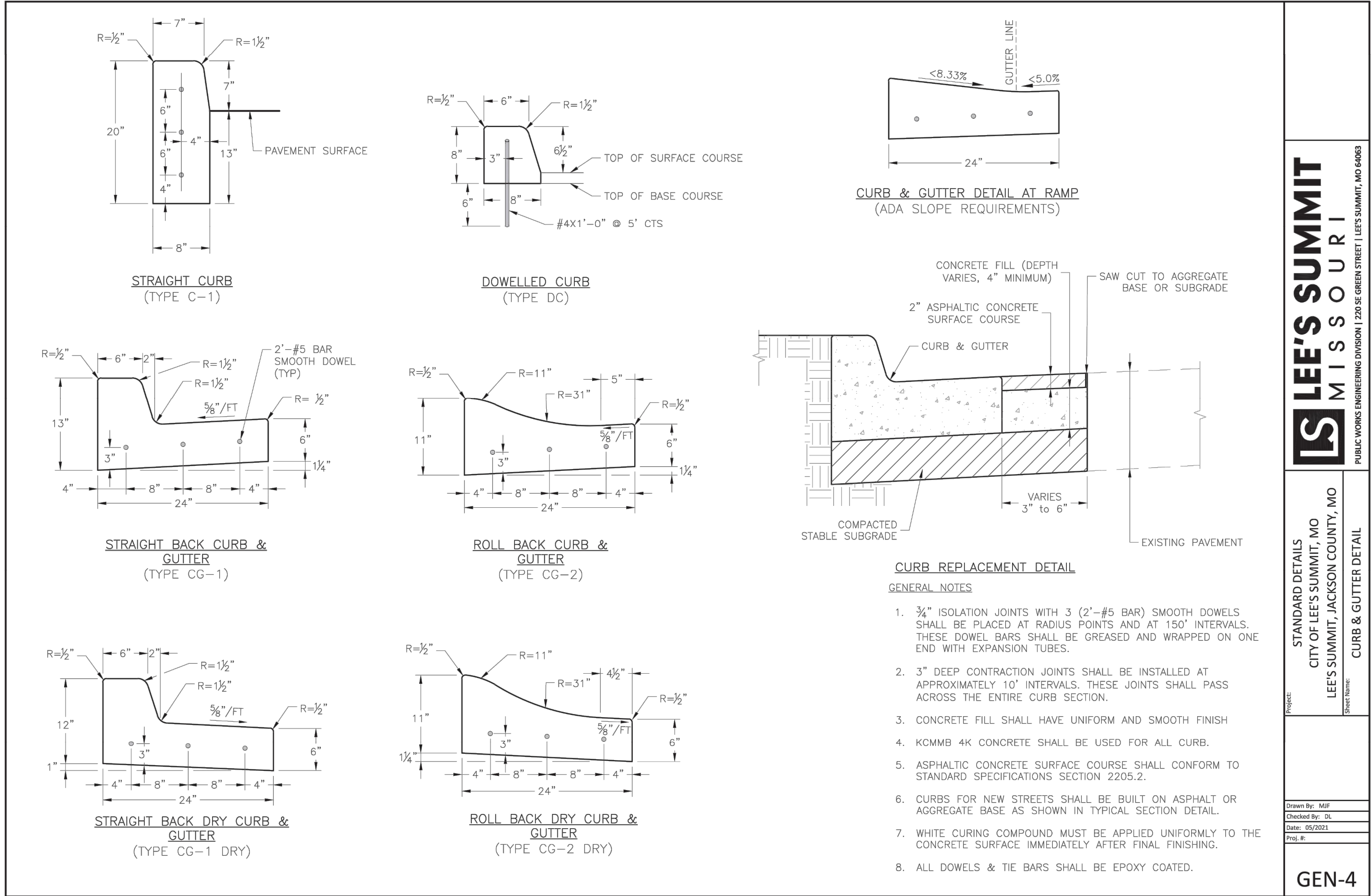
RESIDENCES AT BLACKWELL
FINAL DEVELOPMENT PLAN

HERITAGE STREET LEE'S SUMMIT, MO

REVISION	DATE	DESCRIPTION
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GENERAL
DETAILS

SHEET
C800



REVISION DATE	DESCRIPTION
1 01/23/23	PER CITY COMMENTS
2 03/24/2023	PER CITY COMMENTS
3 04/28/2023	PER CITY COMMENTS
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DRAWN BY:	TRC
CHECKED BY:	MAB
DATE PREPARED:	2/9/2023
PROJ. NUMBER:	22-102