

FOR SURVEY CONTROL DATA, SEE SURVEY DATA SHEETS

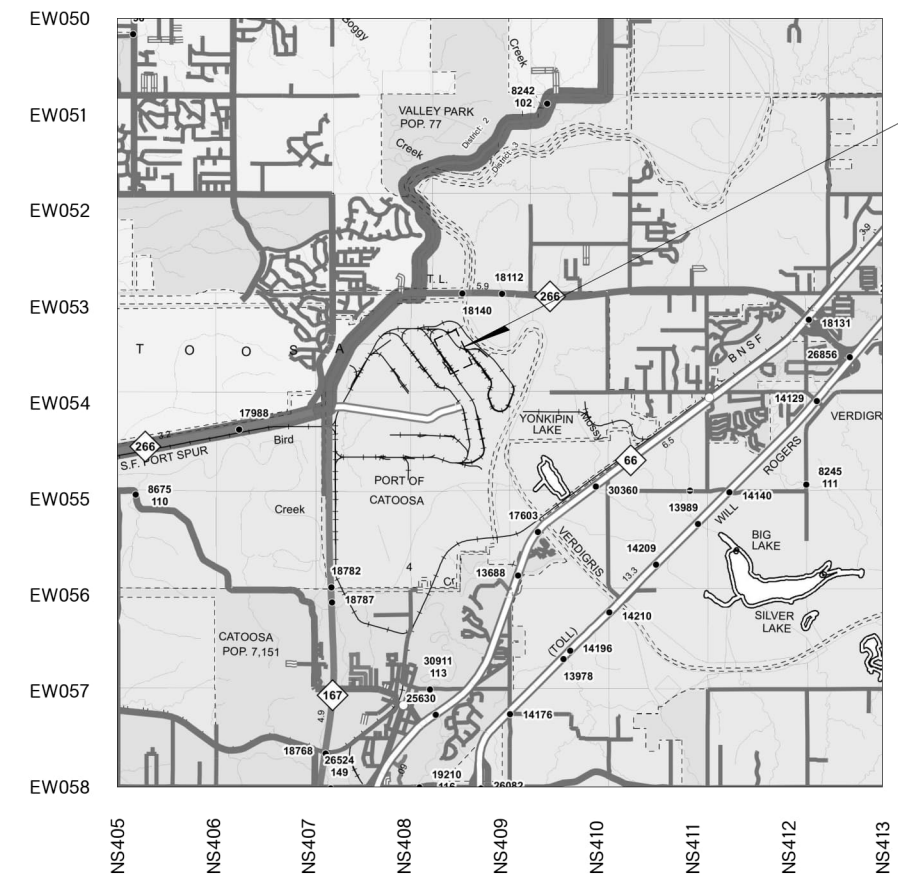
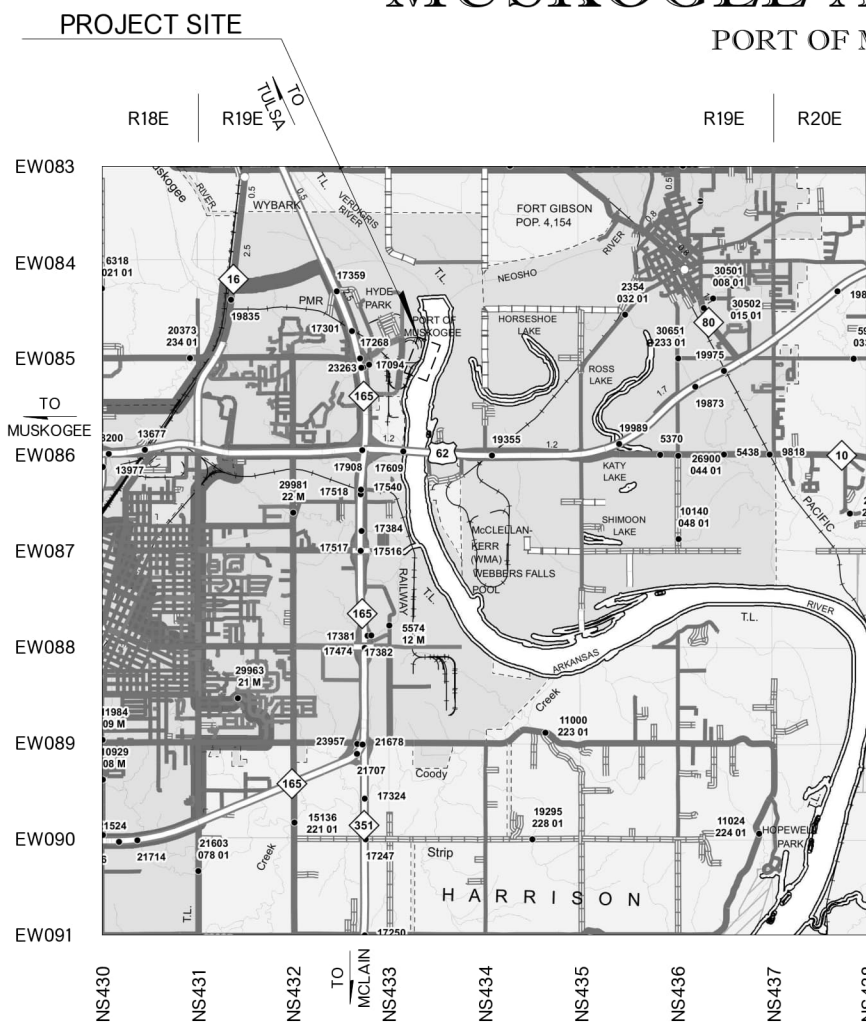
STATE OF OKLAHOMA DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED MOORING MODERNIZATION

FEDERAL AID PROJECT NO. ##### MKARNS WATERWAY

MUSKOGEE AND ROGERS COUNTIES

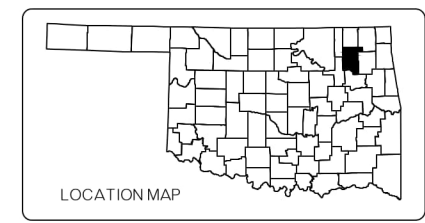
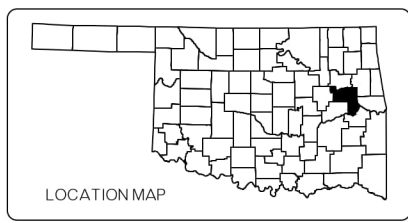
PORT OF MUSKOGEE AND PORT OF CATOOSA STATE JOB NO. 35257(07)



SCALES 1" = 100' PLAN 1" = 100' PROFILE HOR. 1" = 100' VER. 1" = 10' LAYOUT MAP 1" = 5,280'

CONVENTIONAL SYMBOLS

- PROPOSED ROAD
RAILROADS
RANGE & TOWNSHIP
SECTION LINES
QUARTER SECTION LINES
EXISTING FENCE
PROPOSED FENCE
GROUND LINE
EXISTING ROADS
BASE LINE
GRADE LINES
TELEPHONE & TELEGRAPH
POWER LINES
BUILDINGS
OIL WELL
DRAINAGE STRUCTURES - IN PLACE
DRAINAGE STRUCTURES - NEW
RIGHT-OF-WAY LINES - EXISTING
RIGHT-OF-WAY LINES - NEW
CONTROLLED ACCESS
RIGHT-OF-WAY FENCE



INDEX OF SHEETS

Table listing sheet numbers (0001, AV01, S001-S015, V001-V005) and their corresponding titles (TITLE SHEET, GENERAL NOTES, SURVEY DATA SHEET, etc.).

Table listing sheet numbers (V006, V008-V010, V011, V012, V013-V014, V015, V016, V017, V018, V019) and their corresponding titles (PORT OF MUSKOGEE - MONOPILE DETAILS, PORT OF MUSKOGEE - SOIL BORING INFORMATION, etc.).

Professional Engineer information for LANIER AND ASSOCIATES, including logo, name, address, and a circular seal.

Approval form with fields for DATE APPROVED, BY (CHIEF ENGINEER, DIVISION ADMINISTRATOR), SWO, COUNTY, PROJECT NO., HIGHWAY, and SHEET NO.

P.E. NO : XXXXX(01)

2019 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION GOVERN, APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, DECEMBER 18, 2019.

PRELIMINARY PLANS

03/24/2023

GENERAL NOTES:

- CONSTRUCTION SHALL COMPLY WITH THESE GENERAL NOTES, THE CONTRACT DRAWINGS, SPECIFICATIONS, AND ALL APPLICABLE STATE AND LOCAL CODES.
- EXISTING CONSTRUCTION AND CONDITIONS SHOWN ARE SCHEMATIC. ACTUAL CONDITIONS MAY DIFFER. CONTRACTOR IS FULLY RESPONSIBLE FOR MAKING THEIR OWN SITE EXAMINATION AND DETERMINING THE ACTUAL NATURE AND EXTENT OF EXISTING CONDITIONS AS NEEDED PRIOR TO UNDERTAKING THE WORK.
- U.S. ARMY CORPS OF ENGINEERS PERMITS HAVE BEEN SECURED BY THE OWNER. CONTRACTOR SHALL BE REQUIRED TO ABIDE BY ALL REQUIREMENTS AND RESTRICTIONS SET FORTH BY THESE PERMITS. ALL OTHER PERMITS, LICENSES AND NOTIFICATIONS NECESSARY FOR THE EXECUTION OF WORK SHALL BE SECURED BY THE CONTRACTOR.
- ANY DAMAGE, DISTURBANCE, OR OTHER IMPAIRMENT OF EXISTING FACILITIES SHALL BE PROMPTLY REPAIRED OR REPLACED BY THE CONTRACTOR AS APPROVED BY AND AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL REMOVE CONSTRUCTION MATERIAL AND DEBRIS FROM THE WORK SITE DURING AND AT COMPLETION OF THE WORK.
- IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES, PERMIT RESTRICTIONS AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR SAFETY PRECAUTIONS, MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED FOR PERFORMANCE OF THE WORK INCLUDING, BUT NOT LIMITED TO, SHORING, SCAFFOLDING, UNDERPINNING AND ANY ERECTION METHODS.
- ALL STRUCTURES ARE DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER ERECTION IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENTS DURING ERECTION. THIS INCLUDES THE ADDITION OF ANY SHORING, SHEETING, TEMPORARY BRACING, GUYS, OR TIE DOWNS WHICH MIGHT BE NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER COMPLETION OF THE PROJECT.
- CONTRACTOR WILL BE RESPONSIBLE FOR ALL LAYOUT AND SURVEYING REQUIRED FOR THE CONSTRUCTION AS SHOWN ON THE DRAWINGS.
- ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ON DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THE GENERAL STRUCTURAL NOTES, THE SPECIFICATIONS, OR WITH EACH OTHER, THE STRICTEST PROVISION SHALL GOVERN.
- THE LATEST REVISION OF THE FOLLOWING CODES AND STANDARDS SHALL BE OBSERVED FOR ALL PROJECT RELATED ACTIVITIES:

OKLAHOMA DEPT. OF TRANSPORTATION
2019 STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION (ODOT 2019)
ASCE 7-16, UNLESS NOTED OTHERWISE.
INTERNATIONAL BUILDING CODE-2018
ACI 318-19 AND ACI 315R-18
AWS D1.1-2020 AND AWS D1.4-2018
AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS 360-16
AISC CODE OF STANDARD PRACTICE 303-16
SPECIFICATIONS FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS-2014
- CONTRACTOR SHALL NOTIFY THE USCG OF MARINE ACTIVITIES IN ACCORDANCE WITH USCG REGULATIONS.
- CONTRACTOR TO DEVELOP AND SUBMIT A STORM WATER POLLUTION PREVENTION PLAN TO OWNER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH EPA REGULATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST ASSOCIATED WITH ALL MATERIAL, FABRICATION, AND TESTING REQUIRED IN THE PROJECT DOCUMENTS, UNLESS NOTED OTHERWISE.
- SURVEY MONUMENTS BASED ON NGS OKLAHOMA STATE PLANE COORDINATE SYSTEM NAD83 (2011), LAMBERT PROJECTION NORTH ZONE.

STRUCTURAL STEEL

- ALL STRUCTURAL STEEL AND ASSOCIATED FABRICATION SHALL CONFORM WITH THE LATEST AISC EDITION MANUAL OF STEEL CONSTRUCTION FOR FABRICATION AND ERECTION OF STRUCTURAL STEEL.
- ALL STRUCTURAL STEEL SHALL CONFORM TO ODOT 2019 SECTION 506.
- ALL STEEL WIDE FLANGES AND WT SECTIONS SHALL MEET ASTM A992; STEEL HP AND CHANNELS SHALL MEET ASTM A572 GRADE 50; STEEL ANGLES SHALL MEET ASTM A572 GRADE 50; STEEL PIPE (12" DIAMETER OR LESS) SHALL MEET ASTM A53 GRADE B; AND STEEL PIPE (EXCLUDING ROLLED MONOPILES) (GREATER THAN 12" DIAMETER) SHALL MEET ASTM A252 GRADE 3, UNLESS NOTED OTHERWISE. ALL STEEL PLATE SHALL MEET ASTM A572 GRADE 50.
- ALL CONNECTIONS SHALL BE FULL PENETRATION WELDS AND DEVELOP FULL

CAPACITY OF MEMBERS UNLESS OTHERWISE NOTED.

- ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.5-2020 LATEST EDITIONS, AND SHALL BE PERFORMED BY AWS QUALIFIED WELDERS. WELDING ELECTRODES TO BE E70XX.
- ALL STRUCTURAL BOLTS SHALL BE TYPE 1 AND HOT DIPPED GALVANIZED, UNLESS OTHERWISE NOTED.
- ALL STRUCTURAL WELDS ARE SUBJECT TO NON-DESTRUCTIVE EXAMINATION BY ULTRASONIC TESTING (UT). EXAMINATION SHALL BE ACCOMPLISHED BY SELECTING SAMPLE GROUPS OF WELDS DURING VARIOUS STAGES OF FABRICATION. FIVE PERCENT (5%) OF THE WELDS WITHIN THE DEFINED SAMPLE GROUP SHALL BE TESTED. IF NO WELDS ARE PROVEN TO BE DEFECTIVE IN THE OPINION OF THE OWNER'S REPRESENTATIVE, NO FURTHER TESTING OF THE SAMPLE GROUP SHALL BE REQUIRED. IF TEN PERCENT (10%) OR MORE OF THE WELDS TESTED ARE PROVEN DEFECTIVE, THE NUMBER OF WELDS TO BE TESTED SHALL BE INCREASED FROM 5 TO 10 PERCENT (10%) OF THE SAMPLE GROUP. IF MORE THAN 10 PERCENT (10%) OF THE WELDS TO THIS TIME ARE PROVEN DEFECTIVE IN THE OPINION OF THE OWNER'S REPRESENTATIVE, THEN ALL OF THE WELDS IN THE SAMPLE GROUP SHALL BE TESTED.
- OBTAIN APPROVAL OF ENGINEER PRIOR TO CUTTING AN OPENING IN ANY MEMBER.

COATING

- COATING SHALL CONFORM TO ODOT 2019 SECTION 730.02(B).
- ALL STEEL SHALL BE SURFACE BLASTED (NEAR WHITE) IN ACCORDANCE WITH THE LATEST SSPC SPECIFICATIONS AND COATED PER SPECIFICATIONS UNLESS NOTED OTHERWISE. AFTER ERECTION, CONTRACTOR SHALL TOUCH-UP ALL DAMAGED COATING AREAS DUE TO HANDLING TO PROVIDE A FULLY COATED FINISHED PRODUCT.
- ALL FIELD WELDS ARE TO BE COATED IN ACCORDANCE WITH COATING MANUFACTURE'S RECOMMENDATIONS AS APPROVED BY ENGINEER.
- ALL PILES AND FRAMING MEMBERS SHALL BE COATED WITH A MINIMUM OF SIXTEEN (16) MILS DFT OF AN APPROVED COATING SYSTEM.
- TO MINIMIZE FIELD WELDING, POTENTIAL CORROSION, AND POSSIBLE DAMAGE TO THE COATING, CONTRACTOR SHALL COORDINATE WELDING OF CONDUIT SUPPORTS TO STRUCTURAL MEMBERS TO THE MAXIMUM EXTENT POSSIBLE PRIOR TO SURFACE TREATMENT. WHERE PRE-INSTALLED SUPPORTS CAN NOT BE ACCOMMODATED, FIELD WELDING TO STRUCTURAL MEMBERS WILL BE ALLOWED WITH THE SAME SURFACE TREATMENT APPLIED. TREATMENT SHALL BE APPLIED OVER THE ENTIRE WELD AREA.

CONCRETE

- CONCRETE COMPRESSIVE STRENGTH:
ALL CONCRETE = 5,000 PSI AT TWENTY-EIGHT (28) DAYS, UNLESS OTHERWISE NOTED. CONCRETE SHALL CONFORM WITH THE "BUILDING CODE REQUIREMENTS FOR REINFORCING CONCRETE", ACI 318-19. CEMENT SHALL BE TYPE II OR III AND ODOT 2019 SECTION 701.
- CONCRETE WATER/CEMENT RATIO SHALL BE A MAXIMUM OF 0.40.
- CURING - CONCRETE SHALL BE KEPT IN MOIST CONDITION FOR AT LEAST SEVEN (7) DAYS AFTER PLACEMENT.
- TESTING AND SAMPLING SHALL BE IN ACCORDANCE WITH ODOT SECTION 701.01 D
- CONCRETE FOR STRUCTURES SHALL BE PLACED MONOLITHICALLY, UNLESS NOTED OTHERWISE.
- ALL CONCRETE SHALL BE THOROUGHLY COMPACTED BY MECHANICALLY VIBRATING OR HAND POUNDING, AND SHALL BE THOROUGHLY WORKED AROUND THE REINFORCEMENT AND INTO ALL CORNERS OF THE FORMS.

STEEL PILES

- ALL STEEL PILING SHALL BE ASTM A709 GR. 50, UNLESS OTHERWISE NOTED. NO LAP WELD OR SPIRAL WELD PIPE WILL BE ALLOWED.
- ALL SPLICES SHALL BE MADE WITH COMPLETE FULL PENETRATION WELDS DEVELOPING THE FULL STRENGTH OF THE SECTION.
- ALL PILES SHALL BE COATED WITH A MINIMUM OF SIXTEEN (16) MILS OF AN APPROVED COATING SYSTEM FROM THE TOP OF THE PILE FOR THE LENGTH NOTED IN THE PILE SCHEDULE.
- THE FIELD SPLICE WELDS FOR ALL OF THE MONOPILES SHALL BE TESTED BY A THIRD PARTY INSPECTION COMPANY APPROVED BY THE ENGINEER.

PILE INSTALLATION

- PILE INSTALLATION SHALL CONFORM TO ODOT 2019 SECTION 516.
- ALL PILES SHALL BE INSTALLED TO THEIR ENTIRE LENGTH TO THE DESIGN "TIP OF PILE" ELEVATIONS INDICATED ON THE DRAWINGS.
- THE LENGTH OF THE PILE SHOWN ON THE DRAWINGS IS THE TRUE LENGTH MEASURED ALONG THE CENTERLINE AXIS OF THE PILE AND IS THE LENGTH REQUIRED AFTER THE PILE IS DRIVEN AND CUTOFF (IF NECESSARY) IS ACCOMPLISHED.

- CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING PILES OF SUFFICIENT LENGTH TO ACCOUNT FOR THE ADDED LENGTH REQUIRED FOR THE HAMMER IN USE AND FOR CUTOFF SUCH THAT THE FINAL, DRIVEN, CUTOFF PILE IS THE LENGTH SHOWN ON THE DRAWINGS.

SHOP DRAWINGS

- SHOP DRAWINGS MUST BE PROVIDED AND REVIEWED BY ENGINEER PRIOR TO FABRICATION.

35257(07) PAY QUANTITIES - BRIDGE				
0200 BRIDGE ITEMS				
ITEM NO.		BID ITEM DESCRIPTION	UNIT	QUANTITY
509(A)	0210	CLASS AA CONCRETE	C.Y.	920
514(A)	5300	LAMINATED FENDER	(2) EA.	26
514(O)	6600	MONOPILE MOORING STRUCTURE	(1)(3) L.F.	2120
619(B)	6308	REMOVAL OF BRIDGE ITEM	(4) EA.	7

35257(07) PAY QUANTITIES- STAKING				
0600 STAKING				
ITEM NO.		BID ITEM DESCRIPTION	UNIT	QUANTITY
642(B)	3300	CONSTRUCTION STAKING LEVEL II	L.S.	1

35257(07) PAY QUANTITIES- CONSTRUCTION				
0640 CONSTRUCTION				
ITEM NO.		BID ITEM DESCRIPTION	UNIT	QUANTITY
641	2100	MOBILIZATION	L.S.	1

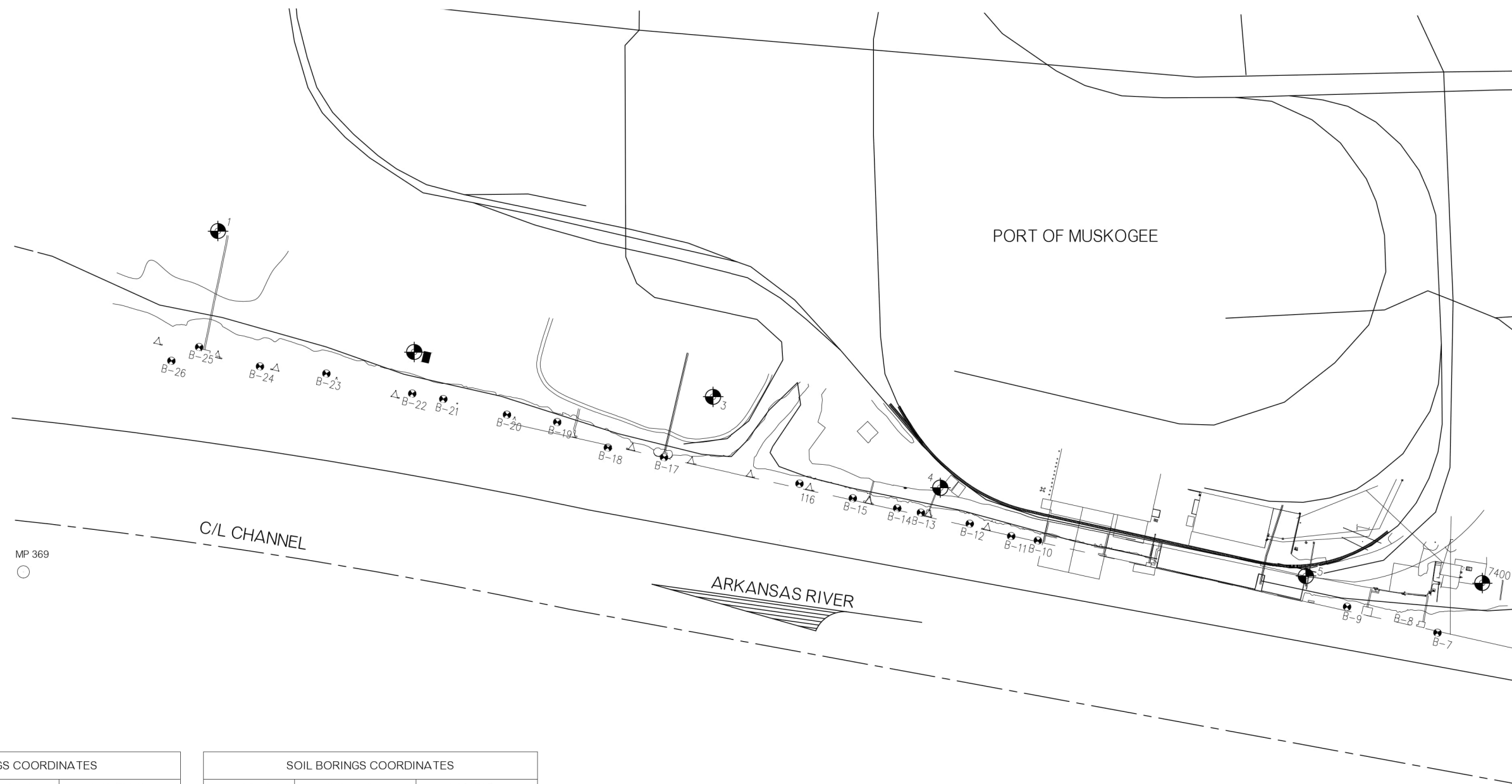
PAY ITEM NOTES

- LINEAR FOOT COST OF MONOPILE TO INCLUDE BUT NOT LIMITED TO PILES, STRUCTURAL STEEL, STEEL COATING, MUCK AND ROCK EXCAVATION, BOLLARDS, MOORING RAILS, AND ANY OTHER INCIDENTALS RELATED TO THE FABRICATION AND INSTALLATION OF MONOPILES.
- EACH FENDER ESTIMATE SHALL INCLUDE EIGHT (8) WELD ON MOUNTS AND TWO (2) STRAP MOUNTS.
- ESTIMATED QUANTITIES SHALL INCLUDE ALL STEEL, RAILS, AND INSTALLATION. ESTIMATE SHALL INCLUDE COATING AS INDICATED ON NOTES AND DRAWINGS.
- ALL ITEMS REMOVED TO BECOME PROPERTY OF THE CONTRACTOR

DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY			MUSKOGEE
HIGHWAY			MKARNS
STATE JOB NO			35257(07)
SHEET NO			AV001

**GENERAL NOTES,
PAY QUANTITIES &
PAY ITEM NOTES**

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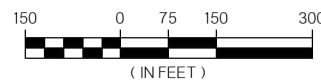


SOIL BORINGS COORDINATES		
BORING	NORTHING (Y)	EASTING (X)
B-7	297,688.28	2,769,838.27
B-8	297,596.40	2,769,808.19
B-9	297,464.42	2,769,776.26
B-10	297,698.97	2,769,619.54
B-11	296,633.14	2,769,609.50
B-12	296,530.35	2,769,579.72
B-13	296,409.45	2,769,553.41
B-14	296,350.90	2,769,543.17
B-15	296,241.00	2,769,519.52
B-16	296,108.93	2,769,484.62

SOIL BORINGS COORDINATES		
BORING	NORTHING (Y)	EASTING (X)
B-17	295,772.19	2,769,422.78
B-18	295,633.17	2,769,399.94
B-19	295,507.64	2,769,338.15
B-20	295,383.35	2,769,320.84
B-21	295,225.73	2,769,283.68
B-22	295,148.90	2,769,270.98
B-23	294,936.37	2,769,223.48
B-24	294,772.05	2,769,207.28
B-25	294,621.46	2,769,161.02
B-26	294,553.23	2,769,195.56

PORT OF MUSKOGEE
OVERALL EXISTING SITE PLAN

SCALE: 1"=300'



LEGEND

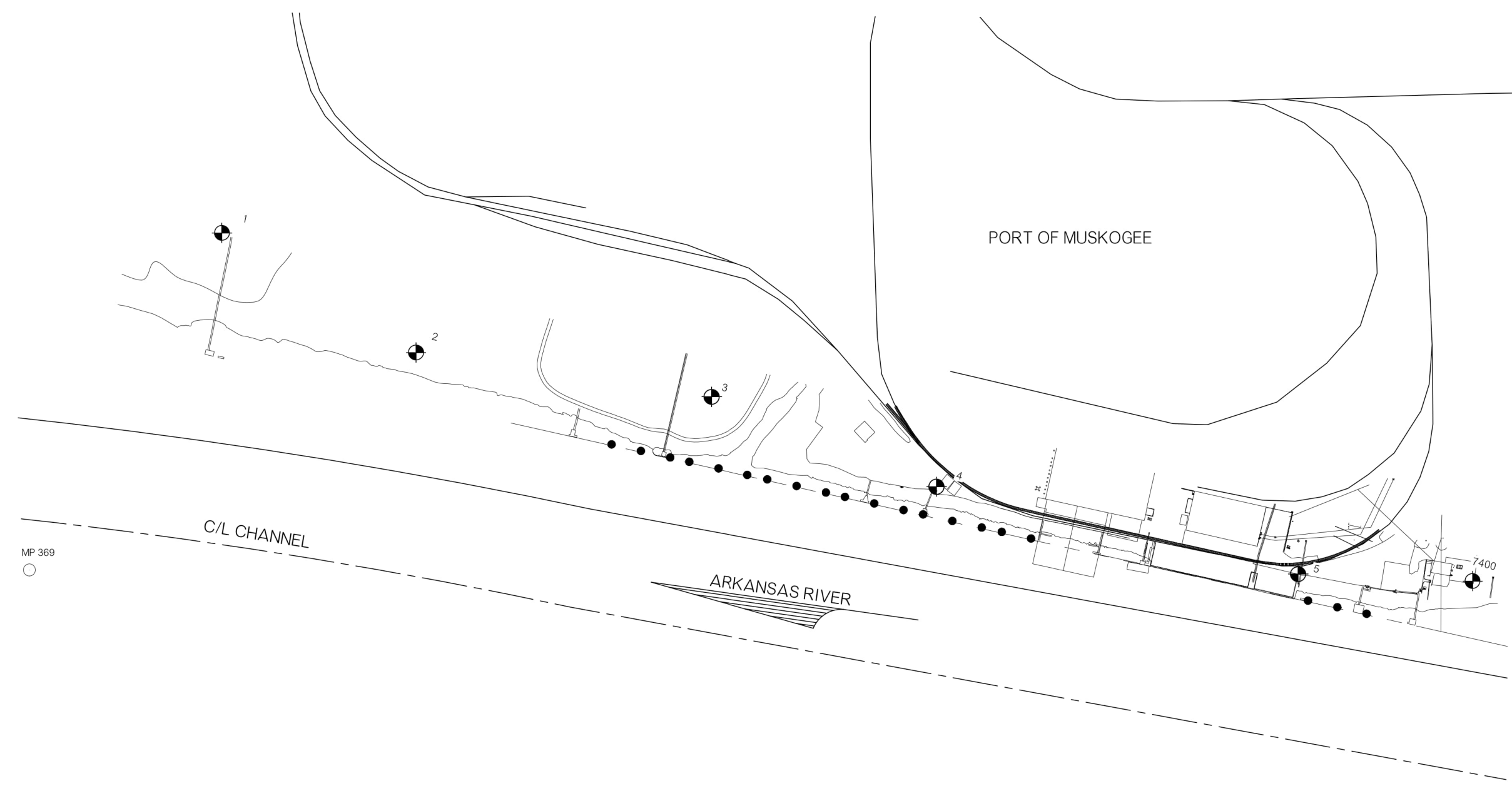
- - BORING LOCATION
- X - BORING LOCATION NUMBER
- - BENCHMARK
- X - BENCHMARK NUMBER

NOTES:

1. SOIL COORDINATES ARE REFERENCED TO NGS OKLAHOMA STATE PLANE COORDINATE SYSTEM, NAD83 (2011), LAMBERT PROJECTION NORTH ZONE.
2. FOR SOIL BORING INFORMATION SEE SHEET V016 to V018.

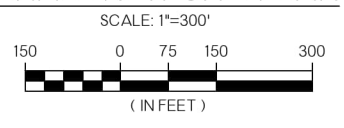
DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION PORT OF MUSKOGEE OVERALL EXISTING SITE PLAN
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY	MUSKOGEE	HIGHWAY	MKARNS
STATE JOB NO	35257(07)	SHEET NO	V001

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MP 369
○

PORT OF MUSKOGEE
OVERALL NEW SITE PLAN



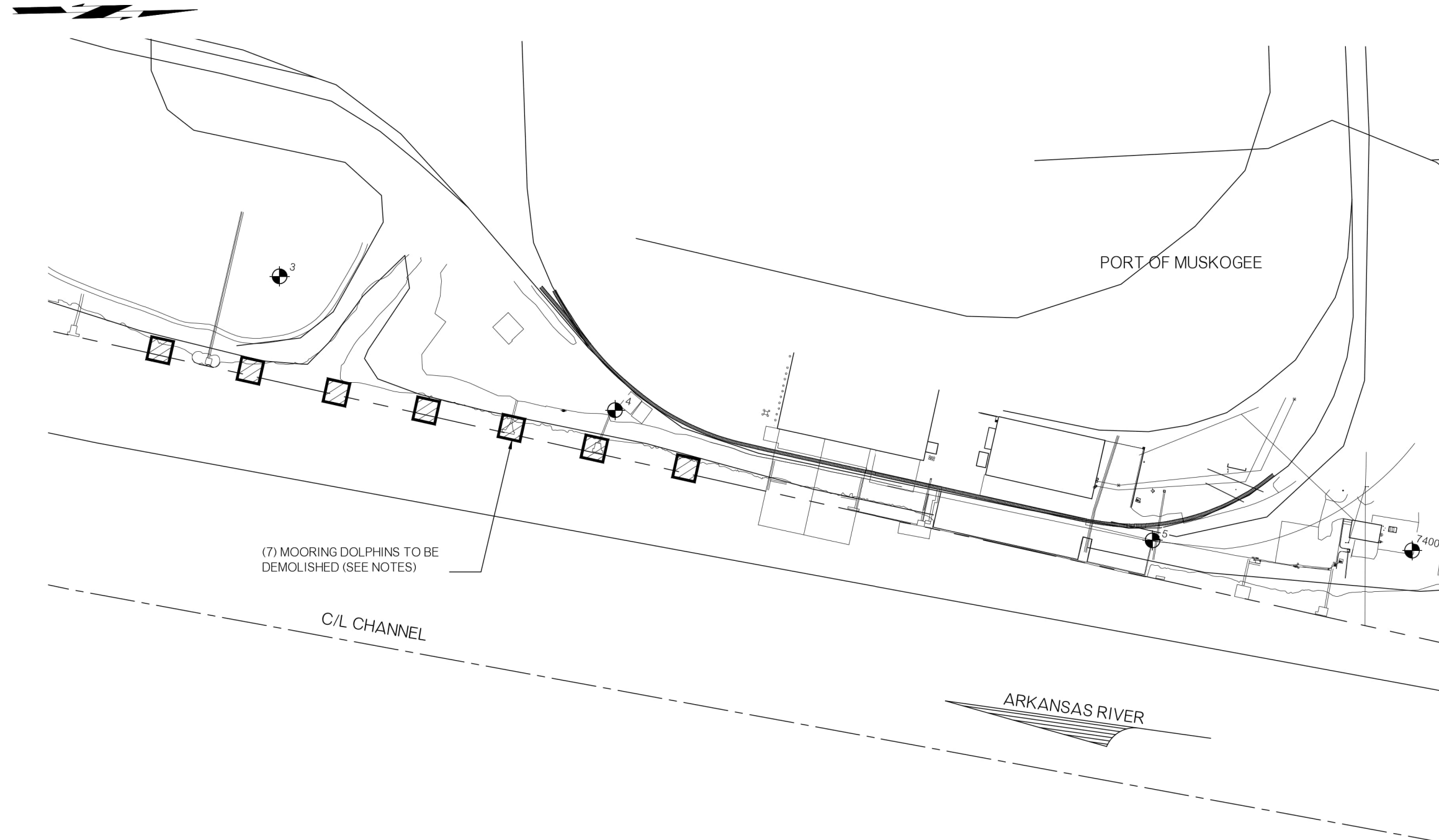
- LEGEND
- - NEW MONOPILE
 - ⊕ - BENCHMARK
 - X - BENCHMARK NUMBER

NOTES:

1. BENCHMARK COORDINATES ARE REFERENCED TO NGS OKLAHOMA STATE PLANE COORDINATE SYSTEM, NAD83 (2011), LAMBERT PROJECTION NORTH ZONE.

DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY MUSKOGEE			OKLAHOMA DEPARTMENT OF TRANSPORTATION
HIGHWAY MKARNS			PORT OF MUSKOGEE OVERALL NEW SITE PLAN
STATE JOB NO 35257(07)			
SHEET NO V002			

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(7) MOORING DOLPHINS TO BE
DEMOLISHED (SEE NOTES)

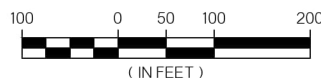
C/L CHANNEL

PORT OF MUSKOGEE

ARKANSAS RIVER

PORT OF MUSKOGEE
DEMOLITION PLAN

SCALE: 1"=200'



LEGEND

- - NEW MONOPILE
- ⊕ - BENCHMARK
- X - BENCHMARK NUMBER



TYPICAL DOLPHIN
DEMOLITION

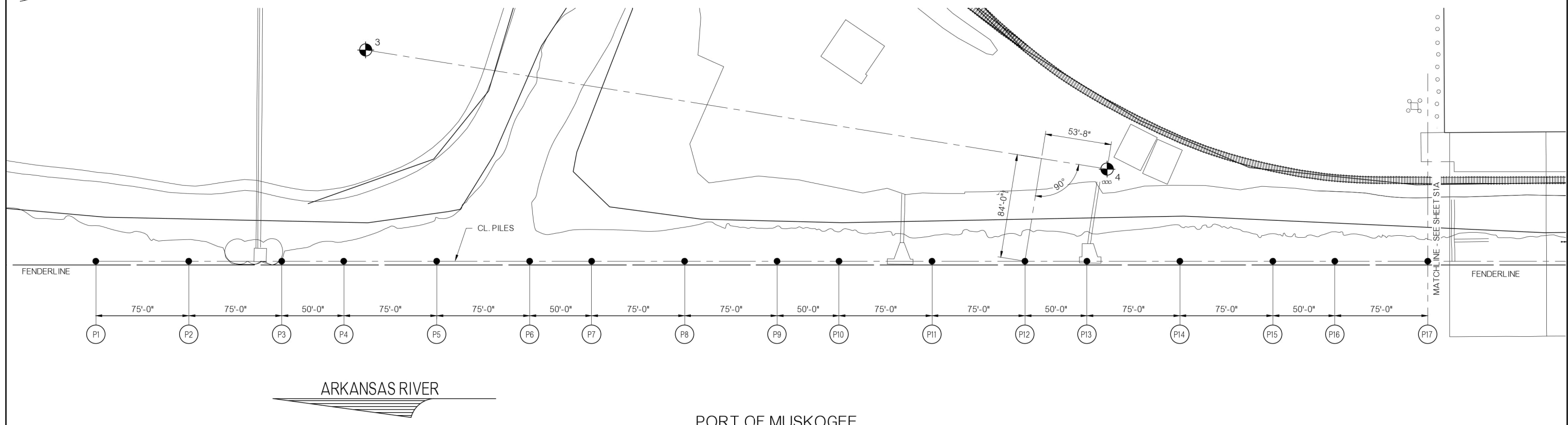
SCALE: N.T.S
(7 PLCS)

NOTES:

1. CONTRACTOR SHALL DEMOLISH AND DISPOSE OF STRUCTURES INDICATED.
2. CONTRACTOR SHALL CUT PILES 5 FEET BELOW MUDLINE.

DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY MUSKOGEE HIGHWAY MKARNS STATE JOB NO 35257(07) SHEET NO V003			

PORT OF MUSKOGEE
DEMOLITION PLAN



**PORT OF MUSKOGEE
 PARTIAL PILE PLAN**
 SCALE: 1"=40'
 40 0 20 40 80
 (IN FEET)

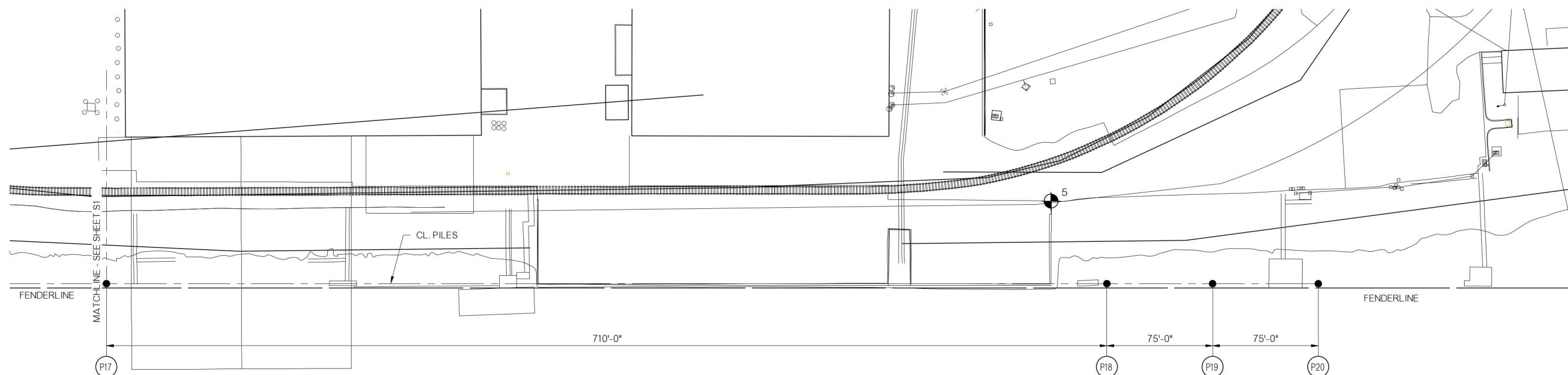
- LEGEND**
- - NEW MONOPILE
 - ⊕ - BENCHMARK
 - X - BENCHMARK NUMBER

PILE SCHEDULE						
PILE DESIGNATION	PILE SIZE	PILE TYPE	CUT OFF EL.	TIP EL.	APPROX. COMPETENT BEDROCK EL.	COATING LENGTH
P1	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	467.50'	ENTIRE
P2	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	467.30'	ENTIRE
P3	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	467.30'	ENTIRE
P4	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	467.60'	ENTIRE
P5	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	468.10'	ENTIRE
P6	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	468.60'	ENTIRE
P7	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	469.00'	ENTIRE
P8	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	469.50'	ENTIRE
P9	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	469.00'	ENTIRE
P10	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	468.50'	ENTIRE
P11	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	468.30'	ENTIRE
P12	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	468.10'	ENTIRE
P13	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	468.60'	ENTIRE
P14	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	468.70'	ENTIRE
P15	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	468.70'	ENTIRE
P16	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	471.20'	ENTIRE
P17	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	469.20'	ENTIRE
P18	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	471.40'	ENTIRE
P19	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	471.40'	ENTIRE
P20	60" DIA. x VARIES	STEEL PILE	530.00'	445.00'	470.00'	ENTIRE

* SEE SHEETS V012 & V014 FOR PILE DETAILS

DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION PORT OF MUSKOGEE PARTIAL PILE PLAN & PILE SCHEDULE
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY	MUSKOGEE	HIGHWAY	MKARNS STATE JOB NO. 35257(07) SHEET NO. V004

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ARKANSAS RIVER

PORT OF MUSKOGEE
PARTIAL PILE PLAN

SCALE: 1"=40'



LEGEND

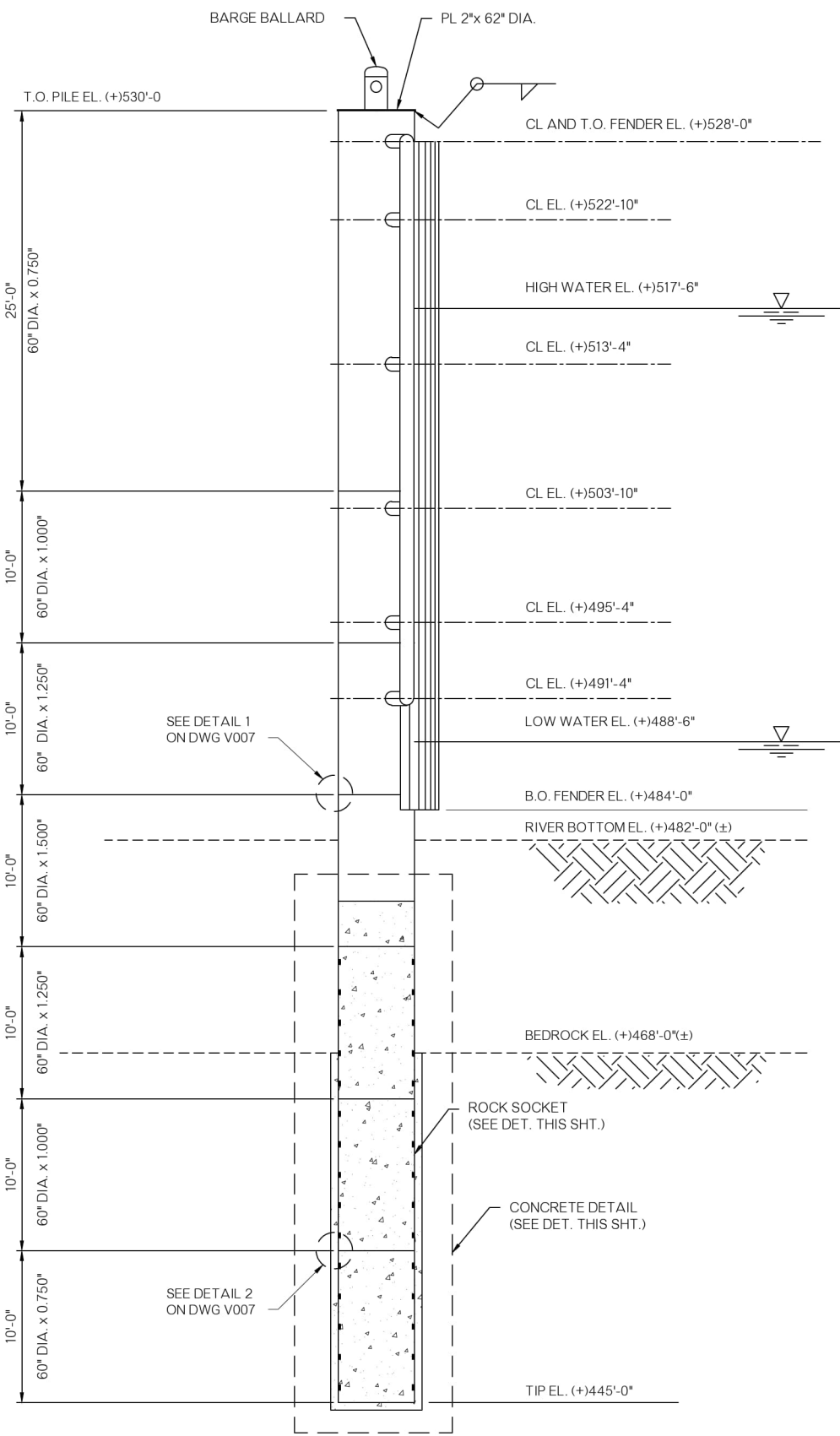
- - NEW MONOPILE
- ⊕ - BENCHMARK
- X - BENCHMARK NUMBER

NOTE: FOR PILE SCHEDULE SEE SHEET V008.

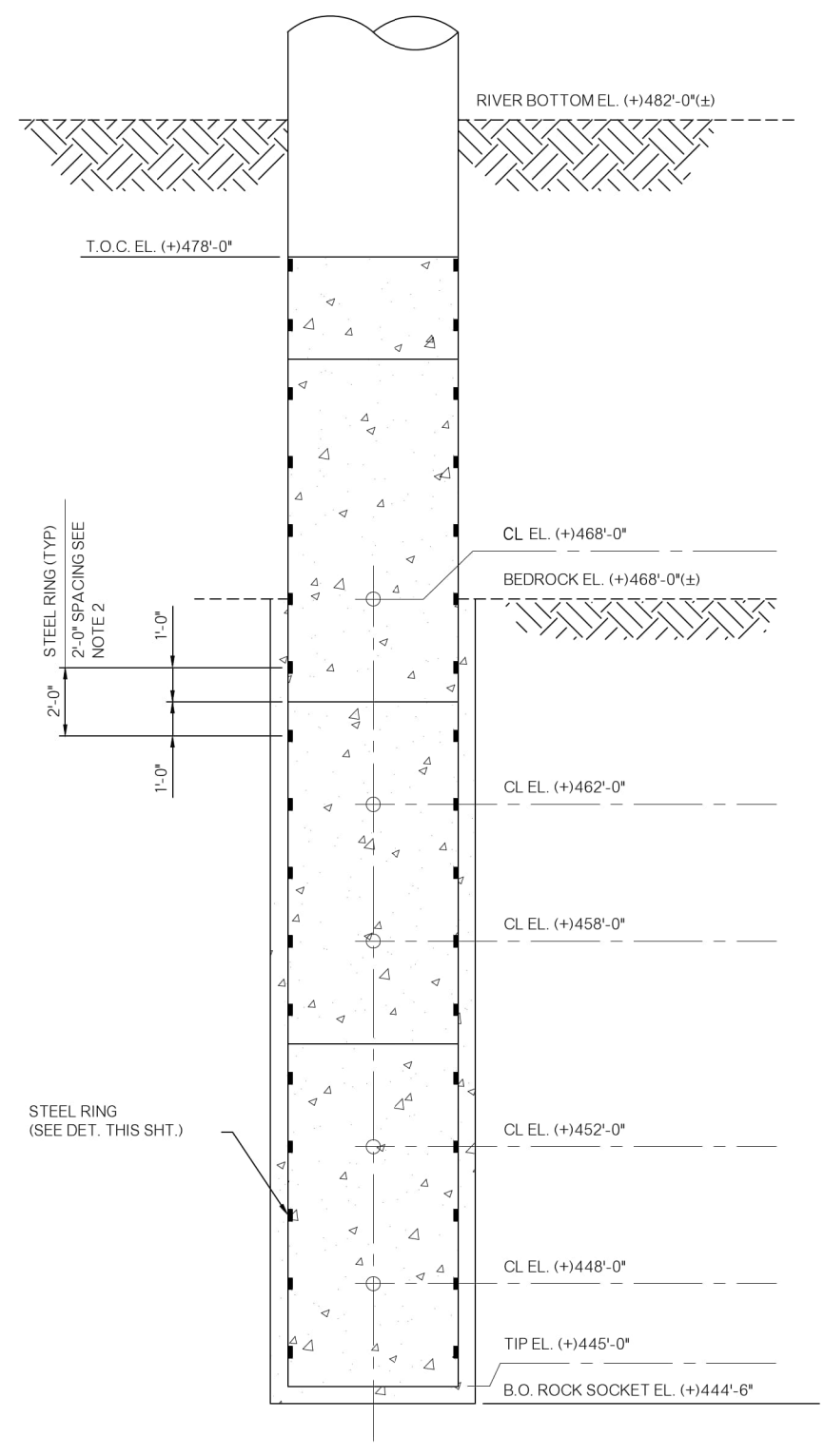
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DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY MUSKOGEE HIGHWAY MKARNS STATE JOB NO 35257(07) SHEET NO V005			

PORT OF MUSKOGEE
PARTIAL PILE PLAN

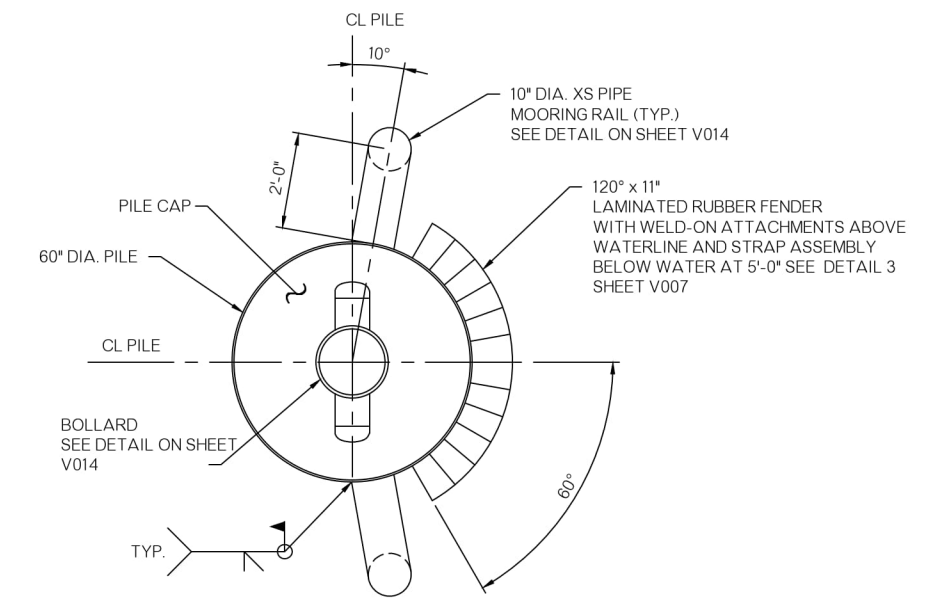


**PORT OF MUSKOGEE
 MONOPILE ELEVATION**
 SCALE: 3/16" = 1'-0"
 (20 REQUIRED)

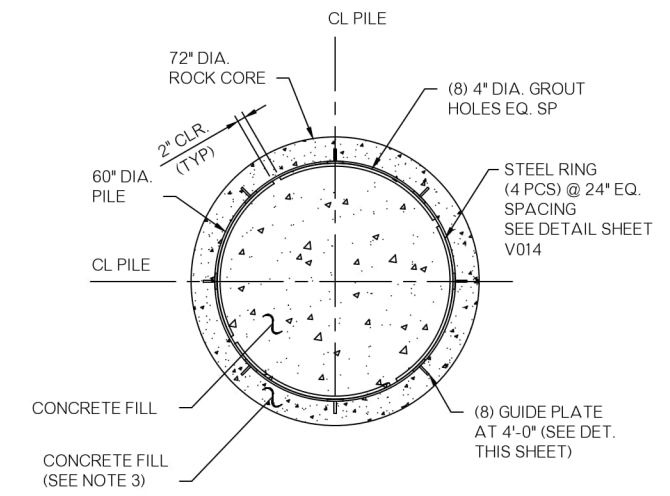


MONOPILE CONCRETE DETAIL
 SCALE: 3/8" = 1'-0"
 (20 REQUIRED)

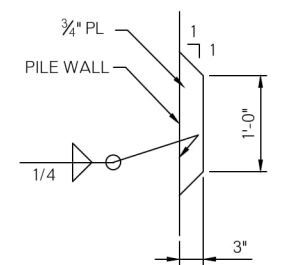
- NOTES:**
- HIGH WATER BASED ON 2019 YEAR FLOOD EVENT.
 - STEEL RING TO BE INSTALLED INTERNALLY OF THE PILE FOR THE FULL EXTEND OF THE CONCRETE.
 - VOID BETWEEN PILE AND ROCK TO BE FILLED WITH CONCRETE TO THE TOP OF THE BEDROCK AS SHOWN ON DRAWING.



DOLPHIN PLAN
 SCALE: 1/2" = 1'-0"



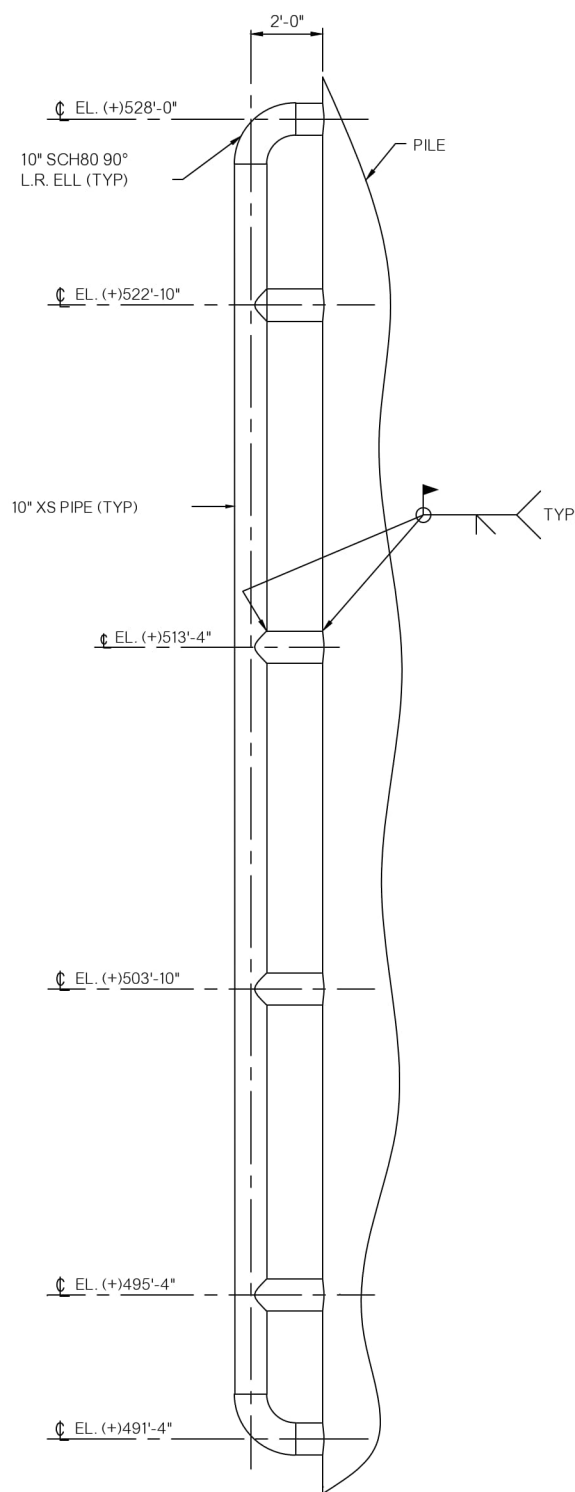
ROCK SOCKET PLAN
 SCALE: 1/2" = 1'-0"



PILE GUIDE PLATE
 SCALE: 1" = 1'-0"

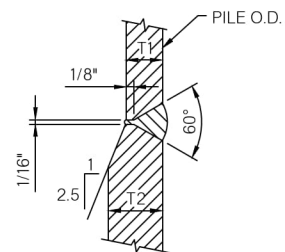
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DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION PORT OF MUSKOGEE MONOPILE ELEVATION, PLANS & DETAILS
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY	MUSKOGEE	HIGHWAY M&KARNS	STATE JOB NO. 35257(07) SHEET NO. V006



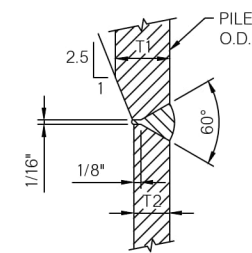
PORT OF MUSKOGEE
MOORING RAIL DETAIL

SCALE: 3/8" = 1'-0"



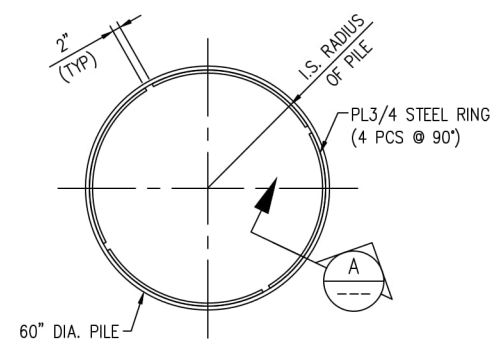
DETAIL 1

SCALE: N.T.S.



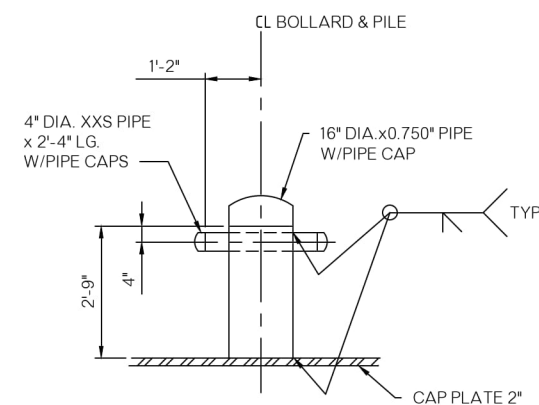
DETAIL 2

SCALE: N.T.S.



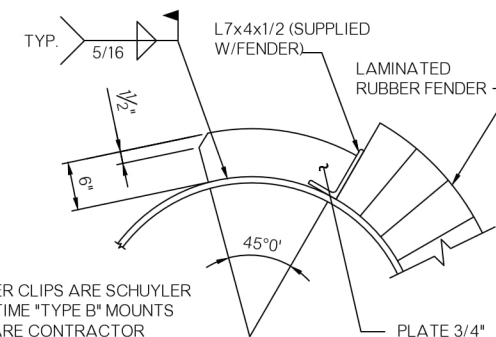
STEEL RING DETAIL

SCALE: 1/2" = 1'-0"



MOORING BOLLARD DETAIL

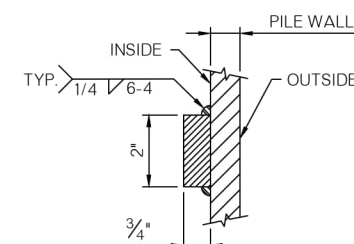
SCALE: 1/2" = 1'-0"



NOTE:
FENDER CLIPS ARE SCHUYLER
MARITIME "TYPE B" MOUNTS
AND ARE CONTRACTOR
FURNISHED AND CONTRACTOR
INSTALLED

DETAIL 3

SCALE: 1" = 1'-0"



SECTION A

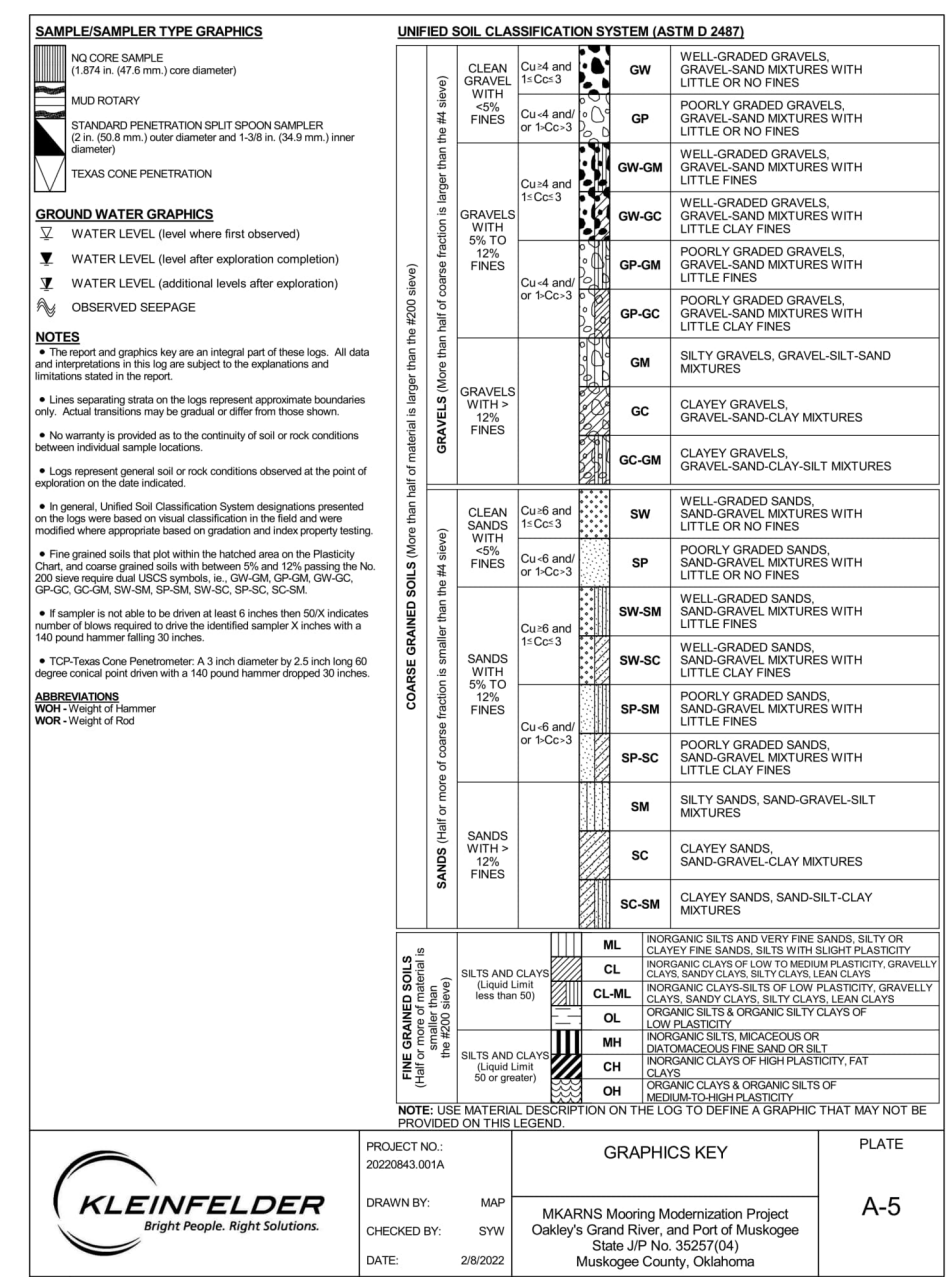
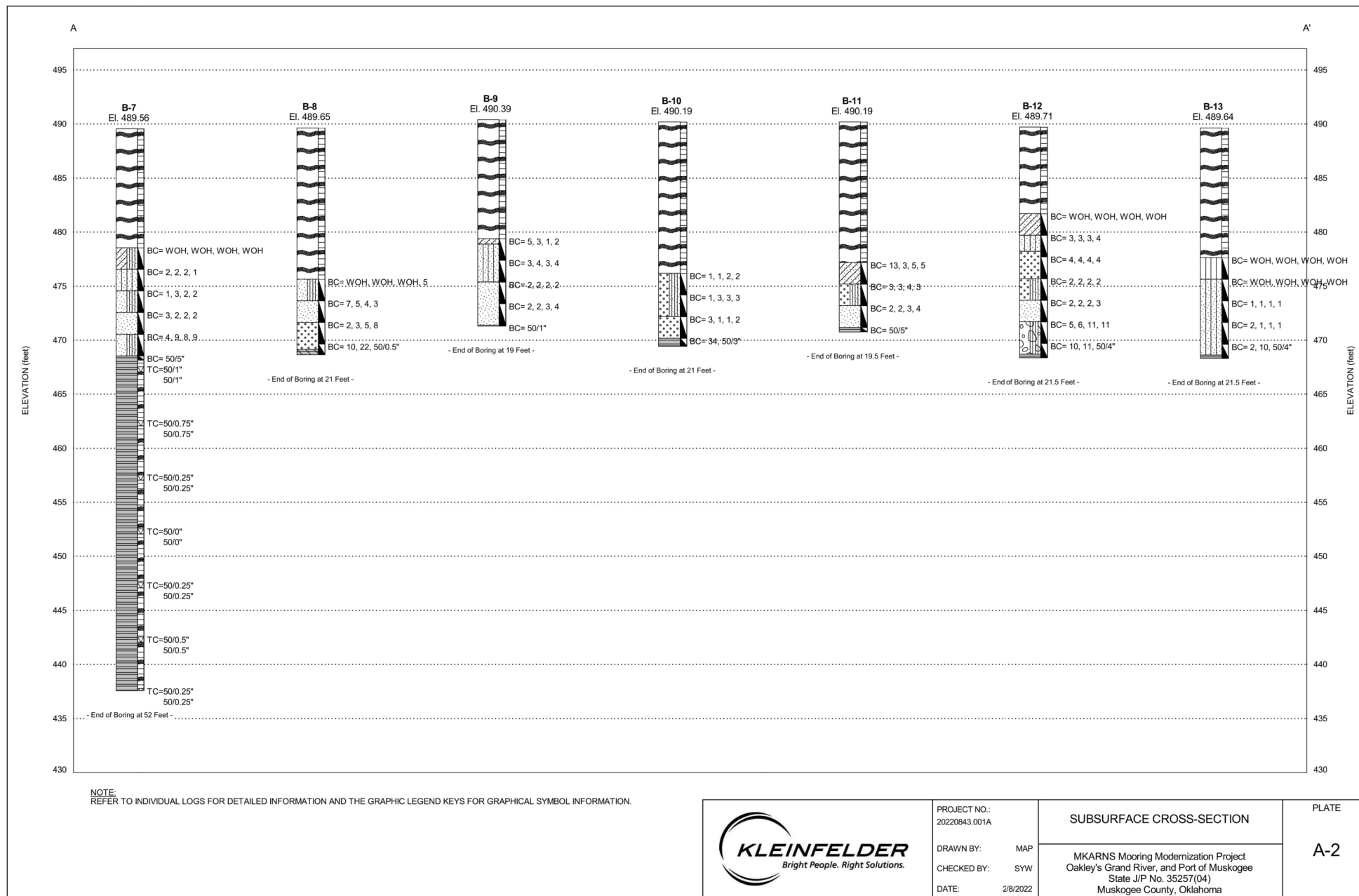
SCALE: N.T.S.

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DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY MUSKOGEE HIGHWAY MKARNS STATE JOB NO 35257(07) SHEET NO V007			PORT OF MUSKOGEE MONOPILE DETAILS

PRELIMINARY PLANS

03/24/2023



	PROJECT NO.: 20220843.001A	SUBSURFACE CROSS-SECTION	PLATE
	DRAWN BY: MAP CHECKED BY: SYW DATE: 2/8/2022	MKARNS Mooring Modernization Project Oakley's Grand River, and Port of Muskogee State J/P No. 35257(04) Muskogee County, Oklahoma	A-2

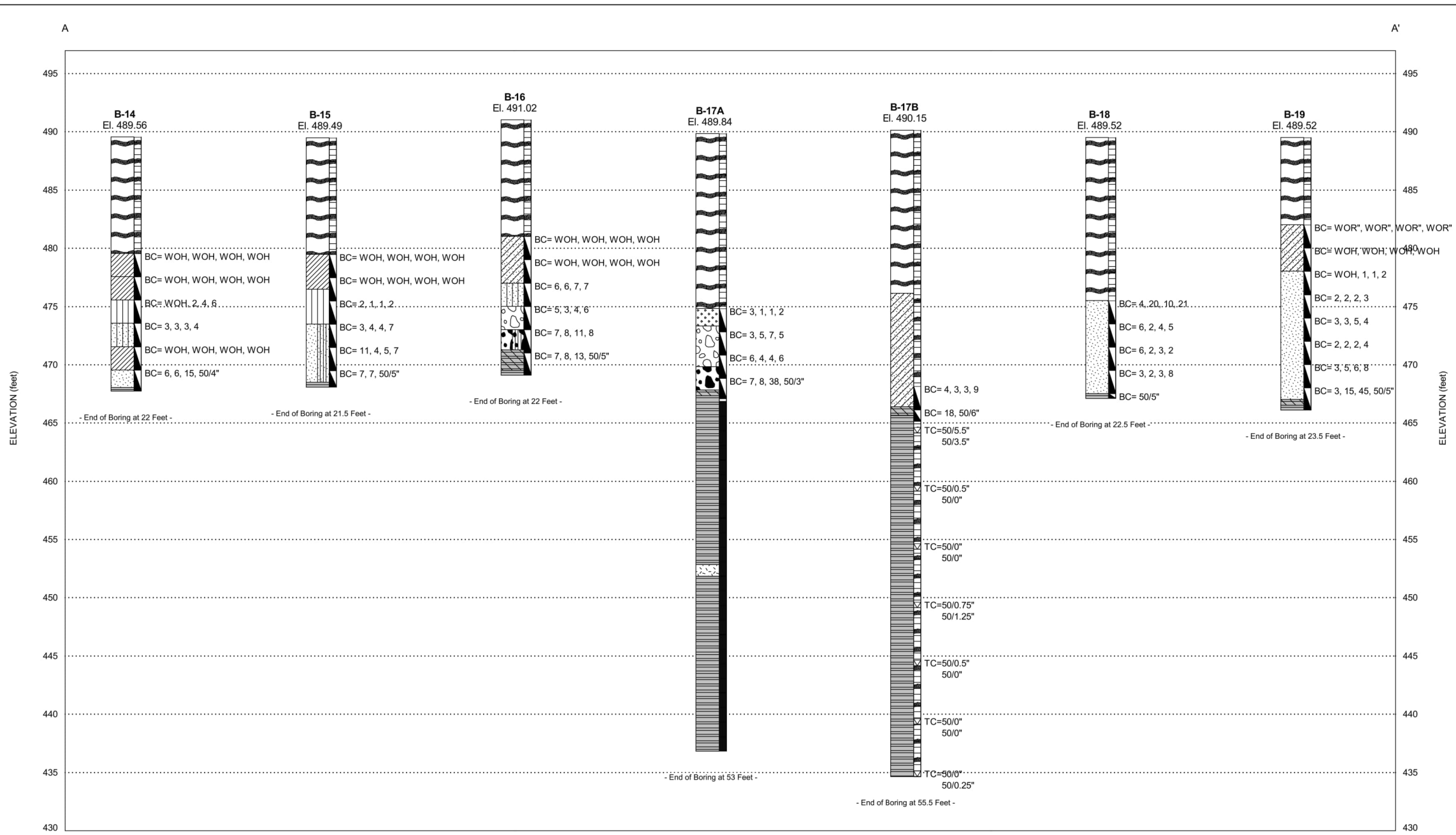
	PROJECT NO.: 20220843.001A	GRAPHICS KEY	PLATE
	DRAWN BY: MAP CHECKED BY: SYW DATE: 2/8/2022	MKARNS Mooring Modernization Project Oakley's Grand River, and Port of Muskogee State J/P No. 35257(04) Muskogee County, Oklahoma	A-5

- NOTES:
- DRIVING TIP TO BE INSTALLED AS NEEDED TO PREVENT DAMAGE TO PILE TIP DURING DRIVING.

PORT OF MUSKOGEE
SOIL BORING INFORMATION

DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION PORT OF MUSKOGEE SOIL BORING INFORMATION
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY	MUSKOGEE	HIGHWAY MKARNS STATE JOB NO. 35257(07)	SHEET NO. V008

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NOTE:
REFER TO INDIVIDUAL LOGS FOR DETAILED INFORMATION AND THE GRAPHIC LEGEND KEYS FOR GRAPHICAL SYMBOL INFORMATION.



PROJECT NO.:
20220843.001A

DRAWN BY: MAP
CHECKED BY: SYW
DATE: 2/8/2022

SUBSURFACE CROSS-SECTION

MKARNS Mooring Modernization Project
Oakley's Grand River, and Port of Muskogee
State J/P No. 35257(04)
Muskogee County, Oklahoma

PLATE

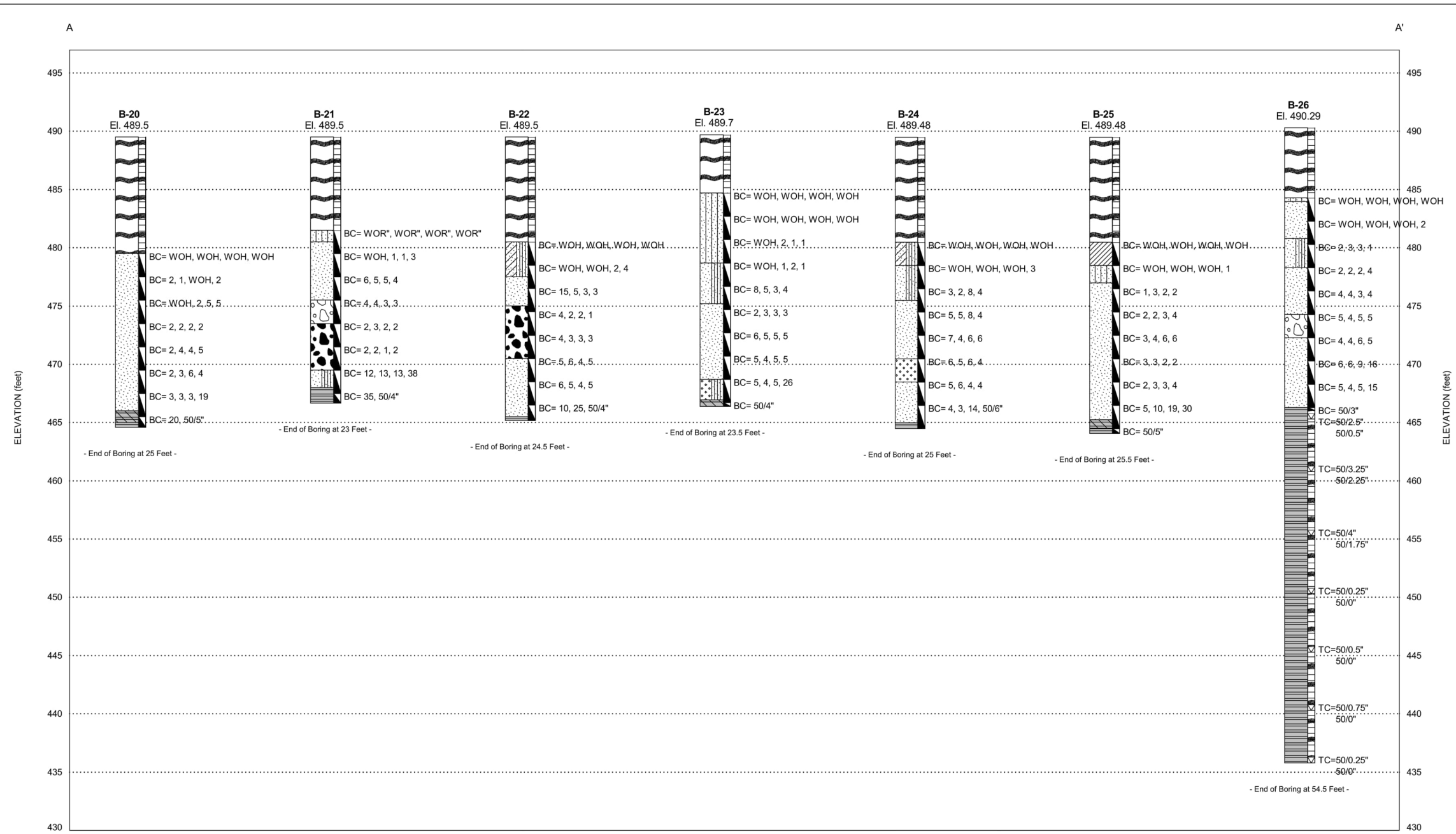
A-3

PORT OF MUSKOGEE
SOIL BORING INFORMATION

- NOTES:
- DRIVING TIP TO BE INSTALLED AS NEEDED TO PREVENT DAMAGE TO PILE TIP DURING DRIVING.

DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY MUSKOGEE HIGHWAY MKARNS STATE JOB NO. 35257(07) SHEET NO. V009			PORT OF MUSKOGEE SOIL BORING INFORMATION

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NOTE:
REFER TO INDIVIDUAL LOGS FOR DETAILED INFORMATION AND THE GRAPHIC LEGEND KEYS FOR GRAPHICAL SYMBOL INFORMATION.



PROJECT NO.:
20220843.001A

DRAWN BY: MAP
CHECKED BY: SYW
DATE: 2/8/2022

SUBSURFACE CROSS-SECTION

MKARNS Mooring Modernization Project
Oakley's Grand River, and Port of Muskogee
State J/P No. 35257(04)
Muskogee County, Oklahoma

PLATE

A-4

PORT OF MUSKOGEE
SOIL BORING INFORMATION

NOTES:

- DRIVING TIP TO BE INSTALLED AS NEEDED TO PREVENT DAMAGE TO PILE TIP DURING DRIVING.

DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY			MUSKOGEE
HIGHWAY			MKARNS
STATE JOB NO.			35257(07)
SHEET NO.			V010

PORT OF MUSKOGEE
SOIL BORING INFORMATION

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**PRELIMINARY
PLANS**

03/24/2023

LEGEND

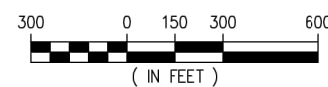
- - BENCHMARK
- X - BENCHMARK NUMBER



BENCHMARK TABLE		
BORING	NORTHING (Y)	EASTING (X)
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5	457066.20	2636885.34
6	457608.26	2636459.05
7	458163.40	2636022.42
8	458659.38	2635709.98
9	459110.34	2635353.99
10	459571.56	2634991.29
11	459892.01	2634738.79
12	459885.08	2635932.83
13	459291.70	2636202.76
14	458665.06	2636683.32
15	458152.12	2637084.84
16	457606.05	2637515.42
17	457136.17	2637756.79
18	456356.51	2638080.28
7401	460459.75	2635482.81

**PORT OF CATOOSA
OVERALL EXISTING SITE PLAN**

SCALE: 1"=300'



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DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION PORT OF CATOOSA OVERALL EXISTING SITE PLAN
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY	ROGERS	HIGHWAY MKARNS	STATE JOB NO. 35257(07) SHEET NO. V011

PRELIMINARY PLANS

03/24/2023

LEGEND

- - NEW MONOPILE
- ⊕ - BENCHMARK
- X - BENCHMARK NUMBER



PORT OF CATOOSA OVERALL NEW SITE PLAN

SCALE: 1"=300'



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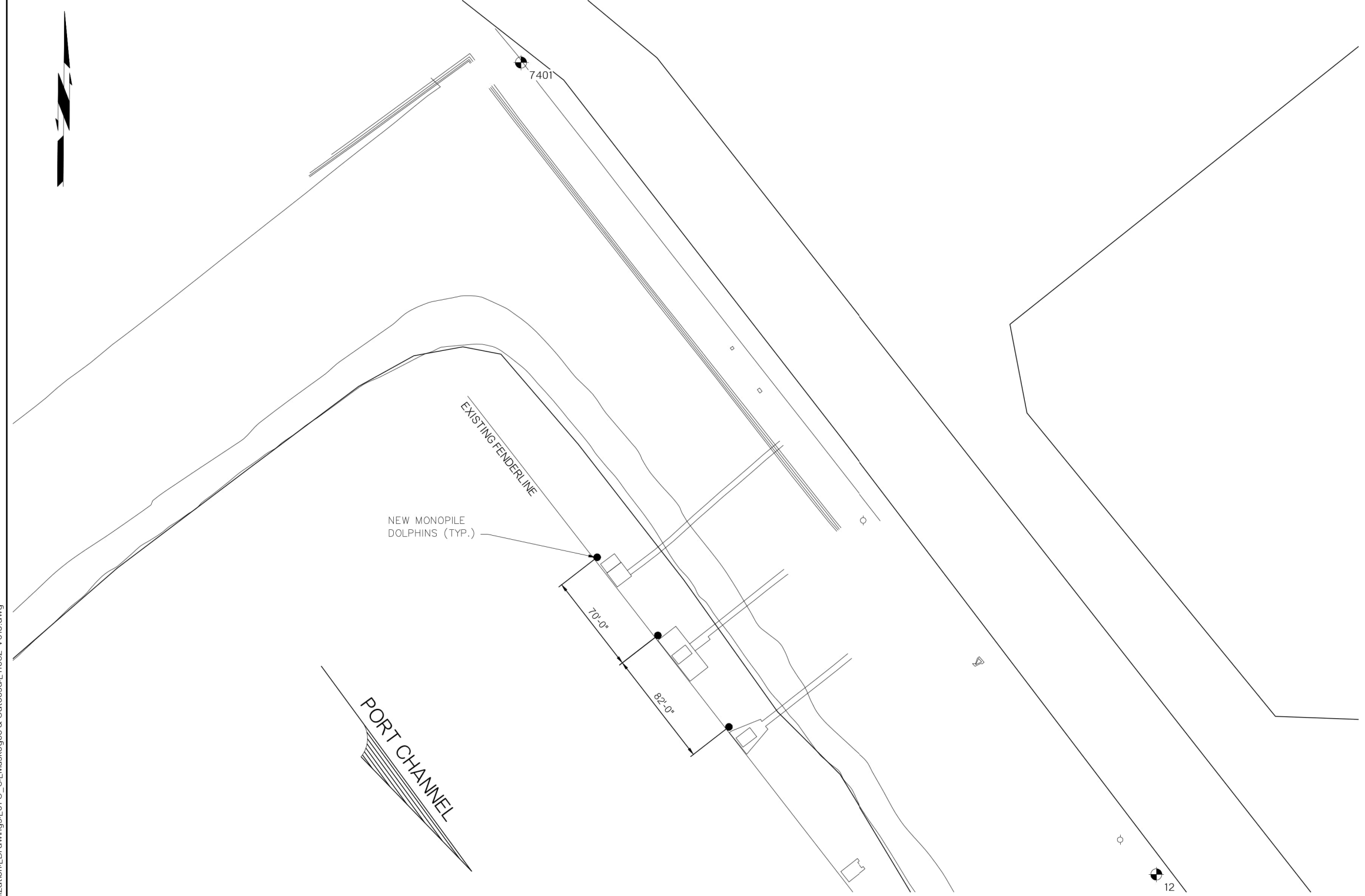
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DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY			ROGERS
HIGHWAY			MKARNS
STATE JOB NO			35257(07)
SHEET NO			V012

PORT OF CATOOSA OVERALL NEW SITE PLAN

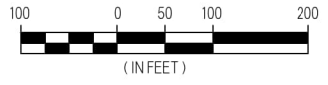
LEGEND

- - NEW MONOPILE
- ⊕ - BENCHMARK
- X - BENCHMARK NUMBER



PORT OF CATOOSA
 PARTIAL ENLARGED NEW SITE PLAN

SCALE: 1"=100'

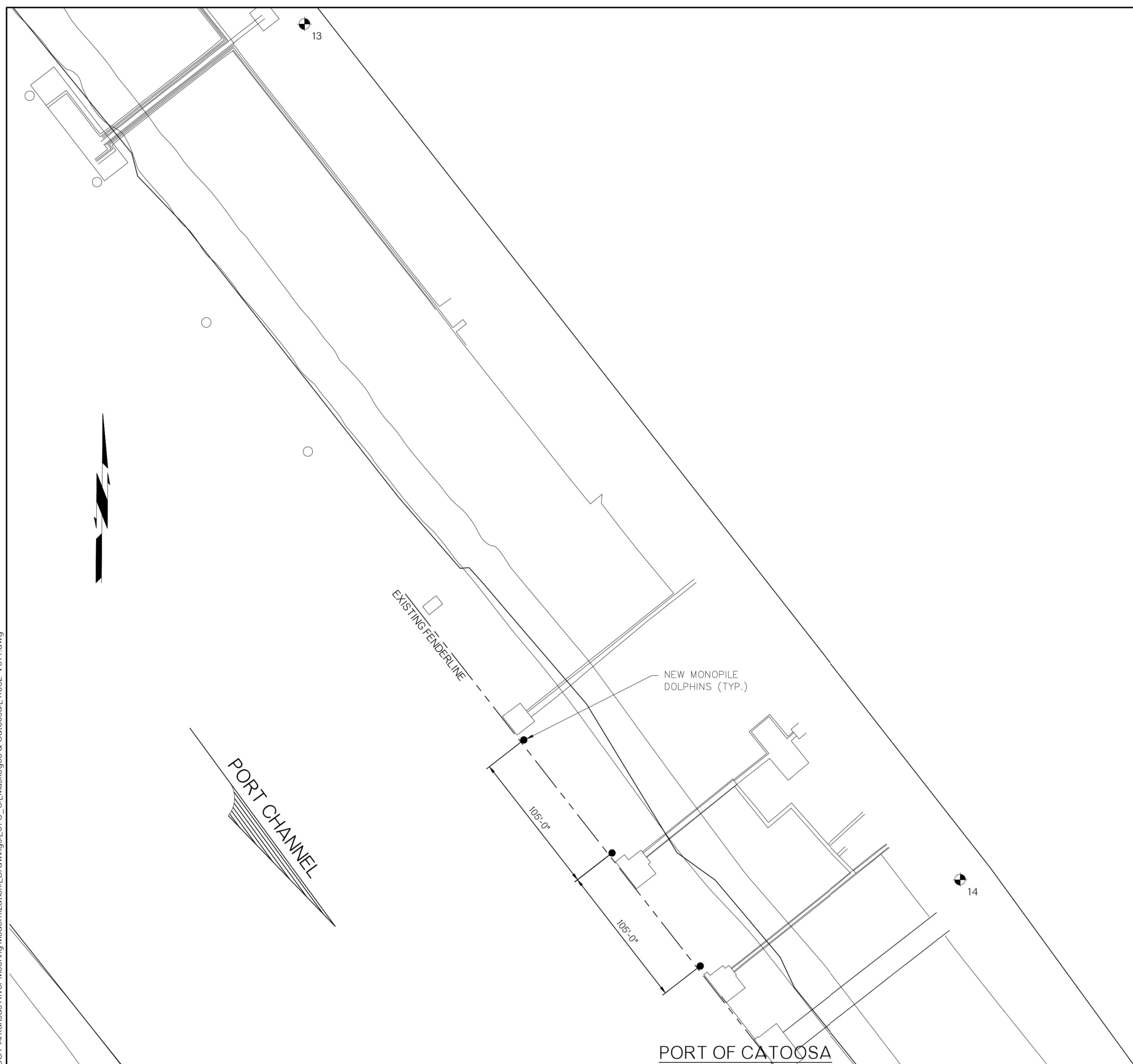


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DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY	ROGERS	HIGHWAY	MKARNS STATE JOB NO. 35257(07) SHEET NO. V013

LEGEND

- - NEW MONOPILE
- ⊕ - BENCHMARK
- X - BENCHMARK NUMBER



PORT OF CATOOSA
PARTIAL ENLARGED NEW SITE PLAN

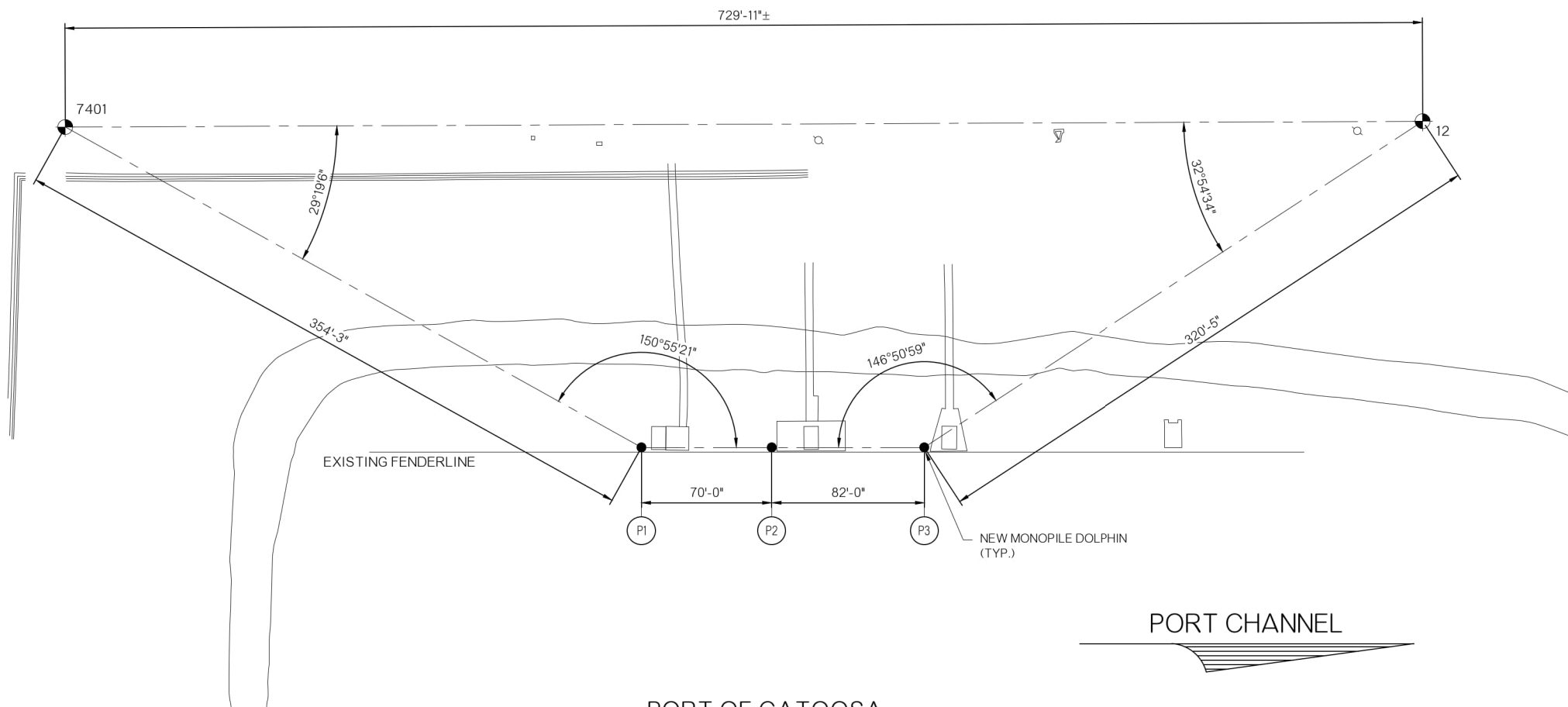
SCALE: 1"=100'



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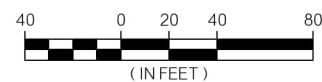
DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION PORT OF CATOOSA PARTIAL ENLARGED NEW SITE PLAN
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY	ROGERS	HIGHWAY	MKARNS STATE JOB NO. 35257(07) SHEET NO. V014

- LEGEND
- - NEW MONOPILE
 - ⊕ - BENCHMARK
 - X - BENCHMARK NUMBER



PORT OF CATOOSA
PARTIAL PILE PLAN

SCALE: 1"=40'



PILE SCHEDULE

PILE DESIGNATION	PILE SIZE	PILE TYPE	CUT OFF EL.	TIP EL.	APPROX. COMPETENT BEDROCK EL.	COATING LENGTH
P1	60"DIA. x VARIES	STEEL PILE	572.00'	502.00'	466.90'	ENTIRE
P2	60"DIA. x VARIES	STEEL PILE	572.00'	502.00'	467.90'	ENTIRE
P3	60"DIA. x VARIES	STEEL PILE	572.00'	502.00'	466.40'	ENTIRE
P4	60"DIA. x VARIES	STEEL PILE	572.00'	502.00'	468.20'	ENTIRE
P5	60"DIA. x VARIES	STEEL PILE	572.00'	502.00'	467.70'	ENTIRE
P6	60"DIA. x VARIES	STEEL PILE	572.00'	502.00'	470.50'	ENTIRE

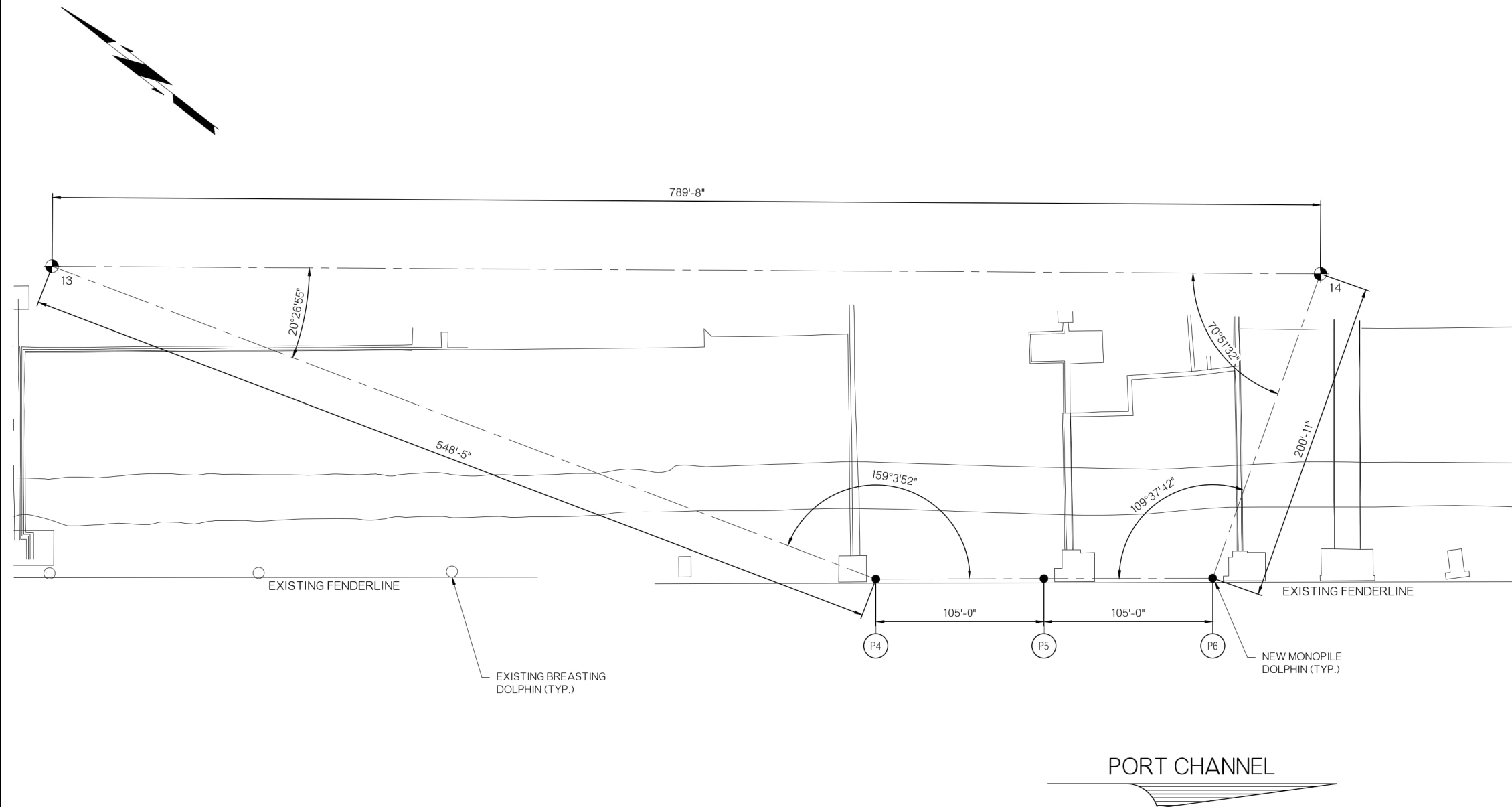
* SEE SHEET V017 & V018 FOR PILE DETAILS

DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION PORT OF CATOOSA PARTIAL PILE PLAN & PILE SCHEDULE
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY	ROGERS	HIGHWAY	MKARNS STATE JOB NO. 35257(07) SHEET NO. V015

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LEGEND

- - NEW MONOPILE
- ⊙ - BENCHMARK
- X - BENCHMARK NUMBER



PORT CHANNEL

**PORT OF CATOOSA
PARTIAL PILE PLAN**

SCALE: 1"=40'



NOTE: FOR PILE SCHEDULE SEE SHEET V010.

DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY			ROGERS
HIGHWAY			MKARNS
STATE JOB NO			35257(07)
SHEET NO			V016

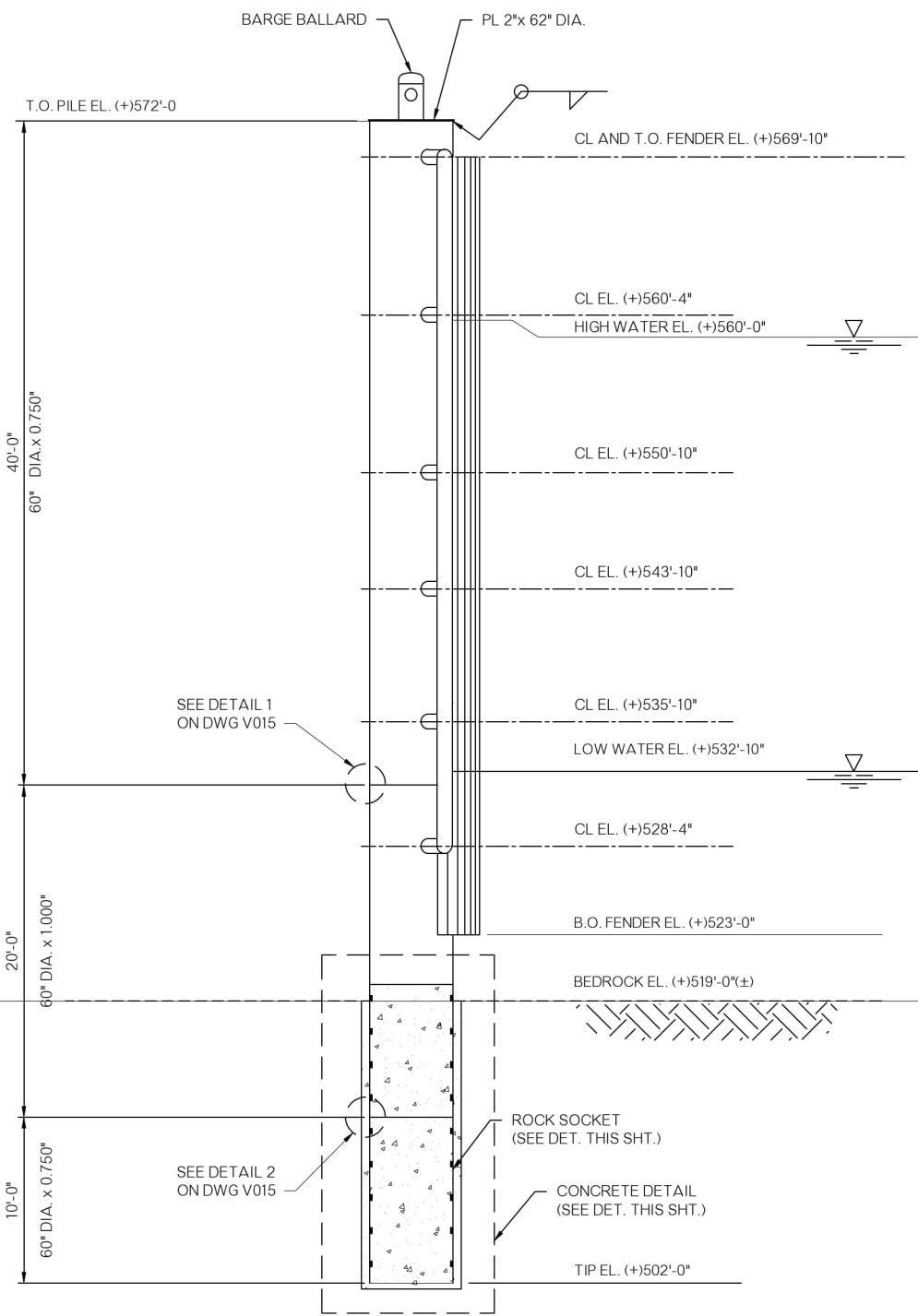
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PRELIMINARY PLANS

03/24/2023

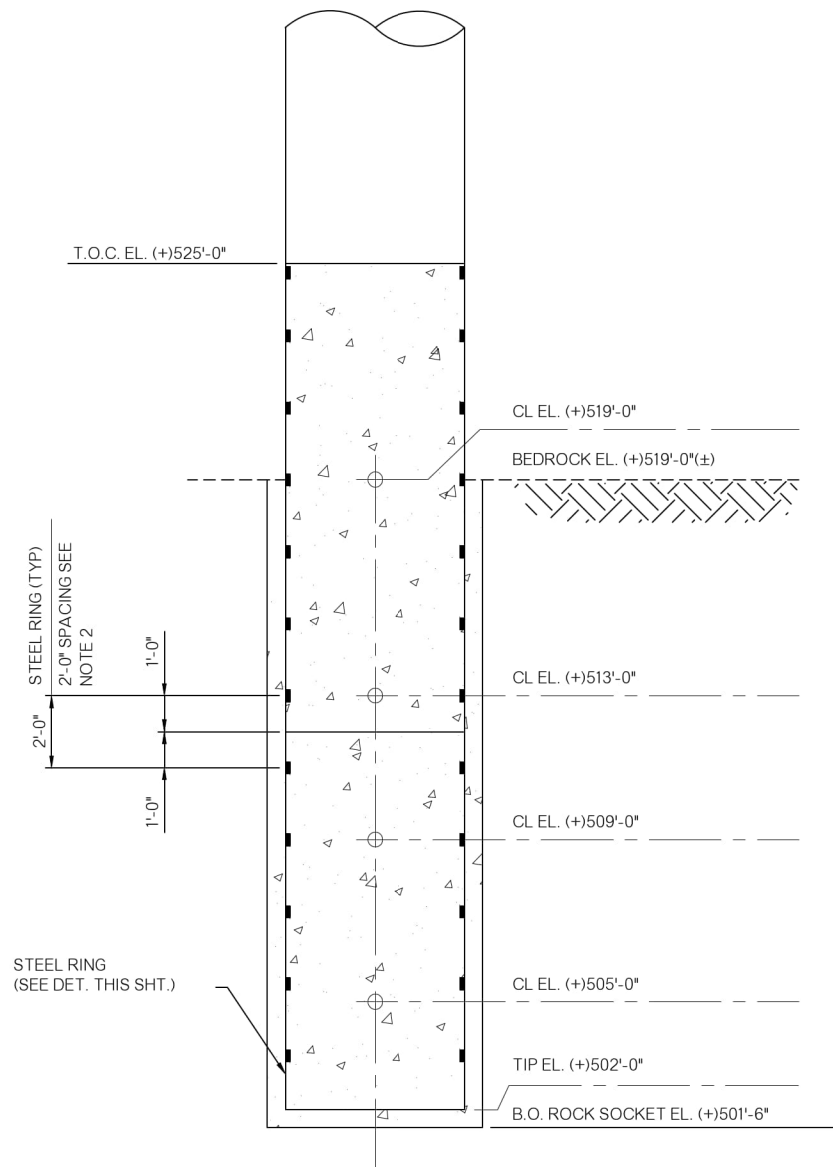
NOTES:

- HIGH WATER BASED ON 2019 YEAR FLOOD EVENT.
- STEEL RING TO BE INSTALLED INTERNALLY OF THE PILE FOR THE FULL EXTEND OF THE CONCRETE.
- VOID BETWEEN PILE AND ROCK TO BE FILLED WITH CONCRETE TO THE TOP OF THE BEDROCK AS SHOWN ON DRAWING.



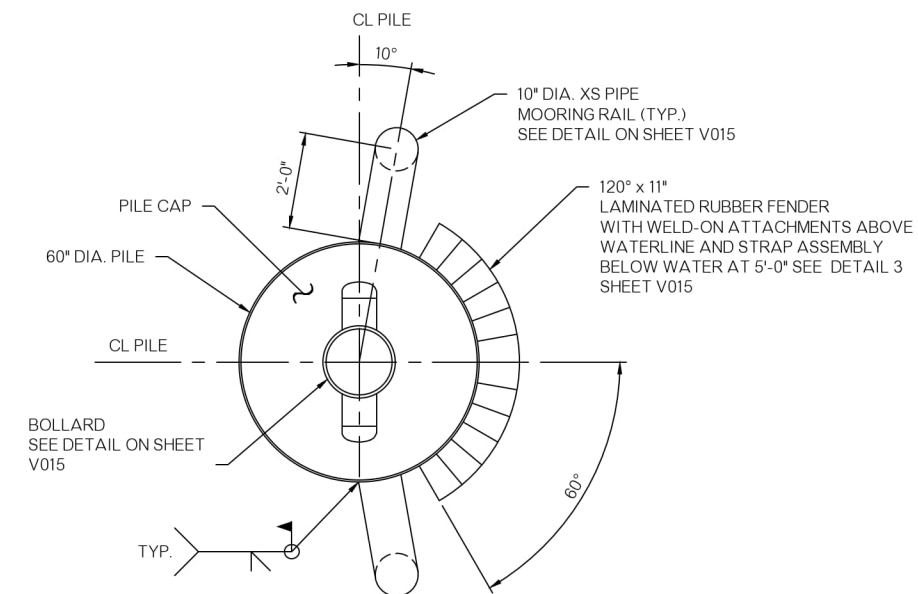
**PORT OF CATOOSA
MONOPILE ELEVATION**

SCALE: 3/16" = 1'-0"
(6 REQUIRED)



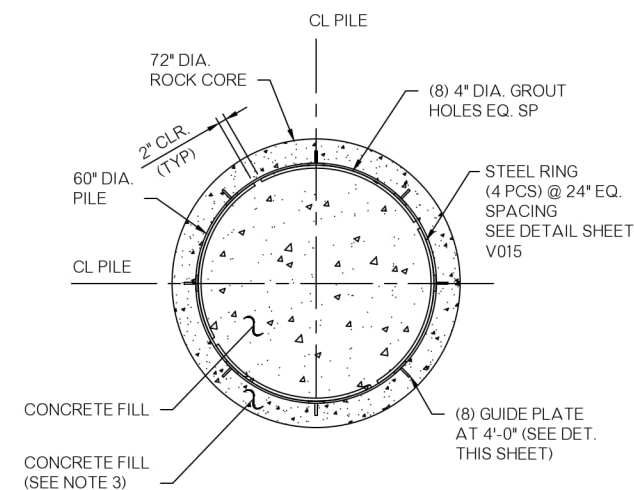
MONOPILE CONCRETE DETAIL

SCALE: 3/8" = 1'-0"
(6 REQUIRED)



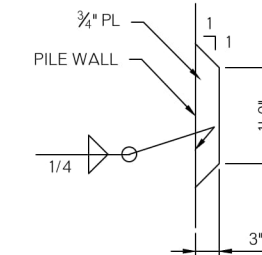
DOLPHIN PLAN

SCALE: 1/2" = 1'-0"



ROCK SOCKET PLAN

SCALE: 1/2" = 1'-0"

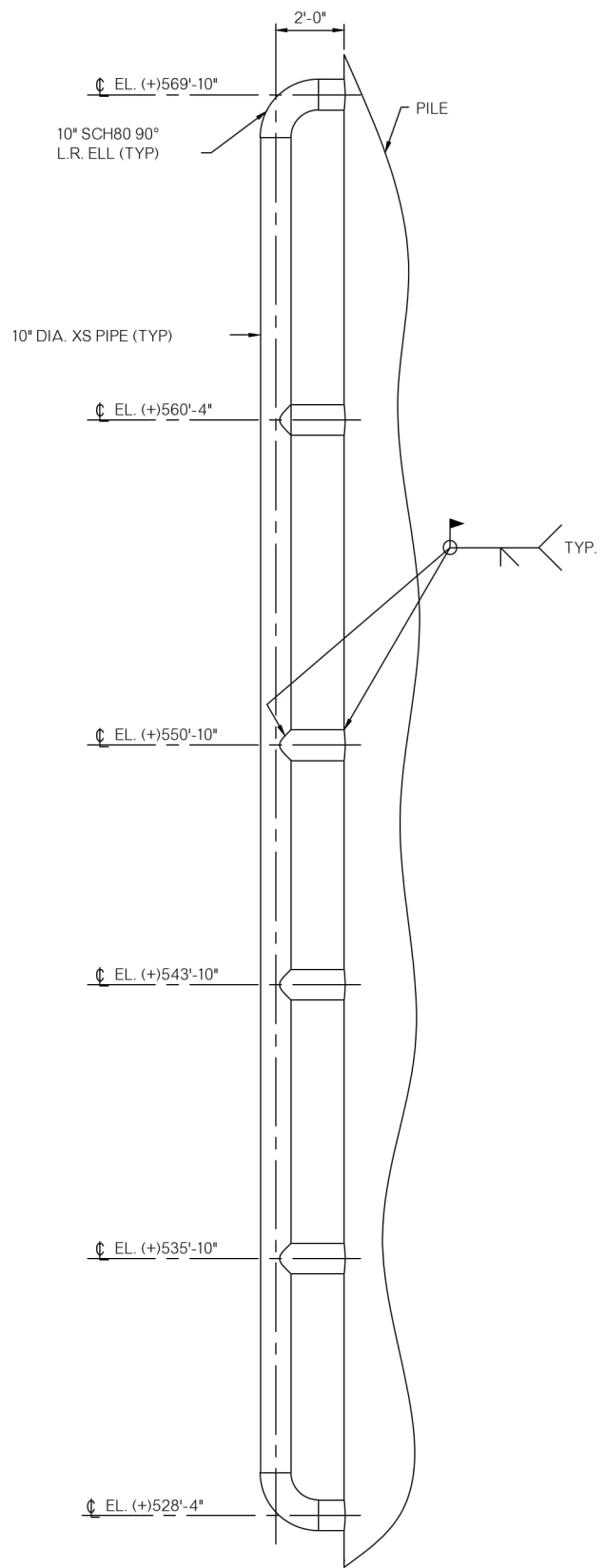


PILE GUIDE PLATE

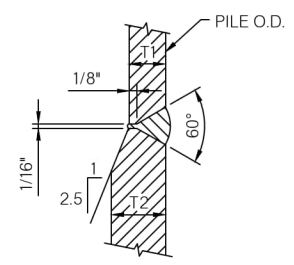
SCALE: 1" = 1'-0"

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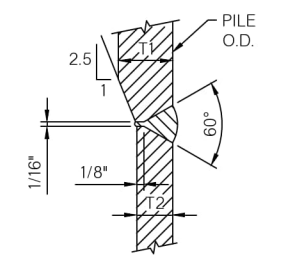
DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION PORT OF CATOOSA MONOPILE ELEVATION, PLANS & DETAILS
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY	ROGERS	HIGHWAY M&KARNS	STATE JOB NO. 35257(07) SHEET NO. V017



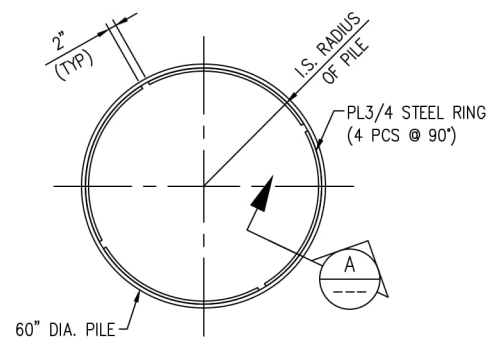
**PORT OF CATOOSA
MOORING RAIL DETAIL**
SCALE: 3/8" = 1'-0"



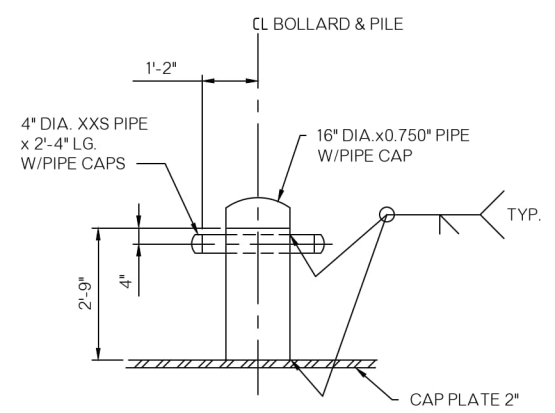
DETAIL 1
SCALE: N.T.S. V013



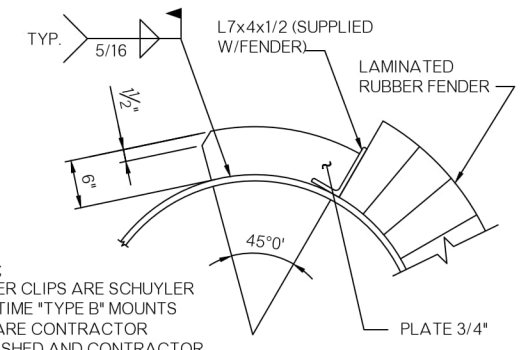
DETAIL 2
SCALE: N.T.S. V013



STEEL RING DETAIL
SCALE: 1/2" = 1'-0"

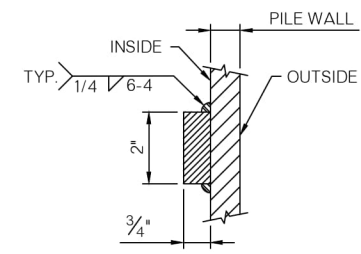


MOORING BOLLARD DETAIL
SCALE: 1/2" = 1'-0"



NOTE:
FENDER CLIPS ARE SCHUYLER MARITIME "TYPE B" MOUNTS AND ARE CONTRACTOR FURNISHED AND CONTRACTOR INSTALLED

DETAIL 3
SCALE: 1" = 1'-0" V013

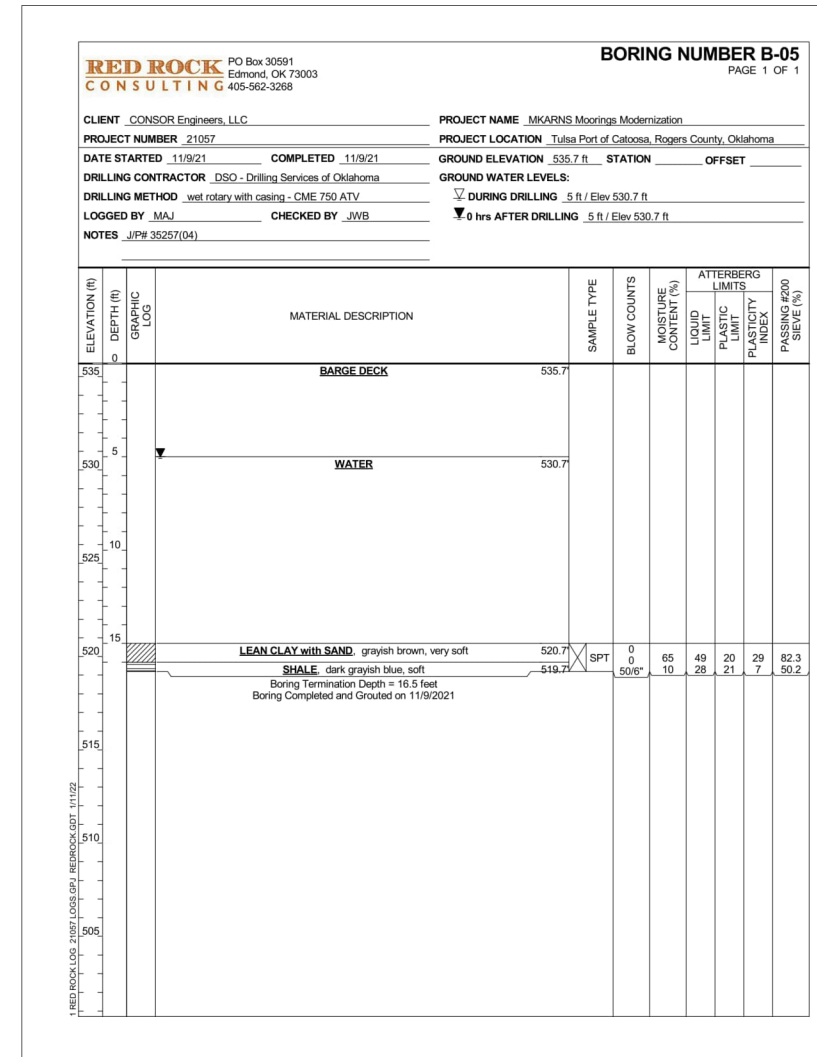
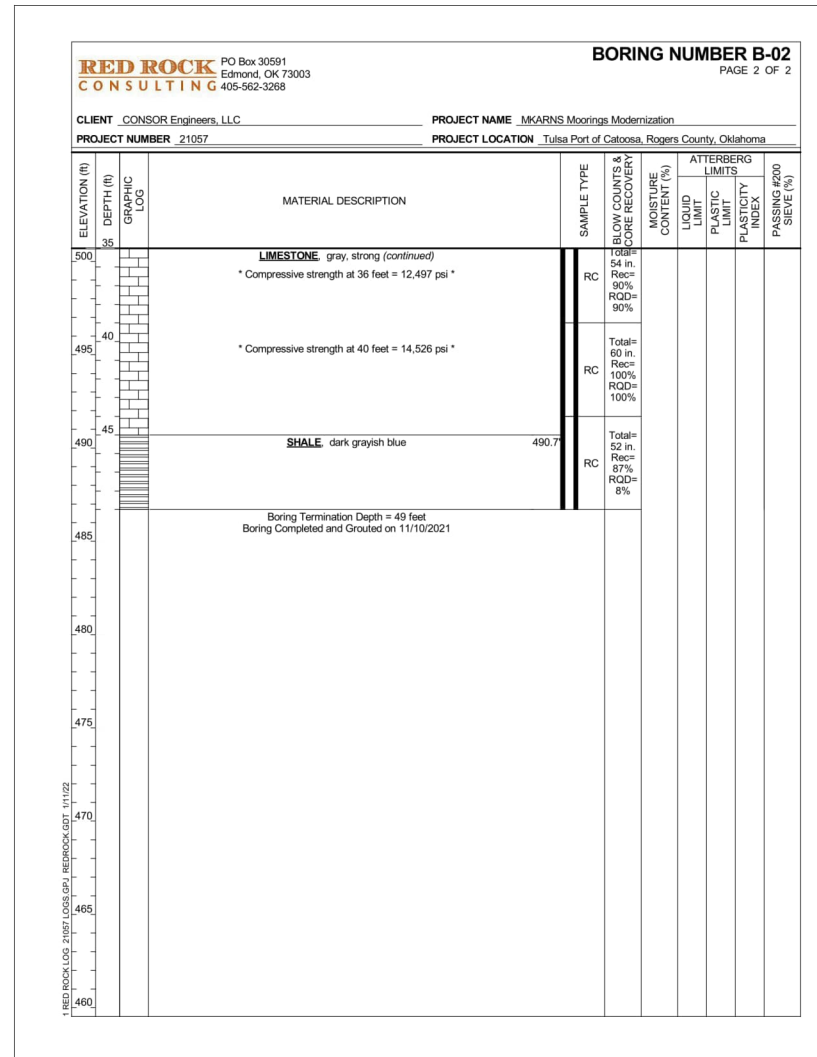
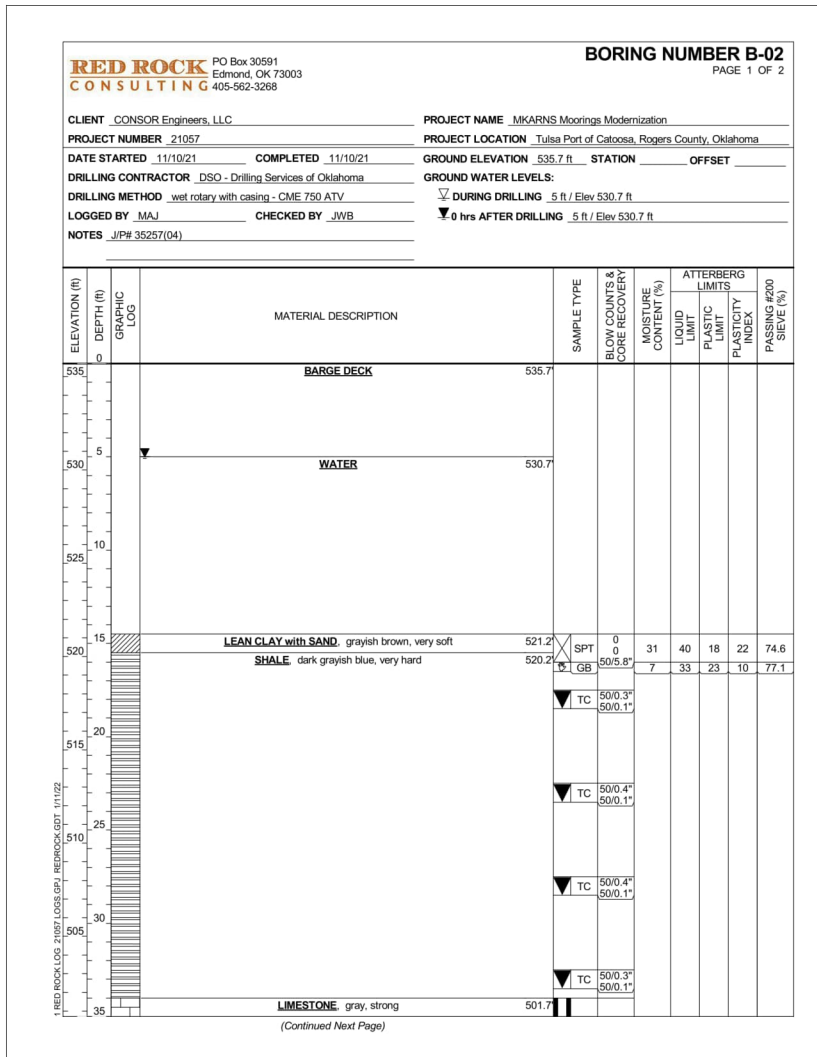


SECTION A
SCALE: N.T.S.

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DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY			ROGERS
HIGHWAY			MKARNS
STATE JOB NO.			35257(07)
SHEET NO.			V018

**PORT OF CATOOSA
MONOPILE DETAILS**



PORT OF CATOOSA
SOIL BORING INFORMATION

DESIGN	EMG	9-22	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	MEW	9-22	
CHECKED	EMG	9-22	
APPROVED	RRM	9-22	
SQUAD			
COUNTY	ROGERS	HIGHWAY MKARNS STATE JOB NO 35257(07) SHEET NO V019	

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