

| LIST OF SOE/BULKHEAD DRAWINGS | |
|-------------------------------|---|
| DRAWING NUMBER | DRAWING TITLE |
| T-001 | SUPPORT OF EXCAVATION - GENERAL NOTES, LIST OF DRAWINGS, LEGEND AND ABBREVIATIONS |
| SOE-100 | SUPPORT OF EXCAVATION - SITE PLAN |
| SOE-200 | SUPPORT OF EXCAVATION - SEQUENCE OF CONSTRUCTION |
| SOE-201 | SUPPORT OF EXCAVATION - SEQUENCE OF CONSTRUCTION |
| SOE-202 | SUPPORT OF EXCAVATION - SEQUENCE OF CONSTRUCTION |
| SOE-300 | SUPPORT OF EXCAVATION - PARTIAL PLAN |
| SOE-301 | SUPPORT OF EXCAVATION - PARTIAL PLAN |
| SOE-400 | SUPPORT OF EXCAVATION - SECTIONS |
| SOE-401 | SUPPORT OF EXCAVATION - SECTIONS |
| SOE-500 | SUPPORT OF EXCAVATION - DETAILS |
| SOE-501 | SUPPORT OF EXCAVATION - DETAILS |
| SOE-600 | GEOTECHNICAL INSTRUMENTATION AND MONITORING PLAN |
| S-100 | PERMANENT BULKHEAD BRACING - PLAN |
| S-101 | PERMANENT BULKHEAD BRACING LAYOUT - PARTIAL PLAN AND SECTION |
| S-102 | PERMANENT BULKHEAD BRACING LAYOUT - PARTIAL PLAN AND SECTION |
| S-200 | PERMANENT BULKHEAD - SECTIONS |
| S-201 | PERMANENT BULKHEAD - SECTIONS AND DETAILS |
| S-400 | PERMANENT BULKHEAD CONCRETE CAP - PLAN |
| S-401 | PERMANENT BULKHEAD CAP - PLANS, SECTIONS, AND DETAILS |

GENERAL NOTES:

- THE LAYOUT OF SOE SYSTEM SHOWN HEREIN IS BASED ON THE SURVEY DRAWING PREPARED BY B.THAYER ASSOCIATES, DATED OCTOBER 10, 2017.
- ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- EXISTING GRADE INFORMATION SHOWN ON DRAWINGS HAVE BEEN DEVELOPED BASED ON ELEVATIONS PROVIDED ON TOPOGRAPHICAL AND PROPERTY LINE MAP. EXISTING GRADES AND PROPERTY LINE INFORMATION ALONG THE SOUTH SIDE OF THE SITE IS BASED ON THE PROPOSED POWERHOUSE GRADING PLAN, DATED 5-5-2017.
- SUBSURFACE SOIL INFORMATION USED FOR THE DESIGN OF THE SUPPORT OF EXCAVATION (SOE) AND BULKHEADS IS BASED ON THE "GEOTECHNICAL INVESTIGATION REPORT" PREPARED BY MUESER RUTLEDGE CONSULTING ENGINEERS, DATED NOVEMBER 15, 2017.
- CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS SO AS NOT TO DAMAGE EXISTING UTILITIES THAT MUST REMAIN IN OPERATION DURING THE INSTALLATION OF THE SOE. CONTRACTOR SHALL PROTECT AND OR RELOCATE UTILITIES AS REQUIRED. TEST PITS AT RETAINING WALL MAY BE REQUIRED.
- WORK POINTS FOR THE PERMANENT BULKHEAD ARE USED TO DEFINE THE ALIGNMENT OF THE SOE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SURVEY AND LOCATE THE PERMANENT BULKHEAD AND VERIFY THE VALIDITY OF THE WORK POINTS IN THE FIELD PRIOR TO SOE INSTALLATION. THE CONTRACTOR SHALL SUBMIT A SURVEY OF THE WORK POINTS FOR APPROVAL BY THE ENGINEER PRIOR TO START OF WORK.
- THE TOP OF SOE AND BULKHEAD WALL ELEVATIONS VARY. TOP OF BULKHEAD WALL ELEVATIONS SHALL BE AS SHOWN ON THESE DRAWINGS.
- FINAL EXCAVATION SUBGRADE ELEVATIONS SHOWN ON THESE DRAWINGS ARE BASED ON CAPPING PLAN AND PROFILE, DRAWING C-101, PREPARED BY ARCADIS.
- THE BRACING LAYOUT AND SPACING SHOWN ON THESE DRAWINGS SHALL NOT BE ALTERED WITHOUT THE REVIEW AND APPROVAL OF ENGINEER. ANY PROPOSED ALTERATIONS TO THE DESIGN SHALL BE PERFORMED BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER, SUBJECT TO THE APPROVAL OF MUESER RUTLEDGE CONSULTING ENGINEERS.

MATERIAL NOTES:

- PIPE PILES SHALL CONFORM TO MODIFIED ASTM A252, GRADE 3 WITH A MINIMUM YIELD STRENGTH OF 50 KSI. PIPE PILES SHALL BE EPOXY COATED TO THE MINIMUM ELEVATIONS INDICATED ON DRAWING S-100.
- STRUCTURAL STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A992 OR ASTM A572, WITH A MINIMUM YIELD STRENGTH (F_y) EQUAL TO 50 KSI, UNLESS OTHERWISE NOTED. PERMANENT STEEL BRACING SHALL BE GALVANIZED AND COMPLY WITH THE REQUIREMENTS OF ASTM A123.
- SHIM PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36, WITH A MINIMUM YIELD STRENGTH (F_y) EQUAL TO 36 KSI.
- ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.1 USING E70 LOW HYDROGEN ELECTRODES.
- TREMIE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS.
- CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
- REINFORCING STEEL SHALL BE NEW BILLET STEEL EPOXY COATED MEETING THE REQUIREMENT OF ASTM A775, GRADE 60 STEEL.

CONSTRUCTION SEQUENCE:

- THE SOE INSTALLATION SEQUENCE SHALL BE BASED ON THE CONTRACT DRAWINGS IN CONJUNCTION WITH THE SPECIFICATION REQUIREMENTS OF THE CONTRACT DOCUMENTS.

INSTRUMENTATION AND MONITORING:

- PRIOR TO CONSTRUCTION, PRE-CONSTRUCTION CONDITION SURVEY OF ADJACENT STRUCTURES SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION 31 09 13 - GEOTECHNICAL INSTRUMENTATION AND MONITORING.
- INSTALL INSTRUMENTATION AND MOVEMENT MONITORING POINTS, PERFORM BASELINE MONITORING AND MONITOR ALL EXISTING STRUCTURES, PRIOR TO AND DURING CONSTRUCTION, IN ACCORDANCE WITH SPECIFICATION 31 09 13 - GEOTECHNICAL INSTRUMENTATION AND MONITORING.

SOE DESIGN CRITERIA:

- DESIGN GROUND WATER ELEVATION = EL. 3.0.
- TEMPORARY CONSTRUCTION SURCHARGE = 600 PSF.
- DIFFERENTIAL HYDROSTATIC WATER PRESSURE = 2 FEET.
- CLOSURE WALL DESIGNED FOR CANAL DREDGE OCCURRING PRIOR TO T81 DREDGING.

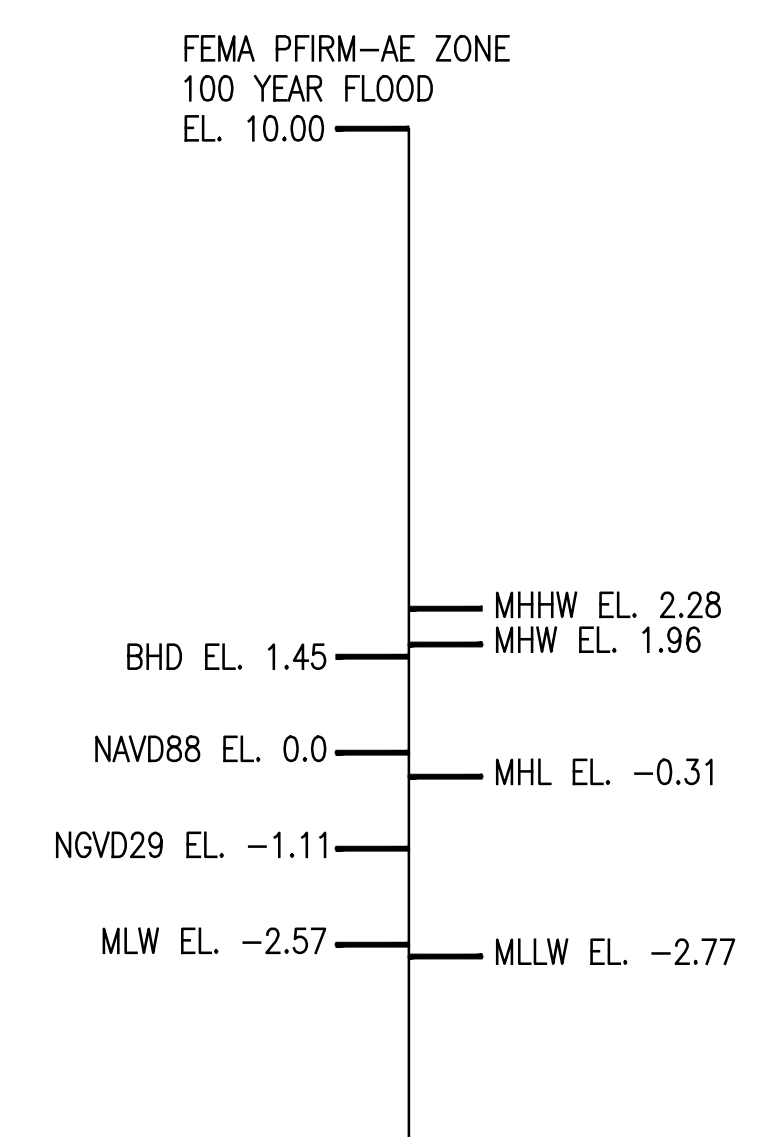
BULKHEAD DESIGN CRITERIA:

- LIVE LOAD SURCHARGE = 250 PSF.
- DIFFERENTIAL HYDROSTATIC WATER PRESSURE = 2 FEET.
- DESIGN EARTHQUAKE (MCE) = 5.75.
- DESIGN FLOOD ELEVATION = EL. 10 (ZONE AE).

APPLICABLE CODES AND STANDARDS

- NYCBC - NEW YORK CITY BUILDING CODE (2014)
- AISC - MANUAL OF STEEL CONSTRUCTION
- ACI - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-14)
- ASCE - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-10 SEISMIC)

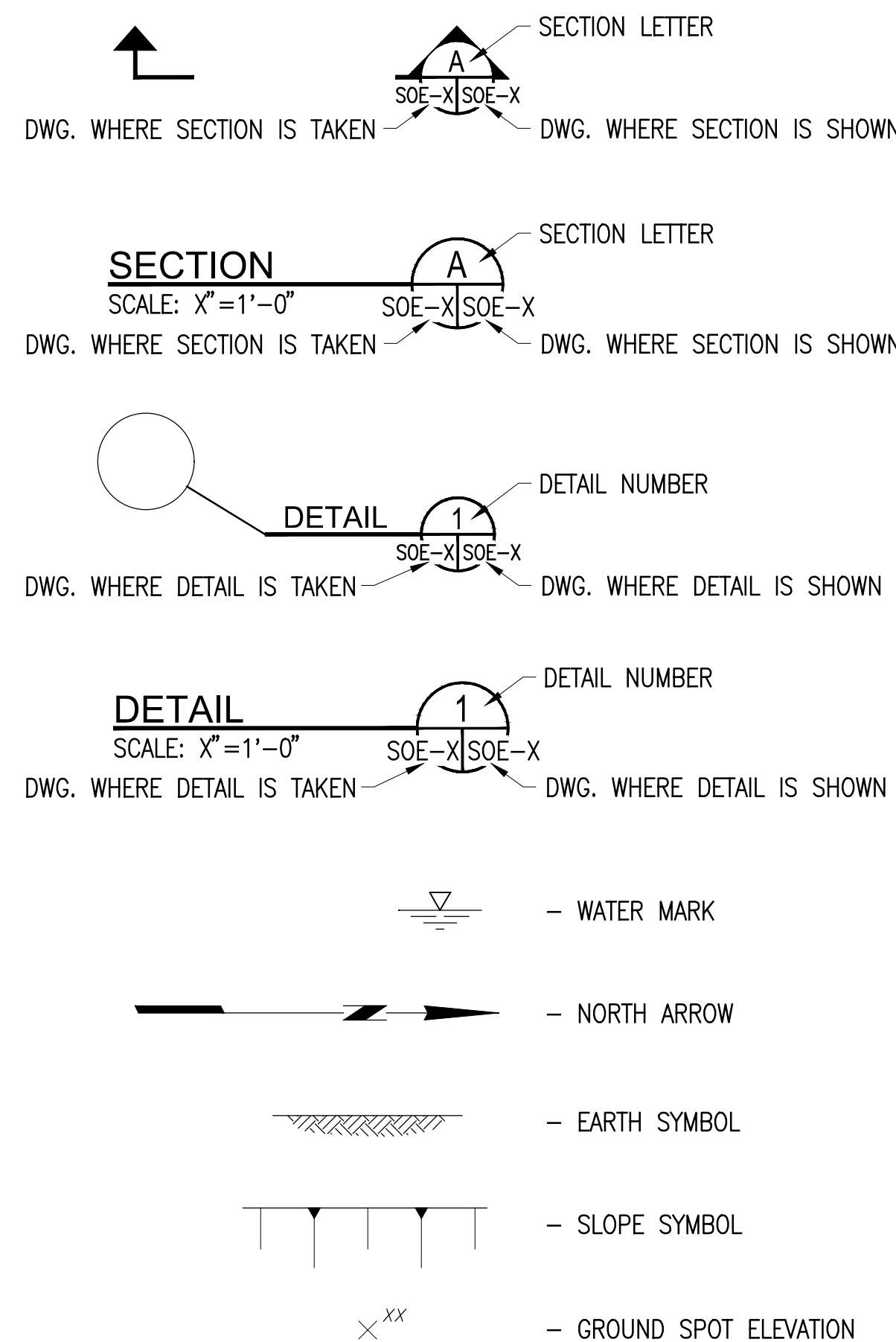
DATUM AND TIDAL INFORMATION:



NOTES:

- ELEVATIONS SHOWN REFERENCE NAVD88 (NGVD29).
- ELEVATIONS SHOWN IN FEET.

LEGEND:



ABBREVIATIONS:

- BLDG. - BUILDING
- B.O. - BOTTOM OF
- CL - CENTER LINE
- CL - CHAIN LINK
- CLR. - CLEAR
- CONC. - CONCRETE
- DIA. - DIAMETER
- DWG. - DRAWING
- DWGS. - DRAWINGS
- EL. - ELEVATION
- EXIST. - EXISTING
- FT. - FOOT, FEET
- KSF - KIPS PER SQUARE FOOT
- KSI - KIPS PER SQUARE INCH
- LG. - LONG
- MHW - MEAN HIGH WATER
- MLW - MEAN LOW WATER
- NO. - NUMBER
- NOS. - NUMBERS
- O.D. - OUTSIDE DIAMETER
- PSF - POUNDS PER SQUARE FOOT
- PSI - POUNDS PER SQUARE INCH
- STIFF. - STIFFENER
- S.O.E. - SUPPORT OF EXCAVATION
- TYP. - TYPICAL
- TEMP. - TEMPORARY
- T.O. - TOP OF
- W.P. - WORK POINT
- W/ - WITH
- U.O.N. - UNLESS OTHERWISE NOTED

INTERLOCKED PIPE PILE INSTALLATION NOTES:

- CONTRACTOR SHALL SUBMIT INTERLOCKED PIPE PILE LAYOUT AND FABRICATION SHOP DRAWINGS INCLUDING WORKING POINTS, DRIVING SEQUENCE AND ELEVATIONS FOR REVIEW.
- THE CONTRACTOR SHALL INSTALL A GUIDE WALL FOR INSTALLATION OF THE SOE WALL SYSTEMS; SUBMIT DRAWINGS AND DETAILED DESCRIPTION OF THE GUIDE WALLS INCLUDING LOCATION AND ALIGNMENT FOR APPROVAL OF THE ENGINEER.
- CONTRACTOR SHALL SUBMIT THE PROCEDURE TO ADVANCE INTERLOCKED PIPE PILES INCLUDING THE DETAILS OF THE SYSTEM FOR DRILLING THROUGH OVERBURDEN CASING SHOE, DOWN THE HOLE HAMMER AND WELDED CONNECTIONS FOR APPROVAL BY THE ENGINEER PRIOR TO START OF WORK.
- BOULDERS, COBBLES, BRICK MASONRY, STEEL, CONCRETE AND OTHER OBSTRUCTIONS ARE EXPECTED TO BE ENCOUNTERED IN THE FILL LAYER. THE CONTRACTOR IS RESPONSIBLE FOR SELECTING A DRILLING SYSTEM CAPABLE OF ADVANCING INTERLOCKED PIPE PILES THROUGH THE OVERBURDEN TO THE MINIMUM TIP ELEVATIONS SHOWN ON THE DRAWINGS. DOWN THE HOLE HAMMER SYSTEM SHALL BE RESTRAINED FROM ADVANCING AHEAD OF THE CASING AND THE CUTTINGS SHALL BE FLUSHED OUT INTERNALLY.
- PRIOR TO INSTALLATION OF INTERLOCKED PIPE PILES, CONTRACTOR SHALL USE THE PROPOSED SYSTEM TO INSTALL 2 TEST PILES IN THE INTERIOR OF THE SITE TO PROVE THE METHOD AND ENSURE THE OPERATION DOES NOT CAUSE LOSS OF MATERIAL OUTSIDE OF THE CASING WHICH MAY BE DETRIMENTAL TO ADJACENT STRUCTURES.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY SPECIAL CLOSURES, CONSTRUCTION DETAILS AND INTERLOCKS. SUBMIT SHOP DRAWINGS AND CATALOG CUTS FOR ALL ITEMS FOR THE APPROVAL BY THE ENGINEER.
- IT IS EXPECTED THAT THE PILES WILL BE INSTALLED WITHOUT FIELD SPLICING. IN THE EVENT THAT SPLICING OF THE PILES IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. SPLICES SHALL BE FULL PENETRATION BUTT WELDS AND SHALL BE LOCATED IN THE ZONES OF LOW FLEXURAL STRESS AS DETERMINED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT SPLICING DETAILS FOR APPROVAL BY THE ENGINEER. THE SUBMITTAL SHALL INCLUDE WELDING PROCEDURES AND SHOP DRAWINGS.
- ALL WELDING OF PIPE PILES AND PILING CONNECTORS SHALL BE IN ACCORDANCE WITH THE PILE AND CONNECTOR MANUFACTURER'S RECOMMENDATIONS.
- CLOSURE WALL PIPE PILES ARE SCHEDULED TO BE INSTALLED FIRST TO FACILITATE DREDGING IN THE CANAL. THESE PILES SHALL BE SURVEYED IMMEDIATELY AFTER INSTALLATION AND PERIODICALLY MONITORED UNTIL THE REMAINDER OF BULKHEADS ARE INSTALLED.
- AT THE COMPLETION OF PILE INSTALLATION, SUBMIT COMPLETE AND ACCURATE PILE INSTALLATION RECORDS AND THE AS-BUILT LAYOUT OF THE BULKHEAD WALLS.
- STEEL SHIMS SHALL BE INSTALLED BETWEEN TEMPORARY WALES AND PIPE PILES TO ENSURE CONTACT AT ALL PIPE PILES.

LIST OF SOE/BULKHEAD SPECIFICATIONS

- SECTION 03 11 13 - CAST-IN-PLACE
- SECTION 03 21 00 - REINFORCING STEEL
- SECTION 03 30 00 - CAST-IN-PLACE CONCRETE
- SECTION 03 37 26 - UNDERWATER PLACED CONCRETE
- SECTION 05 05 13.1 - GALVANIZING
- SECTION 05 12 34 - STRUCTURAL STEEL
- SECTION 09 96 56 - EPOXY COATINGS
- SECTION 31 09 13 - GEOTECHNICAL INSTRUMENTATION AND MONITORING
- SECTION 31 53 01 - TEMPORARY BRACING FOR EXCAVATION
- SECTION 31 63 34 - DRILLED STEEL PIPE PILES

| NO. | DATE | DESCRIPTIONS | BY | APPR'D |
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| 1 | 3/23/2020 | 100% DESIGN REVISION 1 | RC | |
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| REVISIONS | |
|---|----------------------|
| FIRST STREET TURNING BASIN GOWANUS CANAL BROOKLYN, NEW YORK | |
| CAPITAL PROJECT NO. PW77GOWAN 03/23/2020 | SHEET 01 OF 19 T-001 |

FINAL DESIGN SUBMITTED BY:



DESIGN PREPARED BY:



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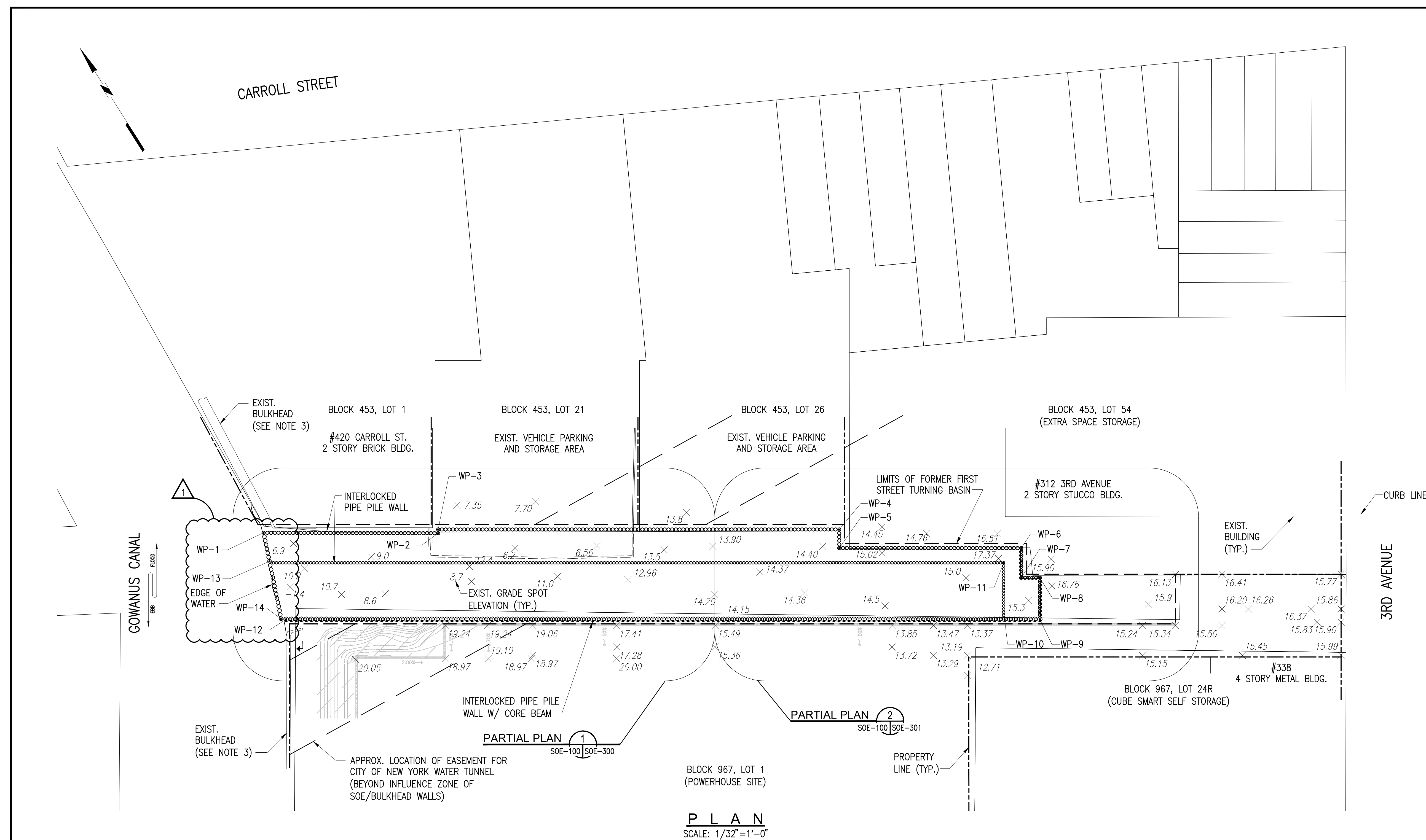
SUPPORT OF EXCAVATION
GENERAL NOTES, LIST OF DRAWINGS,
LEGEND AND ABBREVIATIONS

SK
DRAWN BY

T-001.00.DWG
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NOTES:

1. FOR GENERAL NOTES, SEE DRAWING NO. T-001.
2. FOR GENERAL CONSTRUCTION SEQUENCE, SEE DRAWINGS NOS. SOE-200, SOE-201, AND SOE-202.
3. CONTRACTOR SHALL LAYOUT THE NEW SOE BULKHEAD LOCATION AND SUBMIT PLAN SHOWING THE LOCATION AND DETAILS OF THE EXISTING BULKHEAD RELATIVE TO THE NEW BULKHEAD. ANY INTERFERENCE BETWEEN OLD AND NEW BULKHEAD SHALL BE PRESENTED TO THE ENGINEER FOR RESOLUTION PRIOR TO THE START OF WORK.
4. SEE G SERIES DRAWING FOR EXISTING CONDITIONS AND CONTRACTOR STAGING AREAS.
5. SEE C SERIES DRAWING FOR GRADING PROFILE AND DETAILS.



P L A N
SCALE: 1/32"=1'-0"

| WORK POINT COORDINATE TABLE | | |
|-----------------------------|-------------|-------------|
| WORK POINT NUMBER | NORTHING | EASTING |
| W.P.-1 | 186056.0773 | 987285.6553 |
| W.P.-2 | 185999.3246 | 987374.6122 |
| W.P.-3 | 186001.2201 | 987375.8152 |
| W.P.-4 | 185871.3633 | 987580.5790 |
| W.P.-5 | 185861.8856 | 987574.5638 |
| W.P.-6 | 185802.9691 | 987667.4658 |
| W.P.-7 | 185787.8048 | 987657.8415 |
| W.P.-8 | 185781.7929 | 987667.3213 |
| W.P.-9 | 185760.6077 | 987653.8758 |
| W.P.-10 | 185771.9922 | 987635.9242 |
| W.P.-11 | 185801.1728 | 987653.6776 |
| W.P.-12 | 186004.5623 | 987269.1978 |
| W.P.-13 | 186039.6139 | 987279.4016 |
| W.P.-14 | 186006.4729 | 987266.6487 |

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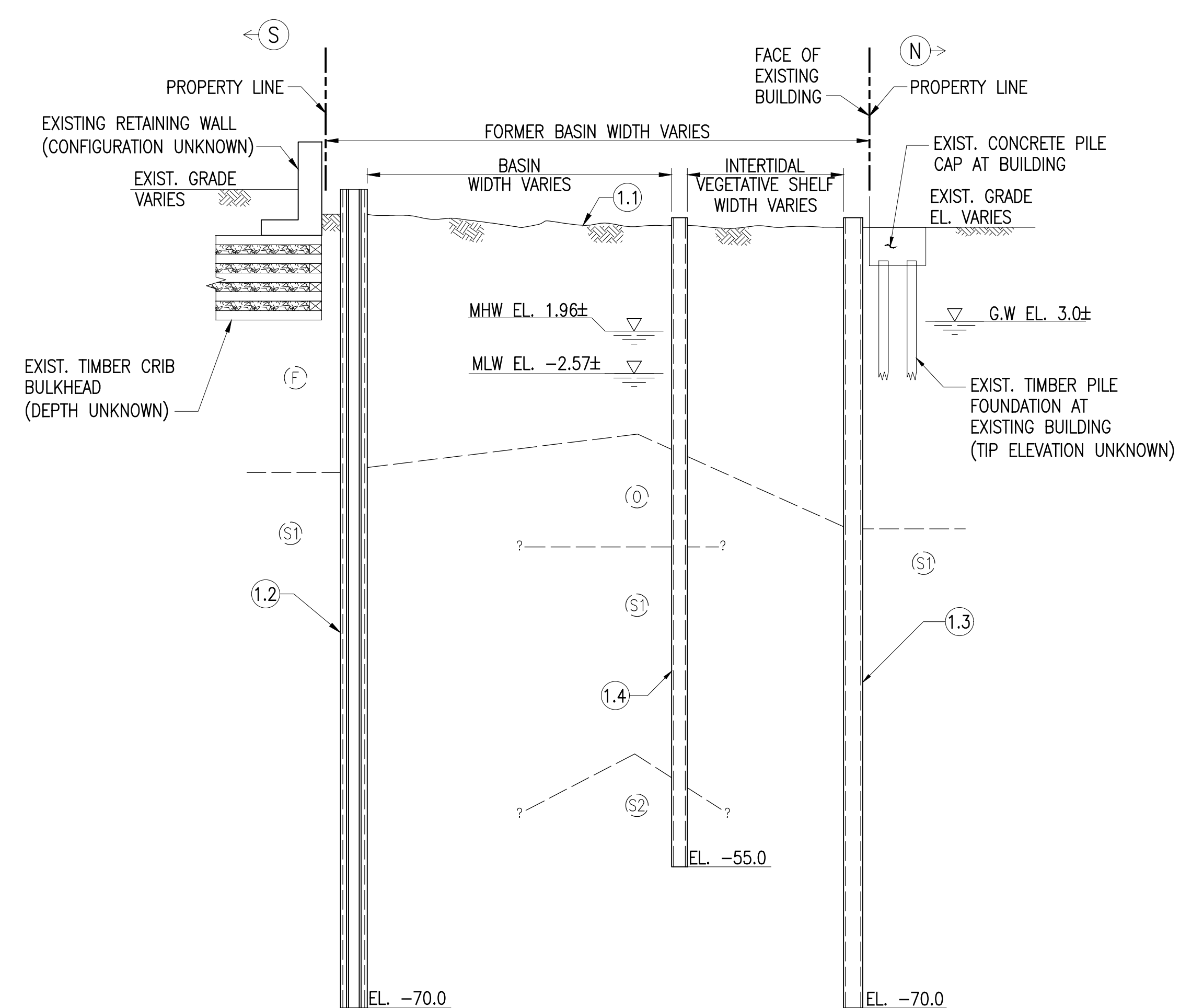
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The AKRF-KSE JV

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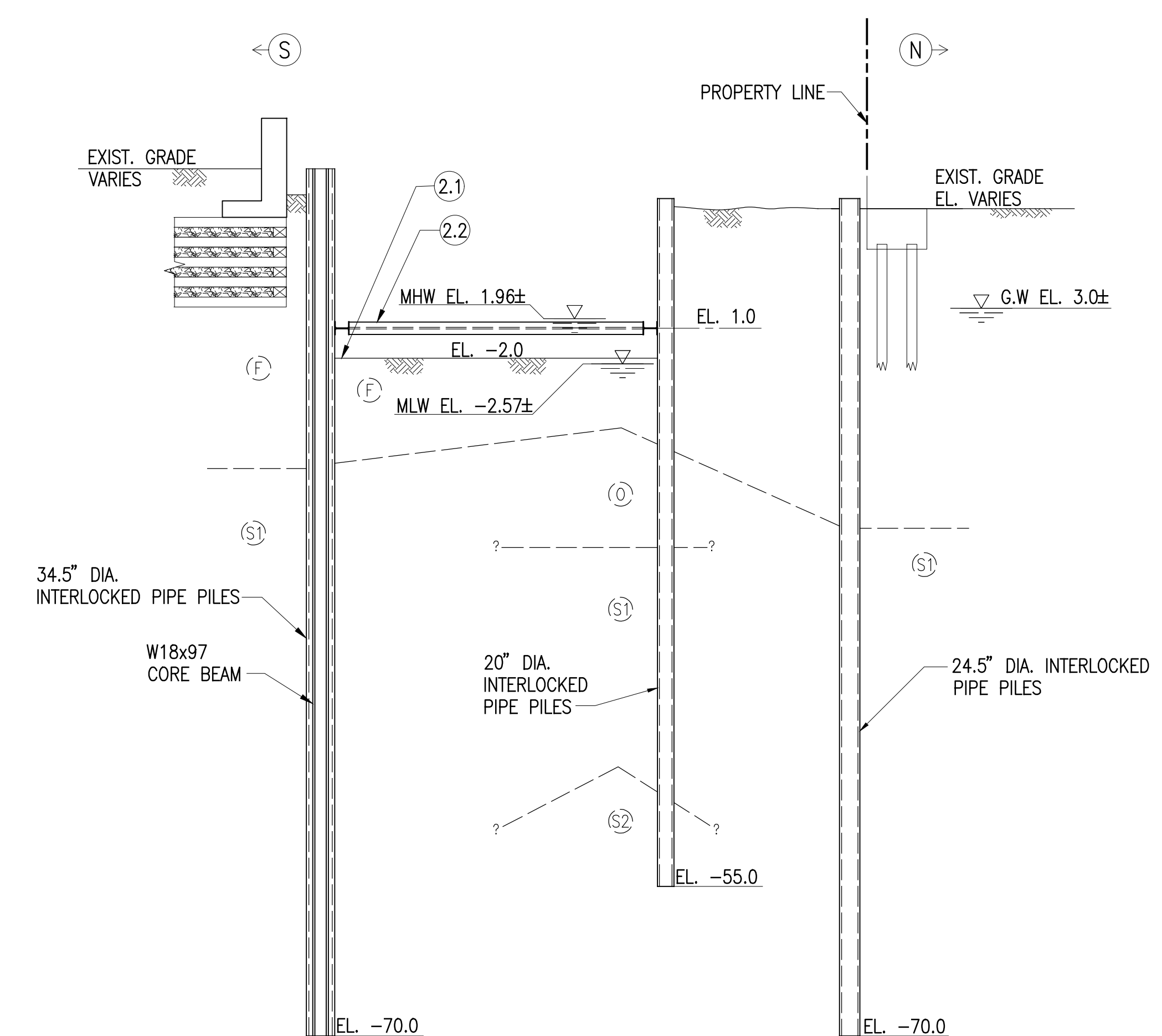
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BROOKLYN, NEW YORK
CAPITAL PROJECT NO. PW77GOWAN 03/23/2020
SHEET 02 OF 19
SOE-100



STAGE 1
INSTALL INTERLOCKED PIPE PILES
 SCALE: 3/32" = 1'-0"

- STAGE 1:**
- 1.1 REGRADE SITE AS NECESSARY FOR INSTALLATION OF PIPE PILES.
 - 1.2 INSTALL 34.5" DIAMETER PIPE PILES, CORE BEAMS, AND CONCRETE FILL.
 - 1.3 INSTALL 24.5" DIAMETER PIPE PILES AND CONCRETE FILL.
 - 1.4 INSTALL 20" DIAMETER PIPE PILES AND CONCRETE FILL.

NOTES:
 CONTRACTOR MAY PERFORM STEPS 1.2 THROUGH 1.4 IN ANY ORDER AND CONCURRENTLY TO MEET APPROVED PROJECT SCHEDULE.



STAGE 2
EXCAVATE AND INSTALL BRACING
 SCALE: 3/32" = 1'-0"

- STAGE 2:**
- 2.1 EXCAVATE IN THE WET TO EL. -2.0. MONITOR PIPE STRUCTURES FOR MOVEMENT.
 - 2.2 INSTALL TEMPORARY BRACING AT EL. 1.0.

NOTES:

1. SOIL STRATA IS SHOWN FOR ILLUSTRATION PURPOSES ONLY. ACTUAL SOIL PROFILE VARIES. SEE GEOTECHNICAL REPORT FOR SUBSURFACE INFORMATION.
2. SECTIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. EXISTING GRADES AND ADJACENT PROPERTIES VARY. SEE SURVEY PLAN FOR EXISTING CONDITIONS.

- GENERAL STRATA DESCRIPTIONS:**
- (F) FILL
 - (O) CLAY
 - (S1) LOWER SAND
 - (S2) UPPER SAND

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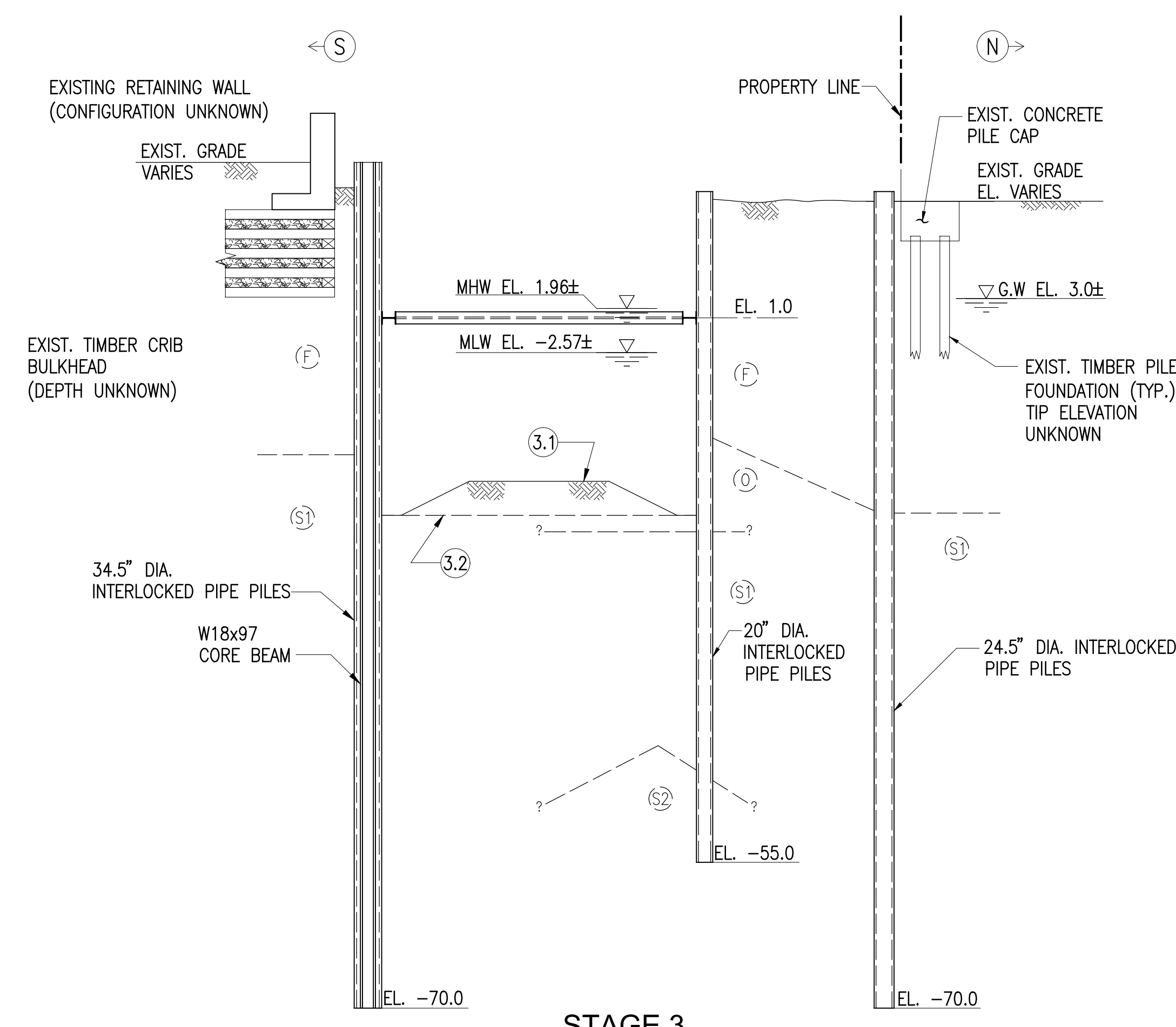
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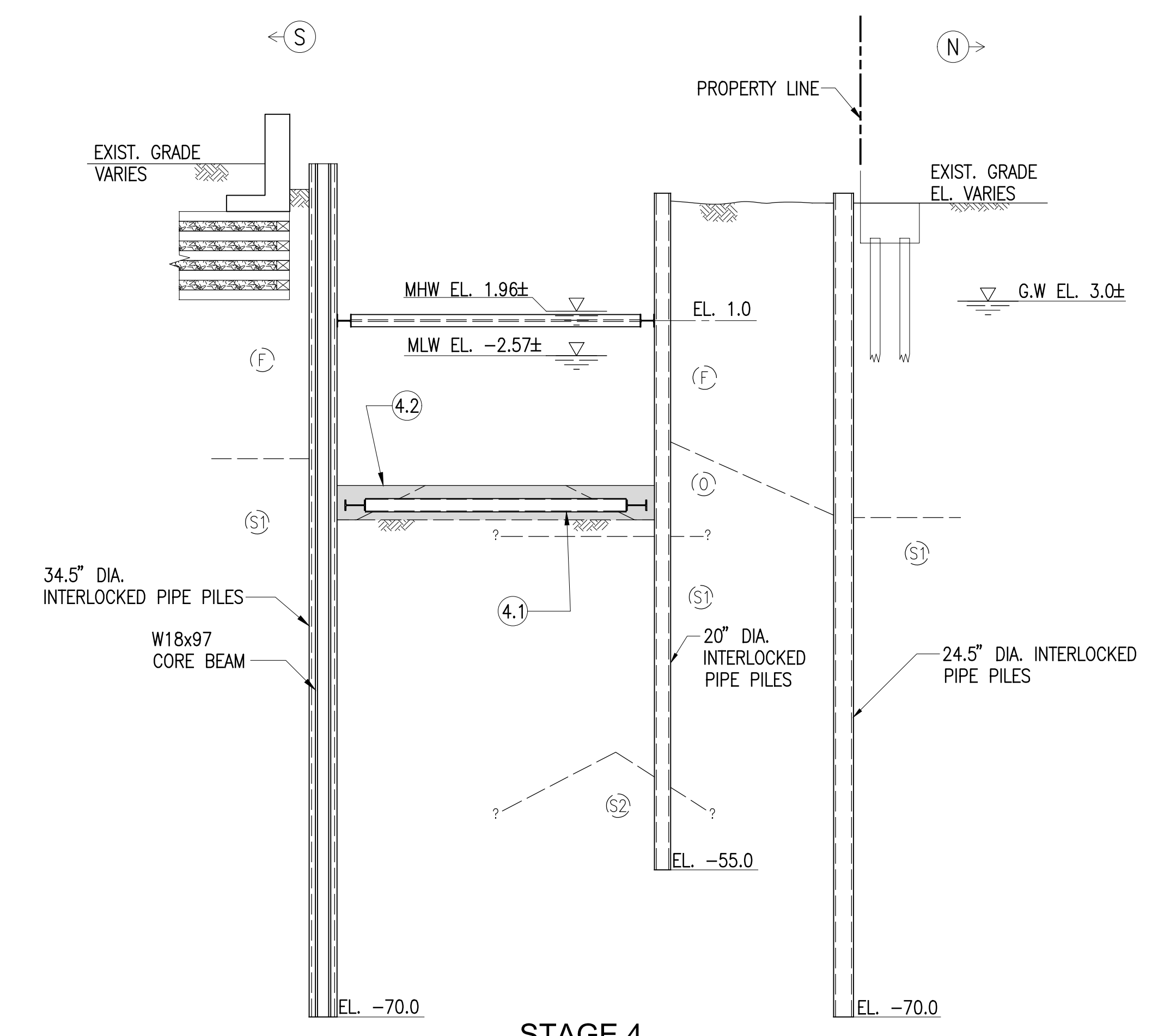
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 CAPITAL PROJECT NO. PW77GOWAN 03/23/2020
 SHEET 03 OF 19
 SOE-200



STAGE 3
EXCAVATE TO FINAL SUBGRADE
 SCALE: 3/32"=1'-0"

- STAGE 3:**
- 3.1 EXCAVATE IN THE WET TO SEDIMENT CAP SUBGRADE ELEVATION. MONITOR STRUCTURES. SEE NOTE 4.
 - 3.2 EXCAVATE TRENCHES FOR PERMANENT BRACING INSTALLATION. MONITOR STRUCTURES FOR MOVEMENT. SEE NOTE 2.



STAGE 4
INSTALL PERMANENT BRACING
 SCALE: 3/32"=1'-0"

- STAGE 4:**
- 4.1 INSTALL PERMANENT BRACING WITHIN TRENCHES.
 - 4.2 BACKFILL TRENCHES WITH TREMIE CONCRETE. SEE NOTE 5.

NOTES:

1. SOIL STRATA IS SHOWN FOR ILLUSTRATION PURPOSES ONLY. ACTUAL SOIL PROFILE VARIES. SEE GEOTECHNICAL REPORT FOR SUBSURFACE INFORMATION.
2. SEE DWG. NO. S-201 FOR TYPICAL TRENCH DETAILS. SEE DWGS S-101 AND S-102 FOR TRENCH SUBGRADE ELEVATIONS.
3. SECTIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. EXISTING GRADES AND ADJACENT PROPERTIES VARY. SEE SURVEY PLAN FOR ACTUAL CONDITIONS.
4. SEE C-SERIES DRAWINGS FOR CAP SUBGRADE ELEVATIONS.
5. SEE DWGS S-101 AND S-102 FOR TOP OF TREMIE CONCRETE ELEVATIONS.

GENERAL STRATA DESCRIPTIONS:

- (F) FILL
- (O) CLAY
- (S1) LOWER SAND
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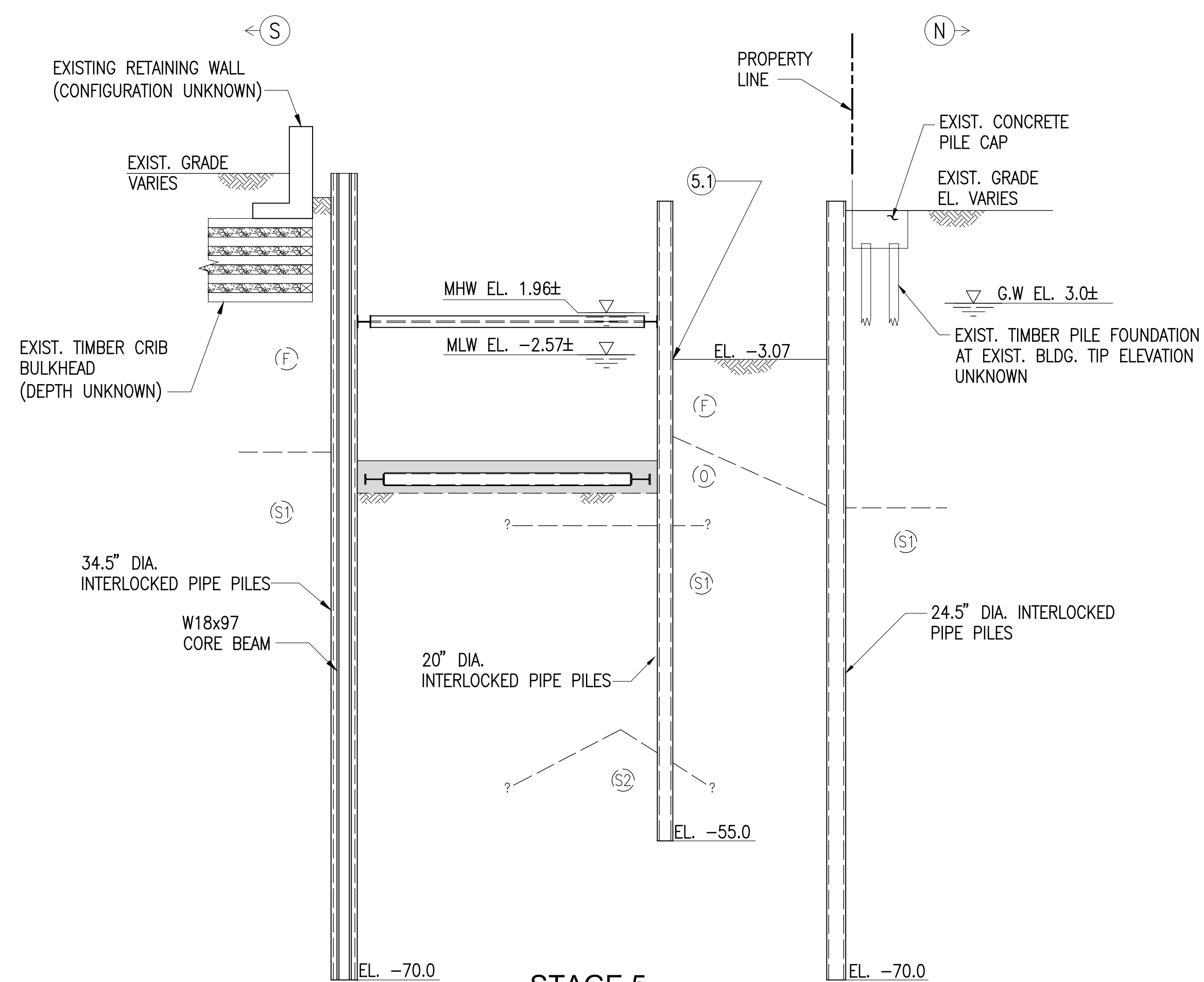
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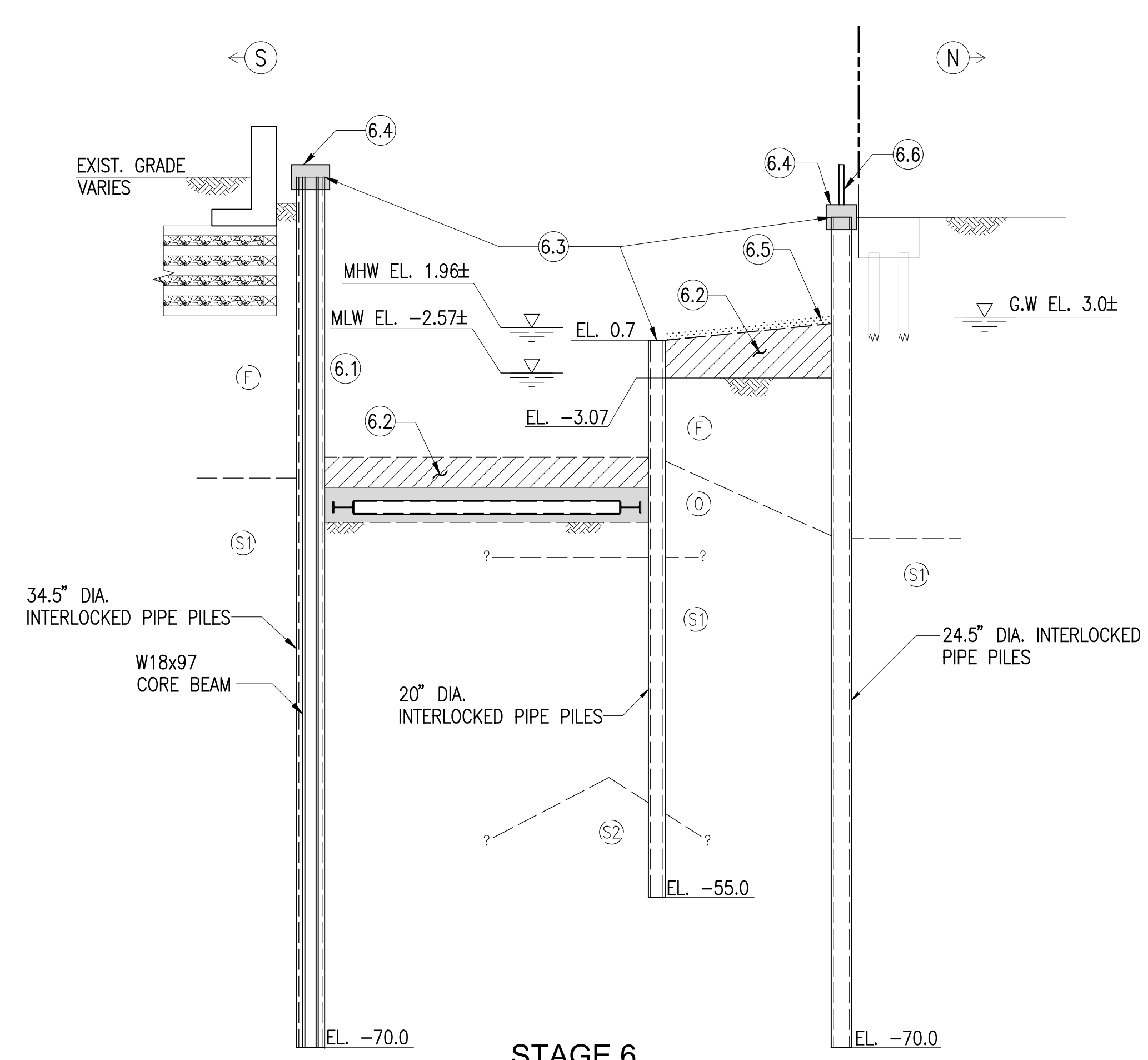
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STAGE 5
EXCAVATE FOR INTERTIDAL VEGETATIVE SHELF
 SCALE: 3/32"=1'-0"

STAGE 5:

5.1 EXCAVATE FOR INTERTIDAL VEGETATIVE SHELF. MONITOR STRUCTURES FOR MOVEMENT. SEE NOTE 3.



STAGE 6
REMOVE TEMPORARY BRACING, INSTALL SEDIMENT CAPS, CONCRETE BULKHEAD CAP, PLANTINGS, AND FENCE
 SCALE: 3/32"=1'-0"

STAGE 6:

- 6.1 REMOVE TEMPORARY BRACING. MONITOR PIPE PILES FOR MOVEMENT.
- 6.2 INSTALL SEDIMENT CAP. SEE NOTE 3.
- 6.3 CUT-OFF PIPE PILES TO FINAL CUT-OFF ELEVATION. SEE NOTE 4.
- 6.4 CONSTRUCT CONCRETE CAP. SEE NOTE 4.
- 6.5 PLACE PLANTING SOIL AND PLANTINGS FOR INTERTIDAL VEGETATIVE SHELF.
- 6.6 INSTALL FENCE. SEE NOTE 5.

NOTES:

1. SOIL STRATA IS SHOWN FOR ILLUSTRATION PURPOSES ONLY. ACTUAL SOIL PROFILE VARIES. SEE GEOTECHNICAL REPORT FOR SUBSURFACE INFORMATION.
2. SECTIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. EXISTING GRADES AND ADJACENT PROPERTIES VARY. SEE SURVEY PLAN FOR ACTUAL CONDITIONS.
3. SEE C-SERIES DRAWINGS FOR SEDIMENT CAP DETAILS.
4. PILE CUT-OFF ELEVATIONS SHALL BE 1'-0" BELOW TOP OF CONCRETE CAP. SEE DRAWINGS S-101 AND S-102 FOR TOP OF BULKHEAD CONCRETE CAP ELEVATIONS.
5. SEE L-SERIES DRAWINGS FOR FENCE DETAILS.

GENERAL STRATA DESCRIPTIONS:

- (F) FILL
- (O) CLAY
- (S1) LOWER SAND
- (S2) UPPER SAND

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| REVISIONS | |
| CAPITAL PROJECT NO. PW77GOWAN 03/23/2020 | SHEET 05 OF 19 SOE-202 |

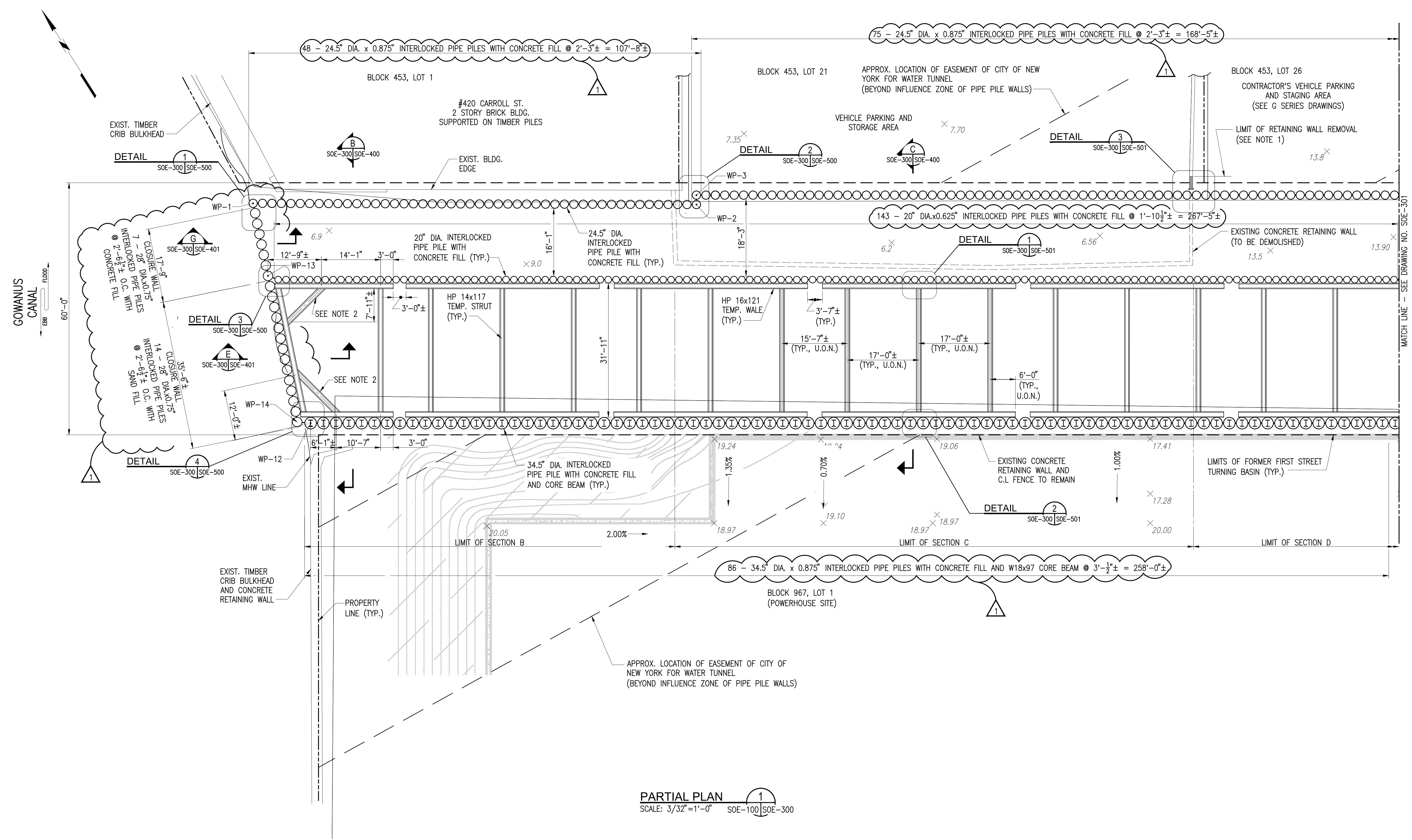
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 SEQUENCE OF CONSTRUCTION
 SK DRAWN BY _____
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FIRST STREET TURNING BASIN
 GOWANUS CANAL
 BROOKLYN, NEW YORK



PARTIAL PLAN
SCALE: 3/32" = 1'-0" SOE-100/SOE-300

- NOTES:**
1. THE SOIL CURRENTLY RETAINED BY THE EXISTING RETAINING WALL AT BLOCK 453, LOT 21 SHALL BE BERMED BACK AT 1.5H:1V SLOPE PRIOR TO DEMOLITION OF RETAINING WALL. CONTRACTOR SHALL SAW CUT THE RETAINING WALL AT THE LIMITS MARKED FOR REMOVAL PRIOR TO DEMOLITION.
 2. HP14x121 TEMPORARY CORNER BRACE. SEE DETAIL ON DWG. NO. SOE-501.

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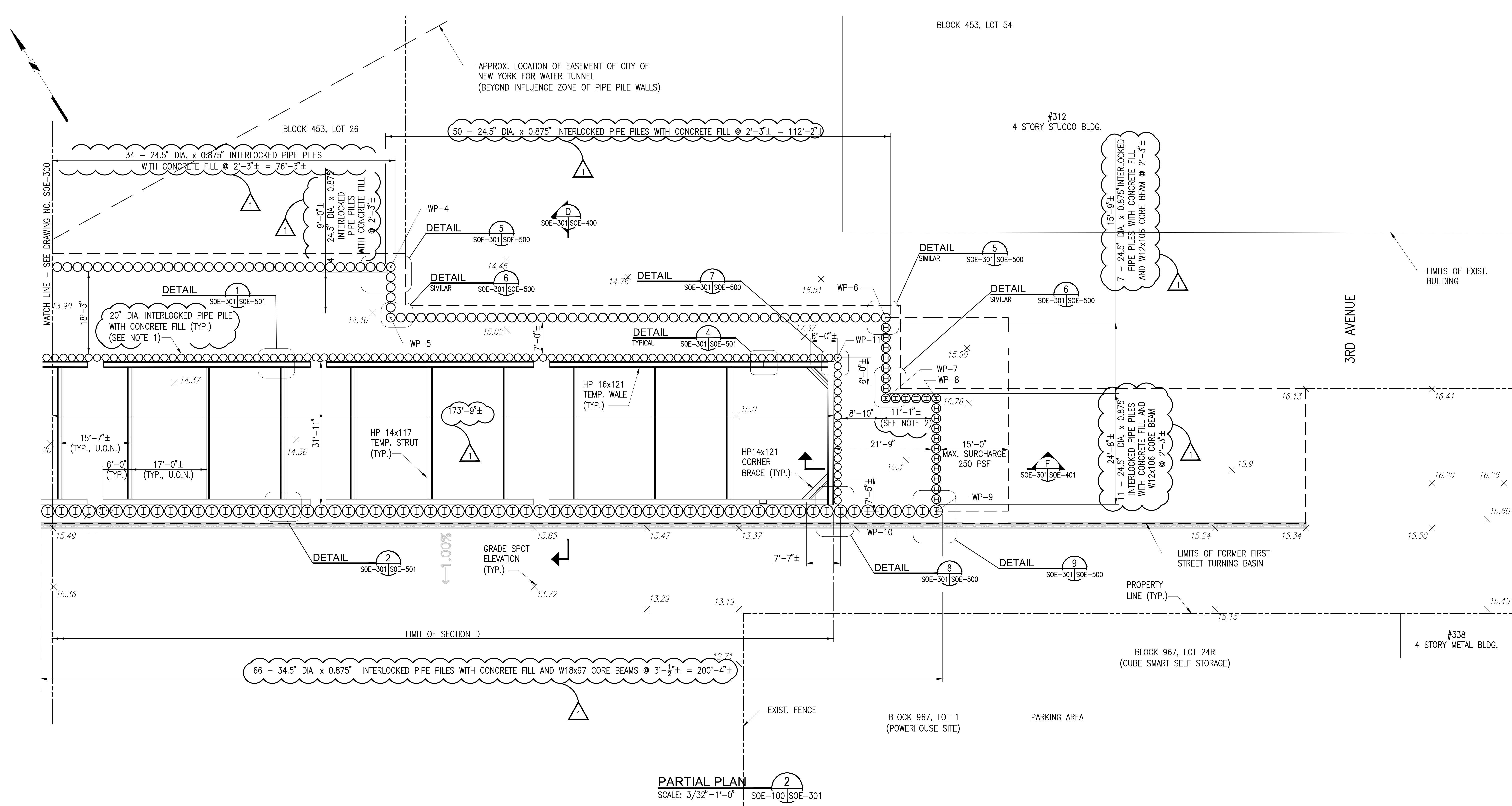
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DESIGN PREPARED BY:
MIRCE
MUESER RUTLEDGE CONSULTING ENGINEERS
NAME OF CONSULTANT
SIGNATURE _____
DATE _____

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

SUPPORT OF EXCAVATION
PARTIAL PLAN
SK DRAWN BY _____
SOE-300.00.DWG
CADD FILE

FIRST STREET TURNING BASIN
GOWANUS CANAL
BROOKLYN, NEW YORK
CAPITAL PROJECT NO. PW77GOWAN 03/23/2020 SHEET 06 OF 19 SOE-300



- NOTES:**
1. (94+17) 20\"/>
 - 2. 5 - 24.5\"/>

PARTIAL PLAN
SCALE: 3/32\"/>

| NO. | DATE | DESCRIPTIONS | BY | APPR'D |
|-----|------------|------------------------|----|--------|
| 1 | 3/23/2020 | 100% DESIGN REVISION 1 | | RC |
| 0 | 03/18/2019 | 100% DESIGN REPORT | | RC |

REVISIONS

| | | | |
|--|--|----------------|---------|
| CAPITAL PROJECT NO. PW77GOWAN 03/23/2020 | | SHEET 07 OF 19 | SOE-301 |
|--|--|----------------|---------|

FINAL DESIGN SUBMITTED BY:
AKRF KSE
The AKRF-KSE JV

DESIGN PREPARED BY:
MIRCE
MUESER RUTLEDGE CONSULTING ENGINEERS
NAME OF CONSULTANT

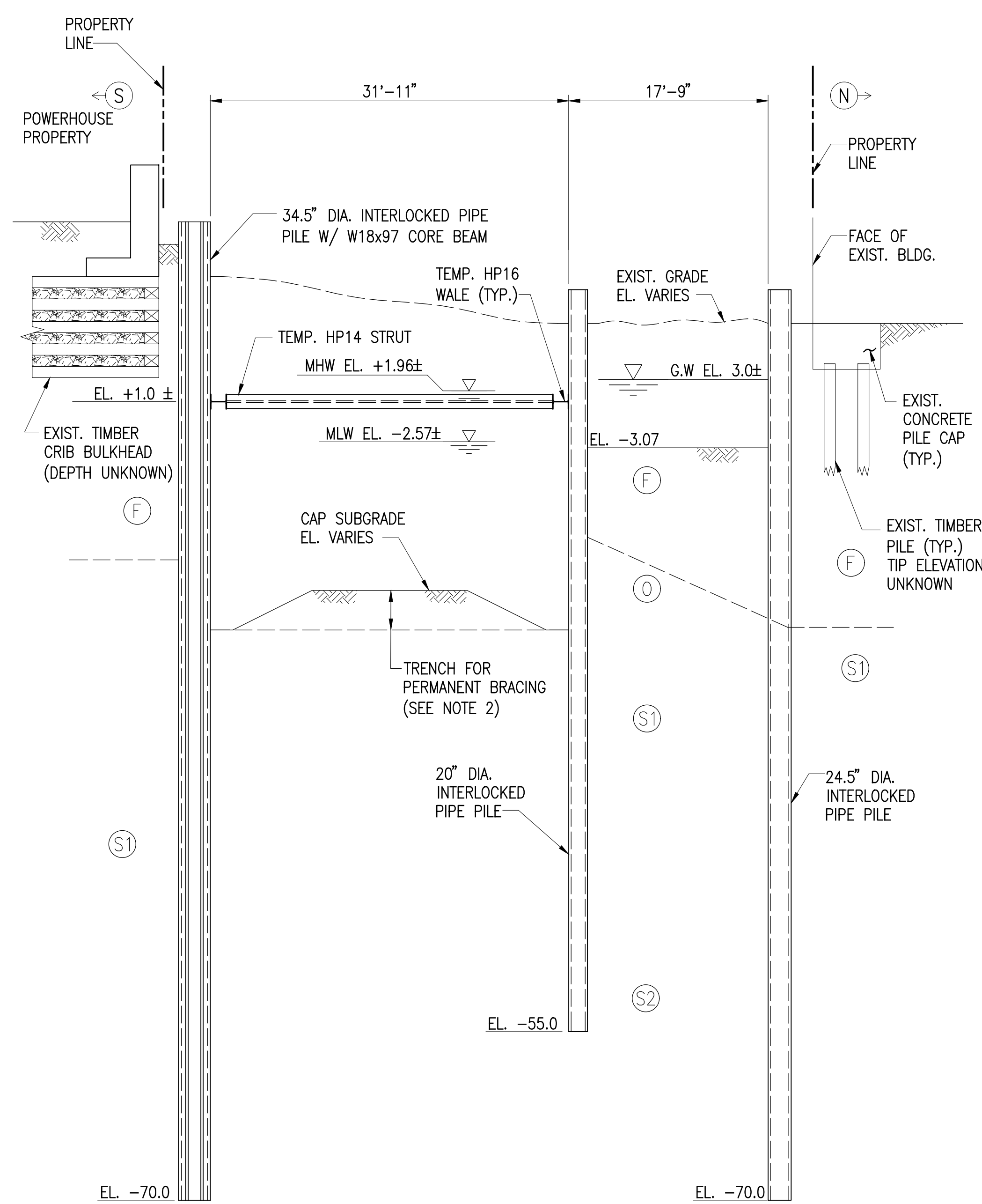
SIGNATURE _____
DATE _____

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

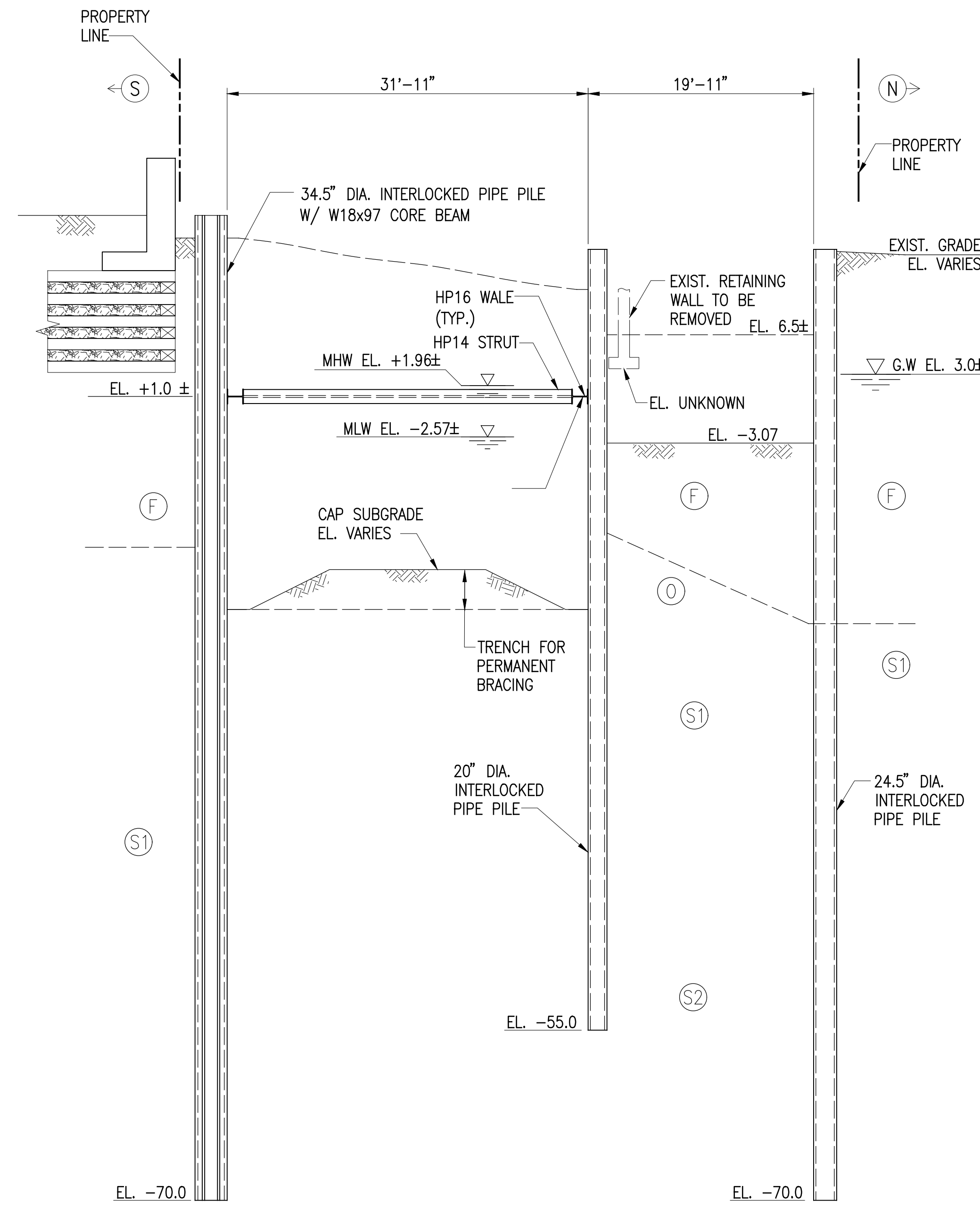
SUPPORT OF EXCAVATION
PARTIAL PLAN

SK DRAWN BY _____
SOE-301.00.DWG
CADD FILE

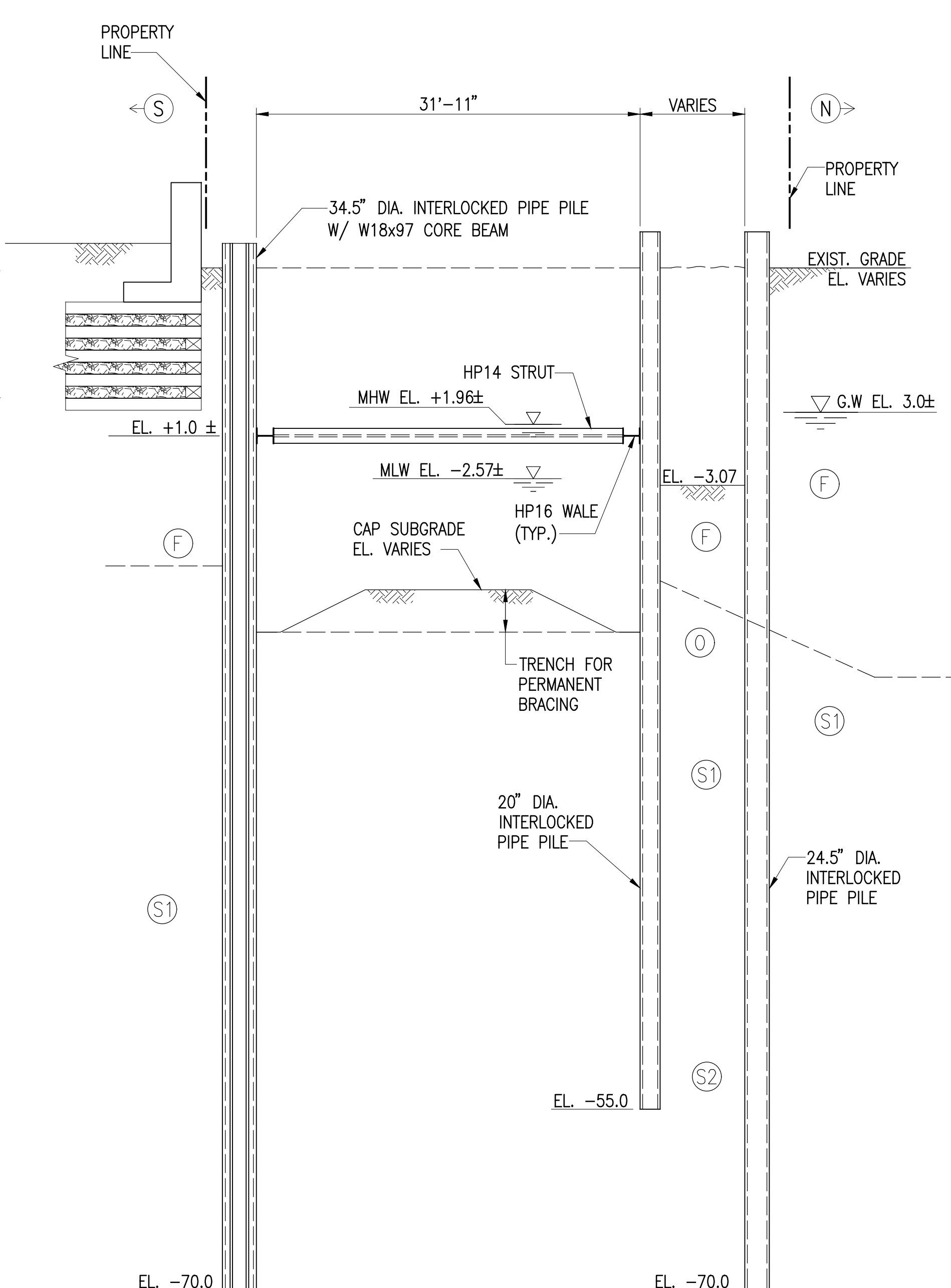
FIRST STREET TURNING BASIN
GOWANUS CANAL
BROOKLYN, NEW YORK



SECTION B
SCALE: 1/8"=1'-0" SOE-300|SOE-400



SECTION C
SCALE: 1/8"=1'-0" SOE-300|SOE-400



SECTION D
SCALE: 1/8"=1'-0" SOE-300|SOE-400

NOTES:

- SOIL STRATA IS SHOWN FOR ILLUSTRATION PURPOSES ONLY. ACTUAL SOIL PROFILE VARIES. SEE GEOTECHNICAL REPORT FOR SUBSURFACE INFORMATION.
- SEE DWG S-201 FOR TYPICAL TRENCHING DETAIL.

| NO. | DATE | DESCRIPTIONS | BY | APPR'D |
|-----|------------|------------------------|----|--------|
| 1 | 3/23/2020 | 100% DESIGN REVISION 1 | RC | |
| 0 | 03/18/2019 | 100% DESIGN REPORT | RC | |

| REVISIONS | | | | |
|---|----------------------|-------|----------|---------|
| FIRST STREET TURNING BASIN GOWANUS CANAL BROOKLYN, NEW YORK | | | | |
| CAPITAL PROJECT NO. | PW77GOWAN 03/23/2020 | SHEET | 08 OF 19 | SOE-400 |

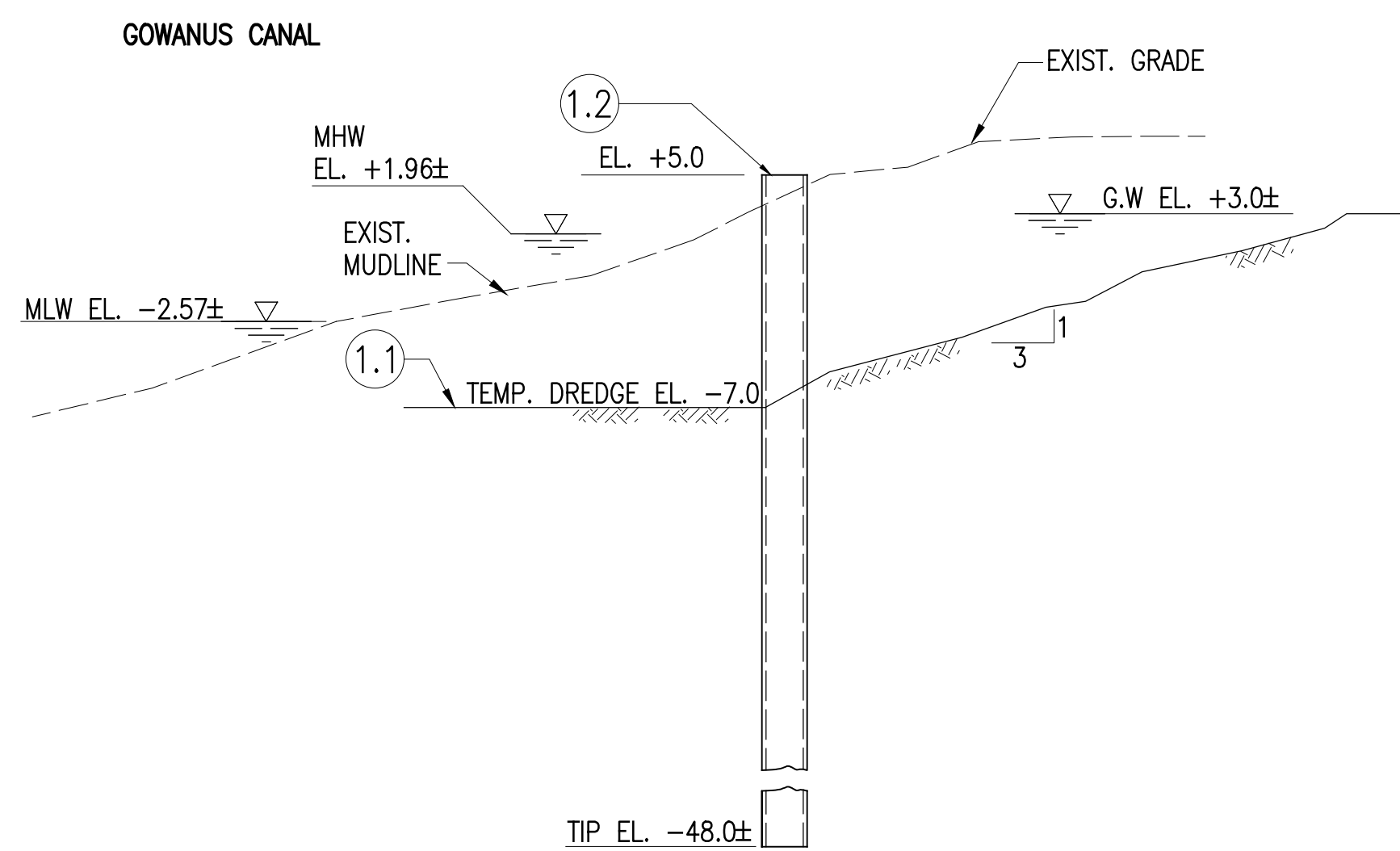
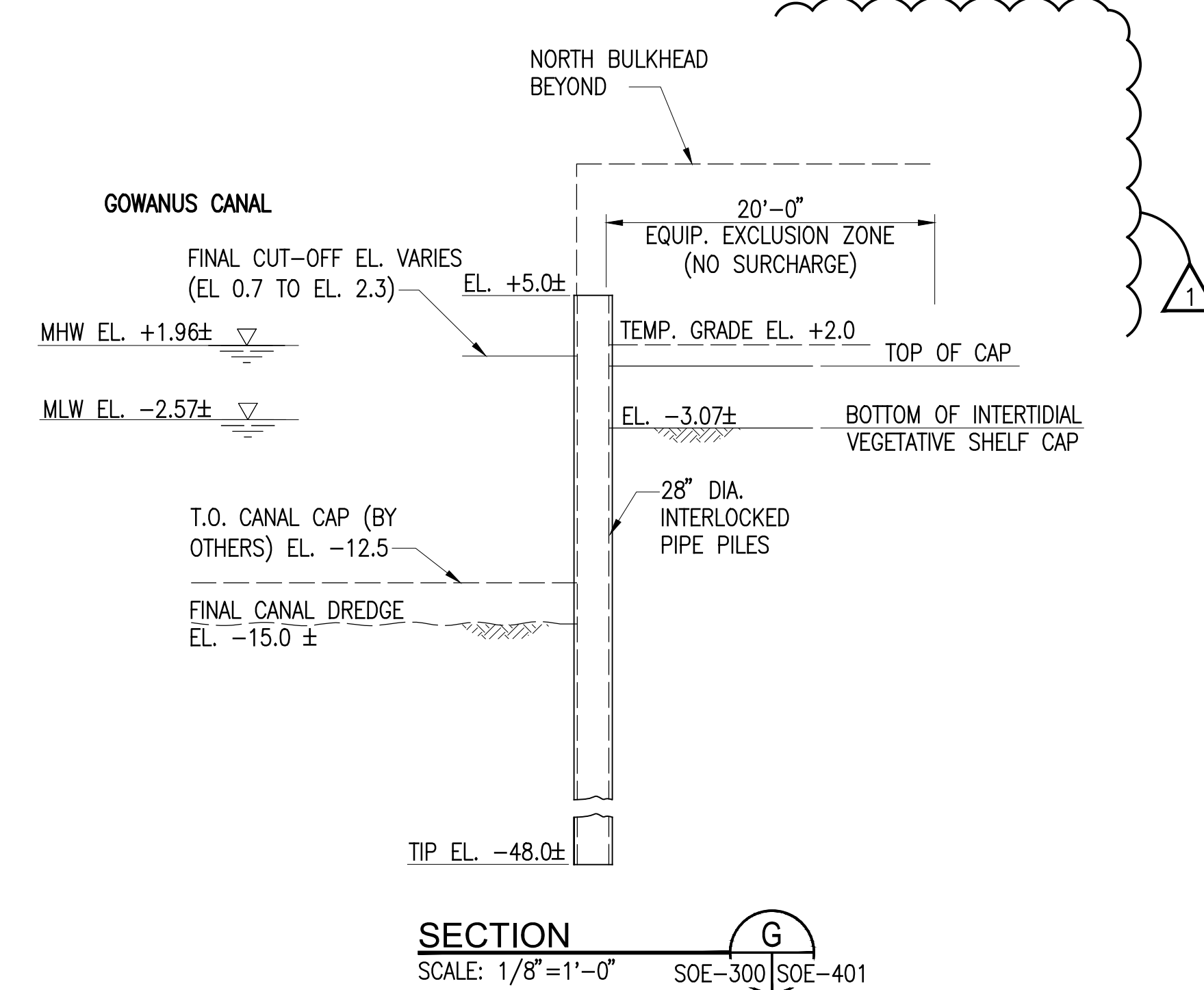
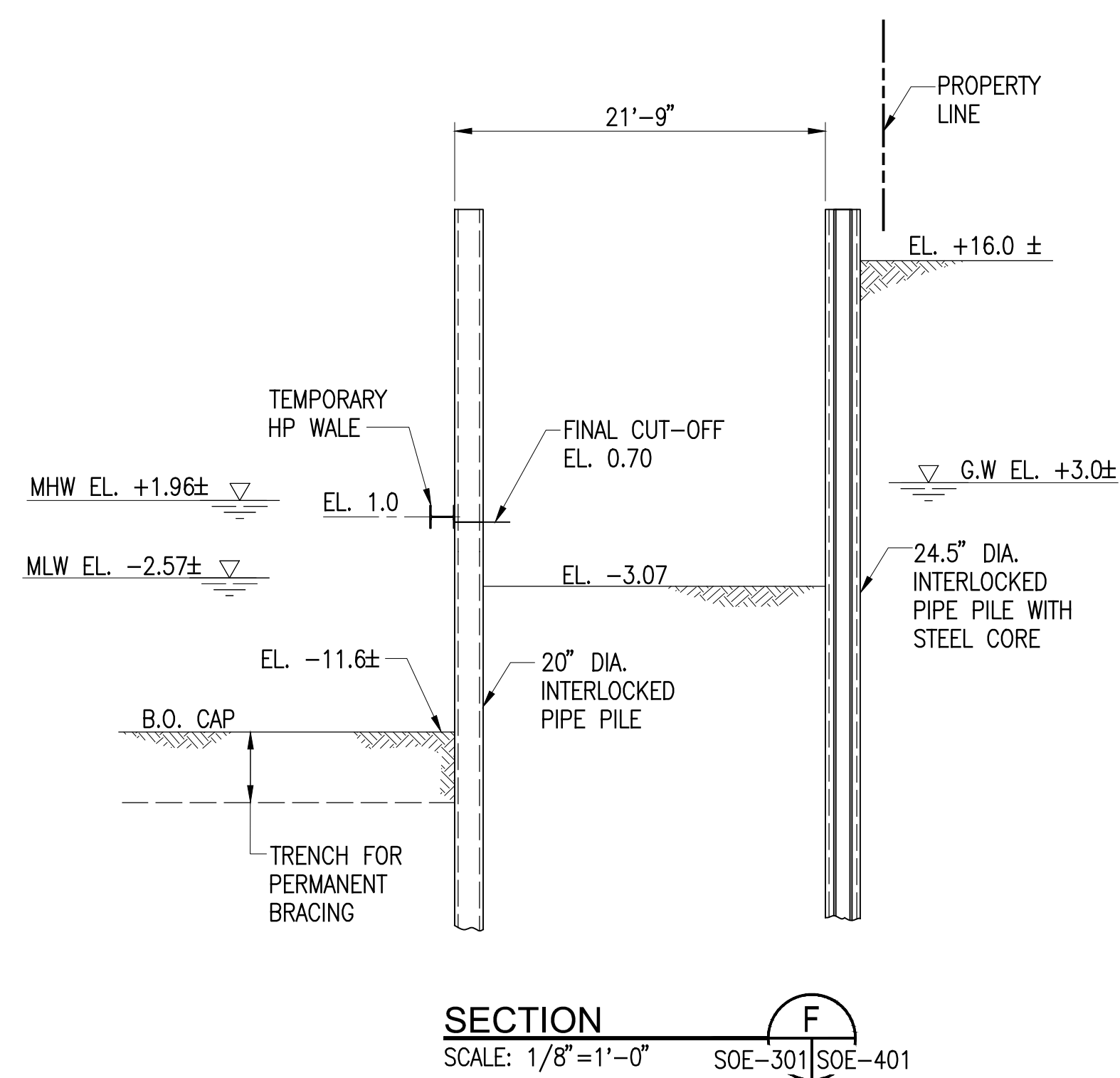
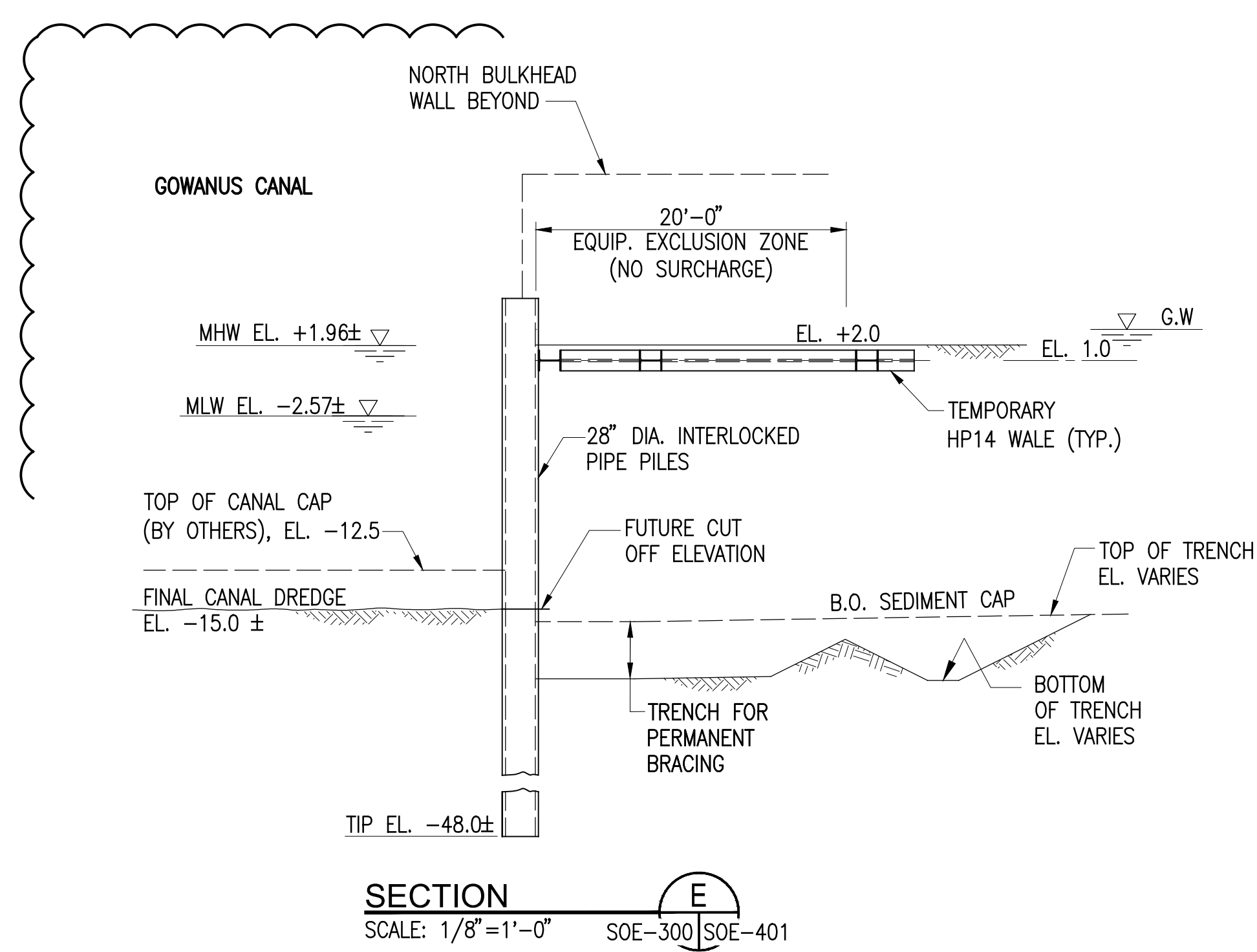
FINAL DESIGN SUBMITTED BY:
AKRF KSE
The AKRF-KSE JV

DESIGN PREPARED BY:
MIRCE
MUESER RUTLEDGE CONSULTING ENGINEERS
NAME OF CONSULTANT
SIGNATURE _____
DATE _____

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

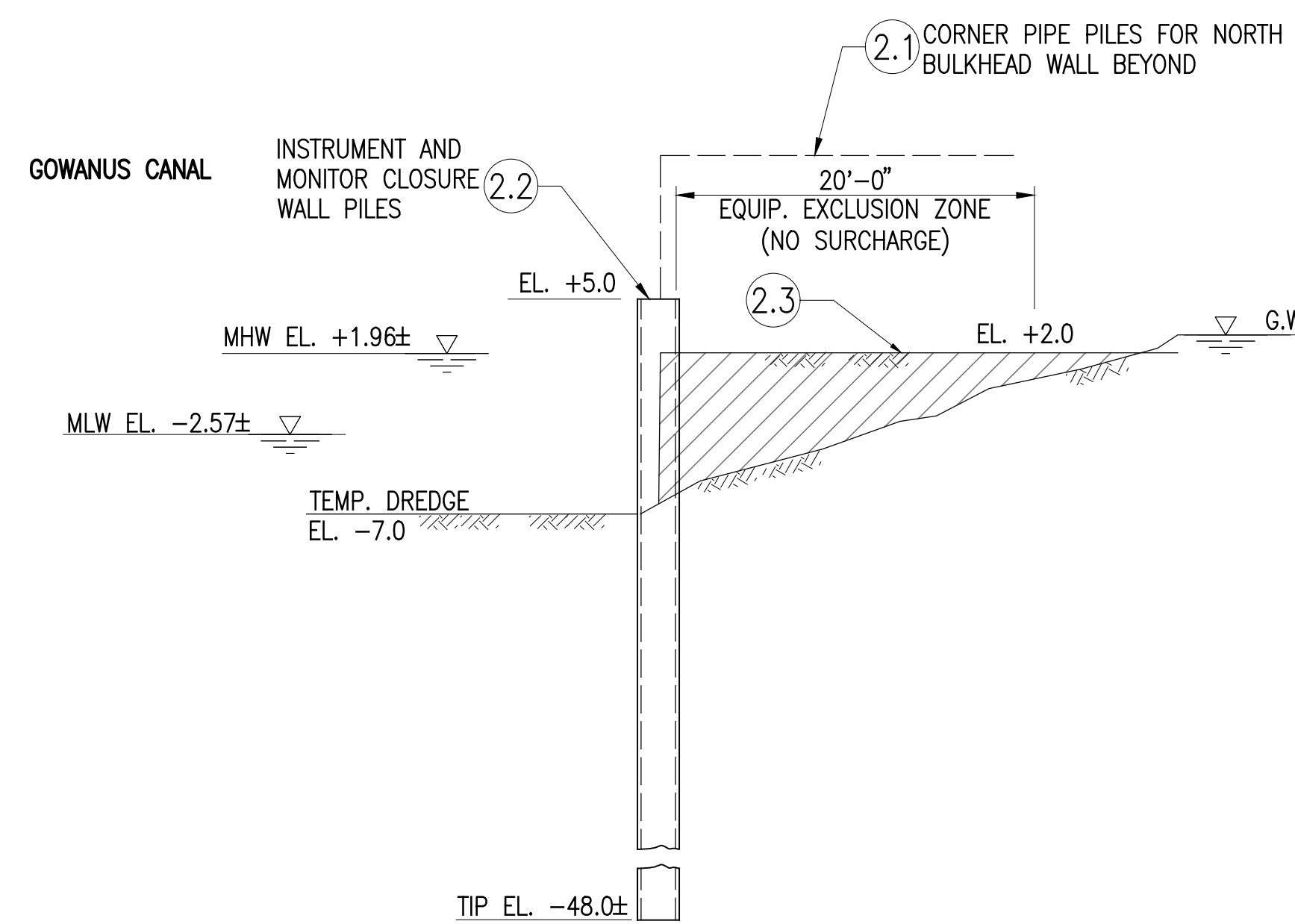
SUPPORT OF EXCAVATION
SECTIONS

SK DRAWN BY _____
SOE-400.00.DWG
CADD FILE



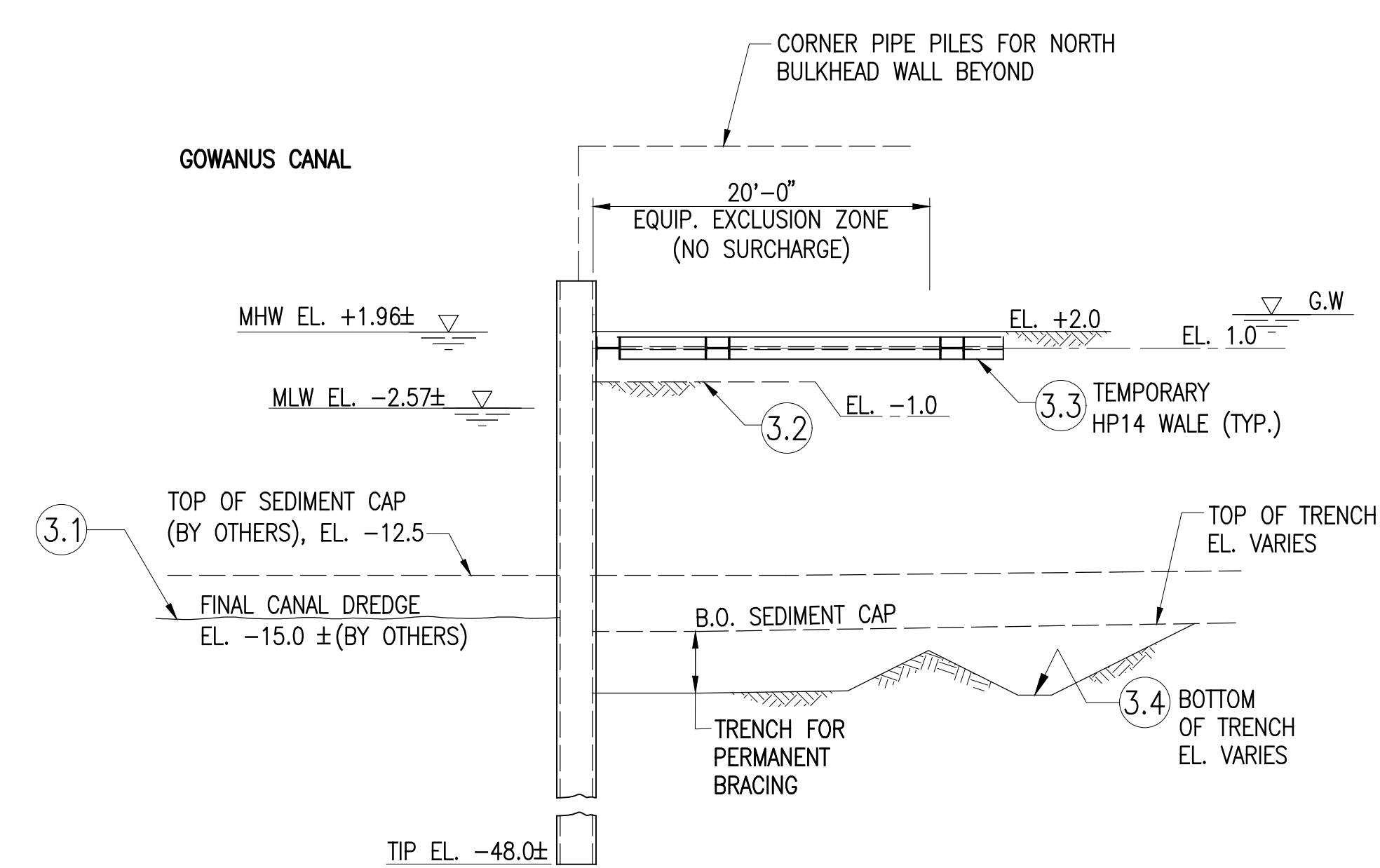
STAGE 1:

1. PRE-DREDGE TO EL. -7±. PRE-EXCAVATE BEHIND CLOSURE WALL ALIGNMENT TO MAINTAIN A SLOPE OF 3:1.
2. INSTALL 28" DIA. SAND FILLED INTERLOCKED PIPE PILES. FOR CLOSURE WALL.



STAGE 2:

1. INSTALL CORNER PIPE PILES FOR NORTH BULKHEAD WALL. MIN. 6 PILES ALONG NORTH AND SOUTH BULKHEADS, MIN. 10 PILES ALONG INTERTIDAL SHELF WALL.
2. INSTALL INSTRUMENTATION AND COMMENCE MONITORING OF PILES. SEE SOE-600 FOR FREQUENCY AND CRITERIA.
3. BACKFILL TO EL. +2.0 AFTER INSTALLING CORNER PILES ALONG NORTH, SOUTH AND INTERTIDAL SHELF WALL.



STAGE 3:

1. EXCAVATE TO FINAL CANAL DREDGE EL. -15.0.
2. EXCAVATE TO EL. -1.0
3. INSTALL TEMPORARY BRACING AT EL. 1.0±
4. EXCAVATE TO BOTTOM OF TRENCH ELEVATION

**CONSTRUCTION SEQUENCE AT CLOSURE WALL
(BASED ON SECTION-E)**

NOTES:

1. PER THE REVISED DREDGING SCHEDULE, THE CANAL DREDGING WILL BE PERFORMED PRIOR TO TB-1 EXCAVATION.
2. CLOSURE WALL DETAILS AND CONSTRUCTION SEQUENCE SHOWN HEREIN ARE APPLICABLE FOR THE CANAL DREDGE OCCURRING PRIOR TO TB-1 EXCAVATION.
3. STAGES 1 AND 2 TO BE PERFORMED BY GOWANUS CANAL REMEDIATION TARGET AREA 1 CONTRACTOR.

| NO. | DATE | DESCRIPTIONS | BY | APPR'D |
|-----|------------|------------------------|----|--------|
| 1 | 3/23/2020 | 100% DESIGN REVISION 1 | | RC |
| 0 | 03/18/2019 | 100% DESIGN REPORT | | RC |

FINAL DESIGN SUBMITTED BY:



DESIGN PREPARED BY:

MIRCE
MUESER RUTLEDGE CONSULTING ENGINEERS
NAME OF CONSULTANT

SIGNATURE
DATE

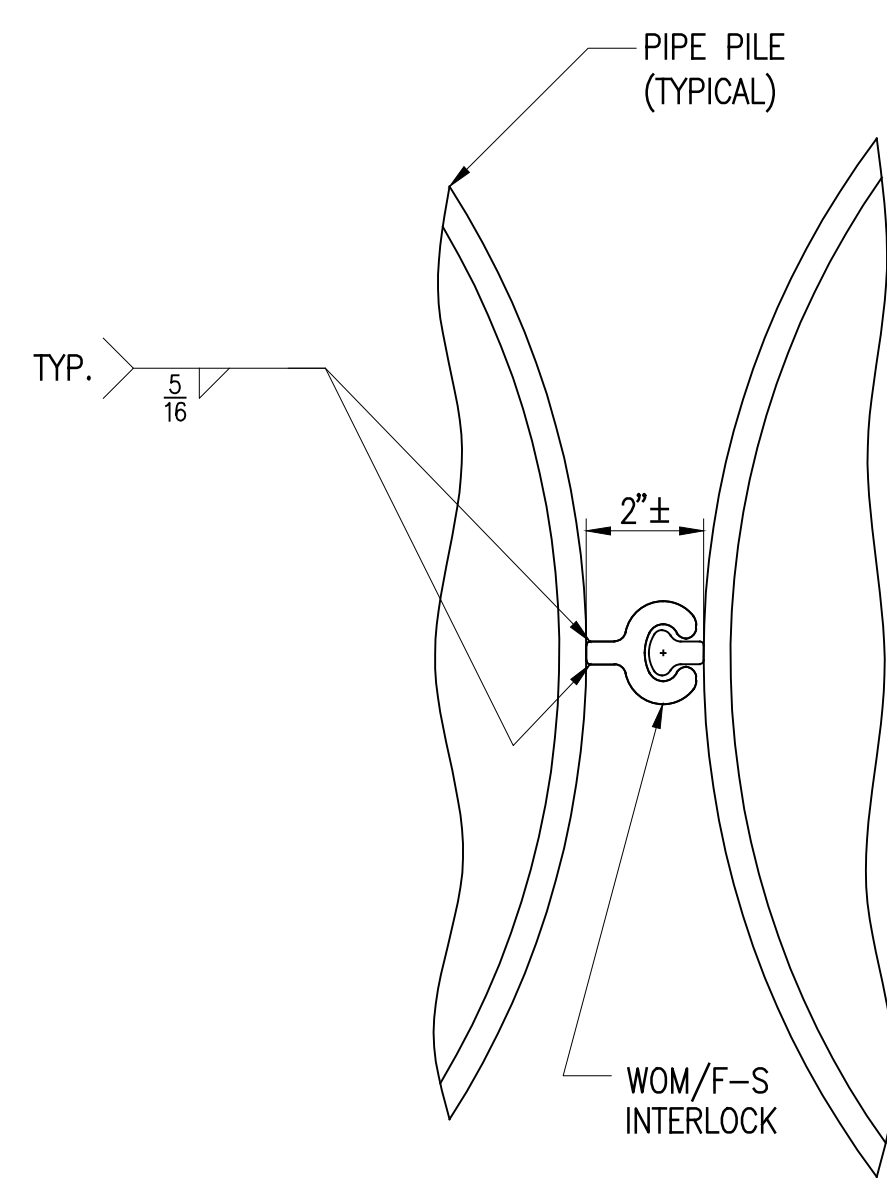
CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

SUPPORT OF EXCAVATION
SECTIONS

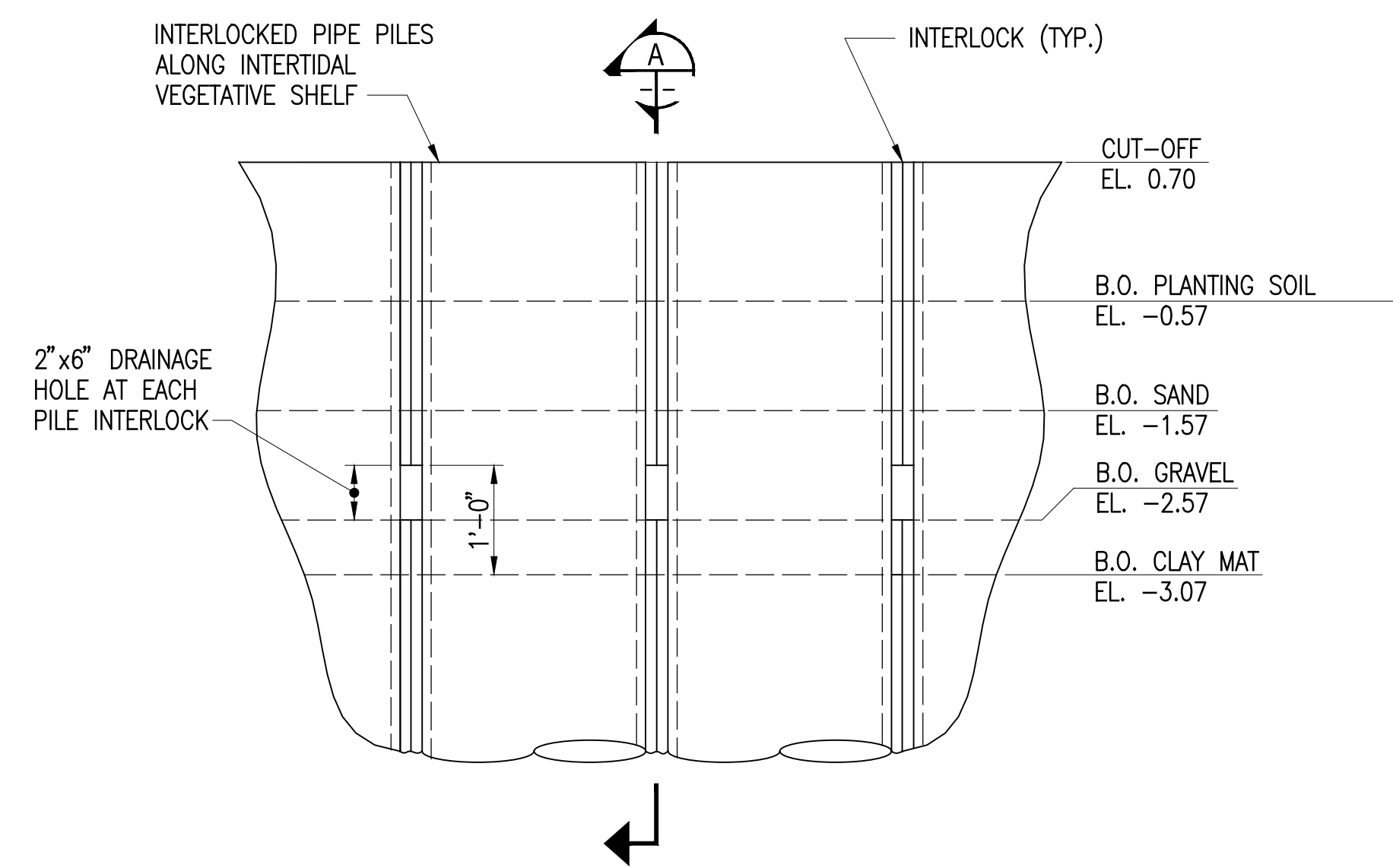
SK DRAWN BY _____ SOE-401.00.DWG CADD FILE

FIRST STREET TURNING BASIN
GOWANUS CANAL
BROOKLYN, NEW YORK

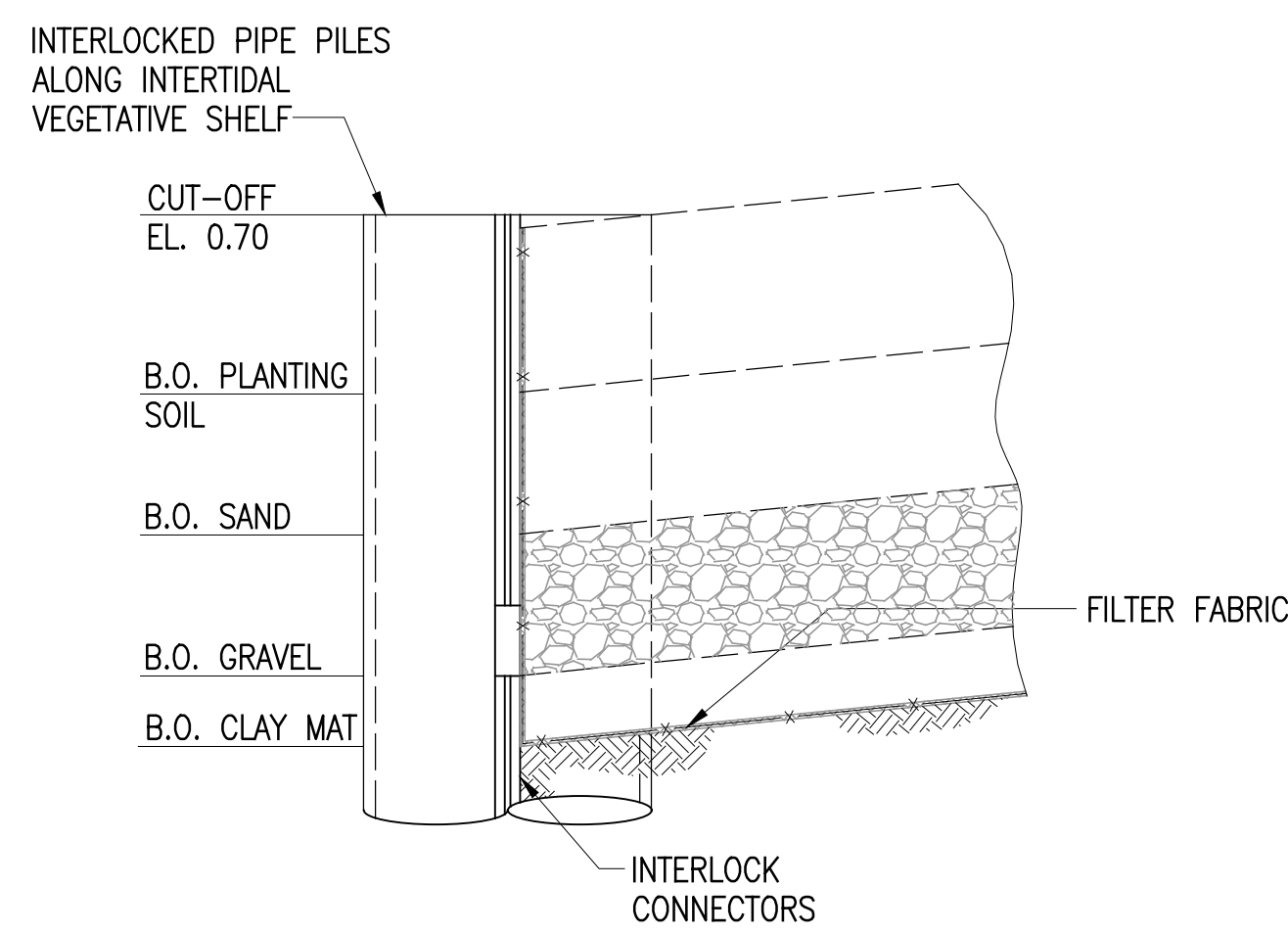
CAPITAL PROJECT NO. PW77GOWAN 03/23/2020 SHEET 09 OF 19 SOE-401



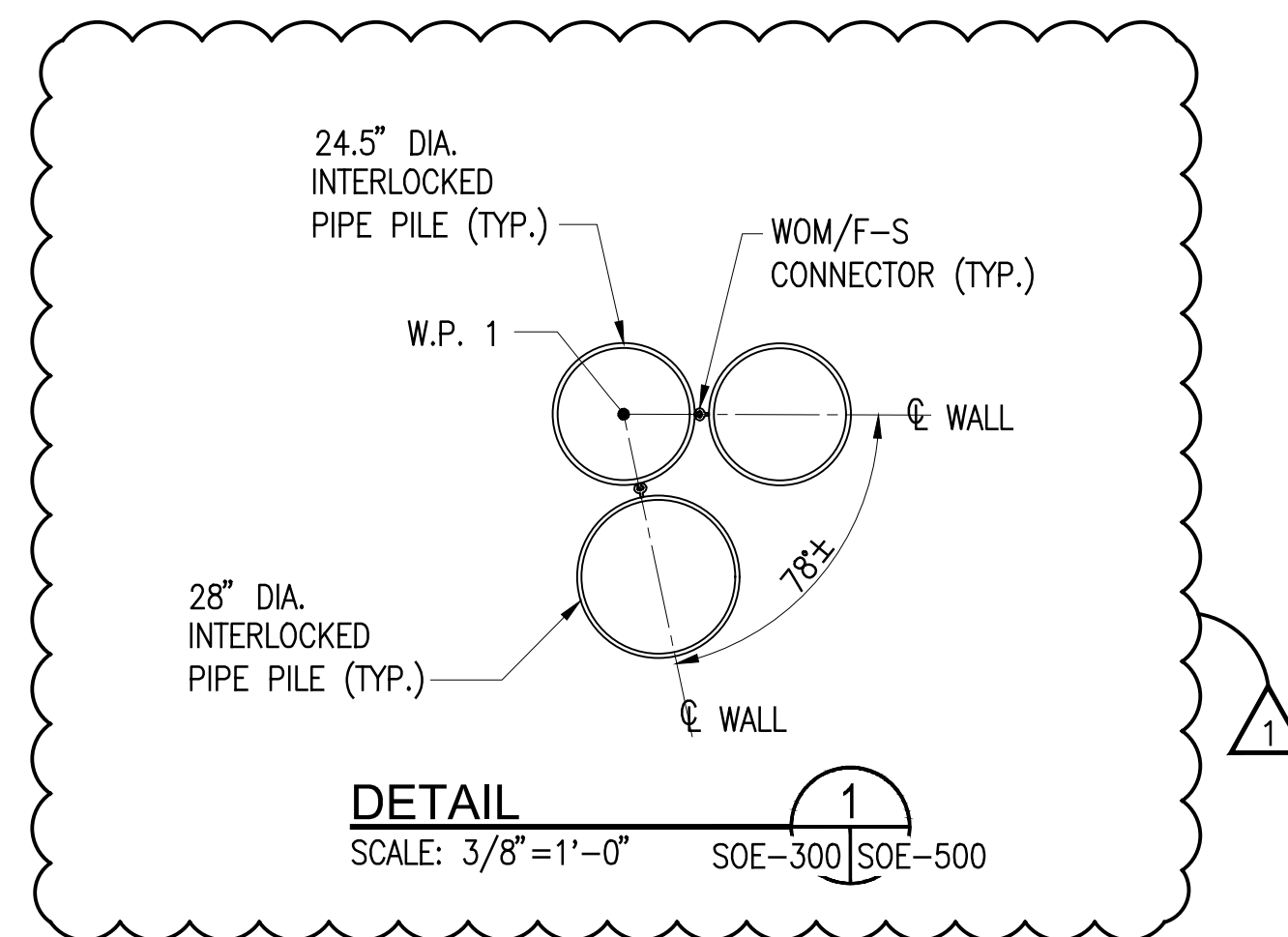
TYPICAL PIPE PILE CONNECTION DETAIL
SCALE: 3"=1'-0"



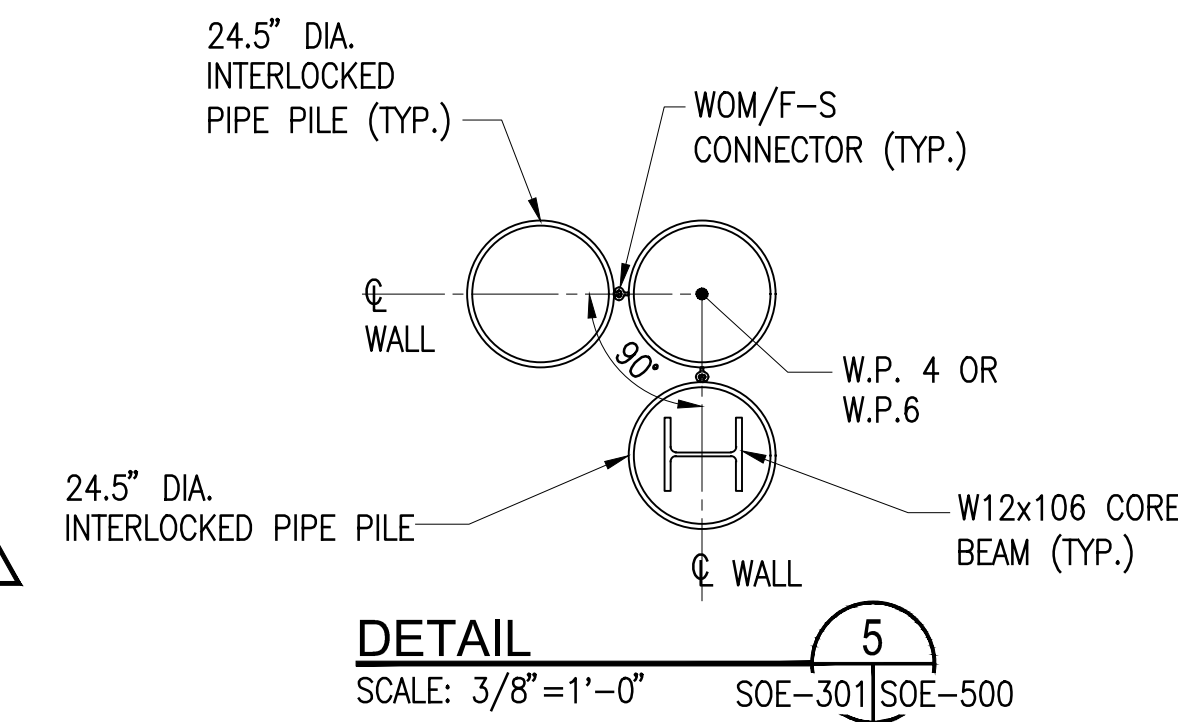
TYPICAL DRAINAGE HOLE DETAIL
SCALE: 3/4"=1'-0"



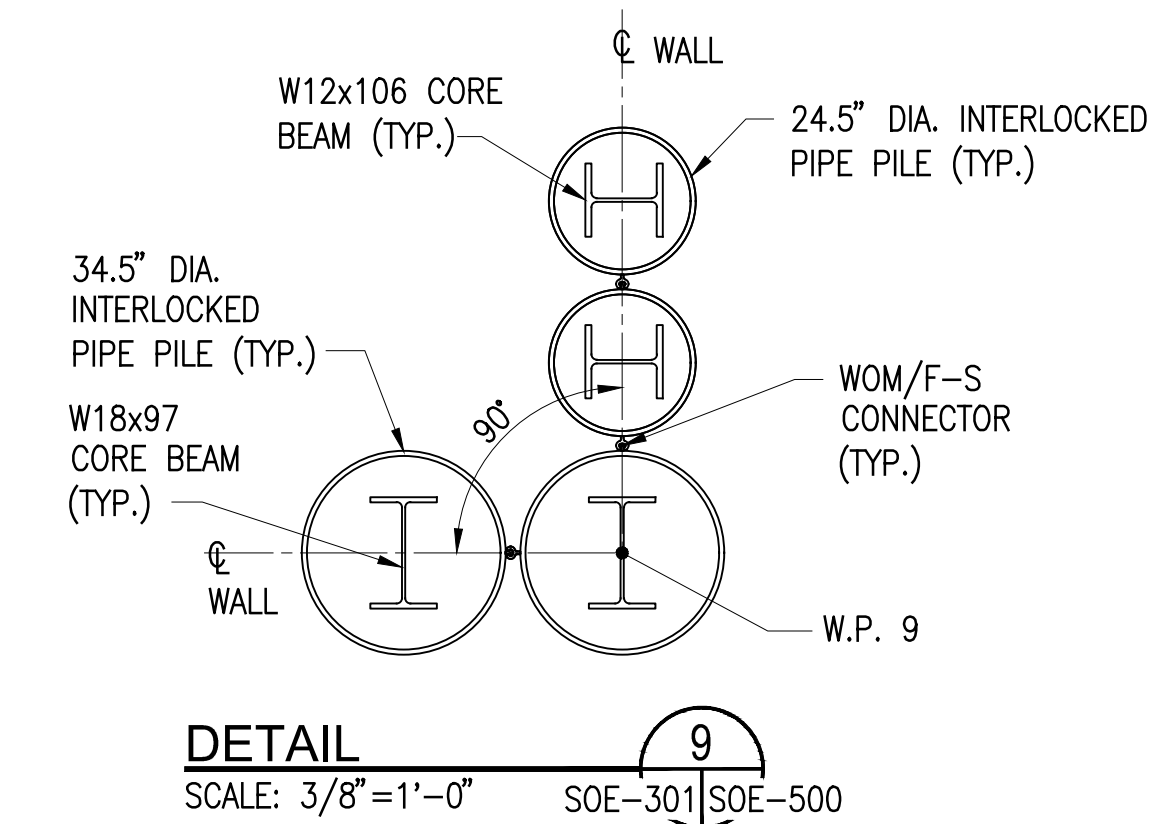
SECTION
SCALE: 3/4"=1'-0"



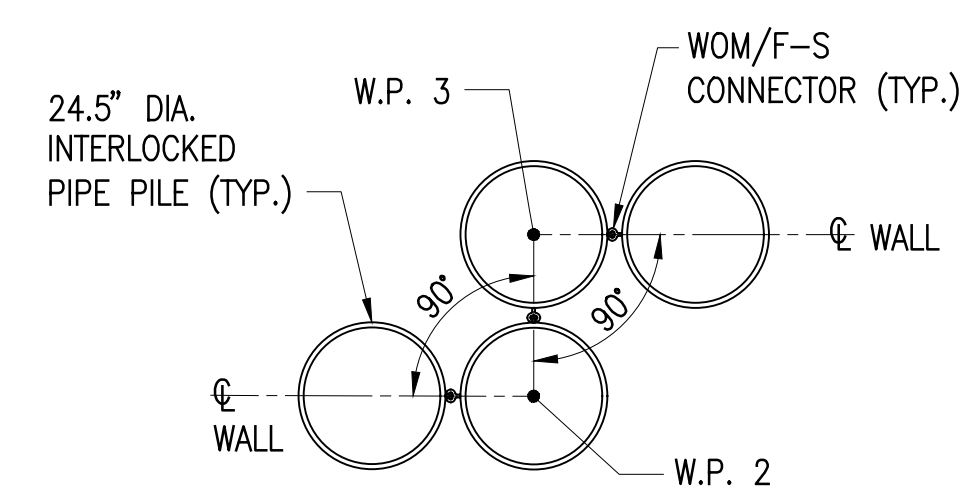
DETAIL 1
SCALE: 3/8"=1'-0" SOE-300|SOE-500



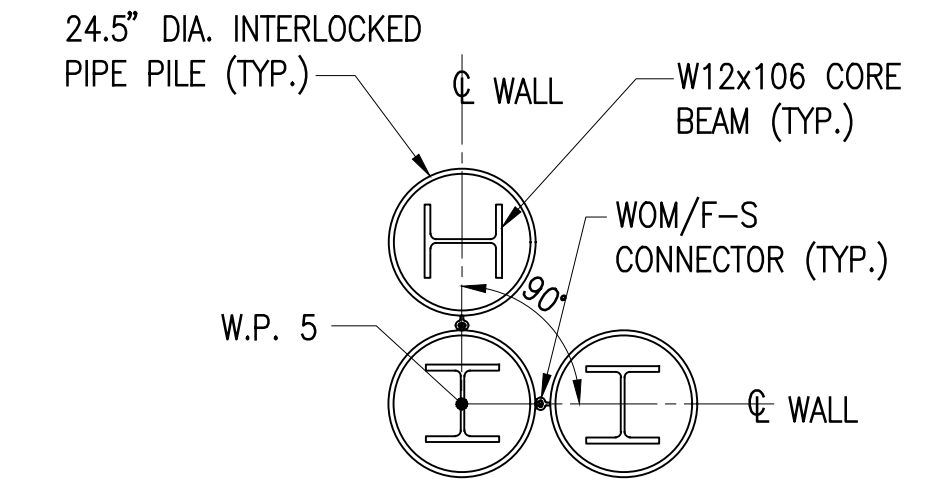
DETAIL 5
SCALE: 3/8"=1'-0" SOE-301|SOE-500



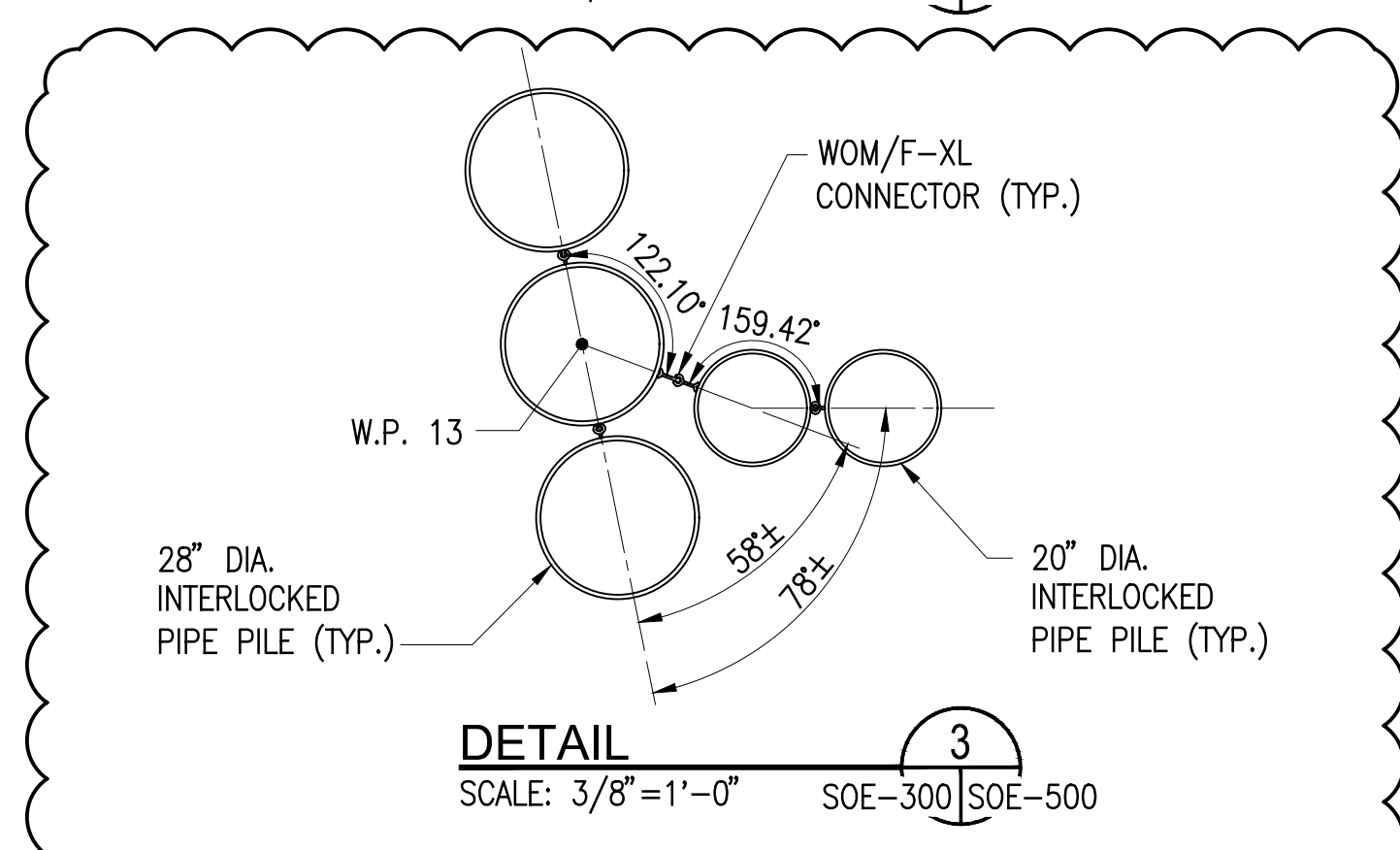
DETAIL 9
SCALE: 3/8"=1'-0" SOE-301|SOE-500



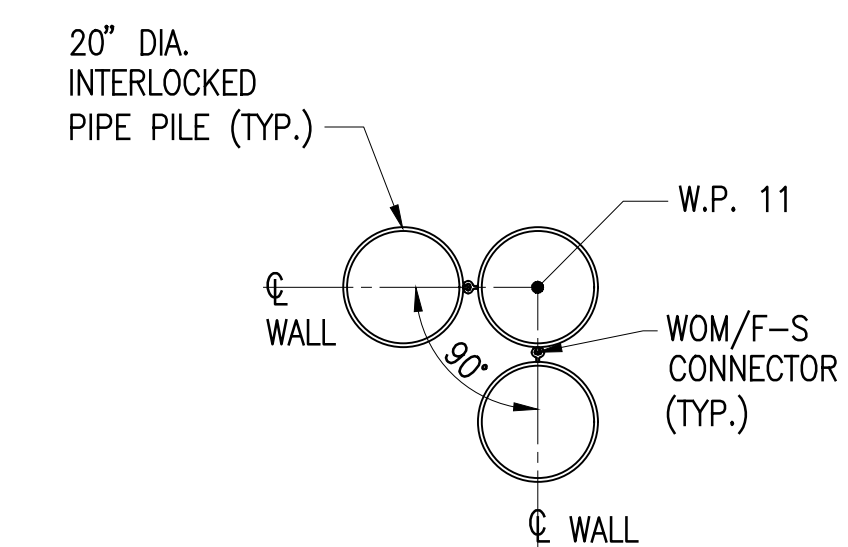
DETAIL 2
SCALE: 3/8"=1'-0" SOE-300|SOE-500



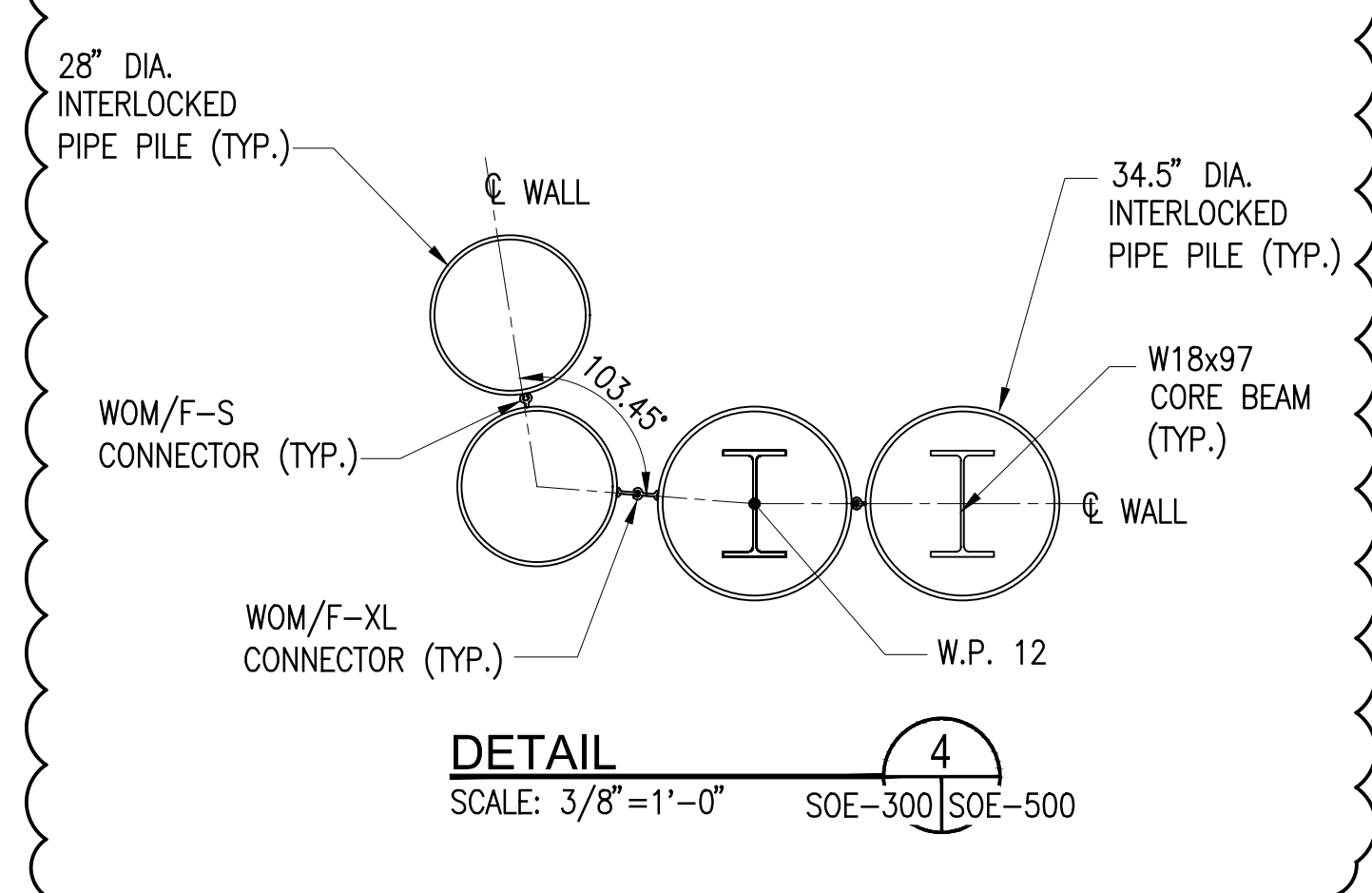
DETAIL 6
SCALE: 3/8"=1'-0" SOE-301|SOE-500



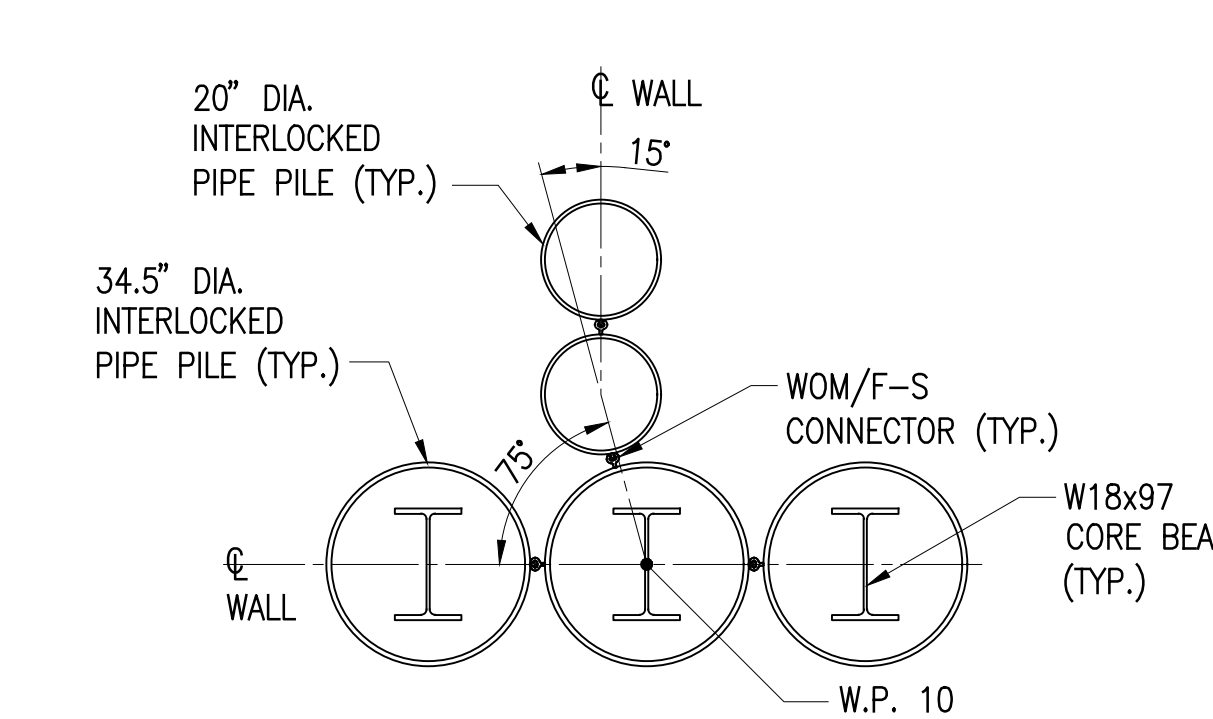
DETAIL 3
SCALE: 3/8"=1'-0" SOE-300|SOE-500



DETAIL 7
SCALE: 3/8"=1'-0" SOE-301|SOE-500



DETAIL 4
SCALE: 3/8"=1'-0" SOE-300|SOE-500



DETAIL 8
SCALE: 3/8"=1'-0" SOE-301|SOE-500

PIPE PILE COUNT:

| | |
|---|----------|
| 34.5" DIA. x 0.875" INTERLOCKED PIPE PILE WITH CONCRETE FILL AND CORE BEAM: | 152 NOS. |
| 24.5" DIA. x .0875" INTERLOCKED PIPE PILE WITH CONCRETE FILL: | 242 NOS. |
| 24.5" DIA. x .0875" INTERLOCKED PIPE PILE WITH CONCRETE FILL AND CORE BEAM: | 23 NOS. |
| 20.0" DIA. x 0.750" INTERLOCKED PIPE PILE WITH CONCRETE FILL: | 255 NOS. |
| 28.0" DIA. x 0.750" INTERLOCKED PIPE PILE WITH CONCRETE FILL: | 7 NOS. |
| 28.0" DIA. x 0.750" INTERLOCKED PIPE PILE WITH SAND FILL: | 14 NOS. |

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| 1 | 3/23/2020 | 100% DESIGN REVISION 1 | | RC |
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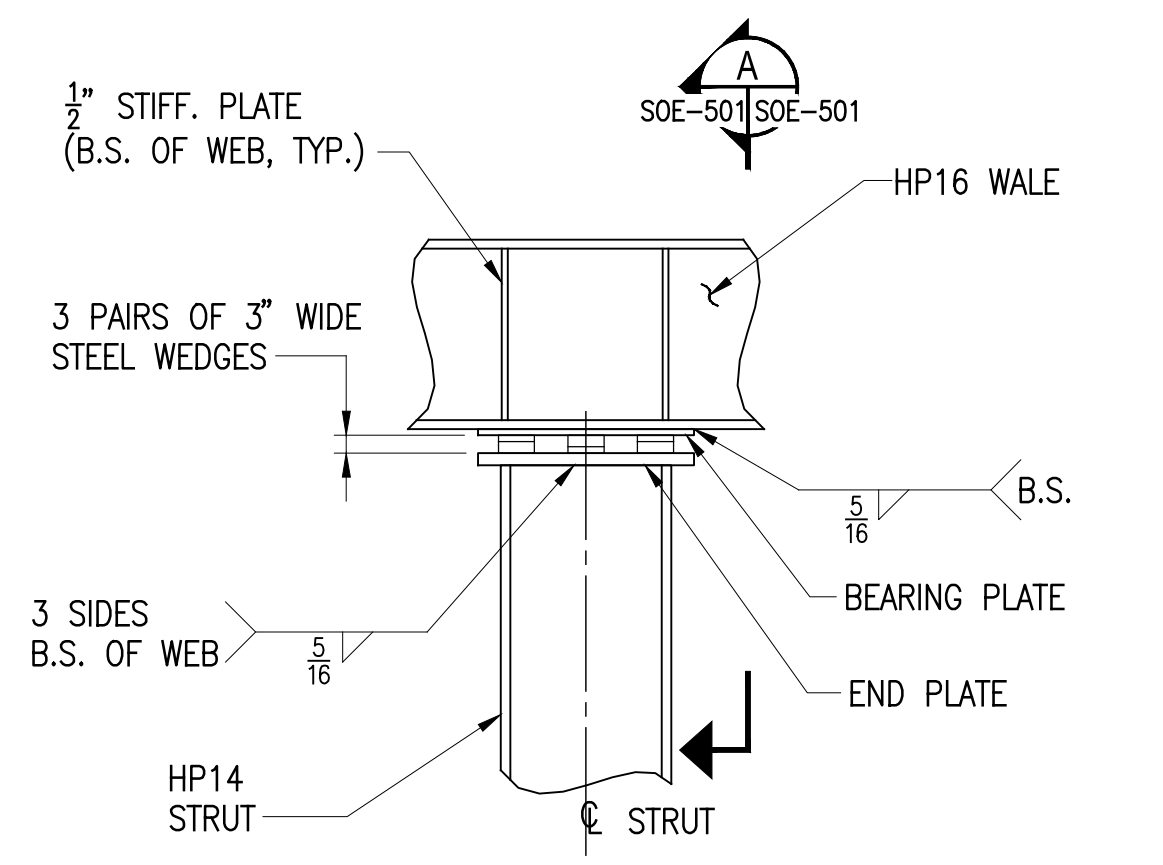
FINAL DESIGN SUBMITTED BY:
AKRF KSE
The AKRF-KSE JV

DESIGN PREPARED BY:
MIRCEI
MUESER RUTLEDGE CONSULTING ENGINEERS
NAME OF CONSULTANT
SIGNATURE _____
DATE _____

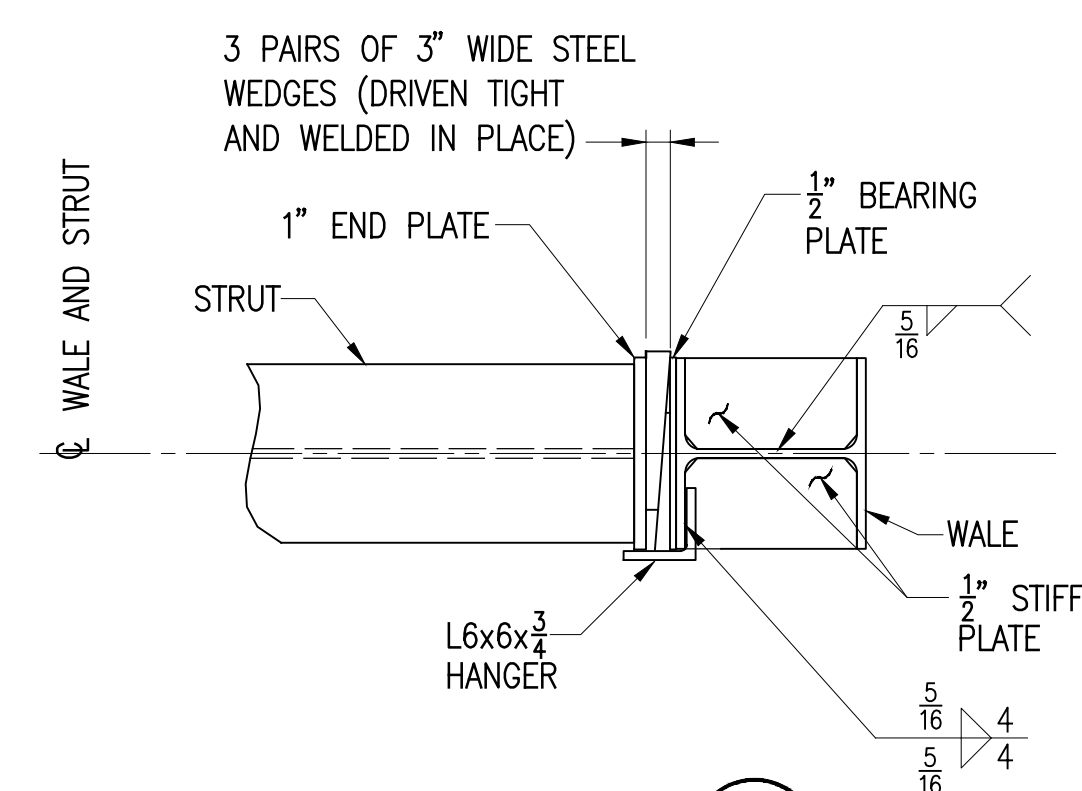
CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

SUPPORT OF EXCAVATION DETAILS
SK DRAWN BY _____
SOE-500.00.DWG
CADD FILE

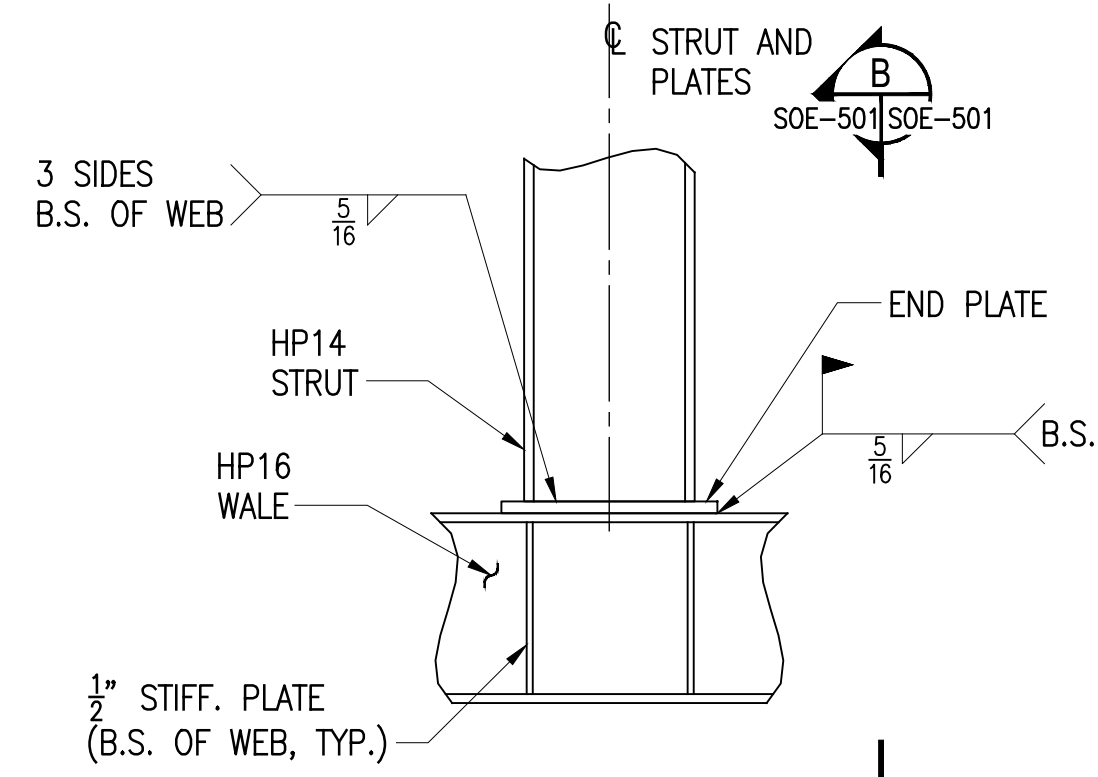
FIRST STREET TURNING BASIN
GOWANUS CANAL
BROOKLYN, NEW YORK
CAPITAL PROJECT NO. PW77GOWAN 03/23/2020
SHEET 10 OF 19
SOE-500



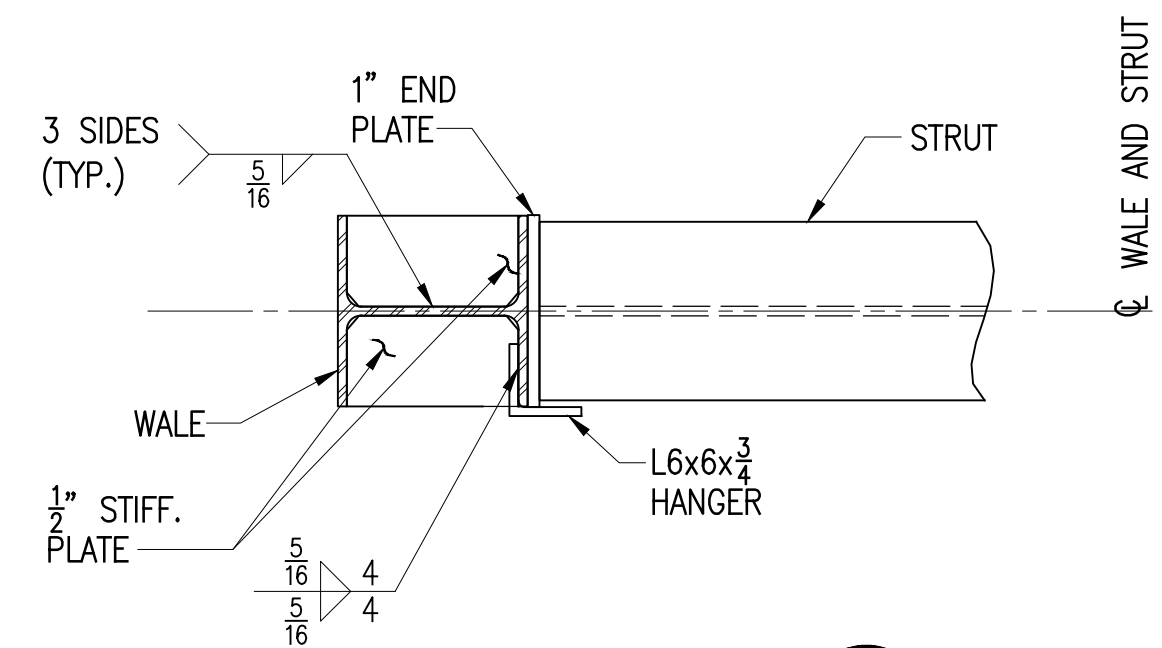
DETAIL 1
SCALE: 3/4"=1'-0"
SOE-300 SOE-501



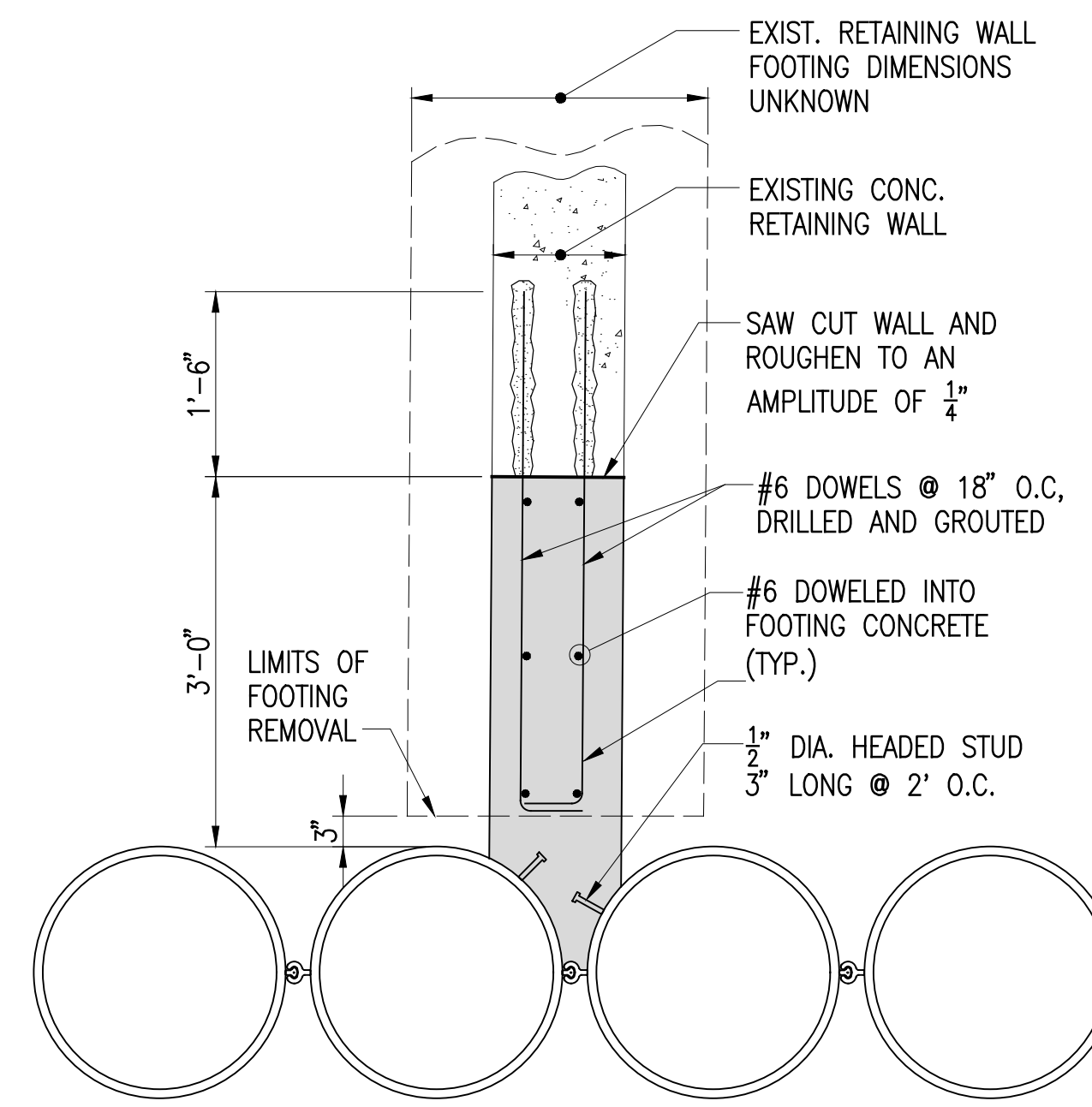
SECTION A
SCALE: 3/4"=1'-0"
SOE-501 SOE-501



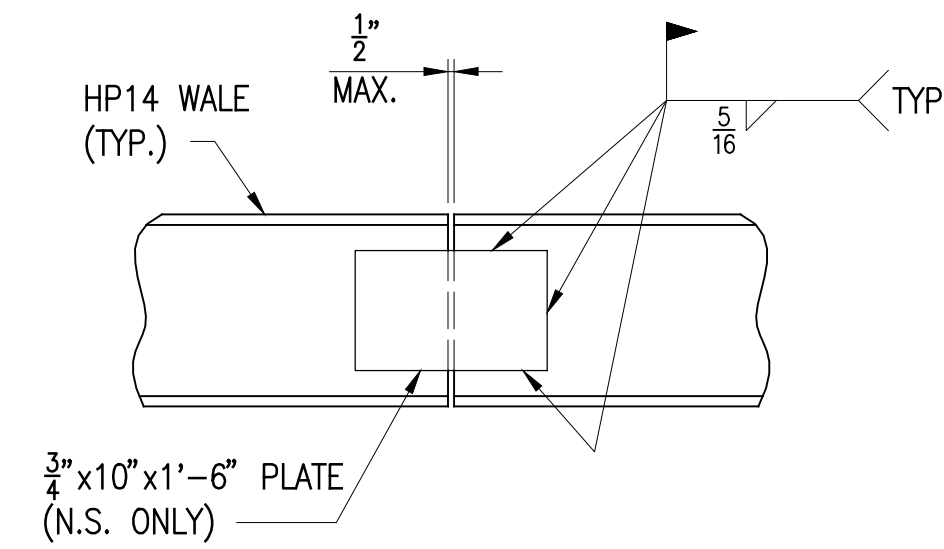
DETAIL 2
SCALE: 3/4"=1'-0"
SOE-300 SOE-501



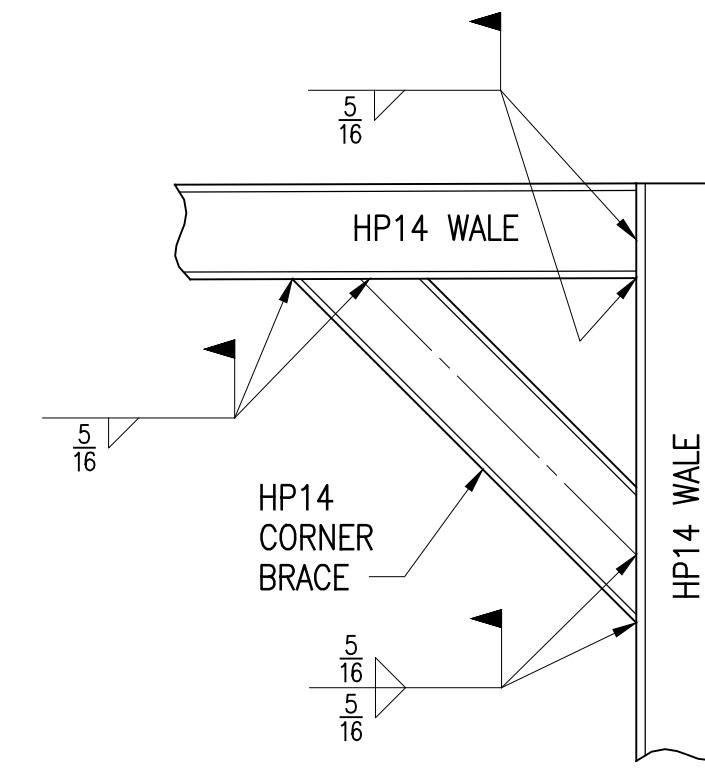
SECTION B
SCALE: 3/4"=1'-0"
SOE-501 SOE-501



NOTE: EXISTING RETAINING WALL FOOTING SHALL BE SAW CUT WITH 3" CLEARANCE FROM INTERLOCKED PIPE PILE WALL
DETAIL 3
SCALE: 3/4"=1'-0"
SOE-300 SOE-501



DETAIL 4
SCALE: 3/4"=1'-0"
SOE-301 SOE-501



TYPICAL CORNER BRACE DETAIL
SCALE: 3/8"=1'-0"

| NO. | DATE | DESCRIPTIONS | BY | APPR'D |
|-----|------------|------------------------|----|--------|
| 1 | 3/23/2020 | 100% DESIGN REVISION 1 | RC | |
| 0 | 03/18/2019 | 100% DESIGN REPORT | RC | |

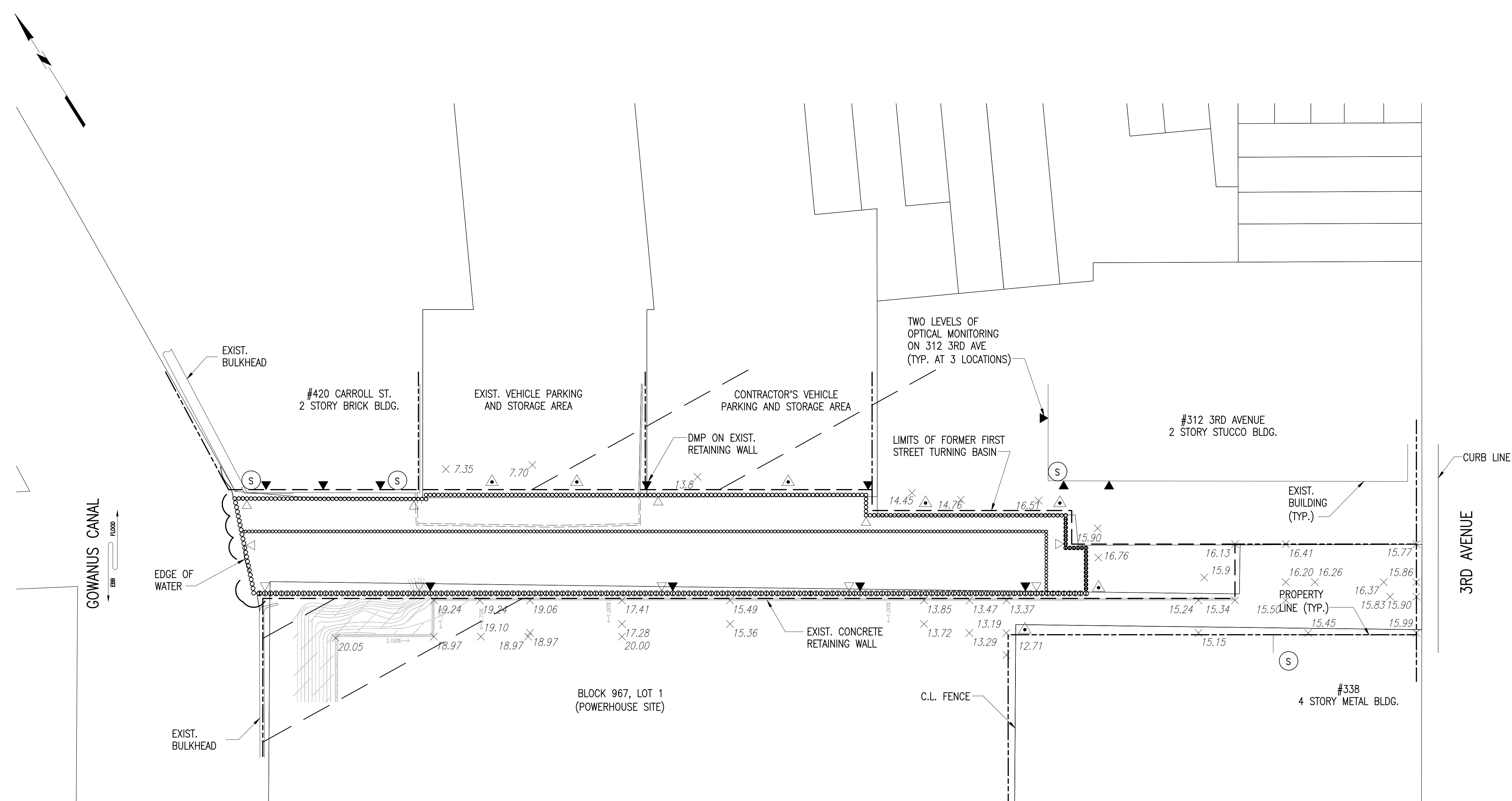
FINAL DESIGN SUBMITTED BY:
AKRF KSE
The AKRF-KSE JV

DESIGN PREPARED BY:
MIRCEI
MUESER RUTLEDGE CONSULTING ENGINEERS
NAME OF CONSULTANT
SIGNATURE _____
DATE _____

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

SUPPORT OF EXCAVATION DETAILS
SK DRAWN BY _____
SOE-501.00.DWG
CADD FILE

FIRST STREET TURNING BASIN
GOWANUS CANAL
BROOKLYN, NEW YORK
CAPITAL PROJECT NO. PW77GOWAN 03/23/2020
SHEET 11 OF 19
SOE-501



- NOTES:**
- FOR GENERAL NOTES, SEE DRAWING NO. T-001.
 - INSTRUMENTATION LAYOUT SHOWN HEREIN DEPICTS THE MINIMUM REQUIREMENTS. CONTRACTOR SHALL ENGAGE A GEOTECHNICAL INSTRUMENTATION ENGINEER (GIE) LICENSED IN THE STATE OF NEW YORK TO DEVELOP AN INSTRUMENTATION AND MONITORING PLAN AND IMPLEMENT IN ACCORDANCE WITH GEOTECHNICAL INSTRUMENTATION AND MONITORING SPECIFICATION, SECTION 31 09 13.
 - INSTRUMENT LOCATIONS ARE APPROXIMATE AND WILL BE ADJUSTED IN THE FIELD BASED UPON CONDITIONS ENCOUNTERED. FINAL INSTRUMENT LOCATIONS TO BE DETERMINED BY AVAILABILITY OF POWER, SIGHT LINES, ACCESSIBILITY AND FIELD CONDITIONS.
 - ALL INSTRUMENTS SHALL BE INSTALLED AND MAINTAINED BY THE GIE.
 - PRIOR TO INSTALLATION OF THE INSTRUMENTATION, THE CONTRACTOR SHALL PERFORM A PRE-CONSTRUCTION CONDITION SURVEY OF THE EXISTING BUILDINGS AND STRUCTURES IN ACCORDANCE WITH SPECIFICATION 31 09 13.
 - PRE-CONSTRUCTION CONDITION SURVEY SHALL BE PERFORMED AND MONITORING POINTS INSTALLED AT #420 CARROLL ST., RETAINING WALL TO THE EAST OF #420 CARROLL ST., #312 3RD AVENUE, #338 3RD AVENUE, RETAINING WALL TO THE WEST OF #338 3RD AVENUE AND BLOCK 967 LOT 1.

- MONITORING LEGEND:**
- (S) - SEISMOGRAPH (VIBRATION MONITOR)
 - ▲ - DEFORMATION MONITORING POINT (STRUCTURE)
 - △ - DEFORMATION MONITORING POINT (SOE)
 - ▲ (with dot) - DEFORMATION MONITORING POINT (GROUND)

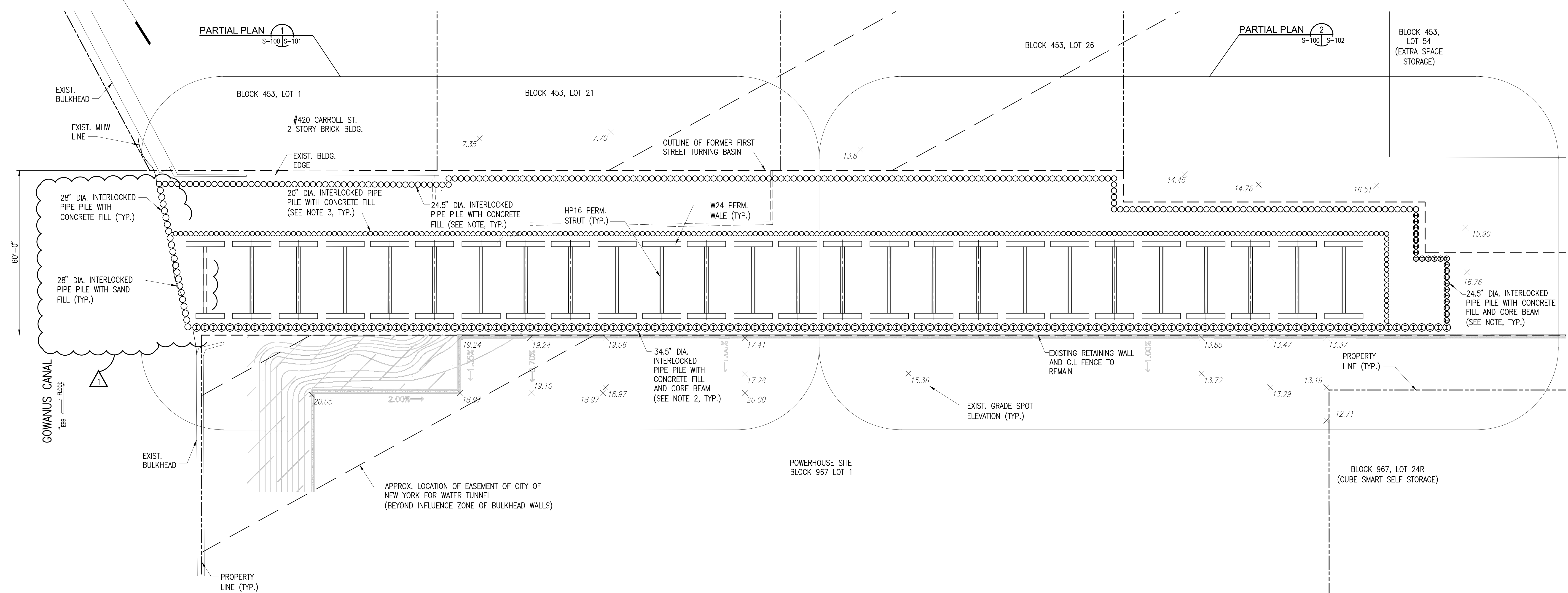
P L A N
SCALE: 1/32"=1'-0"

TABLE 1 -- MINIMUM MONITORING FREQUENCY AND CRITERIA

| INSTRUMENTS | BASELINE | READING FREQUENCY | THRESHOLD CRITERIA | LIMITING CRITERIA |
|--|---|--|--------------------|-------------------|
| SEISMOGRAPH | ONE WEEK OF CONTINUOUS 15-MINUTE HISTOGRAM PRIOR TO START OF SITE WORK | CONTINUOUS 15-MINUTE HISTOGRAM SUPPLEMENTED WITH A WAVEFORM FOR EVENTS ABOVE THE THRESHOLD CRITERIA. MONITOR CONTINUOUSLY DURING SOE/EXCAVATION/BULKHEAD CONSTRUCTION. | 0.5 INCH | 1.0 INCH |
| DEFORMATION MONITORING POINTS (STRUCTURE) | PROVIDE THREE INDEPENDENT READING SETS OF X, Y, Z POSITION 2 DAYS PRIOR TO START OF SITE WORK | MONITOR ALL DMP'S FOUR TIMES PER DAY. | 0.25 INCH | 0.5 INCH |
| DEFORMATION MONITORING POINTS (SOE) | PROVIDE THREE INDEPENDENT READING SETS OF X, Y, Z POSITION PRIOR TO START OF EXCAVATION | MONITOR ALL DMP'S FOUR TIMES PER DAY. | 1.0 INCH | 2.0 INCHES |
| DEFORMATION MONITORING POINTS (GROUND) | PROVIDE THREE INDEPENDENT READING SETS OF X, Y, Z POSITION PRIOR TO START OF EXCAVATION | MONITOR ALL DMP'S FOUR TIMES PER DAY. | 0.25 INCH | 0.5 INCH |
| DEFORMATION MONITORING POINTS -- CLOSURE WALL (GROUND) | PROVIDE THREE INDEPENDENT READING SETS OF X, Y, Z POSITION 2 DAYS PRIOR TO START OF WORK | MONITOR ALL DMP'S FOUR TIMES PER DAY. | 0.25 INCH | 0.5 INCH |

| NO. | DATE | DESCRIPTIONS | BY | APPR'D |
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| 1 | 3/25/2020 | 100% DESIGN REVISION 1 | RC | |
| 0 | 05/18/2019 | 100% DESIGN REPORT | RC | |

| | | | | |
|--------------------------------|---|---|---|---|
| FINAL DESIGN SUBMITTED BY: | DESIGN PREPARED BY: MUESER RUTLEDGE CONSULTING ENGINEERS NAME OF CONSULTANT | CITY OF NEW YORK DEPARTMENT OF DESIGN + CONSTRUCTION DIVISION OF INFRASTRUCTURE BUREAU OF DESIGN | GEOTECHNICAL INSTRUMENTATION AND MONITORING PLAN | FIRST STREET TURNING BASIN GOWANUS CANAL BROOKLYN, NEW YORK |
| SIGNATURE _____ DATE _____ | | SK _____ DRAWN BY _____ | SOE-600.00.DWG CADD FILE | SHEET 12 OF 19 CAPITAL PROJECT NO. PW77GOWAN 03/23/2020 |



PLAN
SCALE: 1/16" = 1'-0"

NOTES:

1. ALL 24.5" DIAMETER PIPE PILES SHALL BE EPOXY COATED FROM CUT-OFF ELEVATION TO MINIMUM EL. -10.
2. ALL 34.5" DIAMETER PIPE PILES SHALL BE EPOXY COATED FROM CUT-OFF ELEVATION TO MINIMUM EL. -20.
3. ALL PERMANENT 20" DIAMETER PIPE PILES SHALL BE EPOXY COATED FROM CUT-OFF ELEVATION TO MINIMUM EL. -20.

| NO. | DATE | DESCRIPTIONS | BY | APPR'D |
|-----|------------|------------------------|----|--------|
| 1 | 3/23/2020 | 100% DESIGN REVISION 1 | RC | |
| 0 | 03/18/2019 | 100% DESIGN REPORT | RC | |

FINAL DESIGN SUBMITTED BY:

The AKRF-KSE JV

DESIGN PREPARED BY:

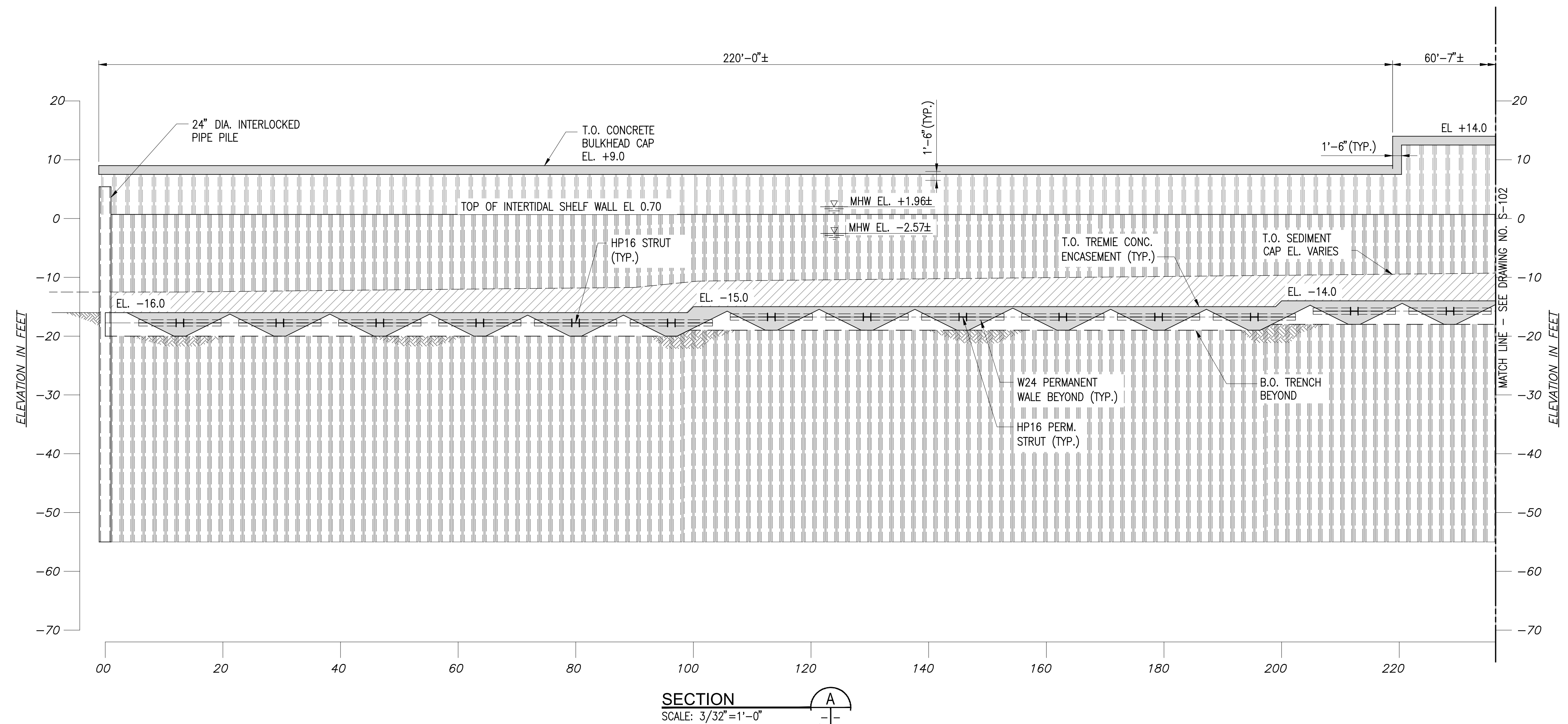
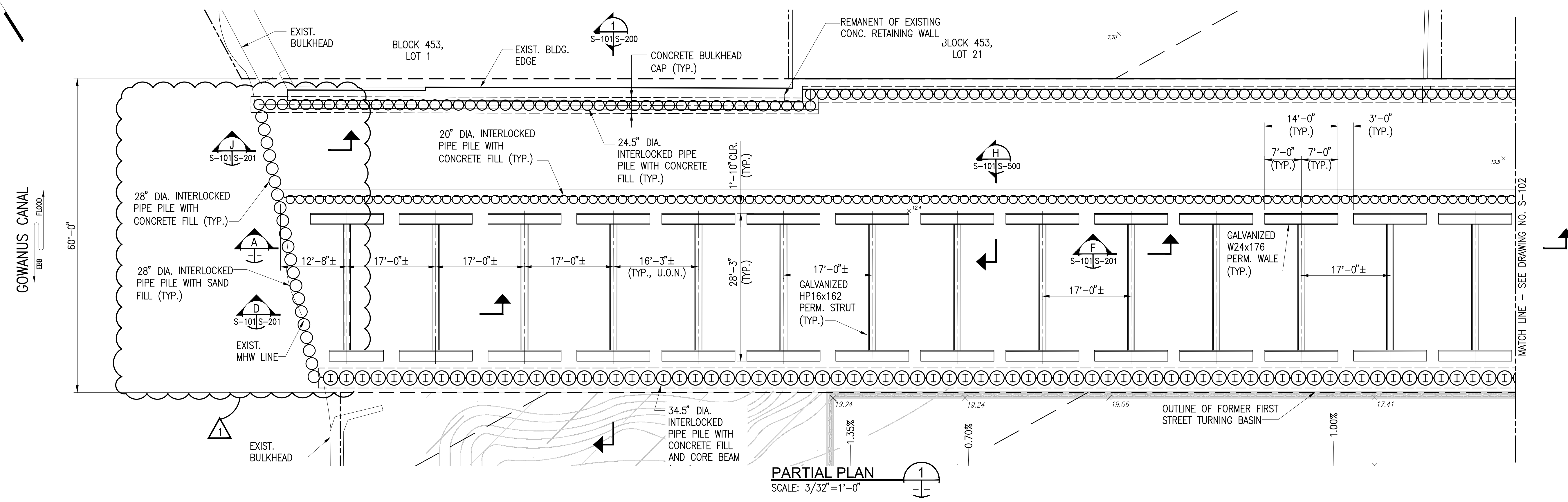
MUESER RUTLEDGE CONSULTING ENGINEERS
 NAME OF CONSULTANT
 SIGNATURE _____
 DATE _____

CITY OF NEW YORK
 DEPARTMENT OF DESIGN + CONSTRUCTION
 DIVISION OF INFRASTRUCTURE
 BUREAU OF DESIGN

PERMANENT BULKHEAD BRACING
 PARTIAL PLAN
 SK _____
 DRAWN BY _____
 S-100.00.DWG
 CADD FILE

FIRST STREET TURNING BASIN
 GOWANUS CANAL
 BROOKLYN, NEW YORK
 CAPITAL PROJECT NO. PW77GOWAN 03/23/2020
 SHEET 13 OF 19
 S-100

NOTES:
 1. SEDIMENT CAP PROFILE BASED ON CAPPING PLAN AND PROFILE DRAWING C-101 DATED 03-28-2019.



| NO. | DATE | DESCRIPTIONS | BY | APPR'D |
|-----|------------|------------------------|----|--------|
| 1 | 3/23/2020 | 100% DESIGN REVISION 1 | RC | |
| 0 | 03/18/2019 | 100% DESIGN REPORT | RC | |

FINAL DESIGN SUBMITTED BY:
AKRF KSE
The AKRF-KSE JV

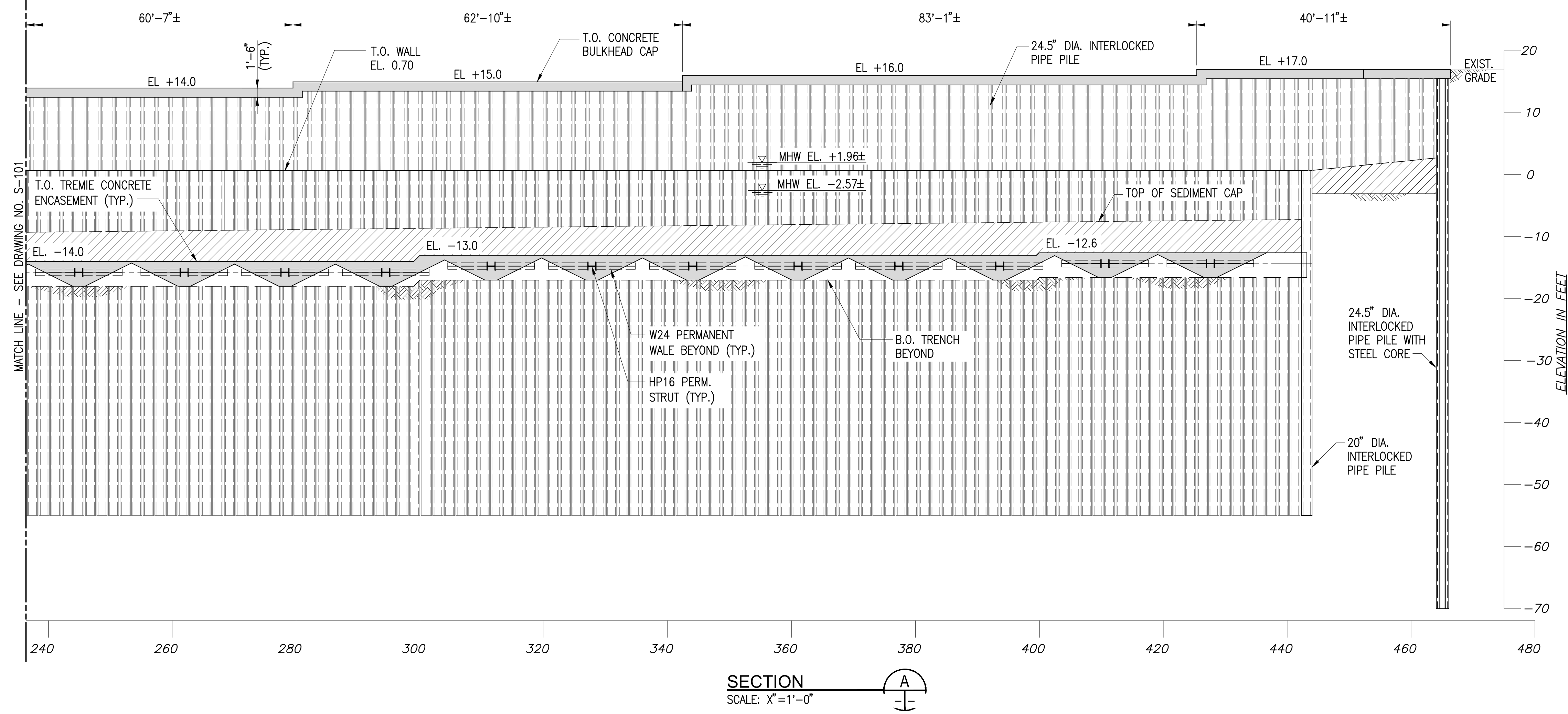
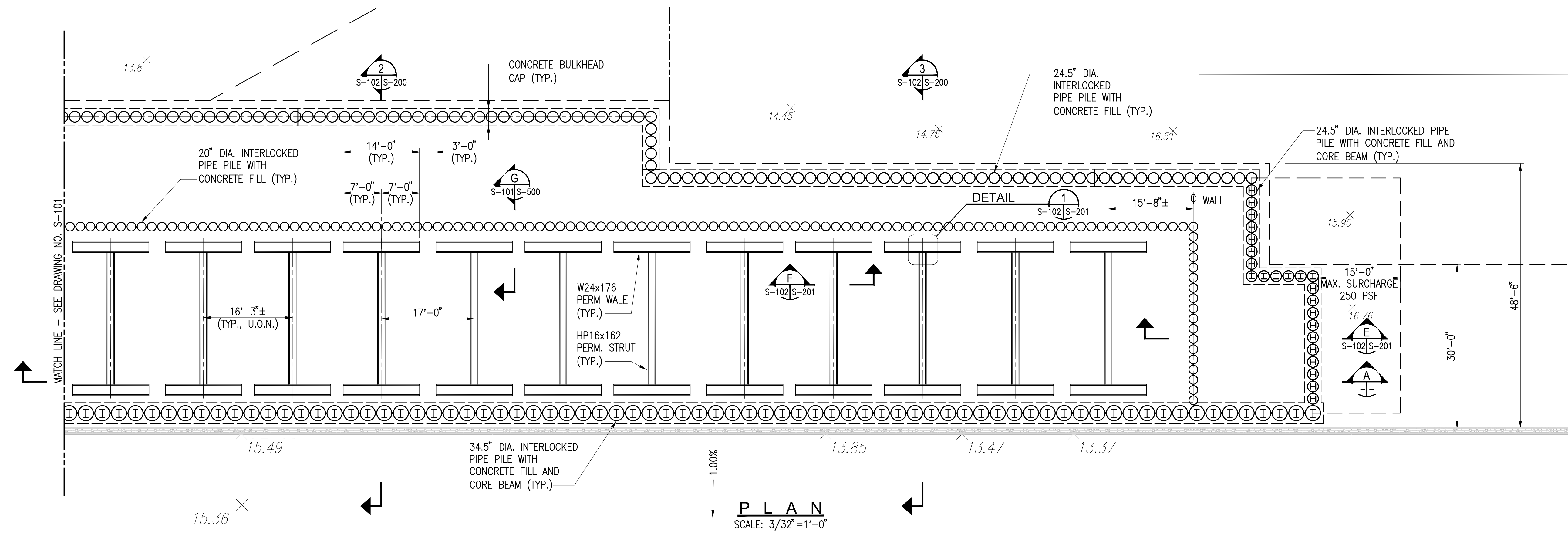
DESIGN PREPARED BY:
MRCE
MUESER RUTLEDGE CONSULTING ENGINEERS
 NAME OF CONSULTANT
 SIGNATURE _____
 DATE _____

CITY OF NEW YORK
 DEPARTMENT OF DESIGN + CONSTRUCTION
 DIVISION OF INFRASTRUCTURE
 BUREAU OF DESIGN

PERMANENT BULKHEAD BRACING
 PARTIAL PLAN AND SECTION
 SK DRAWN BY _____
 S-101.00.DWG
 CADD FILE

FIRST STREET TURNING BASIN
 GOWANUS CANAL
 BROOKLYN, NEW YORK
 CAPITAL PROJECT NO. PW77GOWAN 03/23/2020
 SHEET 14 OF 19 S-101

NOTES:
 1. SEDIMENT CAP PROFILE BASED ON CAPPING PLAN AND PROFILE DRAWING C-101 DATED 03-28-2019.



| NO. | DATE | DESCRIPTIONS | BY | APPR'D |
|-----|------------|------------------------|----|--------|
| 1 | 3/23/2020 | 100% DESIGN REVISION 1 | RC | |
| 0 | 03/18/2019 | 100% DESIGN REPORT | RC | |

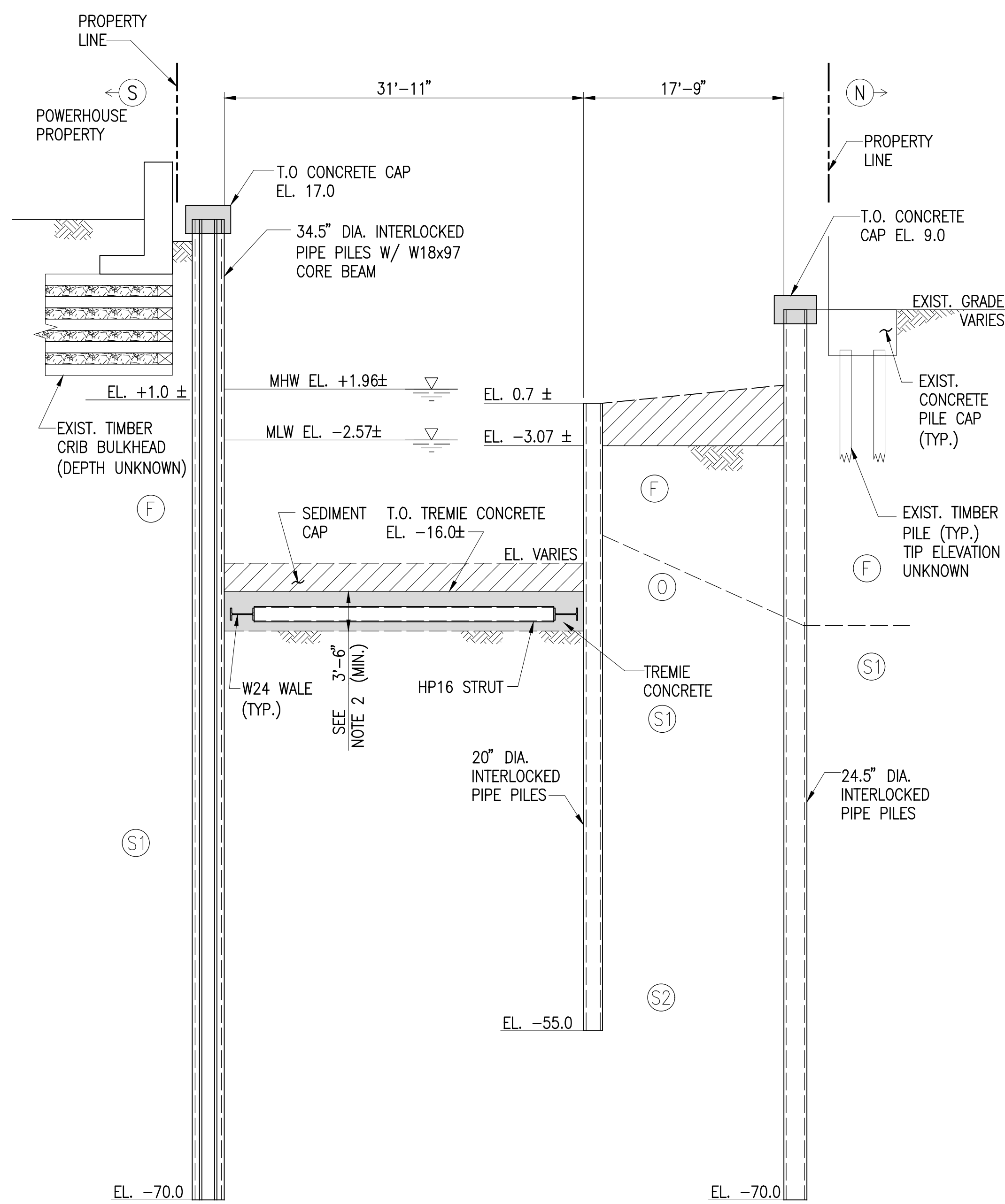
FINAL DESIGN SUBMITTED BY:
AKRF KSE
 The AKRF-KSE JV

DESIGN PREPARED BY:
MIRCE
 MUESER RUTLEDGE CONSULTING ENGINEERS
 NAME OF CONSULTANT
 SIGNATURE _____
 DATE _____

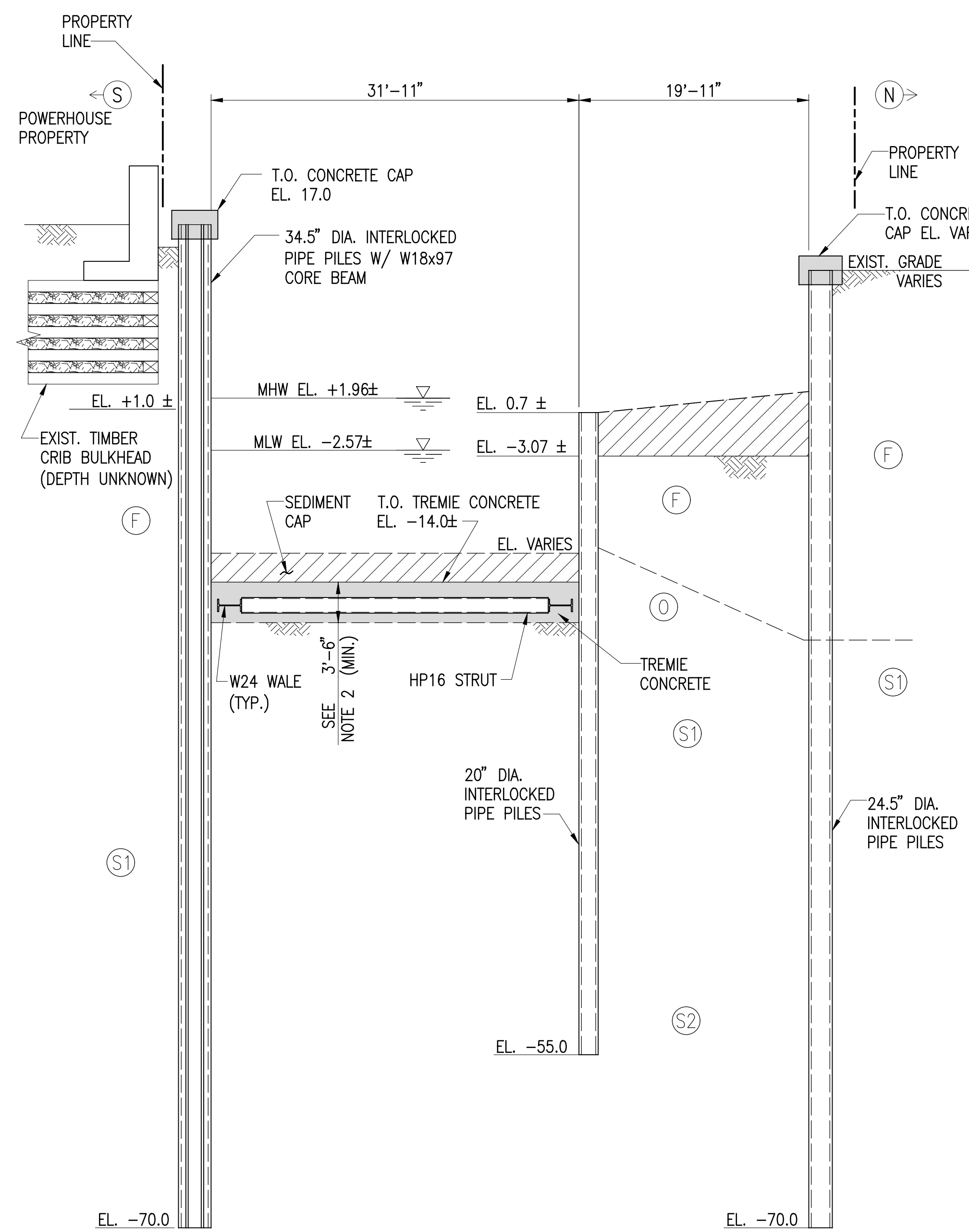
CITY OF NEW YORK
 DEPARTMENT OF DESIGN + CONSTRUCTION
 DIVISION OF INFRASTRUCTURE
 BUREAU OF DESIGN

PERMANENT BULKHEAD BRACING
 PARTIAL PLAN AND SECTION
 SK DRAWN BY _____
 S-102.00.DWG
 CADD FILE

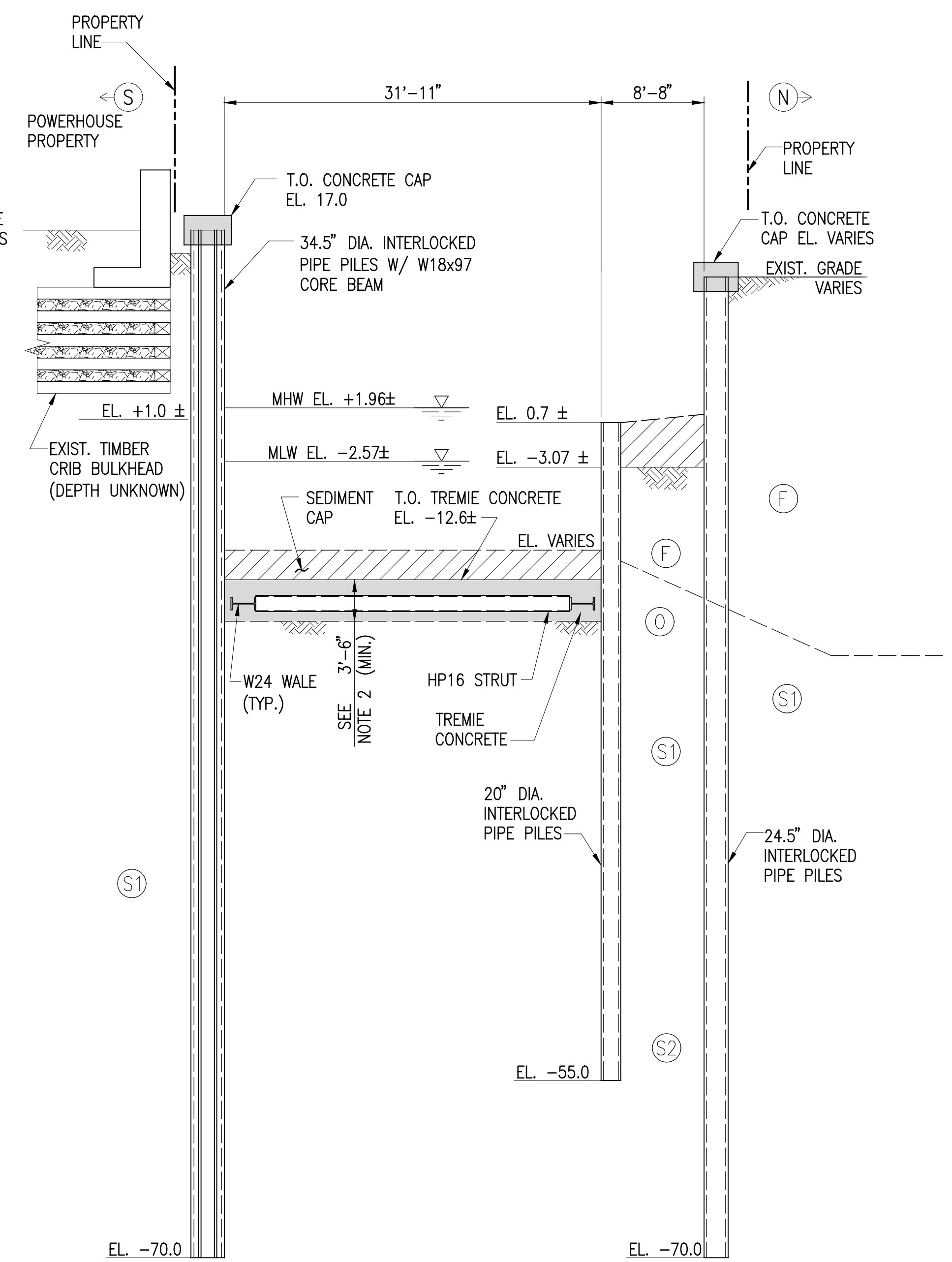
FIRST STREET TURNING BASIN
 GOWANUS CANAL
 BROOKLYN, NEW YORK
 CAPITAL PROJECT NO. PW77GOWAN 03/23/2020
 SHEET 15 OF 19
 S-102



SECTION 1
SCALE: 1/8"=1'-0" S-101 S-200



SECTION 2
SCALE: 1/8"=1'-0" S-102 S-200



SECTION 3
SCALE: 1/8"=1'-0" S-102 S-200

NOTES:

1. SOIL STRATA IS SHOWN FOR ILLUSTRATION PURPOSES ONLY. ACTUAL SOIL PROFILE VARIES. SEE GEOTECHNICAL REPORT FOR SUBSURFACE INFORMATION.
2. SEE DWG S-201 FOR TYPICAL TRENCH DETAIL.

| NO. | DATE | DESCRIPTIONS | BY | APPR'D |
|-----|------------|------------------------|----|--------|
| 1 | 3/25/2020 | 100% DESIGN REVISION 1 | RC | |
| 0 | 05/18/2019 | 100% DESIGN REPORT | RC | |

FINAL DESIGN SUBMITTED BY:
AKRF KSE
The AKRF-KSE JV

DESIGN PREPARED BY:
MIRCEI
MUESER RUTLEDGE CONSULTING ENGINEERS
NAME OF CONSULTANT

SIGNATURE _____
DATE _____

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

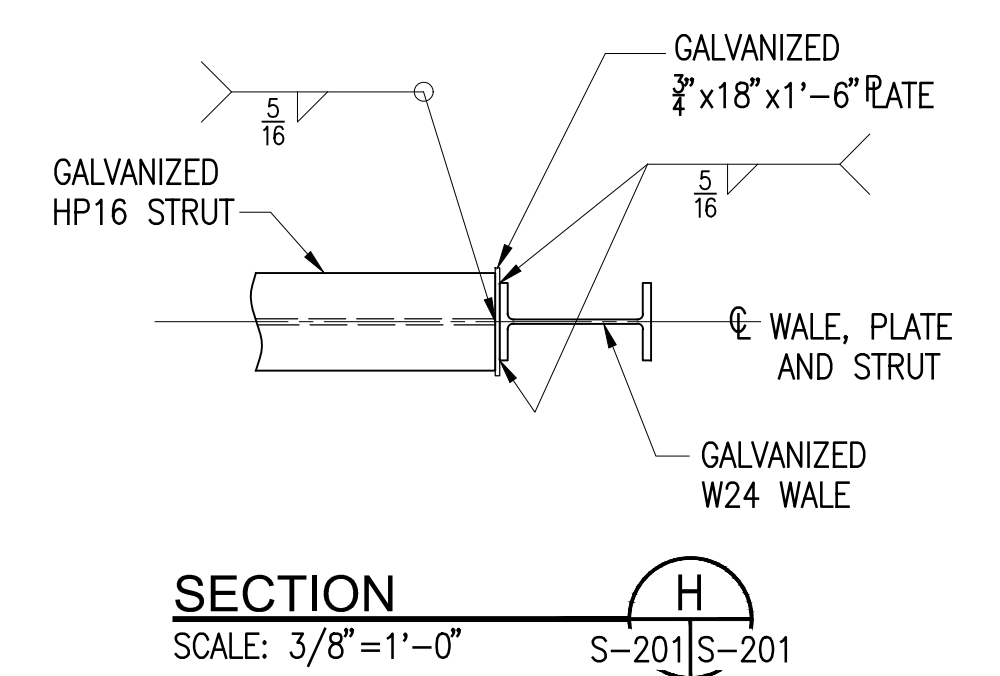
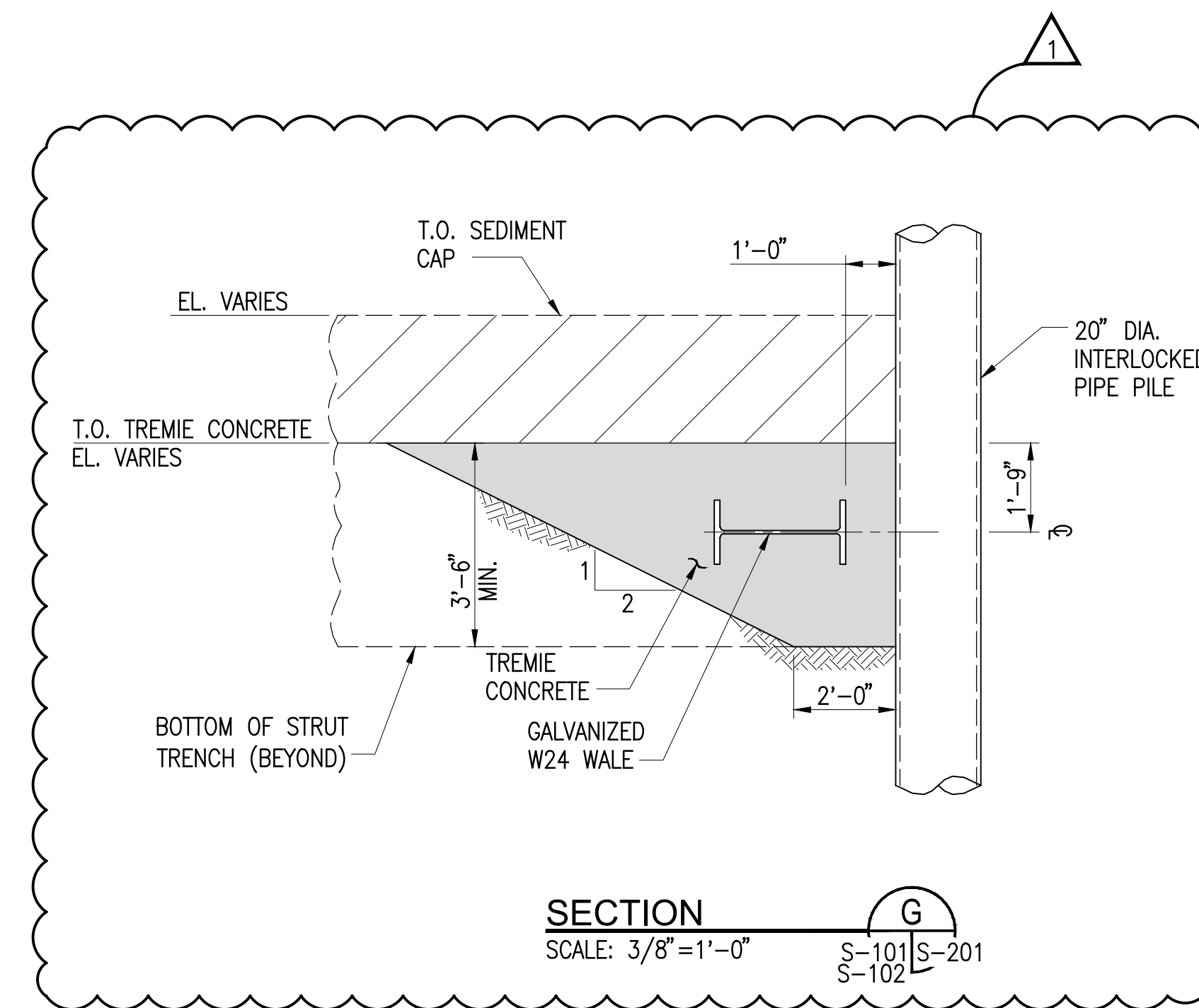
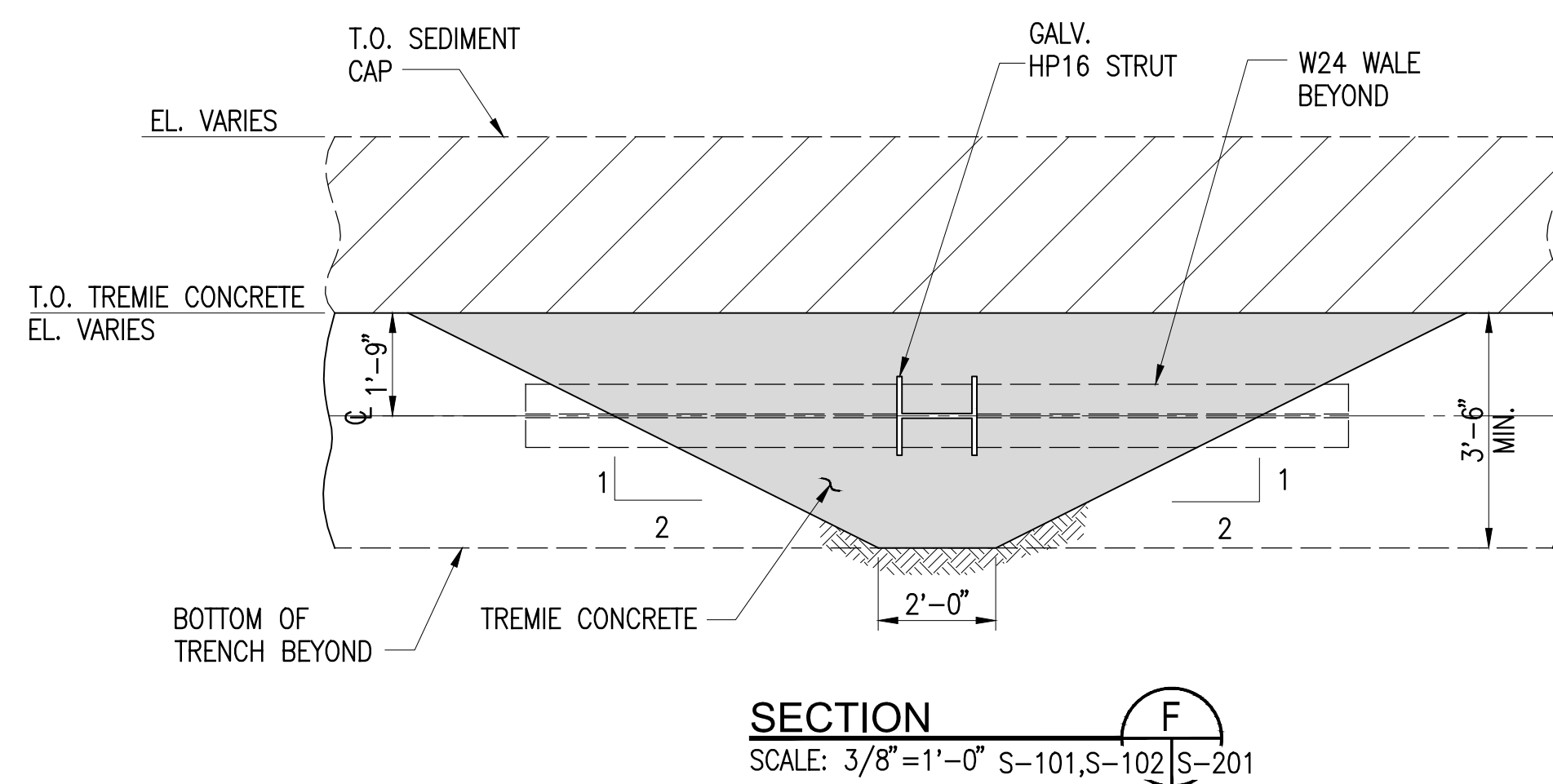
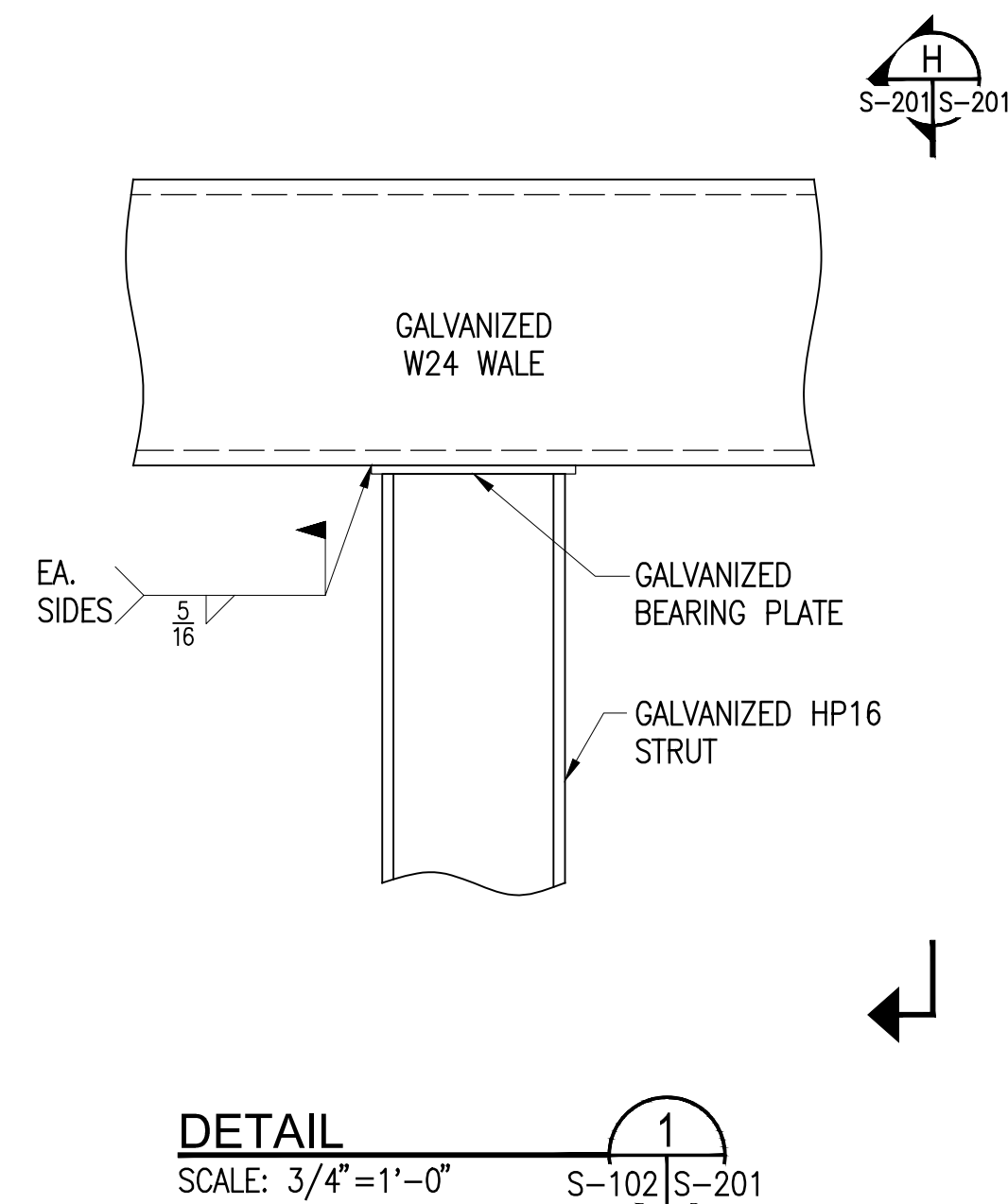
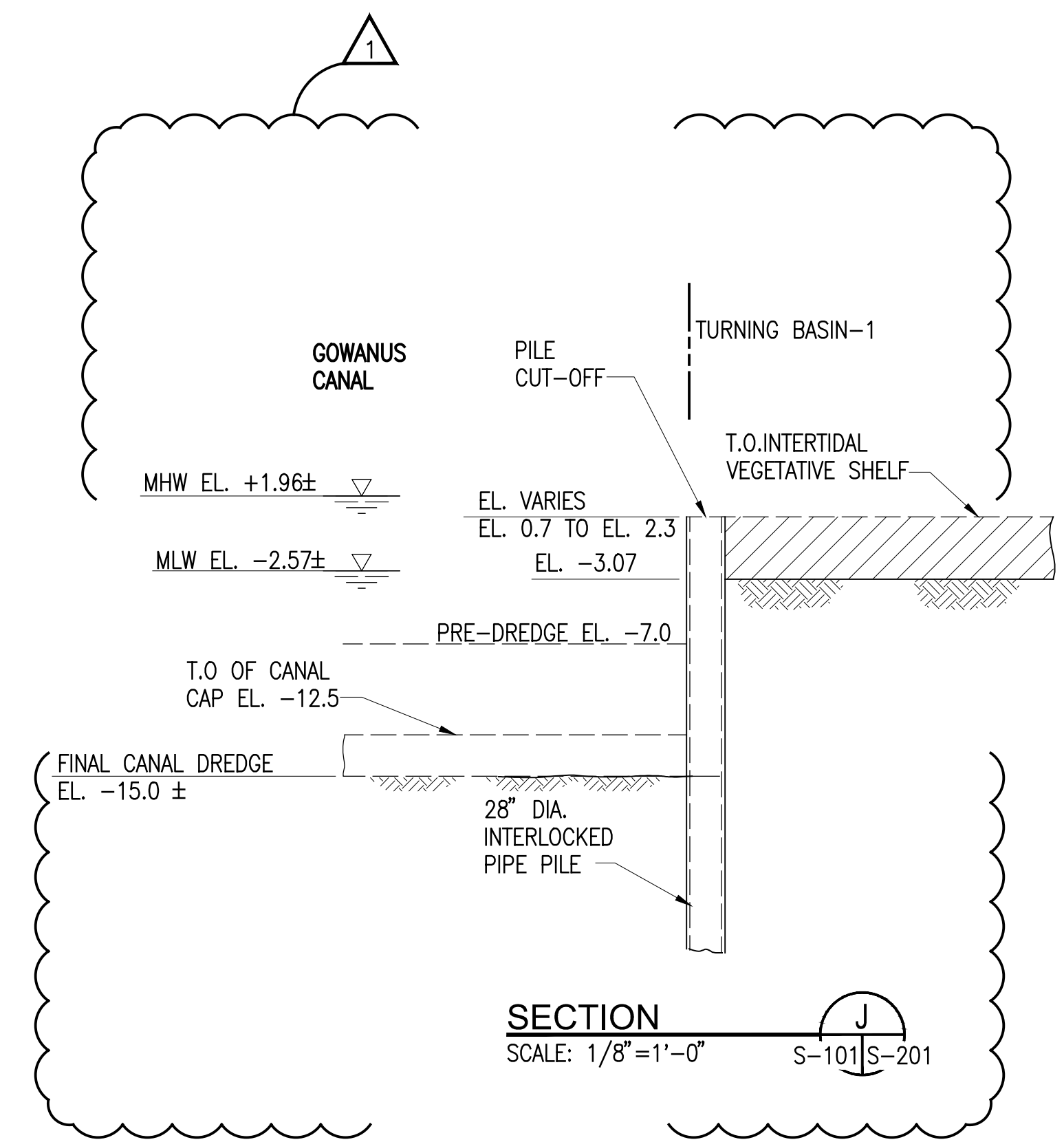
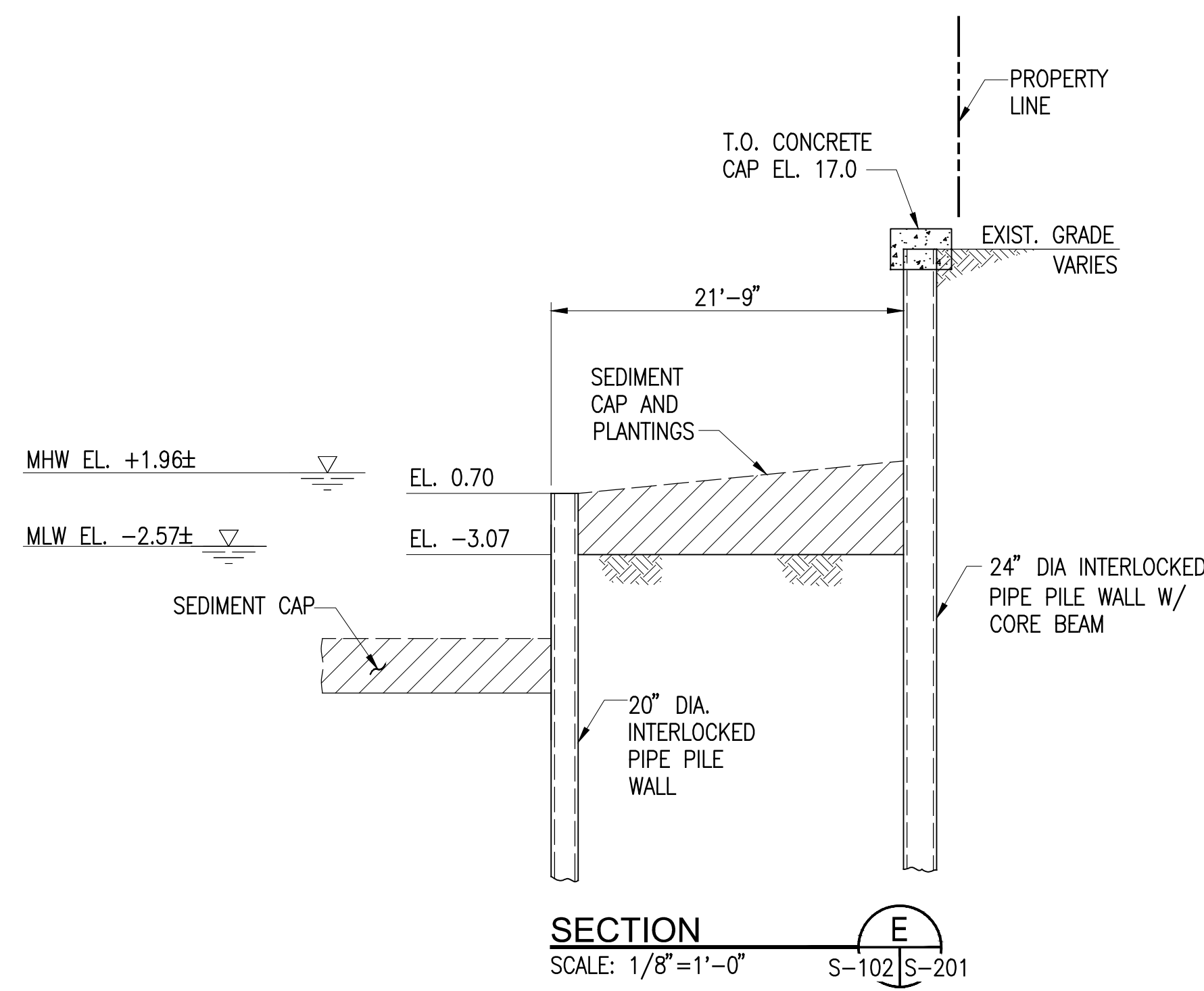
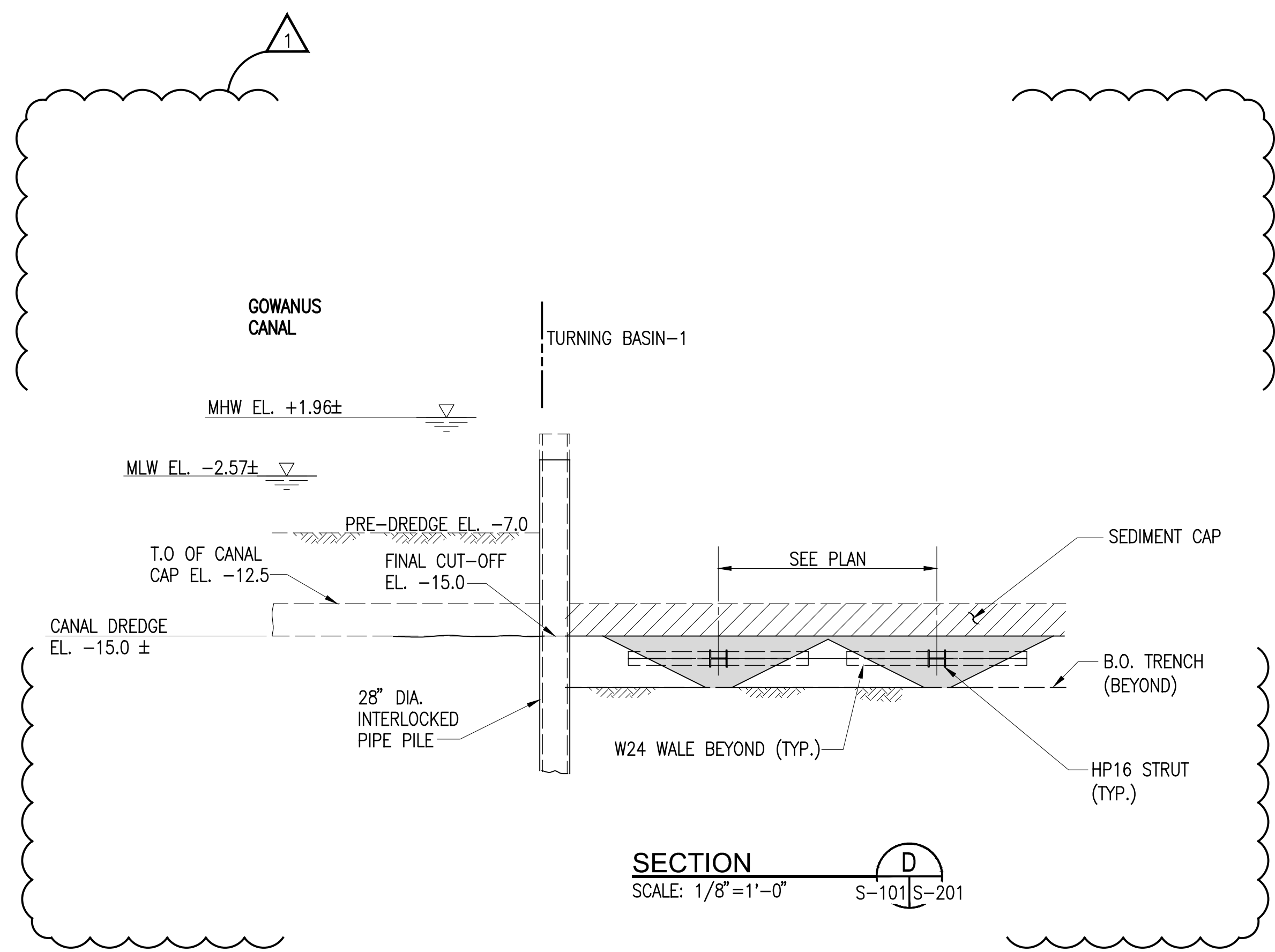
PERMANENT BULKHEAD SECTIONS

SK _____
DRAWN BY

S-200.00.DWG
CADD FILE

FIRST STREET TURNING BASIN
GOWANUS CANAL
BROOKLYN, NEW YORK

CAPITAL PROJECT NO. PW77GOWAN 03/23/2020 SHEET 16 OF 19 S-200



| NO. | DATE | DESCRIPTIONS | BY | APPR'D |
|-----|------------|------------------------|----|--------|
| 1 | 3/23/2020 | 100% DESIGN REVISION 1 | RC | |
| 0 | 03/18/2019 | 100% DESIGN REPORT | RC | |

REVISIONS

**FIRST STREET TURNING BASIN
GOWANUS CANAL
BROOKLYN, NEW YORK**

CAPITAL PROJECT NO. PW77GOWAN 03/23/2020 SHEET 17 OF 19 S-201

FINAL DESIGN SUBMITTED BY:
AKRF KSE
The AKRF-KSE JV

DESIGN PREPARED BY:
MIRCE
MUESER RUTLEDGE CONSULTING ENGINEERS
NAME OF CONSULTANT

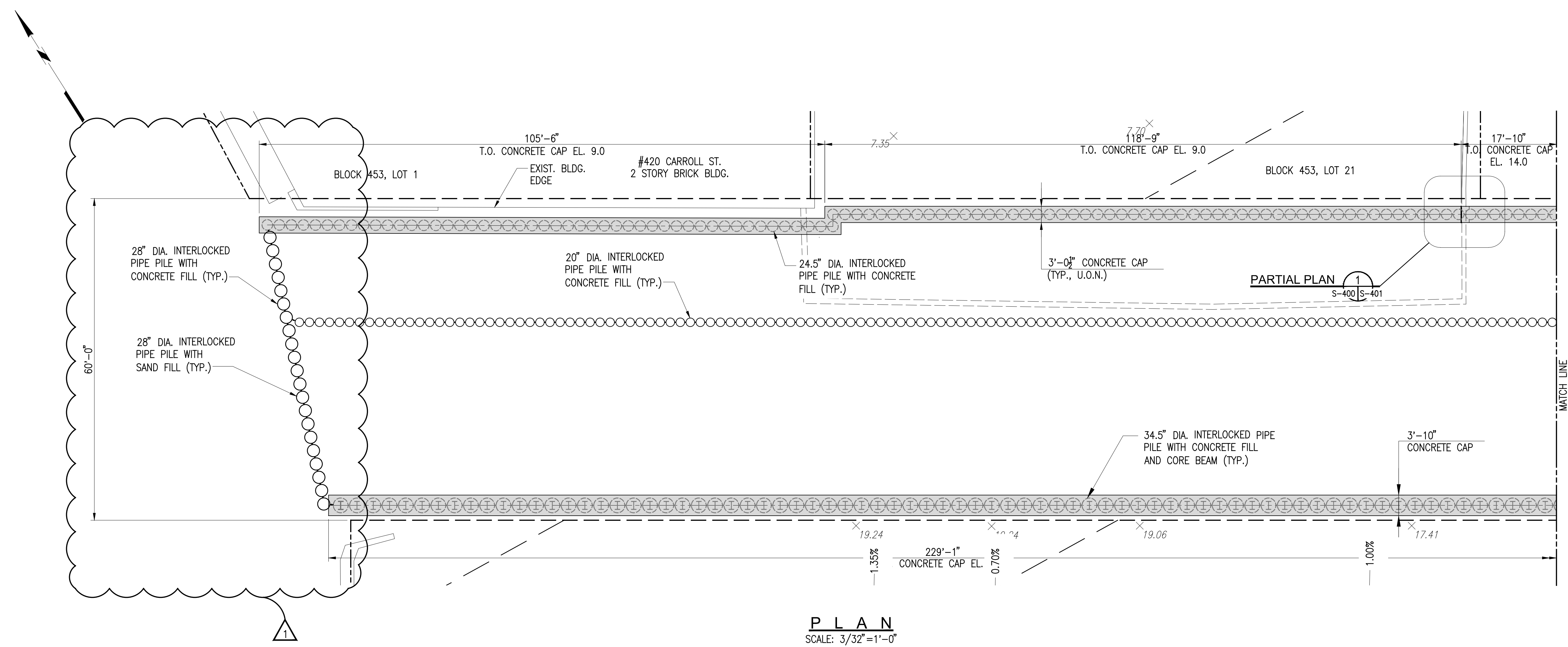
SIGNATURE _____
DATE _____

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

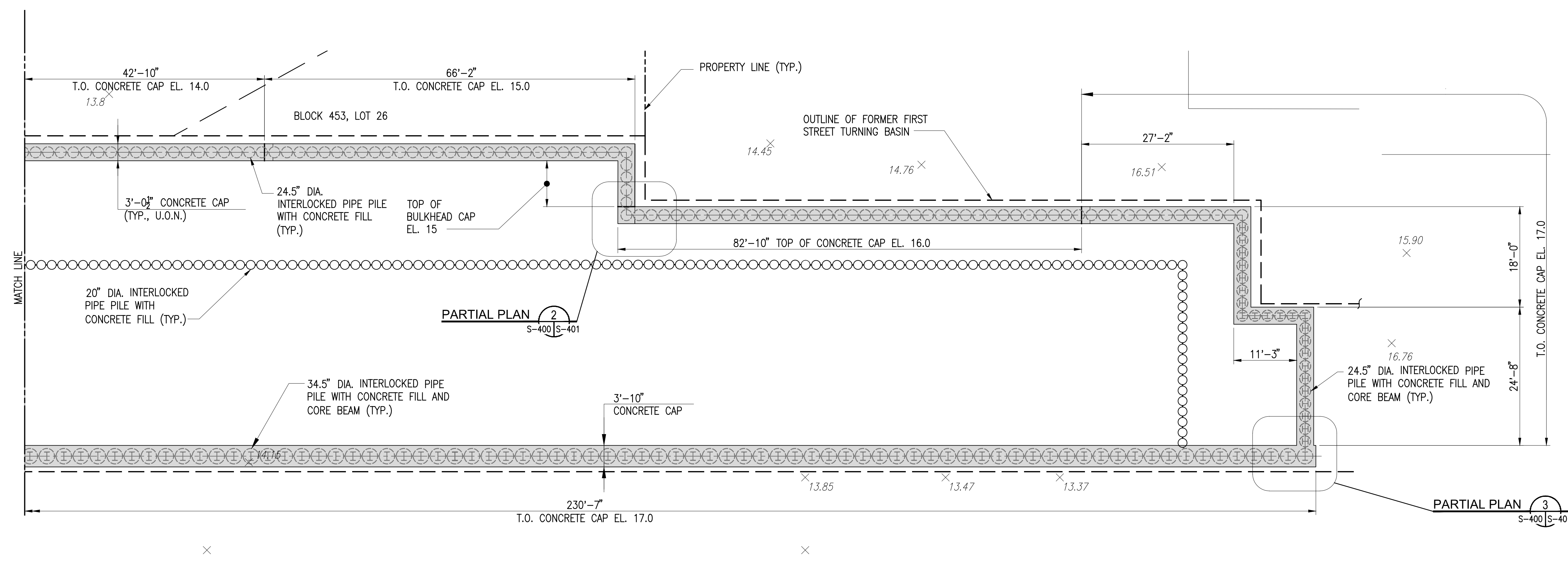
PERMANENT BULKHEAD
SECTIONS AND DETAILS

SK _____
DRAWN BY

S-201.00.DWG
CADD FILE



PLAN
SCALE: 3/32"=1'-0"



PLAN
SCALE: 3/32"=1'-0"

| NO. | DATE | DESCRIPTIONS | BY | APPR'D |
|-----|------------|------------------------|----|--------|
| 1 | 3/23/2020 | 100% DESIGN REVISION 1 | RC | |
| 0 | 03/18/2019 | 100% DESIGN REPORT | RC | |

| REVISIONS | | | | |
|---|----------------------|-------|----------|-------|
| FIRST STREET TURNING BASIN GOWANUS CANAL BROOKLYN, NEW YORK | | | | |
| CAPITAL PROJECT NO. | PW77GOWAN 03/23/2020 | SHEET | 18 OF 19 | S-400 |

FINAL DESIGN SUBMITTED BY:

The AKRF-KSE JV

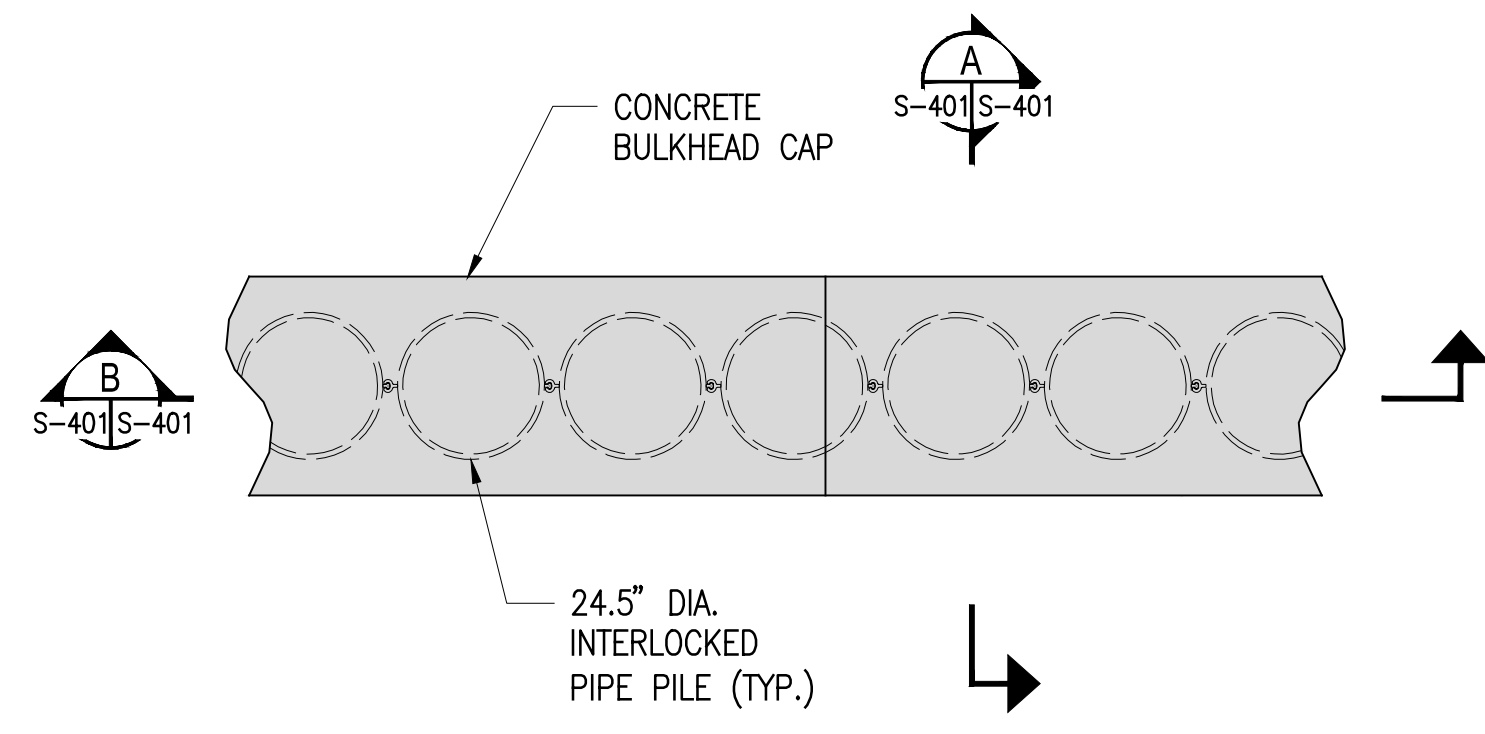
DESIGN PREPARED BY:

MUESER RUTLEDGE CONSULTING ENGINEERS
 NAME OF CONSULTANT
 SIGNATURE _____
 DATE _____

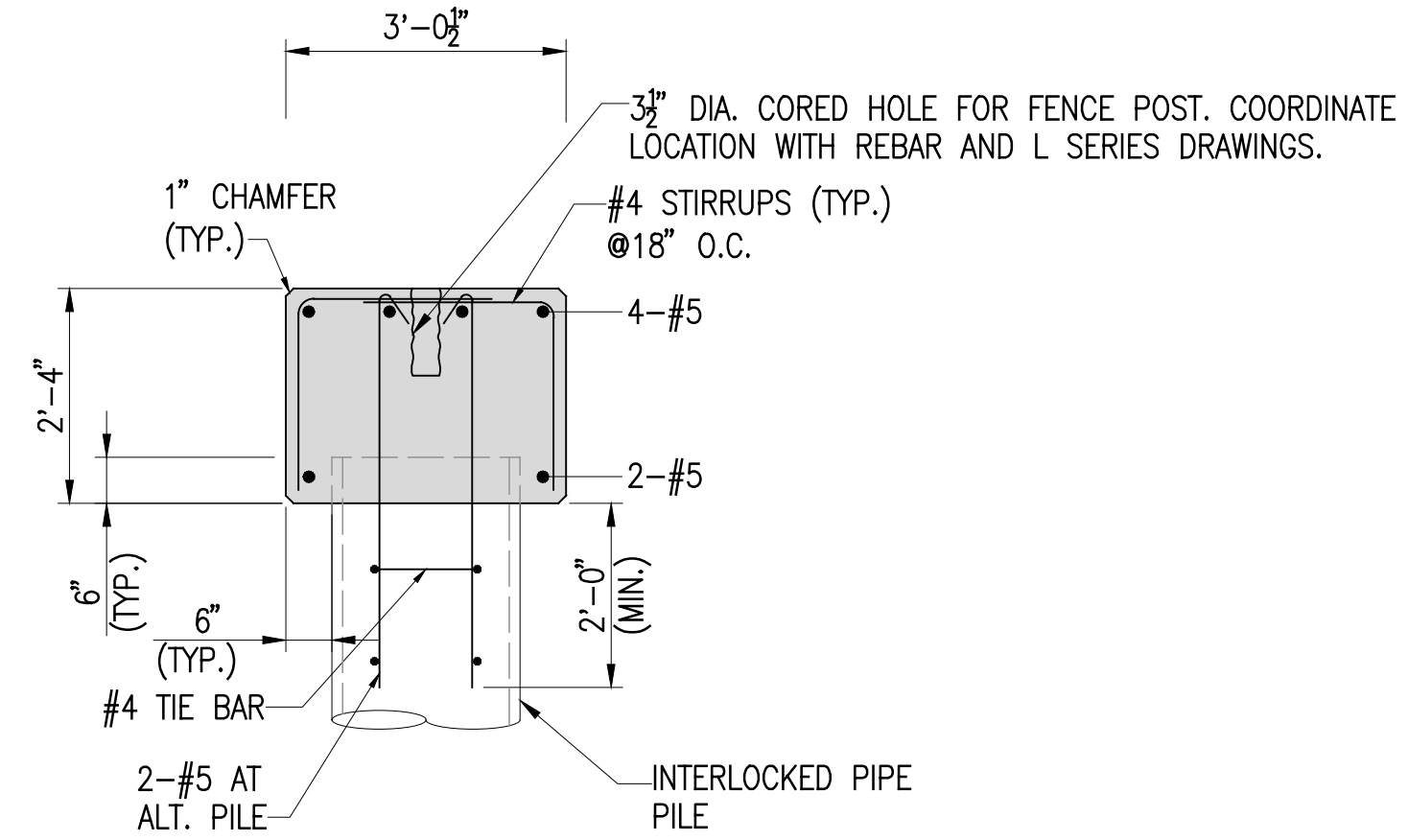
CITY OF NEW YORK
 DEPARTMENT OF DESIGN + CONSTRUCTION
 DIVISION OF INFRASTRUCTURE
 BUREAU OF DESIGN

PERMANENT BULKHEAD CONCRETE CAP
 PLAN

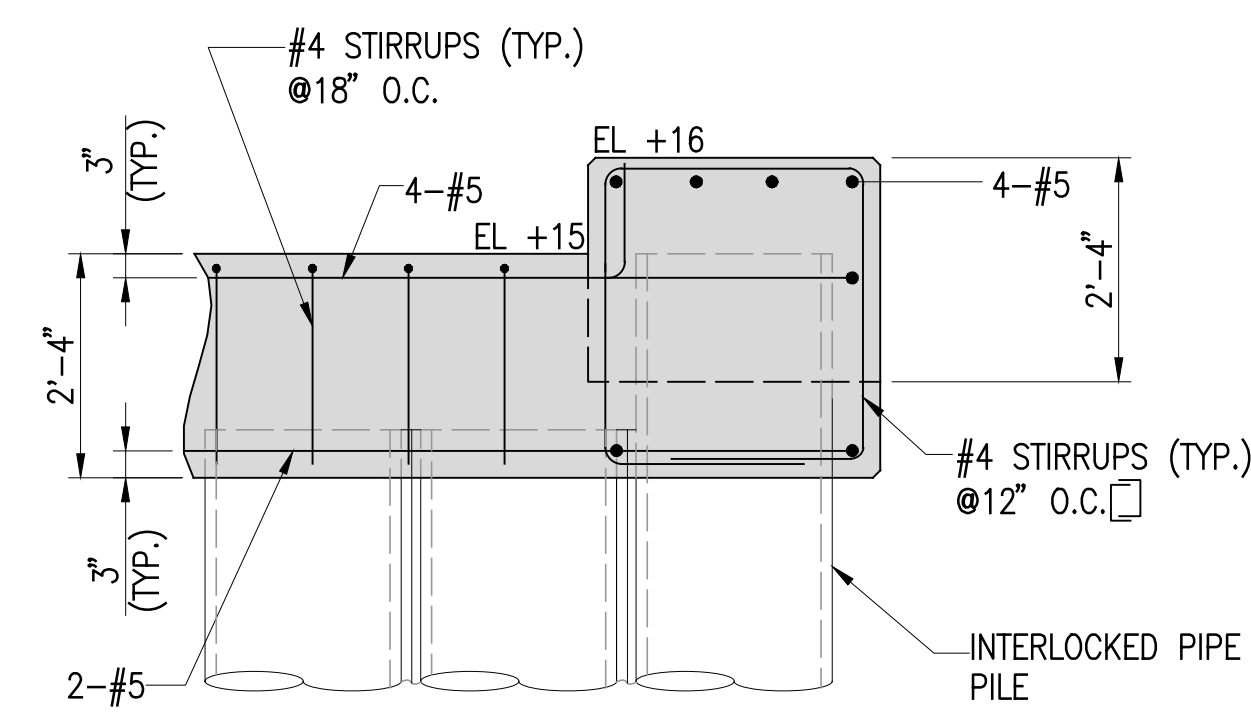
SK _____ S-400.00.DWG
 DRAWN BY _____ CADD FILE _____



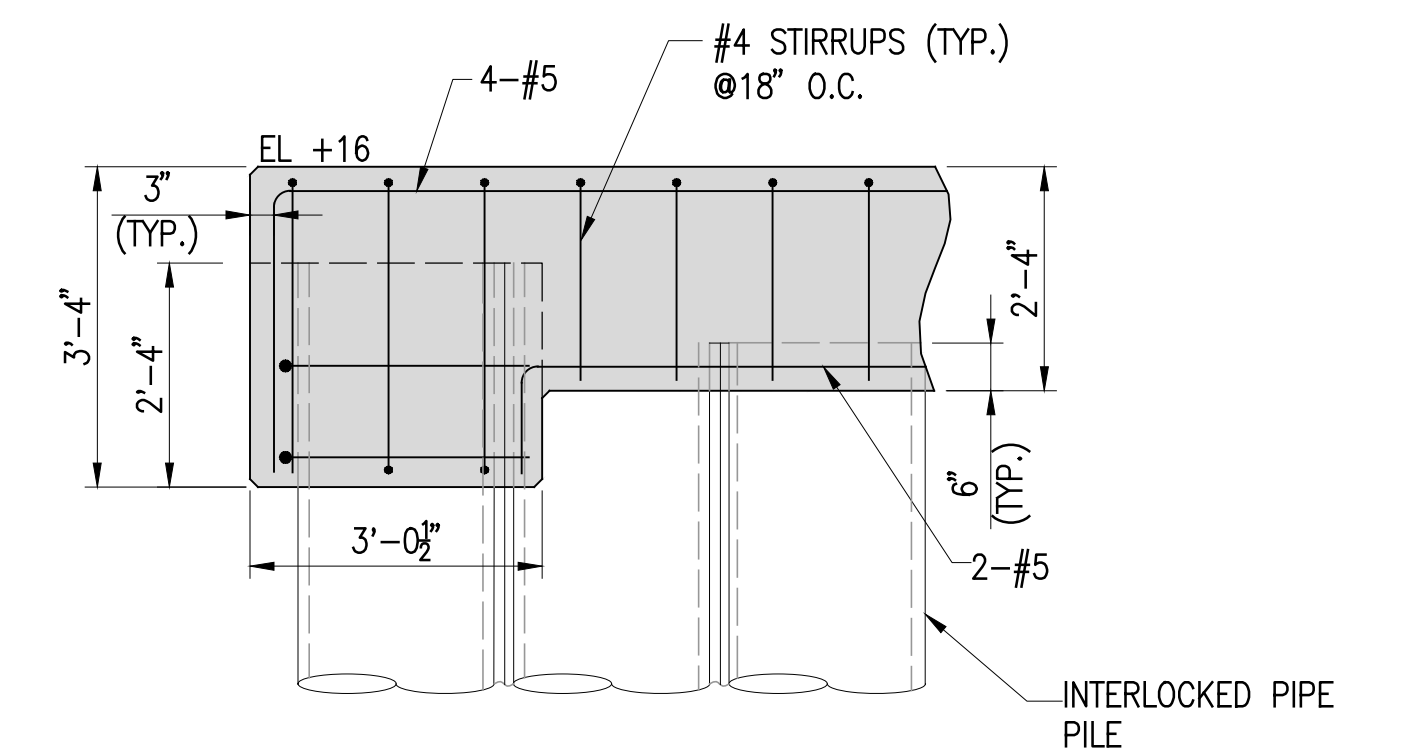
PARTIAL PLAN 1
SCALE: 3/8"=1'-0"
S-400|S-401



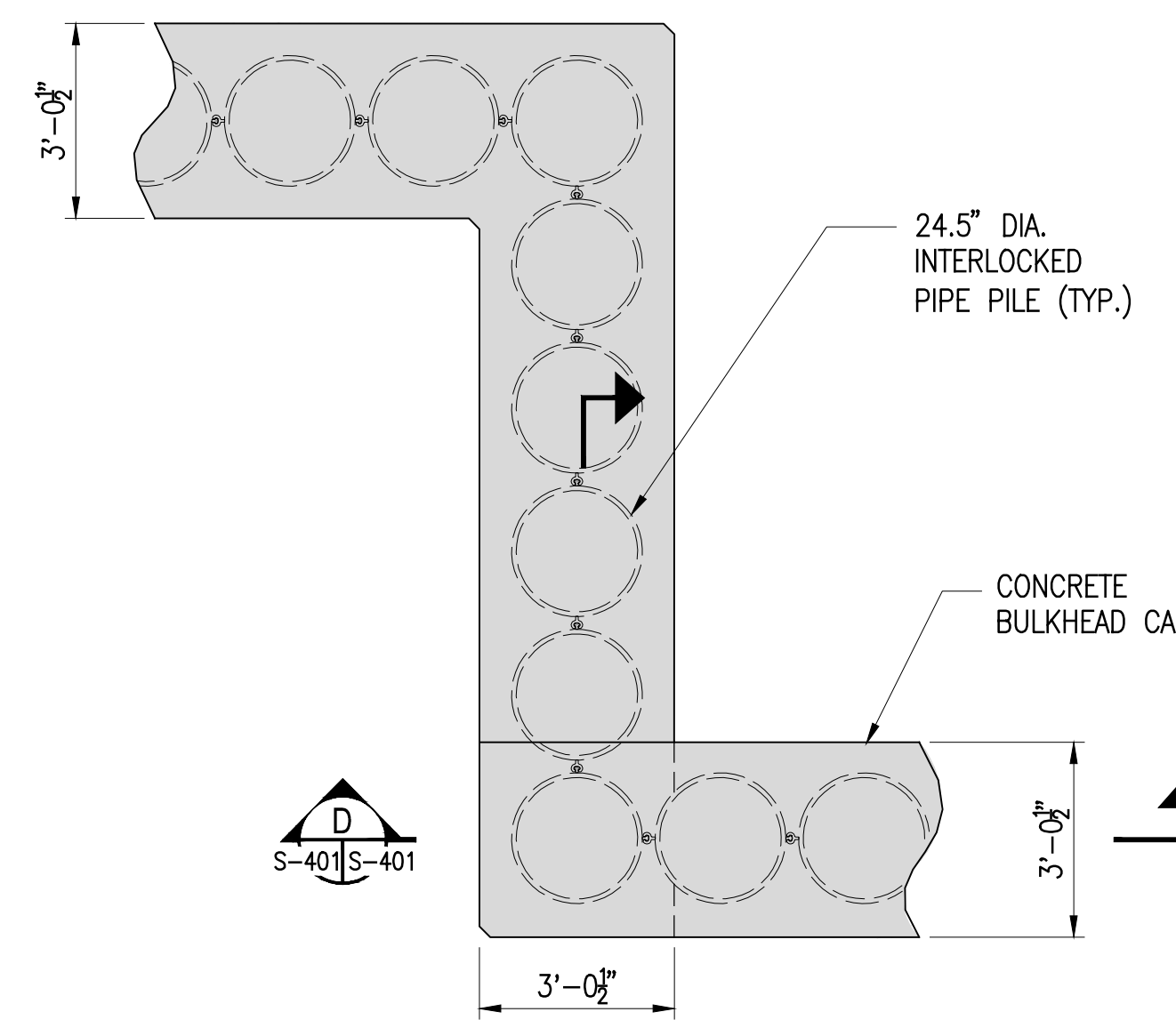
SECTION A
1/2"=1'-0"
S-401|S-401



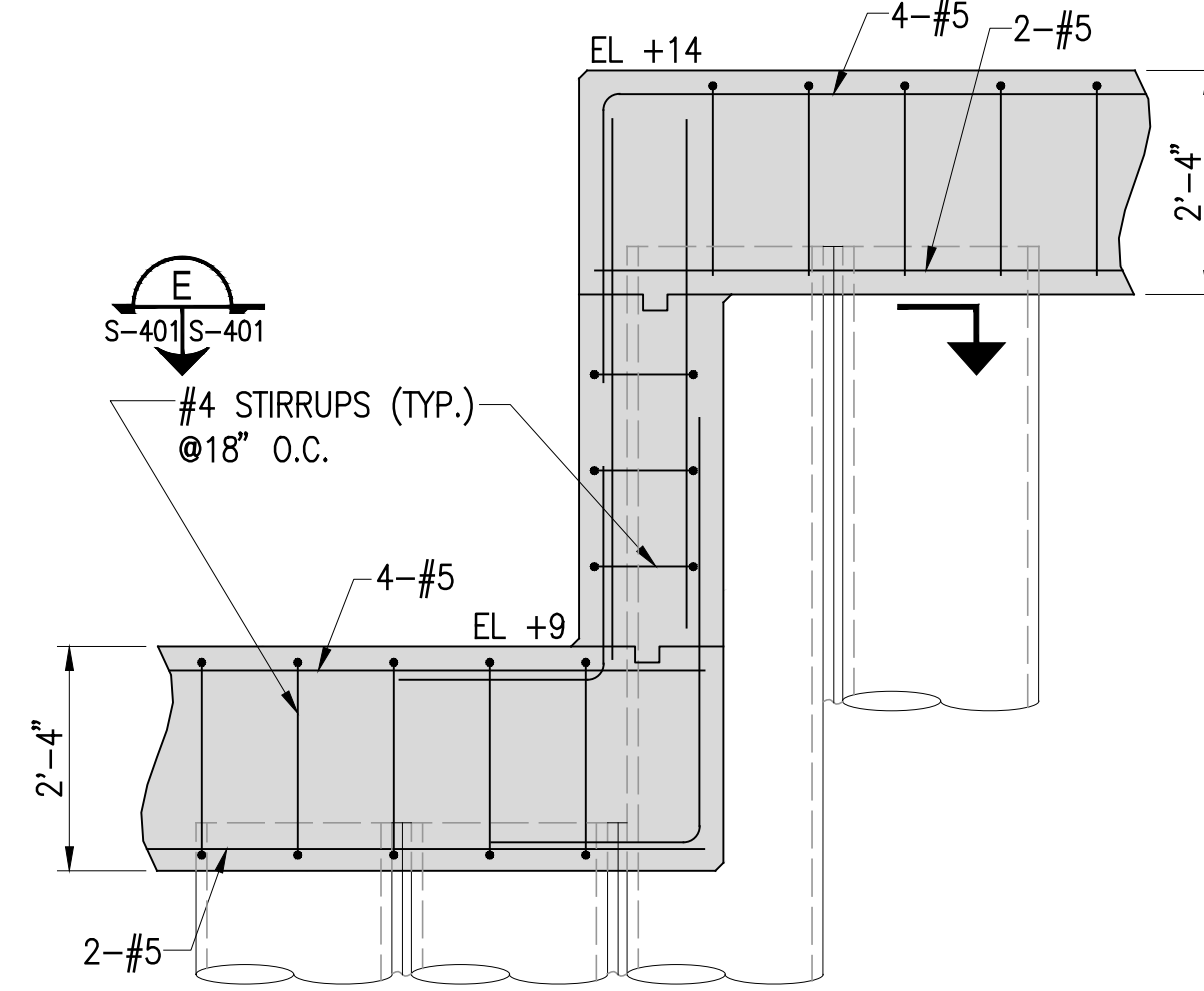
SECTION C
1/2"=1'-0"
S-401|S-401



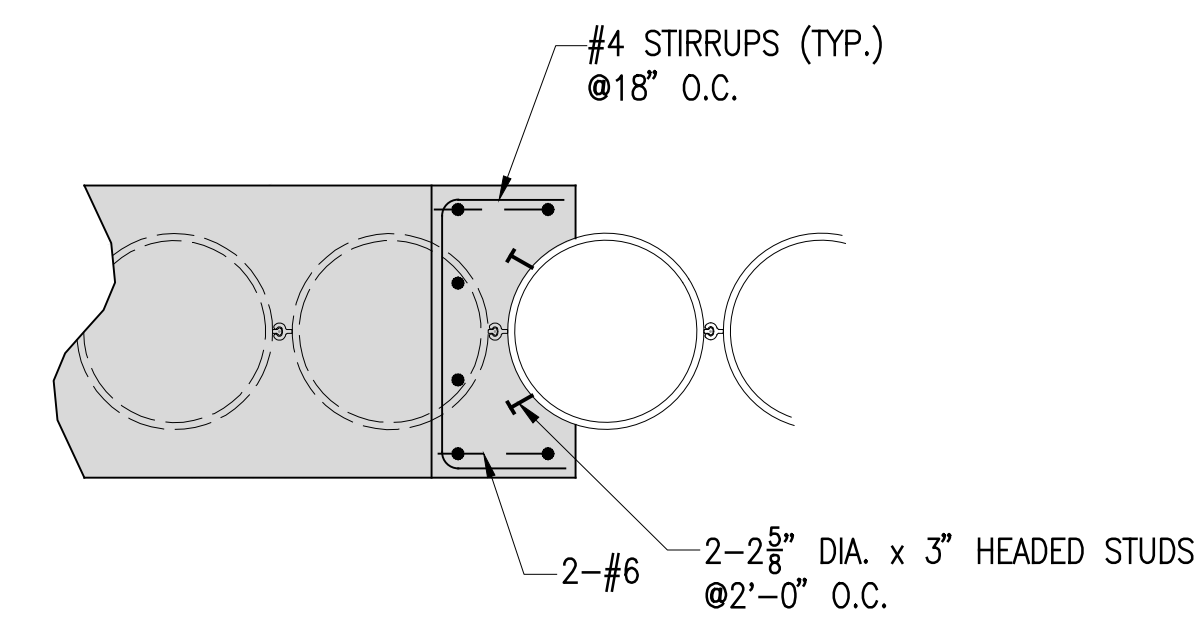
SECTION D
1/2"=1'-0"
S-401|S-401



PARTIAL PLAN 2
SCALE: 3/8"=1'-0"
S-400|S-401

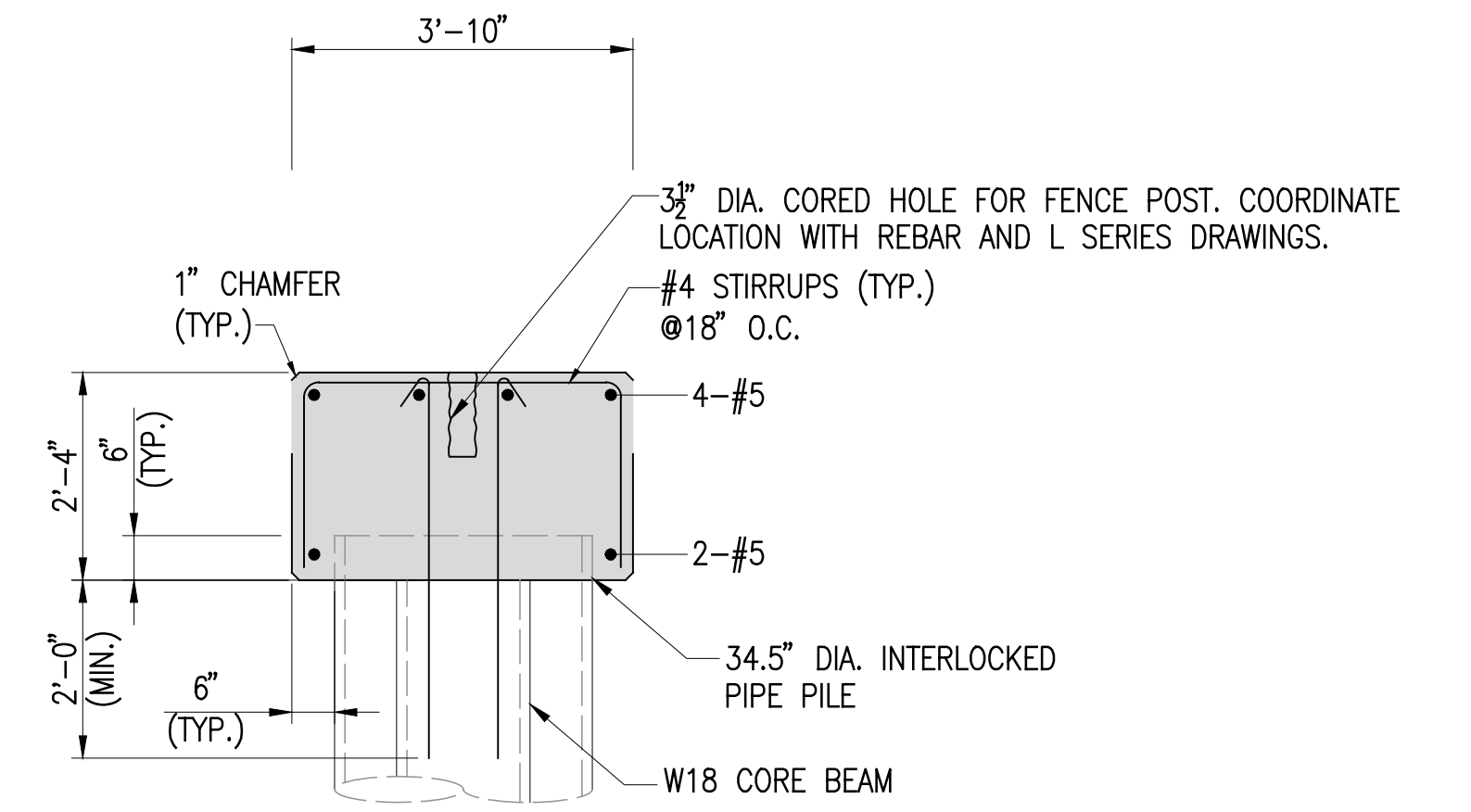


SECTION B
1/2"=1'-0"
S-401|S-401

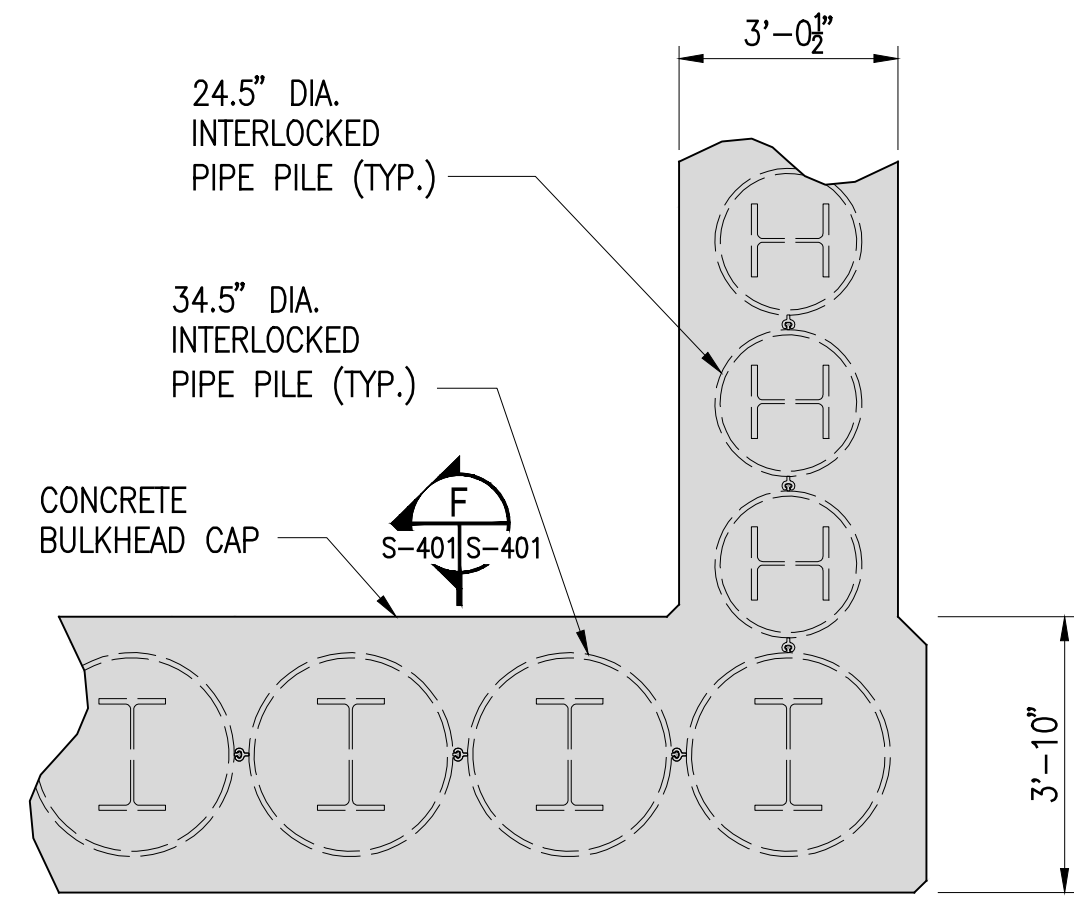


NOTE: PILE REINFORCEMENT NOT SHOWN.

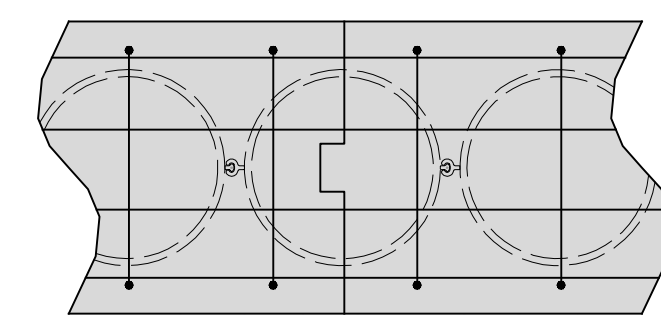
SECTION E
1/2"=1'-0"
S-401|S-401



SECTION F
1/2"=1'-0"
S-401|S-401



PARTIAL PLAN 3
SCALE: 3/8"=1'-0"
S-400|S-401



TYPICAL CONSTRUCTION JOINT
SCALE: 1/2"=1'-0"

| NO. | DATE | DESCRIPTIONS | BY | APPR'D |
|-----|------------|------------------------|----|--------|
| 1 | 3/23/2020 | 100% DESIGN REVISION 1 | RC | |
| 0 | 03/18/2019 | 100% DESIGN REPORT | RC | |

FINAL DESIGN SUBMITTED BY:
AKRF KSE
The AKRF-KSE JV

DESIGN PREPARED BY:
MUESER RUTLEDGE CONSULTING ENGINEERS
NAME OF CONSULTANT

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

PERMANENT BULKHEAD CAP
PLANS, SECTIONS, AND DETAILS
SK DRAWN BY _____ S-401.00.DWG CADD FILE

FIRST STREET TURNING BASIN
GOWANUS CANAL
BROOKLYN, NEW YORK
CAPITAL PROJECT NO. PW77GOWAN 03/23/2020 SHEET 19 OF 19 S-401