



LEGEND	
	TEMPORARY STORAGE AREA FOR EXCESS MATERIAL
	TEMP. CONSTRUCTION ENTRANCE AND STAGING AREA
	CONCRETE WASHOUT AREA
	SILT FOAM DIKE OR STRAW WATTLE - STAKED & INSTALL PER MFR'S RECOMMENDATIONS
	ROCK DITCH CHECK
	STRAW WATTLE OR COIL LOG STAKED & INSTALL PER MFR'S RECOMMENDATIONS
	SILT FENCE (PRIOR TO LAND DISTURBANCE)
	SILT FENCE (DURING CONSTRUCTION)
	SILT SOCK / ROCK SOCK / SOCK WATTLE
	LIMITS OF DISTURBANCE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	GRAVEL FILTER FOR STORM SEWER STRUCTURES ONLY
	BMP PLAN REF. NO.

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

**SITE SPECIFIC NOTES:**

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

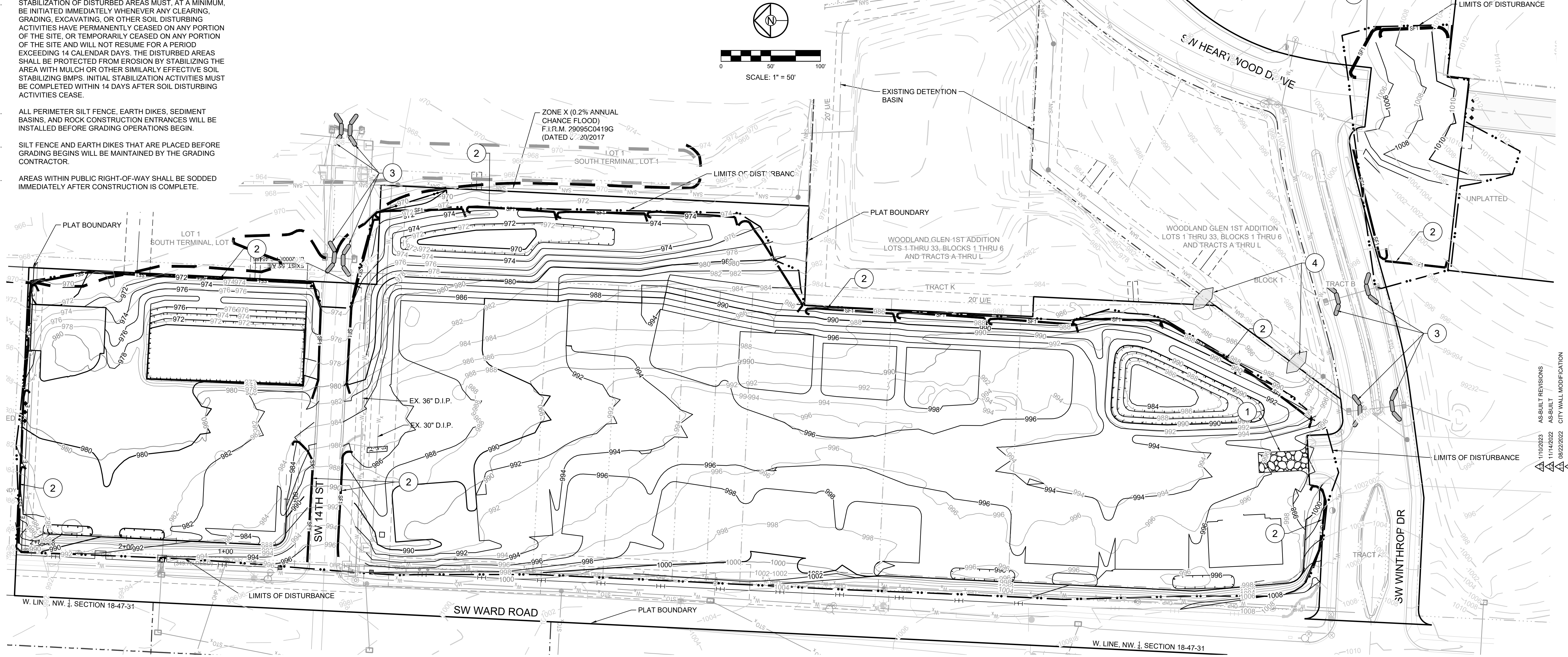
EROSION AND SEDIMENT CONTROL STAGING CHART				
PROJECT STAGE	BMP PLAN REF. NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A - PRIOR TO LAND DISTURBANCE	1	CONSTRUCTION ENTRANCE & STAGING AREA	D	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
	2	SILT FENCE 1 (PRIOR TO LAND DISTURBANCE)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	3	EXISTING INLET PROTECTION	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	4	FOAM SILT DIKE OR ROCK DITCH CHECK	E	PLACE WHERE INDICATED AT EXISTING SWALES AND DRAINAGE COURSES
B - MASS GRADING	5	SEDIMENT BASINS (REF. DETAIL ON SHEET 6)	E	TO BE INSTALLED PRIOR TO DISTURBING ENTIRE SITE.
	6	SILT FENCE 2 (DURING CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
C - UTILITY CONSTRUCTION	7	FOAM SILT DIKE OR STRAW WATTLE/COIL LOG CHECK	E	PLACE WHERE INDICATED AS SOON AS SWALE IS ESTABLISHED, REPAIR OR REPLACE AS NECESSARY
	8	CONCRETE WASHOUT AREA	E	MAINTAIN, REPAIR, OR REPLACE AS NECESSARY
	9	INLET PROTECTION (SILT FENCE)	D/E	PLACE SILT FENCE AROUND ALL STORM SEWER STRUCTURES / YARD AREA STORM STRUCTURES TO HAVE SILT FENCE REMOVED ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
D - AFTER PAVING OPERATIONS	10	INLET PROTECTION (GRAVEL FILTER BAGS)	E	BOARDS SHALL BE PLACED IN FRONT OF INLET OPENING FROM THE TIME SILT FENCE IS REMOVED UNTIL SUCH TIME THAT THE CURB / THROAT IS POURED. PLACE GRAVEL FILTER BAGS AT THE OPENING OF ALL CURB INLETS IMMEDIATELY AFTER THE INLET THROATS ARE POURED
	11	SILT FENCE 2 (AFTER CURB CONSTRUCTION)	E	PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED
	12	SEEDING AND MULCHING	E	ALL DISTURBED AREAS PRIOR TO 14 DAYS OF CONSTRUCTION INACTIVITY
E - UNTIL CLOSURE OF LAND DISTURBANCE PERMIT	13			ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY BE REQUIRED ANY TIME CURRENT MEASURES ARE FOUND TO BE INEFFECTIVE.

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Date: 1/10/2023  
 Certified by: RPM  
 Title: Design Engineer  
 Firm: Schlager and Associates, P.A.



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

REVISION DATE	DESCRIPTION
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06/16/2022	CITY EMAILED COMMENTS

DRAWN BY:	DESCRIPTION
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CHEKED BY:	SCHLAGEL QUANTITIES
MAB	SCHLAGEL QUANTITIES
DATE PREPARED:	CITY COMMENTS
2-19-2020	CITY COMMENTS
PROJ. NUMBER:	SCHLAGEL UPDATE
10062021	CITY COMMENTS
18-017	WATER LINE CONFLICT

**PRE-CLEARING PLAN**

SHEET **2**

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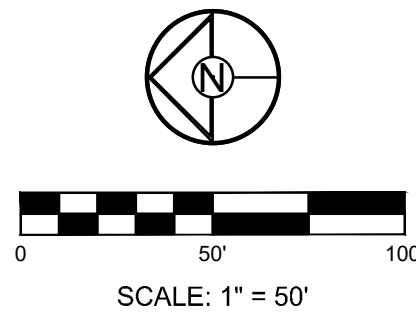
TOTAL DRAINAGE AREA TO TEMPORARY SEDIMENT BASIN  
 EDDB#1 AREA = 2.59 AC.  
 EDDB#2 AREA = 4.99 AC.  
 EDDB#3 AREA = 1.26 AC.

SEDIMENT VOLUME REQUIRED (3600 CU. FT./AC.)  
 EDDB#1 2.59 AC. \* 3600 CU.FT./AC. = 9,324 CU.FT.  
 EDDB#2 4.99 AC. \* 3600 CU.FT./AC. = 17,964 CU.FT.  
 EDDB#3 1.26 AC. \* 3600 CU.FT./AC. = 4,536 CU.FT.

SEDIMENT VOLUME PROVIDED  
 EDDB#1 VOLUME @ 986.90 = 9,537 CU.FT.  
 EDDB#2 VOLUME @ 972.10 = 18,904 CU.FT.  
 EDDB#3 VOLUME @ 971.70 = 5,225 CU.FT.

INSTALL 30"x20" LANDLOCK TRM 435 OR EQUIVALENT RETENTION BLANKET PER MANUFACTURER'S DETAIL SHEET 6

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

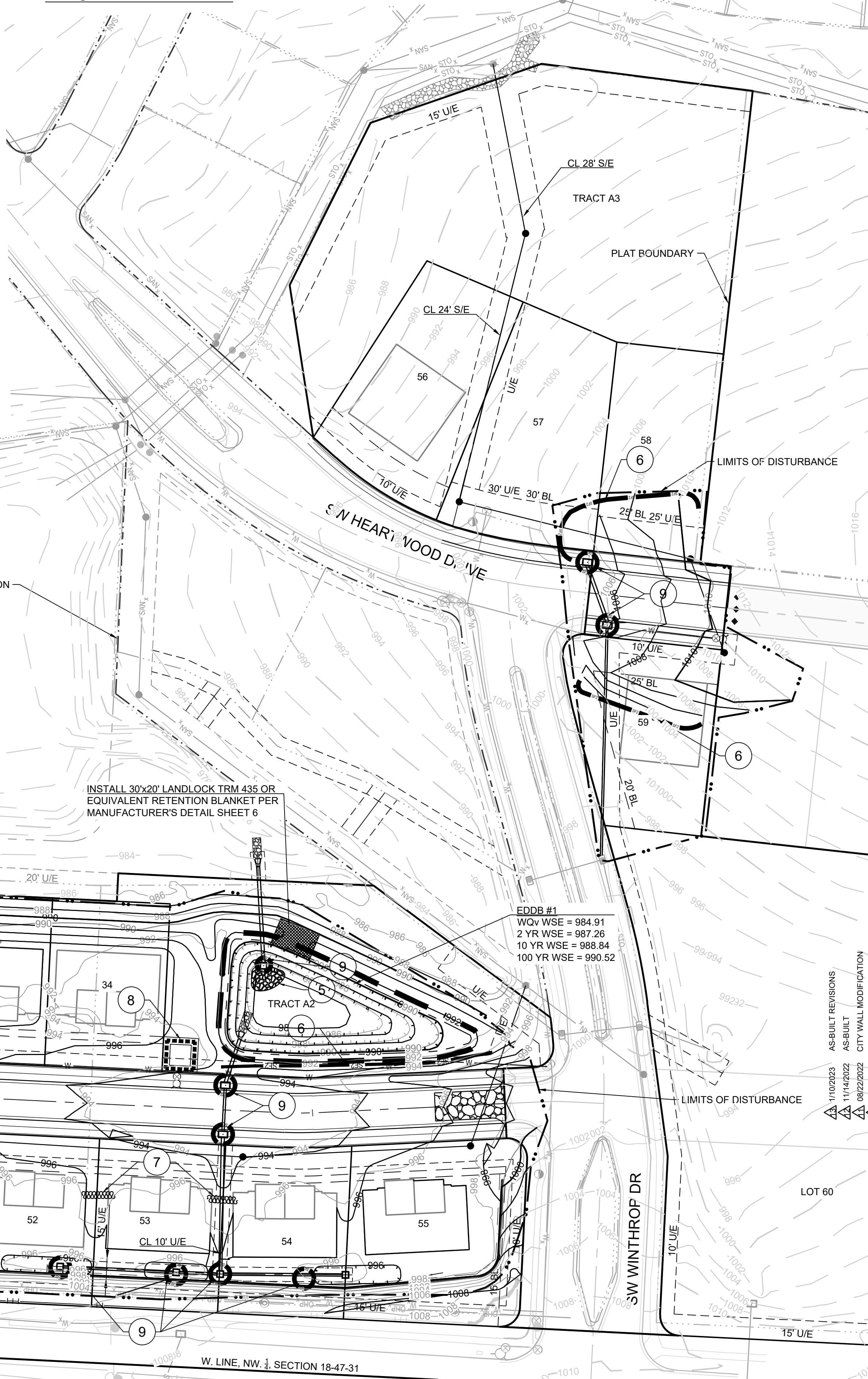


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09/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

DRAWN BY: BAL  
 CHECKED BY: MAB  
 DATE PREPARED: 2-19-2020  
 PROJ. NUMBER: 10062021  
 18-017

**ECP CONSTRUCTION**

SHEET **3**

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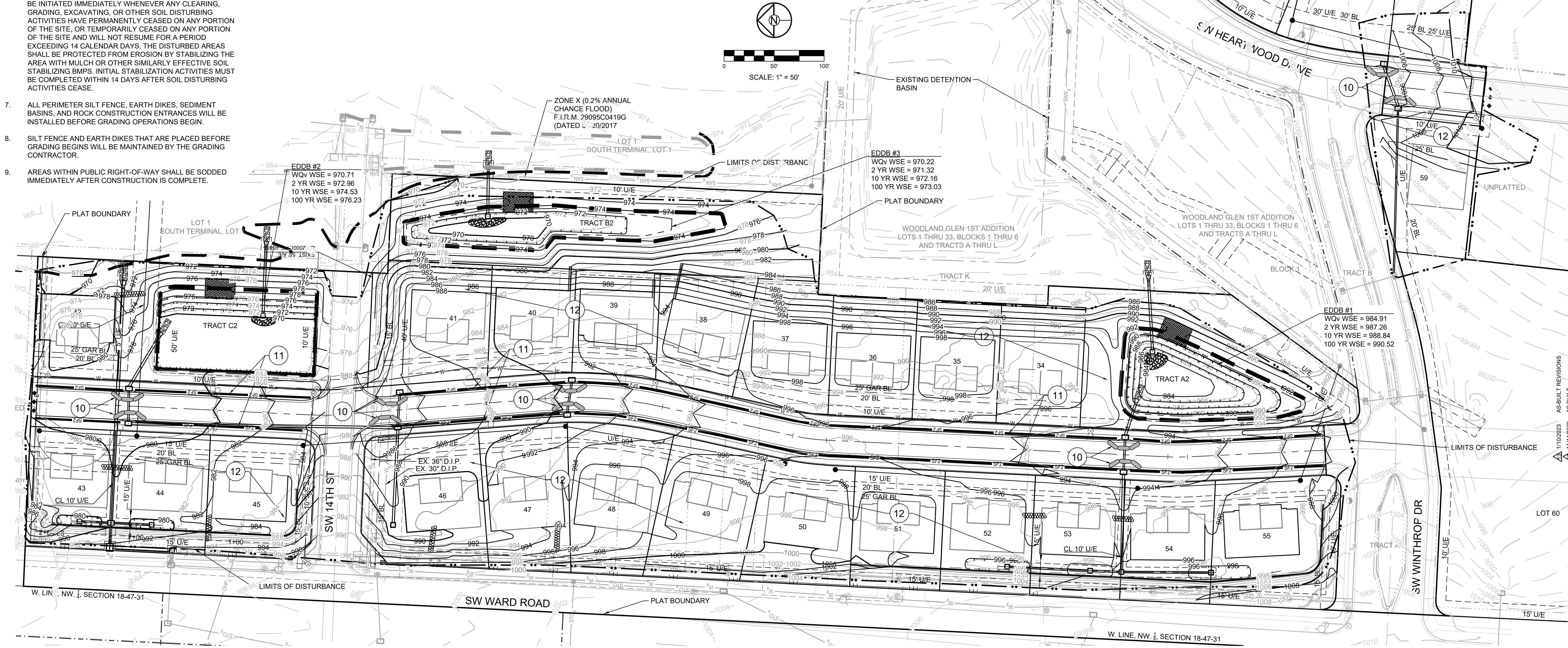
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18-017	01/20/2022 WATER LINE CONFLICT

ECP FINAL STABILIZATION	
SHEET	
<b>4</b>	

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PREPARED BY:

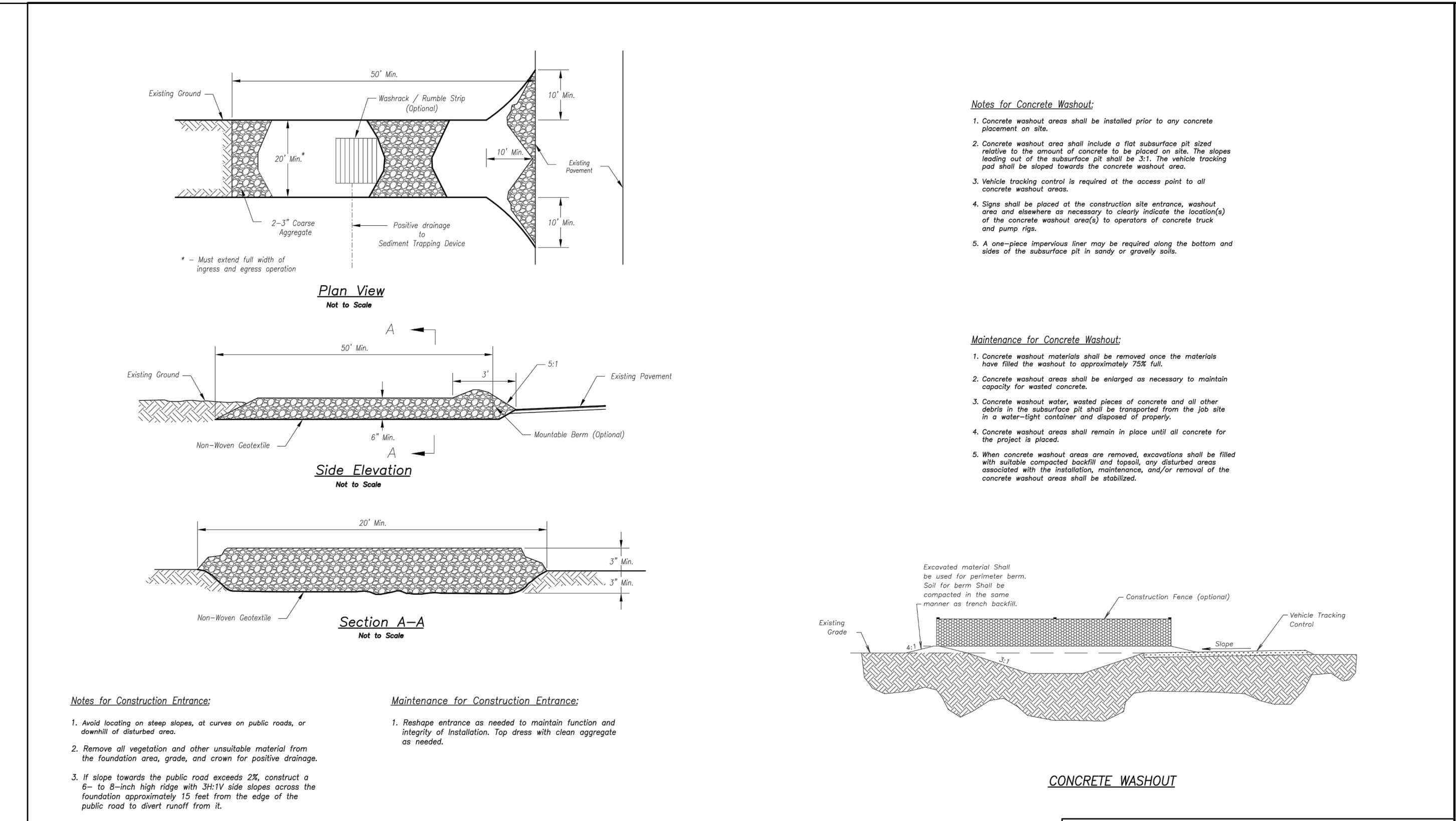
SCHLAGEL & ASSOCIATES, P.A.

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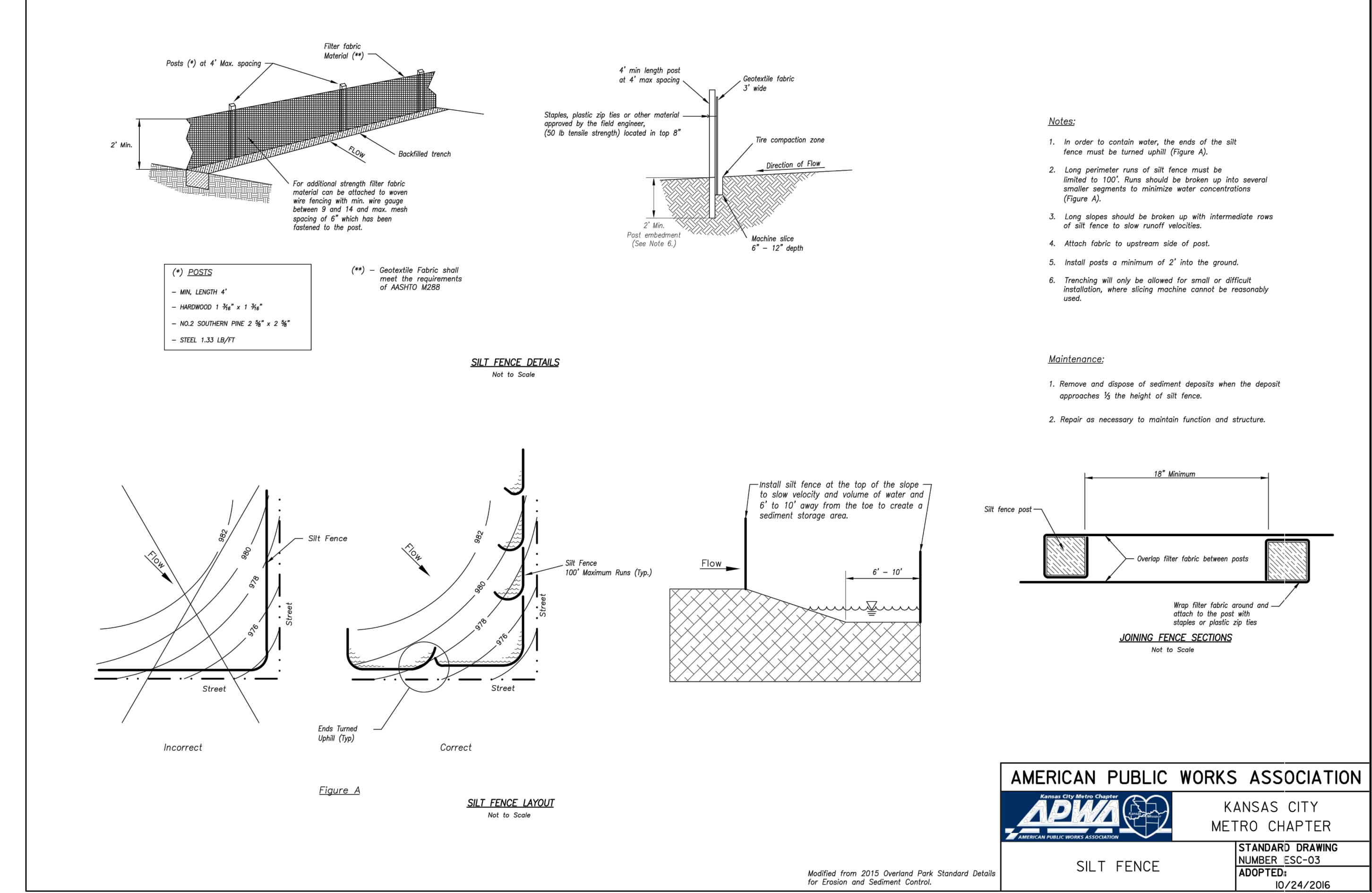
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EROSION CONTROL DETAILS

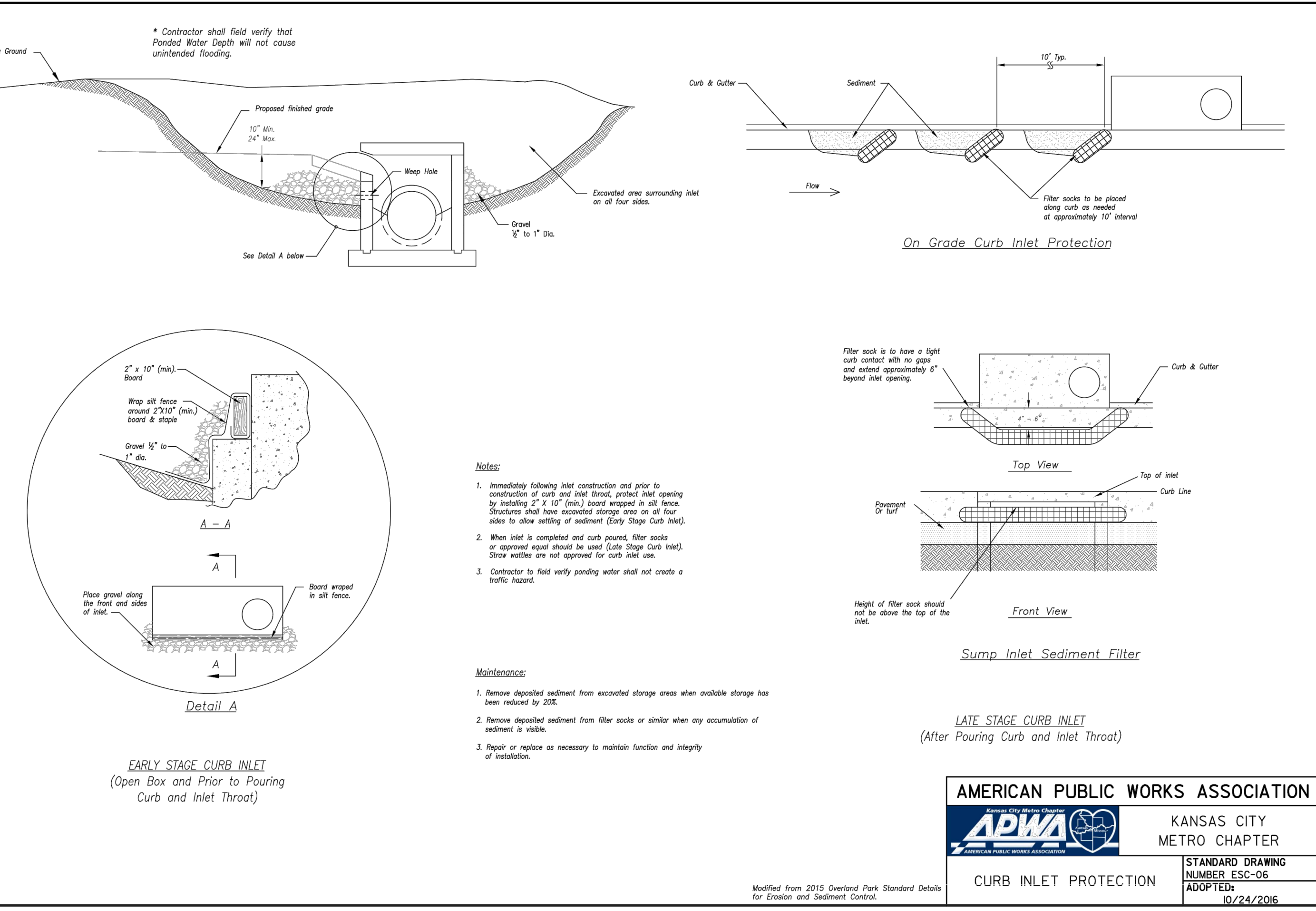
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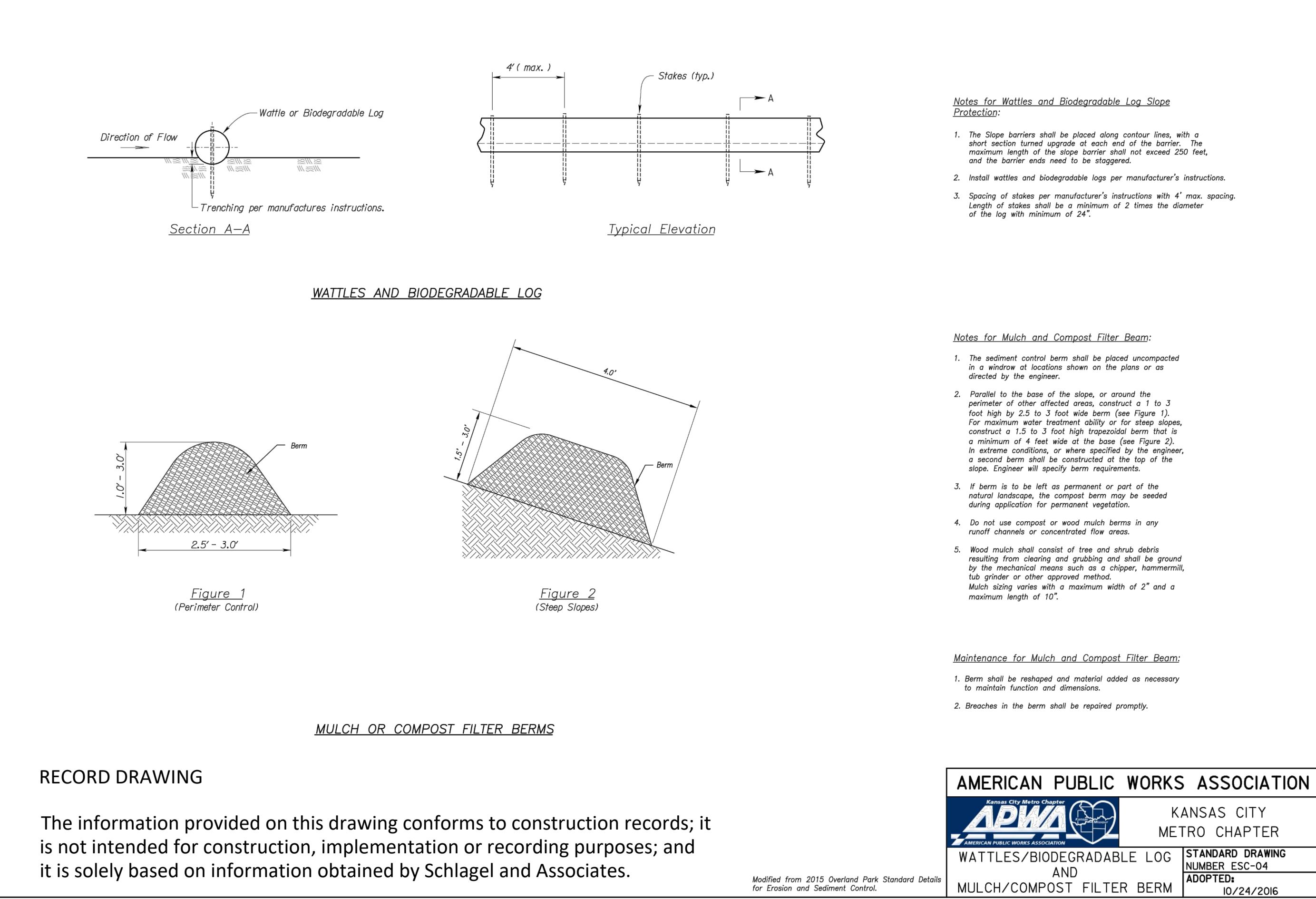
AMERICAN PUBLIC WORKS ASSOCIATION  
 KANSAS CITY METRO CHAPTER  
 CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT  
 STANDARD DRAWING NUMBER ESC-01 ADOPTED 10/24/2016



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



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



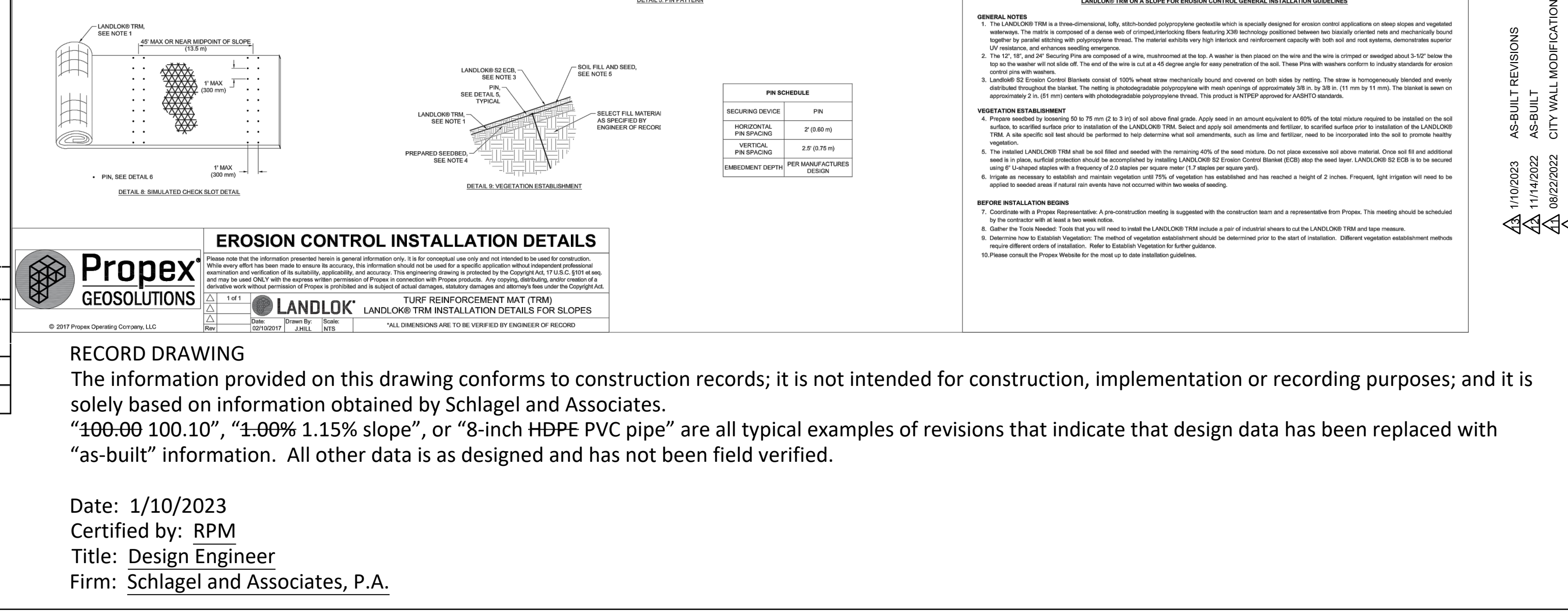
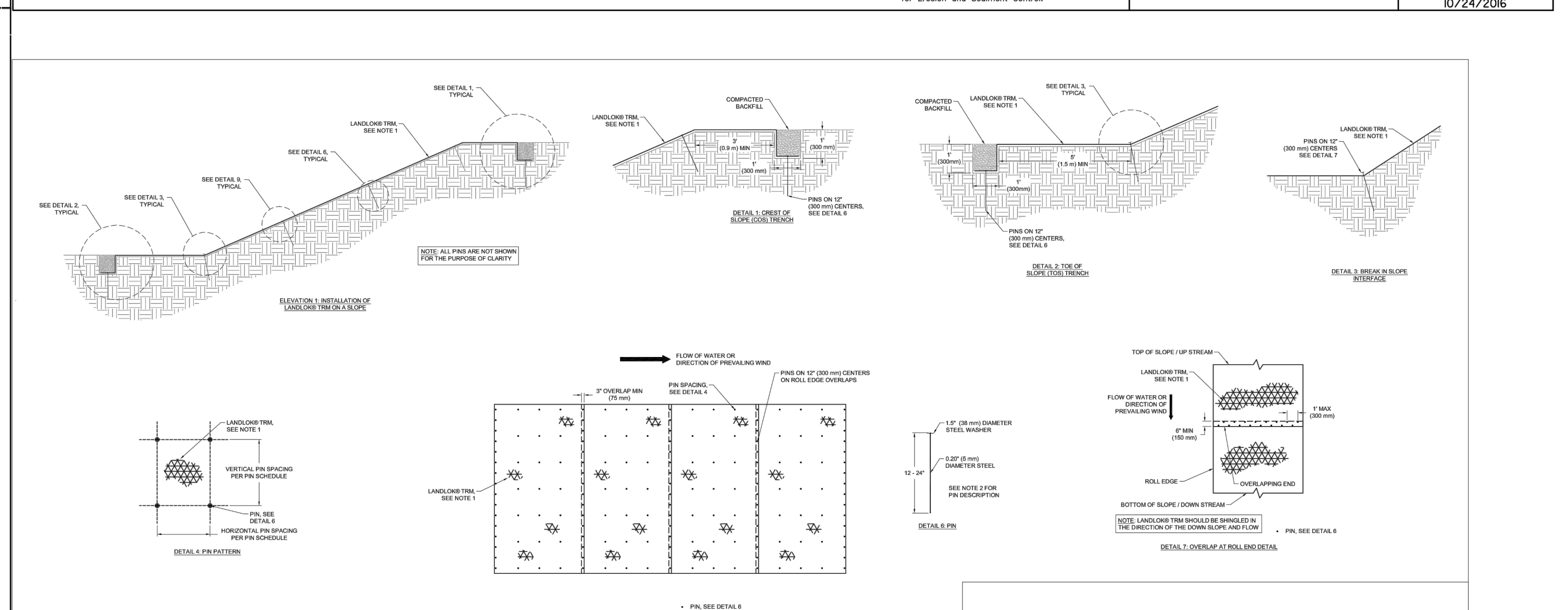
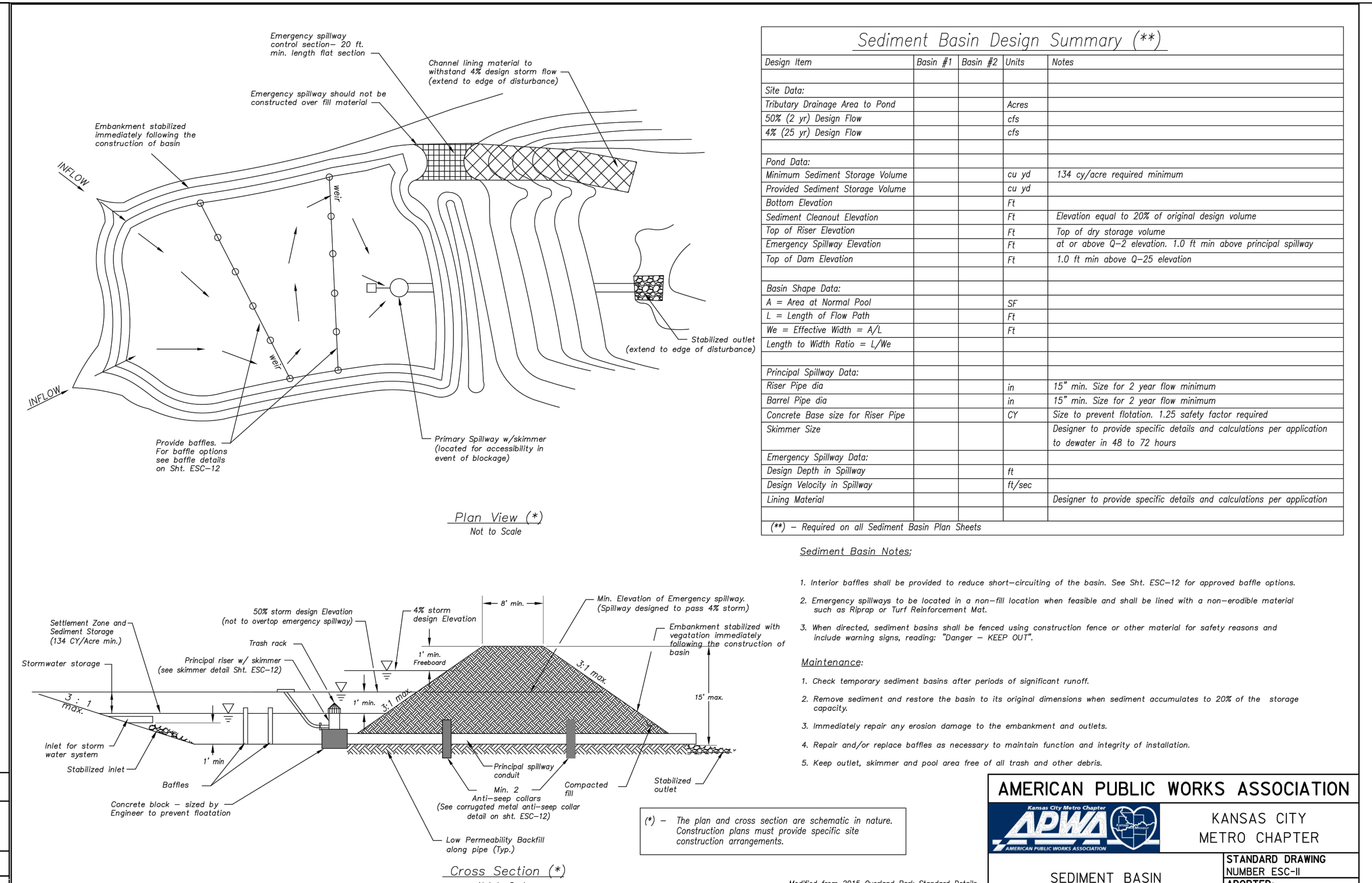
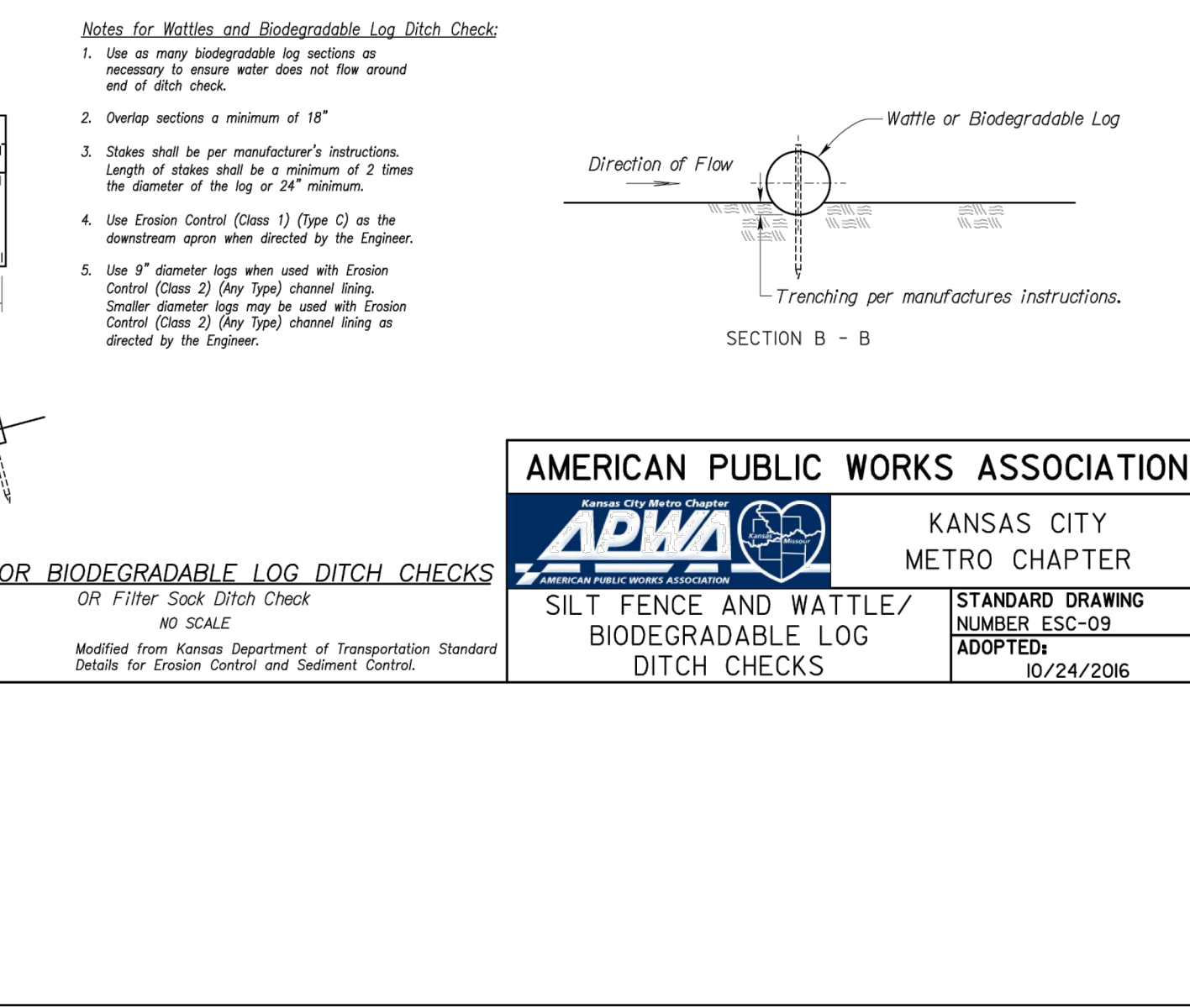
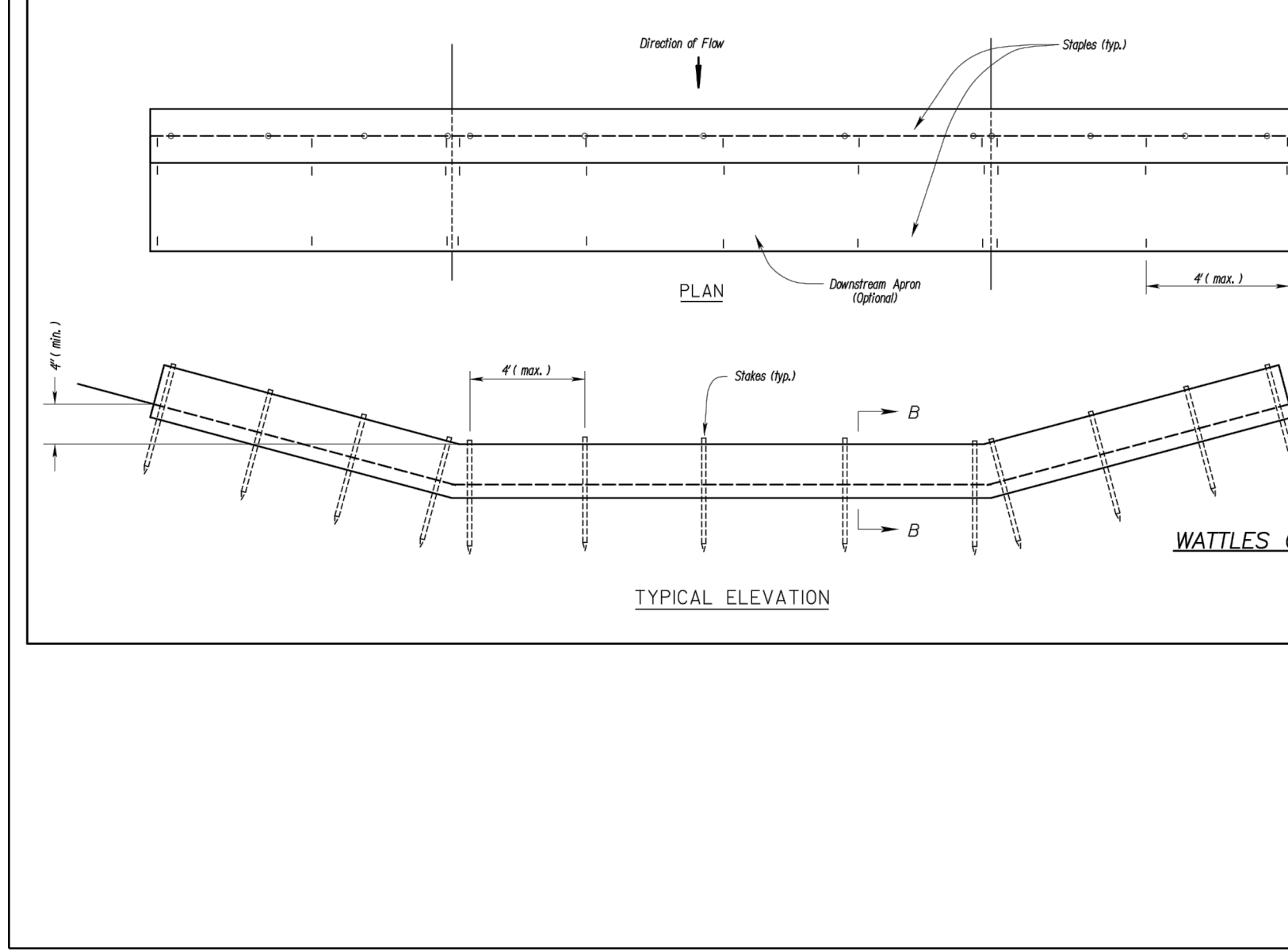
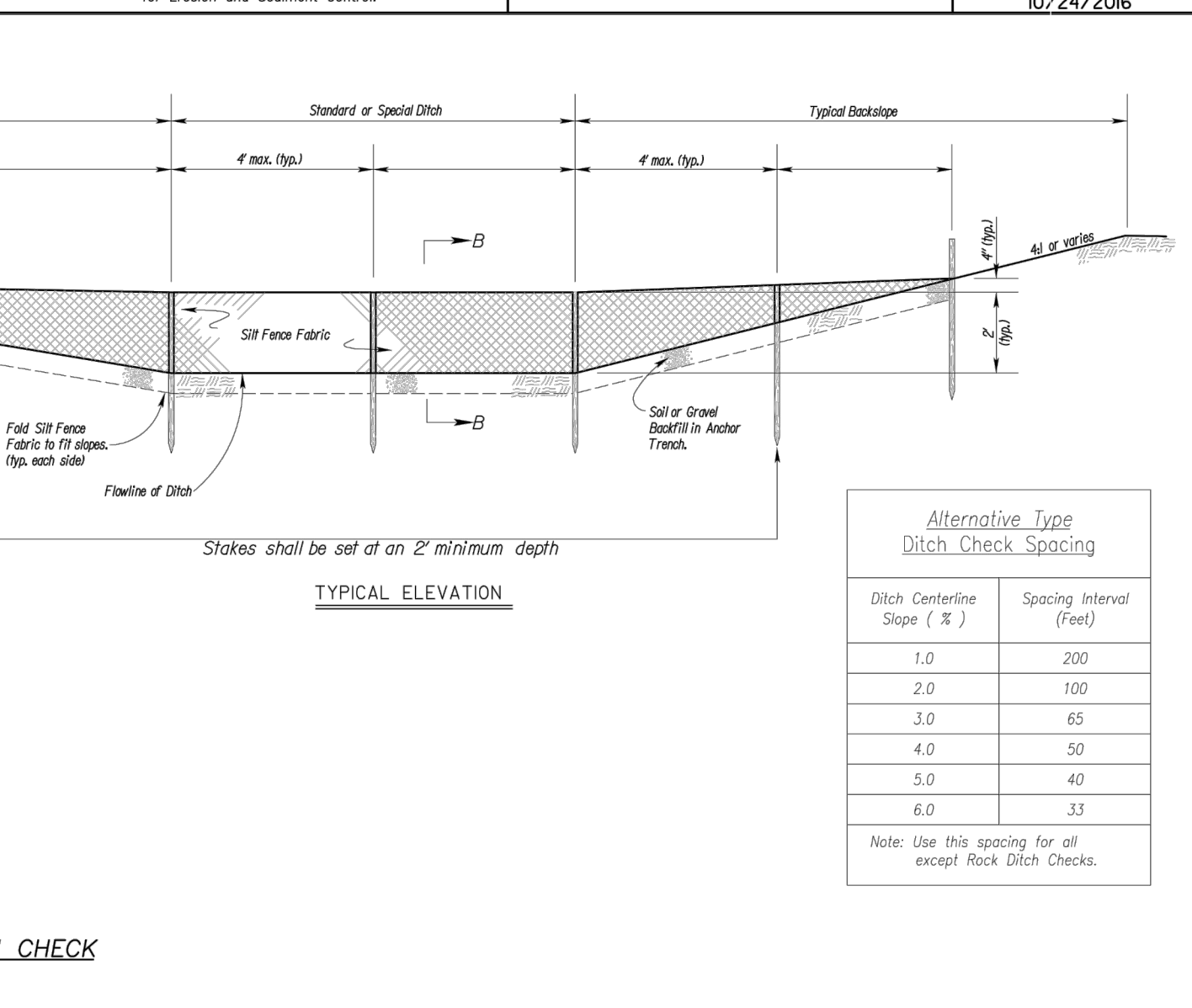
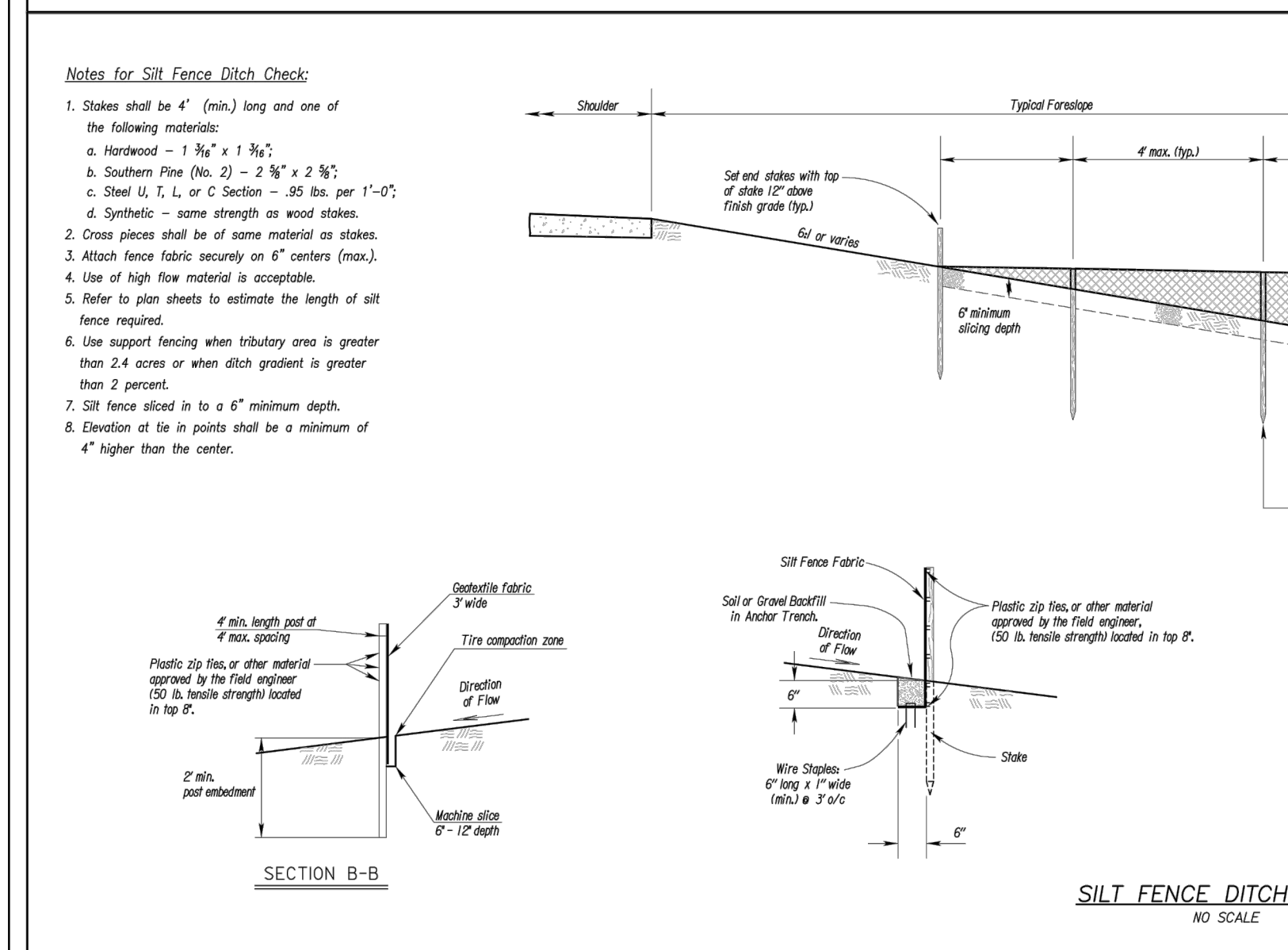
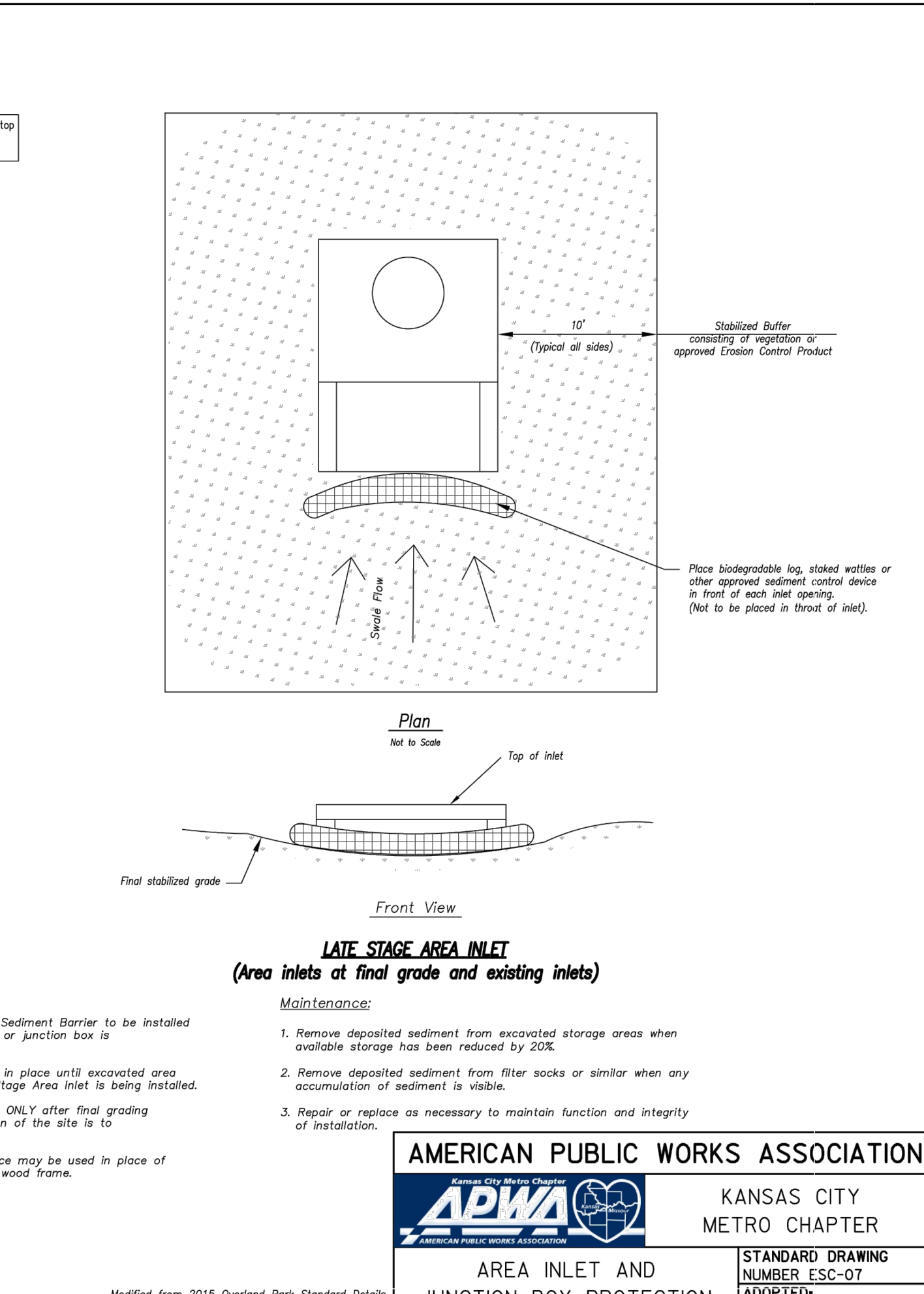
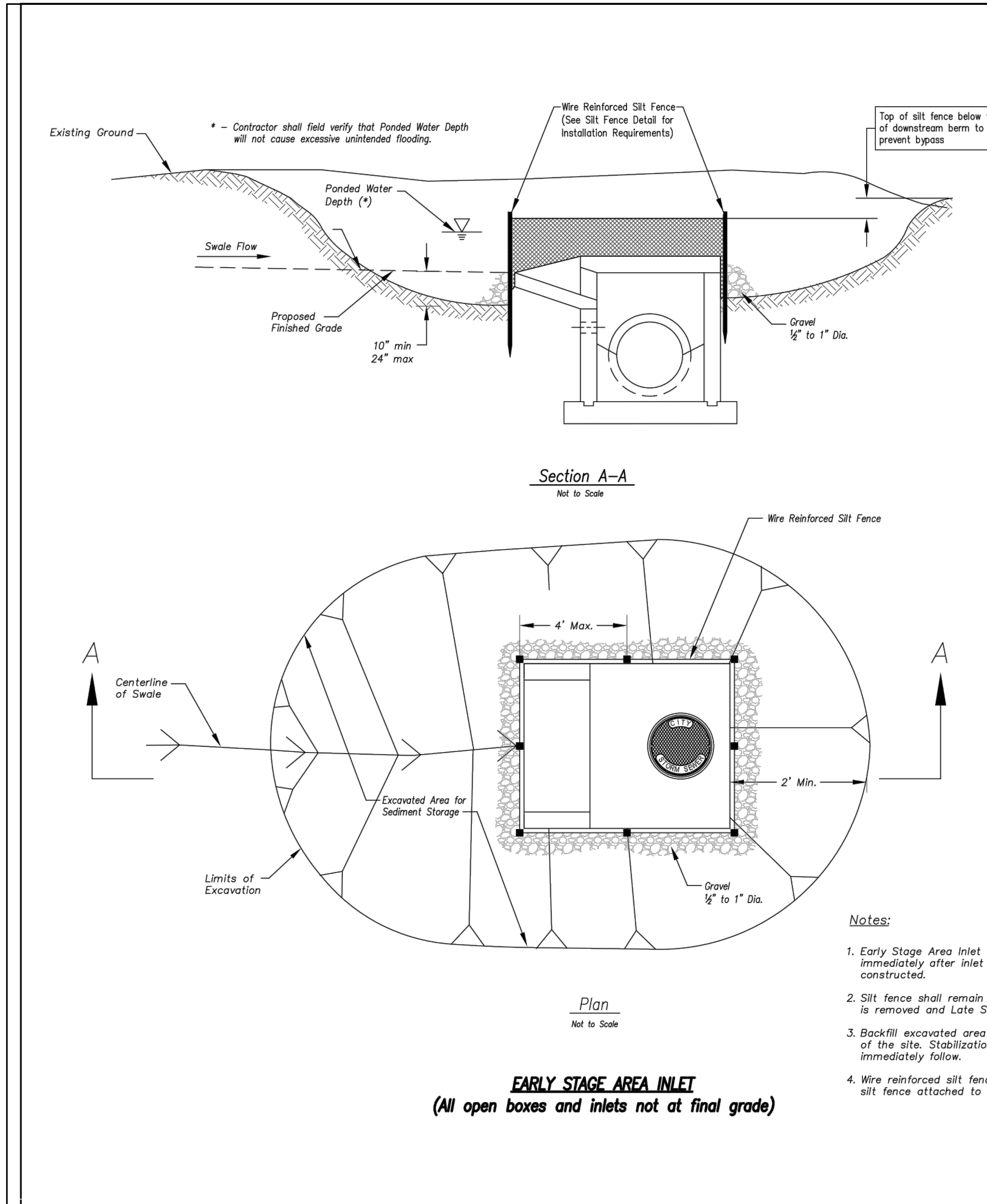
AMERICAN PUBLIC WORKS ASSOCIATION  
 KANSAS CITY METRO CHAPTER  
 WATTLES/BIODEGRADABLE LOG AND MULCH/COMPOST FILTER BERM  
 STANDARD DRAWING NUMBER ESC-04 ADOPTED 10/24/2016

RECORD DRAWING

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"400.00 100.10", "1.00% 1.15% slope", or "8-inch HDPE PVC pipe" are all typical examples of revisions that indicate that design data has been replaced with "as-built" information. All other data is as designed and has not been field verified.

Date: 1/10/2023  
 Certified by: RPM  
 Title: Design Engineer  
 Firm: Schlager and Associates, P.A.

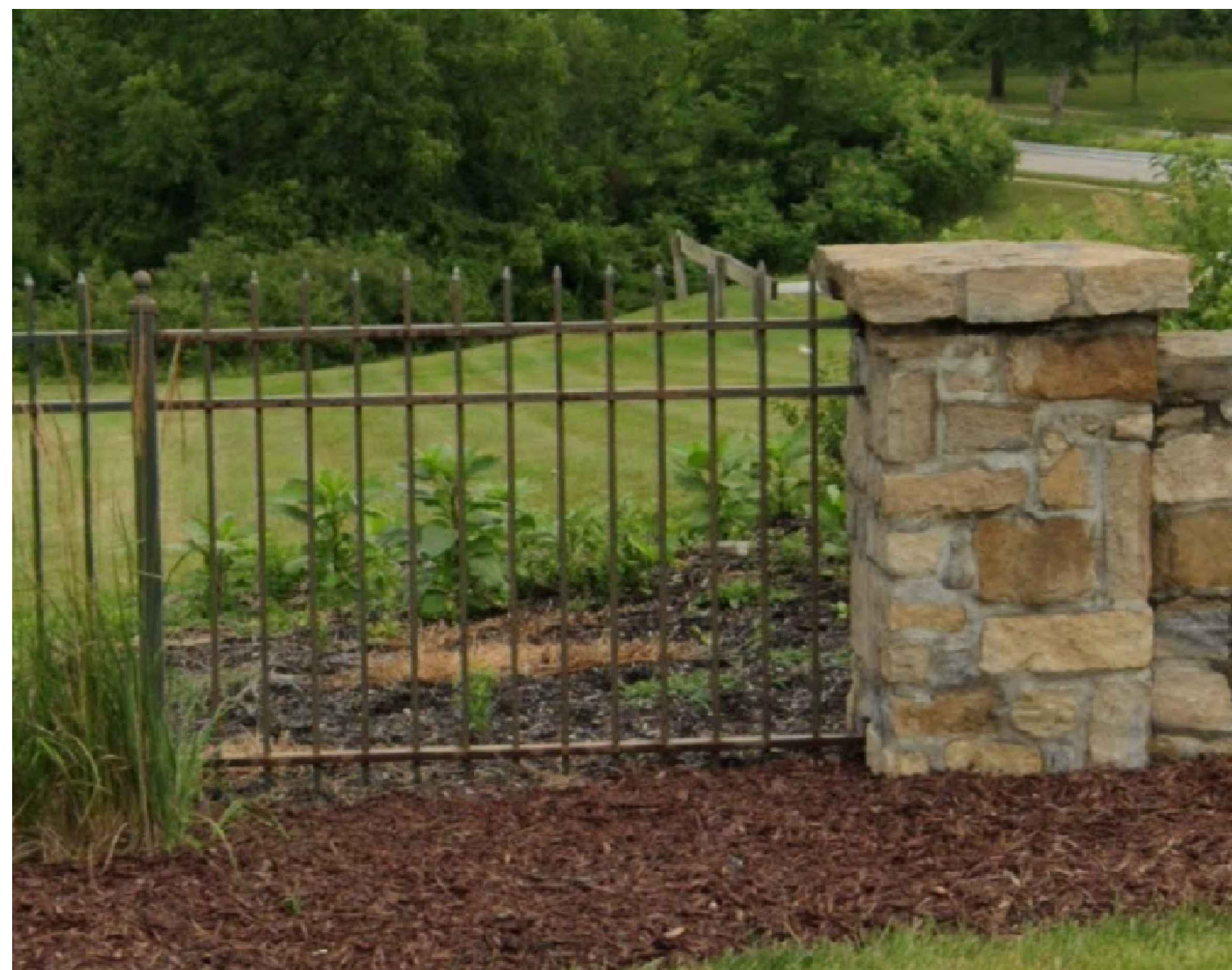


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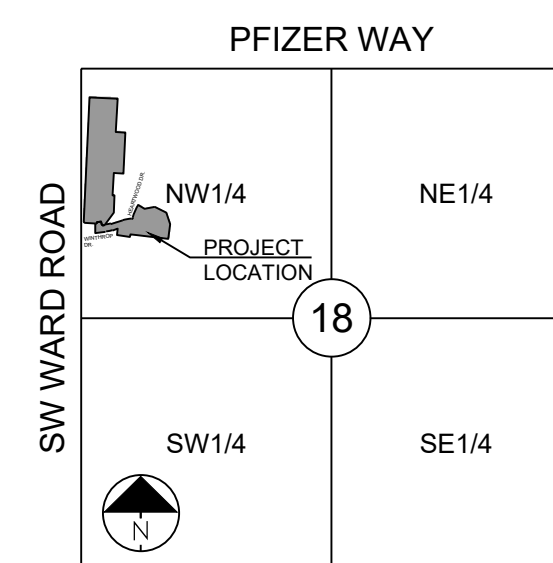
Date: 1/10/2023  
 Certified by: RPM  
 Title: Design Engineer  
 Firm: Schlager and Associates, P.A.



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

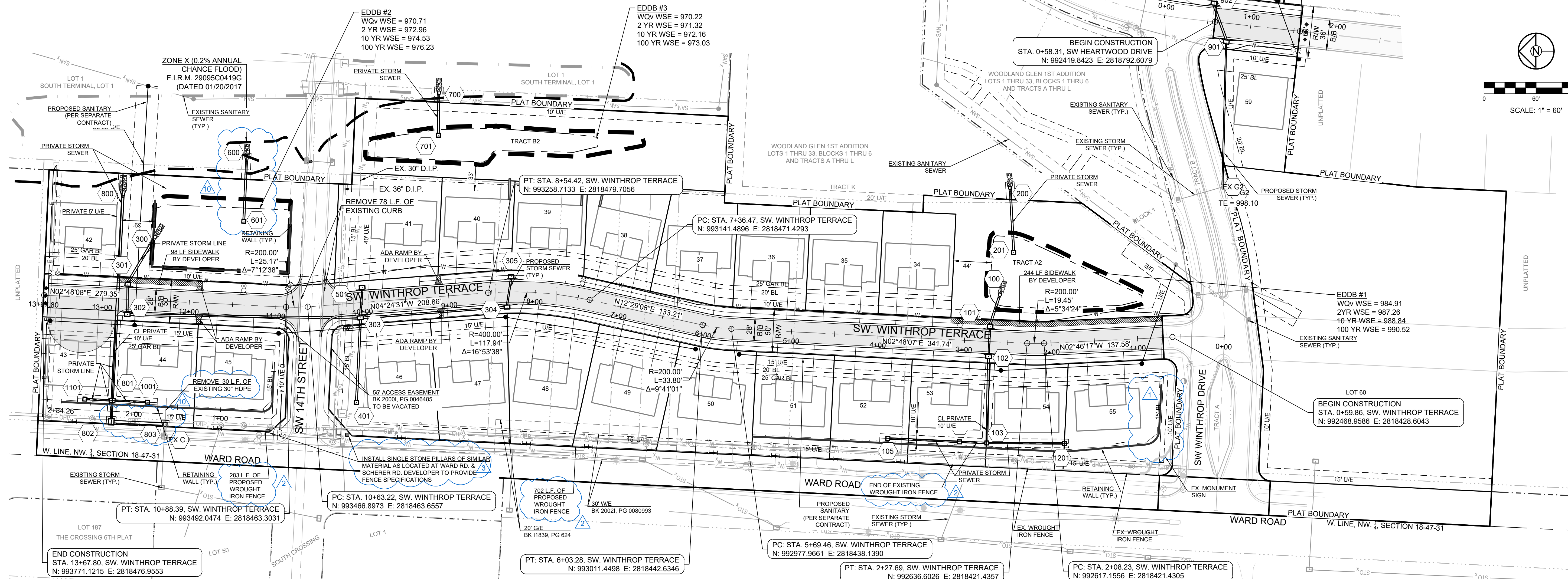
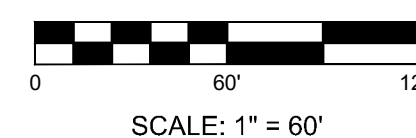
PROJECT BENCHMARK:

SW. CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.  
 3" DIAMETER ALUMINUM DISK IN MONUMENT BOX  
 M.D.N.R. DOC. NO. 600-65374  
 ELEV. 1036.41



SECTION 18-47N-31W

LOCATION MAP  
 SCALE 1" = 2000'



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

REVISION DATE	DESCRIPTION
1/10/2023	AS-BUILT REVISIONS
1/11/2023	AS-BUILT
02/22/2023	CITY WALL MODIFICATION
02/16/2022	CITY EMAILED COMMENTS
04/24/2020	CITY COMMENTS
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06/15/2021	CITY COMMENTS
09/29/2021	CITY COMMENTS
09/29/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

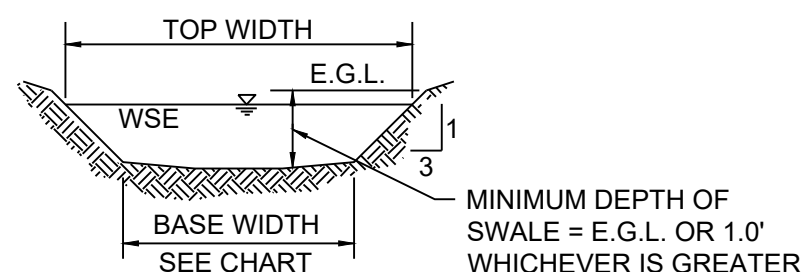
GENERAL LAYOUT  
 SHEET

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 Missouri State Certificate of Authority  
 #E2002003600F #LAC201005237 #LS200200895F

**NOTES:**

- MBOE = MINIMUM BUILDING OPENING ELEVATION FOR HOUSES ADJACENT TO ENGINEERED OVERFLOW SWALES SHALL BE MINIMUM 2 FEET ABOVE THE 100 YR WATER SURFACE ELEVATION.
- EGL = ENERGY GRADE LINE (100 YR)
- WSE = WATER SURFACE ELEVATION (100 YR)
- ENGINEERED SWALES TO BE GRADED TO NORMAL DEPTH OF FLOW (WATER SURFACE ELEVATION) OR 1.0 FT, WHICHEVER IS GREATER. MINIMUM SLOPE OF ENGINEERED SWALES SHALL BE AS NOTED.
- MBOE'S ADJACENT TO SUMPED INLETS SHALL BE A MINIMUM OF 1' ABOVE TOP OF ADJACENT BERM
- SWALE SECTIONS EXTEND THE ENTIRE LENGTH BETWEEN UPSTREAM AND DOWNSTREAM STRUCTURES WITH THE EXCEPTION OF A TRANSITION AT EACH STRUCTURE.

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



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

**100 YR OVERFLOW SWALE SECTIONS**  
SECTION 1-2

100 YEAR OVERFLOW SWALES												
SECTION	DRAINAGE AREA (AC.)	Q100 (CFS)	Q10 (CFS)	DESIGN OVERFLOW (CFS)	BED SLOPE (%)	BASE WIDTH (FT.)	SIDE SLOPE	TOP WIDTH (FT.)	NORMAL DEPTH (FT.)	VELOCITY (FPS)	VELOCITY HEAD (FT.)	EGL (FT.)
A-A	0.32	2.11	-	2.11	2.52	5	3:1	6.02	0.17	2.26	0.08	0.25
B-B	3.54	23.29	-	23.29	7.93	5	3:1	7.91	0.49	7.44	0.86	1.35
C-C	0.93	6.12	-	6.12	6.50	5	3:1	6.44	0.24	4.46	0.31	0.55
D-D	2.65	17.44	-	17.44	5.93	5	3:1	7.69	0.45	6.13	0.58	1.03

**DETENTION STORAGE EDDB #1:**  
 100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = 990.54 (SEE FINAL STORMWATER MGMT. PLAN) 990.5

**AUXILIARY SPILLWAY SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 991.04**  
 990.7

**AUXILIARY SPILLWAY DESIGN:**  
 $Q(100) = 2.74 \text{ CFS}$ ,  $Q = CLH^{\frac{2}{3}}$ ,  $C = 3.33$ ,  $L = 20 \text{ FT.}$ ,  $2.74 \text{ CFS} = 3.33 * 20 \text{ FT.} * (H^{\frac{2}{3}})$ ,  $H = 0.42 \text{ FT.}$   
 1.29 1.29 0.07

**DETENTION STORAGE EDDB #2:**  
 100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = 975.90 (SEE FINAL STORMWATER MGMT. PLAN) 976.2

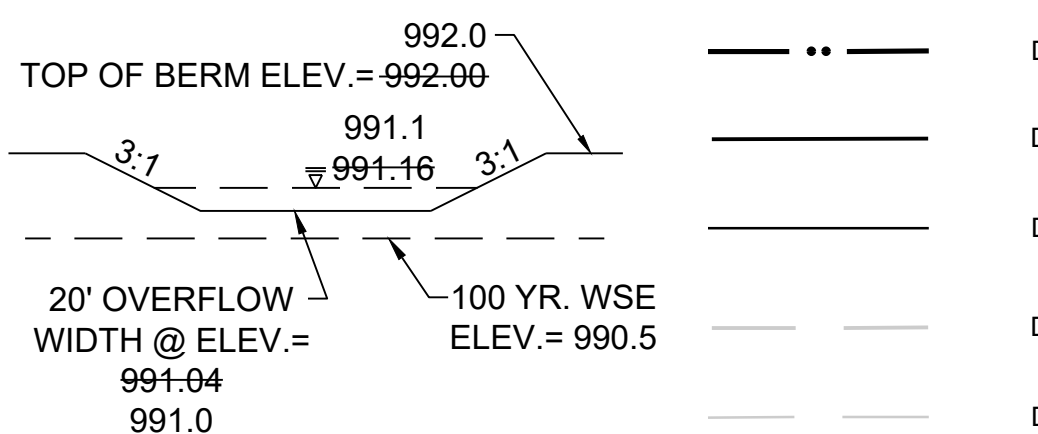
**AUXILIARY SPILLWAY SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 976.40**  
 976.7

**AUXILIARY SPILLWAY DESIGN:**  
 $Q(100) = 18.47 \text{ CFS}$ ,  $Q = CLH^{\frac{2}{3}}$ ,  $C = 3.33$ ,  $L = 20 \text{ FT.}$ ,  $18.47 \text{ CFS} = 3.33 * 20 \text{ FT.} * (H^{\frac{2}{3}})$ ,  $H = 0.43 \text{ FT.}$   
 19.09 19.09 0.43

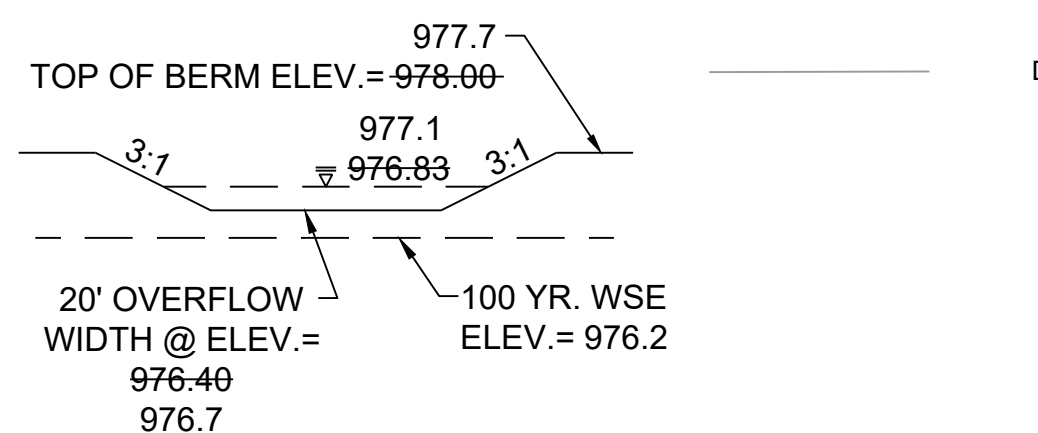
**DETENTION STORAGE EDDB #3:**  
 100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = 972.96 (SEE FINAL STORMWATER MGMT. PLAN) 973.03

**AUXILIARY SPILLWAY SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 973.46**  
 973.9

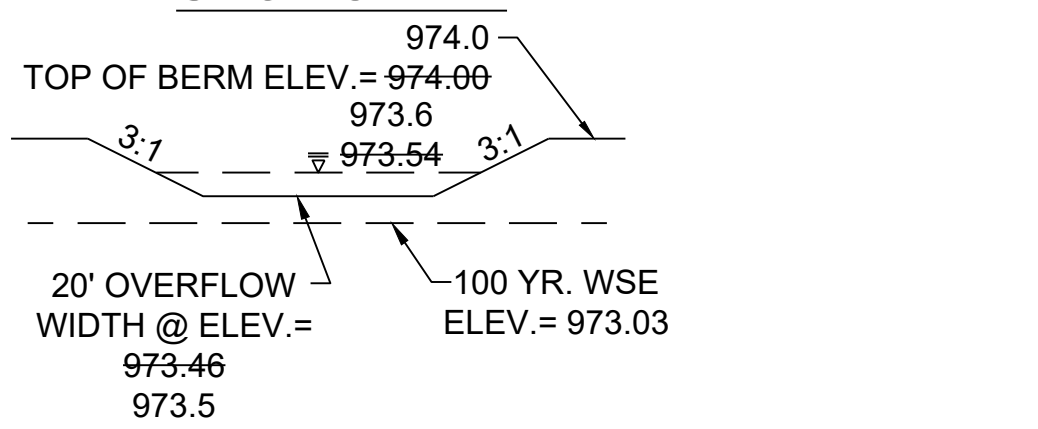
**AUXILIARY SPILLWAY DESIGN:**  
 $Q(100) = 1.43 \text{ CFS}$ ,  $Q = CLH^{\frac{2}{3}}$ ,  $C = 3.33$ ,  $L = 20 \text{ FT.}$ ,  $1.43 \text{ CFS} = 3.33 * 20 \text{ FT.} * (H^{\frac{2}{3}})$ ,  $H = 0.08 \text{ FT.}$   
 0.71 0.71 0.05



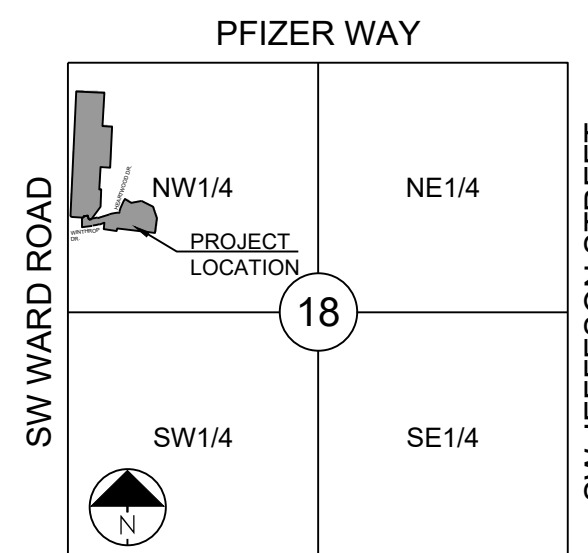
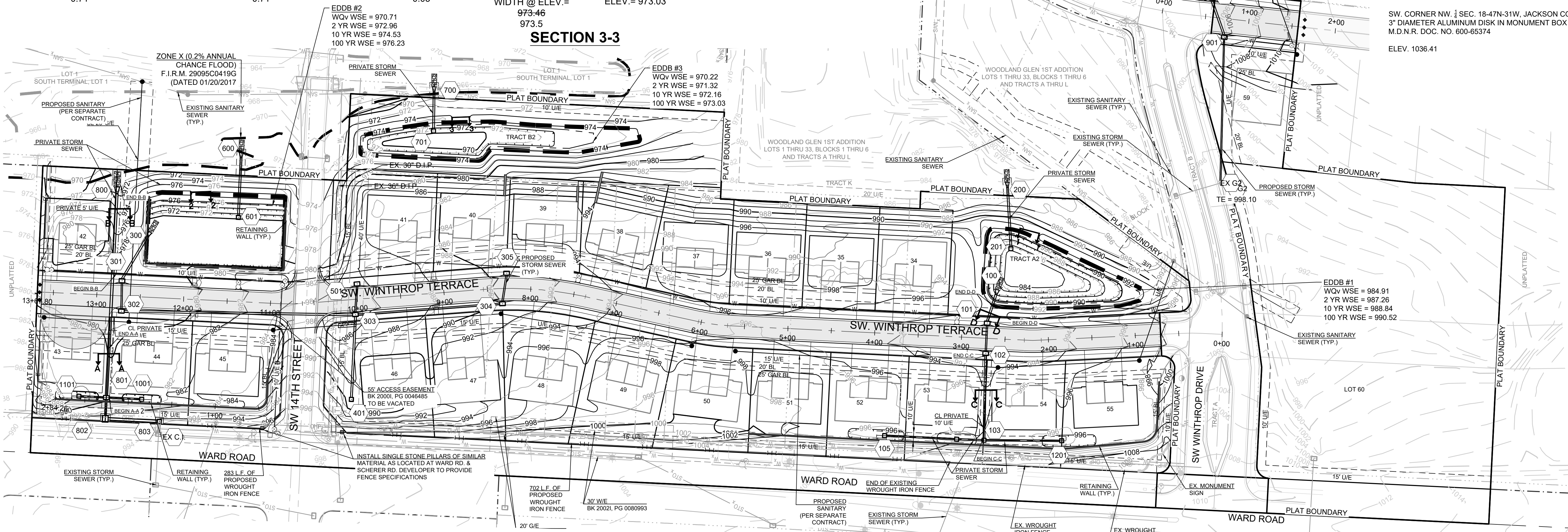
**SECTION 1-1**



**SECTION 2-2**



**SECTION 3-3**



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



**PROJECT BENCHMARK:**

SW CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.  
 3" DIAMETER ALUMINUM DISK IN MONUMENT BOX  
 M.D.N.R. DOC. NO. 600-65374  
 ELEV. 1036.41

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

REVISION DATE	DESCRIPTION
11/02/2023	AS-BUILT REVISIONS
11/14/2022	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
05/16/2022	CITY EMAILED COMMENTS
04/24/2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
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06/15/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

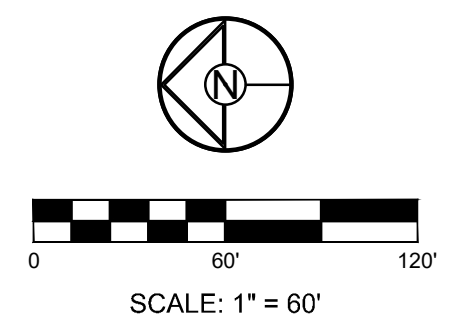
**MASTER DRAINAGE PLAN GRADING PLAN**

SHEET

**RECORD DRAWING**

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Date: 1/10/2023  
 Certified by: RPM  
 Title: Design Engineer  
 Firm: Schlager and Associates, P.A.



I:\PROJECTS\2018\18-0773.0 Design\3.0 DWG Plans\6.0 SS\18-0773 SS GL AND GP.dwg, MDP GRADING, 1/10/2023, 3:19:09 PM, 1:1



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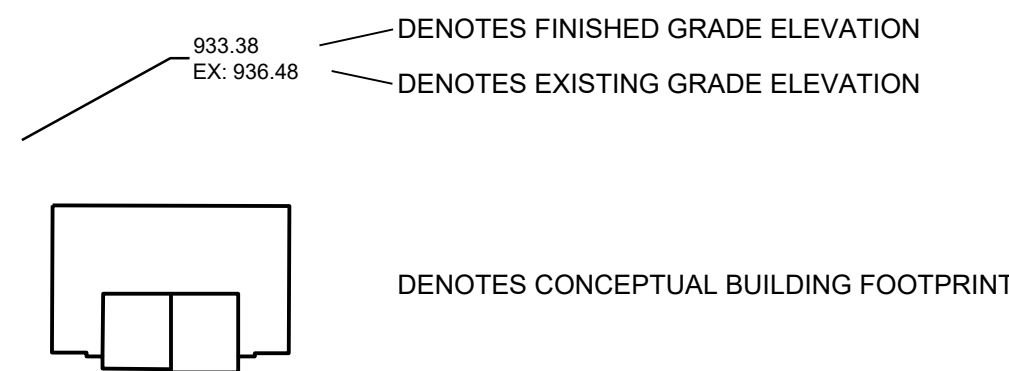
Date: 1/10/2023  
 Certified by: RPM  
 Title: Design Engineer  
 Firm: Schlagel and Associates, P.A.

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

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

**NOTES:**

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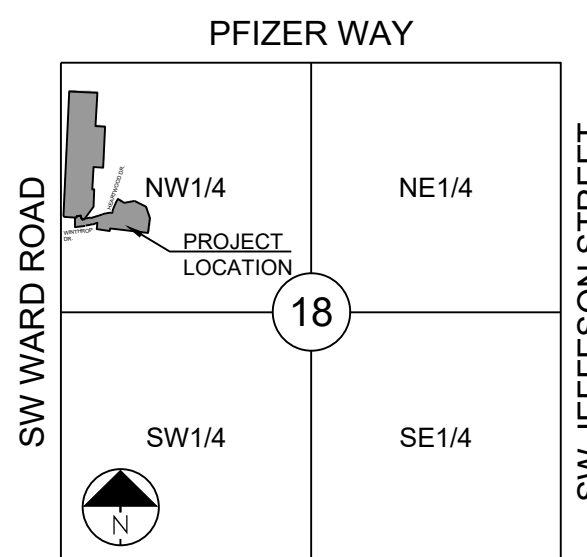


**PROJECT BENCHMARK:**

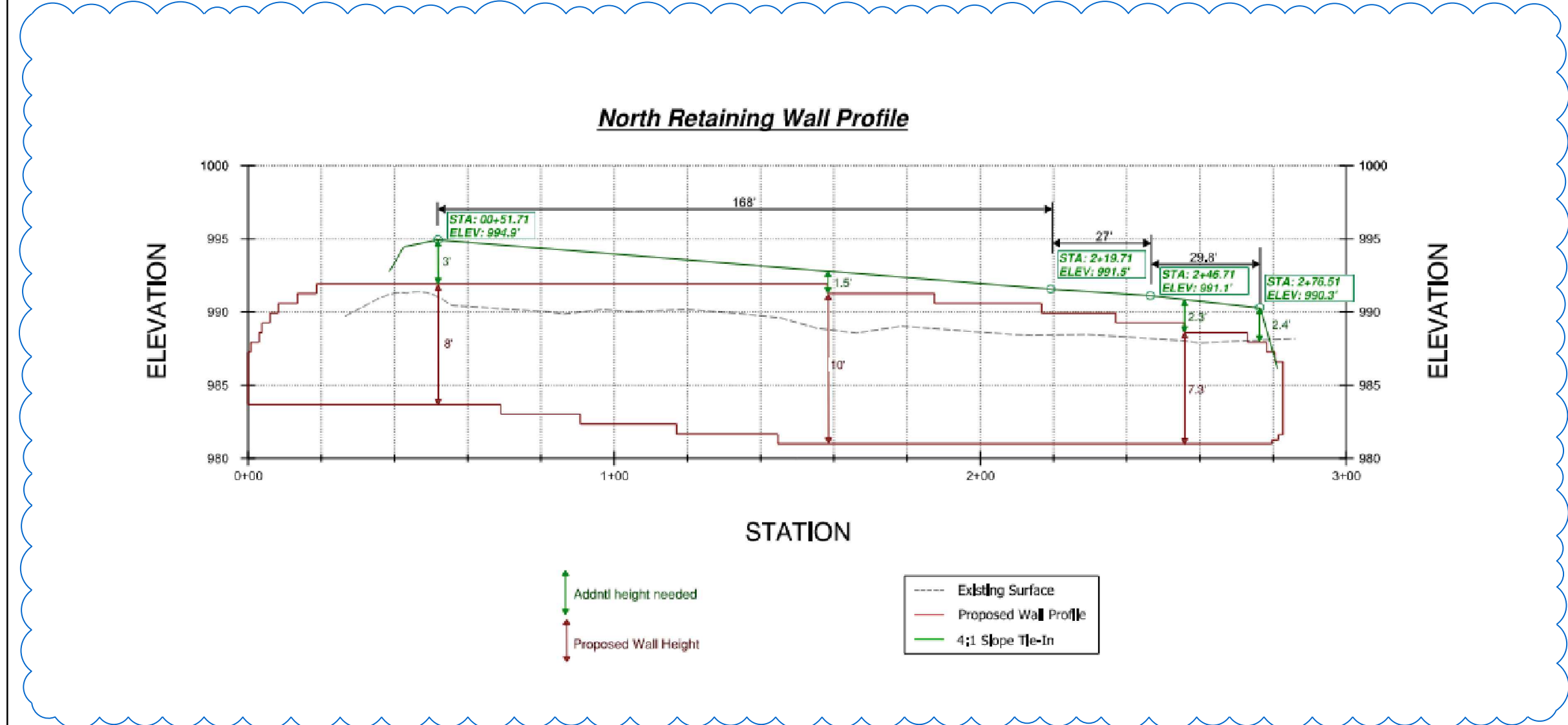
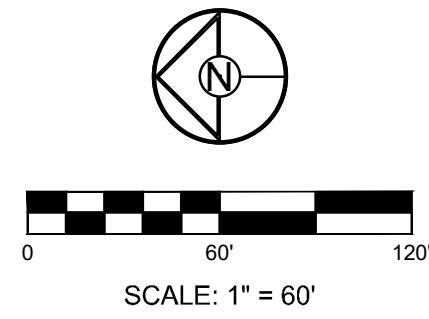
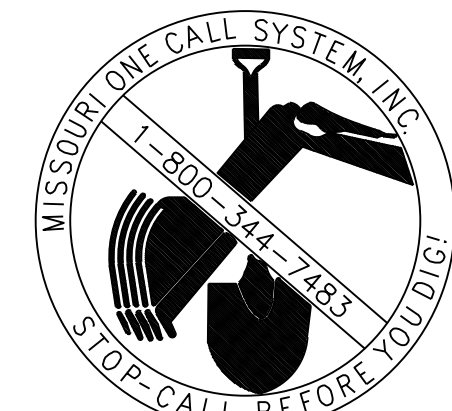
SW. CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.  
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ELEV. 1036.41

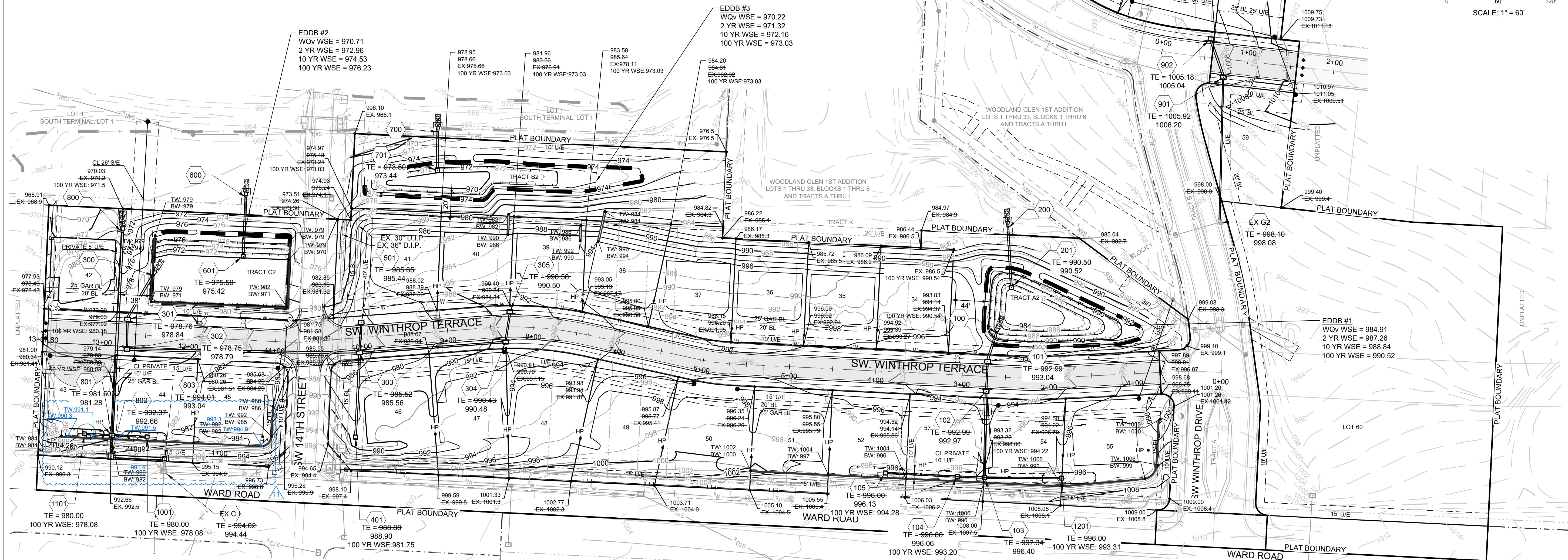
- \*\* --- DENOTES LIMITS OF DISTURBANCE
- --- DENOTES PROPOSED MAJOR CONTOUR
- --- DENOTES PROPOSED MINOR CONTOUR
- --- DENOTES EXISTING MAJOR CONTOUR
- --- DENOTES EXISTING MINOR CONTOUR
- --- DENOTES AS-BUILT MAJOR CONTOUR
- --- DENOTES AS-BUILT MINOR CONTOUR



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



RAISING THE NORTHWEST WALL PER THE CITY'S REQUEST.



REVISION DATE	DESCRIPTION
1/10/2023	AS-BUILT REVISIONS
1/14/2023	AS-BUILT
02/22/2023	CITY WALL MODIFICATION
02/16/2022	CITY EMAILED COMMENTS

DRAWN BY:	CITY COMMENTS
BAL	04/24/2020
CHECKED BY:	01/12/2021
MAB	04/09/2021
DATE PREPARED:	05/12/2021
2-19-2020	06/15/2021
10/08/2021	09/28/2021
18-017	01/20/2022

REVISION DATE	CITY COMMENTS
04/24/2020	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/08/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

REVISION	DESCRIPTION
1	MASTER DRAINAGE PLAN SPOT ELEVATIONS

WOODLAND GLEN 2ND PLAT  
 STREET, STORMWATER, MASTER DRAINAGE,  
 AND EROSION CONTROL PLANS  
 WARD ROAD & WINTHROP DRIVE  
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 #E200203690F #LAC201005237 #LS200208959F

**PROJECT BENCHMARK:**

SW CORNER NW ¼ SEC. 18-47N-31W, JACKSON COUNTY, MO.  
3" DIAMETER ALUMINUM DISK IN MONUMENT BOX  
M.D.N.R. DOC. NO. 600-65374

ELEV. 1036.41

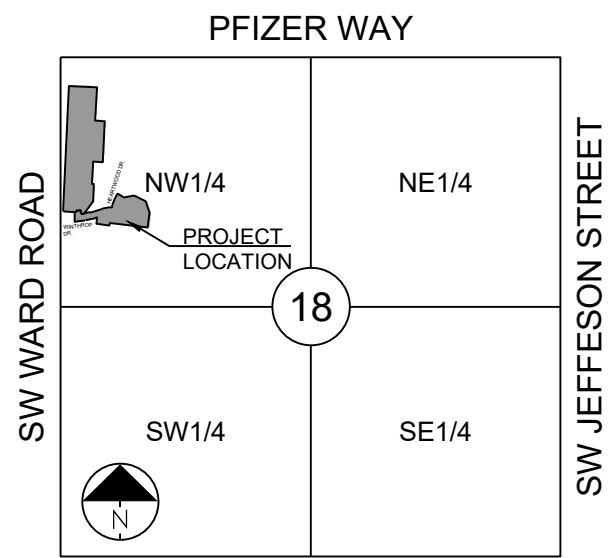


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Certified by: RPM  
Title: Design Engineer  
Firm: Schlagel and Associates, P.A.



SECTION 18-47N-31W

LOCATION MAP  
SCALE 1" = 2000'

- 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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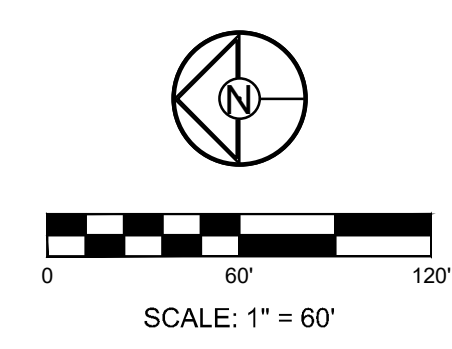
WOODLAND GLEN 2ND PLAT  
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10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

MASTER DRAINAGE PLAN  
DRAINAGE AREAS

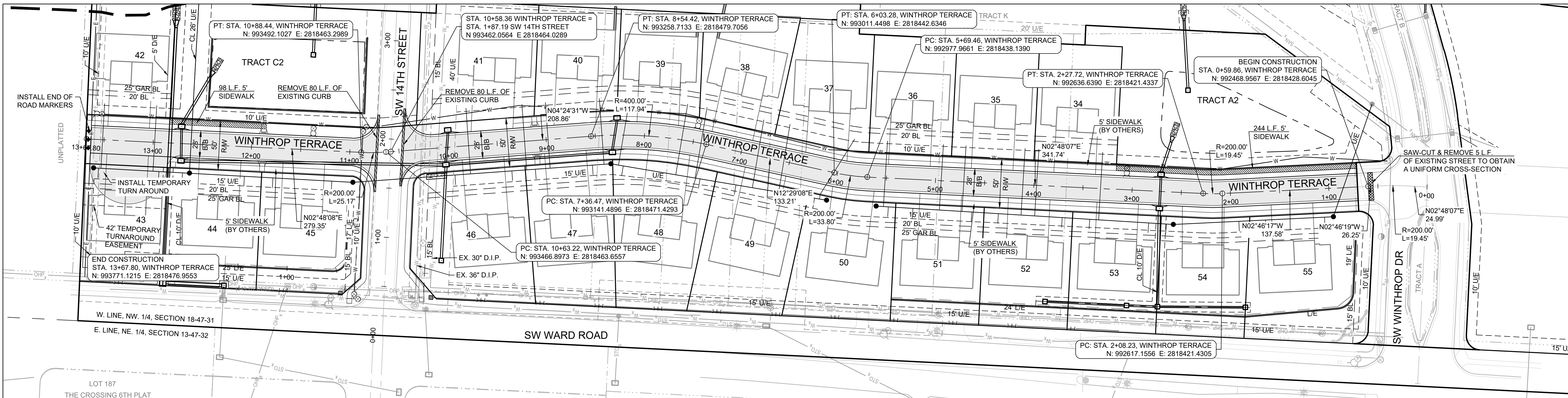
SHEET

10



I:\PROJECTS\2018\18-0773.0 Design\3.0 DWG Plans\6.0 SS\18-07 SS GL AND GP.dwg, MDP DRAINAGE MAP (2), 11/02/2023 3:24:45 PM, 1:1





**RECORD DRAWING**

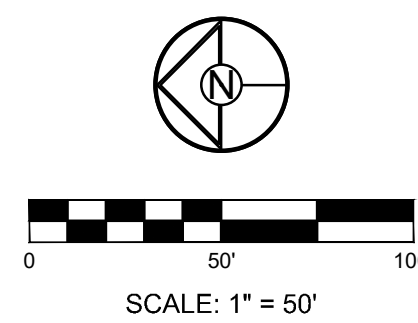
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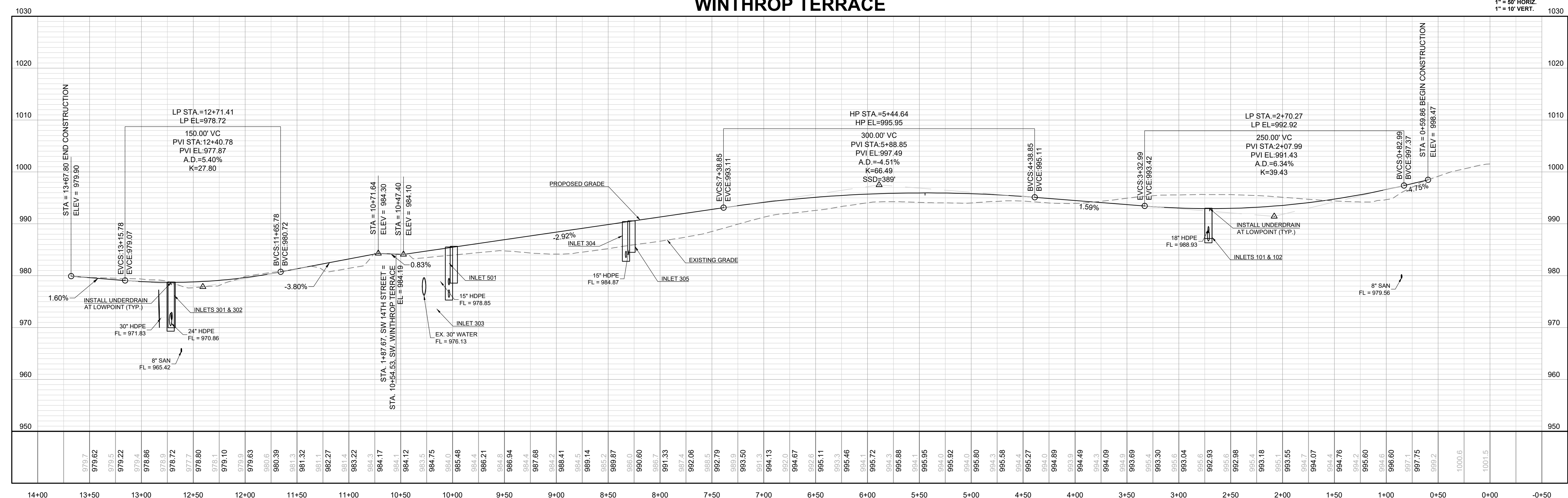
Date: 1/10/2023  
 Certified by: RPM  
 Title: Design Engineer  
 Firm: Schlagel and Associates, P.A.

**PROJECT BENCHMARK:**

SW CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.  
 3" DIAMETER ALUMINUM DISK IN MONUMENT BOX  
 M.D.N.R. DOC. NO. 600-65374  
 ELEV. 1036.41



**WINTHROP TERRACE**



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

REVISION DATE	DESCRIPTION
11/02/2023	AS-BUILT REVISIONS
11/14/2022	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
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09/29/2021	CITY COMMENTS
2-19-2020	CITY COMMENTS
09/29/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

WINTHROP  
 TERRACE PLAN &  
 PROFILE

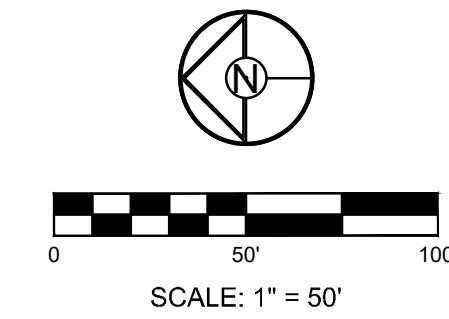
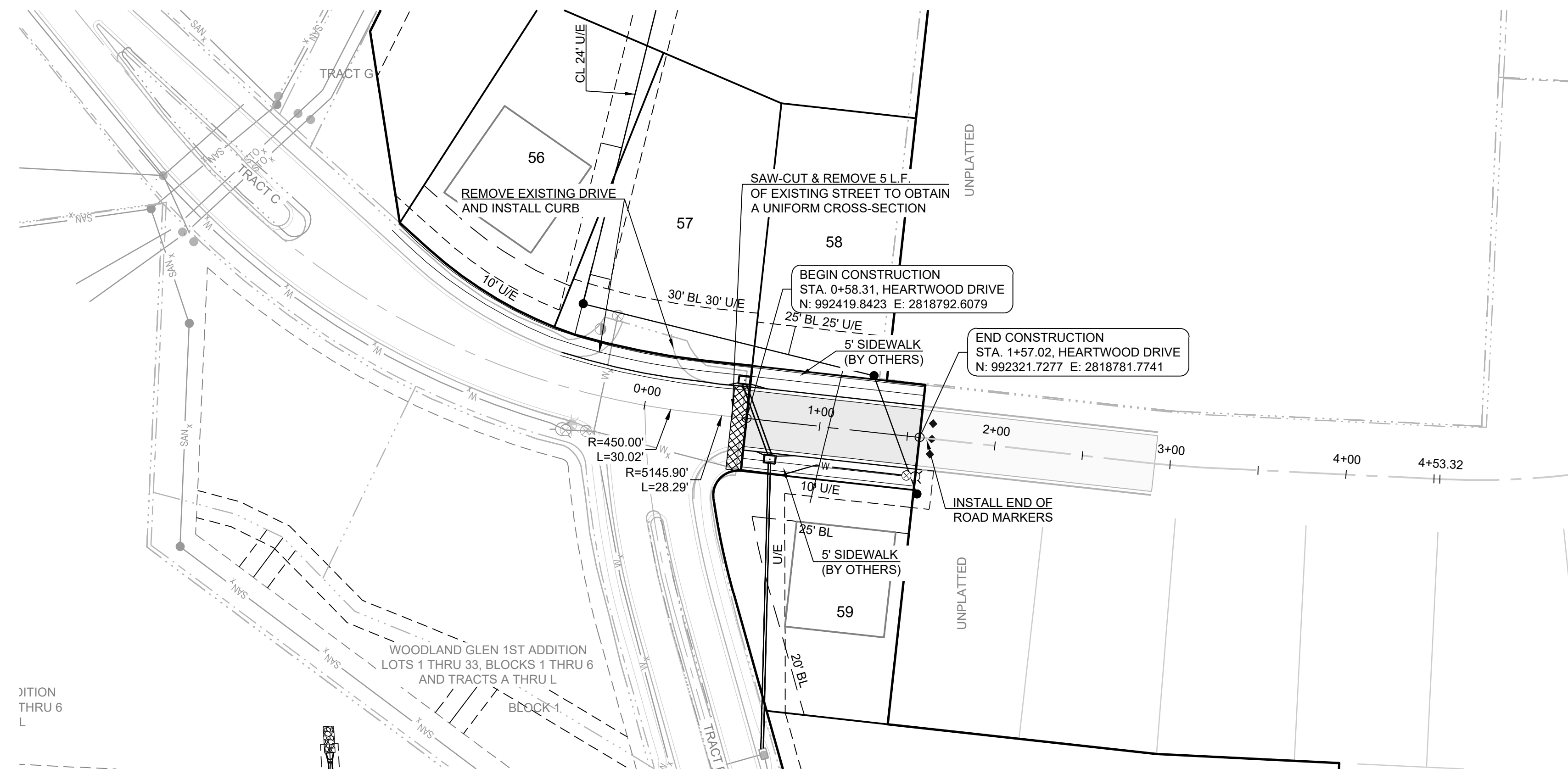
SHEET

I:\PROJECTS\2018\18-0713.0 Design\3.0 DWG Plans\6.0 SS\18-017 STREET PP.dwg, WINTHROP TERR PP. 11/02/2023 3:28:37 PM, 1:1

**PROJECT BENCHMARK:**

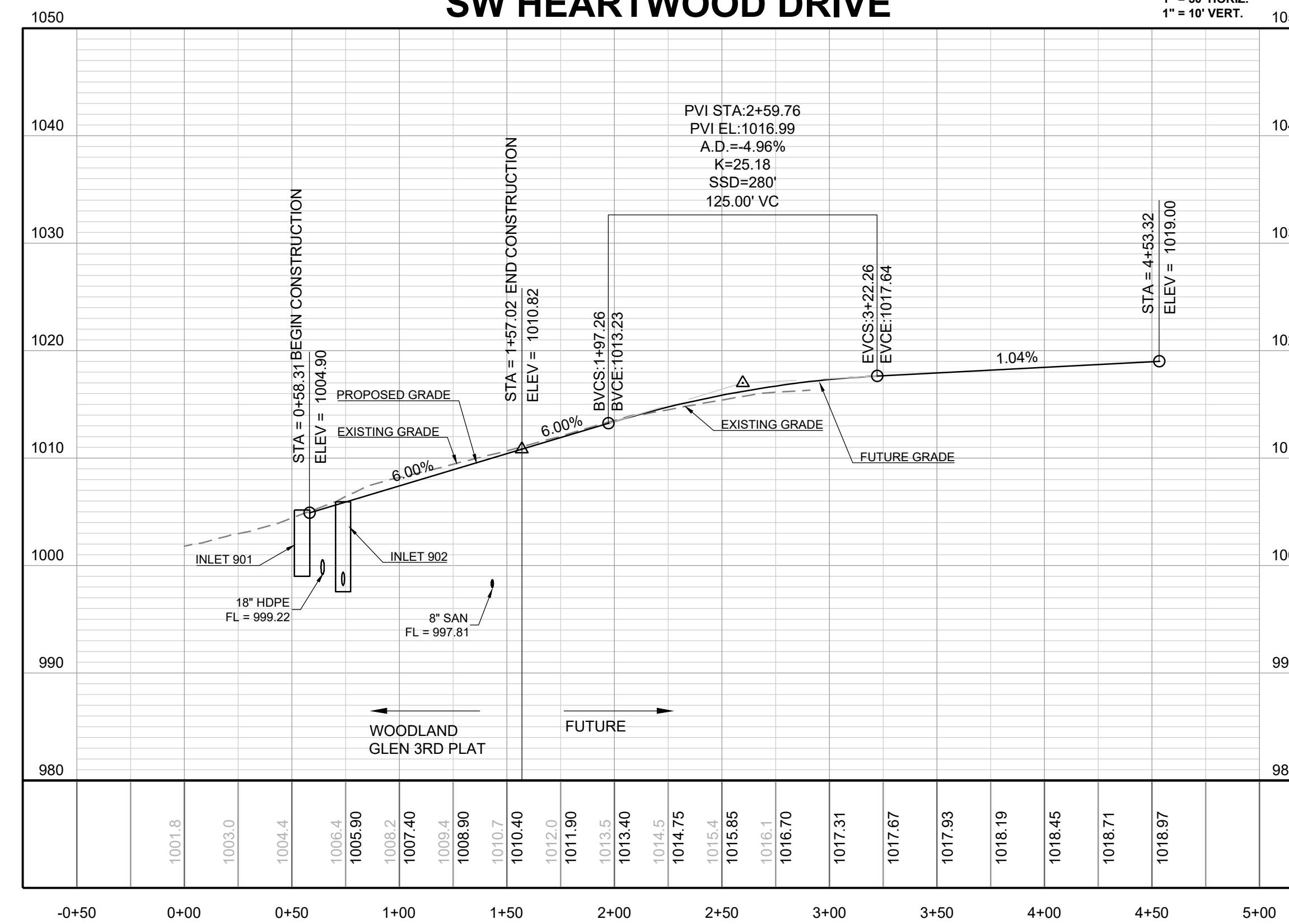
SW CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.  
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 M.D.N.R. DOC. NO. 600-65374

ELEV. 1036.41



**SW HEARTWOOD DRIVE**

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



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

HEARTWOOD  
 DRIVE PLAN &  
 PROFILE

SHEET

13

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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 Certificate of Authority  
 #E2002003600F #LAC201005237 #S200200869F

PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

WOODLAND GLEN 2ND PLAT  
 STREET, STORMWATER, MASTER DRAINAGE,  
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INTERSECTION  
 DETAIL

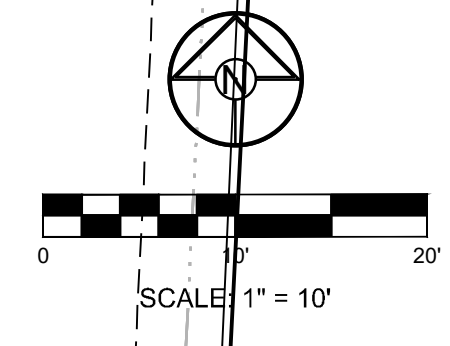
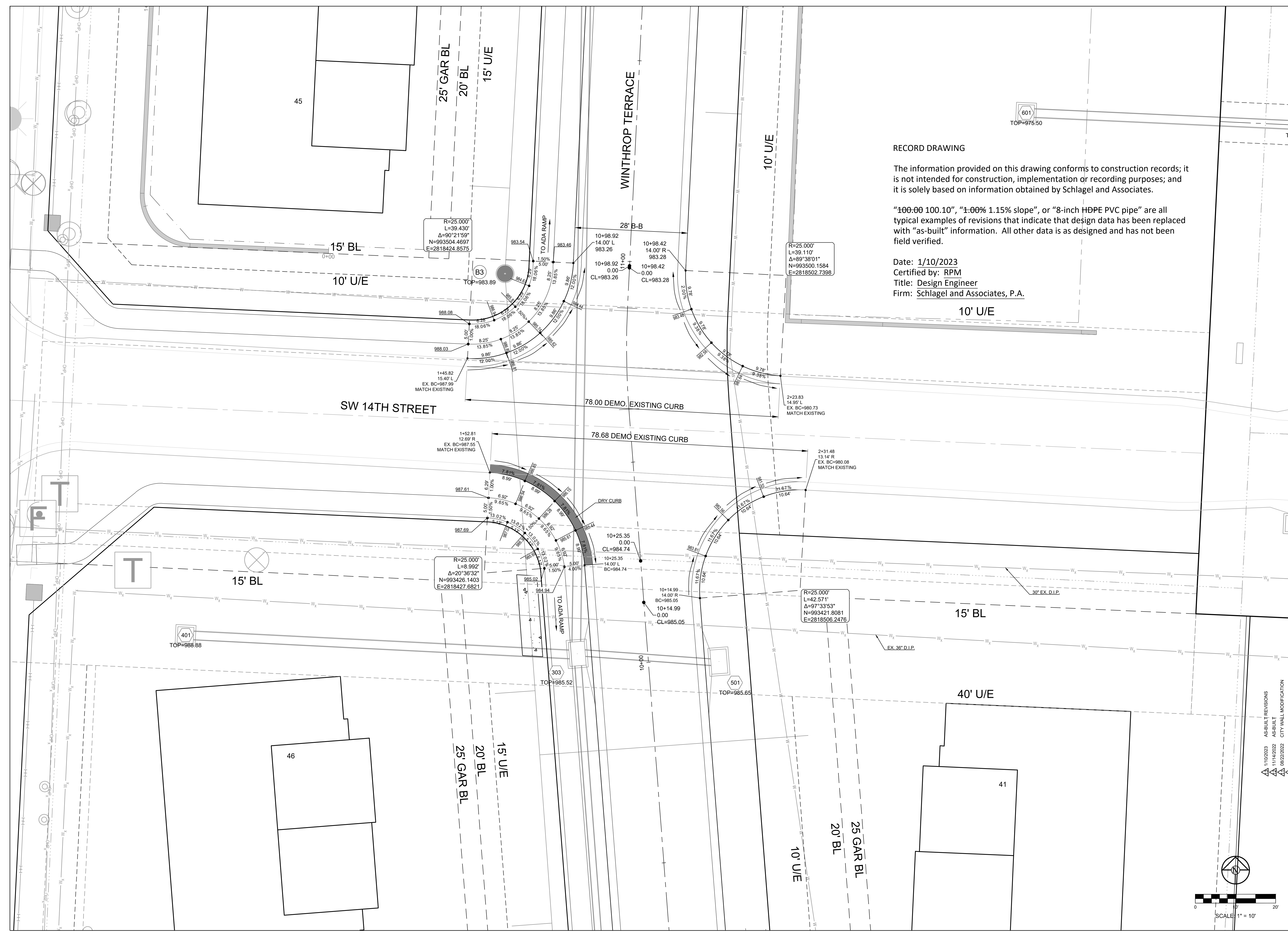
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RECORD DRAWING

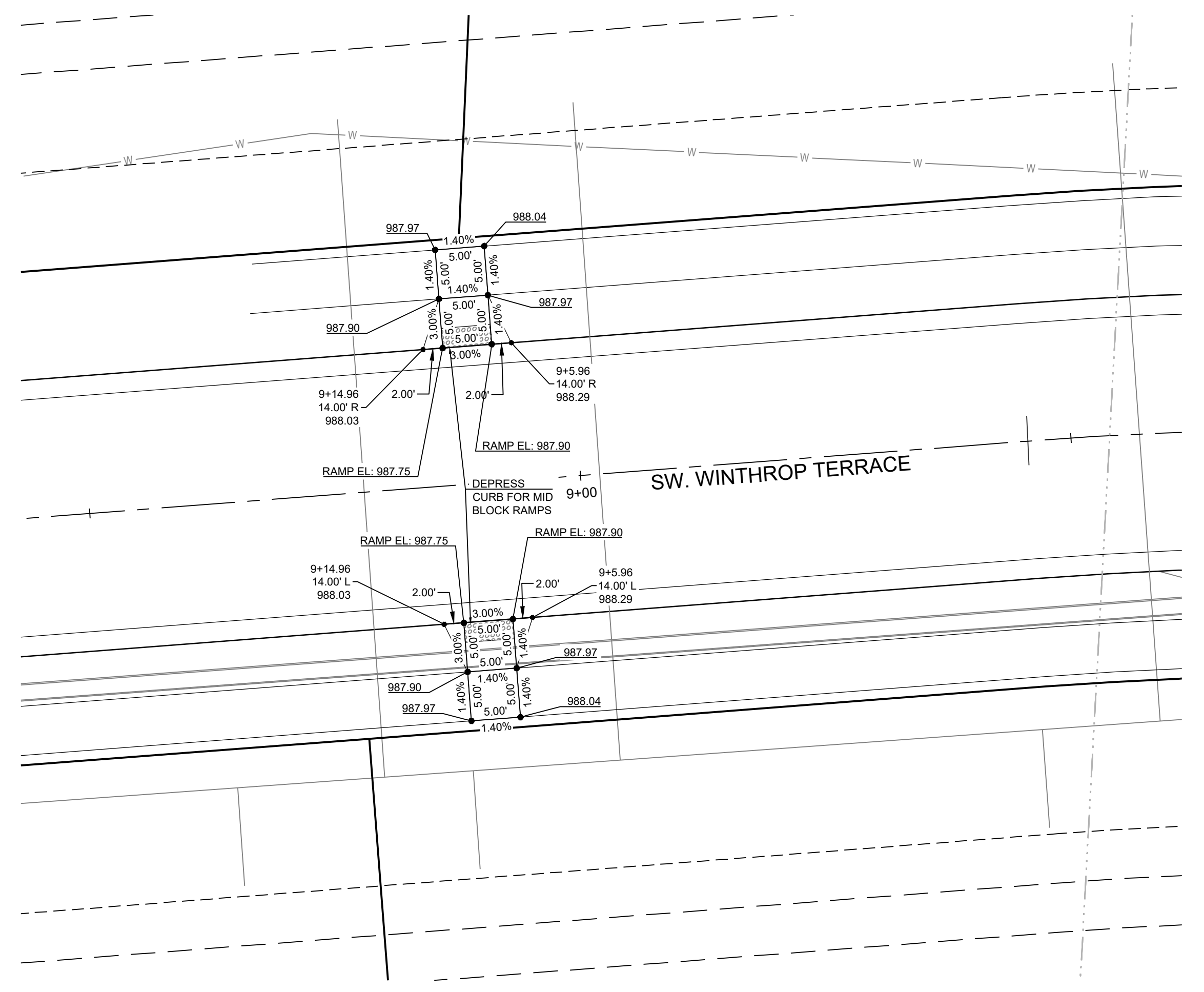
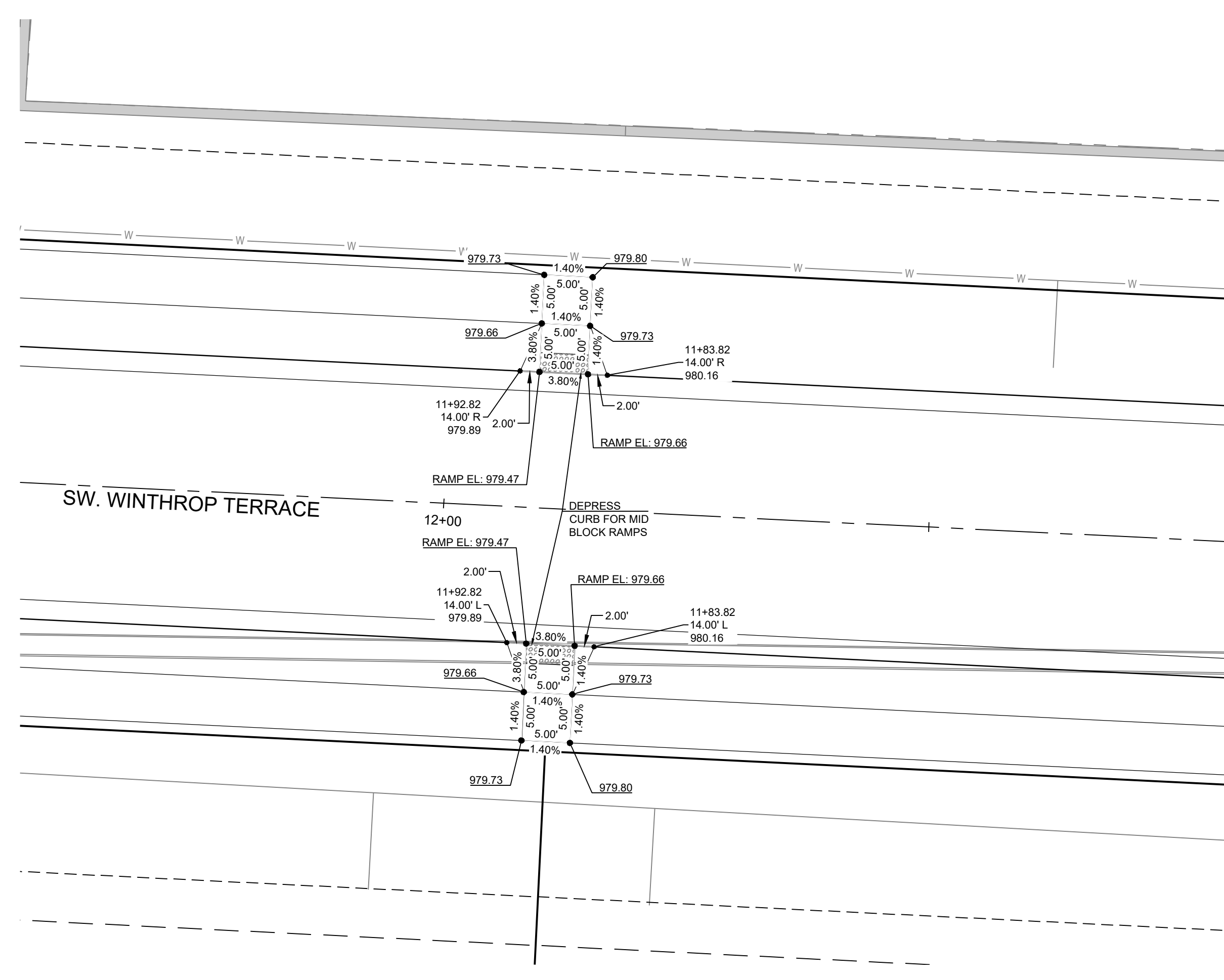
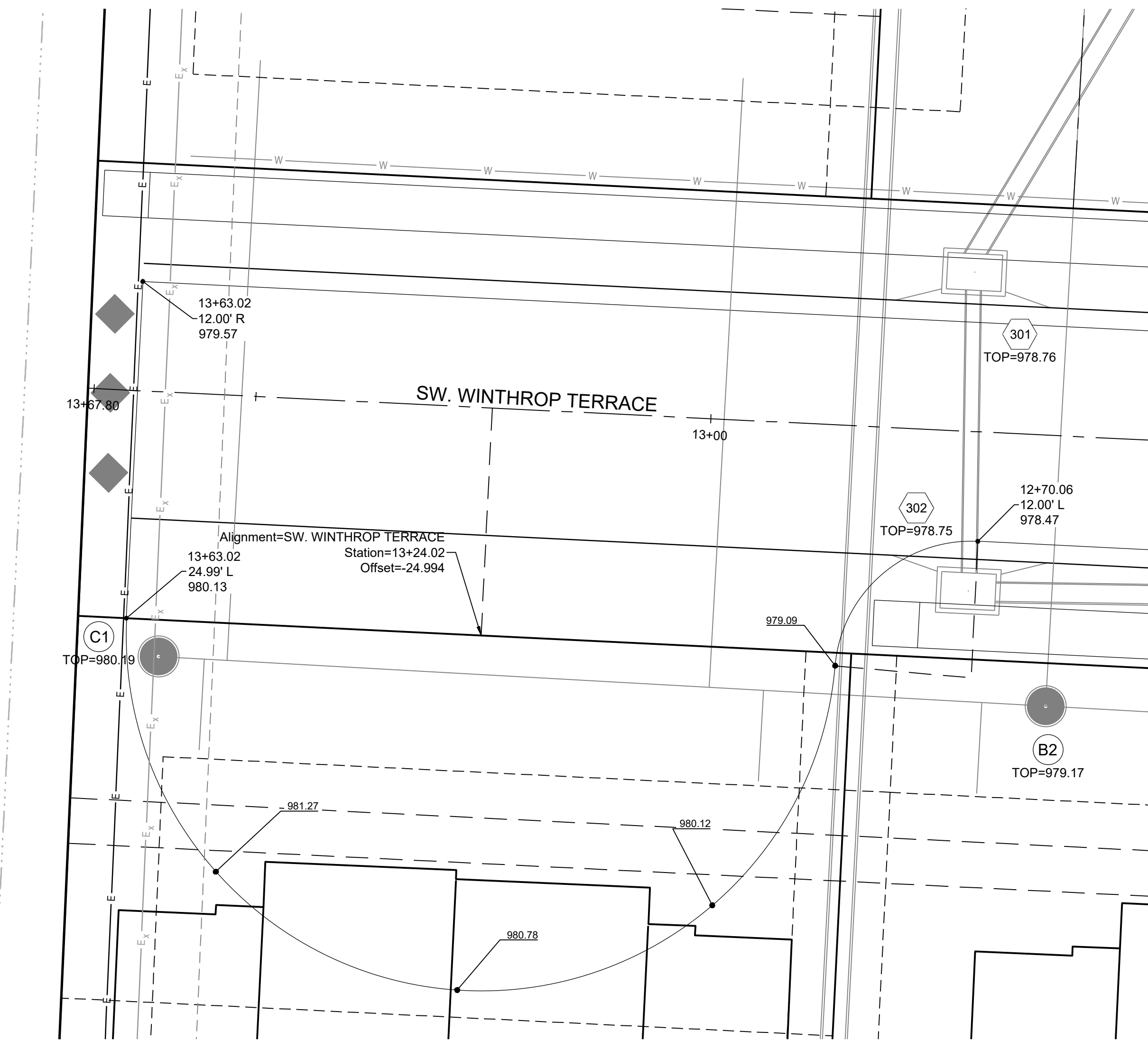
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I:\PROJECTS\2018\18-0773.0 Design\3.0 DWG Plans\6.0 SS\18-017 SS INT DTLS.dwg, GenericPlanSet-IntersectionDetail, 1/10/2023 3:32:59 PM, 1:1

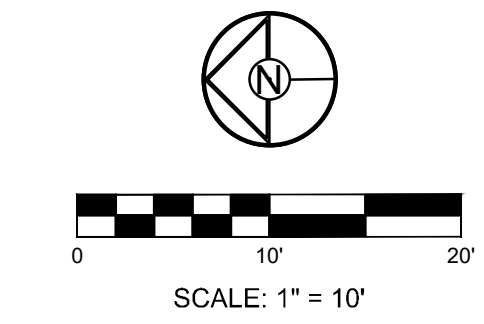


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**WOODLAND GLEN 2ND PLAT  
 STREET, STORMWATER, MASTER DRAINAGE,  
 AND EROSION CONTROL PLANS  
 WARD ROAD & WINTHROP DRIVE  
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09/28/2021	CITY COMMENTS
10/06/2021	SCHLAGEL UPDATE
01/20/2022	WATER LINE CONFLICT

**INTERSECTION  
 DETAILS**

SHEET  
**15**

**PROJECT BENCHMARK:**

SW CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.  
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 ELEV. 1036.41

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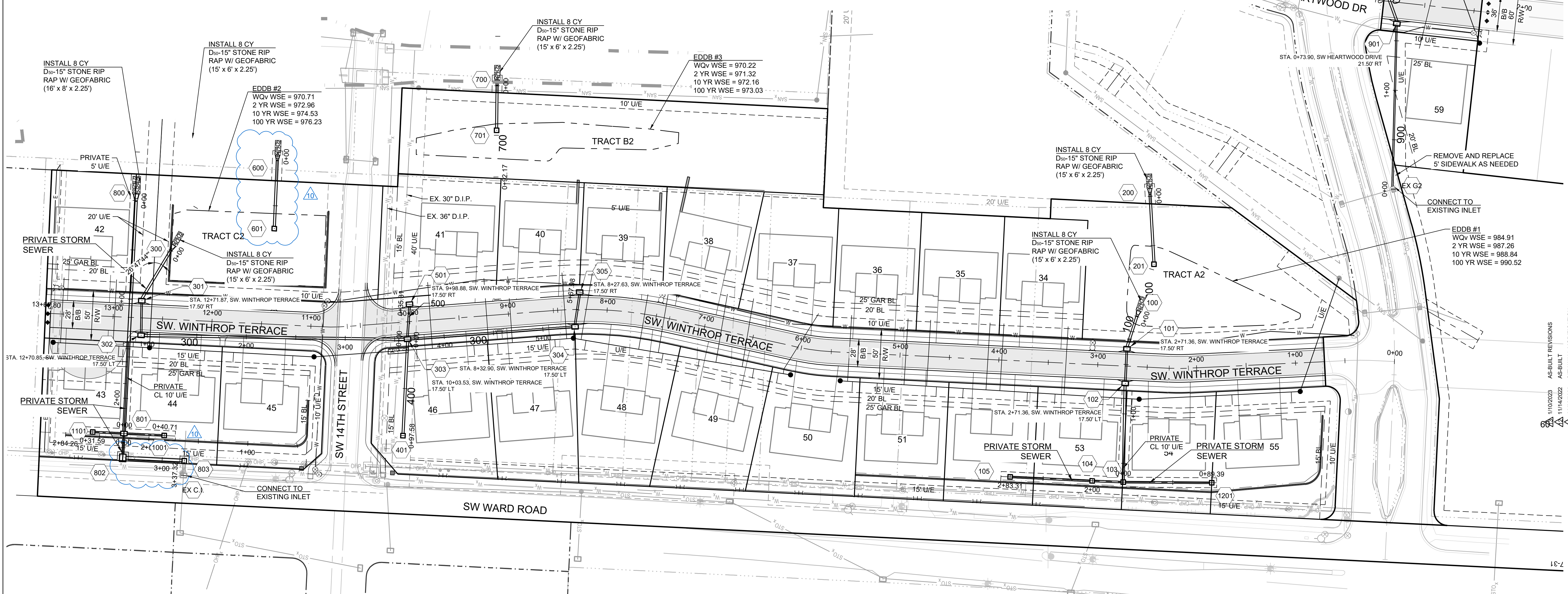
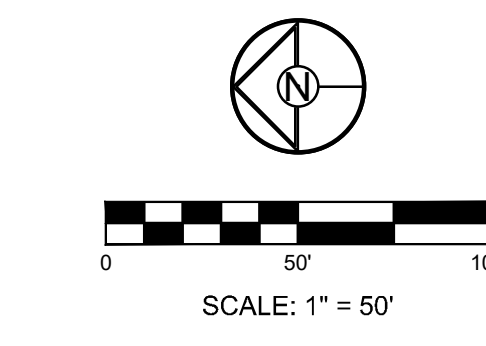
Date: 1/10/2023  
 Certified by: RPM  
 Title: Design Engineer  
 Firm: Schlager and Associates, P.A.

Structure	Notes
100	STA 0+00.00, 100 INSTALL 24" END SECTION N 992669.2728 E 2818473.6957
101	STA 0+34.17, 100 INSTALL 6 X 4 CURB INLET N 992679.3667 E 2818441.0459
102	STA 0+69.17, 100 INSTALL 6 X 4 CURB INLET N 992681.0777 E 2818406.0877
103	STA 1+68.90, 100 INSTALL 4 X 4 JUNCTION BOX F.F.B. 358°53'41" N 992683.0605 E 2818306.3812
104	STA 2+00.35, 100 INSTALL 4 X 4 AREA INLET (OPENINGS N.E.S.W) F.F.B. 0°00'00" N 992714.4882 E 2818307.6069
105	STA 2+83.31, 100 INSTALL 4 X 4 AREA INLET (OPENINGS N.E.S.W) F.F.B. 86°30'58" N 992797.3500 E 2818311.6624
200	STA -0+00.04, 200 INSTALL 15" END SECTION N 992655.8760 E 2818595.2227
201	STA 0+68.76, 200 INSTALL OUTLET STRUCTURE F.F.B. 180°00'00" N 992652.0986 E 2818526.5222

Structure	Notes
300	STA -0+00.00, 300 INSTALL 24" END SECTION N 993645.0883 E 2818540.6336
301	STA 0+58.76, 300 INSTALL 6 X 4 CURB INLET N 993674.4582 E 2818489.7451
302	STA 0+93.77, 300 INSTALL 6 X 4 CURB INLET N 993675.1476 E 2818454.7370
303	STA 3+62.91, 300 INSTALL 6 X 4 CURB INLET N 993406.0386 E 2818450.7956
304	STA 5+32.58, 300 INSTALL 6 X 4 CURB INLET N 993236.8248 E 2818463.2865
305	STA 5+67.98, 300 INSTALL 6 X 4 CURB INLET N 993232.1336 E 2818498.3682
401	STA 0+97.58, 400 INSTALL 4 X 4 AREA INLET (OPENINGS S.W) F.F.B. 357°17'49" N 993410.6806 E 2818353.3299
501	STA 0+35.31, 500 INSTALL 6 X 4 CURB INLET N 993404.0946 E 2818486.0494

Structure	Notes
600	STA 0+04.52, 600 INSTALL 18" END SECTION N 993537.5200 E 2818630.9786
601	STA 0+73.07, 600 INSTALL OUTLET STRUCTURE F.F.B. 357°23'29" N 993540.6400 E 2818562.4994
700	STA 0+00.00, 700 INSTALL 15" END SECTION N 993315.5193 E 2818706.7724
701	STA 0+44.96, 700 INSTALL OUTLET STRUCTURE F.F.B. 0°00'00" N 993316.1131 E 2818661.8180
800	STA 0+00.85, 800 INSTALL 36" END SECTION N 993680.3317 E 2818589.9535
801	STA 2+35.65, 800 INSTALL 6 X 4 JUNCTION BOX F.F.B. 87°17'49" N 993692.4917 E 2818355.4726
802	STA 2+60.17, 800 INSTALL 7 X 6 JUNCTION BOX N 993693.6905 E 2818330.9777
803	STA 3+22.40, 800 INSTALL 4 X 4 JUNCTION BOX N 993631.5331 E 2818328.0430

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



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

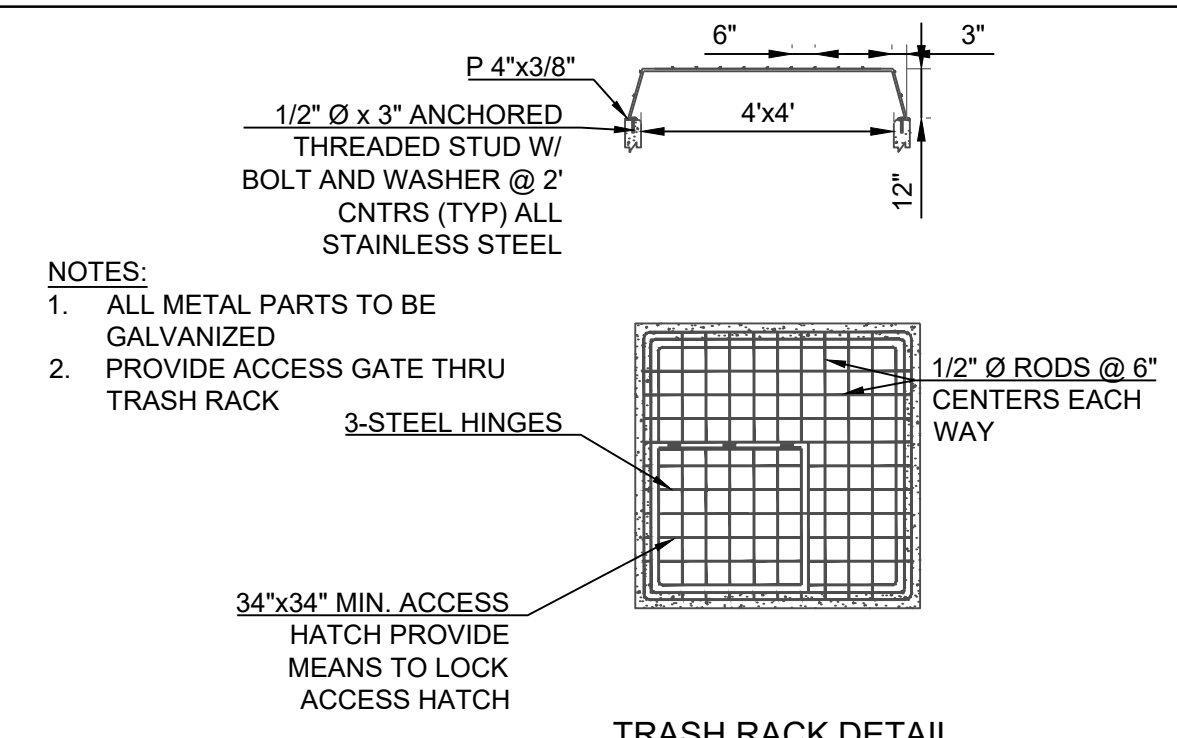
REVISION DATE	DESCRIPTION
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06/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

STORM PLAN

SHEET  
**16**

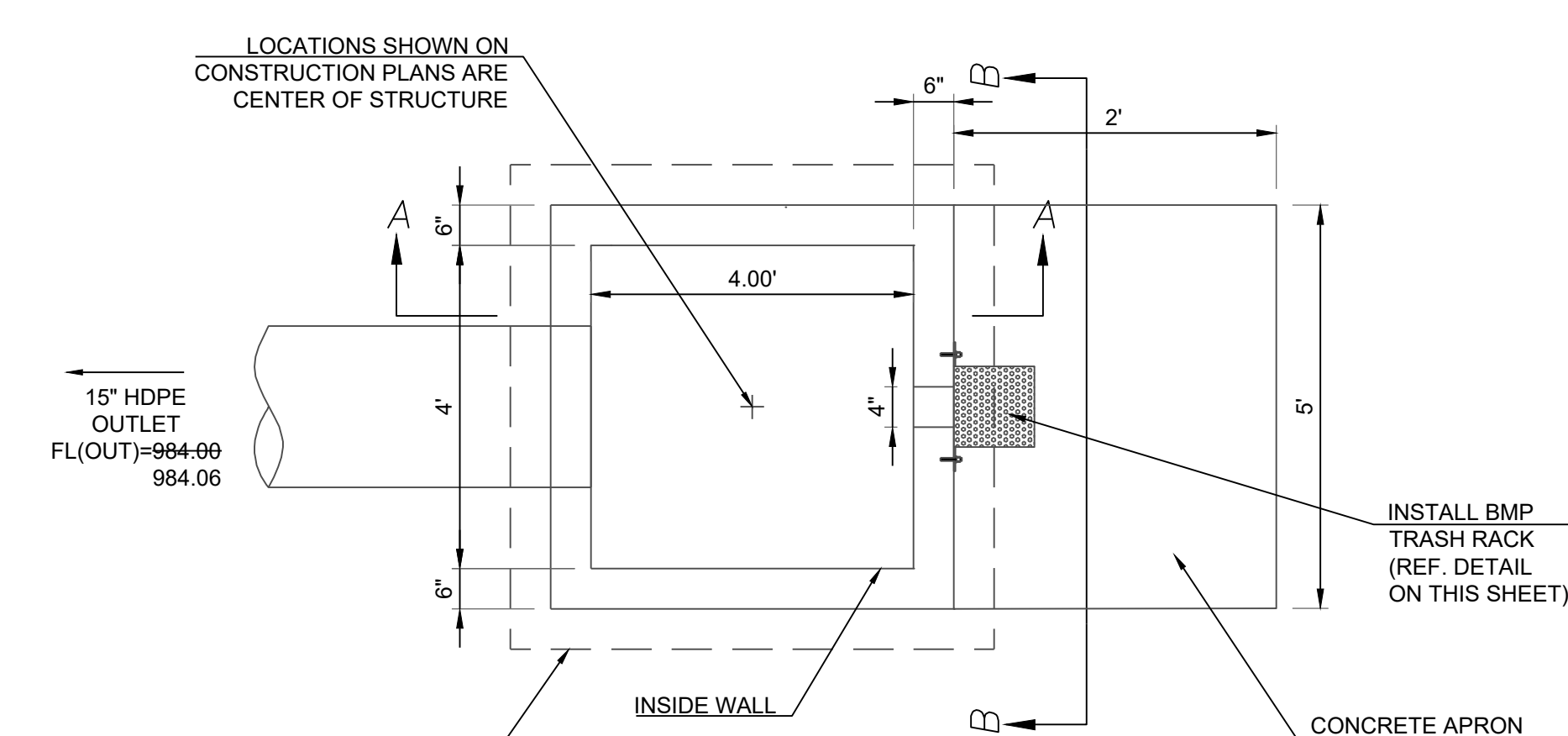
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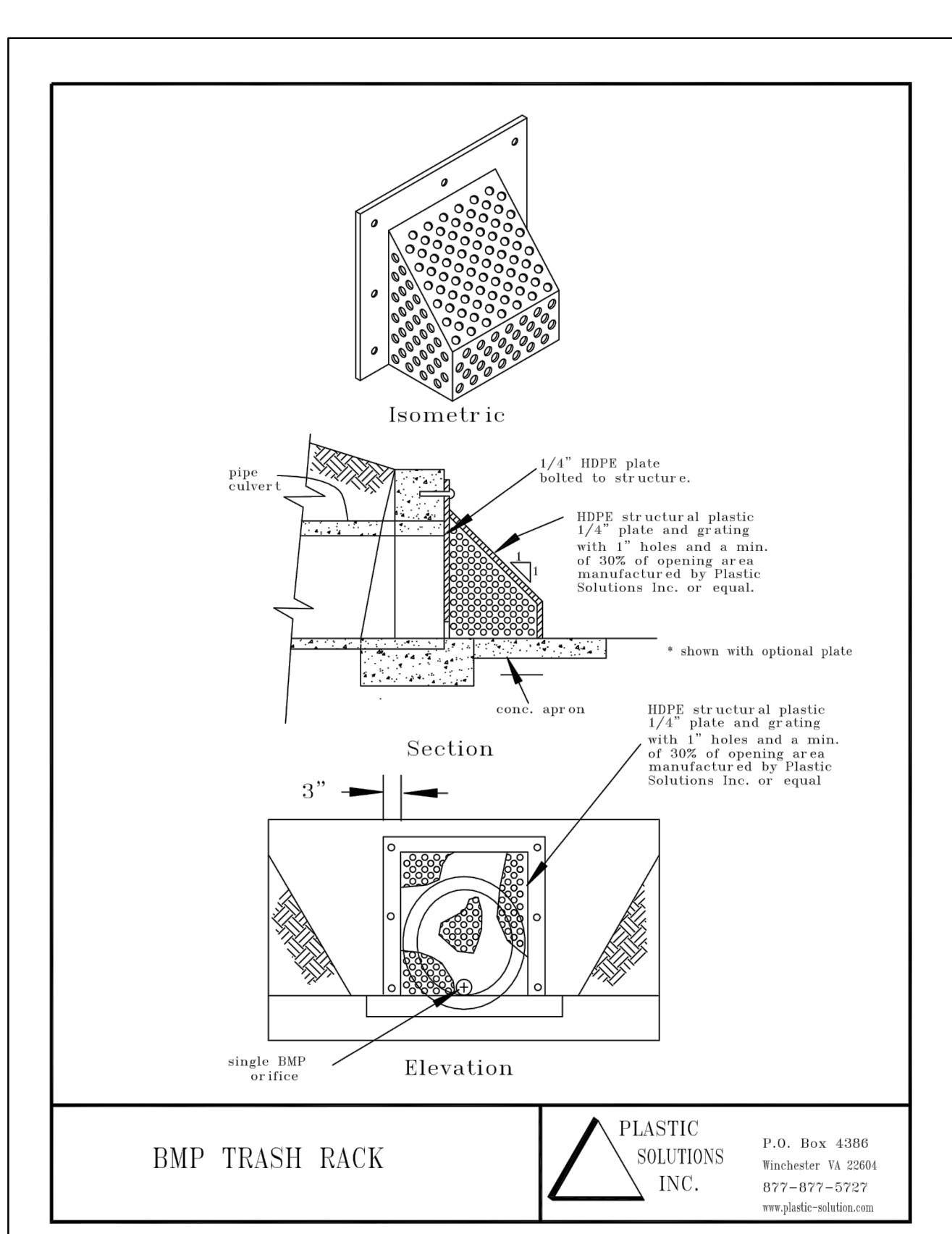


- NOTES:
- ALL METAL PARTS TO BE GALVANIZED
  - PROVIDE ACCESS GATE THRU TRASH RACK

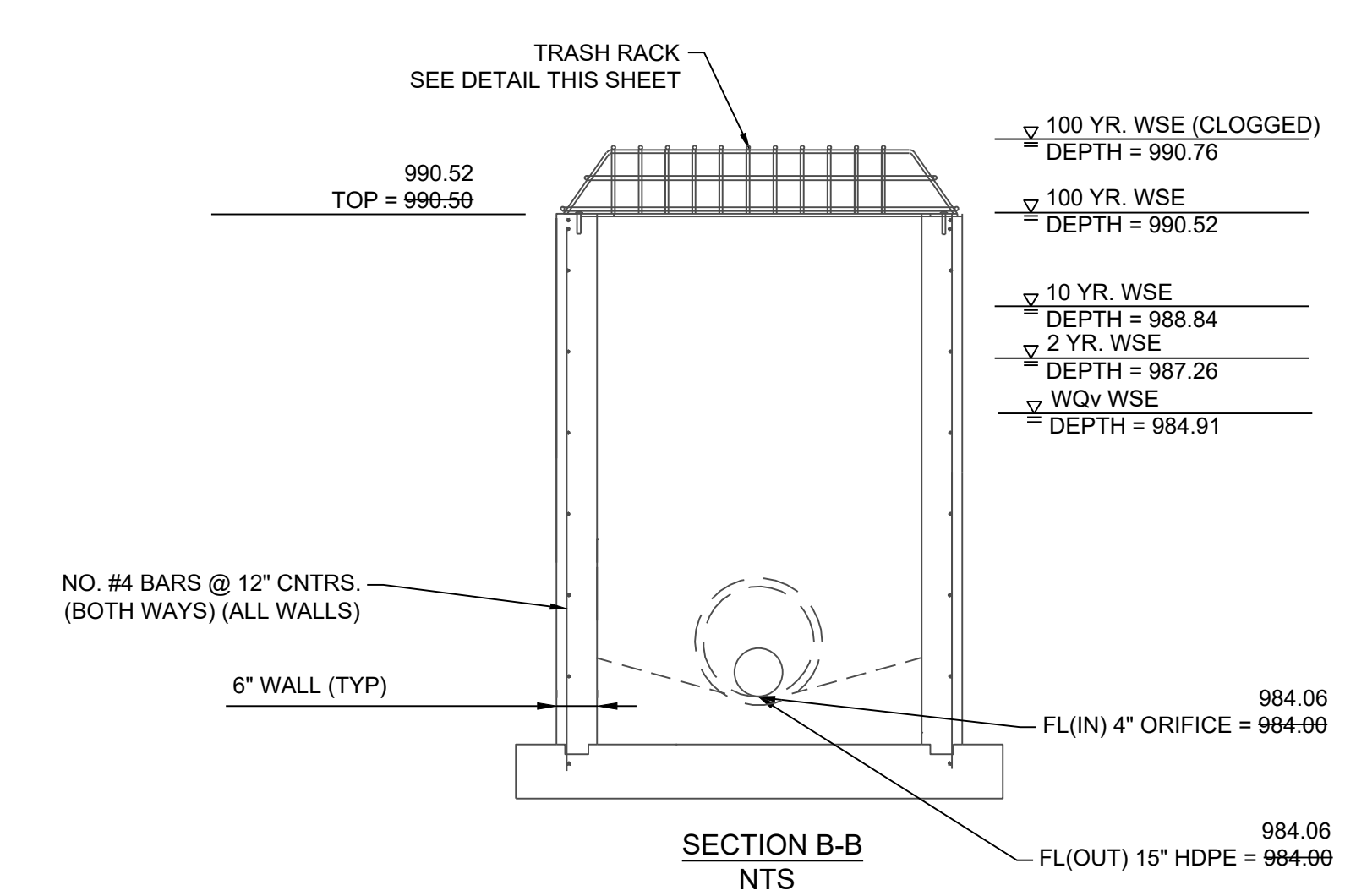
TRASH RACK DETAIL



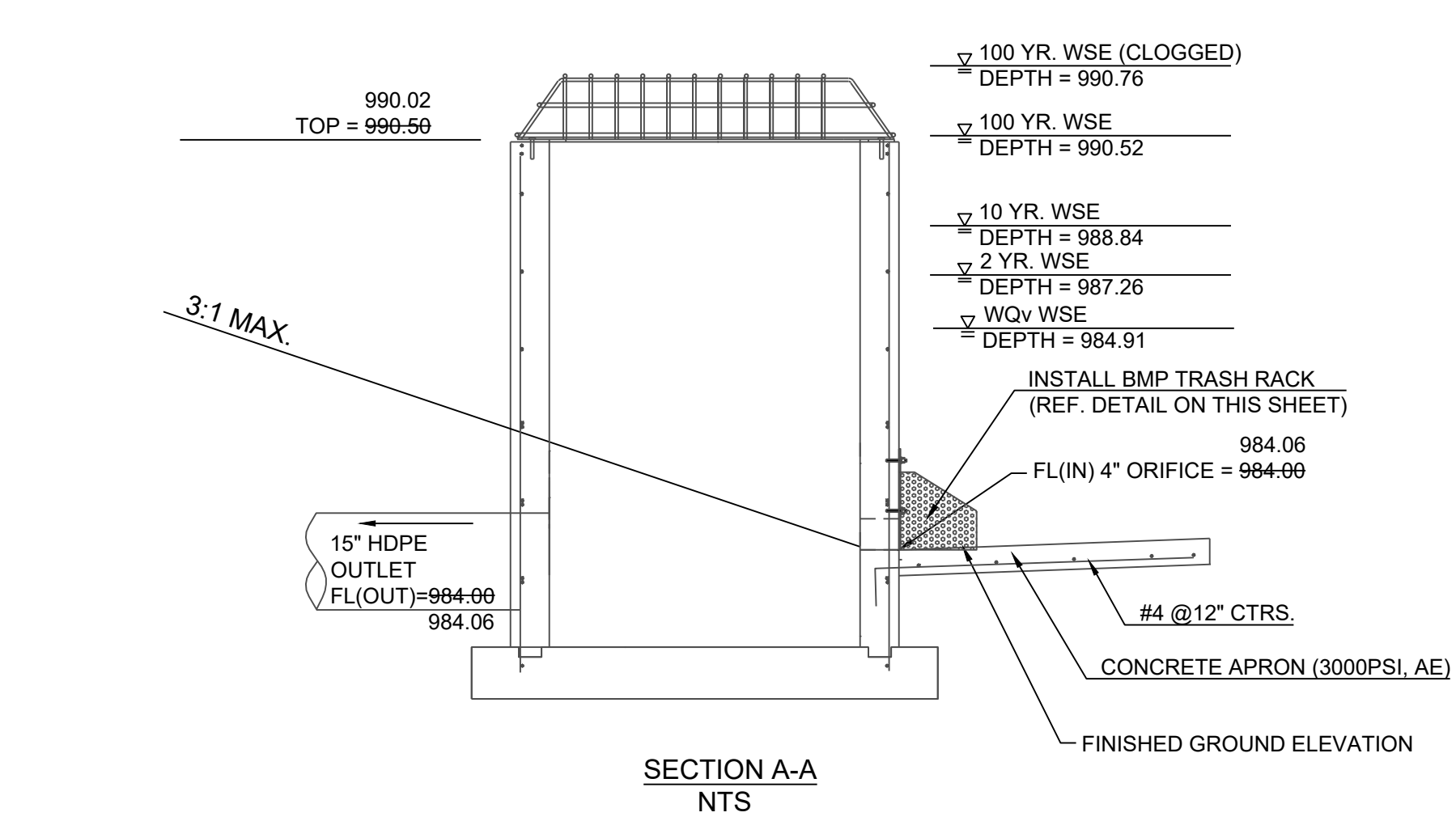
INSTALL BMP TRASH RACK (REF. DETAIL ON THIS SHEET)



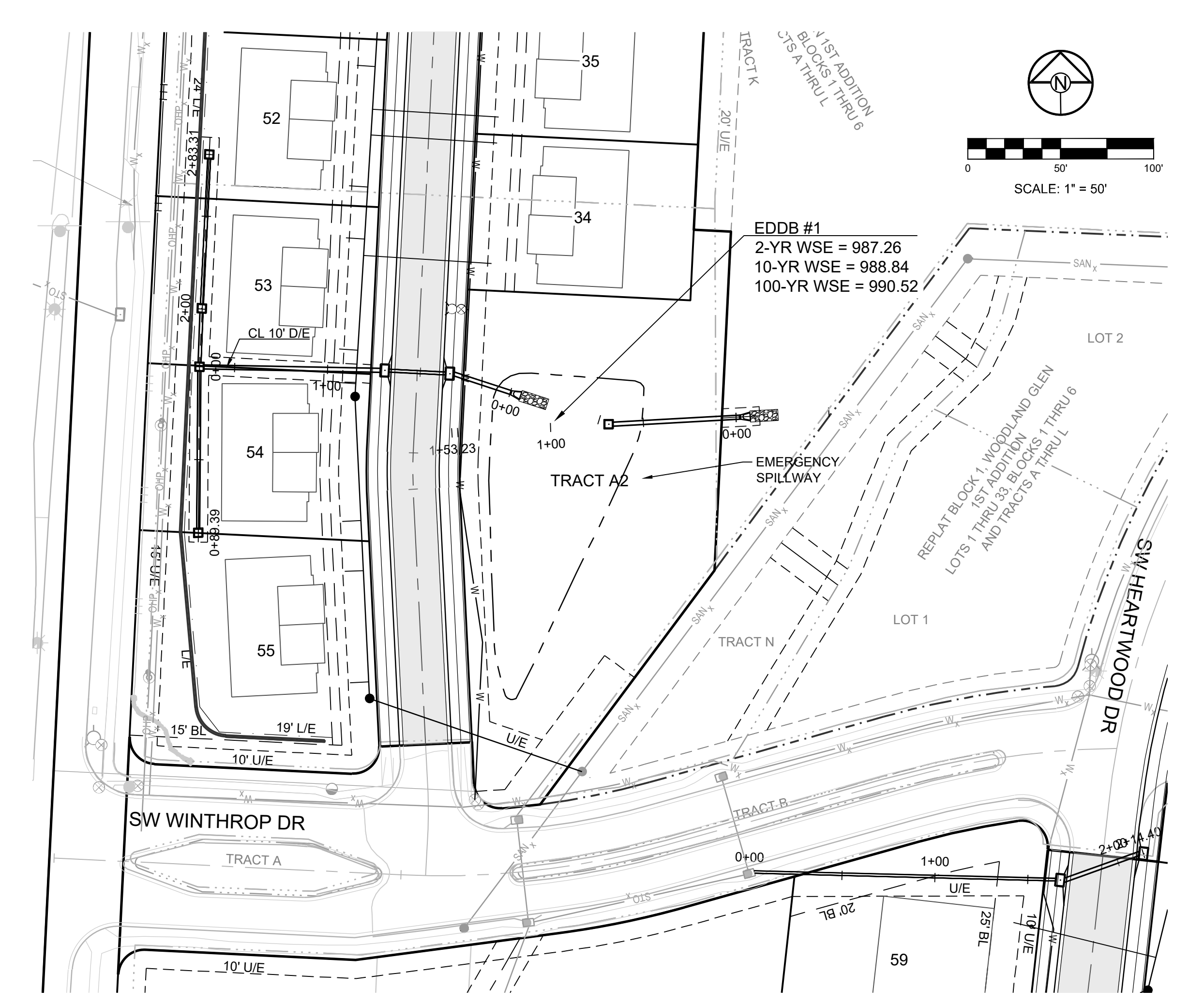
BMP TRASH RACK  
 PLASTIC SOLUTIONS INC.  
 P.O. Box 4386  
 Winchester VA 22094  
 877-877-5727  
 www.plastic-solutions.com



SECTION B-B NTS

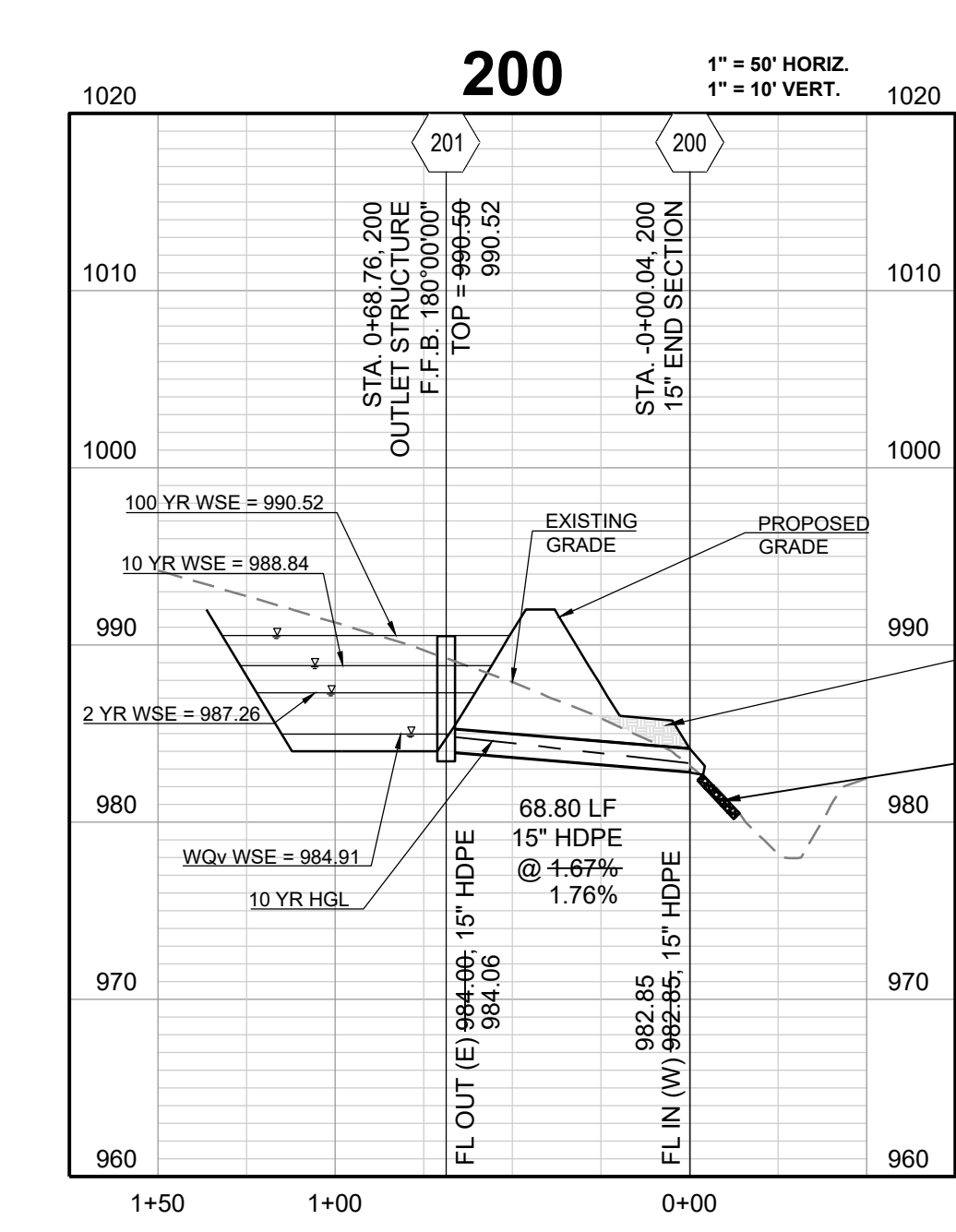


SECTION A-A NTS



EXTENDED DRY DETENTION BASIN #1 VOLUME

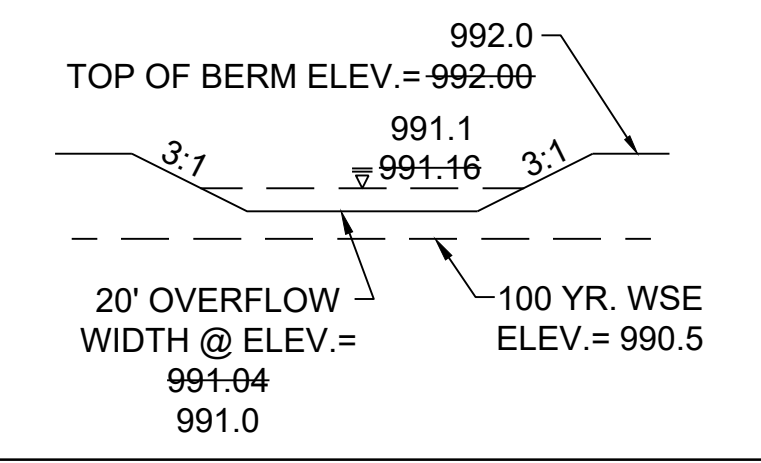
REQUIRED = 1,246 C.Y.  
 PROPOSED = 1,787 C.Y.  
 AS-BUILT = 1,668 C.Y.



DETENTION STORAGE EDDB #1:  
 100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = 990.52 (SEE FINAL STORMWATER MGMT. PLAN)

AUXILIARY SPILLWAY SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 991.02

AUXILIARY SPILLWAY DESIGN:  
 $Q(100)=2.71$  CFS,  $Q=CLH^{3/2}$ ,  $C=3.33$ ,  $L=20$  FT.,  $2.71$  CFS =  $3.33 * 20^{3/2}$ ,  $H=(3/2)$ ,  $H=0.12$  FT.



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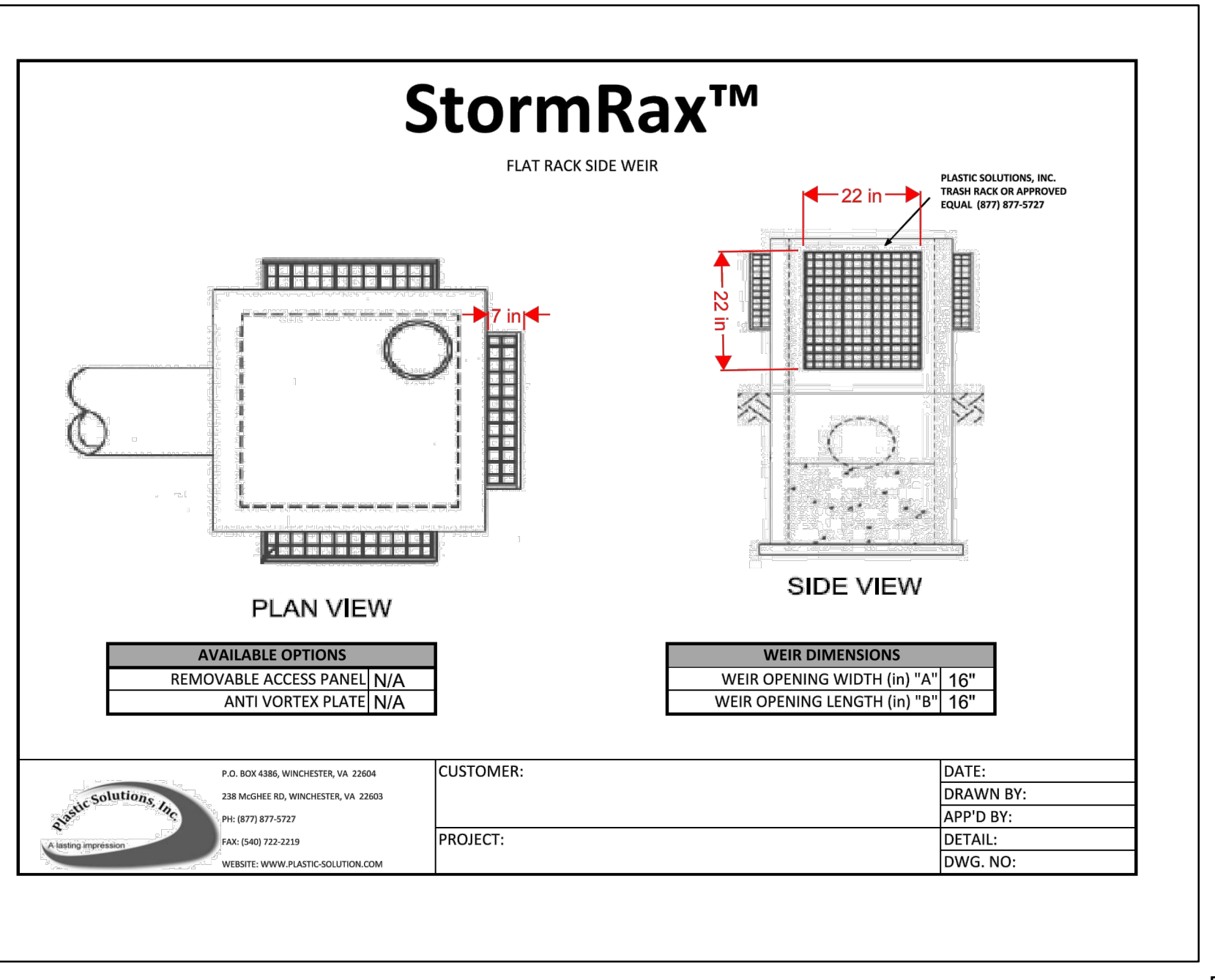
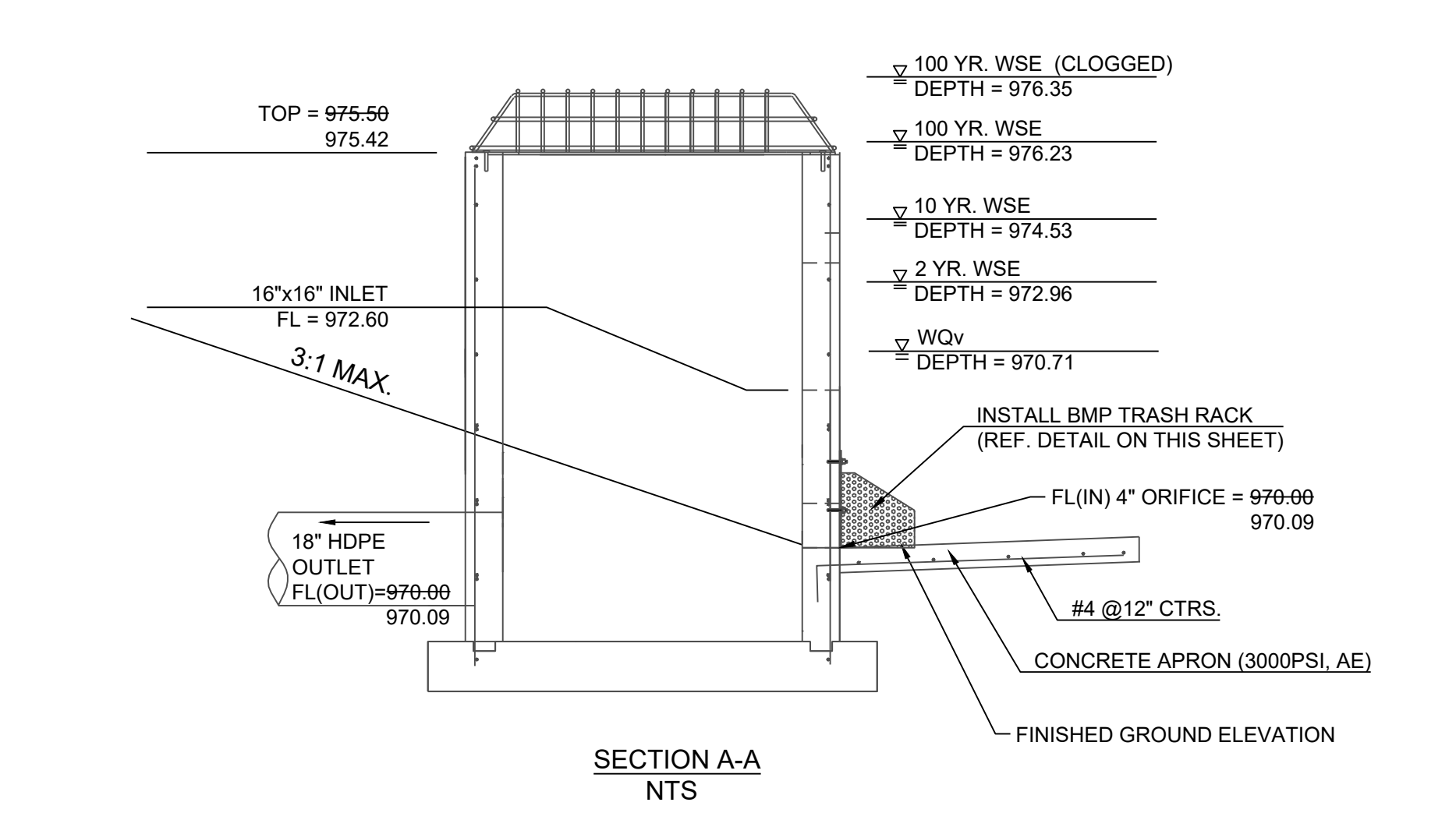
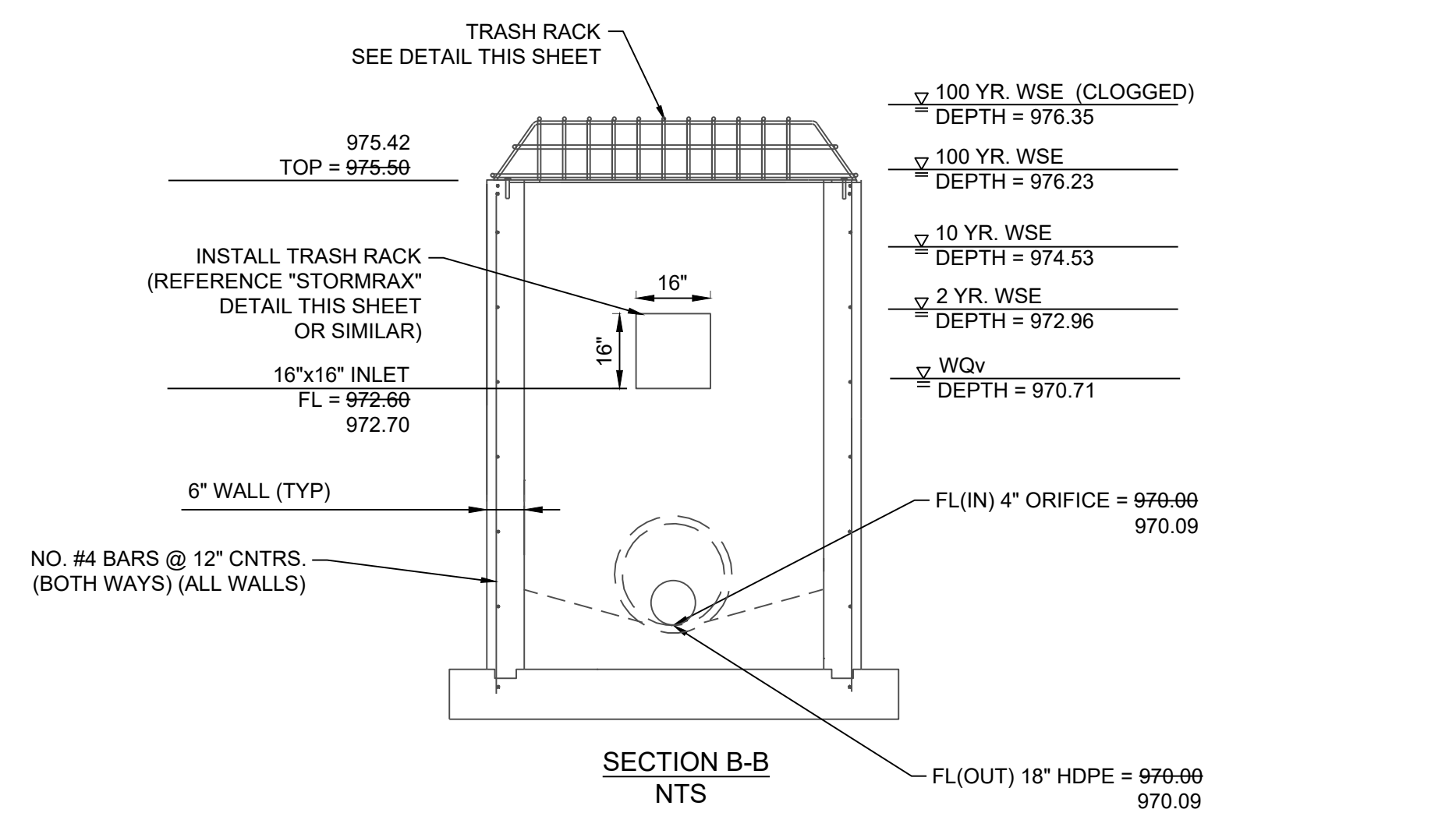
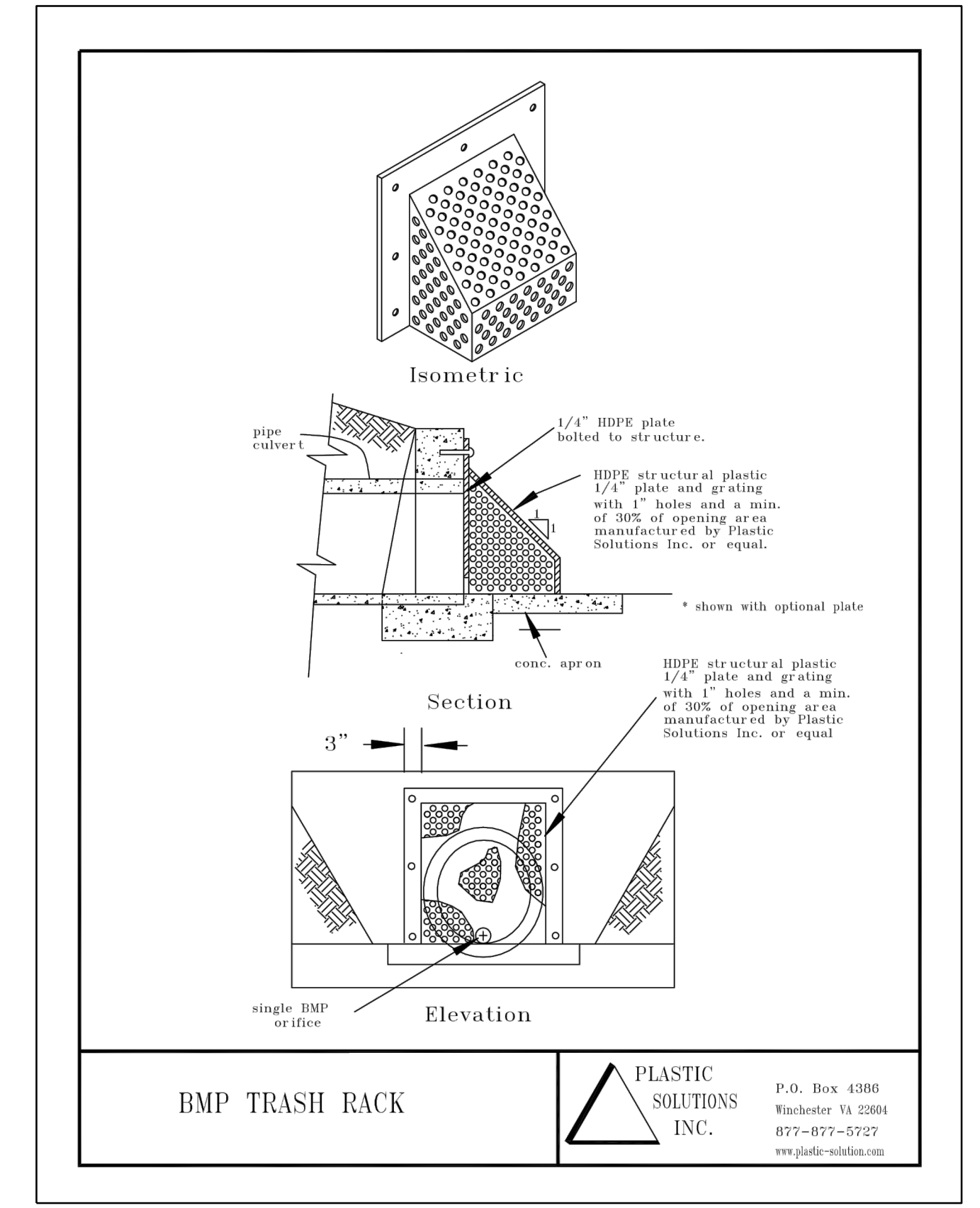
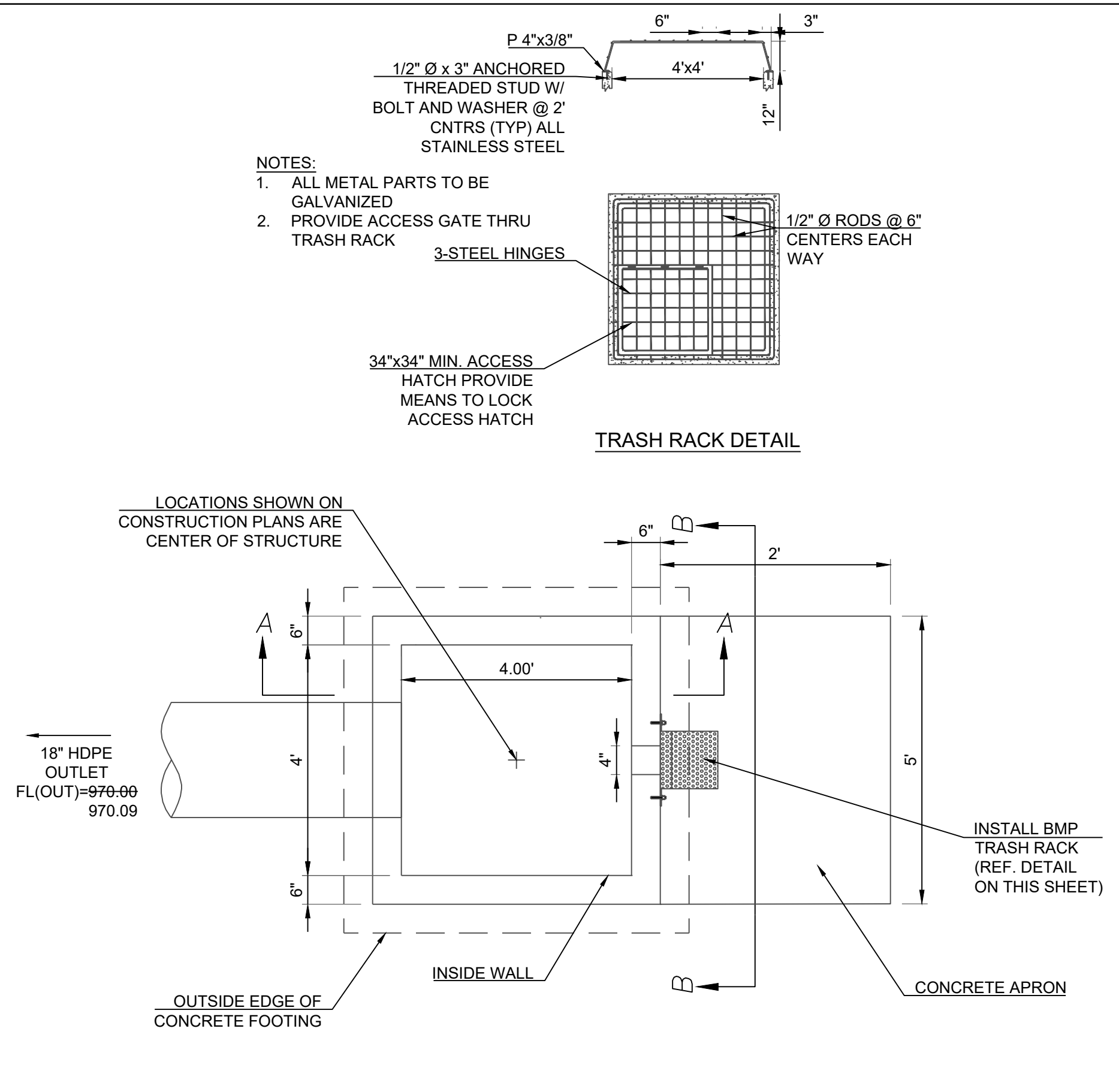
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01/20/2022	WATER LINE CONFLICT

EDDB 1 OUTLET STRUCTURE  
 SHEET  
 17

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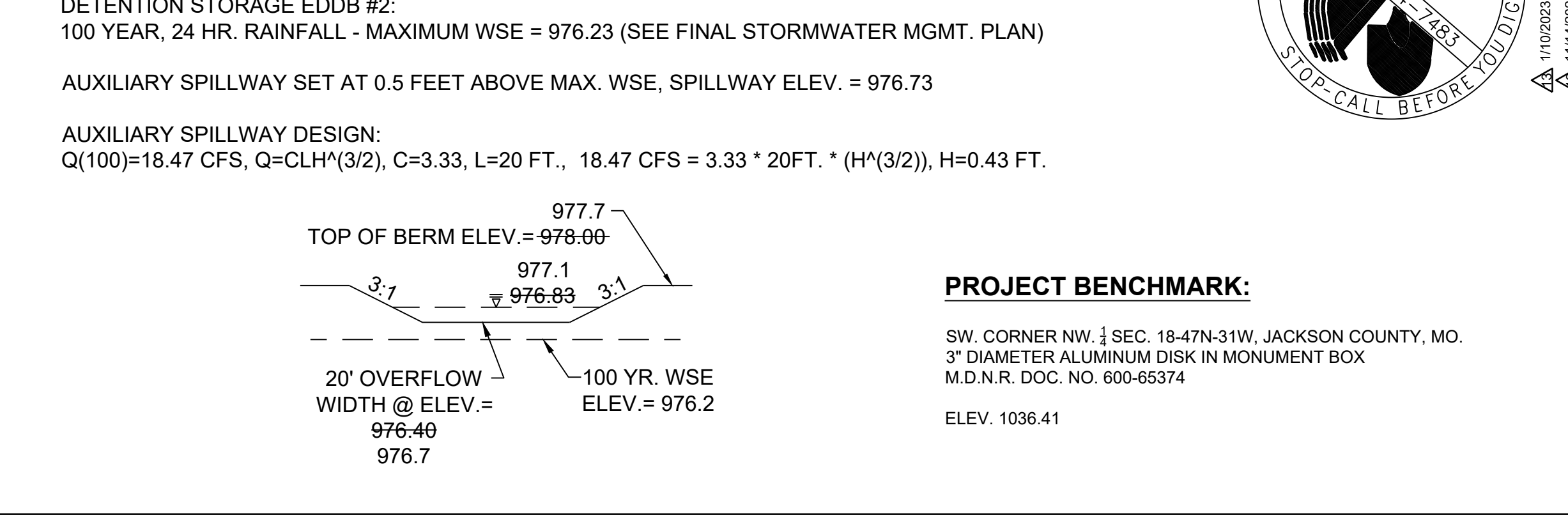
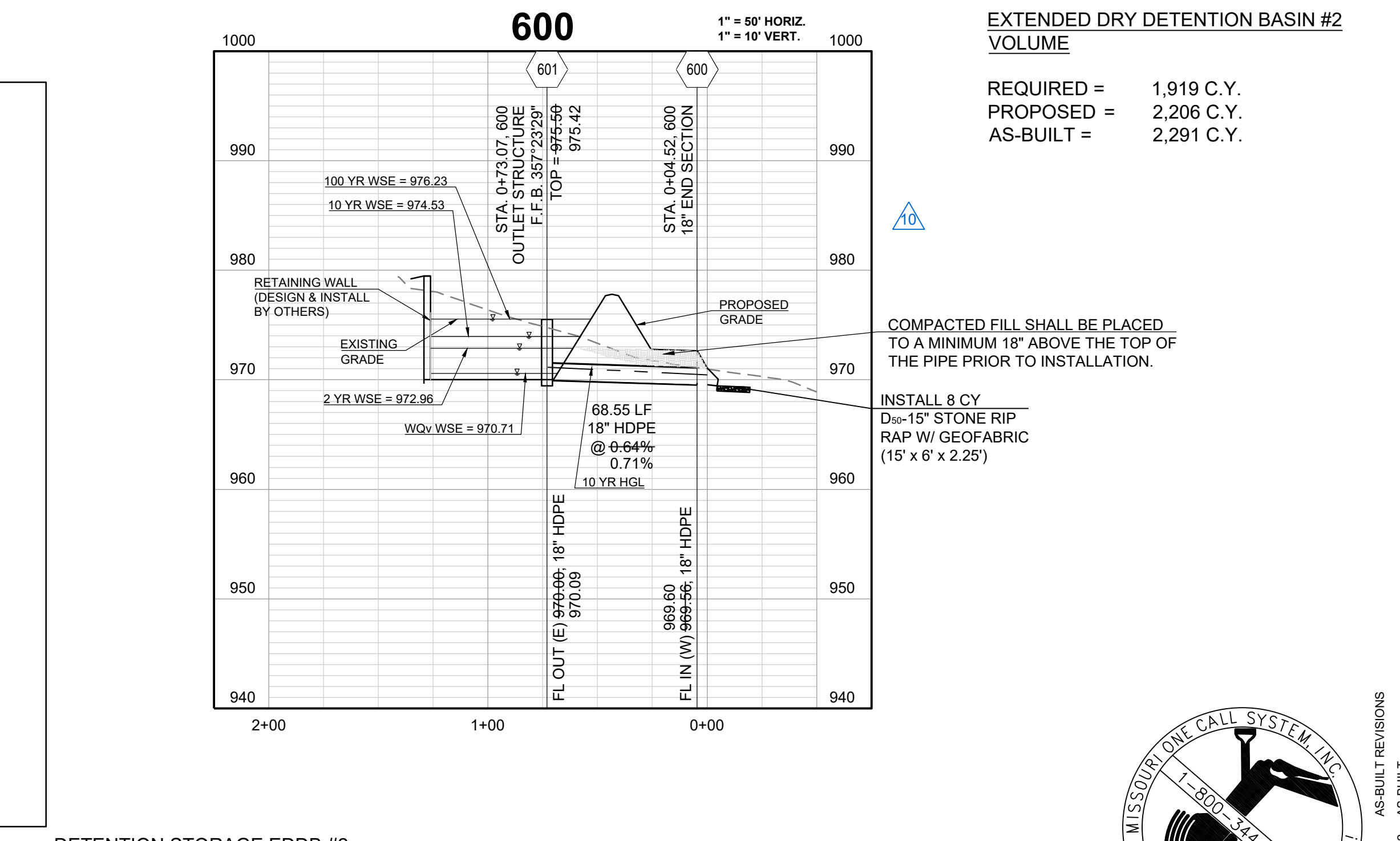
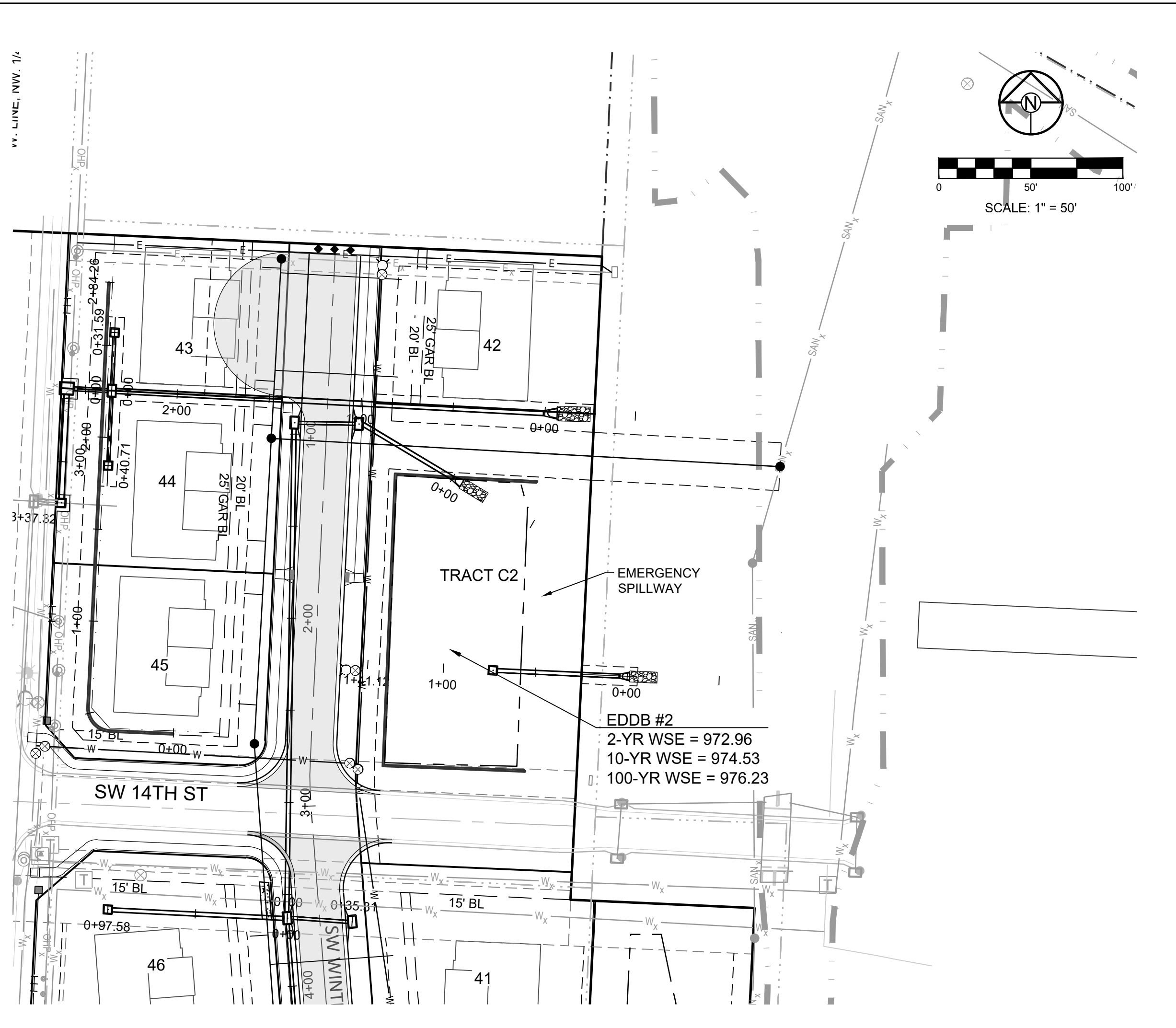


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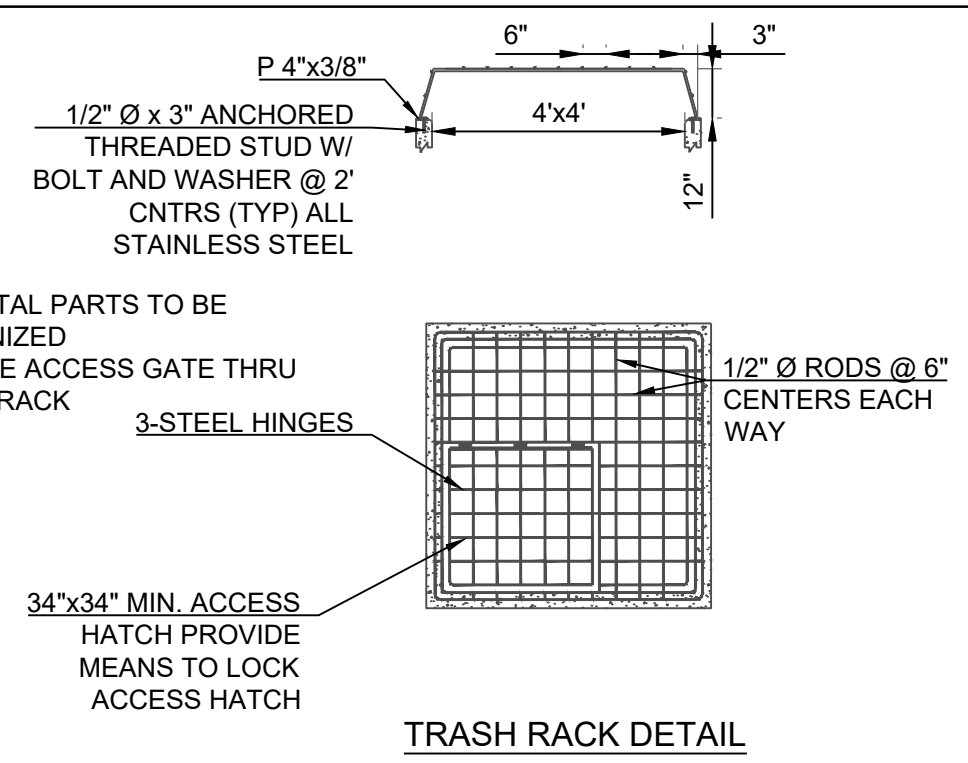
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 Certified by: RPM  
 Title: Design Engineer  
 Firm: Schlagel and Associates, P.A.

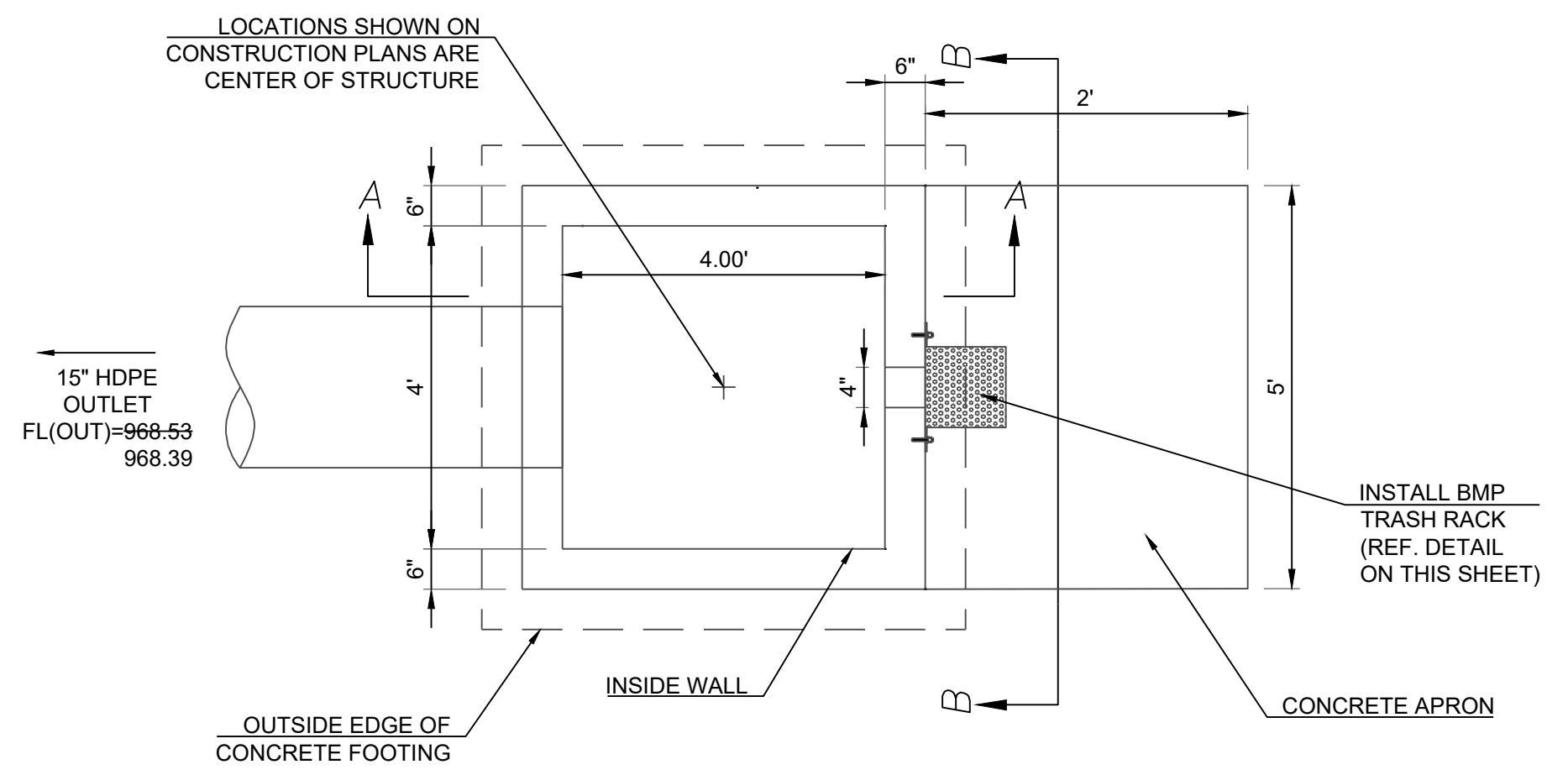


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- NOTES:
1. ALL METAL PARTS TO BE GALVANIZED
  2. PROVIDE ACCESS GATE THRU TRASH RACK



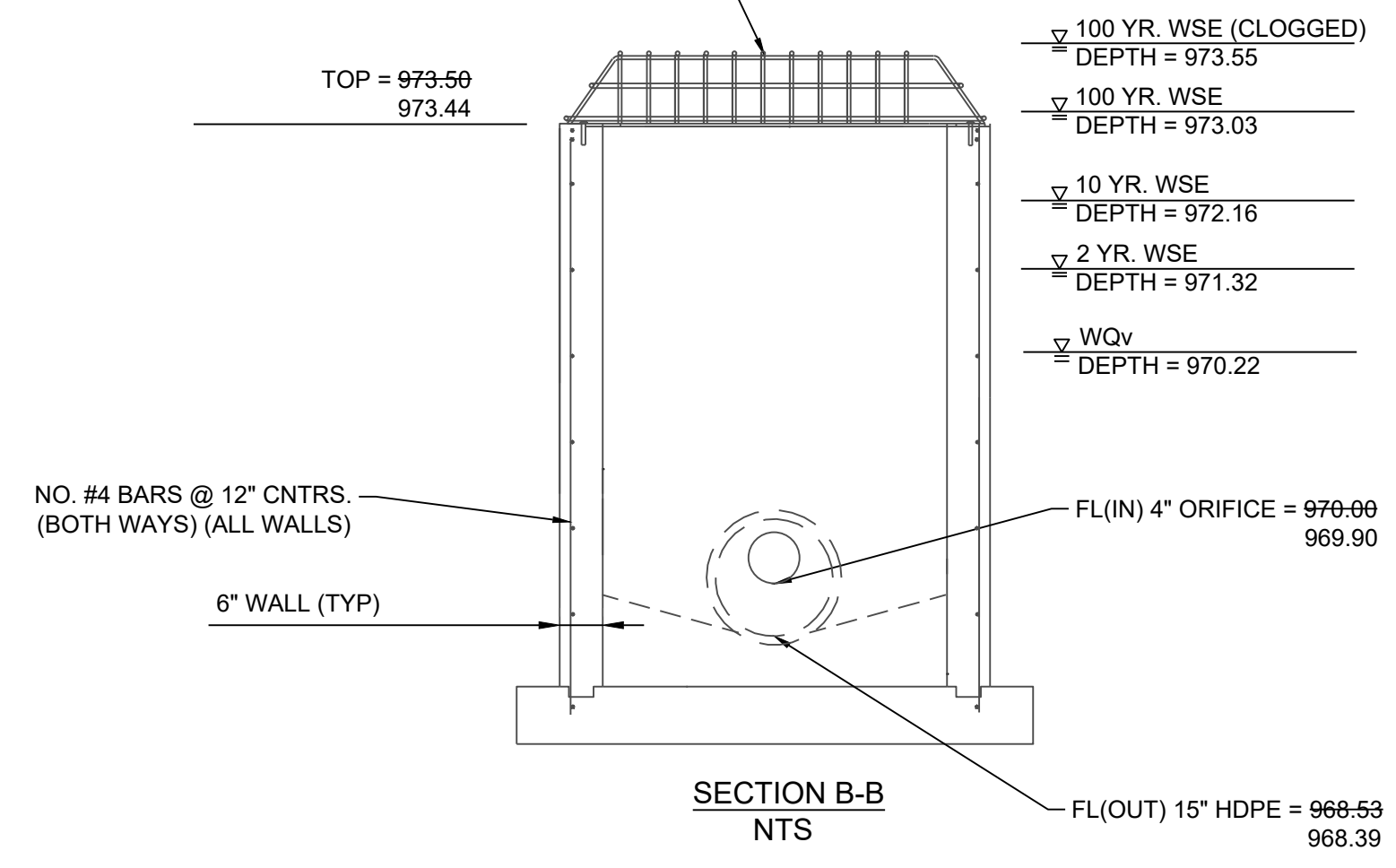
TRASH RACK DETAIL



INSTALL BMP TRASH RACK (REF. DETAIL ON THIS SHEET)

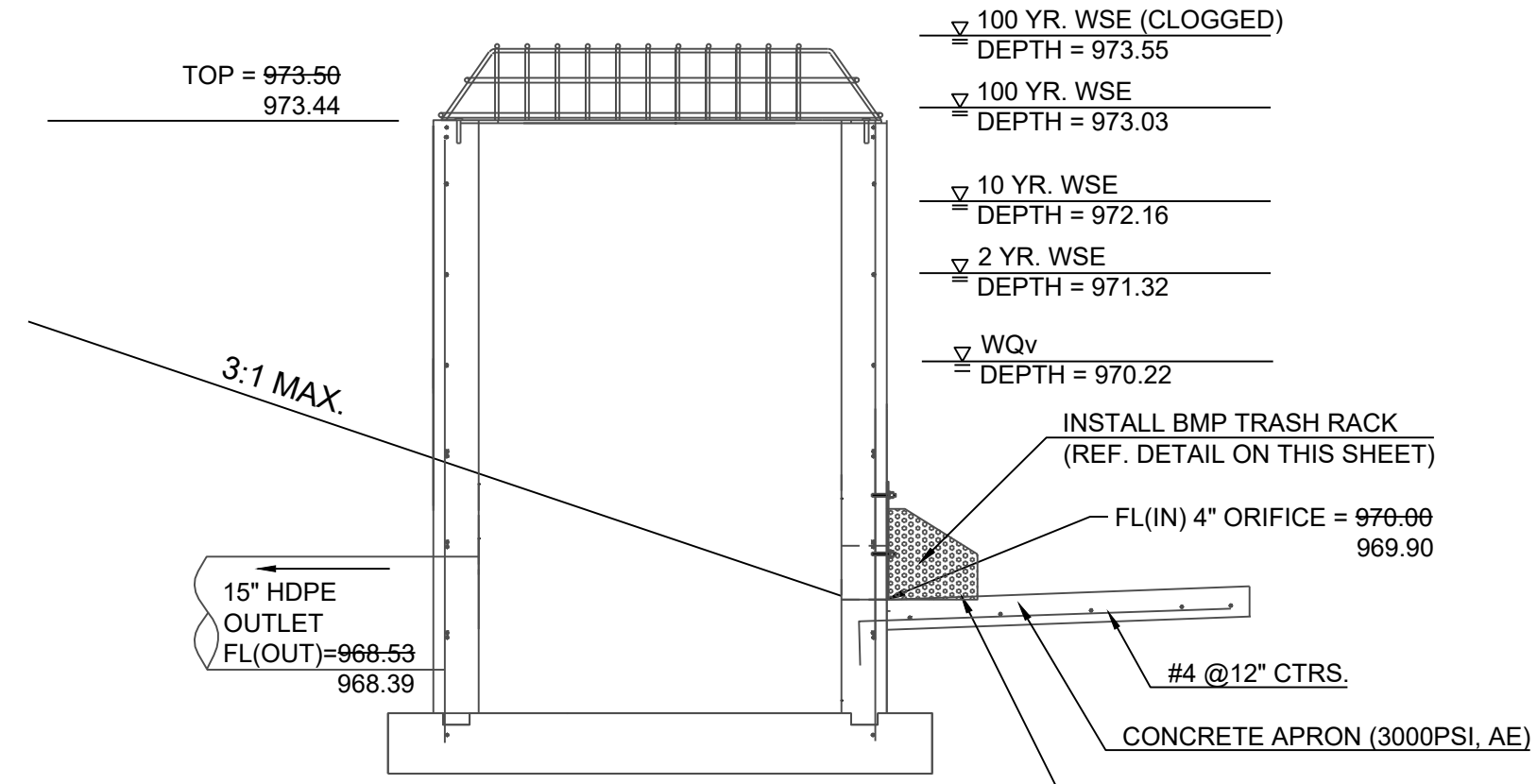
OUTSIDE EDGE OF CONCRETE FOOTING

SECTION B-B NTS



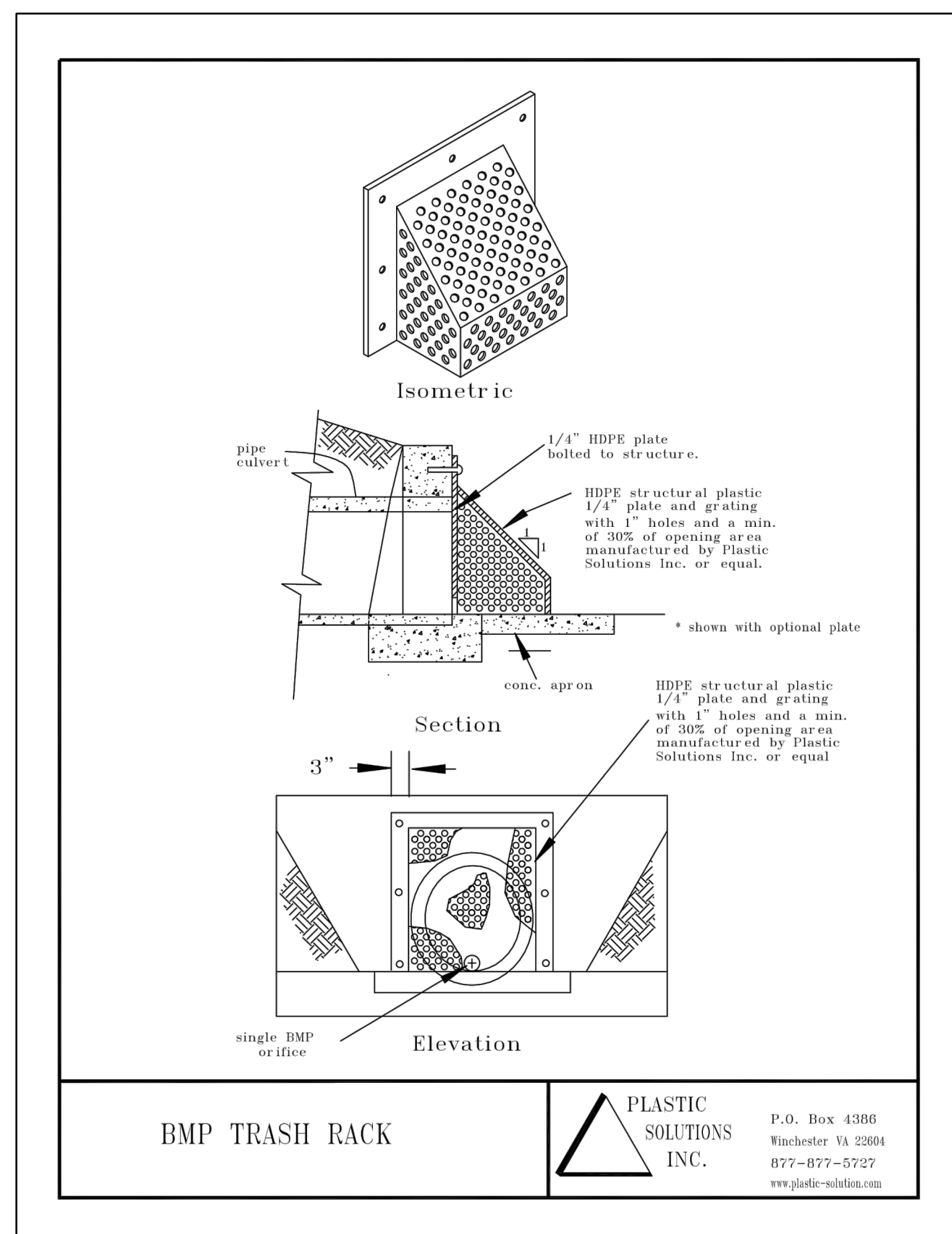
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- 100 YR. WSE DEPTH = 973.03
- 10 YR. WSE DEPTH = 972.16
- 2 YR. WSE DEPTH = 971.32
- WQv DEPTH = 970.22

SECTION A-A NTS



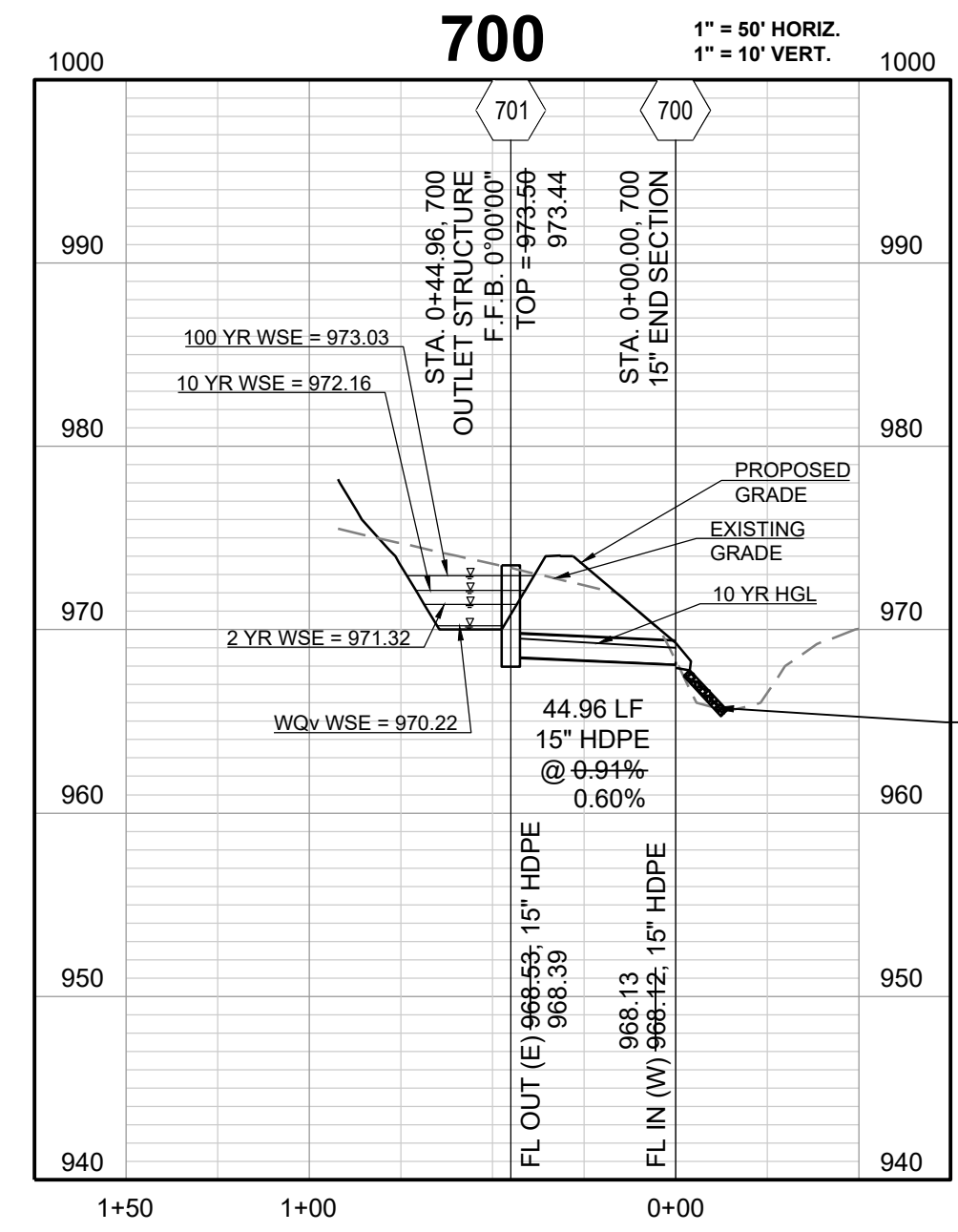
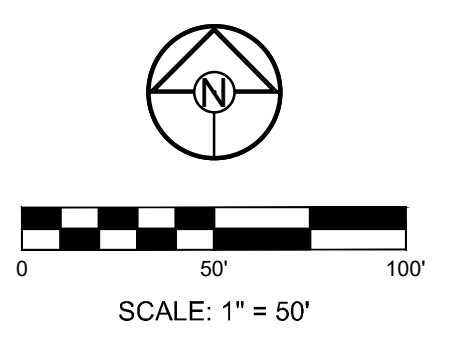
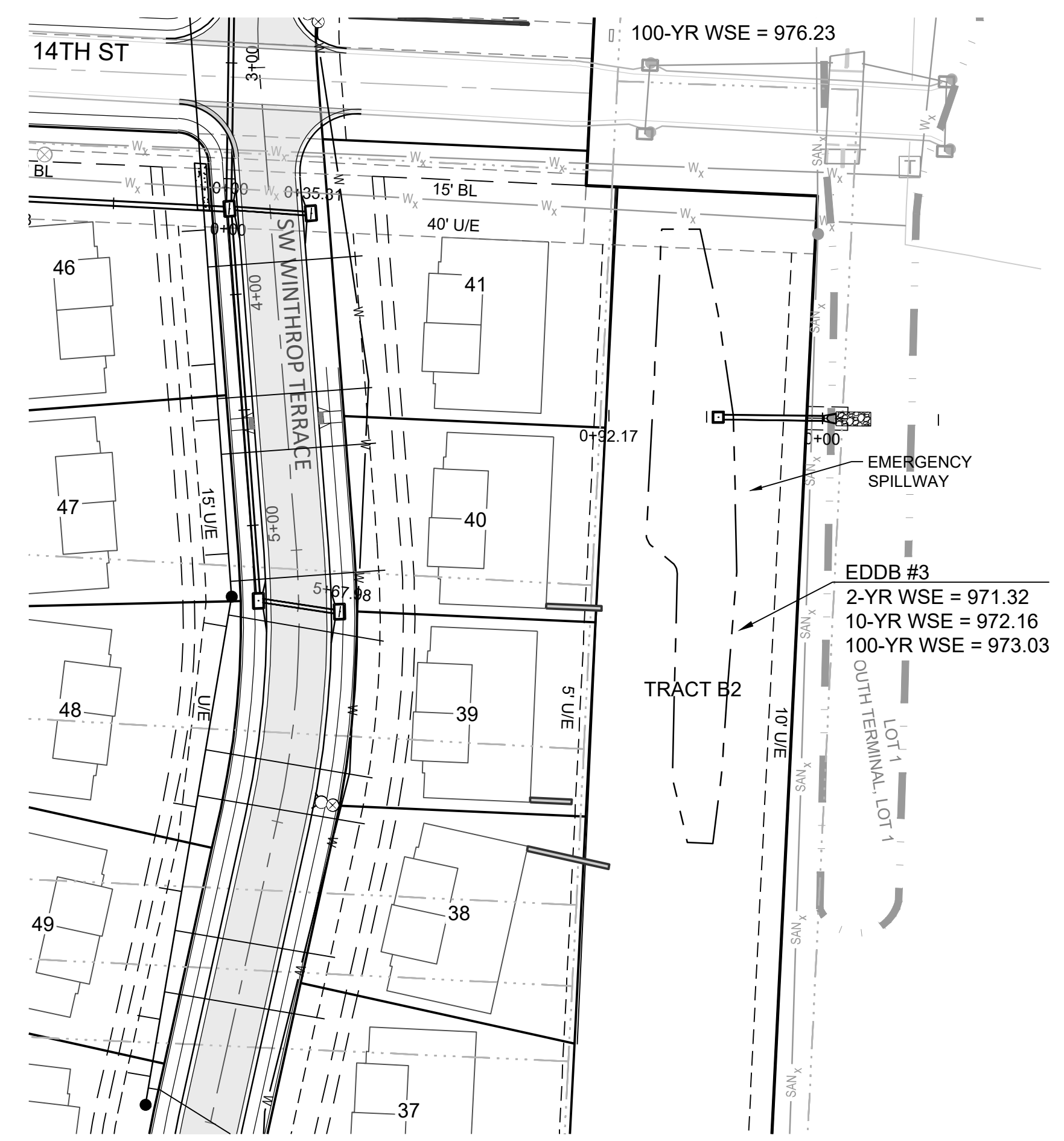
- 100 YR. WSE (CLOGGED) DEPTH = 973.55
- 100 YR. WSE DEPTH = 973.03
- 10 YR. WSE DEPTH = 972.16
- 2 YR. WSE DEPTH = 971.32
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SECTION A-A NTS



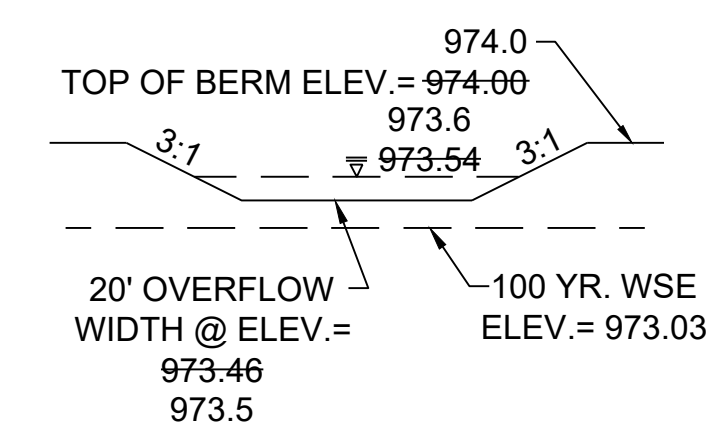
BMP TRASH RACK

PLASTIC SOLUTIONS INC. P.O. Box 4386 Winchester VA 23061 877-877-5727 www.plastic-solutions.com



EXTENDED DRY DETENTION BASIN #3 VOLUME  
 REQUIRED = 484 C.Y.  
 PROPOSED = 1,968 C.Y.  
 AS-BUILT = 636 C.Y.

DETENTION STORAGE EDDB #3:  
 100 YEAR, 24 HR. RAINFALL - MAXIMUM WSE = 973.03 (SEE FINAL STORMWATER MGMT. PLAN)  
 AUXILIARY SPILLWAY SET AT 0.5 FEET ABOVE MAX. WSE, SPILLWAY ELEV. = 973.53  
 AUXILIARY SPILLWAY DESIGN:  
 $Q(100)=1.43$  CFS,  $Q=CLH^{\frac{2}{3}}$ ,  $C=3.33$ ,  $L=20$  FT.,  $1.43$  CFS =  $3.33 * 20^{\frac{2}{3}}$ ,  $H=0.08$  FT.



PROJECT BENCHMARK:  
 SW. CORNER NW 1/4 SEC. 18-47N-31W, JACKSON COUNTY, MO.  
 3" DIAMETER ALUMINUM DISK IN MONUMENT BOX  
 M.D.N.R. DOC. NO. 600-65374  
 ELEV. 1036.41

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 Certified by: RPM  
 Title: Design Engineer  
 Firm: Schlager and Associates, P.A.

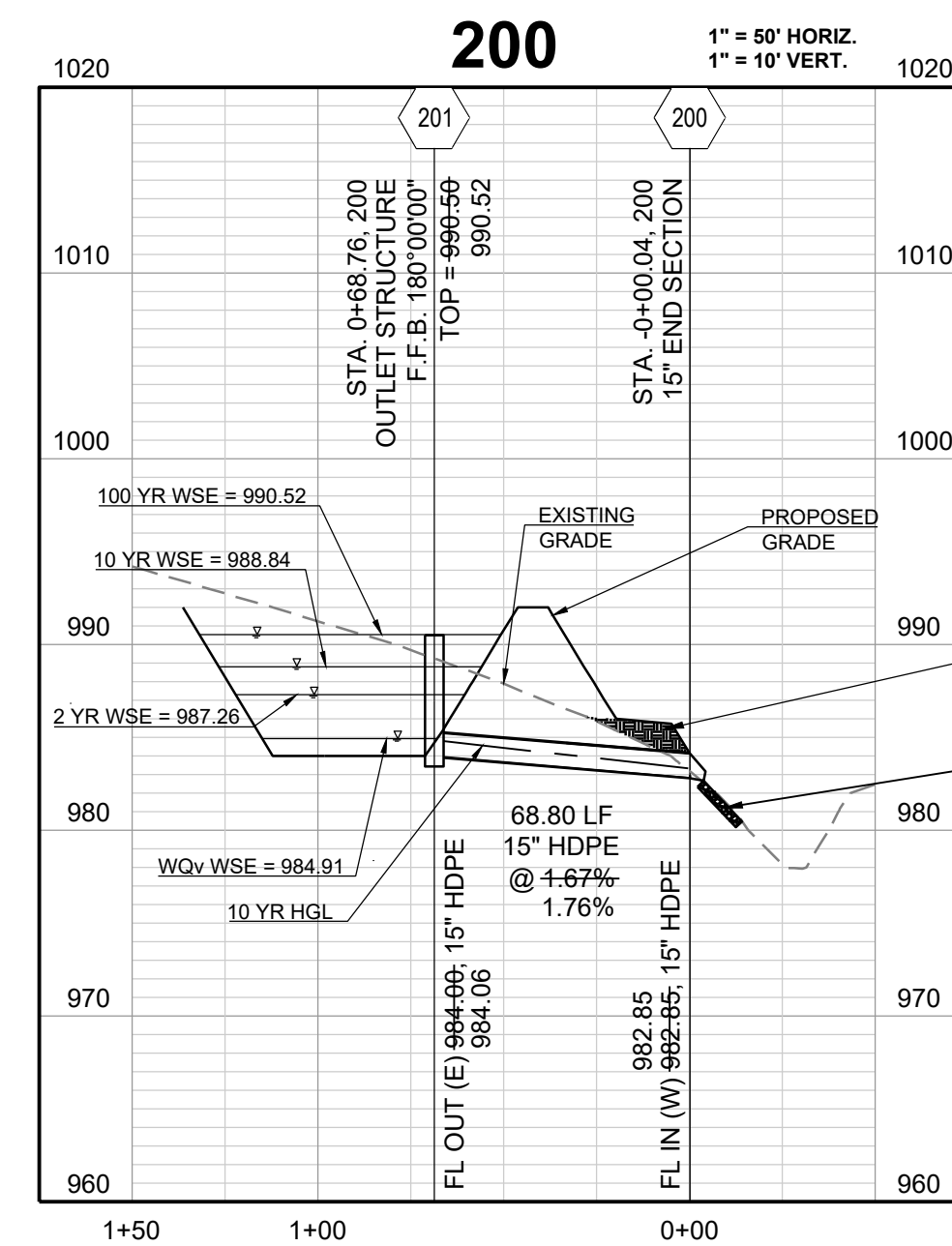
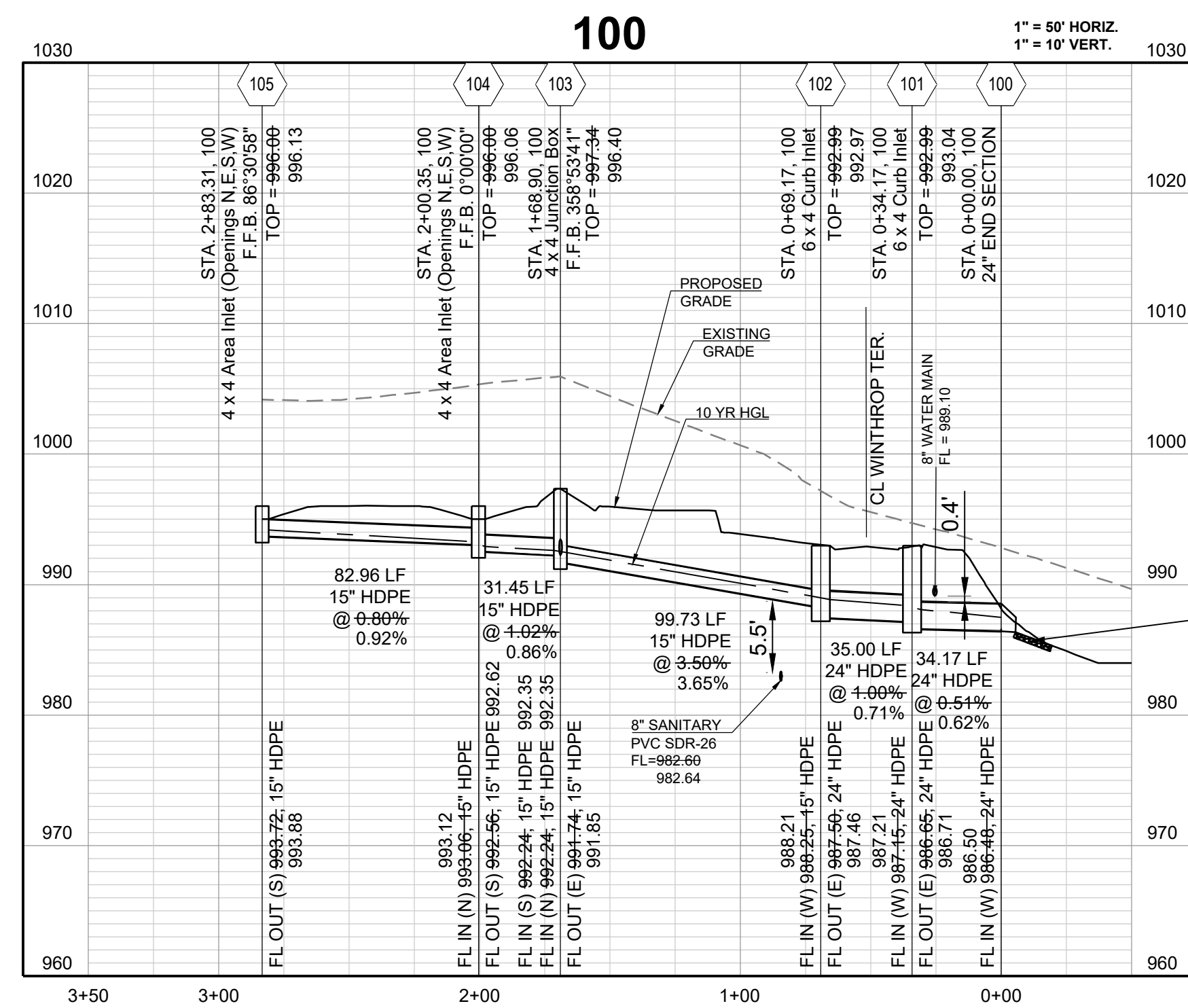
PREPARED BY:  
 SCHLAGEL & ASSOCIATES, P.A.

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

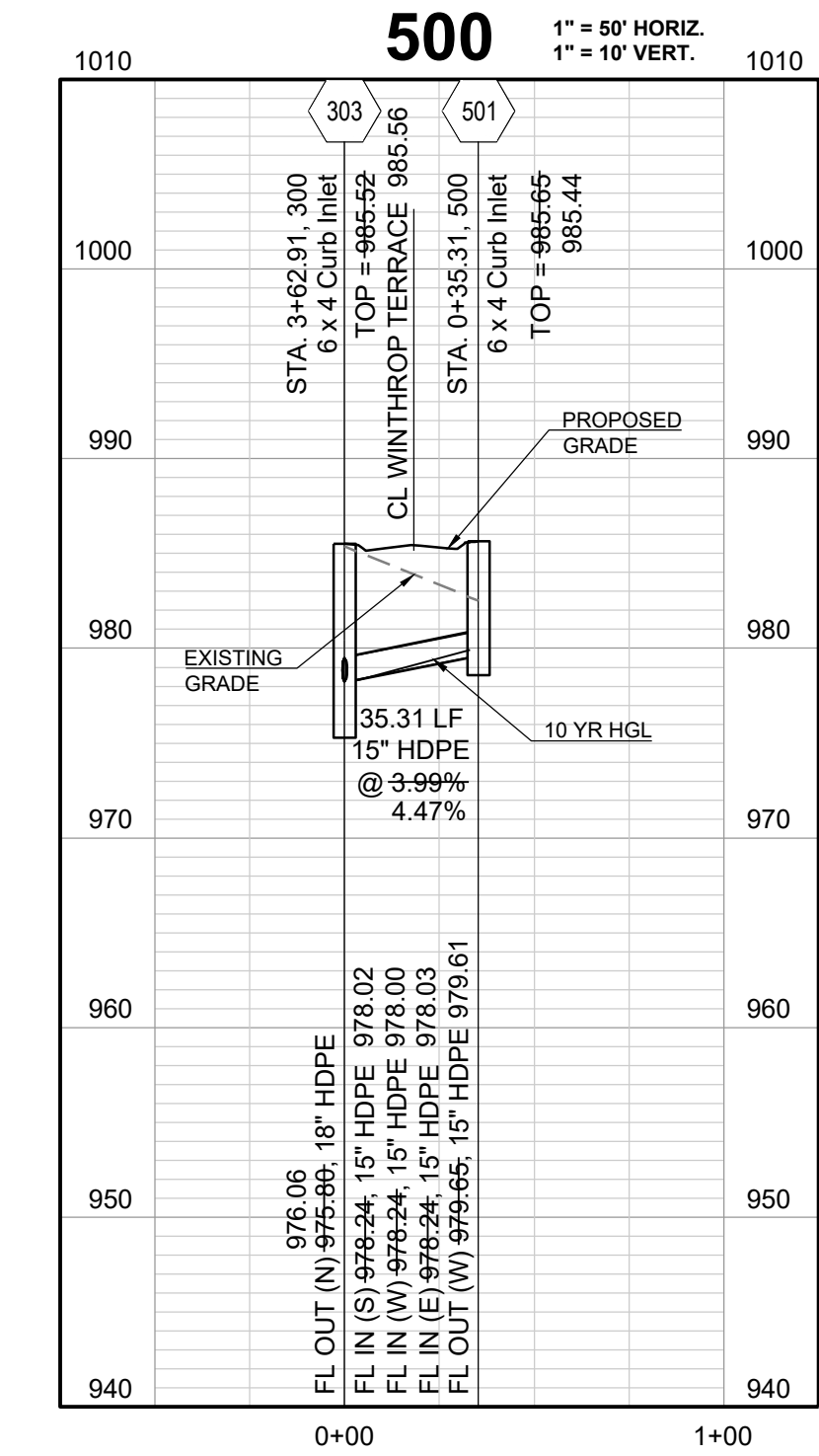
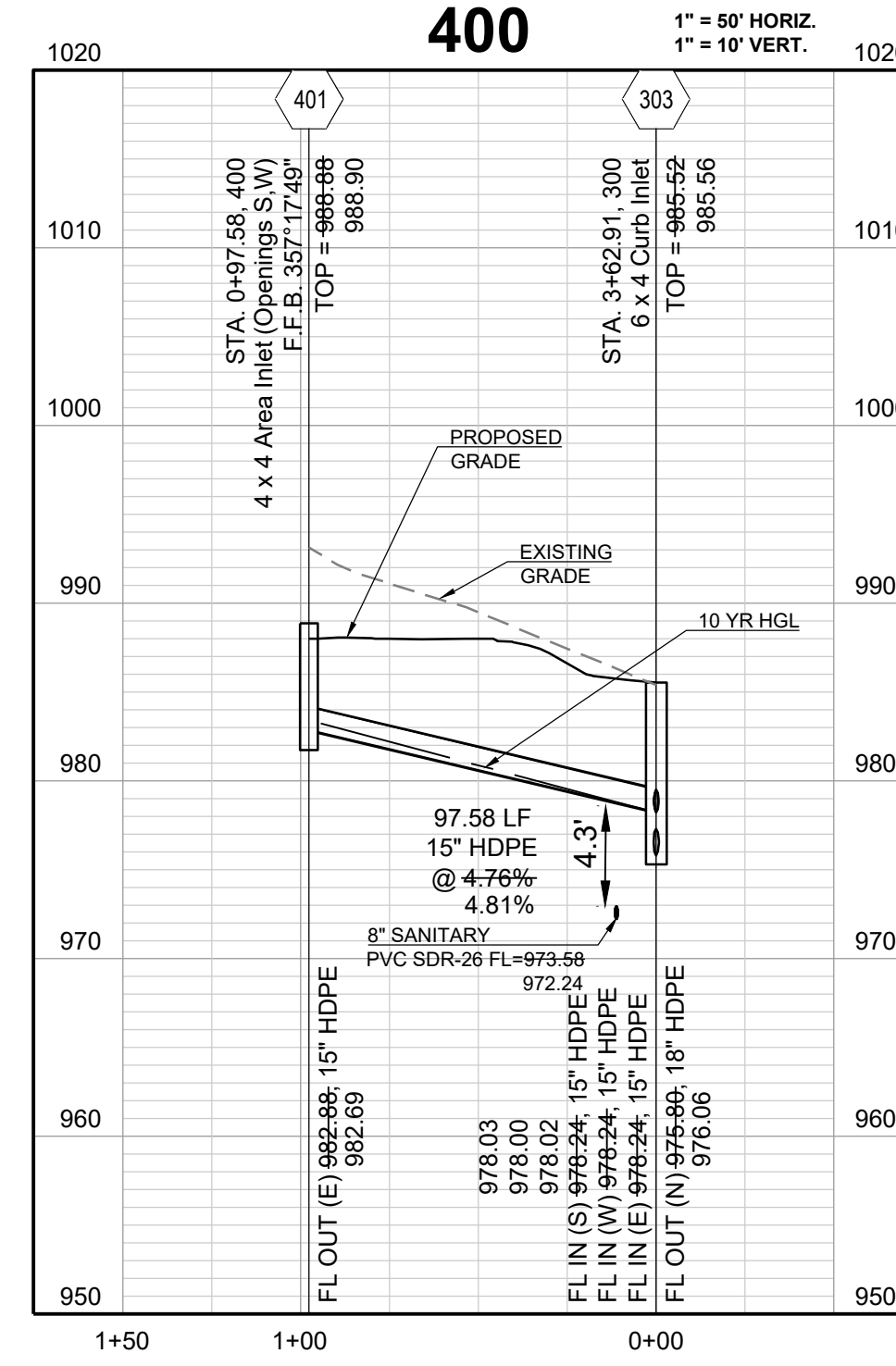
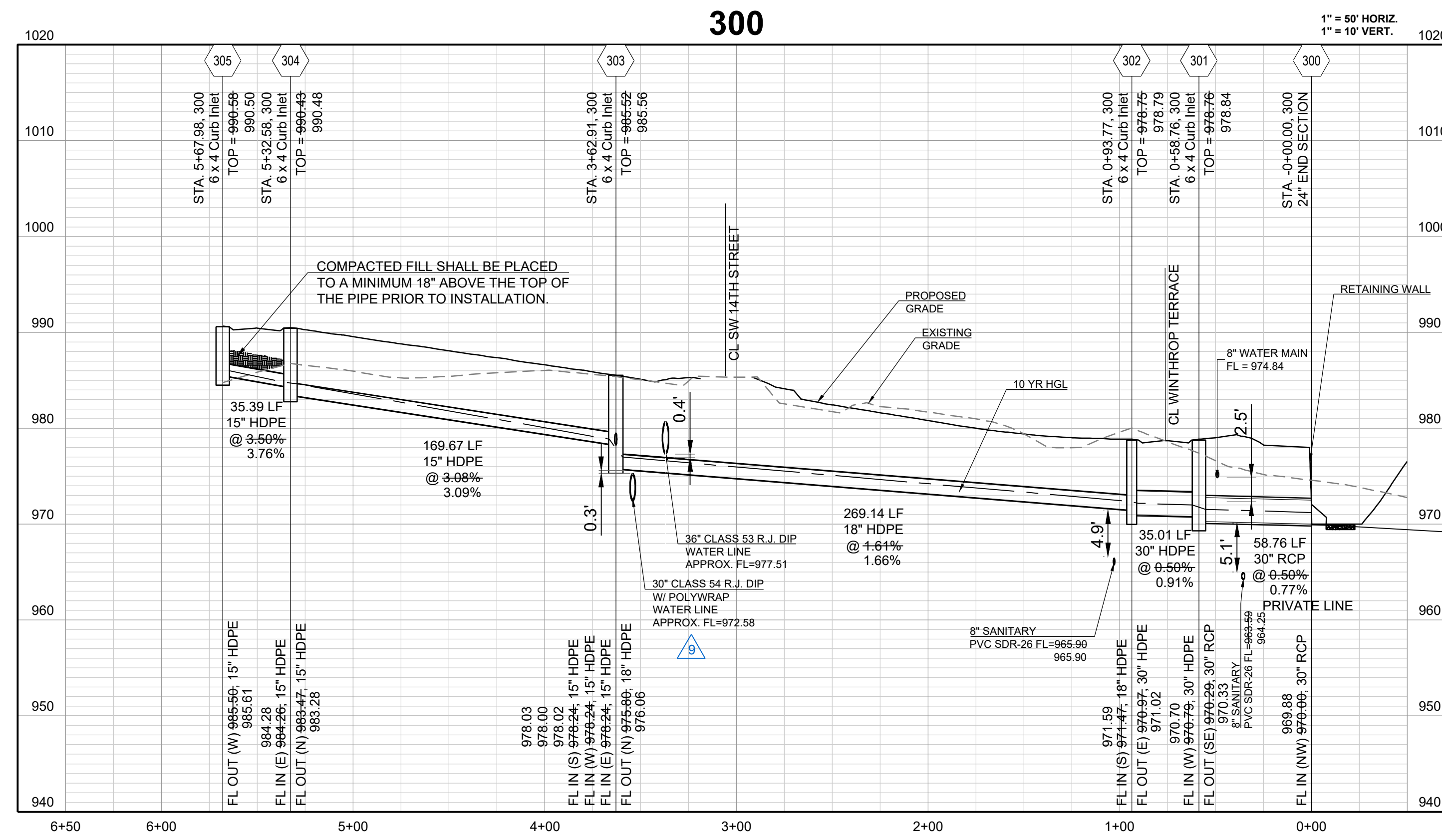
REVISION DATE	DESCRIPTION
11/02/2023	AS-BUILT REVISIONS
11/14/2022	AS-BUILT
09/22/2022	CITY WALL MODIFICATION
09/16/2022	CITY EMAILED COMMENTS
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01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT



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



COMPACTED FILL SHALL BE PLACED TO A MINIMUM 18" ABOVE THE TOP OF THE PIPE PRIOR TO INSTALLATION.  
 INSTALL 8 CY D30-15 STONE RIP RAP W/ GEOFABRIC (15' x 6' x 2.25')



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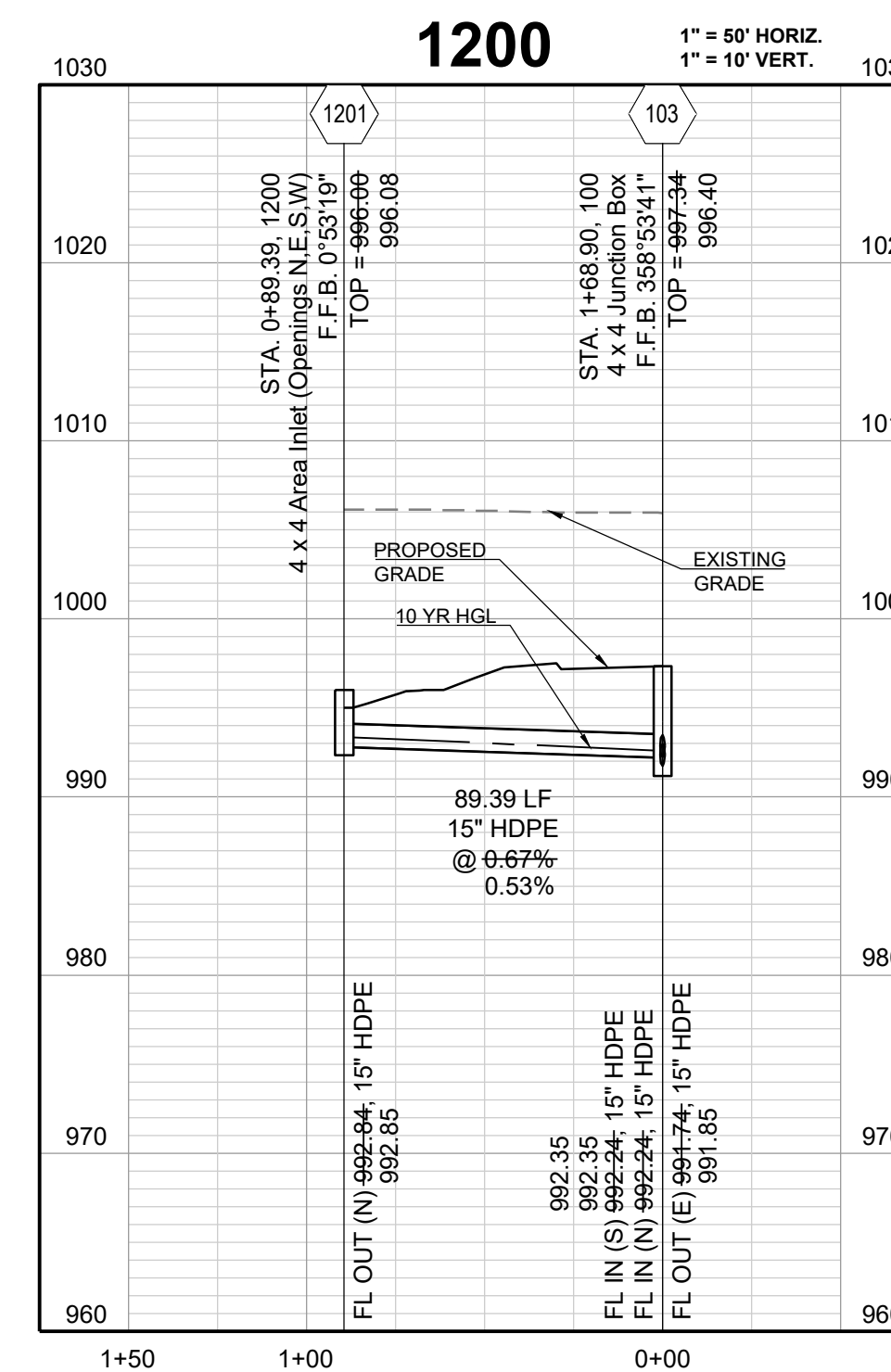
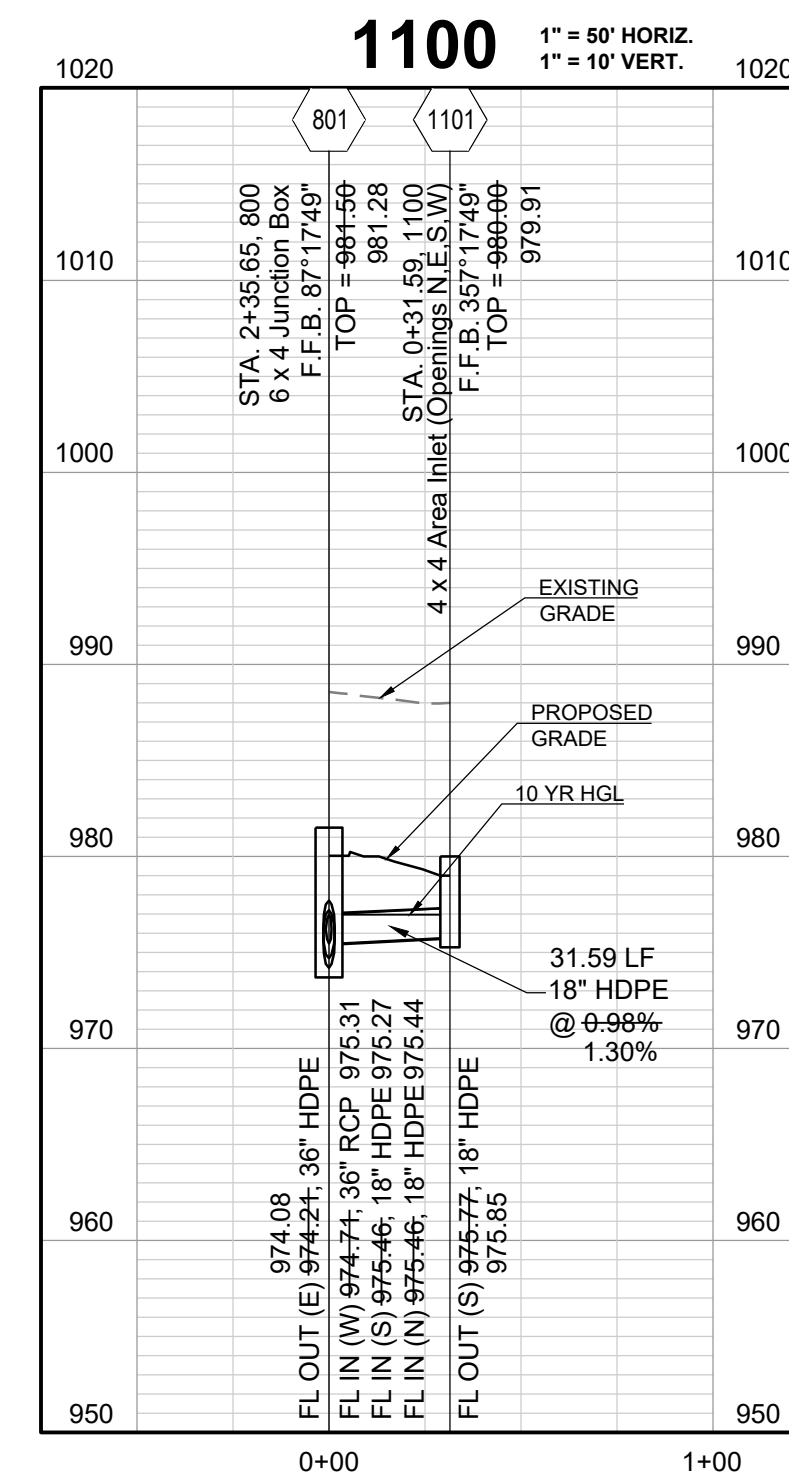
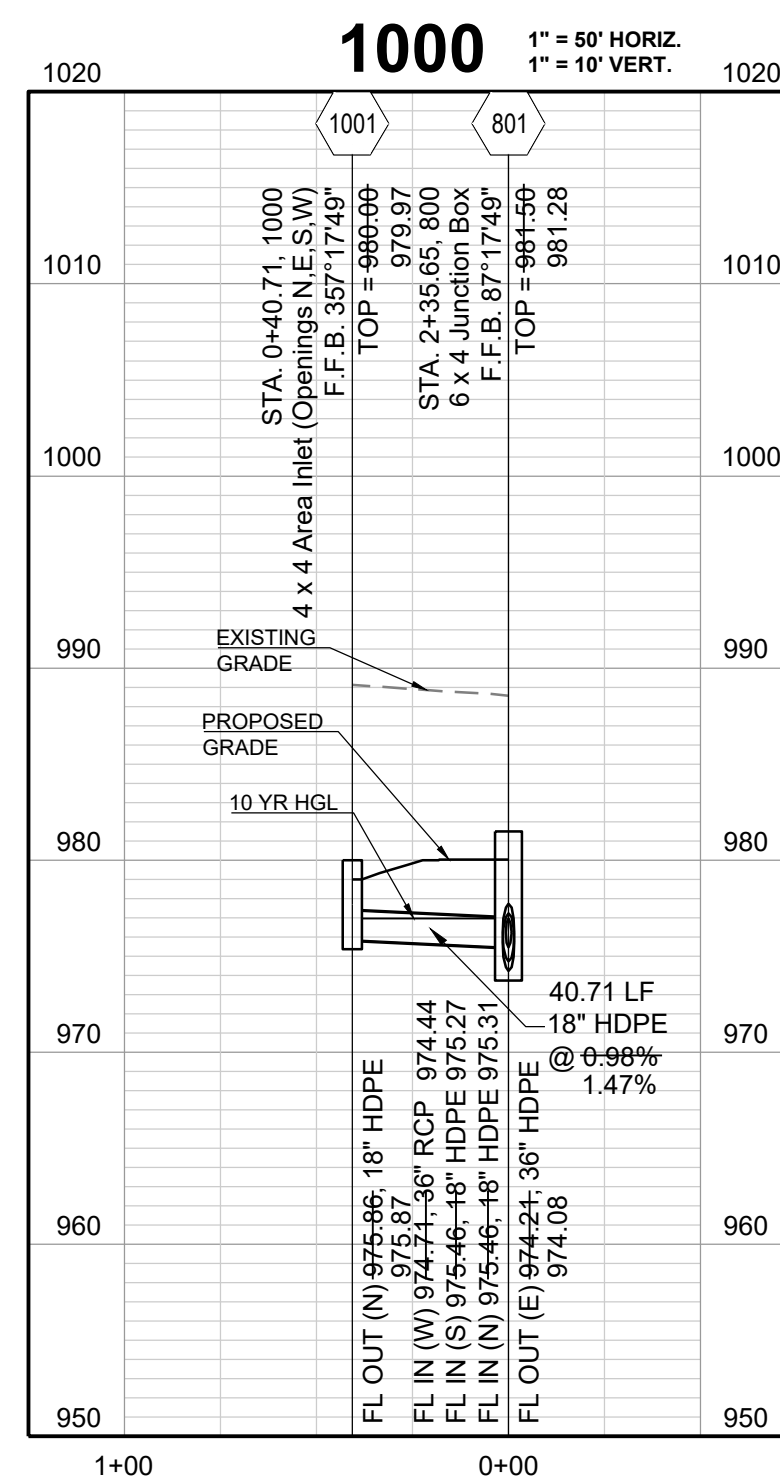
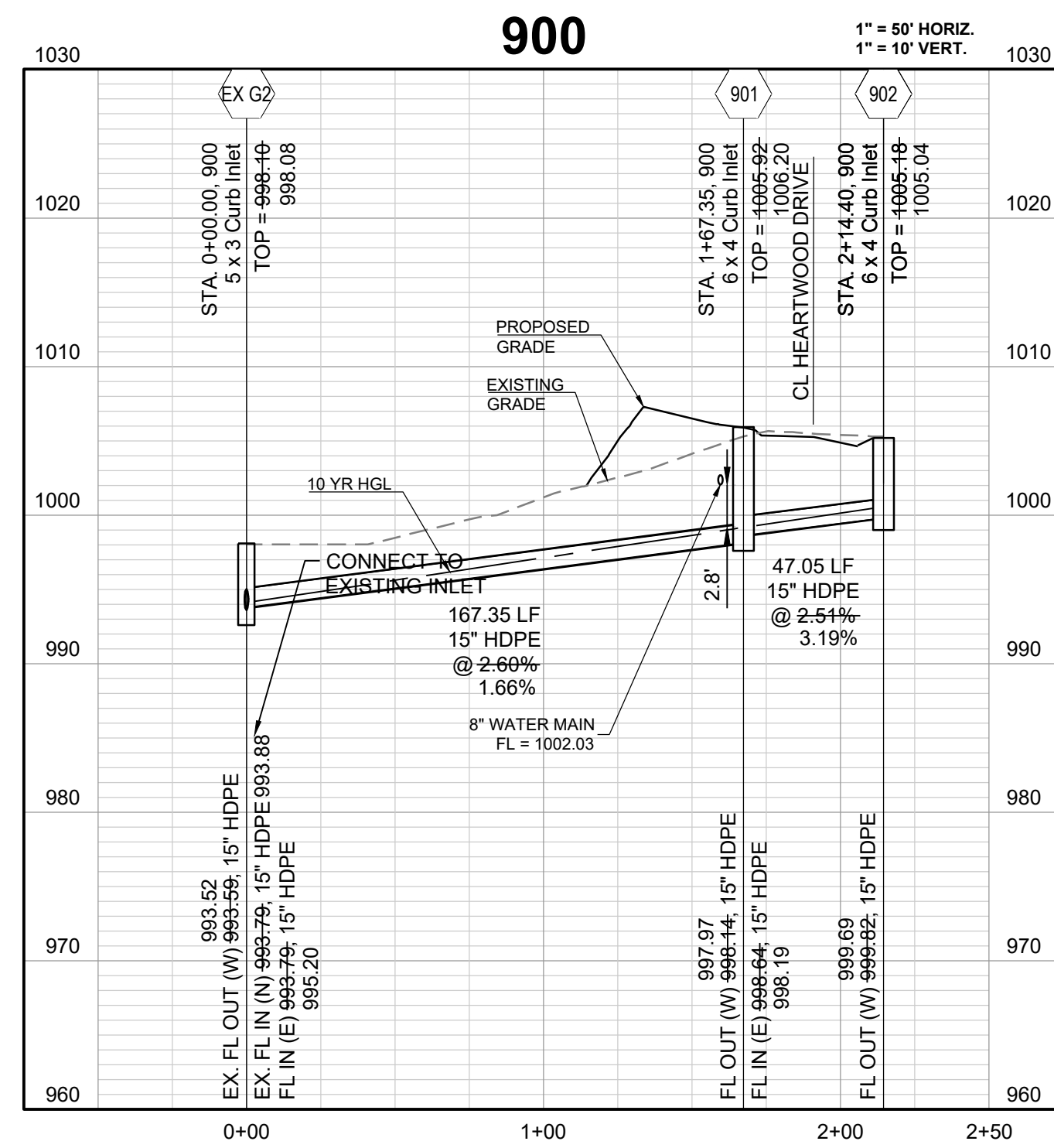
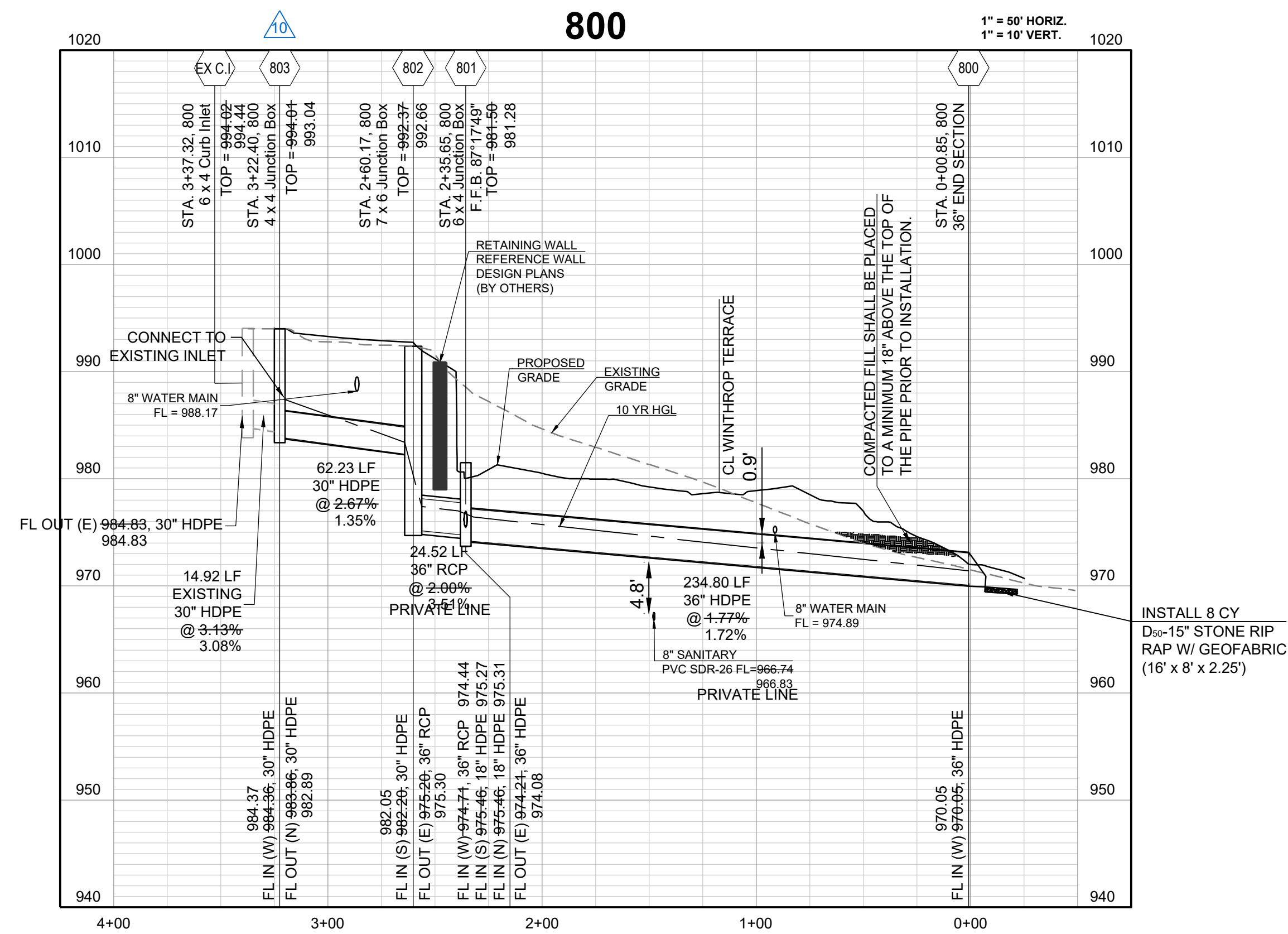
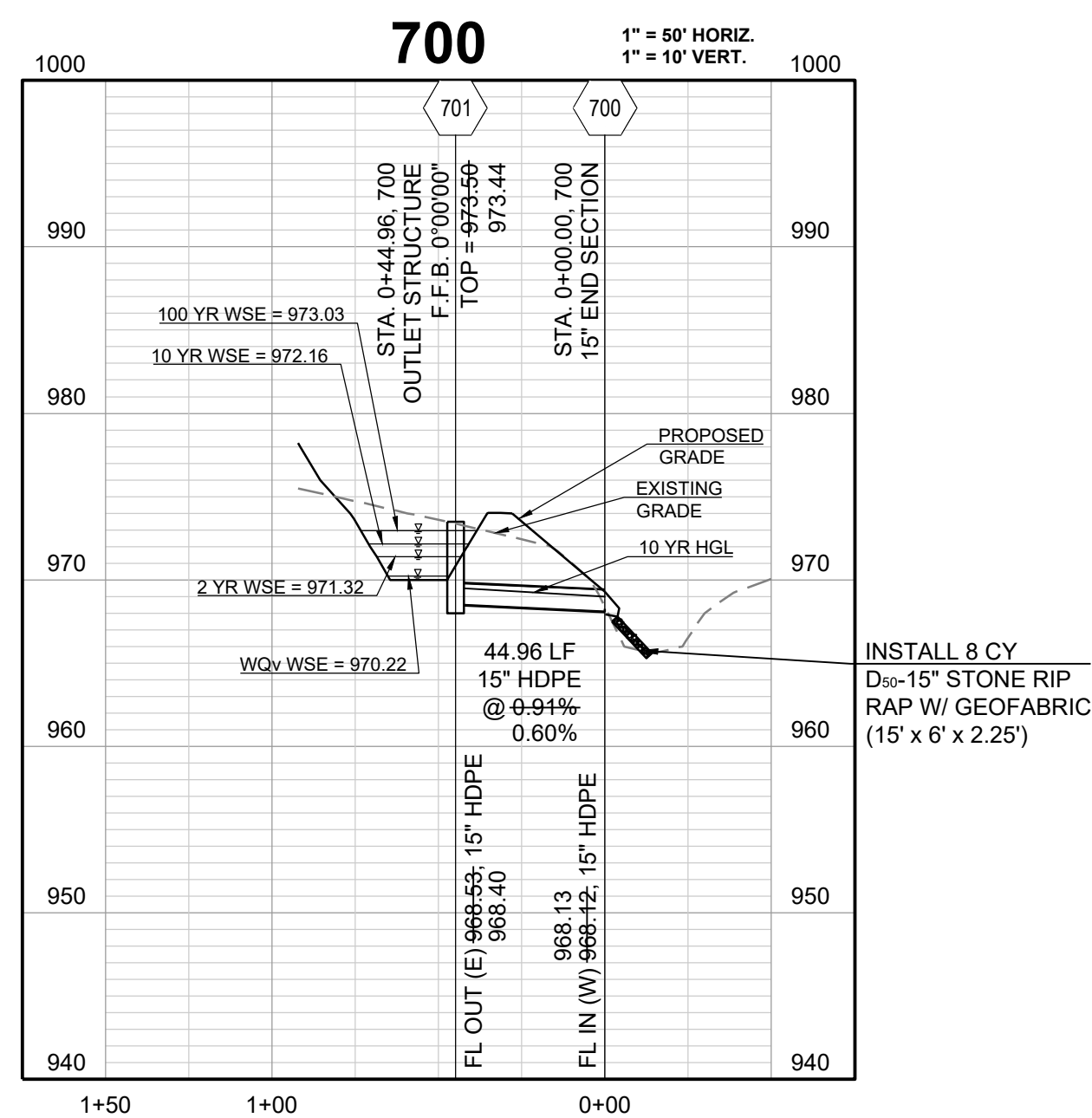
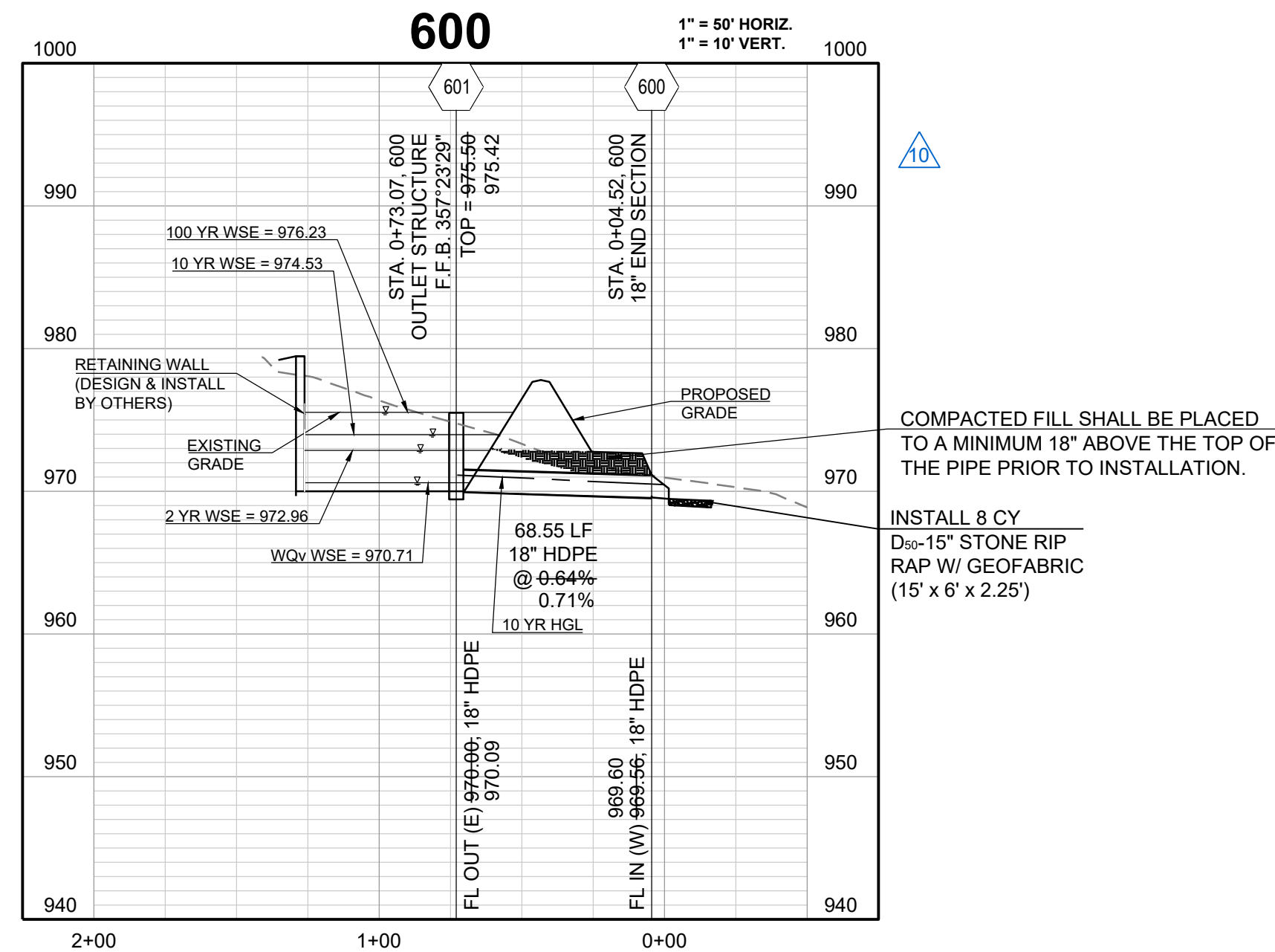
REVISIONS

NO.	DATE	DESCRIPTION
1	11/14/2022	AS-BUILT
2	08/22/2022	CITY WALL MODIFICATION
3	08/16/2022	CITY EMAILED COMMENTS

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

STORM PROFILE

SHEET



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

REVISION DATE	DESCRIPTION
1/10/2023	AS-BUILT REVISIONS
1/11/2023	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
08/16/2022	CITY EMAILED COMMENTS

DRAWN BY:	REVISION DATE	DESCRIPTION
BAL	04/24/2020	CITY COMMENTS
MAB	01/12/2021	SCHLAGEL QUANTITIES
MAB	04/09/2021	SCHLAGEL QUANTITIES
MAB	09/12/2021	CITY COMMENTS
MAB	09/15/2021	CITY COMMENTS
MAB	09/29/2021	CITY COMMENTS
MAB	09/29/2021	SCHLAGEL UPDATE
MAB	10/06/2021	CITY COMMENTS
MAB	01/20/2022	WATER LINE CONFLICT

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REVISION DATE	DESCRIPTION
11/10/2023	AS-BUILT REVISIONS
11/14/2022	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
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10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

**LEE'S SUMMIT MISSOURI**  
 STANDARD DETAILS  
 CITY OF LEE'S SUMMIT, MO  
 LEE'S SUMMIT, JACKSON COUNTY, MO  
 PUBLIC WORKS ENGINEERING DIVISION 1200 SE GREEN STREET | LEE'S SUMMIT, MO 66643

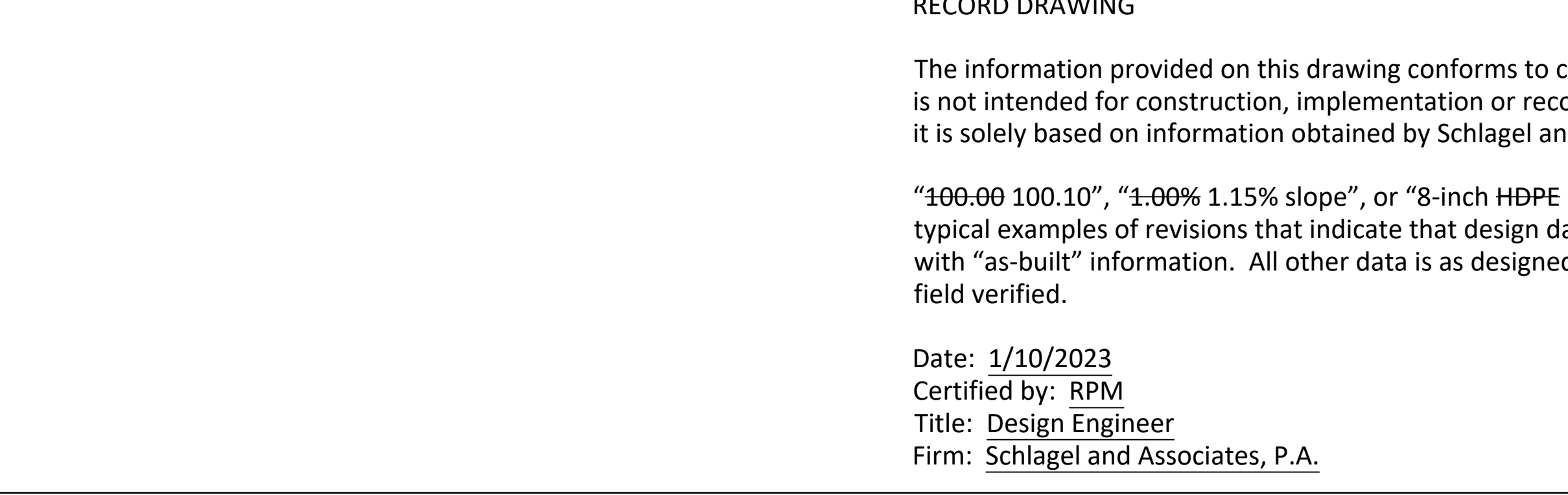
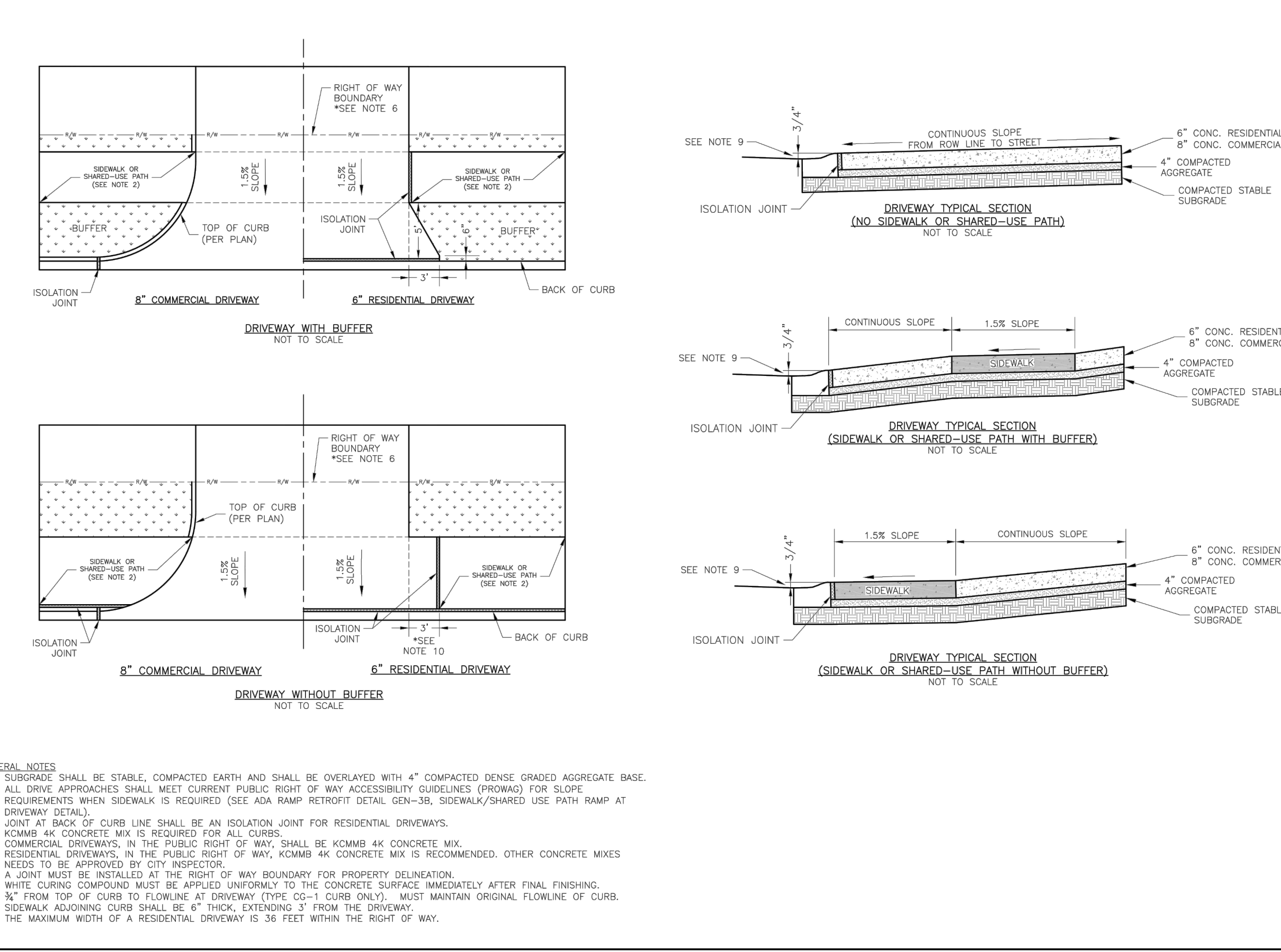
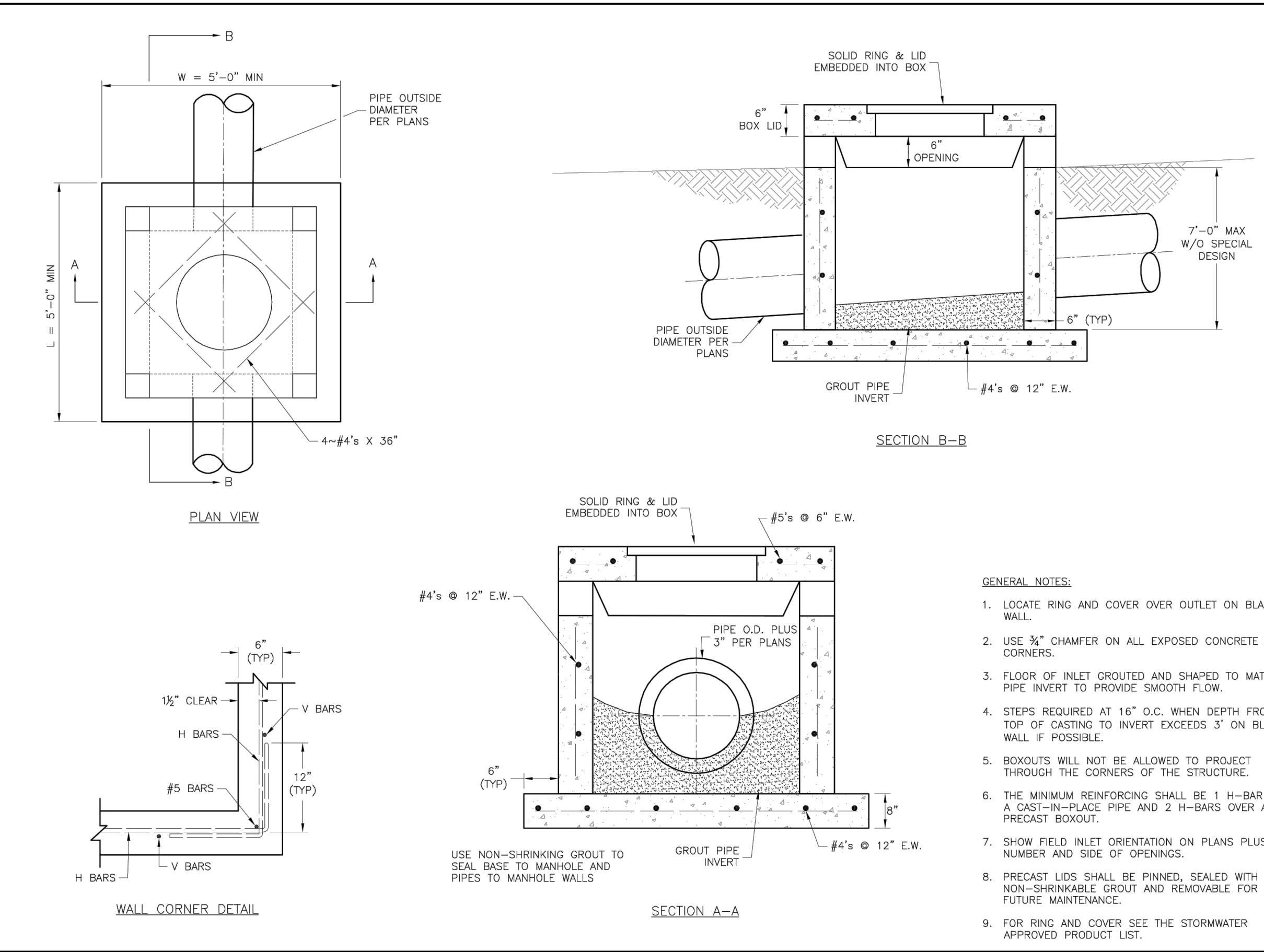
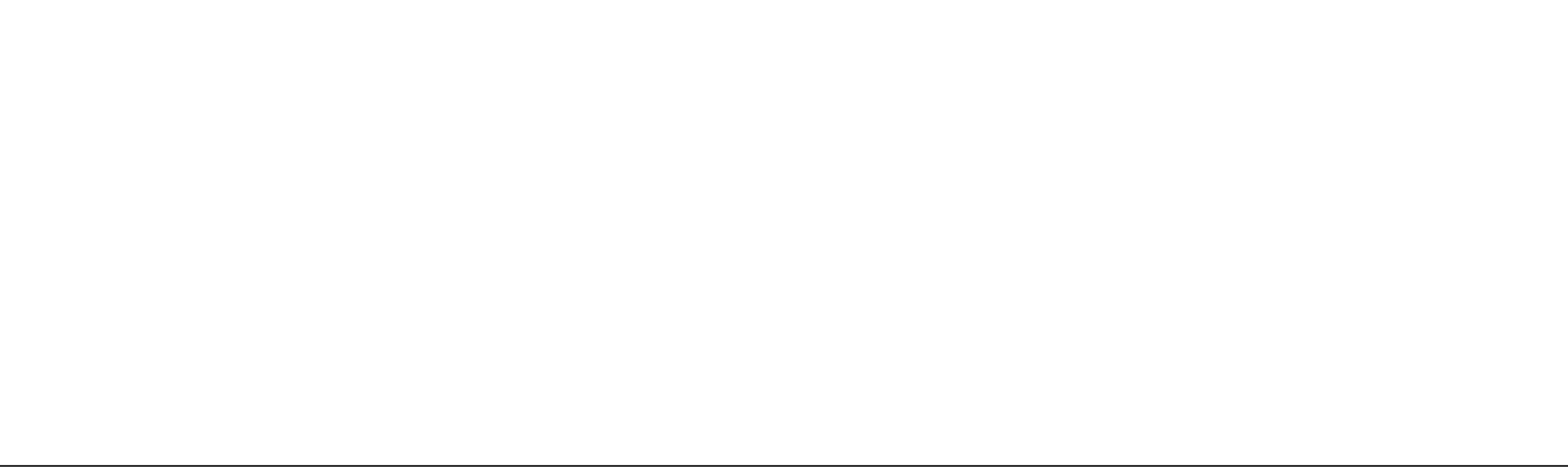
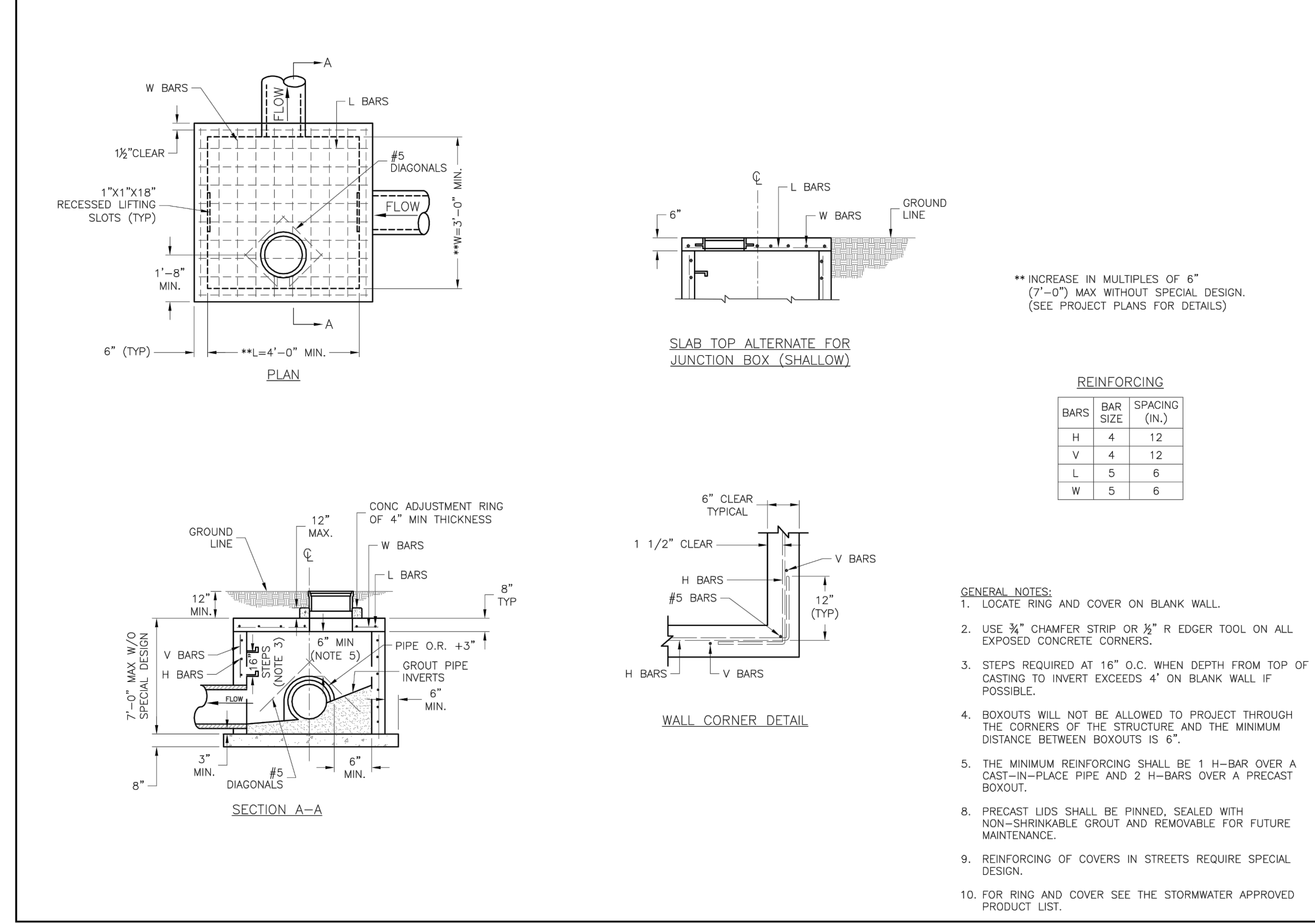
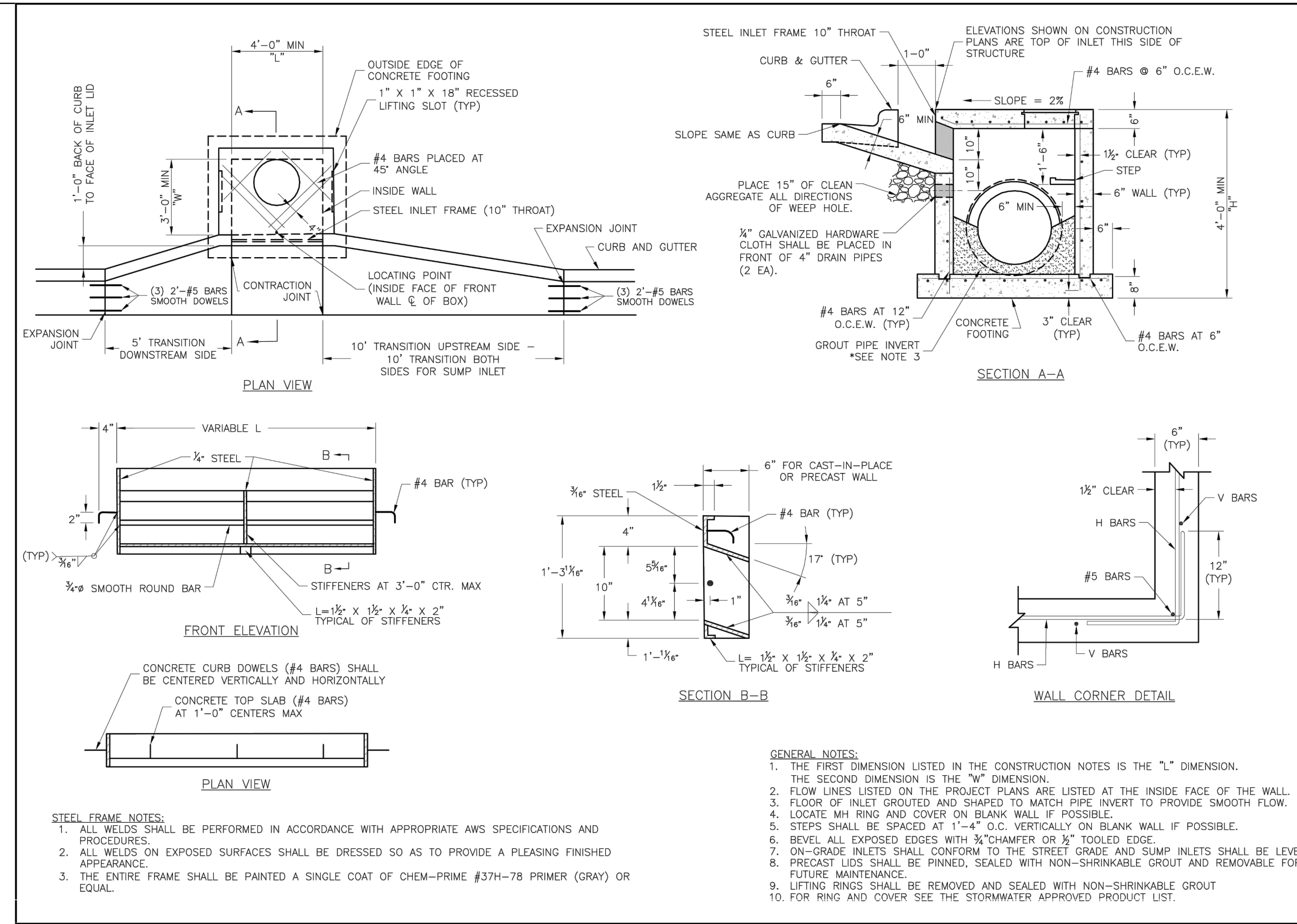
**LEE'S SUMMIT MISSOURI**  
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 CITY OF LEE'S SUMMIT, MO  
 LEE'S SUMMIT, JACKSON COUNTY, MO  
 PUBLIC WORKS ENGINEERING DIVISION 1200 SE GREEN STREET | LEE'S SUMMIT, MO 66643

**LEE'S SUMMIT MISSOURI**  
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 CITY OF LEE'S SUMMIT, MO  
 LEE'S SUMMIT, JACKSON COUNTY, MO  
 PUBLIC WORKS ENGINEERING DIVISION 1200 SE GREEN STREET | LEE'S SUMMIT, MO 66643

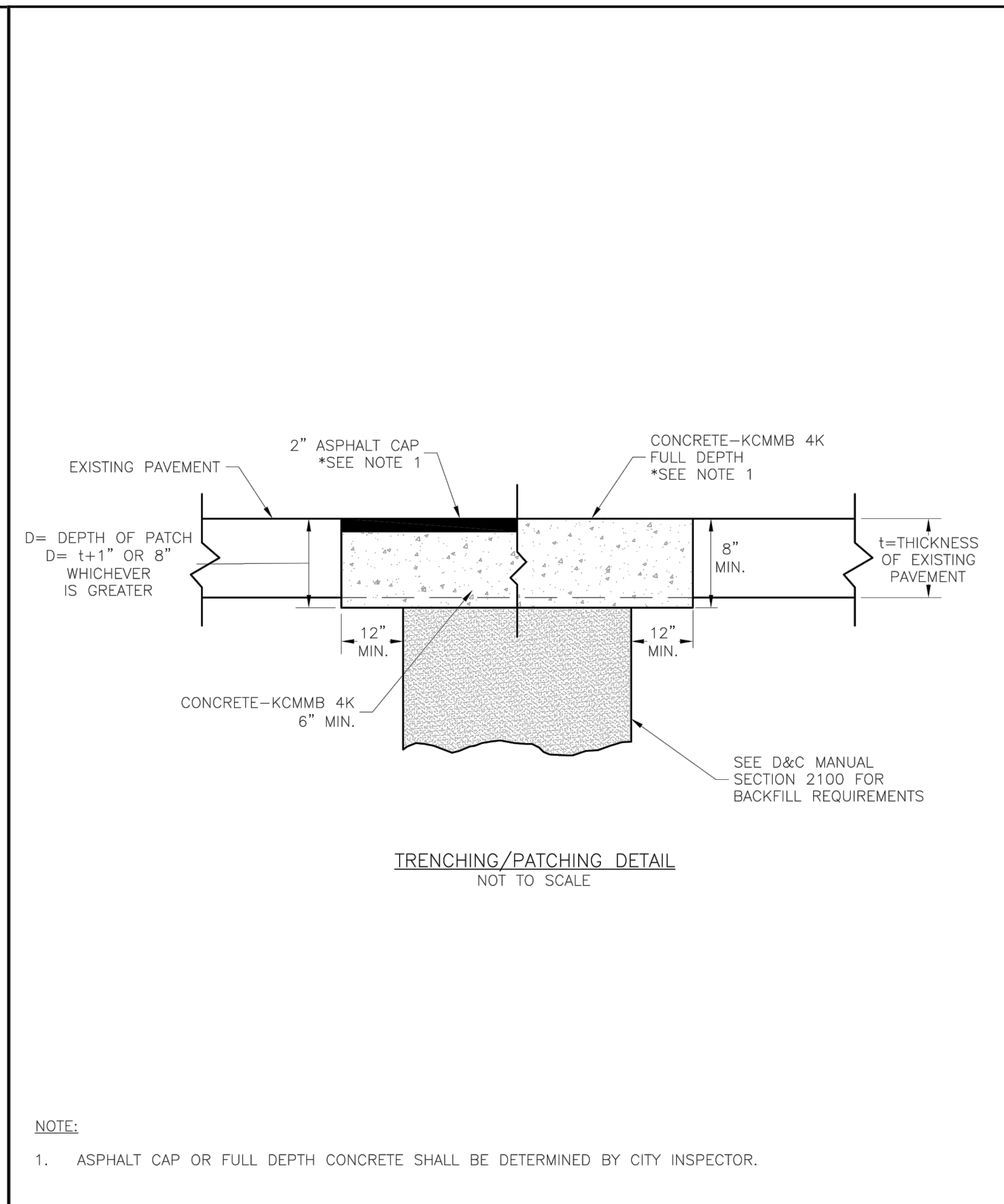
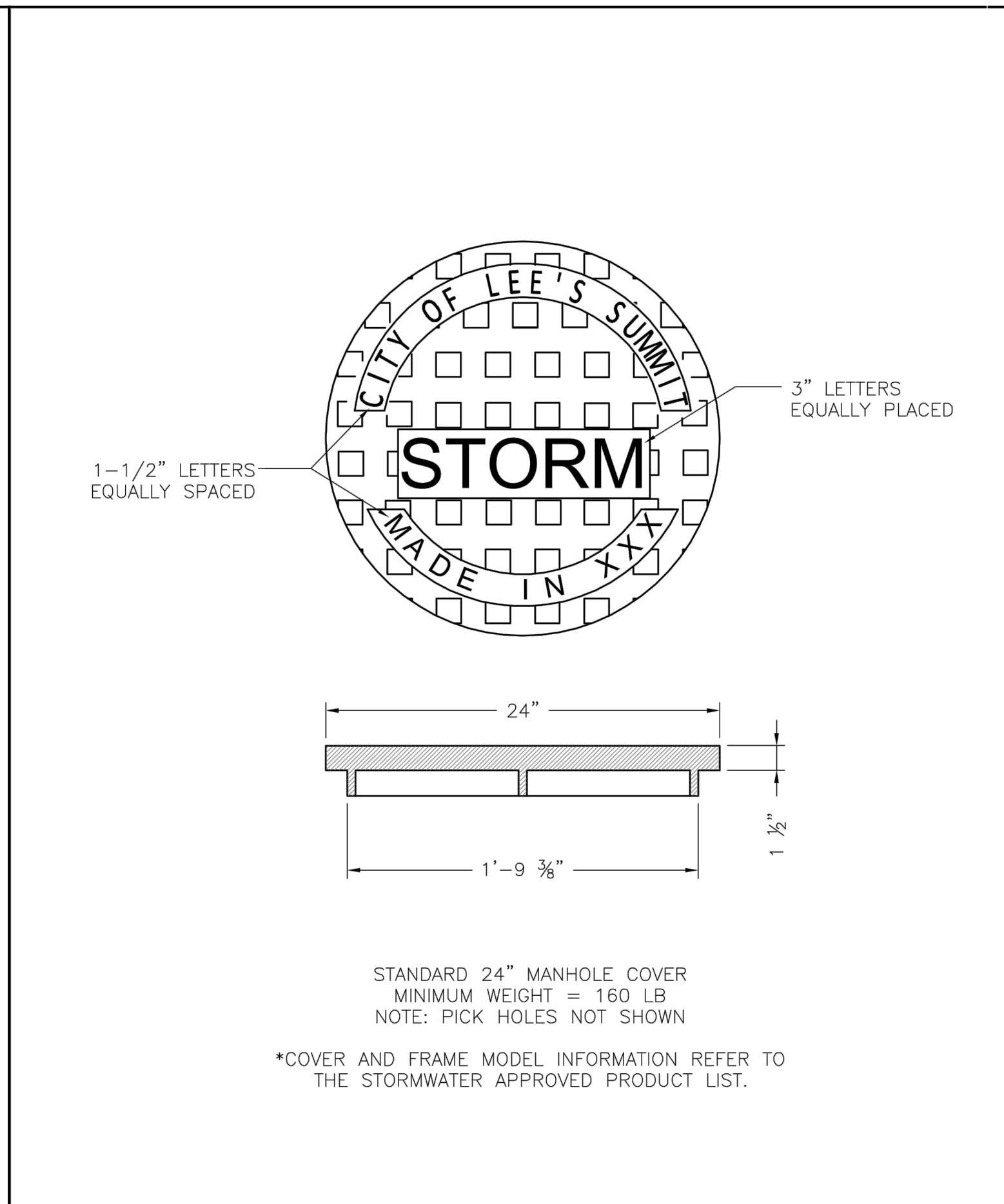
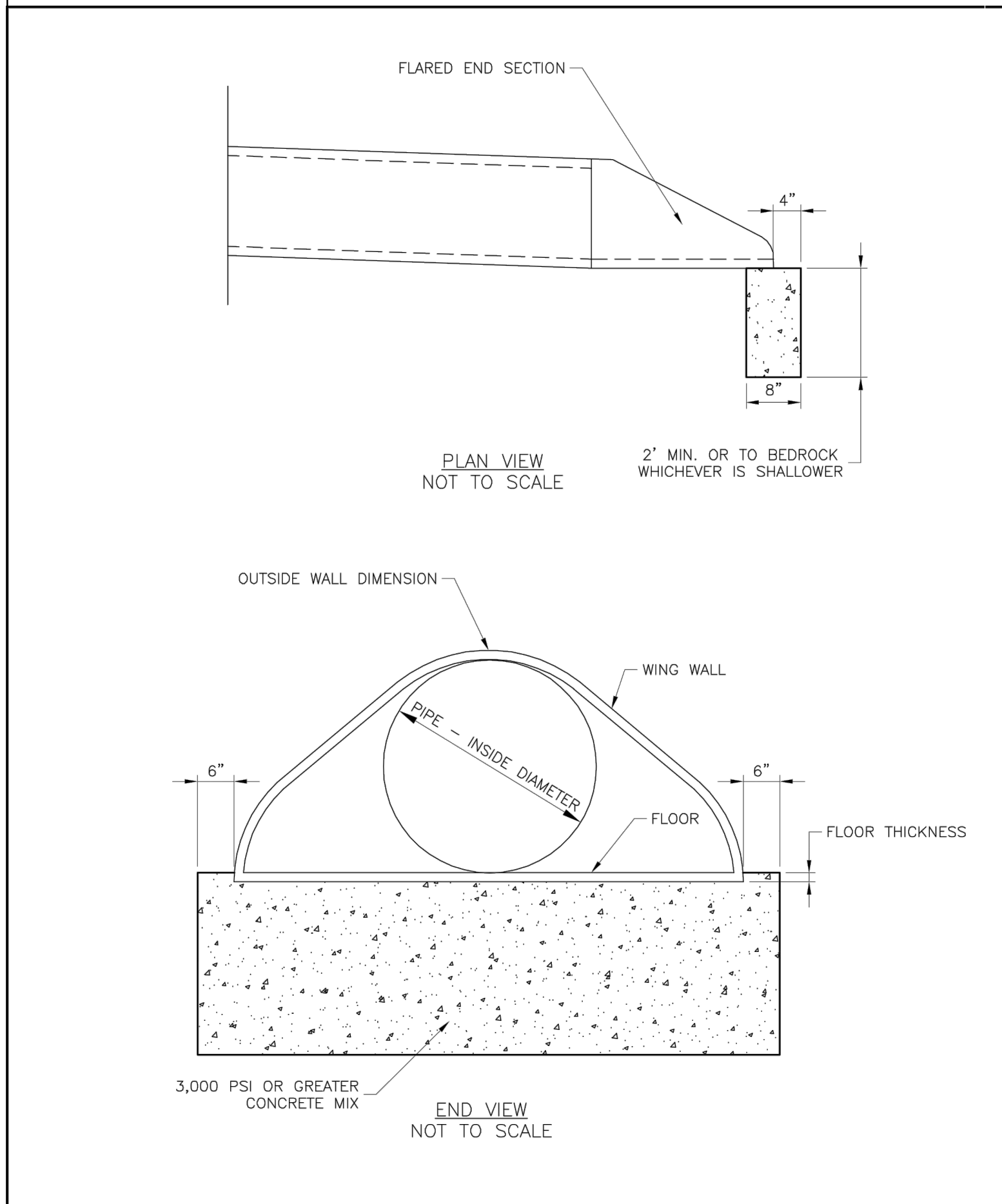
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 CITY OF LEE'S SUMMIT, MO  
 LEE'S SUMMIT, JACKSON COUNTY, MO  
 PUBLIC WORKS ENGINEERING DIVISION 1200 SE GREEN STREET | LEE'S SUMMIT, MO 66643



REVISION DATE	DESCRIPTION
11/10/2023	AS-BUILT REVISIONS
11/14/2022	AS-BUILT
08/22/2022	CITY WALL MODIFICATION
08/16/2022	CITY EMAILED COMMENTS
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01/12/2021	SCHLAGEL QUANTITIES
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05/12/2021	CITY COMMENTS
05/12/2021	CITY COMMENTS
05/28/2021	CITY COMMENTS
05/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT



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

**FLARED END SECTION SUPPORT DETAIL**

STM-5

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

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

**STORM MANHOLE COVER DETAIL**

STM-6

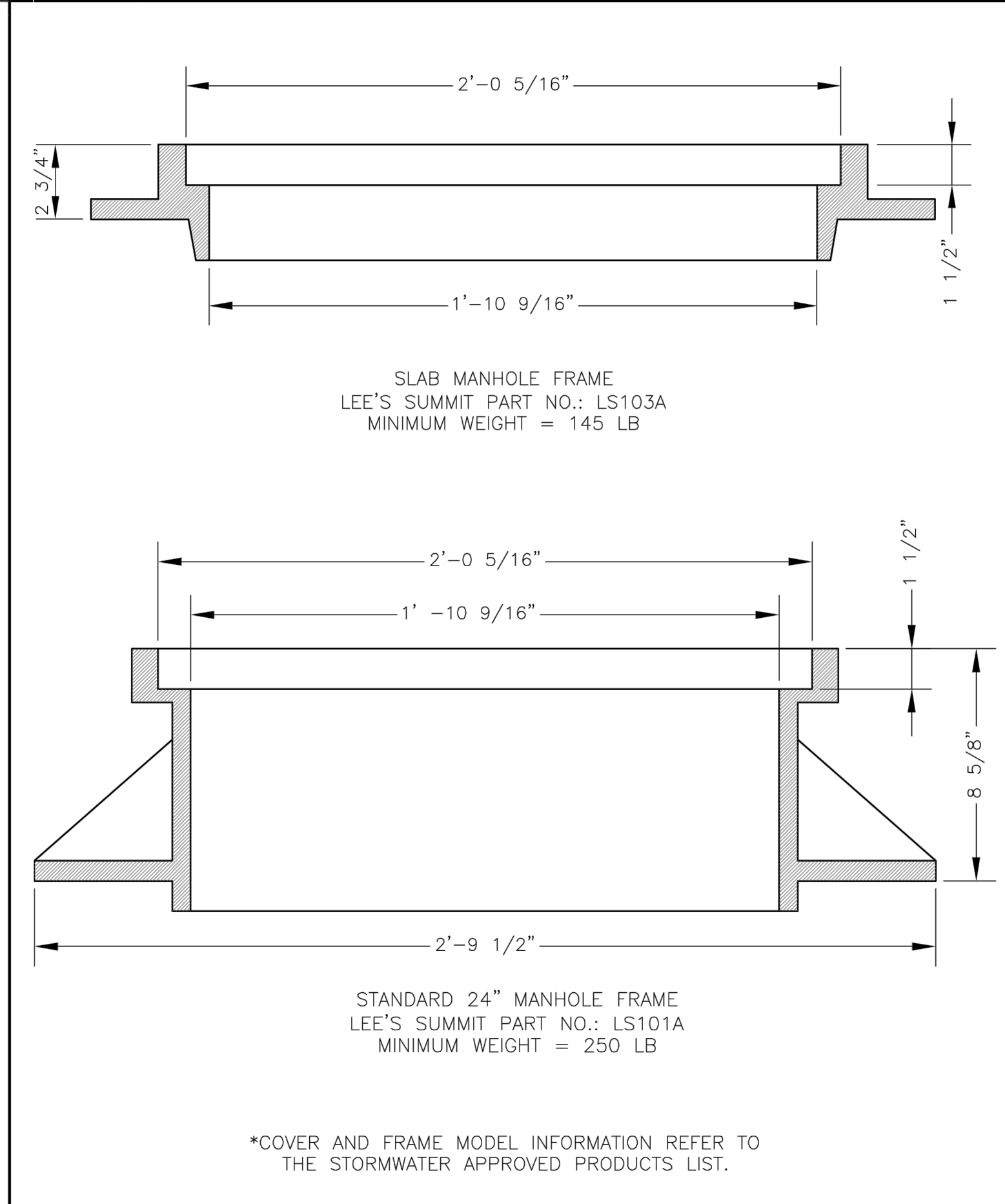
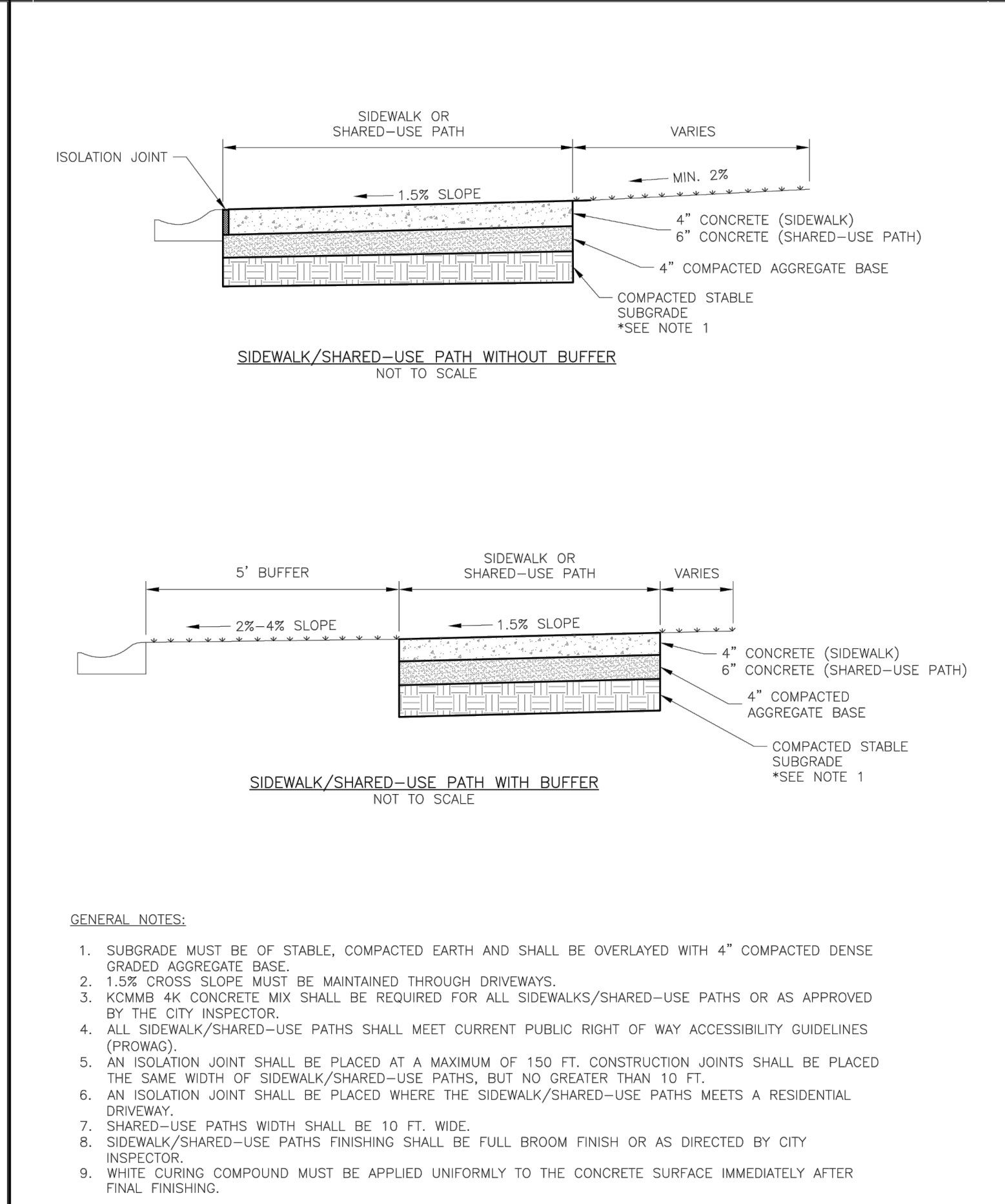
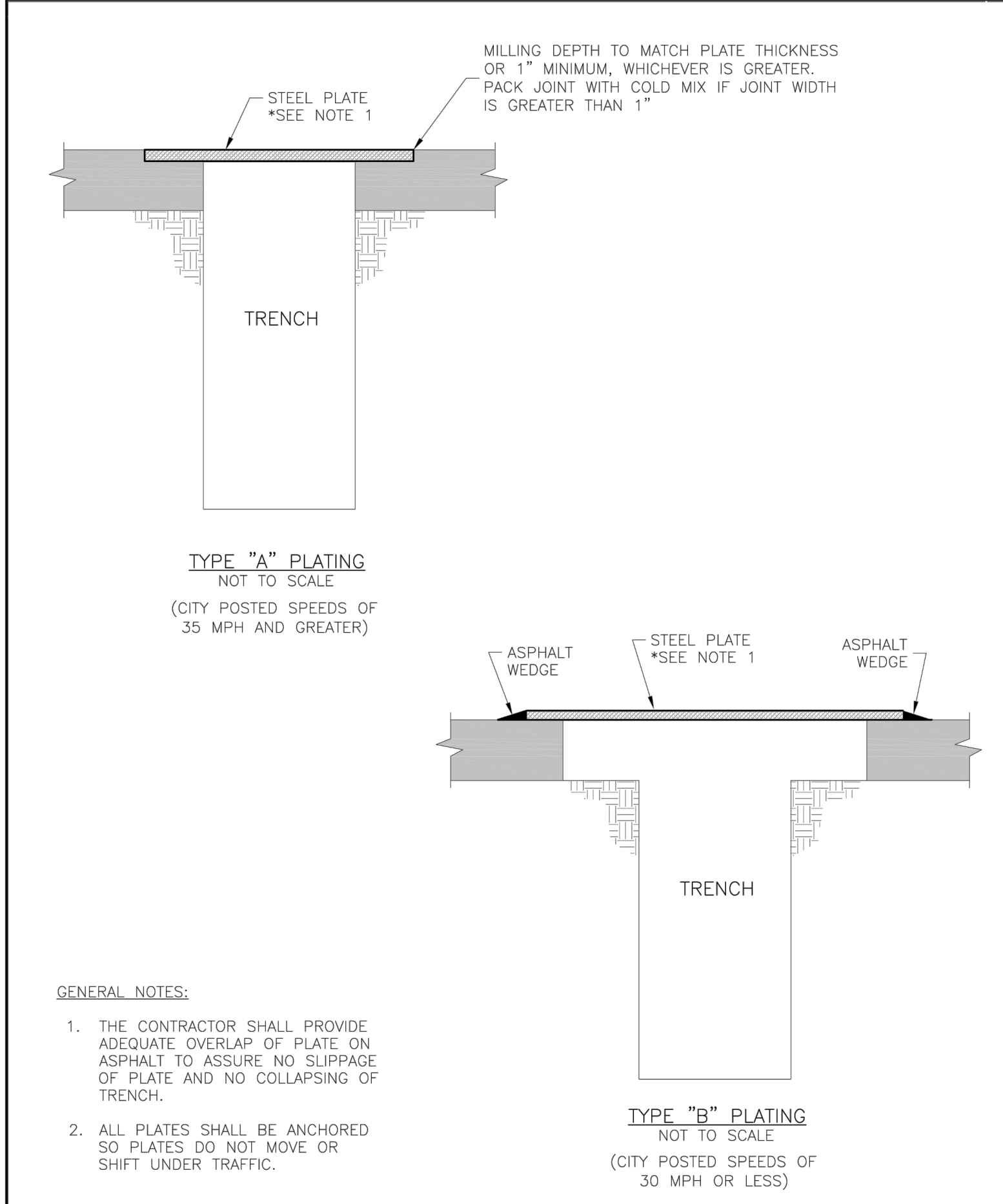
Date: 04/17  
 Drawn By: MJF  
 Checked By: DL

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

**TRENCHING/PATCHING ROADWAYS DETAIL**

GEN-5

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



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

**TRENCHING PLATE DETAIL**

GEN-6

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

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

**SIDEWALK/SHARED-USE PATH DETAIL**

GEN-2

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

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

**STORM MANHOLE FRAME DETAIL**

STM-7

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

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I:\PROJECTS\2018\18-07\3.0 Design\3.0 DWG Plans\6.0 SS\18-07-SS DETAILS.dwg, DET. 2, 1/10/2023 3:53:00 PM, 1:1

REVISION DATE	DESCRIPTION
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01/20/2022	WATER LINE CONFLICT

STREET AND STORM DETAILS

SHEET

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

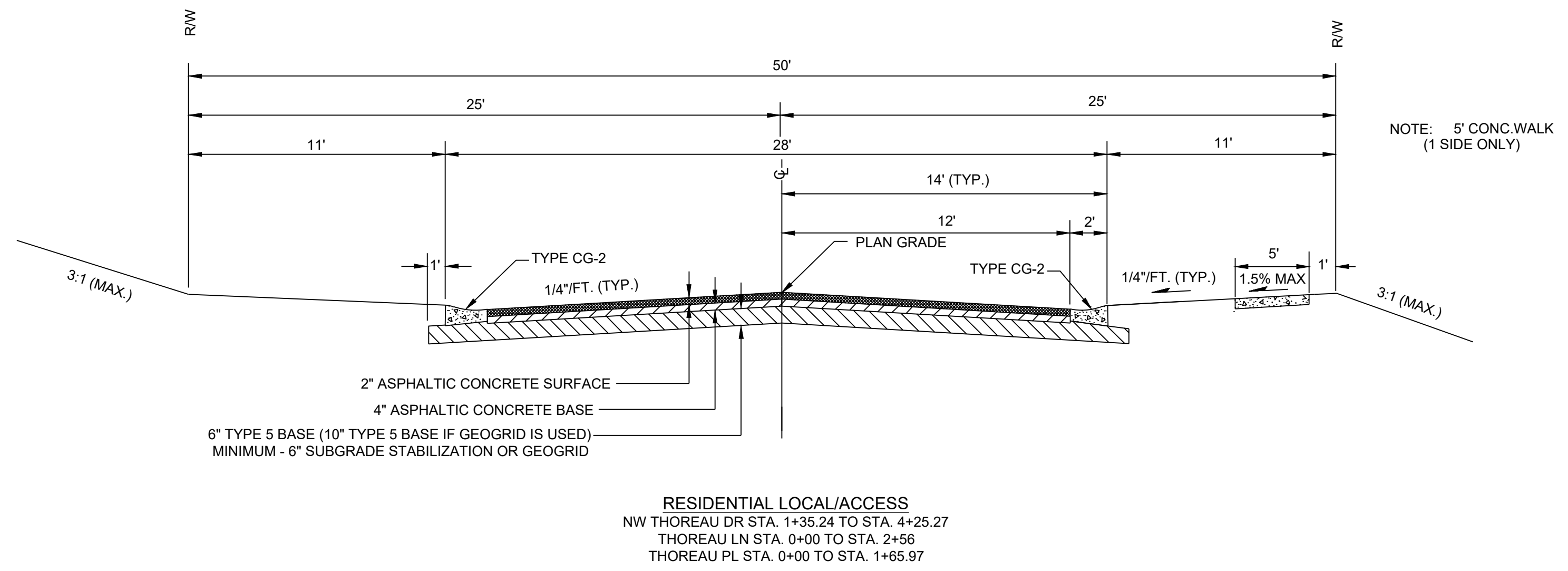
Street Classification	PCC (in.)	Aggregate Base (in.)	Subgrade Stabilization <sup>(1)</sup> (in.)
Residential Local/Access	6	4	--
Residential Collector	6	4	6
Commercial Industrial Local/Collector	8	4	9

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

LS5200

16

October 2016

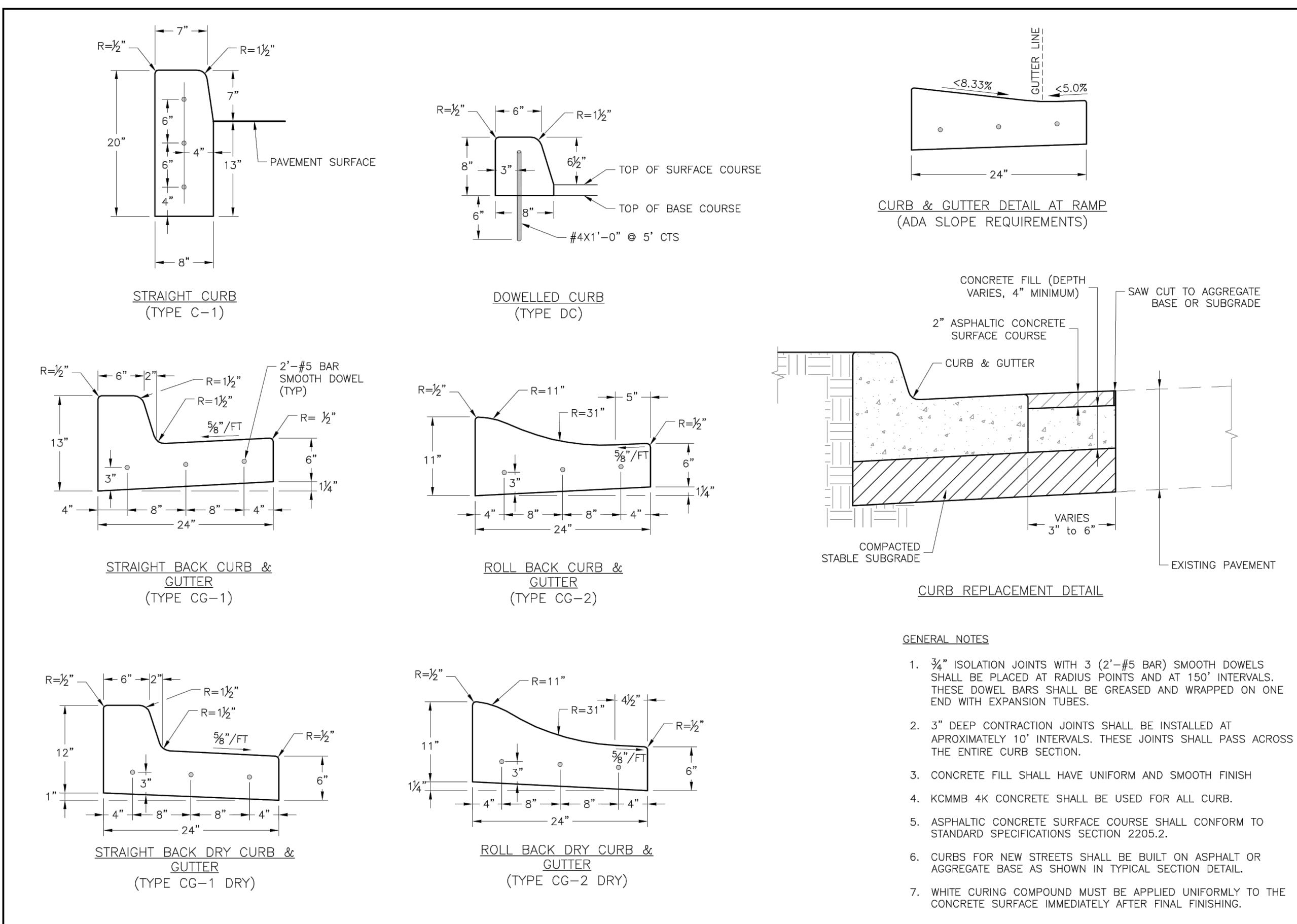


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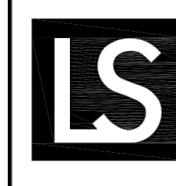
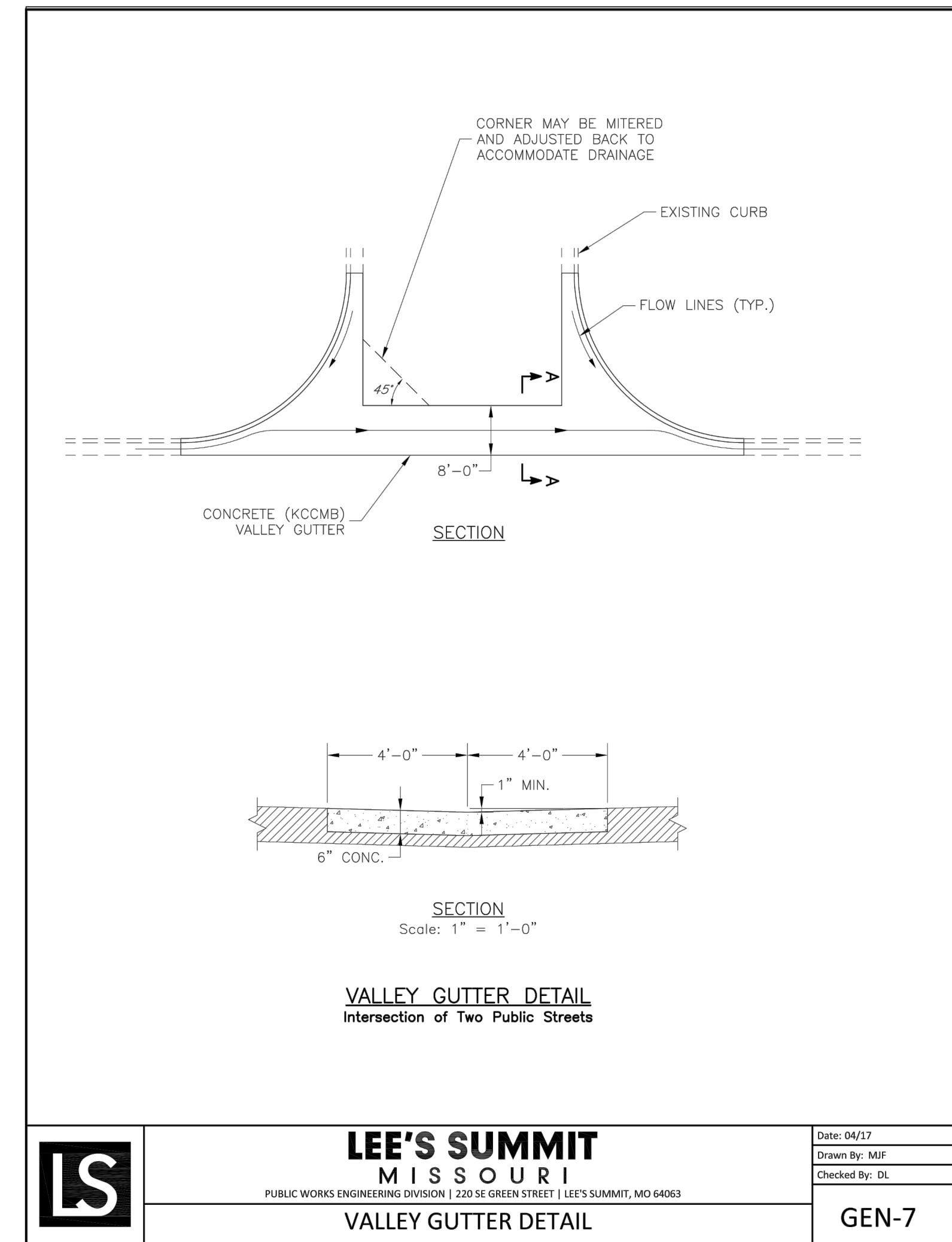
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LEE'S SUMMIT  
 MISSOURI  
 PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD DETAILS  
 CITY OF LEE'S SUMMIT, MO  
 LEE'S SUMMIT, JACKSON COUNTY, MO  
 CURB & GUTTER DETAIL  
 GEN-4



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  
 GEN-7



PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

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

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09/22/2022	CITY HALL MODIFICATION
09/16/2022	CITY EMAILED COMMENTS
04/24/2020	CITY COMMENTS
01/11/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
05/15/2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

ON 18-47-31

SIGNING PLAN

SHEET

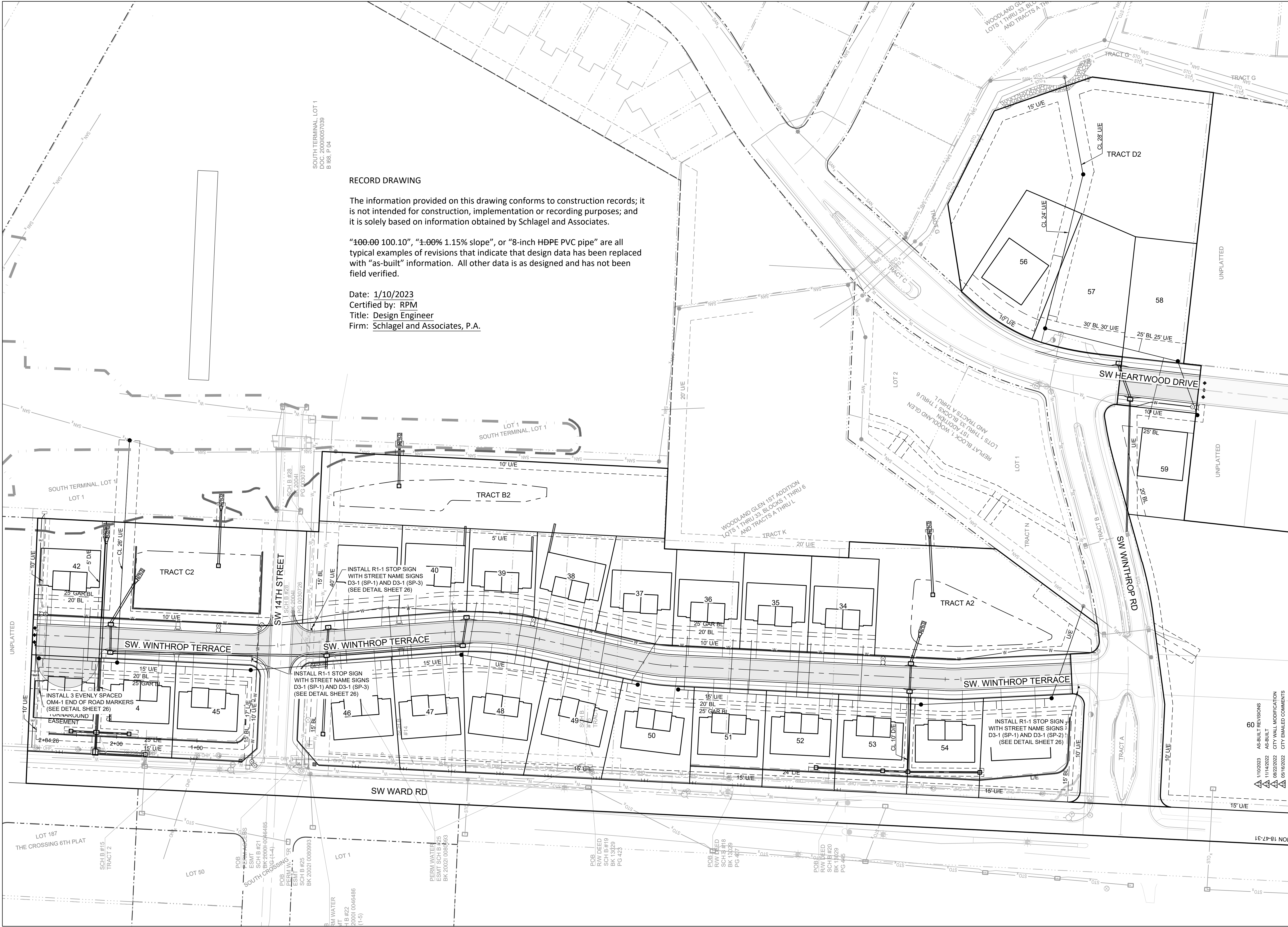
**RECORD DRAWING**

The information provided on this drawing conforms to construction records; it is not intended for construction, implementation or recording purposes; and it is solely based on information obtained by Schlager and Associates.

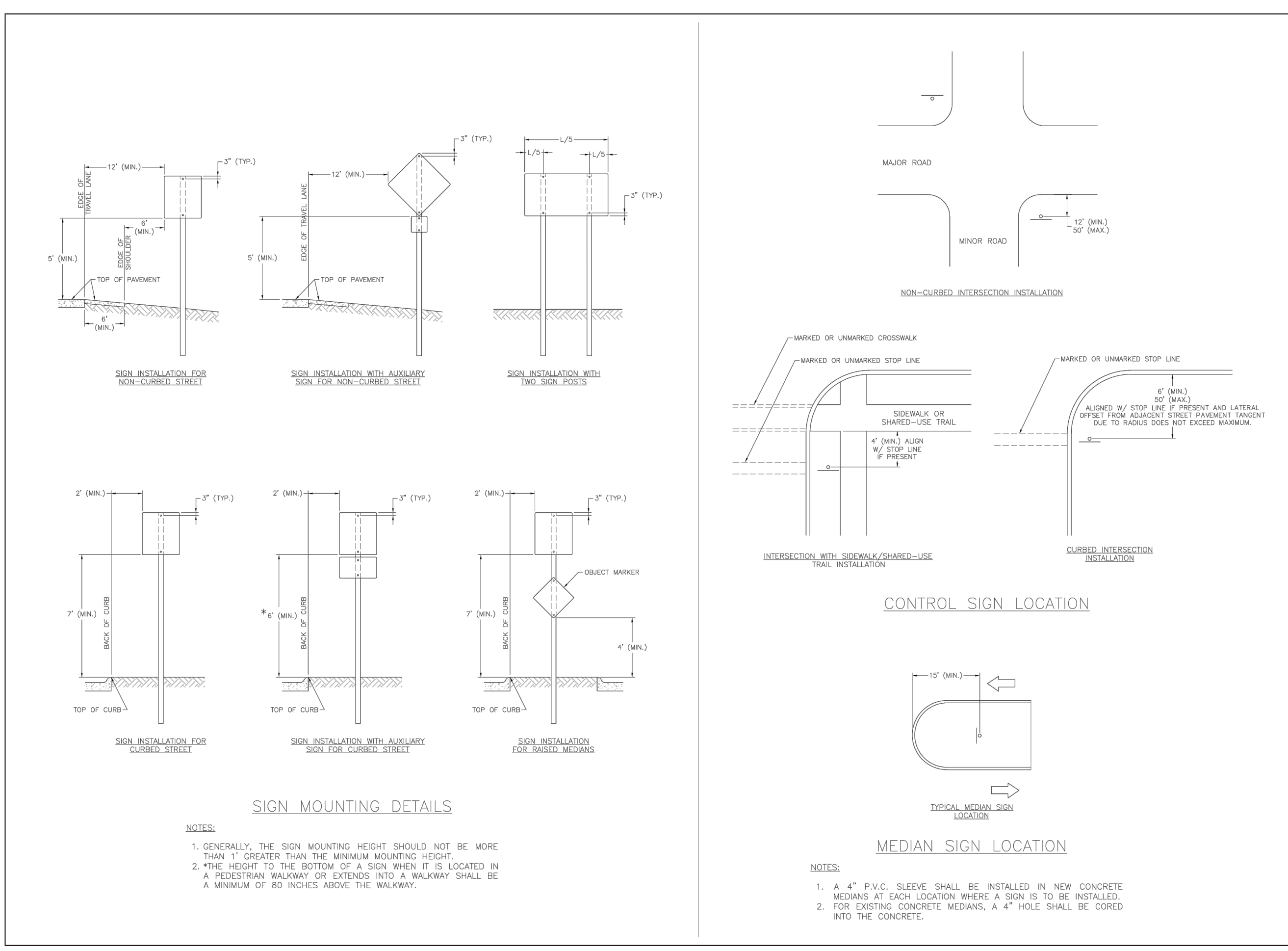
"100.00 100.10", "1.00% 1.15% slope", or "8-inch HDPE PVC pipe" are all typical examples of revisions that indicate that design data has been replaced with "as-built" information. All other data is as designed and has not been field verified.

Date: 1/10/2023  
 Certified by: RPM  
 Title: Design Engineer  
 Firm: Schlager and Associates, P.A.

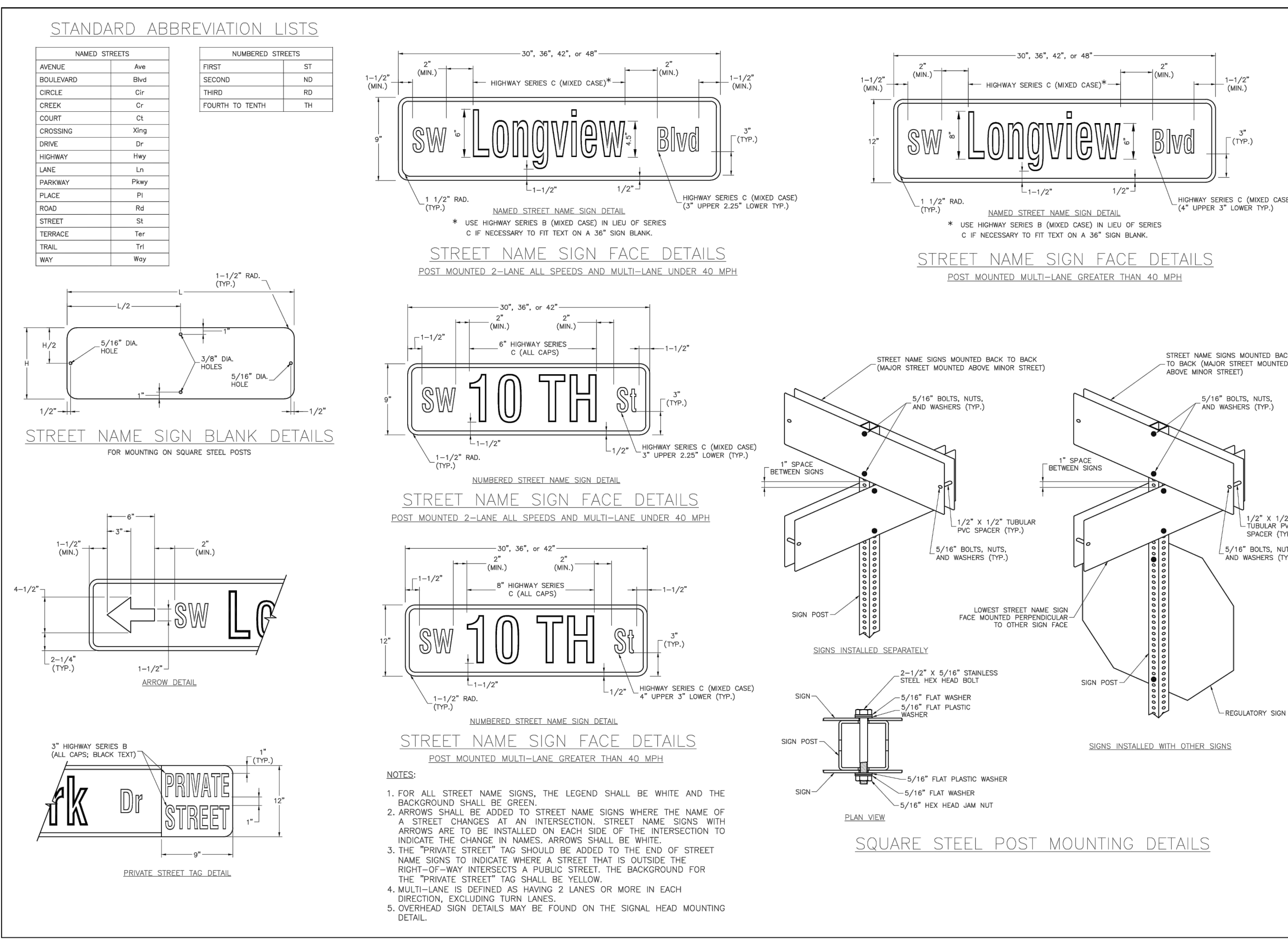
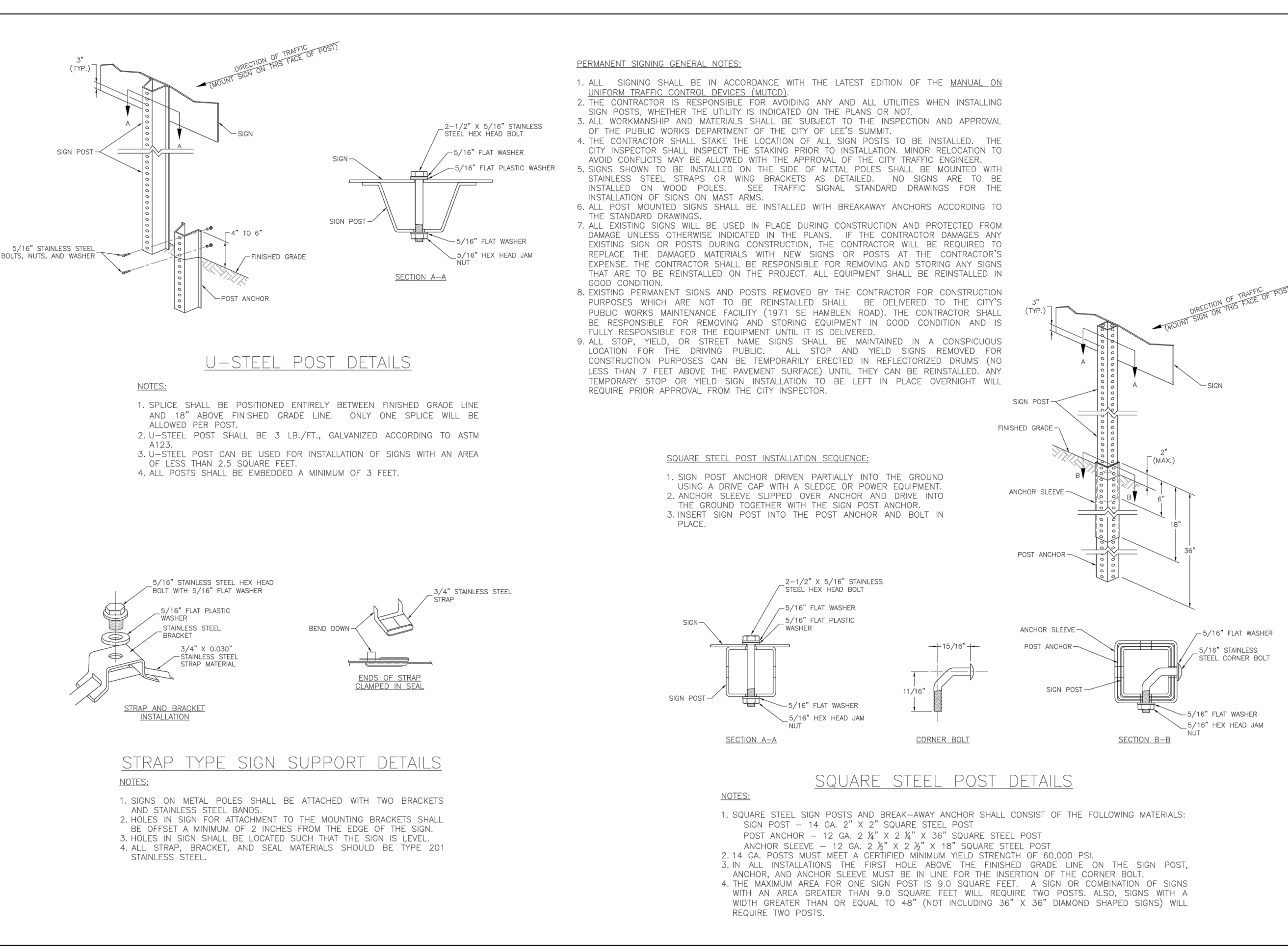
SOUTH TERMINAL LOT 1  
 DOC. 20010057039  
 B 168, P.04



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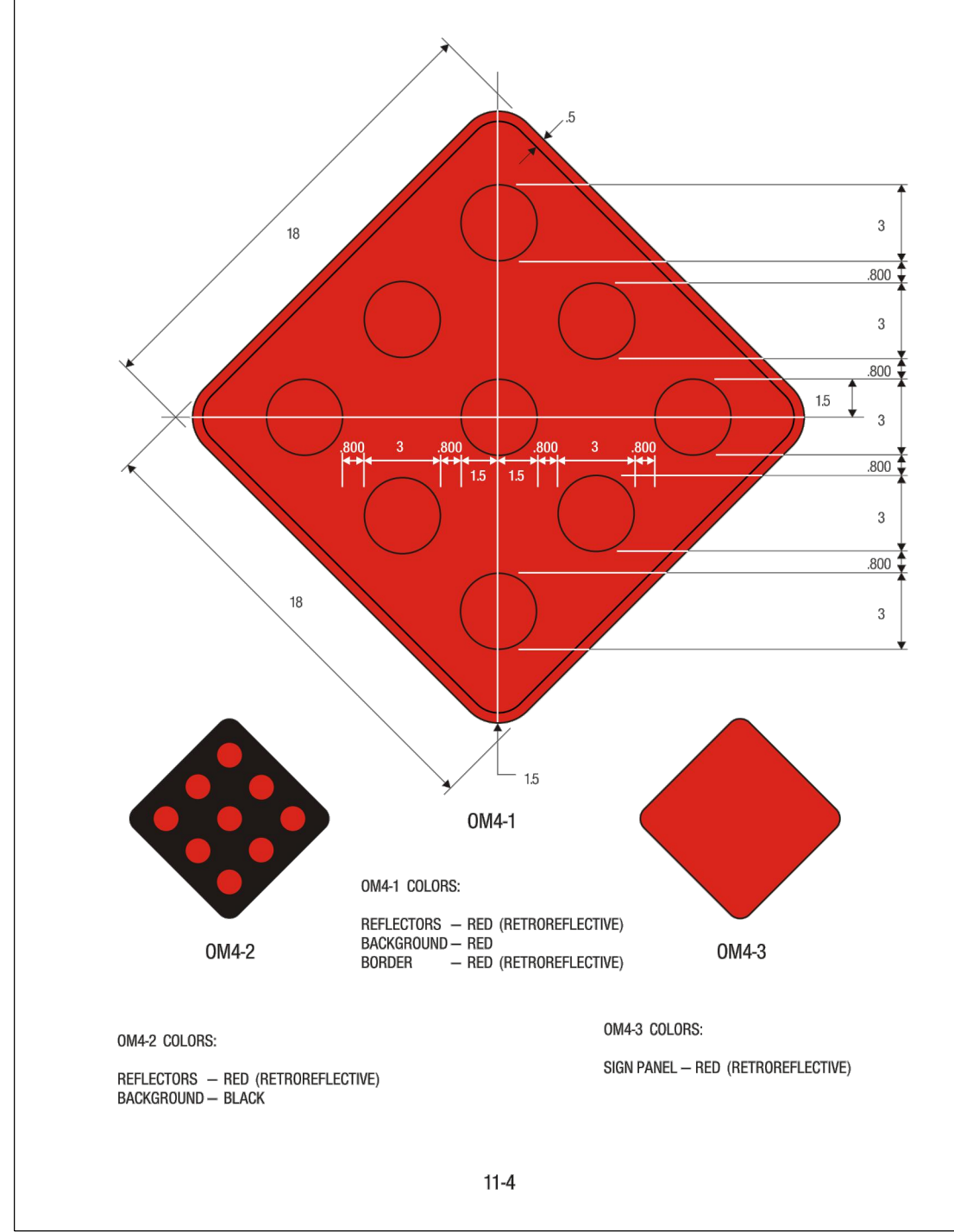


DATE	DESCRIPTION



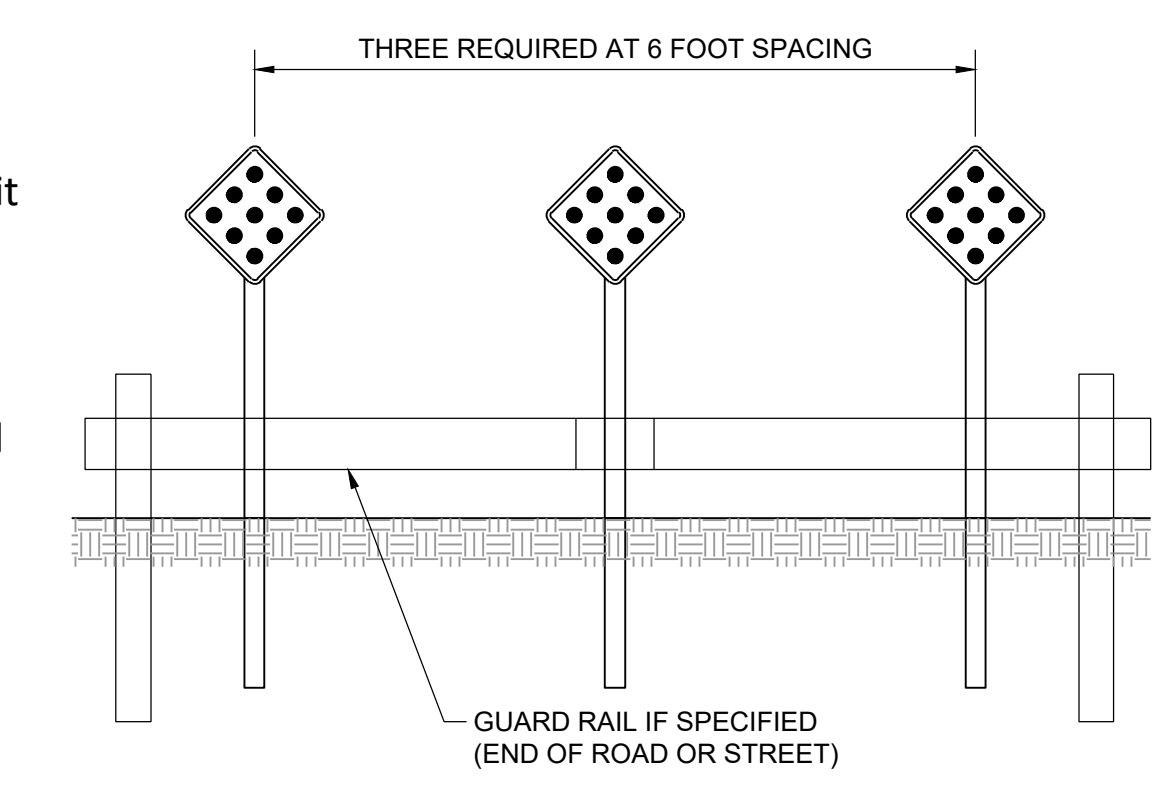
DATE	DESCRIPTION

DATE	DESCRIPTION



**RECORD DRAWING**  
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"100.00 100.10", "±.00% 1.15% slope", or "8-inch HDPE PVC pipe" are all typical examples of revisions that indicate that design data has been replaced with "as-built" information. All other data is as designed and has not been field verified.

Date: 1/10/2023  
Certified by: RPM  
Title: Design Engineer  
Firm: Schlager and Associates, P.A.



REVISION	DATE	DESCRIPTION

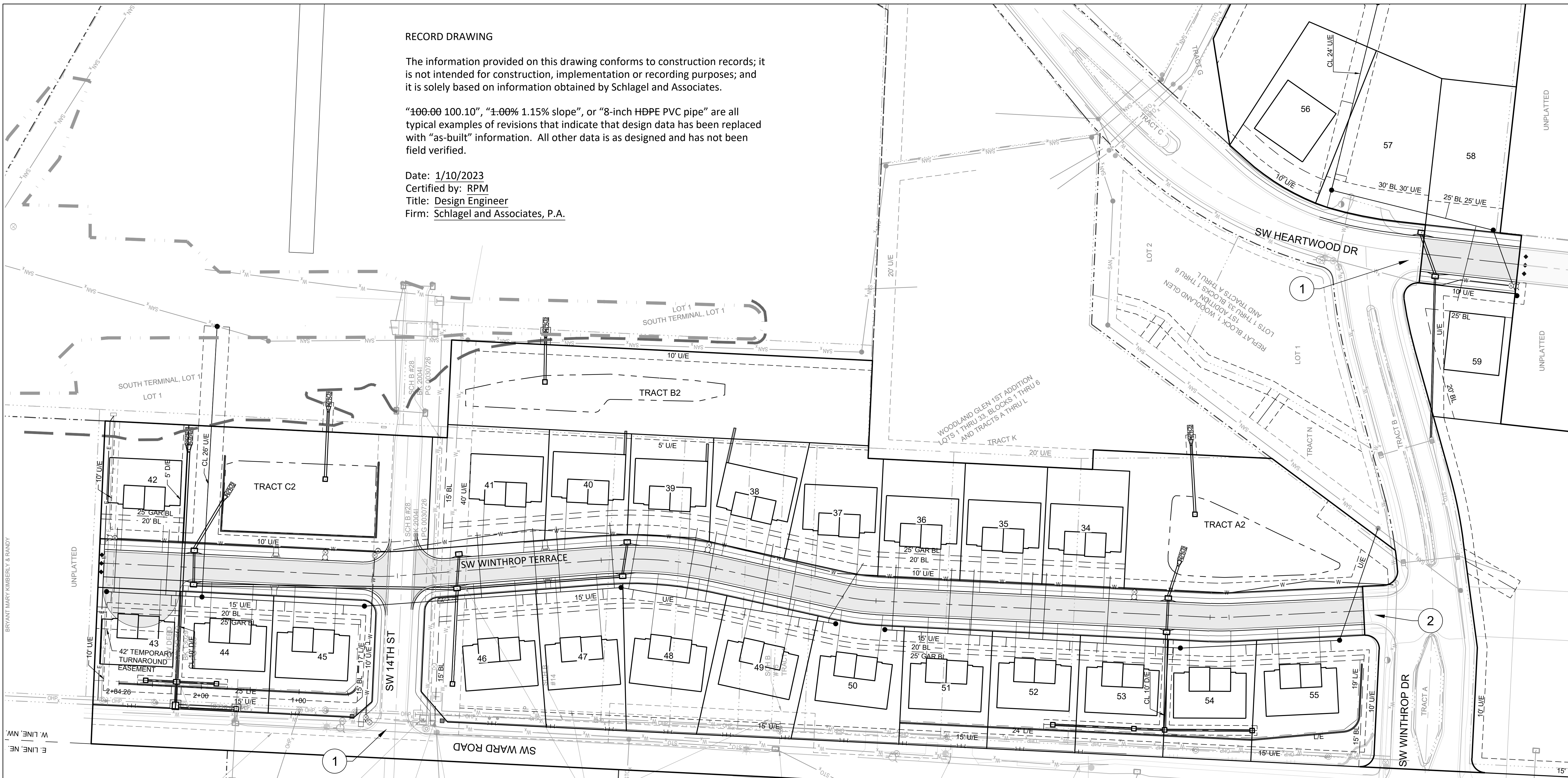
DRAWN BY	DATE	DESCRIPTION
BAL	04/24/2020	CITY COMMENTS

RECORD DRAWING

The information provided on this drawing conforms to construction records; it is not intended for construction, implementation or recording purposes; and it is solely based on information obtained by Schlagel and Associates.

"400-00 100.10", "1.00% 1.15% slope", or "8-inch HDPE PVC pipe" are all typical examples of revisions that indicate that design data has been replaced with "as-built" information. All other data is as designed and has not been field verified.

Date: 1/10/2023  
 Certified by: RPM  
 Title: Design Engineer  
 Firm: Schlagel and Associates, P.A.

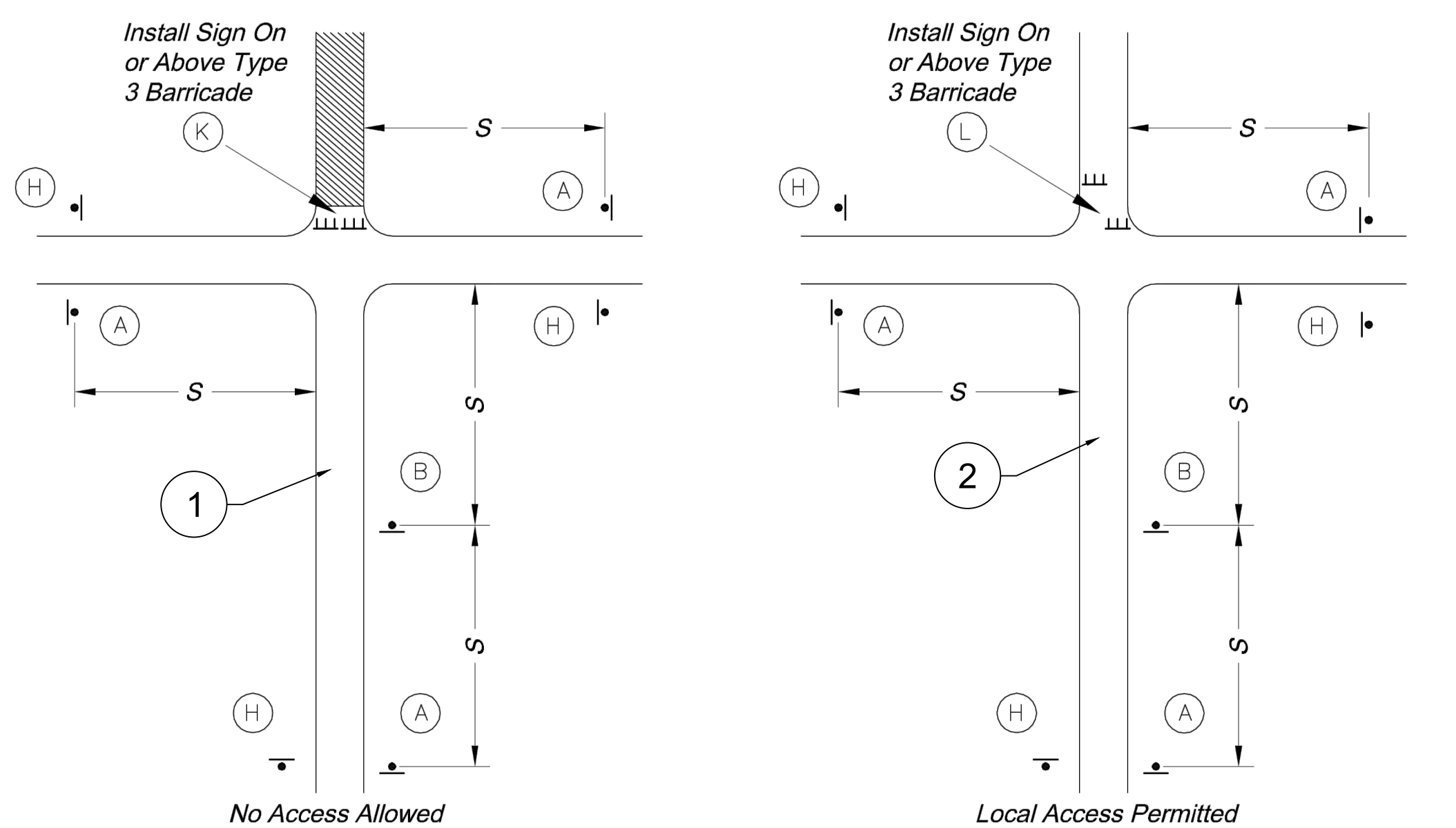


Sign Spacing "S"	
Speed Limit (mph)	Spacing (Feet)
25	100
30 - 35	250
≥ 40	350

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

Guidelines for Length of Longitudinal Buffer Space "B"	
Speed Limit (mph)	Length (Feet)
25	35
30	55
35	85
40	120
45	170

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



NOTE:  
 Reference the City of Lee's Summit "TRAFFIC CONTROL DETAILS" Standard Drawing TC-1 on Sheet 28 for sign types listed in the Typical Street Closure Diagrams.

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

REVISION DATE	DESCRIPTION
1/10/2023	AS-BUILT REVISIONS
11/14/2022	AS-BUILT
09/22/2022	CITY MAIL MODIFICATION
09/16/2022	CITY EMAILED COMMENTS
04/24/2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

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PREPARED BY:

SCHLAGEL & ASSOCIATES, P.A.

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

REVISION DATE	DESCRIPTION
1/10/2023	AS-BUILT REVISIONS
11/14/2022	AS-BUILT
09/22/2022	CITY HALL MODIFICATION
05/16/2022	CITY EMAILED COMMENTS
04/24/2020	CITY COMMENTS
01/12/2021	SCHLAGEL QUANTITIES
04/09/2021	SCHLAGEL QUANTITIES
05/12/2021	CITY COMMENTS
06/15/2021	CITY COMMENTS
06/28/2021	CITY COMMENTS
09/28/2021	SCHLAGEL UPDATE
10/06/2021	CITY COMMENTS
01/20/2022	WATER LINE CONFLICT

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

TRAFFIC CONTROL DETAILS

SHEET  
**28**

RECORD DRAWING  
 The information provided on this drawing conforms to construction records; it is not intended for construction, implementation or recording purposes; and it is solely based on information obtained by Schlager and Associates.

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Date: 1/10/2023  
 Certified by: RPM  
 Title: Design Engineer  
 Firm: Schlager and Associates, P.A.

### SYMBOL LEGEND

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

### SIGN LEGEND

### GENERAL NOTES:

- All signs, barricades, channelizers, markings and other traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
- All traffic control devices shall be standard in size, shape, color, and message, in good condition, and retro-reflectORIZED. All signs shall be securely mounted with height and lateral location as described in the MUTCD.
- Warning lights shall be used on barricades in place at night and on warning signs which alert drivers about a change in alignment, traffic control, lane closure, or road closure.
- Flaggers shall be used where indicated on the plans, where construction vehicles interact with normal traffic, or where construction activities impose a restriction on traffic, as directed by the City Traffic Engineer. Where flaggers are used, advance signing shall be erected as shown in the details or as specified in the MUTCD. Flaggers shall meet the requirements in the MUTCD in regard to character, training, attire, and behavior.
- Trim-lines are the City's preferred channelizing device. Cones may not be used at nighttime.
- Traffic control devices not in use or not applicable shall be either covered or removed from the work area.
- The Contractor shall use barricades, street plates, or fencing as needed to effectively shield pedestrian and vehicular traffic from exposed objects, excavations, and construction activities.
- Access shall be maintained to all driveways and side streets unless noted otherwise on the plans.
- No street shall be closed without the approval of the City Traffic Engineer. The Contractor shall notify the City Traffic Engineer at least 7 days in advance of any street closure. If a detour route around the closure is to be provided, all detour signing shall be as shown on a plan approved by the City Traffic Engineer.
- Construction vehicles parked along streets shall be located within the work area (traffic control) or where otherwise normally permitted. Construction materials, including traffic control and vehicles shall not restrict sight distance for vehicles exiting at streets or drives.
- Construction materials shall be kept off of sidewalks, consolidated in one location within City right-of-way, and removed daily unless otherwise approved by the Inspector. Dirt, mud, and other construction debris on streets and sidewalks shall be removed immediately.
- The Contractor shall not perform any work that will restrict vehicular traffic in any way between the hours of 7:00 a.m. and 9:00 a.m. or 4:00 p.m. and 6:00 p.m. Monday through Friday unless otherwise indicated in the specifications.
- All travel lanes should be at least 11 feet wide unless otherwise authorized by the City Traffic Engineer. A "Narrow Lanes" sign shall be installed in advance of a lane width reduction to less than 11 feet.
- All edge drop-offs of more than 2 inches and less than 4 inches should be protected by a wedge or barrier and all edge drop-offs greater than 4 inches shall have edge protection (see Traffic Control Specifications for edge treatment requirements).
- The "Workers" symbolic sign (MUTCD No. W21-1a) may be used instead of the "Road Work Ahead" sign for work with a duration of 12 hours or less. The "End Road Work" sign is not required to be installed after the "Workers" sign.
- No traffic signal shall be altered or modified in any way without a plan approved by the City Traffic Engineer.
- The Contractor shall be responsible for maintaining all traffic control devices on an around-the-clock basis, whether or not work is actively being pursued and any deficiencies noted shall be corrected immediately.
- The traffic control requirements shown on these plans are minimum requirements only and do not attempt to address in depth the variety of situations that may occur once construction has started. In no way do the requirements shown on these plans relieve the Contractor of his responsibility for selecting the proper traffic control devices and implementation procedures that will assure the safety of drivers, pedestrians, and workers at all times.
- Should the contractor fail to enforce the traffic control plan or fail to clean, replace or otherwise maintain the traffic control devices when directed to do so by the City Traffic Engineer or representative, the City may take one or more of the following actions:
  - Employ another agency to correct deficiencies in traffic control devices and deduct the cost from the Contractor's pay estimate.
  - Stop the work until deficiencies are corrected.
  - Suspend all pay estimates until deficiencies are corrected, or
  - Place the Contractor in default.

### LANE CLOSURE - TWO LANE STREET

### LANE CLOSURE - FOUR LANE STREET

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

### TURN LANE CLOSURE

### LANE CLOSURE - THREE LANE STREET

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

### TYPICAL SIGNING FOR WORK ADJACENT TO THE STREET

### TYPICAL STREET CLOSURE

No Access Allowed / Local Access Permitted

### CHANNELIZERS

NOTE: White Bands On Barricades and Channelizers Shall Be Made From High Intensity Sheeting Material.

### BARRICADES

Sign Spacing "S"		Taper Dimensions (Feet)				
Speed Limit (mph)	Spacing (Feet)	Speed Limit (mph)	Minimum Taper Length "L", per Lane Width "W"	11	12	Minimum Number of Channelizers
25	100	25	105	115	125	6
30 - 35	250	30	150	165	180	7
≥ 40	350	35	205	225	245	8
		40	270	295	320	9
		45	450	495	540	13

Guidelines for Length of Longitudinal Buffer Space "B"		Maximum Channelizer Spacing		
Speed Limit (mph)	Length (Feet)	Speed Limit (mph)	Within Taper (Feet)	Outside Taper (Feet)
25	35	25	25	50
30	55	30	30	60
35	85	35	35	70
40	120	40	40	80
45	170	45	45	90

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