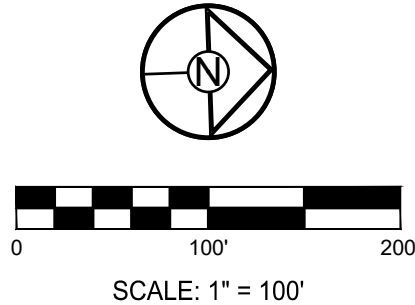


EARTHWORK
CUT: 133,0890 CY
FILL: 135,267 CY (15% FACTOR)
NET: 1,378 CY CUT
(APPROXIMATE - PAVEMENTS AND TRENCHING NEGLECTED)



RESIDENCES, REUNION & RESERVE AT BLACKWELL
MASS GRADING & EROSION SEDIMENT CONTROL PLANS

| REVISION DATE | DESCRIPTION |
|---------------|-------------------|
| 01/23/2023 | PER CITY COMMENTS |
| 5/12/2023 | PER CITY COMMENTS |
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| | |

GRADING PLAN
FULL SITE

SHEET
2

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ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS

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(913) 492-5158 • Fax: (913) 492-8400
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Missouri State Certificates of Authority
#E2002003600-F #LAC2001005237 #LS2002008659-F

PREPARED BY:

STATE OF MISSOURI

MARK ALLEN BREUER

NUMBER PE-2003007268

PROFESSIONAL ENGINEER

05.15.2023

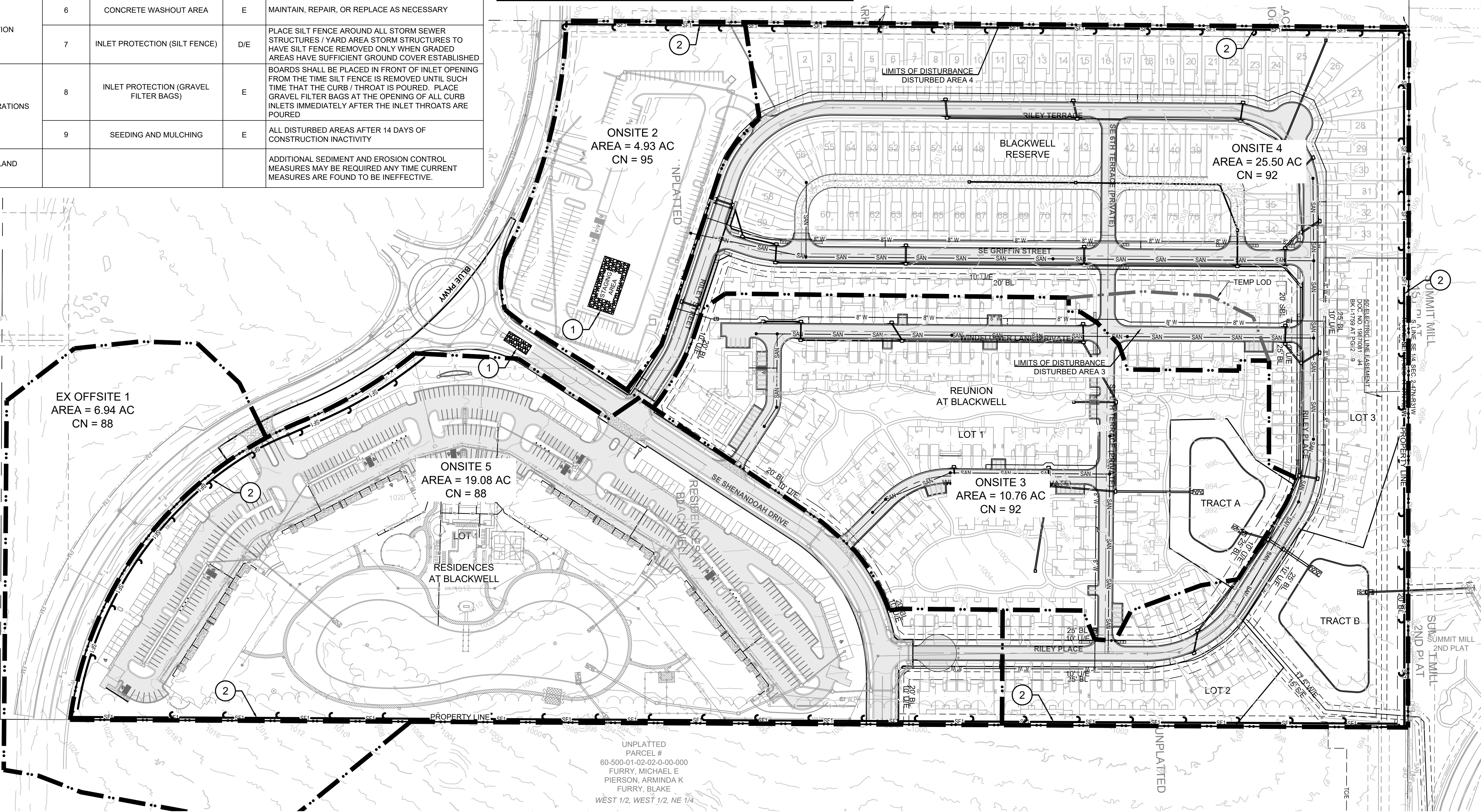
SCHLAGEL & ASSOCIATES, P.A.

| EROSION AND SEDIMENT CONTROL STAGING CHART | | | | | |
|--|--|------------------|---------------------------------------|--------------------|--|
| PROJECT STAGE | | BMP PLAN REF. NO | BMP DESCRIPTION | REMOVE AFTER STAGE | NOTES: |
| PRE-CLEARING PHASE | A - PRIOR TO LAND DISTURBANCE | 1 | CONSTRUCTION ENTRANCE & STAGING AREA | D | MAINTAIN, REPAIR, OR REPLACE AS NECESSARY |
| | | 2 | SILT FENCE (PRIOR TO CONSTRUCTION) | E | PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED |
| CONSTRUCTION PHASE | B - MASS GRADING | 3 | SILT FENCE (DURING CONSTRUCTION) | E | PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED |
| | | 4 | SEDIMENT BASIN | E | INSTALL PRIOR TO BEGINNING MASS SITE GRADING (RE: SHEET 7 FOR DETAILS) |
| | | 5 | ROCK DITCH CHECK | E | PLACE WHERE INDICATED, REPAIR OR REPLACE AS NECESSARY AND REMOVE ONLY WHEN GRADED AREAS HAVE SUFFICIENT GROUND COVER ESTABLISHED |
| | C - UTILITY CONSTRUCTION | 6 | CONCRETE WASHOUT AREA | E | MAINTAIN, REPAIR, OR REPLACE AS NECESSARY |
| | | 7 | 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 |
| FINAL STABILIZATION PHASE | D - AFTER PAVING OPERATIONS | 8 | 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 |
| | | 9 | SEEDING AND MULCHING | E | ALL DISTURBED AREAS AFTER 14 DAYS OF CONSTRUCTION INACTIVITY |
| | E - UNTIL CLOSURE OF LAND DISTURBANCE PERMIT | | | | ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES MAY BE REQUIRED ANY TIME CURRENT MEASURES ARE FOUND TO BE INEFFECTIVE. |

| LEGEND | |
|--------|--|
| | TEMP. CONSTRUCTION ENTRANCE AND STAGING AREA |
| | CONCRETE WASHOUT AREA |
| | ROCK DITCH CHECK |
| | SILT FENCE FOR INLET PROTECTION PRIOR TO STRUCTURE TOP |
| | TURF REINFORCEMENT MAT |
| | BMP PLAN REF. NO. |
| | SUPER SEDIMENT SILT FENCE (PRIOR TO LAND DISTURBANCE) |
| | SILT FENCE (PRIOR TO LAND DISTURBANCE) |
| | SILT FENCE (DURING CONSTRUCTION) |
| | LIMITS OF DISTURBANCE |
| | EXISTING CONTOURS |
| | PROPOSED CONTOURS |
| | GRAVEL FILTER FOR STORM SEWER STRUCTURES ONLY |

NW CORNER, NW 1/4 SEC. 11-47-31
W. LINE, NW 1/4, SEC. 11-47-31

S87°55'11"E 1316.24'



DISTURBED AREA 1 = 0.54 A.C.
DISTURBED AREA 2 = 4.97 A.C.
DISTURBED AREA 3 = 10.76 A.C.
DISTURBED AREA 4 = 25.50 A.C.
DISTURBED AREA 5 = 17.37 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 NUMBERS 29095C0441G, 29095C0445G, 29095C0437G AND

29095C0439G DATED JANUARY 20TH, 2017.

- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED ACCORDING TO THE BMP STAGING CHART.
- ADDITIONAL EROSION CONTROL MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME EXISTING MEASURES ARE FOUND TO BE INEFFECTIVE OR PROBLEMATIC AREAS ARE NOTED IN THE FIELD.
- STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING, OR OTHER SOIL DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. THE DISTURBED AREAS SHALL BE PROTECTED FROM EROSION BY STABILIZING THE

AREA WITH MULCH OR OTHER SIMILARLY EFFECTIVE SOIL STABILIZING BMPs. INITIAL STABILIZATION ACTIVITIES MUST BE COMPLETED WITHIN 14 DAYS AFTER SOIL DISTURBING ACTIVITIES CEASE.

- ALL PERIMETER SILT FENCE, EARTH DIKES, SEDIMENT BASINS, AND ROCK CONSTRUCTION ENTRANCES WILL BE INSTALLED BEFORE GRADING OPERATIONS BEGIN.
- SILT FENCE AND EARTH DIKES THAT ARE PLACED BEFORE GRADING BEGINS WILL BE MAINTAINED BY THE GRADING CONTRACTOR.
- AREAS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SODDED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE.

MO GRS BENCHMARK:

STATION NAME - JA-90

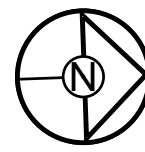
KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988" LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD. N:996874.9690, E:2840937.1365

ELEV. 997.045

PROJECT BENCHMARK:

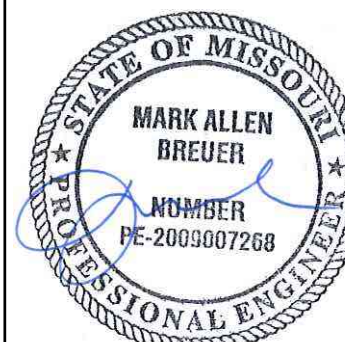
"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH OF THE CENTERLINE OF BLUE PARKWAY. N:996874.9690, E:2840937.1365

ELEV. 1005.719



0 100' 200'
SCALE: 1" = 100'

PREPARED BY:



05.15.2023

SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES, REUNION & RESERVE AT BLACKWELL
MASS GRADING & EROSION SEDIMENT CONTROL PLANS

HERITAGE STREET LEE'S SUMMIT, MO

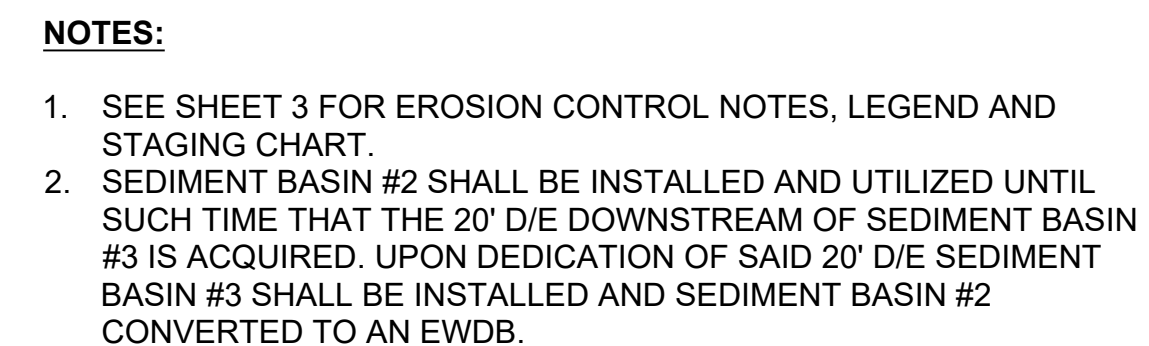
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| 01/23/2023 | PER CITY COMMENTS |
| 01/23/2023 | PER CITY COMMENTS |

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| DRAWN BY: | TRC |
| CHECKED BY: | MAB |
| DATE PREPARED: | 11/30/2022 |
| PROJ. NUMBER: | 22-102 |

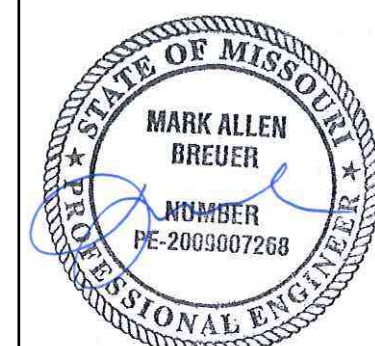
PRE-CONSTRUCTION
EROSION
CONTROL PLAN

SHEET

3



PREPARED BY:



05.15.2023

SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES, REUNION & RESERVE AT BLACKWELL
MASS GRADING & EROSION SEDIMENT CONTROL PLANS

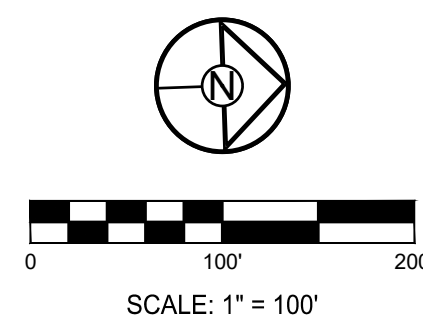
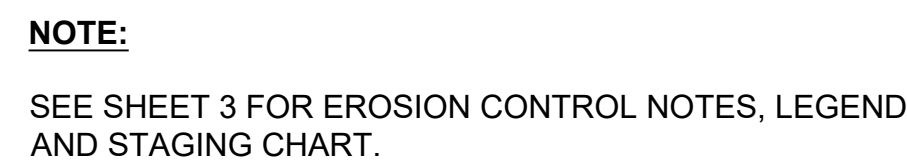
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| DRAWN BY: | REVISION DATE | DESCRIPTION |
|----------------|---------------|-------------------|
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| | 5/12/2023 | PER CITY COMMENTS |
| CHECKED BY: | | |
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| DATE PREPARED: | | |
| 11/30/2022 | | |
| PROJ. NUMBER: | | |
| 22-102 | | |

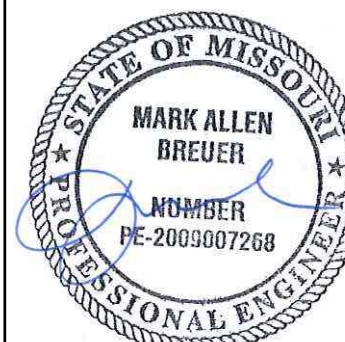
EROSION CONTROL PLAN

SHEET

4



PREPARED BY:



05.15.2023

SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES, REUNION & RESERVE AT BLACKWELL
MASS GRADING & EROSION SEDIMENT CONTROL PLANS

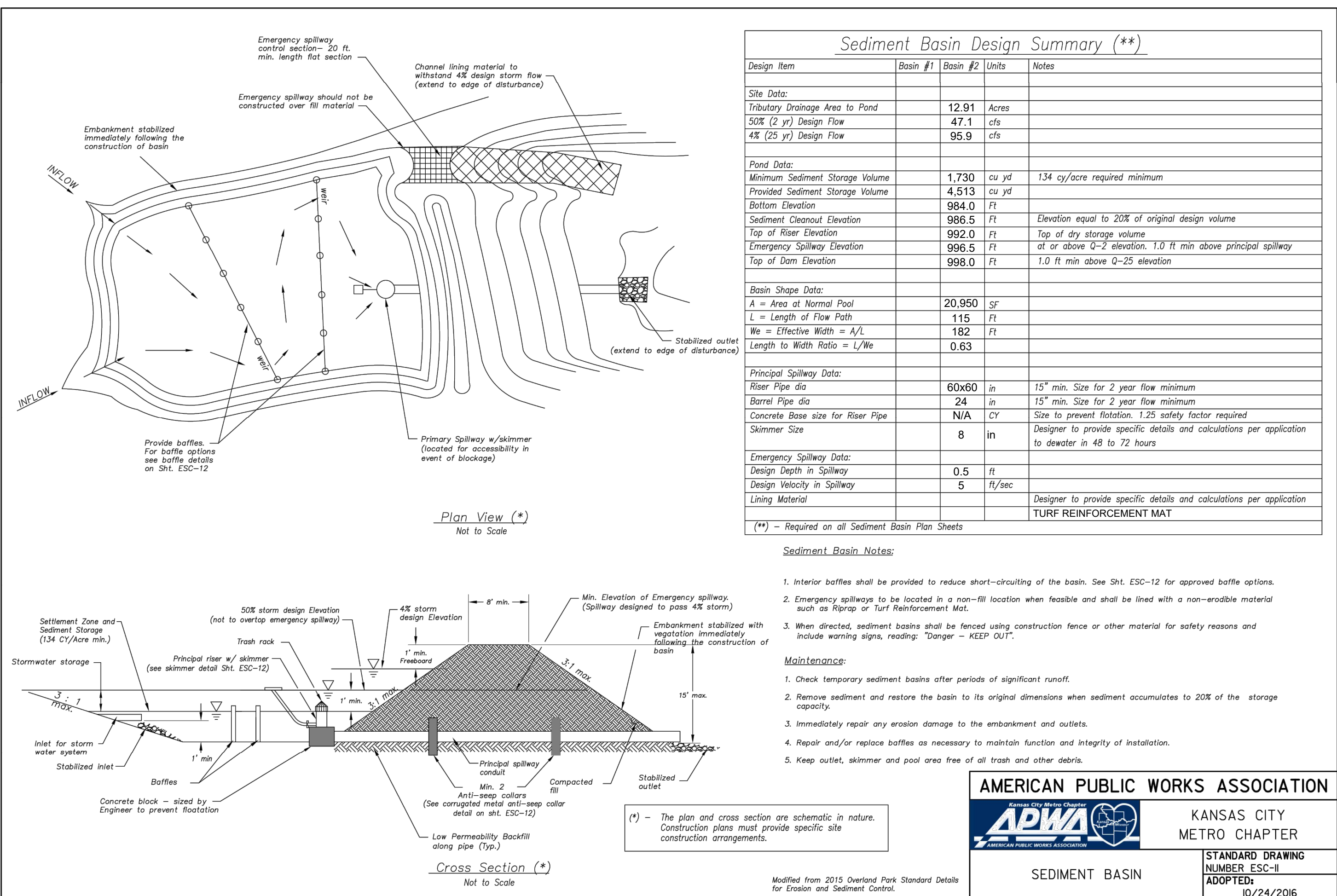
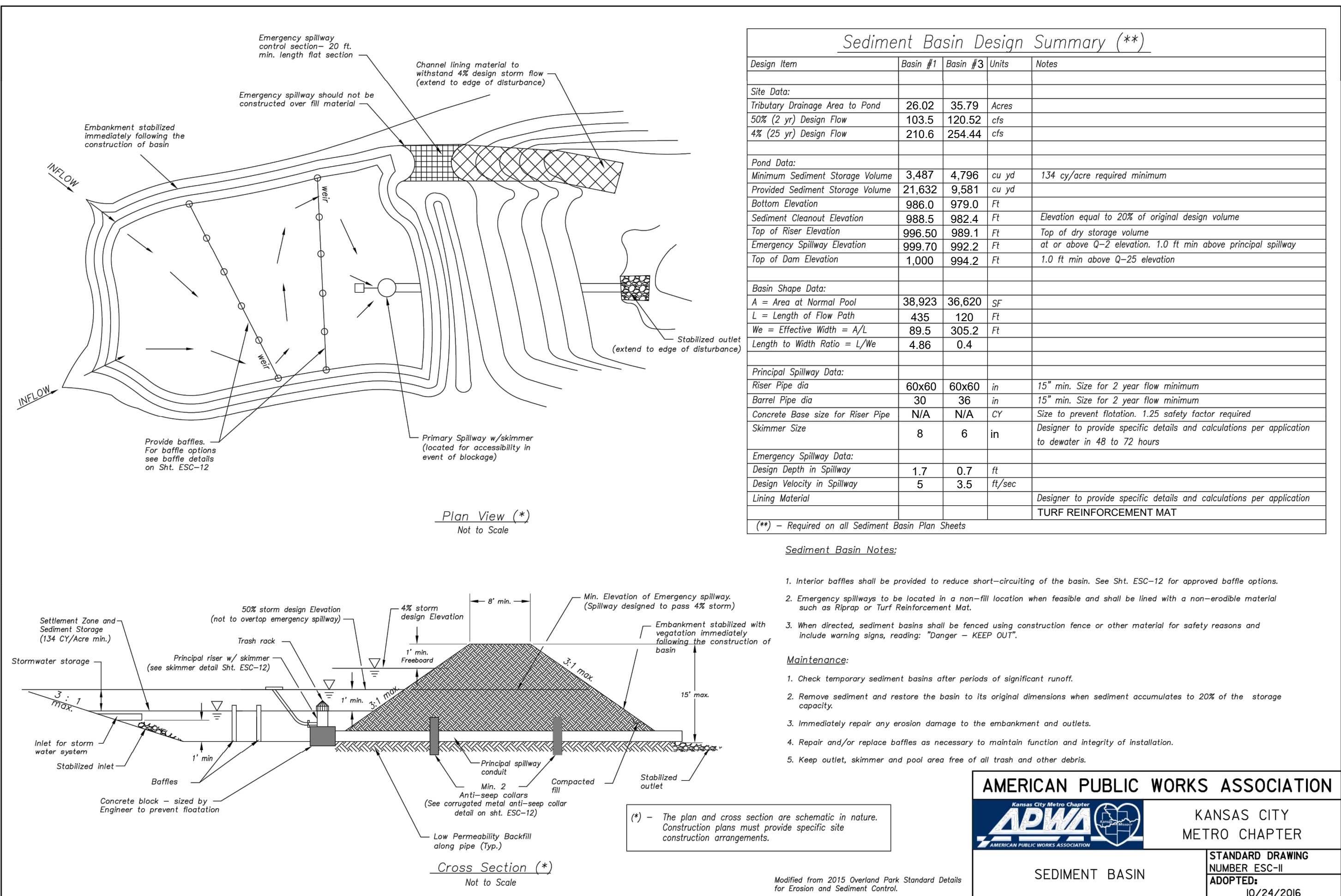
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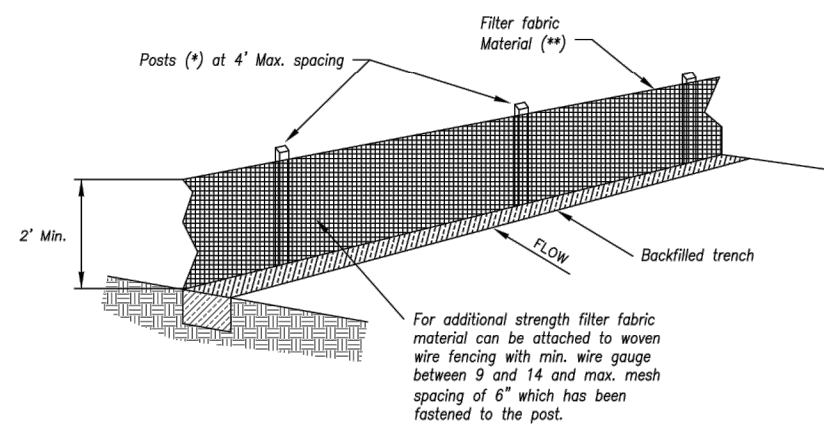
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| CHECKED BY: | B 5/12/2023 | PER CITY COMMENTS |
| MAB | A | |
| DATE PREPARED | A | |
| 11/30/2023 | A | |
| PROJ. NUMBER: | A | |
| 22-102 | A | |

POST-CONSTRUCTION EROSION CONTROL PLAN

SHEET

5

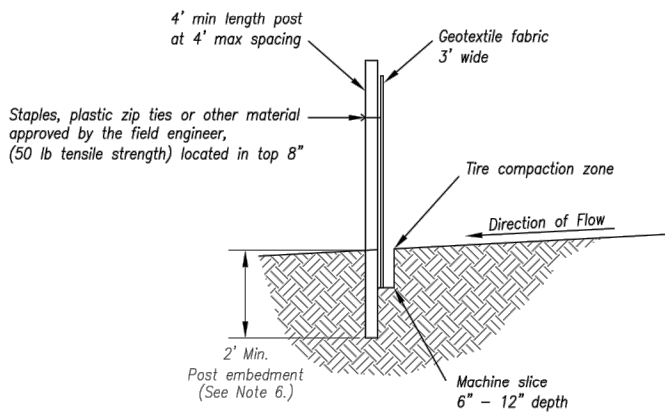




- (*) POSTS
- MIN. LENGTH 4'
 - HARDWOOD 1 3/4" x 1 3/4"
 - NO.2 SOUTHERN PINE 2 3/4" x 2 3/4"
 - STEEL 1.53 LB/YT

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

SILT FENCE DETAILS
Not to Scale

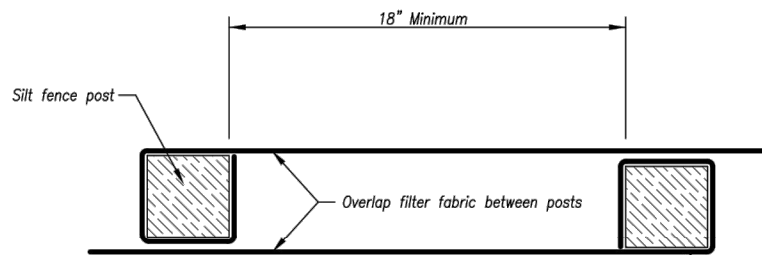


Notes:

- In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
- Long perimeter runs of silt fence must be limited to 100'. Runs should be broken up into several smaller segments to minimize water concentrations (Figure A).
- Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
- Attach fabric to upstream side of post.
- Install posts a minimum of 2' into the ground.
- Fencing will only be allowed for small or difficult installation, where staking machine cannot be reasonably used.

Maintenance:

- Remove and dispose of sediment deposits when the deposit approaches 1/2 the height of silt fence.
- Repair as necessary to maintain function and structure.



JOINING FENCE SECTIONS
Not to Scale

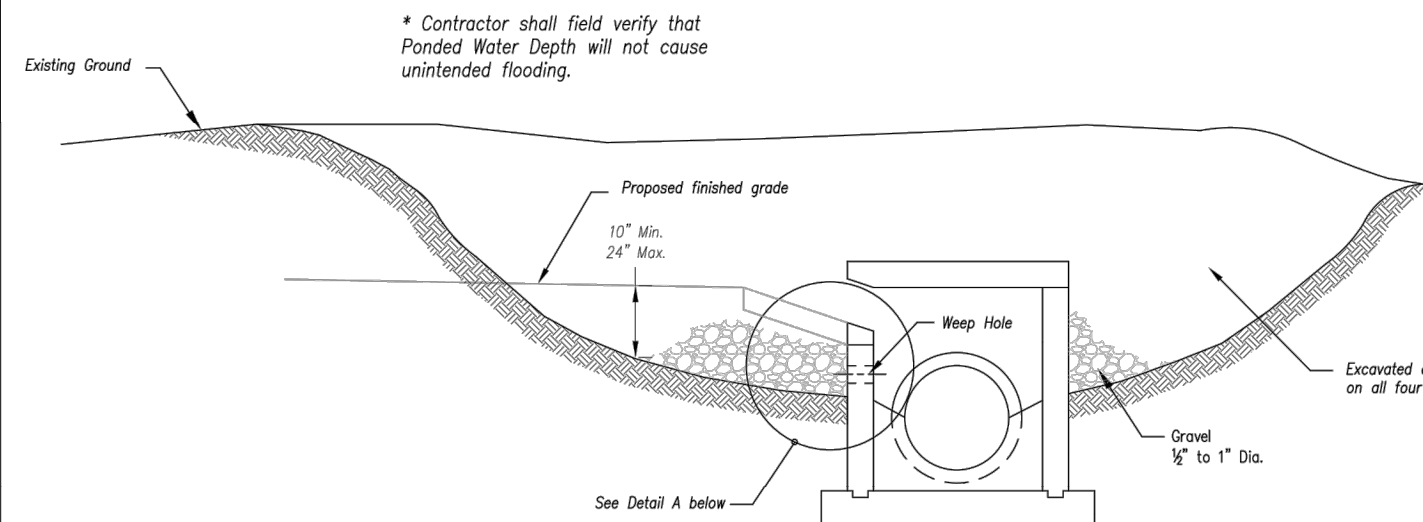
AMERICAN PUBLIC WORKS ASSOCIATION

APWA KANSAS CITY METRO CHAPTER

SILT FENCE

STANDARD DRAWING NUMBER ESC-03 ADOPTED: 10/24/2016

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



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

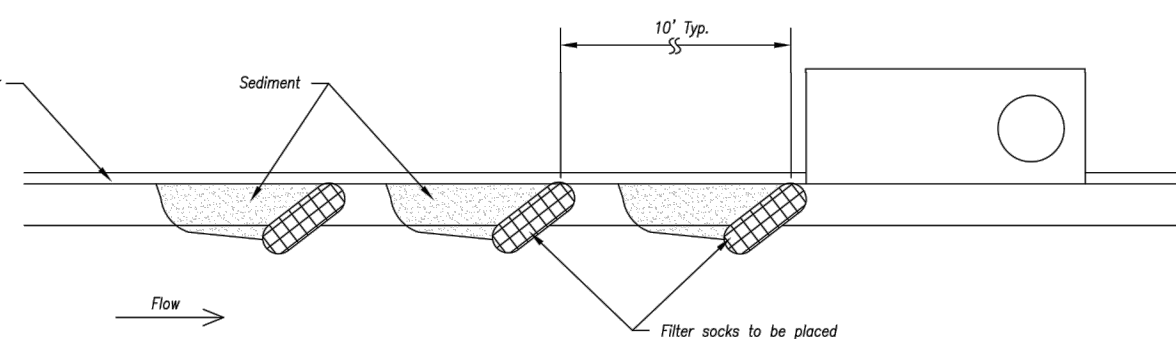
Notes:

- Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2' x 10' (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).
- When inlet is completed and curb poured, filter socks or approved equal should be used (Late Stage Curb Inlet). Show wetlines are not approved for curb inlet use.
- Contractor to field verify ponding water shall not create a traffic hazard.

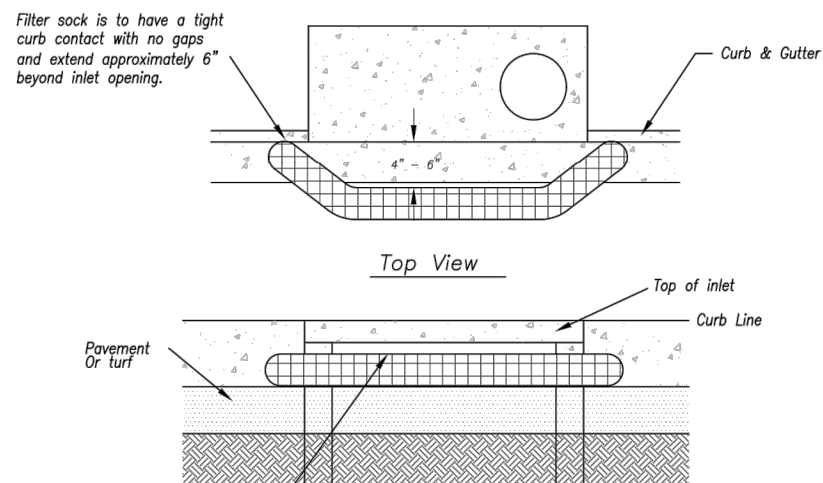
Maintenance:

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

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



On Grade Curb Inlet Protection



Sump Inlet Sediment Filter

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

AMERICAN PUBLIC WORKS ASSOCIATION

APWA KANSAS CITY METRO CHAPTER

CURB INLET PROTECTION

STANDARD DRAWING NUMBER ESC-06 ADOPTED: 10/24/2016

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

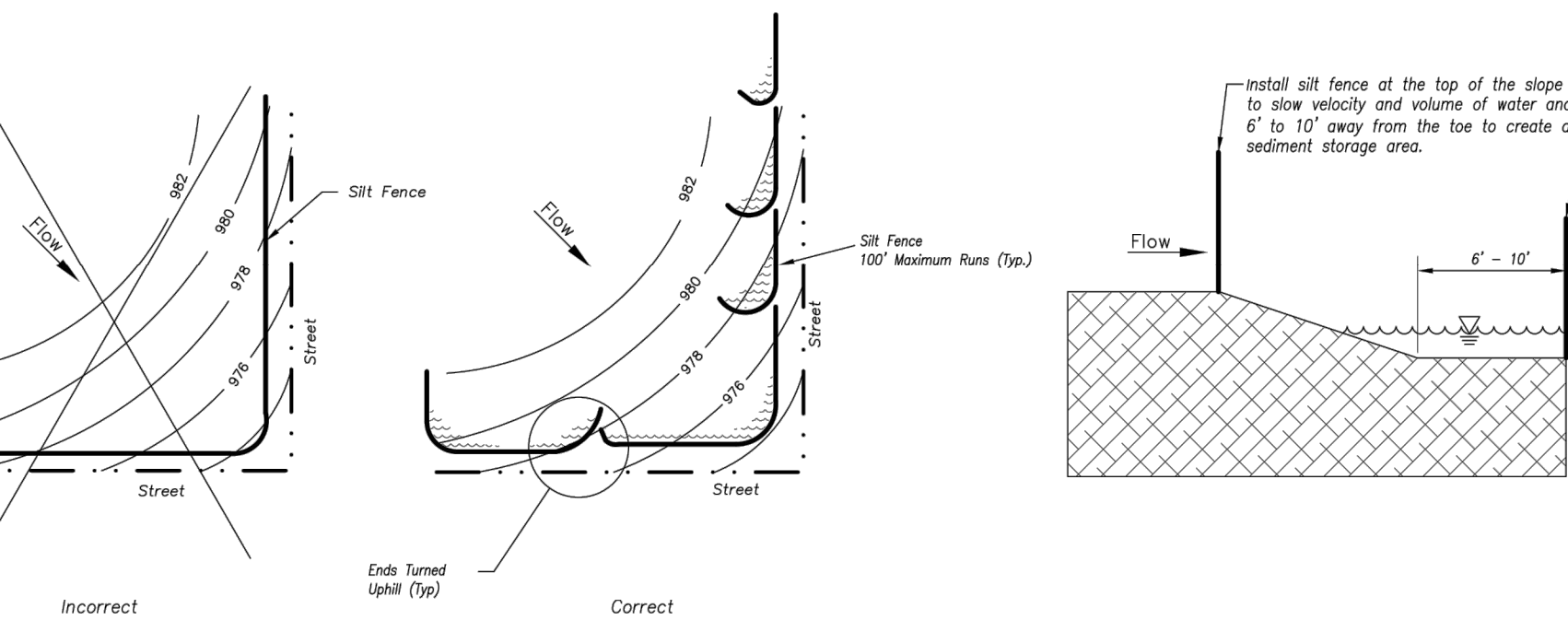
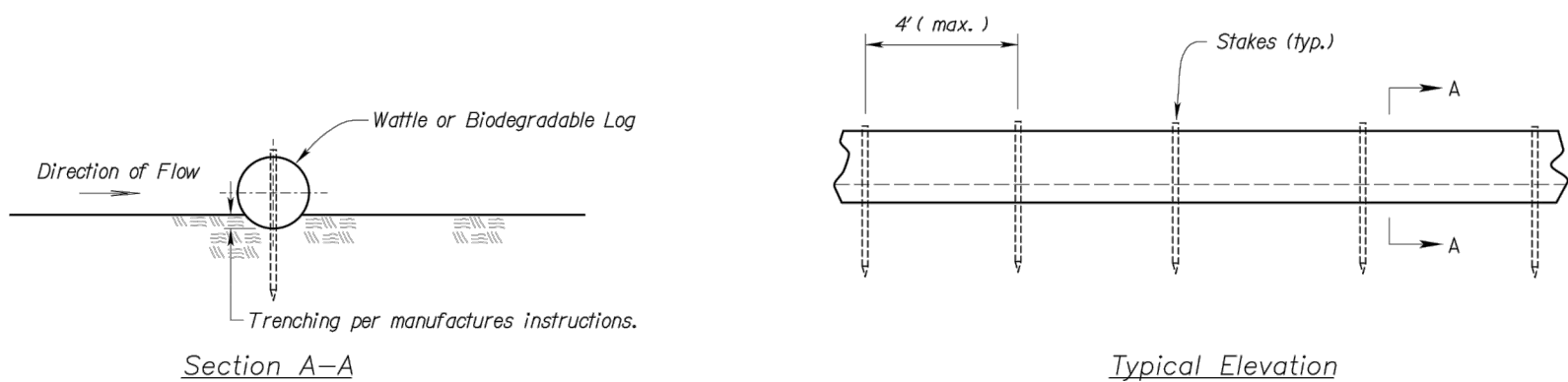


Figure A

SILT FENCE LAYOUT
Not to Scale

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



WATTLES AND BIODEGRADABLE LOG

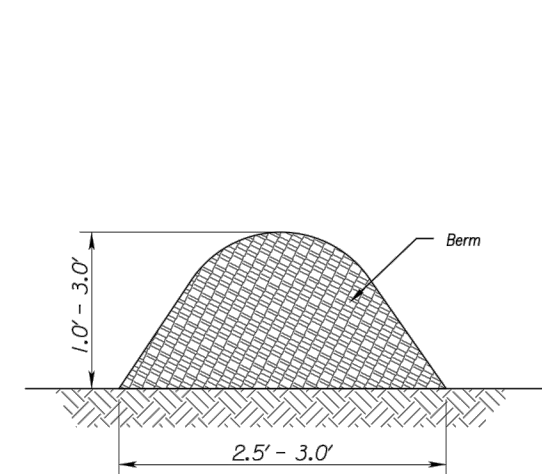


Figure 1
(Perimeter Control)

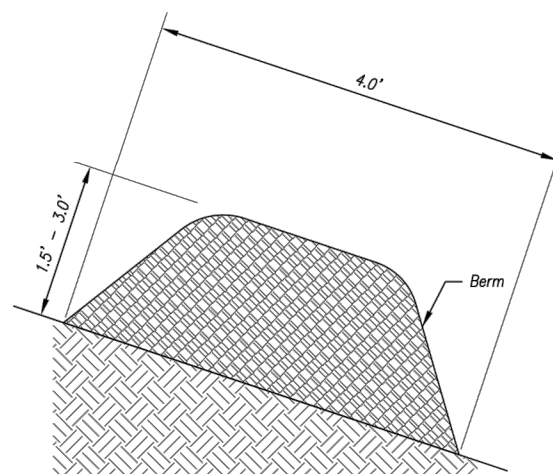


Figure 2
(Steep Slopes)

MULCH OR COMPOST FILTER BERMS

Notes for Wattles and Biodegradable Log Slope Protection:

- The Slope barriers shall be placed along contour lines, with a short section turned up-slope at each end of the barrier. The maximum length of the slope barrier shall not exceed 250 feet, and the barrier ends need to be staggered.
- Install wattles and biodegradable logs per manufacturer's instructions.
- Spacing of stakes per manufacturer's instructions with 4' max. spacing. Length of stakes shall be a minimum of 2 times the diameter of the log with minimum of 24".

Notes for Mulch and Compost Filter Berm:

- The sediment control berm shall be placed uncompacted in a window at locations shown on the plans or as directed by the engineer.
- Parallel to the base of the slope, or around the perimeter of other affected areas, construct a 1 to 3 foot high by 2.5 to 3 foot wide berm (see Figure 1). For maximum water treatment ability or for steep slopes, construct a 1.5 to 3 foot high trapezoidal berm that is a minimum of 4 feet wide at the base (see Figure 2). In extreme conditions, or where specified by the engineer, a second berm shall be constructed at the top of the slope. Engineer will specify berm requirements.
- If berm is to be left as permanent or part of the natural landscape, the compost berm may be seeded during application for permanent vegetation.
- Do not use compost or wood mulch berms in any runoff channels or concentrated flow areas.
- Wood mulch shall consist of tree and shrub debris resulting from clearing and grubbing and shall be ground by the mechanical means such as a chipper, hammermill, tub grinder or other approved method. Mulch sizing varies with a maximum width of 2" and a maximum length of 10".

Maintenance for Mulch and Compost Filter Berm:

- Berm shall be reshaped and material added as necessary to maintain function and dimensions.
- Breaches in the berm shall be repaired promptly.

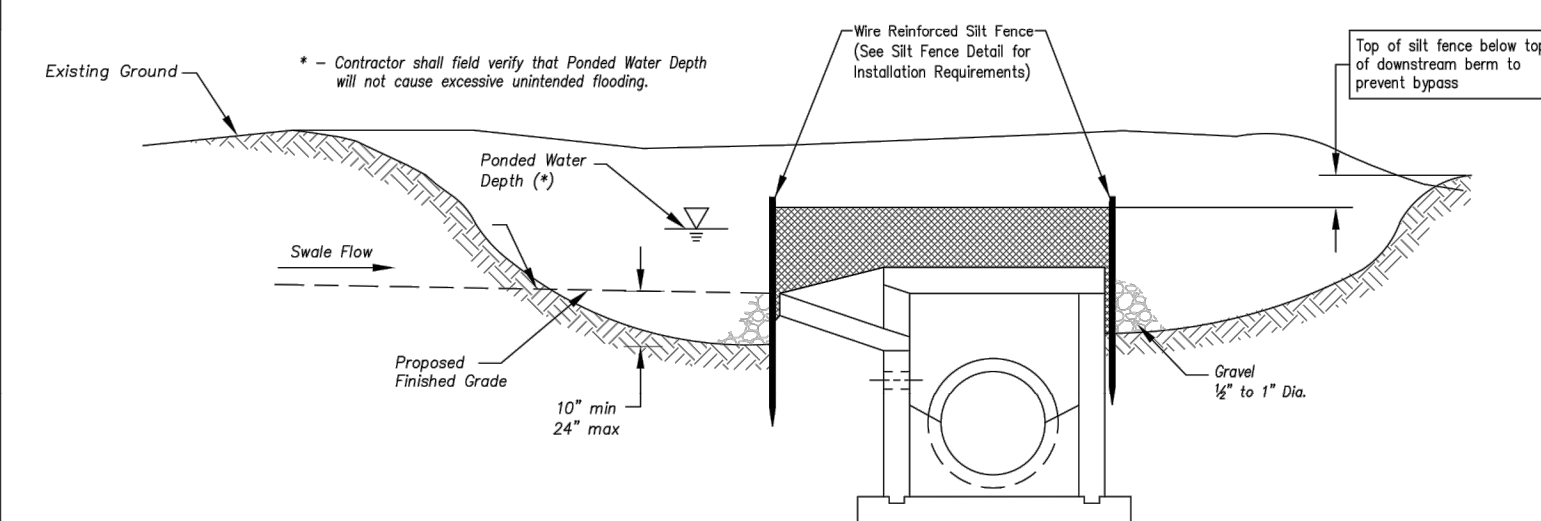
AMERICAN PUBLIC WORKS ASSOCIATION

APWA KANSAS CITY METRO CHAPTER

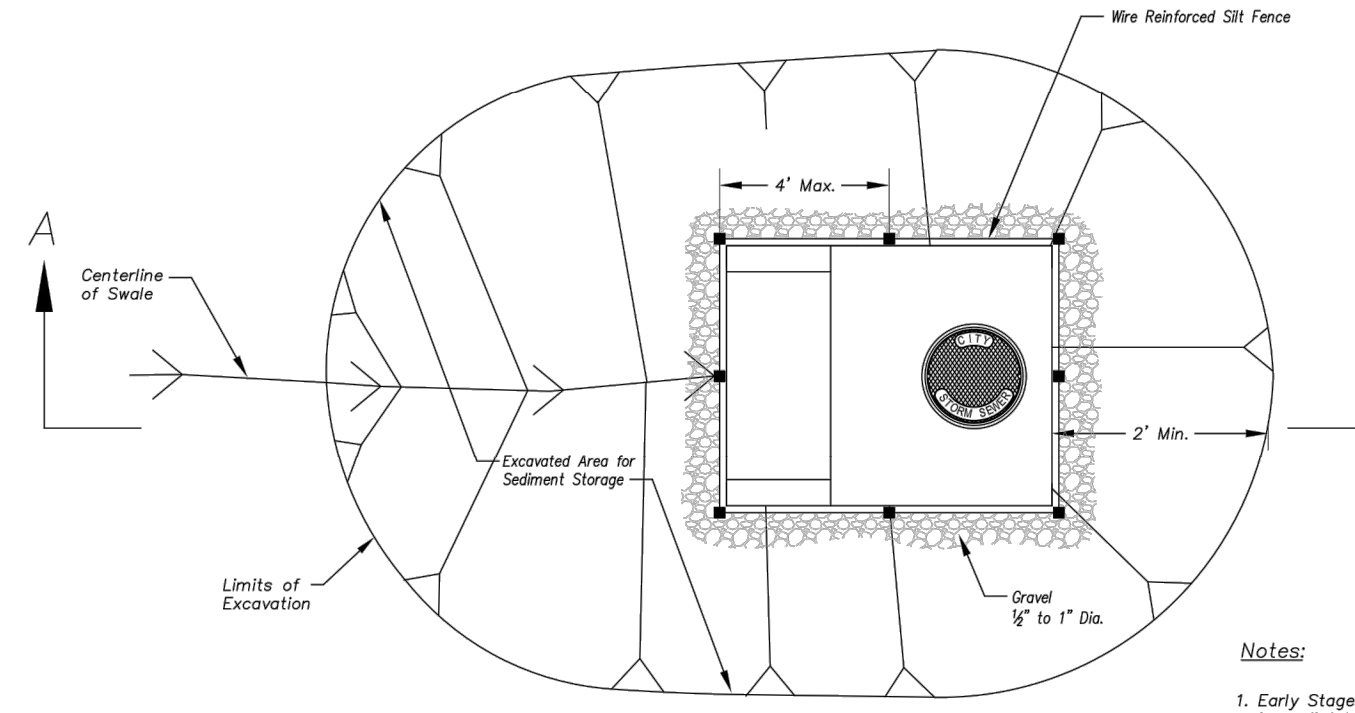
WATTLES/BIODEGRADABLE LOG AND MULCH/COMPOST FILTER BERM

STANDARD DRAWING NUMBER ESC-04 ADOPTED: 10/24/2016

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



Section A-A
Not to Scale



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

Notes:

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

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

Maintenance:

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

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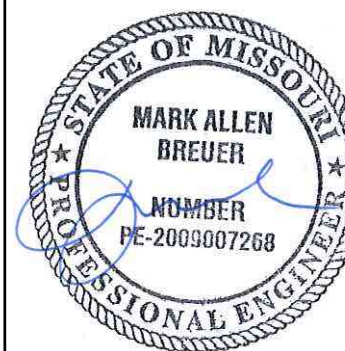
APWA KANSAS CITY METRO CHAPTER

AREA INLET AND JUNCTION BOX PROTECTION

STANDARD DRAWING NUMBER ESC-07 ADOPTED: 10/24/2016

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

PREPARED BY:



05.15.2023

SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES, REUNION & RESERVE AT BLACKWELL
MASS GRADING & EROSION SEDIMENT CONTROL PLANS

HERITAGE STREET LEE'S SUMMIT, MO

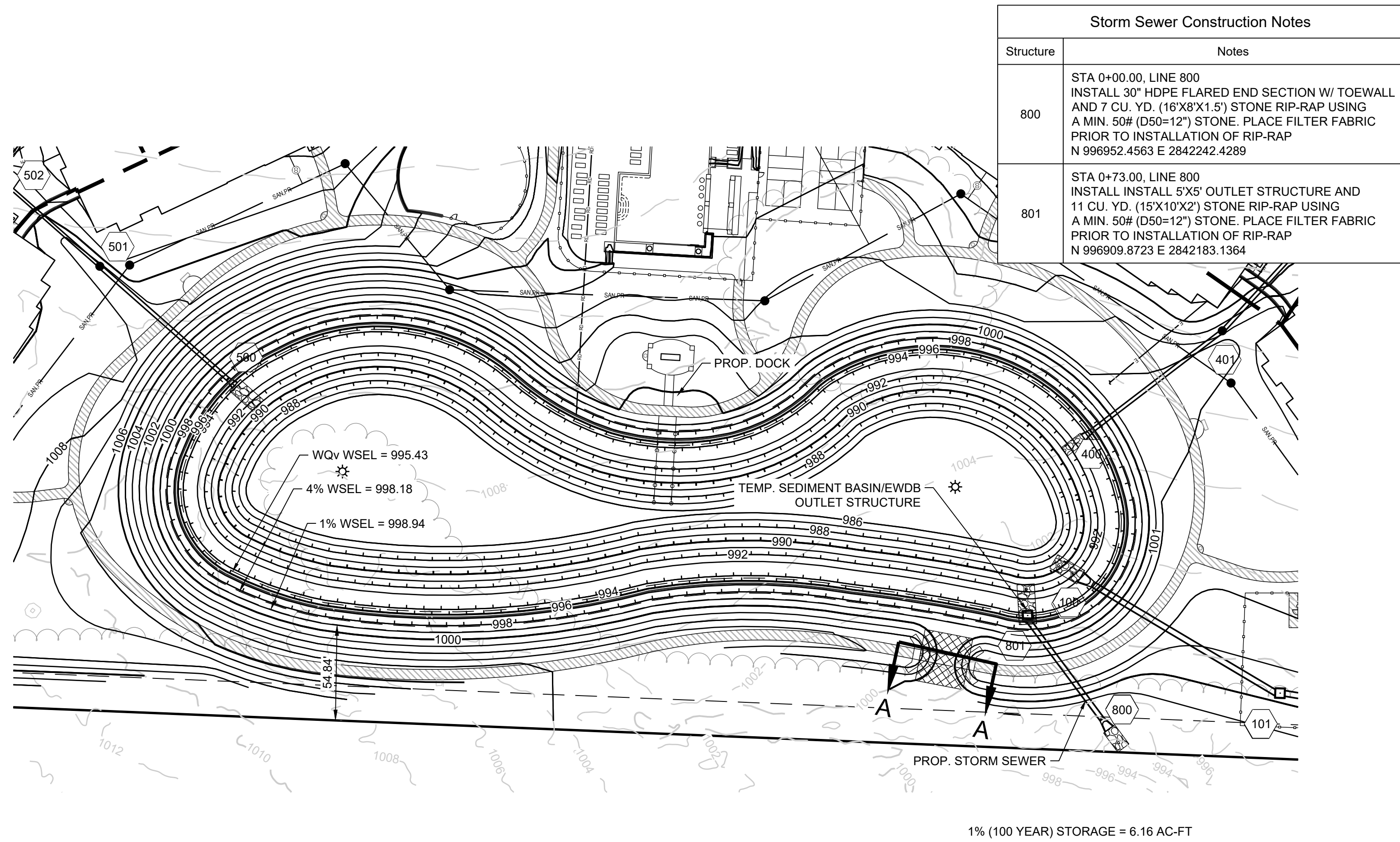
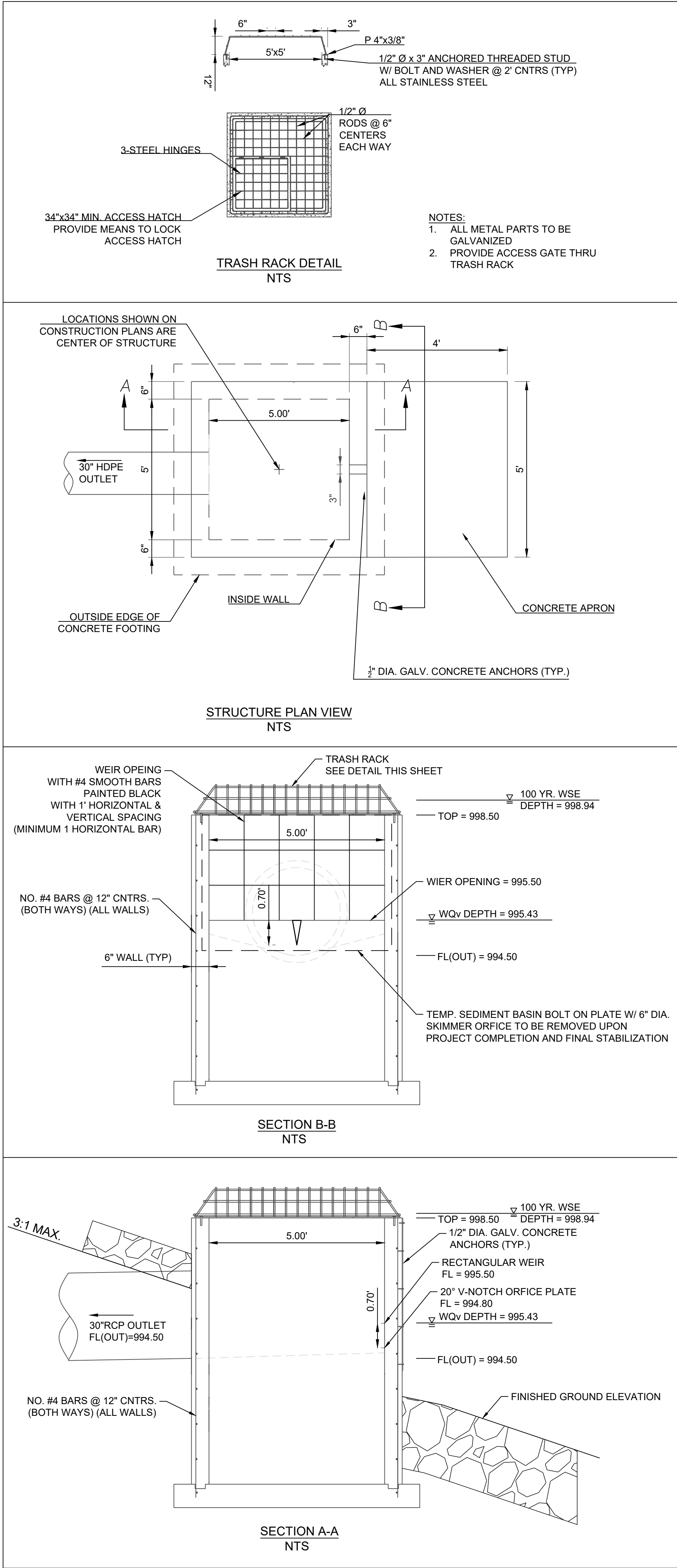
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| 01/23/2023 | TRC | |
| 5/12/2023 | MAB | |
| 11/30/2022 | DATE PREPARED | |
| 22-102 | PROJ. NUMBER | |

EROSION CONTROL DETAILS

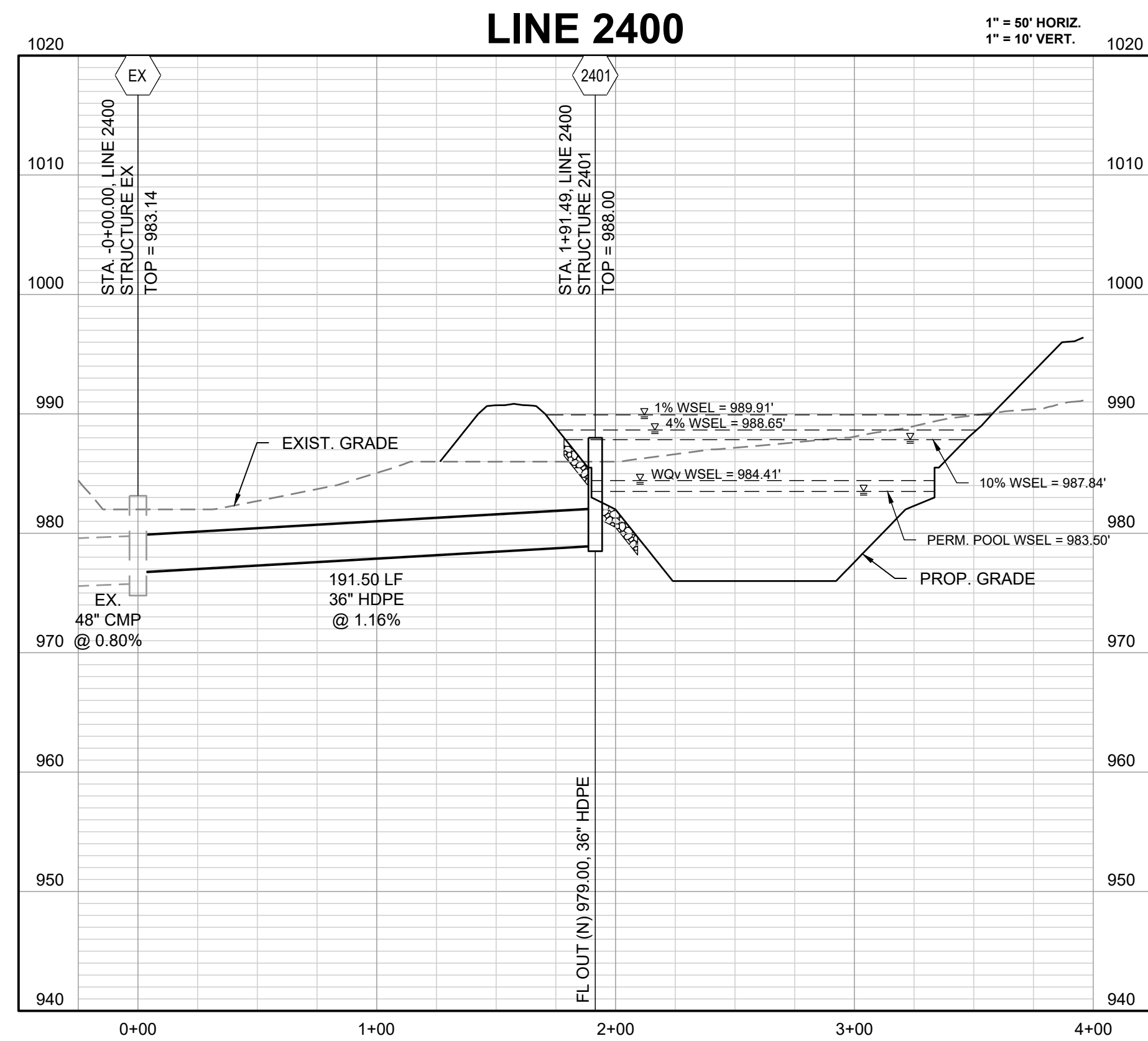
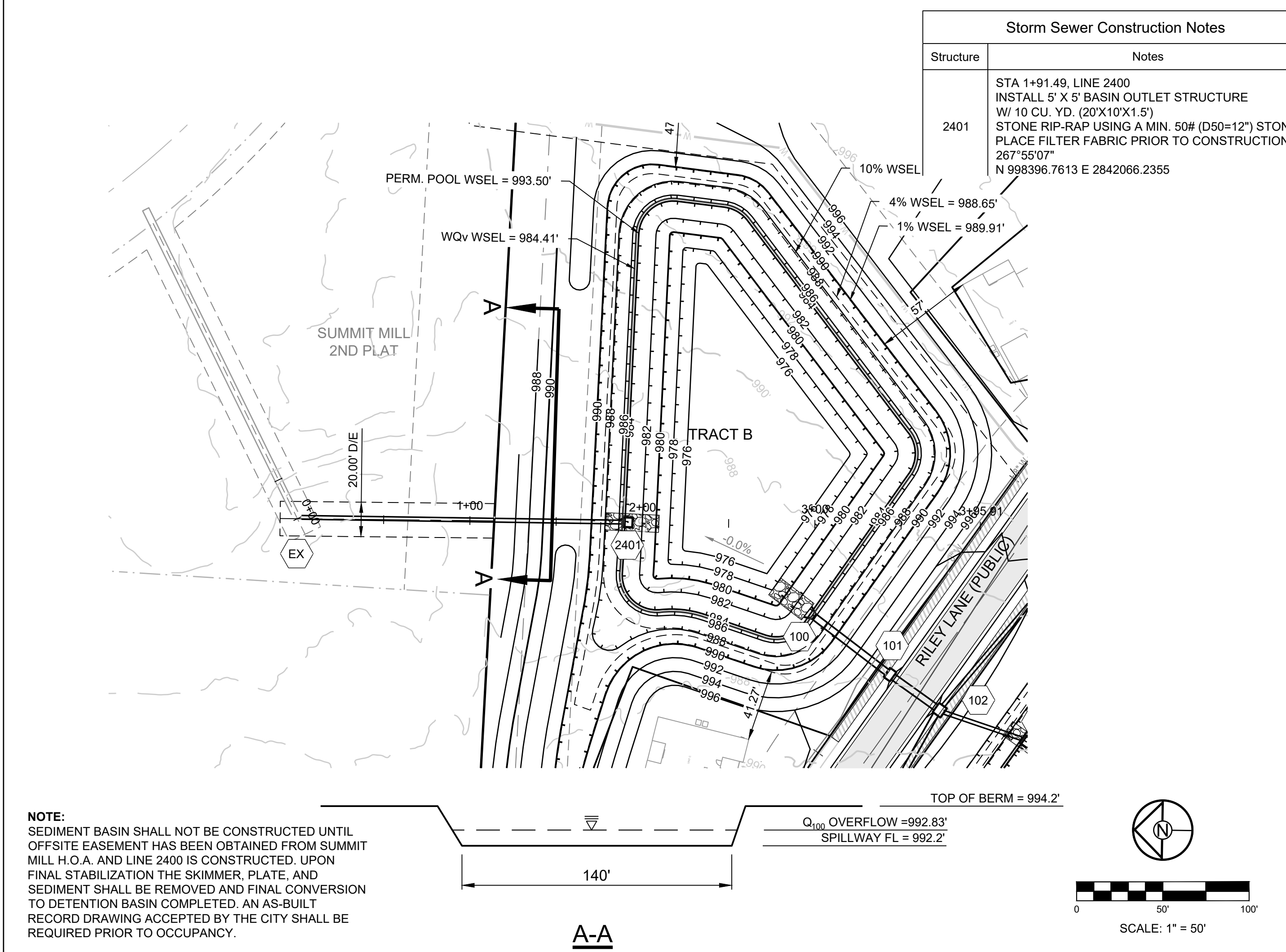
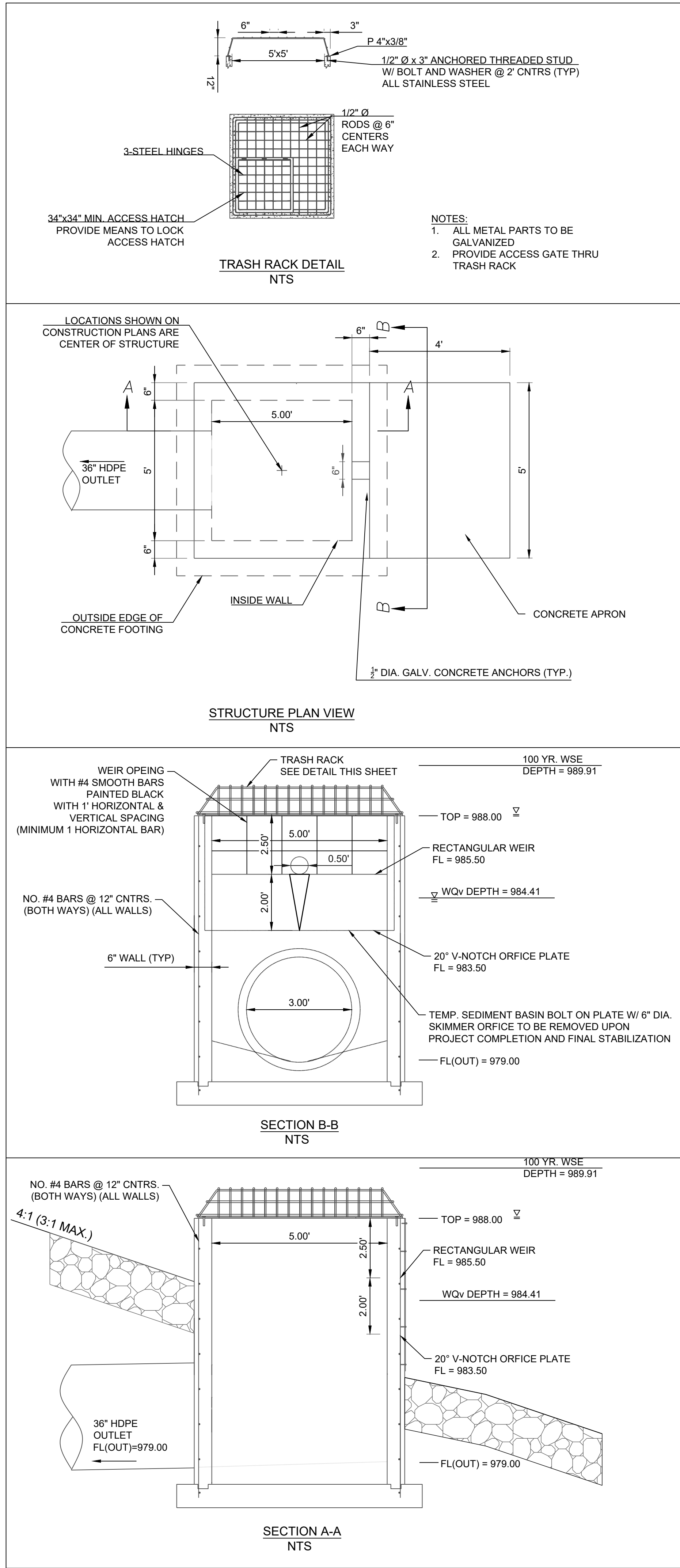
SHEET

7

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I:\PROJECTS\2022\22-097\3.0 Design\3.0 DWG Plans\4.0 SDDP\22-097 - SDDP - STRM - BASIN.dwg, 8 OUTLET STRUCTURE 2401, 1:1



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PREPARED BY:

MARK ALLEN BREUER
NUMBER PE-2005007268
05.15.2023

SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES, REUNION & RESERVE AT BLACKWELL
MASS GRADING & EROSION SEDIMENT CONTROL PLANS

HERITAGE STREET LEE'S SUMMIT, MO

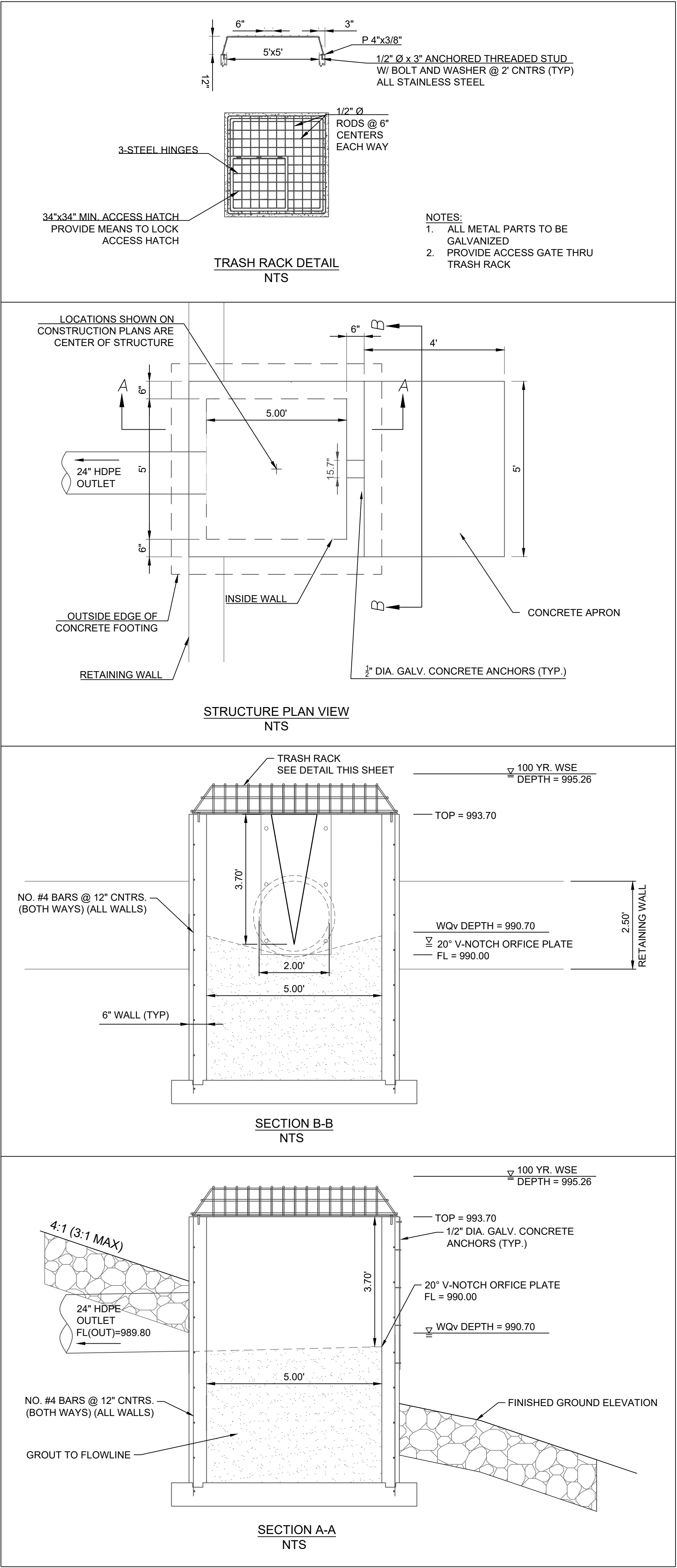
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DRAWN BY: TRC
CHECKED BY: MAB
DATE PREPARED: 11/30/2022
PROJ. NUMBER: 22-102

OUTLET STRUCTURE 2401

SHEET

9



NOTE:
TEMPORARY SEDIMENT BASIN AND OUTLET STRUCTURE W/ SKIMMER AND PLATE SHALL BE CONSTRUCTED WITH THE FIRST PHASE OF THE EROSION CONTROL PLAN. UPON FINAL STABILIZATION THE SKIMMER, PLATE, AND SEDIMENT SHALL BE REMOVED AND FINAL CONVERSION TO DETENTION BASIN COMPLETED. AN AS-BUILT RECORD DRAWING ACCEPTED BY THE CITY SHALL BE REQUIRED PRIOR TO OCCUPANCY.

