

Lake Keystone

W ARCHER ST

W 1 ST S

W 8 ST S

Sand Springs Expy

W 14 ST S

Sand Springs
Elevation - 638

W 17 ST S

Sand Springs
Elevation - 635

W 21 ST S

SH 51

W 10 ST S

W 11 ST S

E 12 ST S

W 9 ST S

E 10 ST S

W 7 ST S

E 6 ST S

W 6 ST S

W 5 ST S

W 4 ST S

E 2 ST S

W 2 ST S

N MAIN ST

S MAIN ST

W 31 ST S

SH 97

W 33 ST S

E 34 ST S

W 35 ST S

E 38 ST S

W 38 ST S

W 40 ST S

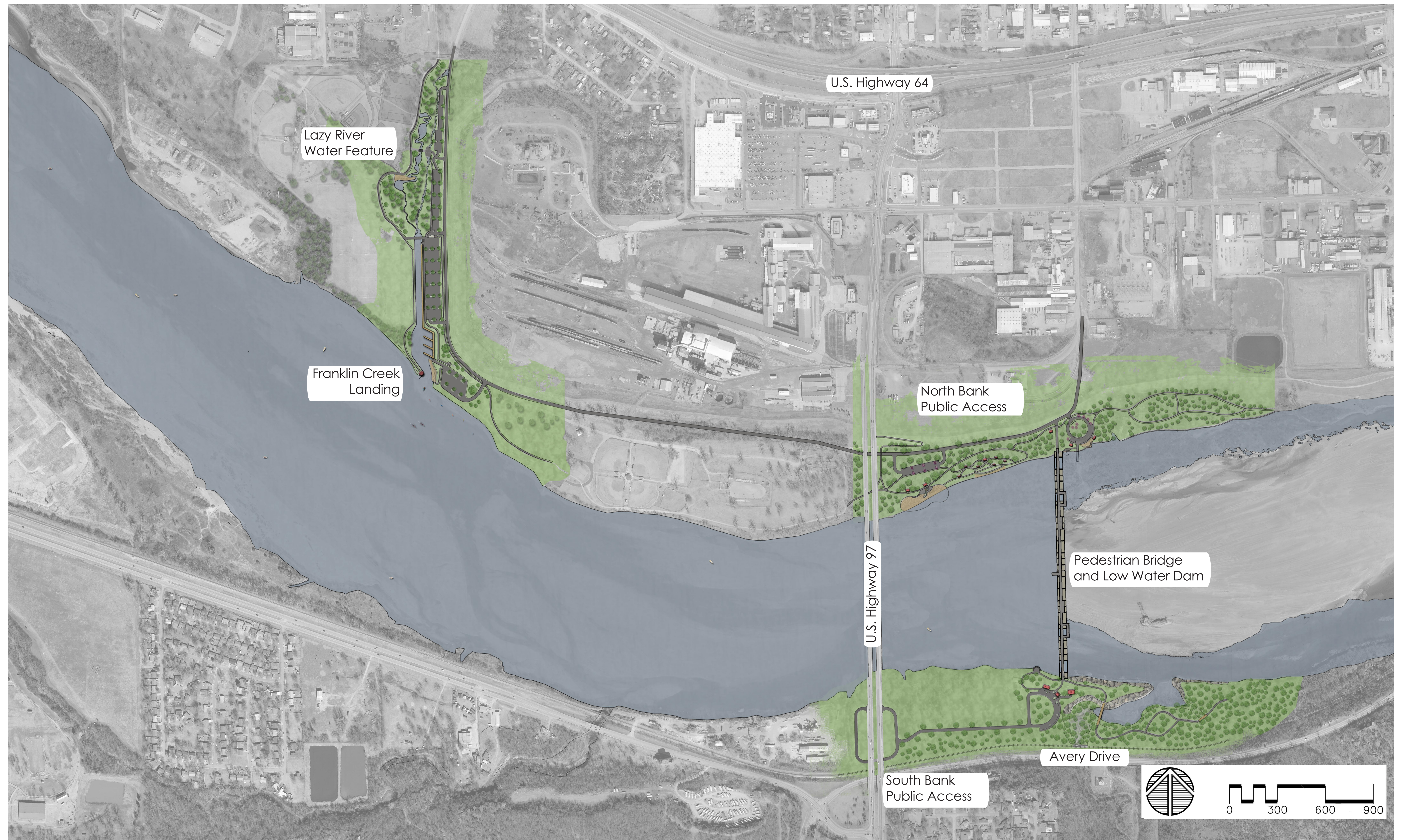
E 41 ST S

W 41 ST S

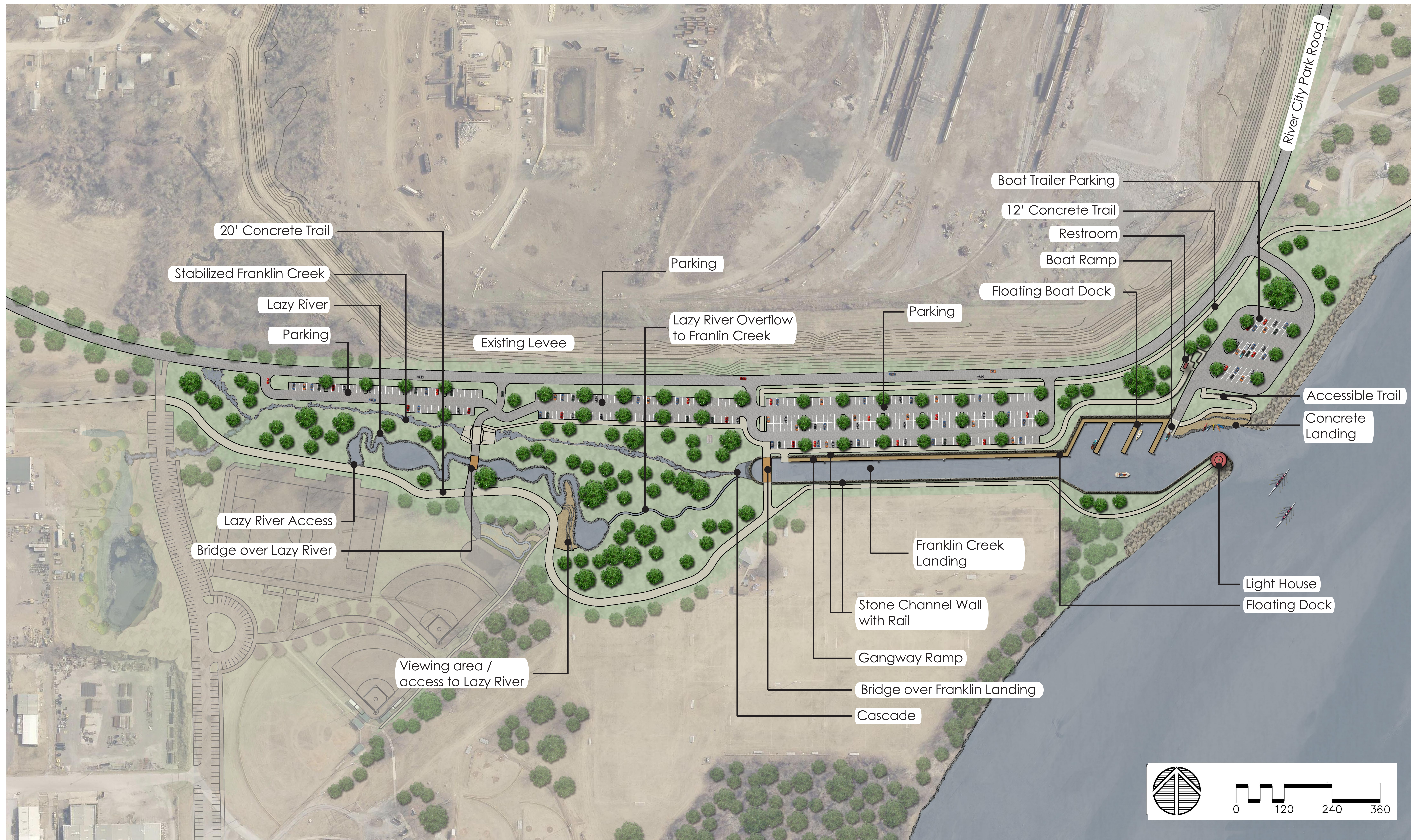
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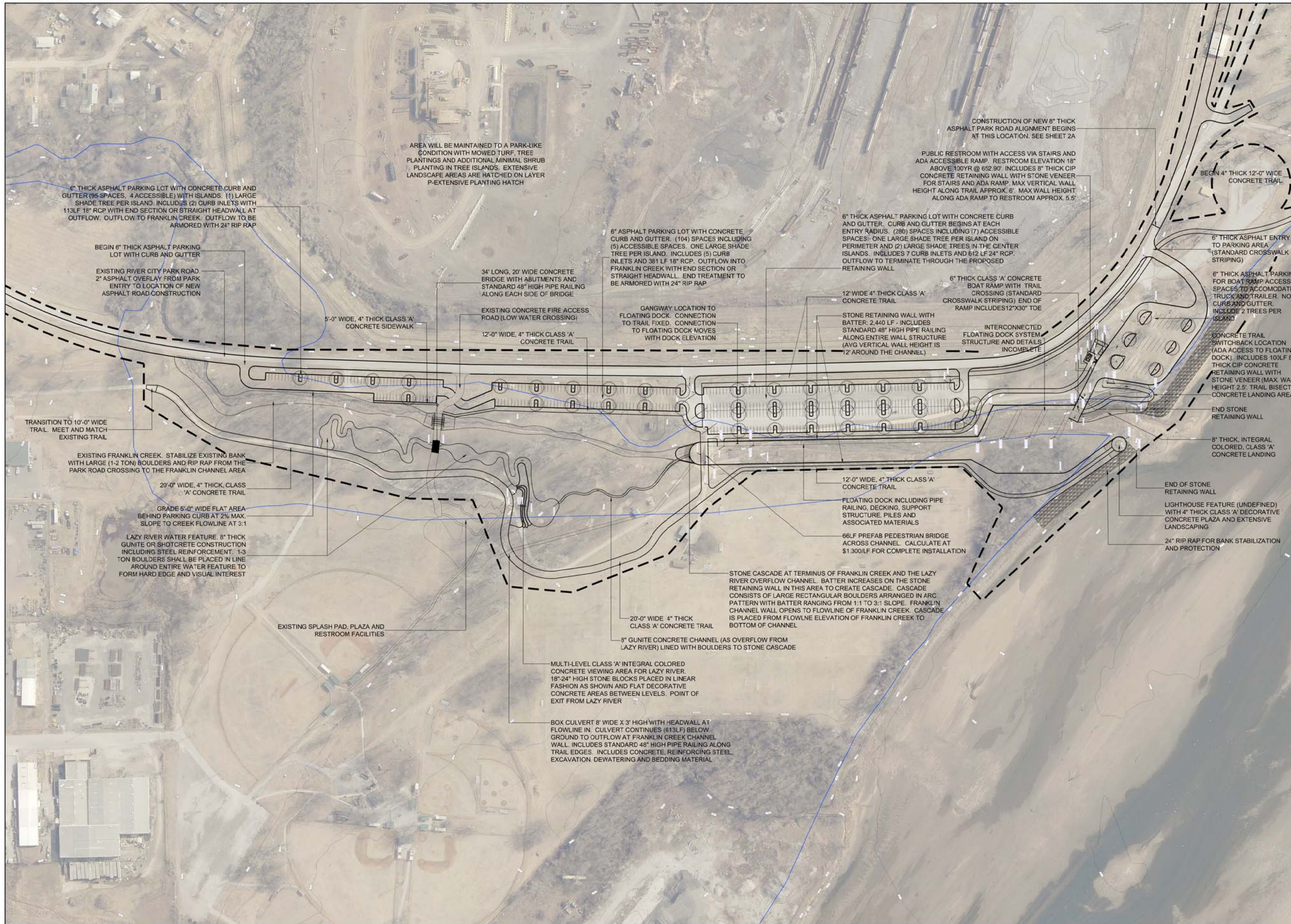
W 46 ST S



Sand Springs Low Water Dam
Overall Plan



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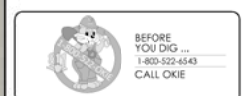
Seal:

Sand Springs Low Water Dam
City of Sand Springs
Franklin Creek Public Access

Revisions:

North

Design	
Drawn	
Checked	
Approved	



Sheet: **3** of ##







Sand Springs Low Water Dam North Bank Public Access

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THIS LOCATION WILL RECEIVE EXTENSIVE LANDSCAPE PLANTING NEAR SHELTERS, RESTROOM AND OVERLOOK (AREAS HATCHED IN DOT PATTERN). AREA IN GENERAL WILL BE MAINTAINED TO A PARK-LIKE CONDITION WITH MOWED TURF, TREE PLANTINGS AND ADDITIONAL MINIMAL SHRUB PLANTING IN TREE ISLANDS AT PARKING LOT AND NEAR MONUMENT SIGN

BEGIN NEW 12'-0" WIDE 4" THICK CLASS 'A' CONCRETE TRAIL. REMOVE EXISTING TRAIL TO THE WEST OF THIS POINT. SEE SHEET 2A

EXISTING CONCRETE TRAIL, NO IMPROVEMENTS

28'-0" WIDE, 6" THICK ASPHALT PARK ROAD (CONTINUED FROM SHEET 2A). NO CURB AND GUTTER

6" THICK ASPHALT PARKING LOT (72 SPACES) WITH CURB AND GUTTER. INCLUDES (3) ACCESSIBLE SPACES, STRIPING AND SIGNAGE. LARGE SHADE TREES TO BE INCLUDED IN ALL ISLAND LOCATIONS. ASPHALT ACCESS ROADS DO NOT INCLUDE CURB AND GUTTER. PARKING LOT INCLUDES (4) CURB INLETS AND APPROX. 620LF 16" RCP WITH (1) END SECTION OR STRAIGHT HEADWALL AT OUTFLOW NEAR RIVERS EDGE. OUTFALL LOCATION ARMED WITH 24" RIP RAP

26'-0" WIDE, 6" THICK ASPHALT ACCESS ROAD. NO CURB AND GUTTER. STANDARD STRIPING

MONUMENT SIGN - 4' HIGH 6" THICK CIP CONCRETE WALL WITH STONE VENEER, LIGHTING, METAL LETTERING

6" THICK ASPHALT PARKING LOT (25 SPACES) WITH CURB AND GUTTER. INCLUDES (1) ACCESSIBLE SPACE WITH STRIPING AND SIGNAGE. INCLUDES LARGE SHADE TREES PLANTED IN ISLANDS. CURB AND GUTTER BEGINS AND ENDS WITH LIMITS OF PARKING SPACES. INCLUDES (2) CURB INLETS WITH XXX LF 18" RCP WITH (1) END SECTION OR STRAIGHT HEADWALL AT OUTFLOW. OUTFLOW LOCATION ARMED WITH 24" RIP RAP

6" THICK 20' WIDE ASPHALT BRIDGE ACCESS ROAD WITH LOCKING DOUBLE POLE GATE AND SIGNAGE

4" THICK 12'-0" WIDE CLASS 'A' CONCRETE TRAIL

CONCRETE TRAIL ENDS. BEGIN 4" THICK CRUSHED GRANITE TRAIL WITH BINDER

4" THICK, 10' WIDE CRUSHED GRANITE TRAIL WITH BINDER

AREAS BETWEEN TRAIL SPURS AND AREAS RECEIVING SELECTIVE CLEARING TO BE REVEGETATED BY PERMANENT SEEDING METHOD WITH FESCUE BLEND

LIMIT OF CONSTRUCTION

(2) 20'X30' STEEL FABRICATED SHELTER WITH STONE WAINSCOTED COLUMNS AND INTEGRAL COLORED CONCRETE SLABS. ALL STEEL FRAMEWORK TO BE POWDERCOATED (TYP.)

6" THICK CLASS 'A' INTEGRAL COLORED CONCRETE STEPPED/TERRACED OVERLOOK. INCLUDE 12" THICK/30" DEEP CONCRETE TOE AROUND LOWEST LEVEL

6" THICK, 20' WIDE REINFORCED CLASS 'A' CONCRETE EMERGENCY BOAT RAMP

6" THICK CLASS 'A' INTEGRAL COLORED CONCRETE LANDING FOR FISHING. INCLUDES 12" THICK/30" DEEP TOE AROUND PERIMETER

20'-0" WIDE PEDESTRIAN BRIDGE. INCLUDES STRUCTURE, DECKING, RAILS, PIERS AND PILES, ABUTMENTS AND ALL ASSOCIATED MATERIALS INCLUDING RIP RAP ARMOR IN ABUTMENT AND PIER LOCATIONS. TYPE OF BRIDGE STRUCTURE HAS NOT BEEN DEFINED (ASSUME PREFAB SECTIONS WITH 200' SPANS)

20'X30' RESTROOM STRUCTURE WITH STONE WAINSCOTING EXTERIOR

AREA BETWEEN LOWER TRAIL AND WATERS EDGE TO BE LAID UP WITH LARGE 3-5 TON FLAT TOPPED BOULDERS FOR FISHING

AREAS BETWEEN TRAIL SPURS AND AREAS RECEIVING SELECTIVE CLEARING TO BE REVEGETATED BY PERMANENT SEEDING METHOD WITH FESCUE BLEND

(6) 12'X24' AND (1) 20'X30' STEEL SHELTERS WITH STONE WAINSCOTE COLUMNS AND POWDER COATED STRUCTURE. INCLUDES 4" THICK INTEGRAL COLORED CONCRETE SLABS

ALL TRAIL SPURS THROUGHOUT THIS AREA WILL BE CLASS 'A' CONCRETE. INCLUDES SELECTIVE CLEARING AT A MINIMUM OF 3' TO EACH SIDE OF THE PROPOSED TRAIL. CLEARING DIFFICULT TO DETERMINE WITHOUT TRAIL CUT/FILL CATCHLINES. AN AREA SUCH AS THIS WILL REQUIRE A SUBSTANTIAL LUMP SUM (50-100K)

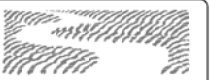
12" THICK CIP CLASS 'A' CONCRETE RETAINING WALL WITH STONE VENEER. MAX VERTICAL HEIGHT: 6'

DECORATIVE CONCRETE LANDING AREA. 8" THICK SHOTCRETE, INTEGRAL COLOR. INCLUDES MULTI-LEVELLED STEPPING OF PAVEMENT AND RECIRCULATING WATER FEATURE (WATER FEATURE DESIGN IS INCOMPLETE - LUMP SUM SUFFICIENT TO COVER A FEATURE OF THIS SIZE)

ACCESSIBLE RAMP INCLUDING 8" THICK CIP CLASS 'A' CONCRETE RETAINING WALL WITH STONE VENEER MAX. HEIGHT: 6'. 3:1 SLOPE FROM TRAIL ABOVE TO RAMP PAVING

(2) 20'X30' STEEL FABRICATED SHELTER WITH STONE WAINSCOTED COLUMNS AND INTEGRAL COLORED CONCRETE SLABS. ALL STEEL FRAMEWORK TO BE POWDERCOATED (TYP.)

12'-0" WIDE CLASS 'A' CONCRETE TRAIL THROUGHOUT THIS AREA UNLESS OTHERWISE NOTED. TRAIL CONSTRUCTION WILL REQUIRE SELECTIVE CLEARING AS NECESSARY. TREES TO BE CLEARED A MINIMUM OF 3' FROM THE EDGE OF TRAIL (TYP.)



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Sheet:
2 of ##





Sand Springs Low Water Dam South Bank Public Access

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Sheet:
1 of ##

THIS LOCATION WILL RECEIVE NO EXTENSIVE LANDSCAPE. AREA WILL BE MAINTAINED TO A PARK-LIKE CONDITION WITH MOWED TURF, TREE PLANTINGS AND ADDITIONAL MINIMAL SHRUB PLANTING IN TREE ISLANDS AND NEAR THE PEDESTRIAN OVERLOOK

28X36 CUSTOM RESTROOM WITH OUTDOOR WATER FOUNTAIN. EXTERIOR TO BE COMPLETED WITH STONE WAINSCOTING

40X60 CUSTOM SHELTER WITH DECORATIVE STAMPED AND STAINED 4" CLASS 'A' CONCRETE SLAB. POSTS SHALL RECEIVE STONE WAINSCOTING. STEEL STRUCTURE SHALL BE POWDER COATED (TYP.)

OVERLOOK: CUSTOM STEEL TUBE ARBOR WITH DECORATIVE STAMPED AND STAINED 4" THICK CLASS 'A' CONCRETE PLAZA AREA. INCLUDES 12" THICK CIP RETAINING WALL WITH STONE VENEER (AVG VERTICAL HEIGHT TF-TW RANGING FROM 4' TO 24') BELOW PLAZA AND SURFACE MOUNTED DECORATIVE PIPE RAILING (\$240/LF) AROUND TOP PERIMETER OF CONCRETE PLAZA. SLAB THICKENS TO 6" AT EDGE FOR MOUNTING OF PIPE RAIL. SLAB TO REST ON TOP OF WALL AND WILL BE TIED TOGETHER WITH STEEL REINFORCEMENT

24" RIP RAP FOR BANK STABILIZATION AROUND OVERLOOK AREA

20'-0" WIDE PEDESTRIAN BRIDGE. INCLUDES STRUCTURE, DECKING, RAILS, PIERS AND PILES, ABUTMENTS AND ALL ASSOCIATED MATERIALS INCLUDING RIP RAP ARMOR IN ABUTMENT AND PIER LOCATIONS. TYPE OF BRIDGE STRUCTURE HAS NOT BEEN DEFINED (ASSUME PRE-FAB SECTIONS WITH 200' SPANS)

6" THICK, 20' WIDE ASPHALT MAINTENANCE ROAD.

40X60 STEEL FABRICATED MAINTENANCE BUILDING WITH EXTERIOR STONE WAINSCOTING. COST ESTIMATE SHOULD INCLUDE UTILITY AND RESTROOM FACILITY

16'-0" WIDE PREFABRICATED STEEL TRUSS PEDESTRIAN BRIDGE. INCLUDES 6" THICK CONCRETE DECKING, RAILS AND PILES, ABUTMENTS AND ALL ASSOCIATED MATERIALS INCLUDING RIP RAP ARMOR IN ABUTMENT LOCATIONS. INCLUDES 15' LONG, FULL WIDTH CONCRETE APPROACH ON EACH SIDE OF BRIDGE

12'-0" WIDE 4" THICK CLASS 'A' CONCRETE TRAIL. ALL PAVED AREAS SHOULD INCLUDE A MINIMUM OF 6" THICK AGGREGATE BASE MATERIAL. AGGREGATE SHALL EXTEND 1' BEYOND PAVING AT A MINIMUM ALONG EACH EDGE

12'-0" WIDE 4" THICK CLASS 'A' CONCRETE TRAIL

END PARKING CURB AND GUTTER

6" THICK ASPHALT PARKING LOT WITH CURB AND GUTTER. INCLUDES (2) ACCESSIBLE PARKING SPACES, LARGE SHADE TREES IN EACH ISLAND AND 4' WIDE, WHITE PARKING STRIPES

2" THICK, 24'-0" WIDE ASPHALT OVERLAY

5" THICK, 24'-0" WIDE ASPHALT ENTRY ROAD. NO CURB AND GUTTER. STANDARD 2-WAY STRIPING

BEGIN PARKING CURB AND GUTTER

BEGIN NEW 6" THICK, 26' WIDE ASPHALT ENTRY ROAD

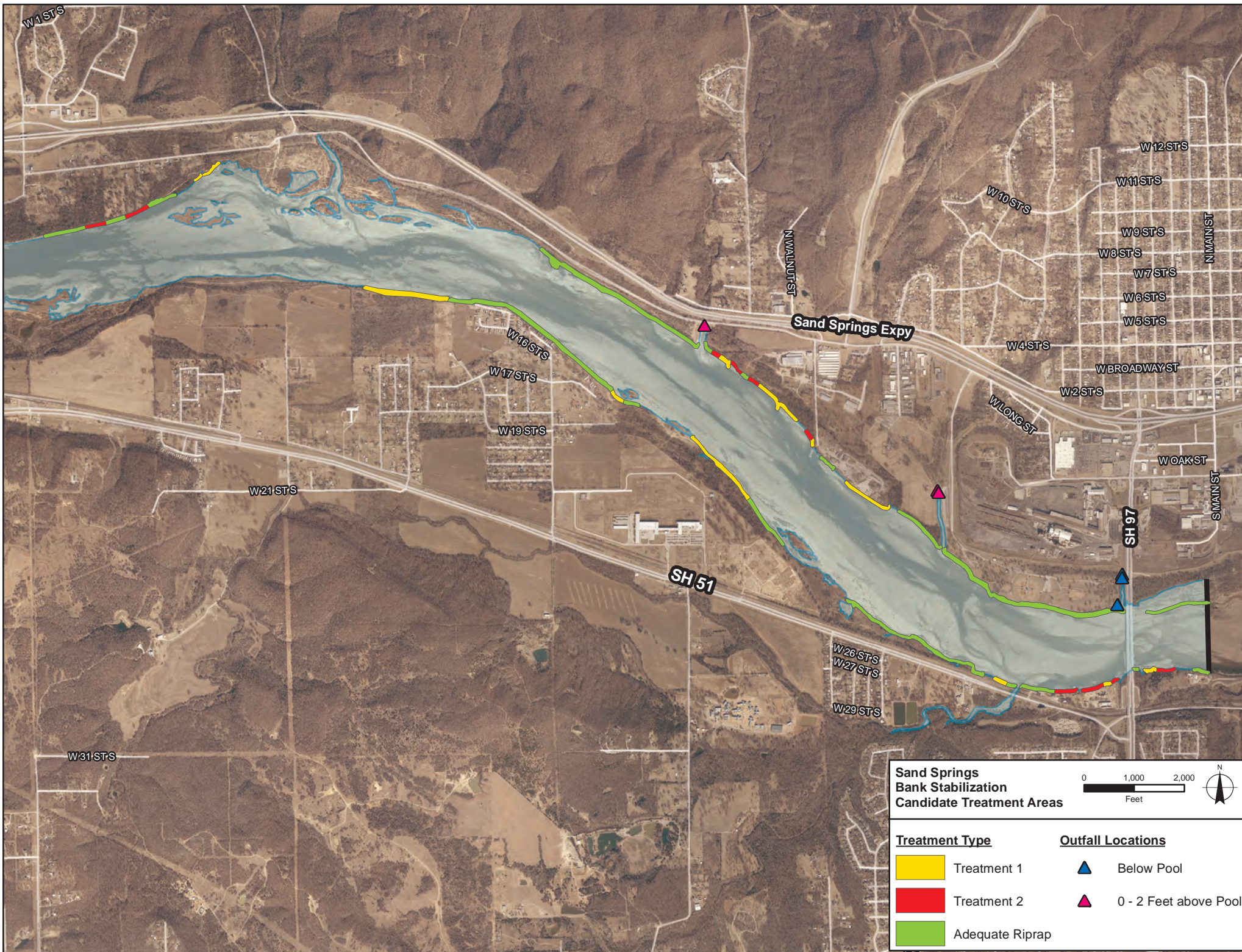
12'-0" WIDE CRUSHED GRANITE NATURE TRAIL WITH BINDER

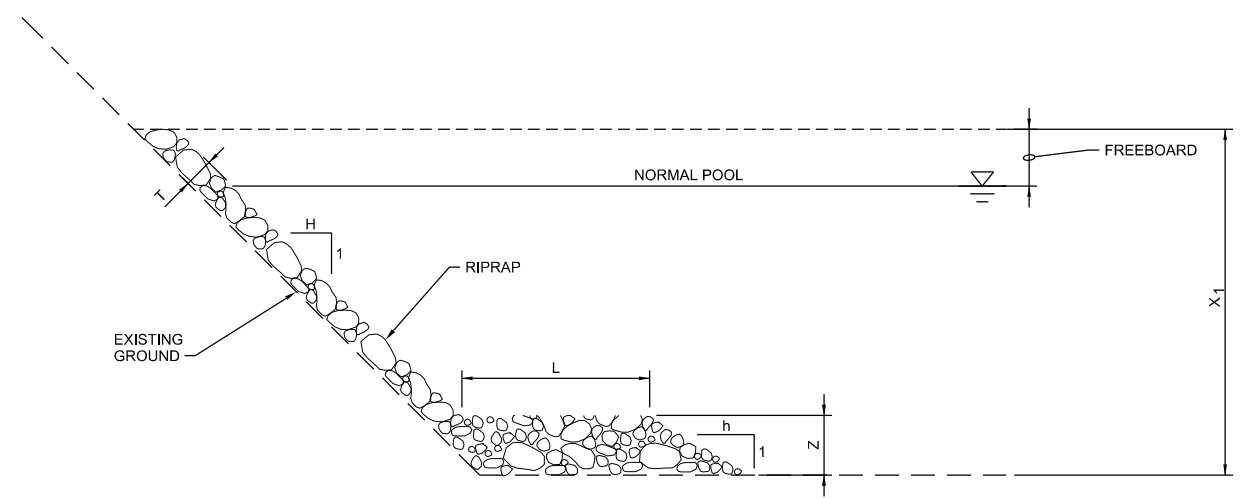
16'-0" WIDE PREFABRICATED PEDESTRIAN BRIDGE. INCLUDES 6" THICK CLASS 'A' CONCRETE DECKING, RAILS AND PILES, ABUTMENTS AND ALL ASSOCIATED MATERIALS INCLUDING RIP RAP ARMOR IN ABUTMENT LOCATIONS. INCLUDES 15' LONG, FULL WIDTH CONCRETE APPROACH ON EACH SIDE OF BRIDGE.

FILL EXISTING CHANNEL WITH BORROW ATTAINED FROM REROUTING THE CHANNEL AROUND THE PARKING AREA

BEGIN REROUTING OF DRAINAGE SWALE AT THIS POINT (EL 648) AND CONTINUE PARALLEL TO RAILROAD R.O.W. TO OUTFLOW INTO CREEK (EL. 630). FLOWLINE WILL SLOPE AT 2% WITH MAX. SIDE SLOPES OF 2:1. FLOWLINE WILL RECEIVE RIP RAP. SIDE SLOPE WILL BE REVEGETATED NATURALLY.

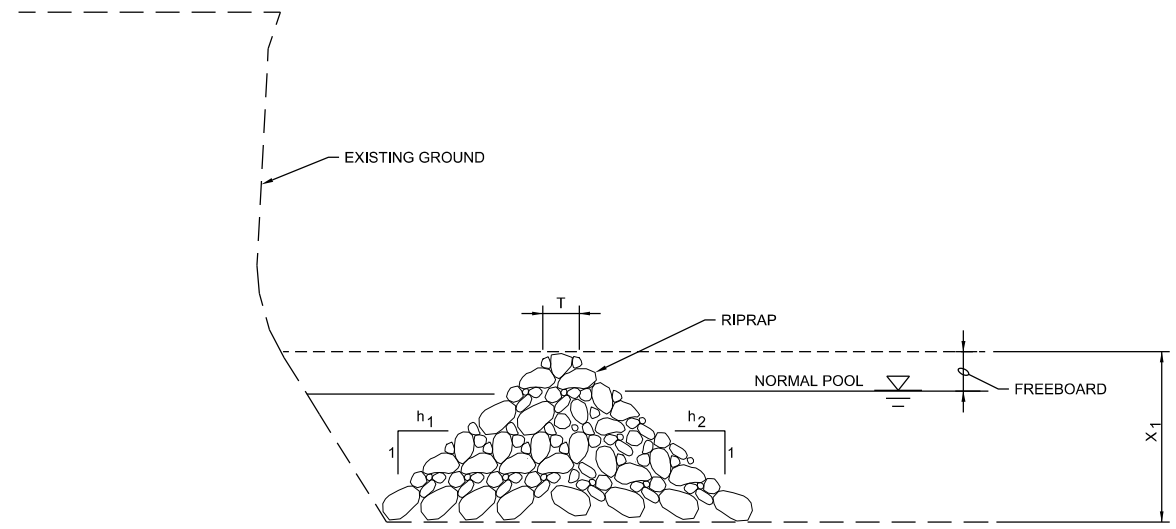






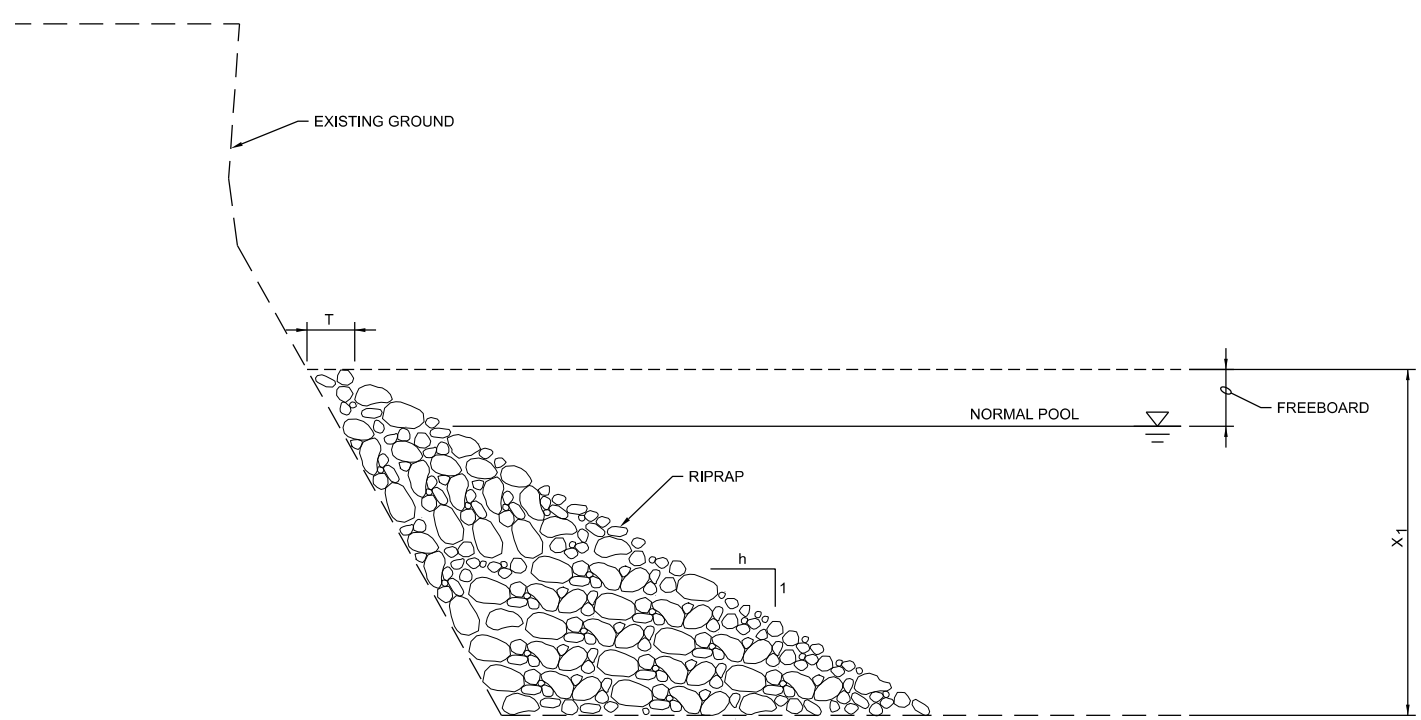
REVETMENT RIPRAP WITH LAUNCHABLE STONE TOE

1 TREATMENT
NTS



LONGITUDINAL PEAKED STONE TOE

3 TREATMENT
NTS



STONE TOE WEDGE

2 TREATMENT
NTS

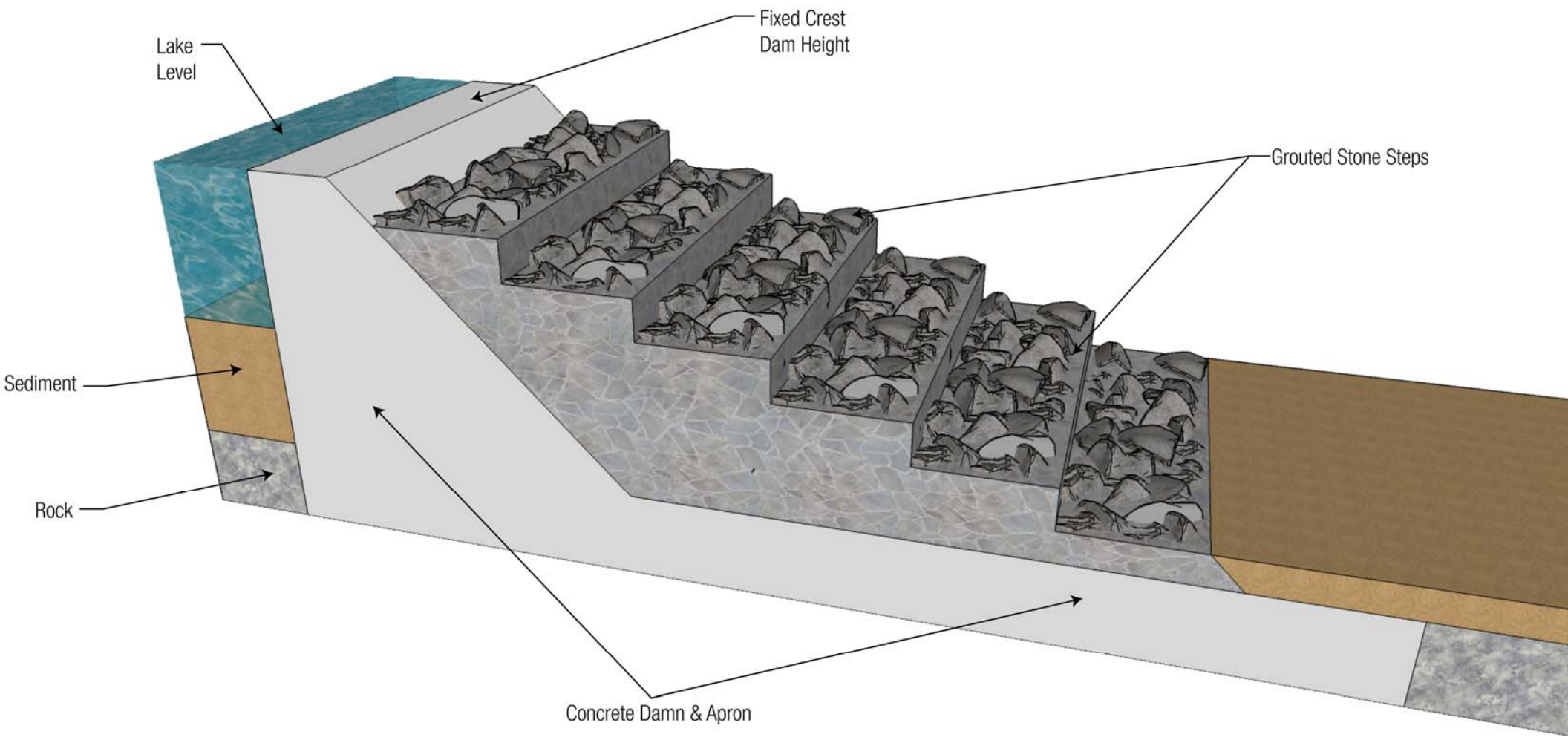
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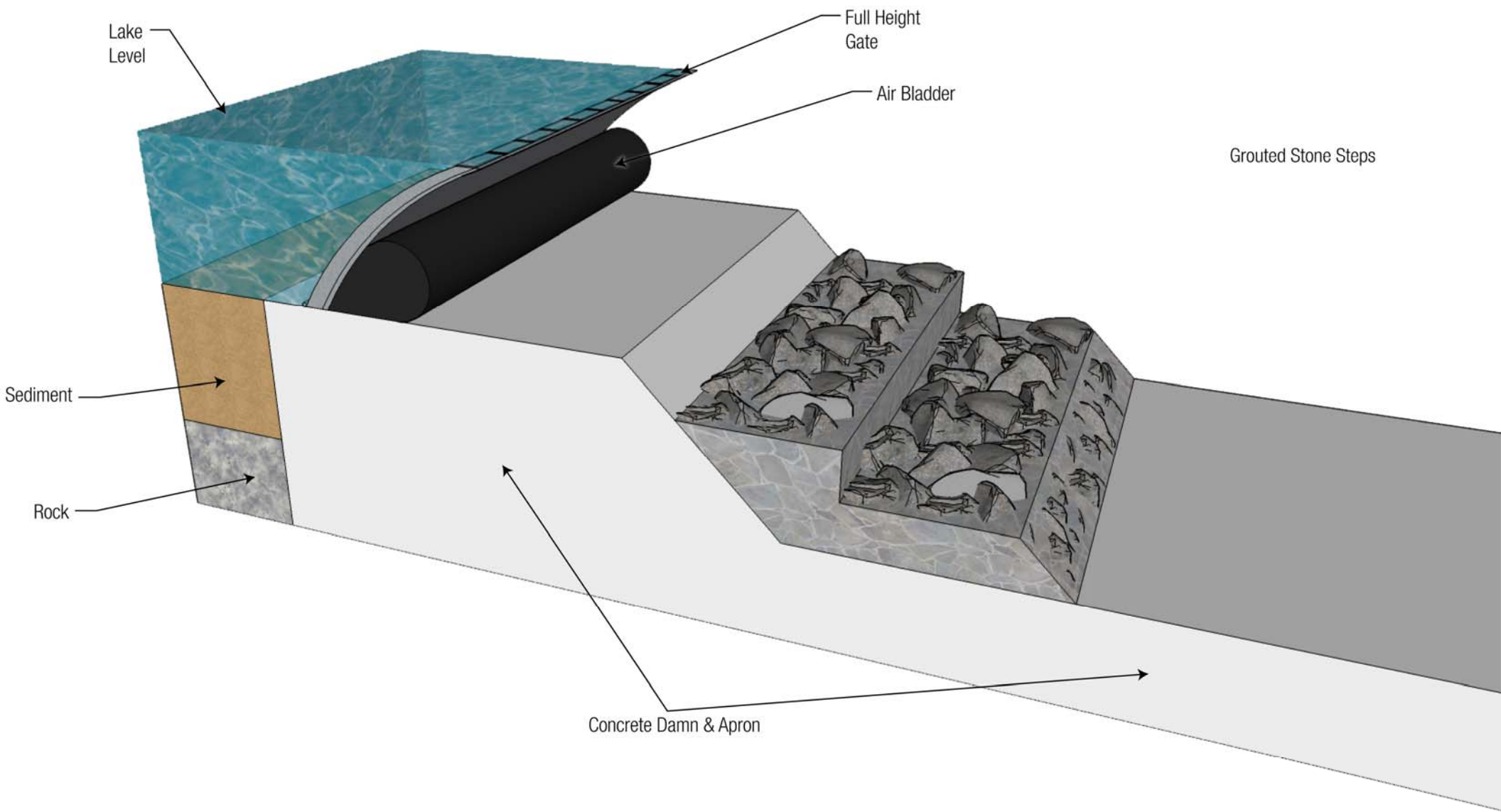
1. ALL TRASH AND WOODY DEBRIS SHOULD BE REMOVED FROM BANK FACE AND TOE WITHIN THE RANGE OF X1 AND THE FOOTPRINT OF TREATMENT PRIOR TO INSTALLING RIPRAP.
2. DIMENSION X1 IS A FUNCTION OF THE TREATMENT LOCATION / STATION ALONG THE RIVER. FOR OTHER TREATMENT DIMENSIONS USED FOR COST-ESTIMATING PURPOSES, REFER TO THE "BANK TREATMENT DIMENSIONS" TABLE BELOW.

BANK TREATMENT DIMENSIONS

COMMON DIMENSIONS FOR ALL TREATMENTS	
VERTICAL FREEBOARD	2.0 FT
RIPRAP MEDIAN DIAMETER, D50	1.5 FT
TREATMENT THICKNESS (T)	3.0 FT
TREATMENT 1	
STONE TOE THICKNESS (Z)	6.0 FT
STONE TOE LENGTH (L)	12.0 FT
STONE TOE SLOPE (H)	2.0 FT/FT
TREATMENT 2	
WEDGE SLOPE (H)	3.0 FT/FT
TREATMENT 3	
PEAK STONE TOE SLOPE, BANK SIDE (H1)	2.5 FT/FT
PEAK STONE TOE SLOPE, RIVER SIDE (H2)	2.5 FT/FT

FIGURE 1
BANK STABILIZATION TREATMENTS
ARKANSAS RIVER LOW WATER DAMS
CITY OF TULSA, OKLAHOMA





Lake Level

Full Height Gate

Air Bladder

Grouted Stone Steps

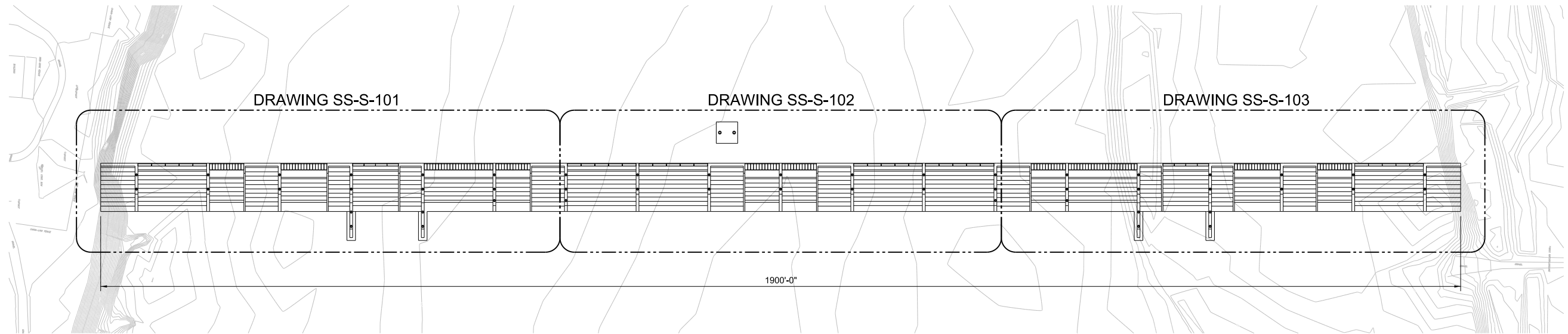
Sediment

Rock

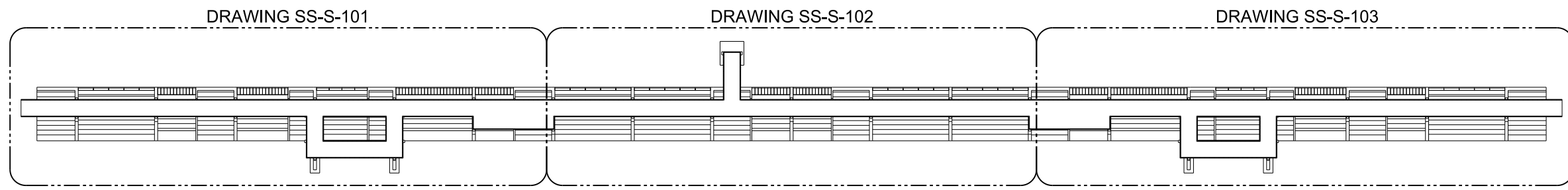
Concrete Dam & Apron

1 2 3 4 5 6

A
B
C
D



 **DAM PLAN - OVERALL**
1"=80'



 **BRIDGE PLAN - OVERALL**
1"=80'

NO.	DATE	REVISION	BY	APVD

ARKANSAS RIVER LOW WATER DAMS
TULSA COUNTY
OKLAHOMA

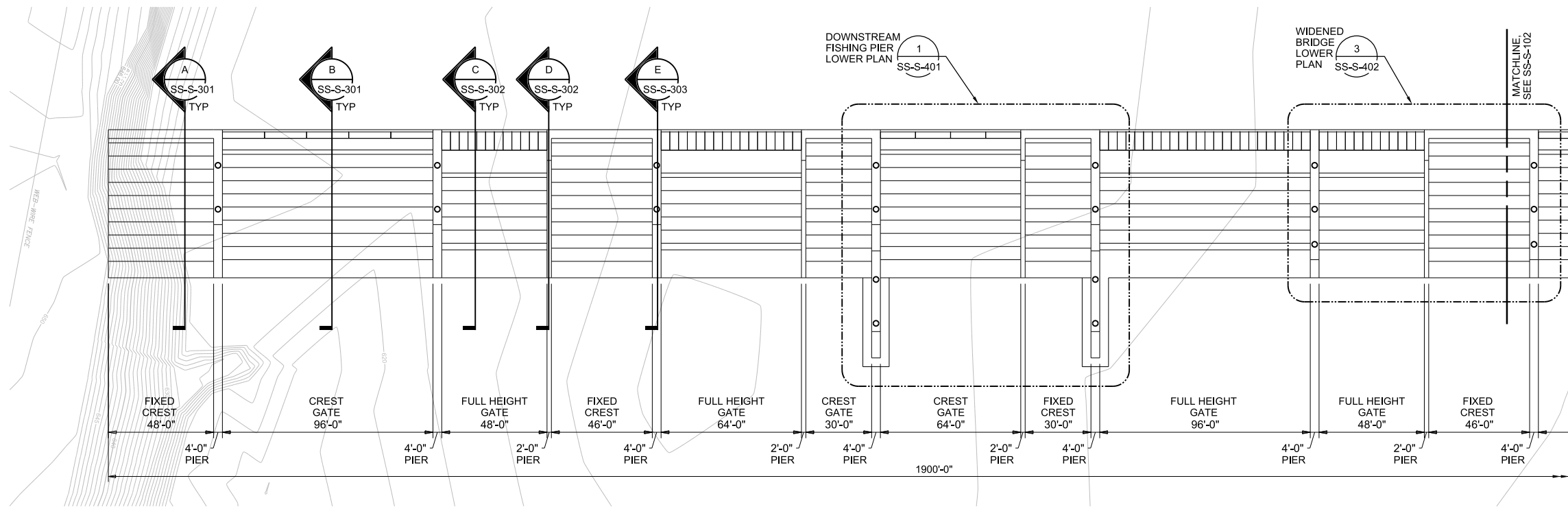
ch2m
SAND SPRINGS DAM
STRUCTURAL
PLAN - OVERALL

DATE	
PROJ	
DWG	SS-S-100
SHEET	of

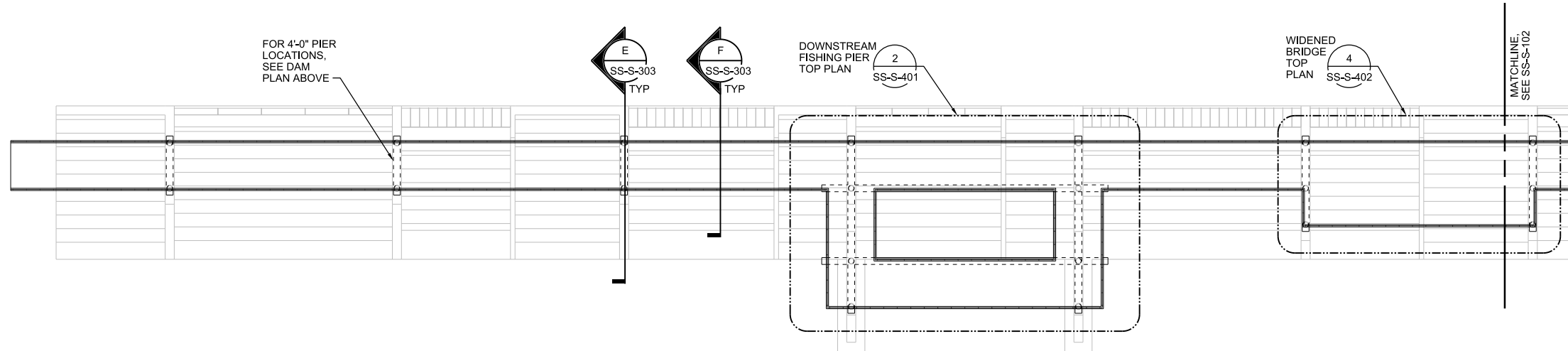
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SCHEMATIC DESIGN



DAM PLAN - WEST
1"=30'



BRIDGE PLAN - WEST
1"=30'



SAND SPRINGS DAM
STRUCTURAL
PLAN - WEST

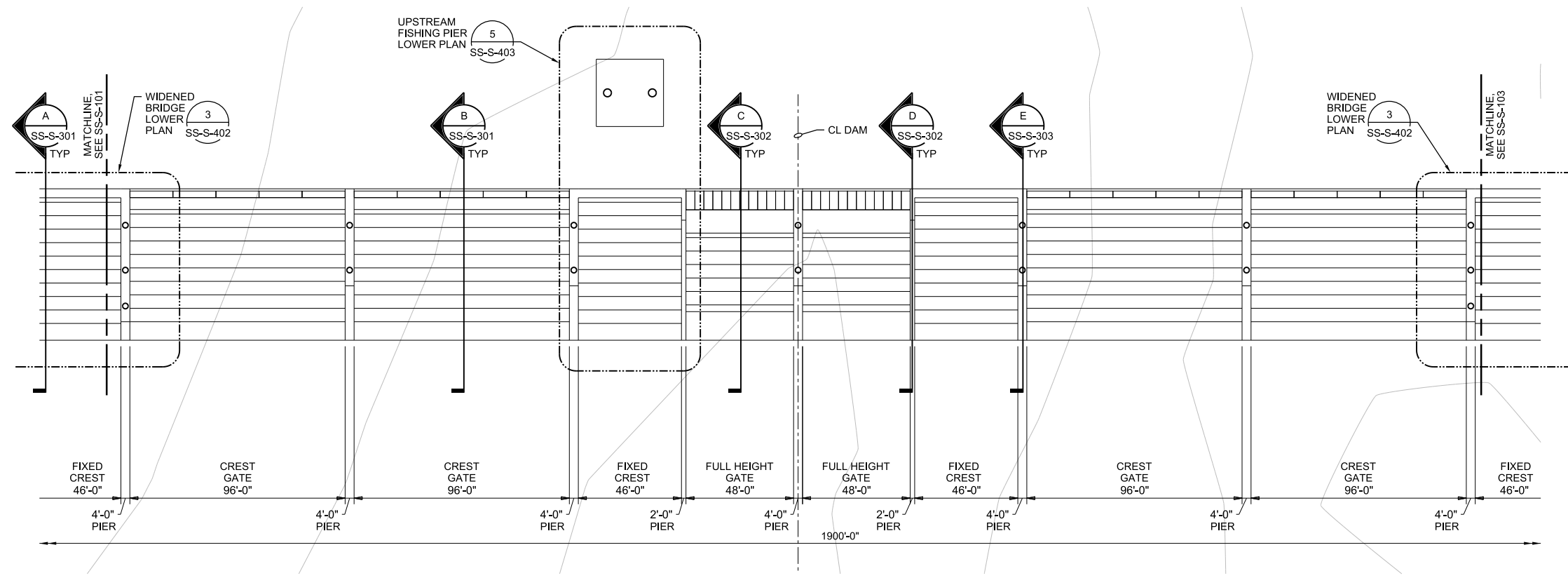
ARKANSAS RIVER LOW WATER DAMS
TULSA COUNTY
OKLAHOMA

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SHEET	of

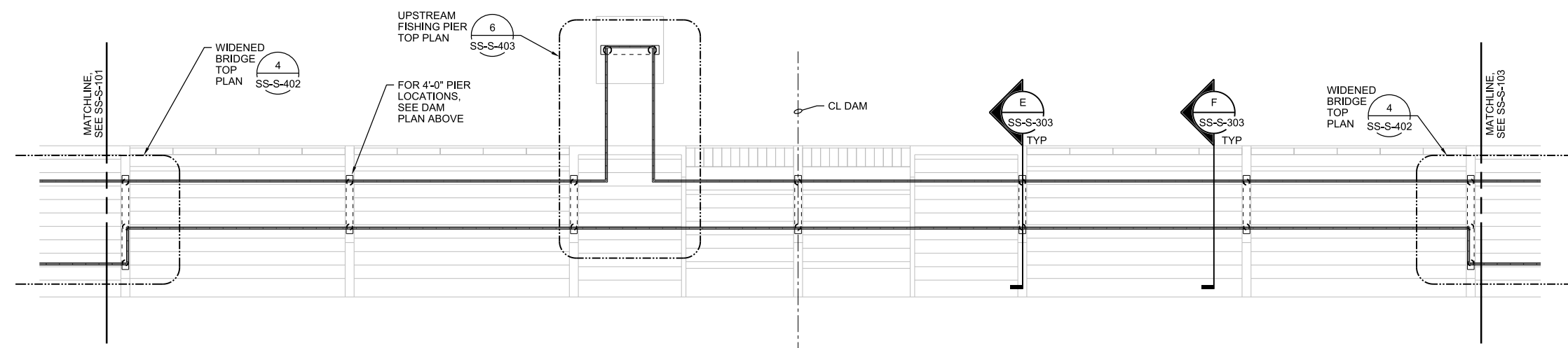
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DAM PLAN - MIDDLE
1"=30'



BRIDGE PLAN - MIDDLE
1"=30'

NOTE:
DAM BELOW SCREENED FOR CLARITY.

ch2m
SAND SPRINGS DAM
STRUCTURAL
PLAN - MIDDLE

ARKANSAS RIVER LOW WATER DAMS
TULSA COUNTY
OKLAHOMA

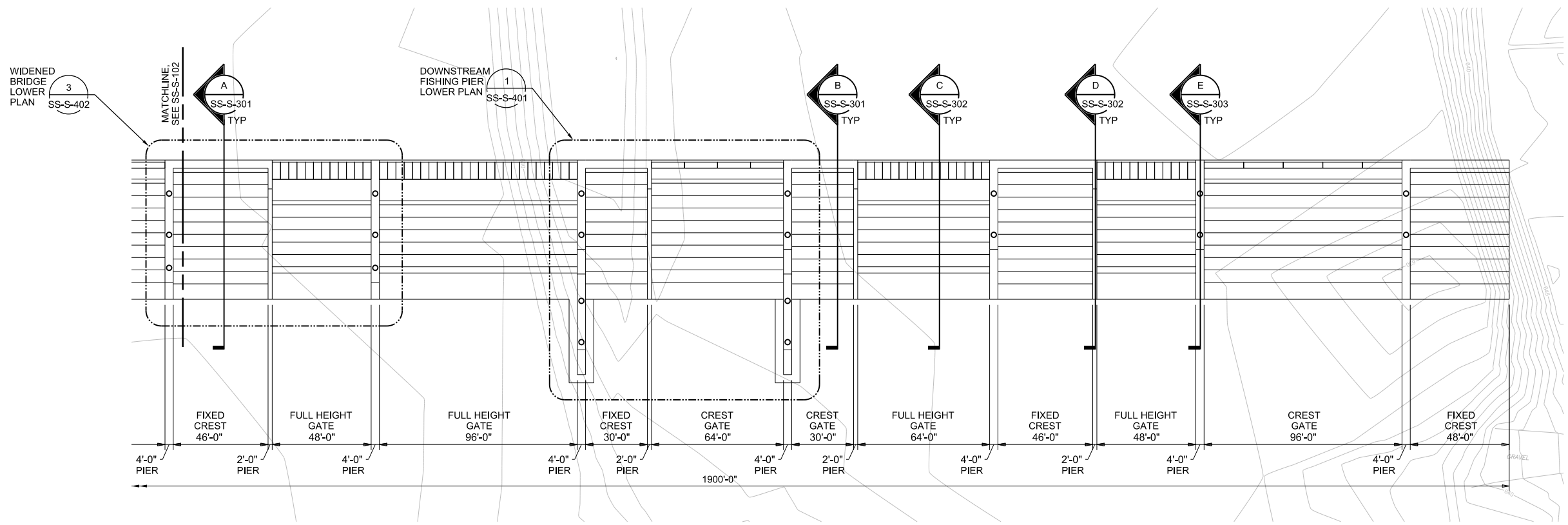
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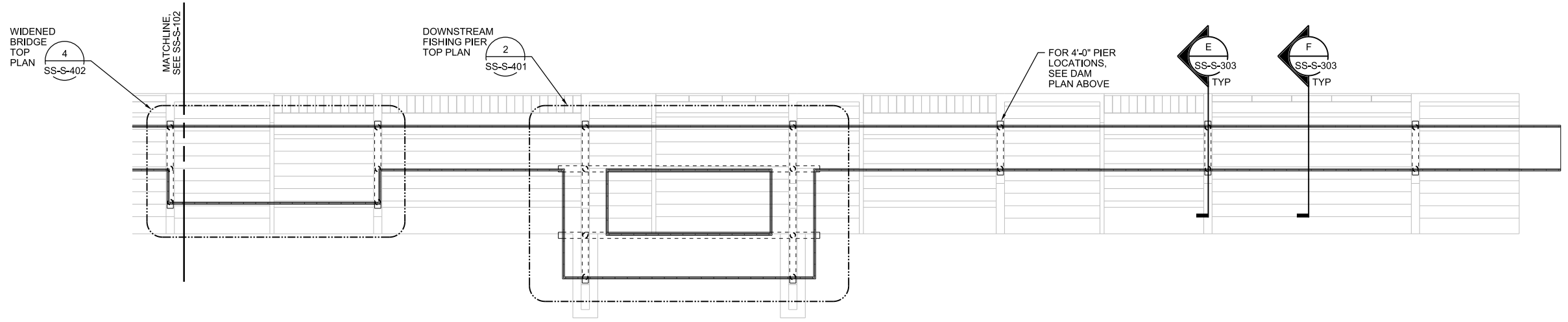
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DAM PLAN - EAST
1"=30'



NOTE:
DAM BELOW SCREENED FOR CLARITY.

BRIDGE PLAN - EAST
1"=30'

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ARKANSAS RIVER LOW WATER DAMS
TULSA COUNTY
OKLAHOMA

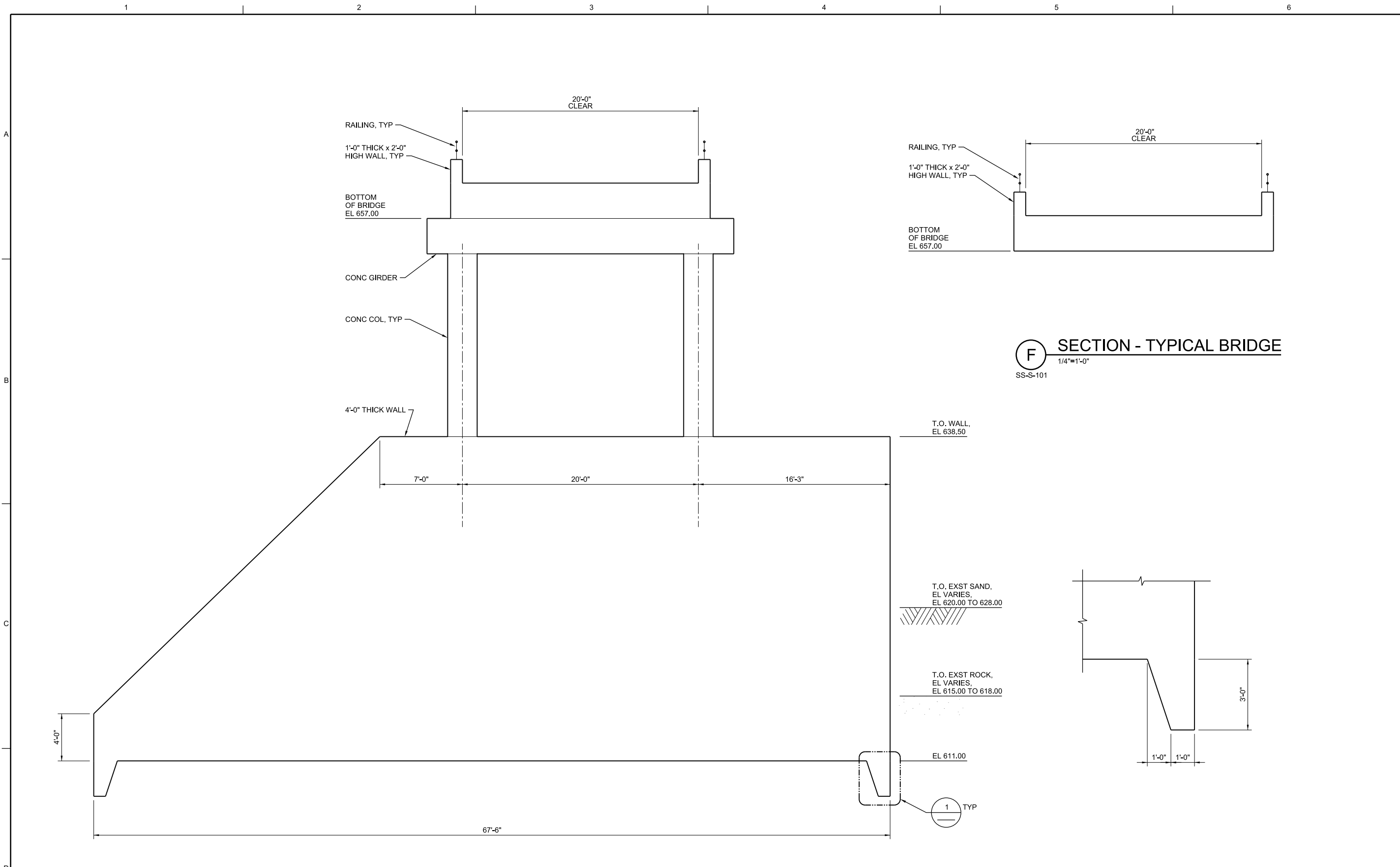
ch2m
SAND SPRINGS DAM
STRUCTURAL
PLAN - EAST

DATE	
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DWG	SS-S-103
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DR
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BY
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E SECTION - 4'-0" PIER
1/4"=1'-0"
SS-S-101

F SECTION - TYPICAL BRIDGE
1/4"=1'-0"
SS-S-101

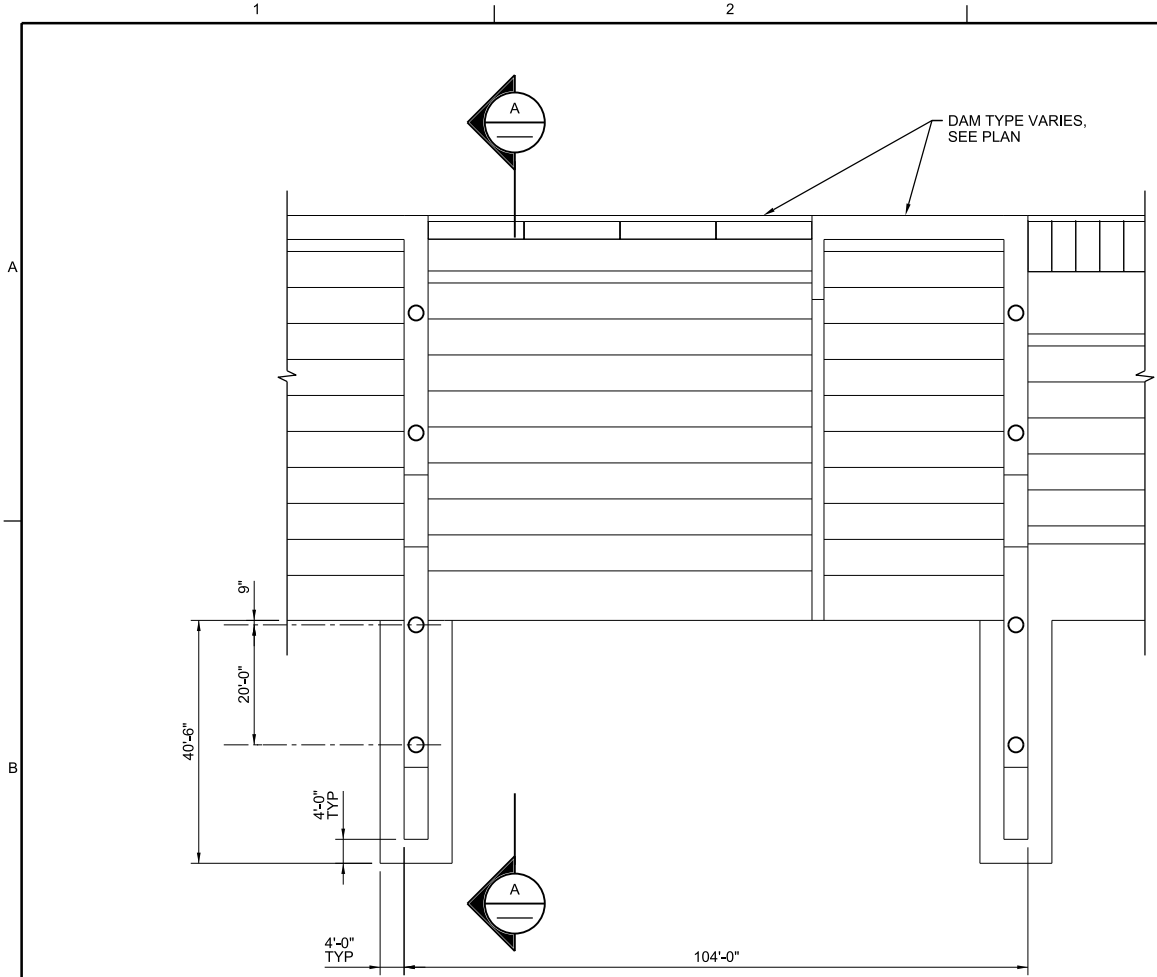
1 KEYED EDGE
1/2"=1'-0"
SS-S-301

		SAND SPRINGS DAM STRUCTURAL SECTIONS	
ARKANSAS RIVER LOW WATER DAMS TULSA COUNTY OKLAHOMA		NO. DATE DSGN	REVISION CHK
DATE PROJ DWG SHEET		DR K. WHITTIER	APVD C. NEWLIN
VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.		SS-S-303 of	

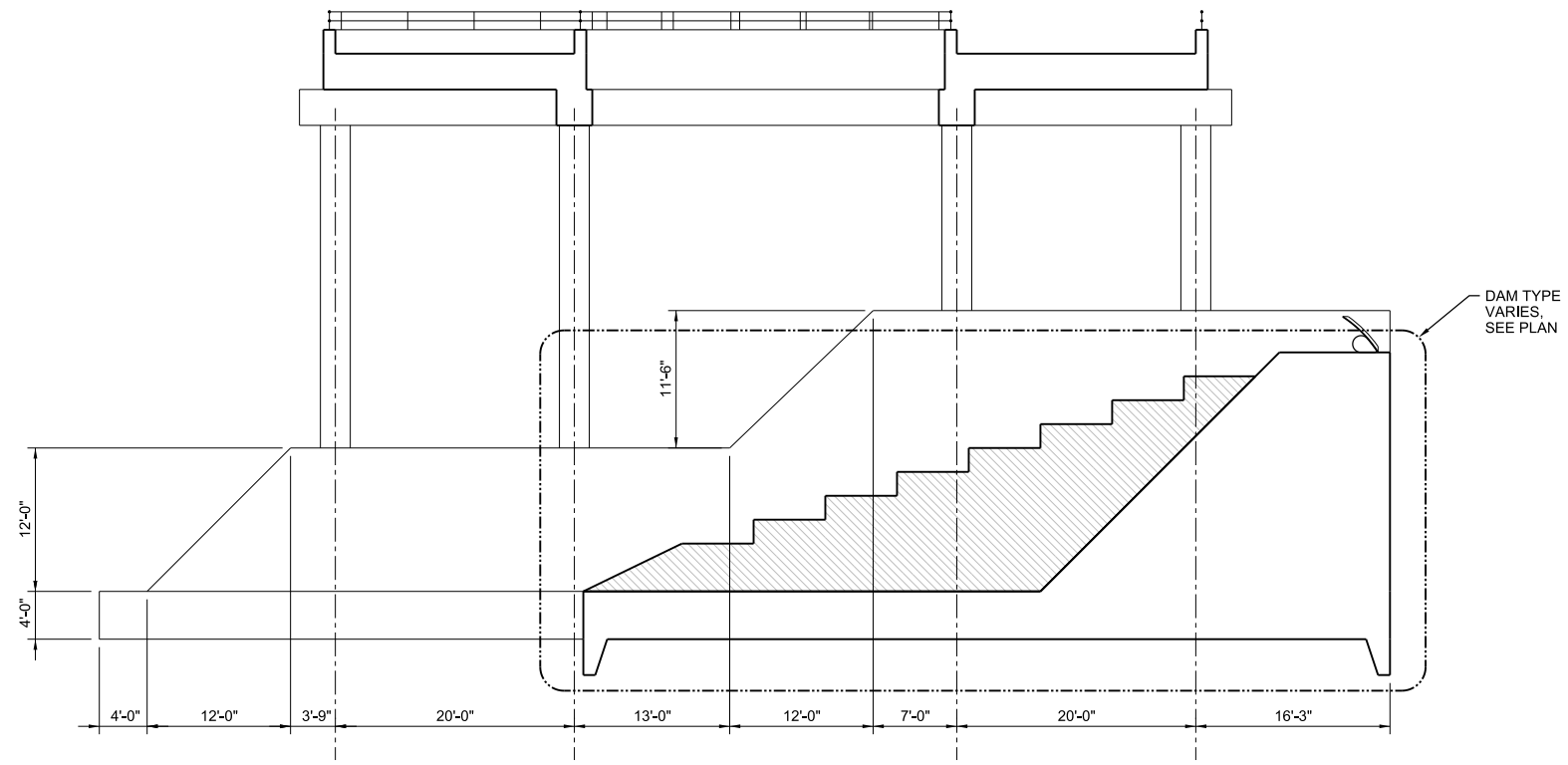
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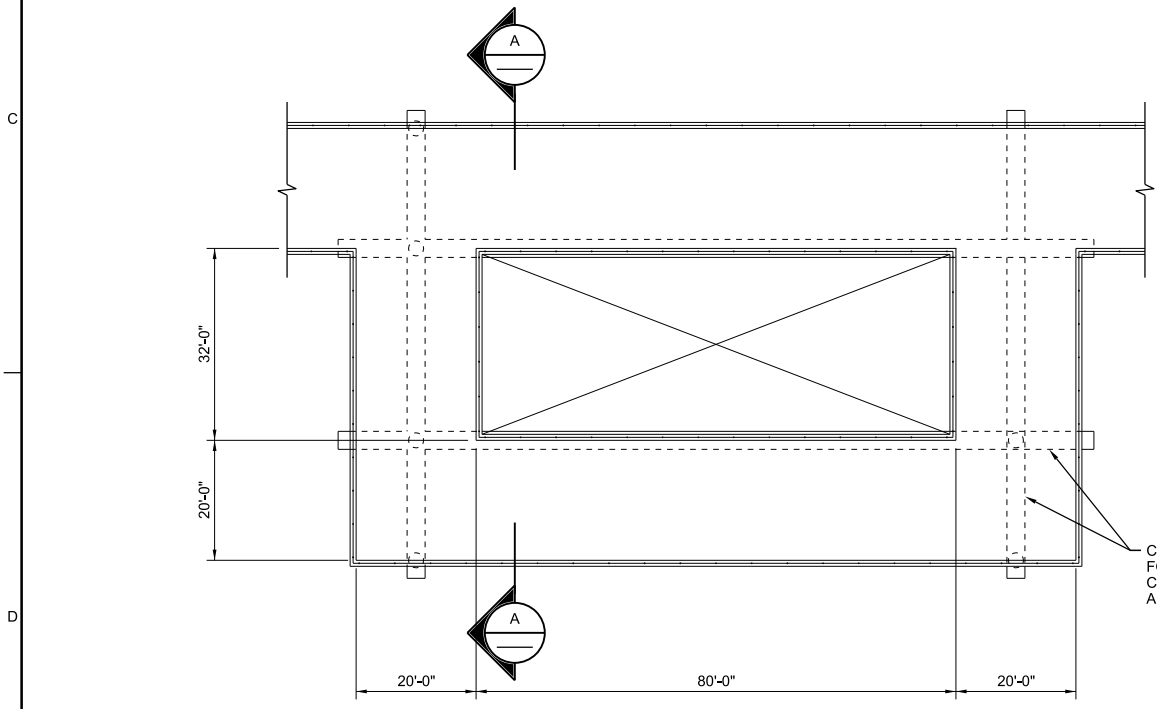
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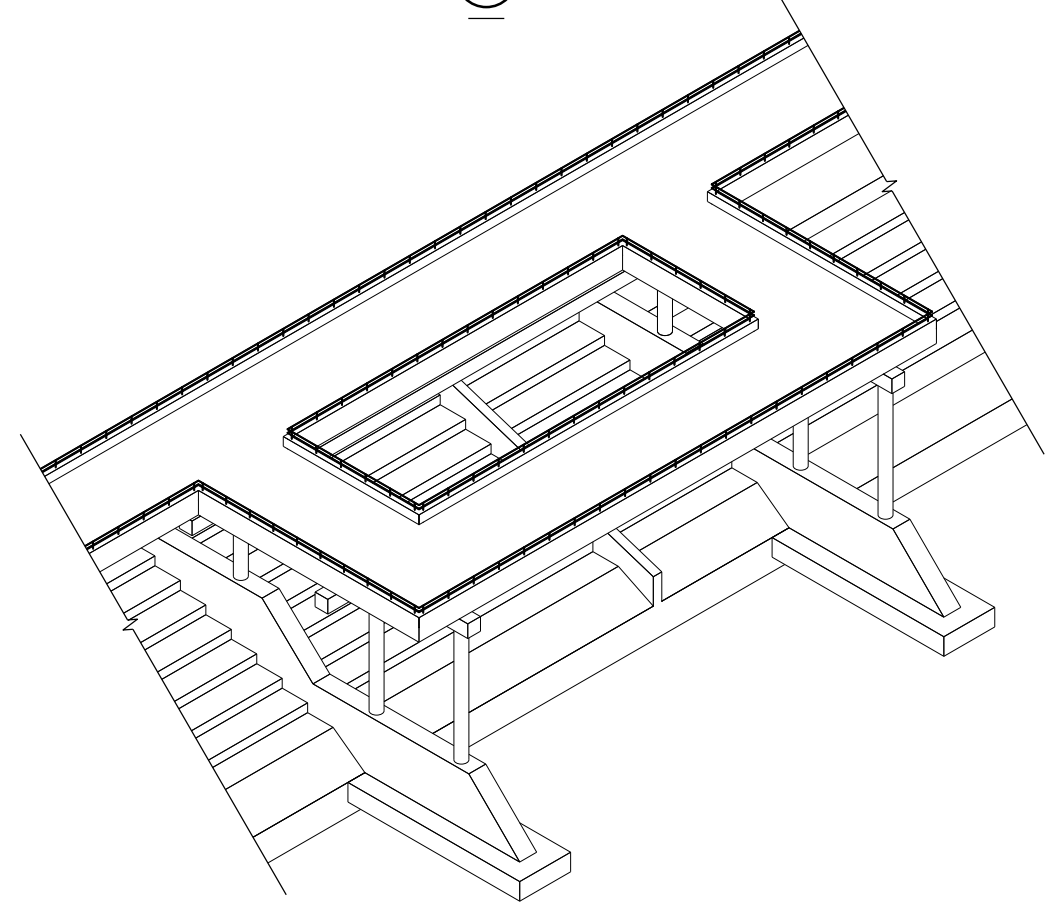
1 ENLARGED LOWER PLAN
 1/16"=1'-0"
 SS-S-101



A SECTION
 1/8"=1'-0"



2 ENLARGED TOP PLAN
 1/16"=1'-0"
 SS-S-101

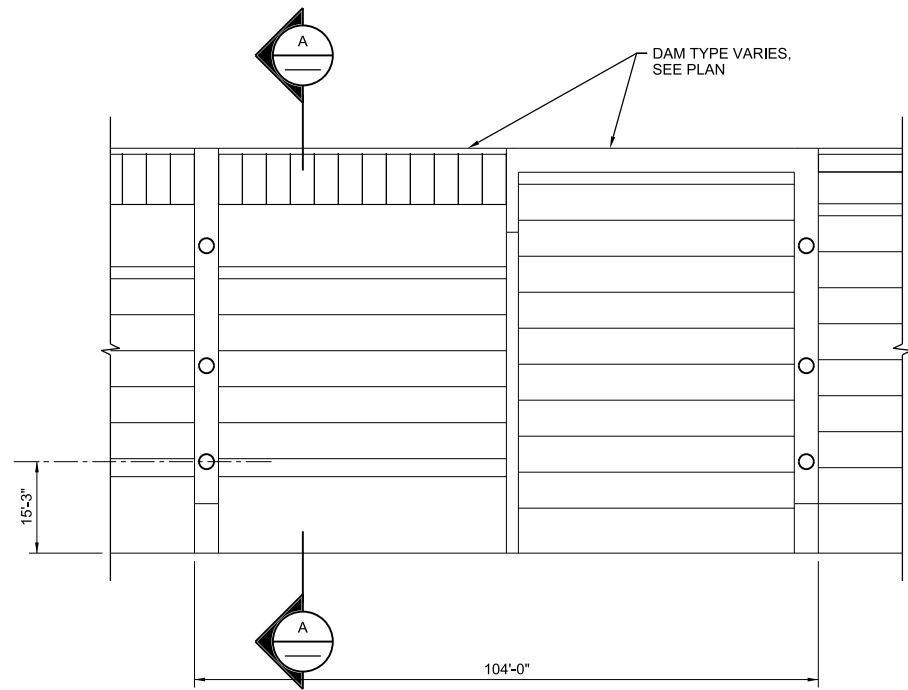


ISOMETRIC
 1/16"=1'-0"

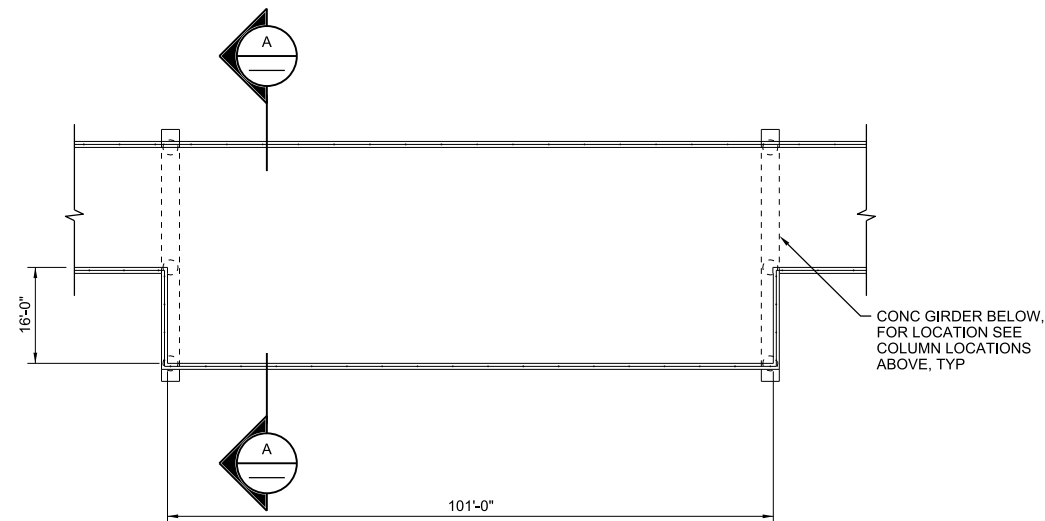
				SAND SPRINGS DAM STRUCTURAL ENLARGED PLANS				ARKANSAS RIVER LOW WATER DAMS TULSA COUNTY OKLAHOMA					
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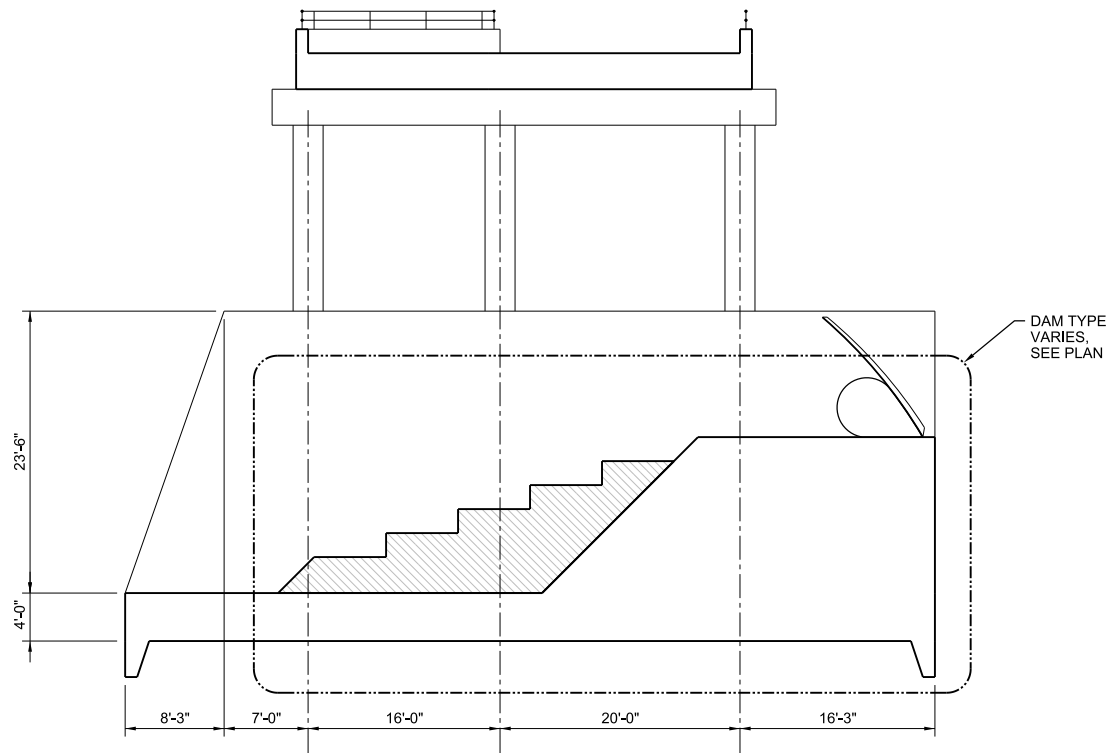
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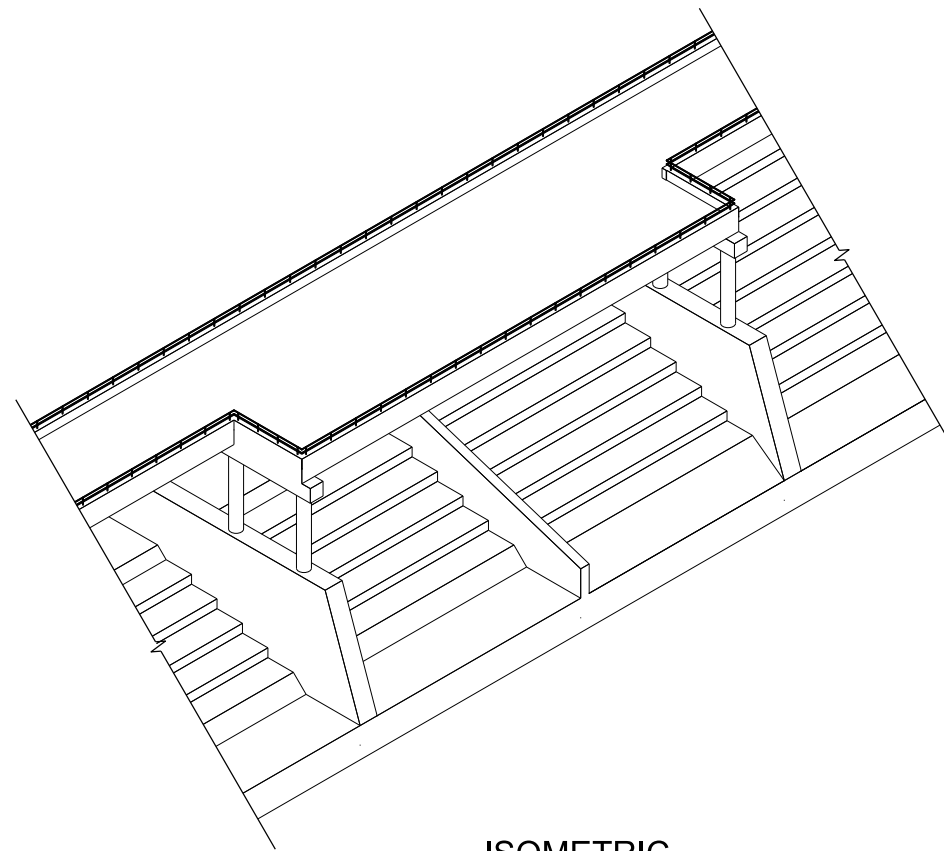
3 ENLARGED LOWER PLAN
 1/16"=1'-0"
 SS-S-101



4 ENLARGED TOP PLAN
 1/16"=1'-0"
 SS-S-101



A SECTION
 1/8"=1'-0"



ISOMETRIC
 1/16"=1'-0"

ch2m

SAND SPRINGS DAM
 STRUCTURAL
 ENLARGED PLANS

ARKANSAS RIVER LOW WATER DAMS
 TULSA COUNTY
 OKLAHOMA

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	
PROJ	
DWG	SS-S-402
SHEET	of

SCHEMATIC DESIGN

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