

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION STREET AND CARROLL STREET BRIDGES OVER GOWANUS CANAL

B.I.N. 2-24026-0 & 2-24027-0
BOROUGH OF BROOKLYN



UNION STREET BRIDGE
OVER GOWANUS CANAL
B.I.N. 2-24027-0

CARROLL STREET BRIDGE
OVER GOWANUS CANAL
B.I.N. 2-24026-0

NOT FOR CONSTRUCTION

LOCATION PLAN
N.T.S.

SHEET NO.	1	TOTAL SHEETS	26

	SHEET NO.	TOTAL SHEETS
	2	26

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CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO.	
CONTRACT NO.	CD NO.

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE
UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
GENERAL DRAWINGS
BOROUGH OF BROOKLYN B.I.N. 2-24026-0 & 2-24027-0

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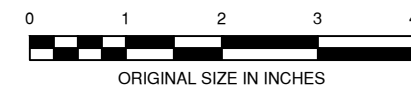
DWG. NO. G-2	SCALE NONE	DATE FEB 2020	SHEET NO. 2
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NOT FOR CONSTRUCTION

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IN CHARGE J. STERN DRAFTER D. CASILLAS
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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

GENERAL NOTES

	SHEET NO.	TOTAL SHEETS
	3	26

GENERAL NOTES:

- ELEVATIONS (EL.) ARE IN FEET (FT) BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). THE GRID COORDINATE SYSTEM CORRESPONDS TO NEW YORK STATE PLANE, EAST ZONE (3101). HORIZONTAL REFERENCE DATUM IS NORTH AMERICAN DATUM OF 1983 (NAD83).
- THE BATHYMETRIC SURFACE WAS CREATED BASED ON DATA FROM A MULTIBEAM HYDROGRAPHIC SURVEY COMPLETED BY OCEAN SURVEYS, INC. (OSI) FROM OCTOBER 13 TO 18, 2014. GPI RECEIVED THIS SURFACE FROM GEOSYNTEC IN MARCH 2019.
- TIDAL EPOCHS WERE BASED ON THE TIDAL EPOCH FROM 1983 TO 2001 AT THE BATTERY STATION (NO. 8518750) MAINTAINED BY THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA). MEAN LOW WATER (MLW) IS -2.57-FT AND MEAN HIGH WATER (MHW) IS 1.96-FT NAVD88.
- THE NAVIGATIONAL ELEVATION IN RTA1 WAS SELECTED TO BE -8.77-FT (I.E., 6-FT DEPTH AT MEAN LOWER LOW WATER) IN THE DESIGN REPORT BY GEOSYNTEC. THIS ELEVATION WOULD BE ADEQUATE TO PROVIDE " SUFFICIENT DEPTH TO OPERATE THE FLUSHING TUNNEL" AND ALLOW FOR VESSEL NAVIGATION FOR THE PURPOSES OF PERFORMING " CAP MONITORING AND MAINTENANCE, AS WELL AS SEWER SYSTEM AND FLUSHING TUNNEL MAINTENANCE AND BRIDGE AND BULKHEAD REPAIRS" IN ACCORDANCE WITH THE RECORD OF DECISION (EPA, 2013). THE SELECTED NAVIGATIONAL ELEVATION OF -8.77-FT IS AN INCREASE IN THE DEPTH OF WATER BY 1 FOOT RELATIVE TO THE ELEVATION SELECTED AS PART OF THE BASIS OF DESIGN REPORT (GEOSYNTEC, 2016).
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SAFETY OF WORK AREAS AND LIMITING PUBLIC ACCESS INTO WORK AREAS.
- WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS AND WITH ENVIRONMENTAL HEALTH AND SAFETY/TRAINING REQUIREMENTS IN ACCORDANCE WITH THE APPROVED HEALTH AND SAFETY PLAN AND THE RTA1 DESIGN PACKAGE SPECIFICATIONS.
- THE CONTRACTOR SHALL HAVE A HARD COPY OF THE APPROVED SET OF CONSTRUCTION DRAWINGS AND SPECIFICATIONS AND A COPY OF THE CONTRACTOR'S HEALTH AND SAFETY PLAN (HASP) ON THE JOB SITE AT ALL TIMES.
- THE CONTRACTOR SHALL CONTACT NEW YORK 811 (I.E., CALL BEFORE YOU DIG) 2 TO 10 WORKING DAYS (EXCLUDING HOLIDAYS AND WEEKENDS) PRIOR TO THE START OF CONSTRUCTION TO VERIFY THE LOCATION OF ANY POTENTIAL UTILITIES IN THE PUBLIC RIGHT OF WAY. CONTRACTOR IS RESPONSIBLE FOR LOCATING UNDERGROUND UTILITIES WITHIN EXCAVATION AREAS WITHIN THE PROPERTY LIMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OR DISRUPTION OF UTILITY SERVICE DURING CONSTRUCTION. THE CONTRACTOR SHALL NOT MODIFY OR REMOVE ANY EXISTING UTILITIES WITHOUT THE PERMISSION OF THE UTILITY OWNER.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A LOCAL NOTICE TO MARINERS OF THE UNITED STATES COAST GUARD TWO (2) WEEKS PRIOR TO THE COMMENCEMENT OF MARINE CONSTRUCTION ACTIVITIES INVOLVING VESSEL ACTIVITY IN THE CANAL. REQUIREMENTS FOR SUBMITTING THE LOCAL NOTICE TO MARINERS ARE LISTED IN THE RTA1 DESIGN PACKAGE.
- THE CONTRACTOR SHALL VERIFY WORK IN FIELD AND SHALL SATISFY THEMSELVES AS TO THE ACCURACY BETWEEN WORK SET FORTH IN THESE CONSTRUCTION DRAWINGS AND THE WORK REQUIRED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCING LAND DISTURBANCE AND DREDGING ACTIVITIES.

- ITEM NUMBERS USED ARE FOR SPECIFICATION REFERENCE ONLY, NOT FOR PAYMENT PURPOSES.

DESIGN AND SPECIFICATIONS:

- MATERIAL AND CONSTRUCTION SPECIFICATIONS SHALL BE THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS, CONSTRUCTION AND MATERIALS, DATED JAN 1, 2020 WITH CURRENT ADDITIONS AND MODIFICATIONS.
- DESIGN SPECIFICATIONS: FOR ANALYSIS OF EXISTING STRUCTURES - NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 17TH EDITION, 2002. FOR NEW STRUCTURES - NEW YORK STATE DEPARTMENT OF TRANSPORTATION LRFD BRIDGE DESIGN SPECIFICATIONS 7TH EDITION WITH 2016 INTERIM REVISIONS.
- AMERICAN WELDING SOCIETY SPECIFICATIONS - AASHTO/AWS D1.5 BRIDGE WELDING CODE 6TH EDITION, 2015.
- NYSDOT STEEL CONSTRUCTION MANUAL FOURTH EDITION JANUARY 2018, AND LATEST ADDENDUM.
- ALL PIPE PILE WALLS WERE DESIGNED IN ACCORDANCE WITH THE NYSDOT GEOTECHNICAL DESIGN MANUAL GDP-11 GEOTECHNICAL DESIGN PROCEDURES FOR FLEXIBLE WALL SYSTEMS, REV. 4, AUGUST 2015.
- LIVE LOAD: HS20-44 FOR ALL BRIDGES.

CONSTRUCTION NOTES:

- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A MINIMUM OF TWO (2) HOURS OF ADVANCED NOTIFICATION TO NEW YORK CITY DEPARTMENT OF TRANSPORTATION (NYCDOT) PRIOR TO THE 9TH ST., 3RD ST., CARROLL ST., AND UNION ST. BRIDGES BEING OPENED. THE FOLLOWING NUMBERS MAY BE USED TO CONTACT NYCDOT [(212) 839-3740 (WEEKDAYS), (718) 885-0805 (WEEKENDS AND HOLIDAYS), AND 718-254-8726 (ALTERNATIVE PHONE NUMBER)]. THE NYCDOT BRIDGE OPERATOR CAN ALSO BE REACHED ON MARINE RADIO CHANNEL 13. THE HAMILTON AVE. BRIDGE DOES NOT REQUIRE ADVANCED NOTIFICATION.
- DO NOT STOCKPILE SOIL, PARK EQUIPMENT, OR OTHERWISE SURCHARGE THE AREA WITHIN 25 FEET BEHIND THE PROPOSED PIPE PILE WALLS.
- THE CONTRACTOR SHALL PROVIDE FOR APPROVAL PLANS AND CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER (P.E.) REGISTERED IN THE STATE OF NEW YORK DEMONSTRATING THE PROPOSED METHODS OF ERECTION OF NEW PIPE PILING, SPECIFICALLY SHOWING THAT THE EQUIPMENT SHALL NOT PLACE SURCHARGE LOADS ON THE EXISTING BULKHEAD WALL OR BRIDGE STRUCTURE AT ANY TIME.
- ADEQUATE ACCESS TO WORK AREAS MUST BE PROVIDED FOR THE ENGINEER BY THE CONTRACTOR. THE ACCESS PROVIDED MAY BE THE SAME OR SIMILAR TO WHAT IS USED BY THE CONTRACTOR. HOWEVER, THE ENGINEER'S ACCESS MUST BE OF SUCH TYPE AND DESIGN SO AS TO ALLOW THE ENGINEER TO MOVE FROM PLACE TO PLACE TO INSPECT WORK UNDER PROGRESS WITHOUT DELAYING THE PROJECT.
- THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT ANY MATERIALS WHICH ARE TO REMAIN IN PLACE OR WHICH ARE TO REMAIN THE PROPERTY OF NEW YORK CITY, WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY MATERIALS WHICH ARE TO REMAIN IN PLACE OR WHICH ARE TO REMAIN THE PROPERTY OF NEW YORK CITY, THE DAMAGES SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AND THE CITY, AT NO EXPENSE TO THE CITY OR THE GOWANUS ENVIRONMENTAL REMEDIATION TRUST (GOWANUS ERT).
- DIMENSIONS AND ELEVATIONS OF THE EXISTING STRUCTURES SHOWN ON THESE PLANS ARE APPROXIMATE BASED ON AS-BUILT INFORMATION AND ARE FOR GENERAL PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD.

- THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT DUE TO THE NATURE OF BULKHEAD SUPPORT PROJECTS, THE EXACT EXTENT OF WORK CANNOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO THE COMMENCEMENT OF WORK. THESE CONTRACT DOCUMENTS HAVE BEEN PREPARED BASED ON FIELD INSPECTION AND OTHER AVAILABLE INFORMATION. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO CONSTRUCTION DETAILS AND WORK QUANTITIES. THE CONTRACTOR SHALL PERFORM THE WORK IN ACCORDANCE WITH ACTUAL FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER.
- ALL AREAS DISTURBED/DAMAGED BY THE CONTRACTOR WITHOUT AUTHORIZATION BY THE ENGINEER SHALL BE RESTORED BY THE CONTRACTOR AT NO EXPENSE TO THE CITY OR GOWANUS ERT.
- ALL CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN STRICT COMPLIANCE WITH APPLICABLE NEW YORK CITY NOISE REGULATIONS. THE CONTRACTOR SHALL OBTAIN A VARIANCE FROM THE NOISE CODE AT OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMC) LOCATED AT 55 WATER STREET, NEW YORK, NY 10041 ONE WEEK PRIOR TO COMMENCING WORK.
- WHENEVER WORK IN THE CONTRACT REQUIRES MATERIALS TO BE REMOVED AND DISPOSED OF, THE COST OF DISPOSAL AND TRANSPORTATION TO THE AREA OF DISPOSAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THOSE ITEMS UNLESS OTHERWISE NOTED.
- IF THE STRUCTURE HAS A BRIDGE IDENTIFICATION NUMBER (B.I.N.) PLATE ATTACHED IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT IT DURING CONSTRUCTION AND REMOVE AND REMOUNT IT AFTER CONSTRUCTION IS COMPLETED. IF THE STRUCTURE HAS A DAMAGED BRIDGE IDENTIFICATION PLATE OR THERE IS NONE, THE CONTRACTOR SHALL PROVIDE A NEW BRIDGE IDENTIFICATION PLATE AT NO COST TO THE CITY OR GOWANUS ERT.
- THE CONTRACTOR SHALL MOVE ALL BARGES AND OTHER FLOATING EQUIPMENT EMPLOYED TO PERFORM THE WORK IN THIS CONTRACT TO SAFE ANCHORAGES AWAY FROM BRIDGES PRIOR TO THE ONSET OF INCLEMENT WEATHER CONDITIONS WHICH COULD CAUSE SUCH BARGES AND FLOATING EQUIPMENT MOORED UNDER OR ALONGSIDE THE BRIDGES TO COLLIDE WITH AND POSSIBLY DAMAGE THE BRIDGES. THE CONTRACTOR SHALL NOT ATTACH ANY MOORING LINES FROM THE BARGES OR FLOATING EQUIPMENT TO THE BRIDGES DURING SUCH INCLEMENT WEATHER CONDITIONS.
- AIR AND WATER QUALITY IN THE CANAL SHALL BE MONITORED BY OTHERS PRIOR TO AND DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONTROL AIR AND WATER QUALITY TO MEET THE STANDARDS PRESCRIBED IN THE RTA1 DESIGN PACKAGE SPECIFICATIONS THROUGHOUT THE DURATION OF CONSTRUCTION.

STRUCTURAL STEEL:

- ALL STRUCTURAL STEEL PLATES SHALL MEET THE REQUIREMENTS OF ASTM A36 UNLESS OTHERWISE NOTED.
- ALL STRUCTURAL STEEL PILES SHALL MEET THE REQUIREMENTS OF ASTM A572, GRADE 50 UNLESS OTHERWISE NOTED.
- ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL FOR ALL STRUCTURAL STEEL ITEMS.
- ALL FABRICATION AND WELDING SHALL BE IN ACCORDANCE WITH NYSSCM, & AWS D1.5.
- ALL WELDS SHALL BE FILLET WELDS, UNLESS OTHERWISE NOTED.
- ALL WELDING ELECTRODES SHALL BE E70XX AND CONFORM WITH AWS D1.5 SPECIFICATION AND AS LISTED IN NYSSCM SECTION 706. ALL FABRICATION SHALL BE PERFORMED IN ACCORDANCE WITH THE NYSDOT STEEL CONSTRUCTION MANUAL FOURTH EDITION JANUARY 2018, AND LATEST ADDENDUM.

STRUCTURAL CONCRETE:

- ALL CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3,500 psi AT 28 DAYS.

UTILITIES:

- LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLANS, ARE BASED ON INFORMATION AVAILABLE WHEN THESE DRAWINGS WERE PREPARED AND SHOULD BE CONSIDERED APPROXIMATE. EXACT LOCATIONS SHALL BE VERIFIED IN THE FIELD AND ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL SCHEDULE AND, THROUGH THE ENGINEER, COORDINATE HIS OPERATIONS WITH THE VARIOUS COMPANIES OR AGENCIES WHOSE INTEREST WILL BE AFFECTED BY THIS PROJECT. KNOWN AGENCIES INVOLVED ARE THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, AND THE ENVIRONMENTAL PROTECTION AGENCY.
- CARE SHALL BE TAKEN NOT TO DAMAGE ANY UTILITY LINE. IF ANY UTILITY LINE IS DAMAGED DUE TO CONTRACTORS OPERATIONS, THE CONTRACTOR SHALL COMPENSATE ALL DAMAGES AND LOSSES TO THE UTILITY COMPANY AFFECTED.

AVAILABILITY OF PLANS AND RECORD DRAWING STANDARDS:

- AS BUILT PLANS, MAY BE AVAILABLE FOR REVIEW AT NYCDOT DIVISION OF BRIDGES, BUREAU OF DESIGN, 55 WATER STREET, 5TH FLOOR, NEW YORK, NY 10041. NO SHOP DRAWINGS ARE AVAILABLE FOR THESE STRUCTURES. ORIGINAL DESIGN PLANS MAY ALSO BE AVAILABLE AT THE OFFICE OF THE NYCDOT BRIDGE COMPONENT REHAB 55 WATER STREET, N.Y.C., 5TH FLOOR. THE CONTRACTOR USES THESE DRAWINGS AT HIS OWN RISK AND SHALL VERIFY ALL DIMENSIONS IN THE FIELD BEFORE SHOP DRAWINGS ARE SUBMITTED. ALL DRAWINGS SUBMITTED BY THE CONTRACTOR SHALL MEET THE REQUIREMENTS OF NYCDOT DIVISION OF BRIDGE, BUREAU OF ENGINEERING REVIEW AND SUPPORT SPECIFICATIONS FOR THE PREPARATION OF RECORD DRAWINGS AND ELECTRONIC MEDIA CURRENT EDITION.

100% SUBMISSION

**CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
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NYS P.I.N. NO.	FED. AID PROJ. NO.
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FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
GENERAL DRAWINGS
BOROUGH OF BROOKLYN B.I.N. 2-24026-0 & 2-24027-0

GENERAL NOTES (1 OF 2)

DWG. NO. G-3	SCALE NONE	DATE FEB 2020	SHEET NO. 3
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PREPARED BY: GREENMAN-PEDERSEN, INC. ALTERED BY:

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GENERAL NOTES

SHEET NO.	TOTAL SHEETS
4	26

BRIDGE MONITORING CRITERIA:

THE CONTRACTOR SHALL PREPARE A BRIDGE MONITORING PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THE NYCDOT DIVISION OF BRIDGES REVIEW PROCEDURE FOR PRIVATE DEVELOPMENT PROJECT NEAR BRIDGE STRUCTURE, NYSDOT ITEM 634.99020017, AND PROJECT REQUIREMENTS, WHICHEVER IS MORE STRINGENT. ALL EXISTING BRIDGES, STRUCTURES, AND UTILITIES WITHIN 200 FEET OF THE PROPOSED WORK SHALL HAVE VIBRATION MONITORING, CRACK MONITORING AND LATERAL AND VERTICAL MOVEMENT MONITORING BE RECORDED AND INCLUDED IN THE BRIDGE MONITORING PLAN. THE BRIDGE MONITORING PLAN SHALL CONTAIN A GENERAL DESCRIPTION OF THE PROJECT, PROJECT LIMITS, PROJECT SCHEDULE, PERIOD OF MONITORING PLAN IN PLACE, LOCATION AND NUMBER OF MONITORING POINTS PROVIDED FOR MEASURING MOVEMENT, SETTLEMENTS, VIBRATION MONITORING, AND CRACK MONITORING. IT SHALL ALSO CONTAIN THE TYPE OF MONITORING INSTRUMENTS USED, MONITORING PROCEDURES, REPORTING SYSTEM AND THRESHOLD LIMITS FOR MONITORING. THE BRIDGE MONITORING REPORTS SHALL BE SUBMITTED ON A WEEKLY BASES TO THE ENGINEER AND THE DESIGNATED ENGINEER AT THE DIVISION OF BRIDGES.

A) VIBRATION CRITERIA:

- THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE CLOSE PROXIMITY OF THE EXISTING STRUCTURES AND UTILITIES LOCATED AT THE UNION STREET BRIDGE OVER THE GOWANUS CANAL AND THE CARROLL STREET BRIDGE OVER THE GOWANUS CANAL. EXCAVATION, BACKFILL AND COMPACTION, DEMOLITION, DRIVING OF PILES AND SHEETING, AND ANY OTHER CONSTRUCTION OPERATIONS SHALL BE CONDUCTED IN A MANNER WHICH WILL NOT DAMAGE OR DISTRESS ANY OF THE ABOVE, INCLUDING BUT NOT LIMITED TO, ADJACENT BUILDINGS AND STRUCTURES, HISTORIC STRUCTURES, UTILITIES OR TUNNELS. ANY DAMAGE CAUSED BY OR RELATED TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.
- THE CONTRACTOR IS REQUIRED TO ENGAGE THE SERVICES OF A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER TO CONDUCT A CONDITION SURVEY OF THE EXISTING BUILDINGS, STRUCTURES, UTILITIES INDICATED IN TABLE 1 OF THIS SPECIAL NOTE AND AN EXPERIENCED VIBRATION MONITORING CONSULTANT TO MEASURE PEAK PARTICLE VELOCITIES (PPV) PRIOR TO, AND DURING CONSTRUCTION OPERATIONS. THE CONTRACTOR MUST PERFORM ALL WORK IN A MANNER THAT WILL LIMIT CONSTRUCTION VIBRATION AT THE SPECIFIED LOCATIONS TO WITHIN THE LIMITS SET FORTH WITHIN THIS NOTE OR THE LIMITS DETERMINED BY HIS PROFESSIONAL ENGINEER, WHICHEVER IS LESS.
- SHOULD THE MAXIMUM ALLOWABLE PPV BE RECORDED, ALL WORK SHALL STOP AND THE ENGINEER BE NOTIFIED. THE CONTRACTOR SHALL PREPARE A PLAN DETAILING AN ALTERNATIVE METHOD SO THAT THE MAXIMUM PPV IS NOT REACHED AGAIN. WORK SHALL NO RE-COMMENCE UNTIL SUCH REMEDIAL PLAN IS APPROVED BY THE ENGINEER.
- ON THIS CONTRACT, TWO (2) BRIDGES ARE LOCATED CLOSE TO THE SITE OF WORK. EXCAVATION, PILE DRIVING AND ANY OTHER CONSTRUCTION OPERATION IN THE VICINITY SHALL BE CONDUCTED IN A MANNER WHICH WILL NOT DAMAGE OR DISTRESS THE BRIDGES. ANY DAMAGE CAUSED BY OR RELATED TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT NO COST TO NYCDOT.

B) CRACK MONITORING

- EXISTING CRACKS OR CRACKS CAUSED FROM CONSTRUCTION ACTIVITY SHALL BE MONITORED ON THE EXISTING BRIDGES, STRUCTURES AND UTILITIES WITHIN 200 FEET OF THE PROPOSED WORK. SHOULD NEW CRACKS FORM OR EXISTING CRACKS INCREASE IN LENGTH OR WIDTH, ALL WORK SHALL STOP AND THE ENGINEER BE NOTIFIED. THE CONTRACTOR SHALL INCREASE THE FREQUENCY OF READINGS AND PREPARE A PLAN DETAILING AN ALTERNATIVE METHOD SO TO PREVENT FURTHER DAMAGE.

C) VERTICAL AND LATERAL MOVEMENT MONITORING

- VERTICAL AND LATERAL MOVEMENT MONITORING SHALL BE RECORDED FOR EXISTING BRIDGES, STRUCTURES, AND UTILITIES WITHIN 200 FEET OF THE PROPOSED WORK. MAXIMUM ALLOWABLE CUMULATIVE SETTLEMENTS SHALL NOT EXCEED THE VALUES SHOWN IN TABLE 1. SHOULD MOVEMENT REACH THE MAXIMUM ALLOWABLE VALUES SHOWN, ALL WORK SHALL STOP AND THE ENGINEER BE NOTIFIED. THE CONTRACTOR SHALL INCREASE THE FREQUENCY OF READINGS AND PREPARE A PLAN DETAILING AN ALTERNATIVE METHOD SO TO PREVENT FURTHER MOVEMENT.

TABLE 1

STRUCTURE & LOCATION	BRIDGE MONITORING LOCATIONS	MAXIMUM ALLOWABLE PEAK PARTICLE VELOCITY (PPV)	MAXIMUM ALLOWABLE CUMULATIVE SETTLEMENT
THE UNION STREET BRIDGE	WEST ABUTMENT	0.5 IN/SEC	0.25 IN
	WEST PIER		
	EAST PIER		
	EAST ABUTMENT		
	SUBMARINE CABLES AT ALL SUBSTRUCTURE CONNECTION LOCATIONS		
THE CARROLL STREET BRIDGE	CONTROL HOUSE	0.5 IN/SEC	0.25 IN
	WEST ABUTMENT BULKHEAD		
	EAST ABUTMENT BULKHEAD		
	ALL ADJACENT CONCRETE WALLS		
	CONTROL HOUSE		

PRE-CONSTRUCTION AND POST-CONSTRUCTION SURVEYS:

- IT IS REQUIRED THAT THE CONTRACTOR ENGAGE THE SERVICES OF A PROFESSIONAL ENGINEER (P.E.) REGISTERED IN THE STATE OF NEW YORK TO CONDUCT A PRE-CONSTRUCTION SURVEY OF THE EXISTING BRIDGES, STRUCTURES, AND UTILITIES WITHIN 200 FEET OF THE PROPOSED WORK. THE PRE-CONSTRUCTION SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NYCDOT DIVISION OF BRIDGES REVIEW PROCEDURE FOR PRIVATE DEVELOPMENT PROJECT NEAR BRIDGE, NYSDOT SPECIAL SPECIFICATION ITEM 634.99010017, AND PROJECT REQUIREMENTS, WHICHEVER IS MORE STRINGENT. THE PRE-CONSTRUCTION SURVEY REPORT SHALL INCLUDE DETAILED DESCRIPTIONS OF ANY PRE-EXISTING DEFECTS IN THE INTERIOR AND EXTERIOR OF THE EXISTING BRIDGES AND STRUCTURES, SUCH AS CRACKS, SPALLING, DETERIORATIONS, SIGNS INDICATING SETTLEMENT AND ALL NECESSARY COLOR PHOTOGRAPHS TO DOCUMENT THE BRIDGE CONDITION. A COPY OF THIS REPORT SHALL BE SUPPLIED TO THE ENGINEER AND THE NYCDOT DIVISION OF BRIDGES PRIOR TO THE START OF ANY WORK.
- AFTER THE COMPLETION OF ALL WORK, THE CONTRACTOR SHALL PROVIDE A POST-CONSTRUCTION SURVEY, CONDUCTED AND REPORTED FOLLOWING THE SAME REQUIREMENTS AS THE PRE-CONSTRUCTION SURVEY. THE POST-CONSTRUCTION SURVEY WILL BE COMPARED WITH THE PRE-CONSTRUCTION SURVEY TO ASCERTAIN IF ANY DAMAGE WAS DONE TO THE EXISTING BRIDGES, STRUCTURES AND UTILITIES WITHIN 200 FEET OF THE PROPOSED WORK. A COPY OF THIS REPORT SHALL BE SUPPLIED TO THE ENGINEER AND THE NYCDOT DIVISION OF BRIDGES. IF IT IS DETERMINED THAT A BRIDGE SUFFERED DAMAGE CAUSED BY OR RELATED TO THE CONTRACTOR'S OPERATIONS, THE CONTRACTOR SHALL REPAIR THE DAMAGE, TO ITS ORIGINAL CONDITION, AT HIS OWN EXPENSE.

SUGGESTED SEQUENCE OF CONSTRUCTION:

CARROLL STREET BRIDGE (B.I.N. 2-24026-0):

- VERIFY LOCATIONS OF ALL UTILITIES IN THE WORK AREA.
- INSTALL EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH THE RTA1 DESIGN PACKAGE (BY OTHERS).
- PERFORM CLEARING AND GRUBBING IN THE WORK AREAS NECESSARY TO COMPLETE THE PROPOSED WORK AND CLEAR ALL OUTFALLS OF ANY OBSTRUCTIONS.
- REMOVE EXISTING FENCE SUPPORTS AT THE EAST ABUTMENT BULKHEAD.
- REMOVE AND DISPOSE THE EXISTING TIMBER PILE CLUSTER DOLPHINS AS SHOWN ON THE CONTRACT DRAWINGS.
- EXCAVATE THE CANAL TO THE LIMITS SPECIFIED UNDER THE CONTRACT DOCUMENTS IN ACCORDANCE WITH THE PHASE I DREDGING PLAN OF THE RTA1 DESIGN PACKAGE (BY OTHERS).
- PRIOR TO DREDGING, PERFORM TEST PITS AT EXISTING STONE BULKHEADS TO DETERMINE BOTTOM OF FOOTING ELEVATION AND CONFIGURATION.
- REPOINT EXISTING STONE BULKHEADS ADJACENT TO THE BRIDGE AS SHOWN ON THE CONTRACT DRAWINGS.
- INSTALL THE PIPE PILE WALLS USING THE DOWN THE HOLE (DTH) DRILLING METHOD WITH AIR CONTROL BITS IN THE FOLLOWING SEQUENCE:
 - INSTALL THE WEST PIPE PILE WALL (CA 1+41 TO CA 0+80) WITH THE BRIDGE IN THE CLOSED POSITION (OPEN TO TRAFFIC).
 - INSTALL THE EAST PIPE PILE WALL (CA 1+31 TO CA 0+81) WITH THE BRIDGE IN THE CLOSED POSITION (OPEN TO TRAFFIC).
 - INSTALL THE TWO (2) MONOPILE DOLPHINS LOCATED SOUTH OF THE BRIDGE FASCIA.
 - CUT THE WEST ABUTMENT PIPE PILE WALL TO EL. 4.0.
 - INSTALL SEEPAGE PLUGS AND FILL THE PIPE PILES WITH SELECT FILL.
 - INSTALL DONUT FENDER AND PILE STOP TO MONOPILE DOLPHINS.
 - INSTALL THE REMAINING WEST AND EAST PIPE PILE WALLS.
 - INSTALL THE REMAINING TWO (2) MONOPILE DOLPHINS LOCATED NORTH OF THE BRIDGE FASCIA.
 - INSTALL SEEPAGE PLUGS AND FILL THE PIPE PILES WITH SELECT FILL.
 - INSTALL DONUT FENDER AND PILE STOP TO MONOPILE DOLPHINS.
 - INSTALL T PILE CONNECTION PILES TO THE O PILE WALLS AS SHOWN.
 - CUT THE PIPE PILE WALLS TO THE FINAL ELEVATIONS SHOWN ON THE CONTRACT DRAWINGS.
- PLACE AQUABLOK 3070SW FOLLOWED BY CEMENT GROUT BETWEEN THE PIPE PILE WALL AND THE EXISTING WALL TO THE LIMITS SHOWN ON THE CONTRACT DRAWINGS.
- EXCAVATE THE CANAL TO THE LIMITS SPECIFIED UNDER THE CONTRACT DOCUMENTS IN ACCORDANCE WITH THE PHASE III DREDGING PLAN OF THE RTA1 DESIGN PACKAGE (BY OTHERS).
- INSTALL PZ SHEET PILES TO THE T PILE CONNECTION AND INSTALL CONCRETE PLUG AS SHOWN.
- REINSTALL EXISTING FENCE SUPPORTS AT THE EAST ABUTMENT.

UNION STREET BRIDGE (B.I.N. 2-24027-0):

- VERIFY LOCATIONS OF ALL UTILITIES IN THE WORK AREA.
- INSTALL EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH THE RTA1 DESIGN PACKAGE (BY OTHERS).
- PERFORM CLEARING AND GRUBBING IN THE WORK AREAS NECESSARY TO COMPLETE THE PROPOSED WORK AND CLEAR ALL OUTFALLS OF ANY OBSTRUCTIONS.

- REMOVE AND DISPOSE THE EXISTING TIMBER PILE CLUSTER DOLPHINS AS SHOWN ON THE CONTRACT DRAWINGS.
- EXCAVATE THE CANAL TO THE LIMITS SPECIFIED UNDER THE CONTRACT DOCUMENTS IN ACCORDANCE WITH THE PHASE I DREDGING PLAN OF THE RTA1 DESIGN PACKAGE (BY OTHERS).
- REMOVE TWO (2) HORIZONTAL TIMBER WALERS FROM THE EXISTING FENDER SYSTEM ATTACHED TO THE EXISTING CONCRETE PIERS AS SHOWN ON THE CONTRACT PLANS.
- DREDGE BETWEEN THE EXISTING PIER FENDER SYSTEM AND THE CONCRETE PIER TO THE LIMITS SHOWN ON THE CONTRACT PLANS.
- INSTALL THE PIPE PILE WALLS USING DTH DRILLING METHOD WITH AIR CONTROL BITS AND INSTALL T PILE CONNECTION PILES AT ENDS OF PIPE PILE WALLS AS SHOWN.
- INSTALL SEEPAGE PLUG AND FILL PIPE PILES WITH SELECT FILL.
- INSTALL PIPE PILE CAPS.
- INSTALL MONOPILE DOLPHINS USING THE DTH DRILLING METHOD WITH AIR CONTROL BITS.
- INSTALL PILE STOP TO MONOPILE DOLPHINS.
- FILL BEHIND PIER FENDER SYSTEM WITH AQUABLOK 3070SW FOLLOWED BY SELECT FILL TO THE ELEVATIONS INDICATED ON THE CONTRACT DRAWINGS.
- INSTALL FENDER SYSTEM HORIZONTAL TIMBER SECTIONS.
- PERFORM ISS OPERATIONS IN ACCORDANCE WITH THE RTA1 DESIGN PACKAGE (BY OTHERS).
- EXCAVATE THE CANAL TO THE LIMITS SPECIFIED UNDER THE CONTRACT DOCUMENTS IN ACCORDANCE WITH THE PHASE III DREDGING PLAN OF THE RTA1 DESIGN PACKAGE (BY OTHERS).
- INSTALL PZ SHEET PILES TO THE T PILE CONNECTION AND INSTALL CONCRETE PLUG AS SHOWN.

100% SUBMISSION

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO.	
CONTRACT NO.	CD NO.

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
GENERAL DRAWINGS
BOROUGH OF BROOKLYN B.I.N. 2-24026-0 & 2-24027-0

GENERAL NOTES (2 OF 2)

DWG. NO. G-4	SCALE NONE	DATE FEB 2020	SHEET NO. 4
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PREPARED BY: GREENMAN-PEDERSEN, INC. ALTERED BY:

NOT FOR CONSTRUCTION

GPI
Greenman-Pedersen, Inc.
Engineering and Construction Services
325 West Main Street, Babylon, NY 11702
Tel: (631) 587-5060 Fax: (631) 422-3479

PREPARED BY:
IN CHARGE J. STERN DRAFTER D. CASILLAS
DESIGNER P. TAGGART CHECKER J. STERN



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

ABBREVIATIONS

	SHEET NO.	TOTAL SHEETS
	5	26

AOBE	AS ORDERED BY ENGINEER	OC	ON CENTER
ABUT	ABUTMENT	OCMC	OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION
APPROX	APPROXIMATE	OD	OUTSIDE DIAMETER
AVE	AVENUE	P.I.N.	PROJECT IDENTIFICATION NUMBER
B.I.N.	BRIDGE IDENTIFICATION NUMBER	PE	PROFESSIONAL ENGINEER
BLDG	BUILDING	PL	PLACE
C.C.	CENTER TO CENTER	PPV	PEAK PARTICLE VELOCITY
C/C	CENTER TO CENTER	PROP	PROPOSED
C-C	CENTER TO CENTER	QTY	QUANTITY
CL	CENTERLINE	R.O.W.	RIGHT OF WAY
CONC	CONCRETE	RD	ROAD
CONN	CONNECTION	REF	REFERENCE
CONST	CONSTRUCTION	REQD	REQUIRED
DEPT	DEPARTMENT	RET.	RETAINING
DIA	DIAMETER	RT	RIGHT
DTH	DOWN-THE-HOLE	RTA1	REMEDIAL TARGET AREA 1
DWG	DRAWING	S	SOUTH
E	EAST	S.F.	SQUARE FEET
EA	EACH	SE	SOUTHEAST
EIC	ENGINEER-IN-CHARGE	ST	STREET
EL.	ELEVATION	STA	STATION
EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY	STD	STANDARD
EXIST	EXISTING	SW	SOUTHWEST
FT	FEET	TYP.	TYPICAL
GALV	GALVANIZED	UON	UNLESS OTHERWISE NOTED
HASP	HEALTH AND SAFETY PLAN	VERT	VERTICAL
HORIZ	HORIZONTAL	W	WEST
IN	INCHES	WP	WORKING POINT
INV	INVERT	WZTC	WORK ZONE TRAFFIC CONTROL
MAX	MAXIMUM		
MHW	MEAN HIGH WATER		
MIN	MINIMUM		
MLW	MEAN LOW WATER		
MPT	MAINTENANCE AND PROTECTION OF TRAFFIC		
MUTCD	MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES		
N	NORTH		
NAD83	NORTH AMERICAN DATUM OF 1983		
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988		
NE	NORTHEAST		
NO	NUMBER		
NTS	NOT TO SCALE		
NW	NORTHWEST		
NY	NEW YORK		
NYC	NEW YORK CITY		
NYCDEC	NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL CONSERVATION		
NYCDEP	NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION		
NYCDOT	NEW YORK CITY DEPARTMENT OF TRANSPORTATION		
NYCT	NEW YORK CITY TRANSIT		
NYS	NEW YORK STATE		
NYSDOT	NEW YORK STATE DEPARTMENT OF TRANSPORTATION		

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CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

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NYC P.I.N. NO.	
CONTRACT NO.	CD NO.

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
GENERAL DRAWINGS
BOROUGH OF BROOKLYN B.I.N. 2-24026-0 & 2-24027-0

ABBREVIATIONS

DWG. NO. G-5	SCALE NONE	DATE FEB 2020	SHEET NO. 5
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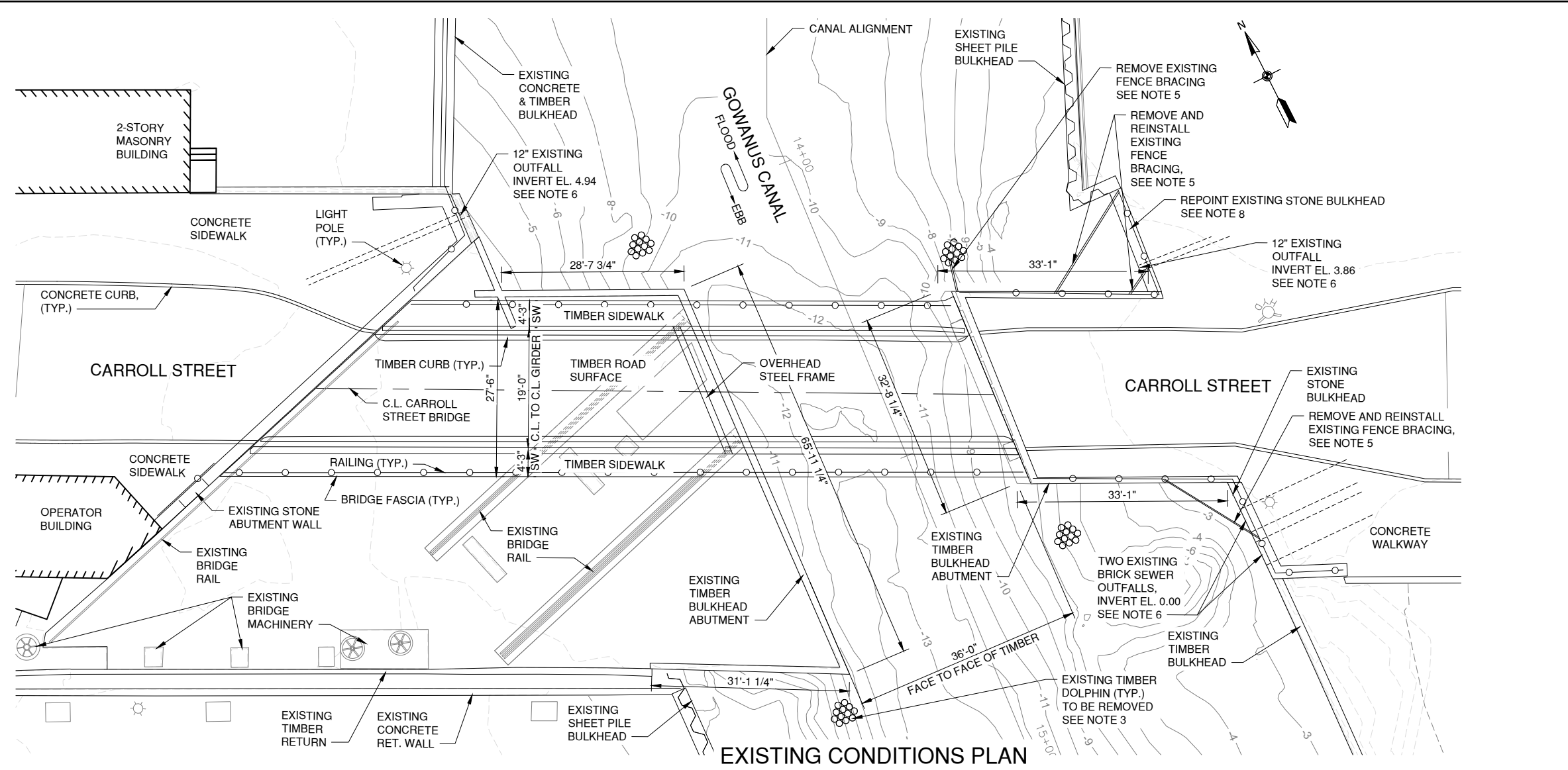
PREPARED BY:

IN CHARGE J. STERN DRAFTER D. CASILLAS
DESIGNER P. TAGGART CHECKER J. APRILE

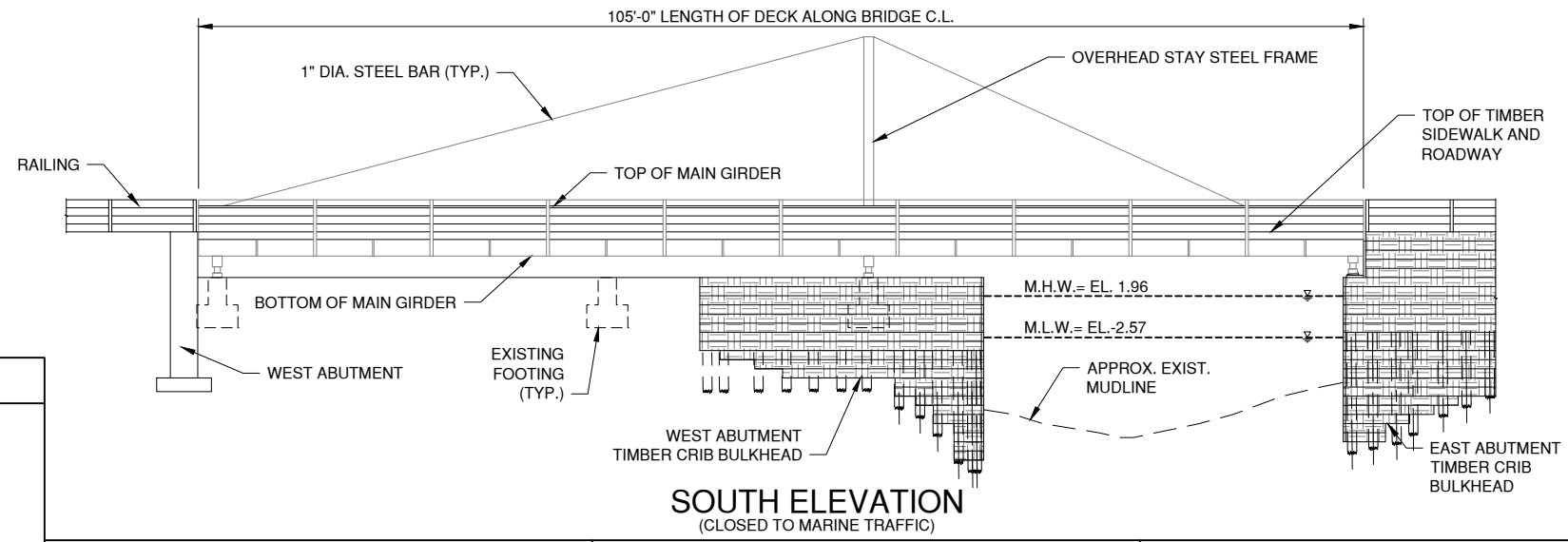


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SHEET NO.	TOTAL SHEETS
6	26



- NOTES:**
- CONTRACTOR SHALL CLEAR ALL DEBRIS FROM THE WORK AREA IN ACCORDANCE WITH ITEM 201.06 CLEARING AND GRUBBING.
 - PARAMETERS REFLECTED ON THIS DRAWINGS WERE DEVELOPED BASED ON AS-BUILT DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
 - EXISTING TIMBER PILE CLUSTER DOLPHINS TO BE REMOVED, ITEM 202.83120010. SEE DWG. NO. F-1 FOR DETAILS.
 - FOR PROPOSED GENERAL PLAN, SEE DWG. NO. C-5.
 - CARE SHALL BE TAKEN WHEN REMOVING EXISTING STEEL FENCE SUPPORTS IN ACCORDANCE WITH ITEM 564.05010011 - REMOVE, STORE, AND REINSTALL STRUCTURAL STEEL.
 - OUTFALLS SHALL BE CLEARED OF ANY OBSTRUCTIONS AND ALLOWED TO FLOW FREELY INTO THE CANAL, ITEM 201.06 - CLEARING AND GRUBBING.
 - ALL ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED.
 - EXISTING STONE BULKHEADS SHALL BE REPOINTED IN ACCORDANCE WITH ITEM 560.09 TUCK POINTING.



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DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES**

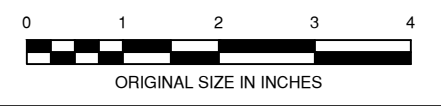
NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO.	CD NO.
FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL CARROLL STREET BRIDGE BOROUGH OF BROOKLYN	
B.I.N. 2-24026-0	

PREPARED BY: GREENMAN-PEDERSEN, INC. ALTERED BY:

NOT FOR CONSTRUCTION

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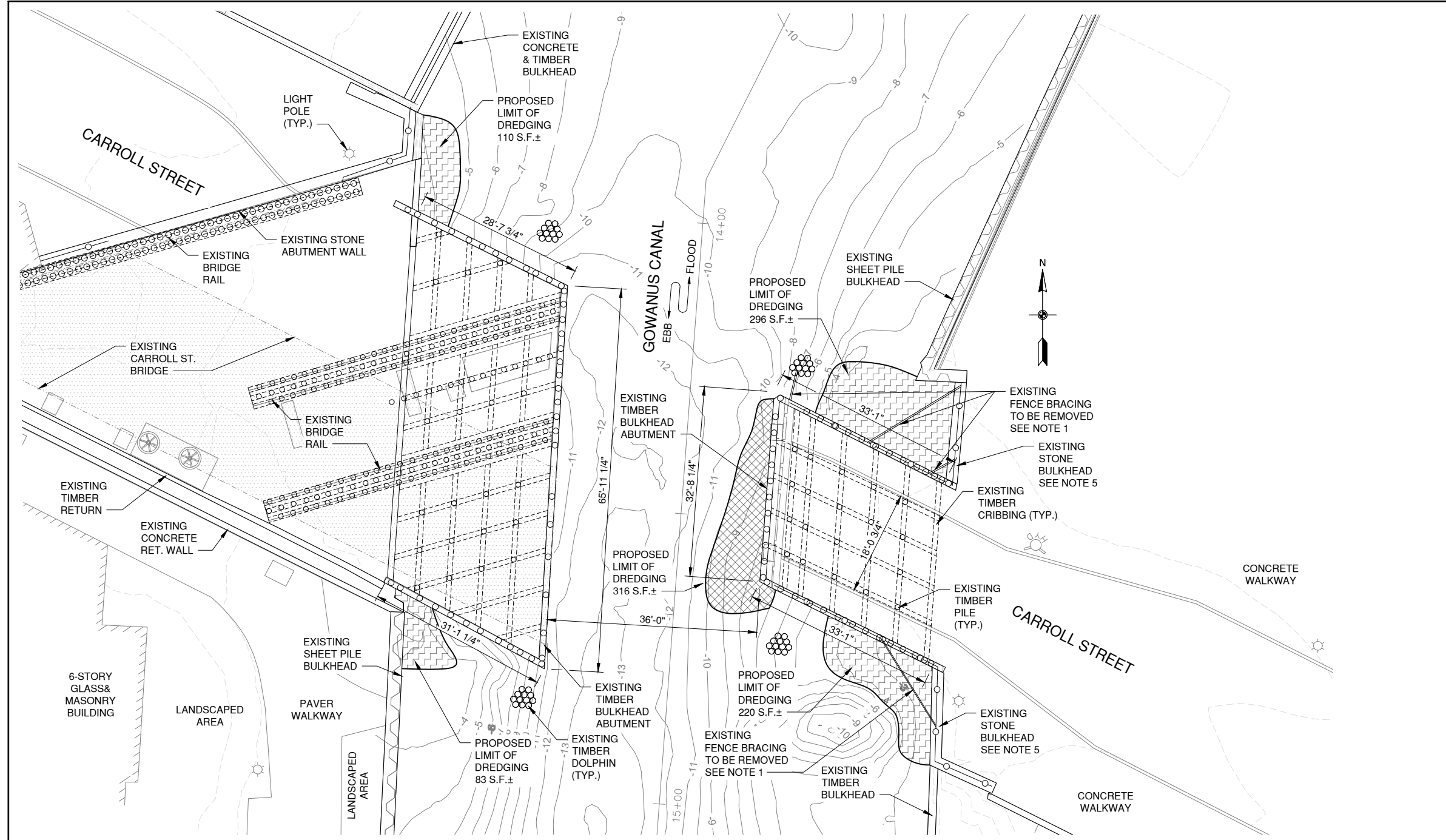


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**EXISTING CONDITIONS
PLAN AND ELEVATION**

DWG. NO. C-1	SCALE 1" = 20'	DATE FEB 2020	SHEET NO. 6
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SHEET NO.	TOTAL SHEETS
7	26



- NOTES:**
- EXISTING FENCE BRACING TO BE REMOVED PRIOR TO DREDGING OPERATIONS IN ACCORDANCE WITH ITEM 564.05010011 - REMOVE, STORE, AND REINSTALL STRUCTURAL STEEL.
 - EXCAVATE AREAS ADJACENT TO BRIDGE STRUCTURES WITH CARE.
 - FOR WEST DREDGING ELEVATIONS, SEE DWG. NO. C-3, FOR EAST DREDGING ELEVATIONS, SEE DWG. NO. C-4.
 - DREDGING IS SHOWN FOR LIMITS ONLY. DREDGING LIMITS ARE APPROXIMATE. FOR DREDGING OPERATIONS, DETAILS AND SPECIFICATIONS, SEE RTA1 DESIGN PACKAGE (BY OTHERS).
 - PRIOR TO DREDGING, TEST PIT(S) SHALL BE PERFORMED AT THE EXISTING STONE BULKHEADS TO DETERMINE THE BOTTOM OF FOOTING ELEVATION AND CONFIGURATION. DREDGING ELEVATIONS ADJACENT TO THE STONE BULKHEAD SHALL BE ADJUSTED, IF NECESSARY, BASED ON THE RESULTS OF THE TEST PITS, AS DETERMINED BY THE ENGINEER. TEST PITS SHALL BE IN ACCORDANCE WITH ITEM 206.05.

LEGEND:

	- DREDGE TO EL. -4.00
	- DREDGE TO EL. -10.00

DREDGING PLAN

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CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO.	
CONTRACT NO.	CD NO.

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
CARROLL STREET BRIDGE
BOROUGH OF BROOKLYN B.I.N. 2-24026-0

DREDGING PLAN

DWG. NO. C-2	SCALE 1" = 20'-0"	DATE FEB 2020	SHEET NO. 7
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PREPARED BY:
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DESIGNER P. TAGGART CHECKER J. STERN

0 1 2 3 4

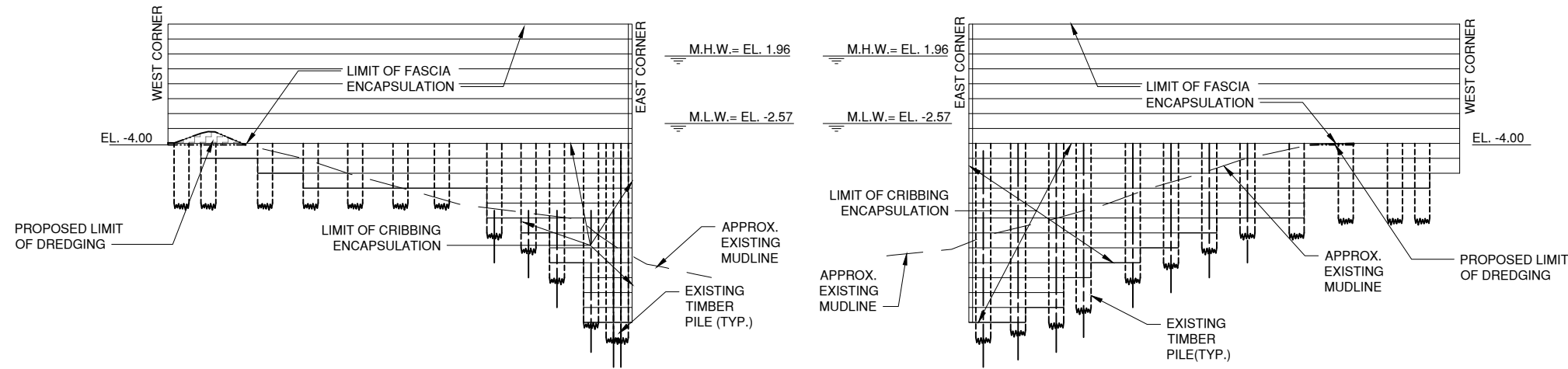
ORIGINAL SIZE IN INCHES

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	SHEET NO.	TOTAL SHEETS
	8	26

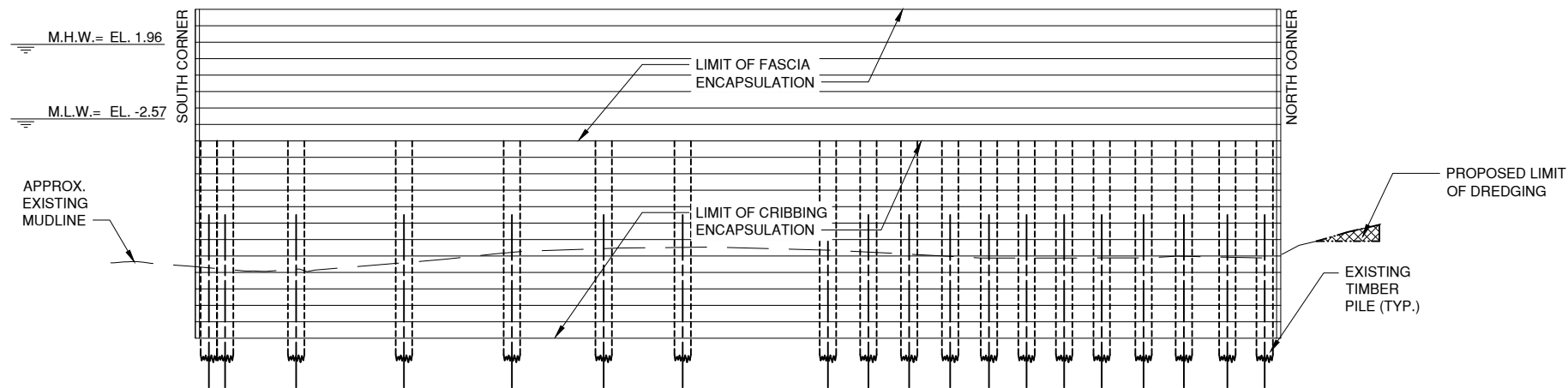
NOTES:

- FOR DREDGING PLAN, SEE DWG. NO. C-2.
- DREDGING IS SHOWN FOR LIMITS ONLY. FOR DREDGING OPERATIONS, DETAILS AND SPECIFICATIONS, SEE REMEDIATION TARGET AREA (RTA) 1 DESIGN PACKAGE (BY OTHERS).





WEST ABUTMENT - LOOKING NORTH

WEST ABUTMENT - LOOKING SOUTH



WEST ABUTMENT - LOOKING WEST

LEGEND:

-  - DREDGE TO EL. -4.00
-  - DREDGE TO EL. -10.00

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DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

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NYC P.I.N. NO.	
CONTRACT NO.	CD NO.

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
CARROLL STREET BRIDGE
BOROUGH OF BROOKLYN B.I.N. 2-24026-0

WEST ABUTMENT ELEVATIONS

DWG. NO. C-3	SCALE 1' = 10'	DATE FEB 2020	SHEET NO. 8
-----------------	-------------------	------------------	----------------

PREPARED BY: GREENMAN-PEDERSEN, INC. ALTERED BY:

NOT FOR CONSTRUCTION

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325 West Main Street, Babylon, NY 11702
Tel: (631) 587-5060 Fax: (631) 422-3479

PREPARED BY:
IN CHARGE J. STERN DRAFTER P. TAGGART
DESIGNER P. TAGGART CHECKER J. APRILE

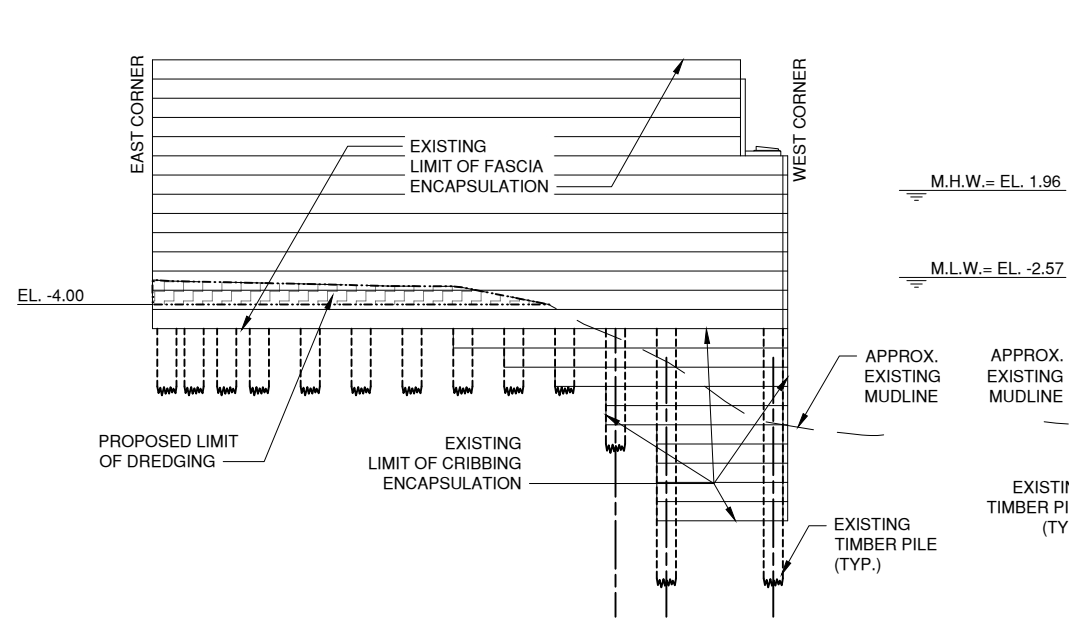


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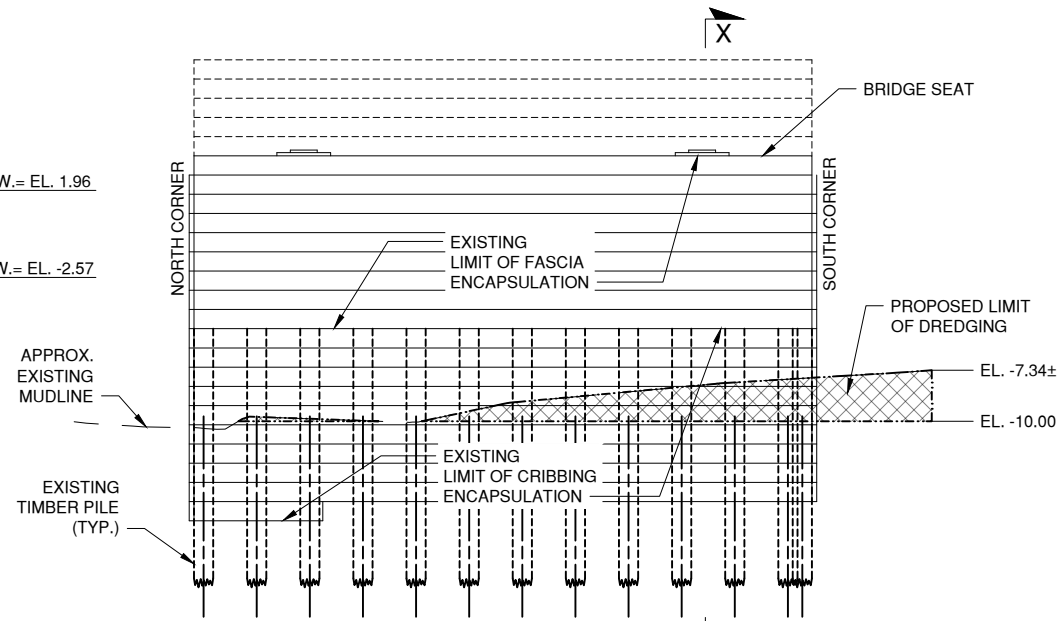
	SHEET NO.	TOTAL SHEETS
	9	26

NOTES:

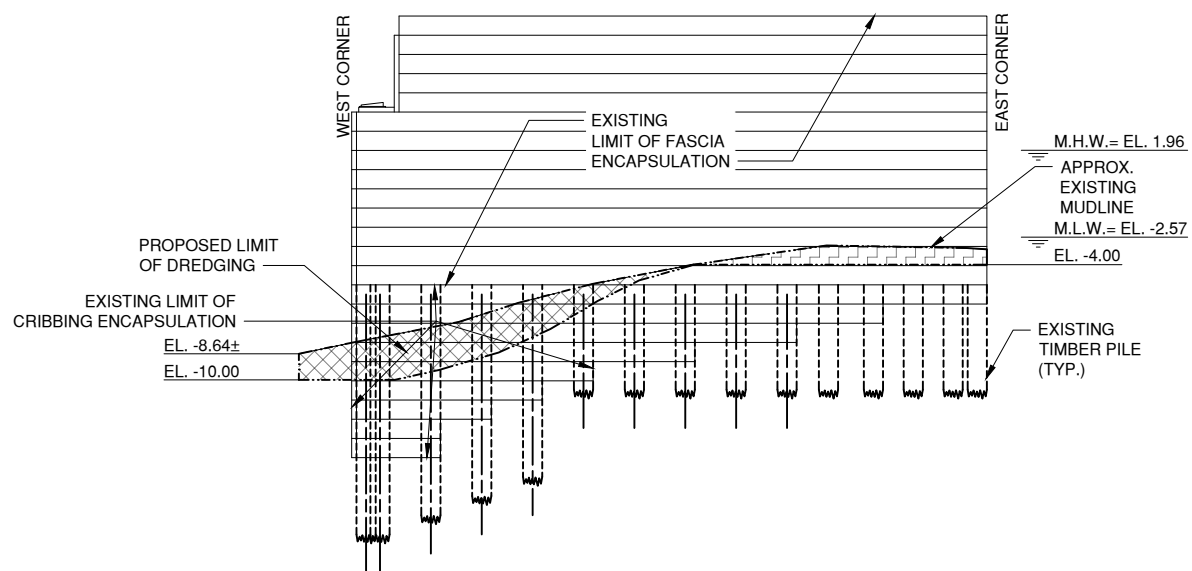
- FOR DREDGING PLAN, SEE DWG. NO. C-2.
- DREDGING IS SHOWN FOR LIMITS ONLY. FOR DREDGING OPERATIONS, DETAILS AND SPECIFICATIONS, SEE RTA1 DESIGN PACKAGE (BY OTHERS).



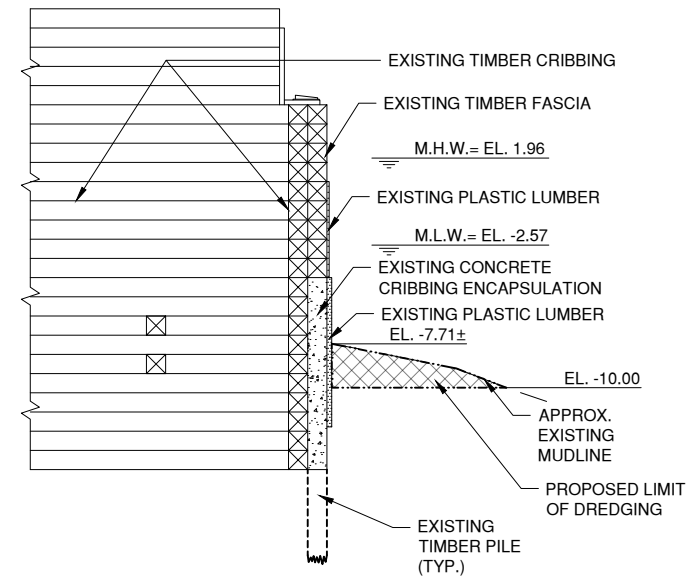
EAST ABUTMENT - LOOKING SOUTH



EAST ABUTMENT - LOOKING EAST



EAST ABUTMENT - LOOKING NORTH



SECTION X-X

LEGEND:

- DREDGE TO EL. -4.00
- DREDGE TO EL. -10.00

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DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO.	
CONTRACT NO.	CD NO.

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
CARROLL STREET BRIDGE
BOROUGH OF BROOKLYN B.I.N. 2-24026-0

EAST ABUTMENT ELEVATIONS AND SECTION

DWG. NO. C-4	SCALE 1" = 10'-0"	DATE FEB 2020	SHEET NO. 9
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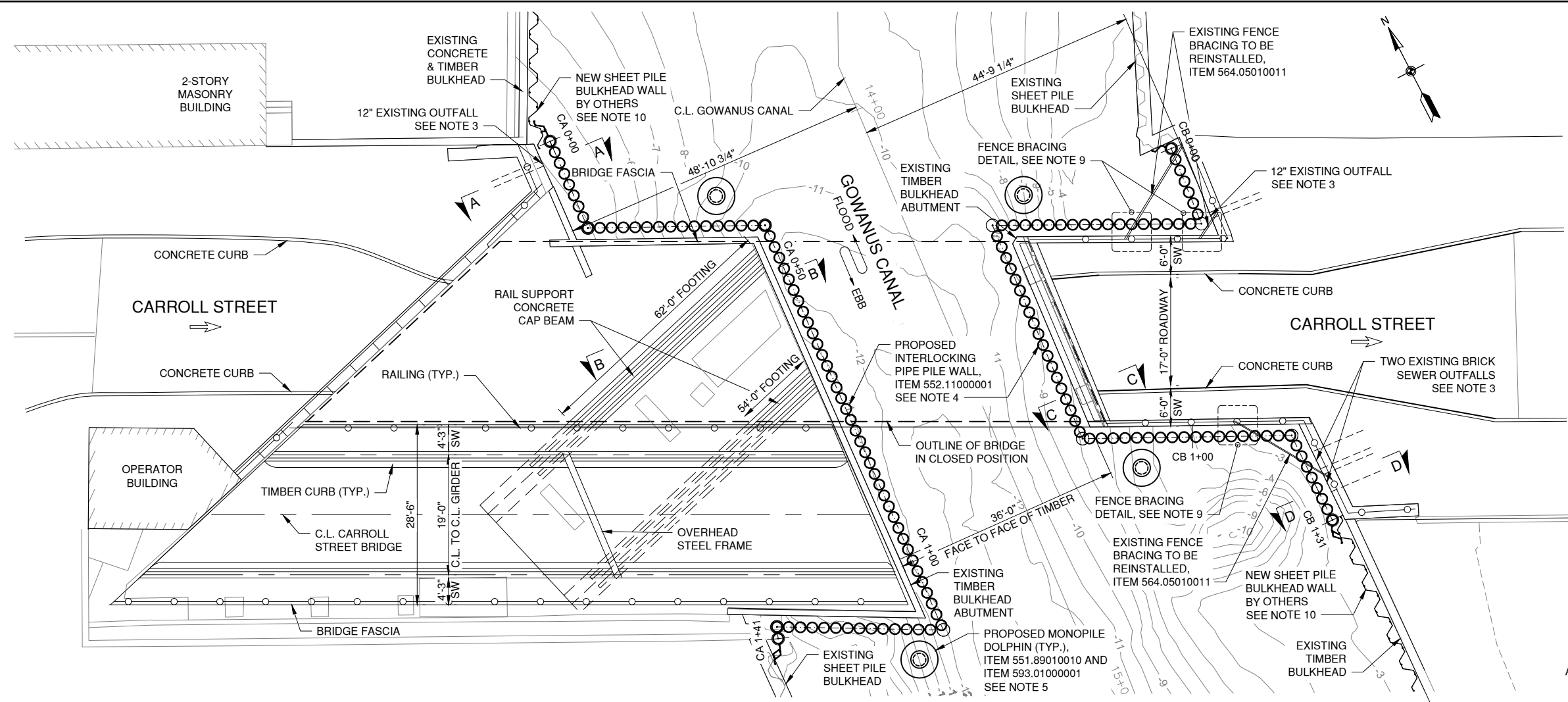
GPI Greenman-Pedersen, Inc.
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325 West Main Street, Babylon, NY 11702
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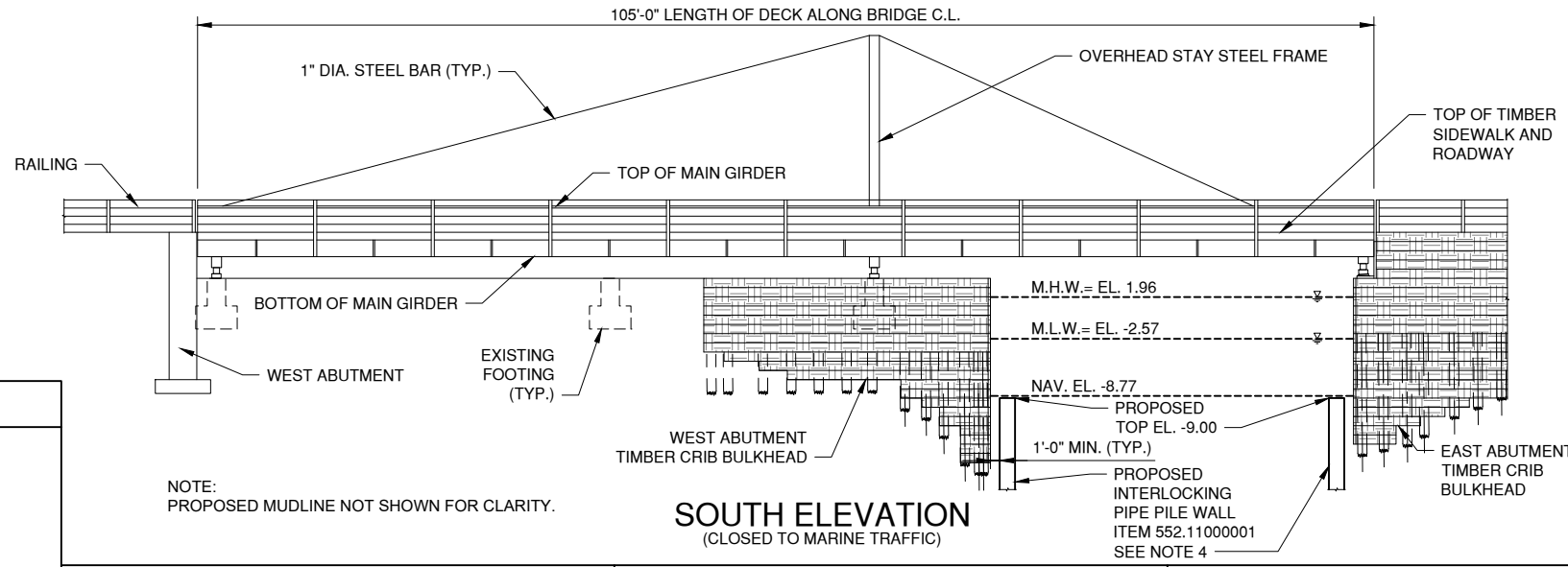
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SHEET NO.	TOTAL SHEETS
10	26



- NOTES:**
- ALL ELEVATIONS AND LENGTHS SHOWN ARE APPROXIMATE BASED ON AS-BUILT AND SURVEY INFORMATION. ELEVATIONS AND LENGTHS SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD.
 - FOR SECTIONS A-A, B-B, C-C AND D-D, SEE DWG. NO. C-7.
 - FOR EXISTING CONDITIONS PLAN, SEE DWG. NO. C-1.
 - FOR LOCATION AND DETAILS OF INTERLOCKING PIPE PILE WALL, SEE DWG. NO. C-6.
 - FOR MONOPILE DOLPHIN DETAILS & LOCATIONS, SEE DWG. NO F-1.
 - ALL ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED.
 - FOR WORK ZONE TRAFFIC CONTROL, SEE DWG. NO. WZTC-1 THROUGH WZTC-5.
 - FOR SEDIMENT CONTROL AND WASTE MANAGEMENT DETAILS, REFER TO RTA1 DESIGN PACKAGE (BY OTHERS).
 - FOR FENCE BRACING DETAIL, SEE DWG. NO. S-1.
 - NEW BULKHEAD WALL BY OTHERS. WALL LOCATIONS ARE APPROXIMATE AND BASED ON PLANS OBTAINED FROM LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC. DEC. 2019.

PROPOSED GENERAL PLAN
(OPEN TO MARINE TRAFFIC)



SOUTH ELEVATION
(CLOSED TO MARINE TRAFFIC)

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CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

NYS P.I.N. NO. _____ FED. AID PROJ. NO. _____
 NYC P.I.N. NO. _____
 CONTRACT NO. _____ CD NO. _____

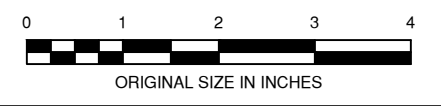
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 CARROLL STREET BRIDGE
 BOROUGH OF BROOKLYN B.I.N. 2-24026-0

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 DESIGNER P. TAGGART CHECKER J. STERN

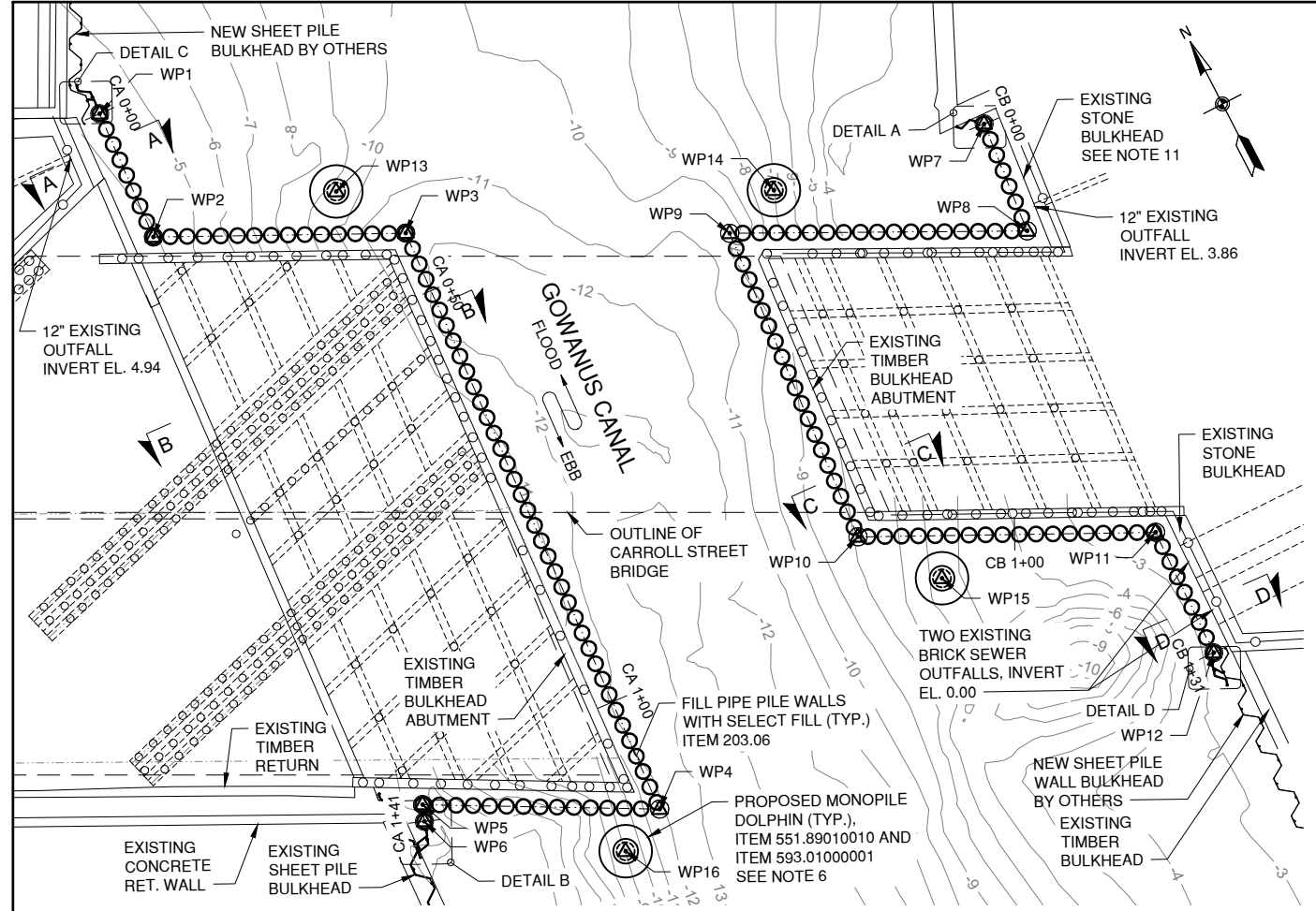


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

PROPOSED GENERAL PLAN AND ELEVATION

DWG. NO. C-5	SCALE 1" = 20'-0"	DATE FEB 2020	SHEET NO. 10
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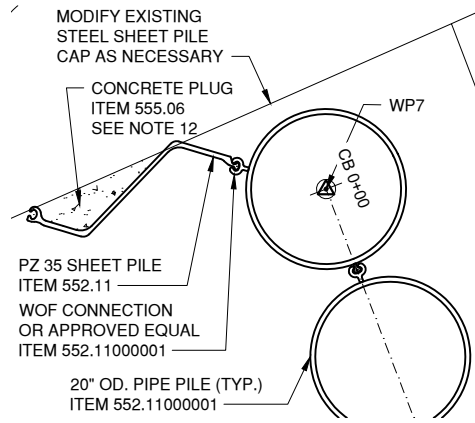
SHEET NO.	TOTAL SHEETS
11	26



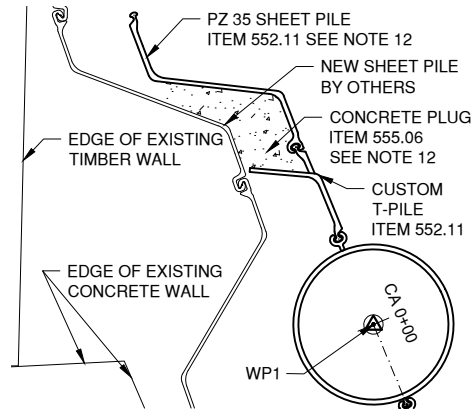
PIPE PILE WALL LAYOUT PLAN
SCALE: 1" = 20'

WALL STATIONING	LOCATION	PILE NO.	MIN. SECTION MODULUS (IN3)	SECTION	TOP OF PILE EL. (FT.)	MIN. TIP EL. (FT.)	PILE LENGTH (FT.)	NO. PILES
CA 0+00 TO CA 0+17	NW CORNER	PP001 - PP010	95.56	O-PILE 1771 20" 0.625"	18.00	-37.00	55.00	10
CA 0+17 TO CA 0+41	NW CORNER	PP011 - PP023	96.56	O-PILE 1771 20" 0.625"	9.00	-37.00	46.00	13
CA 0+41 TO CA 1+10	WEST ABUT.	PP024 - PP061	96.56	O-PILE 1771 20" 0.625"	9.00	-37.00	46.00	38
CA 1+10 TO CA 1+41	SW CORNER	PP062 - PP076	96.56	O-PILE 1771 20" 0.625"	9.00	-37.00	46.00	15
CB 0+00 TO CB 0+46	NE CORNER	PP077 - PP100	96.56	O-PILE 1771 20" 0.625"	18.00	-37.00	55.00	24
CB 0+46 TO CB 0+83	EAST ABUT.	PP101 - PP120	96.56	O-PILE 1771 20" 0.625"	14.00	-37.00	51.00	20
CB 0+83 TO CB 1+31	SE CORNER	PP121 - PP145	95.56	O-PILE 1771 20" 0.625"	18.00	-37.00	55.00	25

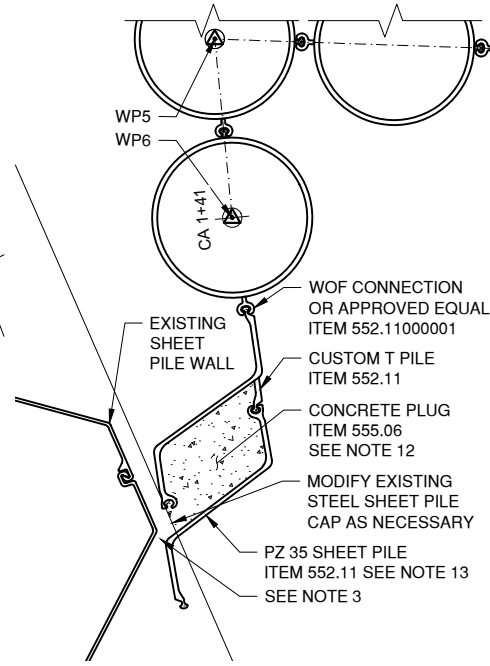
PIPE PILE SCHEDULE



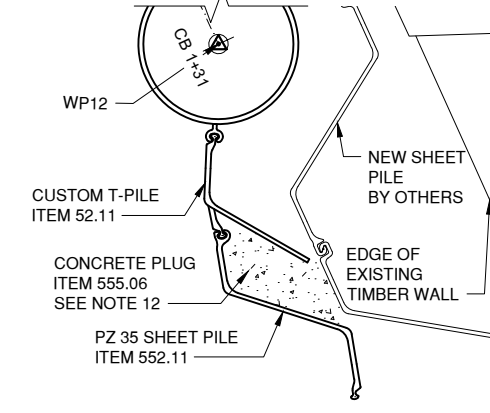
DETAIL A
SCALE: 1/2" = 1'-0"



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



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



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

POINT ID	NORTHING	EASTING	STATION
WP1	672425.674	633761.255	CA 0+00
WP2	672410.745	633760.295	CA 0+15
WP3	672398.278	633785.422	CA 0+43
WP4	672328.393	633781.175	CA 1+13
WP5	672340.908	633757.963	CA 1+39
WP6	672339.160	633757.298	CA 1+41
WP7	672379.617	633848.173	CB 0+00
WP8	672366.841	633846.964	CB 0+11
WP9	672381.766	633817.436	CB 0+44
WP10	672345.212	633814.654	CB 0+81
WP11	672330.500	633844.298	CB 1+14
WP12	672315.637	633843.912	CB 1+28
WP13	672405.936	633780.675	N/A
WP14	672383.767	633824.007	N/A
WP15	672336.832	633820.853	N/A
WP16	672325.962	633775.675	N/A

PIPE PILE ALIGNMENT CONTROL DATA

- CONCRETE PLUG AND ASSOCIATED SHEET PILE SHALL BE PLACED AFTER PHASE III DREDGING. FOR DREDGING LIMITS, SEE RTA1 DESIGN PACKAGE (BY OTHERS).
- ALL CUSTOM T PILE AND PZ SHEET PILES SHALL BE INSTALLED WITH A TIP ELEVATION OF -30.0'.

NOTE: ADJACENT PROPERTY BULKHEAD WALL LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

LEGEND:
△ - WORKING POINT



NOTES:

- CONTRACTOR SHALL PERFORM PHASE I DREDGING OPERATIONS IN ACCORDANCE WITH THE RTA1 DESIGN PACKAGE (BY OTHERS) PRIOR TO INSTALLATION OF PIPE PILE WALLS. SEE DRAWING NO. C-2 FOR DREDGING PLAN.
- CONTRACTOR SHALL INSTALL PIPE PILE WALLS USING THE DOWN THE HOLE DRILLING METHOD WITH AIR CONTROL IN ACCORDANCE WITH ITEM 552.11000001.
- PLACE CONCRETE FORMS BETWEEN EXISTING SHEET PILE WALL AND PROPOSED PZ SHEET PILE, ITEM 555.06 CONCRETE FOR STRUCTURES, CLASS G (DEPOSITED UNDER WATER).
- FOR SECTIONS A-A, B-B, C-C AND D-D, SEE DWG. NO. C-7.
- PIPE PILES LOCATED ADJACENT TO EXISTING OUTFALLS SHALL BE CUT IMMEDIATELY AFTER INSTALLATION OF PILE, ITEM 552.11000001.
- FOR MONOPILE DOLPHIN DETAILS, SEE DWG. NO. F-1.
- CONTRACTOR SHALL PERFORM CLEARING AND GRUBBING OPERATIONS PRIOR TO INSTALLATION OF PIPE PILE WALLS IN ACCORDANCE WITH ITEM 201.06.
- FOR PROPOSED GENERAL PLAN, SEE DWG. NO. C-5.
- INSTALL SEEPAGE PLUG TO PREVENT GROUND WATER MOVEMENT AND FILL PIPE PILES WITH SELECT FILL, ITEM 203.06. FOR SEEPAGE PLUG DETAILS, SEE DWG. NO. S-1.
- WHERE VERTICAL SPACE BETWEEN THE PIPE PILE WALL AND EXISTING STRUCTURE IS GREATER THAN 1'-6" FROM EXISTING MUDLINE TO TOP OF PILE, PLACE 1'-0" OF AQUABLOK 3070SW FOLLOWED BY 6" OF CEMENT GROUT, ITEM 552.11000001. SEE CEMENT GROUTING DETAIL ON DWG. NO. S-1.
- EXISTING STONE BULKHEADS SHALL BE REPOINTED PRIOR TO THE INSTALLATION OF THE PIPE PILE WALLS IN ACCORDANCE WITH ITEM 560.09 TUCK POINTING.

100% SUBMISSION

**CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES**

NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO.	
CONTRACT NO.	CD NO.

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
CARROLL STREET BRIDGE
BOROUGH OF BROOKLYN
B.I.N. 2-24026-0

PIPE PILE WALL LAYOUT PLAN

DWG. NO. C-6	SCALE AS NOTED	DATE FEB 2020	SHEET NO. 11
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PREPARED BY: GREENMAN-PEDERSEN, INC. ALTERED BY:

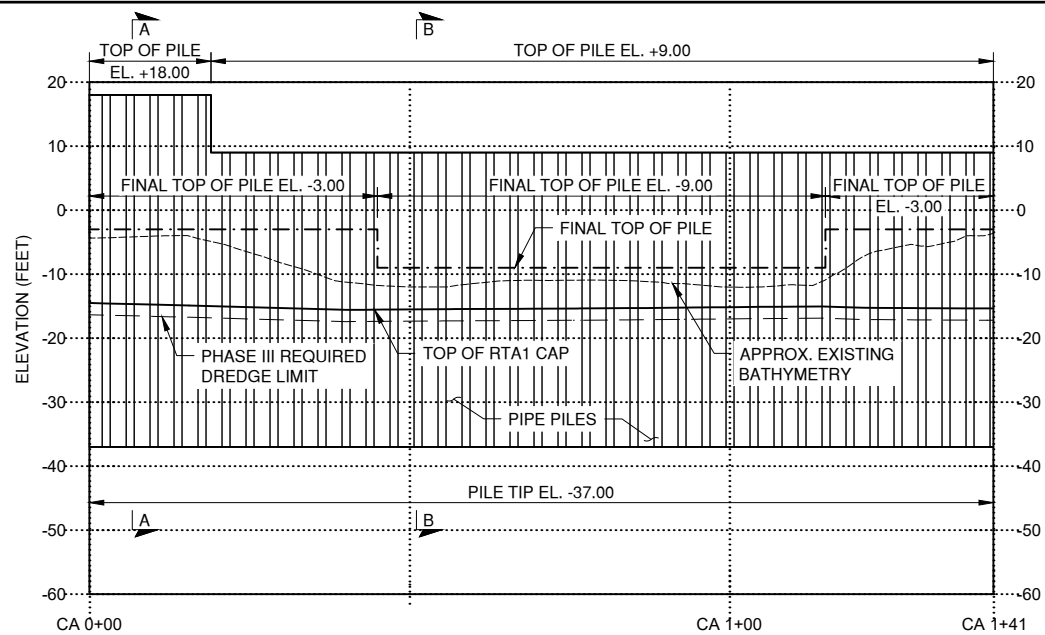
NOT FOR CONSTRUCTION

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services
325 West Main Street, Babylon, NY 11702
Tel: (631) 587-5060 Fax: (631) 422-3479

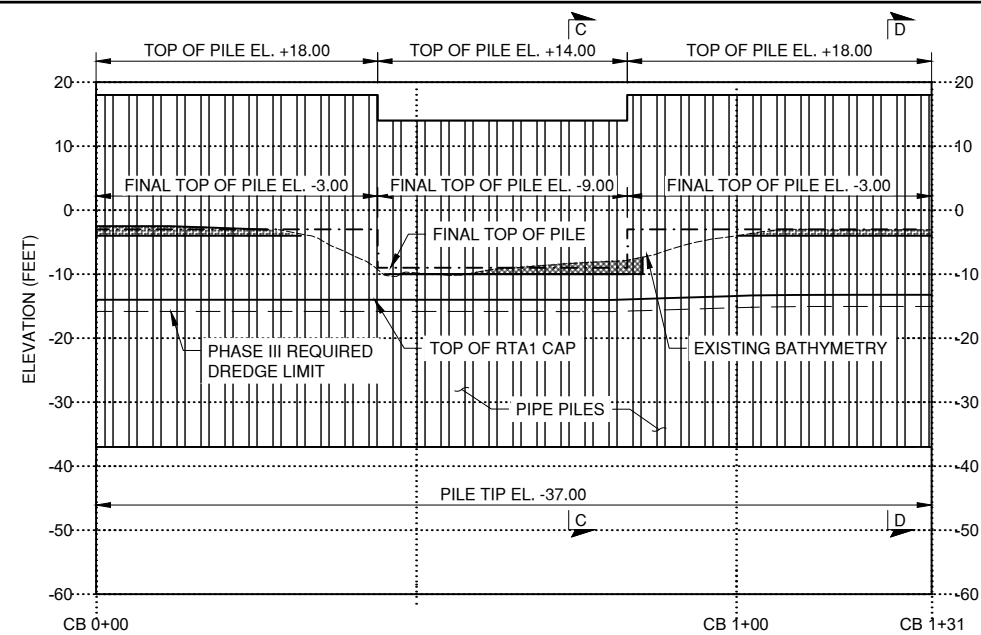
PREPARED BY:
IN CHARGE J. STERN DRAFTER P. TAGGART
DESIGNER P. TAGGART CHECKER J. STERN

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

SHEET NO.	TOTAL SHEETS
12	26

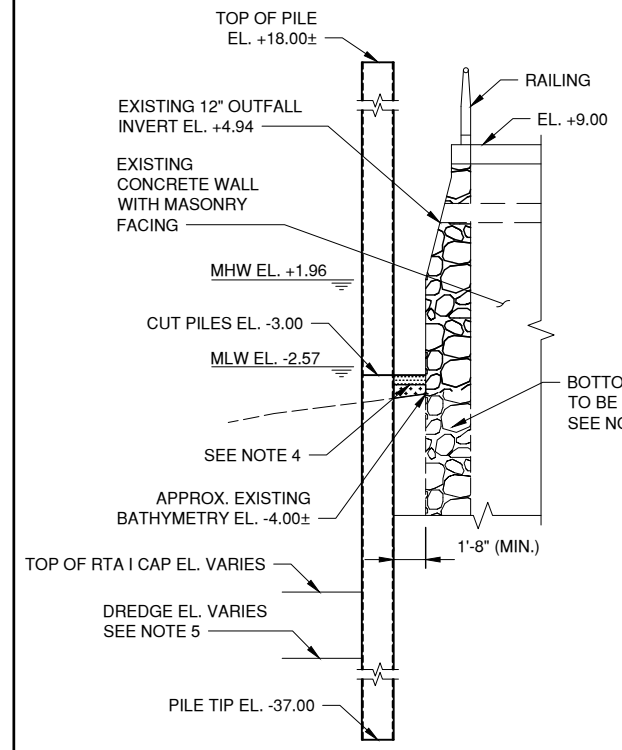


WEST PIPE PILE WALL PROFILE
SCALE: 1" = 30' (HORIZONTAL); 1" = 30' (VERTICAL)

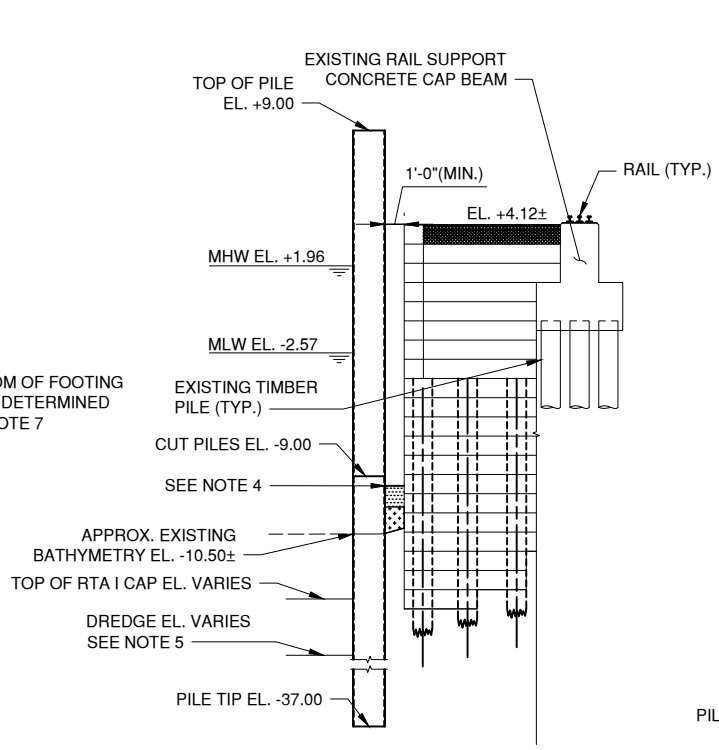


EAST PIPE PILE WALL PROFILE
SCALE: 1" = 30' (HORIZONTAL); 1" = 30' (VERTICAL)

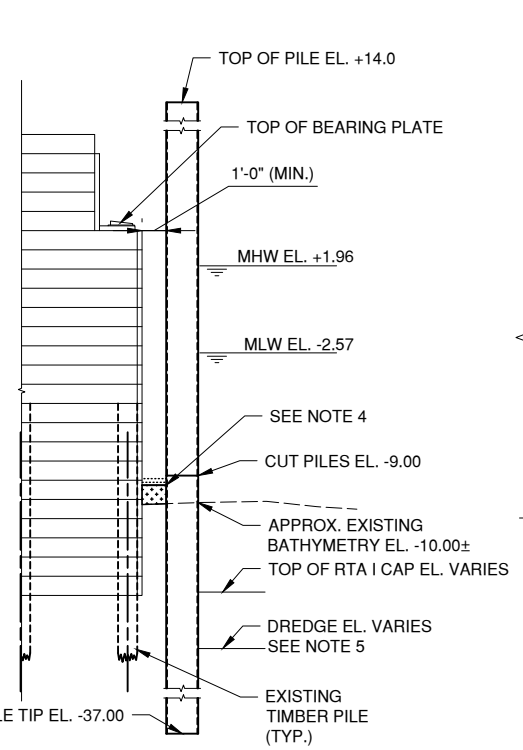
- NOTES:**
- CONTRACTOR TO FIELD VERIFY ALL EXISTING ELEVATIONS.
 - FOR SECTIONS A-A, B-B, C-C AND D-D, SEE DWG. NO. C-5.
 - ALL ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED.
 - WHERE VERTICAL SPACE BETWEEN THE PIPE PILE WALL AND EXISTING STRUCTURE IS GREATER THAN 1'-6" FROM EXISTING MUDLINE TO TOP OF PILE, PLACE 1'-0" OF AQUABLOK 3070SW FOLLOWED BY 6" OF CEMENT GROUT, ITEM 552.11000001. OTHERWISE, PLACE 6" OF AQUABLOK FOLLOWED BY 6" OF CONCRETE GROUT. SEE CEMENT GROUTING DETAIL ON DWG. NO. S-1.
 - FOR DREDGING CAPPING ELEVATIONS, SEE RTA1 DESIGN PACKAGE BY OTHERS.
 - PIPE PILES LOCATED ADJACENT TO EXISTING OUTFALLS SHALL BE CUT IMMEDIATELY AFTER INSTALLATION OF PILE, ITEM 552.11000001.
 - PRIOR TO DREDGING, TEST PIT(S) SHALL BE PERFORMED AT THE EXISTING STONE BULKHEADS TO DETERMINE THE BOTTOM OF FOOTING ELEVATION AND CONFIGURATION. DREDGING ELEVATIONS ADJACENT TO THE STONE BULKHEAD SHALL BE ADJUSTED, IF NECESSARY, BASED ON THE RESULTS OF THE TEST PITS, AS DETERMINED BY THE ENGINEER. TEST PITS SHALL BE IN ACCORDANCE WITH ITEM 206.05.



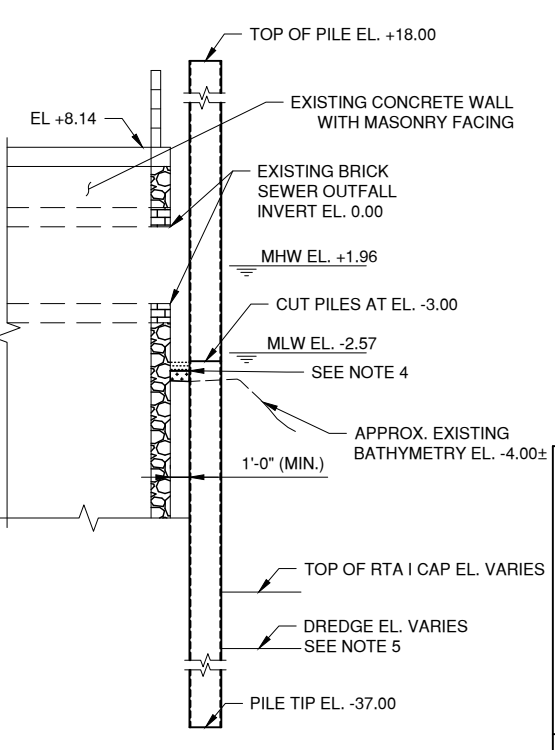
SECTION A-A
SCALE: 1" = 10'



SECTION B-B
SCALE: 1" = 10'



SECTION C-C
SCALE: 1" = 10'



SECTION D-D
SCALE: 1" = 10'

LEGEND:

- EXISTING BATHYMETRY
- - - FINAL SHEETING ELEVATION
- - - TOP OF RTA1 CAP
- PHASE III REQUIRED DREDGE ELEVATION
- [Pattern] - DREDGE TO EL. -4.0
- [Pattern] - DREDGE TO EL. -10.0
- [Pattern] - CEMENT GROUT, ITEM 552.11000001
- [Pattern] - AQUABLOK 3070SW

100% SUBMISSION

**CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES**

NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO.	
CONTRACT NO.	CD NO.

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
CARROLL STREET BRIDGE
BOROUGH OF BROOKLYN B.I.N. 2-24026-0

PIPE PILE WALL PROFILES AND SECTIONS

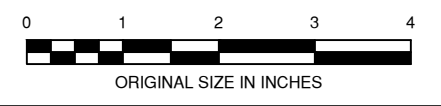
DWG. NO. C-7	SCALE AS NOTED	DATE FEB 2020	SHEET NO. 12
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PREPARED BY: GREENMAN-PEDERSEN, INC. ALTERED BY:

NOT FOR CONSTRUCTION

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services
325 West Main Street, Babylon, NY 11702
Tel: (631) 587-5060 Fax: (631) 422-3479

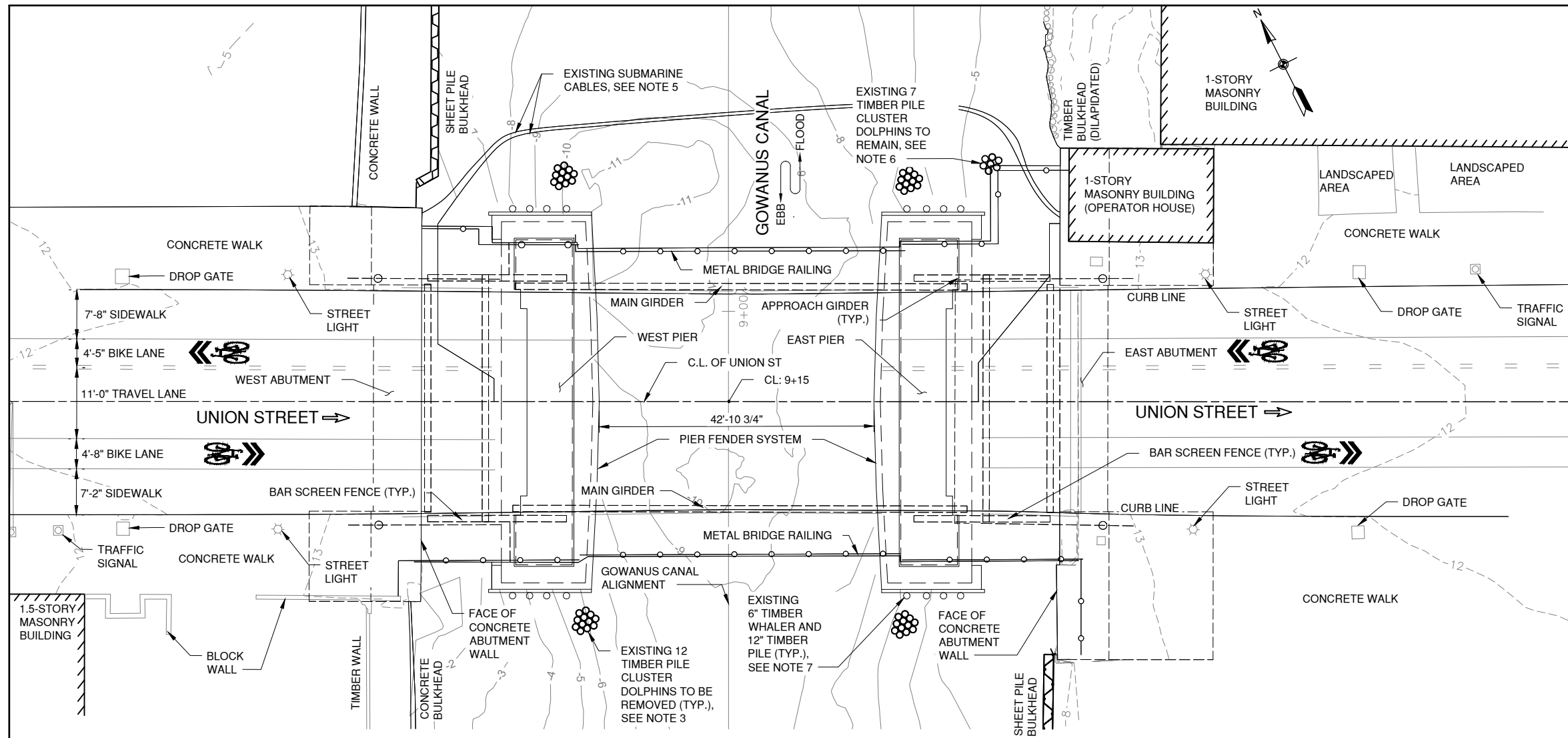
PREPARED BY:
IN CHARGE J. STERN DRAFTER P. TAGGART
DESIGNER P. TAGGART CHECKER J. STERN



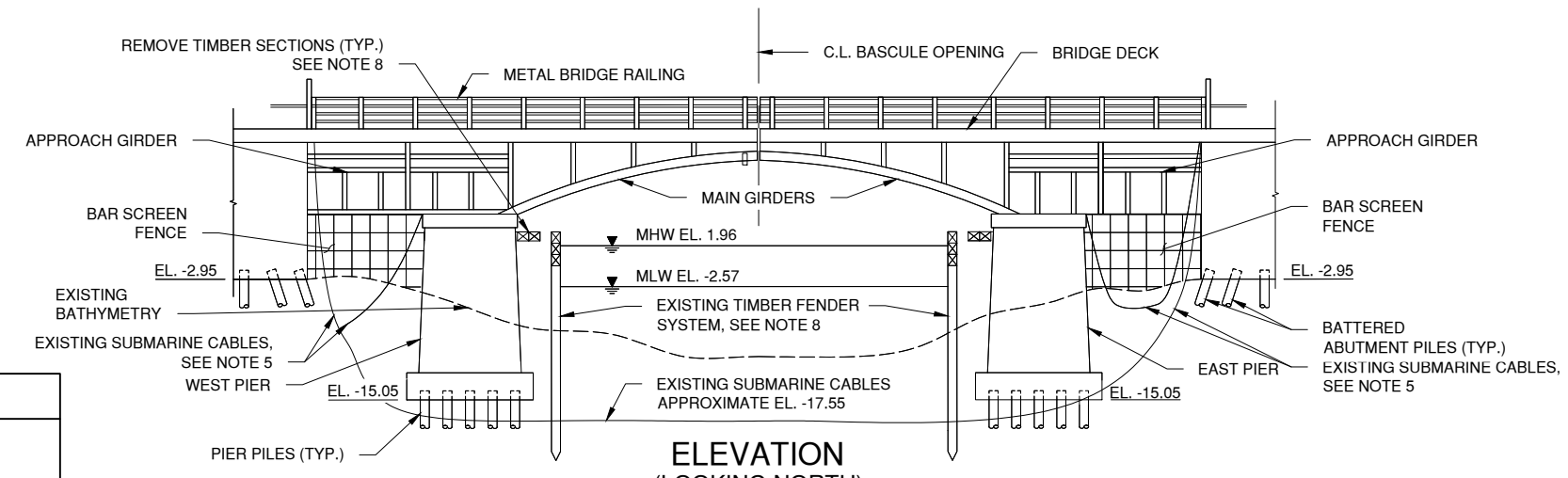
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SHEET NO.	TOTAL SHEETS
13	26

- NOTES:**
- CONTRACTOR SHALL CLEAR ALL DEBRIS FROM THE WORK AREA IN ACCORDANCE WITH ITEM 201.06 CLEARING AND GRUBBING.
 - PARAMETERS REFLECTED ON THIS DRAWING WERE DEVELOPED BASED ON SURVEY INFORMATION AND AS-BUILT DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
 - EXISTING TIMBER PILE CLUSTER DOLPHINS TO BE REMOVED, ITEM 202.83120010. SEE DWG. NO. F-1 FOR DETAILS.
 - FOR PROPOSED GENERAL PLAN, SEE DWG. NO. U-2.
 - FOR BRIDGE SUBMARINE CABLE PROTECTION AND RELOCATION, SEE DESIGN PACKAGE BY MODJESKI AND MASTERS, INC.
 - EXISTING 7 TIMBER PILE CLUSTER DOLPHIN IS CUT AT MEAN LOW WATER. CONTRACTOR TO VERIFY EXACT LOCATION PRIOR TO INSTALLATION OF PIPE PILE WALLS. THE CONTRACTOR'S ATTENTION IS BROUGHT TO THE LIKELIHOOD OF SIMILAR TIMBER PILE CLUSTERS LOCATED BELOW THE M.L.W. AT EACH CORNER OF THE BRIDGE.
 - EXISTING EXTERIOR FENDER TIMBER PILES AND WALERS ARE CUT BELOW MEAN LOW WATER.
 - TO MAINTAIN STABILITY OF THE FENDER DURING DREDGING OPERATIONS, REFER TO DWG. NO. U-5 AND U-6.



EXISTING CONDITIONS PLAN



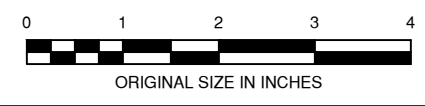
ELEVATION (LOOKING NORTH)

PREPARED BY: GREENMAN-PEDERSEN, INC. ALTERED BY:

NOT FOR CONSTRUCTION

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services
325 West Main Street, Babylon, NY 11702
Tel: (631) 587-5060 Fax: (631) 422-3479

PREPARED BY:
IN CHARGE J. STERN DRAFTER P. TAGGART
DESIGNER P. TAGGART CHECKER J. STERN



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CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

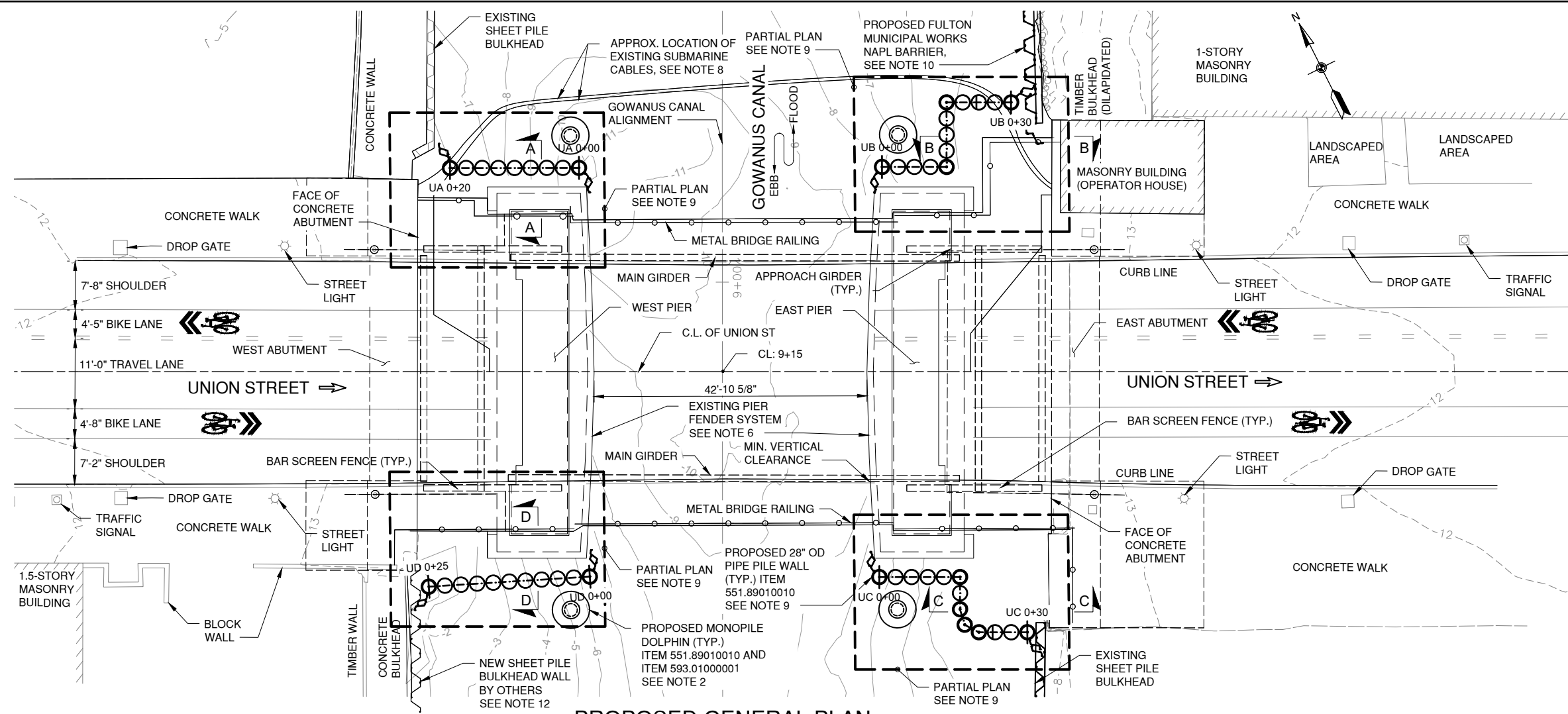
NYS P.I.N. NO. _____ FED. AID PROJ. NO. _____
NYC P.I.N. NO. _____
CONTRACT NO. _____ CD NO. _____

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
UNION STREET BRIDGE
BOROUGH OF BROOKLYN B.I.N. 2-24027-0

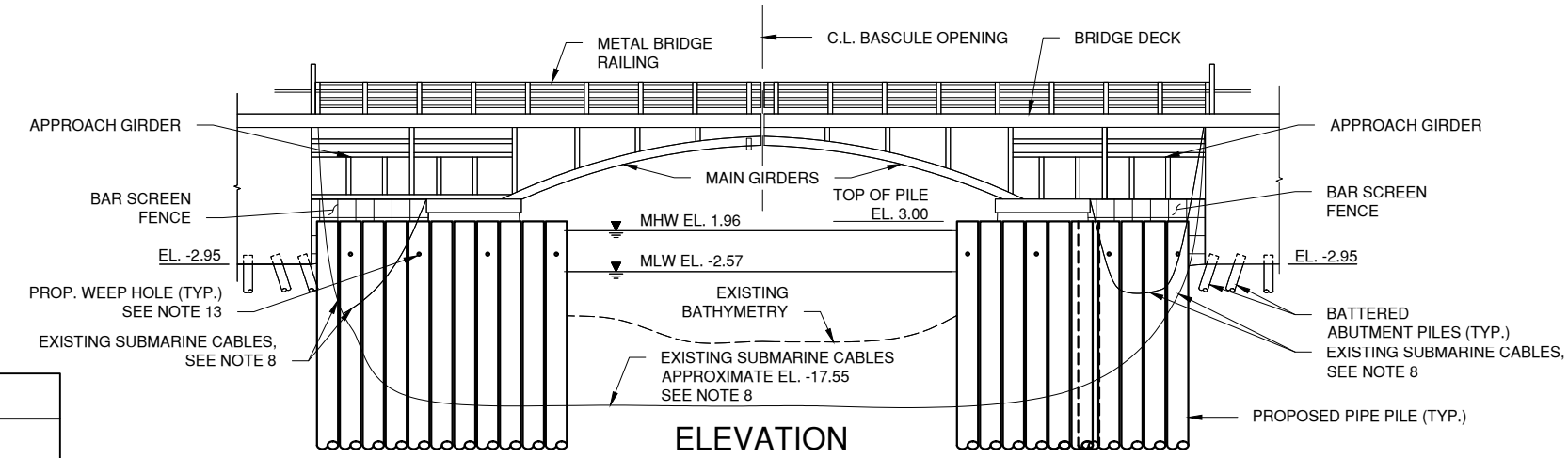
EXISTING CONDITIONS PLAN AND ELEVATION

DWG. NO. U-1	SCALE 1" = 20'	DATE FEB 2020	SHEET NO. 13
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SHEET NO.	TOTAL SHEETS
14	26



PROPOSED GENERAL PLAN



ELEVATION (LOOKING NORTH)

- NOTES:**
- FOR EXISTING CONDITIONS PLAN, SEE DWG. NO. U-1.
 - FOR MONOPILE DOLPHIN DETAILS & LOCATION, SEE DWG. NO. F-1.
 - FOR SECTIONS A-A, B-B, C-C AND D-D, SEE DWG. NO. U-4.
 - ALL ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED.
 - ALL ELEVATIONS AND LENGTHS SHOWN ARE APPROXIMATE BASED ON AS-BUILT AND SURVEY INFORMATION. ELEVATIONS AND LENGTHS SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD.
 - TO MAINTAIN STABILITY OF THE FENDER DURING DREDGING OPERATIONS, REFER TO DWG. NO. U-5 AND U-6.
 - FOR SEDIMENT CONTROL AND WASTE MANAGEMENT DETAILS, REFER TO RTA1 DESIGN PACKAGE BY OTHERS.
 - FOR BRIDGE SUBMARINE CABLE PROTECTION AND RELOCATION, SEE DESIGN PACKAGE BY MODJESKI AND MASTERS, INC.
 - FOR LOCATION AND DETAILS OF INTERLOCKING PIPE PILE WALL, ITEM 552.11000001, SEE DWG. NO. U-3.
 - FOR PROPOSED FULTON MUNICIPAL WORKS NAPL BARRIER, REFER TO PLANS BY GZA GEOENVIRONMENTAL NEW YORK.
 - MATERIAL LEFT BEHIND PROPOSED PIPE PILE WALLS BETWEEN THE PIERS AND ABUTMENTS SHALL BE CAPPED IN ACCORDANCE WITH THE RTA1 DESIGN PACKAGE (BY OTHERS).
 - NEW BULKHEAD WALL BY OTHERS. WALL LOCATIONS ARE APPROXIMATE AND BASED ON PLANS OBTAINED FROM LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC. DEC. 2019.
 - PROPOSED WEEP HOLES SHALL BE INSTALLED AT EVERY THIRD PILE AS SHOWN. FOR DETAIL, SEE DWG. NO. S-1.

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**CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES**

NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO.	
CONTRACT NO.	CD NO.

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
UNION STREET BRIDGE
BOROUGH OF BROOKLYN B.I.N. 2-24027-0

**PROPOSED GENERAL
PLAN AND ELEVATION**

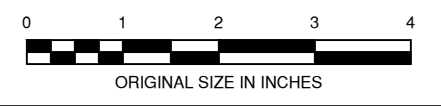
DWG. NO. U-2	SCALE 1" = 20'-0"	DATE FEB 2020	SHEET NO. 14
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PREPARED BY: GREENMAN-PEDERSEN, INC. ALTERED BY:

NOT FOR CONSTRUCTION

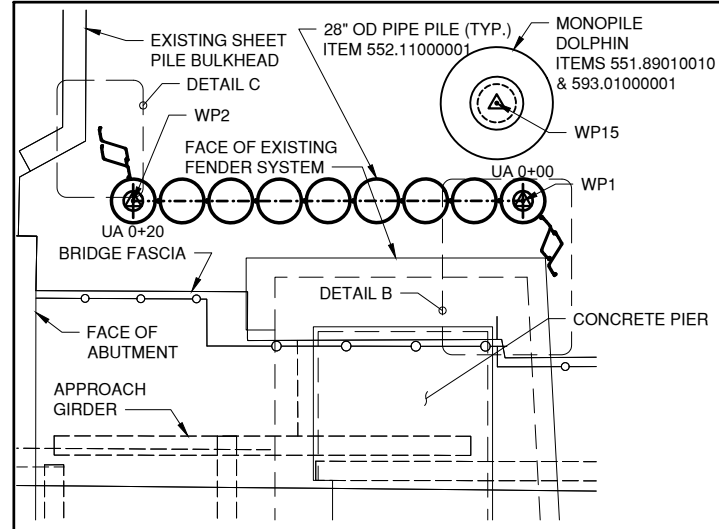
GPI Greenman-Pedersen, Inc.
Engineering and Construction Services
325 West Main Street, Babylon, NY 11702
Tel: (631) 587-5060 Fax: (631) 422-3479

PREPARED BY:
IN CHARGE J. STERN DRAFTER P. TAGGART
DESIGNER P. TAGGART CHECKER J. STERN



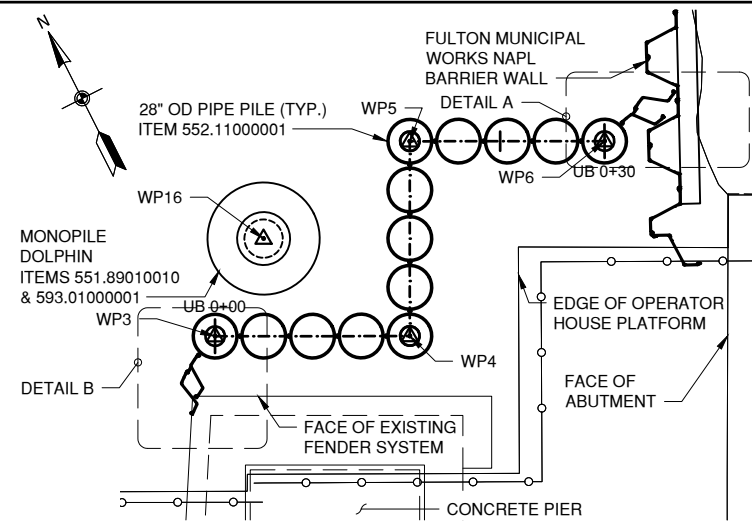
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SHEET NO.	15	TOTAL SHEETS	26
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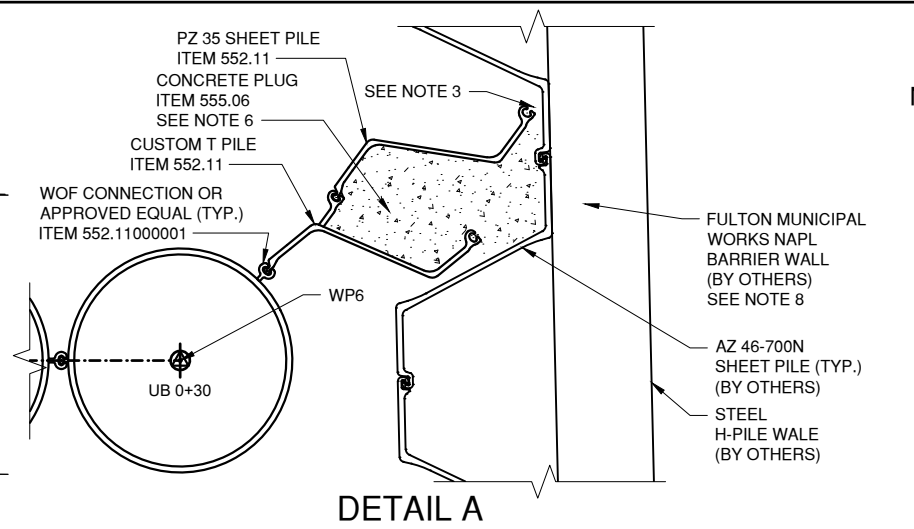
NORTHWEST PILE LAYOUT

SCALE: 1" = 10'



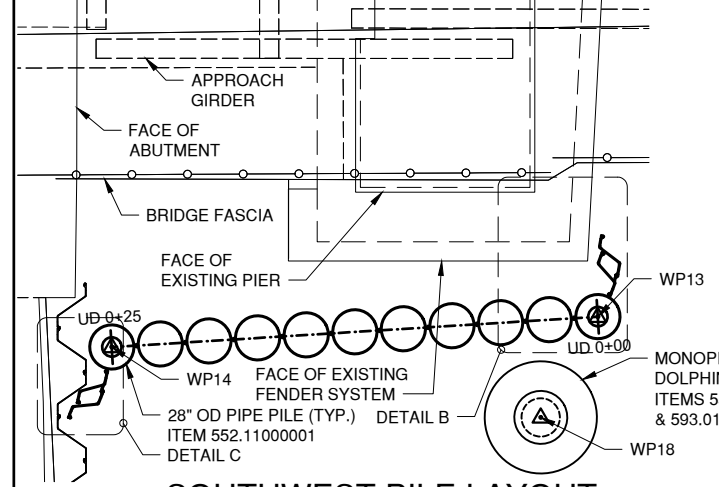
NORTHEAST PILE LAYOUT

SCALE: 1" = 10'



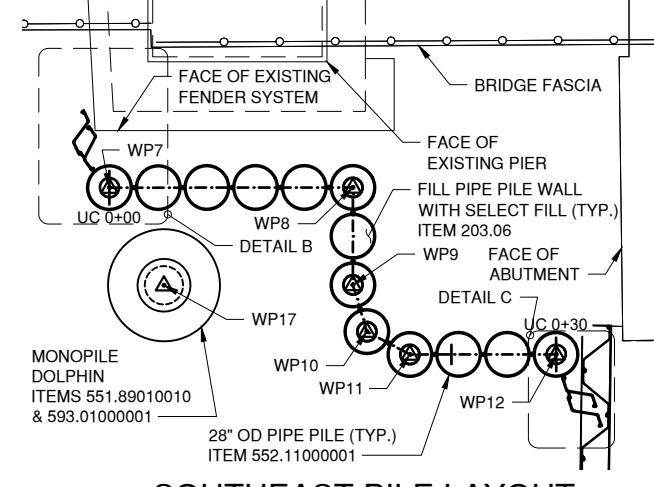
DETAIL A

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



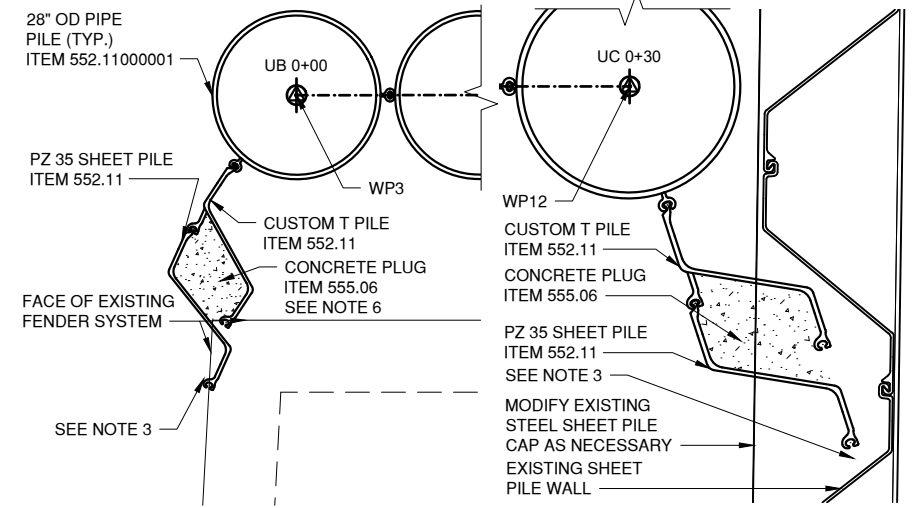
SOUTHWEST PILE LAYOUT

SCALE: 1" = 10'



SOUTHEAST PILE LAYOUT

SCALE: 1" = 10'



DETAIL B (NORTHEAST SHOWN, OTHERS SIMILAR)

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

DETAIL C (SOUTHEAST SHOWN, OTHERS SIMILAR)

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

NOTES:

- FOR PROPOSED GENERAL PLAN, SEE DWG. NO. U-2.
- CONTRACTOR SHALL INSTALL PIPE PILE WALLS USING THE DOWN THE HOLE DRILLING METHOD WITH AIR CONTROL IN ACCORDANCE WITH ITEM 552.11000001.
- PLACE CONCRETE FORMS BETWEEN EXISTING SHEET PILE WALL AND PROPOSED PZ SHEET PILE, ITEM 555.06 CONCRETE FOR STRUCTURES, CLASS G (DEPOSITED UNDER WATER).
- CONTRACTOR SHALL PERFORM CLEARING AND GRUBBING OPERATIONS PRIOR TO INSTALLATION OF PIPE PILE WALLS IN ACCORDANCE WITH ITEM 201.06.
- FILL PIPE PILES WITH SELECT FILL, ITEM 203.06 AND INSTALL SEEPAGE PLUG TO PREVENT GROUND WATER MOVEMENT. FOR SEEPAGE PLUG DETAILS, SEE DWG. NO. S-1.
- CONCRETE PLUG AND ASSOCIATED PZ SHEET PILE SHALL BE PLACED AFTER PHASE III DREDGING. FOR DREDGING LIMITS, SEE RTA1 DESIGN PACKAGE.
- ALL CUSTOM T PILE AND PZ SHEET PILES SHALL BE INSTALLED WITH A TIP ELEVATION OF -30.0'.
- FOR PROPOSED FULTON MUNICIPAL WORKS NAPL BARRIER, REFER TO PLANS BY GZA GEOENVIRONMENTAL NEW YORK.

WALL STATIONING	LOCATION	PILE NO.	MIN. SECTION MODULUS (IN3)	SECTION	TOP OF PILE EL. (FT.)	MIN. TIP EL. (FT.)	PILE LENGTH (FT.)	NO. PILES
UA 0+00 TO UA 0+20	NW CORNER	PP001-PP009	167.53	O-PILE 3105 28" 0.75"	3.00	-53.00	56.00	9
UB 0+00 TO UB 0+30	NE CORNER	PP010-PP022	167.53	O-PILE 3105 28" 0.75"	3.00	-55.00	58.00	13
UC 0+00 TO UC 0+32	SE CORNER	PP023-PP035	167.53	O-PILE 3105 28" 0.75"	3.00	-53.00	56.00	13
UD 0+00 TO UD 0+25	SW CORNER	PP036-PP048	167.53	O-PILE 3105 28" 0.75"	3.00	-54.00	57.00	11

PILE WALL SCHEDULE

POINT ID	NORTHING	EASTING	STATION
WP1	672881.306	634016.973	UA 0+00
WP2	672890.443	633998.852	UA 0+20
WP3	672859.960	634059.565	UB 0+00
WP4	672855.392	634068.625	UB 0+10
WP5	672864.453	634073.193	UB 0+20
WP6	672859.885	634082.254	UB 0+30
WP7	672802.578	634030.118	UC 0+00
WP8	672796.868	634041.443	UC 0+13
WP9	672792.338	634039.159	UC 0+18
WP10	672789.841	634038.709	UC 0+22
WP11	672787.769	634040.172	UC 0+26
WP12	672784.338	634046.979	UC 0+30
WP13	672823.164	633989.513	UD 0+00
WP14	672833.162	633966.204	UD 0+25
WP15	672886.458	634018.05	N/A
WP16	672863.359	634064.12	N/A
WP17	672796.761	634030.36	N/A
WP18	672819.824	633984.5	N/A

PIPE PILE ALIGNMENT CONTROL DATA

PREPARED BY: GREENMAN-PEDERSEN, INC. ALTERED BY:

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GPI Greenman-Pedersen, Inc.
Engineering and Construction Services
325 West Main Street, Babylon, NY 11702
Tel: (631) 587-5060 Fax: (631) 422-3479

PREPARED BY:
IN CHARGE J. STERN DRAFTER P. TAGGART
DESIGNER P. TAGGART CHECKER J. STERN

0 1 2 3 4
ORIGINAL SIZE IN INCHES

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100% SUBMISSION

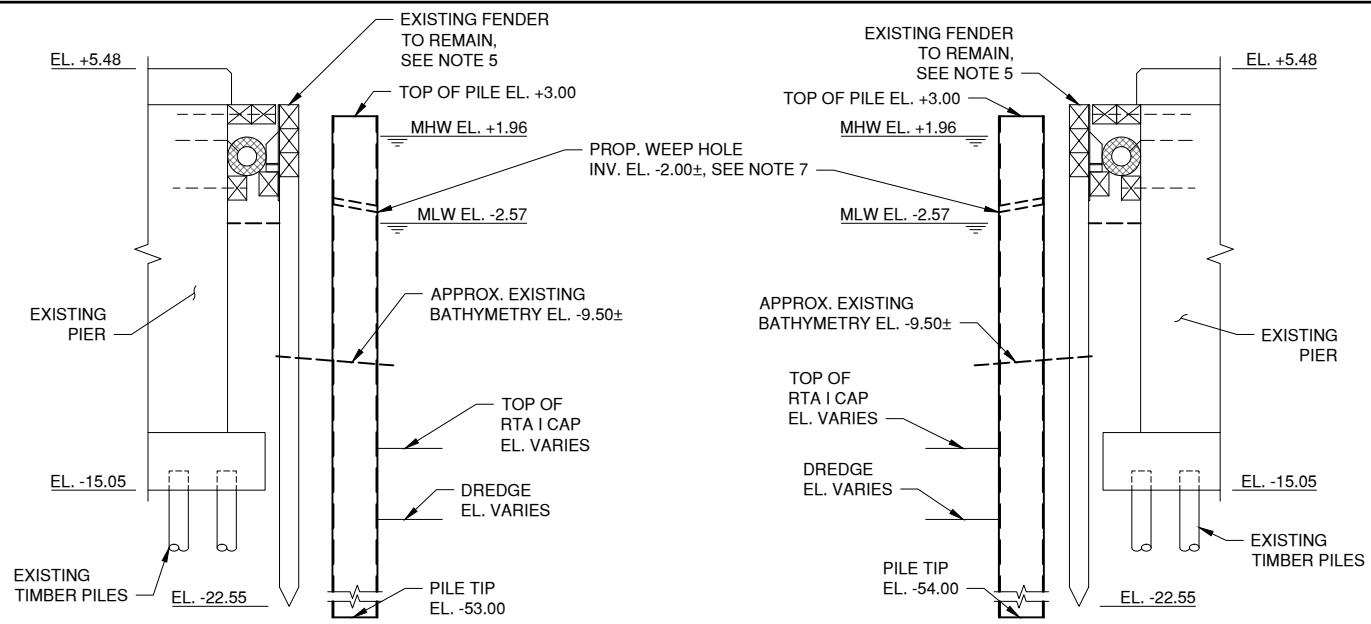
CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

NYS P.I.N. NO. _____ FED. AID PROJ. NO. _____
NYC P.I.N. NO. _____
CONTRACT NO. _____ CD NO. _____

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
UNION STREET BRIDGE
BOROUGH OF BROOKLYN B.I.N. 2-24027-0

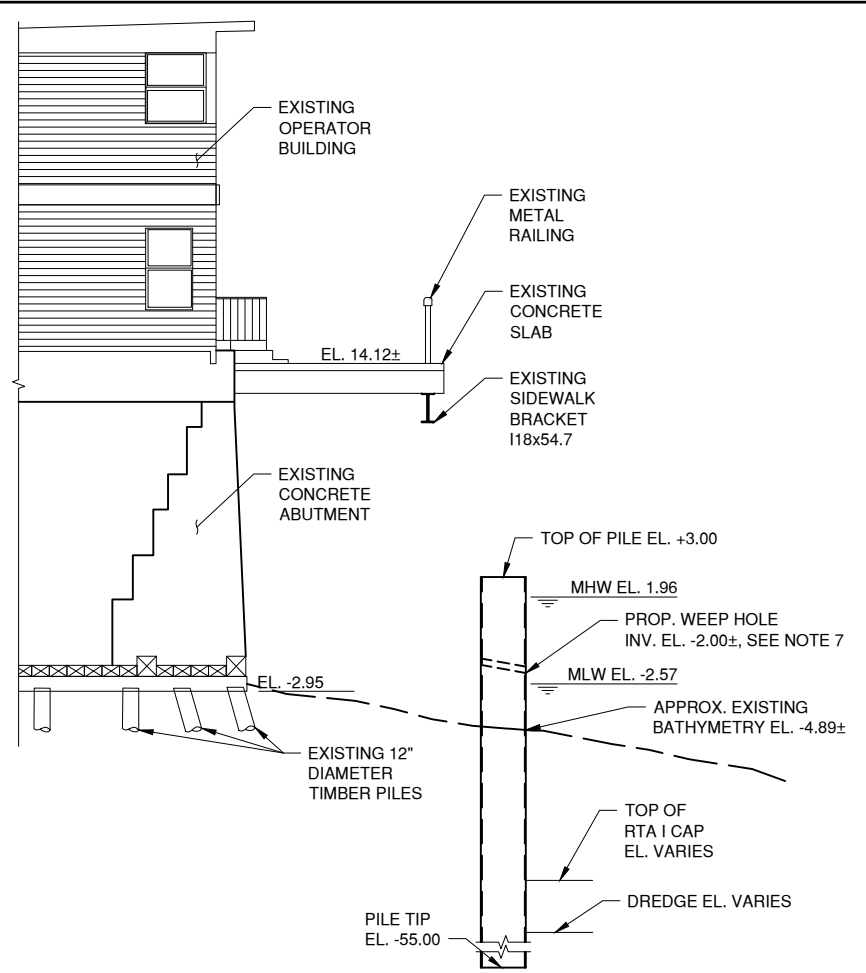
PIPE PILE WALL LAYOUT PLAN

DWG. NO. U-3	SCALE AS NOTED	DATE FEB 2020	SHEET NO. 15
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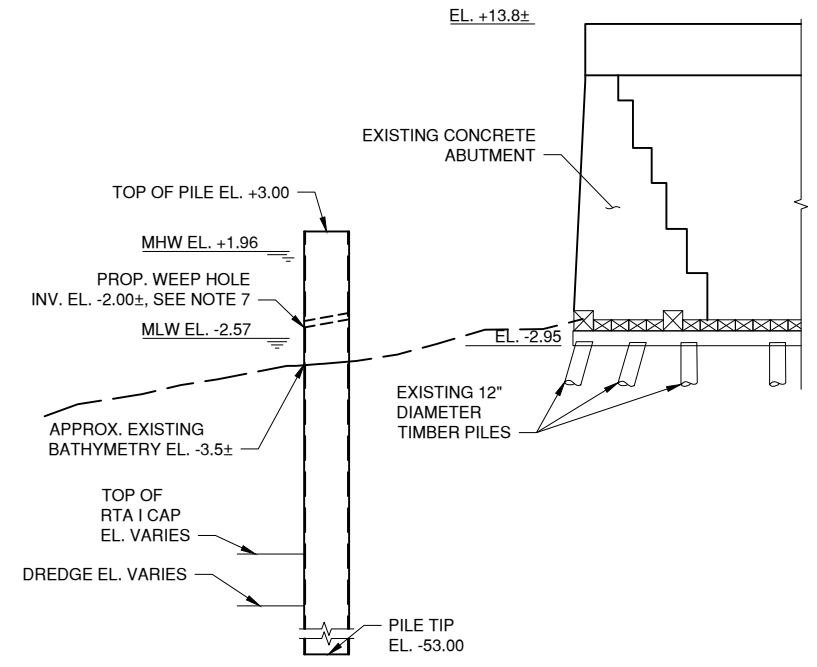


SECTION A-A
SCALE: 1" = 10'

SECTION D-D
SCALE: 1" = 10'



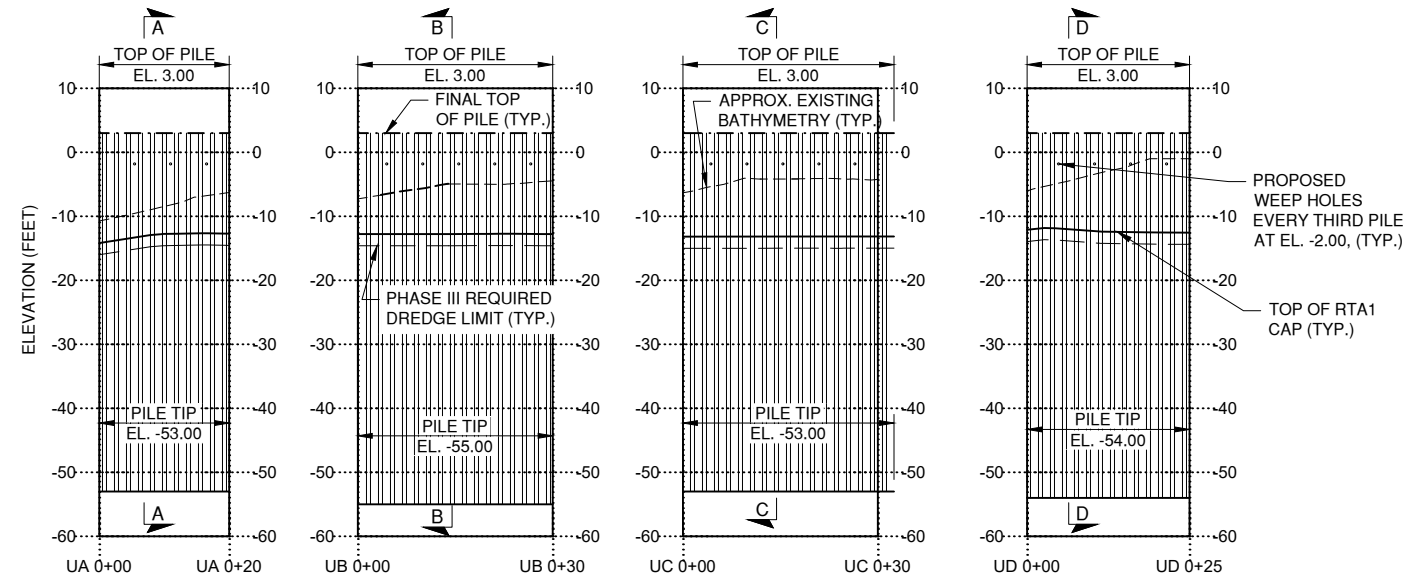
SECTION B-B
SCALE: 1" = 10'



SECTION C-C
SCALE: 1" = 10'

- NOTES:**
- CONTRACTOR TO FIELD VERIFY ALL EXISTING ELEVATIONS.
 - FOR SECTIONS A-A, B-B, C-C AND D-D, SEE DWG. NO. U-2.
 - ALL ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED.
 - FINAL DREDGE AND RTA1 CAP ELEVATIONS BY OTHERS.
 - TO MAINTAIN STABILITY OF THE FENDER DURING DREDGING OPERATIONS, REFER TO DWG. NO. U-5 AND U-6.
 - MATERIAL LEFT BEHIND PROPOSED PIPE PILE WALLS BETWEEN THE PIERS AND ABUTMENTS SHALL BE CAPPED IN ACCORDANCE WITH THE RTA1 DESIGN PACKAGE.
 - PROPOSED WEEP HOLE SHALL BE INSTALLED AT EVERY THIRD PILE AS SHOWN. FOR DETAIL, SEE DWG. NO. S-1.

- LEGEND:**
- EXISTING BATHYMETRY
 - - - - - FINAL SHEETING ELEVATION
 - TOP OF RTA1 CAP
 - - - - - PHASE III REQUIRED DREDGE ELEVATION



PROFILE OF PIPE PILE WALLS
SCALE: 1" = 30' (HORIZONTAL); 1" = 30' (VERTICAL)

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**CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES**

NYS P.I.N. NO. _____ FED. AID PROJ. NO. _____
 NYC P.I.N. NO. _____
 CONTRACT NO. _____ CD NO. _____

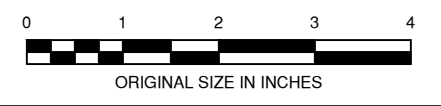
FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
 UNION STREET BRIDGE
 BOROUGH OF BROOKLYN B.I.N. 2-24027-0

PREPARED BY: GREENMAN-PEDERSEN, INC. ALTERED BY:

NOT FOR CONSTRUCTION

GPI Greenman-Pedersen, Inc.
 Engineering and Construction Services
 325 West Main Street, Babylon, NY 11702
 Tel: (631) 587-5060 Fax: (631) 422-3479

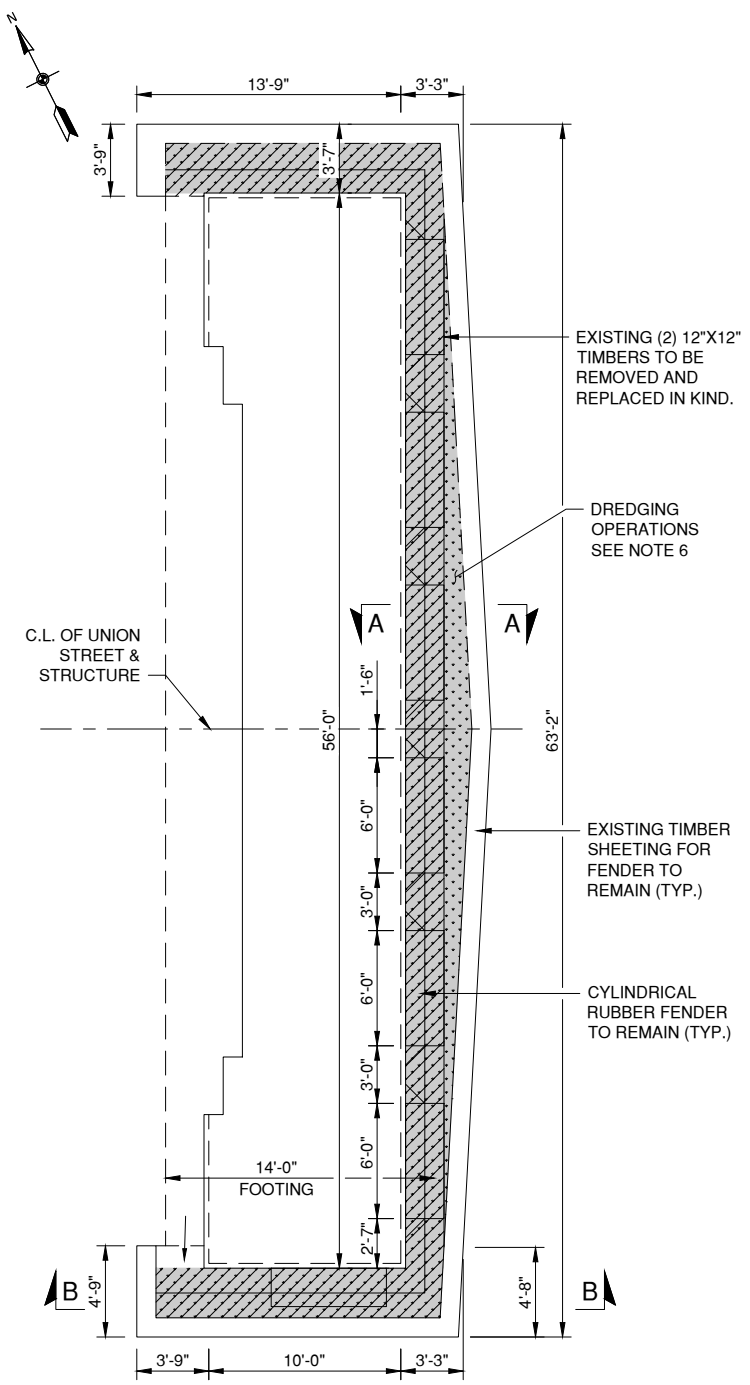
PREPARED BY:
 IN CHARGE J. STERN DRAFTER P. TAGGART
 DESIGNER P. TAGGART CHECKER J. STERN



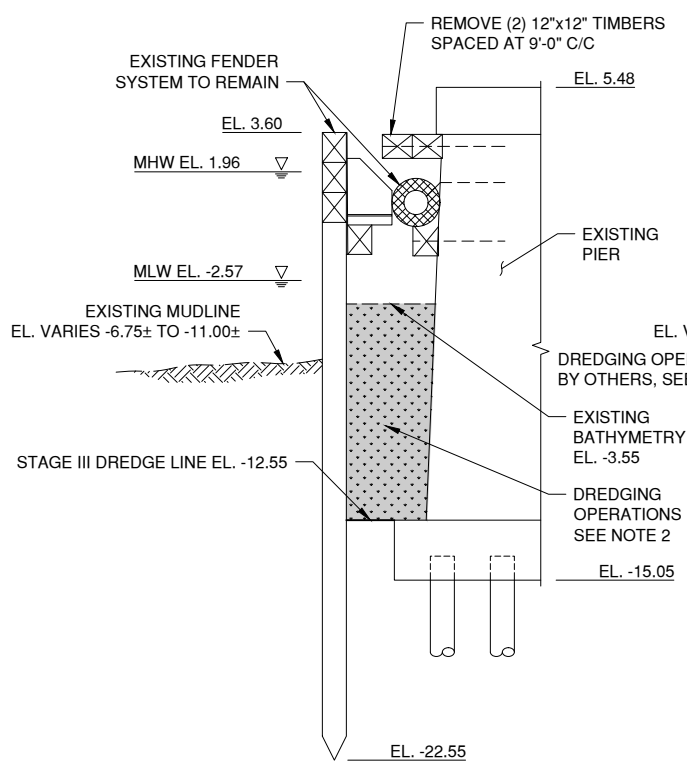
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PIPE PILE WALL PROFILES AND SECTIONS

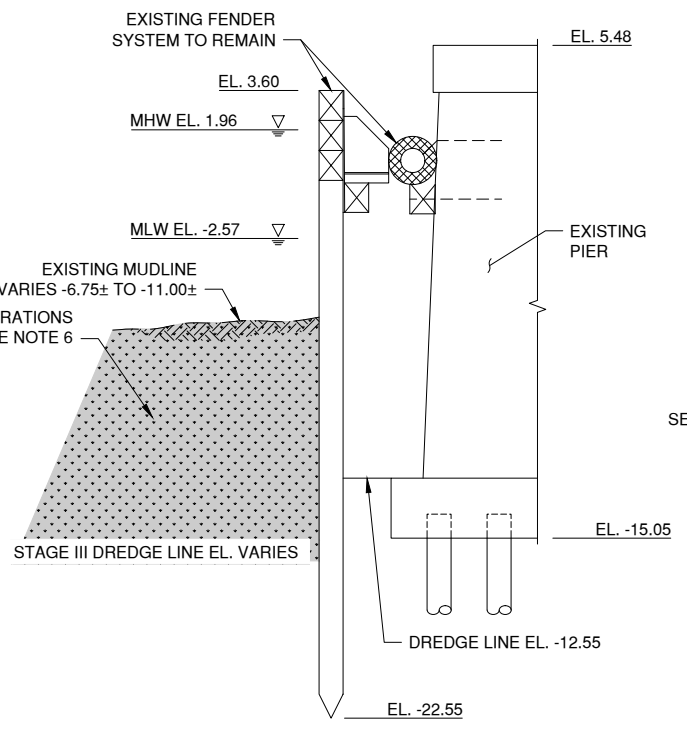
DWG. NO. **U-4** SCALE **AS NOTED** DATE **FEB 2020** SHEET NO. **16**



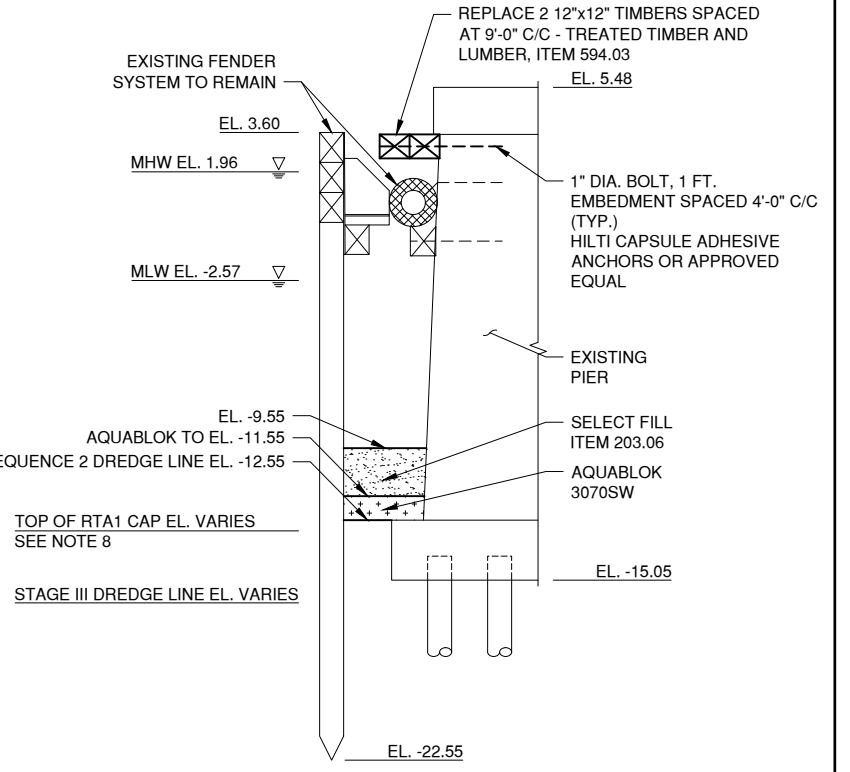
PLAN
WEST PIER SHOWN, EAST PIER SIMILAR
SCALE: 1" = 10'-0"



STAGE 1



STAGE 2



STAGE 3

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

NOTES:

- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS.
- FOR SEDIMENT CONTROL AND WASTE MANAGEMENT DETAILS, REFER TO REMEDIATION TARGET AREA (RTA) 1 DESIGN PACKAGE (BY OTHERS).
- FOR UNION STREET PROPOSED GENERAL PLAN AND ELEVATION, SEE DWG. NO. U-2.
- CARE SHALL BE TAKEN THROUGHOUT DREDGING OPERATIONS. ANY DAMAGE TO THE FENDER SYSTEM SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- CANAL DREDGING ADJACENT TO THE EXISTING FENDER SYSTEMS AND CONCRETE PIERS SHALL BE DONE USING BEST MANAGEMENT PRACTICES.
- DREDGING OF CANAL SEDIMENTS BY OTHERS. FOR DREDGING LIMITS, OPERATIONS, DETAILS AND SPECIFICATIONS, SEE REMEDIATION TARGET AREA (RTA) 1 DESIGN PACKAGE (BY OTHERS).
- DURING DREDGING OPERATIONS, HYDRAULIC HEAD ON BOTH SIDES OF THE FENDER TO BE MAINTAINED AT THE SAME ELEVATION.
- FOR CAPPING LIMITS, DETAILS AND OPERATIONS, REFER TO RTA1 DESIGN PACKAGE (BY OTHERS).
- FOR SECTION B-B, SEE DWG. NO. U-6.

SUGGESTED SEQUENCE OF DREDGING:

THE FOLLOWING DREDGING SEQUENCE ALLOWS FOR STABILITY OF THE EXISTING FENDER SYSTEM WHILE MAINTAINING DREDGING OPERATION.

- STAGE 1**
- REMOVE 2 HORIZONTAL 12"x12" TIMBER SECTIONS.
 - DREDGE BEHIND THE FENDER SYSTEM TO ELEVATION -12.55.
 - DISCHARGE TO BE PUMPED DIRECTLY TO A HOPPER BARGE.
- STAGE 2**
- DREDGE IN CANAL TO ELEVATION TO ELEVATIONS SHOWN IN THE RTA 1 DESIGN PACKAGE (BY OTHERS).
- STAGE 3**
- FILL BEHIND FENDER WITH AQUABLOK 3070SW TO EL. -11.55 FOLLOWED BY SELECT FILL TO EL. -9.55, ITEM 203.06.
 - REPLACE 2 12"x12" TIMBER SECTIONS.

LEGEND:

- VOLUME TO BE DREDGED
- SELECT FILL, ITEM 203.06
- AQUABLOK 3070SW



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CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO.	
CONTRACT NO.	CD NO.

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UNION STREET BRIDGE
BOROUGH OF BROOKLYN B.I.N. 2-24027-0

DREDGING DETAILS AT EXISTING PIER FENDER I

DWG. NO. U-5	SCALE AS NOTED	DATE FEB 2020	SHEET NO. 17
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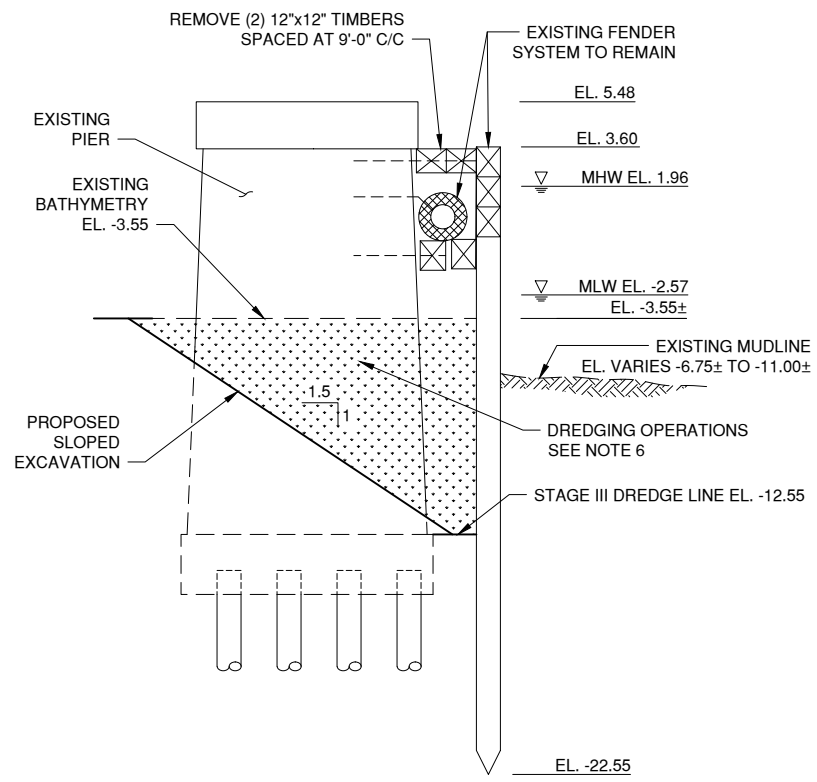
NOT FOR CONSTRUCTION

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services
325 West Main Street, Babylon, NY 11702
Tel: (631) 587-5060 Fax: (631) 422-3479

PREPARED BY:
IN CHARGE J. STERN DRAFTER D. CASILLAS
DESIGNER L. DESIMONE CHECKER J. STERN

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	SHEET NO.	TOTAL SHEETS
	18	26



SECTION B-B
SCALE: 1/8" = 1'-0"

- NOTES:**
1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS.
 2. FOR SEDIMENT CONTROL AND WASTE MANAGEMENT DETAILS, REFER TO REMEDIATION TARGET AREA (RTA) 1 DESIGN PACKAGE (BY OTHERS).
 3. FOR UNION STREET PROPOSED GENERAL PLAN AND ELEVATION, SEE DWG. NO. U-2.
 4. CARE SHALL BE TAKEN THROUGHOUT DREDGING OPERATIONS. ANY DAMAGE TO THE FENDER SYSTEM SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
 5. CANAL DREDGING ADJACENT TO THE EXISTING FENDER SYSTEMS AND CONCRETE PIERS SHALL BE DONE IN SLOTS USING BEST MANAGEMENT PRACTICES.
 6. DREDGING OF CANAL SEDIMENTS BY OTHERS. FOR DREDGING LIMITS, OPERATIONS, DETAILS AND SPECIFICATIONS, SEE REMEDIATION TARGET AREA (RTA) 1 DESIGN PACKAGE (BY OTHERS).
 7. DURING DREDGING OPERATIONS, HYDRAULIC HEAD ON BOTH SIDES OF THE FENDER TO BE MAINTAINED AT THE SAME ELEVATION.
 8. FOR CAPPING LIMITS, DETAILS AND OPERATIONS, REFER TO RTA1 DESIGN PACKAGE (BY OTHERS).
 9. FOR SECTION B-B, SEE DWG. NO. U-5.

- LEGEND:**
- VOLUME TO BE DREDGED
 - SELECT FILL, ITEM 203.06

SUGGESTED SEQUENCE OF DREDGING:

THE FOLLOWING DREDGING SEQUENCE ALLOWS FOR STABILITY OF THE EXISTING FENDER SYSTEM WHILE MAINTAINING DREDGING OPERATION.

- STAGE 1**
1. REMOVE 2 HORIZONTAL 12"x12" TIMBER SECTIONS.
 2. DREDGE BEHIND THE FENDER SYSTEM TO ELEVATION -12.55.
 3. DISCHARGE TO BE PUMPED DIRECTLY TO A HOPPER BARGE.
- STAGE 2**
1. DREDGE IN CANAL TO ELEVATION TO ELEVATIONS SHOWN IN THE RTA 1 DESIGN PACKAGE (BY OTHERS).
- STAGE 3**
1. FILL BEHIND FENDER WITH AQUABLOK 3070SW TO EL. -11.55 FOLLOWED BY SELECT FILL TO EL. -9.55, ITEM 203.06.
 2. REPLACE 2 12"x12" TIMBER SECTIONS.

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CITY OF NEW YORK DEPARTMENT OF TRANSPORTATION DIVISION OF BRIDGES	
NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO.	
CONTRACT NO.	CD NO.
FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL UNION STREET BRIDGE BOROUGH OF BROOKLYN	
B.I.N. 2-24027-0	

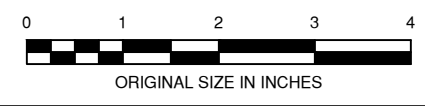
**DREDGING DETAILS AT
EXISTING PIER FENDER II**

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Engineering and Construction Services
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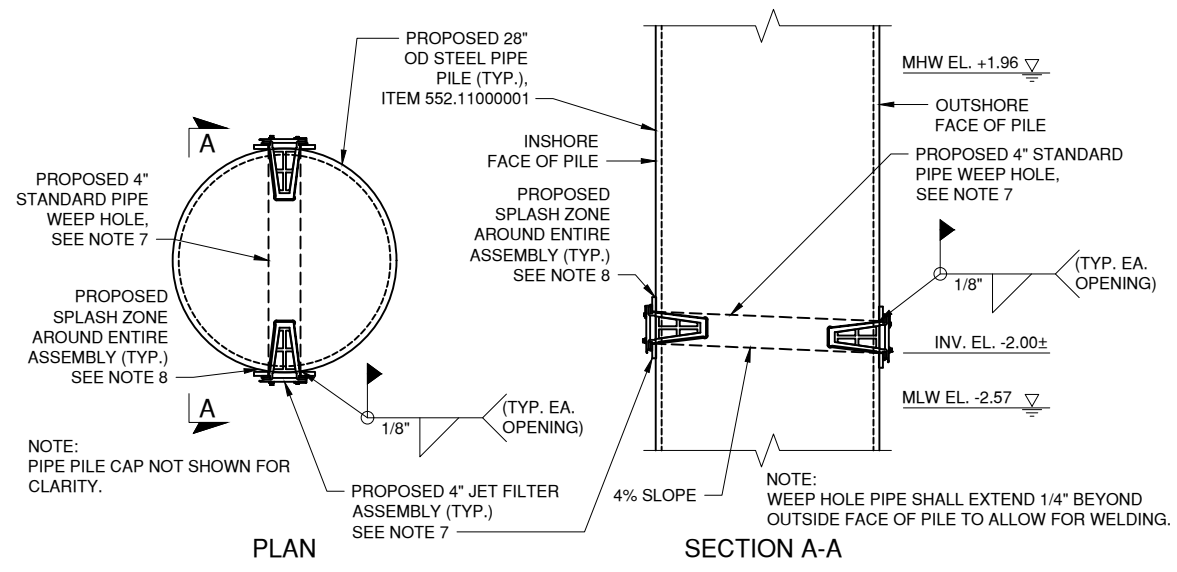
PREPARED BY:
IN CHARGE J. STERN DRAFTER D. CASILLAS
DESIGNER P. TAGGART CHECKER J. STERN



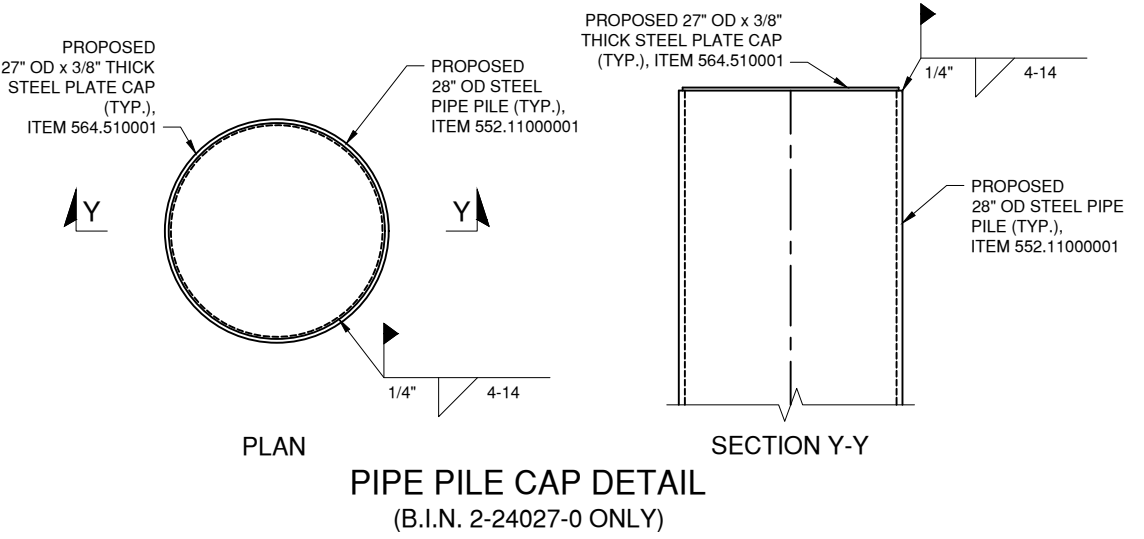
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DWG. NO. U-6	SCALE AS NOTED	DATE FEB 2020	SHEET NO. 18
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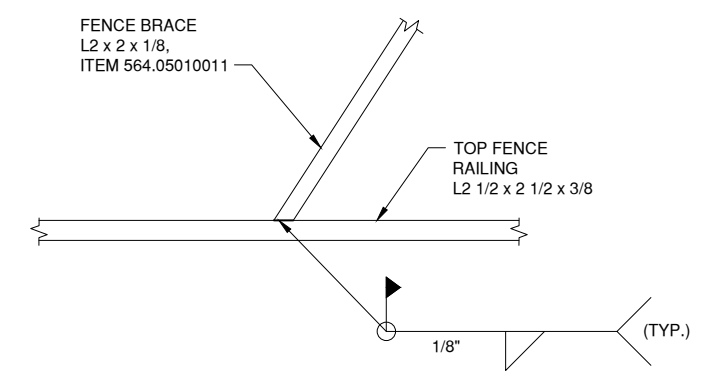
SHEET NO.	TOTAL SHEETS
19	26



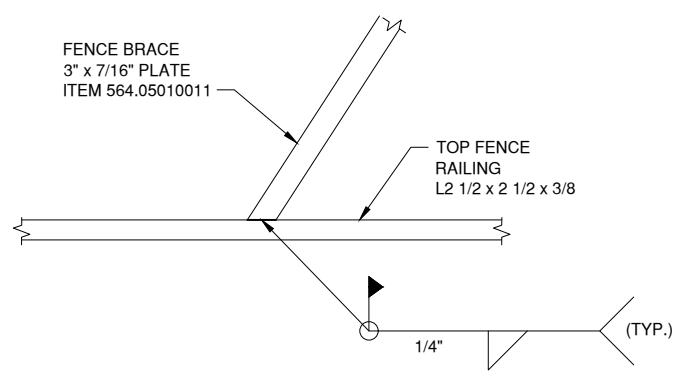
WEEP HOLE DETAIL
(B.I.N. 2-24027-0 ONLY)



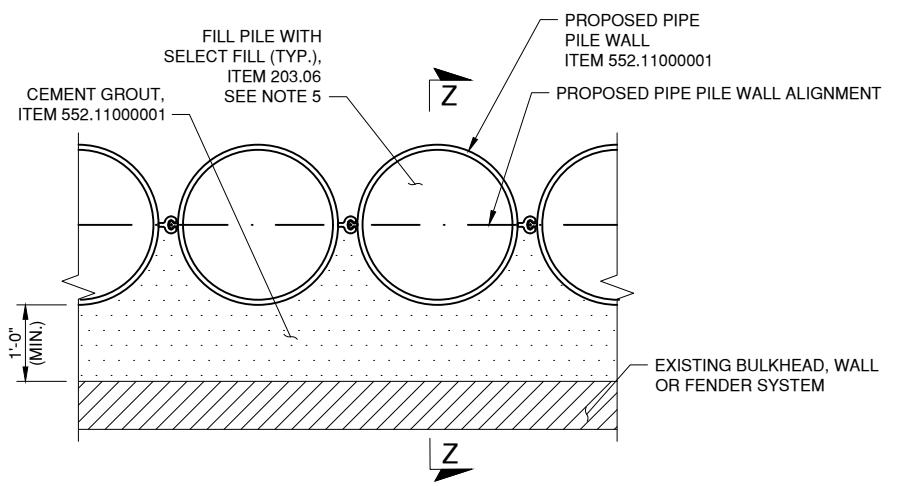
PIPE PILE CAP DETAIL
(B.I.N. 2-24027-0 ONLY)



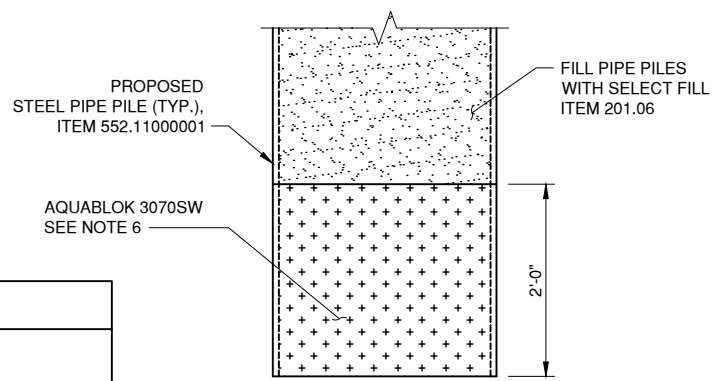
FENCE BRACING DETAIL
(ANGLE)



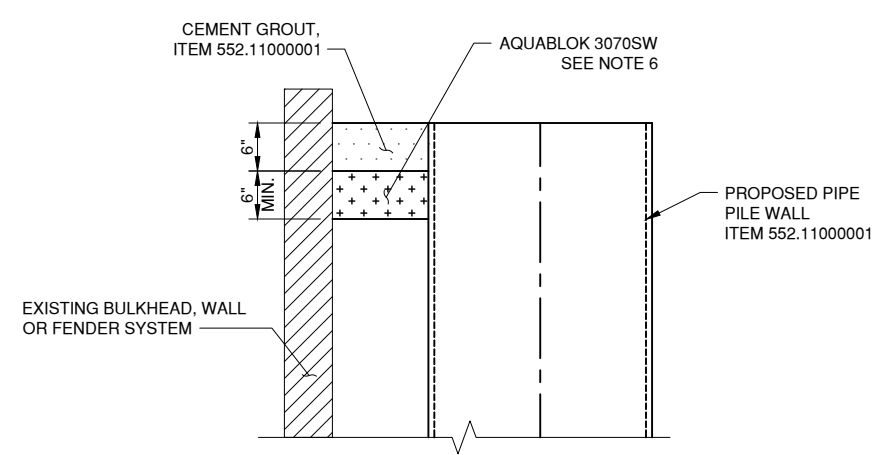
FENCE BRACING DETAIL
(PLATE)



CEMENT GROUTING DETAIL
(B.I.N. 2-24026-0 ONLY)



SEEPAGE PLUG



SECTION Z-Z
(B.I.N. 2-24026-0 ONLY)

- NOTES:**
- FOR CARROLL STREET PROPOSED GENERAL PLAN, SEE DWG. NO. C-5.
 - FOR CARROLL STREET PIPE PILE WALL LAYOUT, SEE DWG. NO. C-6.
 - FOR UNION STREET GENERAL PLAN, SEE DWG. NO. U-2.
 - FOR UNION STREET PIPE PILE WALL LAYOUT, SEE DWG. NO. U-3.
 - INSTALL SEEPAGE PLUG TO PREVENT GROUND WATER MOVEMENT AND FILL PIPE PILES WITH SELECT FILL, ITEM 203.06.
 - FOR DETAILS OF AQUABLOK 3070SW, SEE RTA1 DESIGN PACKAGE (BY OTHERS).
 - WEEP HOLES SHALL CONSIST OF 4" STANDARD PIPE, WHICH SHALL EXTEND APPROXIMATELY 1/4" BEYOND THE OUTSIDE FACE OF THE PIPE PILE IN ORDER TO WELD THE PIPE ALL AROUND TO THE PILE, AND SHALL BE EQUIPPED WITH 4" JET FILTER ASSEMBLY AS MANUFACTURED BY JET FILTER SYSTEMS ON BOTH THE INSHORE AND OUTSHORE FACES OF THE PIPE PILE. JET FILTERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS.
 - INSTALL SPLASH ZONE AS MANUFACTURED BY CARBOLINE BETWEEN THE FACE OF THE PIPE PILE AND THE JET FILTER ASSEMBLY TO CREATE A WATERTIGHT SEAL ON BOTH THE INSHORE AND OUTSHORE FACES OF THE PIPE PILES.

LEGEND:

	- CEMENT GROUT, ITEM 552.11000001
	- SELECT FILL, ITEM 201.06
	- AQUABLOK 3070SW

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DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES**

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NYC P.I.N. NO.	
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UNION STREET BRIDGE
BOROUGH OF BROOKLYN B.I.N.

PIPE PILE WALL DETAILS

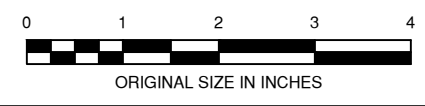
DWG. NO. S-1	SCALE 1/2" = 1'-0"	DATE FEB 2020	SHEET NO. 19
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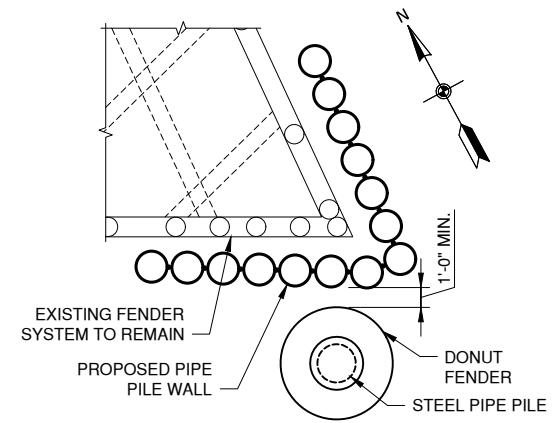
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DESIGNER P. TAGGART CHECKER J. APRILE

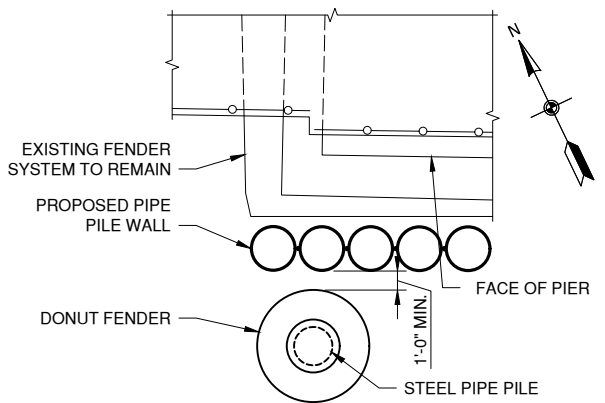


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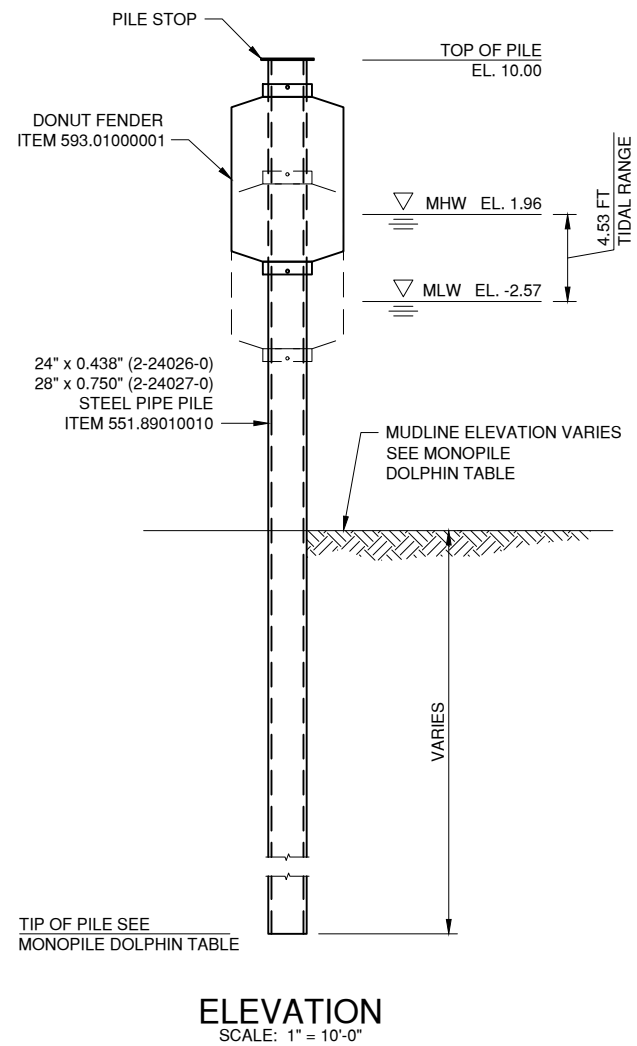
MONOPILE DOLPHIN TABLE								
LOCATION	COORDINATES		T.O. PILE EL. (FT)	MUDLINE EL. (FT)	MIN. PILE TIP EL. (FT)	PILE LENGTH (FT)	DEFLECTION AT MUDLINE (IN)	PILE DIMENSIONS (IN)
	NORTHING	EASTING						
UNION STREET								
NW CORNER	672886.4577	634018.0454	10.00	-17.50	-55.00	65.00	0.388	24 x 0.438
NE CORNER	672863.3591	634064.1152	10.00	-14.60	-52.10	63.00	0.328	24 x 0.438
SE CORNER	672796.7611	634030.3633	10.00	-15.00	-52.5	63.00	0.258	24 x 0.438
SW CORNER	672819.8242	633984.4979	10.00	-14.00	-51.50	62.00	0.232	24 x 0.438
CARROLL STREET								
NW CORNER	672405.9357	633780.6750	10.00	-17.44	-50.00	60.00	0.233	28 x 0.750
NE CORNER	672383.7667	633824.0070	10.00	-15.68	-48.24	59.00	0.172	28 x 0.750
SE CORNER	672336.8323	633820.8534	10.00	-15.75	-48.31	59.00	0.220	28 x 0.750
SW CORNER	672325.9616	633775.6752	10.00	-16.91	-49.47	60.00	0.205	28 x 0.750



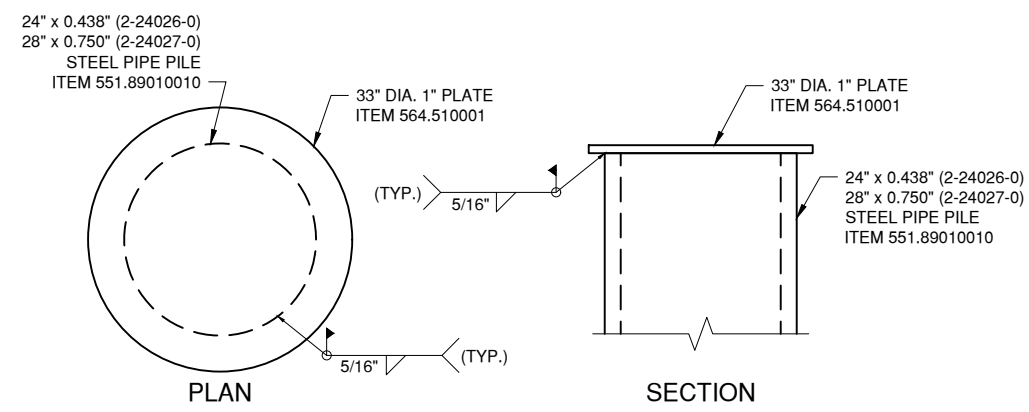
CARROLL STREET DOLPHIN PLAN
(SW CORNER SHOWN)
(TYPICAL ALL FOUR DOLPHINS)
SCALE: 1" = 10'-0"



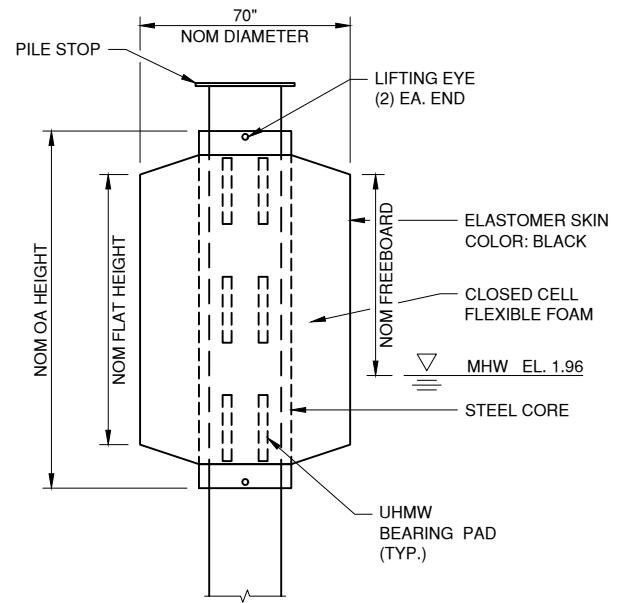
UNION STREET DOLPHIN PLAN
(SE CORNER SHOWN)
(TYPICAL ALL FOUR DOLPHINS)
SCALE: 1" = 10'-0"



ELEVATION
SCALE: 1" = 10'-0"



PILE STOP DETAIL
SCALE: 1/2" = 1'-0"



DONUT FENDER DETAIL
SCALE: 3/16" = 1'-0"

- NOTES:**
- INSTALL DOLPHIN PILES USING THE DOWN THE HOLE (DTH) DRILLING METHOD WITH AIR CONTROL AS PER ITEM 551.89010010 - STEEL MONOPILE DOLPHINS.
 - MUDLINE DEFLECTIONS SHOWN IN THE DOLPHIN PILE TABLE ARE PRIOR TO THE INSTALLATION OF THE ENVIRONMENTAL CANAL CAP.
 - DOLPHIN DONUT FENDER SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH ITEM 593.01000001.
 - REMOVE EXISTING TIMBER PILE CLUSTER DOLPHINS IN ACCORDANCE WITH ITEM 202.83120010. THE CONTRACTOR IS ALERTED TO THE FACT THAT IF THE EXISTING TIMBER PILES ARE NOT COMPLETELY REMOVED, THEY MAY INTERFERE WITH THE PIER PROTECTION SYSTEM DURING INSTALLATION.
 - THE CONTRACTORS ATTENTION IS BROUGHT TO THE POSSIBILITY OF SUBMARINE CABLES IN THE VICINITY OF THE EXISTING DOLPHIN LOCATIONS. THE CONTRACTOR MUST VERIFY THE LOCATION OF THE UTILITIES PRIOR TO REMOVAL OF THE PILES.

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CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO.	
CONTRACT NO.	CD NO.

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL FENDER SYSTEM
BOROUGH OF BROOKLYN B.I.N.

DOLPHIN PLAN, SECTION AND DETAILS

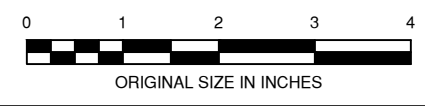
DWG. NO. F-1	SCALE AS NOTED	DATE FEB 2020	SHEET NO. 20
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PREPARED BY: GREENMAN-PEDERSEN, INC. ALTERED BY:

NOT FOR CONSTRUCTION

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DESIGNER G. CODISPOTI CHECKER J. STERN



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WORK ZONE TRAFFIC CONTROL NOTES

- ALL WORK ZONE TRAFFIC CONTROL PROCEDURES, DEVICES, SIGNS AND SIGN MOUNTINGS SHALL CONFORM TO THE 2009 NATIONAL MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D) AND TO THE 2010 NYS SUPPLEMENT TO THE NATIONAL M.U.T.C.D.
- THE STAGED LANE CLOSURES SHOWN IN THE WORK ZONE TRAFFIC CONTROL PLANS SHALL BE PERMITTED ONLY AFTER ALL SHOP DRAWINGS REQUIRED TO COMPLETE THE CONTRACT WORK IN THE CLOSED PORTION ARE SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THIS REQUIREMENT MAY BE WAIVED BY THE DIRECTOR OF BRIDGE CONSTRUCTION WHEN IT IS DETERMINED THE APPROVAL OF CERTAIN SHOP DRAWINGS WILL NOT AFFECT THE TIMELY REOPENING OF THIS PORTION OF THE STRUCTURE. SHOP DRAWINGS HAVING DIMENSIONS REQUIRING FIELD VERIFICATION WHICH CANNOT BE OBTAINED UNTIL DEMOLITION, WILL BE STAMPED "APPROVED AS NOTED" BY THE ENGINEER.
- ALL SIGNS AND BARRICADES MUST ALSO CONFORM TO STANDARDS SPECIFIED IN THE NYC BUREAU OF TRAFFIC OPERATIONS "REGULATION MANUAL ON TEMPORARY TRAFFIC CONTROL BY STREET BARRICADES AND CHANNELIZATION".
- SIGNS ARE TO BE DISPLAYED ONLY DURING THE TIME THE TEXT APPLIES. ALL APPROPRIATE SIGNS MUST BE COMPLETELY IN PLACE AND ON DISPLAY BEFORE A PARTICULAR STAGE OF WORK COMMENCES. CONSTRUCTION SIGNS HAVING CENTER HINGES SIGN PANEL OR HAVING FOLDING PORTABLE SIGN SUPPORTS SHALL BE FOLDED DOWN WHEN THE WORK THEY PERTAIN TO IS NOT IN PROGRESS. OTHER CONSTRUCTION SIGNS WHICH OTHERWISE CAN NOT BE FOLDED DOWN SHALL BE REMOVED. THE COVERING OF SIGNS SHALL CONFORM TO THE REQUIREMENTS OF THE SECTION 645-2.02 AND 645-3.17 OF THE NYSDOT STANDARD SPECIFICATIONS.
- ALL CONSTRUCTION SIGNS SHALL HAVE AN ORANGE BACKGROUND AND BLACK LETTERS AND BORDERS (REFLECTORIZED IF USED AT NIGHT). CORNER OF SIGNS SHALL NOT BE CUT. THE CONTRACTOR SHALL IDENTIFY ALL CONSTRUCTION SIGNS WITH "CONTRACTOR'S NAME, CONTRACT NO., NYCDOT" WRITTEN AT THE BACK OF THE SIGN. THE LETTERS SHALL BE 3 INCHES HIGH. THE CONTRACTOR IS TO SUBMIT THE TEXT AND SIZE OF CONSTRUCTION SIGNS TO THE E.I.C. BEFORE FABRICATION.
- THE EDGE OF GROUND MOUNTED CONSTRUCTION SIGNS SHALL BE A MINIMUM OF 2 FEET AWAY FROM THE TRAVELED ROADWAY WITH THE BOTTOM OF SIGNS A MINIMUM OF 7 FEET ABOVE THE PAVEMENT.
- TEMPORARY SIGNS SHALL NOT BE PLACED AT ANY LOCATION WHERE THEY ARE OBSCURED BY TEMPORARY OR PERMANENT OBJECTS.
- THE PLANS SHOW SCHEMATICALLY THE POSITION OF THE TEMPORARY CONSTRUCTION ITEMS. FIELD CONDITIONS MAY VARY THE CONFIGURATION SOMEWHAT. THE ACTUAL POSITION OF ANY TEMPORARY ITEM IS TO BE APPROVED BY THE ENGINEER.
- ANY REQUIRED RELOCATION OF SIGNS WILL BE AT THE CONTRACTORS EXPENSE.

- ALL CONSTRUCTION SIGNS OR ANY OTHER ITEM USED SHALL EACH HAVE AN IDENTIFICATION TEXT PLACED ON THE BACK OF THE SIGN UNOBSTRUCTED BY THE SIGN SUPPORT, IN WHICH IT WILL IDENTIFY THE CONTRACT, THE CONTRACTOR AND THE CONTRACTING DIVISION. THE TEXT SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISION "CONSTRUCTION SIGNS" CONTAINED IN THE SPECIFICATION BOOK.
- THE CONTRACTOR IS RESPONSIBLE TO PROVIDE FLAGGERS AND TRAFFIC AGENTS (WHEN REQUIRED) FOR POSITIVE AND SAFE GUIDANCE OF VEHICULAR AS WELL AS PEDESTRIAN TRAFFIC DURING THE PERIOD OF CONSTRUCTION OPERATIONS.
- EXISTING TRAFFIC SIGNS WITHIN THE WORK ZONE WHICH BECOME INAPPROPRIATE OR CONFUSING BECAUSE OF CONSTRUCTION PHASING, SHALL BE COVERED WITH AN OPAQUE MATERIAL.
- THE CONTRACTOR WILL BE REQUIRED TO REPAIR OR REPLACE ANY WORK ZONE TRAFFIC COMPONENT, CALLED FOR IN THE PLANS, WHICH IS DAMAGED DURING THE LIFE OF CONTRACT AT NO ADDITIONAL COST TO THE CITY.
- THE WORK ZONE TRAFFIC CONTROL SCHEMES ARE TO PROTECT THE TRAVELING PUBLIC. THE CONTRACTOR IS RESPONSIBLE FOR THE SAFETY AND PROTECTION OF THE WORKMEN.
- THE CONTRACTOR IS RESPONSIBLE FOR CLEANING OF THE ROADWAY WITHIN THE PROJECT LIMITS, AS REQUESTED BY THE ENGINEER, UP TO THE FINAL ACCEPTANCE OF THE PROJECT.
- THE CONTRACTOR SHALL RESTORE ALL PAVEMENT, CONCRETE AND GRADED AREAS DISTURBED BY THE INSTALLATION AND REMOVAL OF TRAFFIC CONTROL DEVICES SUCH AS CONCRETE BARRIERS, ETC., THE AFFECTED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND APPROVED BY THE ENGINEER.
- IMMEDIATELY AFTER THE AWARD OF THE CONTRACT AND PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL MAKE A WRITTEN REQUEST TO NYCDOT AT SEVENTH FLOOR, 55 WATER STREET, NEW YORK, N.Y. 10041 TO ARRANGE A MEETING BETWEEN THE CONTRACTOR AND ALL CITY, PUBLIC AND PRIVATE AGENCIES AND OTHER INTERESTED PARTIES, TO DISCUSS THE DETAILS OF THE MAINTENANCE AND PROTECTION OF TRAFFIC REQUIREMENTS. THE MEETING SHALL TAKE PLACE A MINIMUM OF 20 DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR MUST NOTIFY THE ENGINEER, THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION, MR. JOE NOTO (212-839-9621), OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION - (OCMC), THE NEW YORK CITY FIRE DEPARTMENT, OPERATIONS DIVISION, AND THE NEW YORK CITY POLICE DEPARTMENT OF ALL DETOURS, PROPOSED STREET CLOSING, OR ANY WORK THAT MIGHT AFFECT THE MOBILITY OR ACCESS OF THE FIRE OR POLICE DEPARTMENTS, FIVE (5) WORKING DAYS IN ADVANCE OF THEIR IMPLEMENTATION. IN ADDITION, THE CONTRACTOR SHALL ASSURE THAT HYDRANTS, POLICE CALL BOXES, AND FIRE ALARM BOXES ARE KEPT OPERATIONAL AND ACCESSIBLE AT ALL TIMES.
- THE CONTRACTOR SHALL CONTACT MR. KARL STRICKER, NEW YORK CITY TRANSIT AUTHORITY (718-694-3655) AND NEW YORK CITY BUREAU OF TRAFFIC OPERATIONS TEN (10) WORKING DAYS PRIOR TO START OF OPERATIONS TO ARRANGE THE RELOCATION OF TEMPORARY BUS STOPS. TEMPORARY BUS STOP SIGNS WILL BE SUPPLIED BY THE NEW YORK CITY BUREAU OF TRAFFIC OPERATIONS.
- NO EXCAVATION FOR DRAINAGE OR UTILITIES SHALL REMAIN OPEN DURING NON-WORKING HOURS. ALL SUCH WORK, IF NOT LOCATED BEHIND CONCRETE BARRIER, SHALL BE PLATED.
- ALL WORK ZONE TRAFFIC CONTROL PLAN DEFICIENCIES SHOULD BE RECTIFIED WITHIN 24 HRS. OF OCCURRENCE BY THE CONTRACTOR. NO ADDITIONAL PAYMENT WILL BE MADE FOR DEVICES THAT ARE FOUND DEFICIENT DUE TO THE CONTRACTOR'S NEGLIGENCE.

- THE WORK ZONE TRAFFIC CONTROL SCHEMES SHOWN ON THE CONTRACT PLANS DESCRIBE THE MINIMUM METHODS AND CONTROL DEVICES NECESSARY FOR RECONSTRUCTION WORKS OF THE BRIDGES PROJECT. THE ENGINEER MAY ORDER ADDITIONAL DEVICES AND/OR METHODS TO MEET THE FIELD CONDITIONS AND ASSURE SAFETY TO THE TRAVELING PEDESTRIAN AND VEHICULAR TRAFFIC. NO ADDITIONAL PAYMENT WILL BE MADE FOR ADDITIONAL DEVICES SO ORDERED.
- PRIOR TO THE START OF WORK, THE CONTRACTOR MUST SUBMIT ANY PROPOSED CHANGES TO THE TRAFFIC CONTROL PLAN TO THE ENGINEER FOR APPROVAL. ANY CHANGE WHICH ALTERS THE BASIC CONCEPT OF THE PLAN MUST BE APPROVED BY THE NYCDOT.
- ACCESS TO AND FROM THE WORK ZONE SHALL CONFORM TO THOSE DESCRIBED IN THE CONTRACT DRAWINGS OR APPROVED BY THE ENGINEER. WHERE NECESSARY OR AS REQUIRED BY THE ENGINEER, THE CONTRACTOR SHALL UTILIZE FLAGGERS AT WORKER'S ENTRANCE TO WORK AREA AND LOCATIONS SPECIFIED IN THE CONSTRUCTION STAGE DRAWINGS.
- IN ADDITION TO THE SIGNING REQUIRED IN THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, THE CONTRACTOR SHALL USE A FLASHING ARROW BOARD, INCLUDED UNDER ITEM 619.01. TO BE POSITIONED AT THE BEGINNING OF THE TAPER FOR ALL MAINLINE TRAVEL LANE CLOSINGS AND/OR LANE SHIFTS.
- THE LOCATION OF CONSTRUCTION STAGING AREA MUST BE APPROVED BY THE ENGINEER IN CHARGE.
- PEDESTRIAN ACCESS FOR LOCAL BUSINESSES AND RESIDENCES SHALL BE KEPT ACCESSIBLE AT ALL TIMES DURING CONSTRUCTION.
- THE WORK ZONE TRAFFIC CONTROL DURING CONSTRUCTION WILL BE INCLUDED UNDER THE FOLLOWING ITEMS, RESPECTIVELY:

DESCRIPTION	ITEM NUMBER
BASIC WORK ZONE TRAFFIC CONTROL	619.01
TYPE III CONSTRUCTION BARRICADE	619.04

- THE CONTRACTOR SHALL SUBMIT FOR THE ENGINEER'S APPROVAL SHOP DRAWINGS OF ALL NON-STANDARD CONSTRUCTION SIGNS. INFORMATION TO BE INCLUDED IN SUBMITTAL SHALL BE TEXT LAYOUT, PANEL SIZE, AND LETTER SIZE, SERIES AND SPACING.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN WORK ZONE ACCESS AT LOCATIONS WHICH DO NOT IMPACT BRIDGE TRAFFIC.
- THIRTY (30) DAYS PRIOR TO REDUCING THE ROADWAY WIDTH, THE CONTRACTOR MUST SUBMIT IN WRITING TO THE NYPD TRAFFIC DIVISION DIRECTOR, A REQUEST FOR INTERSECTION AGENT COVERAGE. COPIES OF SAME ARE TO BE SUBMITTED TO NYCDOT DIVISION OF BRIDGES, CHIEF BRIDGE OFFICER, AND THE OCMC.
- THE FLAGGERS SHALL BE PROVIDED WITH REFLECTIVE VESTS AND ALL NECESSARY EQUIPMENT TO SAFELY CONDUCT TRAFFIC FLOW OPERATIONS DURING CONSTRUCTION.
- THE SOLE DUTY OF FLAGGERS SHALL BE TO DIRECT TRAFFIC PROPERLY AT ALL TIMES. THEY SHALL NOT BE USED TO MOVE TEMPORARY SIGNS OR ASSIST IN OTHER WORK AND SHALL BE POSITIONED APPROPRIATELY IN ADVANCE OF THE WORK ZONE.
- SNOW REMOVAL ON THE TRAVELED ROADWAY WITHIN PROJECT LIMITS SHALL BE THE RESPONSIBILITY OF THE CITY OF NEW YORK. HOWEVER, THE SNOW ON SIDEWALKS WITHIN THE PROJECT LIMITS EITHER ON THE BRIDGE OR APPROACHES SHALL BE REMOVED BY THE CONTRACTOR DURING THE LIFE OF THE CONTRACT. WHENEVER THESE SIDEWALKS ARE OPENED TO THE PUBLIC EXCEPT SIDEWALKS ADJACENT TO PRIVATE PROPERTIES WHICH ARE THE RESPONSIBILITIES OF OWNERS.

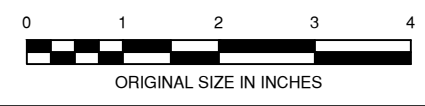
	SHEET NO.	TOTAL SHEETS
	21	26

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BOROUGH OF BROOKLYN	B.I.N.

**WORK ZONE TRAFFIC CONTROL
NOTES SHEET 1 OF 2**

DWG. NO. WZTC-1	SCALE NONE	DATE FEB 2020	SHEET NO. 21
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NYCDOT OCMC SPECIAL STIPULATIONS

1. EMBARGOES - A CONSTRUCTION EMBARGO WILL APPLY TO THOSE LOCATIONS BELOW WHICH FALL WITHIN THE HOLIDAY EMBARGO OR ANY OTHER SPECIAL EVENT EMBARGOES, SUCH AS PUBLISHED BY THE BUREAU OF PERMIT MANAGEMENT AND CONSTRUCTION CONTROL.
2. BIKE LANES - IF WORK IS IN OR AFFECTING A BIKE LANE, THE CONTRACTOR MUST POST ADVANCE WARNING SIGNS 350 FEET AND 200 FEET PRIOR TO THE WORK ZONE STATING "**CONSTRUCTION IN BIKE LANE AHEAD PROCEED WITH CAUTION**", AND ALSO POST A SIGN AT THE WORK ZONE STATING "**CONSTRUCTION IN BIKE LANE PROCEED WITH CAUTION**". SUCH SIGN SHALL BE ORANGE, 3'x 3', DIAMOND-SHAPED WITH 4" BLACK LETTERING. SIGNS SHALL BE POSTED IN ACCORDANCE WITH THE FEDERAL MUTCD.
3. BIKE SHARE STATIONS - THE PERMITTEE SHALL NOT REMOVE, RELOCATE, DAMAGE OR DISRUPT THE OPERATION OF EXISTING BIKE SHARE STATIONS WITHOUT FIRST CONTACTING NYC BIKE SHARE AT 855-245-3311 FOR THEIR REQUIREMENTS PRIOR TO COMMENCING WORK.
4. BUS STOPS - THE PERMITTEE SHALL PROVIDE WRITTEN NOTICE TO NYC DOT OCMC AND NYCT A MINIMUM OF FIVE (5) WEEKS IN ADVANCE FOR LANE/STREET CLOSURES THAT AFFECT BUS ROUTES/BUS STOPS.
5. STREET LIGHTS/TRAFFIC SIGNALS - THE PERMITTEE SHALL NOT REMOVE OR RELOCATE EXISTING STREET LIGHTS OR TRAFFIC SIGNALS WITHOUT FIRST OBTAINING APPROVAL FROM NYCDOT STREET LIGHTING/TRAFFIC SIGNALS UNIT.
6. TRAFFIC CAMERAS, DETECTION/COMMUNICATION EQUIPMENT - IF AT ANY TIME DURING THE APPROVED WORK, THE PERMITTEE ENCOUNTERS TRAFFIC SURVEILLANCE CAMERAS, DETECTION EQUIPMENT OR ANY TYPE OF COMMUNICATION EQUIPMENT (WIRELESS OR HARD-WIRED) ON ANY NYC DOT FACILITY, THAT IS NOT INCLUDED ON THE DESIGN/BUILD DRAWINGS, THE PERMITTEE SHALL IMMEDIATELY NOTIFY NYC DOT TRAFFIC MANAGEMENT BY PHONE AT 718-433-3390 OR 718-433-3340 AND VIA EMAIL AT TMC@DOT.NYC.GOV AND AWAIT DIRECTION PRIOR TO CONTINUING WORK.
7. METERS - THE PERMITTEE SHALL NOT REMOVE OR RELOCATE PARKING METERS WITHOUT FIRST OBTAINING AN APPROVAL FROM NYCDOT PARKING METER DIVISION AT 718-894-8651.
8. TEST PITS - THE BELOW TRAFFIC STIPULATIONS DO NOT APPLY TO TEST PIT WORK RELATED TO THIS CONTRACT. WORK HOURS AND OTHER REQUIREMENTS FOR TEST PIT OPERATIONS MAY DIFFER FROM THE STIPULATIONS IDENTIFIED BELOW. THE PERMITTEE SHALL BE REQUIRED TO OBTAIN SEPARATE PERMITS RELATED TO TEST PITS.
9. ACCESS TO ABUTTING PROPERTIES - THE PERMITTEE SHALL COORDINATE ALL ACTIVITIES WITH ABUTTING PROPERTY OWNERS TO ENSURE ACCESS IS PROVIDED TO/FROM ENTRANCES/DRIVEWAYS AT ALL TIMES.
10. TEMPORARY PARKING REGULATIONS/PAVEMENT MARKINGS - THE PERMITTEE IS REQUIRED TO INSTALL, MAINTAIN AND REMOVE ALL NECESSARY TEMPORARY PARKING AND REGULATORY SIGNS AND PAVEMENT MARKINGS, AND RESTORE THEIR ORIGINAL CONDITION PER NYC DOT STANDARDS, PRIOR TO EXPIRATION OF THEIR PERMITS. THE PERMITTEE OR AGENCY PERFORMING PUBLIC OUTREACH SHALL POST AND MAINTAIN ADVISORY SIGNS A MINIMUM OF 48 HOURS PRIOR TO CHANGING EXISTING PARKING REGULATION SIGNS TO APPROVED TEMPORARY CONSTRUCTION PARKING REGULATION SIGNS. THE ADVISORY SIGNS SHOULD BE POSTED ON ALL POLES AND DRIVE RAILS ON THE SEGMENT AFFECTED, INDICATING THE DATE OF THE CHANGE, THE NEW REGULATIONS AND A TELEPHONE NUMBER TO OBTAIN MORE INFORMATION.

NYCDOT OCMC SPECIAL STIPULATIONS (CONT.)

11. AUTHORIZED PARKING - PRIOR TO PERFORMING ANY WORK WHICH IMPACTS AUTHORIZED PARKING, THE PERMITTEE SHALL SUBMIT IN WRITING, AND COPY OCMC-STREETS, A REQUEST TO OCCUPY SPACE CURRENTLY USED BY AUTHORIZED VEHICLES. APPROVAL MUST BE RECEIVED FROM AUTHORIZED PARKING PRIOR TO OCCUPYING THESE AREAS.
12. NOTIFICATION - AT LEAST TWO (2) WORKING DAYS BEFORE THE START OF CONSTRUCTION, NOTIFY THE NYC FIRE DEPT., NYC POLICE DEPT., NYCEMS, LOCAL COMMUNITY BOARD, BOROUGH PRESIDENT'S OFFICE-CHIEF ENGINEER, NYCDOT OCMC OFFICE, AND ALL ABUTTING PROPERTY OWNERS.
13. CONSTRUCTION INFORMATIONAL SIGNS - THIS PROJECT REQUIRES A CONSTRUCTION PROJECT INFORMATIONAL SIGN (CPIS) IN ACCORDANCE WITH THE NYCDOT HIGHWAY RULE SECTION 2-02 (4) AND (5). CRITERIA AND A PROTOTYPE FOR THIS SIGN MAY BE FOUND ON THE NYCDOT WEBSITE: WWW.NYC.GOV/HTML/DOT/DOWNLOADS/PDF/DOT_CPIS_DIRECTIONS.PDF
14. ENHANCED MITIGATION:
 - A. NYPD TRAFFIC AGENTS
 - B. ENHANCED MITIGATIONS FOR PEDESTRIAN FLOW, INCLUDING METAL FENCING, SHALL BE PROVIDED TO ENSURE PEDESTRIANS STAY WITHIN THEIR DESIGNATED PATH/ROUTE. FLAGGERS SHALL BE PROVIDED TO ASSIST WITH PEDESTRIANS AT THE DESIGNATED CROSSWALK AREAS. THESE FLAGGERS SHALL BE ASSIGNED TO THIS FUNCTION ONLY.
 - C. VARIABLE MESSAGE SIGNS (VMS) SHALL BE PROVIDED FOR THIS PROJECT. THE LOCATIONS AND MESSAGES SHALL BE RECOMMENDED BY NYCDOT AND THEIR CONTRACTOR A MINIMUM OF TWO (2) WEEKS PRIOR TO WORK COMMENCING, FOR OCMC REVIEW AND APPROVAL.
 - D. "NO STANDING ANYTIME-TEMPORARY CONSTRUCTION" SIGNS AND TEMPORARY PAVEMENT MARKINGS SHALL BE INSTALLED AND MAINTAINED AS WARRANTED BY THE MAINTENANCE AND PROTECTION OF TRAFFIC (MPT) REQUIRED TO FACILITATE TRAFFIC MOVEMENTS THROUGH THE WORK ZONE. ALL TEMPORARY SIGNS AND PAVEMENT MARKINGS SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.
 - E. COMMUNITY OUTREACH SHALL BE PROVIDED FOR THE DURATION OF THE PROJECT.

	SHEET NO.	TOTAL SHEETS
	22	26

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WZTC
BOROUGH OF BROOKLYN B.I.N.

**WORK ZONE TRAFFIC CONTROL
NOTES SHEET 2 OF 2**

DWG. NO. WZTC-2	SCALE NONE	DATE FEB 2020	SHEET NO. 22
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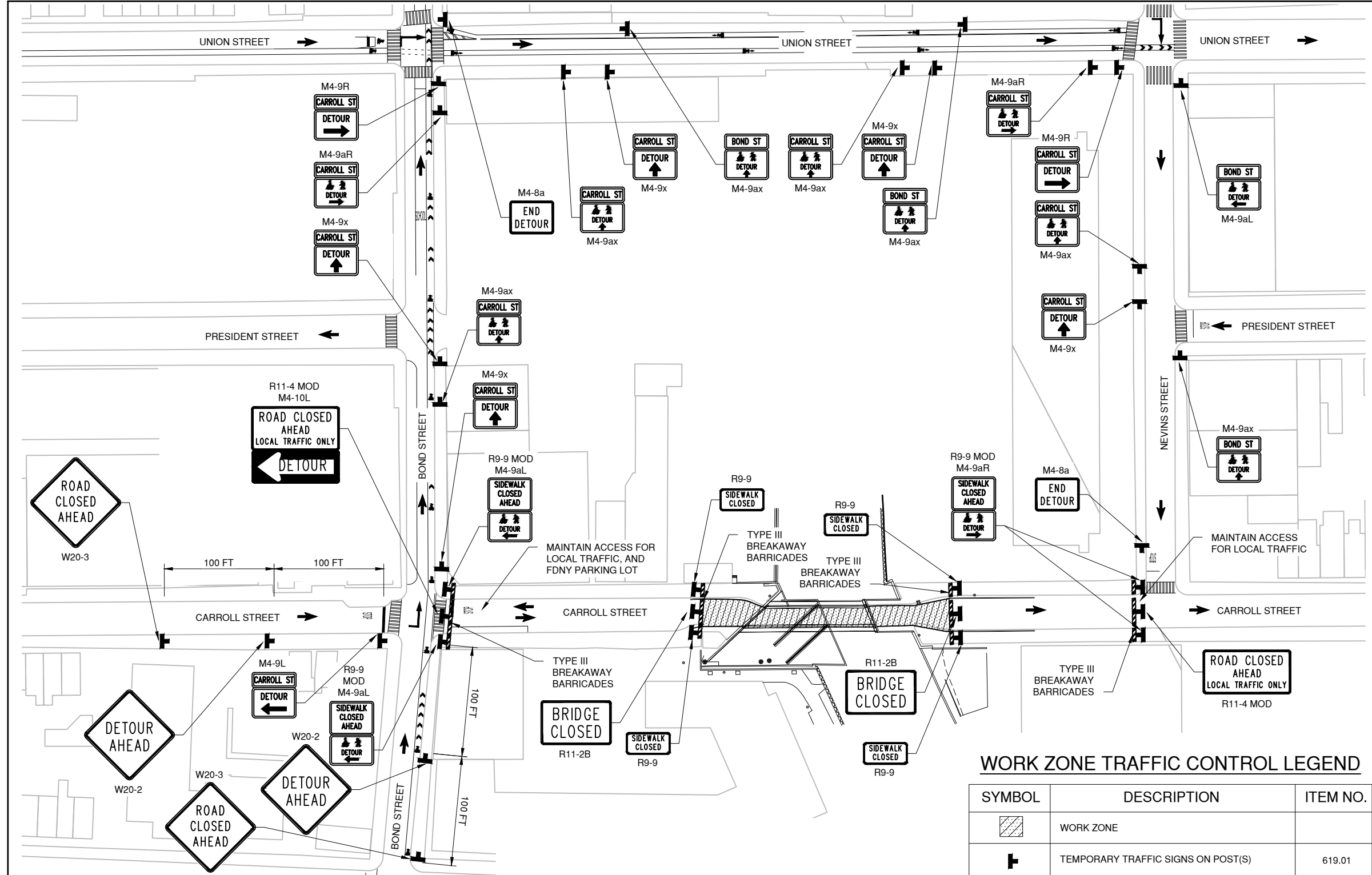
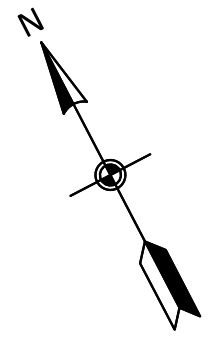
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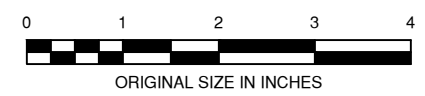


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WORK ZONE TRAFFIC CONTROL LEGEND

SYMBOL	DESCRIPTION	ITEM NO.
	WORK ZONE	
	TEMPORARY TRAFFIC SIGNS ON POST(S)	619.01
	TYPE III CONSTRUCTION BARRICADE	619.04
	DIRECTION OF TRAFFIC	-
	DIRECTION OF TRAVEL (DURING CONSTRUCTION)	-



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BOROUGH OF BROOKLYN	B.I.N. 2-24026-0

WORK ZONE TRAFFIC CONTROL AND DETOUR PLAN AT CARROLL ST

DWG. NO. WZTC-3	SCALE 1" = 100'-0"	DATE FEB 2020	SHEET NO. 23
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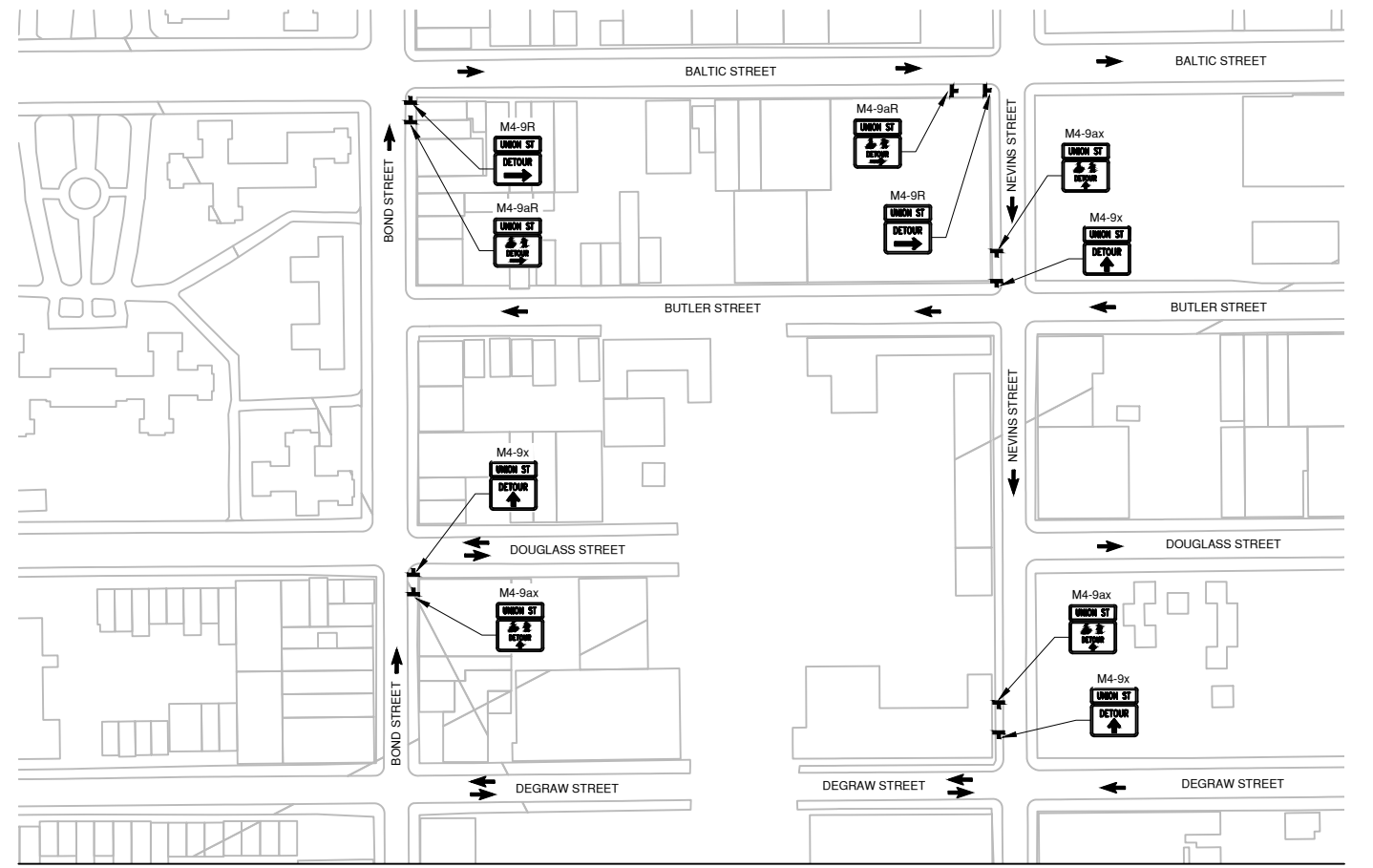
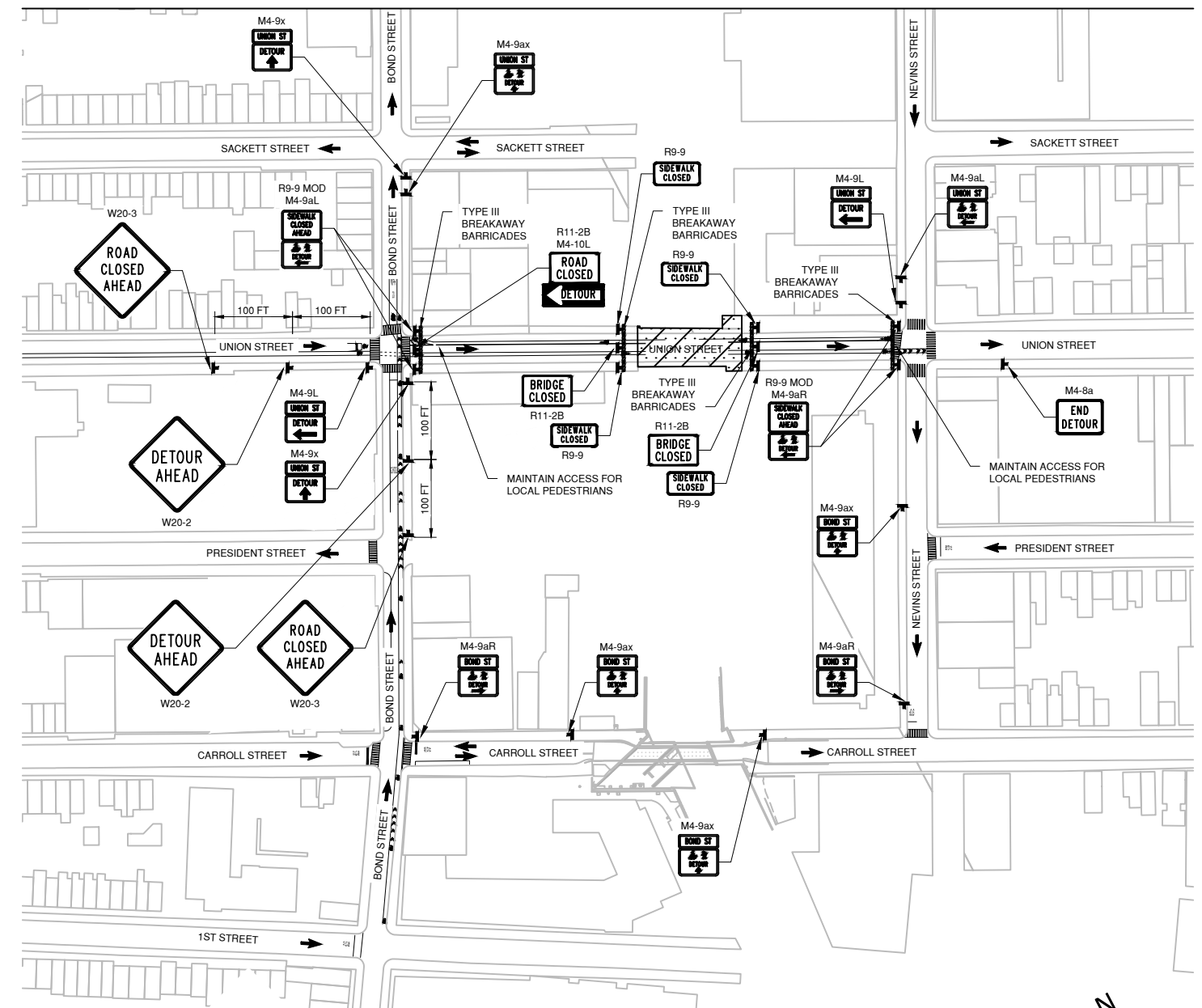
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MATCH LINE A-A



MATCH LINE A-A

WORK ZONE TRAFFIC CONTROL LEGEND

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	TEMPORARY TRAFFIC SIGNS ON POST(S)	619.01
	TYPE III CONSTRUCTION BARRICADE	619.04
	DIRECTION OF TRAFFIC	-
	DIRECTION OF TRAVEL (DURING CONSTRUCTION)	-

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FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL WZTC
BOROUGH OF BROOKLYN B.I.N.

WORK ZONE TRAFFIC CONTROL AND DETOUR PLAN AT UNION ST

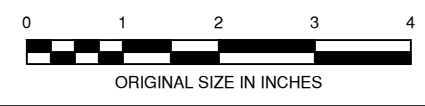
DWG. NO. WZTC-4	SCALE 1" = 200'-0"	DATE FEB 2020	SHEET NO. 24
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PREPARED BY: GREENMAN-PEDERSEN, INC. ALTERED BY:

NOT FOR CONSTRUCTION

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Greenman-Pedersen, Inc.
Engineering and Construction Services
325 West Main Street, Babylon, NY 11702
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PREPARED BY:
IN CHARGE J. STERN DRAFTER J. FANG
DESIGNER J. FANG CHECKER B. MCMENAMIN

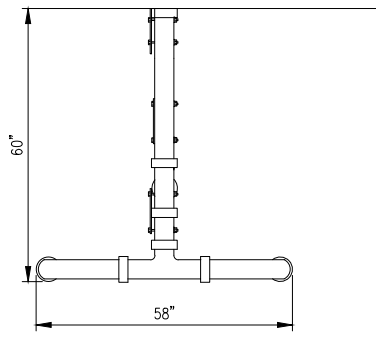
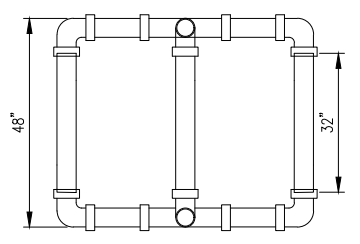


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

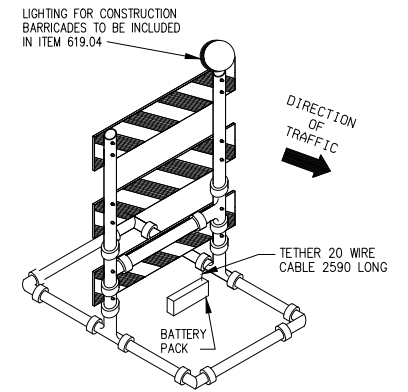
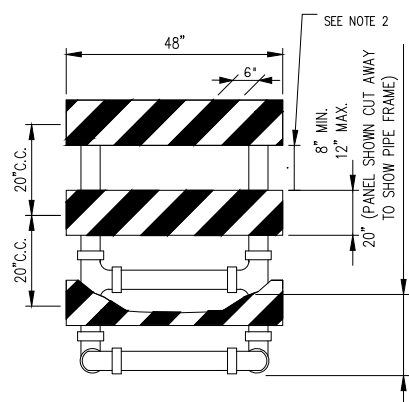
SHEET NO.	TOTAL SHEETS
25	26

NOTES:

1. THE DETAILS AND MATERIALS FOR TYPE III CONSTRUCTION BARRICADES ARE SUGGESTED DESIGNS. IN THE EVENT THE CONTRACTOR ELECTS TO SUBSTITUTE ANY MATERIAL NOT LISTED IN THE SPECIFICATIONS, HE SHALL SUBMIT EVIDENCE ACCEPTABLE TO THE DEPARTMENT THAT BARRICADES FABRICATED OF THIS MATERIAL ARE FRANGIBLE. IF HE ELECTS TO USE AN ALTERNATE DESIGN, HE SHALL PREPARE AND SUBMIT SHOP DRAWINGS. SHOP DRAWINGS FOR AN ALTERNATE DESIGN AND/OR EVIDENCE THAT SUBSTITUTE MATERIAL WILL PRODUCE FRANGIBLE BARRICADES SHALL BE SUBMITTED TO THE COMMISSIONER, DIVISION OF BRIDGES FOR APPROVAL. ALTERNATE DESIGNS OR SUBSTITUTE MATERIAL SHALL NOT BE USED PRIOR TO RECEIPT OF WRITTEN APPROVAL FROM THE COMMISSIONER, DIVISION OF BRIDGES.
2. PANELS SHALL HAVE 6" WIDE REFLECTORIZED ORANGE AND WHITE DIAGONAL STRIPES SLOPING AT AN ANGLE OF 45 DEGREES. THE STRIPES SHALL SLOPE DOWNWARD TOWARD THE SIDE ON WHICH TRAFFIC IS TO PASS. THE REFLECTIVE SHEETING, FOR THE STRIPES, SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 730-05.01 "REFLECTIVE SHEETING (CLASS A)".
3. A FIXED FRANGIBLE PAVEMENT CONNECTION IS PREFERRED, HOWEVER, 4 SAND BAGS WEIGHING 65 +/- POUNDS EACH, MAY BE PLACED ON THE BASE MEMBERS OF BARRICADE, ONE ON EACH SIDE.
4. ALUMINUM FACE PANELS FOR RAILS OR SIGNS MOUNTED ON THE BARRICADE SHALL BE .025 INCHES THICK AND CONFORM TO THE REQUIREMENTS OF THE SUBSECTION 730-01 "ALUMINUM SIGN PANELS".
5. BATTERY PACKS FOR LIGHTING CONSTRUCTION BARRICADES SHALL BE EITHER MOUNTED AT THE BOTTOM OF THE BARRICADE OR BE INTEGRAL WITH THE LIGHT AND BE MOUNTED ON TOP OF THE BARRICADE. WHEN AN INTEGRAL UNIT IS CHOSEN AND IS MOUNTED AT THE TOP OF THE BARRICADE, IT SHALL BE A DRY CELL TYPE AND WEIGH NO MORE THAN 10 LBS, INCLUDING BATTERIES. THE INTEGRAL UNITS SHALL BE FIXED TO THE BARRICADE OR RESTRAINED SO IT WILL NOT BECOME A FLYING HAZARD TO EITHER THE MOTORIST OR THE WORKERS IF THE BARRICADE IS HIT.
6. IF SIGN PANELS ARE ADDED TO THE BARRICADES REQUIRING ADDITIONAL HEIGHT, THE UPRIGHTS SHALL BE EXTENDED WITH PVC PIPE.
7. ALL PIPE SHOULD BE WHITE. WHITE FITTINGS ARE PREFERRED, BLACK MAY BE USED.
8. ALL JOINTS SHALL BE GLUED WITH A SOLVENT CEMENT COMPATIBLE WITH THE PVC PIPE CHOSEN BY THE CONTRACTOR.
9. GAUGES FOR WIRE SHALL BE THE UNITED STATES STEEL WIRE GAUGE.
10. USE TYPE "A" LOW INTENSITY FLASHING LIGHTS TO POINT HAZARDS TYPE "C" LOW INTENSITY STEADY BURNING LIGHTS FOR CHANNELIZATION.
11. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.



TYPICAL TYPE III CONSTRUCTION BARRICADE



SUGGESTED DETAILS FOR FASTENING LIGHTS ON TOP OF BARRICADE

100% SUBMISSION

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

NYS P.I.N. NO. _____ FED. AID PROJ. NO. _____
 NYC P.I.N. NO. _____
 CONTRACT NO. _____ CD NO. _____

FINAL DESIGN FOR THE STABILITY DURING DREDGING FOR THE UNION ST AND CARROLL ST BRIDGES OVER GOWANUS CANAL
WZTC
BOROUGH OF BROOKLYN B.I.N.

**WORK ZONE TRAFFIC CONTROL
DETAIL**

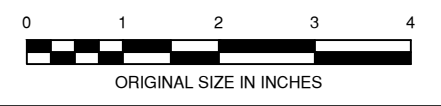
DWG. NO. WZTC-5	SCALE NONE	DATE FEB 2020	SHEET NO. 25
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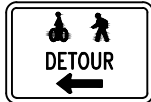

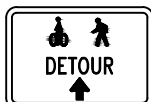

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CONSTRUCTION SIGN TEXT DATA SHEET

SHEET NO.	TOTAL SHEETS
26	26


TEXT NO.	TEXT	APPROX. SIZE OF SIGN	M.U.T.C.D. NO.	COLOR	
				BACKGROUND	CHARACTERS
1		(24" x 18")	M4-8A	O	B
2		(30" x 24")	M4-9L	O	B
3		(30" x 24")	M4-9R	O	B
4		(30" x 24")	M4-9x	O	B
5		(30" x 24")	M4-9aL	O	B
6		(30" x 24")	M4-9aR	O	B
7		(30" x 24")	M4-9ax	O	B
8		(48" x 18")	M4-10L	O	B

TEXT NO.	TEXT	APPROX. SIZE OF SIGN	M.U.T.C.D. NO.	COLOR	
				BACKGROUND	CHARACTERS
9		(24" x 12")	R9-9	W	B
10		(24" x 18")	R9-9 MOD	W	B
11		(48" x 30")	R11-2B	W	B
12		(60" x 30")	R11-4 MOD	W	B
13		(36" x 36")	W20-2	O	B
14		(36" x 36")	W20-3	O	B
15		(30" x 12")	CUSTOM	O	B
16		(30" x 12")	CUSTOM	O	B
17		(30" x 12")	CUSTOM	O	B

NOTES:

- SEE NYSDOT STANDARD SHEETS FOR TYPE OF MOUNTING AND CONSTRUCTION DETAILS.
- FOR LOCATION OF ALL CONSTRUCTION ZONE SIGNS, SEE WORK ZONE TRAFFIC CONTROL AND DETOUR DRAWING NUMBER WZTC-3.
- ALL CONSTRUCTION ZONE SIGNS SHALL BE ON ORANGE BACKGROUND WITH BLACK CHARACTERS EXCEPT OTHERWISE NOTED.
- DIMENSIONS ARE SHOWN AS WIDTH X HEIGHT.

LEGEND	
SYMBOL	DESCRIPTION
W	WHITE OR SILVER
G	GREEN
Y	YELLOW
B	BLACK
BL	BLUE
R	RED
O	ORANGE
REFL	REFLECTORIZED
NON REFL	NON REFLECTORIZED
NIC	NOT IN CONTRACT
NS	NON STANDARD
VMS	VARIABLE MESSAGE SIGN

- TYPE "B" FLASHING LIGHTS SHALL BE PROVIDED ON ALL TRAFFIC SIGNS THAT ARE DENOTED BY  SYMBOL.

100% SUBMISSION

CITY OF NEW YORK
DEPARTMENT OF TRANSPORTATION
DIVISION OF BRIDGES

NYS P.I.N. NO.	FED. AID PROJ. NO.
NYC P.I.N. NO.	
CONTRACT NO.	CD NO.

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WZTC
BOROUGH OF BROOKLYN B.I.N.

SIGN TEXT DATA TABLE

DWG. NO. WZTC-6	SCALE NONE	DATE FEB 2020	SHEET NO. 26
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