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ADDENDA / REVISIONS

SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-407 & 1-504
T201807401	DESIGNED BY:	B.MARSHALL
COUNTY	CHECKED BY:	H.BROWN
NEW CASTLE		

INDEX OF SHEETS

SECTION
PAI
SHEET NO.
2

ADDENDUM PREPARED BY DELDOT - TRANSPORTATION SOLUTIONS XXXXXXXXXXXXXXXXXXXX		
THIS SEAL APPLIES TO THE FOLLOWING SHEETS CHANGED UNDER ADDENDUM #X: XX, XX-XX, XX	DATE	SEAL

REVISION PREPARED BY DELDOT - TRANSPORTATION SOLUTIONS XXXXXXXXXXXXXXXXXXXX		
THIS SEAL APPLIES TO THE FOLLOWING SHEETS CHANGED UNDER REVISION #X: XX, XX-XX, XX	DATE	SEAL

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ADDENDA / REVISIONS			SILVER LAKE DAM REPAIRS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: 8px;">CONTRACT</td> <td style="font-size: 8px;">BRIDGE NO.</td> <td style="font-size: 8px;">1-407 & 1-504</td> </tr> <tr> <td style="font-size: 8px;">T201807401</td> <td colspan="2" style="font-size: 8px;">DESIGNED BY: B.MARSHALL</td> </tr> <tr> <td style="font-size: 8px;">COUNTY</td> <td colspan="2" style="font-size: 8px;">CHECKED BY: H.BROWN</td> </tr> <tr> <td style="font-size: 8px;">NEW CASTLE</td> <td colspan="2"></td> </tr> </table>	CONTRACT	BRIDGE NO.	1-407 & 1-504	T201807401	DESIGNED BY: B.MARSHALL		COUNTY	CHECKED BY: H.BROWN		NEW CASTLE			ADDENDA AND REVISIONS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: 8px;">SECTION</td> </tr> <tr> <td style="font-size: 8px;">PAI</td> </tr> <tr> <td style="font-size: 8px;">SHEET NO.</td> </tr> <tr> <td style="text-align: center; font-size: 8px;">3</td> </tr> </table>	SECTION	PAI	SHEET NO.	3
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EXISTING SYMBOLS

DRAINAGE	
	DITCH OR STREAM CENTERLINE
	DIRECTIONAL STREAM FLOW ARROW
	DRAINAGE INLET
	DRAINAGE JUNCTION BOX
	DRAINAGE MANHOLE
	DRAINAGE PIPE AND FLOW ARROW
	DRAINAGE PIPE HEADWALL
	RIPRAP - AREA FEATURE
	RIPRAP - LINEAR FEATURE

MANMADE ROADSIDE FEATURES	
	BOLLARD - STEEL POLE
	BOLLARD - WOOD POST
	CURB
	CURB AND GUTTER
	FENCE - CHAINLINK OR STRANDED
	FENCE - STOCKADE OR SPLIT RAIL
	FLAG POLE
	GUARDRAIL - STEEL BEAM
	GUARDRAIL - WIRE ROPE
	LAMP AND POST - RESIDENTIAL
	MAILBOX
	PARKING METER AND POST
	PAVEMENT - FLEXIBLE
	PAVEMENT - RIGID
	PILE - BRIDGE
	PILLAR OR MISCELLANEOUS POST
	TRAFFIC SIGN AND POST
	WALL - BRICK OR BLOCK
	WALL - STONE

NATURAL ROADSIDE FEATURES	
	GRASS LAWN
	HEDGEROW OR THICKET
	MARSH BOUNDARY LINE
	TREE - CONIFEROUS
	TREE - DECIDUOUS
	TREE STUMP
	SHRUBBERY
	DELINEATED WETLAND BOUNDARY LINE
	WOODS LINE BOUNDARY

RIGHT-OF-WAY SYMBOLS	
	PROPERTY MARKER - CONCRETE MON.
	PROPERTY MARKER - IRON PIPE
	HISTORIC RIGHT-OF-WAY BASELINE
	EXISTING RIGHT-OF-WAY
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING DENIAL OF ACCESS
	EXISTING R/W & DENIAL OF ACCESS

SURVEY CONTROL & MONUMENTATION	
	SURVEY BENCHMARK LOCATION
	SURVEY TIE POINT LOCATION
	SURVEY TRAVERSE POINT
	POINT OF CURVATURE OR TANGENCY
	POINT OF INTERSECTING TANGENTS

UTILITY	
	SOIL BORING LOCATION
	UTILITY TEST HOLE LOCATION
	CABLE TV DISTRIBUTION BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	POLE MOUNTED LUMINAIRE
	GAS MANHOLE
	GAS METER
	GAS VALVE
	GAS PUMP - SERVICE STATION
	RAILROAD TRACKS
	SANITARY SEWER MANHOLE
	SANITARY SEWER VALVE
	SANITARY SEWER CLEANOUT OR VENT
	SEPTIC DRAIN FIELD
	TELEPHONE BOOTH
	TELEPHONE MANHOLE
	TELEPHONE TEST POINT
	TRAFFIC - CONDUIT JUNCTION WELL
	TRAFFIC - LIGHT POLE AND BASE
	TRAFFIC - PEDESTRIAN POLE & BASE
	TRAFFIC - SIGNAL CABINET & BASE
	TRAFFIC - SIGNAL POLE AND BASE
	UTILITY BOX
	UTILITY POLE GUY WIRE ANCHOR
	UTILITY POLE
	WATER - FIRE HYDRANT
	WATER METER
	WATER VALVE
	WELL HEAD
	MANHOLE - UNDETERMINED OWNER

EXISTING UTILITIES	
	DELMARVA POWER ELECTRIC
	CHESAPEAKE UTILITIES GAS
	NEW CASTLE COUNTY SEWER

PROPOSED SYMBOLS

CONSTRUCTION	
	CONCRETE SAFETY BARRIER - PERMANENT
	BIOFILTRATION SWALE
	BRICK PATTERNED SURFACE
	BUTT JOINT
	CLEAR ZONE
	COMPOST FILTER LOG
	CONSTRUCTION BASELINE
	CONSTRUCTION SAFETY FENCE
	CURB, TYPE 1 & TYPE 3
	CURB, TYPE 2
	CURB & GUTTER, TYPE 1
	CURB & GUTTER, TYPE 2
	CURB & GUTTER, TYPE 3
	CURB & GUTTER, TYPE 4
	CURB OPENING
	DRAINAGE INLET
	DITCH
	FENCE - METAL
	FENCE - WOOD
	FLARED END SECTION
	GUARDRAIL, TYPE 1
	GUARDRAIL, TYPE 2
	GUARDRAIL, TYPE 3
	GUARDRAIL END ANCHORAGE
	GUARDRAIL END TREATMENT, TYPE 1
	GUARDRAIL END TREATMENT, TYPE 2
	GUARDRAIL END TREATMENT, TYPE 3
	IMPACT ATTENUATOR
	JUNCTION BOX - DRAINAGE
	LATERAL OFFSET
	LIMIT OF CONSTRUCTION
	MAILBOX
	MANHOLE
	PAVEMENT PATCH
	PAVEMENT REMOVAL - TOPSOIL, SEED AND MULCH
	PIPE & DIRECTIONAL FLOW ARROW
	RIPRAP
	P.C.C. SIDEWALK - 4"
	P.C.C. SIDEWALK - 6" (USE 8" DEPTH FOR CHANNELIZATION ISLANDS.)
	UNDERDRAIN
	UNDERDRAIN OUTLET

RIGHT-OF-WAY SYMBOLS	
	PROPOSED RIGHT-OF-WAY MONUMENT
	PROPOSED DENIAL OF ACCESS
	PROPOSED PERMANENT EASEMENT
	PROPOSED RIGHT-OF-WAY
	PROPOSED R/W & DENIAL OF ACCESS
	TEMPORARY CONSTRUCTION EASEMENT
	PROPOSED RIGHT-OF-WAY BASELINE

IDENTIFIERS	
	ADJUST BY CONTRACTOR
	ADJUST BY OTHERS
	CONCRETE SAFETY BARRIER
	COMPOST FILTER LOG
	CURB OR CURB & GUTTER
	CONVERT TO JUNCTION BOX
	CONVERT TO DRAINAGE MANHOLE
	CURB OPENING
	CURB RAMP / TYPE
	CURB RAMP / TYPE WITHOUT SIDEWALK SURFACE DETECTABLE WARNING SYSTEM
	CONSTRUCTION SAFETY FENCE
	DRAINAGE INLET
	DO NOT DISTURB
	ENERGY DISSIPATOR
	FENCE
	FLARED END SECTION
	FILL WITH FLOWABLE FILL
	FILTRATION STRUCTURE
	GUARDRAIL
	JUNCTION BOX
	MANHOLE
	MONUMENT - RIGHT-OF-WAY
	PIPE
	RELOCATE BY CONTRACTOR
	RELOCATE BY OTHERS
	RELOCATE BY PROPERTY OWNER
	REMOVE BY CONTRACTOR
	REMOVE BY TRAFFIC CONTRACTOR
	REMOVE BY OTHERS
	UNDERDRAIN / LENGTH
	UNDERDRAIN OUTLET PIPE

LANDSCAPING	
	LANDSCAPE PLANTINGS
	SHRUBBERY
	CONIFEROUS TREE
	DECIDUOUS TREE

TRAFFIC	
	ITMS CONDUIT
	SIGNAL CONDUIT
	CONDUIT JUNCTION WELL
	LUMINAIRE
	PAVEMENT MARKINGS
	PAVEMENT STRIPING
	TRAFFIC SIGN

PAVEMENT SECTION(S)	
	RECONSTRUCTED PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS

MISCELLANEOUS	
	SHEET PILE WALL

ADDENDA / REVISIONS

NOT TO SCALE

SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-407 & 1-504
T201807401	DESIGNED BY:	B.MARSHALL
COUNTY	CHECKED BY:	H.BROWN
NEW CASTLE		

LEGEND

LG-01

SECTION	PAI
SHEET NO.	4

GENERAL NOTES

- THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED AUGUST 2016 AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2018, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.
- ELECTRONIC PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR, INCLUDE:

()	NONE
()	ASCII DATA FILES WITH COORDINATES AND ELEVATIONS FOR PROPOSED POINTS AS SELECTED BY THE ENGINEER.
(X)	ALL PLAN SHEETS, IN PDF FORMAT.
()	EXISTING DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
()	PROPOSED DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
()	DESIGN FILE, IN .DGN FILE FORMAT, CONTAINING ONLY THE PROPOSED 3D TRIANGLES OF THE PROPOSED DIGITAL TERRAIN MODEL (DTM).

NOTE: THE DOCUMENT ENTITLED "RELEASE FOR DELIVERY OF DOCUMENTS IN ELECTRONIC FORM TO A CONTRACTOR" MUST BE SIGNED BY ALL PARTIES PRIOR TO THE DELIVERY OF ANY ELECTRONIC PROJECT FILES.

- PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE CONTRACTOR, INCLUDE:

()	CROSS SECTIONS (TO BE MADE AVAILABLE TO THE AWARDED CONTRACTOR)
()	RIGHT-OF-WAY PLANS (INCLUDED IN PLAN SET)

PROJECT NOTES

SECTION 100

- ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR WILL CONTACT THE DELAWARE TMC AT 302-659-4600 PRIOR TO ANY UNMANNED AIRCRAFT VEHICLE (UAV) FLIGHTS. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE THE FOLLOWING INFORMATION: THE REGISTRATION NUMBER OF THE UAV, THE FLIGHT TIME, LOCATION OF THE FLIGHT, THE PILOT'S NAME AND THE PILOT'S CONTACT NUMBER DURING THE FLIGHT.

SECTION 200

- REMOVAL OF STRUCTURES AND OBSTRUCTIONS:
ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS ASSOCIATING WITH BRIDGE (1-504) SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
- TIMBER AND STEEL GATES WITH STEMS AND OPERATORS
- STEEL GATE FRAMES
- CHIP LOOSE CONCRETE/SPALLED AREAS OF WINGWALLS
- CONCRETE FISH LADDER SUPPORT
- CONCRETE BAFFLE WITH STEEL ANGLE
- BRIDGE 1-504 DECK
- BRIDGE 1-504 BARRIER
- PORTION OF CENTER PIER
- EXISTING GUARDRAIL TRANSITIONS TO BE REMOVED AND REINSTALLED

ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS ASSOCIATING WITH BRIDGE (1-407) SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
- TIMBER AND STEEL GATES WITH STEMS AND OPERATORS
- GATE MOUNTING HARDWARE AND GUIDES
- CONCRETE PLANTERS

- PORTIONS OF THE WINGWALL DEMOLITION REQUIRE TEMPORARY SUPPORT OF EXISTING FILL TO BE DESIGNED BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT A PLAN DETAILING PROPOSED METHOD OF TEMPORARY SUPPORT FOR APPROVAL PRIOR TO BEGINNING DEMOLITION WORK. PAYMENT FOR TEMPORARY SUPPORT SHALL BE MADE UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
- DECK AND BARRIER REMOVAL REQUIRES TEMPORARY SUPPORT OF EXISTING SUBSTRUCTURE UNITS TO BE DESIGNED BY THE CONTRACTOR THAT SHALL STABILIZE SUBSTRUCTURE UNITS AND PROTECT UTILITIES. CONTRACTOR SHALL SUBMIT A PLAN DETAILING PROPOSED METHOD OF TEMPORARY SUPPORT FOR APPROVAL PRIOR TO BEGINNING DEMOLITION WORK IN ACCORDANCE WITH SECTION 604. CAPACITY OF SUBSTRUCTURE UNITS DURING TEMPORARY BRACING SHALL BE VERIFIED. EXISTING 8" DIA. SEWER PIPE SHALL BE SUPPORTED AFTER EXISTING HANGER IS REMOVED UNTIL NEW HANGER IS INSTALLED AS SHOWN ON SHEET 17A. PAYMENT FOR TEMPORARY SUPPORT SHALL BE MADE UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
- SIGNING:
TO AVOID DAMAGE, SIGNS WITHIN PROJECT LIMITS MAY BE REMOVED DURING CONSTRUCTION IF NEEDED BUT MUST BE REINSTALLED AT THE SAME LOCATION BEFORE REOPENING THE ROADWAY. ALL WORK RELATED TO MOVING AND REINSTALLING EXISTING SIGNS SHALL BE INCIDENTAL TO ITEM #211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS. IF THE SIGN IS DAMAGED DURING CONSTRUCTION, THE SIGN MUST BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- CUT TO GRADE ALL TREES WITHIN THE LOC. DO NOT REMOVE STUMPS BELOW GRADE. PAYMENT IS INCIDENTAL TO ITEM 201000.

SECTION 600

- PORTLAND CEMENT CONCRETE:
USE PORTLAND CEMENT CONCRETE FOR CAST-IN-PLACE ELEMENTS AS FOLLOWS:
(f'c = 28-DAY COMPRESSIVE STRENGTH)
CLASS A - ALL CONCRETE. (f'c = 4.5 ksi)
A HIGHER CLASS CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS CONCRETE AT NO ADDITIONAL COST TO DELDOT WITH APPROVAL OF THE BRIDGE DESIGN ENGINEER.
- CHAMFER ALL EXPOSED EDGES 3/4" X 3/4" UNLESS OTHERWISE NOTED.
- DO NOT SLIP-FORM BARRIERS, UNLESS OTHERWISE APPROVED BY THE DEPARTMENT.
- ALL CONCRETE SHALL BE PROVIDED WITH A SHRINKAGE REDUCING/ COMPENSATING ADMIXTURE. THE ADMIXTURE MAY BE SUPPLIED BY ONE PRODUCT THAT PROVIDES BOTH EXPANSION AND PORE WATER SURFACE TENSION OR TWO SEPARATE PRODUCTS EACH ADDED AT THE DOSAGE RECOMMENDED BY THE MANUFACTURER'S TECHNICAL DATA SHEETS AND HAVING THE FOLLOWING CHARACTERISTICS:
(a.) DESIGNED TO PROVIDE BOTH OF THE FOLLOWING CHARACTERISTICS
(i.) EXPANDS AT A RATE THAT CLOSELY COMPENSATES FOR THE SHRINKAGE OF THE CONCRETE MIX
(ii.) REDUCES THE CAPILLARY SURFACE TENSION OF THE CONCRETE PORE WATER
(b.) PROVIDES AT LEAST 80% SHRINKAGE REDUCTION AS MEASURED AND DOCUMENTED BY FIELD PERFORMANCE
(c.) FORMULATED FOR USE IN FREEZING AND THAWING WEATHER
ALL ADMIXTURES MUST BE COMPATIBLE WITH ALL OTHER CONCRETE-MIX DESIGN CONSTITUENTS. CALCIUM CHLORIDE IS NOT PERMITTED; NO CHEMICAL ADMIXTURES WHICH CONTAIN MORE THAN 0.1% CHLORIDE BY WEIGHT, WILL BE PERMITTED FOR USE. DOSAGE RATE AND MIXING SEQUENCE WILL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS

SECTION 600 (CONTINUED)

- PORTLAND CEMENT CONCRETE (CONTINUED):
(d.) SHALL HAVE DOCUMENTED PERFORMANCE OF ASTM C1581, RING TEST, RUN WITH CONCRETE (MAXIMUM AGGREGATE SIZE NOT TO EXCEED 0.5 INCHES): NO CRACKING FOR MINIMUM 120 DAYS
(e.) SHALL BE CERTIFIED BY NSF/ANSI STANDARD 61: DRINKING WATER SYSTEM COMPONENTS - HEALTH EFFECTS. CONTRACTORS AND SUPPLIERS THAT DO NOT HAVE DOCUMENTED EXPERIENCE WITH SHRINKAGE COMPENSATING ADMIXTURES SHALL INCLUDE SUFFICIENT TIME FOR LABORATORY TESTING AND A TRIAL BATCH TO CONFIRM DOSAGE AND ADMIXTURES WILL PERFORM AS INTENDED TO MEET THE DESIGN INTENT.
- IN ADDITION TO ALL PRIOR LISTED REQUIREMENTS, SELF CONSOLIDATING CONCRETE SHALL BE PROVIDED IN ACCORDANCE WITH SPECIFICATION 610512 AT THE FOLLOWING LOCATIONS: 1-504 CENTER PIER, 1-504 FISH LADDER SUPPORT, 1-504 WINGWALL OVERLAYS, AND 1-407 CENTER PIER.
- BAR REINFORCEMENT:
- REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60.
- REINFORCING STEEL SHALL HAVE A 3" CLEAR COVER IF CAST AGAINST EARTH OR A 2" CLEAR COVER ELSEWHERE, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- ALL REINFORCING STEEL SHALL BE PROTECTED WITH FUSION BONDED EPOXY. EPOXY COATED REINFORCING STEEL SHALL CONFORM TO ASTM A775
- ANY FIELD CUTTING OR FIELD BENDING MUST BE APPROVED BY THE ENGINEER, PAYMENT SHALL BE INCIDENTAL TO THE BAR REINFORCEMENT ITEM.
- GALVANIZED REINFORCING STEEL MAY BE SUBSTITUTED FOR EPOXY-COATED REINFORCING STEEL AT NO ADDITIONAL COST TO DELDOT WITH APPROVAL OF THE BRIDGE DESIGN ENGINEER.
- WELDING OF REINFORCEMENT DURING FABRICATION OR CONSTRUCTION IS NOT PERMITTED UNLESS SPECIFIED.
- STEEL STRUCTURES:
- TO BE PROVIDED IN ACCORDANCE WITH SECTION 615521 OF THE SPECIAL PROVISIONS.
- COFFERDAMS:
- TO BE PROVIDED AND PAID FOR IN ACCORDANCE WITH ITEM 604500.
- TYPE OF COFFERDAM TO BE CONSTRUCTED SHALL BE SELECTED BY THE CONTRACTOR, HOWEVER, THE DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF SECTION 604 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR MAY SUBMIT FOR APPROVAL, PROPRIETARY DIVERSION DEVICES SUCH AS PORTADAM, AQUA-BARRIER OR APPROVED EQUAL.
- CONCRETE SEALER
CONCRETE SEALER IS TO BE APPLIED TO ALL EXPOSED CONCRETE SURFACES. REFER TO DIAGRAMS CONTAINING CONCRETE SEALER LIMITS ON SHEET 10. PAYMENT SHALL BE INCIDENTAL TO ITEM 613001.

SECTION 700

- SAWCUTTING:
ALL PAVED AREAS TO BE RECONSTRUCTED OR WIDENED SHALL BE SAWCUT AT THE POINT WHERE THE NEW PAVEMENT IS TO TIE INTO THE EXISTING PAVEMENT. ALL HOT-MIX OR P.C.C. SAWCUTTING SHALL BE FULL DEPTH, UNLESS OTHERWISE NOTED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

SECTION 800

- MAINTENANCE OF TRAFFIC:
MAINTENANCE OF TRAFFIC SHALL BE AS PER DETOUR PLAN. THE DETOUR SHALL REMAIN IN EFFECT UNTIL THE FINAL WARM MIX OR P.C.C. PAVEMENT IS PLACED. ALL NOT ITEMS WITH THE EXCEPTION OF PORTABLE CHANGEABLE MESSAGE SIGNS (ITEM 803001) AND FLAGGERS (ITEMS 811001 AND 811013) WILL BE INCLUDED IN ITEM #801500 - MAINTENANCE OF TRAFFIC, ALL INCLUSIVE.

SECTION 900

- THIS PROJECT IS COVERED UNDER AN NPDES GENERAL PERMIT FOR CONSTRUCTION. UNDER THE GENERAL PERMIT, COMPLIANCE WITH DELDOT'S APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS WILL CONSTITUTE COMPLIANCE WITH THE NPDES INDUSTRIAL PERMITTING REQUIREMENTS FOR THIS CONSTRUCTION PROJECT. A COPY OF THE NPDES GENERAL PERMIT AND NOI IS KEPT ON FILE IN EACH OF THE CONSTRUCTION OFFICES AND THE DEPARTMENT'S STORMWATER SECTION. A COPY OF THE GENERAL PERMIT OR THE NOI CAN BE OBTAINED UPON REQUEST FROM EITHER THE DEPARTMENT'S STORMWATER ENGINEER OR THE APPROPRIATE CONSTRUCTION ENGINEER.

MISCELLANEOUS

- DESIGN SPECIFICATIONS:
(A) DELDOT BRIDGE DESIGN MANUAL, 2019 EDITION
(B) AASHTO LRFD BRIDGE SPECIFICATIONS, 2017, 8TH EDITION, CUSTOMARY U.S. UNITS.
(C) PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH THE DELDOT STANDARD SPECIFICATIONS, AUGUST 2016.
- THE CONTRACTOR SHALL NOTIFY DART FIRST STATE AT DOT_DETOURS@DELAWARE.GOV AT LEAST 14 DAYS PRIOR TO THE START OF ANY DETOURS OR CONSTRUCTION, AND DOT_DTC_PROJECTDEVELOPMENT@DELAWARE.GOV AT SUCH TIME THE FACILITY IS COMPLETED AND OPERABLE FOR TRANSIT OPERATIONS. FOR EMERGENCY DETOUR INFORMATION ONLY, PLEASE CONTACT DTC'S CHIEF SCHEDULER AT 302-576-6019.
- THE CONTRACTOR SHALL CONTACT STATE HISTORIC PRESERVATION OFFICE (SHPO) AT (302) 736-7400 AT LEAST TWO (2) WEEKS PRIOR TO START OF CONSTRUCTION.
- EXISTING CONDITIONS
- ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, GEOMETRY, AND ELEVATIONS AS NECESSARY PRIOR TO ORDERING ANY MATERIALS AND COMMENCING CONSTRUCTION TO ENSURE PROPER FIT OF THE PROPOSED CONSTRUCTION. PAYMENT SHALL BE INCIDENTAL TO ITEM 763501 - CONSTRUCTION ENGINEERING.
- THE CONTRACTOR SHALL NOT CONSIDER ANY OF THE DATA ON THE EXISTING STRUCTURE SUPPLIED IN THE ORIGINAL DESIGN DRAWINGS OR MADE AVAILABLE BY THE DEPARTMENT OR ITS AUTHORIZED AGENTS AS POSITIVE REPRESENTATIONS OF ANY OF THE CONDITIONS THAT WILL BE ENCOUNTERED IN THE FIELD.
- POND LEVEL TO REMAIN THE SAME ELEVATION AS CURRENT. REDUCTION IN ADVANCE OF STORMS TO BE DONE ONLY WITH DELDOT APPROVAL.
- LOADING:
- DEAD LOADS INCLUDE 0.110 K/FT FOR WEARING SURFACE (INCLUDING 25 PSF FUTURE WEARING SURFACE), 0.425 K/FT FOR BARRIER LOAD, AND 0.500 K/FT FOR UTILITY LOAD.
- DESIGN LIVE LOADS INCLUDE HL-93 LOADING.
- FATIGUE DESIGN IS BASED ON THE FOLLOWING ONE DIRECTIONAL TRAFFIC VOLUMES: ADTT = 649 (2018).
- BARRIERS HAVE BEEN DESIGNED PER AASHTO 8TH EDITION SECTION A.13.2 FOR THE TL-3 AND HAVE NOT BEEN CRASH TESTED.
- LIVE LOAD DEFLECTION SHALL BE LIMITED TO L/800
- HYDRAULIC DATA (1-504):
DRAINAGE AREA: 6.6 sq. miles
DESIGN DISCHARGE: 750 cfs
EXISTING (0.14 PMF) WSE: EL 14.6 ft
EXISTING (0.14 PMF) DISCHARGE: 750 cfs
EXISTING 100-YEAR WSE: EL 14.5 ft
EXISTING 100-YEAR DISCHARGE: 728 cfs
EXISTING WATERWAY OPENING: 276 sq. ft
MEAN HIGH WATER ELEVATION: 2.87 ft, NAVD88
MEAN LOW WATER ELEVATION: -2.79 ft, NAVD88
VERTICAL UNDER CLEARANCE: 11.5 ft
DESIGN FREQ.: 0.14 PMF
100-YEAR DISCHARGE: NO CHANGE
PROPOSED (0.14 PMF) WSE: NO CHANGE
PROPOSED (0.14 PMF) DISCHARGE: NO CHANGE
PROPOSED 100-YEAR WSE: NO CHANGE
PROPOSED 100-YEAR DISCHARGE: NO CHANGE
PROPOSED WATERWAY OPENING: NO CHANGE

BRIDGE 1-504 LOAD RATING SUMMARY					
DESIGN VEHICLE	RATING FACTOR	RATING WEIGHT (TONS)	CONTROLLING MEMBER	CONTROLLING POINT	LOAD EFFECT
HL-93 TRUCK (INVENTORY)	1.18	N/A	SLAB	105	STRENGTH I
HL-93 TANDEM (INVENTORY)	1.06	N/A	SLAB	103	STRENGTH I
HS20 (INVENTORY)	1.22	43.99	SLAB	105	STRENGTH I
HL-93 TRUCK (OPERATING)	1.51	N/A	SLAB	105	STRENGTH I
HL-93 TANDEM (OPERATING)	1.36	N/A	SLAB	103	STRENGTH I
HS20 (OPERATING)	1.57	56.39	SLAB	105	STRENGTH I
DE S220	2.15	43.03	SLAB	105	STRENGTH I
DE S335	1.26	44.03	SLAB	103	STRENGTH I
DE S437	1.55	56.63	SLAB	105	STRENGTH I
DE T330	2.14	64.31	SLAB	105	STRENGTH I
DE T435	1.69	58.98	SLAB	103	STRENGTH I
DE T540	1.68	67.18	SLAB	103	STRENGTH I
EV2	1.46	41.86	SLAB	105	STRENGTH I
EV3	1.10	47.42	SLAB	103	STRENGTH I
SU4	1.96	53.00	SLAB	103	STRENGTH I
SU5	1.96	60.81	SLAB	103	STRENGTH I
SU6	1.90	66.13	SLAB	103	STRENGTH I
SU7	1.95	75.44	SLAB	105	STRENGTH I

NOTE: LOAD RATING INCLUDES FUTURE WEARING SURFACE AS NOTED IN THE PLANS.

- HYDRAULIC DATA (1-407):
DRAINAGE AREA: 6.6 sq. miles
DESIGN DISCHARGE: 409 cfs
EXISTING (0.14 PMF) WSE: EL 14.6 ft
EXISTING (0.14 PMF) DISCHARGE: 409 cfs
EXISTING 100-YEAR WSE: EL 14.5 ft
EXISTING 100-YEAR DISCHARGE: 394 cfs
EXISTING WATERWAY OPENING: 186 sq. ft
MEAN HIGH WATER ELEVATION: 2.87 ft
MEAN LOW WATER ELEVATION: -2.79 ft
VERTICAL UNDER CLEARANCE: 9.8 ft
DESIGN FREQ.: 0.14 PMF
100-YEAR DISCHARGE: NO CHANGE
PROPOSED (0.14 PMF) WSE: NO CHANGE
PROPOSED (0.14 PMF) DISCHARGE: NO CHANGE
PROPOSED 100-YEAR WSE: NO CHANGE
PROPOSED 100-YEAR DISCHARGE: NO CHANGE
PROPOSED WATERWAY OPENING: NO CHANGE
- ENVIRONMENTAL COMPLIANCE:
REFER TO THE ENVIRONMENTAL COMPLIANCE PLAN FOR RESTRICTIONS AND ADDITIONAL GUIDANCE THAT MAY BE ASSOCIATED TO THIS PROJECT.

ADDENDA / REVISIONS

SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-407 & 1-504
T201807401	DESIGNED BY:	B.MARSHALL
COUNTY	CHECKED BY:	H.BROWN
NEW CASTLE		

NOTES

PN-01

SECTION

PAI

SHEET NO.

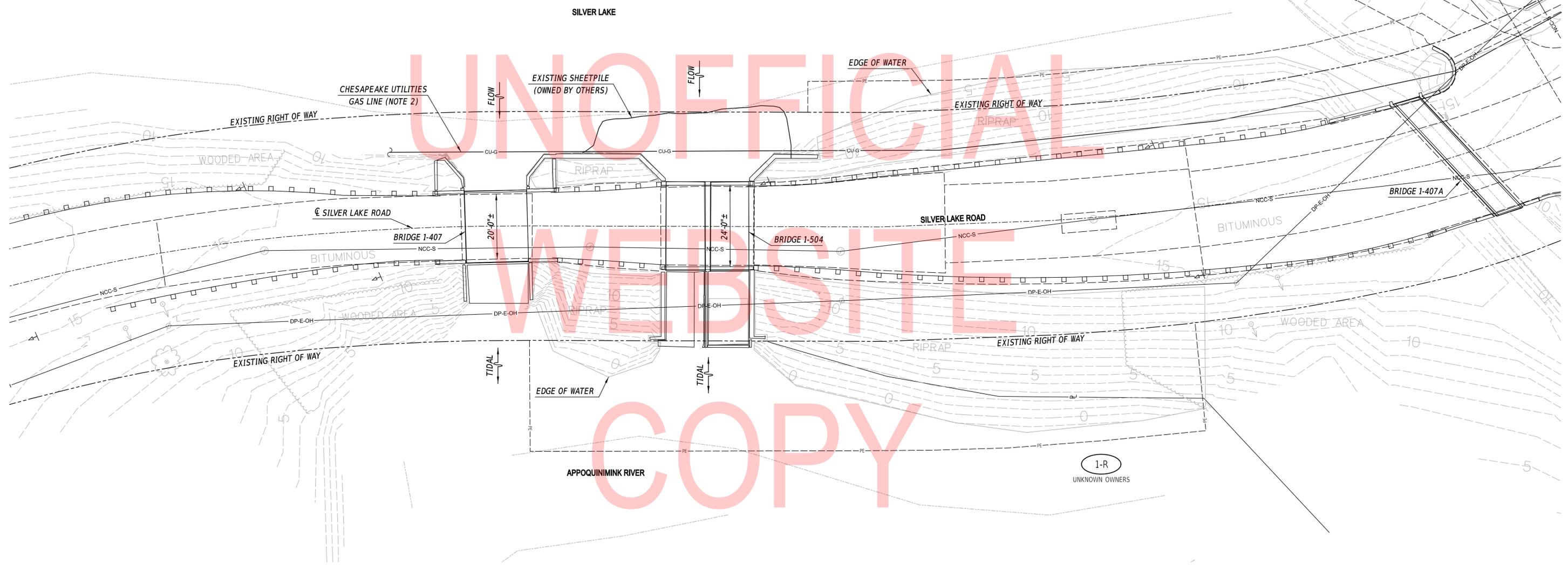
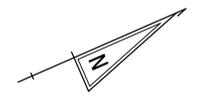
5

2-L
13-027.00-012
ST. ANDREWS SCHOOL OF DELAWARE, INC.
D.R. 2201-0044

20' WIDE SANITARY
SEWER EASEMENT

1-L
UNKNOWN OWNERS

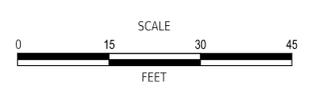
1-R
UNKNOWN OWNERS



NOTES:

1. CONTOURS SHOWN ARE FROM SURVEY COMPLETED BY DELDOT IN AUGUST/SEPTEMBER 2014 USING NAVD88.
2. LOCATION OF EXISTING CHESAPEAKE UTILITIES GAS LINE SHOWN IS APPROXIMATE.

ADDENDA / REVISIONS



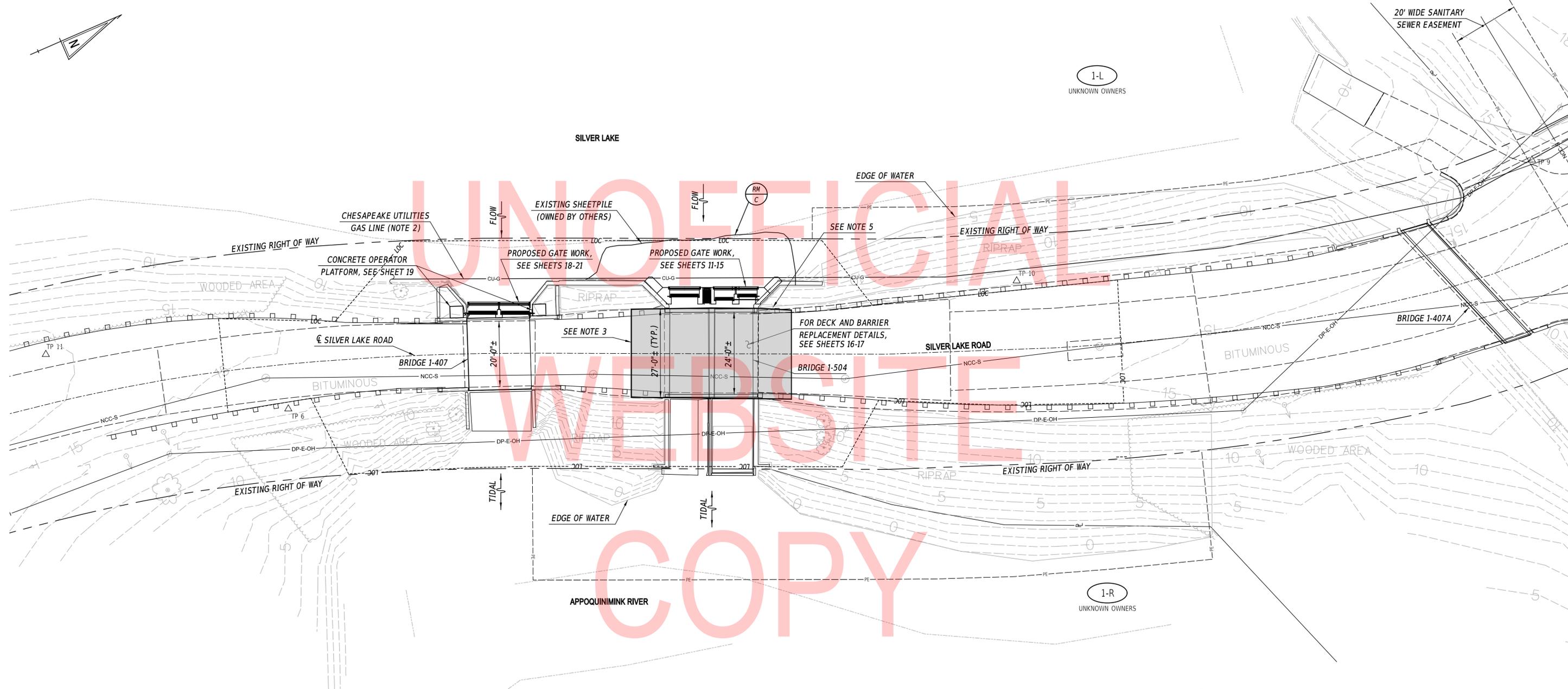
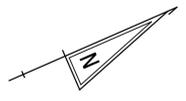
SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-407 & 1-504
T201807401	DESIGNED BY:	B.MARSHALL
COUNTY	CHECKED BY:	H.BROWN
NEW CASTLE		

EXISTING CONDITIONS

FS-01
SECTION
PAI
SHEET NO.
6

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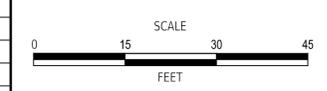
1-L
 UNKNOWN OWNERS

1-R
 UNKNOWN OWNERS

UNOFFICIAL
 WEBSITE
 COPY

- NOTES:**
1. CONTOURS SHOWN ARE FROM SURVEY COMPLETED BY DELDOT IN AUGUST/SEPTEMBER 2014 USING NAVD88.
 2. LOCATION OF EXISTING CHESAPEAKE UTILITIES GAS LINE SHOWN IS APPROXIMATE.
 3. SAWCUT EXISTING PAVEMENT AND MATCH EXISTING GRADE WITH FULL DEPTH RECONSTRUCTION AS SHOWN IN THE PAVEMENT SECTIONS ON SHEET 16.
 4. ALL DISTURBED AREAS, UNLESS STATED OTHERWISE, SHALL BE REPAIRED WITH R6 RIPRAP.
 5. REMOVE AND RE-SET EXISTING SIGN (1 POST, 3 SIGNS) ADJACENT TO NORTHWEST CORNER OF BRIDGE 1-504. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM 211000.

HORIZONTAL / VERTICAL CONTROL DATA					
POINT NO.	STATION	OFFSET	NORTHING	EASTING	ELEV.
6	N/A	N/A	523744.8900	577983.9590	14.56
9	N/A	N/A	524119.7700	578065.5750	15.10
10	N/A	N/A	523962.3070	578036.6360	13.80
11	N/A	N/A	523684.2240	577939.5410	16.47



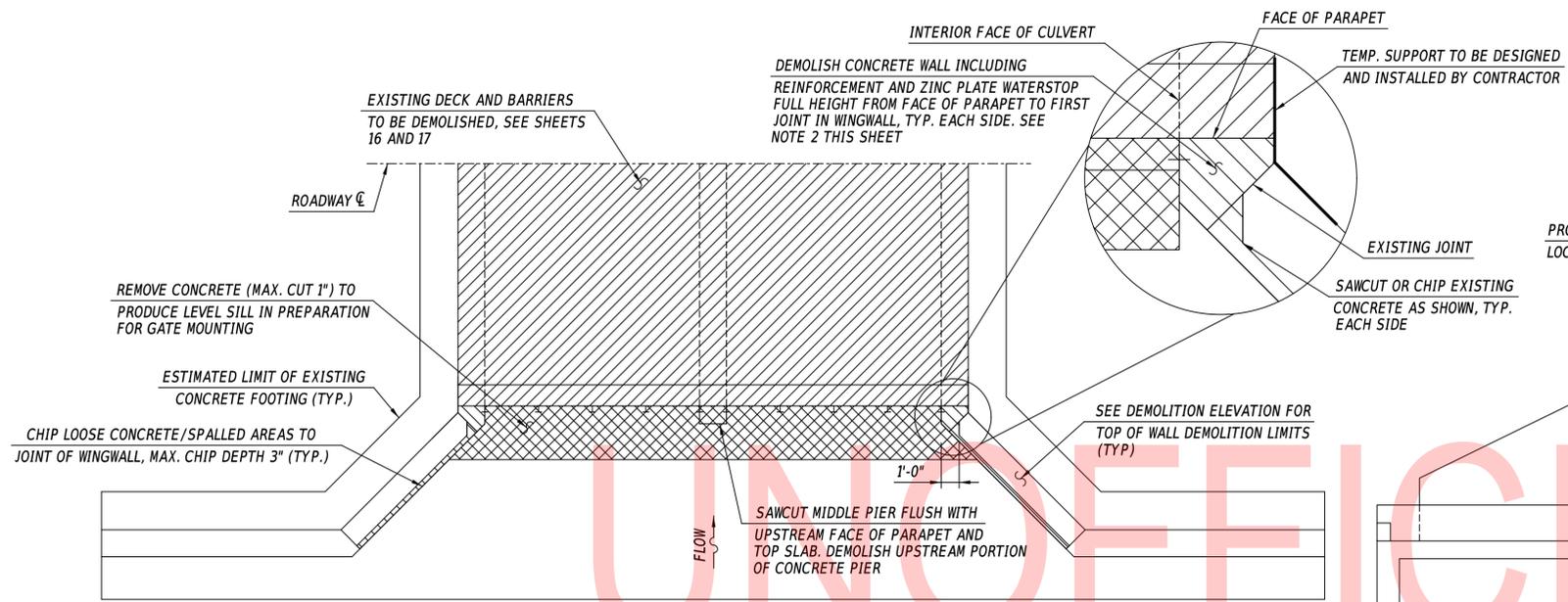
SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-407 & 1-504
T201807401	DESIGNED BY:	A.VASKO
COUNTY	CHECKED BY:	W.BROWN
NEW CASTLE		

CONSTRUCTION PLAN

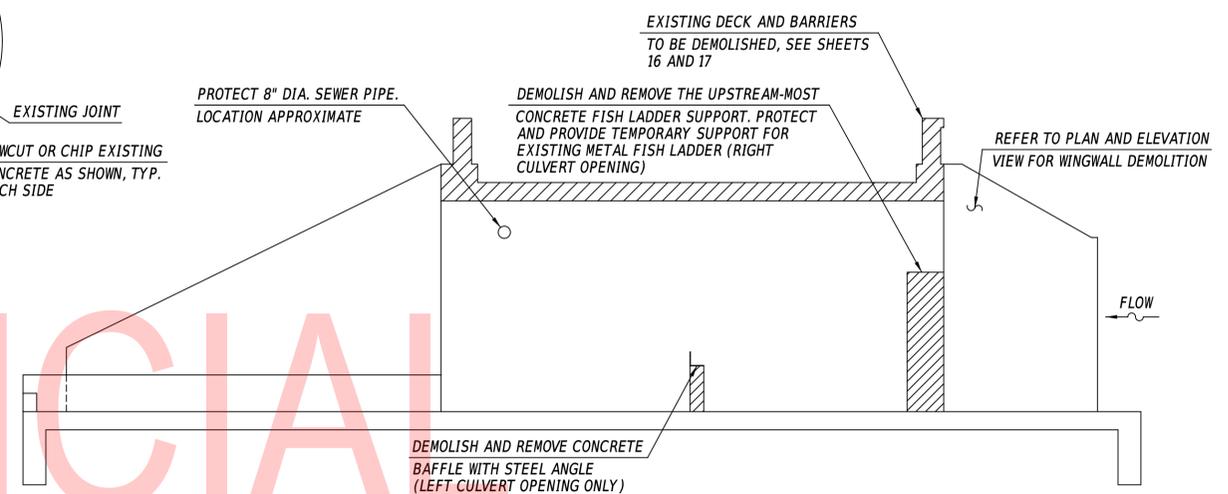
CP-01
SECTION
SHEET NO.
7

ADDENDA / REVISIONS



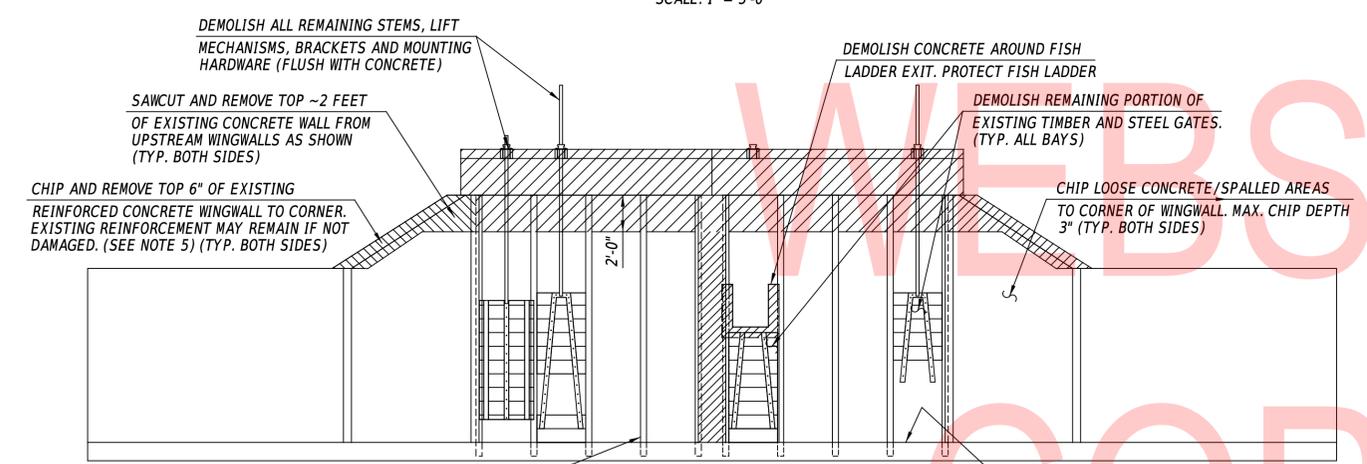
BRIDGE 1-504 DEMOLITION - PLAN

SCALE: 1" = 5'-0"



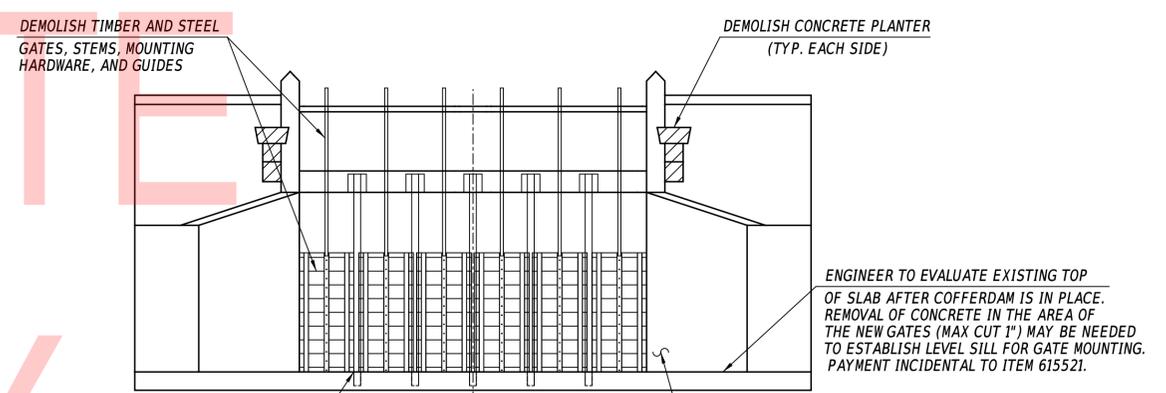
BRIDGE 1-504 DEMOLITION - SECTION

SCALE: 1" = 5'-0"



BRIDGE 1-504 DEMOLITION - ELEVATION

SCALE: 1" = 5'-0"



BRIDGE 1-407 DEMOLITION - ELEVATION

SCALE: 1" = 5'-0"

NOTES:

- REFERENCES TO RIGHT AND LEFT ASSUME ONE IS LOOKING DOWNSTREAM.
- ACCORDING TO CONTRACT 672 HIGHWAY DEPARTMENT DELAWARE CONCRETE BRIDGE SILVER LAKE MIDDLETOWN DRAWINGS DATED JANUARY 1939, SHEET 3 OF 4, THE EXISTING REINFORCEMENT IN THE PORTION OF THE WALL TO BE DEMOLISHED THROUGH THE FULL THICKNESS OF THE WALL CONSISTS OF #6 VERTICAL BARS SPACED AT 12" AND #4 HORIZONTAL BARS SPACED AT 12" ON THE EXPOSED FACE ONLY. A 12" WIDE ZINC PLATE SPANS THE VERTICAL WALL JOINT. REINFORCEMENT FOR THE WINGWALL UPSTREAM OF THE JOINT CONSISTS OF #7 VERTICAL BARS SPACED AT 12" AND #4 HORIZONTAL BARS SPACED AT 12" ON THE SOIL FACE OF THE WALL ONLY.
- EXISTING UPSTREAM FISH LADDER SUPPORT DOWELS TO BE EVALUATED BY THE ENGINEER AFTER DEMOLITION OF SURROUNDING CONCRETE. IF REPLACEMENT OF DOWELS IS REQUIRED THEN USE APPROVED EPOXY GROUT WITH #5 REBAR DRILLED INTO LOCATIONS AS DIRECTED BY THE ENGINEER; WORK SHALL BE PAID UNDER ITEMS 611001 AND 628070. BAFFLE DOWELS SHALL BE CUT FLUSH WITH CONCRETE SLAB AND PAINTED WITH COAL TAR EPOXY. NO ADDITIONAL PAYMENT WILL BE MADE FOR BAFFLE DOWEL REMOVAL AND COAL TAR EPOXY.
- ALL DEMOLITION AND REMOVAL SHOWN ON THIS SHEET INCLUDING TEMPORARY SUPPORT SHALL BE PAID UNDER LUMP SUM ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
- IF EXISTING REINFORCEMENT REMAINS, IT NEEDS TO BE CLEANED WITH WIREBRUSH PRIOR TO EMBEDMENT IN FRESH CONCRETE. PAYMENT FOR CLEANING WILL BE CONSIDERED INCIDENTAL WITH ITEM 211000.

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ADDENDA / REVISIONS	

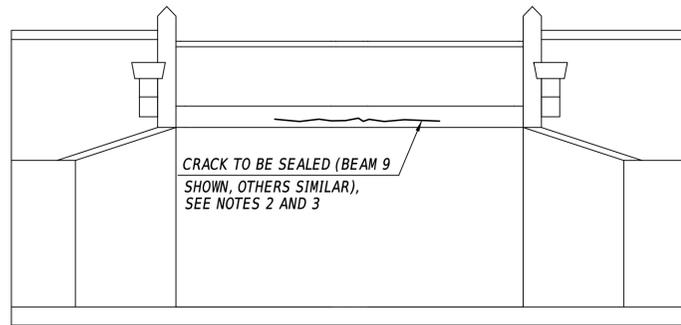
SCALE AS NOTED

SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-407 & 1-504
T201807401	DESIGNED BY:	A.VASKO
COUNTY	CHECKED BY:	K.BROWN
NEW CASTLE		

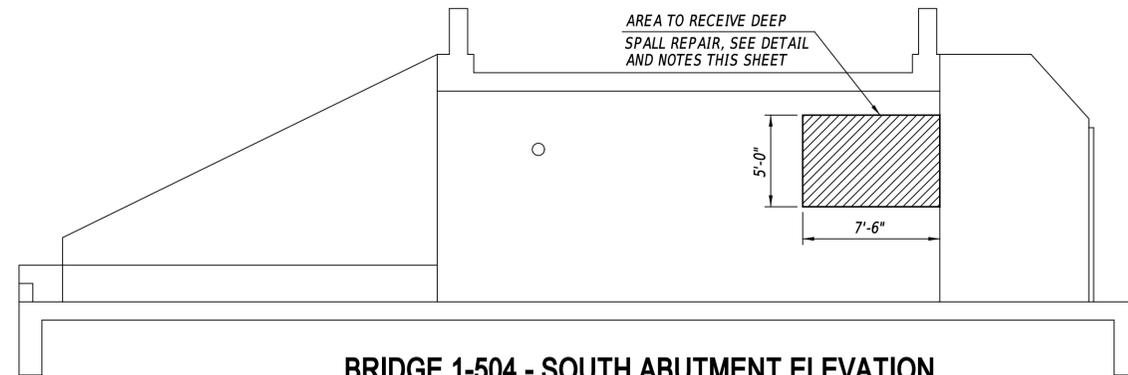
DEMOLITION PLAN

DM-01
SECTION
SE
SHEET NO.
8



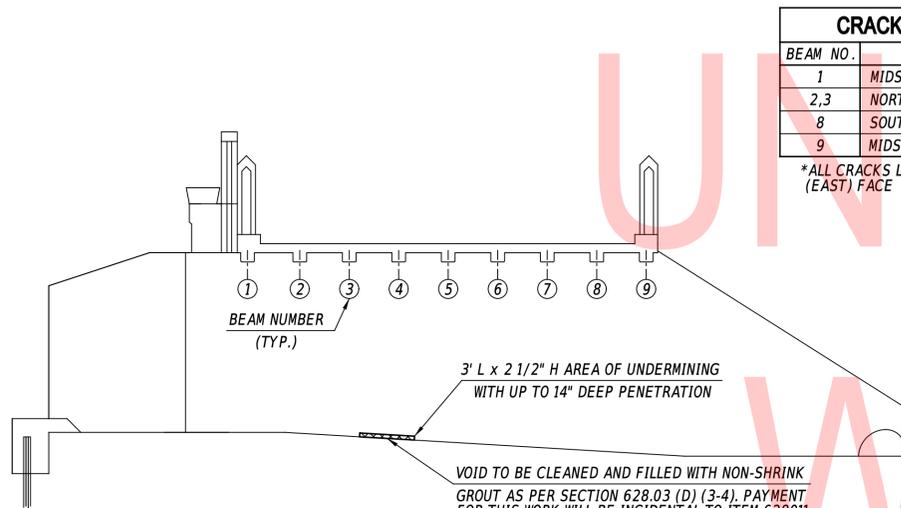
BRIDGE 1-407 - EAST ELEVATION

SCALE: 1" = 5'-0"



BRIDGE 1-504 - SOUTH ABUTMENT ELEVATION

SCALE: 1" = 5'-0"

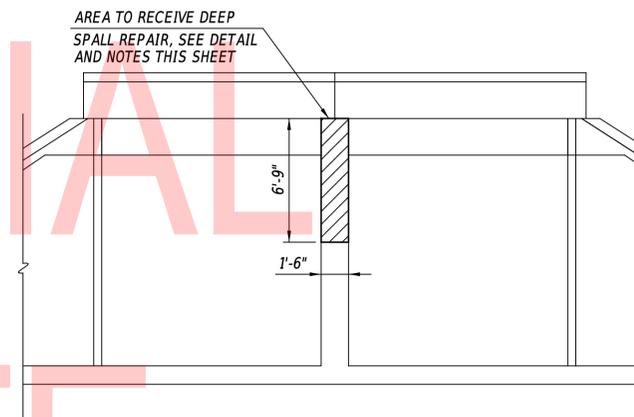


BRIDGE 1-407 - NORTH ABUTMENT ELEVATION

SCALE: 1" = 5'-0"

CRACK REPAIR DETAILS	
BEAM NO.	CRACK DESCRIPTION
1	MIDSPAN - 9' L x 1/8" W CRACK
2,3	NORTH END - 3' L x 1/8" W CRACK
8	SOUTH END - 5' L x 1/16" W CRACK
9	MIDSPAN - 9' L x 1/4" W CRACK

*ALL CRACKS LOCATED ON THE DOWNSTREAM (EAST) FACE

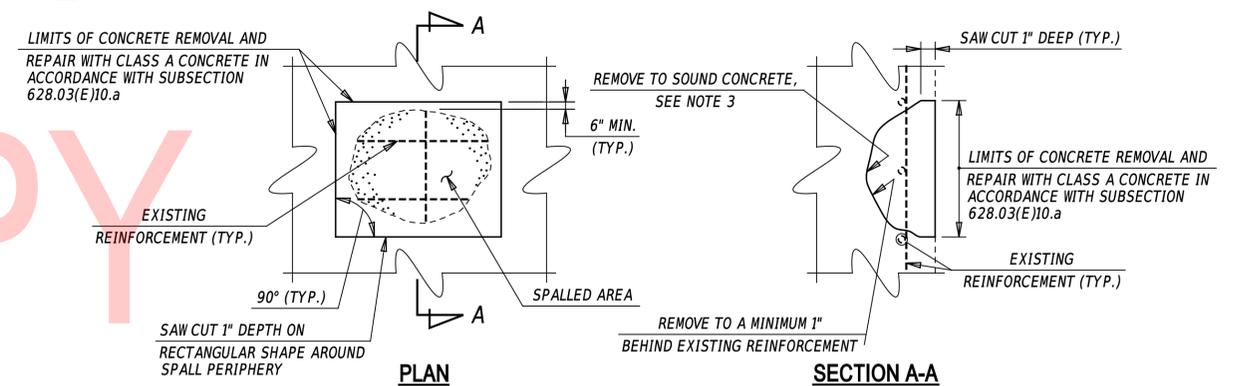


BRIDGE 1-504 - EAST ELEVATION

SCALE: 1" = 5'-0"

CONCRETE REPAIR QUANTITIES			
ITEM NO.	ITEM DESCRIPTION / TYPE	UNIT	QUANTITY
628011	CRACK SEALING	LF	35*
613001	SILICONE-BASED ACRYLIC CONCRETE SEALER	SF	7400
628041	DEEP SPALL REPAIR	CF	31

* QUANTITY INCLUDES A 20% CONTINGENCY FACTOR



DEEP SPALL REPAIR

NOT TO SCALE

NOTES:

- THE LOCATION AND QUANTITIES OF THE REPAIRS SHOWN ON THIS DRAWING ARE APPROXIMATE BASED ON THE 12/10/2018 INSPECTION FIELD NOTES AND REQUIRE VERIFICATION. PRIOR TO STARTING EACH REPAIR, THE LIMITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
- FOR CRACK SEALING IF THERE IS A CONFLICT BETWEEN THE STANDARD SPECIFICATIONS (SECTION 628.03) AND THE MANUFACTURER'S RECOMMENDATIONS, THE LATTER WILL PREVAIL. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 628011 - CRACK SEALING.
- THE LOCATIONS TO BE REPAIRED BY CRACK SEALING SHALL BE CLEANED AND PREPARED WITH ALL LOOSE CONCRETE REMOVED. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 628011 - CRACK SEALING.

DEEP SPALL REPAIR NOTES:

- DEEP SPALL REPAIRS ARE DEFINED AS PATCHES THAT EXTEND BELOW THE TOP MAT OF REINFORCEMENT. DELAMINATED CONCRETE AREAS DENOTED ON PLANS HAVE BEEN ASSUMED AS DEEP SPALL REPAIRS.
- ALL WORK INVOLVING METHODS OF CONCRETE REMOVAL, CLEANING OF CONCRETE SURFACE AND EXISTING REINFORCEMENT, REPAIRING OR REPLACING DAMAGED REINFORCEMENT AS RESULT OF CONSTRUCTION ACTIVITIES OR SECTION LOSS, PRESENCE OF CONTRACTION OR EXPANSION JOINTS, SURFACE PREPARATION, AND CONCRETE PLACEMENT SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 628.03(E) OF THE STANDARD SPECIFICATIONS. PAYMENT INCIDENTAL TO 628041 - DEEP SPALL REPAIR.
- IF DEPTH OF REPAIR EXTENDS MORE THAN 6" BEYOND SURFACE OF CONCRETE, CONTRACTOR SHALL STOP WORK AND NOTIFY THE ENGINEER IMMEDIATELY.

ADDENDA / REVISIONS

SCALE AS NOTED

SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-407 & 1-504
T201807401	DESIGNED BY:	B.MARSHALL
COUNTY	CHECKED BY:	H.BROWN
NEW CASTLE		

CONCRETE REPAIR DETAILS - 1

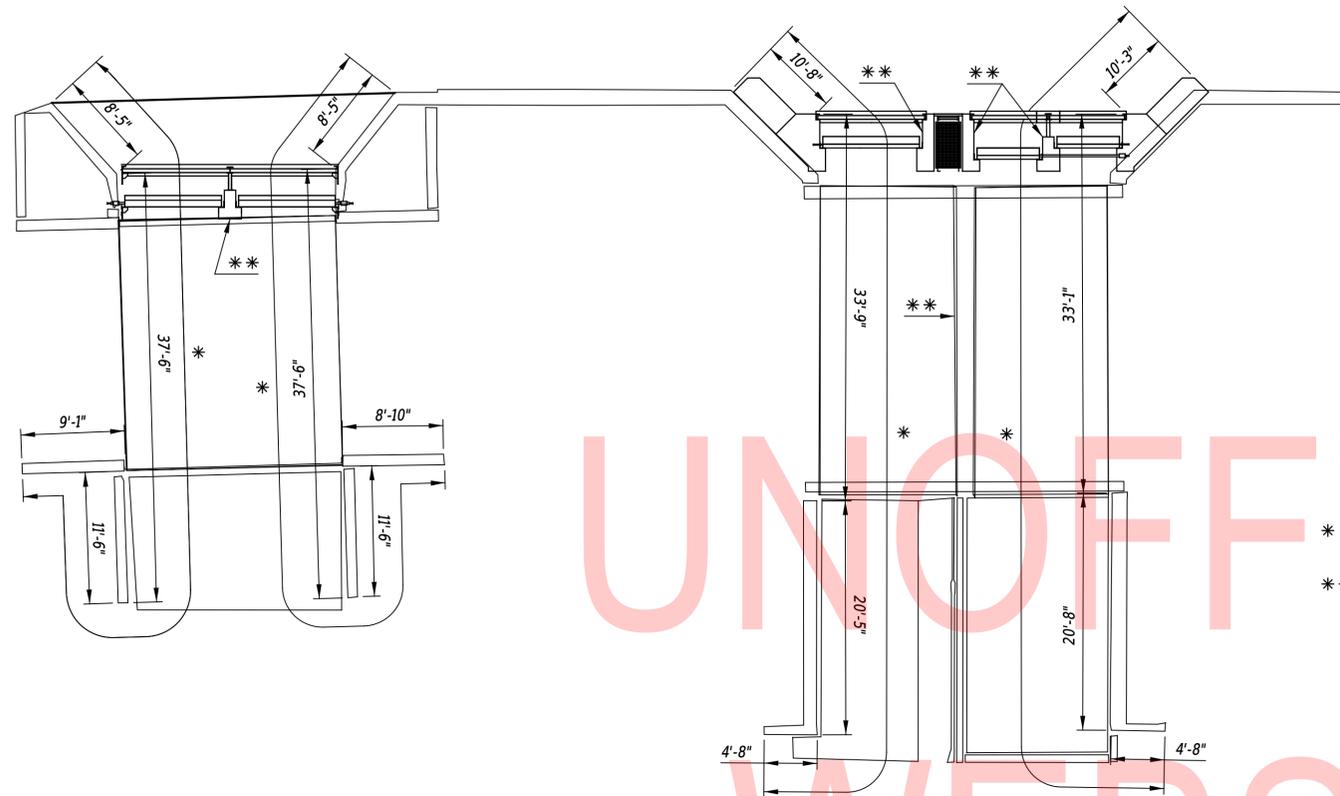
RH-01

SECTION

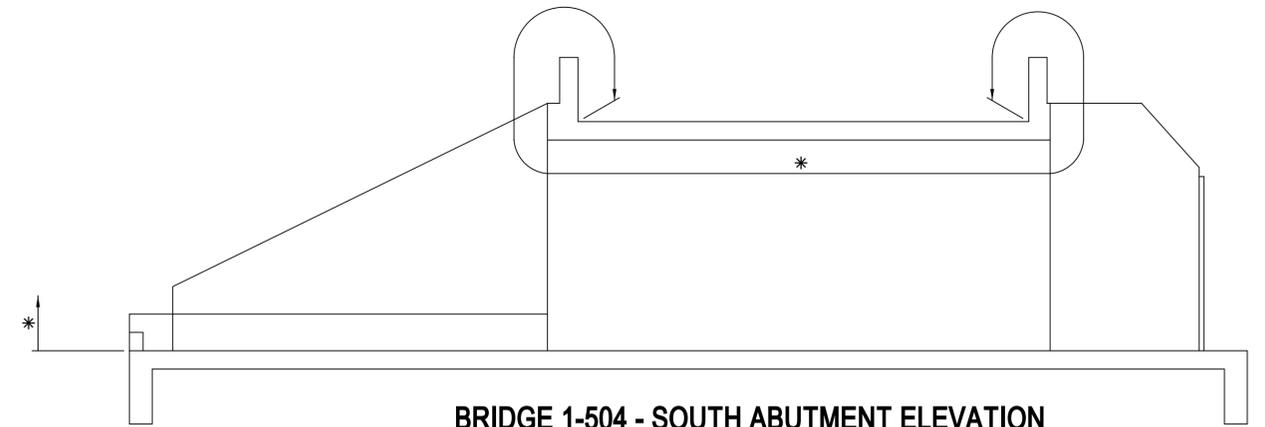
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SHEET NO.

9

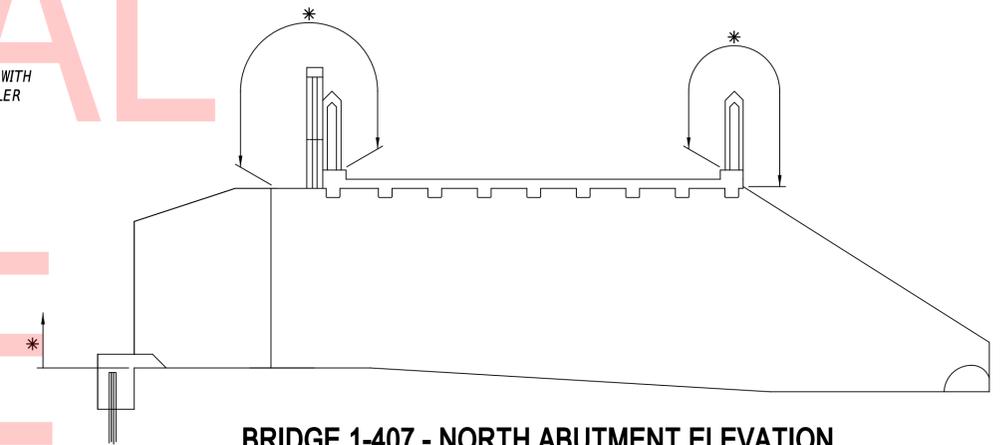


CONCRETE SEALING DETAIL - PLAN
SCALE: 1/8" = 1'-0"



BRIDGE 1-504 - SOUTH ABUTMENT ELEVATION
SCALE: 1" = 5'-0"

- * LIMITS OF SILICONE BASED ACRYLIC CONCRETE SEALER (SEE NOTE 1)
- ** COAT PERIMETER OF ALL EXPOSED FACES WITH SILICONE BASED ACRYLIC CONCRETE SEALER (SEE NOTE 1)



BRIDGE 1-407 - NORTH ABUTMENT ELEVATION
SCALE: 1" = 5'-0"

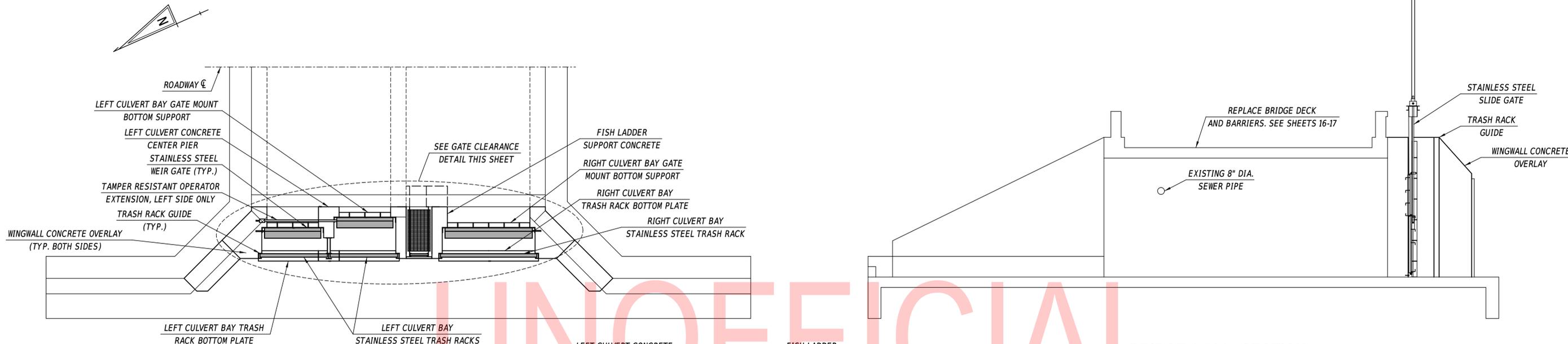
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NOTES:

1. SILICONE-BASED ACRYLIC CONCRETE SEALER SHALL BE APPLIED TO ALL PROPOSED AND EXISTING EXPOSED CONCRETE SURFACES SUBSEQUENT TO THE CRACK REPAIRS AND DEEP SPALL REPAIRS. AREAS COVERED WITH WEARING SURFACE AND BOTTOM SLAB ON CULVERTS NOT INCLUDED. PRIOR TO APPLICATION OF THE SEALANT, PREPARE THE CONCRETE SURFACES ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO ITEM 613001 - SILICONE-BASED ACRYLIC CONCRETE SEALER. FOR SILICONE-BASED ACRYLIC CONCRETE SEALER QUANTITIES SEE SHEET 9.

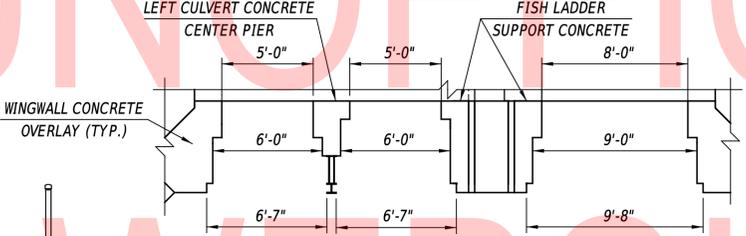
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ADDENDA / REVISIONS		SCALE AS NOTED	SILVER LAKE DAM REPAIRS	CONTRACT	BRIDGE NO.	1-407 & 1-504	CONCRETE REPAIR DETAILS - 2	SECTION	RH-02
				T201807401	DESIGNED BY:	M.WEBER		PAI	
		NEW CASTLE	CHECKED BY:	H.BROWN		SHEET NO.		10	
						10			

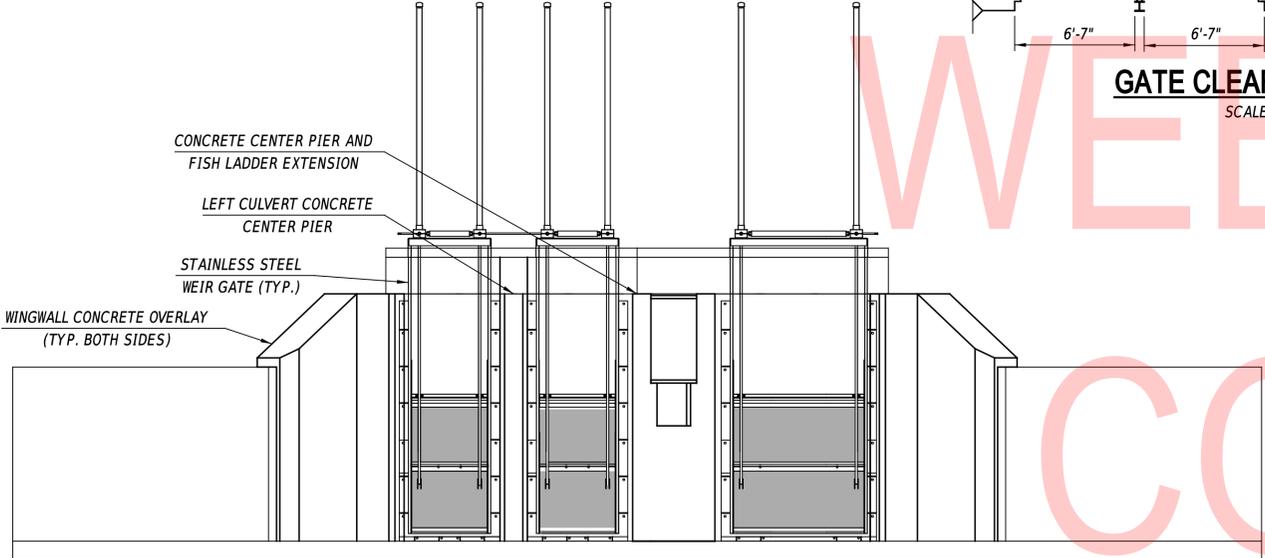


BRIDGE 1-504 - PLAN
SCALE: 1" = 5'-0"

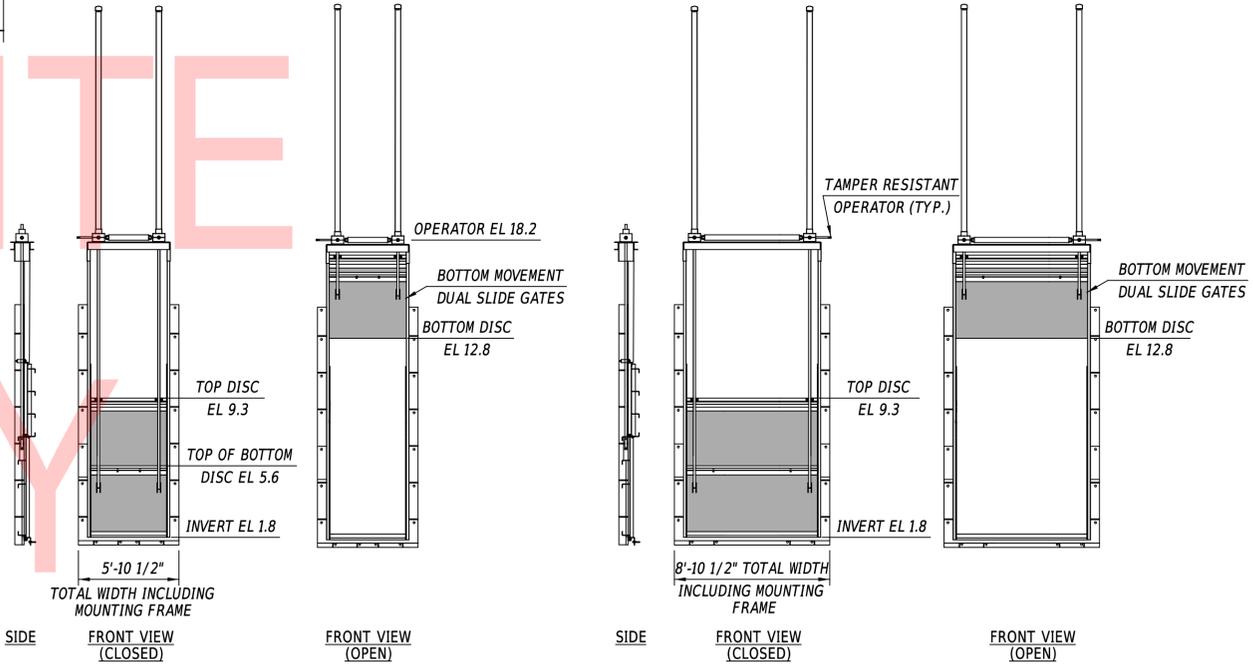
BRIDGE 1-504 - SECTION
SCALE: 1" = 5'-0"



GATE CLEARANCE DETAIL
SCALE: 1" = 5'-0"



BRIDGE 1-504 - ELEVATION
SCALE: 1" = 5'-0"



LEFT BAY
(2 REQUIRED OPERATORS ON LEFT SIDE, 1 EXTENDED DRIVE SHAFT REQUIRED (NOT SHOWN))

RIGHT BAY
(1 REQUIRED)

BRIDGE 1-504 - GATE SCHEMATICS
SCALE: 1" = 5'-0"

- NOTES:**
- ALL THREE GATES, SEALS, OPERATORS, OPERATOR EXTENSION, MOUNTING HARDWARE, GATE MANUFACTURER REQUIRED BRACING AND REQUIRED GATE TESTING SHALL BE PAID UNDER LUMP SUM ITEM 615520 - STAINLESS STEEL SLIDE GATES.
 - CONTROL OF WATER MEANS AND METHODS NOT SHOWN FOR CLARITY, SEE SHEETS 27-28.
 - THE GATES AS SHOWN ON THIS SHEET ARE CONCEPTUAL REPRESENTATIONS. GATE STYLES VARY BY MANUFACTURER, REGARDLESS OF MANUFACTURER THE GATE MUST MEET THE CRITERIA DEFINED ON THESE DRAWINGS AS WELL AS SPECIFICATION SECTION 615520 - STAINLESS STEEL SLIDE GATES.

ADDENDA / REVISIONS

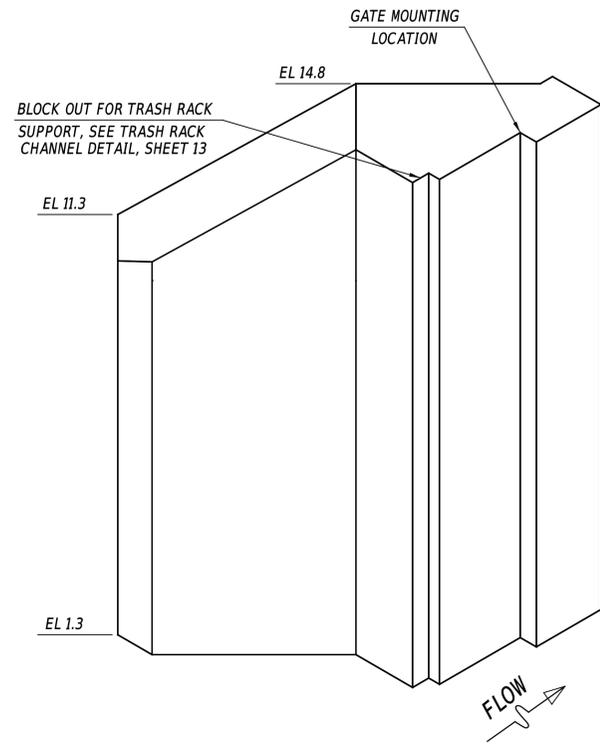
SCALE AS NOTED

SILVER LAKE DAM REPAIRS

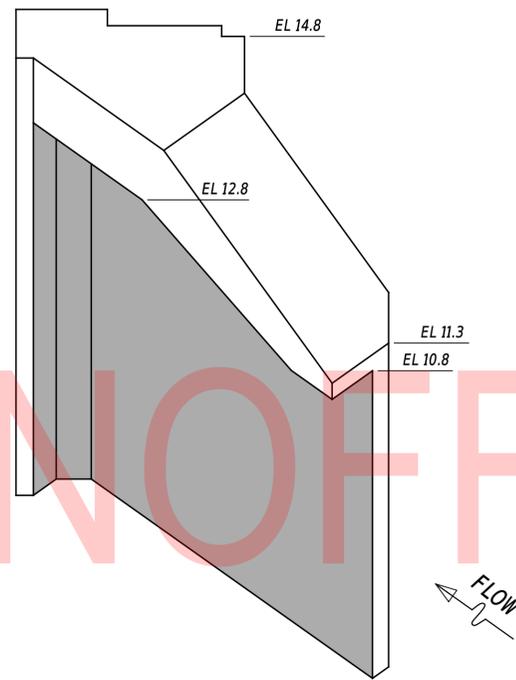
CONTRACT	BRIDGE NO.	1-504
T201807401	DESIGNED BY:	A.VASKO
COUNTY	CHECKED BY:	W.BROWN
NEW CASTLE		

BRIDGE 1-504 - PLAN, ELEVATION, AND SECTION

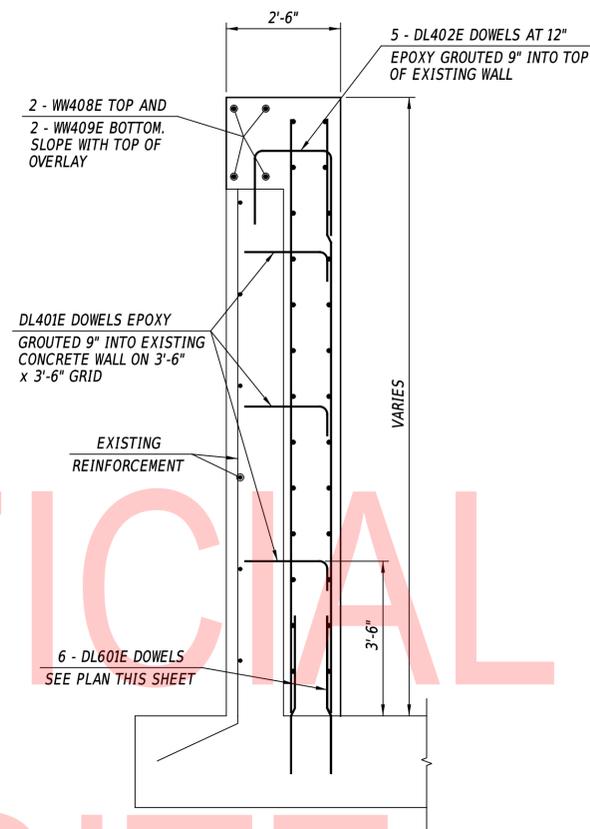
PE-01
SECTION
SHEET NO.
11



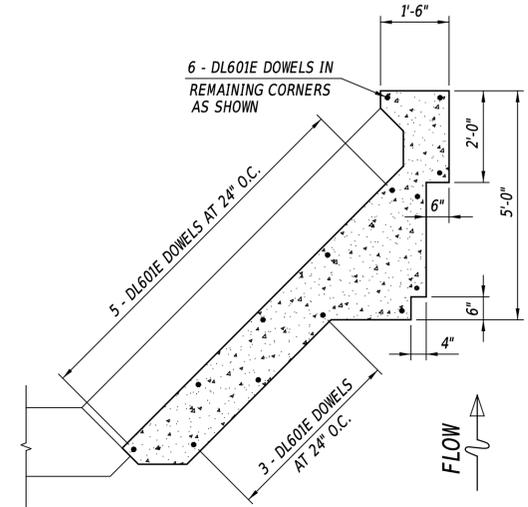
WINGWALL OVERLAY - ISOMETRIC



WINGWALL OVERLAY - ISOMETRIC
(SHADED FACES CAST AGAINST EXISTING CONCRETE)

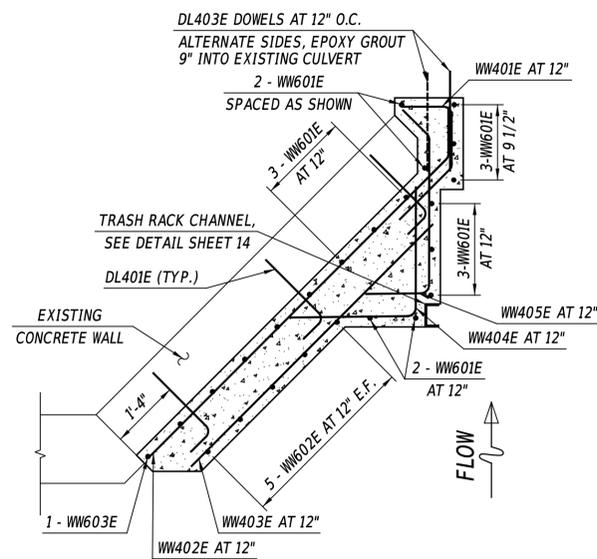


WINGWALL OVERLAY - TYPICAL SECTION
SCALE: 1/2" = 1'-0"



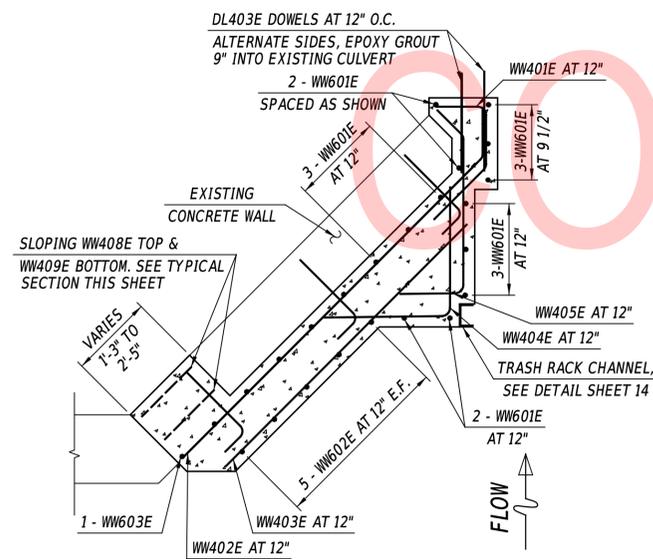
NOTE: ALL DOWELS SHOWN THIS VIEW DRILLED AND EPOXY GROUTED WITH 9" EMBEDMENT INTO EXISTING CONCRETE SLAB

WINGWALL OVERLAY - SLAB DOWEL PLAN
SCALE: 1/2" = 1'-0"



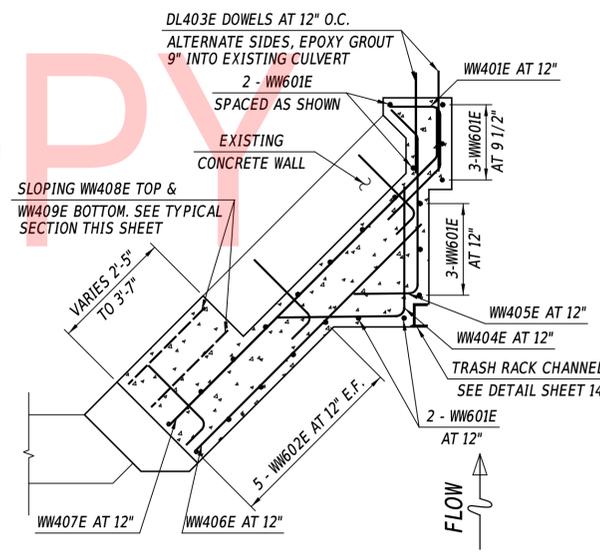
WINGWALL OVERLAY - EL 1.3 TO EL 10.8

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



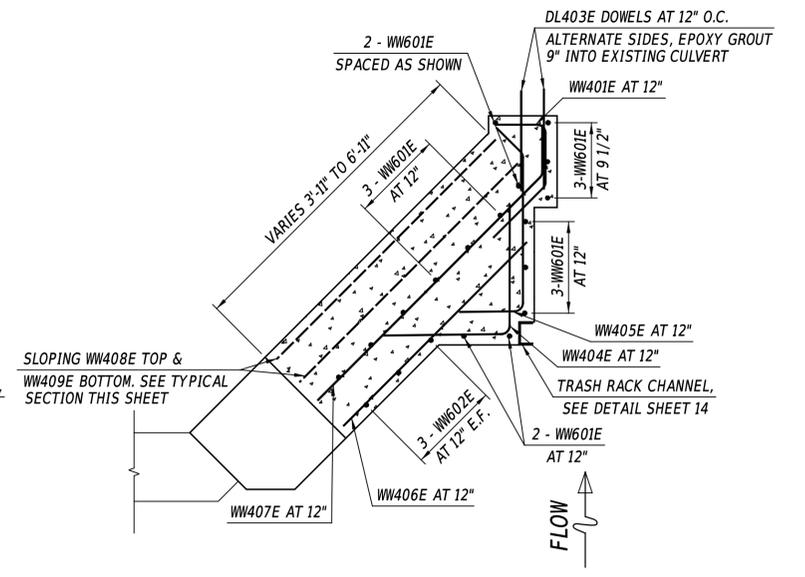
WINGWALL OVERLAY - EL 10.8 TO EL 11.3

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



WINGWALL OVERLAY - EL 11.3 TO EL 12.8

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



WINGWALL OVERLAY - EL 12.8 TO EL 14.8

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

ADDENDA / REVISIONS

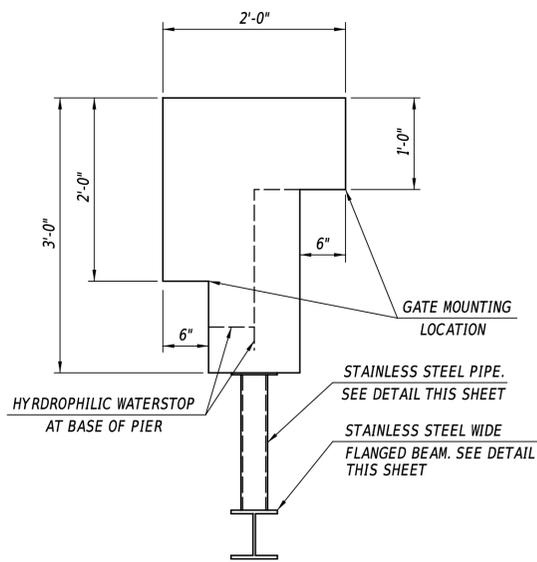
SCALE AS NOTED

SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-504
T201807401	DESIGNED BY:	A.VASKO
COUNTY	CHECKED BY:	W.BROWN
NEW CASTLE		

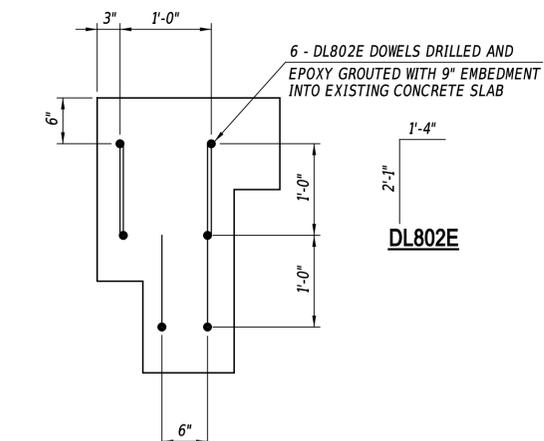
BRIDGE 1-504 STRUCTURAL DETAILS - WINGWALL CONCRETE

DT-01
SECTION
SE
SHEET NO.
12



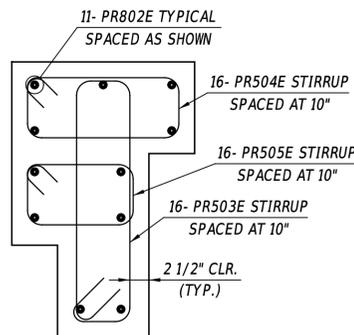
CENTER PIER - TYPICAL PLAN

SCALE: 1" = 1'-0"



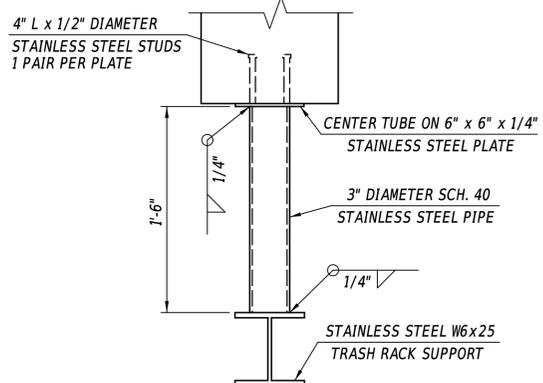
CENTER PIER - DOWEL PLAN

SCALE: 1" = 1'-0"



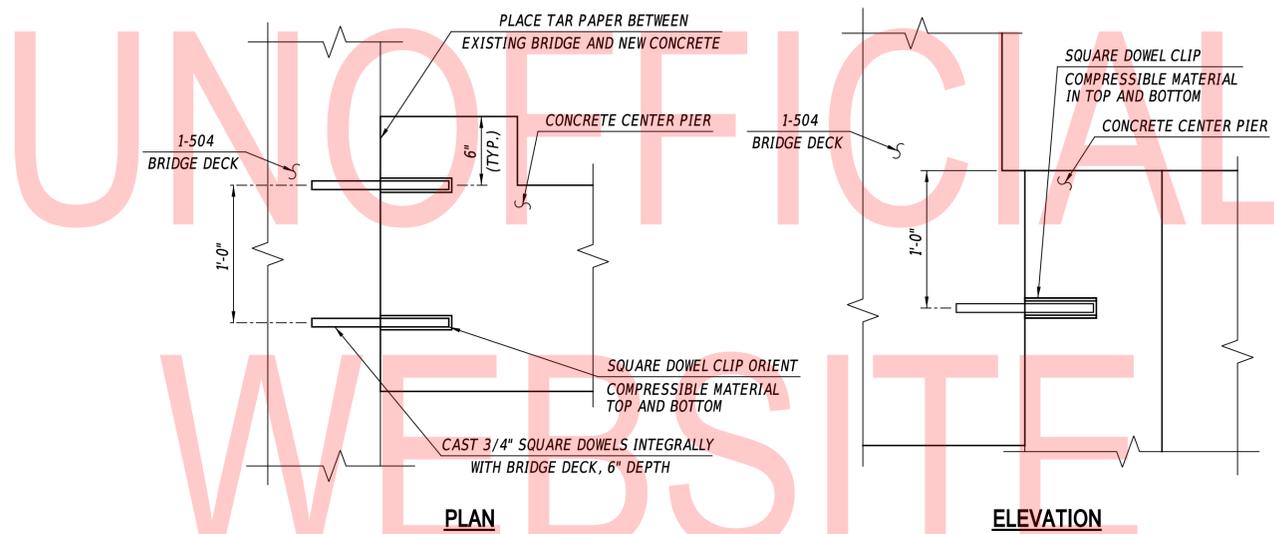
CENTER PIER - REINFORCEMENT PLAN

SCALE: 1" = 1'-0"



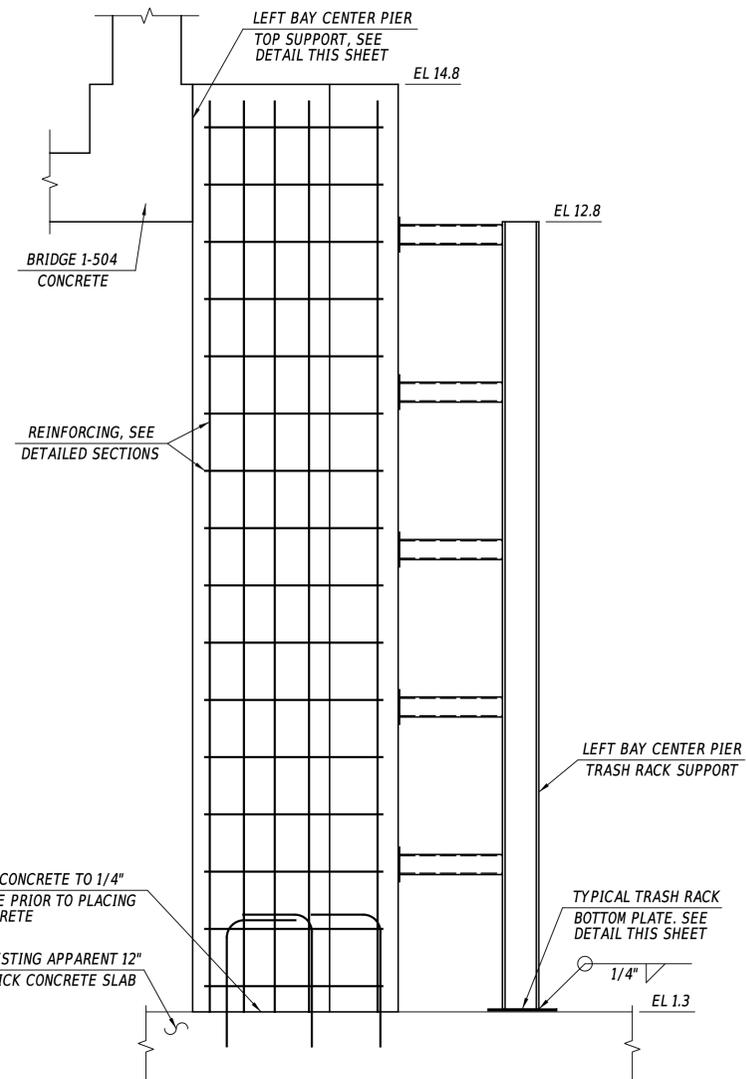
CENTER PIER - TRASH RACK SUPPORT DETAIL

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



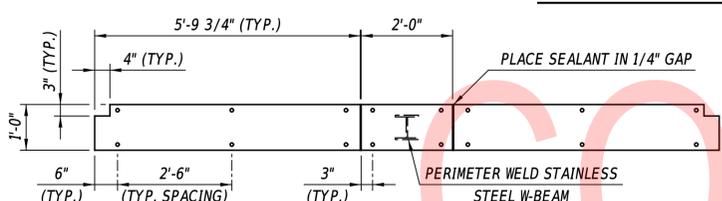
LEFT BAY CENTER PIER - TOP SUPPORT DETAIL

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



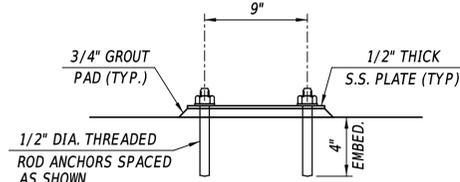
LEFT BAY CENTER PIER - ELEVATION

SCALE: 3/4" = 1'-0"



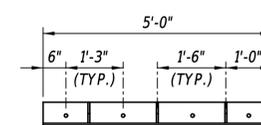
TYPICAL TRASH RACK BOTTOM PLATE - PLAN

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



TYPICAL TRASH RACK BOTTOM PLATE - SECTION

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



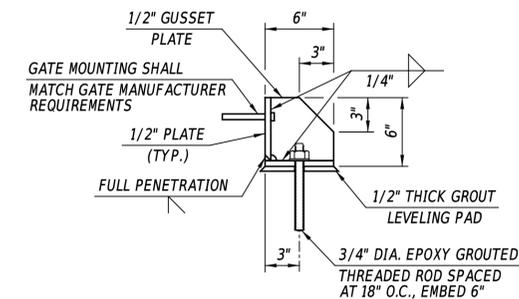
PLAN



ELEVATION

GATE MOUNT BOTTOM SUPPORT - PLAN - LEFT BAYS

(2 REQUIRED)
SCALE: 1/2" = 1'-0"



GATE MOUNT BOTTOM SUPPORT - SECTION - LEFT BAYS

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

NOTES:

- TAR PAPER, HYDROPHILIC WATERSTOP, SQUARE DOWELS AND DOWEL CLIPS USED FOR TOP SUPPORT DETAIL SHALL BE INCIDENTAL TO ITEM 610000. NO SEPARATE PAYMENT WILL BE MADE.
- PREPARE EXISTING CONCRETE TO BE IN CONTACT WITH NEW CONCRETE. ROUGHEN SURFACE TO 1/4" AMPLITUDE. SURFACE PREPARATION SHALL BE INCIDENTAL TO ITEM 610000. NO ADDITIONAL PAYMENT WILL BE MADE.
- ALL GATE FRAME MEMBERS AND BRACKETS SHALL BE STAINLESS STEEL AISI TYPE 316L.
- ALL THREADED ROD ANCHORS SHALL BE HILTI HAS-R 316SS WITH HIT-RE500 V3 EPOXY OR APPROVED EQUAL.
- ALL HOLES FOR THREADED ROD ANCHORS SHALL HAVE DIAMETER 1/8" GREATER THAN ANCHOR DIAMETER.
- ANCHOR LENGTH SHALL BE DETERMINED BY CONTRACTOR. TOTAL LENGTH TO INCLUDE EMBEDDED LENGTH. VARYING GROUT PAD THICKNESS, WASHER, HEX NUT, JAM NUT (AS REQUIRED), AND AT LEAST ONE ADDITIONAL THREAD WIDTH ABOVE ALL HARDWARE.
- GATES NOT SHOWN FOR CLARITY. CONTRACTOR TO VERIFY THAT GATE MOUNTING DOES NOT INTERFERE WITH FRAME GUSSETS, ANCHORS, AND HARDWARE.

ADDENDA / REVISIONS

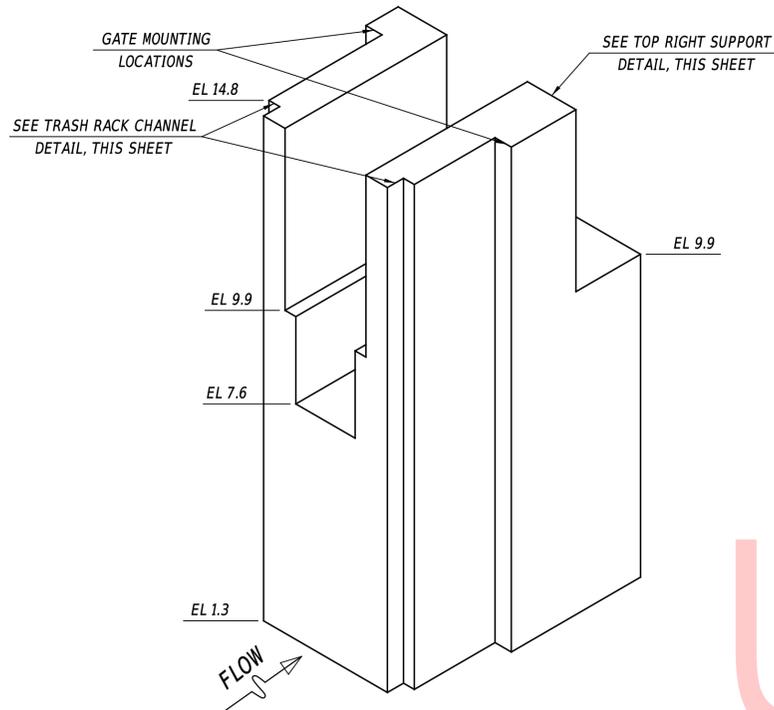
SCALE AS NOTED

SILVER LAKE DAM REPAIRS

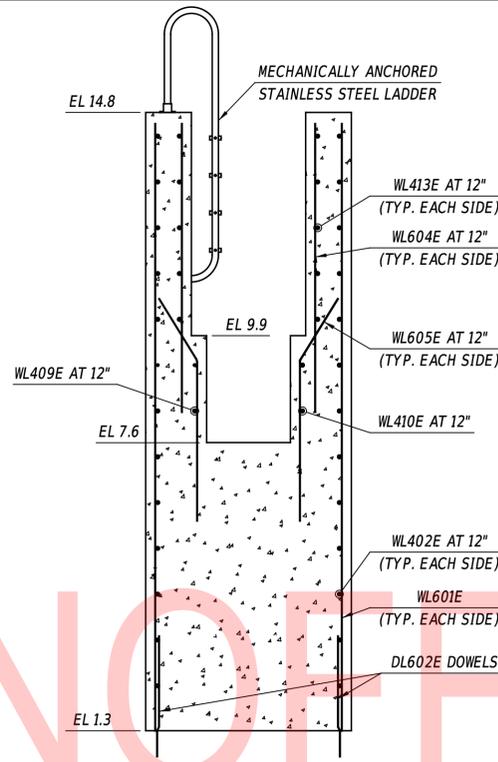
CONTRACT	BRIDGE NO.	1-504
T201807401	DESIGNED BY:	A.VASKO
COUNTY	CHECKED BY:	W.BROWN
NEW CASTLE		

BRIDGE 1-504 STRUCTURAL
DETAILS - LEFT CULVERT
PIER CONCRETE

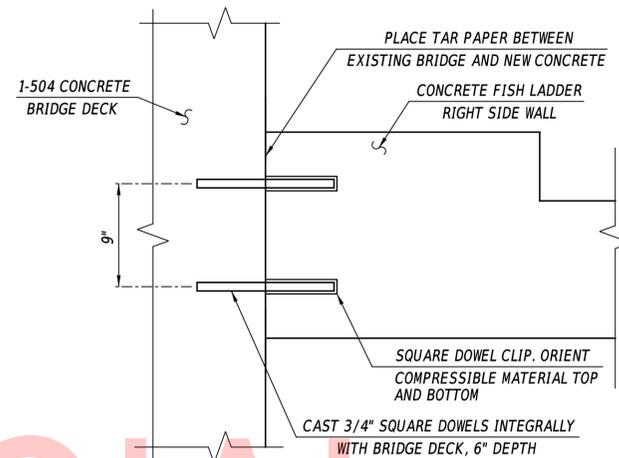
DT-02
SECTION
SHEET NO.
13



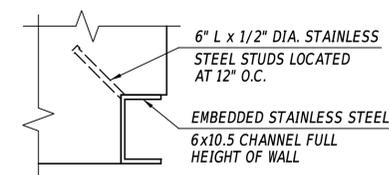
RIGHT CULVERT - FISH LADDER SUPPORT - ISOMETRIC



RIGHT CULVERT - FISH LADDER SUPPORT - TYPICAL SECTION



PLAN FISH LADDER - TOP RIGHT SUPPORT DETAIL

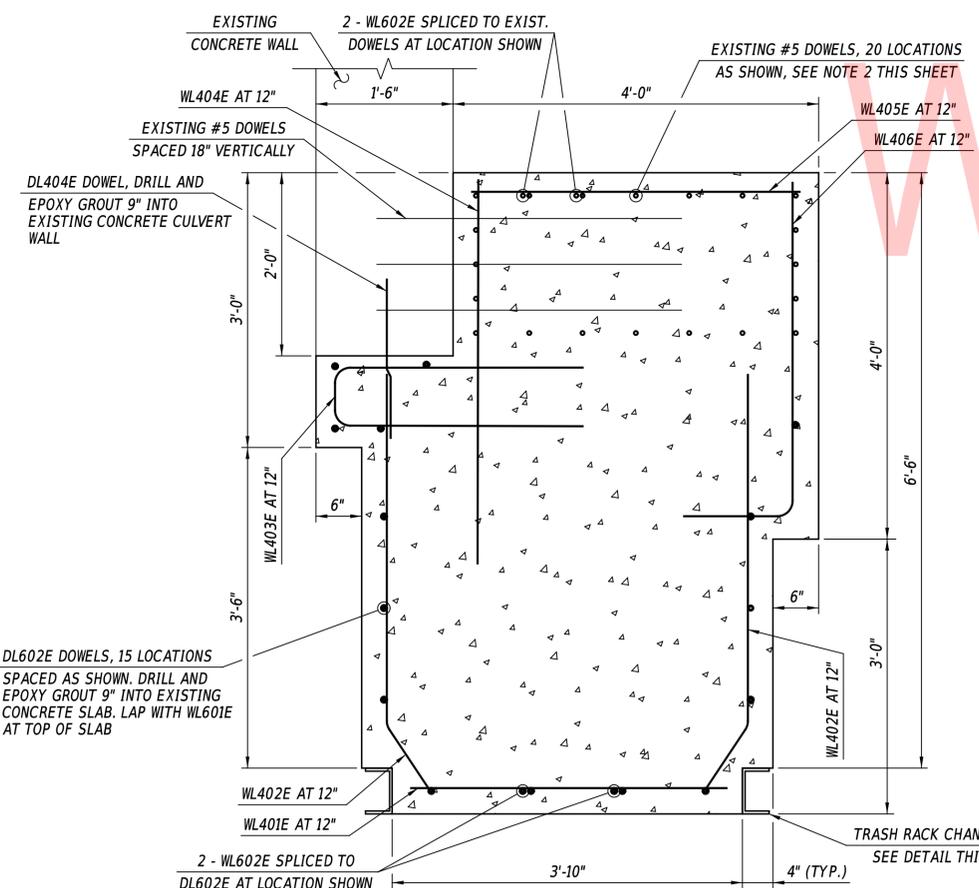


TYPICAL TRASH RACK CHANNEL DETAIL

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

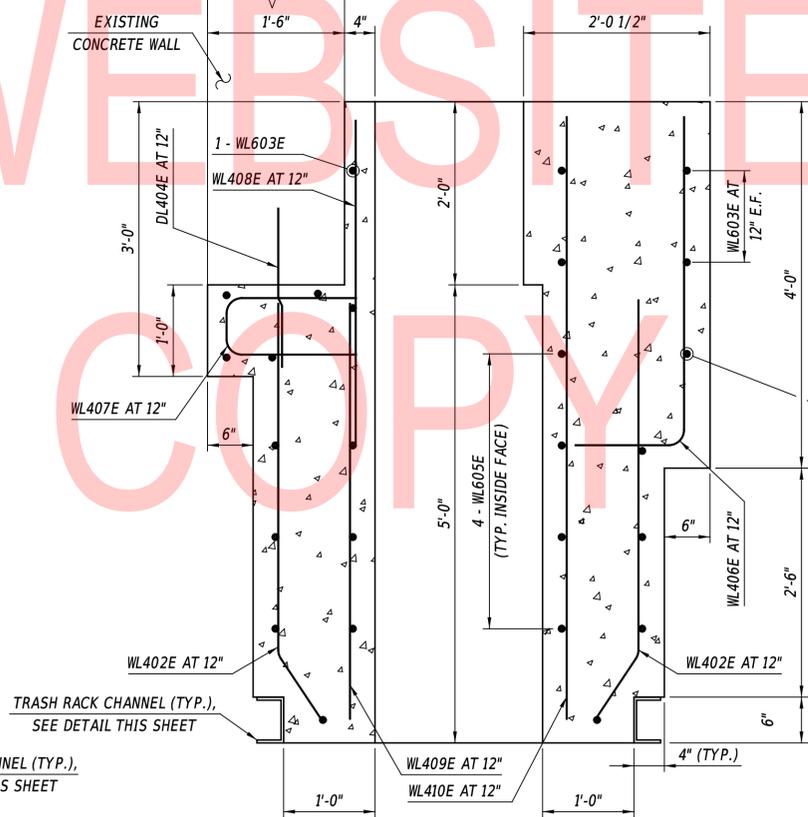
NOTES:

1. TAR PAPER, SQUARE DOWELS AND DOWEL CLIPS USED FOR TOP SUPPORT DETAIL SHALL BE INCIDENTAL TO ITEM 610000. NO SEPARATE PAYMENT WILL BE MADE.
2. EXISTING DOWELS TO BE EVALUATED BY ENGINEER AFTER DEMOLITION OF SURROUNDING CONCRETE. IF REPLACEMENT OF DOWELS IS NEEDED THEN USE HILTI HIT-RE500V3 OR APPROVED EQUAL WITH #5 REBAR DRILLED INTO LOCATIONS AS DIRECTED BY THE ENGINEER. WORK SHALL BE PAID UNDER ITEMS 611001 AND 628070.
3. PREPARE EXISTING CONCRETE TO BE IN CONTACT WITH NEW CONCRETE. ROUGHEN SURFACE TO 1/4" AMPLITUDE. SURFACE PREPARATION SHALL BE INCIDENTAL TO ITEM 610000. NO ADDITIONAL PAYMENT WILL BE MADE.



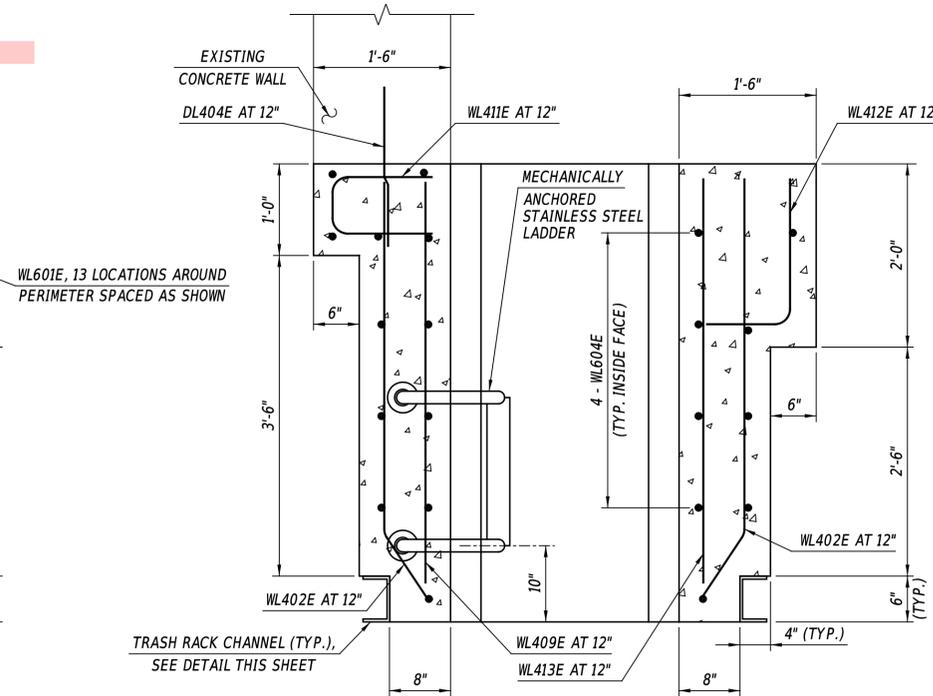
RIGHT CULVERT FISH LADDER SUPPORT - PLAN EL 1.3 TO EL 7.6

SCALE: 1" = 1'-0"



RIGHT CULVERT FISH LADDER SUPPORT - PLAN EL 7.6 TO EL 9.9

SCALE: 1" = 1'-0"



RIGHT CULVERT FISH LADDER SUPPORT - PLAN EL 9.9 TO EL 14.8

SCALE: 1" = 1'-0"

ADDENDA / REVISIONS

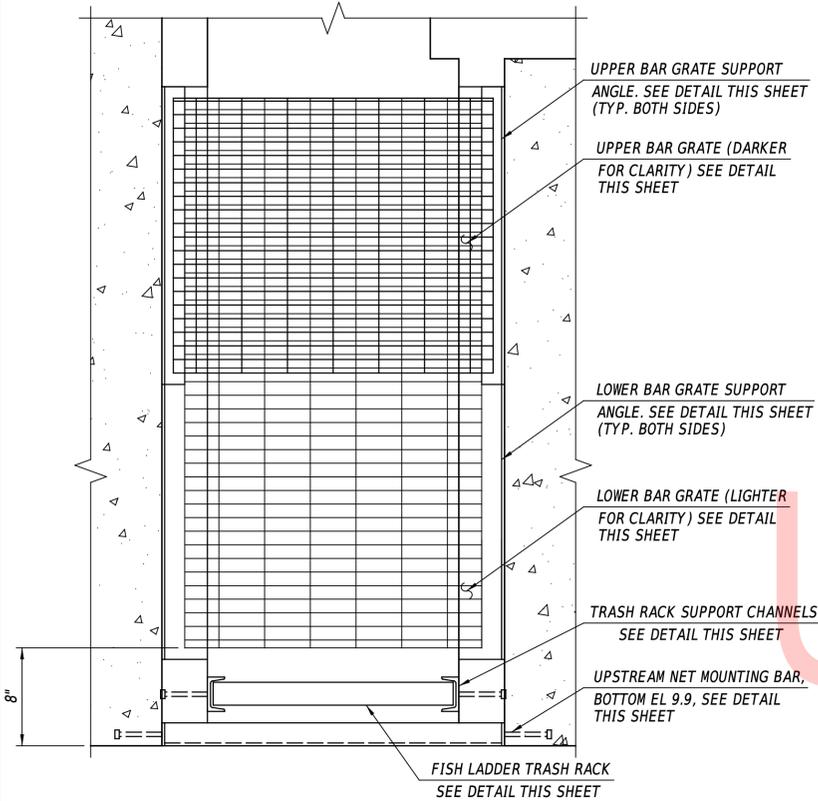
SCALE AS NOTED

SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-504
T201807401	DESIGNED BY:	A.VASKO
COUNTY	CHECKED BY:	W.BROWN
NEW CASTLE		

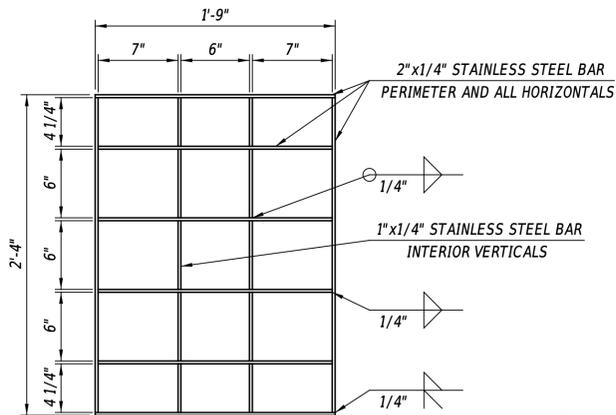
BRIDGE 1-504 STRUCTURAL DETAILS - RIGHT CULVERT CONCRETE

DT-03
SECTION
SE
SHEET NO.
14



FISH PASSAGE EXTENSION - PLAN

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



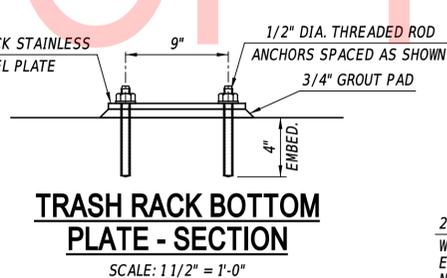
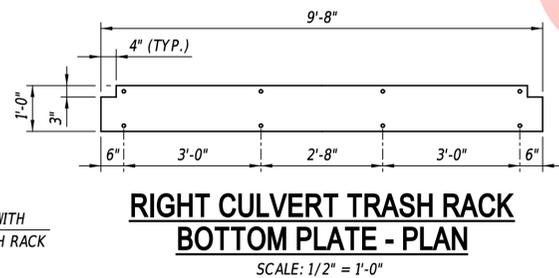
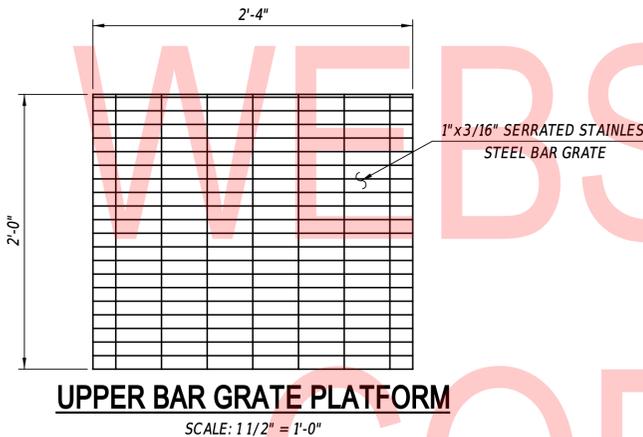
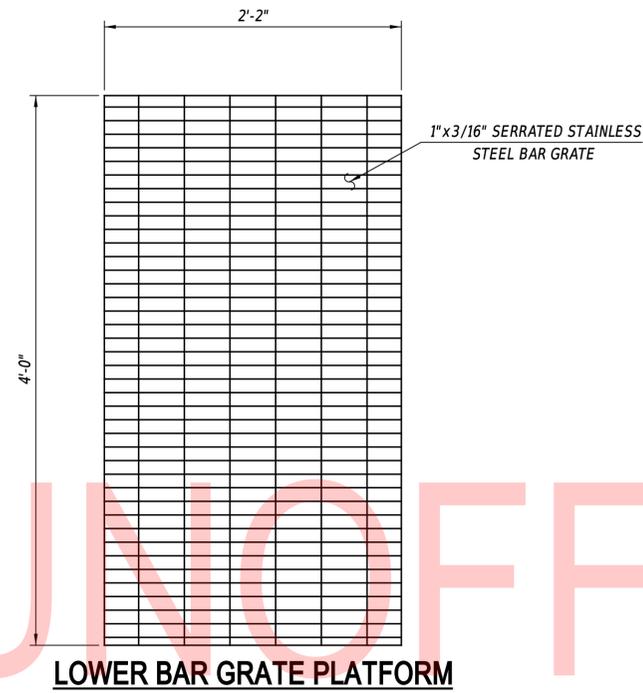
**FISH LADDER TRASH RACK
DETAIL - ELEVATION**

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



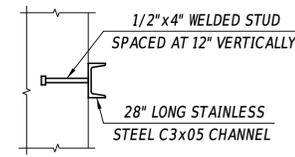
**FISH LADDER TRASH RACK
DETAIL - SECTION**

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



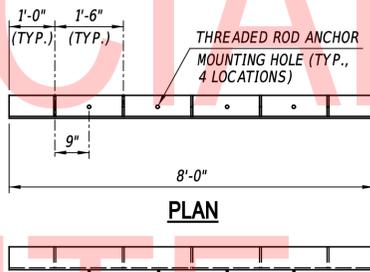
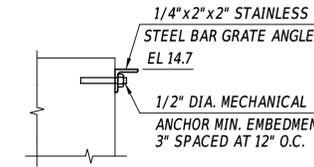
**FISH LADDER TRASH RACK
SUPPORT DETAIL**

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



**UPPER BAR GRATE
SUPPORT DETAIL**

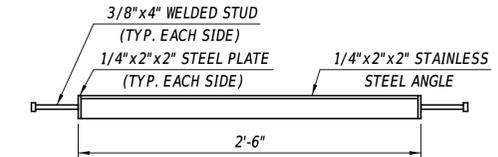
SCALE: 1 1/2" = 1'-0"



**GATE MOUNT BOTTOM SUPPORT
DETAIL - RIGHT BAY**

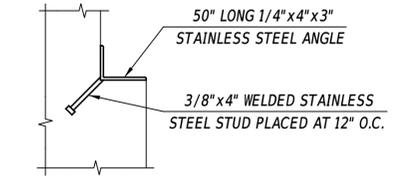
SCALE: 1/2" = 1'-0"

ELEVATION



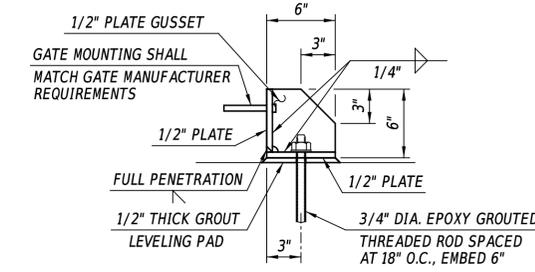
**UPSTREAM NET MOUNTING
BAR DETAIL**

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



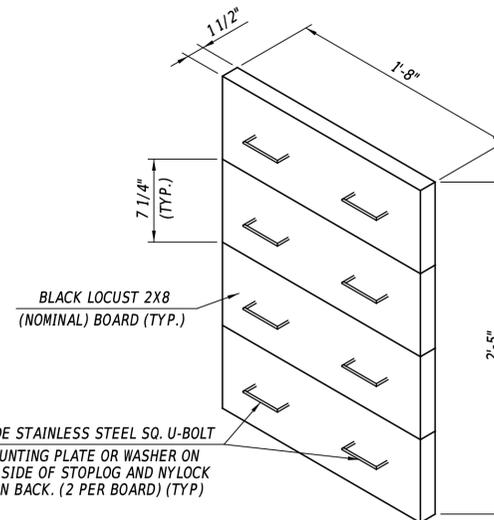
**LOWER BAR GRATE
SUPPORT DETAIL**

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



**TYPICAL GATE MOUNT BOTTOM
SUPPORT - SECTION**

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



**FISH LADDER STOP LOG
DETAIL - ISOMETRIC**

NOTES:

- BAR GRATES, BAR GRATE SUPPORTS, UPSTREAM MOUNTING BAR, FISH LADDER TRASH RACK, AND TRASH RACK SUPPORT CHANNEL AND ANCHORS SHALL BE PAID UNDER LUMP SUM ITEM 615521 - METAL FABRICATIONS.
- STOP LOGS AND U-BOLT HANDLES TO BE PAID UNDER LUMP SUM ITEM 615521 - METAL FABRICATIONS.

ADDENDA / REVISIONS

SCALE AS NOTED

SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-504
T201807401	DESIGNED BY:	A.VASKO
COUNTY	CHECKED BY:	W.BROWN
NEW CASTLE		

BRIDGE 1-504 STRUCTURAL
DETAILS - MISCELLANEOUS
DETAILS

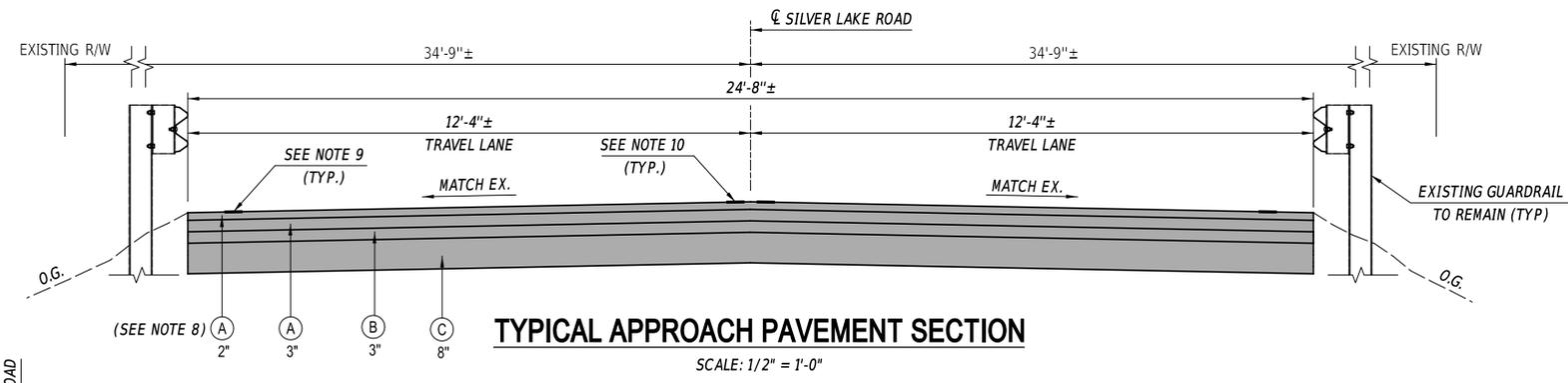
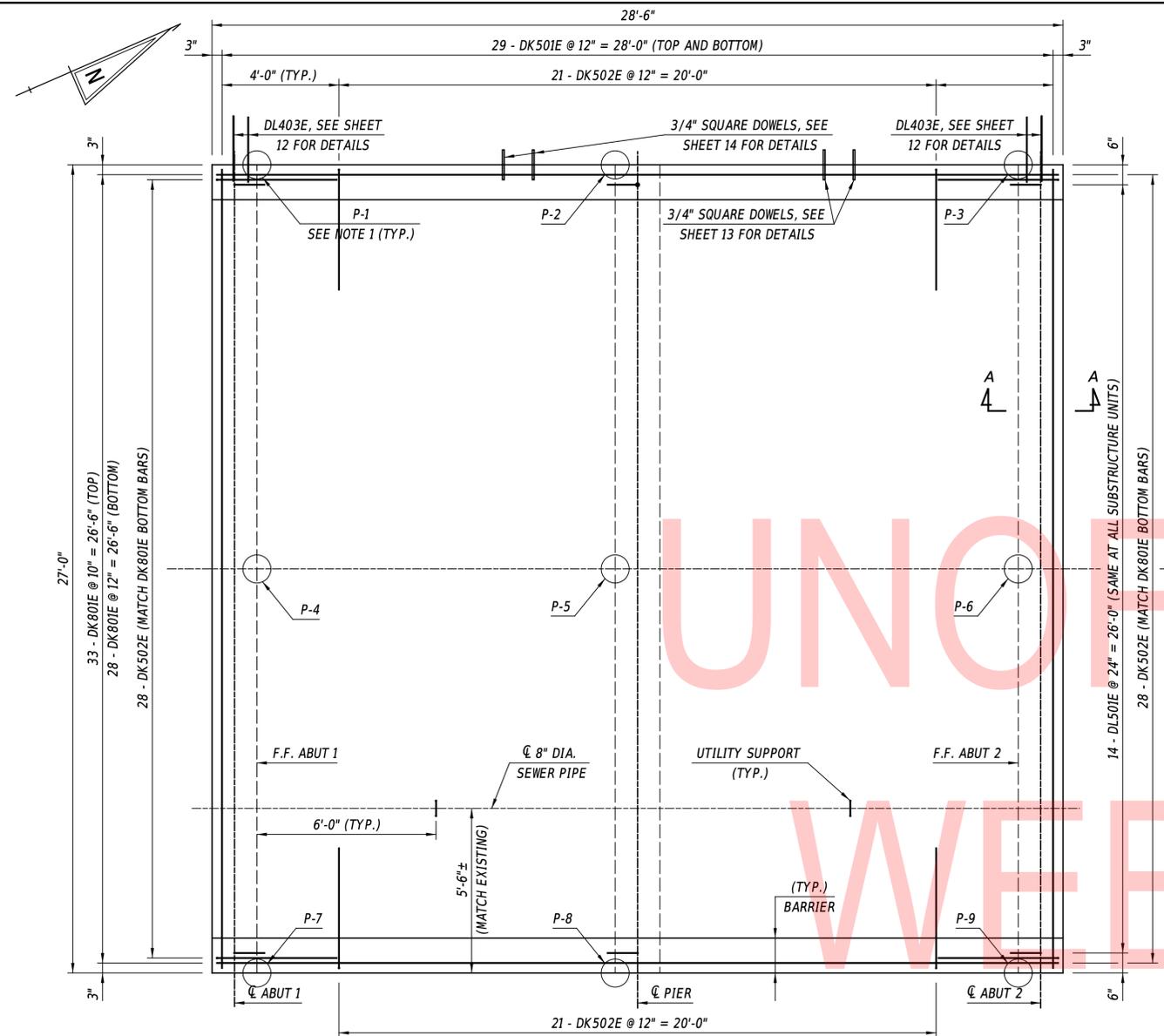
DT-04

SECTION

SE

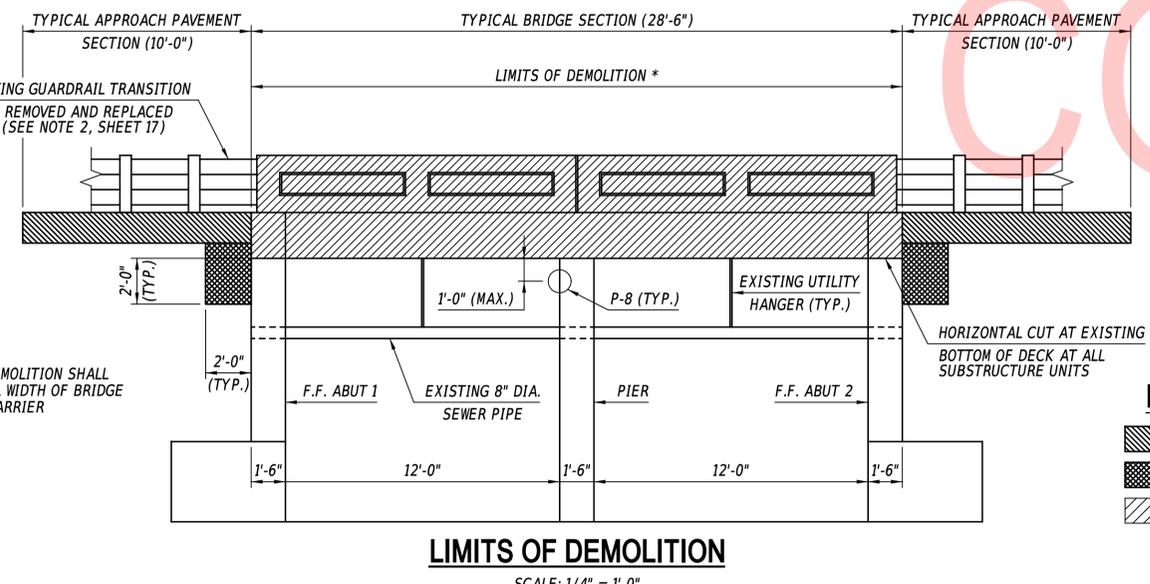
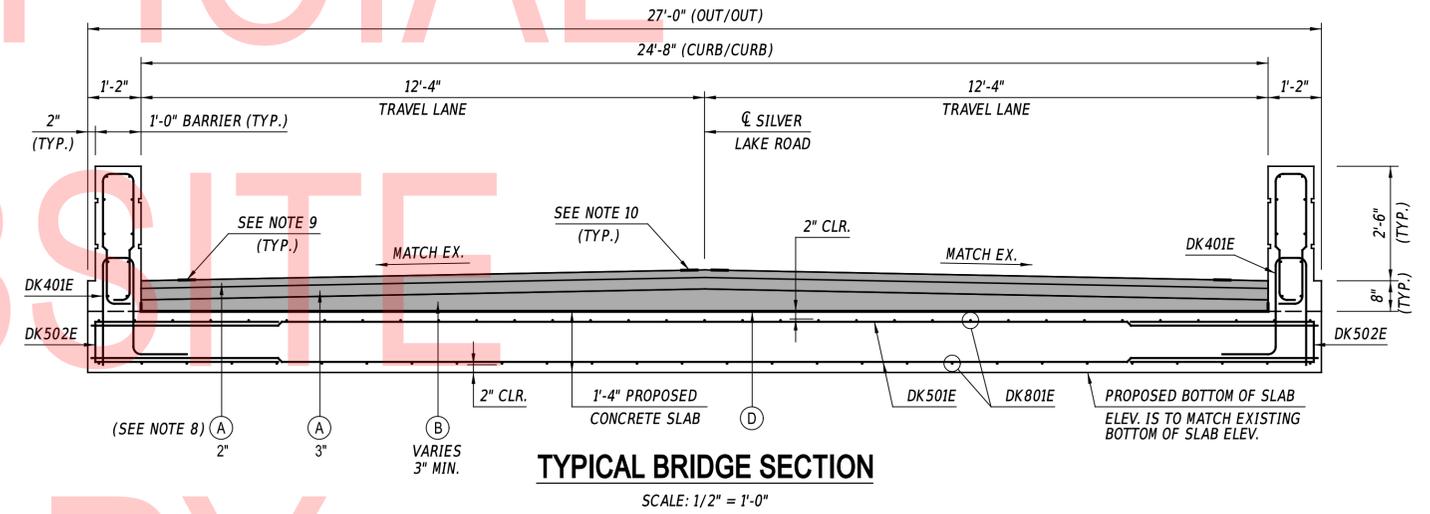
SHEET NO.

15



LEGEND

- (A) ITEM 401014 - SUPERPAVE TYPE B, PG 64-22
- (B) ITEM 401021 - SUPERPAVE TYPE BCBC, PG 64-22
- (C) ITEM 301001 - GRADED AGGREGATE BASE COURSE, TYPE B
- (D) ITEM 613004 - WATERPROOFING MEMBRANE, TRAFFIC BEARING



LEGEND

- (Hatched) EXCAVATION AND EMBANKMENT (ITEM 202000)
- (Dotted) STRUCTURAL EXCAVATION (ITEM 207000)
- (Diagonal Lines) REMOVAL OF SUPERSTRUCTURE (ITEM 211000)

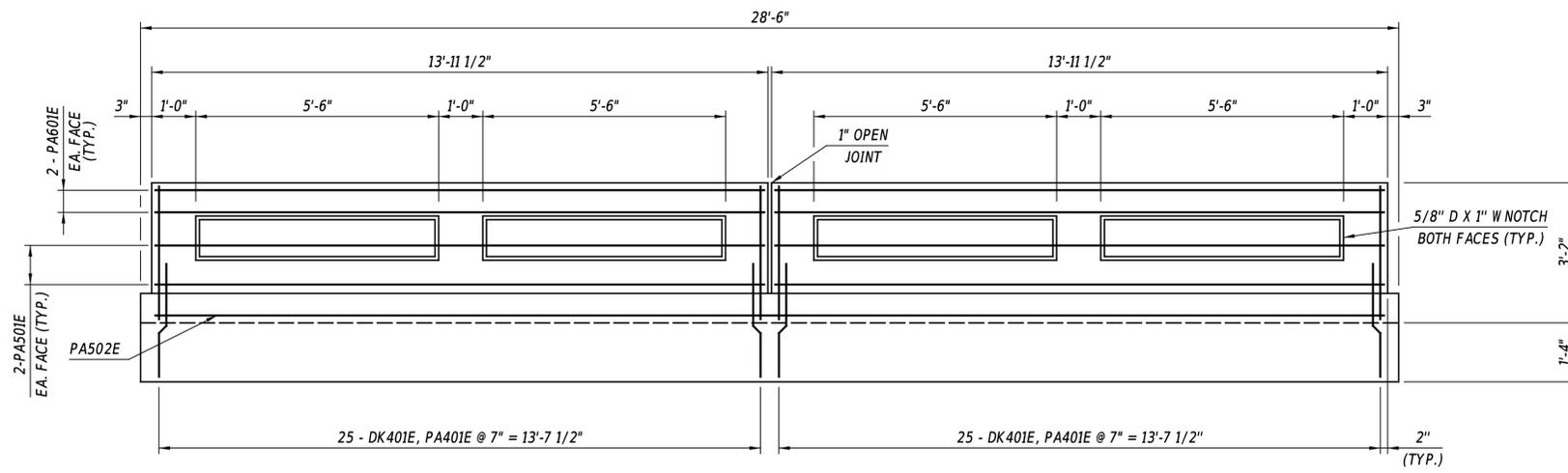
NOTES:

1. POINTS TO BE SURVEYED BY CONTRACTOR PRIOR TO CONSTRUCTION, TAKEN NO MORE THAN 12" BELOW BOTTOM OF EXISTING SLAB. CONTRACTOR IS TO VERIFY THERE IS NO MOVEMENT IN THE STRUCTURE DURING AND AFTER CONSTRUCTION IS COMPLETED. PAYMENT FOR THE WORK IS INCIDENTAL TO ITEM 763501 - CONSTRUCTION ENGINEERING.
2. THE MAXIMUM LIFTS FOR INDIVIDUAL PAVEMENT MATERIALS ARE AS FOLLOWS:

MATERIAL	LIFT THICKNESS	
	MINIMUM	MAXIMUM
BITUMINOUS CONCRETE, TYPE 'B'	2.25"	4"
BITUMINOUS CONCRETE BASE COURSE	3"	6"
GRADED AGGREGATE BASE COURSE	4"	8"
3. EXISTING PAVEMENT SECTION (OVER BRIDGE AND APPROACHES):
TRAVEL LANES:
- 40 MM (1.57") SUPERPAVE, TYPE C HOT-MIX, 115 GYRATIONS, PG 64-22
- 60 MM (2.36") SUPERPAVE, TYPE B HOT-MIX, 115 GYRATIONS, PG 64-22
- 150 MM (5.9") SUPERPAVE BCBC, 115 GYRATIONS, PG 64-22
SHOULDER:
- 40 MM (1.57") SUPERPAVE, TYPE C HOT-MIX, 115 GYRATIONS, PG 64-22
- 60 MM (2.36") SUPERPAVE, TYPE B HOT-MIX, 115 GYRATIONS, PG 64-22
- 150 MM (5.9") GABC, TYPE B
4. FOR GUARDRAIL ATTACHMENT DETAIL, SEE SHEET 17.
5. FOR SECTION A-A, SEE SHEET 17.
6. TYPICAL APPROACH PAVEMENT SECTION SHALL BE INSTALLED ON ANY AREAS EXCAVATED BEHIND ABUTMENTS DURING CONSTRUCTION (10 LF AT EACH APPROACH WAS ASSUMED IN QUANTITIES).
7. FOR ADDITIONAL NOTES, SEE SHEET 5.
8. CONTRACTOR SHALL PLACE 5" OF ITEM 401014 - SUPERPAVE TYPE B, PG 64-22 USING 2 LIFTS: 2" OVER 3". THE DEPARTMENT ACKNOWLEDGES THIS DOES NOT MEET MINIMUM LIFT THICKNESSES. 2" OF ITEM 401014 - SUPERPAVE TYPE B, PG 64-22 WILL BE REMOVED AND OVERLAYED USING ITEM 401005 - SUPERPAVE TYPE C, PG 64-22 (CARBONATE STONE) BY OTHERS IN A LATER CONTRACT TO BE DETERMINED.
9. CONTRACTOR SHALL INSTALL ITEM 817013 - PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, WHITE, 5" ACROSS STRUCTURE TO MATCH EXISTING STRIPING TO APPROACHES.
10. CONTRACTOR SHALL INSTALL ITEM 817013 - PERMANENT PAVEMENT STRIPING, EPOXY RESIN PAINT, YELLOW, 5" ACROSS STRUCTURE AND RECONSTRUCTED APPROACHES TO MATCH EXISTING STRIPING TO APPROACHES.

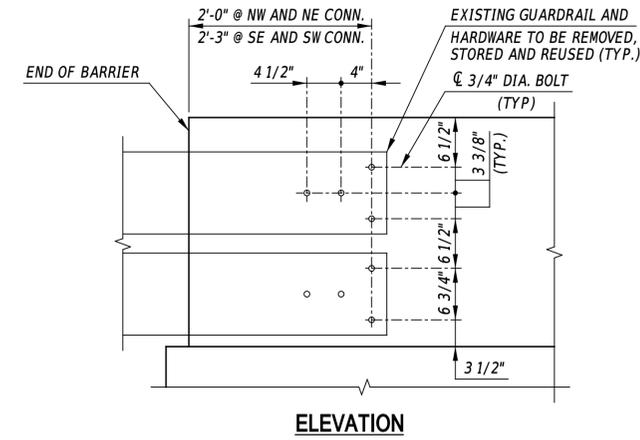
2/7/2020
10:00:46
SFILES

ADDENDA / REVISIONS		SCALE AS NOTED	SILVER LAKE DAM REPAIRS	CONTRACT	BRIDGE NO.	1-504	BRIDGE 1-504 - SLAB PLAN	DK-01		
				T201807401	DESIGNED BY:	M.WEBER		SECTION	PAI	
				NEW CASTLE	CHECKED BY:	H.BROWN		SHEET NO.	16	

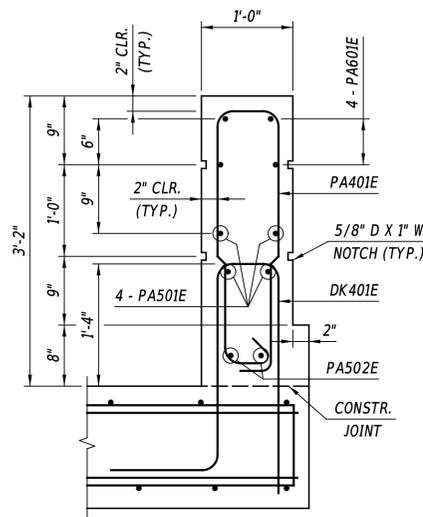


BARRIER ELEVATION

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

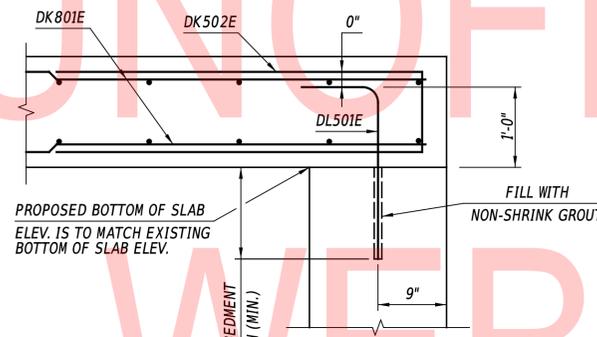


ELEVATION



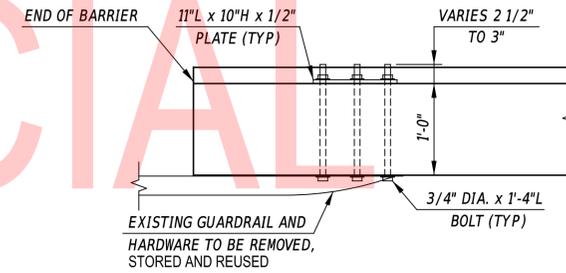
BARRIER DETAIL

SCALE: 1" = 1'-0"



SECTION A-A

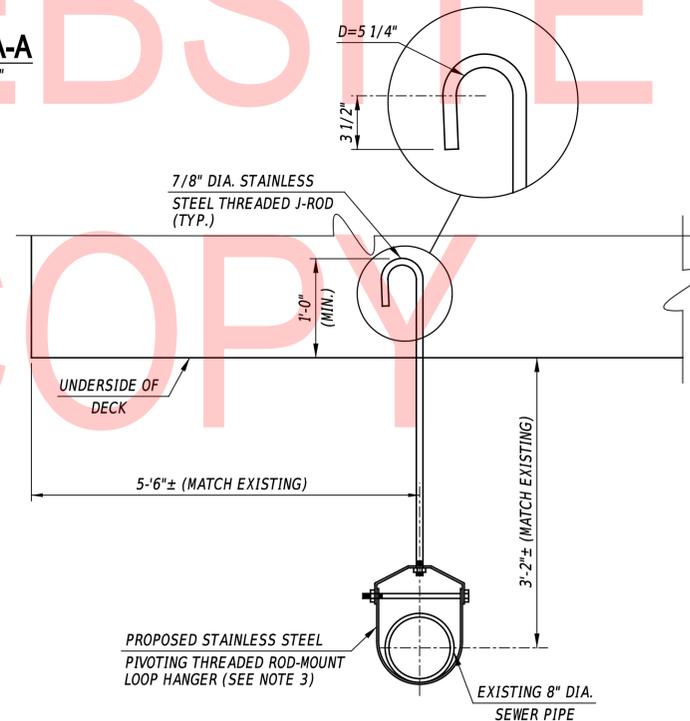
SCALE: 1" = 1'-0"



PLAN

GUARDRAIL ATTACHMENT DETAIL

SCALE: 1" = 1'-0"



UTILITY SUPPORT DETAIL

SCALE: 1" = 1'-0"

GUARDRAIL ATTACHMENT NOTES:

- 1" DIAMETER HOLES SHALL BE CAST INTO BARRIER SUCH THAT BOLTS CAN BE REMOVED AS NECESSARY. CONTRACTOR MAY USE SLEEVES, DRILLED HOLES ARE PROHIBITED.
- EXISTING GUARDRAIL TRANSITION TO BE REMOVED AND REINSTALLED TO PROPOSED BARRIER TO MATCH EXISTING CONDITIONS. PAYMENT SHALL BE INCIDENTAL TO ITEM 211000. ANY DAMAGE TO GUARDRAIL SYSTEM DURING CONSTRUCTION SHALL BE REPLACED AND INSTALLED AS IS AT NO ADDITIONAL COST.
- DIMENSIONS FOR GUARDRAIL ATTACHMENT ARE CONSIDERED CONCEPTUAL IN NATURE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO DEMOLITION SUCH THAT REINSTALLATION MATCHES EXISTING CONDITIONS.

NOTES:

- FOR SLAB DETAILS, SEE SHEET 16.
- FOR ADDITIONAL NOTES, SEE SHEET 5.
- PROPOSED PIVOTING THREADED ROD-MOUNT LOOP HANGER, 304 STAINLESS STEEL, 10 3/4" I.D. (MCMASTER-CARR PRODUCT 3309T654). CONTRACTOR HAS THE OPTION TO USE A DIFFERENT PRODUCT WITH APPROVAL FROM DELDOT AND NEW CASTLE COUNTY. PAYMENT FOR PROPOSED HANGER IS INCIDENTAL TO ITEM 610007.
- CONTRACTOR IS RESPONSIBLE FOR SUPPORTING EXISTING 8" DIAMETER SEWER PIPE DURING CONSTRUCTION, SEE TEMPORARY SUPPORT DETAILS ON SHEET 17A. PAYMENT FOR TEMPORARY UTILITY SUPPORT SHALL BE INCIDENTAL TO ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS, NO SEPARATE PAYMENT WILL BE MADE.

ADDENDA / REVISIONS

SCALE AS NOTED

SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-504
T201807401	DESIGNED BY:	M.WEBBER
COUNTY	CHECKED BY:	H.BROWN
NEW CASTLE		

BRIDGE 1-504 - SLAB AND BARRIER DETAILS

DK-02

SECTION

PAI

SHEET NO.

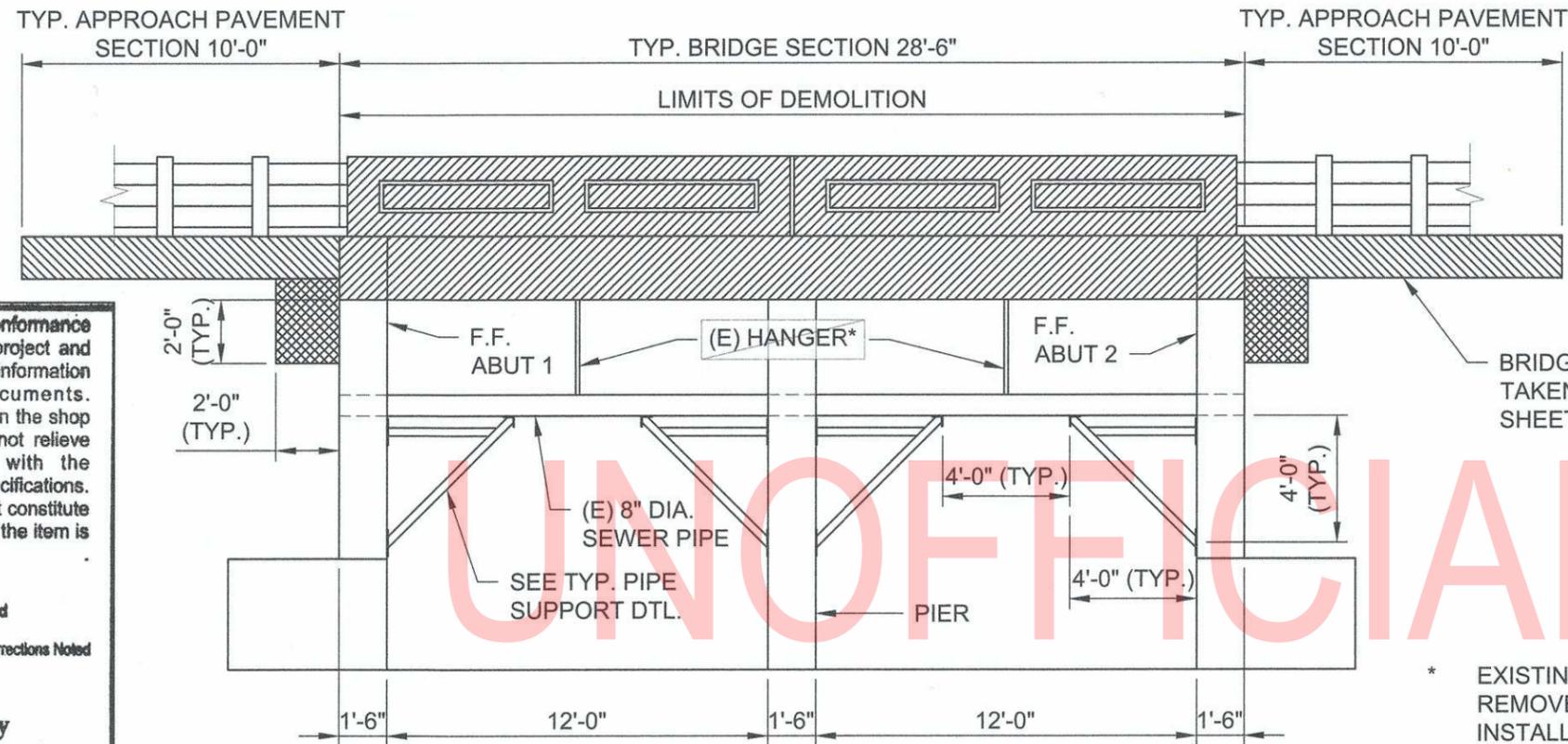
17

PROJECT
SILVER LAKE DAM REPAIRS

OWNER/CLIENT

CONSULTANT
AECOM TECHNICAL SERVICES, INC.
4051 OGLETOWN RD.
NEWARK, DE 19713
PHONE: (302) 781-5900

CONSULTANTS



This review is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve contractor from compliance with the requirements of the plans and specifications. Review of a specific item does not constitute approval of an assembly of which the item is a component.

- No Exception Taken
- Rejected
- Revise and Resubmit
- Make Corrections Noted

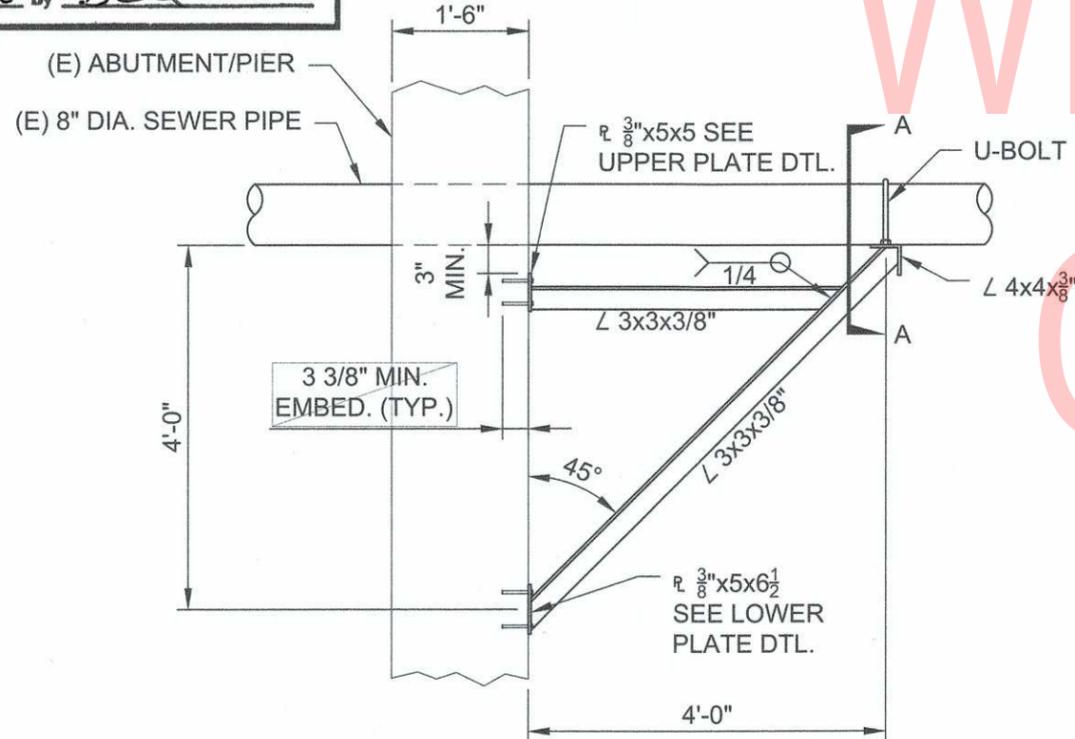
New Castle County
Department of Special Services

Date 2/6/20 By Dal

* EXISTING HANGERS TO BE REMOVED AFTER COMPLETED INSTALLATION OF BRACKETS.

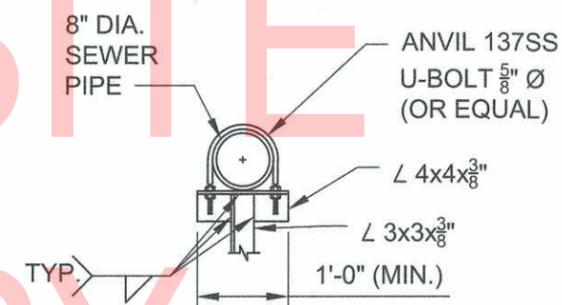
BRIDGE SECTION (TYP.)

Scale: 3/16" = 1'-0"



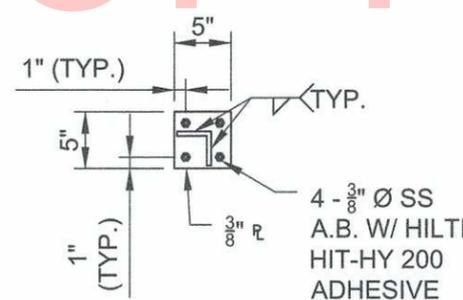
TYP. PIPE SUPPORT DTL.

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



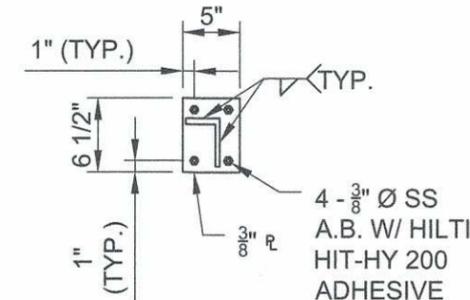
SECTION A-A

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



UPPER PLATE DTL.

Scale: 3/4" = 1'-0"



LOWER PLATE DTL.

Scale: 3/4" = 1'-0"

PROJECT NUMBER

Designed By: B. DRAPER

Drawn By: B. DRAPER

Dept Check: M. MILLER

Proj Check:

Date: 2/4/2020

Scale: AS NOTED

DISCIPLINE

SHEET TITLE

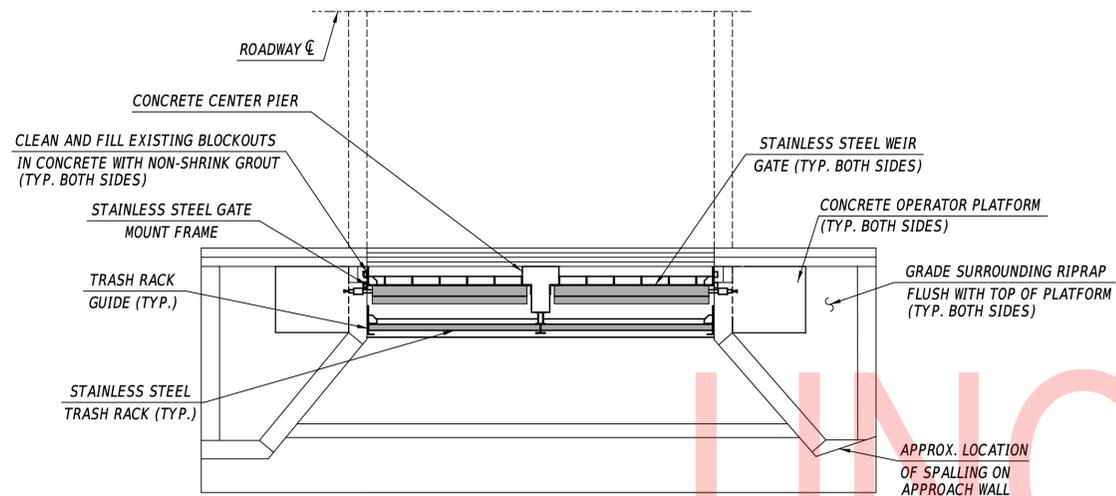
SEWER PIPE SUPPORT DETAILS

SHEET NUMBER

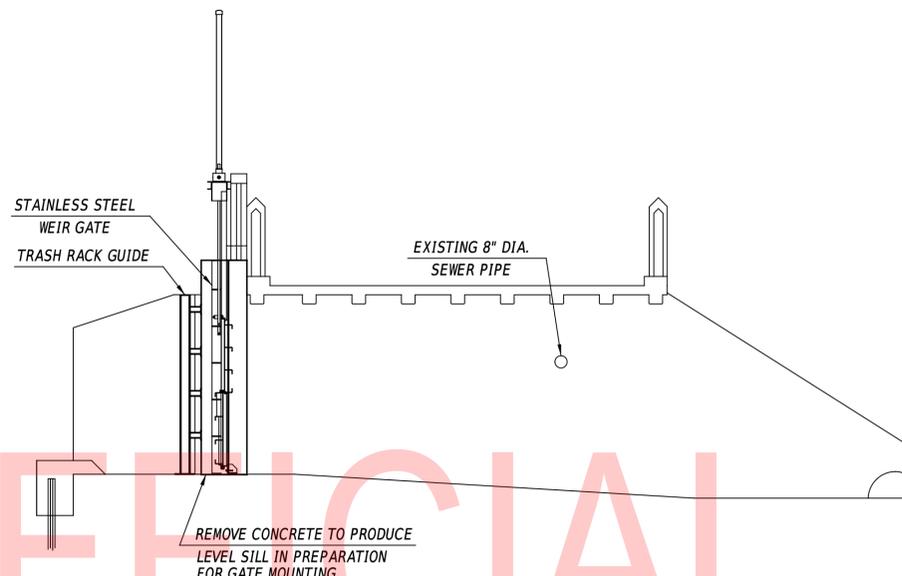
17A

NOTES:

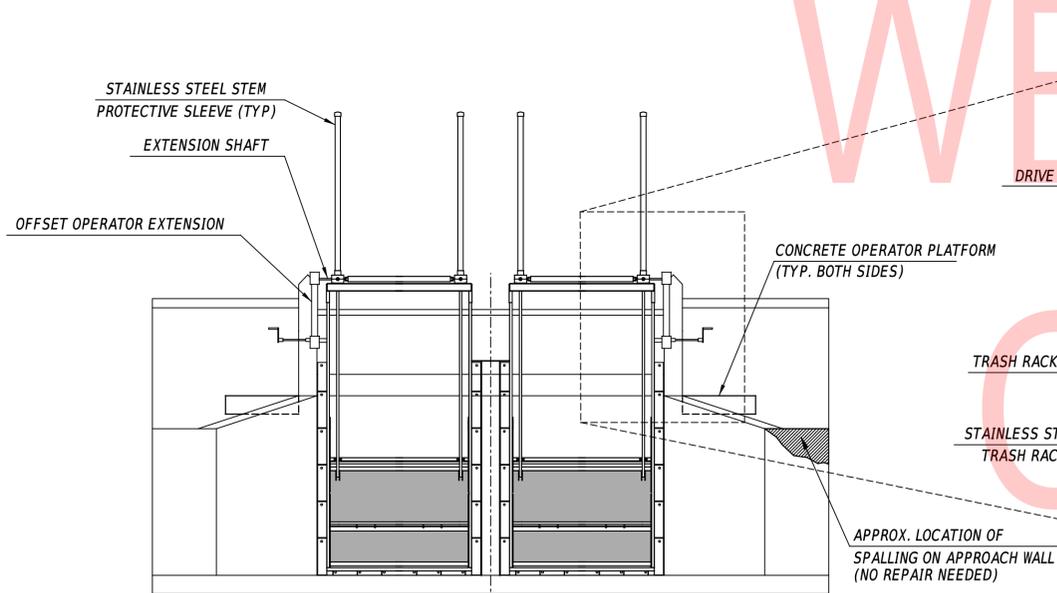
- CONTROL OF WATER MEANS AND METHODS NOT SHOWN FOR CLARITY, SEE SHEET 26.
- THE GATES AS SHOWN ON THIS SHEET ARE CONCEPTUAL REPRESENTATIONS. GATE STYLES VARY BY MANUFACTURER, REGARDLESS OF MANUFACTURER THE GATE MUST MEET THE CRITERIA DEFINED ON THESE DRAWINGS AS WELL AS SPECIFICATION SECTION 615520 - STAINLESS STEEL SLIDE GATES.
- EXISTING CONCRETE SURFACE PREPARATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 615521 - METAL FABRICATION. NO SEPARATE PAYMENT WILL BE MADE.
- BOTH GATES, SEALS, OPERATORS, OPERATOR EXTENSIONS OVER THE PLANTERS, MOUNTING HARDWARE, GATE MANUFACTURER REQUIRED BRACING, AND REQUIRED TESTING SHALL BE PAID UNDER LUMP SUM ITEM 615520 - STAINLESS STEEL SLIDE GATES.
- CLEANING AND FILLING EXISTING BLOCKOUTS SHALL BE CONSIDERED INCIDENTAL TO ITEM 615521. NO SEPARATE PAYMENT WILL BE MADE.



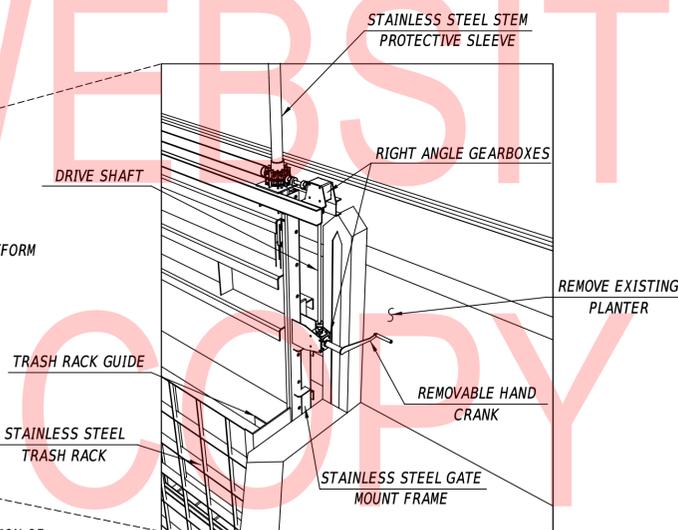
BRIDGE 1-407 - PLAN
SCALE: 1" = 5'-0"



BRIDGE 1-407 - SECTION
SCALE: 1" = 5'-0"



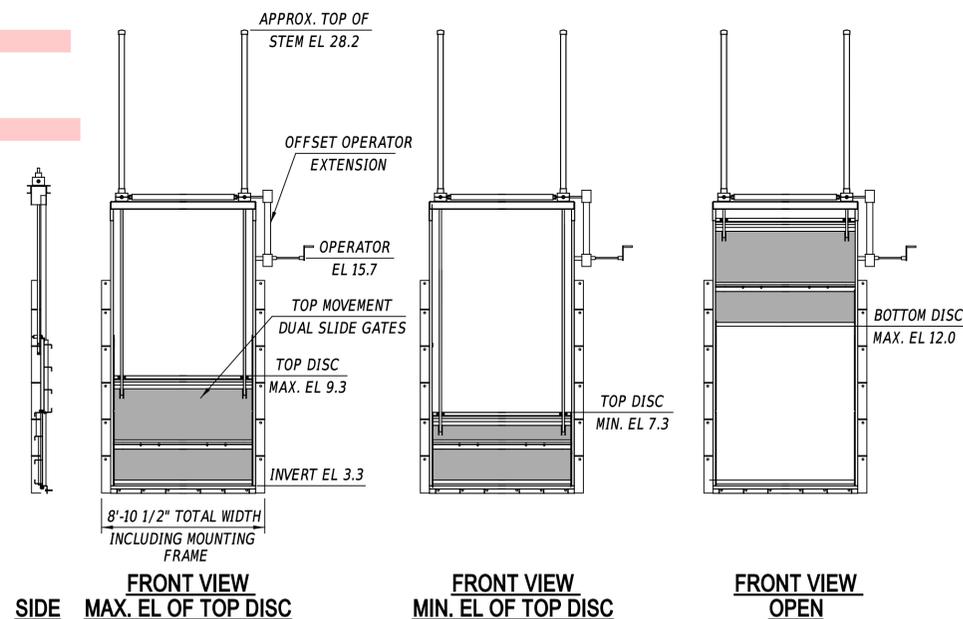
BRIDGE 1-407 - ELEVATION
SCALE: 1" = 5'-0"



CONCEPTUAL OFFSET GATE OPERATOR EXTENSION - ISOMETRIC
NOT TO SCALE

NOTES:

- OPERATOR SHALL BE TAMPER-RESISTANT.
- RIGHT SIDE SHOWN, LEFT SIDE MIRRORED.
- PORTABLE POWER ACTUATOR(S) TO BE PROVIDED IN ACCORDANCE WITH 615520 - STAINLESS STEEL SLIDE GATE.



BRIDGE 1-407 - GATE SCHEMATICS
(2 GATES REQUIRED, OPERATORS OPPOSITE)
SCALE: 1" = 5'-0"

ADDENDA / REVISIONS

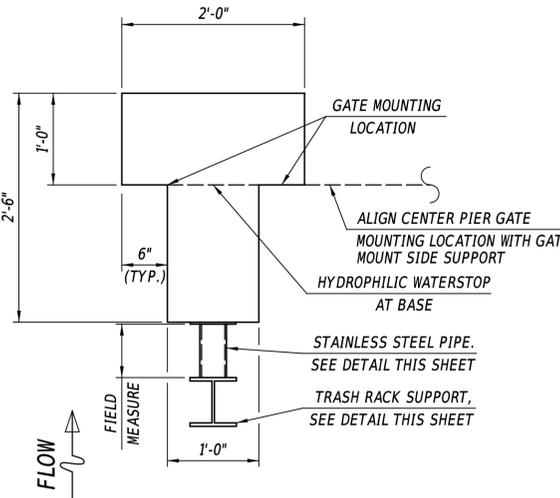
SCALE AS NOTED

SILVER LAKE DAM REPAIRS

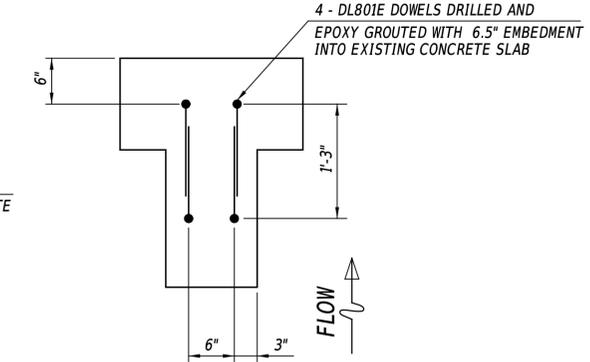
CONTRACT	BRIDGE NO.	1-407
T201807401	DESIGNED BY:	A.VASKO
COUNTY	CHECKED BY:	W.BROWN
NEW CASTLE		

BRIDGE 1-407 - PLAN,
ELEVATION, AND SECTION

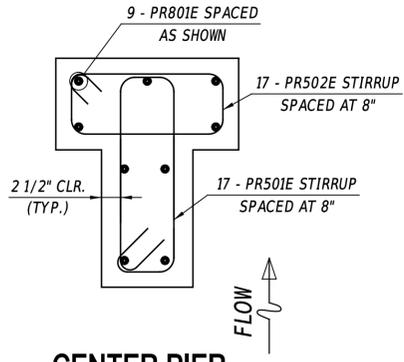
PE-02
SECTION
SHEET NO.
18



CENTER PIER - TYPICAL PLAN
SCALE: 1" = 1'-0"



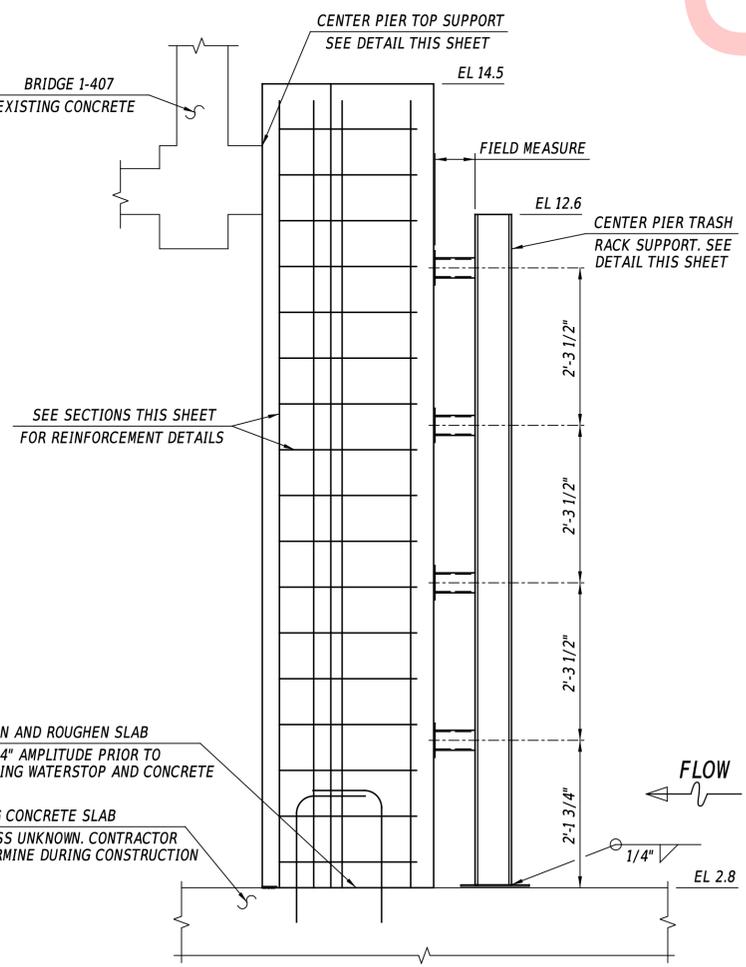
CENTER PIER - DOWEL SECTION
SCALE: 1" = 1'-0"



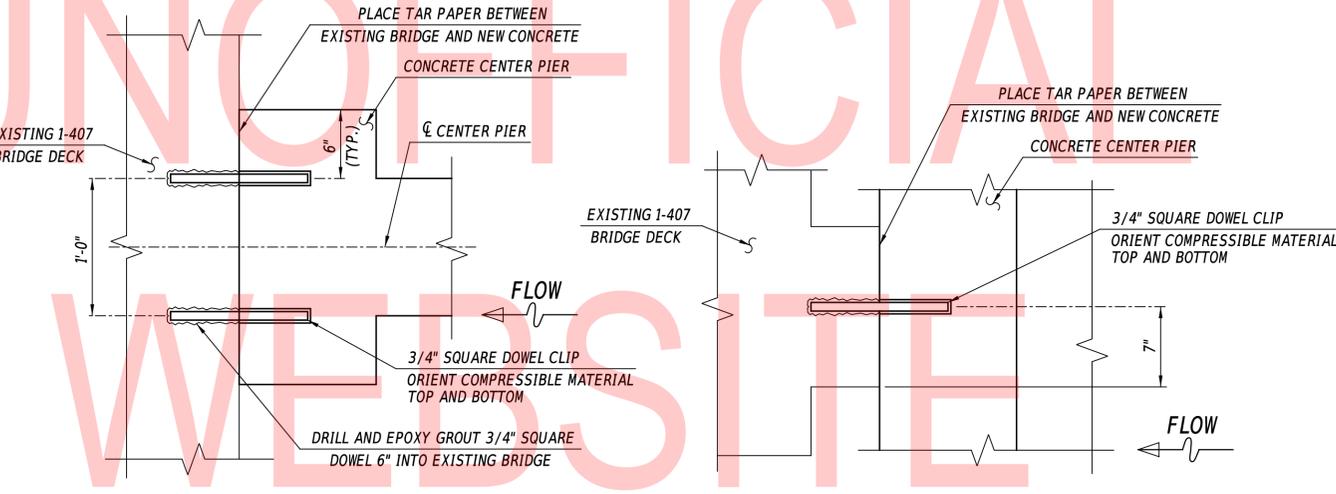
CENTER PIER - REINFORCEMENT SECTION
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NOTES:

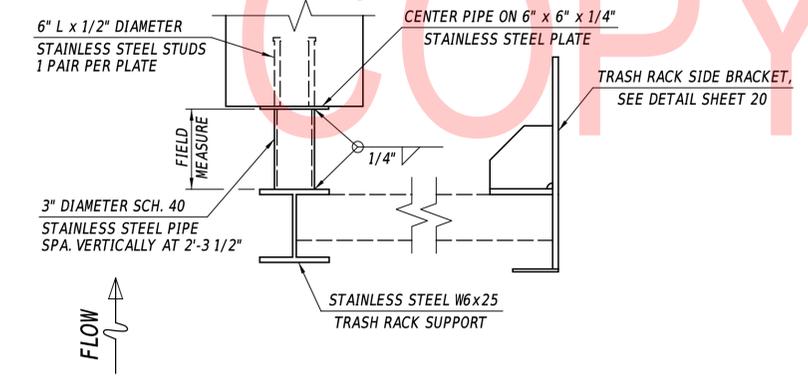
- TAR PAPER, HYDROPHILIC WATERSTOP, SQUARE DOWELS AND DOWEL CLIPS USED FOR TOP SUPPORT DETAIL SHALL BE INCIDENTAL TO ITEM 610000. NO SEPARATE PAYMENT WILL BE MADE.
- EXCAVATION FOR CONCRETE OPERATOR PLATFORM SHALL BE PAID UNDER ITEM 207000 - STRUCTURAL EXCAVATION.
- AASHTO NO. 57 STONE USED TO LEVEL PRIOR TO CONSTRUCTION OF OPERATOR PLATFORM IS CONSIDERED INCIDENTAL TO ITEM 610000. NO SEPERATE PAYMENT WILL BE MADE.



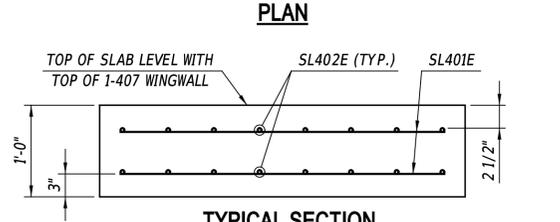
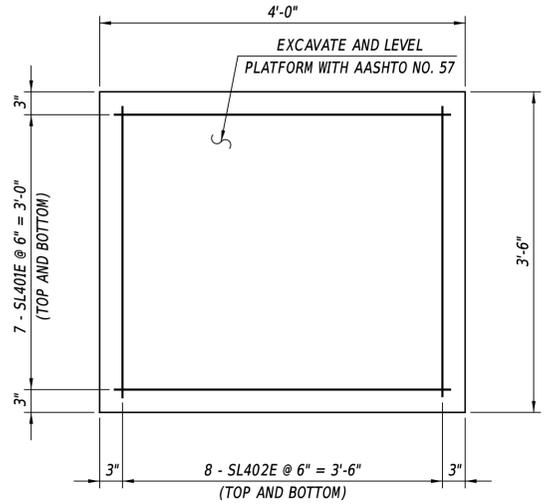
CENTER PIER - ELEVATION
SCALE: 3/4" = 1'-0"



CENTER PIER - TOP SUPPORT DETAIL
SCALE: 1 1/2" = 1'-0"



CENTER PIER - TRASH RACK SUPPORT DETAIL
SCALE: 1 1/2" = 1'-0"

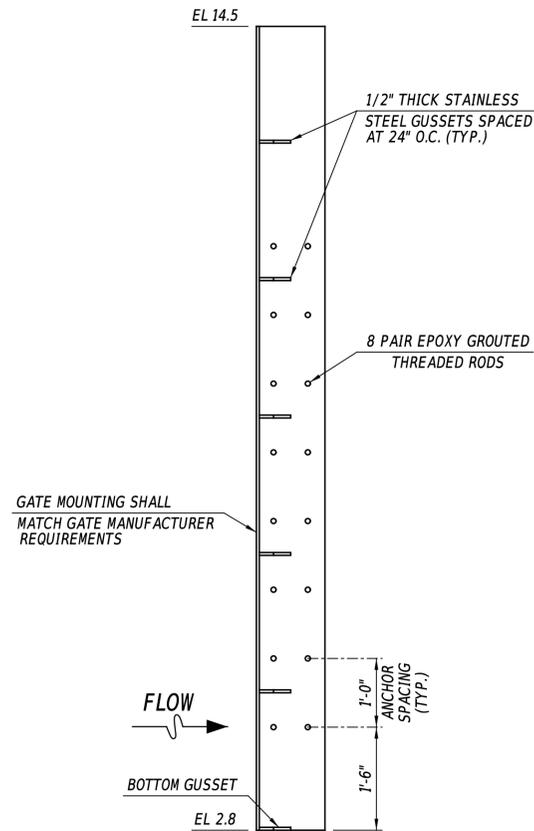


CONCRETE OPERATOR PLATFORM
SCALE: 1" = 1'-0"

UNOFFICIAL
WEBSITE
COPY

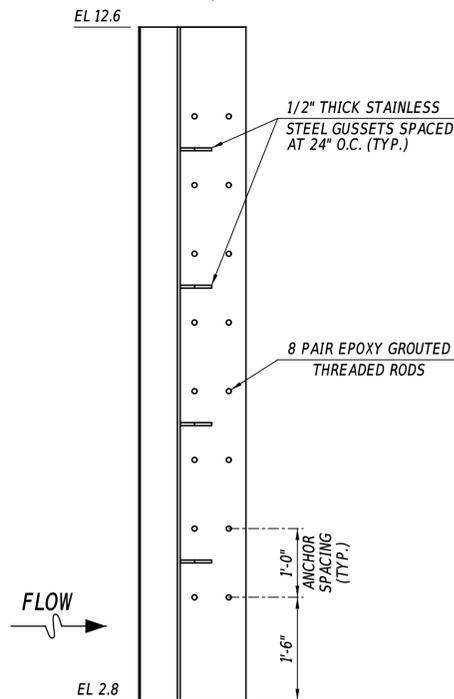
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ADDENDA / REVISIONS		SCALE AS NOTED	SILVER LAKE DAM REPAIRS	CONTRACT	BRIDGE NO.	1-407	BRIDGE 1-407 - CENTER PIER DETAILS	DT-05
				T201807401	DESIGNED BY:	A.VASKO		SECTION
				COUNTY	CHECKED BY:	W.BROWN		SHEET NO.
				NEW CASTLE				19



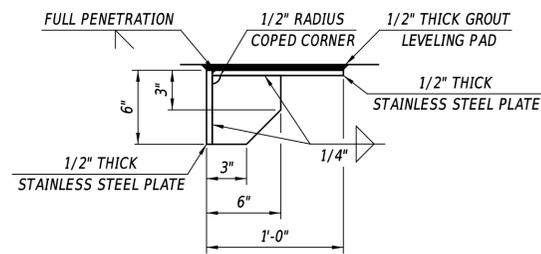
GATE MOUNT SIDE SUPPORT - ELEVATION

(2 REQUIRED, MIRROR IMAGE)
SCALE: 3/4" = 1'-0"



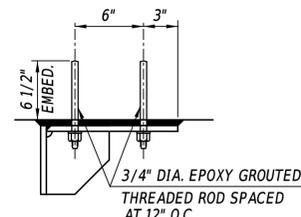
TRASH RACK SIDE BRACKET - ELEVATION

(2 REQUIRED, MIRROR IMAGE)
SCALE: 3/4" = 1'-0"



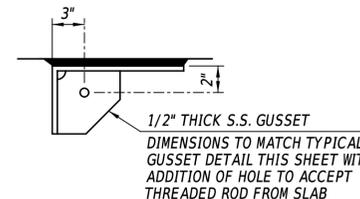
TYPICAL GUSSET DETAIL

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



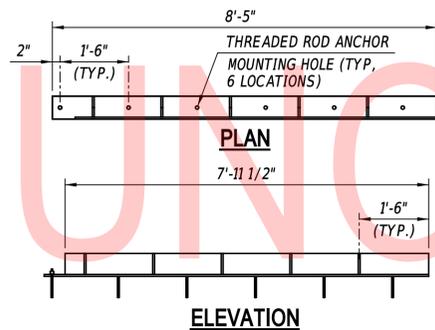
TYPICAL ANCHOR ROD DETAIL

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



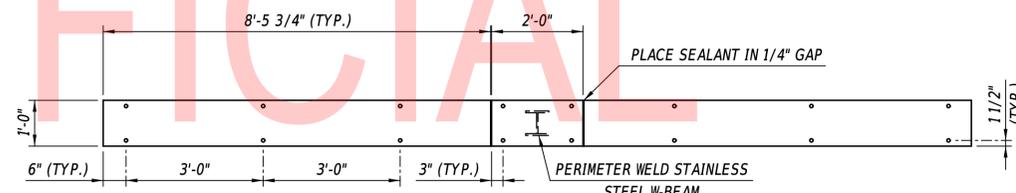
BOTTOM GUSSET DETAIL

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



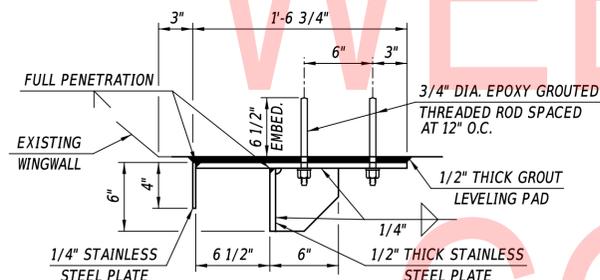
GATE MOUNT BOTTOM SUPPORT DETAILS

(2 REQUIRED, MIRROR IMAGE)
SCALE: 1/2" = 1'-0"



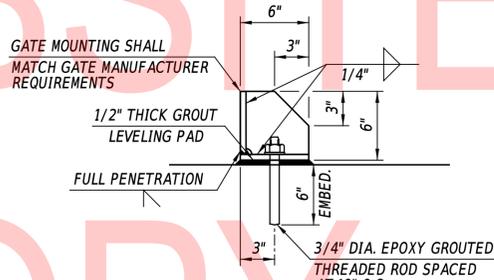
TRASH RACK BOTTOM PLATE - PLAN

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



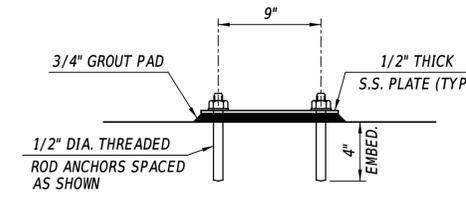
TYPICAL TRASH RACK SIDE BRACKET - PLAN

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



TYPICAL GATE MOUNT BOTTOM SUPPORT - SECTION

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



TYPICAL TRASH RACK BOTTOM PLATE - SECTION

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

NOTES:

1. ALL GATE FRAME MEMBERS AND BRACKETS SHALL BE STAINLESS STEEL AISI TYPE 316L.
2. ALL THREADED ROD ANCHORS SHALL BE HILTI TYPE HAS-R 316SS WITH HIT-RE500 V3 EPOXY OR EQUAL.
3. ALL HOLES FOR THREADED ROD ANCHORS SHALL HAVE DIAMETER 1/8" GREATER THAN ANCHOR DIAMETER.
4. ANCHOR LENGTH SHALL BE DETERMINED BY CONTRACTOR. TOTAL LENGTH TO INCLUDE EMBEDDED LENGTH. VARYING GROUT PAD THICKNESS, WASHER, HEX NUT, JAM NUT (AS REQUIRED), AND AT LEAST ONE ADDITIONAL THREAD WIDTH ABOVE ALL HARDWARE.
5. GATES NOT SHOWN FOR CLARITY. CONTRACTOR TO VERIFY THAT GATE MOUNTING DOES NOT INTERFERE WITH FRAME GUSSETS, ANCHORS, AND HARDWARE.

ADDENDA / REVISIONS

SCALE AS NOTED

SILVER LAKE DAM REPAIRS

CONTRACT
T201807401
COUNTY
NEW CASTLE

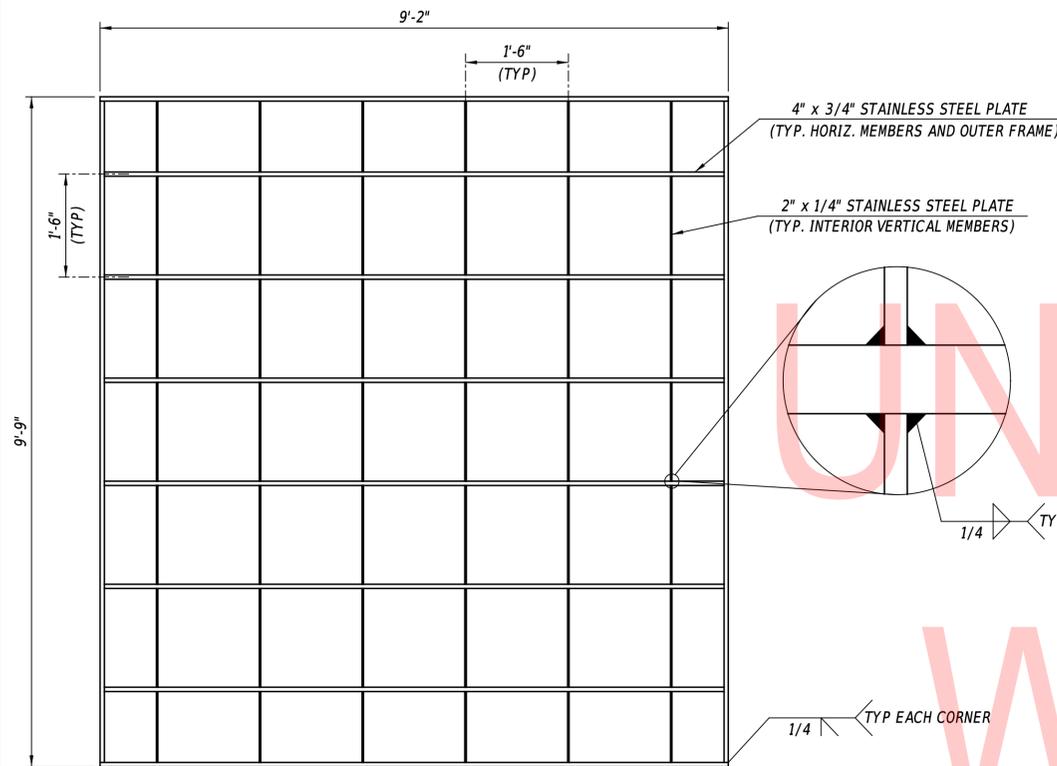
BRIDGE NO. 1-407
DESIGNED BY: A.VASKO
CHECKED BY: W.BROWN

BRIDGE 1-407 - STAINLESS STEEL FRAMES

DT-06
SECTION
SE
SHEET NO.
20

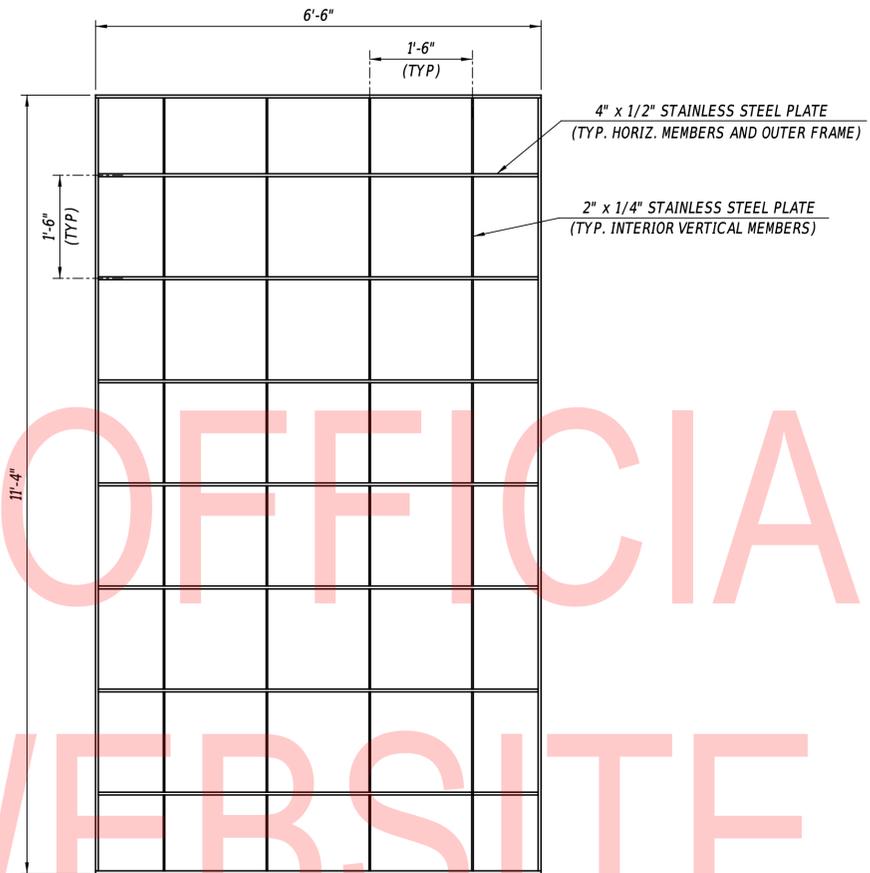
NOTES:

- TRASHRACK MEMBERS SHALL BE DUPLEX TYPE 2205 STAINLESS STEEL WITH (Fy=65ksi).



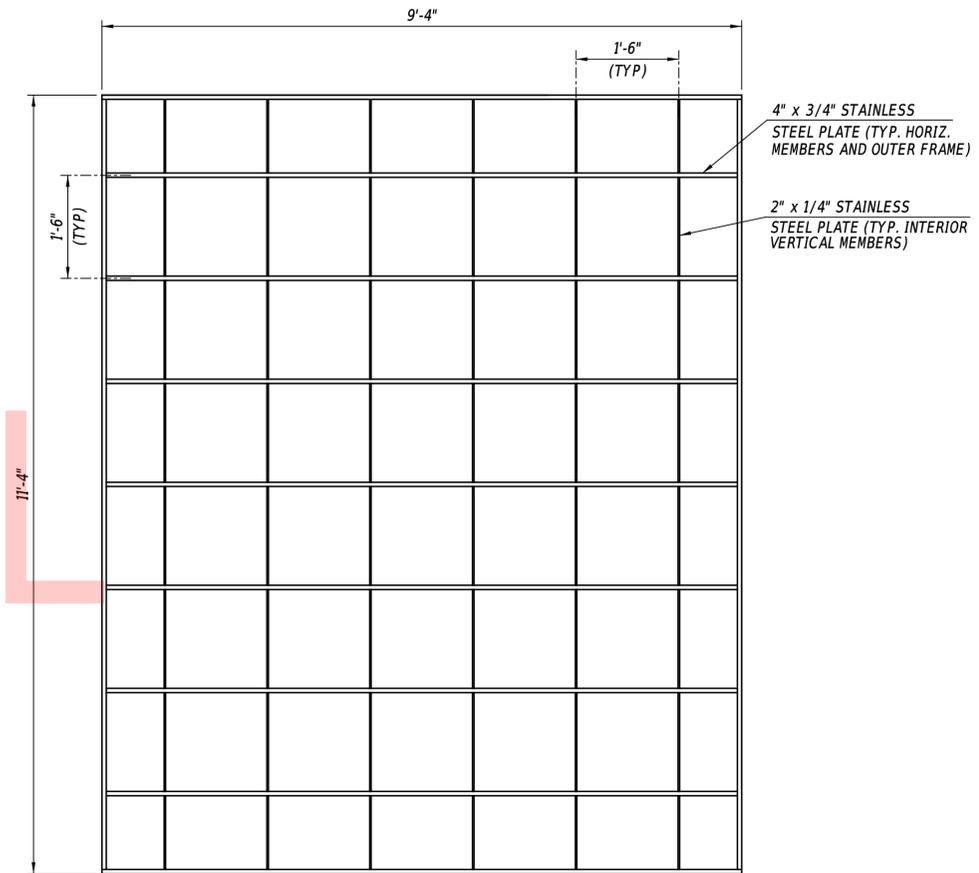
1-407 TRASH RACK - ELEVATION

(2 REQUIRED)
SCALE: 3/4" = 1'-0"



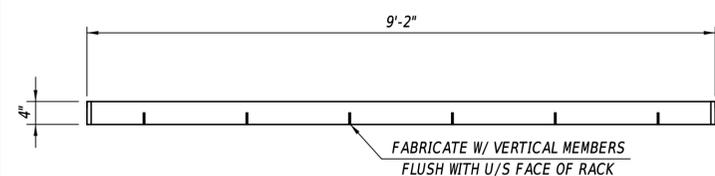
1-504 LEFT BAY TRASH RACK - ELEVATION

(2 REQUIRED)
SCALE: 3/4" = 1'-0"



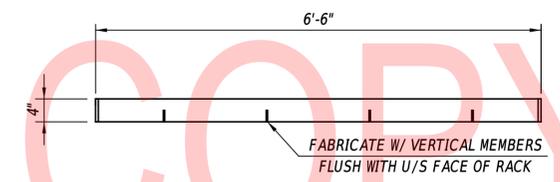
1-504 RIGHT BAY TRASH RACK - ELEVATION

(1 REQUIRED)
SCALE: 3/4" = 1'-0"



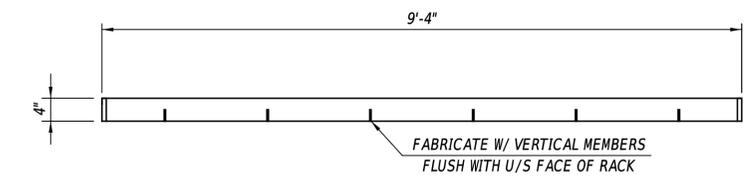
1-407 TRASH RACK - TYPICAL SECTION

SCALE: 3/4" = 1'-0"



1-504 LEFT BAY TRASH RACK - TYPICAL SECTION

SCALE: 3/4" = 1'-0"



1-504 RIGHT BAY TRASH RACK - TYPICAL SECTION

SCALE: 3/4" = 1'-0"

ADDENDA / REVISIONS

SCALE AS NOTED

SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-407 & 1-504
T201807401	DESIGNED BY:	A.VASKO
COUNTY	CHECKED BY:	W.BROWN
NEW CASTLE		

STRUCTURAL DETAILS -
STAINLESS STEEL TRASH RACKS

DT-07

SECTION

SE

SHEET NO.

21

ENVIRONMENTAL COMPLIANCE NOTES

1. GENERAL NOTES:

- A. THE PURPOSE OF THIS SHEET IS TO IDENTIFY THOSE ITEMS ASSOCIATED WITH ENVIRONMENTAL COMPLIANCE. IMPACT CALCULATIONS ARE FOR THE AGENCY PERMIT REPORTING PURPOSES ONLY AND ARE NOT TO BE USED FOR BIDDING PURPOSES.
- B. IF A DEPARTURE FROM THE APPROVED PLANS (WHICH WOULD AFFECT ANY NATURAL AND/OR CULTURAL RESOURCES) IS NECESSARY, CONTACT THE ENVIRONMENTAL STUDIES SECTION (302-760-2259 OR DOT_ENVIRONMENTALSTUDIES@DELAWARE.GOV) TO ALLOW FOR COORDINATION WITH THE APPROPRIATE RESOURCE AGENCIES AND APPROVAL.
- C. USE OF THIS SHEET DOES NOT ALLEVIATE THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH ALL CONDITIONS SET FORTH IN THE ENVIRONMENTAL STATEMENT AND PERMITS.

2. NATURAL RESOURCE ISSUES:

- A. PERMIT REQUIREMENTS/APPROVALS *:
 - U.S. ARMY CORPS OF ENGINEERS (COE): NWP #3 WITH PCN
 - DNREC - WETLANDS & SUBAQUEOUS LANDS (WLSL): WLSL PERMIT
 - DNREC - WATER QUALITY (WQC) & COASTAL ZONE CONSISTENCY (CZM): ISSUED
 - NCC DEPT. OF LAND USE (NCC): FLOODPLAIN PERMIT
- * THE PERMITS/APPROVALS LISTED ARE THOSE REQUIRED FOR THIS PROJECT. THE ENVIRONMENTAL STUDIES SECTION IS RESPONSIBLE FOR COORDINATING AND/OR OBTAINING THESE APPROVALS.
- ** THE CONTRACTOR MUST ENSURE THAT THESE PERMITS/APPROVALS ARE IN THEIR POSSESSION PRIOR TO BEGINNING CONSTRUCTION IN THE PERMITTED AREA(S) AND ENSURE THEY ARE DISPLAYED ON-SITE DURING THE ENTIRE CONSTRUCTION PERIOD.
- B. CONSTRUCTION RESTRICTIONS:
 - FISHERIES - NO IN-WATER WORK MARCH 1 - JUNE 30, UNLESS COFFERDAM IS INSTALLED/REMOVED BEFORE/AFTER RESTRICTION WINDOW. NO IN-WATER WORK BEYOND LIMITS OF COFFERDAM MARCH 1 - JUNE 15. IF FISH LADDER IS FUNCTIONAL (NOT INHIBITED BY COFFERDAMS INSTALLED OUTSIDE OF RESTRICTION WINDOW AND FLOWS), NO IN-WATER WORK DECEMBER 1-31 AND LADDER MUST REMAIN IN OPERATION MARCH 1 - JUNE 15 AND DECEMBER 1-31.
 - ENDANGERED SPECIES - NONE
 - MIGRATORY BIRDS - NONE

3. CULTURAL RESOURCE ISSUES:

- A. THE CONTRACTOR SHOULD BE MADE AWARE THE BRIDGES 1-504 AND 1-407 ARE ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES. THE PROJECT, AS CURRENTLY DESIGNED, CONSTITUTES AN ADVERSE EFFECT. COORDINATION WITH THE DELAWARE STATE HISTORIC PRESERVATION OFFICE (DE SHPO) IS ONGOING. SHOULD IT BE NECESSARY TO CHANGE THE PROJECT SCOPE, ADD ADDITIONAL ACCESS LOCATIONS OR OTHER STOCPILING/STAGING AREAS, OR OTHERWISE ALTER THE SCOPE OF THE PROJECT, DELDOT ENVIRONMENTAL STUDIES STAFF WILL NEED TO REVIEW THESE CHANGES FOR POTENTIAL CULTURAL RESOURCES CONCERNS.
- B. THIS WORK WILL OCCUR WITHIN THE BOUNDARY OF THE WILLOW GROVE MILL HISTORIC DISTRICT. ANY PLAN MODIFICATION OR CHANGE IN THE PROJECT'S LOC MUST BE COORDINATED WITH THE DELDOT ENVIRONMENTAL STUDIES OFFICE AT (302)-760-4887. SHOULD ANY UNFORESEEN DAMAGE OCCUR AS A RESULT OF THE PROJECT, DELDOT ENVIRONMENTAL STUDIES MUST BE NOTIFIED IMMEDIATELY AS TO ENSURE THAT DE SHPO, FHWA AND OTHERS ARE CONSULTED ON WAYS TO REPAIR THE DAMAGE CONSISTENT WITH THE SECRETARY OF THE INTERIOR'S STANDARDS.

4. POND BOTTOM RESTORATION:

- A. UPON REMOVAL OF THE BULK SANDBAGS AT BRIDGE 1-504, RESTORE THE POND BOTTOM TO ELEVATION 1.3 (TO MATCH THE TOP OF THE EXISTING FLOOR SLAB) MINIMUM OR THE ADJACENT NATURAL POND, WHICHEVER IS HIGHER. RESTORE OTHER AREAS OF THE POND BOTTOM AFFECTED BY CONSTRUCTION (SUCH AS THE LOCATION OF SUMP PITS) TO EXISTING CONDITIONS. FILL ALL CAVITIES OR SCOUR HOLES RESULTING FROM CONSTRUCTION ACTIVITIES WITH AASHTO #57 AGGREGATE. PAYMENT INCIDENTAL TO ITEM 604500.

UNOFFICIAL
WEBSITE
COPY

WETLANDS DELINEATED BY TJ AUSTIN (CENTURY ENGINEERING, INC.) IN 2019 IN ACCORDANCE WITH THE US ARMY CORPS OF ENGINEERS DELINEATION MANUAL (1987) AND THE ATLANTIC AND GULF COAST REGIONAL SUPPLEMENT (2010).

ORIGINAL SHEET PREPARED BY GLEN LOVELACE III ON 7/15/2019. SHEET LAST UPDATED ON 2/10/2020.

ADDENDA / REVISIONS

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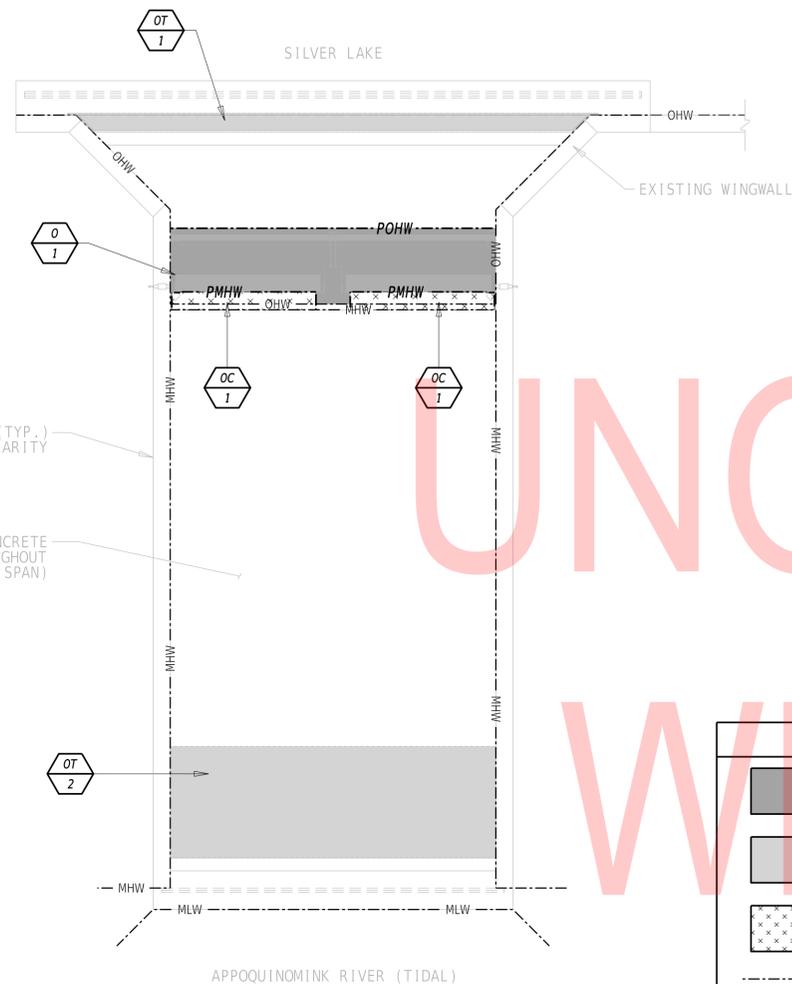
SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-407 & 1-504
T201807401	DESIGNED BY:	GCL III
COUNTY	CHECKED BY:	CAS
NEW CASTLE		

ENVIRONMENTAL COMPLIANCE NOTES

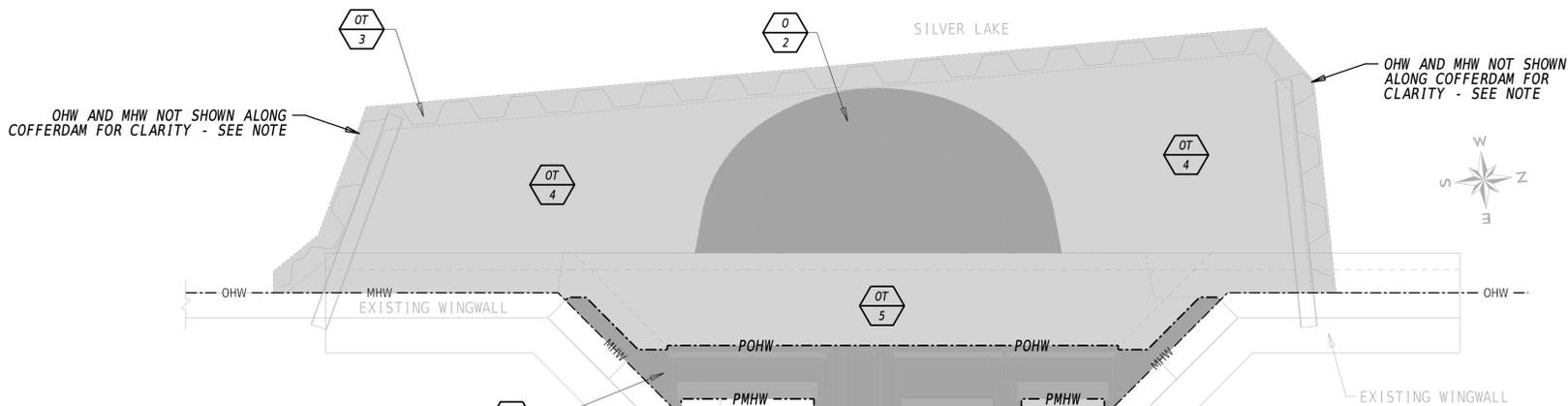
EC-01
SECTION
DDOT
SHEET NO.
23

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BRIDGE 1-407 PLAN

3/16" = 1'-0"



NOTE: OHW FOLLOWS THE OUTSIDE OR POND FACE OF THE COFFERDAM. THE MHW LINE FOLLOWS THE INSIDE OR DOWNSTREAM FACE.

UNOFFICIAL WEBSITE COPY

LEGEND	
	PERMANENT IMPACT AREA
	TEMPORARY IMPACT AREA
	CREATION AREA
---	ORDINARY HIGH WATER
---	MEAN HIGH WATER
---	MEAN LOW WATER
---	PROPOSED ORDINARY HIGH WATER
---	PROPOSED MEAN HIGH WATER
	IMPACT AREA TYPE ID. (SEE BELOW) IMPACT AREA ID. AND/OR NUMBER
O = OPEN WATER IMPACT	T = TEMPORARY IMPACT
C = CREATION AREA	

EXISTING FISH LADDER SUPPORT COLUMNS (FISH LADDER STRUCTURE NOT SHOWN FOR CLARITY)

EXISTING CONCRETE FLOOR THROUGHOUT (TYP. EACH SPAN)

EXISTING WINGWALL

EXISTING FISH LADDER EXIT CHANNEL

APPOQUINOMINK RIVER (TIDAL)

BRIDGE 1-504 PLAN

3/16" = 1'-0"

PERMANENT OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
O-1	1-407 NEW GATES AND SUPPORTS	71.85	0.0016	4.78	COE/DNREC
O-2	1-504 SCOUR HOLE	173.89	0.0040	41.44	COE/DNREC
O-3	1-504 NEW GATES AND SUPPORTS	126.24	0.0029	19.05	COE/DNREC
SUBTOTAL FOR BRIDGE 1-504		300.13	0.0069	60.49	COE/DNREC
TOTAL PERMANENT OPEN WATER IMPACTS		371.98	0.0085	65.27	COE/DNREC

TIDAL OPEN WATER CREATION AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OC-1	1-407 NEW TIDAL AREA	17.50	0.0004	N/A	COE/DNREC
OC-2	1-504 GATE REMOVAL	6.00	0.0001	N/A	COE/DNREC
OC-3	1-504 BAFFLE REMOVAL	9.00	0.0002	N/A	COE/DNREC
SUBTOTAL FOR BRIDGE 1-504		15.00	0.0003	N/A	COE/DNREC
TOTAL TIDAL OPEN WATER CREATION AREAS		32.50	0.0007	N/A	COE/DNREC

TEMPORARY OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OT-1	1-407 UPSTREAM COFFERDAM	29.30	0.0007	7.11	COE/DNREC
OT-2	1-407 DOWNSTREAM SANDBAGS	123.52	0.0028	4.95	COE/DNREC
SUBTOTAL FOR BRIDGE 1-407		152.82	0.0035	12.06	COE/DNREC
OT-3	1-504 EX. COFFERDAM REMOVAL	116.47	0.0027	0.00	COE/DNREC
OT-4	1-504 BULK SANDBAGS / COFFERDAM	433.43	0.0100	31.11	COE/DNREC
OT-5	1-504 UPSTREAM CONTROL OF WATER	193.58	0.0044	3.89	COE/DNREC
OT-6	1-504 BAFFLE REMOVAL	9.00	0.0002	0.00	COE/DNREC
OT-7	1-504 DOWNSTREAM SANDBAGS	96.00	0.0022	4.15	COE/DNREC
SUBTOTAL FOR BRIDGE 1-504		848.48	0.0195	39.15	COE/DNREC
TOTAL TEMPORARY OPEN WATER IMPACTS		1001.30	0.0230	51.21	COE/DNREC

ADDENDA / REVISIONS

SILVER LAKE DAM REPAIRS

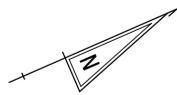
CONTRACT	BRIDGE NO.	1-407 & 1-504
T201807401	DESIGNED BY:	GCL III
COUNTY	CHECKED BY:	CAS
NEW CASTLE		

ENVIRONMENTAL COMPLIANCE PLAN

ORIGINAL SHEET PREPARED BY GLEN LOVELACE III ON 07/15/2019.
SHEET LAST UPDATED ON 10/28/2019.

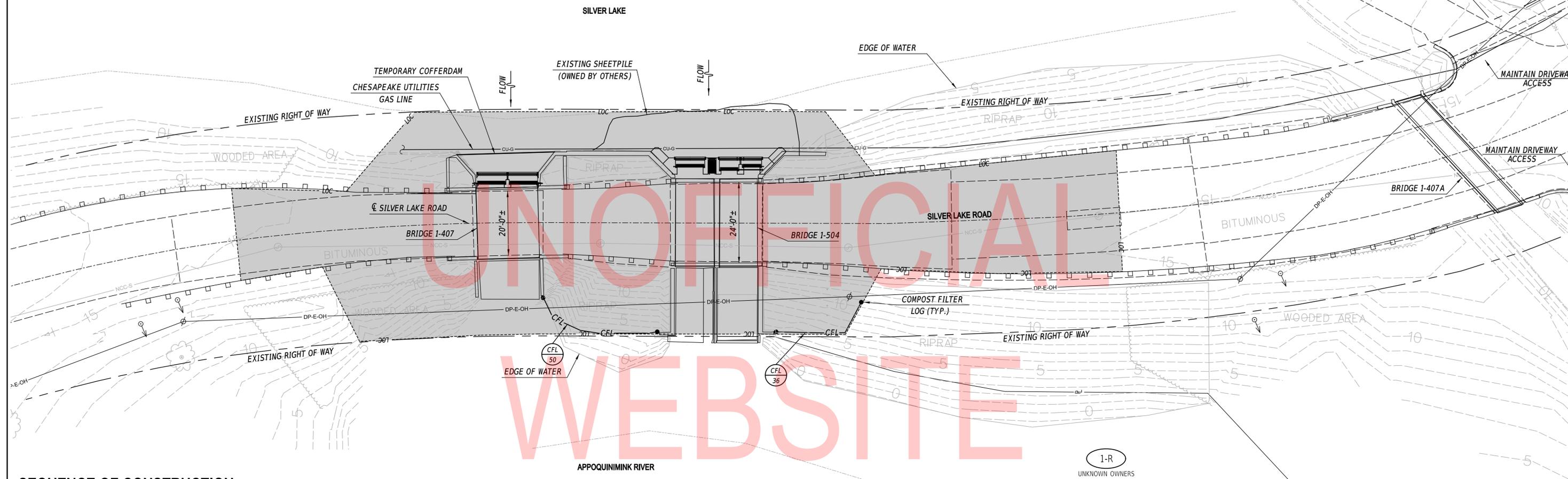
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SECTION
DDOT
SHEET NO.
24



EROSION & SEDIMENT CONTROL	
	COMPOST FILTER LOG/LENGTH (FT)
	COMPOST FILTER LOG

2-L
13-027.00-012
ST. ANDREWS SCHOOL OF DELAWARE, INC.
D.R. 2201-0044



SEQUENCE OF CONSTRUCTION:

- COORDINATE WITH UTILITY COMPANIES IN ACCORDANCE WITH THE UTILITY STATEMENT.
- INSTALL MOT DEVICES IN ACCORDANCE WITH THE DETOUR PLAN OR AS DIRECTED BY THE ENGINEER.
- MAINTAIN POOL LEVEL AT EL 9.3 USING EXISTING GATES AT BRIDGE 1-407.
- INSTALL EROSION AND SEDIMENT CONTROL MEASURES.
- CLEAR AND GRUB DESIGNATED TREES.
- INSTALL CONTROL OF WATER DEVICES, AND MODIFICATIONS TO EXISTING COFFERDAM AT BRIDGE 504.
- BRACE EXISTING STRUCTURES IN PREPARATION FOR DEMOLITION.
- DEMOLISH AND REMOVE GATE STRUCTURE AND OTHER COMPONENTS IN ACCORDANCE WITH DRAWINGS AT BRIDGE 1-504.
- INSTALL NEW CONCRETE, GATE SYSTEMS, AND PAVEMENT AT BRIDGE 1-504.
- UPON ACCEPTABLE GATE TEST RESULTS, REMOVE CONTROL OF WATER DEVICES AT BRIDGE 1-504 INCLUDING SHEET PILE IN RESERVOIR. RETURN SHEET PILE TO MUMFORD & MILLER.
- MAINTAIN POOL LEVEL AT EL 9.3 USING NEW GATES AT BRIDGE 1-504.
- CONSTRUCT COFFERDAM AND CONTROL OF WATER DEVICES AT BRIDGE 1-407.
- REMOVE EXISTING GATES AND ASSOCIATED MOUNTING HARDWARE AT BRIDGE 1-407.
- INSTALL NEW CONCRETE, AND GATE SYSTEMS AT BRIDGE 1-407.
- REMOVE CONTROL OF WATER DEVICES AND COFFERDAM FROM BRIDGE 1-407.
- STABILIZE ALL DISTURBED AREAS WITH R6 RIPRAP.
- REMOVE SEDIMENT CONTROL AFTER FINAL STABILIZATION OF ALL DISTURBED AREAS AND AS APPROVED BY ENGINEER.
- REMOVE ALL MOT DEVICES AND REOPEN THE ROADWAY. REMOVAL OF MOT DEVICES MAY OCCUR PRIOR TO THE REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES.

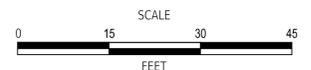
GENERAL EROSION AND SEDIMENT CONTROL NOTES:

- CLEARLY MARK ALL TREES TO BE REMOVED WITH PAINT PRIOR TO THE EROSION AND SEDIMENT CONTROL MEETING.
- EROSION AND SEDIMENT CONTROL DEVICES WILL BE MAINTAINED IN PLACE AND WILL ONLY BE REMOVED WHEN IT IS NO LONGER NECESSARY TO PROVIDE FOR THEIR DESIGNATED FUNCTIONS AS APPROVED BY THE ENGINEER.
- | EROSION POTENTIAL FOR THIS PROJECT | CONTRACTOR ESC SUPERVISOR REQUIREMENT |
|------------------------------------|---|
| (X) INSIGNIFICANT | NONE |
| () MINOR | CONTRACTOR TRAINING PROGRAM, AS DEFINED IN SECTION 6.2 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS. |
| () MAJOR | CERTIFIED CONSTRUCTION REVIEWER (CCR), AS DEFINED IN SECTION 6.3 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS. |
- THE DISTURBED AREA FOR THIS PROJECT IS 0.02 ACRES.

GENERAL MOT NOTES:

- ACCESS TO ALL BUSINESSES AND RESIDENCES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THIS CONTRACT.
 - SEE DETOUR PLAN FOR ADDITIONAL TEMPORARY CONSTRUCTION SIGNAGE.
 - AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED TRAFFIC CONTROL SUPERVISOR REQUIREMENT FOR THIS PROJECT.
- | | |
|-------|--|
| (X) | THE CONTRACTOR SHALL NOT BE REQUIRED TO HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. |
| () | THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT OR ANOTHER ATSSA CERTIFIED MEMBER OF THE CONTRACTOR'S PROJECT STAFF MAY BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR IS INCIDENTAL TO ITEM 801000. |

ADDENDA / REVISIONS



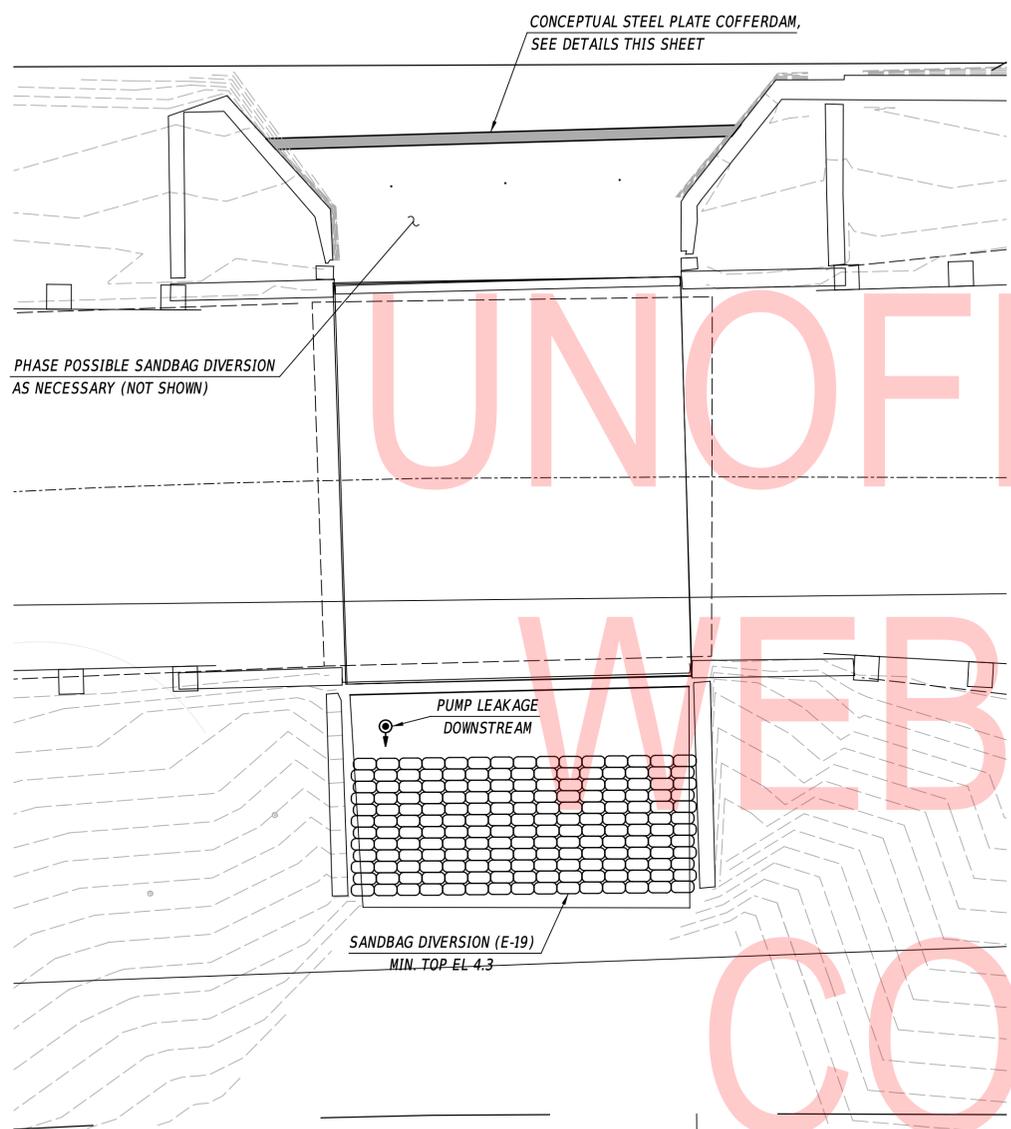
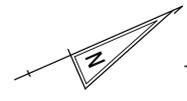
SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-407 & 1-504
T201807401	DESIGNED BY:	A.VASKO
COUNTY	CHECKED BY:	W.BROWN
NEW CASTLE		

CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLAN

CS-01
SECTION
SE
SHEET NO.
25

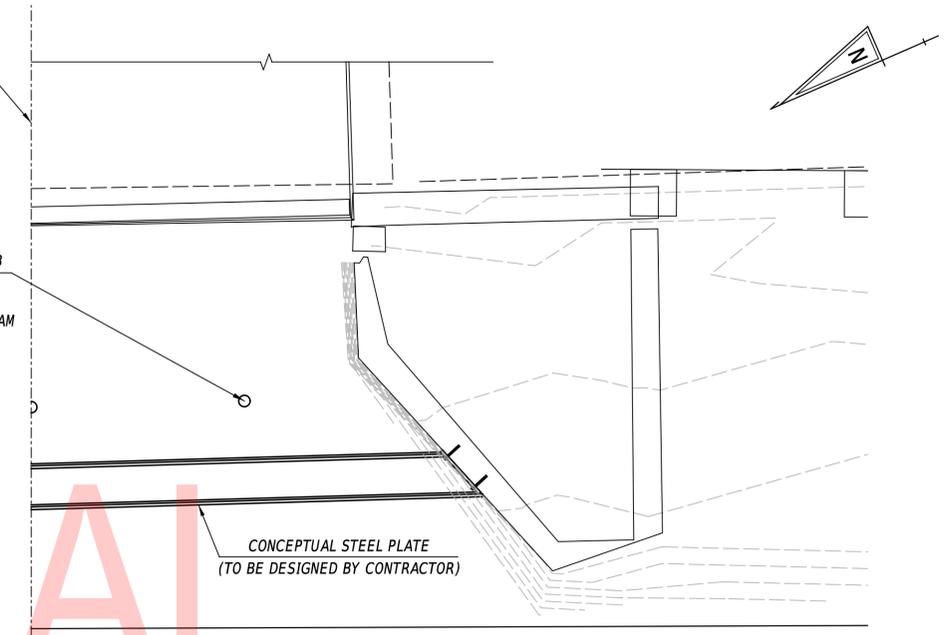
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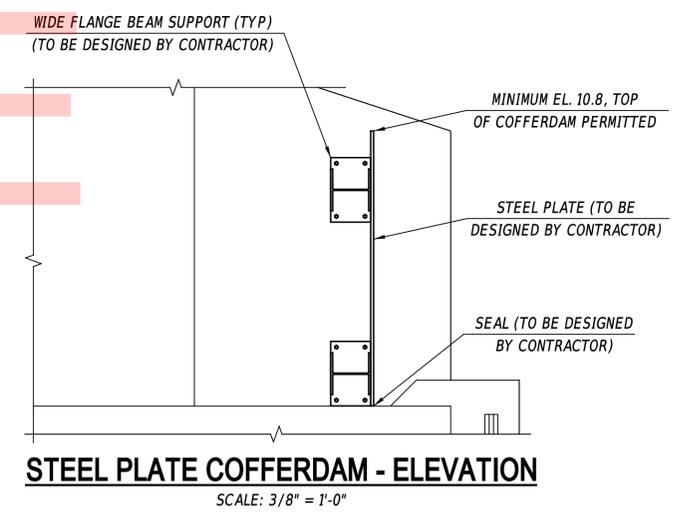
1-407 CONTROL OF WATER - PLAN
SCALE: 1" = 5'-0"

SYMMETRICAL ABOUT CENTERLINE

CORE (3) 4" DIA. HOLES THROUGH SLAB IN THE WET TO RELIEVE POSSIBLE PRESSURE THAT MAY DEVELOP AFTER UNWATERING AREA BETWEEN COFFERDAM AND EXISTING GATES. PATCH WITH NON-SHRINK GROUT IN THE WET AFTER GATE CONSTRUCTION HAS BEEN COMPLETED. LOCATIONS SHALL NOT INTERFERE WITH WORK AND SHALL BE EVENLY SPACED.



STEEL PLATE COFFERDAM - PLAN
SCALE: 3/8" = 1'-0"



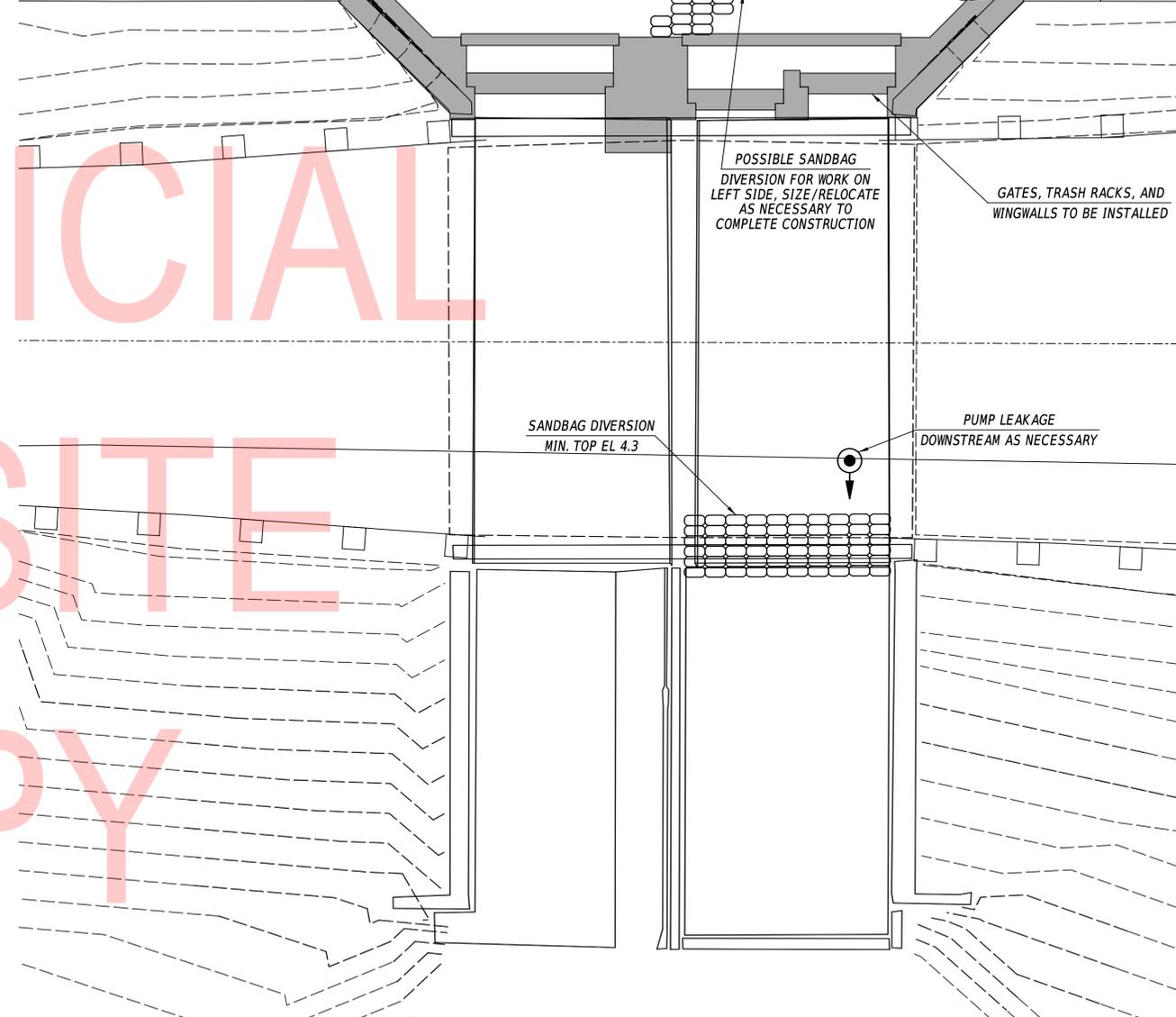
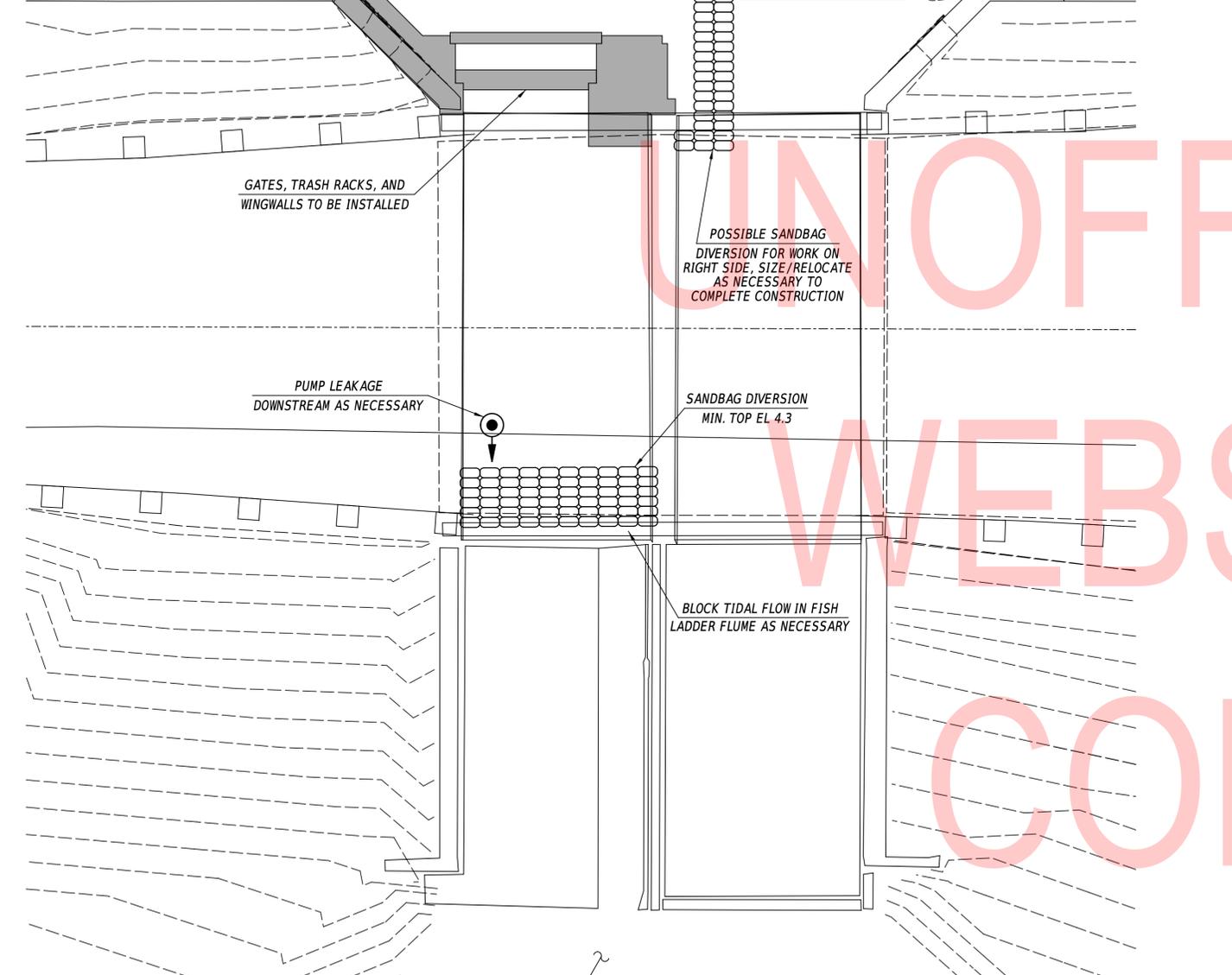
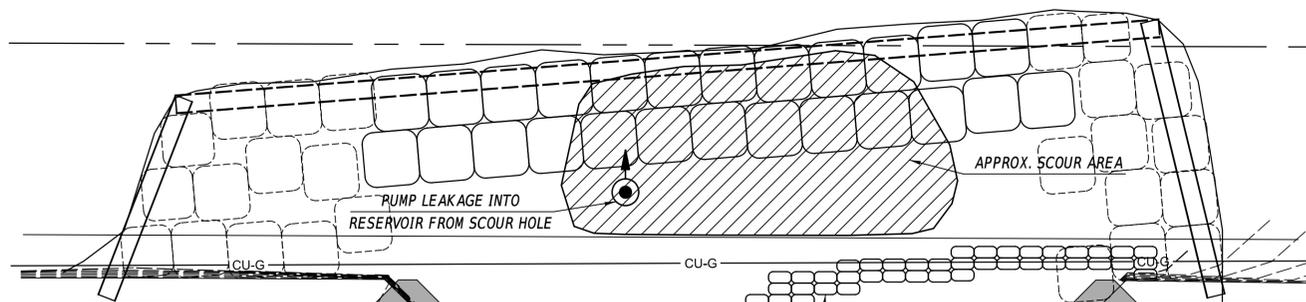
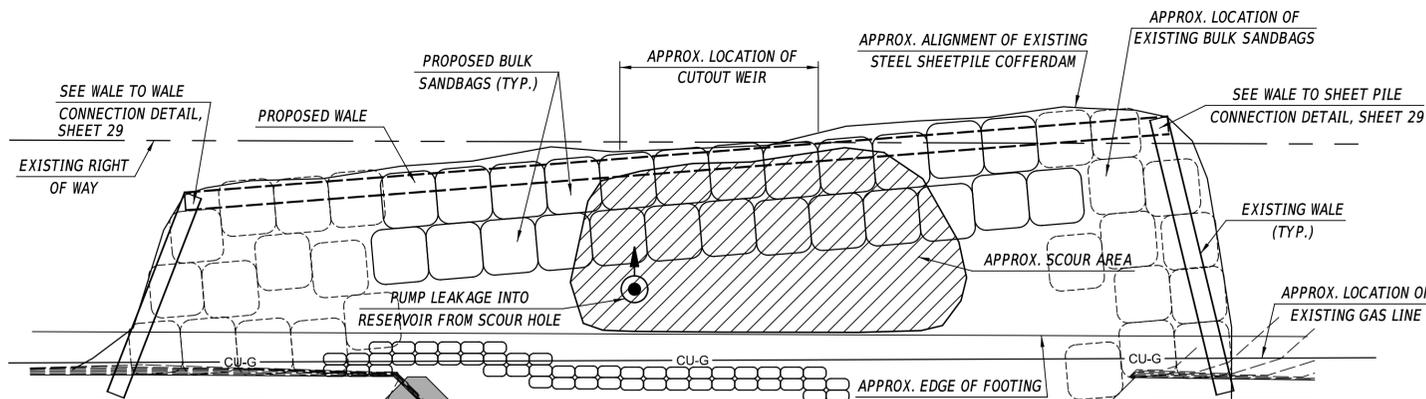
STEEL PLATE COFFERDAM - ELEVATION
SCALE: 3/8" = 1'-0"

NOTES:

- CONTRACTOR SHOULD BE PREPARED FOR NOTABLE DIFFERENCES IN GEOMETRY. CONTRACTOR'S CONTROL OF WATER SYSTEM SHALL CONSIDER THESE DIFFERENCES IN GEOMETRY AT NO ADDITIONAL COST TO THE DEPARTMENT.
- CONCEPTUAL COFFERDAM DESIGN SHOWN SHALL BE MODIFIED IN THE CONTRACTOR'S CONTROL OF WATER SUBMITTAL TO SUIT THEIR NEEDS, EXISTING CONDITIONS, OR PROTECTION LEVEL DESIRED. DESIGN COFFERDAM FOR MINIMUM HEADWATER ELEVATION OF 12.8 OR CRITICAL LOAD LOWER THAN THIS LEVEL. CONCEPTUAL COFFERDAM TO BE INSTALLED IN THE WET.
- ALL CONTROL OF WATER WORK INCLUDING FURNISHING AND PLACING ALL MATERIALS, ENGINEERING, LABOR, EQUIPMENT, AND COORDINATION NECESSARY FOR COFFERDAM INSTALLATION, PREPARATION OF SIGNED AND SEALED DRAWINGS (MULTIPLE SUBMISSIONS IF RESUBMISSIONS ARE NECESSARY), FILLING SCOUR AREA, BRACING OF EXISTING SHEETING, SANDBAG COFFERDAMS, PUMPING, CORING, PATCHING OF ALL HOLES USED FOR COFFERDAM WORK, DRILLING, PLATES, BEAMS, BOLTS, WELDING, REMOVAL OF EXISTING SHEETING AND REMOVAL OF TEMPORARY WORKS SHALL BE PAID UNDER LUMP SUM ITEM 604500 - COFFERDAMS.

12/19/2019
11:28:32
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ADDENDA / REVISIONS		SCALE AS NOTED	SILVER LAKE DAM REPAIRS	CONTRACT	BRIDGE NO.	1-407	BRIDGE 1-407 - CONTROL OF WATER	CS-02
				T201807401	DESIGNED BY: A.VASKO	SECTION		SE
				COUNTY	CHECKED BY: W.BROWN		SHEET NO.	26
				NEW CASTLE				



AREA DOWNSTREAM OF 1-504 BRIDGE IS TIDAL

1-504 CONTROL OF WATER - CONCEPTUAL PHASE 1 PLAN

SCALE: 1" = 5'-0"

1-504 CONTROL OF WATER - CONCEPTUAL PHASE 2 PLAN

SCALE: 1" = 5'-0"

NOTES:

- CONTRACTOR SHOULD BE PREPARED FOR NOTABLE DIFFERENCES IN GEOMETRY. CONTRACTOR'S CONTROL OF WATER SYSTEM SHALL CONSIDER THESE DIFFERENCES IN GEOMETRY AT NO ADDITIONAL COST TO THE DEPARTMENT.
- NORTH AND SOUTH SHEET PILES DO NOT HAVE NOTABLE EMBEDMENT AND MAY NOT BE STABLE IF BULK SAND BAGS ARE REMOVED. ADDITIONALLY, HEAVY WATER FLOW (LEAKAGE) IS OBSERVED IN THIS AREA. CONTRACTOR SHALL USE POLY DRAPES, GROUTING TECHNIQUES, CONCRETE, PUMPS, OR OTHER APPROVED METHODS TO LIMIT WATER INFILTRATION AND PIPING POTENTIAL, AND SHALL CAUSE NO DAMAGE TO THE EXISTING GAS LINE.
- ALL CONTROL OF WATER WORK INCLUDING FURNISHING AND PLACING ALL MATERIALS, ENGINEERING, LABOR, EQUIPMENT, AND COORDINATION NECESSARY FOR COFFERDAM INSTALLATION, PREPARATION OF SIGNED AND SEALED DRAWINGS (MULTIPLE SUBMISSIONS IF RESUBMISSIONS ARE NECESSARY), FILLING SCOUR AREA, BRACING OF EXISTING SHEETING, SANDBAG COFFERDAMS, PUMPING, CORING, PATCHING OF ALL HOLES USED FOR COFFERDAM WORK, DRILLING, PLATES, BEAMS, BOLTS, WELDING, REMOVAL OF EXISTING SHEETING AND REMOVAL OF TEMPORARY WORKS SHALL BE PAID UNDER LUMP SUM ITEM 604500 - COFFERDAMS.
- CONTRACTOR MAY LOWER THE LAKE IN ADVANCE OF STORM EVENTS ONLY WITH PERMISSION FROM DELDOT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DESIGN THE CONTROL OF WATER SYSTEM AND SEQUENCE. CONTRACTOR MAY ELECT TO MODIFY THE CONTROL OF WATER CONCEPTS INDICATED ON THESE PLANS WITH PERMISSION FROM DELDOT. THE WORK WILL BE PERFORMED AT NO ADDITIONAL COST TO THE DEPARTMENT.

ADDENDA / REVISIONS

SCALE AS NOTED

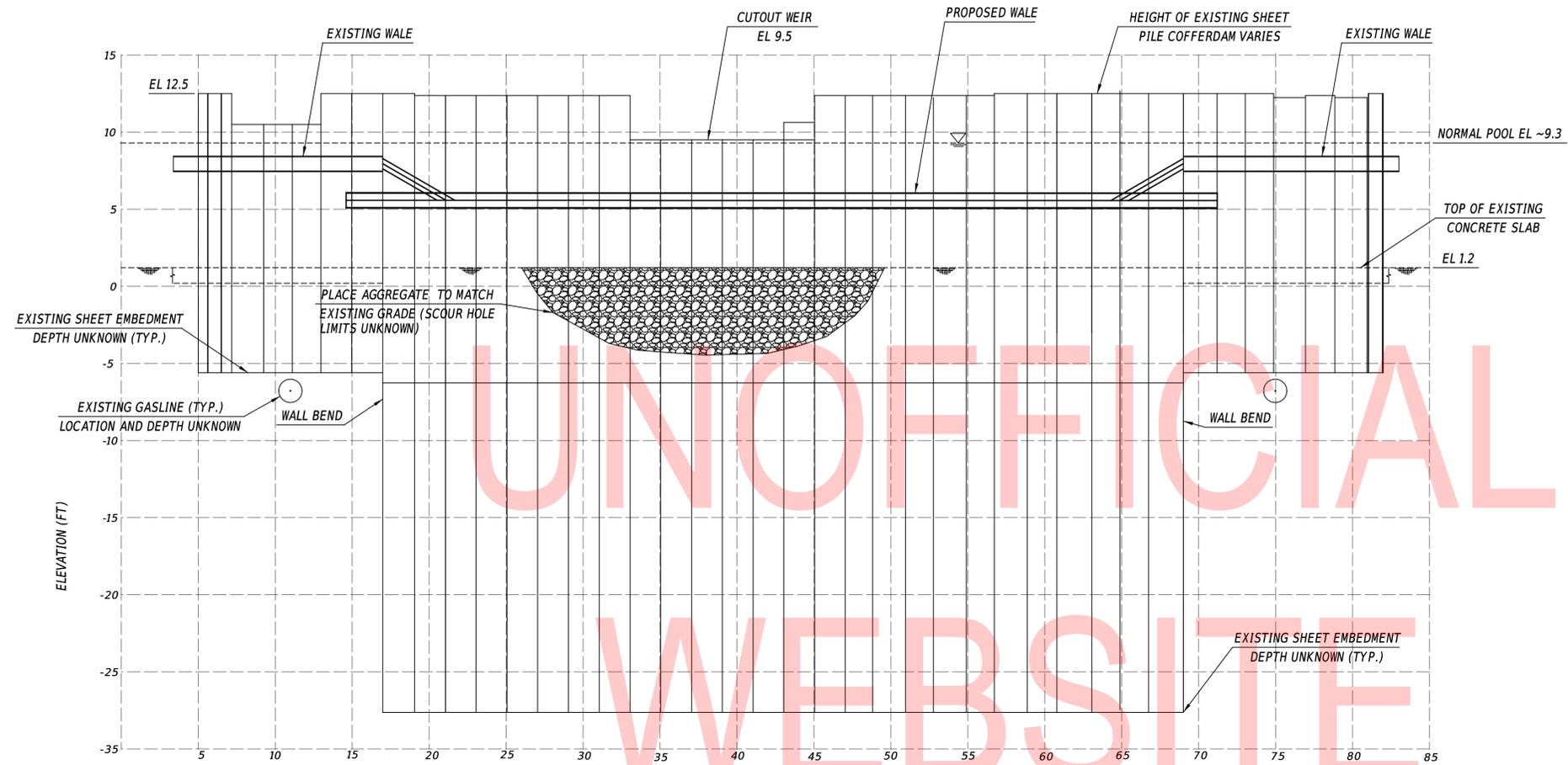
SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-504
T201807401	DESIGNED BY:	A.VASKO
COUNTY	CHECKED BY:	W.BROWN
NEW CASTLE		

BRIDGE 1-504 CONTROL OF WATER - PLAN

CS-03
SECTION
SE
SHEET NO.
27

12/23/2019
11:17:09
\$.FILES



1-504 CONTROL OF WATER - ELEVATION

SCALE: 1" = 5'-0"

NOTES:

1. CONTRACTOR SHOULD BE PREPARED FOR NOTABLE DIFFERENCES IN GEOMETRY. CONTRACTOR'S CONTROL OF WATER SYSTEM SHALL CONSIDER THESE DIFFERENCES IN GEOMETRY AT NO ADDITIONAL COST TO THE DEPARTMENT.
2. ELEVATION VIEW LOOKING DOWNSTREAM. VIEW TAKEN ALONG ALIGNMENT OF SHEETING.
3. ALL CONTROL OF WATER WORK INCLUDING FURNISHING AND PLACING ALL MATERIALS, ENGINEERING, LABOR, EQUIPMENT, AND COORDINATION NECESSARY FOR COFFERDAM INSTALLATION, PREPARATION OF SIGNED AND SEALED DRAWINGS (MULTIPLE SUBMISSIONS IF RESUBMISSIONS ARE NECESSARY), FILLING SCOUR AREA, BRACING OF EXISTING SHEETING, SANDBAG COFFERDAMS, PUMPING, CORING, PATCHING OF ALL HOLES USED FOR COFFERDAM WORK, DRILLING, PLATES, BEAMS, BOLTS, WELDING, REMOVAL OF EXISTING SHEETING AND REMOVAL OF TEMPORARY WORKS SHALL BE PAID UNDER LUMP SUM ITEM 604500 - COFFERDAMS.

ADDENDA / REVISIONS

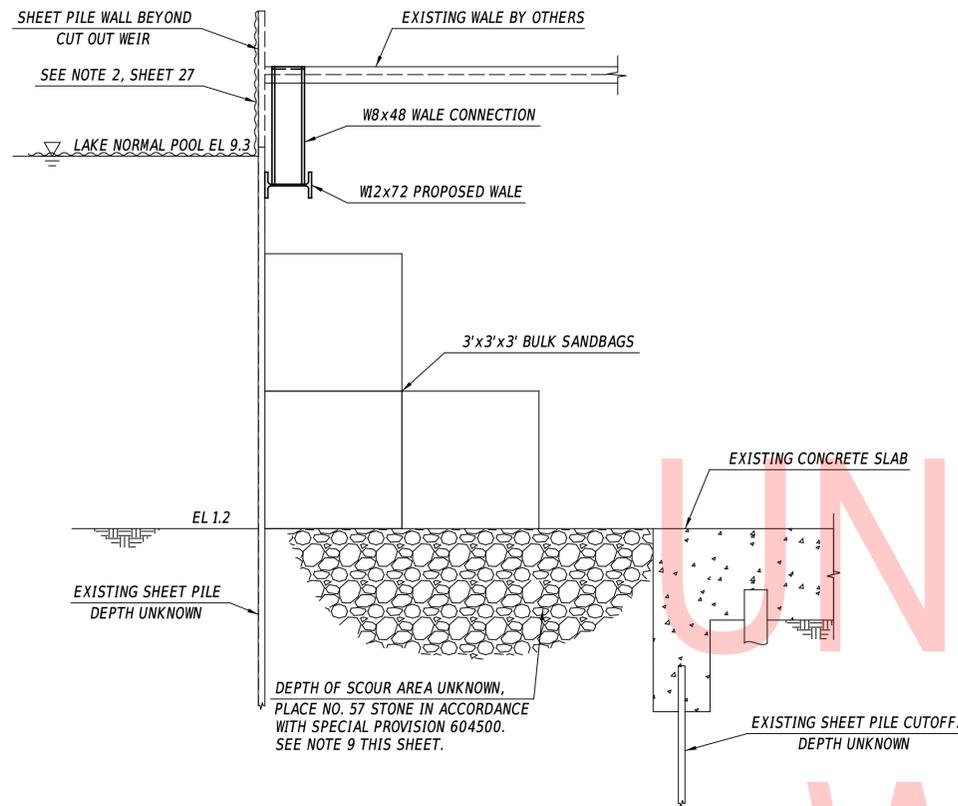
SCALE AS NOTED

SILVER LAKE DAM REPAIRS

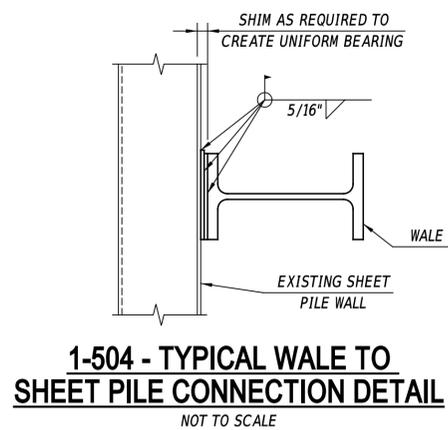
CONTRACT	BRIDGE NO.	1-504
T201807401	DESIGNED BY:	A.VASKO
COUNTY	CHECKED BY:	W.BROWN
NEW CASTLE		

BRIDGE 1-504 CONTROL OF WATER - ELEVATION

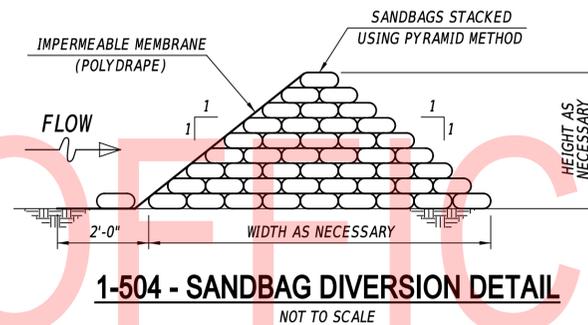
CS-04
SECTION
SE
SHEET NO.
28



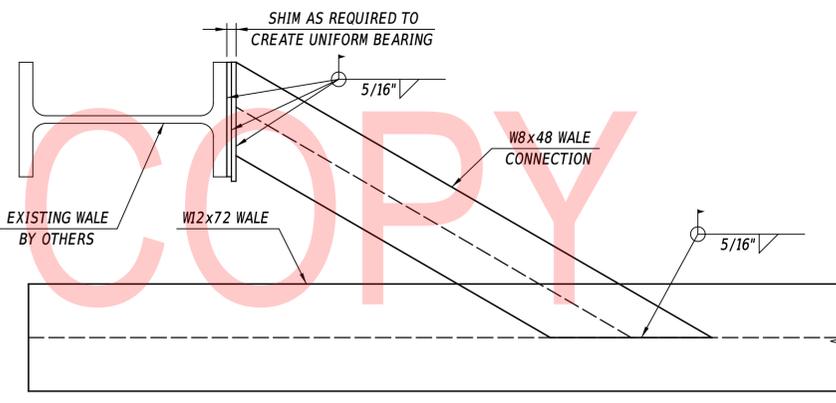
1-504 - ELEVATION VIEW OF TYPICAL WALE TO WALE CONNECTION DETAIL
NOT TO SCALE



1-504 - TYPICAL WALE TO SHEET PILE CONNECTION DETAIL
NOT TO SCALE



1-504 - SANDBAG DIVERSION DETAIL
NOT TO SCALE



1-504 - TYPICAL WALE TO WALE CONNECTION DETAIL
NOT TO SCALE

1-504 CONTROL OF WATER NOTES:

- THIS DESIGN IS CONTINGENT ON PROPER CONSTRUCTION TECHNIQUES AND PUMP OPERATIONS. THE INTENT OF THE PRESENTED DESIGN IS TO BOLSTER THE EXISTING WALERS AND TIE THE SHEET PILES TOGETHER TO LIMIT ADDITIONAL MOVEMENT AND MAINTAIN EXISTING PRESSURES ON THE SHEET PILES DURING UNWATERING OPERATIONS.
- PROPOSED STRUCTURES, UTILITIES, AND GRADING ARE SHOWN ON THESE DRAWINGS FOR REFERENCE ONLY. REFER TO OTHER DRAWINGS FOR DETAILS OF THE PROPOSED STRUCTURES.
- CONTRACTOR SHALL LOCATE EXISTING UTILITIES PRIOR TO ANY WORK. THE CONTRACTOR SHALL TAKE CARE TO NOT DISTURB EXISTING UTILITIES.
- ELEVATIONS OF EXISTING GROUND SURFACES WERE EXTRAPOLATED BASED ON CONTOURS. CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS AND ELEVATIONS PRIOR TO THE START OF WORK. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY SITE CONDITIONS NOT REFLECTED ON THESE DRAWINGS.
- THE EXISTING SHEET PILES SHALL BE REMOVED AT THE END OF WORK ON BRIDGE 1-504 AND RETURNED TO:

MUMFORD & MILLER
1005 INDUSTRIAL RD
MIDDLETOWN, DE 19709
PHONE: (302)378-7736
- CONTRACTOR SHALL SUBMIT METHODS AND MATERIALS FOR CONTROLLING WATER AT THE NORTH AND SOUTH ENDS OF THE EXISTING SHEET PILE COFFERDAM. METHODS SHALL ALLOW FOR THE REMOVAL OF THE EXISTING SHEET PILES WHEN THE SPILLWAY IS RETURNED TO SERVICE.
- MATERIALS:
- WALERS SHALL CONSIST OF W12x72 (Sx=97.4 in³, I=597 in⁴, Fy=50 ksi) OR APPROVED EQUAL.
- WALE CONNECTION SHALL CONSIST OF W8x48 (Sx=43.2 in³, I=184 in⁴, Fy=50 ksi) OR APPROVED EQUAL.
- SHIMS SHALL CONFORM TO ASTM A36 (Fy=36 ksi) AND SHALL PROVIDE FULL BEARING OF CONNECTED PARTS.
- WELDING ELECTRODES SHALL BE E70XX.
- IMPERMEABLE MEMBRANE SHALL BE 30 MIL HIGH DENSITY POLYETHYLENE (HDPE).
- ALL CONTROL OF WATER WORK INCLUDING FURNISHING AND PLACING ALL MATERIALS, ENGINEERING, LABOR, EQUIPMENT, AND COORDINATION NECESSARY FOR COFFERDAM INSTALLATION, PREPARATION OF SIGNED AND SEALED DRAWINGS (MULTIPLE SUBMISSIONS IF RESUBMISSIONS ARE NECESSARY), FILLING SCOUR AREA, BRACING OF EXISTING SHEETING, SANDBAG COFFERDAMS, PUMPING, CORING, PATCHING OF ALL HOLES USED FOR COFFERDAM WORK, DRILLING, PLATES, BEAMS, BOLTS, WELDING, REMOVAL OF EXISTING SHEETING AND REMOVAL OF TEMPORARY WORKS SHALL BE PAID UNDER LUMP SUM ITEM 604500 - COFFERDAMS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT SCOUR HOLE FILL PLACED AS PART OF THIS WORK FROM EROSION. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.

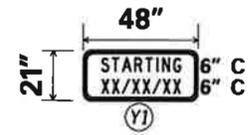
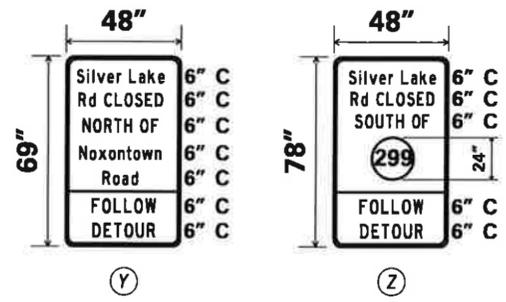
CONSTRUCTION SEQUENCE:

- FILL SCOUR HOLE WITH AASHTO #57 AGGREGATE DOWNSTREAM OF LOW FLOW NOTCH TO MATCH EXISTING GRADE. APPROXIMATE 2'x2'x2' LOW AREA MAY BE MAINTAINED FOR PUMPING NEEDS PROVIDED THIS AREA IS CLOSE TO BRIDGE 1-504 AND IS FILLED WITH SPECIFIED MATERIAL UPON COMPLETION OF WORK.
- PERFORM SEEPAGE REMEDIATION AS REQUIRED.
- INSTALL WALERS.
- PLACE BULK SANDBAGS AND SANDBAGS.
- UNWATER AREA AS REQUIRED TO PERFORM THE WORK. ADDITIONAL PHASED SANDBAG DIVERSIONS MAY BE NECESSARY TO COMPLETE THE WORK IN DRY CONDITIONS.
- REMOVE TEMPORARY WORKS AS SPECIFIED.

PLACEMENT OF SANDBAGS:

- PLACE AN EQUAL NUMBER OF HORIZONTAL ROWS ON EITHER SIDE OF DIVERSION CREST ON THE BOTTOM AS THERE ARE VERTICAL LAYERS CREATING AN APPROXIMATE 1:1 SLOPE.
- BUTT ENDS OF SACKS TOGETHER MAINTAINING STAGGERED JOINT PLACEMENT.
- COMPACT EACH BAG IN PLACE BY WALKING ON IT.
- PLACE MEMBRANE AND ADDITIONAL SANDBAGS AT TOE TO KEEP THE MEMBRANE IN PLACE.

SPECIAL SIGNS



NOTES

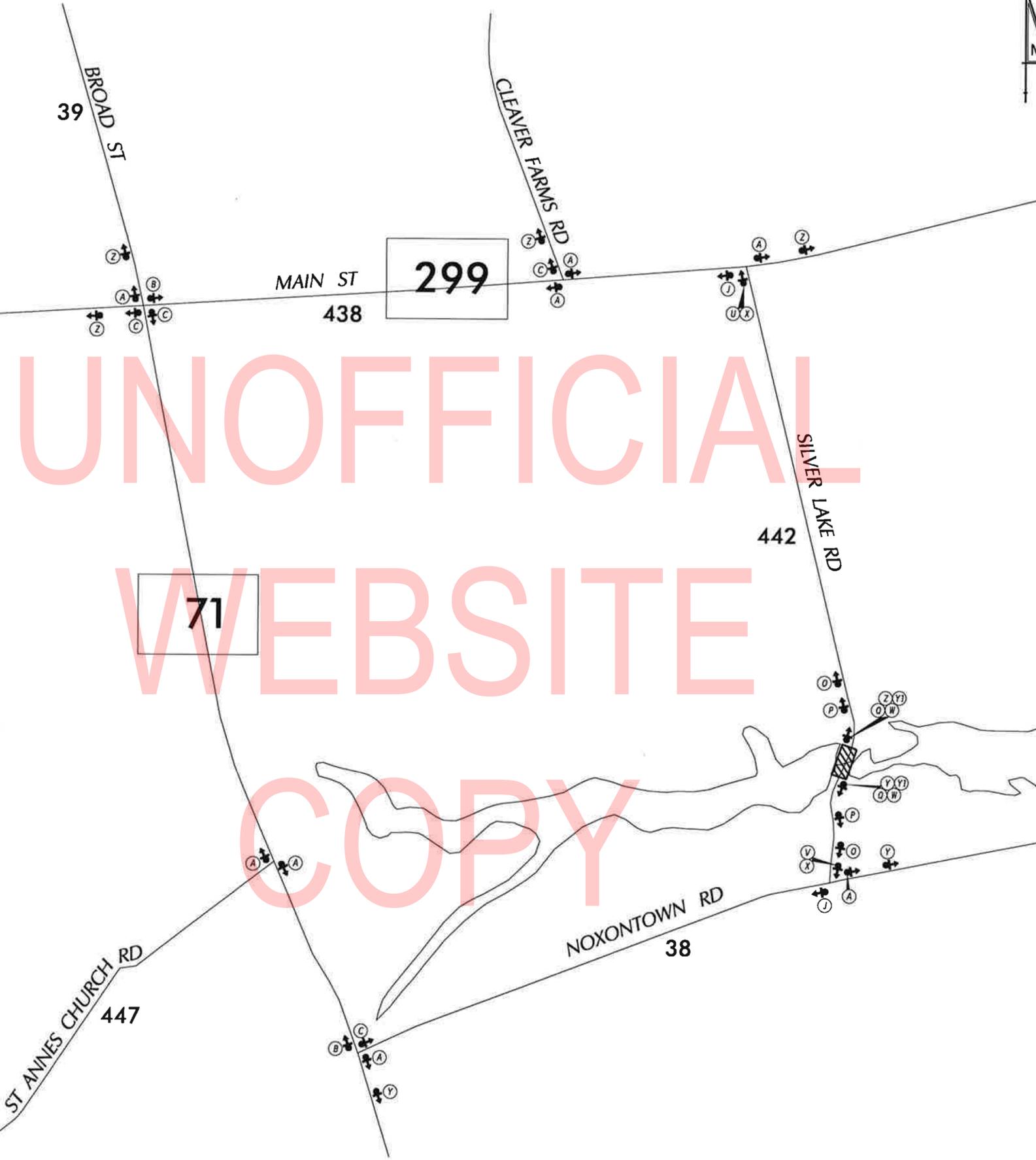
*DISPLAY (Y) & (Z), ALONG WITH THE (Y1) PLAQUE, FOR 10 DAYS PRIOR TO THE IMPLEMENTATION OF DETOUR. (Y1) PLAQUE TO COMPLETELY COVER "FOLLOW DETOUR" LEGEND ON (Y) & (Z) SIGNS. UPON IMPLEMENTATION OF DETOUR, REMOVE (Y1) PLAQUE FROM (Y) & (Z) SIGNS AND RELOCATE (Y) & (Z) TO A LOCATION OUTSIDE OF CLOSURE AREA.

*DG RETROREFLECTIVE ORANGE BACKGROUND; BLACK LEGEND

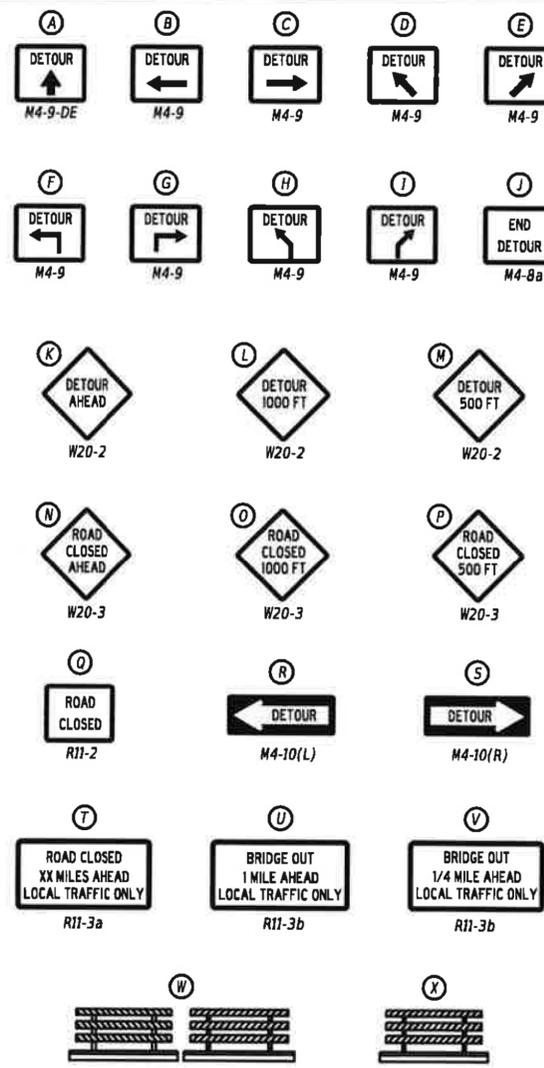
*ROUTE SHIELD - WHITE BACKGROUND; BLACK LEGEND

PREPARED BY
DELDOT - TRANSPORTATION SOLUTIONS
TRAFFIC SAFETY

M. S. P. 7/8/19
DATE



LEGEND



GENERAL NOTES

- ALL TEMPORARY TRAFFIC CONTROL DEVICES ARE TO BE SUPPLIED AND MAINTAINED BY THE GENERAL CONTRACTOR AND SHALL BE IN COMPLIANCE WITH THIS PLAN AND THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (DE MUTCD) LATEST EDITION.
- SIGNS "N" THROUGH "Q" AND "T" AND "V". THE WORD "ROAD" SHALL BE CHANGED TO "RAMP", "RR XING" OR "BRIDGE" WHERE APPLICABLE.
- "W" TYPE 3 BARRICADES AT A ROAD CLOSURE SHALL BE PLACED COMPLETELY ACROSS THE ROADWAY, FROM CURB TO CURB, OR FROM EDGE OF ROAD TO EDGE OF ROAD, WITH THE STRIPES POSITIONED DOWNWARD TOWARD THE CENTER OF THE ROADWAY.
- BARRICADES SHALL BE A MINIMUM OF 6 FEET WIDE UNLESS DIRECTED BY THE ENGINEER.

CONCURRENCE FOR IMPLEMENTATION

Mark S. Buckalew 7-8-19

ADDENDA / REVISIONS

SILVER LAKE DAM REPAIRS

CONTRACT	BRIDGE NO.	1-407 & 1-504
T201807401	DESIGNED BY:	DBW
COUNTY	CHECKED BY:	MSB
NEW CASTLE		

DETOUR PLAN

SECTION	TS
SHEET NO.	30