no.	date	by	ckd	description
A	01/15/21	MGS	BSC	65% SUBMITTAL
B	05/11/21	MGS	BSC	90% SUBMITTAL

2021 TOWBOAT DOCK REPLACEMENT

90% SUBMITTAL

MAY 11, 2021

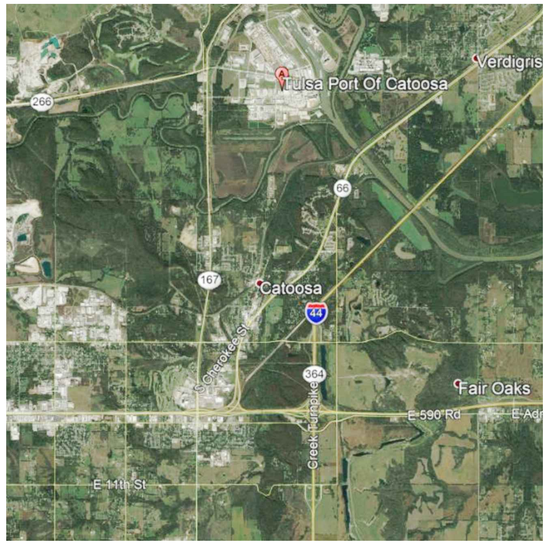
ALL CONSTRUCTION METHODS AND MATERIALS WILL CONFORM TO THE LATEST EDITION OF THE OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, OKLAHOMA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS AND SPECIFICATIONS DRAWINGS, OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY, AND ANY OTHER APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES, AND STATUTES.

TULSA PORTS

TULSA PORT OF CATOOSA

CITY OF TULSA-ROGERS COUNTY PORT AUTHORITY

5350 CIMARRON ROAD
CATOOSA, OK 74015



VICINITY MAP
SCALE: 1" = 5000'

SHEET INDEX	
SHEET	SHEET TITLE
CIVIL	
C-001	COVER SHEET
C-002	CIVIL GENERAL NOTES
C-003	CIVIL LEGEND AND ABBREVIATIONS
V-100	EXISTING CONDITIONS PLAN
CD100	DEMOLITION AND EROSION & SEDIMENT CONTROL PLAN
CS100	SITE AND UTILITY PLAN
CG100	GRADING PLAN
CG200	DOCK PROFILE
C-500	SITE DETAILS
C-501	SITE DETAILS
C-502	SITE DETAILS
C-510	EROSION & SEDIMENT CONTROL DETAILS
C-511	EROSION & SEDIMENT CONTROL DETAILS
C-512	EROSION & SEDIMENT CONTROL DETAILS
STRUCTURAL	
S-100	DOCK PLAN
S-101	DOCK DETAILS
S-102	TYPICAL PIPE PILE DETAILS
ELECTRICAL	
E-100	ELECTRICAL GENERAL NOTES
E-101	ELECTRICAL ONE-LINE & WIRING DIAGRAMS
E-102	ELECTRICAL & GROUNDING PLAN
E-103	SCHEDULES CABLE / PANELBOARD / LUMINAIRES
E-104	ELECTRICAL INSTALLATION DETAILS
E-105	ELECTRICAL INSTALLATION DETAILS

PROJECT MAP
SCALE: 1" = 1000'

NOT APPROVED FOR CONSTRUCTION

BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. 421

date	detailed
MAY 11, 2021	A. SANDOR
designed	checked
M. SARGENT	S. CHEWNING

TULSA PORTS
BARGE · RAIL · INDUSTRIAL PARK
CATOOSA·INOLA

CATOOSA, OKLAHOMA

2021 TOWBOAT DOCK REPLACEMENT
COVER SHEET

project	contract
125412	---

drawing **C-001** rev. **B**

sheet 1 of 23 sheets

file 125412-C-001-COVER.DWG

Michael A. Way
Civil

NOTES

GENERAL

1. IN ACCORDANCE WITH THE OKLAHOMA UNDERGROUND FACILITIES DAMAGE PREVENTION ACT, THE CONTRACTOR SHALL NOTIFY THE OKLAHOMA ONE-CALL SYSTEM, INC. 48 HOURS PRIOR TO THE BEGINNING EXCAVATION. OKLAHOMA ONE-CALL SYSTEM, INC. "CALL OKIE" 1-800-522-6543 OR 811.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
3. AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL FOLLOW DETAILS PROVIDED ON SHEET C-511.
4. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, WATERWAYS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
5. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
6. IT IS NOT ANTICIPATED FOR THIS PROJECT; HOWEVER, IN THE EVENT THAT CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, OLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
7. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
8. DAMAGE RESULTING FROM CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
9. CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE FOR REPAIRS RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
10. DUE TO THE ACTIVE NATURE OF THE RIVER, WATER LEVELS CAN FLUCTUATE 30 FT ±. CONTRACTOR TO PLAN WORK BASED ON WEATHER FORECASTS AND ANTICIPATED STAGE OF THE RIVER.
11. CONTRACTOR TO OBTAIN RELEASE FROM USACE PRIOR TO START OF WORK.

UTILITIES

1. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR IT'S REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THE UTILITIES, NOR DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES AND, SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
3. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELOCATION AND FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
4. UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE ON THE PLAN:
   A. WATER PIPES SHALL BE SCHEDULE 80 PVC.
5. MINIMUM COVER FOR UTILITIES SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE ON THE PLAN:
   A. WATER: 36 INCHES.
6. MINIMUM VERTICAL SEPARATION FOR UTILITIES SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE ON THE PLAN:
   A. WATER: 18 INCHES.

SITE PLAN

5. DIMENSIONS ARE FROM EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED.
6. ANY PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.
7. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE INLETS AND OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
8. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
9. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.

DEMOLITION

1. CONTRACTOR SHALL ONLY REMOVE AND DISPOSE OF EXISTING FEATURES INDICATED ON THE PLANS WITHIN THE LIMIT OF WORK.
2. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
3. THE DEMOLITION PLAN IS INTENDED TO AID THE CONTRACTOR DURING THE BIDDING AND CONSTRUCTION PROCESS AND IS NOT INTENDED TO DEPICT EACH AND EVERY ELEMENT OF DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THE DETAILED SCOPE OF DEMOLITION.
4. ENGINEER AND ITS CONSULTANTS SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE, INCLUDING BUT NOT LIMITED TO ASBESTOS, POLYCHLORINATED BIPHENYL (PCB), DIOXIN, ACID OR ALKALI CHEMICALS, LEAD PAINT, AIR POLLUTANTS, WATER POLLUTANTS, UNDERGROUND STORAGE TANKS OR OTHER DELETERIOUS MATERIALS. ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS OF LOSS, DAMAGE, EXPENSE, DELAY, INJURY OR DEATH ARISING FROM THE PRESENCE THEREOF OR EXPOSURE THERETO AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER AND ITS CONSULTANTS FROM ANY CLAIM MADE IN CONNECTION THEREWITH. MOREOVER, ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACT OR AMENDMENT THERE TO INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL OR ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS SUBSTANCES.

EROSION CONTROL

1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE AND LOCAL APPROVAL DOCUMENTS PERTAINING TO THIS PROJECT.
2. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT AND DISPOSE OF SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND OR DIRECT DEPOSIT.
4. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM TIME BEFORE THEY ARE COVERED, SEEDED OR OTHERWISE STABILIZED TO PREVENT EROSION.
5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF, LEGALLY PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.

EXISTING CONDITIONS INFORMATION

1. THE EXISTING CONDITIONS SHOWN ARE BASED ON A TOPOGRAPHIC SURVEY AND GIS INFORMATION PROVIDED BY THE PORT.

CONCRETE

1. ALL CONCRETE SHALL BE AIR ENTRAINED (4,000 PSI) IN ACCORDANCE WITH THE MOST RECENT VERSION OF OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS UNLESS OTHERWISE SPECIFIED.

DRAINAGE

1. TEMPORARY DRAINAGE DURING CONSTRUCTION SHALL BE PROVIDED BY THE CONTRACTOR TO RELIEVE AREAS THAT MAY CAUSE DAMAGE TO ROADWAYS OR EMBANKMENT AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.

OVERHEAD POWER SAFETY

1. CONTRACTOR SHALL VERIFY HEIGHT AND LOCATION OF ALL EXISTING OVERHEAD POWER LINES PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL WORK AT A SAFE DISTANCE FROM ALL POWER LINES THROUGHOUT THE DURATION OF CONSTRUCTION. PER OSHA 1926.1408 TABLE A, ALL EQUIPMENT SHALL MAINTAIN A MINIMUM CLEARANCE OF 10' FROM ALL POWER LINES WITH VOLTAGES UP TO 50KV. CRANES SHALL MAINTAIN A MINIMUM DISTANCE OF 20' FROM ALL POWER LINES.
3. CONTRACTOR SHALL MARK LOCATION OF ALL OVERHEAD POWER LINES WITH ADEQUATE, OWNER-APPROVED SIGNAGE. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO, GROUND SIGNAGE AND FLAGGING OF POWER LINES. CONTACT POWER COMPANY TO FLAG ALL POWER LINES AT CONSTRUCTION ENTRANCES AND EXITS.
4. ALL DUMP TRUCK OPERATORS SHALL BE RESPONSIBLE FOR VERIFYING THAT THE DUMP BUCKETS HAVE BEEN COMPLETELY LOWERED BEFORE PUTTING THE TRUCK IN GEAR.
5. ALL WORK WITHIN 20 FEET OF OVERHEAD POWER LINES SHALL NOT BE COMPLETED WITHOUT UTILIZING A DEDICATED SPOTTER.

Michael A. Way
Civil

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A	01/15/21	MGS	BSC	65% SUBMITTAL
B	05/11/21	MGS	BSC	90% SUBMITTAL

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BURNS McDONNELL
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KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. 421

date	detailed
MAY 11, 2021	A. SANDOR
designed	checked
M. SARGENT	S. CHEWNING

TULSA PORTS
BARGE · RAIL · INDUSTRIAL PARK
CATOOSA · INOLA

CATOOSA, OKLAHOMA

2021 TOWBOAT DOCK REPLACEMENT
CIVIL GENERAL NOTES

project	contract
125412	---

drawing **C-002** rev. **B**

sheet 2 of 23 sheets

file 125412-C-002-GENERAL.DWG

Scale For Microfilming
Millimeters
Inches

LEGEND

EXISTING		PROPOSED
	LIMITS OF CONSTRUCTION	
X X	FENCE	
	RAILROAD RIGHT-OF-WAY	
	RAILROAD TRACK	
	SIDEWALK	
524.64	SPOT ELEVATION	564.5± MG 564.5
	LIGHT	
	BOLLARD	
560	CONTOUR	560
	GRADING TIE-IN	
W	WATER LINE DOMESTIC	W
	STORM SEWER	
G	UNDERGROUND GAS	
	FLARED END SECTION	
	WATER VALVE	WV
WSPIG	WATER SPIGOT	
E	ELECTRICAL PEDESTAL	
	ELECTRICAL TRANSFORMER	
	MISC TRACK SWITCH	
V	GAS VENT	
	STORM DRAIN MANHOLE	
	STORM DRAIN INLET	

ABBREVIATIONS

APPROX	APPROXIMATE
BFE	BASE FLOOD ELEVATION
BW	BOTTOM OF WALL
CONC	CONCRETE
DATR	DATA ACCORDING TO RECORD
DIA	DIAMETER
E&S	EROSION AND SEDIMENT CONTROL
EL	ELEVATION
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EPED	ELECTRICAL PEDISTAL
EXIST	EXISTING
EQUIP	EQUIPMENT
FL	FLOW LINE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HOR	HORIZONTAL
HYD	HYDRANT
LOC	LIMIT OF CONSTRUCTION
LPF	LIGHT POLE FOUNDATION
MAX	MAXIMUM
MG	MATCH GRADE
MIN	MINIMUM
MISC	MISCELLANEOUS
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTER DIAMETER
ODOT	OKLAHOMA DEPARTMENT OF TRANSPORTATION
PROP	PROPOSED
PVC	POLYVINYLCHLORIDE PIPE
RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
SCH	SCHEDULE
STD	STANDARD
SWMH	STORMWATER MANHOLE
TG	TOP OF GRATE
TR	TOP OF RIM
TW	TOP OF WALL
TYP	TYPICAL
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
VER	VERTICAL
WSE	WATER SURFACE ELEVATION
WSPIG	WATER SPIGOT
WV	WATER VALVE
XFMR	TRANSFORMER

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BURNS McDONNELL

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date	detailed
MAY 11, 2021	A. SANDOR
designed	checked
M. SARGENT	S. CHEWNING

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CATOOSA-INOLA

CATOOSA, OKLAHOMA

2021 TOWBOAT DOCK REPLACEMENT
CIVIL LEGEND AND ABBREVIATIONS

project	contract
125412	---

drawing **C-003** – rev. **B**

sheet 3 of 23 sheets

file 125412-C-002-GENERAL.DWG

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Civil

Scale For Microfilming
Millimeters
Inches

Scale For Microfilming
Millimeters
Inches

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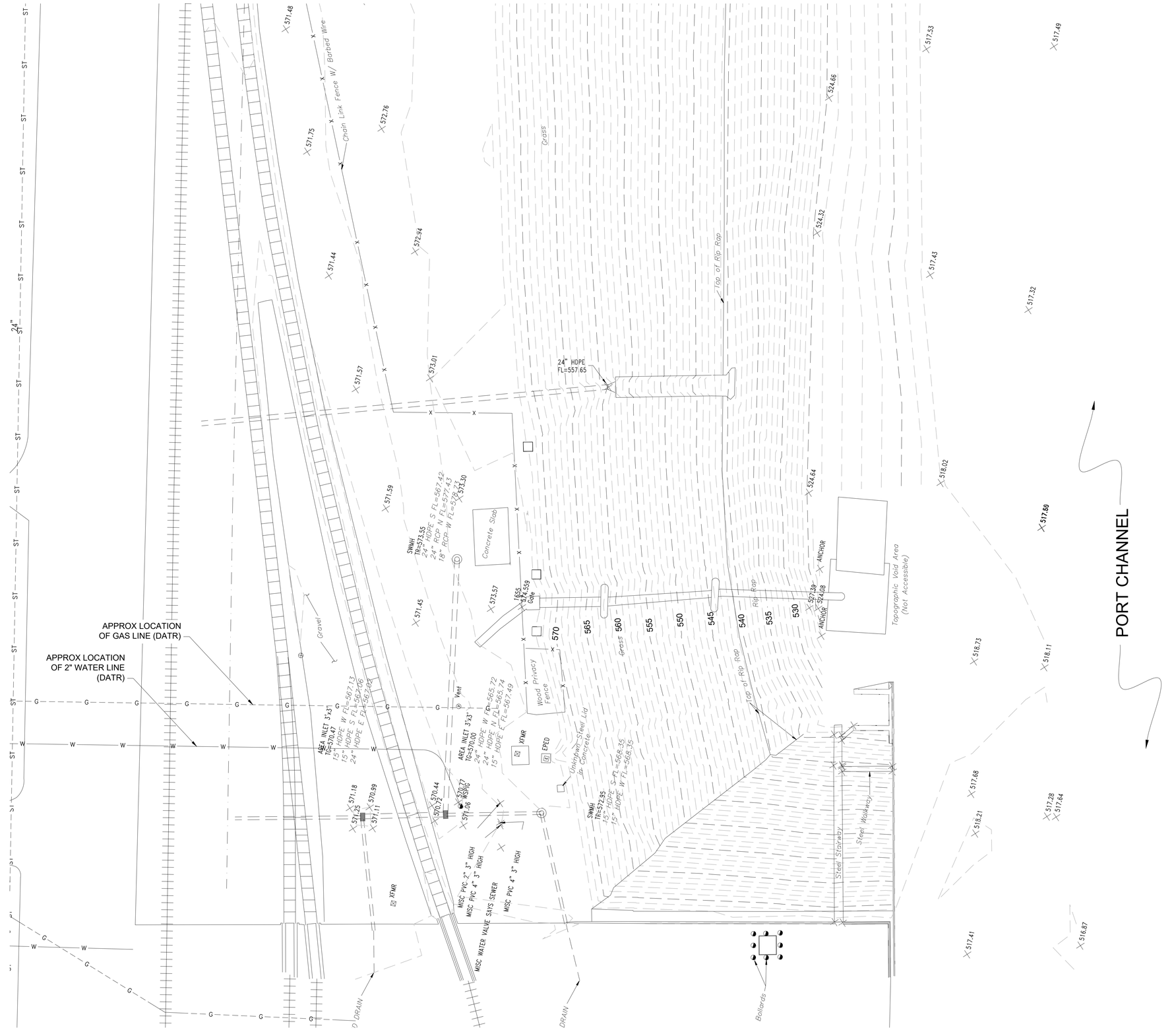

EXISTING CONDITIONS PLAN
SCALE: 1" = 20'

0 10' 20' 40'
SCALE IN FEET

N

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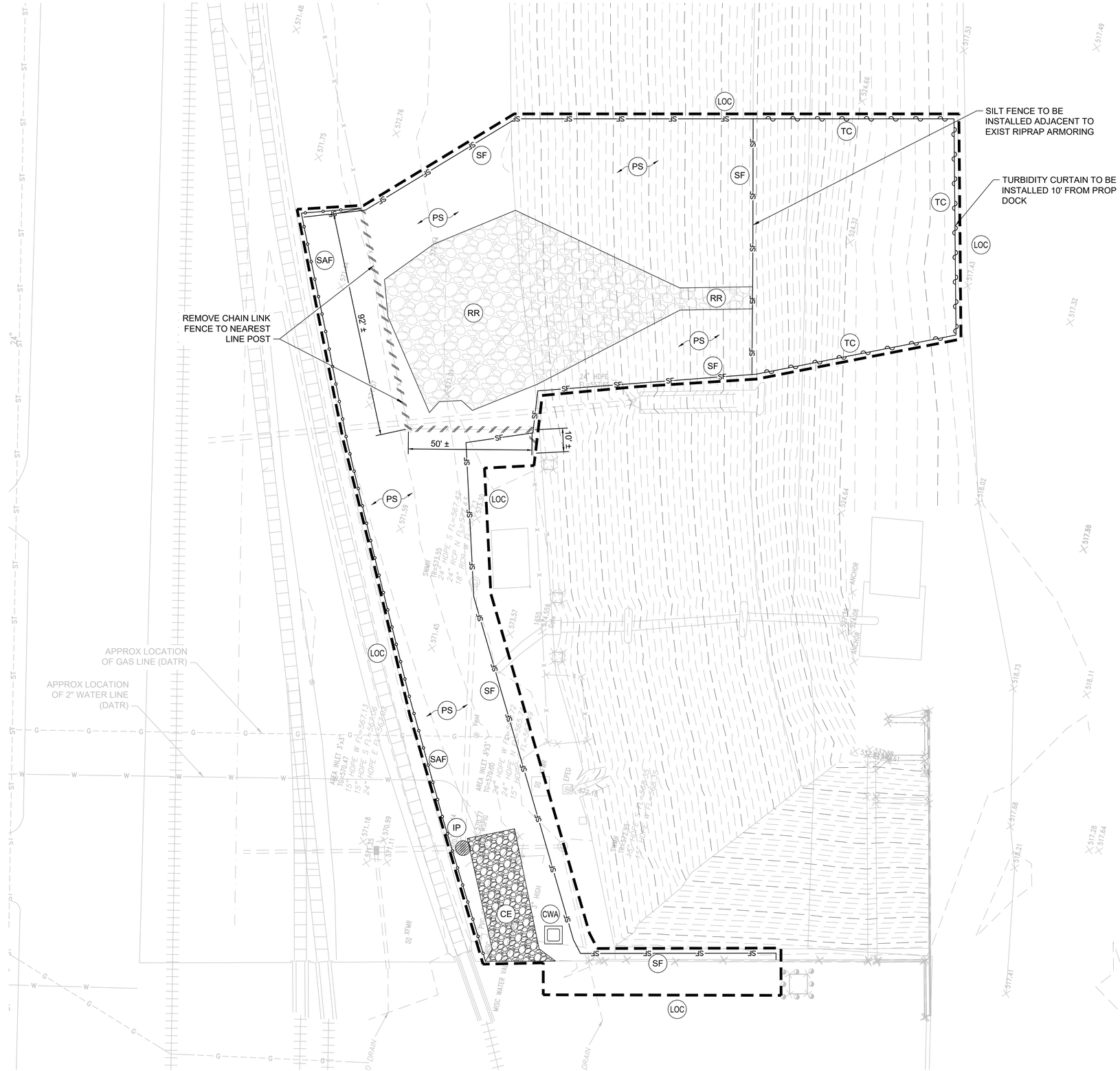
2021 TOWBOAT DOCK REPLACEMENT
EXISTING CONDITIONS PLAN

project	contract
125412	---

drawing **V-100** rev. **B**

sheet 4 of 23 sheets

file 125412-V-100-EX CONDITIONS.DWG



DEMOLITION AND EROSION & SEDIMENT CONTROL PLAN

SCALE: 1" = 20'

0 10' 20' 40'

SCALE IN FEET

N

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Civil

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DEMOLITION LEGEND

FENCE TO BE REMOVED

EROSION AND SEDIMENT CONTROL LEGEND

TITLE	KEY	SYMBOL
SAFETY FENCE	SAF	
SILT FENCE	SF	
TEMPORARY STONE CONSTRUCTION ENTRANCE	CE	
STORM DRAIN INLET PROTECTION	IP	
RIPRAP	RR	
PERMANENT SEEDING	PS	
TURBIDITY CURTAIN	TC	
CONCRETE WASH AREA	CWA	
LIMITS OF CONSTRUCTION	LOC	

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2021 TOWBOAT DOCK REPLACEMENT

DEMOLITION AND EROSION & SEDIMENT CONTROL PLAN

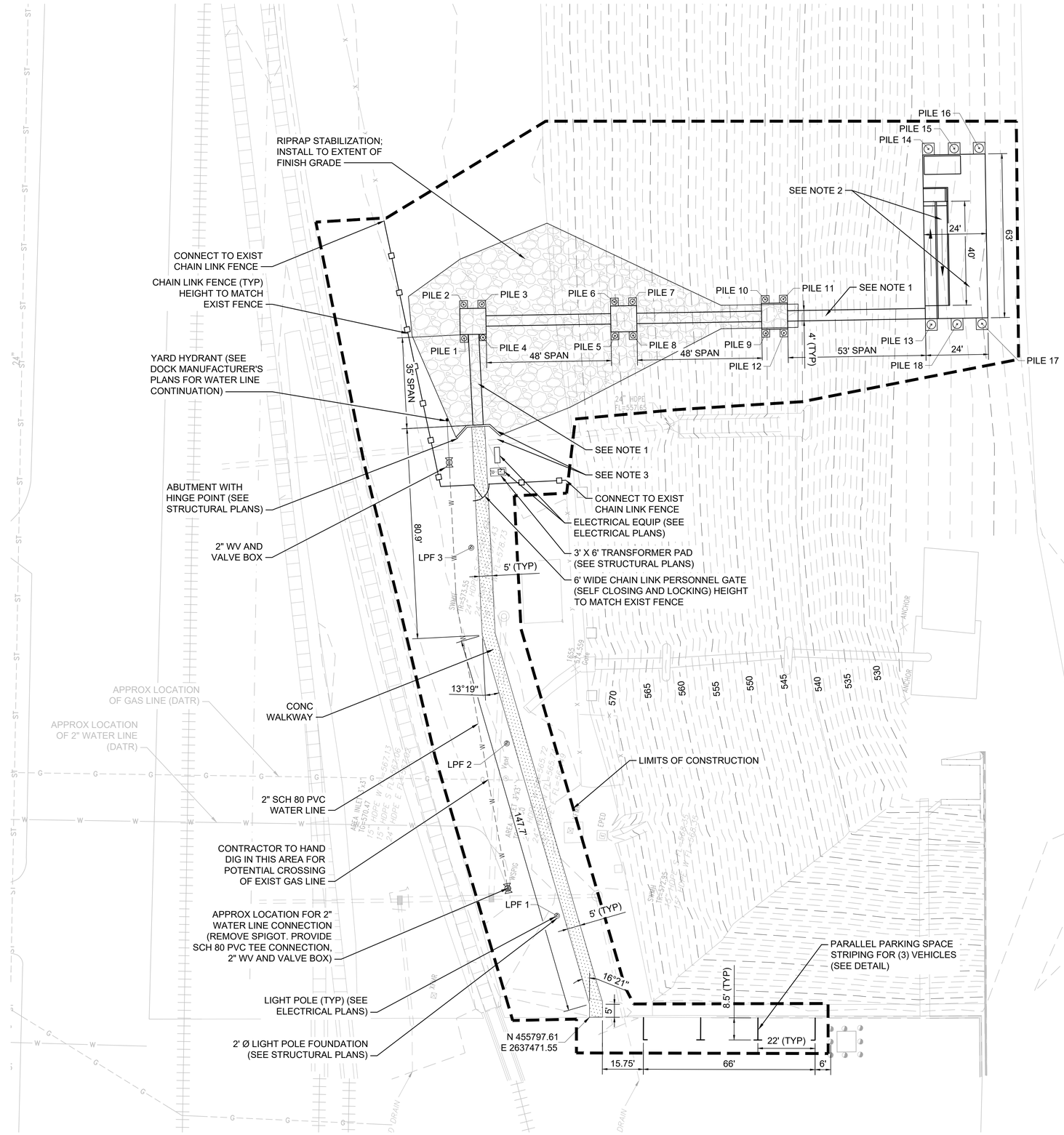
project	contract
125412	---

drawing **CD100** – rev. **B**

sheet 5 of 23 sheets

file 125412-CE100-DEMO AND E&S PLAN.DWG

Scale For Microfilming
Millimeters
Inches



SITE AND UTILITY PLAN
SCALE: 1" = 20'

0 10' 20' 40'
SCALE IN FEET

Michael A. Way
Civil

Millimeters
Inches
Scale For Microfilming

COORDINATE TABLE

NUMBER	NORTHING	EASTING
LPF 1	455833.28	2637451.37
LPF 2	455894.21	2637418.98
LPF 3	455965.07	2637390.22
PILE 1	456043.28	2637371.10
PILE 2	456055.96	2637368.23
PILE 3	456057.51	2637375.06
PILE 4	456045.13	2637378.12
PILE 5	456056.09	2637427.62
PILE 6	456068.77	2637424.75
PILE 7	456070.32	2637431.58
PILE 8	456057.64	2637434.44
PILE 9	456068.90	2637484.14
PILE 10	456081.58	2637481.27
PILE 11	456083.12	2637488.10
PILE 12	456070.44	2637490.96
PILE 13	456085.17	2637545.77
PILE 14	456151.01	2637530.88
PILE 15	456153.19	2637540.55
PILE 16	456155.31	2637549.90
PILE 17	456089.47	2637564.79
PILE 18	456087.36	2637555.44

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GENERAL NOTES

1. DOCK GANGWAY SLOPED AT 6:1 SLOPE FROM EL 572.5 TO EL 534.0. BRIDGE SECTIONS ARE INTENDED TO ARTICULATE BETWEEN FLOATING DOCKS TO ADAPT TO VARYING CHANGES IN WATER ELEVATION CONDITIONS. SEE DOCK MANUFACTURER'S PLANS FOR EXACT DIMENSIONS AND DETAILS.
2. APPROXIMATE DOCK LOCATION AND LAYOUT SHOWN WITH (2) 40' RAMP SECTIONS. SEE DOCK MANUFACTURER'S PLANS FOR EXACT DIMENSIONS AND DETAILS.
3. CONTRACTOR TO CONFIRM NO CONFLICT BETWEEN EXISTING STORM PIPE AND/OR EXISTING STRUCTURE AND PROPOSED ABUTMENT FOUNDATION PRIOR TO START OF WORK. IF NECESSARY, SHIFT PROPOSED DOCK IMPROVEMENTS TO AVOID CONFLICT. COORDINATE WITH OWNER AND OWNER'S REPRESENTATIVE ON FINAL LOCATION.
4. HAND EXCAVATE WITHIN TWO FEET OF EXISTING UTILITIES.

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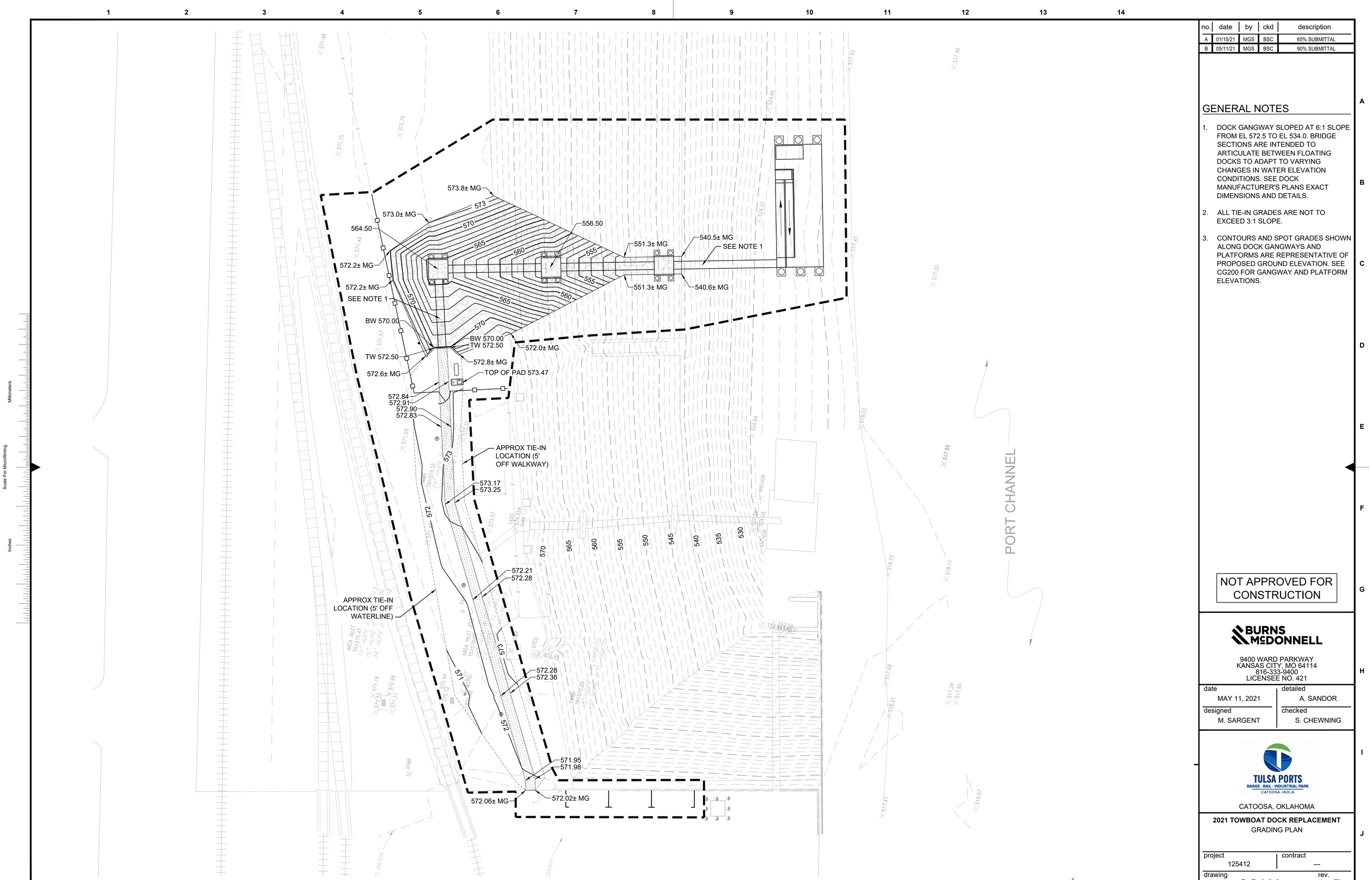
CATOOSA, OKLAHOMA

2021 TOWBOAT DOCK REPLACEMENT
SITE AND UTILITY PLAN

project	contract
125412	---
drawing	rev.
CS100	B

sheet 6 of 23 sheets
file 125412-CS100-SITE & UTILITY PLAN.DWG



GRADING PLAN
SCALE: 1" = 20'

0 10' 20' 40'
SCALE IN FEET

Michael A. Way
Civil

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GENERAL NOTES

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2. ALL TIE-IN GRADES ARE NOT TO EXCEED 3:1 SLOPE.
3. CONTOURS AND SPOT GRADES SHOWN ALONG DOCK GANGWAYS AND PLATFORMS ARE REPRESENTATIVE OF PROPOSED GROUND ELEVATION. SEE CG200 FOR GANGWAY AND PLATFORM ELEVATIONS.

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2021 TOWBOAT DOCK REPLACEMENT
GRADING PLAN

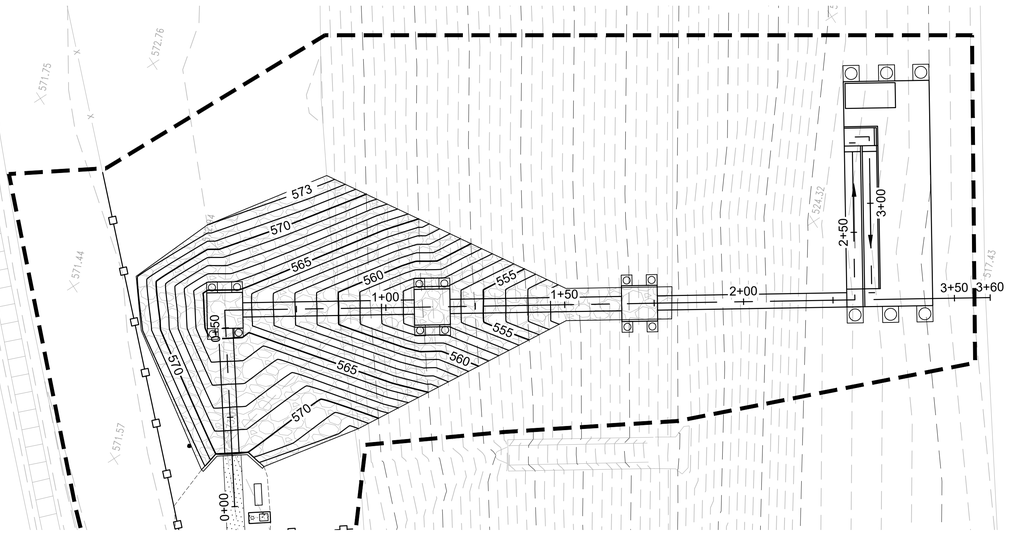
project	contract
125412	---

drawing **CG100** rev. **B**

sheet 7 of 23 sheets

file 125412-CG100-GRADING PLAN.DWG

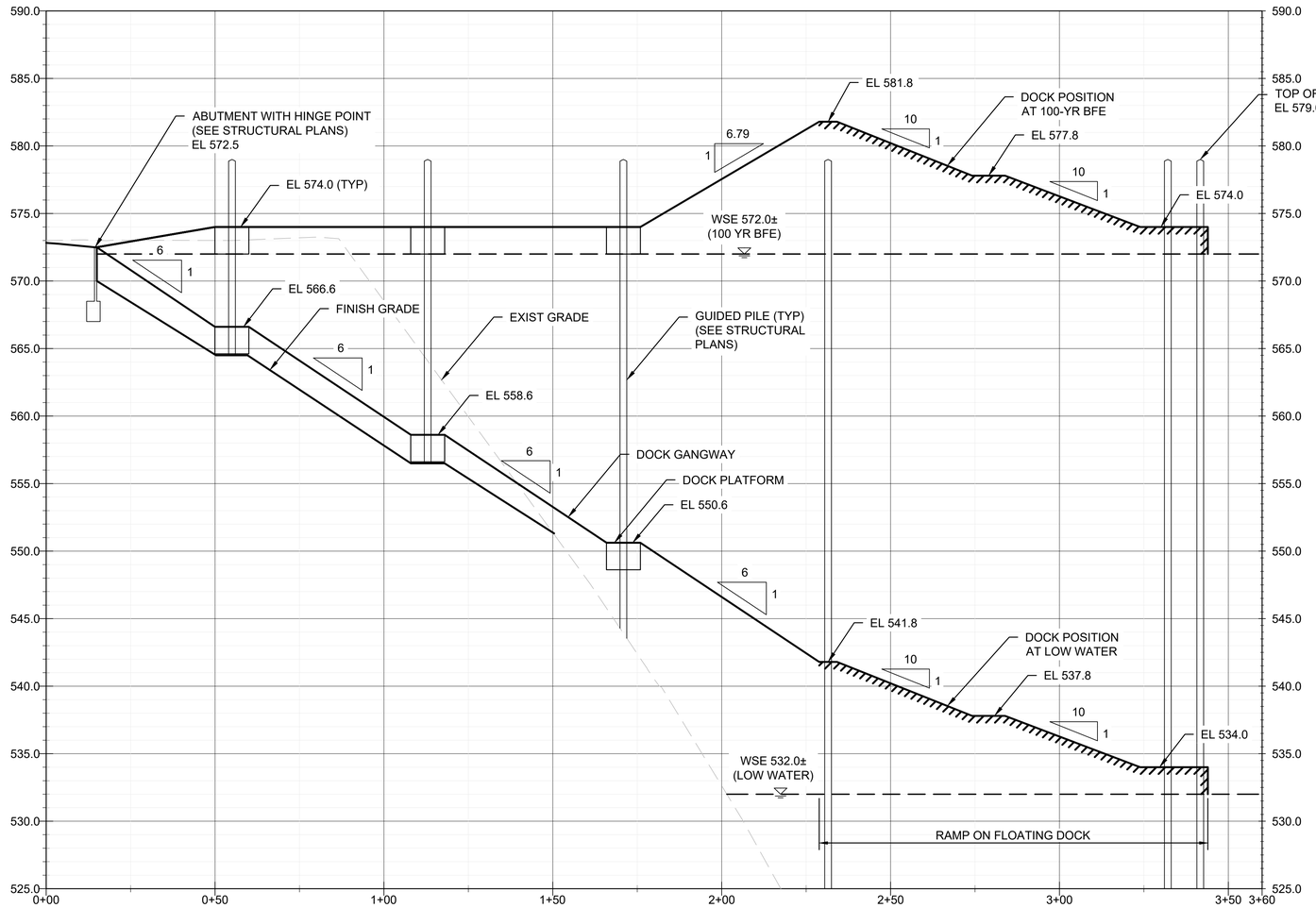
Scale For Microfilming
Millimeters
Inches



DOCK ALIGNMENT

SCALE: 1" = 20'

0 10' 20' 40'
SCALE IN FEET



DOCK PROFILE

HOR. SCALE: 1" = 20'
VER. SCALE: 1" = 5'

0 10' 20' 40'
HORIZONTAL SCALE IN FEET

0 2.5' 5' 10'
VERTICAL SCALE IN FEET

Michael A. Way
Civil

no.	date	by	ckd	description
A	01/15/21	MGS	BSC	65% SUBMITTAL
B	05/11/21	MGS	BSC	90% SUBMITTAL

NOT APPROVED FOR CONSTRUCTION

BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. 421

date	detailed
MAY 11, 2021	A. SANDOR
designed	checked
M. SARGENT	S. CHEWNING

TULSA PORTS
BARGE · RAIL · INDUSTRIAL PARK
CATOOSA-INOLA

CATOOSA, OKLAHOMA

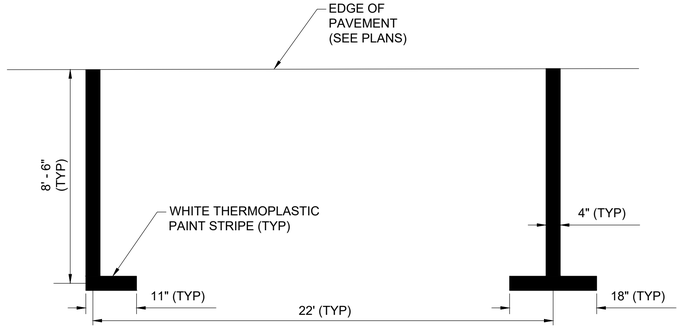
2021 TOWBOAT DOCK REPLACEMENT
DOCK PROFILE

project	contract
125412	---

drawing **CG200** rev. **B**

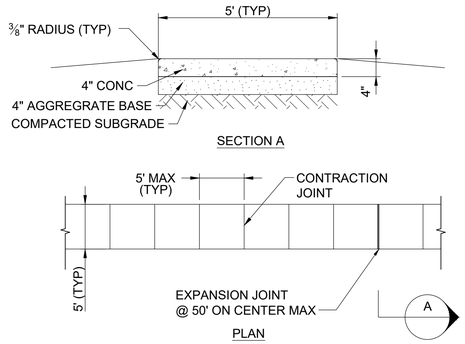
sheet 8 of 23 sheets
file 125412-CG100-GRADING PLAN.DWG

Millimeters
Scale For Microfilming
Inches



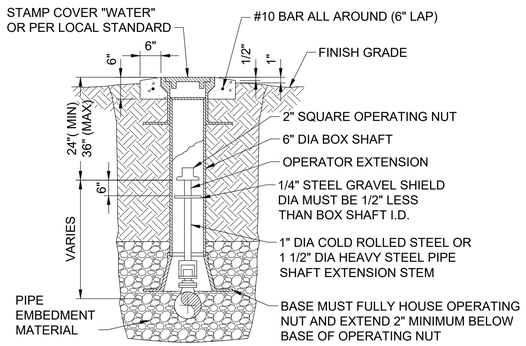
PARALLEL PARKING SPACE STRIPING

NOT TO SCALE



CONCRETE WALKWAY

NOT TO SCALE

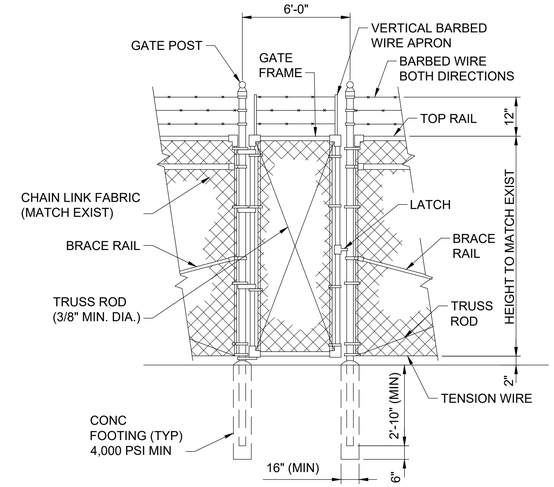


NOTES:

1. VALVE BOX COVERS LOCATED IN PAVED AREAS MUST BE H-20 TRAFFIC RATED AND MUST BE INSTALLED FLUSH WITH FINISH GRADE.
2. VALVE BOX MAY NOT REST ON OPERATING ASSEMBLY.
3. CONCRETE COLLAR MAY BE LOWERED ON RISER ASSEMBLY TO ACCOMMODATE SPECIAL FINISH GRADING.
4. PAINT VALVE BOX WITH HEAVY COAT OF BITUMINOUS PAINT.
5. INSTALL A CORROSIVE RESISTANT DEBRIS CAP TO PREVENT DEBRIS FROM PASSING AROUND THE CAP AND DOWN INTO THE VALVE HOUSING. HOLD THE CAP IN PLACE BY A MECHANISM WHICH WILL NOT DAMAGE THE VALVE HOUSING. CONSTRUCT THE CAP TO ALLOW THE DEVICE TO BE SECURED BY A LOCK. HANDLE AND BODY OF THE CAP MUST BE INTEGRALLY COLORED AS REQUIRED BY LOCAL STANDARDS.

WATER VALVE BOX

NOT TO SCALE

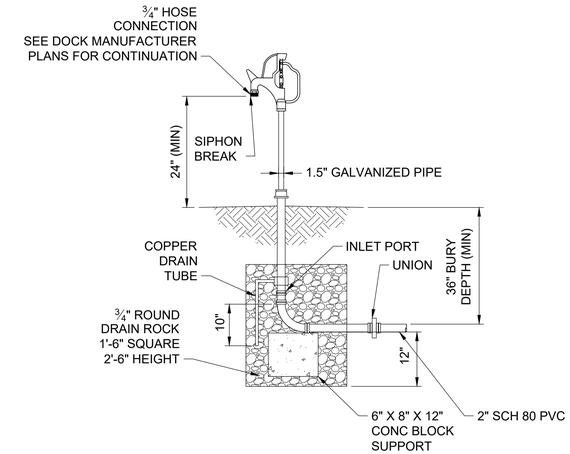


NOTES:

1. SEE ADDITIONAL DETAILS ON SHEET C-501, PERTAINING TO POST, SUPPORTS, HARDWARE, FABRIC AND FOOTINGS.
2. CONTRACTOR SHALL PROVIDE PRODUCT DATA AND SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO ORDERING.
3. NEW FENCE MATERIALS TO MATCH EXISTING FENCE MATERIALS.

CHAIN LINK PERSONNEL GATE

NOT TO SCALE



NOTES:

1. WHERE A CONCRETE PAD IS REQUIRED, PROVIDE A PAD 4" (MIN) THICK X 24" SQUARE (MIN).
2. CONTRACTOR SHALL PROVIDE PRODUCT DATA FOR REVIEW AND APPROVAL PRIOR TO ORDERING.

YARD HYDRANT

NOT TO SCALE

no.	date	by	ckd	description
A	01/15/21	MGS	BSC	65% SUBMITTAL
B	05/11/21	MGS	BSC	90% SUBMITTAL

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CATOOSA, OKLAHOMA

2021 TOWBOAT DOCK REPLACEMENT

SITE DETAILS

project	contract
125412	---

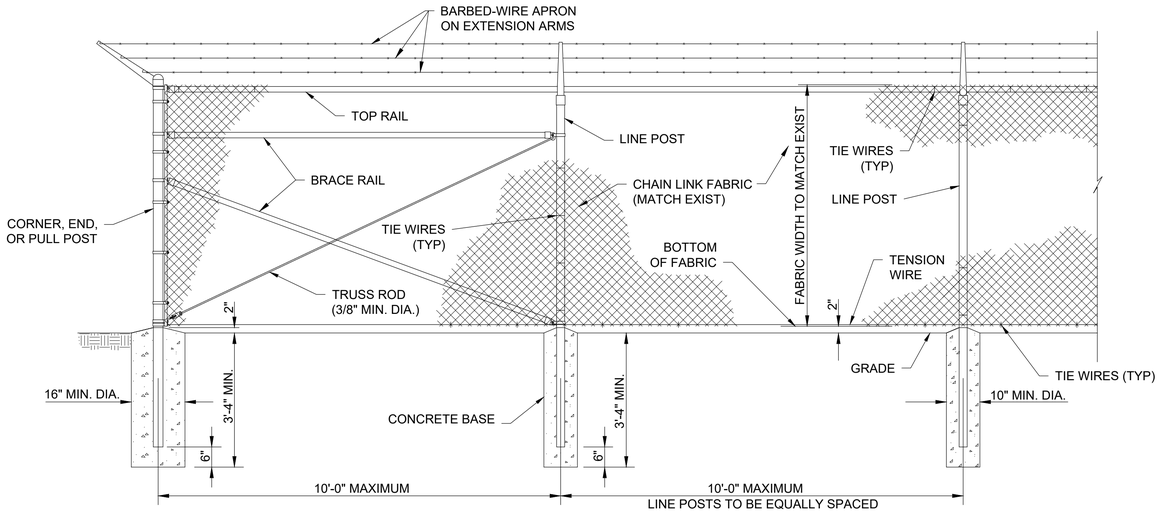
drawing C-500 – rev. B

sheet 9 of 23 sheets

file 125412-C-500-SITE DETAILS.DWG

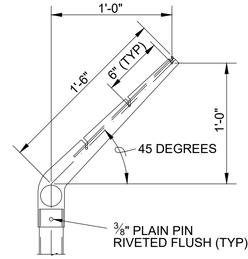
Michael A. Way
Civil

Scale For Microfilming
Millimeters
Inches

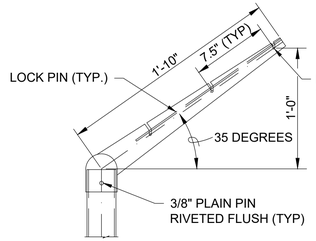


FE6 CHAIN-LINK SECURITY FENCE ELEVATION

NO SCALE



LINE POST

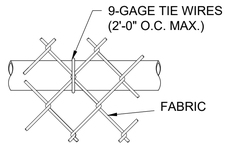


CORNER POST

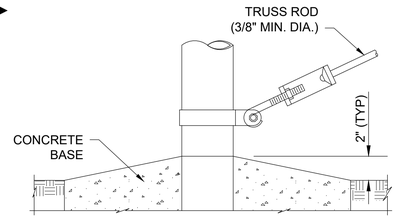
EXTENSION ARM DETAILS

NO SCALE

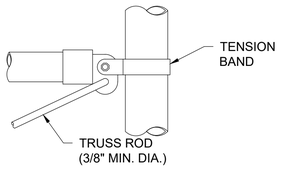
STEEL POST SCHEDULE	
USE AND SECTION	MIN. OD (NOMINAL) FABRIC 72" TO 96"
CORNER, GATE, END & PULL POSTS	
TUBULAR - ROUND	2.875" O.D.
TUBULAR - SQUARE	2.50" SQ.
C-SECTION (ROLL-FORMED)	3.50" x 3.50"
LINE POSTS	
TUBULAR - ROUND	2.375" O.D.
H-SECTION	2.25" x 1.70"
C-SECTION (ROLL-FORMED)	2.25" x 1.70"
TOP, BOTTOM & BRACE RAILS	
TUBULAR - ROUND	1.66" O.D.
TUBULAR - SQUARE	1.50" O.D.
H-SECTION	1.625" x 1.50"
C-SECTION (ROLL-FORMED)	1.625" x 1.25"



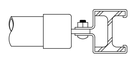
TOP OR BRACE RAIL ATTACHMENT



TRUSS ROD AND BAND

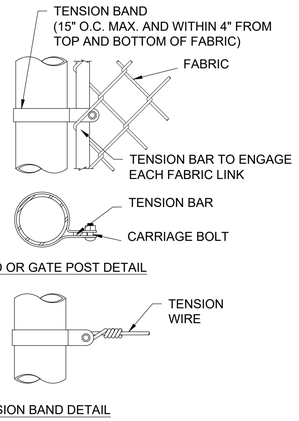


ROUND POST



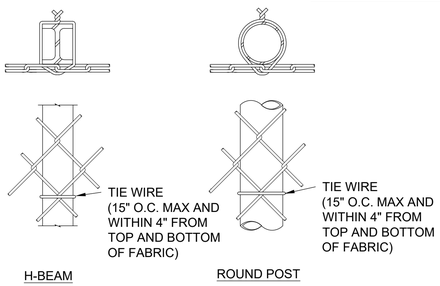
H-BEAM

BRACE RAIL CLAMP DETAILS



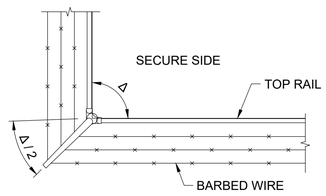
END OR GATE POST DETAIL

TENSION BAND DETAIL

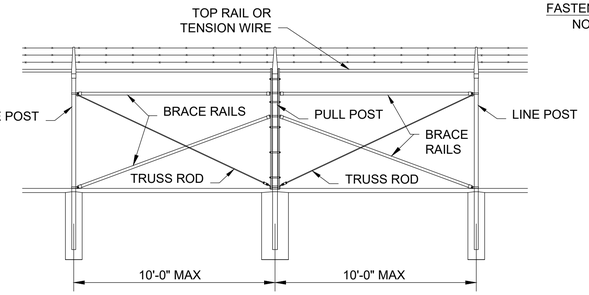


H-BEAM ROUND POST

LINE POST ATTACHMENTS



SECURITY FENCE - CORNER PLAN



BRACE PANEL DETAIL

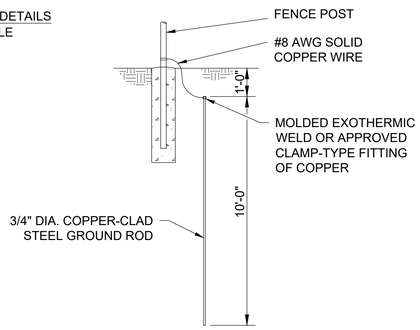
NO SCALE

NOTE:

1. PROVIDE BRACE PANEL WHENEVER STRAIGHT RUNS EXCEED 500 FEET.

FASTENING DETAILS

NO SCALE



GROUNDING DETAIL

NO SCALE

NOTES:

1. DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT METHOD OF INSTALLATION TO ONE MANUFACTURER.
2. CONSTRUCT WIRE TIES, RAILS, POSTS, AND BRACES ON THE SECURE SIDE OF THE FENCE ALIGNMENT. PLACE CHAIN-LINK FABRIC ON THE OPPOSITE SIDE OF THE SECURE AREA.
3. UNLESS OTHERWISE SHOWN OR SPECIFIED, ALL FENCING MUST HAVE APRON EXTENDED OUTWARD FROM THE AREA BEING PROTECTED.
4. INSTALL C-SECTION POSTS SO THAT THE VOID INSIDE THE POST IS COMPLETELY FILLED WITH CONCRETE UP TO THE TOP OF THE FOUNDATION.
5. NEW FENCE MATERIALS TO MATCH EXISTING FENCE MATERIALS.

CHAIN LINK FENCE

NOT TO SCALE

no.	date	by	ckd	description
A	01/15/21	MGS	BSC	65% SUBMITTAL
B	05/11/21	MGS	BSC	90% SUBMITTAL

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2021 TOWBOAT DOCK REPLACEMENT

SITE DETAILS

project	contract
125412	---

drawing **C-501** — rev. **B**

sheet 10 of 23 sheets

file 125412-C-500-SITE DETAILS.DWG

Michael A. Way
Civil

Millimeters
Inches
Scale For Microfilming

no.	date	by	ckd	description
A	01/15/21	MGS	BSC	65% SUBMITTAL
B	05/11/21	MGS	BSC	90% SUBMITTAL

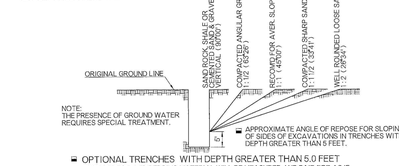
TRENCHING DIMENSIONS AND STANDARD BEDDING MATERIAL QUANTITIES

PIPE DIAM. OR DESIGN EQUIV.		H ■	T	SINGLE PIPE STANDARD TRENCHING W	STANDARD BEDDING MATERIAL ■	DOUBLE PIPE STANDARD TRENCHING W	STANDARD BEDDING MATERIAL ■	TRIPLE PIPE STANDARD TRENCHING W	STANDARD BEDDING MATERIAL ■	SPECIAL TRENCHING SINGLE, DOUBLE & TRIPLE PIPE OPTIONS W+2'	ADDL STANDARD BEDDING MATERIAL
	IN.	FT.	FT.	FT.	CY/LF	FT.	CY/LF	FT.	CY/LF	FT.	CY/LF
CIRCULAR PIPE	18	3.25	0.208	3.17	0.274	5.67	0.466	8.17	0.663		0.120
	24	3.83	0.25	4.00	0.386	7.00	0.629	10.00	0.873		0.142
	30	4.42	0.292	4.58	0.474	8.33	0.811	12.08	1.146		0.163
	36		0.333	6.17	0.751	10.67	1.193	15.17	1.636		0.185
	42	5.58	0.375	6.75	0.870	12.00	1.429	17.25	1.989		0.207
	48	6.17	0.417	7.33	0.996	13.33	1.668	19.33	2.379		0.228
	54	6.75	0.458	7.92	1.126	14.67	1.960	21.42	2.794		0.250
	60	7.33	0.5	9.50	1.532	17.00	2.521	24.50	3.510		0.271
	66	8.08	0.542	10.08	1.757	18.33	2.965	26.58	4.173		0.299
	72	8.67	0.583	10.67	1.931	19.67	3.327	28.67	4.724		0.321
	78	9.25	0.625	11.25	2.107	20.75	3.615	30.25	5.122		0.343
	84	9.83	0.667	11.83	2.288	21.83	3.908	31.83	5.529		0.364
	90	10.42	0.708	12.42	2.478	22.92	4.219	33.42	5.969		0.386
	96	11	0.75	13.00	2.671	24.00	4.527	35.00	6.383		0.407
ARCH PIPE	18	2.88	0.208	3.50	0.271	6.33	0.471	9.17	0.671		0.106
	21	3.06	0.229	4.12	0.338	7.29	0.567	10.46	0.796		0.114
	24	3.33	0.250	4.38	0.374	7.75	0.624	11.13	0.874		0.123
	30	3.79	0.291	6.10	0.603	10.13	0.916	14.16	1.227		0.140
	36	4.20	0.333	6.81	0.700	11.67	1.097	16.53	1.493		0.156
	42	4.69	0.375	7.50	0.813	13.17	1.308	18.83	1.802		0.173
	48	5.17	0.416	9.21	1.186	15.71	1.842	22.21	2.504		0.191
	54	5.58	0.458	9.83	1.243	17.05	1.946	24.28	2.649		0.207
	60	6.08	0.500	10.58	1.392	18.69	2.228	26.81	3.064		0.225
	66	6.75	0.542	11.00	1.488	19.56	2.365	28.11	3.242		0.250
	72	7.00	0.583	12.00	1.690	21.79	2.803	31.58	3.917		0.259
	78	7.83	0.625	12.42	1.854	22.64	3.071	32.86	4.288		0.272
	84	7.83	0.667	13.33	1.983	24.61	3.365	36.02	4.788		0.290
	90	8.92	0.708	14.50	2.382	27.06	4.131	39.67	5.881		0.330
	96	9.46	0.750	15.17	2.625	28.33	4.549	41.50	6.473		0.350
HORIZONTAL ELLIPTICAL PIPE	18	2.96	0.229	3.67	0.282	6.54	0.487	9.46	0.691		0.109
	24	3.46	0.27	4.54	0.387	8.04	0.840	11.54	0.893		0.128
	30	3.96	0.312	6.29	0.629	10.51	0.954	14.74	1.28		0.147
	35	4.50	0.375	7.00	0.743	12.00	1.153	17.00	1.564		0.167
	42	5.00	0.416	7.75	0.862	13.64	1.379	19.53	1.896		0.185
	48	5.42	0.458	9.42	1.170	16.05	1.788	22.75	2.406		0.200
	54	5.92	0.5	10.17	1.311	17.72	2.050	25.28	2.789		0.219
	60	6.42	0.541	10.92	1.476	19.36	2.368	27.81	3.259		0.238
	66	6.91	0.583	11.68	1.626	20.81	2.648	30.03	3.67		0.256
	72	7.41	0.625	12.33	1.807	22.44	3.004	32.56	4.201		0.275
	78	7.91	0.667	13.00	1.962	23.89	3.305	34.78	4.649		0.293
	84	8.58	0.708	13.75	2.239	26.53	3.850	37.31	5.462		0.318
	90	9.00	0.75	14.42	2.364	26.83	4.062	39.25	5.759		0.333
	96	9.5	0.791	15.17	2.570	28.25	4.408	41.33	6.245		0.352

NOTE: QUANTITIES FOR 66" & 78" EQUIV. DIAM. ARCH PIPE BASED ON METAL PIPE & ESTIMATED WALL THICKNESS.

■ FOR PIPES UNDER PAVEMENT, THE H DIMENSION AND THE STANDARD BEDDING MATERIAL QUANTITY, SHALL BE INCREASED TO GO TO THE TOP OF THE TRENCH.

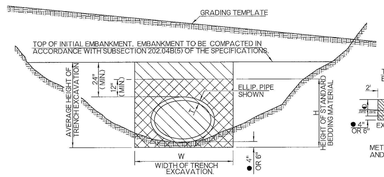
BEDDING MATERIAL VALUES SHOWN FOR STANDARD TRENCHING CONDITIONS MAY BE USED ONLY FOR VERTICAL WALL TRENCHES. ■



■ APPROXIMATE ANGLE OF REPOSE FOR SLOPING OF SIDES OF EXCAVATIONS IN TRENCHES WITH DEPTH GREATER THAN 5 FEET.

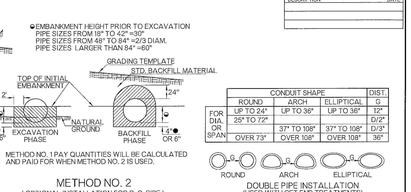
■ OPTIONAL TRENCHES WITH DEPTH GREATER THAN 5.0 FEET

EXCAVATION AND BEDDING MATERIAL WILL BE MEASURED AND PAID FOR AS IF SHEETING & SHORING WAS USED. (SPECIAL TRENCHING=STD. WIDTH TRENCH+12")



METHOD NO. 1

TRENCH EXCAVATION IN EMBANKMENT SECTIONS



METHOD NO. 1 PAY QUANTITIES WILL BE CALCULATED AND PAID FOR WHEN METHOD NO. 2 IS USED.

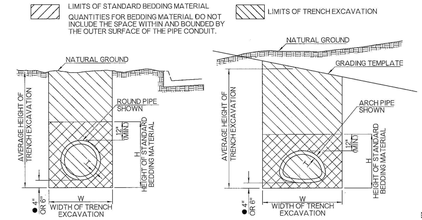
METHOD NO. 2

(OPTIONAL INSTALLATION FOR R. C. PIPE)

CONDUIT SHAPE				DIST.
	ROUND	ARCH	ELLIPTICAL	G
FOR DIA. OR SPAN	UP TO 24"	UP TO 36"	UP TO 36"	12"
	28" TO 72"			D/3*
		37" TO 108"	37" TO 108"	D/3*
	OVER 73"	OVER 108"	OVER 108"	36"

DOUBLE PIPE INSTALLATION

(USED WITH CET END TREATMENTS)



TRENCH EXCAVATION IN CUT SECTIONS

TABLE OF EQUIVALENT PIPES

EQUIV. DIA.	REINF. CONC. ARCH PIPE	STEEL ARCH PIPE	ALUMINUM ARCH PIPE	REINF. CONC. ELLIPTICAL PIPE ◑
18"	22" x 13"	21" x 15"	21" x 15"	14" x 23"
21"		24" x 18"	24" x 18"	
24"	28" x 18"	28" x 20"	28" x 20"	19" x 30"
27"				22" x 34"
30"	36" x 22"	35" x 24"	35" x 24"	24" x 38"
36"	43" x 26"	42" x 29"	42" x 29"	29" x 45"
42"	51" x 31"	49" x 33"	49" x 33"	34" x 53"
48"	58" x 36"	57" x 38"	57" x 38"	38" x 60"
54"	65" x 40"	64" x 43"	64" x 43"	43" x 68"
60"	73" x 45"	71" x 47"	71" x 47"	48" x 76"
66"		77" x 52"	77" x 52"	53" x 83"
72"	88" x 54"	83" x 57"	83" x 57"	58" x 91"
78"		87" x 63"	92" x 65" ▲	63" x 98"
84"	102" x 62"	95" x 67"	95" x 67" ▲	68" x 106"
90"	115" x 72"	103" x 71"	103" x 71" ▲	72" x 113"
96"	122" x 77"	112" x 75"	112" x 75" ▲	77" x 121"

▲ STRUCTURAL PLATE ARCH.

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2009 ODOT STANDARD SPECIFICATIONS.
2. TRENCH EXCAVATION AND BEDDING MATERIAL WILL NOT BE REQUIRED FOR PIPE INSTALLATIONS OF SIDE DRAINS UNLESS OTHERWISE NOTED ON THE PLANS.
3. FOR PIPE UNDERDRAIN INSTALLATIONS, SEE ROADWAY STANDARD PUD-3.
4. ■ SPECIAL TRENCHING CONDITIONS ARE THOSE AS DEFINED BY O.S.H.A. REGULATIONS, TITLE 29 CFR CHAPTER XVII, PART 1926.650, 1926.651 & 1926.652. SO DEFINED WILL APPLY UNTIL THEY ARE IN CONFLICT WITH CURRENT SPECIFICATIONS, FOR TRENCH DEPTHS OVER FIVE FEET. WHERE O.S.H.A. REGULATIONS FOR SPECIAL TRENCHING ARE APPLIED, QUANTITIES AND DIMENSIONS FOR SPECIAL TRENCHING WILL BE USED FOR COMPUTING QUANTITIES. SEE TABLE OF TRENCHING DIMENSIONS AND STANDARD BEDDING MATERIAL QUANTITIES.
5. NORMAL BACKFILLING OPERATIONS SHALL FOLLOW BEDDING AND PIPE INSTALLATION AS CLOSELY AS PRACTICAL. IN NO CASE SHALL A PIPE INSTALLATION SUBJECT TO SUDDEN FLOW DEVELOPMENT BE LEFT WITHOUT SUFFICIENT BACKFILL TO RESTRAIN THE CONDUIT AND PREVENT JOINT SEPARATION AND/OR PIPING SCOUR. PHYSICALLY RESTRAINING THE CONDUIT MAY BE USED TO AUGMENT OR REPLACE THIS IMMEDIATE BACKFILL REQUIREMENT.
6. ANY EXCESS EXCAVATION NOT USED FOR BACKFILL WILL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF, BY HIM, IN A MANNER APPROVED BY THE ENGINEER.
7. ○ STANDARD BEDDING QUANTITIES FOR ROUND PIPE ARE BASED ON AASHTO DESIGNATED CLASS III (WALL B) REINFORCED CONCRETE PIPE.
8. ■ WHEN REQUIRED, THE SIDES OF THE TRENCHES SHALL BE SHEETED AND SHORED OR OTHERWISE SUPPORTED WHEN THE TRENCH IS MORE THAN 5.0 FEET IN DEPTH. IN LIEU OF SHEETING, THE SIDES OF THE TRENCH ABOVE THE 5.0 FOOT LEVEL MAY BE SLOPED TO PRECLUDE COLLAPSE. SEE OPTIONAL TRENCHES DETAIL THIS SHEET.
9. ■ PROPER COMPACTION OF BACKFILL REQUIRES A VERTICAL WALLED TRENCH TO 24 INCHES ABOVE TOP OF PIPE, REGARDLESS OF EXCAVATION ABOVE THAT ELEVATION.
10. ● EQUIVALENT PIPE SIZES 66 INCHES AND LARGER REQUIRE 6 INCHES OF BEDDING MATERIAL BELOW PIPE CONDUIT.
11. ◑ ELLIPTICAL PIPE DIMENSIONS CONFORM TO AASHTO M 207, AS DESIGNATED RISE BY SPAN.
12. FOR COMPUTING TRENCH EXCAVATION & STANDARD BEDDING QUANTITIES, THE LENGTH OF THE CULVERT SHALL INCLUDE END SECTION AND END TREATMENT LENGTHS.
13. MULTIPLE PIPE INSTALLATIONS WILL REQUIRE A MINIMUM OF 12" BETWEEN PIPES FOR PROPER COMPACTION.

BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
613 (R)	STANDARD BEDDING MATERIAL, CLASS A	CY
613 (S)	STANDARD BEDDING MATERIAL, CLASS B	CY
613 (T)	STANDARD BEDDING MATERIAL, CLASS C	CY
613 (V)	TRENCH EXCAVATION	CY

APPROVED BY ROADWAY ENGINEER: Caleb A. DATE: 04/16/15

ROADWAY DESIGN DIVISION STANDARD

STANDARD PIPE INSTALLATION

OKLAHOMA DEPARTMENT OF TRANSPORTATION
2009 SPECIFICATIONS

SPI-4 | 1 | R-47

OKLAHOMA DEPARTMENT OF TRANSPORTATION	
STANDARD REVISIONS	
DESCRIPTION	DATE

NOT APPROVED FOR CONSTRUCTION

BURNS McDONNELL

9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. 421

date	detailed
MAY 11, 2021	A. SANDOR
designed	checked
M. SARGENT	S. CHEWNING

TULSA PORTS
BARGE · RAIL · INDUSTRIAL PARK
CATOOSA · INOLA

CATOOSA, OKLAHOMA

2021 TOWBOAT DOCK REPLACEMENT

SITE DETAILS

project	contract
125412	---

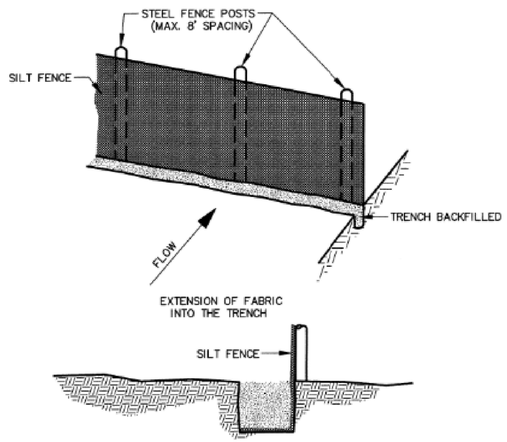
drawing **C-502** rev. **B**

sheet 11 of 23 sheets

file 125412-C-500-SITE DETAILS.DWG

Scale For Microfilming: Millimeters / Inches

SILT FENCE*
NOT TO SCALE



NOTE:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. THE TRENCH SHOULD BE A MINIMUM OF 6 INCHES DEEP AND 3-4 INCHES WIDE TO ALLOW FOR THE SILT FENCE TO BE LAID IN THE TRENCH 4" AND BACKFILLED.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POSTS.
5. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN IT HAS SERVED ITS USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. SEDIMENT TRAPPED BY THIS PRACTICE SHALL BE DISPOSED OF IN AN APPROVED SITE, IN A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.
8. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES AND DISPOSED OF IN AN APPROVED SPOIL SITE OR AS IN NO. 7 ABOVE.

* DRAINAGE AREA LESS THAN TWO (2) ACRES.

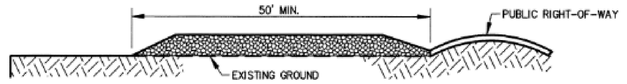
STANDARD SYMBOL SF L=

REFERENCE:
CHAPTER 1000: CITY OF TULSA STORMWATER MANAGEMENT CRITERIA MANUAL.

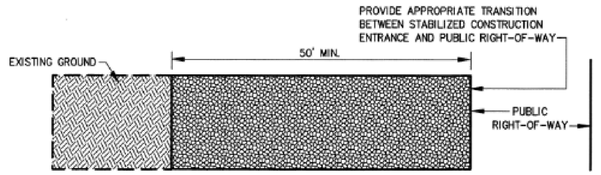
STANDARD OBTAINED FROM: USDA-SCS, MD. STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS.

SILT FENCE (SF)
NOT TO SCALE

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



PROFILE
NOT TO SCALE



PLAN VIEW
NOT TO SCALE

NOTE:

1. STONE SIZE AASHTO DESIGNATION M43, SIZE NO. 2 (2-1/2" TO 1-1/2"). USE CRUSHED STONE.
2. LENGTH - AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.
3. THICKNESS - NOT LESS THAN EIGHT (8) INCHES.
4. WIDTH - NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
5. WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SANDBAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
6. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.

CONSTRUCTION ENTRANCE (CE)
NOT TO SCALE

REVISION	BY	DATE

CITY ENGINEER

DESIGN MANAGER

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

STANDARD SILT FENCE
AND CONSTRUCTION ENTRANCE

DATE: OCTOBER 2013 STD. 126

no.	date	by	ckd	description
A	01/15/21	MGS	BSC	65% SUBMITTAL
B	05/11/21	MGS	BSC	90% SUBMITTAL

NOT APPROVED FOR CONSTRUCTION

BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. 421

date	detailed
MAY 11, 2021	A. SANDOR
designed	checked
M. SARGENT	S. CHEWNING

TULSA PORTS
BARGE · RAIL · INDUSTRIAL PARK
CATOOSA-INOLA

CATOOSA, OKLAHOMA

2021 TOWBOAT DOCK REPLACEMENT
EROSION & SEDIMENT CONTROL DETAILS

project	contract
125412	---

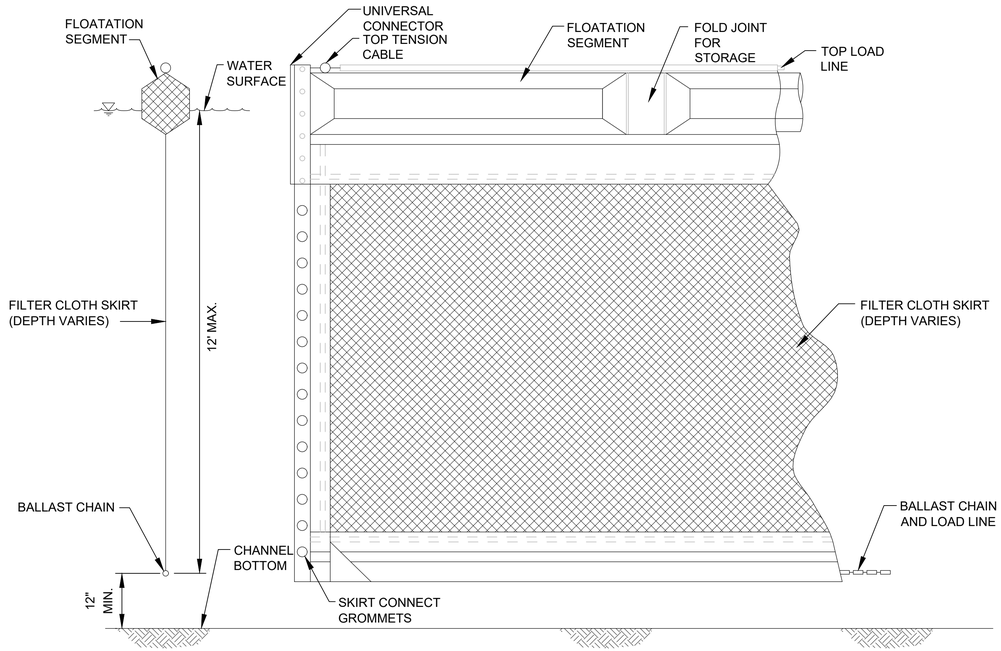
drawing C-510 — rev. B

sheet 12 of 23 sheets

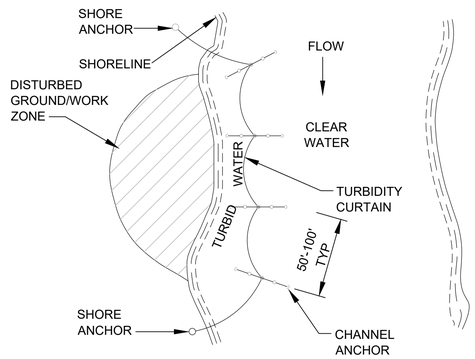
file 125412-C-510-E&S DETAILS.DWG

PATH NAME: E:/PARTS/STD/DGN_STDS/A26-STD-SILT-FENCE-CONST-ENTRN SBW 09/19/2013

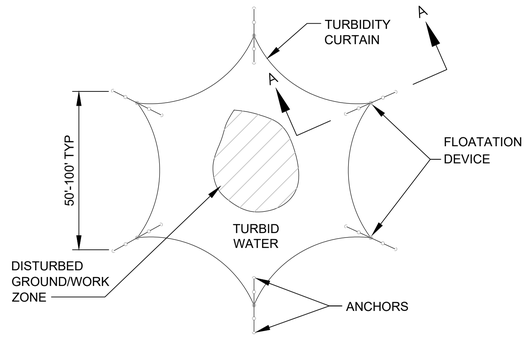
Scale For Microfilming
Millimeters
Inches



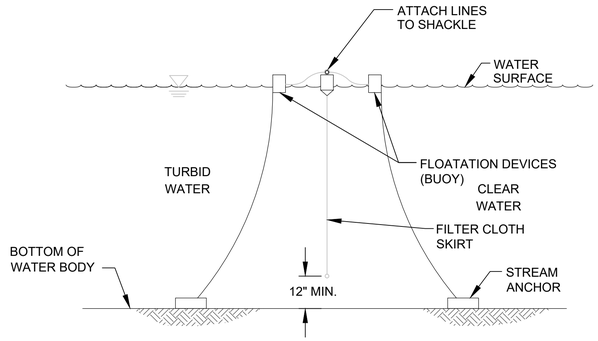
TYPICAL ANCHORING SECTION



TYPICAL ANCHORING PLAN FOR SHORELINE/RIVER EDGE WORK



TYPICAL ANCHORING PLAN FOR MID CHANNEL WORK (BRIDGE PIER, CAISSON, ETC.)



SECTION A-A

TURBIDITY CURTAIN

NOT TO SCALE

TC

Table 1. Seed rates to use for vegetative cover.

Plant Name	Rate per Acre	Rate per 1,000 sq. ft.	Planting Date
Temporary Species:			
Annual rye	40 lbs.	1.0 lb.	Feb.-April Sept.-Nov.
Rye grain	120 lbs.	3.0 lb.	Aug.-Nov.
Wheat	120 lbs.	3.0 lbs.	Aug.-Nov.
Sorghums	80 lbs.	2.0 lbs.	Mar.-Sept.
Sweet clover	20 lbs.	0.5 lbs.	Sept.-Oct.
Sudan grass	40 lbs.	1.0 lb.	Apr.-Sept.
Millet	60 lbs.	1.0 lb.	Apr.-Sept.
Cowpeas	60 lbs.	1.0 lb.	May-June
Permanent Species:			
Lawn grasses:			
Bermudagrass*	80 lbs.	2.0 lbs.	April-July
Bluegrass	160 lbs.	4.0 lbs.	March-May Sept.-Nov.
Perennial Rye	200 lbs.	5.0 lbs.	Sept.-Dec.
Fescue	200 lbs.	5.0 lbs.	March-May Sept.-Nov.
Zoysia	80 lbs.	2.0 lbs. 2-3 sq. yd. sod if sprigging	April-July
Natives:			
Buffalograss**	80 lbs.	2.0 lbs.	April-June
Bluestem	40 lbs.	1.0 lb.	March-June
Lespedeza	40 lbs	1.0 lb.	April-June
Weeping lovegrass	40 lbs.	1.0 lb.	April-June

* Most seeded bermudagrass is not winter hardy. One of the best ways to plant is by spreading topsoil that contains bermudagrass stolens and rhizomes.

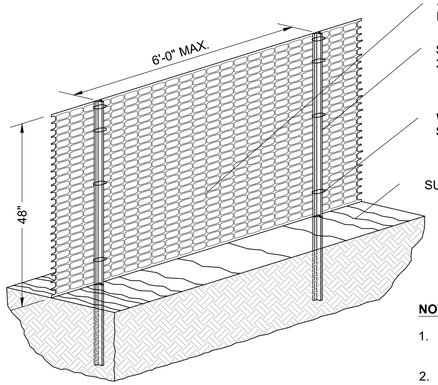
** Buffalograss should not receive more than 2 lbs./1,000 sq.ft. of Nitrogen.

(Source: Oklahoma County Conservation District)

PERMANENT SEEDING

NOT TO SCALE

PS



48" HIGH DENSITY ORANGE POLYETHELENE BLAZE FENCE

STAKES: 72" T-POST DRIVEN 22" MIN. BELOW GRADE

WIRE OR ZIP TIES TO SECURE SAFETY FENCE TO POST

SURFACE GRADE

NOTES:

1. INSTALL SAFETY FENCE AT ALL OPEN EXCAVATIONS.
2. FASTEN FENCE SECURELY TO THE T-POSTS.
3. THE FENCING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION AND UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED.

SAFETY FENCE - ORANGE BLAZE

NOT TO SCALE

SAF

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2021 TOWBOAT DOCK REPLACEMENT

EROSION & SEDIMENT CONTROL DETAILS

project	contract
125412	---

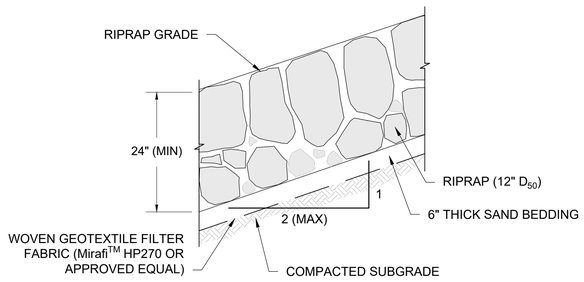
drawing **C-511** rev. **B**

sheet 13 of 23 sheets

file 125412-C-510-E&S DETAILS.DWG

Michael A. Way
Civil

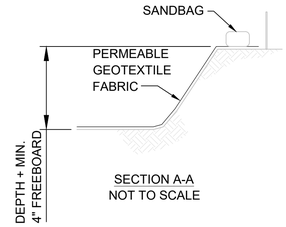
Millimeters
Inches
Scale For Microfilming



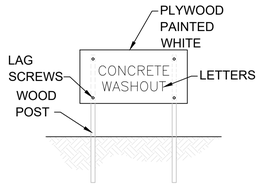
RIPRAP STABILIZATION

RR

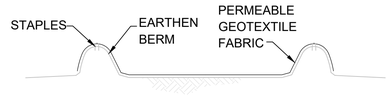
NOT TO SCALE



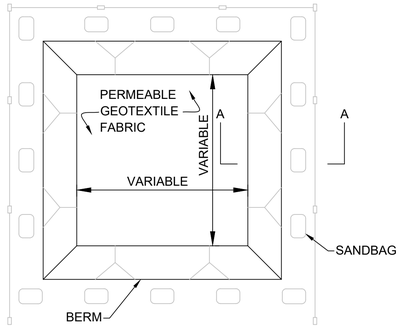
SECTION A-A
NOT TO SCALE



CONCRETE WASHOUT SIGN (OR EQUIVALENT)

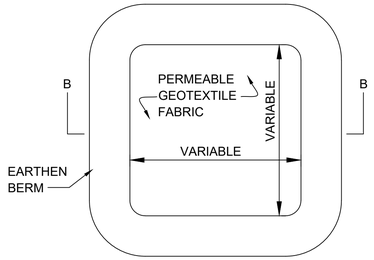


SECTION B-B
NOT TO SCALE



PLAN VIEW
NOT TO SCALE

TYPE "BELOW GRADE"



PLAN VIEW
NOT TO SCALE

TYPE "ABOVE GRADE" WITH EATHERN BERMS

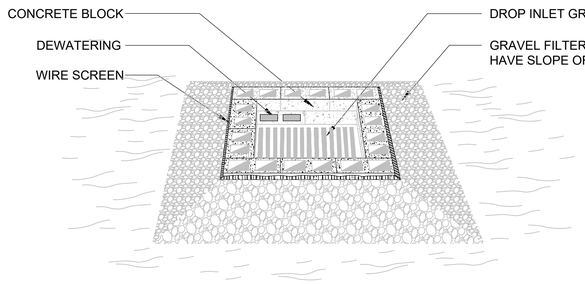
NOTES:

1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. SIGNAGE IDENTIFYING THE CONCRETE WASHOUT AREA SHALL BE INSTALLED WITHIN 5FT. OF THE WASHOUT FACILITY.

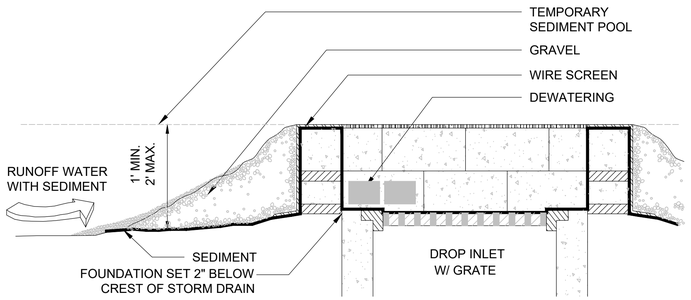
CONCRETE WASHOUT AREA

CWA

NOT TO SCALE



BLOCK AND GRAVEL PERSPECTIVE



NOTES:

1. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.
2. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCHES BELOW THE CREST OF THE STORM DRAIN. THE FIRST ROW OF BLOCKS WILL BE PLACED HERE FOR LATERAL SUPPORT.
3. ONE BLOCK (AS SHOWN) IS TO BE PLACED ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW FOR POOL DRAINAGE.

BLOCK AND GRAVEL SECTION

INLET PROTECTION - BLOCK AND GRAVEL

IP

NOT TO SCALE

Michael A. Way
Civil

no.	date	by	ckd	description
A	01/15/21	MGS	BSC	65% SUBMITTAL
B	05/11/21	MGS	BSC	90% SUBMITTAL

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BURNS McDONNELL
9400 WARD PARKWAY
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date	detailed
MAY 11, 2021	A. SANDOR
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M. SARGENT	S. CHEWNING

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2021 TOWBOAT DOCK REPLACEMENT
EROSION & SEDIMENT CONTROL DETAILS

project	contract
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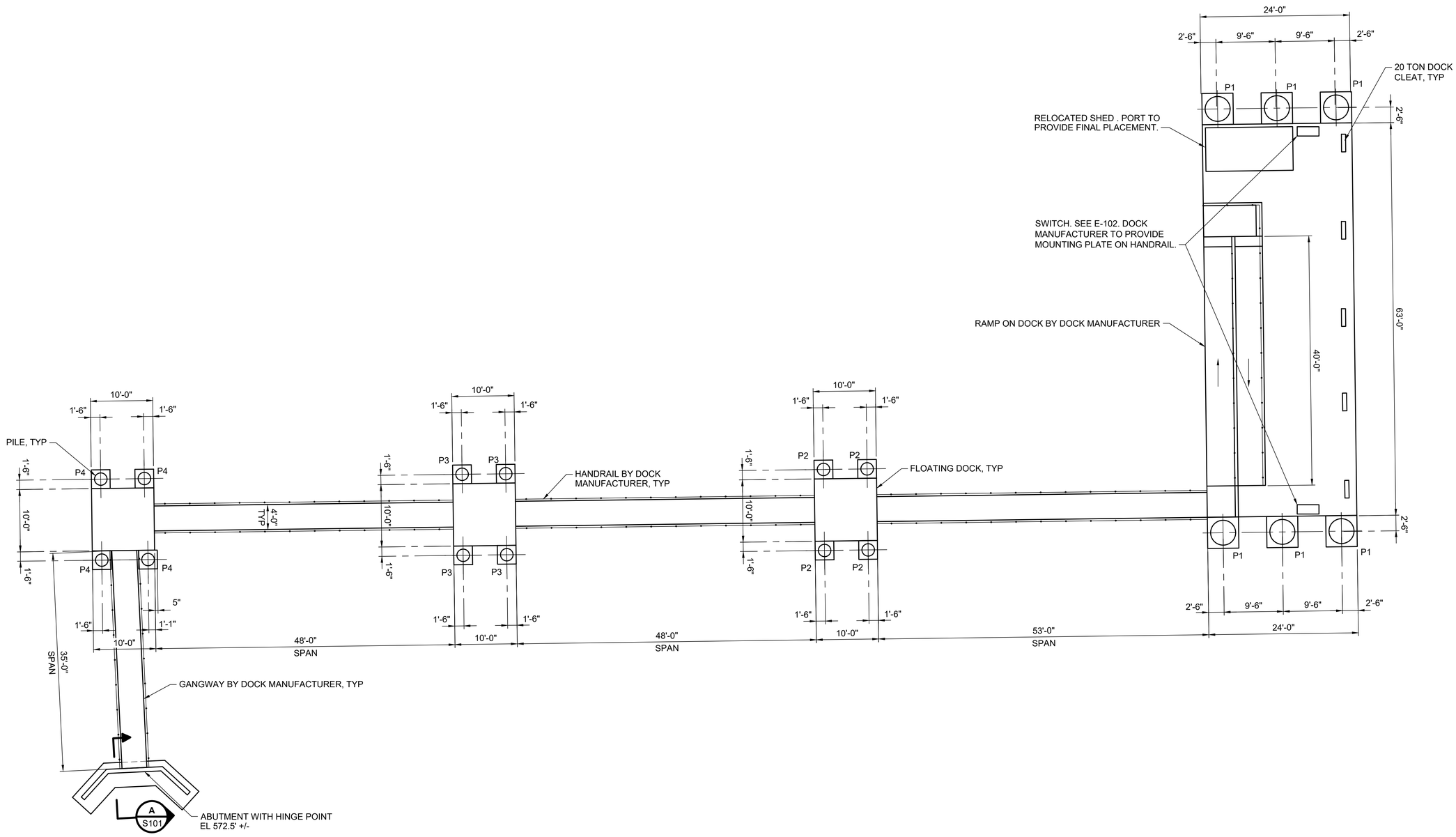
drawing **C-512** rev. **B**

sheet 14 of 23 sheets

file 125412-C-510-E&S DETAILS.DWG



DOCK PLAN

0 4' 8' 16'
SCALE IN FEET

NOTES:

1. DOCK AND GRADE ELEVATIONS PER CIVIL.

DESIGN LOADS:

GANGWAYS:
- 100 PSF UNIFORM LOAD @ L/180
- 50 PSF @ L/360
- 400 LB CONCENTRATED LOAD

FLOATING DOCKS:
- 40 PSF UNIFORM LOAD
- 400 LB CONCENTRATED LOAD

THIS DOCUMENT IS PRELIMINARY IN NATURE
AND IS NOT A FINAL SIGNED AND SEALED DOCUMENT.

no.	date	by	ckd	description
A	01/15/21	JMW	ALC	65% SUBMITTAL
B	05/11/21	JMW	ALC	90% SUBMITTAL

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BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. 421

date	detailed
MAY 11, 2021	B. WEYANT
designed	checked
J. WHITEHEAD	A. COLLOT

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CATOOSA · INOLA

CATOOSA, OKLAHOMA

TPOC TOW BOAT DOCK
DOCK PLAN

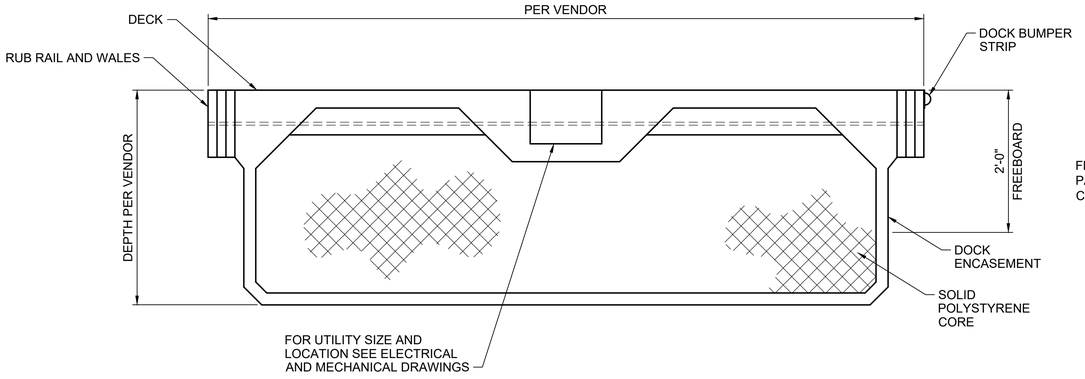
project	contract
125412	---

drawing **S-100** — rev. **B**

sheet 15 of 23 sheets

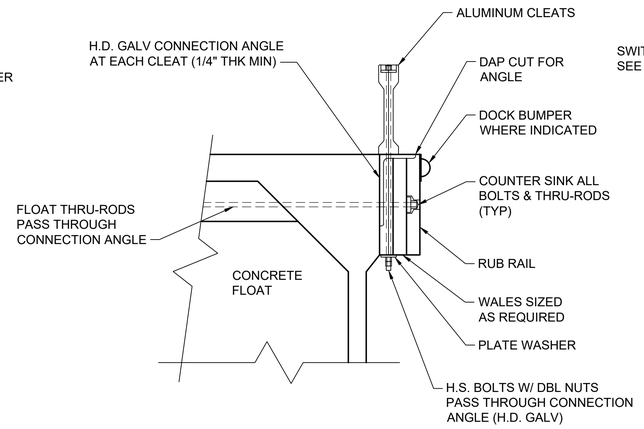
file 125412_S-100.DWG

Millimeters
Inches
Scale For Microfilming



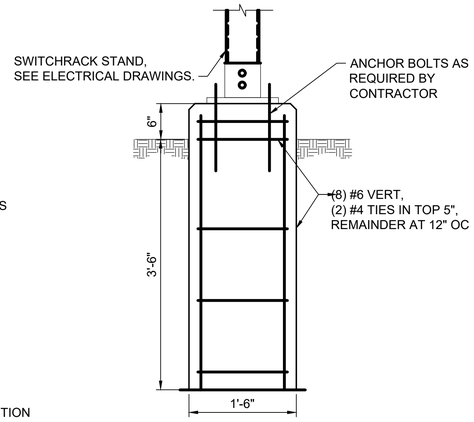
TYPICAL MAIN DOCK

0 1/2' 1' 2'
SCALE IN FEET



TYPICAL CLEAT DETAIL

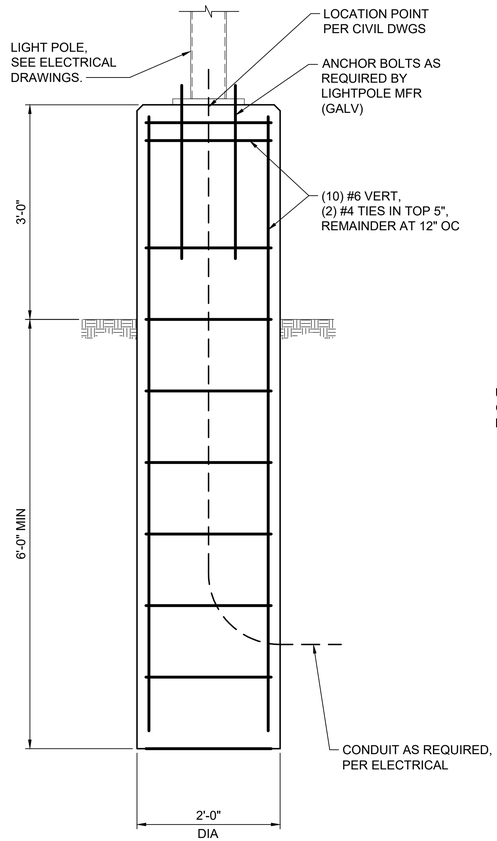
0 1/2' 1' 1 1/2'
SCALE IN FEET



NOTE: SEE CIVIL FOR LOCATION.

TYPICAL SWITCHRACK FOUNDATION

0 1/2' 1' 2'
SCALE IN FEET



NOTE: SEE CIVIL FOR LOCATION.

TYPICAL LIGHT POLE FOUNDATION

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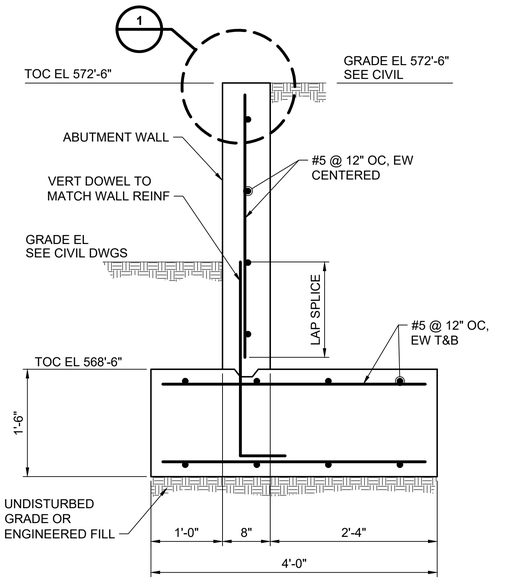
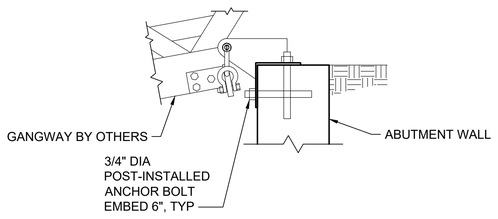
SCALE IN FEET



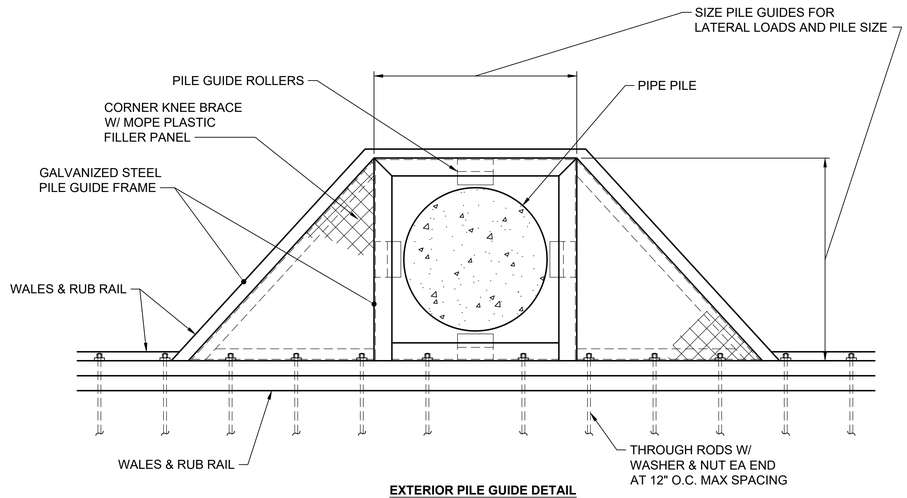
SECTION A S100

0 1/2' 1' 2'
SCALE IN FEET



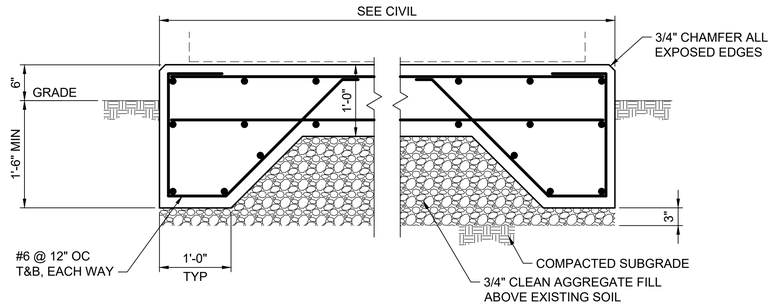
DETAIL 1

0 1/2' 1' 1 1/2'
SCALE IN FEET



EXTERIOR PILE GUIDE DETAIL

0 1/2' 1' 2'
SCALE IN FEET



NOTES:

1. EQUIPMENT PADS TO BE SIZED PER CIVIL DRAWING. EQUIPMENT PADS TO EXTEND A MINIMUM OF 6" BEYOND EQUIPMENT BASE ON ALL SIDES.
2. ANCHORAGE PER EQUIPMENT MANUFACTURER.

TRANSFORMER PAD

0 1/2' 1' 2'
SCALE IN FEET

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BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. 421

date	detailed
MAY 11, 2021	B. WEYANT
designed	checked
J. WHITEHEAD	A. COLLOT

TULSA PORTS
BARGE · RAIL · INDUSTRIAL PARK
CATOOSA-INOLA

CATOOSA, OKLAHOMA

TPOC TOW BOAT DOCK
DOCK DETAILS

project	contract
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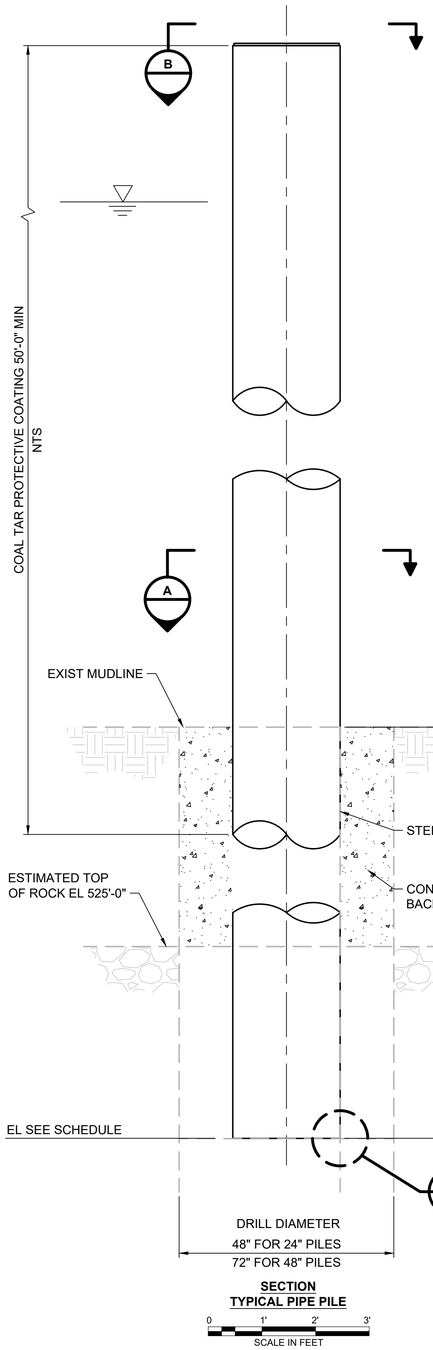
drawing **S-101** rev. **B**

sheet 16 of 23 sheets

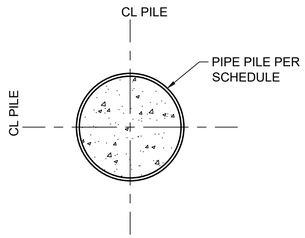
file 125412_S-101.DWG

Scale For Microfilming
Millimeters
Inches



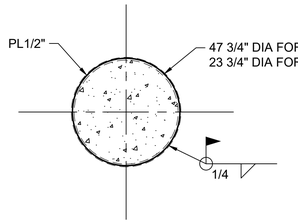
SECTION
TYPICAL PIPE PILE

0 1' 2' 3'
SCALE IN FEET



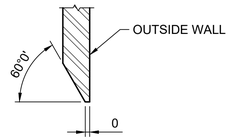
SECTION A

0 1' 2' 3'
SCALE IN FEET



SECTION B

0 1' 2' 3'
SCALE IN FEET



DETAIL 1

0 1" 2" 3" 4"
SCALE IN INCHES

PILE SCHEDULE						
PILE	OUTSIDE DIAMETER (IN)	WALL THICKNESS (IN)	BOT OF PIPE ELEVATION (FT)	TOP OF PIPE ELEVATION (FT)	LENGTH (FT)	MIN EMBEDMENT (FT)
P1	48	3/4	500	578	78	20
P2	24	3/8	517	578	61	27
P3	24	3/8	531	578	47	25
P4	24	3/8	539	578	39	25

NOTES:

1. PIPE PILES SHALL BE INSTALLED INTO A DRILLED EXCAVATION. THE DRILLING DIAMETER SHALL BE AT A MINIMUM 24" LARGER THAN THE PIPE DIAMETER AND CENTERED IN THE EXCAVATION.
2. THE ANNULAR SPACE BETWEEN THE PIPE AND EXCAVATION SIDEWALL SHALL BE BACKFILLED WITH CONCRETE AFTER SETTING THE PIPE SECTION.
3. THE INTERIOR OF THE PILES SHALL BE BACKFILLED WITH CONCRETE. THIS PROCESS SHALL NOT OCCUR UNTIL 48 HOURS AFTER PLACEMENT OF THE ANNULAR BACKFILL AROUND THE PILE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING THE PILE SECTIONS FOR A MINIMUM OF 48 HOURS AFTER THE ANNULAR BACKFILL PLACEMENT AND DURING PLACEMENT OF BACKFILL WITHIN THE PILE.
5. EXCAVATION AND CONCRETE PLACEMENT SHALL BE COMPLETED IN ACCORDANCE WITH SPECIFICATION SECTION 31 63 30.
6. EMBEDMENT FOR P1 PILES SHALL BE IN SHALE OR LIMESTONE BEDROCK. IF CONDITIONS DIFFER, THE OWNER AND ENGINEER SHALL BE CONTACTED.
7. THE MINIMUM EMBEDMENTS SHALL BE ACHIEVED BELOW GROUNDLINE OR MUDLINE. THIS MAY REQUIRE ADDITIONAL PIPE PILE LENGTH TO ACHIEVE THE TOP OF PIPE ELEVATIONS WHERE GROUNDLINE ELEVATIONS VARY.
8. PIPE PILE CASING TO BE MINIMUM 36 KSI A252 STEEL.

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TYPICAL PIPE PILE DETAILS

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Scale For Microfilming
Millimeters
Inches

GENERAL NOTES

1. ALL MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE LATEST NATIONAL ELECTRICAL CODE (N.E.C). ALL MATERIALS SHALL BE NEW AND SHALL BE LISTED BY UNDERWRITERS LABORATORIES INC. (UL). ALL CONDUIT SHALL BE OF DOMESTIC MANUFACTURER AND SHALL BE UL LISTED.
2. IF ANY CONFLICTS EXIST BETWEEN THESE DRAWINGS AND THE NEC, OR ANY OTHER APPLICABLE STATE OR LOCAL CODES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL PROVIDE ALL TEMPORARY LIGHTING AND CONVENIENCE POWER DURING CONSTRUCTION.
4. ALL EQUIPMENT AND MATERIALS SHALL BE UL LISTED.

GROUNDING GENERAL NOTES

1. INSTALL GROUNDING PER LATEST NEC AND LOCAL CODES.
2. MEDIUM HARD DRAWN BARE COPPER GROUND CABLE SHALL BE STRANDED ANNEALED COPPER CONFORMING TO ASTM B3 AND B8.
3. INSULATED GROUND CABLE SHALL BE NEC TYPE XHHW-2, 600V RATED, ANNEALED COPPER CONFORMING TO ASTM B3 WITH GREEN POLYVINYL (PVC) INSULATION CONFORMING TO NEMA WC70.
4. MINIMUM CABLE SIZE FOR MAIN GROUNDING ELECTRODE SYSTEM SHALL BE BARE COPPER #4/0 AWG, AND BURIED A MIN. OF 30-INCHES FINISHED GRADE.
5. MINIMUM CABLE SIZE FOR GROUNDING STINGERS (TAPS FROM MAIN GROUND COUNTERPOISE SYSTEM) SHALL BE STRANDED GREEN INSULATED COPPER CABLE, #2/0 AWG, AND BURIED A MINIMUM OF 18-INCHES BELOW FINISHED GRADE.
6. EXERCISE EXTREME CARE AND IDENTIFY ANY POTENTIAL UNDERGROUND HAZARDS AND UTILITIES WHEN EXCAVATING FOR GROUNDING. INSTALL BURIED GROUND CONDUCTORS SO AS NOT TO INTERFERE WITH UNDERGROUND FOUNDATIONS AND UTILITIES.
7. ABOVE-GRADE GROUNDING CONDUCTOR SHALL BE PROTECTED WITH SCHEDULE 80 PVC CONDUIT TO PREVENT PHYSICAL DAMAGE TO THE CONDUCTOR.
8. VERIFY GROUNDING STUB-UP LOCATIONS WITH PROJECT STRUCTURAL DRAWINGS FOR ALL PADS, FOUNDATIONS, AND STRUCTURAL STEEL.
9. GROUND RODS/TEST WELLS SHALL BE LOCATED +/- 1-FOOT FROM DEPICTED LOCATION AND AT LEAST 2-FEET FROM NEAREST FOUNDATION.
10. GROUNDING CONDUCTORS SHALL BE LAID IN UNDERGROUND TRENCHES WITH A SLIGHT "SNAKING" TO PROVIDE SLACK IN WIRING.
11. REFER TO GROUNDING DETAILS FOR ADDITIONAL INFORMATION.
12. GROUNDING PLANS ARE DIAGRAMMATIC ONLY, MAIN GROUNDING LOOP, SECONDARY TAPS (GROUND STINGERS), GROUND RODS, GROUND TEST WELLS, STUB UPS, ETC. SHALL BE INSTALLED NOT TO CONFLICT WITH ANY BELOW GRADE PROCESS PIPING, WATER LINES, STORM/SEWER PIPING, CONDUIT, CONCRETE DUCT BANKS, FOUNDATIONS, WHEN ADJUSTMENTS OCCUR CHANGES SHALL BE DOCUMENTED ON AS-BUILTS DRAWINGS.
13. INSTALL TREMCO INC. PRODUCT SPECTRUM 1 SILICONE SEALANT IN EXPOSED TOPS OF SCHED 80 PVC CONDUIT GROUNDING STUB UPS. INSTALL PACKING FIBER DOWN BETWEEN GROUND CABLE AND EDGE OF PVC CONDUIT (APPROX. 1/2-INCH BELOW TOP OF CONDUIT). SEALANT SHALL BE APPLIED TO FILL THE 1/2-INCH VOID AT THE TOP OF CONDUIT TO PREVENT WATER AND DEBRIS FROM ENTERING STUB UP.

CABLE GENERAL NOTES:

1. ALL CONDUIT USED FOR CURRENT CARRYING CONDUCTORS SHALL INCLUDE A SEPARATE, INSULATED EQUIPMENT GROUNDING CONDUCTOR IN ACCORDANCE WITH THE NEC.
2. PVC CONDUIT SHALL BE TYPE EPC SCHEDULE 80, HEAVY-WALL RIGID CONDUIT. FITTINGS AND ACCESSORIES SHALL BE FABRICATED FROM THE SAME MATERIAL AS THE CONDUIT EXCEPT WHERE INDICATED OTHERWISE. USE SOLVENT-CEMENT-TYPE JOINTS RECOMMENDED BY THE MANUFACTURER. JOINTS SHALL BE INSTALLED WATERTIGHT WITH CEMENT COMPOUND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL HAVE A GALVANIZED STEEL CORE AND A SYNTHETIC RUBBER, PVC, OR THERMOPLASTIC COVERING. SHALL COMPLY WITH UL 360, AND SHALL CONTAIN A SPIRAL-ENCASED COPPER BONDING CONDUCTOR. FITTINGS SHALL COMPLY WITH UL 514B.
4. REFER TO THE CABLE SCHEDULE HEREIN FOR THE CABLE TYPES AND SIZES, AND REFER TO THE DRAWING AND THE CABLE SCHEDULE FOR CONDUIT TYPE AND SIZES.
5. ALL CABLES AND CONDUITS SHALL BE TAGGED AT BOTH ENDS.

ELECTRICAL INSTALLATION NOTES:

1. CONDUITS ARE SHOWN DIAGRAMMATICALLY ONLY. EXACT ROUTING IS TO BE DETERMINED BY THE ELECTRICAL SUBCONTRACTOR TO SUIT MECHANICAL AND STRUCTURAL CONDITIONS. THE EXACT CONDUIT ROUTING AND ARRANGEMENT WITHIN CONDUIT GROUPS SHALL BE DETERMINED BY THE ELECTRICAL SUBCONTRACTOR. THE SUPPORTS FOR CONDUIT ARE TO BE PROVIDED BY THE ELECTRICAL SUBCONTRACTOR, AT INTERVALS NOT TO EXCEED NEC REQUIREMENTS.
2. ALL CONDUITS SHALL BE SUPPORTED AT INTERVALS NOT TO EXCEED THE NEC REQUIREMENTS FOR THE TYPE OF CONDUIT USED.
3. ALL ELECTRICAL DEVICES SUCH AS JUNCTION BOXES, LIGHTING PANELS, SAFETY SWITCHES, ETC. SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES PER SCHEDULE AND DETAILS.
4. ALL RIGID CONDUITS SHALL BE TERMINATED AT MOTORS, TRANSFORMER, AND FLOOD LIGHTS WITH LIQUIDTIGHT FLEXIBLE CONDUIT. EXCEPT WHERE DEVICES ARE MOUNTED ON WALLS OR COLUMNS AND NOT SUBJECT TO MOVEMENT DUE TO VIBRATION OR EXPANSION/CONTRACTION.
5. ALL METAL CONDUIT SHALL BE TERMINATED WITH AN INSULATING BUSHING OR HUB PRIOR TO PULLING CABLE. A GROUNDING TYPE BUSHING SHALL BE USED FOR CONDUITS ENTERING EQUIPMENT. FOR NON-CONDUCTIVE ENCLOSURES, BOND ENCLOSURE BACKPLATE TO EACH CONDUIT GROUNDING HUB.
6. CONDUIT CONNECTIONS TO BOTTOM OR SIDES OF EQUIPMENT, BOXES, ETC. IN OUTDOOR OR INDOOR WET AREAS, CONDUIT CONNECTIONS SHALL BE MADE WITH UL LISTED WATERPROOF HUBS. TOP ENTRY SHALL BE AVOIDED WHENEVER POSSIBLE. IF TOP ENTRY IS NEEDED, CONTRACTOR SHALL OBTAIN APPROVAL FROM OWNER PRIOR TO INSTALLATION.
7. INSTALL ALL ELECTRICAL EQUIPMENT AT LEAST A DISTANCE OF 12 INCHES ABOVE THE DOCK DECK, AND AT LEAST 30 INCHES ABOVE THE WATER LEVEL, IN ACCORDANCE WITH NEC, ARTICLE 555.
8. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL SAFETY SIGNS IN ACCORDANCE WITH NEC 555.10.
9. OUTDOORS, WHERE THERE IS A CHANGE OF ELEVATION IN A CONDUIT RUN, THERE SHALL BE A "TEE" FITTING WITH A DRAIN FITTING AT THE LOWEST POINT.
10. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL EQUIPMENT NAMEPLATES. EQUIPMENT TAGS ARE INDICATED ON THE DRAWINGS HEREIN, AS WELL AS THE INSTALLATION DETAILS. CONTRACTOR SHALL AFFIX NAMEPLATES TO EQUIPMENT USING A MINIMUM OF TWO (2) SELF-TAPPING SCREWS IN OPPOSITE CORNERS OF THE NAMEPLATE. FOR NEMA RATED ENCLOSURES, CONTRACTOR SHALL USE AN EPOXY-RESIN MIX TO AFFIX THE NAMEPLATE TO THE DEVICE SO AS TO NOT ALTER THE NEMA RATING OF THE ENCLOSURE. DOUBLE-SIDED TAPE SHALL NOT BE USED TO AFFIX NAMEPLATES AND/OR SIGNAGE.
11. CONDUIT SUPPORTS SHALL BE WELDED, CLAMPED, OR BOLTED.
12. ALL ELECTRICAL ENCLOSURES SHALL BE STAINLESS STEEL, NEMA 3R OR NEMA 4X, UNLESS NOTED OTHERWISE.

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ELECTRICAL - GENERAL NOTES

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sheet 18 of 23 sheets
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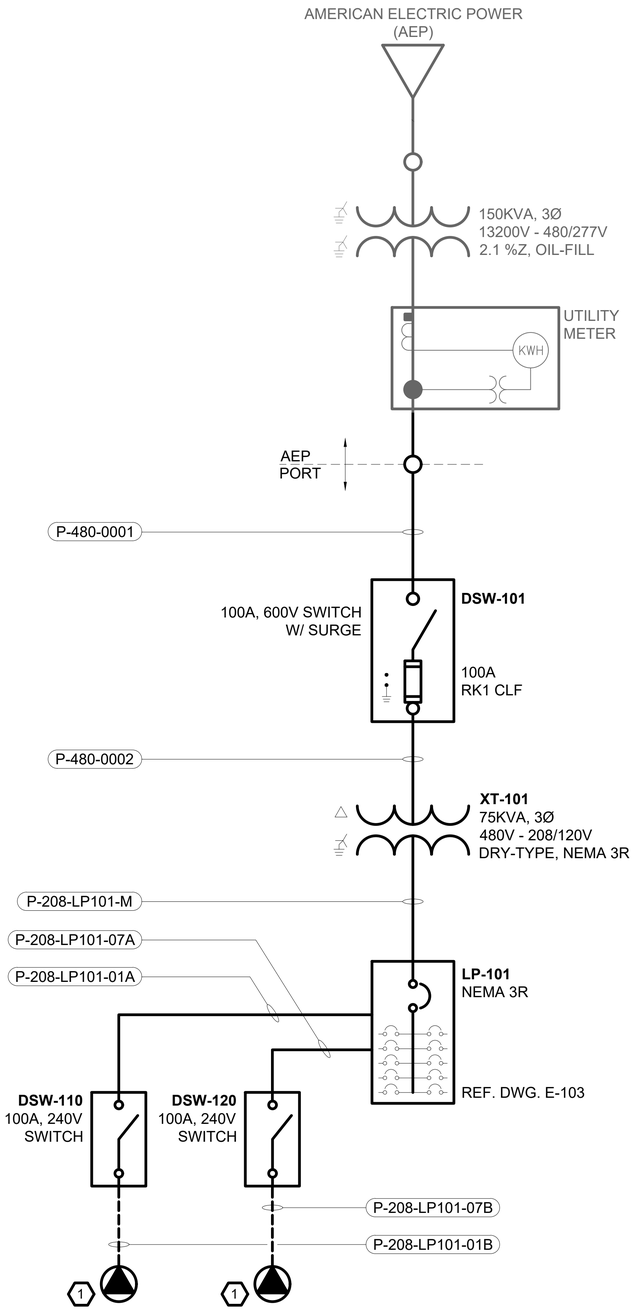
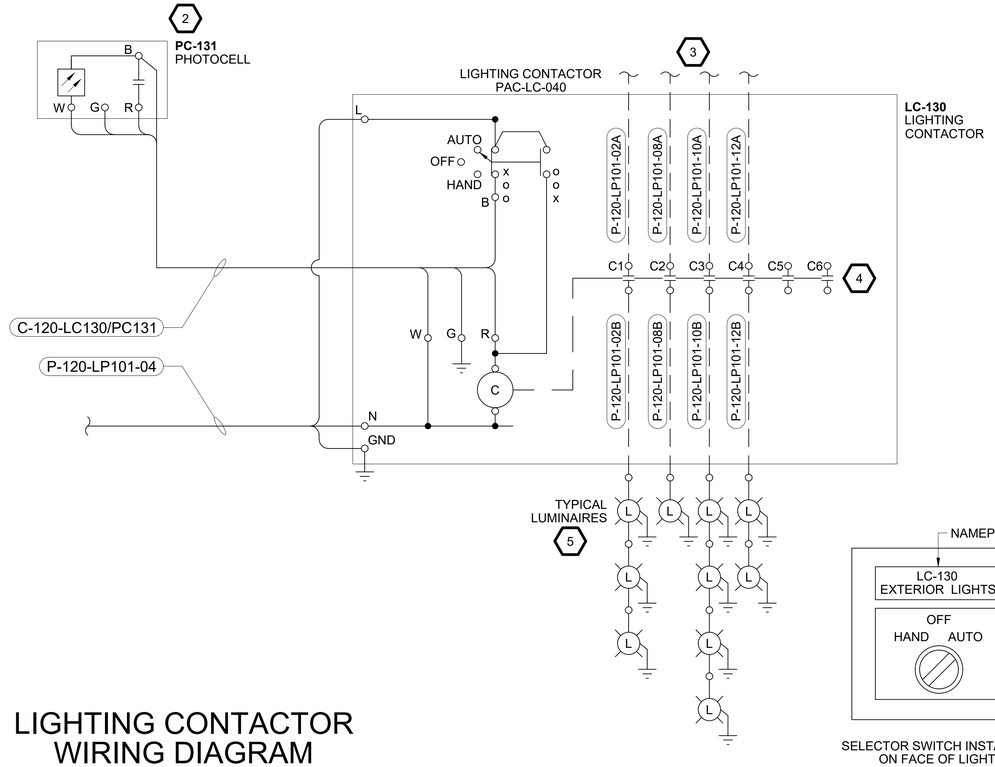
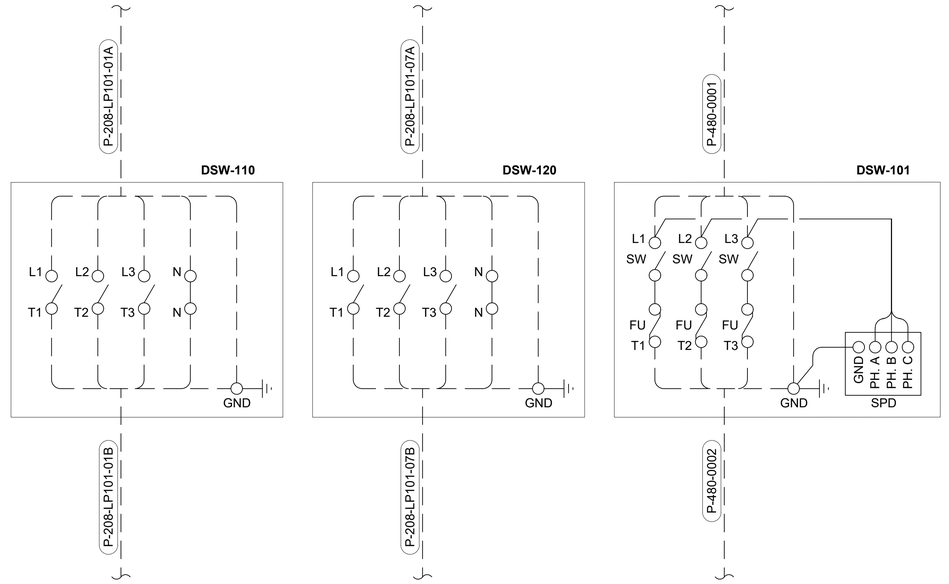


ONE-LINE DIAGRAM



LIGHTING CONTACTOR WIRING DIAGRAM

(SEE NOTE 2)



DISCONNECT SWITCH WIRING DIAGRAM

(SEE NOTE 2)

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GENERAL NOTES:

1. ALL NEW WORK INDICATED BY BOLD LINE-TYPE. EXISTING EQUIPMENT SHOWN IN GRAY.
2. WIRING MAY VARY BASED ON MAKE/MODEL OF EQUIPMENT PURCHASED WIRING DIAGRAMS ARE GENERAL WIRING DIAGRAMS BASED ON EATON SPECIFIED EQUIPMENT.

KEYED NOTES:

1. TOWBOAT CHARGING CORD AND RECEPTACLE PROVIDED BY OTHERS. CONTRACTOR SHALL OBTAIN ELECTRICAL CORD FROM OWNER AND CONNECT TO LOAD SIDE OF DISCONNECT SWITCH. FINAL ELECTRICAL CORD LENGTH TO BE DETERMINED BY OWNER.
2. PHOTOCELL INSTALLED BY CONTRACTOR IN A LOCATION APPROVED BY OWNER THAT IS NOT IMPEDED BY LIGHT POLLUTION. INSTALLATION METHODS BY CONTRACTOR.
3. REFER TO PANELBOARD SCHEDULE AND CABLE SCHEDULE FOR ADDITIONAL CIRCUIT SUPPLY AND ROUTING DETAILS.
4. DIAGRAMMATICALLY SHOWN. ONLY THE POWER CONDUCTOR (BK) IS TERMINATED ON THE CONTACTOR LUGS. NEUTRAL AND GROUND CONDUCTORS FROM CABLE "xxA" AND CABLE "xxB" SHALL BE SPLICED TOGETHER INSIDE THE PANEL. GROUND CONDUCTORS SHALL BE TIED TO LC-130 GROUND LUG.
5. REFER TO ELECTRICAL PLANS AND LUMINAIRE SCHEDULE TO CONFIRM FIXTURE QUANTITIES AND TYPES.

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ELECTRICAL ONE-LINE
& WIRING DIAGRAMS

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drawing **E-101** rev. **B**

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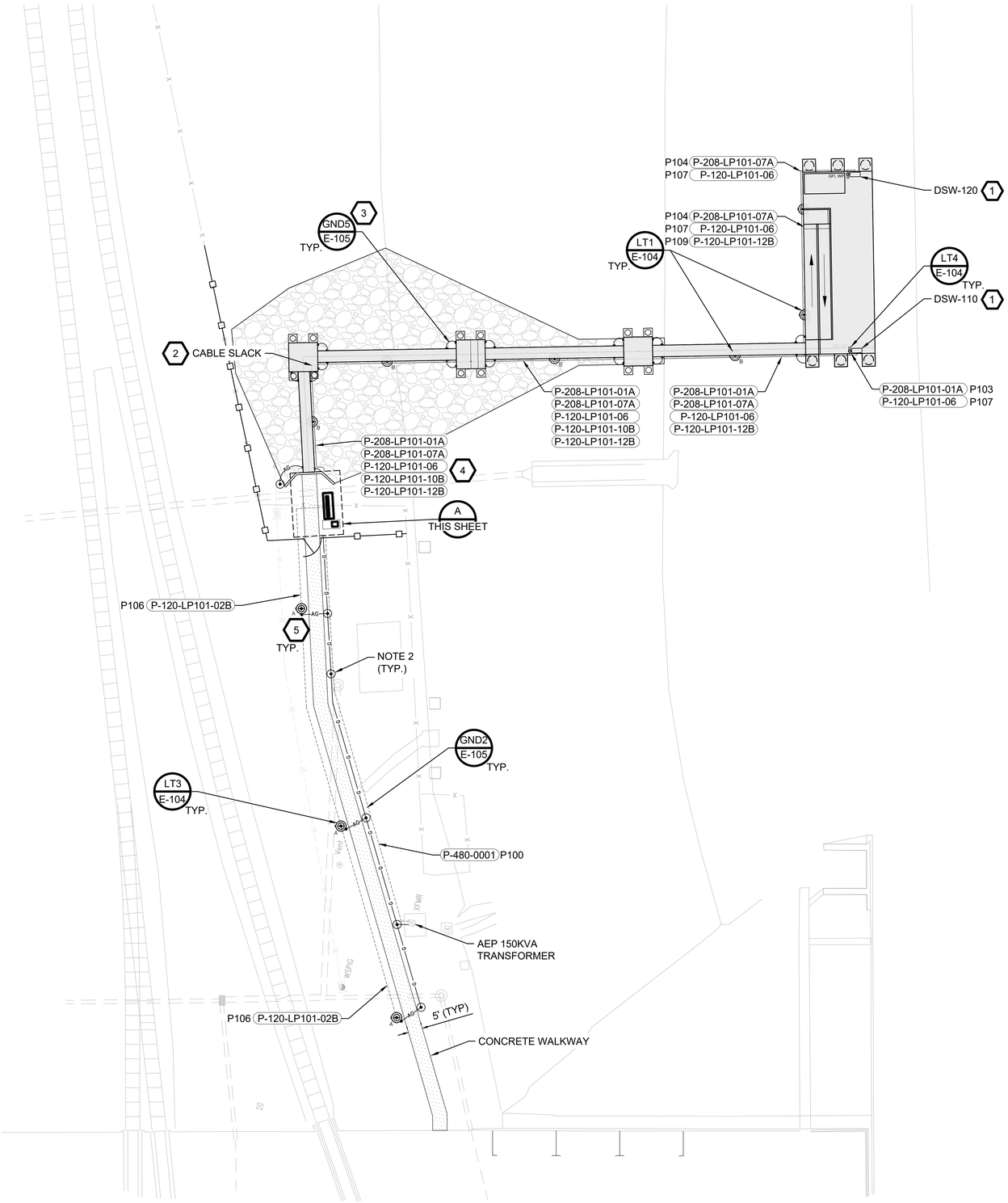
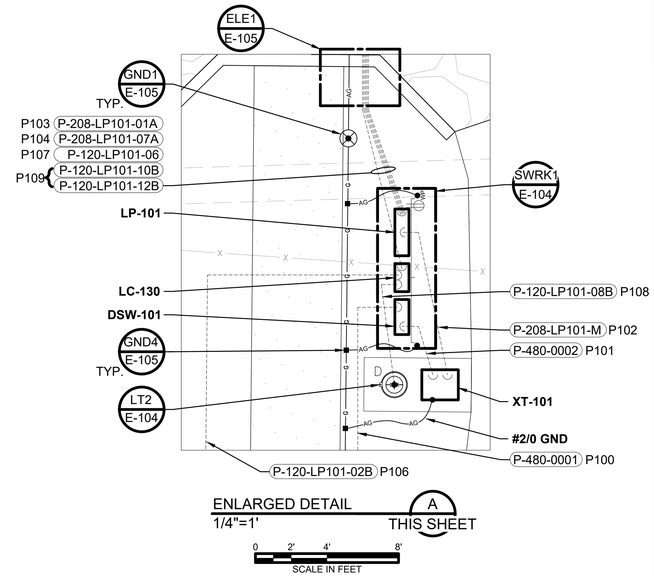


SITE PLAN



ENLARGED DETAIL A
1/4"=1' THIS SHEET

0 2' 4' 8'
SCALE IN FEET

KEYED NOTES:

1. METAL MOUNTING PLATE TO BE INSTALLED ON HANDRAILS BY OTHERS. EQUPMENT SHALL BE INSTALLED ON THESE MOUNTING PLATES. BOTTOM OF THE EQUIPMENT AND ANY APPLICABLE CABLE JUNCTION BOXES SHALL BE INSTALLED AT A MINIMUM OF 12-INCHES ABOVE DOCK DECK.
2. CONTRACTOR SHALL INSTALL CABLES WITH SUFFICIENT SLACK AT EVERY HINGED JOINT AND EXPANSION JOINT IN THE DOCK TO ALLOW THE DOCK TO RAISE/LOWER WITH THE WATER LEVEL WITHOUT STRETCHING THE CABLES. CONTRACTOR SHALL INSTALL SUCH SLACK IN A MEANS/MANNER THAT DOES NOT CREATE ANY PINCH-POINTS WHERE THE CABLES CAN BE DAMAGED DURING DOCK MOVEMENT.
3. CONTRACTOR SHALL INSTALL BONDING JUMPERS AT EVERY HINGED JOINT AND EXPANSION JOINT IN THE DOCK AND PROVIDE ENOUGH SLACK IN THE CABLE TO ALLOW THE DOCK TO RAISE/LOWER WITH THE WATER LEVEL WITHOUT STRETCHING THE CABLES. CARE SHALL BE TAKEN TO PREVENT PINCH-POINTS WHERE THE BONDING JUMPERS CAN BE DAMAGED DURING DOCK MOVEMENT.
4. CONTRACTOR SHALL DETERMINE METHOD OF INSTALLATION OF CABLES ON DOCK/RAMP. METHODS INCLUDE, BUT ARE NOT LIMITED TO, PVC OR ALUMINUM CONDUITS MOUNTED TO SIDE OF RAMP/DOCK, OR HANGING CABLES FROM C-CLAMPS. REGARDLESS OF METHOD, CONTRACTOR SHALL CONFORM TO ALL NEC REQUIREMENTS FOR INSTALLATION AND SUPPORT OF CABLES. CONTRACTOR SHALL ASSURE ADEQUATE SLACK IN CABLE. INSTALLATION METHOD SHALL BE APPROVED BY OWNER PRIOR TO INSTALLATION.
5. GROUND CABLE SHALL BE #2/0 GREEN INSULATED, DESIGNATED AS "ABOVE-GRADE" GROUND, BUT SHALL BE BURIED AND ROUTED UNDER THE SIDEWALK TO BE CONNECTED TO THE LIGHT POLE AS INDICATED IN DETAIL LT3.

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GENERAL NOTES:

1. DRAWINGS ARE DIAGRAMMATICAL IN NATURE: CONTRACTOR SHALL BE RESPONSIBLE FOR ACTUAL CABLE/CONDUIT ROUTING AND SHALL AVOID CONFLICTS.
2. CONTRACTOR TO IDENTIFY UNDERGROUND PIPING BEFORE INSTALLING GROUND ROD AND SHALL AVOID HITTING OR PENETRATING THE PIPE.

LEGEND:

- ABOVE-GRADE CABLES
- BELOW-GRADE CABLES IN CONDUIT
- G—G BURIED GROUND CABLES (#4/0 BARE COPPER)
- AG—AG ABOVE-GRADE GROUND CABLES (#2/0 GREEN INSUL. COPPER)
- EXPANSION BONDING JUMPER REFER TO DETAIL GND5, E-105.
- GROUND ROD REFER TO DETAIL GND2, E-105
- GROUND TEST WELL REFER TO DETAIL GND1, E-105.
- MECHANICAL GROUND CONNECTION (ABOVE-GRADE) REFER TO DETAIL GND3, E-105.
- EXOTHERMIC (IRREVERSIBLE) GROUND CONNECTION (BELOW-GRADE) REFER TO DETAIL GND4, E-105.
- LIGHT FIXTURE (X=TYPE) REFER TO LUMINAIRE SCHEDULE, E-104.

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Millimeters
Inches

CABLE SCHEDULE

#	CONDUIT INFO			CABLE INFO			CABLE ROUTE			CABLE SPECIFICATIONS								COMMENTS
	NUMBER	SIZE (IN.)	TYPE	CABLE NUMBER	CABLE CLASS	CABLE VOLTAGE	SERVICE DESCRIPTION	FROM DESCRIPTION	TO DESCRIPTION	QTY	# OF COND.	COND. SIZE	GROUND COND.	CABLE TYPE	APPROX. LENGTH (FT.)	CABLE O.D. (IN.)	OKONITE CATALOG #	
1	P100	1-1/2"	PRGS	P-480-0001	POWER	480V	SITE POWER FEED	UTILITY TRANSFORMER	DSW-101 (LINE SIDE)	1	3/C	#2	#6	B	175	0.97	112-31-3765	
2	P101	1-1/2"	RGS	P-480-0002	POWER	480V	TRANSFORMER POWER	DSW-101 (LOAD SIDE)	XT-101 (PRIMARY)	1	3/C	#2	#6	B	25	0.97	112-31-3765	
3	P102	2-1/2"	RGS	P-208-LP101-M	POWER	208/120V	PANELBOARD POWER	XT-101 (SECONDARY)	LP-101 (MAIN)	1	4/C	#4/0	#4	B	25	1.63	112-31-3787	
4	P103	2"	PRGS/PVC	P-208-LP101-01A	POWER	208/120V	TOWBOAT #1 SHORE POWER	LP-101, CKT #1	DSW-110 (LINE SIDE)	1	4/C	#2/0	#2	A	250	1.4	112-10-3905	DUE TO VOLT DROP, GND REQUIRED UPSIZE TO #2
5	--	--	--	P-208-LP101-01B	POWER	208/120V	TOWBOAT #1 SHORE POWER	DSW-110 (LOAD SIDE)	TOWBOAT #1 ELEC. PLUG	--	--	--	--	D	--	--	--	COORDINATE WITH OWNER FOR CABLE AND LENGTH
6	P104	2"	PRGS/PVC	P-208-LP101-07A	POWER	208/120V	TOWBOAT #2 SHORE POWER	LP-101, CKT #7	DSW-120 (LINE SIDE)	1	4/C	#2/0	#2	A	300	1.4	112-10-3905	DUE TO VOLT DROP, GND REQUIRED UPSIZE TO #2
7	--	--	--	P-208-LP101-07B	POWER	208/120V	TOWBOAT #2 SHORE POWER	DSW-120 (LOAD SIDE)	TOWBOAT #2 ELEC. PLUG	--	--	--	--	D	--	--	--	COORDINATE WITH OWNER FOR CABLE AND LENGTH
8	P105	1"	RGS	P-120-LP101-02A	POWER	120V	PATHWAY / SITE LIGHT CIRCUIT	LP-101, CKT #2	LC-130, CONTACT #1	2	1/C	#12	#12	C	10	0.13	116-67-1101	CONDUIT P105 CONTAINS MULTIPLE CIRCUITS (NOTE 1)
9	P106	1"	PRGS	P-120-LP101-02B	POWER	120V	PATHWAY / SITE LIGHT CIRCUIT	LC-130, CONTACT #1	PATHWAY LIGHTS	1	2/C	#8	#8	B	350	0.64	112-31-3734	CABLE IS A 3/C (GND INCLUDED IN CABLE)
10	P105	1"	RGS	P-120-LP101-04	POWER	120V	LIGHT CONTACTOR POWER	LP-101, CKT #4	LC-130	2	1/C	#12	#12	C	10	0.13	116-67-1101	(NOTE 1)
11	P107	1"	PRGS/PVC	P-120-LP101-06	POWER	120V	DOCK 120V RECEPTACLES	LP-101, CKT #6	DOCK RECEPTACLES	1	2/C	#12	#12	A	325	0.44	202-10-3403	CABLE IS A 3/C (GND INCLUDED IN CABLE)
12	P105	1"	RGS	P-120-LP101-08A	POWER	120V	SWITCHRACK LIGHT CIRCUIT	LP-101, CKT #8	LC-130, CONTACT #2	2	1/C	#12	#12	C	10	0.13	116-67-1101	(NOTE 1)
13	P108	1"	PRGS	P-120-LP101-08B	POWER	120V	SWITCHRACK LIGHT CIRCUIT	LC-130, CONTACT #2	SWITCHRACK LIGHT	1	2/C	#12	#12	B	25	0.44	202-31-3603	CABLE IS A 3/C (GND INCLUDED IN CABLE)
14	P105	1"	RGS	P-120-LP101-10A	POWER	120V	RAMP LIGHT CIRCUIT	LP-101, CKT #10	LC-130, CONTACT #3	2	1/C	#12	#12	C	10	0.13	116-67-1101	(NOTE 1)
15	P109	1-1/2"	PRGS/PVC	P-120-LP101-10B	POWER	120V	RAMP LIGHT CIRCUIT	LC-130, CONTACT #3	RAMP LIGHTS	1	2/C	#12	#12	A	200	0.44	202-10-3403	CABLE IS A 3/C (GND INCLUDED IN CABLE)
16	P105	1"	RGS	P-120-LP101-12A	POWER	120V	DOCK LIGHT CIRCUIT	LP-101, CKT #12	LC-130, CONTACT #4	2	1/C	#12	#12	C	10	0.13	116-67-1101	(NOTE 1)
17	P109	1-1/2"	PRGS/PVC	P-120-LP101-12B	POWER	120V	DOCK LIGHT CIRCUIT	LC-130, CONTACT #4	DOCK LIGHTS	1	2/C	#12	#12	A	275	0.44	202-10-3403	CABLE IS A 3/C (GND INCLUDED IN CABLE)
18	P110	3/4"	RGS	P-120-LP101-14	POWER	120V	SWITCHRACK RECEPTACLE	LP-101, CKT #14	SWITCHRACK GFCI RECEPTACLE	1	2/C	#12	#12	A	15	0.44	202-10-3403	CABLE IS A 3/C (GND INCLUDED IN CABLE)
19	C100	1"	RGS	C-120-LC130/PC131	CONTROL	120V	PHOTOCELL CONTROLS	LC-130	PC-131	1	4/C	#14	---	B	15	0.43	202-31-3504	

CABLE TYPE
- A OKONITE-FMR, OKOSEAL, 600V OKO-MARINE, MULTICONDUCTOR POWER & CONTROL CABLE, XHH/XHHW-2, ETHYLENE-PROPYLENE INSULATION COMPOUND, PVC JACKET, 90°C RATING
- B OKONITE, X-OLENE-OKOSEAL, 600V TC/TC-ER, MULTICONDUCTOR POWER & CONTROL CABLE, XHH/XHHW-2, CROSS-LINKED POLYETHYLENE INSULATION, PVC JACKET, 90°C RATING
- C OKONITE, OKOSEAL-N, 600V, SINGLE CONDUCTOR POWER & CONTROL CABLE, THHN/THWN-2, PVC INSULATION WITH NYLON COVERING, 90°C RATING
- D CABLE/PLUG PROVIDED BY OTHERS. 100-FT OF CABLE PROVIDED, COORDINATE WITH OWNER FOR FINAL LENGTH OF CABLE (OWNER MAY REQUIRE CABLE TO BE SHORTENED)

CONDUIT TYPE
- RGS RIGID GALVANIZED STEEL (ABOVE-GRADE CONDUIT) NOTE: IF ANY PORTION OF THE CONDUIT IS ROUTED BELOW-GRADE, THE PORTION OF RUN THAT IS BELOW-GRADE SHALL BE TRANSITIONED TO PVC-COATED RGS)
- PRGS PVC-COATED RIGID GALVANIZED STEEL (ALL BELOW-GRADE CONDUIT SHALL BE PVC-COATED RGS)
- PVC SCHEDULE 40 PVC

NOTES
1. INSTEAD OF PULLING FIVE (5) #12 GROUND CONDUCTORS FROM LP-101 TO LC-130 (INSIDE OF CONDUIT P105), CONTRACTOR MAY RUN A SINGLE #8 GROUND CONDUCTOR BETWEEN THE TWO ENCLOSURES. IF SELECTED, GROUND CONDUCTOR SHALL BE CABLE TYPE C, GREEN INSULATION COPPER CONDUCTOR.

PANELBOARD SCHEDULE

PANELBOARD NAME: LP-101 — 22,000 RMS SYMMETRICAL A.I.C.
PANELBOARD TYPE: MAIN CIRCUIT BREAKER — SURFACE MOUNTED, NEMA 3R ENCLOSURE — 225 AMP TRIP MAIN BREAKER
PANEL LOCATION: SWRK1 — 208Y/120 VOLTS, 3 PHASE, 4 WIRE, 60 Hz — 225 AMP MAINS
SUPPLIED FROM: XT-101

CKT NO.	TRIP AMPS	NO. POLES	CABLE NO.	LOAD SERVED	LOAD VA	Ø	LOAD VA	LOAD SERVED	CABLE NO.	NO. POLES	TRIP AMPS	CKT NO.
1	100	3	P-208-LP101-01A	DOCK CHARGING STATION #1 (NOTE 1)	12000	A	732	PATHWAY SITE LIGHTING CIRCUIT	P-120-LP101-02A	1	20	2
					12000	B	396	LIGHTING CONTACTOR/PHOTOCELL	P-120-LP101-04A	1	20	4
					12000	C	360	DOCK RECEPTACLES (NOTE 3)	P-120-LP101-06	1	15	6
7	100	3	P-208-LP101-07A	DOCK CHARGING STATION #2 (NOTE 1)	12000	A	71	SWITCHRACK LIGHT CIRCUIT	P-120-LP101-08A	1	20	8
					12000	B	284	RAMP LIGHTING CIRCUIT (NOTE 2)	P-120-LP101-10A	1	20	10
					12000	C	142	DOCK LIGHTING CIRCUIT (NOTE 2)	P-120-LP101-12A	1	20	12
				(EMPTY)		A	180	SWITCHRACK RECEPTACLE (NOTE 3)	P-120-LP101-14	1	20	14
				(EMPTY)		B		(EMPTY)				
				(EMPTY)		C		(EMPTY)				
				(EMPTY)		A		MAIN BREAKER	P-208-LP101-M	3	225	20
				(EMPTY)		B						
				(EMPTY)		C						

PHASE A TOTAL AMPS = 208.2 A — PHASE A TOTAL LOAD = 25 kVA — TOTAL CONNECTED LOAD = 74.2 kVA
PHASE B TOTAL AMPS = 205.7 A — PHASE B TOTAL LOAD = 24.7 kVA — DEMAND FACTOR = 100%
PHASE C TOTAL AMPS = 204.2 A — PHASE C TOTAL LOAD = 24.5 kVA — ESTIMATED DEMAND LOAD = 60.1 kVA

NOTES:
1. BREAKER SHALL BE GFPE BREAKER SET TO OPEN AT CURRENTS NOT TO EXCEED 30mA.
2. BREAKER SHALL BE GFPE BREAKER SET TO OPEN AT CURRENTS NOT TO EXCEED 100mA.
3. STANDARD BREAKER, BUT A GFCI RECEPTACLE SHALL BE INSTALLED (DO NOT INSTALL A GFCI BREAKER)

LUMINAIRE SCHEDULE

DWG TYPE	LUMINAIRE	QTY	MANUFACTURER	MODEL	CATELOG NUMBER	LUMEN	LAMP	DRIVER	MOUNTING	NOM. PWR (W) / INPUT CURRENT (AMPS)	MOUNTING DETAIL	ACCESSORIES/NOTES
A	AREA/SITE LED	3	COOPER / McGRAW-EDISON	GLEON GALLEON	GLEON-SA4C-740-U-T2-QM-AP	28,000	LED, 70 CRI, 4000K CCT	120-277V AUTO SENSING DRIVER	QUICK-MOUNT ROUND POLE	225 W / 2.03 A	Detail LT3, E-104	25-FT ROUND TAPERED ALUMIMUM POLE
B	RAMP/CATWALK LED	4	EATON CROUSE-HINDS	CHAMP PRO PVM	PVML-5-N-P-R1-UNV1	5,537	LED, 70 CRI, 4000K CCT TYPE 1 OPTICS	120-277V AUTO SENSING DRIVER	STRAIGHT STANCHION PLATFORM SWIVELPOLE	67 W / 0.59 A	Detail LT1, E-104	8-FT PLATFORM SAFETY STANCHION FROM SWIVELPOLE
C	DOCK LED	2	EATON CROUSE-HINDS	CHAMP PRO PVM	PVML-5-N-J-R3-UNV1	5,537	LED, 70 CRI, 4000K CCT TYPE 3 OPTICS	120-277V AUTO SENSING DRIVER	25° STANCHION PLATFORM SWIVELPOLE	67 W / 0.59 A	Detail LT1, E-104	8-FT PLATFORM SAFETY STANCHION FROM SWIVELPOLE
D	ELEC. RACK LED	1	EATON CROUSE-HINDS	CHAMP PRO PVM	PVML-5-N-J-R3-UNV1	5,537	LED, 70 CRI, 4000K CCT TYPE 3 OPTICS	120-277V AUTO SENSING DRIVER	25° STANCHION FREESTAND SWIVELPOLE	67 W / 0.59 A	Detail LT2, E-104	10-FT FREESTANDING SAFETY STANCHION FROM SWIVELPOLE

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B	05/11/21	DES	JFR	90% SUBMITTAL

NOT APPROVED FOR CONSTRUCTION

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KANSAS CITY, MO 64114
816-333-9400
LICENSEE NO. 421

date MAY 11, 2021 | detailed M. LYTLE
designed D. STRINGER | checked J. ROBERSON

TULSA PORTS
BARGE · RAIL · INDUSTRIAL PARK
CATOOSA · INOLA
CATOOSA, OKLAHOMA

TPOC TOW BOAT DOCK
SCHEDULES
CABLE / PANELBOARD / LUMINAIRES

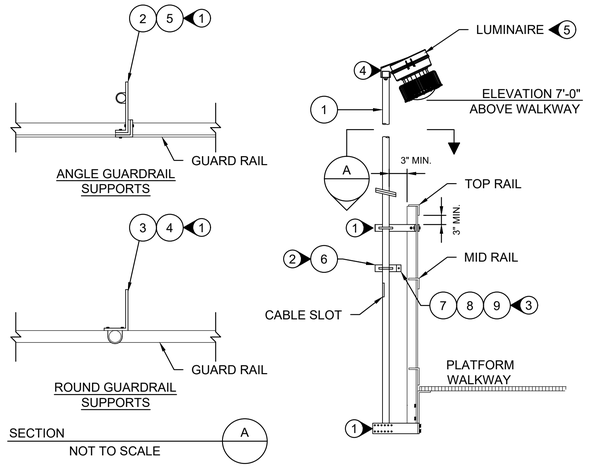
project 125412 | contract ---
drawing E-103 | rev. B
sheet 21 of 23 sheets
file E-103.dwg

Millimeters
Scale For Microfilming
Inches

ITEM	QTY	DESCRIPTION	MANUFACTURER	MODEL NO.	MATERIAL	SIZE
1	1	SAFETY STANCHION	SWIVELPOLE	S2-2400-PS	ALUM.	BFT POLE
2	1	MOUNTING BRACKET KIT, ANGLE	SWIVELPOLE	MBK6-5-50	HDG	CLAMP (1)
3	1	MOUNTING BRACKET KIT, ROUND	SWIVELPOLE	MBK2-5-50	HDG	U-BOLT (1)
4	1	MOUNTING BRACKET KIT	SWIVELPOLE	MBK2-5A-50	HDG	U-BOLT OFFSET (1)
5	1	MOUNTING BRACKET KIT	SWIVELPOLE	MBK6-5A-50	HDG	CLAMP OFFSET (1)
6	1	JUNCTION BOX PLATE	SWIVELPOLE	JBPK1101	HDG	MOUNT FOR SPLICE BOX
7	1	WEATHERPROOF BOX	HUBBELL	PRB57550GY	PVC	CABLE SPLICE BOX
8	1	WEATHERPROOF BOX COVER	HUBBELL	PBC300GY	PVC	BOX COVER
9	3	CORD CONNECTOR (CABLE GLAND)	HUBBELL	SEC75GA	PVC	LOCKNUT #31622008LPK50
10	1	FREESTANDING SAFETY STANCHION	SWIVELPOLE	F1-M1-3000-T-NCT-AL	ALUM.	10FT POLE
11	1	ROUND TAPERED ALUM. POLE	COOPER	RTAGL25A12K0G	ALUM.	25FT POLE
12	1	WEATHERPROOF BOX	HUBBELL	PSB37550GY	PVC	SINGLE GANG/GRAY
13	1	GFCI RECEPTACLE - 15-AMP	HUBBELL	GF5262SGGY	""	TAMPER/WEATHER RESIST.
14	1	WEATHERPROOF IN-USE COVER	HUBBELL	MM420C	PVC	CLEAR COVER
15	A/R	STRUT	B-LINE	B22	HD GALV	LENGTH AS REQ'D
16	3	SQUARE POST BASE	B-LINE	B280SQ	HD GALV	6"x6", 2-HOLE
17	3	4-HOLE TEE PLATE	B-LINE	B133	HD GALV	CLEAR COVER
18	2	3-HOLE CORNER PLATE	B-LINE	B140	HD GALV	CLEAR COVER
19	1	5-HOLE CROSS PLATE	B-LINE	B132	HD GALV	CLEAR COVER

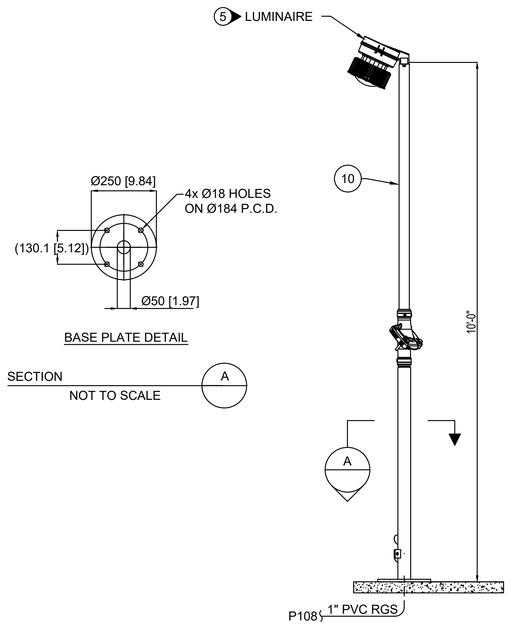
KEYED NOTES:

1. SELECT MOUNTING BRACKET KIT TO MATCH GUARD RAIL DESIGN.
2. THE FINAL FIXTURE OF THE CIRCUIT (END-OF-LINE) WILL NOT REQUIRE BRACKET AND SPLICE BOX (ITEMS #6, 7, 8 & 9).
3. INSTALL 3 - 1/C #12 AWG CONDUCTORS FROM LUMINAIRE DOWN TO WEATHERPROOF SPLICE BOX, SINGLE CONDUCTOR TO MULTI-CONDUCTOR SPLICES SHALL BE MADE WITHIN WEATHERPROOF SPLICE BOX.
4. FOR PLATFORM LIGHTING, STANCHIONS LOCATED ON RAMP ARE STRAIGHT STANCHION, WHILE STANCHIONS LOCATED ON THE FLOATING DOCK ARE 25 DEGREE ANGLED STANCHION. REFER TO PLAN DRAWING AND SCHEDULES FOR PROPER TYPE.
5. REFER TO SITE PLAN DRAWING, E-102, FOR LUMINAIRE LOCATION AND TYPE.
6. BOND EQUIPMENT GROUND CONDUCTOR FROM EACH CIRCUIT TO STATIC GROUND ON GROUND LUG LOCATED IN POLE.
7. MOUNTING PLATES LOCATED ON DOCK ARE INSTALLED BY OTHERS. CONTRACTOR SHALL BE RESPONSIBLE FOR MOUNTING PLATE LOCATED ON SHORE SWITCHRACK.
8. WARNING LABEL SHALL BE INSTALLED NEXT TO RECEPTACLES LOCATED ON DOCK. WARNING LABEL IS NOT REQUIRED FOR RECEPTACLE LOCATED ON SHORE SWITCHRACK. CONTRACTOR SHALL USE A MINIMUM OF TWO SELF-TAPPING SCREWS, IN OPPOSITE CORNERS, TO AFFIX LABELS TO THE STEEL.
9. WARNING LABEL SHALL BE 3-PLY LAMINATED PLASTIC MATERIAL WITH RED FACE AND WHITE CORE (RED LABEL WITH WHITE LETTERING). TEXT SHALL BE ENGRAVED INTO THE CORE. FRONT EDGES OF LABEL SHALL HAVE 45-DEGREE BEVEL. TEXT FONT SHALL BE SANSSERIF WITH 1/4" FONT SIZE.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL HARDWARE REQUIRED TO INSTALL SWITCHRACK AND EQUIPMENT. ALL HARDWARE SHALL BE 316 STAINLESS STEEL.



TYPICAL STANCHION-MOUNT LUMINAIRE FOR PLATFORMS

DETAIL LT1 — NOT TO SCALE

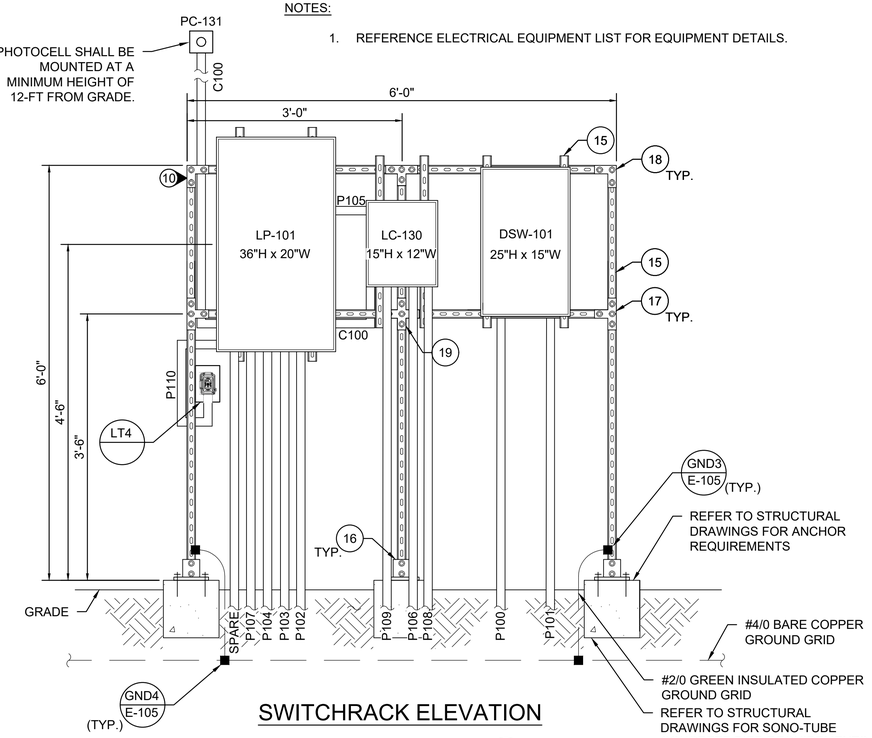


TYPICAL FREESTANDING STANCHION-MOUNT LUMINAIRE

DETAIL LT2 — NOT TO SCALE

NOTES:

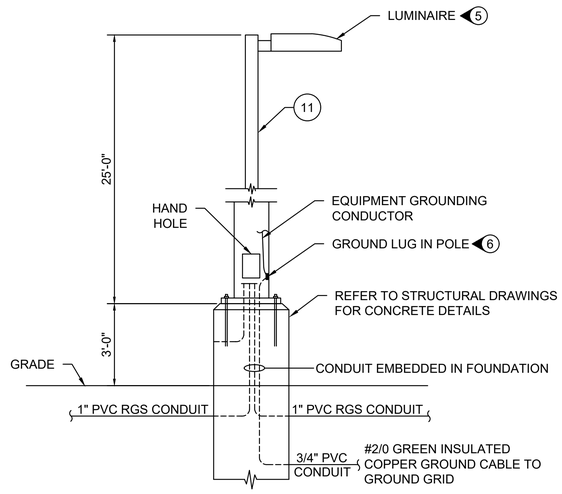
1. REFERENCE ELECTRICAL EQUIPMENT LIST FOR EQUIPMENT DETAILS.



SWITCHRACK ELEVATION

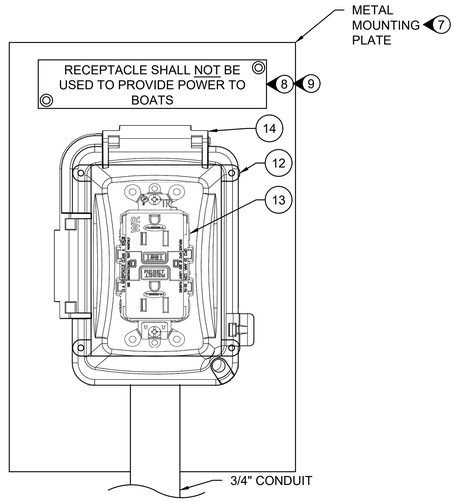
DETAIL SWRK1

0 1/2" 1" 2"
SCALE IN FEET



TYPICAL AREA LIGHT POLE-MOUNT LUMINAIRE

DETAIL LT3 — NOT TO SCALE



TYPICAL 120VAC CONVENIENCE RECEPTACLE

DETAIL LT4 — NOT TO SCALE

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816-333-9400
LICENSEE NO. 421

date	detailed
MAY 11, 2021	M. LYTLE
designed	checked
D. STRINGER	J. ROBERSON

TULSA PORTS
BARGE · RAIL · INDUSTRIAL PARK
CATOOSA · INOLA

CATOOSA, OKLAHOMA

TPOC TOW BOAT DOCK
ELECTRICAL
INSTALLATION DETAILS

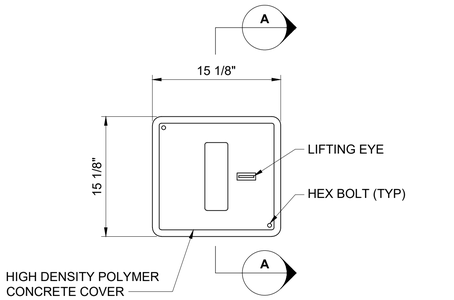
project	contract
125412	---

drawing **E-104** rev. **A**

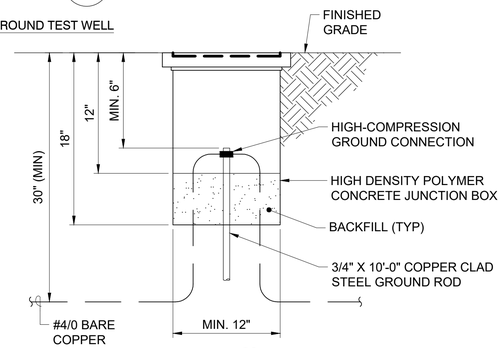
sheet 22 of 23 sheets

file E-104.dwg

Scale For Microfilming
Millimeters
Inches



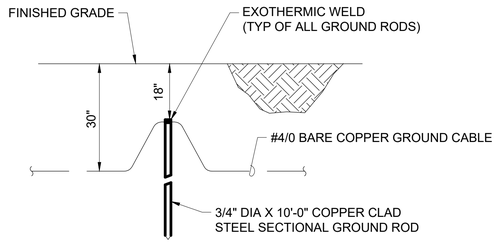
TYPICAL GROUND TEST WELL

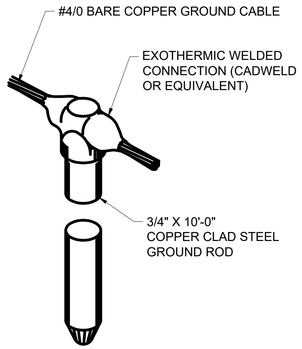


SECTION A
NOT TO SCALE

TYPICAL GROUND TEST WELL ASSEMBLY

DETAIL GND1
NOT TO SCALE

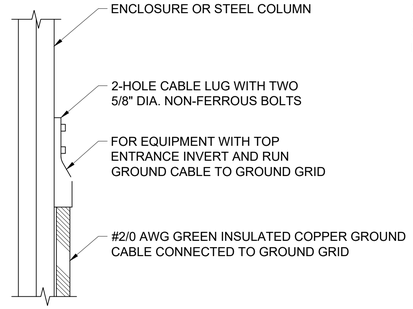


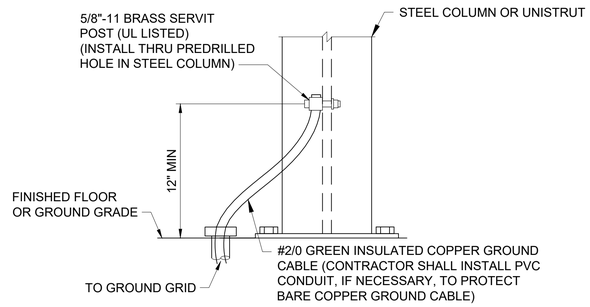


TYPICAL GROUND ROD INSTALLATION

DETAIL GND2
NOT TO SCALE

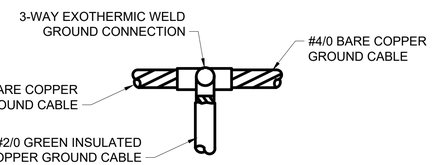
NOTE:
CONTRACTOR SHALL CHOOSE PROPER APPLICATION OF MECHANICAL CONNECTION. SOME APPLICATIONS MAY REQUIRE USE OF SERVIT POST WHILE OTHER APPLICATIONS MAY REQUIRE CABLE LUG.

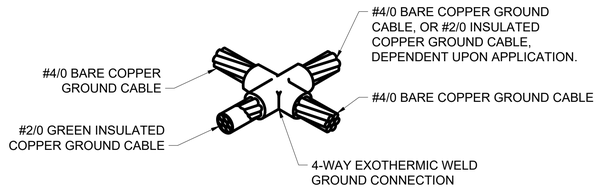




TYPICAL MECHANICAL GROUND CONNECTION INSTALLATION

DETAIL GND3
NOT TO SCALE

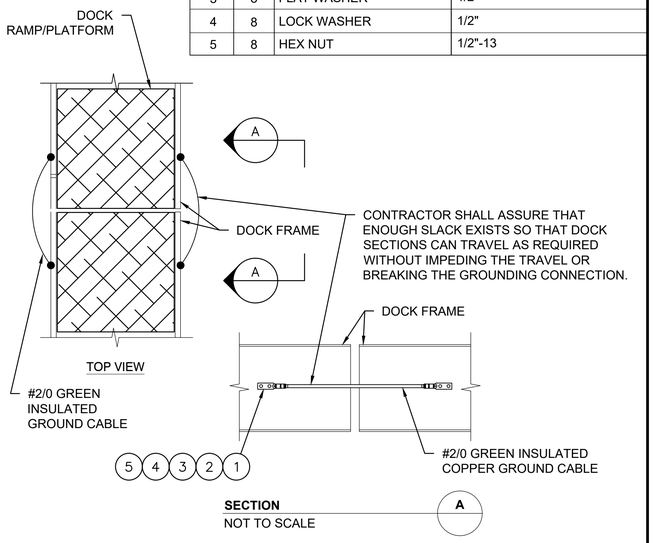




TYPICAL BELOW-GRADE EXOTHERMIC (IRREVERIBLE) GROUND CONNECTION INSTALLATION

DETAIL GND4
NOT TO SCALE

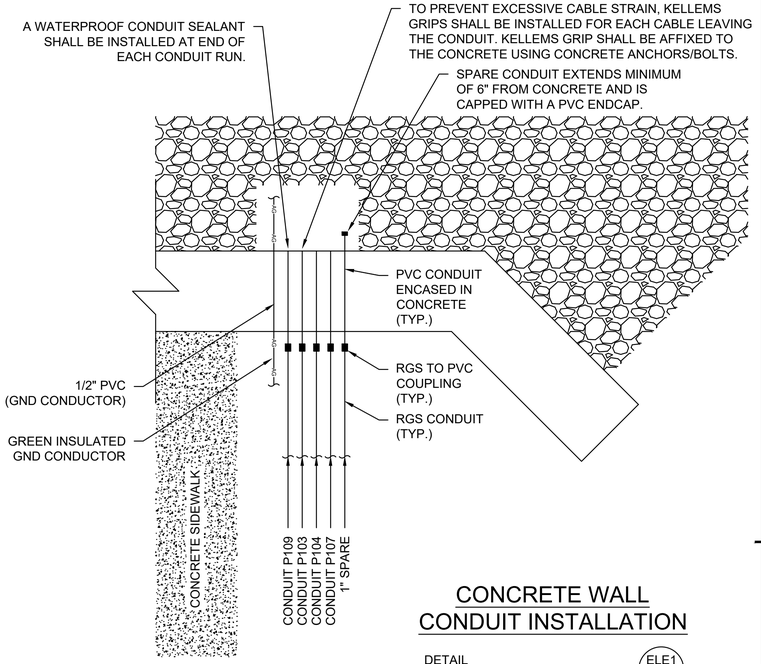
ITEM	QTY	DESCRIPTION	SIZE
1	1	2 HOLE GROUNDING IRREVERSIBLE COMPRESSION TERMINAL	CLAMP SHALL ACCEPT #2/0 AWG STR
2	8	CARRIAGE BOLT	1/2"-13 X 1"
3	8	FLAT WASHER	1/2"
4	8	LOCK WASHER	1/2"
5	8	HEX NUT	1/2"-13



SECTION A
NOT TO SCALE

TYPICAL GROUND BONDING JUMPER INSTALLATION

DETAIL GND5
NOT TO SCALE



CONCRETE WALL CONDUIT INSTALLATION

DETAIL ELE1
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sheet 23 of 23 sheets
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