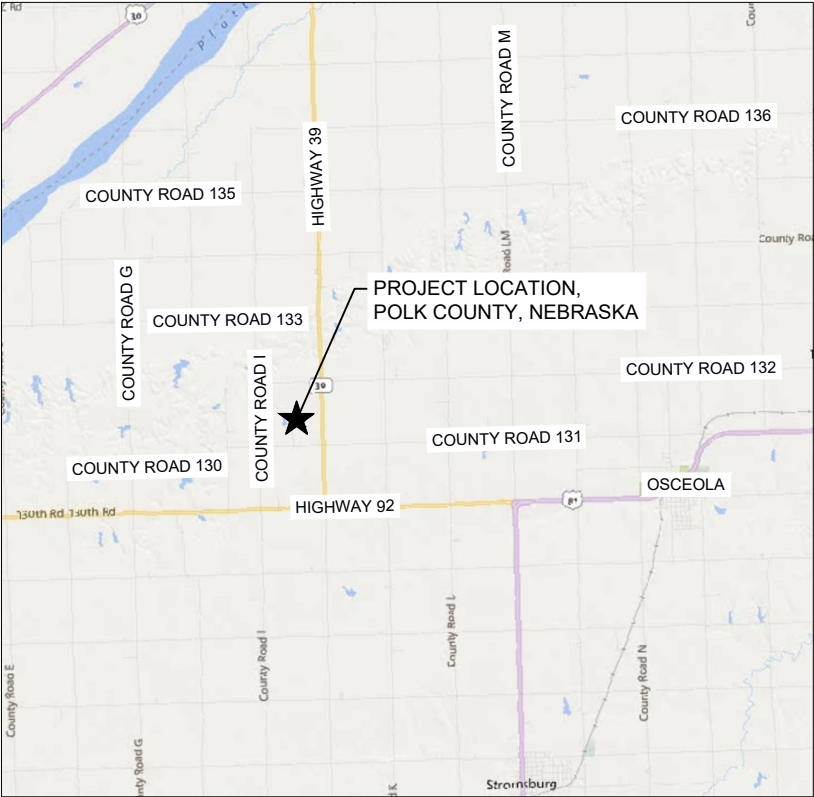


DAM REHABILITATION JONES CREEK RESERVOIR CENTRAL PLATTE NRD

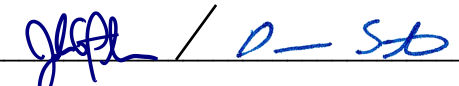
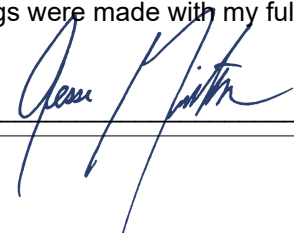
SECTION 9, TOWNSHIP 14N, RANGE 3W
JEO PROJECT NO. 180155.00

INDEX OF SHEETS:

SHEET NO:	SHEET NAME:
C0.1	COVER SHEET
C0.2	SYMBOLS SHEET
C0.3	SITE ACCESS
C0.4	DATA SHEET
C1.1	PLAN & PROFILE - EXCAVATION PLAN
C1.2	NEW PRINCIPAL SPILLWAY
C2.1	EROSION CONTROL PLAN
D1.1	SAND DIAPHRAGM DETAILS
D1.2	RISER DETAILS
D1.3	PIPE REQUIREMENTS
D1.4	TRASH RACK DETAILS
D1.5	PIPE SUPPORT DETAILS



GRAPHIC SCALE
0 4,000 8,000 16,000
UNIT OF MEASURE IS FEET

STATE OF NEBRASKA POLK COUNTY	ENGINEER CERTIFICATE
I certify that the design of the Jones Creek 1-1 Structure represented on these drawings were made under my direction and consist of 11 sheets. I further certify that this dam was designed to meet the requirements of a LOW hazard structure.	
 ENGINEER	
STATE OF NEBRASKA POLK COUNTY	APPLICANT'S CERTIFICATE
I certify that these drawings were made with my full knowledge and consent.	
 APPLICANT	
February 25, 2022	

Department of Natural Resources
Approved by Order Dated

March 14, 2022

Received
February 25, 2022
Department of
Natural Resources

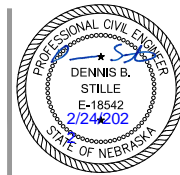


Know what's below.
Call before you dig.

NOTE:
NEITHER THE OWNER (CLIENT) NOR JEO CONSULTING GROUP, INC. ASSUMES ANY RESPONSIBILITY FOR UTILITY LOCATIONS BEING ACCURATELY SHOWN OR NOT SHOWN ON THE PLANS. A REQUEST FOR UTILITY LOCATES WAS MADE FOR THIS LOCATION AS PER THE ONE-CALL NOTIFICATION SYSTEM ACT.
(DATE: 08/24/2020, TICKET NO.: 202371423).
UTILITIES SHOWN ARE FROM FIELD MARKINGS PROVIDED IN THE FIELD BY THE UTILITY PROVIDERS.
THE EXACT LOCATION AND/OR SIZE OF UNDERGROUND FEATURES MAY NOT BE ACCURATELY, COMPLETELY AND RELIABLY DEPICTED. FIELD VERIFICATION OF UTILITIES MAY BE REQUIRED. CONTRACTOR(S) SHALL NOTIFY THE RESPECTIVE UTILITY COMPANIES BEFORE COMMENCING ANY WORK.



DAM REHABILITATION
JONES CREEK RESERVOIR
CENTRAL PLATTE NRD



COVER SHEET



PROJECT NO.	180155.00
DATE	2/24/2022
DRAWN BY	JAA
FILE NAME	S-180155.00-Jones_Creek.dwg
FIELD BOOK	N/A
FIELD CREW	N/A
SURVEY FILE NO.	N/A
PLAN IN HAND	J.G.P.
DATE	7/15/2020
70 PERCENT REVIEW	K.W.K.
DATE	7/15/2020
95 PERCENT REVIEW	K.W.K.
DATE	3/8/2021
REVISIONS	

C0.1

LINESTYLES

ITEM	SYMBOL
BREAK LINE	
CABLE TELEVISION	
CENTERLINE OF ROAD	
CONTOUR MINOR (EX)	
CONTOUR MAJOR (EX)	
CONTOUR MINOR (EX SCREENED)	
CONTOUR MAJOR (EX SCREENED)	
CONTOUR MINOR (PR)	
CONTOUR MAJOR (PR)	
LIMITS OF CONSTRUCTION	
CULVERT	
ELECTRIC (OVERHEAD)	
ELECTRIC (UNDERGROUND)	
FENCE (WOODEN)	
FENCE (WIRE OR UNKNOWN)	
FENCE (CHAINLINK)	
FENCE (SECURITY)	
FIBER OPTIC LINE	
FLOWLINE (BREAKLINE)	
GAS LINE	
GUARDRAIL	
PROPERTY BOUNDARY	
PROPERTY LOT LINES (PR)	
RIGHT-OF-WAY LINE	
RAILROAD RIGHT-OF-WAY	
RAILROAD TRACKS	
RETAINING WALL	
SANITARY SEWER (EXIST)	
SANITARY SEWER (PROP)	
SAN SEWER FORCE MAIN (EX)	
SAN SEWER FORCE MAIN (PR)	
STORM SEWER (EXIST)	
STORM SEWER (PROP)	
TELEPHONE LINE (UGND)	
TELEPHONE LINE (OVERHEAD)	
TERRACE	
CROPLINE	
TRAVELED WAY	
WATER (EXIST)	
WATER (PROP)	
FIRE SERVICE	

SWPPP

ITEM	SYMBOL
SILT FENCE	
INLET PROTECTION	
STRAW WATTLE CHECK	
STRAW BALE CHECK	
FLOW ARROW (PLAN)	
AREA INLET FILTER PROTECTION	
RIP RAP	
SEEDING	
MATTING	

PAVING FEATURES

ITEM	SYMBOL
EXISTING PAVEMENT JOINT	
TRANSVERSE JOINT	
LONGITUDINAL JOINT	
EXPANSION/KEYED JOINT	
PAVEMENT MARKING	
PAVEMENT REBAR	
HANDICAP SYMBOL	

UTILITIES

ITEM	SYMBOL
STORM SEWER	
CURB INLET	
GRATE INLET	
CATCH BASIN	
STORM SEWER MANHOLE	
SANITARY	
CLEANOUT	
SEPTIC TANK	
SANITARY MANHOLE	
POWER, ELECTRICAL, LIGHT, AND TRAFFIC	
AIR CONDITIONING UNIT	
ANTENNA	
ANCHOR POLE/POST	
GUY POLE	
GUY WIRE ANCHOR	
ELECTRICAL HIGHLINE TOWER (METAL OR CONCRETE)	
POWER POLE (EXISTING)	
POWER POLE (PROPOSED)	
POWER (ELEC) PEDESTAL	
POWER (ELEC) PULL BOX OR MANHOLE	
POWER (ELEC) METER	
LIGHT POLE	
TRAFFIC SIGNAL	
TRAFFIC SIGNAL BOX	
TELEVISION PEDESTAL	
TELEVISION MANHOLE	
WATER	
WATER MANHOLE	
WATER VALVE	
WATER SHUT OFF OR CURB STOP	
WELL	
WATER METER	
WATER METER PIT	
YARD HYDRANT	
WATER ELEVATION	
WATER TOWER	
FIRE HYDRANT (EXISTING)	
FIRE HYDRANT (PROPOSED)	
FIRE HYDRANT IN PROFILE	
WATER FITTINGS	
11- 1/4"	
22- 1/2"	
45°	
90°	
CROSS	
PLUG	
REDUCER	
TEE	
GAS	
GAS METER	
GAS MANHOLE	
GAS FILL PIPE	
GAS PUMP	
GAS VALVE	
GAS VENT	
TELEPHONE	
FIBER OPTICS PULL BOX	
TELEPHONE POLE	
TELEPHONE PULL BOX OR MANHOLE	
TELEPHONE PEDESTAL	
MANHOLE (NON-SPECIFIC)	
UNDERGRND STORAGE TANK	
VALVE (NON-SPECIFIC)	

VEGETATION

ITEM	SYMBOL
BUSH	
CONIFEROUS TREE	
DECIDUOUS TREE	
MARSH/WETLAND	
TREE MASS LINE	
TREE STUMP	

SITE & SIGNAGE

ITEM	SYMBOL
SIGN	
BARRICADE	
ROAD SIGNS	
COUNTY ROAD	
INTERSTATE HIGHWAY	
STATE HIGHWAY	
U.S. HIGHWAY	
MILE MARKER POST	
RIGHT OF WAY MARKER	
RAILROAD CROSSING SIGNAL	
RAILROAD SWITCH	
FLAG POLE	
MAILBOX	
PROPANE TANK	
SATELLITE TV DISH	
WINDMILL	

CONTROL & ELEVATION

ITEM	SYMBOL
BENCHMARK	
CONTROL POINT (NON-PROPERTY)	
MONUMENT FOUND (PROPERTY)	
MONUMENT SET	
TEMPORARY POINT	
TEST BORING	
POINT ELEVATION (EXISTING)	
POINT ELEVATION (PROPOSED)	
TOP OF PAVEMENT	
TOP OF CURB	
GROUND	
TOP OF WALL	
BOTTOM OF WALL	
FLOWLINE	
GRID TICK	

MISC FEATURES

ITEM	SYMBOL
CENTER PIVOT	
CEMETERY	
GRAVE	
CHURCH	
CAVE	
CISTERN	
LATRINE	
OIL WELL	
GUARD POST	

PAVEMENT SYMBOLS AND HATCH

ITEM	SYMBOL	HATCH
ASPHALT PAVEMENT (EX.)		
CONCRETE PAVEMENT (EX.)		
GRAVEL (EX.)		
BRICK PAVEMENT (EX.)		
ASPHALT PAVEMENT (PR.)		
CONCRETE PAVEMENT (PR.)		
CONCRETE SIDEWALK (PR)		
GRAVEL (PR.)		
GRAVEL (PR.)		
BRICK PAVEMENT (PR.)		

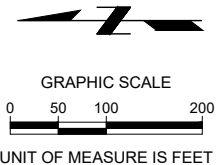
GENERAL

ITEM	SYMBOL
PLAN REVISION	
NORTH ARROW	
GRAPHIC SCALE	

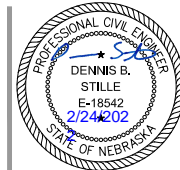
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NOTES:
1. PROPERTY LINES SHOWN ARE APPROXIMATE FROM 2018 POLK COUNTY GIS.
2. ELEVATION DATA ON THIS SHEET DEVELOPED FROM 2012 LIDAR USING NAVD88 DATUM.



DAM REHABILITATION
JONES CREEK RESERVOIR
CENTRAL PLATTE NRD



SITE ACCESS



PROJECT NO.	180155.00
DATE	2/24/2022
DRAWN BY	JAA
FILE NAME	S-180155.00-Jones_Creek.dwg
FIELD BOOK	N/A
FIELD CREW	N/A
SURVEY FILE NO.	N/A
PLAN IN HAND	J.G.P.
DATE	7/15/2020
70 PERCENT REVIEW	K.W.K.
DATE	7/15/2020
95 PERCENT REVIEW	K.W.K.
DATE	3/8/2021
REVISIONS	

AS-BUILT (1965)

ROUTING SUMMARY	ELEV.	STORAGE (AC-FT)	PS OUTFLOW (CFS)	AS OUTFLOW (CFS)
PS CREST	1674.70	23.80	0.00	0
AS CREST	1680.90	78.11	80.95	0
25-YR CREST	1682.18	95.60	84.20	179.60
50-YR CREST	1682.84	108.90	85.30	360.10
TOP OF DAM	1684.20	155.99	89.40	1472.20

NOTE: VALUES COMPUTED FROM STORAGE
VALUES GIVEN ON ORIGINAL DESIGN DRAWINGS.

PS DATA	
MAIN BARREL DIAM., INCHES	30
INLET TYPE	DROP
PIPE MATERIAL	CMP
RISER DIAM., INCHES	36

AS DATA	
WIDTH, FEET	40
LENGTH, FEET	470
INLET SLOPE, %	1
OUTLET SLOPE, %	7
SIDESLOPES, X: 1	3

NOTE: ELEVATION DATA ON THIS SHEET IS IN NAVD88 DATUM.

REPAIR PLAN (2022)

RESERVOIR CAPACITY TABLE		
ELEVATION (FEET)	AREA (ACRES)	STORAGE (ACRE-FT)*
1674.70	5.61	23.8 (P.S.)
1675	6.07	25.6
1676	7.49	32.3
1677	9.13	40.6
1678	10.91	50.7
1679	12.87	62.6
1680	14.87	76.4
1680.90	16.68	90.6 (A.S.)
1681	16.92	92.3
1682	19.02	110.3
1683	21.31	130.4
1684	23.53	152.9 (T.O.D.)

*CAPACITY TABLE COMPUTED FROM LIDAR. STORAGE VOLUME FROM ORIGINAL DESIGN DRAWINGS USED BELOW PS CREST. BATHYMETRIC SURVEY WAS NOT PERFORMED.

HYDROLOGIC DATA	
DRAINAGE AREA, ACRES	630.60
RCN	81.10
TIME OF CONCENTRATION, HR	1.30

STORM DATA	PSH	ASH
STORM FREQUENCY, YEARS	10	50
RAINFALL DISTRIBUTION, TYPE	2	2
RAINFALL DURATION, HOURS	24	24
RAINFALL, INCHES	4.38	6.37
RUNOFF, INCHES	2.44	4.23

ROUTING SUMMARY	ELEV.	STORAGE (AC-FT)	PS OUTFLOW (CFS)	AS OUTFLOW (CFS)
PS CREST	1674.70	23.80	0	0
10-YR CREST	1680.56	85.30	132.00	0
AS CREST	1680.90	90.60	132.90	0
50-YR CREST	1682.77	125.70	137.90	250.70
TOP OF DAM	1684.00	152.90	141.10	615.41

ROUTING METHOD USED	NOTE: THE AUXILIARY SPILLWAY CREST WILL REMAIN AT CONSTRUCTED EL. 1680.90.
SITES -- NE 378	

PS DATA	
MAIN BARREL DIAM., INCHES	36
INLET TYPE	DROP
PIPE MATERIAL	CMP
RISER DIAM., INCHES	54

AS DATA	
WIDTH, FEET	40
LENGTH, FEET	470
INLET SLOPE, %	1
OUTLET SLOPE, %	7
SIDESLOPES, X: 1	3

CONSTRUCTION NOTES

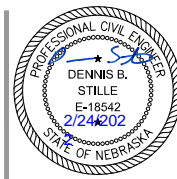
1. THE CONTRACTOR WILL INSPECT THE CONSTRUCTION AREA FOR THE PRESENCE OF UTILITY FACILITIES BOTH SURFACE AND SUBSURFACE, AND WILL NOTIFY THE NEBRASKA ONE CALL SYSTEM (<http://www.ne1call.com>) BEFORE CONSTRUCTION ACTIVITIES BEGIN. THE CONTRACTOR WILL USE EXTRA SAFETY PRECAUTIONS WHEN WORKING NEAR OR AROUND PIPELINES, POWER LINES, POWER POLES, UNDERGROUND CABLES, OR OTHER UTILITY INSTALLATIONS. NEBRASKA811: DIAL 811 OR 1-800-331-5666.
2. AN EXCAVATION WASTE DISPOSAL AREA FOR MATERIAL NOT SUITED FOR EARTHFILL WILL BE STAKED BY THE OWNER AT THE TIME OF CONSTRUCTION.
3. FENCES WITHIN THE CONSTRUCTION WORK LIMITS WILL BE REMOVED AND RESET BY CONTRACTOR AS NEEDED FOR CONSTRUCTION ACTIVITIES.
4. STOCK-PILE AND BORROW ARE LOCATIONS WILL BE IDENTIFIED BY THE PROJECT SPONSOR DURING THE SITE SHOWING.
5. ALL SURFACES BENEATH EARTHFILL AND BORROW AREAS WILL BE STRIPPED TO A DEPTH OF 12 INCHES. STRIPPINGS WILL BE STOCKPILED AND USED AS TOPSOIL ON FINISHED EMBANKMENT AND BORROW AREA SURFACES.
6. PLACEMENT OF THE PRINCIPAL SPILLWAY WILL OCCUR WITH THE NRD INSPECTOR/ENGINEER PRESENT.
7. THE FINISHED DAM SURFACE SHALL BE GRADED TO MATCH THE EXISTING DAM SURFACE.
8. THE EXISTING PRINCIPAL SPILLWAY AND APPURTENANCES REMOVED AS STRUCTURAL REMOVAL SHALL BE HAULED OFF SITE.
9. DEWATERING IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL INCLUDE TAKING WHATEVER MEASURES ARE NECESSARY TO PROVIDE A SAFE CONSTRUCTION SITE AND PROVIDE PROTECTION DOWNSTREAM.
10. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND REMOVING TEMPORARY EROSION CONTROL MEASURES, AS NECESSARY, TO PREVENT EROSION AND/OR SEDIMENTATION OF THE DOWNSTREAM CHANNEL, DURING CONSTRUCTION.
11. DURING INSTALLATION OF NEW PIPE, CONTRACTOR SHALL RE-SEAL ALL SEAMS, RIVETS, & JOINTS PER MANUFACTURER RECOMMENDATIONS.
12. AT THIS LOCATION, THE CONVERSION BETWEEN THE NGVD29 AND NAVD88 DATUMS FOR VERTICAL ELEVATIONS IS APPROXIMATELY: NAVD88 = NGVD29 + 0.7'
13. ALL ELEVATIONS SHOWN ON DRAWINGS ARE NAVD88 DATUM UNLESS SPECIFICALLY NOTED OTHERWISE.
14. ALL AREAS DISTURBED BY THE CONTRACTOR WITHOUT PROPOSED IMPROVEMENTS SHOWN, SHALL BE RESTORED TO PRE-PROJECT CONDITION AND SEEDING, FERTILIZER, AND MULCH INSTALLED.

TABLE OF QUANTITIES			
BID ITEM	UNIT	QUANTITY	AS-BUILT
MOBILIZATION	LS	1	
BONDING AND INSURANCE	LS	1	
SITE ACCESS	LS	1	
STRUCTURAL REMOVAL	LS	1	
STRIPPING AND TOPSOILING	LS	1	
EXCAVATION, ESTABLISHED QUANTITY	CY	3,600	
EARTHWORK MEASURED IN EMBANKMENT (ESTABLISHED QUANTITY)	CY	5,100	
RISER, 54" DIA, 12 GA. **	EA	1	
CMP & APP, 36" DIA., 12 GA.*	LF	123	
CMP & APP, 8" DIA., 16 GA.*	LF	71	
ROCK RIPRAP, NDOT TYPE B	TONS	80	
3" CRUSHED ROCK	TONS	13	
TRASH RACK	EA	1	
SAND DRAIN OUTLET	CY	14	
SAND DIAPHRAGM	CY	25	
PIPE SUPPORT ***	EA	1	
STRAW WATTLE	LF	550	
SEEDING, FERTILIZER, AND MULCH (ESTABLISHED QUANTITY)	AC	1.5	

- * INCLUDES BANDS, ELBOWS, AND OTHER APPURTENANCES.
** INCLUDES CONCRETE, REINFORCING STEEL, PIPE AND ALL OTHER APPURTENANCES. TEE LENGTHS ARE INCLUDED.
*** INCLUDES CONCRETE, STEEL, REINFORCING STEEL, AND ALL OTHER APPURTENANCES.



DAM REHABILITATION
JONES CREEK RESERVOIR
CENTRAL PLATTE NRD

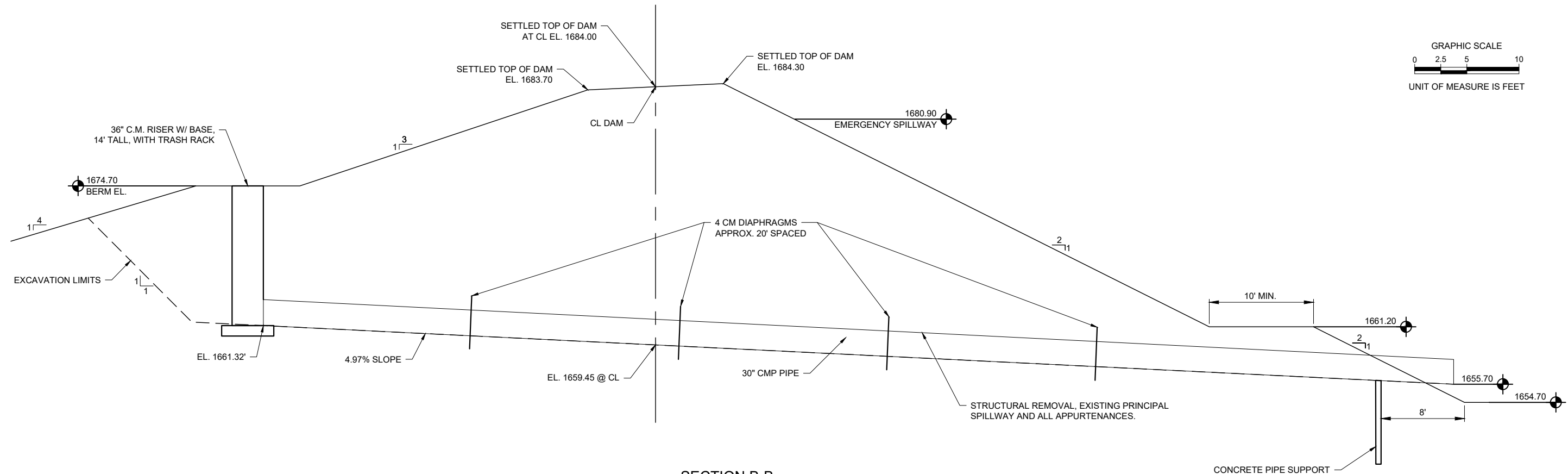


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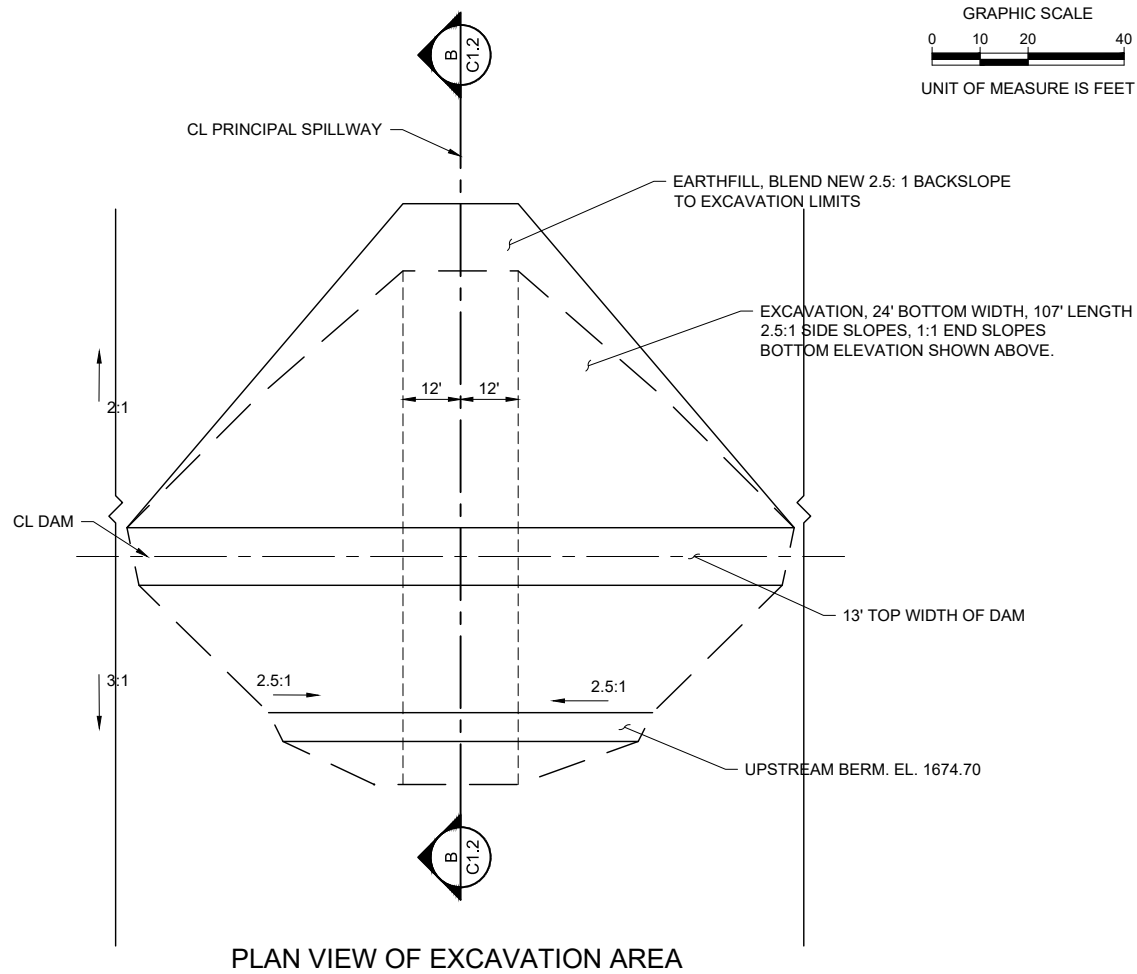
DATA SHEET



PROJECT NO. 180155.00
DATE 2/24/2022
DRAWN BY JAA
FILE NAME S-180155.00-Jones_Creek.dwg
FIELD BOOK N/A
FIELD CREW N/A
SURVEY FILE NO. N/A
PLAN IN HAND J.G.P.
INITIALS DATE 7/15/2020
70 PERCENT REVIEW K.W.K.
INITIALS DATE 7/15/2020
95 PERCENT REVIEW K.W.K.
INITIALS DATE 3/8/2021
REVISIONS



SECTION B-B
CROSS SECTION OF EXISTING PRINCIPAL SPILLWAY
(TO BE REMOVED)

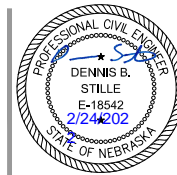


EARTHWORK QUANTITIES	
CUT	3,600 CY
FILL	5,100 CY

- NOTES:
1. SURVEY CONTROL WILL BE ESTABLISHED BY NRD PRIOR TO CONSTRUCTION.
 2. THE CRITICAL ELEVATIONS OF THE DAM WILL REMAIN UNCHANGED FROM LIDAR:
TOP OF DAM (AT CL) = 1684.00
AUXILIARY SPILLWAY CREST = 1680.90
 3. RISER CREST = 1674.70
 4. CONTRACTOR MAY REDUCE EXCAVATION FOOTPRINT WITH ENGINEER APPROVAL.



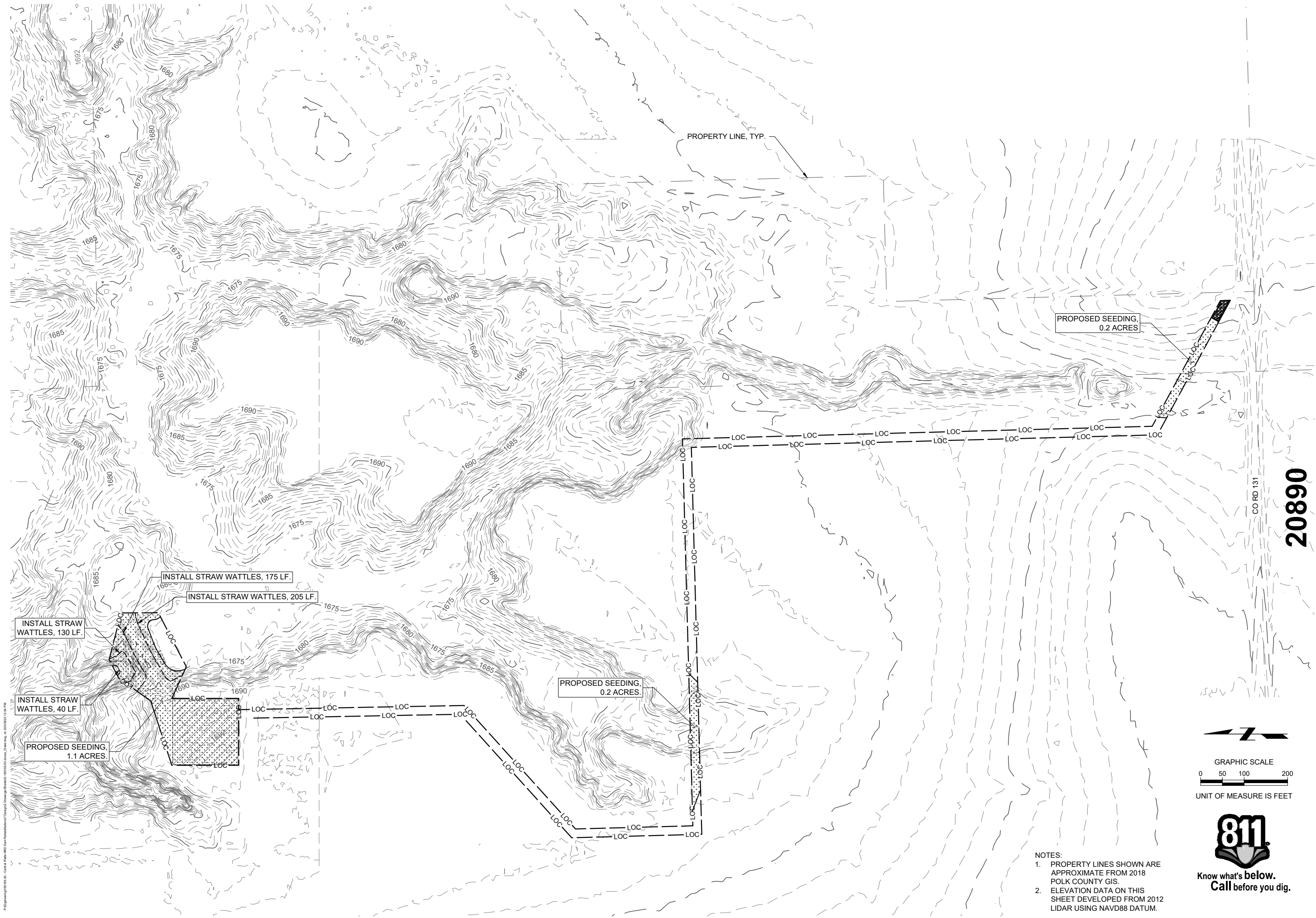
DAM REHABILITATION
JONES CREEK RESERVOIR
CENTRAL PLATTE NRD



EXCAVATION PLAN

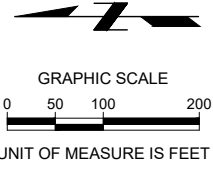


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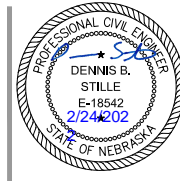


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NOTES:
1. PROPERTY LINES SHOWN ARE APPROXIMATE FROM 2018 POLK COUNTY GIS.
2. ELEVATION DATA ON THIS SHEET DEVELOPED FROM 2012 LIDAR USING NAVD88 DATUM.



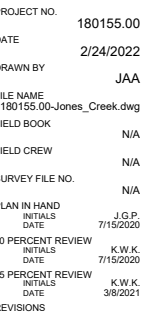
DAM REHABILITATION
JONES CREEK RESERVOIR
CENTRAL PLATTE NRD



EROSION CONTROL PLAN



PROJECT NO.	180155.00
DATE	2/24/2022
DRAWN BY	JAA
FILE NAME	S-180155.00-Jones_Creek.dwg
FIELD BOOK	N/A
FIELD CREW	N/A
SURVEY FILE NO.	N/A
PLAN IN HAND	J.G.P.
INITIALS	7/15/2020
DATE	
70 PERCENT REVIEW	K.W.K.
INITIALS	7/15/2020
DATE	
95 PERCENT REVIEW	K.W.K.
INITIALS	3/8/2021
DATE	
REVISIONS	



DRAWDOWN TRASH RACK ROD LENGTHS		
PIPE DIA. (INCHES)	* ROD LENGTH (INCHES)	** CIRCULAR ROD LENGTH (INCHES)
0'-8"	2'-6"	2'-11"

FLANGE GASKET AND VALVE

PIPE RISER

PIPE TEE

PIPE TEE (DRAWDOWN)

29°

1/4"

12"

54"

78"

12"

12"

54"

78"

SEE TABLE

NO. 4 REINFORCING BARS, 12" C-C EACH WAY

FIELD INSTALLATION OF CONCRETE AND REINFORCING BARS

8"

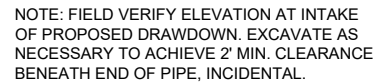
A

A

C





















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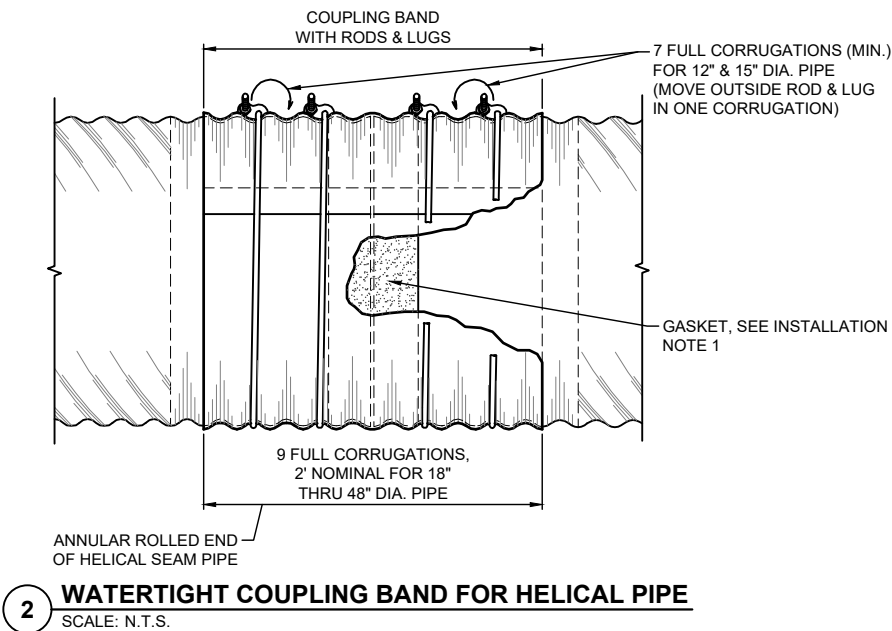
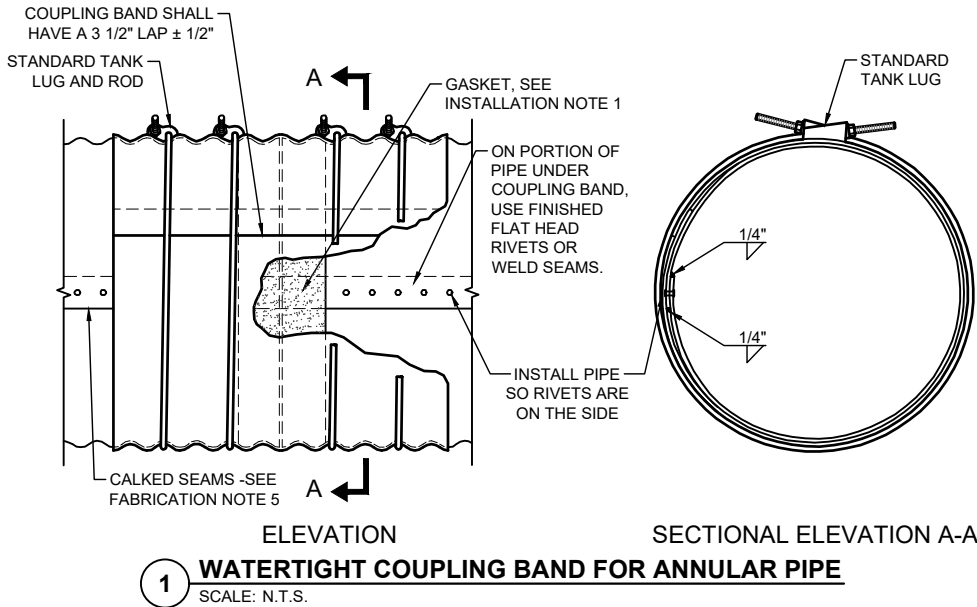
* NOTE:
FABRICATE DRAWDOWN TEE
AT 90° FROM PIPE TEE.



DIA. OF RISER IN INCHES	18	18	21	24	30	36	42	48	54	60	66	72
CONCRETE, CU.YDS.	0.40	0.45	0.52	0.59	0.75	0.92	1.12	1.33	1.56	1.81	2.08	2.37
NO. 4 REINFORCING BAR, LIN.FT.	24	24	26	28	35	45	60	66	84	91	112	120
LENGTH OF EACH BAR, FT.-IN.	3-0	3-0	3-3	3-6	4-0	4-6	5-0	5-6	6-0	6-6	7-0	7-6
TOTAL NUMBER OF BARS	8	8	8	8	10	10	12	12	14	14	16	16
TOTAL WEIGHT - NO. 4 BARS, LBS.	168	160	174	18.7	26.7	30.0	40.1	56.1	60.8	74.8	80.2	

DIA. OF RISER IN INCHES	15	18	24	24	30	36	42	48	54	60	66	72
C SPACING IN INCHES	1 1/2	2	1 1/2	6	3	6	8	6	3	6	3	6

X IN BOX INDICATES THE REQUIREMENTS THAT APPLY TO STRUCTURE		 INDICATES - NOT APPLICABLE	
CONCRETE:	CLASS  3000  3000M  4000	0.75 CU.YD.	
REINFORCING STEEL: 26.7 LB.			
CORRUGATED METAL PIPE RISER, ZINC COATED STEEL 54" DIA., 12 GA., 8'-0" NOMINAL LENGTH WITH A 36" DIA., 12 GA., PIPE TEE 4 FT. NOMINAL LENGTH WELDED TO IT 9" FROM THE LOWER END.			
PIPE CLASSIFICATION		RISER	PIPE TEE
ANNULAR CORRUGATION _____			
HELICAL CORRUGATION _____			
 TYPE I, FULL CIRCULAR CROSS-SECTION FABRICATED _____			
 TYPE II, THIS IS TYPE I PIPE WHICH HAS BEEN REFORMED INTO A PIPE ARCH HAVING APPROXIMATELY A FLAT BOTTOM _____			
CORRUGATION REQUIREMENTS - NOMINAL SIZE (INCH)			
 2 2/3 x 1/2 _____			
 3 x 1 _____			
COATINGS AND FABRICATION			
SEE METAL PIPE REQUIREMENTS AND COUPLING BAND SHEET			



COUPLING BAND REQUIREMENTS							
GAGE	BAND TYPE AND NUMBER OF RODS REQUIRED			NUMBER BANDS REQUIRED	SEE DETAIL		
12	X	2 FT. WITH 4 RODS FOR 36" DIA. PIPE		AS REQUIRED	X	1	X 2
-		4 FT. WITH 6 RODS FOR 54" DIA. PIPE		-		1	2

METAL PIPE REQUIREMENTS:

NOTE: THE FOLLOWING DESIGNATIONS FOR PIPE CLASSIFICATIONS, CORRUGATIONS AND COATINGS WHEN REFERRED TO ON THE DRAWINGS ARE IN ACCORDANCE WITH CURRENT ASTM'S:

- A760 STANDARD SPECIFICATION FOR CORRUGATED STEEL PIPE, METALLIC-COATED FOR SEWERS AND DRAINS.
- A761 STANDARD SPECIFICATION FOR CORRUGATED STEEL STRUCTURAL PLATE, ZINC-COATED, FOR FIELD BOLTED PIPE, PIPE ANCHORS, AND ARCHES.
- A762 STANDARD SPECIFICATION FOR CORRUGATED STEEL PIPE, POLYMER PRECOATED FOR SEWERS AND DRAINS.
- A849 STANDARD SPECIFICATION FOR POST APPLIED COATINGS, PAVINGS, AND LININGS FOR CORRUGATED STEEL SEWER AND DRAINAGE PIPE.
- A885 STANDARD SPECIFICATION FOR STEEL SHEET, ZINC AND ARAMID FIBER COMPOSITE-COATED FOR CORRUGATED STEEL SEWER, CULVERT AND UNDERDRAIN PIPE.

PIPE CLASSIFICATION:

- ☒ TYPE I FULL CIRCULAR CROSS-SECTION
- ☐ TYPE II, THIS IS TYPE I PIPE WHICH HAS BEEN REFORMED INTO A PIPE ARCH HAVING APPROXIMATELY A FLAT BOTTOM

CORRUGATION REQUIREMENTS FOR TYPE I AND II PIPE:

NOMINAL SIZE (INCH):

- ☐ 1 1/2 x 1/4 (AVAILABLE ONLY IN HELICALLY CORRUGATED PIPE)
- ☒ 2 2/3 x 1/2
- ☐ 3 x 1

COATINGS - SEE FABRICATION NOTE NO. 1:

- ☐ ALUMINUM COATED STEEL - SEE FABRICATION NOTE NO. 5
- ☐ ZINC COATED STEEL - SEE FABRICATION NOTE NO. 5
- ☒ POLYMER PRECOATED - SEE FABRICATION NOTE NO. 5
- ☐ ARAMID FIBER COMPOSITE, BITUMINOUS COATED
- ☐ FULLY BITUMINOUS COATED

CORRUGATION TYPES - SEE FABRICATION NOTE NO. 1:

- ☒ ANNULAR, CLOSE RIVETED
- ☒ HELICAL

FABRICATION NOTES:

- WHEN SEVERAL DIFFERENT COATINGS OR CORRUGATIONS ARE CHECKED IN THE COLUMN BOXES, EACH TYPE IS ACCEPTABLE, BUT ONLY ONE TYPE SHALL BE USED IN EACH INSTALLATION.
- COUPLING BANDS PER DETAIL "A" SHALL HAVE THE SAME CORRUGATION REQUIREMENT AND THE SAME COATING AS THE DESIGNATED PIPE.
- ALL WELDS AND ALL HEAT AFFECTED AREAS ON COATED STEEL SHALL BE THOROUGHLY CLEANED AND TREATED IN ACCORDANCE WITH ASTM'S.
- FOR PIPE LARGER THAN 15" DIAMETER, THE ROD SHALL BE 1/2" DIAMETER. DIAMETER HOLES IN THE LUGS SHALL BE 1/8" LARGER THAN THE DIAMETER OF THE ROD USED.
- DURING FABRICATION, WHEN ASPHALT COATING IS NOT USED, RIVETED SEAMS SHALL BE CAULKED WITH AS ASPHALT OR TAR BASED MATERIAL MEETING ASTM A849 TO PROVIDE A WATERTIGHT SEAM. ALL CIRCUMFERENTIAL AND LONGITUDINAL SEAMS SHALL BE CAULKED BEFORE RIVETING. THIS SHALL BE ACCOMPLISHED BY APPLYING A UNIFORM BEAD OF THE ASPHALT OR TAR BASED COMPOUND TO THE INNER LAP SURFACE BEFORE RIVETING SUCH THAT WHEN THE RIVETS ARE IN PLACE ALL VOIDS ARE FILLED.
- CLOSE RIVETED PIPE SHALL BE FABRICATED SO THAT THE RIVET SPACING IN THE CIRCUMFERENTIAL SEAMS SHALL NOT EXCEED 3 INCHES.
- REFER TO SHEET C0.2 FOR STANDARD WELD SYMBOLS.

INSTALLATION NOTES:

- THE SLEEVE TYPE NEOPRENE GASKET SIZE SHALL BE 3/8" THICK WITH A MINIMUM WIDTH OF 7" CENTERED ON THE PIPE JOINT AND FASTENED AT ENDS TO FORM A FULL CIRCLE. IN LIEU OF A NEOPRENE GASKET, ASPHALT OR TAR BASED MASTIC MAY BE USED FOR DETAIL "1" AND "2". (SEE NOTE 5)
- IN CONNECTING THE PIPE SECTIONS, THE COUPLING BANDS WILL BE CENTERED ON THE PIPE JOINT AND ALIGNED FOR COMPLETE AND TIGHT NESTING OF CORRUGATIONS BETWEEN COUPLING BAND AND EACH PIPE SECTION. RODS AND LUGS ON COUPLING BANDS WILL BE INSTALLED ACCORDING TO THE DRAWINGS. THE NUTS ON THE RODS WILL BE TIGHTENED WITHOUT OVER STRESS AND WILL BE RETIGHTENED AT LEAST TWICE AFTER INITIAL INSTALLATION, AT INTERVALS OF APPROXIMATELY 1/2 HOUR. THE FINAL TENSION ON THE RODS SHALL BE DETERMINED BY THE ENGINEER. BACKFILLING AROUND THE PIPE, EXCEPT AT COUPLING BANDS, MAY PROCEED DURING THE INTERVALS REQUIRED FOR TIGHTENING BANDS.
- BEFORE COUPLING BANDS ARE INSTALLED ON RIVETED PIPE, THE PIPE SECTIONS THAT ARE TO BE CONNECTED SHALL BE ROTATED SO RIVETS ON THE PIPE ARE ON THE SIDE OF THE PIPE (SEE DETAIL "1") AND THE INSIDE LAPS ARE POINTED DOWNSTREAM.
- ON BITUMINOUS COATED PIPE, REMOVE EXCESS BITUMINOUS COATING FROM CORRUGATIONS WHERE BANDS AND PIPE JOIN.
- THE ENDS OF THE TWO PIPE SECTIONS AND THE LAP SEAM WILL BE COATED WITH 1/4" OF ASPHALT OR TAR BASED MASTIC (ASTM A849, TROWEL GRADE) FOR DETAIL "A" COUPLING BANDS. THE MASTIC COATED AREAS SHOULD BE KEPT FREE OF ALL DIRT, GRAVEL, AND OTHER FOREIGN MATERIAL UNTIL BANDS ARE IN PLACE AND TIGHTENED. WHEN AIR TEMPERATURE IN 50°F OR LOWER, HEAT WILL BE APPLIED TO SOFTEN, BUT NOT BURN OR MELT, THE MASTIC.
- FLANGE COUPLING BANDS SHALL BE ALIGNED WITH THE MATCHING SLOTS, AND NUTS ON THE BOLTS TIGHTENED SECURELY. NEOPRENE GASKET OR MASTIC SHALL BE USED BETWEEN FLANGES, AND NUTS WILL BE RETIGHTENED AFTER COMPLETE ASSEMBLY.



DAM REHABILITATION
JONES CREEK RESERVOIR
CENTRAL PLATTE NRD



PIPE REQUIREMENTS



PROJECT NO. 180155.00

DATE 2/24/2022

DRAWN BY JAA

FILE NAME S-180155.00-Jones_Creek.dwg

FIELD BOOK N/A

FIELD CREW N/A

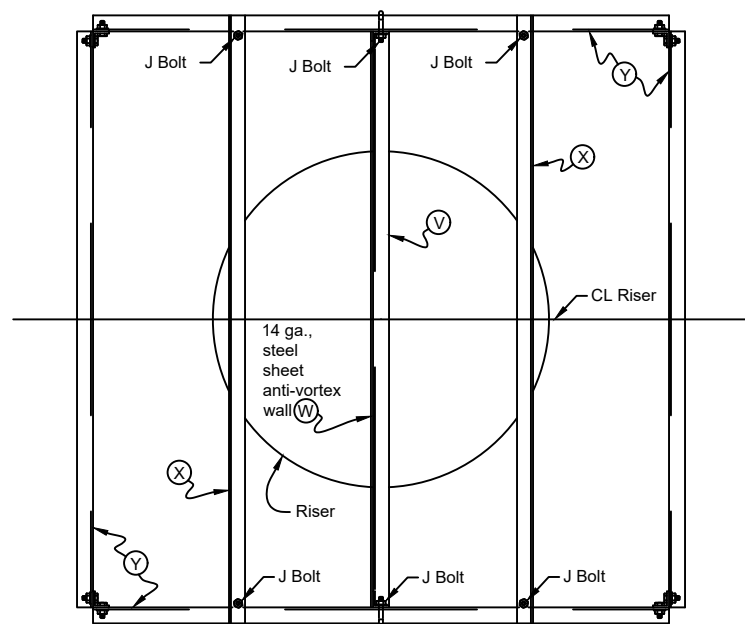
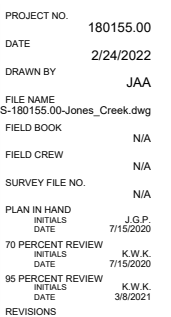
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PLAN IN HAND INITIALS J.G.P. DATE 7/15/2020

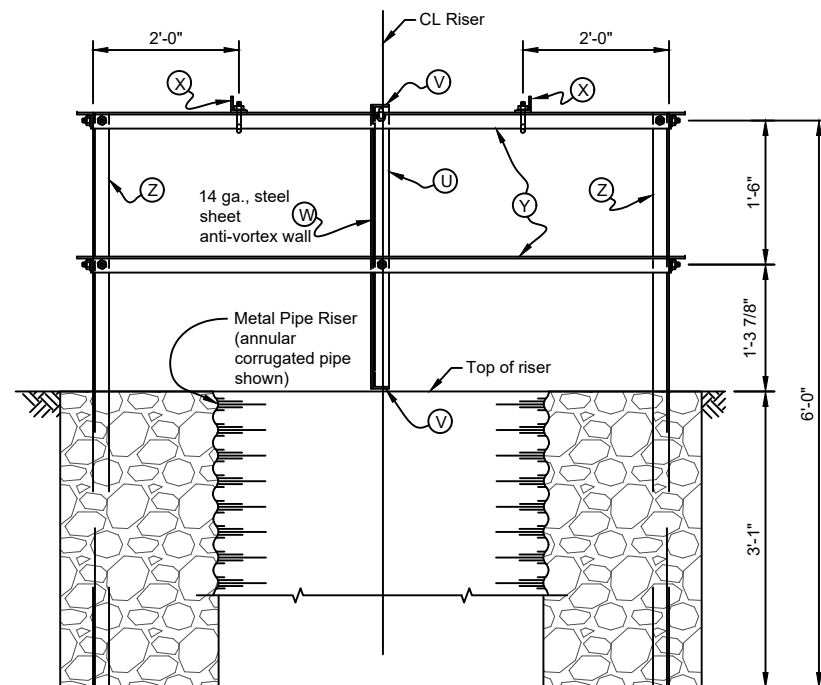
70 PERCENT REVIEW INITIALS K.W.K. DATE 7/15/2020

95 PERCENT REVIEW INITIALS K.W.K. DATE 3/8/2021

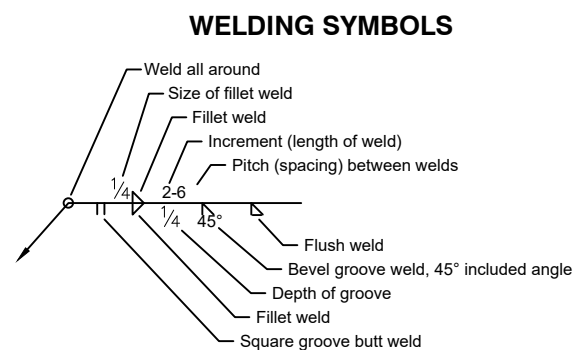
REVISIONS



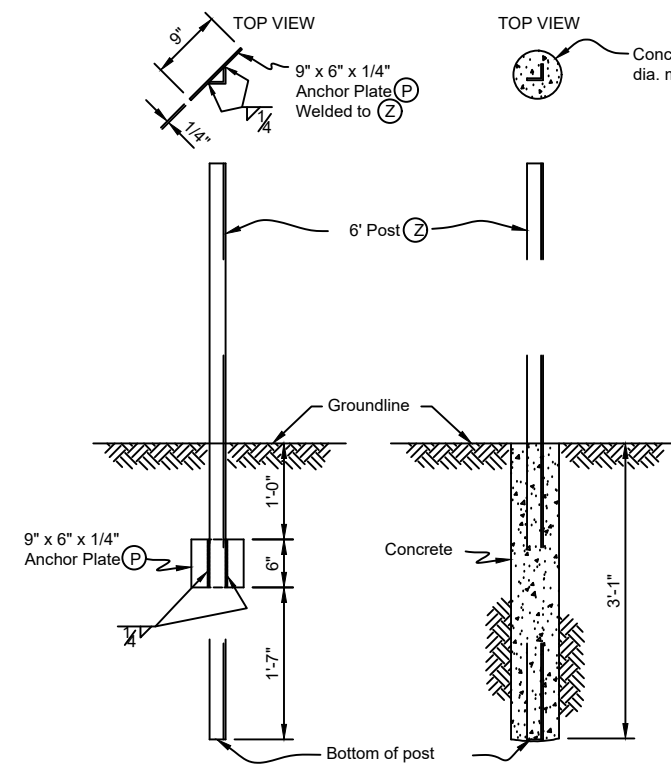
RACK PLAN VIEW



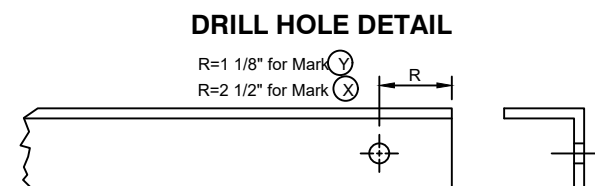
RACK ELEVATION



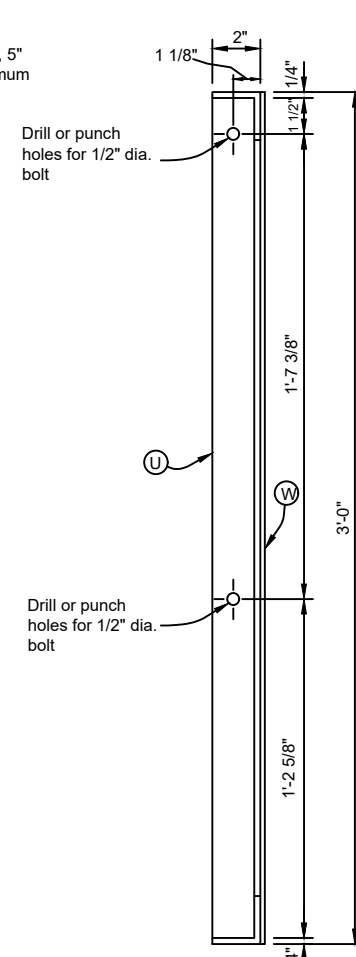
Note:
Symbol above line indicates weld is on the opposite side of joint to which arrow points.
Symbol below line indicates weld is on side of joint to which arrow points. 2-6 indicates making a 2" weld every 6 inches.



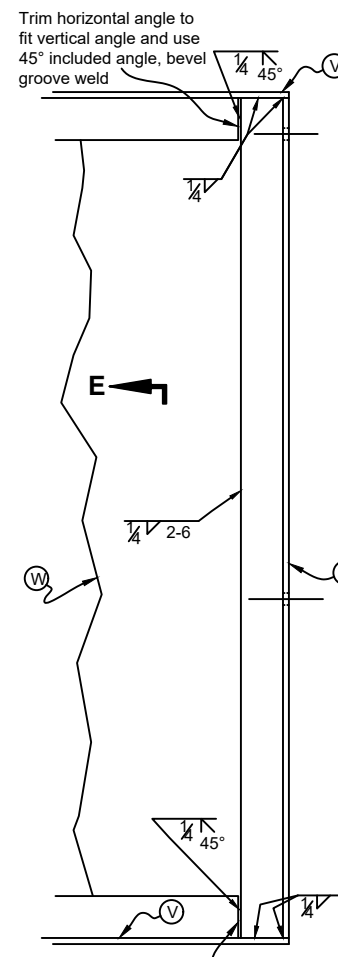
DETAIL "A" **DETAIL "B"**
ANGLE POST ANCHORING DETAILS



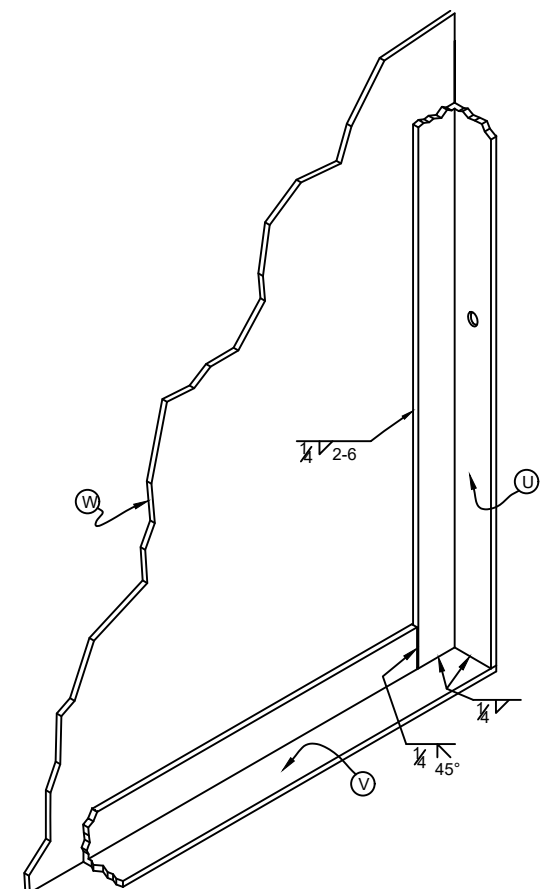
DRILL HOLE DETAIL



SECTION E-E



ELEVATION



ANTI-VORTEX SHEET CORNER DETAIL

MATERIAL LIST

MARK	ITEM	NUMBER REQUIRED		
		36" & 42" DIA. RISER	48", 54" & 60" DIA. RISER	66" & 72" DIA. RISER
U	2" x 2" x 1/4" x 2'-11" 1/2" ANGLES	2	2	2
V	2" x 2" x 1/4" x 6'-0" ANGLES	2		
V	2" x 2" x 1/4" x 8'-0" ANGLES		2	
V	2" x 2" x 1/4" x 9'-0" ANGLES			2
X	2" x 2" x 1/4" x 6'-4" ANGLES	2		
X	2" x 2" x 1/4" x 8'-4" ANGLES		2	
X	2" x 2" x 1/4" x 9'-4" ANGLES			2
Y	2" x 2" x 1/4" x 6'-0" ANGLES	8		
Y	2" x 2" x 1/4" x 8'-0" ANGLES		8	
Y	2" x 2" x 1/4" x 9'-0" ANGLES			2
Z	2" x 2" x 1/4" x 6'-0" ANGLES (POSTS)	4	4	4
P	9" x 6" x 1/4" ANCHOR PLATES (DETAIL A ONLY)	4	4	4
W	14 GA. STEEL SHEET, 3'-0" x 6'-0"	1		
W	14 GA. STEEL SHEET, 3'-0" x 8'-0"		1	
W	14 GA. STEEL SHEET, 3'-0" x 9'-0"			1
	1/2" x 1-1/2" HEX BOLTS (INCLUDING NUTS)	18	18	18
	1/2" x 3" LENGTH "J" BOLTS (INCLUDING NUTS)	6	6	6
	1/2" DIA. LOCK WASHERS (FOR ABOVE BOLTS)	24	24	24







ITEM	WEIGHT IN POUNDS (STEEL)		
	36" & 42" DIA. RISER	48", 54" & 60" DIA. RISER	66" & 72" DIA. RISER
2" x 2" x 1/4" ANGLES (18)	327	404	442
ANTI-VORTEX STEEL SHEET (1)	59	79	84
STEEL BOLTS, NUTS AND LOCK WASHERS (24)	6	6	6
ANCHOR PLATES (4) (DETAIL A ONLY)	15	15	15
TOTAL STEEL (DETAIL A ONLY)	407	504	547
TOTAL STEEL (DETAIL B ONLY)	392	489	532

TOTAL (MIN.) CONCRETE REQUIRED (DETAIL B ONLY) 0.06 CU.YD.

FABRICATION NOTES:

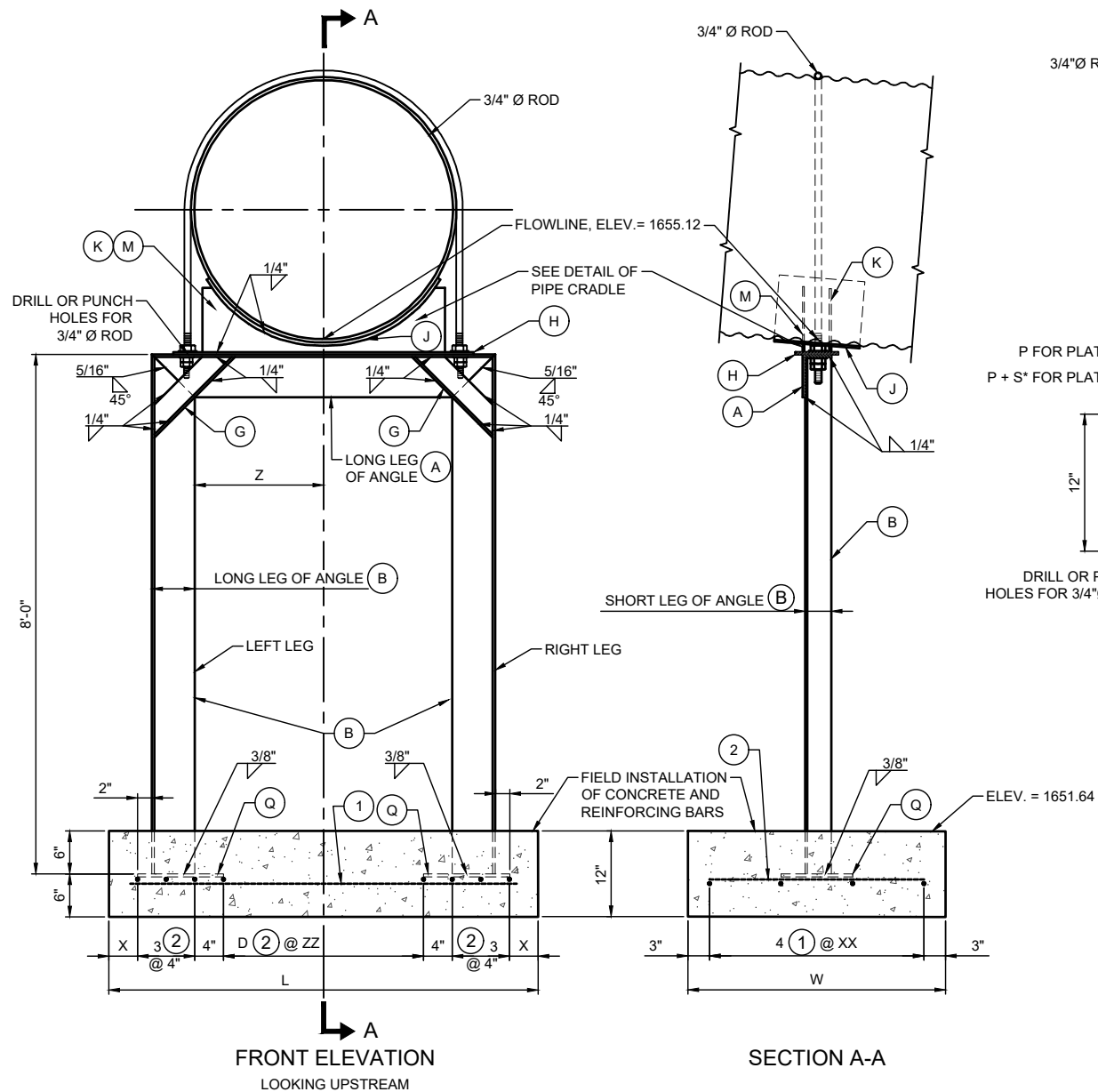
1. ALL ANGLES, SHEETS AND PLATES TO BE SECURELY WELDED AND/OR BOLTED AS SHOWN ON THE DRAWING, IN ACCORDANCE WITH SPECIFICATIONS.
2. ALL WELDS AND HEAT AFFECTED AREAS, ON GALVANIZED METAL SHALL BE TREATED IN ACCORDANCE WITH CONSTRUCTION SPECIFICATIONS.
3. WHEN MATERIALS USED ARE NOT GALVANIZED, ALL PARTS SHALL BE PAINTED ACCORDING TO PAINT SYSTEM "C" OF PAINT SPECIFICATIONS.
4. INSTALL METAL ANTI-VORTEX WALL AT 90° TO CENTERLINE OF STRUCTURE.

REQUIREMENT TABLE

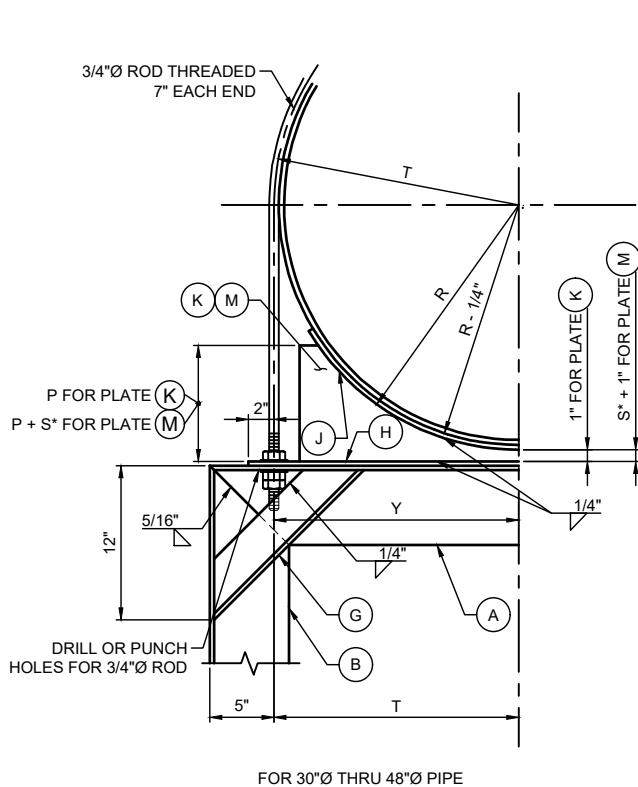
- | | |
|---|---|
|  | X IN BOX INDICATES DETAILS WHICH APPLY TO STRUCTURE |
|  | RACK WITH ANTI-VORTEX DEVICE FOR 54" DIA. PIPE RISER |
|  | METAL TYPE, STEEL |
|  | PROTECTIVE COATINGS, GALVANIZED OR PAINTED ACCORDING TO PAINT SYSTEM "C" OF PAINT SPECIFICATION |
|  | POSTS WITH ANCHOR PLATE (DETAIL "A") |
|  | POSTS WITH CONCRETE BASE (DETAIL "B") |

**DEBRIS RACK WITH ANTI-VORTEX DEVICE FOR
FOR 36", 42", 48", 54", 60" AND 72" DIA. RISER**

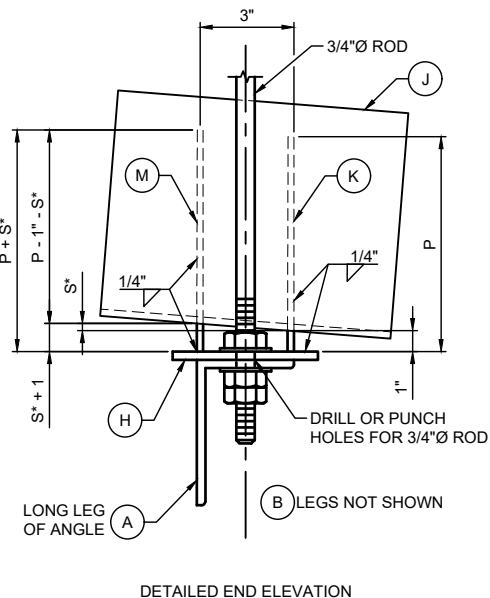
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1 PIPE SUPPORT FOR 30" Ø THRU 48" Ø PIPE BARRELS
SCALE: N.T.S.



2 DETAILED PIPE CRADLE
SCALE: N.T.S.



3 PIPE CRADLE
SCALE: N.T.S.

NOTES:

- ** INCLUDING 6 NUTS AND 4 WASHERS, INCREASE LENGTH OF 3/4" DIA. ROD, AS REQUIRED, WHEN HELICAL PIPE IS USED.

3/4" DIA. ROD = 1.5 LBS. PER FT.
3/8" DIA. ROD = 0.376 LBS. PER FT.
NO. 4 REINFORCING BARS = 1/2" DIA. = 0.668 LBS. PER FT.
(ALUMINUM ALLOY = 1/3 WEIGHT OF STEEL)

"S" DIMENSION TABLE		
X	X BOX FOR GRADE OF PIPE	
	PIPE GRADE (%)	* S (INCHES)
	0	0
	1	1/32
	2	1/16
	3	3/32
	4	1/8
X	5	5/32
	6	3/16
	7	7/32

TABLE OF QUANTITIES FOR CONCRETE BASE									
BARREL DIA. (INCHES)	MARK	NO. D BARS REQD.	TOTAL NO. BARS REQD.	LENGTH	TOTAL LENGTH	LBS.	CONCRETE BASE		
							L	W	CU. YD.
30	1	1	1	4'-0"	16'-0"	10.7	4'-6"	3'-0"	0.50
	2	2	2	2'-6"	22'-6"	15.0	4'-6"	3'-0"	0.50
36	1	1	1	4'-6"	18'-0"	12.0	5'-0"	3'-0"	0.55
	2	5	11	2'-6"	27'-6"	18.4	5'-0"	3'-0"	0.55
42	1	1	1	5'-0"	20'-0"	13.3	5'-0"	3'-0"	0.61
	2	5	11	2'-6"	27'-6"	18.4	5'-0"	3'-0"	0.61
48	1	1	1	5'-0"	20'-0"	13.3	5'-0"	3'-0"	0.67
	2	5	11	2'-6"	27'-6"	18.4	5'-0"	3'-0"	0.67

TABLE OF QUANTITIES				
ITEM	UNIT (STEEL)	PIPE BARREL DIAMETER		
		30"	36"	42"
STR. SHAPES	LBS.	271.8	271.8	271.8
** 3/4" DIA. RODS	LBS.	13.9	13.9	13.9
TOTAL WEIGHT	LBS.	285.7	285.7	285.7

REQUIREMENT TABLE				
X	IN BOX INDICATED DETAILS WHICH APPLY TO STRUCTURE			
	SUPPORT (S) REQUIRED			
PIPE BARREL DIAMETER	30"	X	36"	42"
TYPE OF METAL	X	STEEL	ALUMINUM ALLOY	ALUMINUM ALLOY

DIMENSIONS				
DIM.	PIPE BARREL DIAMETER			
	30"	36"	42"	48"
L	4'-6"	5'-0"	5'-6"	6'-0"
P	0'-7 1/8"	0'-9"	0'-10 1/2"	0'-12"
R	1'-6 7/8"	1'-6 7/8"	1'-9 7/8"	2'-0 7/8"
T	2'-2"	1'-7"	1'-10"	2'-1"
Y	1'-2"	1'-5"	1'-5"	1'-11"
Z	1'-3"	1'-6"	1'-9"	1'-11"
ZZ	0'-11"	0'-7"	0'-8 1/2"	0'-10"

CONCRETE BASE METAL PIPE SUPPORT FOR 30", 36" 42" AND 48" DIAMETER BARRELS

DESIGNERS NOTES:

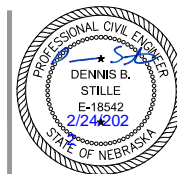
- WHEN STEEL PIPE IS USED, ALL MAJOR COMPONENT PARTS SHALL BE STEEL. WHEN ALUMINUM ALLOY PIPE IS USED, ALL MAJOR COMPONENT PARTS SHALL BE ALUMINUM ALLOY.
- ALUMINUM ALLOY WILL NOT BE USED IN SOILS THAT HAVE A pH GREATER THAN 9 OR LESS THAN 4, OR WHERE RAPID CORROSION OF SIMILAR METAL IS KNOWN TO HAVE OCCURRED.
- STEEL RODS, NUTS AND WASHERS MAY BE USED WITH ALUMINUM ALLOY ONLY WHEN PROPERLY INSULATED WITH TWO (2) THICKNESSES OF 12 mil. (MIN.) PLASTIC TAPE.

NOTES:

- ALL RODS, NUTS AND WASHERS TO BE GALVANIZED.
- ALL ANGLES AND PLATES TO BE SECURELY WELDED AS SHOWN ON THE DRAWINGS IN ACCORDANCE WITH SPECIFICATIONS.
- ALL WELDS AND HEAT AFFECTED AREAS ON GALVANIZED METAL TO BE TREATED IN ACCORDANCE WITH SPECIFICATIONS.
- WHEN MATERIALS USED ARE NOT GALVANIZED, ALL PARTS SHALL BE PAINTED ACCORDING TO PAINT SYSTEM "C" OF PAINT SPECIFICATIONS.
- THE R-1/4 (SEE DETAIL OF PIPE CRADLE) MUST BE ADEQUATE FOR THE OUTSIDE DIAMETER OF THE PIPE, WHICH MUST INCLUDE THE THICKNESS OF THE COATING.
- INCREASE THE VERTICAL DIMENSIONS OF PLATE (M) BY THE DIMENSION "S" TO PLACE THE PIPE CRADLE ON THE SAME GRADE AS THE OUTLET PIPE (AS SHOWN ON DETAILED END ELEVATION OF PIPE CRADLE). THE VALUE OF "S" CHANGES WITH PIPE GRADE ACCORDING TO THE X'D VALUE MARKED IN THE "S" DIMENSION TABLE.



DAM REHABILITATION
JONES CREEK RESERVOIR
CENTRAL PLATTE NRD



PIPE SUPPORT DETAILS



PROJECT NO. 180155.00
DATE 2/24/2022
DRAWN BY JAA
FILE NAME S-180155.00-Jones_Creek.dwg
FIELD BOOK N/A
FIELD CREW N/A
SURVEY FILE NO. N/A
PLAN IN HAND J.G.P.
DATE 7/15/2020
70 PERCENT REVIEW K.W.K.
DATE 7/15/2020
95 PERCENT REVIEW K.W.K.
DATE 3/8/2021
REVISIONS