

CITY OF WALTHAM, MASSACHUSETTS CHESTER BROOK YMCA WETLAND FLOOD MITIGATION

70% DESIGN - NOT FOR CONSTRUCTION

JUNE 2023

PROJECT NO: 160123

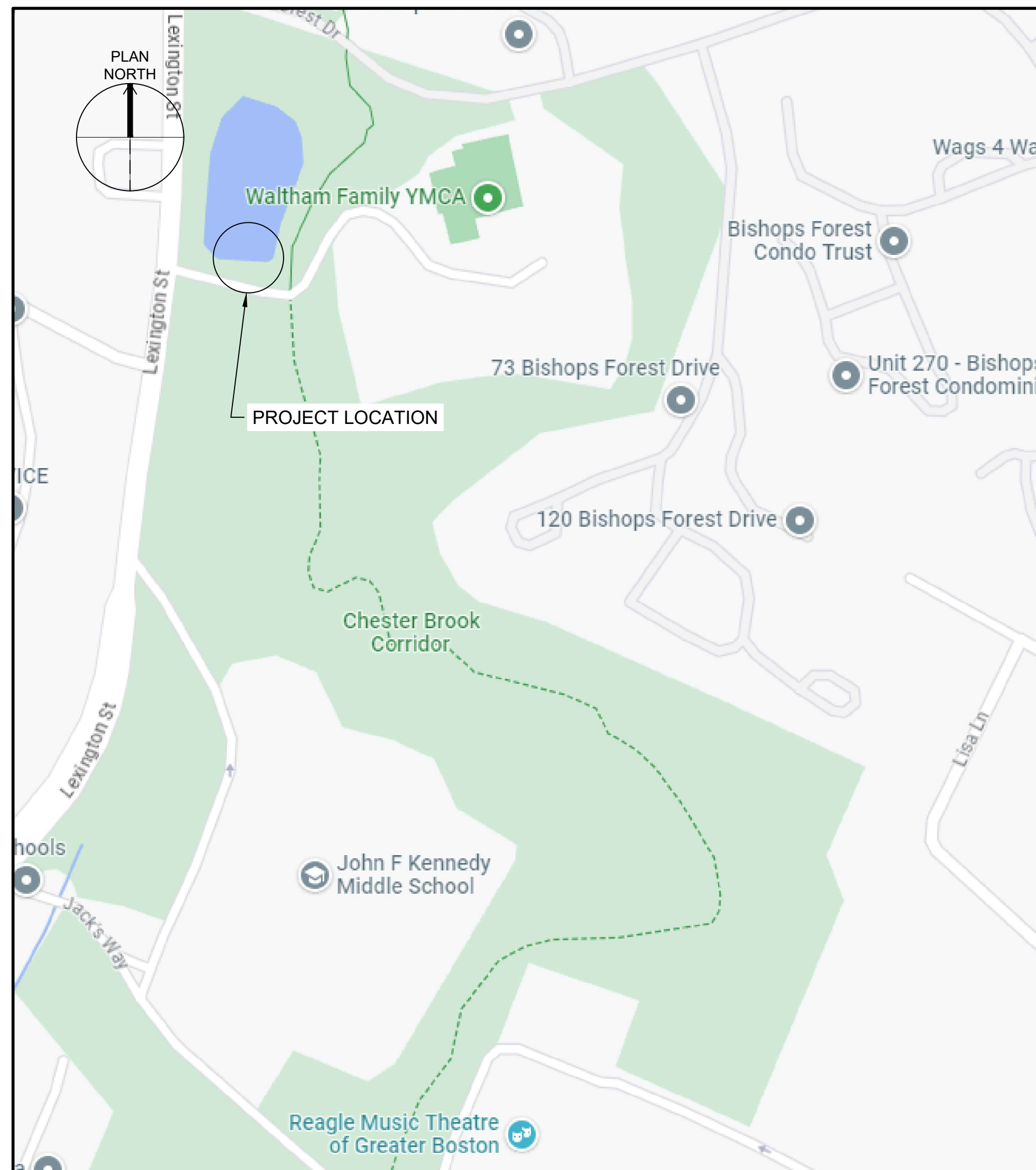
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Robert S. Winn, P.E. - City Engineer
Jeanette A. McCarthy - Mayor



200 BRICKSTON SQUARE, SUITE 403
ANDOVER, MA 01810



VICINITY MAP
SCALE: NO SCALE



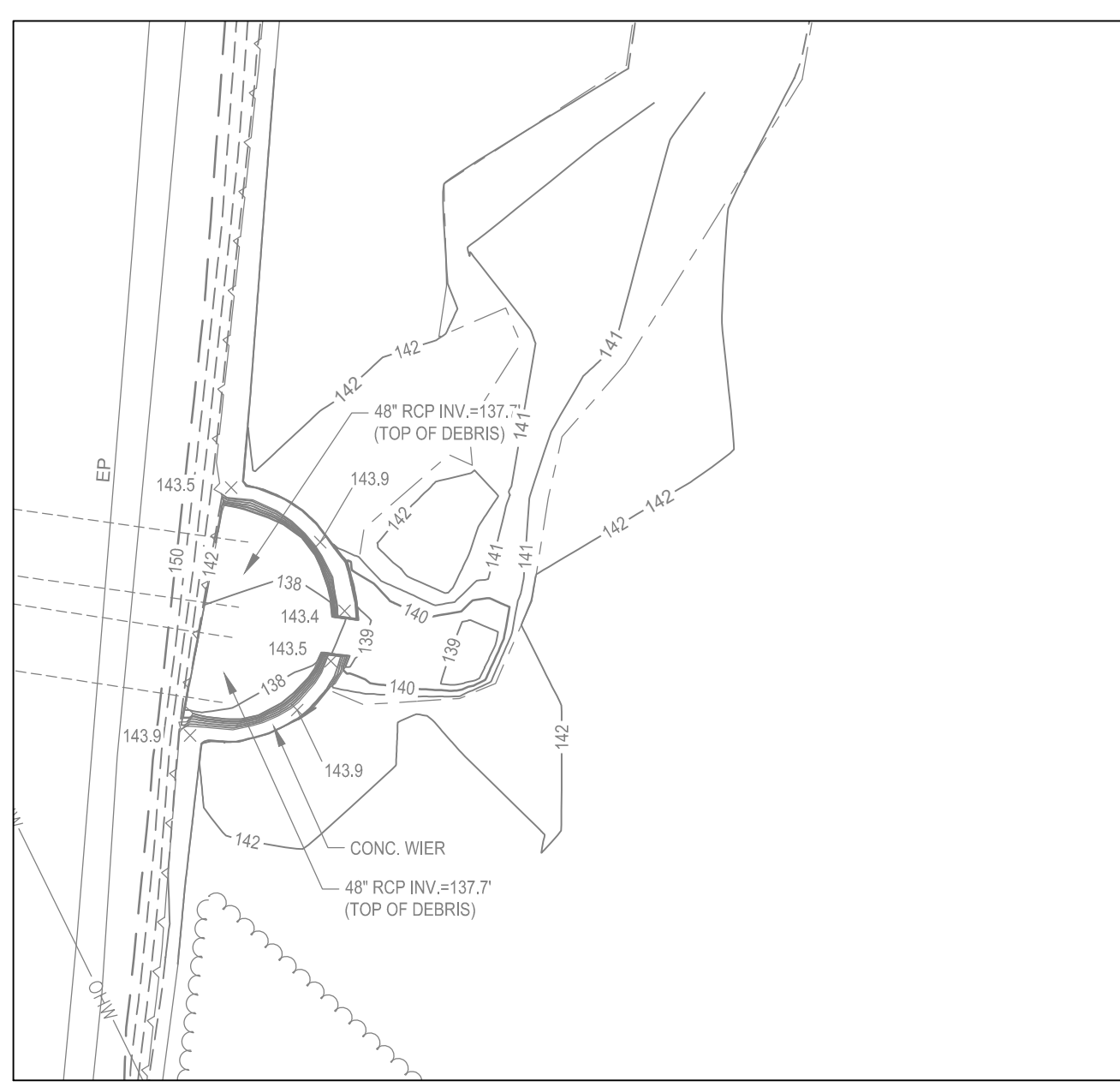
LOCATION MAP
SCALE: 1" = 150'

ENGR P.E. SEAL AND
STAMP DESIGNATED
LOCATION

Path: C:\BPC\W\03249940 FILENAME: C-00-001.DWG PLOT DATE: 6/29/2023 3:24 PM CAD USER: BEN HAWES



A SITE PLAN
SCALE: 1" = 20'



A WEIR DETAIL
SCALE: 1" = 10'

LEGEND

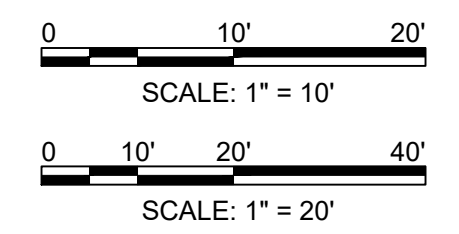
- APPROXIMATE LOT LINE (SEE NOTE 10)
- MAJOR CONTOUR LINE (2-FOOT)
- MINOR CONTOUR LINE (1-FOOT)
- CONTOUR LINE (1-FOOT)
- RETAINING WALL
- WOODEN GUARDRAIL
- METAL GUARDRAIL
- OHW OVERHEAD WIRE
- D DRAIN LINE
- S DRAIN CULVERT
- S SEWER LINE
- G GAS LINE
- C CABLE/INTERNET LINE
- T TREE LINE
- S SHRUB LINE
- EDGE OF DELINEATED WETLAND (SEE NOTE 5)
- TOP OF DELINEATED BANK (SEE NOTE 5)
- WATERCOURSE
- WETLAND AREA
- CONCRETE
- RIP RAP
- LANDSCAPED AREA
- X 145.1 SPOT GRADE
- BOUND FOUND (BND. FND.)
- UTILITY POLE W/LIGHT & GUY WIRE
- LIGHT POST
- LIGHT POLE W/ARM
- DRAIN MANHOLE
- CATCH BASIN
- SEWER MANHOLE
- FIRE HYDRANT
- WATER GATE VALVE
- IRRIGATION CONTROL VALVE
- H H HAND HOLE
- EM ELECTRIC METER
- SIGN
- SIGN (TWO POSTS)
- MAST ARM
- TRAFFIC SIGNAL
- ROCK/BOULDER
- DECIDUOUS TREE
- FLOW DIRECTION
- WETLAND FLAG
- BANK FLAG
- R23-21-1 TAX MAP & LOT NUMBER
- BC BITUMINOUS CURB
- CONC CONCRETE
- DIP DUCTILE IRON PIPE
- DWD DETECTABLE WARNING DEVICE
- EP EDGE OF PAVEMENT
- HDWL HEADWALL
- PVC POLYVINYL CHLORIDE PIPE
- RCP REINFORCED CONCRETE PIPE
- RET WALL RETAINING WALL
- SBB SLOPED BITUMINOUS BERM
- SYL SINGLE YELLOW LINE
- SMH SINGLE YELLOW LINE

GENERAL NOTES:

1. REFERENCE: CHESTER BROOK OUTLET
LEXINGTON STREET & BISHOP FOREST DRIVE, WALTHAM, MASSACHUSETTS
1. FIELD SURVEY PERFORMED BY J.H.H. & A.K.H. (DOUCET SURVEY) DURING MAY 2023 USING A TOTAL STATION AND A SURVEY GRADE GPS WITH A DATA COLLECTOR AND AN AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
2. HORIZONTAL DATUM BASED ON NAD83(2011) MASSACHUSETTS STATE PLANE MAINLAND COORDINATE ZONE (2001) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
3. VERTICAL DATUM IS BASED ON APPROXIMATE NAVD83(GEIOD18) (± 2') DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.
4. JURISDICTIONAL WETLANDS DELINEATED BY EPSILON ASSOCIATES, INC DURING APRIL 2023 IN ACCORDING TO THE:
 - US ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1 (JANUARY, 1987).
 - REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION (2012).
 - NEW ENGLAND HYDRIC SOILS TECHNICAL COMMITTEE 2018 VERSION 4, FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION, LOWELL, MA.
 - NORTH AMERICAN DIGITAL FLORA: NATIONAL WETLAND PLAN LIST, CURRENT VERSION
5. THIS MAP WAS PREPARED FROM RECORD RESEARCH, OTHER MAPS, LIMITED FIELD MEASUREMENTS AND OTHER SOURCES. IT IS NOT TO BE CONSTRUED AS A PROPERTY / BOUNDARY SURVEY AND IS SUBJECT TO SUCH FACTS AS SAID SURVEYS MAY DISCLOSE.
6. PROPER FIELD PROCEDURES WERE FOLLOWED IN ORDER TO GENERATE CONTOURS AT 2' INTERVALS. ANY MODIFICATION OF THIS INTERVAL WILL DIMINISH THE INTEGRITY OF THE DATA, AND DOUCET SURVEY WILL NOT BE RESPONSIBLE FOR ANY SUCH ALTERATION PERFORMED BY THE USER.
7. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON OBSERVED PHYSICAL EVIDENCE AND PAINT MARKS FOUND ON-SITE.
8. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES/TYPES IS SUBJECT TO NUMEROUS FIELD CONDITIONS, INCLUDING: THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS, MANHOLE CONFIGURATION, ETC.
9. ALL UNDERGROUND UTILITIES (ELECTRIC, GAS, TEL. WATER, SEWER DRAIN SERVICES) ARE SHOWN IN SCHEMATIC FASHION. THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATIONS FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE AT 1-888-DIG-SAFE.
10. OVERALL PARCEL BOUNDARIES AS SHOWN HEREON ARE BASED ON GIS DATA FROM THE "BUREAU OF GEOGRAPHIC INFORMATION (MassGIS), COMMONWEALTH OF MASSACHUSETTS, EXECUTIVE OFFICE OF TECHNOLOGY AND SECURITY SERVICES". AND ARE IN THEIR ORIGINAL LOCATION. THE PARCEL BOUNDARIES HAVE NOT BEEN ADJUSTED TO MATCH FOUND PROPERTY MONUMENTS OR THE EDGE OF RIGHT OF WAY AS DETERMINED BY THE SURVEYOR.

KEY NOTES:

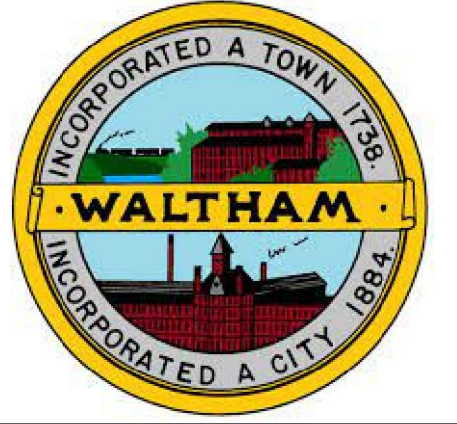
1. -



200 BRICKSTON SQUARE, SUITE 403
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70% SUBMITTAL
NOT FOR CONSTRUCTION



CHESTER BROOK YMCA WETLAND FLOOD MITIGATION

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: KEV/SAS

DRAWN: BWH

CHECKED: TVA

CHECKED:

APPROVED: SAS

FILENAME

C-00-001.dwg

BC PROJECT NUMBER

PROJECT 160123

CIVIL

EXISTING SITE CONDITIONS (SURVEY)

DRAWING NUMBER

C-00-001

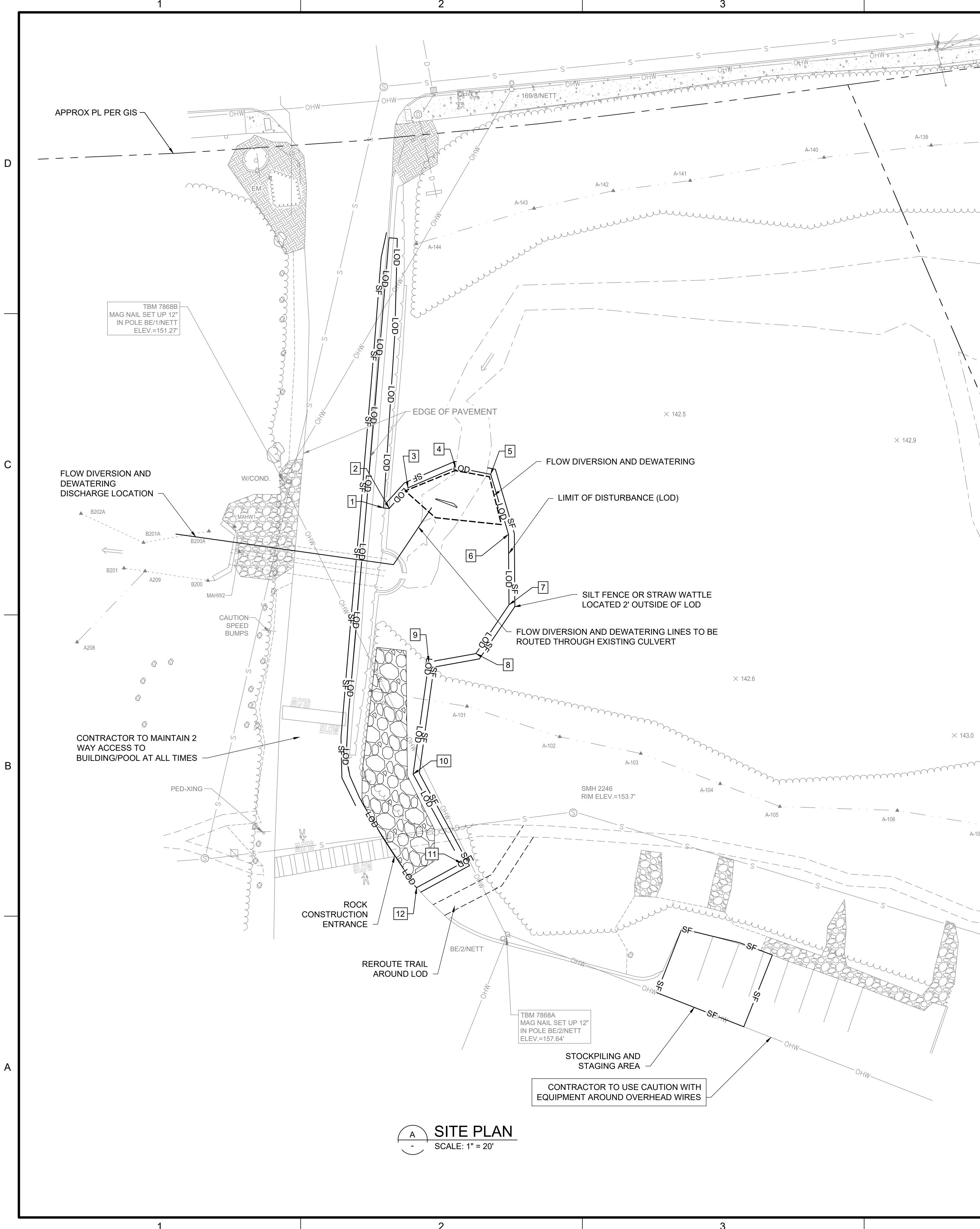
SHEET NUMBER

2

13

OF

Path: C:\BPC\DWG\3249940 FILENAME: C-00-002.DWG PLOT DATE: 6/29/2023 3:42 PM CAD USER: BEN HAWMES



A SITE PLAN
SCALE: 1" = 20'

GENERAL NOTES:

1. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF WORK. THE CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSION REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AND UPON WHICH THEIR BIDS WILL BE BASED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE A REVIEW OF THE SITE TO DETERMINE EXISTING CONDITIONS. ANYTHING NOT SHOWN ON THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE CITY OF WALTHAM IMMEDIATELY AND SHALL NOT CONSTITUTE GROUNDS FOR AN EXTRA, UNLESS APPROVED BY THE CITY.
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF WALTHAM PERMITS AND REQUIREMENTS. THE CONTRACTOR SHALL COMPLY WITH ALL PERMIT CONDITIONS.
4. ANY AND ALL AREAS NOT SPECIFIED FOR CONSTRUCTION WHICH ARE DISTURBED AND OR DAMAGED BY THE CONTRACTOR SHALL BE RESTORED TO THE STANDARDS OF THE CONTRACT DOCUMENTS TO THE EXISTING LOCATION, ELEVATION, AND DIMENSION TO THE SATISFACTION OF THE CITY.
5. CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF NORMAL FLOWS IN THE WETLAND TO ISOLATE WORK AREAS FROM FLOWING WATER. THE CONTRACTOR SHALL ALSO STABILIZE THE SITE AT THE END OF EACH WORK DAY SO ALL WORK AREAS WILL BE STABLE IN THE EVENT OF A 10-YEAR STORM. THE 10-YEAR PEAK FLOW RATE IN THE WETLAND IS 320 CFS.
6. CONTRACTOR SHALL USE PUMPS WHICH MINIMIZE AMBIENT NOISE.
7. CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP EXCAVATIONS DRY AND SHALL PROVIDE ALL SHEETING, SHORING, AND BRACING NECESSARY TO PROTECT ADJACENT STRUCTURES, UTILITIES, EXISTING PAVEMENT, OR TO MINIMIZE TRENCH WIDTH.
8. ALL MATERIALS SHALL BE NEW.
9. FINISHED GRADE SHOWN ON THE DRAWINGS REFERS TO THE FINAL GRADE AFTER THE INSTALLATION OF FINAL EROSION CONTROL MEASURES AND GROUND TREATMENT.
10. THE CONTRACTOR SHALL PROTECT ALL UTILITIES THROUGHOUT THE CONSTRUCTION PERIOD.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED MAINTENANCE OF TRAFFIC AS NEEDED FOR PROJECT CONSTRUCTION.
12. THIS PROJECT IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN ASSOCIATED WITH CHESTER BROOK, ZONE AE, WITH BASE FLOOD ELEVATIONS RANGING BETWEEN 134 FEET AND 152 FEET NAVD88 (PER FEMA FIRM COMMUNITY PANEL NUMBER 2501700413E DATED 06/4/2010).
13. LOCATIONS OF STRUCTURES AND OTHER FEATURES MAY BE ADJUSTED BY THE ENGINEER OF RECORD OR CITY OF WALTHAM STORMWATER ENGINEER DURING CONSTRUCTION DUE TO FIELD CONDITIONS.

CONSTRUCTION SEQUENCE:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING THE PRE-CONSTRUCTION MEETING. THE CONTRACTOR MUST GIVE THE CITY OF WALTHAM 48 HOURS NOTIFICATION TO SCHEDULE THE PRE-CONSTRUCTION MEETING.
2. CLEAR AND GRUB ONLY AS NECESSARY TO INSTALL PERIMETER SILT FENCE OR STRAW WATTLE AND CONSTRUCTION ENTRANCE.
3. INSTALL SILT FENCE OR STRAW WATTLE ON THE PERIMETER OF ALL STOCKPILE/STAGING AREAS AND MUST REMAIN IN PLACE THROUGH THE DURATION OF CONSTRUCTION ACTIVITIES.
4. FIELD VERIFY EXISTING STRUCTURE CONDITION AND EXISTING DIMENSIONS.
5. STRIP TOPSOIL AROUND EXISTING STRUCTURE. STOCKPILE FOR LATER USE AT THE LOCATION SHOWN ON THE PLANS OR REMOVE AND DISPOSE OF SPOILS OFF-SITE.
6. EXCAVATE AROUND EXISTING STRUCTURE AND PROVIDE TEMPORARY SHORING SYSTEM AND BYPASS PIPE IF NECESSARY.
7. DEMOLISH EXISTING STRUCTURE AND EXCAVATE TO PROPOSED GRADE.
8. PREPARE SUBSOILS FOR CAST IN PLACE CONCRETE WEIR STRUCTURE AS SPECIFIED ON STRUCTURAL SHEETS.
- 8.1. NOTIFY ENGINEER OF RECORD AND THE CITY OF WALTHAM STORMWATER ENGINEER. SUBSOILS MUST BE APPROVED PRIOR TO CONTINUATION.
9. PREPARE EXISTING STONE WALL AND CONCRETE WALL FOR PROPOSED WEIR WALL CONCRETE STRUCTURE AS SPECIFIED ON STRUCTURAL SHEETS.
10. CONSTRUCT AND INSTALL FORMWORK FOR CONCRETE WEIR WALL AND INSTALL REBAR AS SPECIFIED ON STRUCTURAL SHEETS.
- 10.1. NOTIFY ENGINEER OF RECORD AND THE CITY OF WALTHAM STORMWATER ENGINEER. ALL FORMWORK MUST BE CERTIFIED PRIOR TO CONCRETE POUR.
11. POUR IN PLACE CONCRETE.
12. BACKFILL INTERIOR STRUCTURE WITH CAST-IN-PLACE CONCRETE OR GRADED ROCK.
13. REMOVE FORMWORK FROM PROPOSED WEIR WALL STRUCTURE.
14. INSTALL SLIDE GATE.
15. BACKFILL AND GRADE AREA TO ELEVATIONS AS SPECIFIED ON PROPOSED CONDITIONS PLAN.
16. INSTALL GEOTEXTILE FABRIC AND SEED WITH WOODLAND SEED MIX FOR ALL NEWLY GRADED AREAS.
17. LEAVE TEMPORARY FLOW DIVERSION IN PLACE FOR A MINIMUM OF THREE (3) MONTHS TO ALLOW FOR VEGETATION TO STABILIZE.
18. REMOVE ALL EROSION AND SEDIMENT CONTROLS.
19. STABILIZE DISTURBED SLOPE WITH GEOTEXTILE AND SEED.
20. THREE MONTHS POST-CONSTRUCTION - REMOVE FLOW DIVERSION AND DEWATERING CONTROLS.

COORDINATE CONTROL POINTS

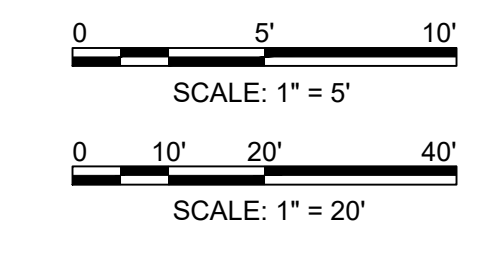
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2	2971034.91	728138.20	LOD	LOD
3	2971042.39	728132.39	LOD	LOD
4	2971059.55	728128.40	LOD	LOD
5	2971070.91	728132.77	LOD	LOD
6	2971073.31	728153.92	LOD	LOD
7	2971069.32	728177.57	LOD	LOD
8	2971055.37	728191.95	LOD	LOD
9	2971039.07	728192.01	LOD	LOD
10	2971027.23	728228.64	LOD	LOD
11	2971038.16	728261.36	LOD	LOD
12	2971021.67	728266.89	LOD	LOD

LEGEND

- SF — STRAW WATTLE
- LOD — LIMIT OF DISTURBANCE
- - - FLOW DIVERSION AND DEWATERING
- [Rock Pattern] ROCK CONSTRUCTION ENTRANCE

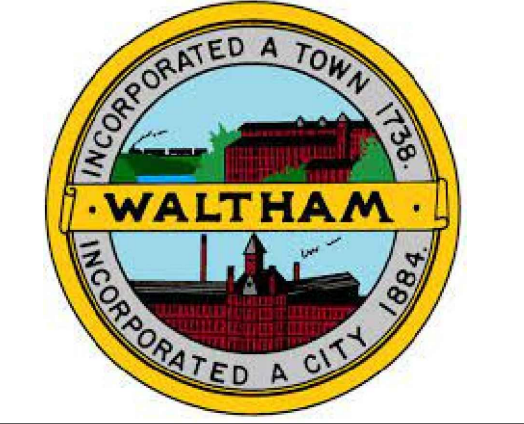
EROSION AND SEDIMENT CONTROL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY OTHER WORK ON SITE. EROSION CONTROL SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
2. THE LIMIT OF DISTURBANCE WORK LINE SHALL SERVE AS THE STRICT LIMIT OF DISTURBANCE FOR THE PROJECT WITHIN OR ADJACENT TO REGULATED WETLAND AREAS.
3. THE LIMITS OF CLEARING, GRADING, AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THESE LIMITS, AS DEPICTED ON THE PLAN SHALL BE UNDISTURBED, TO REMAIN IN NATURAL CONDITION.
4. STOCKPILES OF TOPSOIL SHALL BE LOCATED WITHIN STAGING AREA AND HAVE SIDE SLOPES NO GREATER THAN 2:1 AND TEMPORARILY STABILIZED DURING CONSTRUCTION.



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CHESTER BROOK YMCA WETLAND FLOOD MITIGATION

REVISIONS

REV	DATE	DESCRIPTION

DESIGNED: KEV/SAS
DRAWN: BWH
CHECKED: TVA
CHECKED:
APPROVED: SAS

FILENAME: C-00-002.dwg
BC PROJECT NUMBER: PROJECT 160123

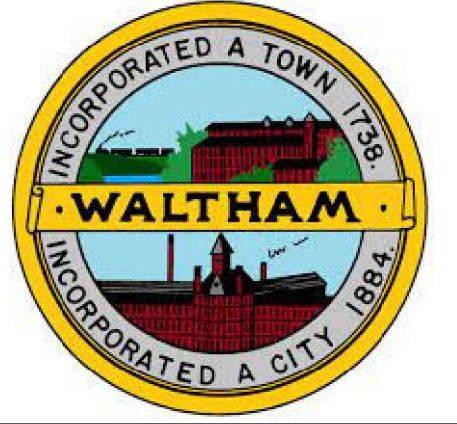
CIVIL

EROSION AND SEDIMENT CONTROL PLAN

DRAWING NUMBER: C-00-002
SHEET NUMBER OF: 3 OF 13

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**CHESTER BROOK
YMCA WETLAND
FLOOD
MITIGATION**

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: KEV/SAS
DRAWN: BWH
CHECKED: TVA
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APPROVED: SAS

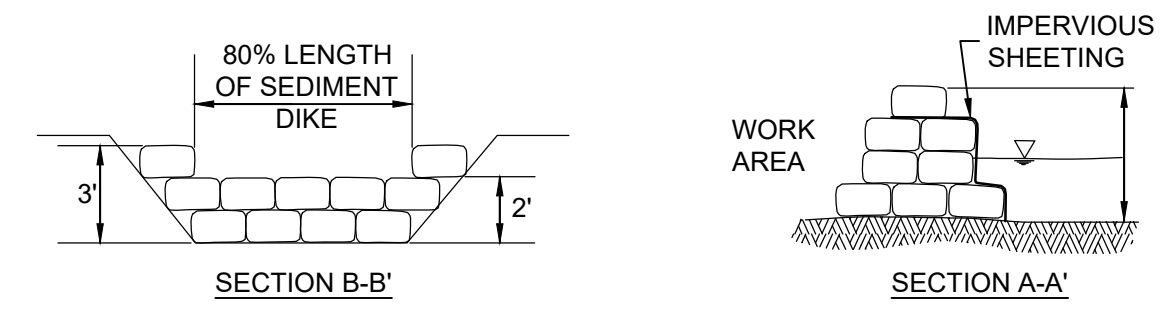
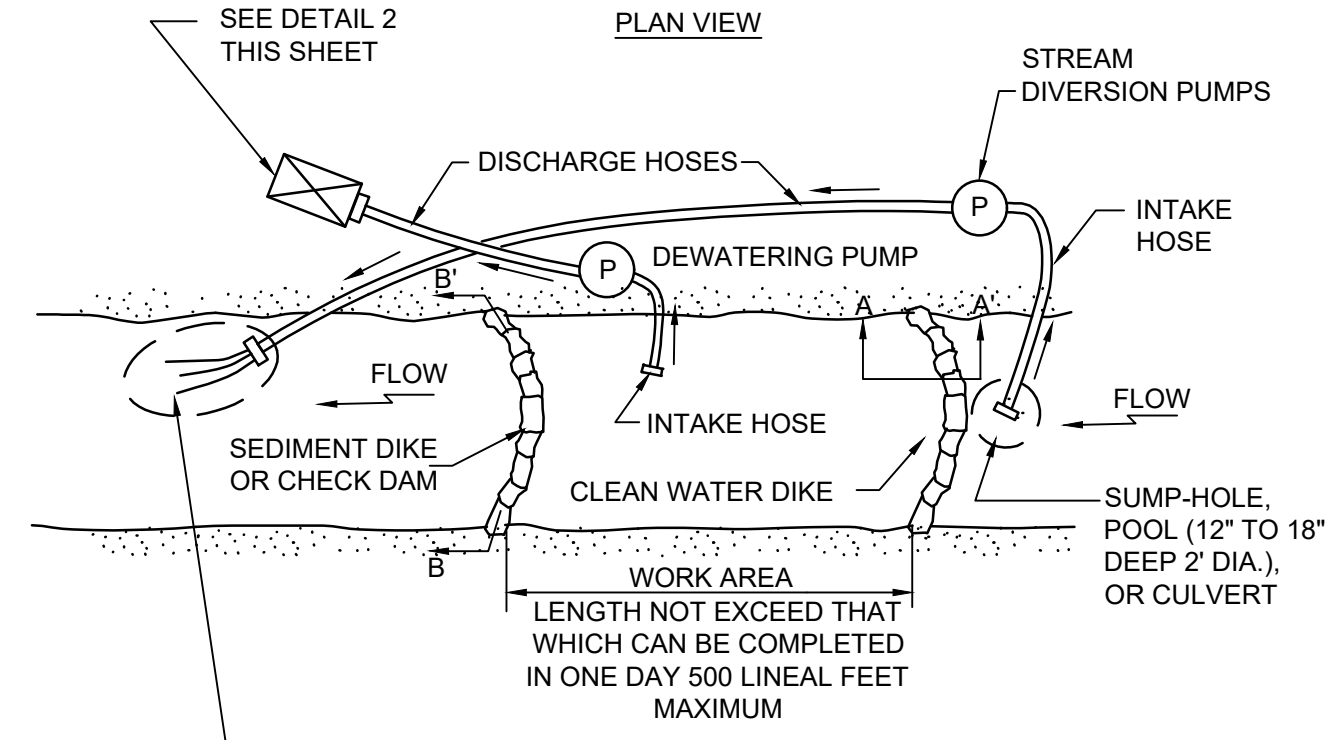
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BC PROJECT NUMBER
PROJECT 160123

CIVIL

**EROSION CONTROL
DETAILS**

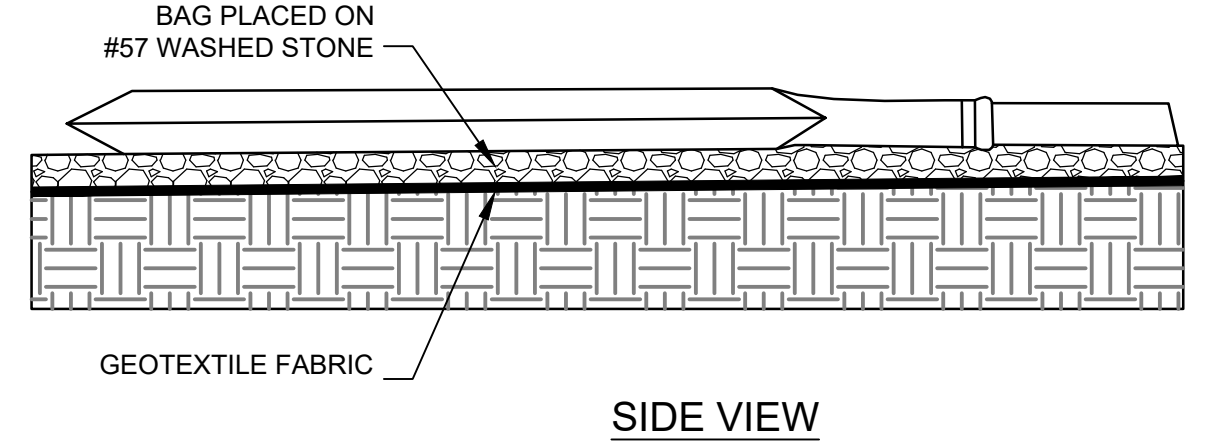
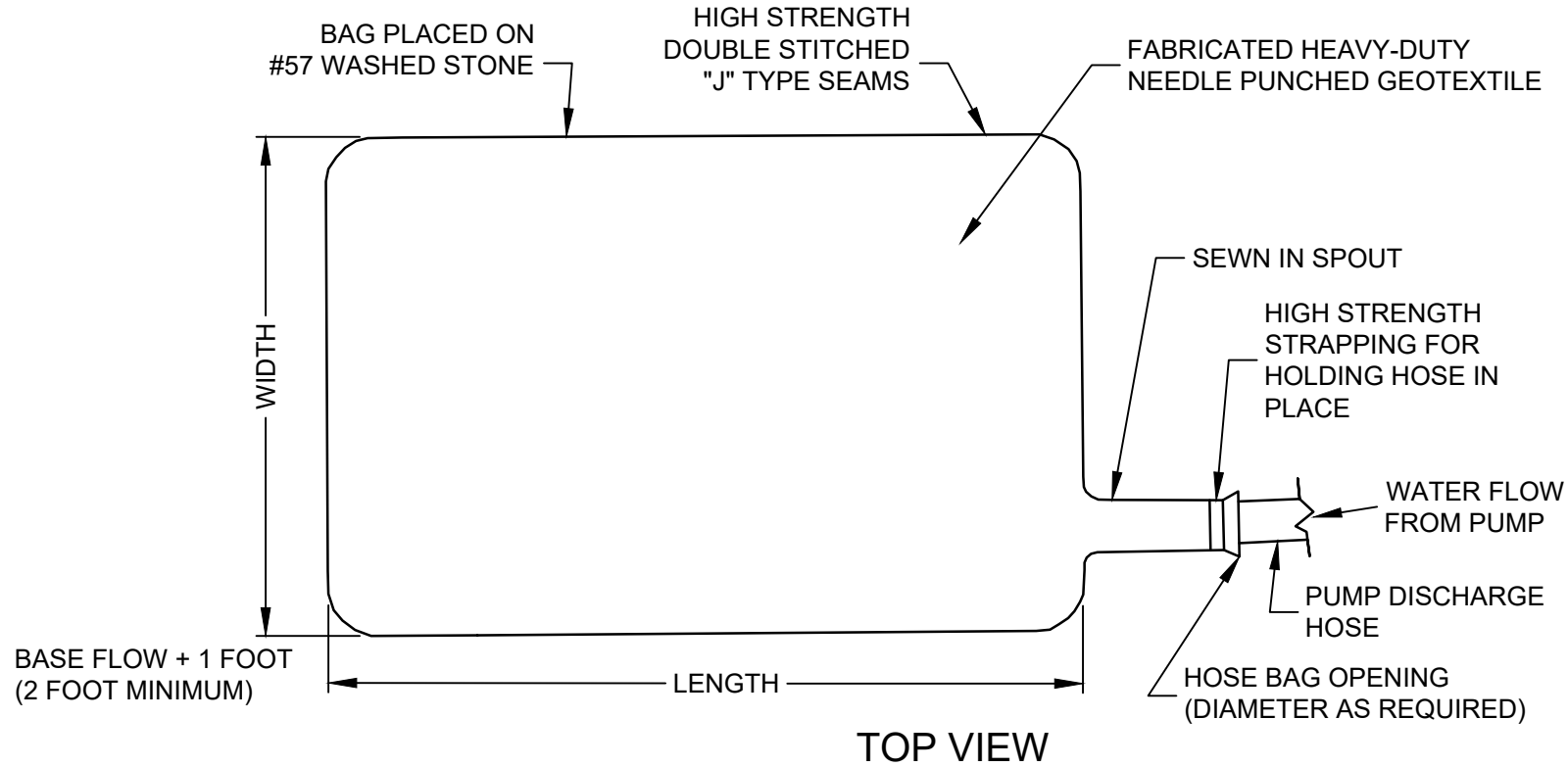
DRAWING NUMBER
C-00-003

4 SHEET NUMBER OF 13

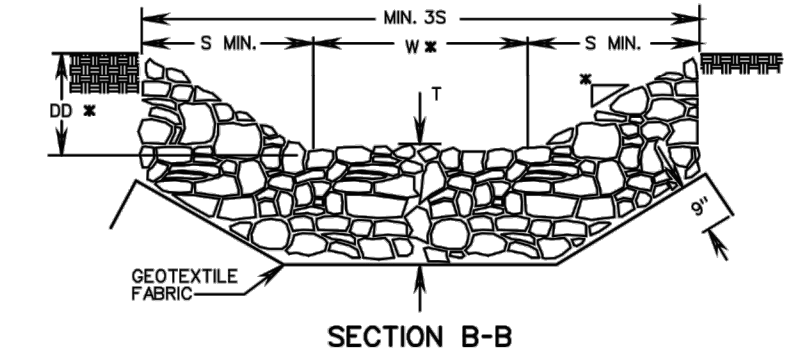
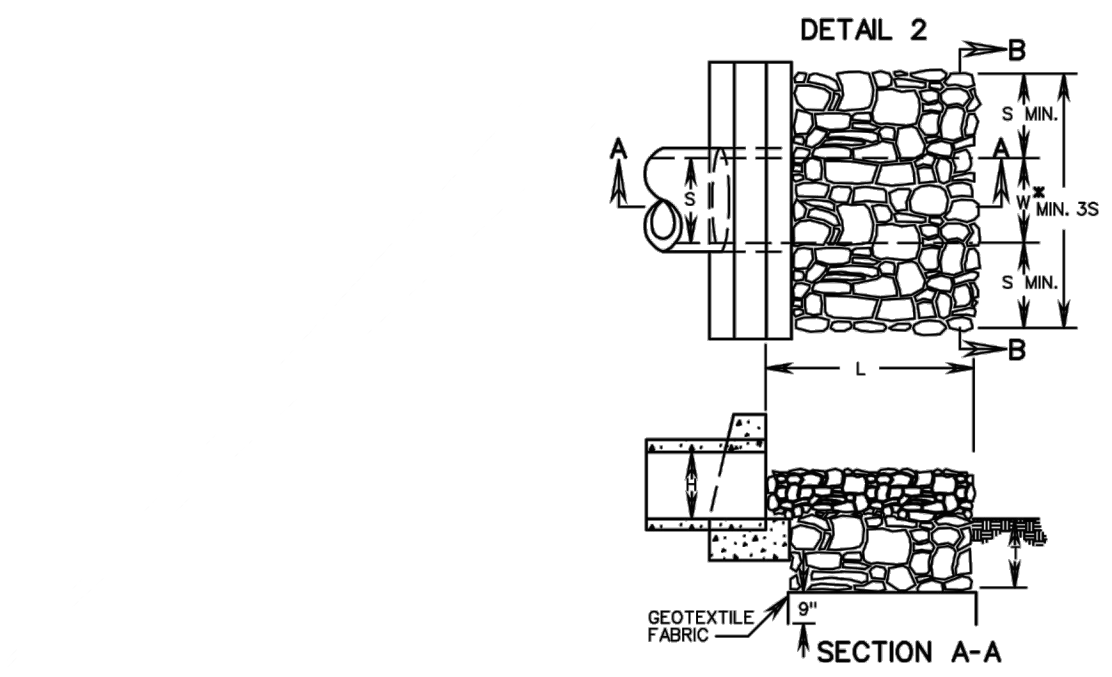


- NOTES:
1. SET UP PUMP AND HOSE AS SHOWN, OR USE OTHER PRACTICAL ALTERNATIVES. PUMP SHOULD HAVE TWICE THE PUMPING CAPACITY OF ANTICIPATED FLOW.
 2. ALL INTAKE HOSES WILL BE SCREENED.
 3. DISMANTLE DOWNSTREAM DAM, THEN UPSTREAM DAM. KEEP PUMP RUNNING TO MAINTAIN STREAM FLOW.
 4. PUMP AROUND MAY NOT BE LEFT IN PLACE FOR MORE THAN 24 HOURS.
 5. REFER TO SECTION 31 23 19. 10, DEWATERING - PUMP BYPASS.

1 PUMP AROUND AND VELOCITY DISSIPATER DETAIL
SCALE: NOT TO SCALE



2 SILT BAG DEWATERING DEVICE DETAIL
SCALE: NOT TO SCALE

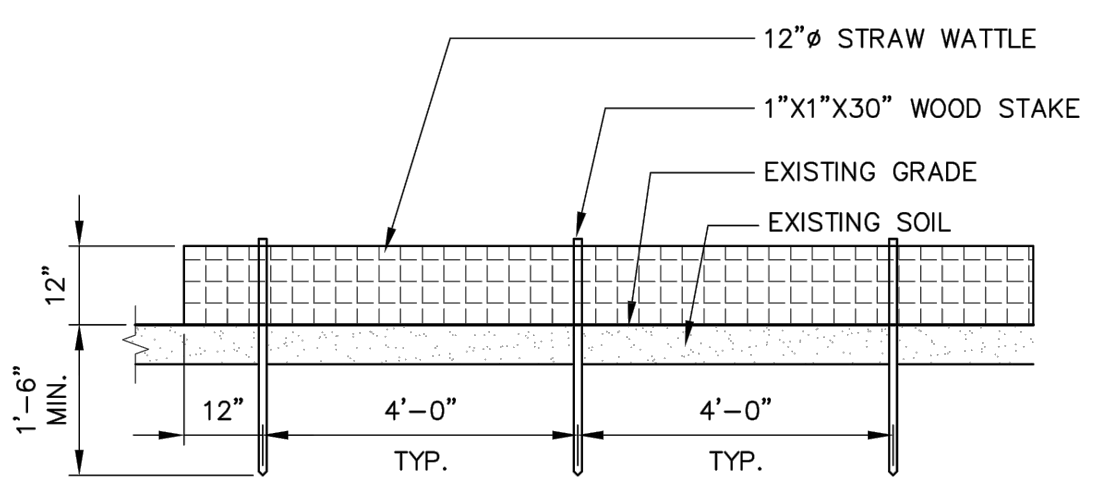


TYPE OF OUTLET PROTECTION MATERIAL	MAXIMUM OUTLET VELOCITY (FOR DESIGN STORM)	MINIMUM "T" (INCHES)
CLASS A1 CLASS A1 DRY RIPRAP	8 fps	18
CLASS I CLASS I DRY RIPRAP	14 fps	24
CLASS II CLASS II DRY RIPRAP	19 fps	36

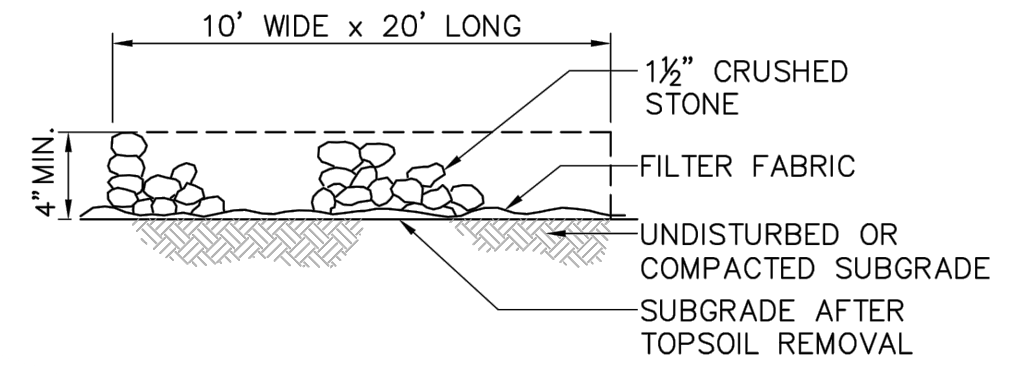
- NOTES:
1. FOR MULTIPLE LINE INSTALLATIONS, DIMENSION S IS TO GOVERN THE PROTECTION OUTSIDE THE CHANNEL WIDTH (W).
 2. ON ANY INSTALLATION REQUIRING CULVERT OUTLET PROTECTION WHERE NO ENDWALL OR ENDSECTION IS SPECIFIED ON THE PLANS, CONSTRUCTION IS TO BE IN ACCORDANCE WITH DETAIL 2 SHOWN ABOVE.
 3. GEOTEXTILE FABRIC TO BE INSTALLED UNDER CLASS A1, AND I MATERIALS IN ACCORDANCE WITH THE SPECIFICATIONS.
 4. S = DIAMETER OF CIRCULAR CULVERT OR SPAN FOR BOX, ELLIPTICAL OR ARCH CULVERT. H = DIAMETER OF CIRCULAR CULVERT OR RISE/HEIGHT FOR BOX, ELLIPTICAL OR ARCH CULVERT.
 - * USE TYPICAL SECTION SHOWN ON PLANS FOR SIDE SLOPE, BOTTOM WIDTH AND DEPTH OF CHANNEL OR MATCH EXISTING DITCH OR NATURAL GROUND.

OUTLET PROTECTION MINIMUM LENGTH (L)	
TYPE A INSTALLATION	3H
TYPE B INSTALLATION	5H

3 INLET PROTECTION DETAIL
SCALE: NOT TO SCALE



4 STRAW WATTLE DETAIL
SCALE: NOT TO SCALE

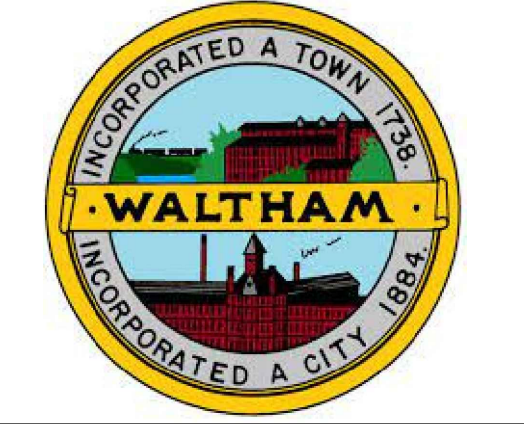


5 STABILIZED TEMPORARY CONSTRUCTION ENTRANCE
SCALE: NOT TO SCALE

Path: C:\BPC\W\03249940 FILENAME: C-00-004.DWG PLOT DATE: 6/29/2023 4:00 PM CAD USER: BEN HAWMES

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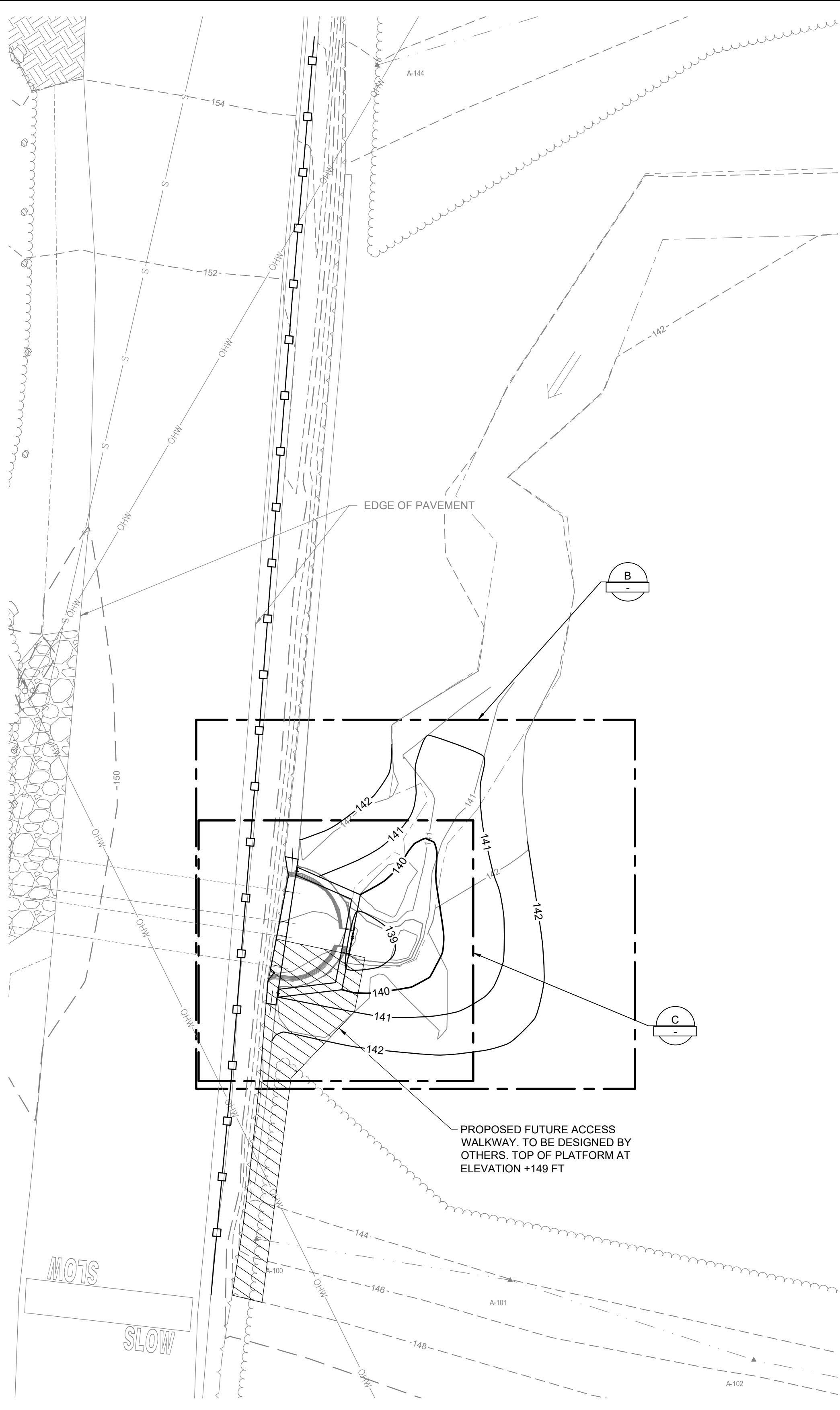
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 BC PROJECT NUMBER: PROJECT 160123

CIVIL

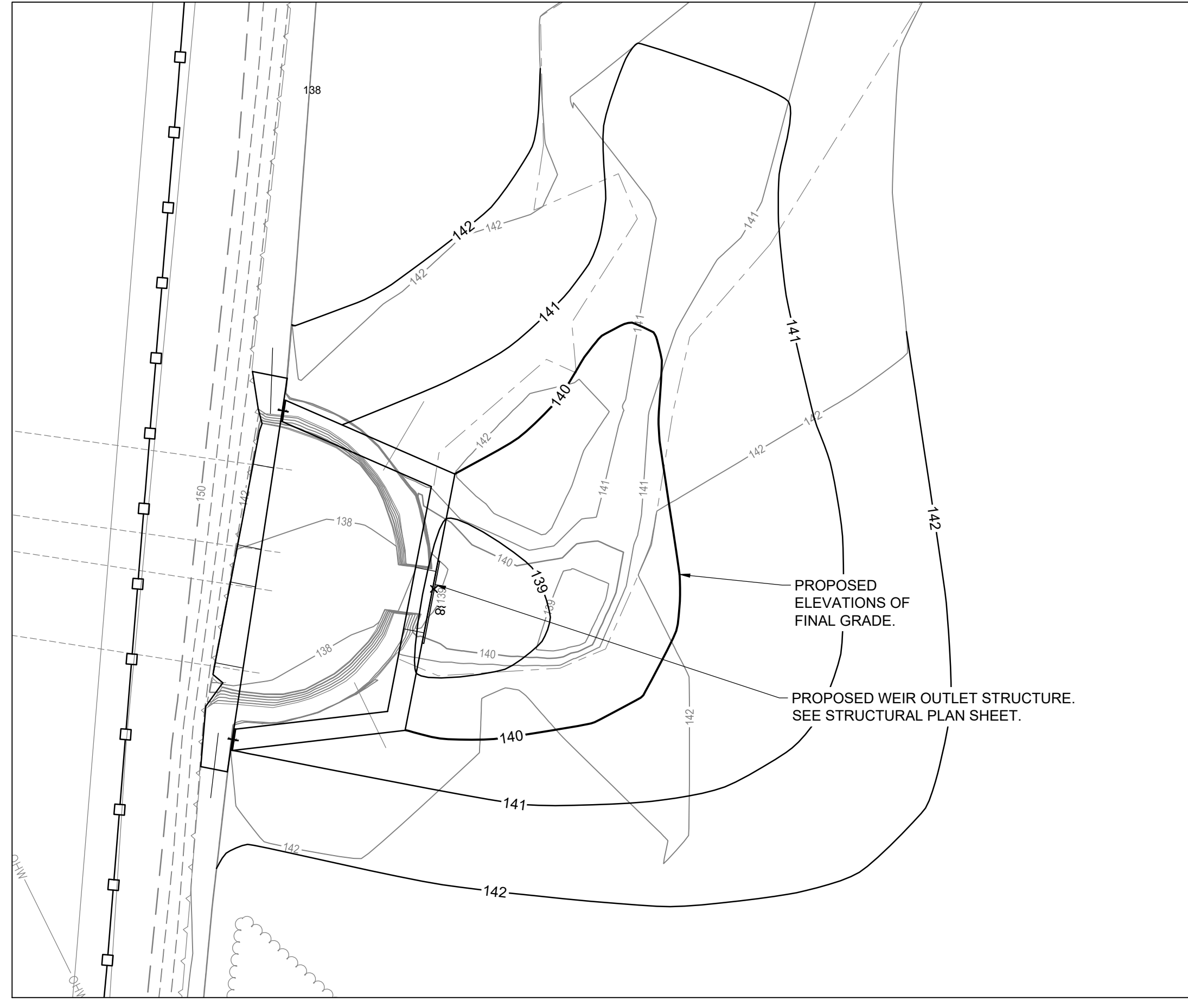
PROPOSED SITE AND GRADING PLAN

DRAWING NUMBER
C-00-004

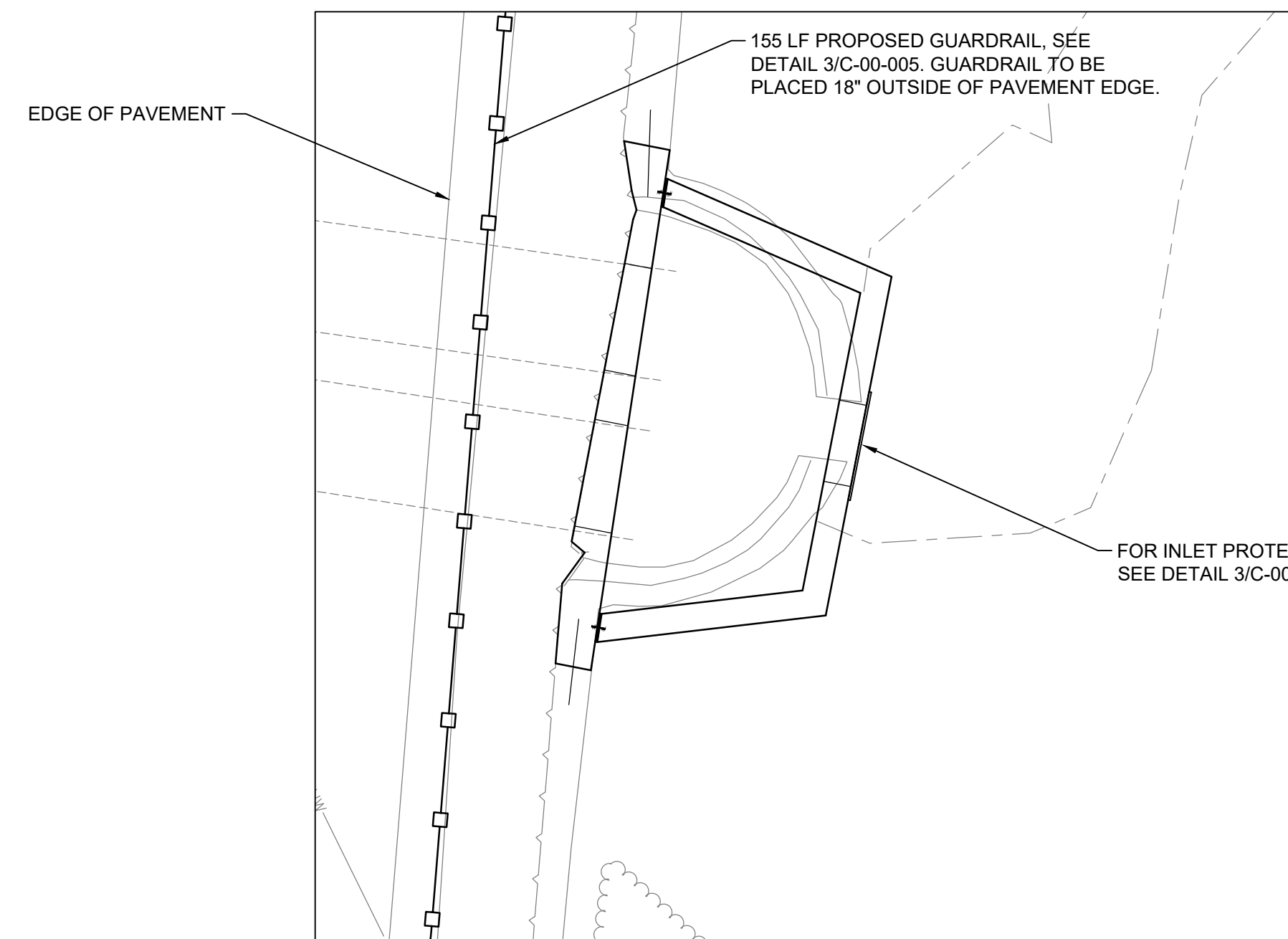
SHEET NUMBER OF
5 OF **13**



A GUARDRAIL AND ACCESS PLATFORM PLAN
 SCALE: 1" = 10'



B PROPOSED SITE GRADING AT WEIR
 SCALE: 1" = 5'



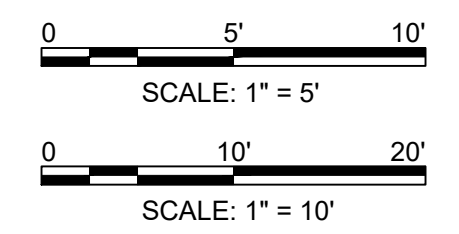
B STRUCTURE PROPOSED SITE GRADING AT WEIR
 SCALE: 1" = 5'

LEGEND

- WOOD GUARDRAIL
- FUTURE PROPOSED ACCESS WALKWAY BY OTHERS

PROPOSED CONDITIONS NOTES:

1. REFER TO CONSTRUCTION SEQUENCE AND DETAIL SHEETS.
2. RESTORE GRADED AREAS WITH WOODLAND SEED MIX.



DEMOLITION AND SITE PREPARATION NOTES:

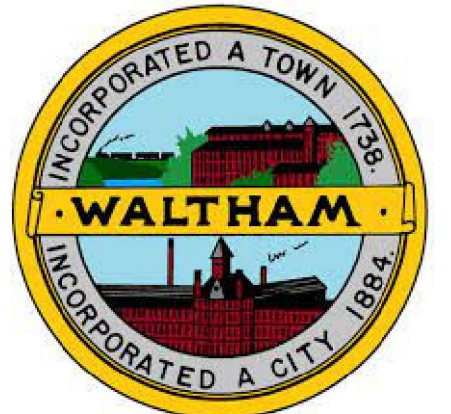
1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY OTHER WORK ON SITE. EROSION CONTROL SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
2. THE LIMIT OF DISTURBANCE (LOD) LINE SHALL SERVE AS THE STRICT LIMIT OF DISTURBANCE FOR THE PROJECT WITHIN OR ADJACENT TO REGULATED WETLAND AREAS. REFER TO EROSION AND SEDIMENT CONTROL PLAN FOR LOD.
3. ALL VEGETATION IS TO BE CLEARED AND GRUBBED WITHIN THE LOD.
4. THE LIMITS OF CLEARING, GRADING, AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION, ALL AREAS OUTSIDE OF THESE LIMITS, AS DEPICTED ON THE PLAN, SHALL BE UNDISTURBED AND REMAIN IN NATURAL CONDITION.
5. DIMENSIONS OF EXISTING STRUCTURE ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO ORDERING OR FABRICATING MATERIALS. IN EVENT OF DISCREPANCIES, NOTIFY CONSTRUCTION MANAGER IMMEDIATELY.



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CHESTER BROOK YMCA WETLAND FLOOD MITIGATION

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: KP
DRAWN: JAB
CHECKED: TVA
APPROVED: SAS

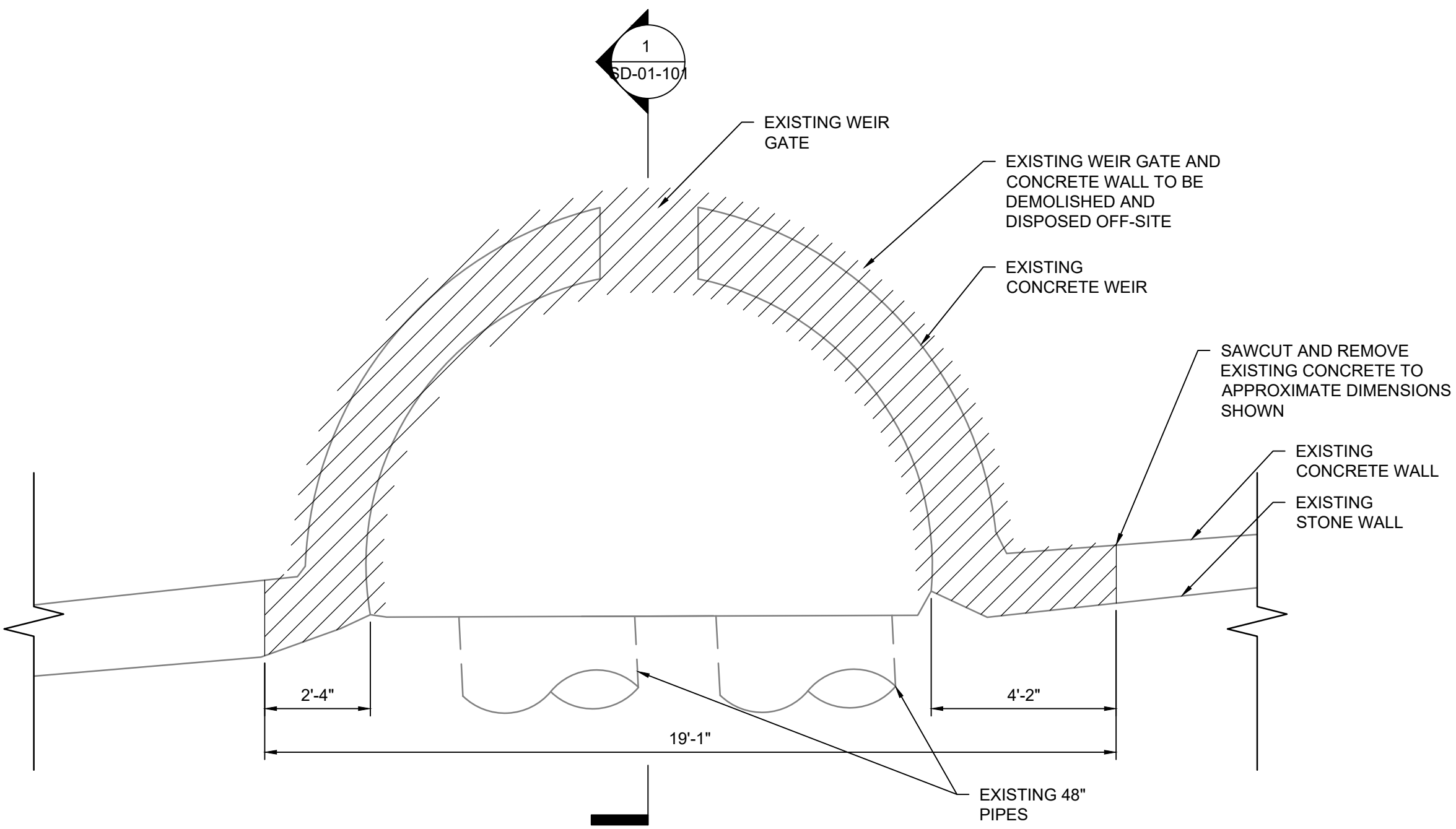
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BC PROJECT NUMBER: PROJECT 160123
CLIENT PROJECT NUMBER: CLIENT 160123

STRUCTURAL

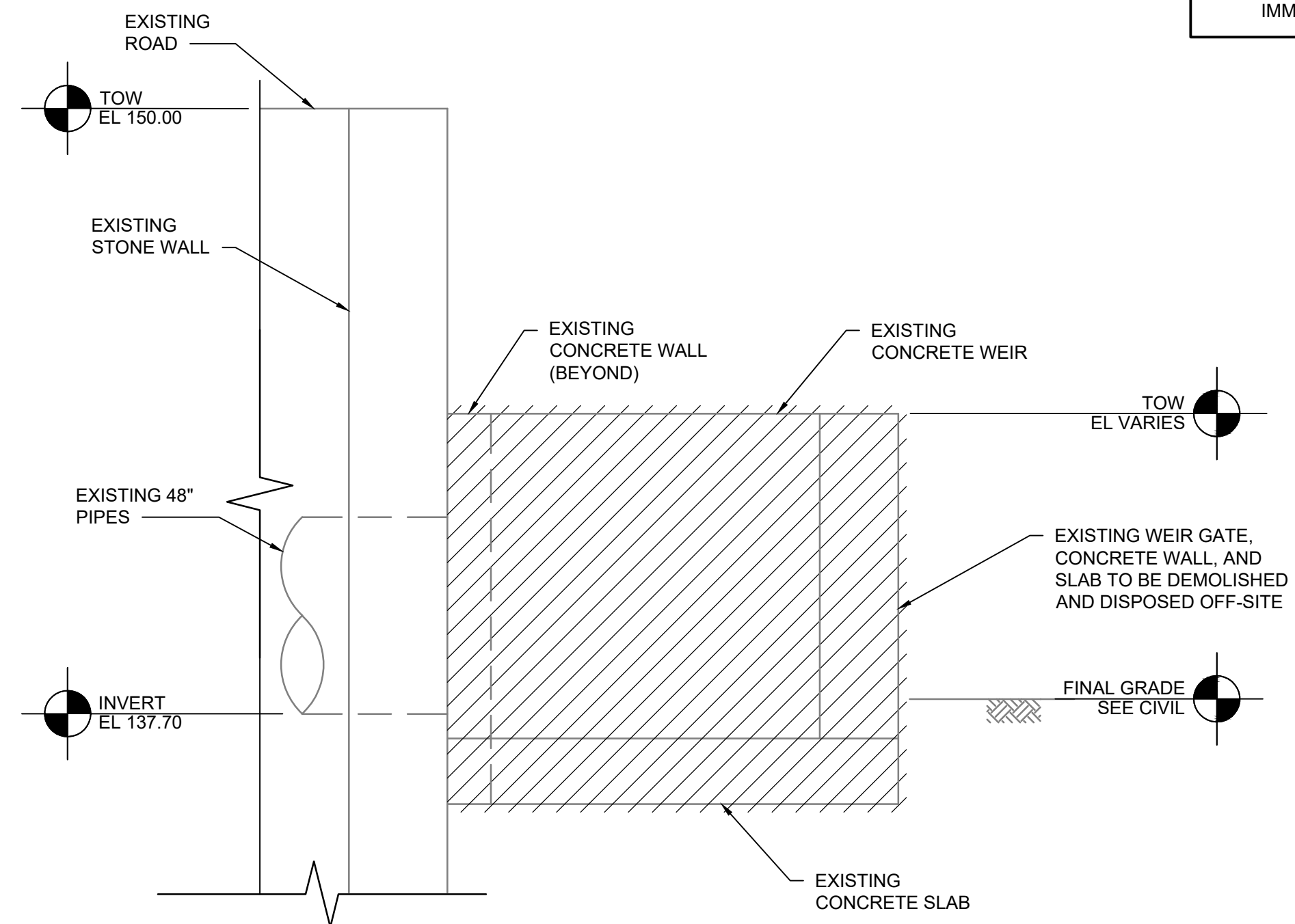
DEMOLITION PLAN, SECTION, PHOTO

DRAWING NUMBER: SD-01-101

SHEET NUMBER OF: 7 OF 13



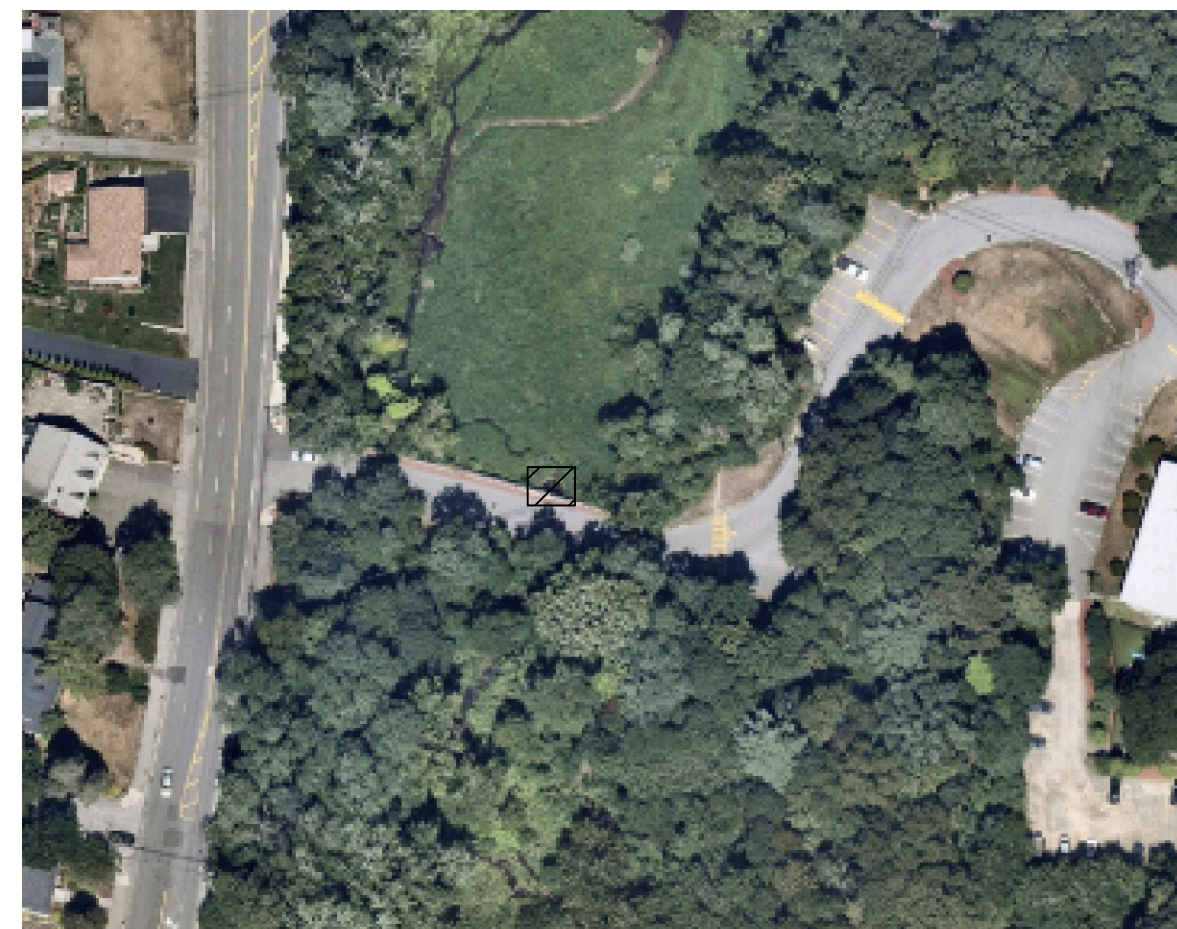
DEMOLITION PLAN
SCALE: 3/8" = 1'-0"



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



SITE PHOTO



KEY PLAN

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GENERAL

G1 SCOPE
THE GENERAL NOTES AND STANDARD DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY.

G2 PRECEDENCE
IF THERE IS A CONFLICT BETWEEN STRUCTURAL NOTES AND STRUCTURAL DRAWINGS, CONTACT THE STRUCTURAL ENGINEER OF RECORD FOR CLARIFICATION. SPECIFIC NOTES AND DETAILS ON DRAWINGS TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.

G3 DIMENSIONS
STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO ELECTRICAL EQUIPMENT AND DIMENSIONS RELATED TO EXISTING FACILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING ALL CONSTRUCTION DIMENSIONS AND NOTIFYING OWNER'S CONSTRUCTION MANAGER OF DISCREPANCIES IN A TIMELY FASHION.

G4 MEANS, METHODS & CONSTRUCTION LOADS
CONTRACT DRAWINGS REPRESENT THE FINISHED STRUCTURE. CONTRACTOR IS RESPONSIBLE FOR MEANS, METHODS AND SEQUENCE OF CONSTRUCTION, AND SHALL MAKE ADEQUATE PROVISIONS TO MAINTAIN THE INTEGRITY OF STRUCTURES AT ALL STAGES OF CONSTRUCTION. DETERMINATION OF AND PROVISIONS FOR CONSTRUCTION LOADING SHALL BE PROVIDED BY THE CONTRACTOR.

G6 SAFETY
CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO ENSURE THE SAFETY OF WORKERS AND VISITORS TO THE SITE, INCLUDING BUT NOT LIMITED TO, PROVIDING ADEQUATE SHORING, BRACING AND ACCESS RESTRICTIONS. COMPLY WITH FEDERAL, STATE AND LOCAL SAFETY CODES AND STANDARDS.

G7 DRAINAGE SURFACES
SLOPE DRAINAGE SURFACES UNIFORMLY TO DRAIN. SLOPE SHALL BE 1/8" TO 1/4" PER FOOT.

DESIGN CRITERIA

D1 GOVERNING BUILDING CODE
CONSTRUCTION AND DESIGN SHALL BE IN ACCORDANCE WITH MASSACHUSETTS STATE BUILDING CODE 780, 9TH ED. (2015 INTERNATIONAL BUILDING CODE WITH AMENDMENTS). THIS CODE SHALL GOVERN EXCEPT WHERE OTHER APPLICABLE CODES OR CONTRACT PROVISIONS ARE MORE RESTRICTIVE.

D2 LIVE LOADS
WALKWAY AND ACCESS PLATFORM100 PSF

D4 SNOW LOADS
GROUND SNOW LOAD $p_g = 40$ PSF
SNOW LOAD IMPORTANCE FACTOR $I_s = 1.10$

D5 WIND
BASIC WIND SPEED (ULTIMATE) 127 MPH
RISK CATEGORY III
EXPOSURE CATEGORY C
TOPOGRAPHIC FACTOR $K_{zt} = 1.0$

D6 SEISMIC
MCE ACCELERATION, SHORT PERIOD $S_s = 0.214$ g
MCE ACCELERATION, 1-SEC PERIOD $S_1 = 0.069$ g
SITE CLASS D
DESIGN ACCEL, SHORT PERIOD $S_{ps} = 0.228$ g
DESIGN ACCEL, 1-SEC PERIOD $S_{p1} = 0.111$ g
RISK CATEGORY III
SEISMIC IMPORTANCE FACTOR $I_e = 1.25$
SEISMIC DESIGN CATEGORY B
NONBUILDING SELF-SUPPORTING STRUCTURES (ASCE 7-10, TABLE 15.4-2). $R = 2$ $\Omega_0 = 2$

FOUNDATION

F1 HIGH GROUND WATER: ASSUME AT TOP OF BANK DURING STORM EVENTS.

F2 ALLOWABLE BEARING PRESSURE
SHALLOW FOUNDATIONS SHALL BEAR ON AT LEAST 2 FEET OVER-EXCAVATED STRUCTURAL FILL AND HAVE BEEN DESIGNED FOR AN ALLOWABLE BEARING PRESSURE OF 1,500 PSF.

F3 FOUNDATION
NEW CONTAINMENT CUT-OFF WALL AND LIGHT POLE BASE SHALL BEAR IN A DENSE, UNDISTURBED CLAY LAYER. SIDEWALK SLAB SHALL BEAR ON COMPACTED STRUCTURAL FILL.

F4 DIFFERING CONDITIONS
FOUNDATION CONDITIONS NOTED DURING CONSTRUCTION WHICH DIFFER FROM THOSE INDICATED SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER. CONTRACTOR IS RESPONSIBLE FOR REPLACING WORK CONDUCTED AFTER SUCH NOTIFICATION BUT BEFORE CONSTRUCTION MANAGER PROVIDES ADDITIONAL DIRECTIONS.

F5 EXCAVATION, DE-WATERING, & SAFETY
DESIGN / PROVIDE CRIBBING, SHORING, AND BRACING AS NEEDED FOR SAFETY AND TO ALLOW CONSTRUCTION OF THE WORK PRESENTED HEREIN.

F6 STRUCTURAL BACKFILL
PLACE IN UNIFORM LAYERS BROUGHT UP UNIFORMLY ON BOTH SIDES OF STRUCTURES.

F7 CONTRACTOR IS RESPONSIBLE TO COORDINATE EXCAVATION FOR CUT-OFF WALL CONSTRUCTION TO MAINTAIN A DRY/STABLE EXCAVATION SUBGRADE PRIOR TO PLACEMENT OF CONCRETE. PROVIDE FOR DEWATERING OF EXCAVATION AND REMOVAL OF SATURATED SUBGRADE MATERIAL. CONCRETE TO BE PLACED ON DRY/STABLE SUBGRADE.

F8 FROST DEPTH 48"

CONCRETE

C1 APPLICABLE CODES
ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE"
ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
ACI 350 (FOR LIQUID CONTAINING STRUCTURES) + "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES"

C2 REINFORCING STEEL DETAILS
DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS IN ACCORDANCE WITH ACI DETAILING MANUAL (ACI SP-66), LATEST EDITION.

C3 DESIGN STRENGTH
1. STRUCTURAL CAST-IN-PLACE CONCRETE $f_c = 4,500$ PSI
2. REINFORCED STEEL ASTM A615, GRADE 60 DEFORMED BARS

C4 CONCRETE COVER
1. CONCRETE CAST AGAINST EARTH 3"
2. CONCRETE EXPOSED TO EARTH, WASTEWATER, CHEMICALS OR WEATHER 2"
3. CONCRETE NOT EXPOSED TO EARTH, WASTEWATER, CHEMICALS OR WEATHER 1-1/2"

C5 BAR DEVELOPMENT AND LAP SPLICE LENGTH
SEE TABLE AT THE END OF THESE STRUCTURAL NOTES. IN SLABS, BEAMS, GIRDERS AND HORIZONTAL REINFORCING AT WALLS, SPLICES OF ADJACENT REINFORCING STEEL BARS SHALL BE STAGGERED AT LEAST ONE SPLICE LENGTH.

C6 WELDING REINFORCING BARS
NOT ALLOWED.

C7 STANDARD HOOKS
BARS ENDING IN RIGHT ANGLE BENDS OR HOOKS SHALL CONFORM TO REQUIREMENTS OF ACI 318. PROVIDE STANDARD HOOK IN BARS WHICH TERMINATE AT WALL OR SLAB EDGES / INTERSECTIONS THAT PROVIDE LESS THAN THE SPECIFIED DEVELOPMENT LENGTH.

C8 CHAMFERS
EXPOSED CONCRETE CORNERS AND EDGES SHALL HAVE 3/4" CHAMFERS. RE-ENTRANT CORNERS SHALL NOT HAVE FILLETS.

C9 ANCHOR BOLTS
STAINLESS STEEL TYPE 316 MATERIAL UNLESS OTHERWISE NOTED (SEE SPECIFICATIONS).

C10 INSERTS
PROVIDE ANCHORAGE INSERTS ON CONCRETE WALLS AND CONCRETE CEILINGS IN GALLERIES, PIPE CHASES, TUNNELS AS REQUIRED BY MECHANICAL AND ELECTRICAL INSTALLATIONS. USE UNISTRUT P3200 SERIES HOT DIP GALVANIZED OR EQUAL UNLESS OTHERWISE SPECIFIED.

C11 COMPATIBLE FINISHES
CURING COMPOUNDS AND OTHER SURFACE TREATMENTS, CONCRETE ADMIXTURES AND SUB-SLAB DRAINAGE SHALL BE REVIEWED BY CONTRACTOR AND CERTIFIED COMPATIBLE WITH FINISHES TO BE APPLIED LATER IN THE CONSTRUCTION SEQUENCE.

C12 VAPOR BARRIER BELOW SLAB ON GRADE
VAPOR BARRIER, WHERE NOTED ON THE DRAWINGS, SHALL BE 10 MIL MINIMUM CLASS A OR B PLASTIC WATER VAPOR RETARDER PER ASTM E1745, INSTALL PER ASTM E1643. LAP JOINTS 6" AND SEAL WITH MANUFACTURER'S RECOMMENDED TAPE OR ADHESIVE.

C13 EXPOSED ENDS OF REINFORCING BARS AT SAWCUT OPENINGS IN EXISTING CONCRETE
REMOVE REINFORCING BARS 1 1/2 INCHES BACK FROM FACE OF OPENING BY FLAME GOUGING. FILL HOLE AND REPAIR SURFACE WITH CONCRETE REPAIR MORTAR.

SPECIAL INSPECTIONS

SI 1 AN INDEPENDENT TESTING COMPANY RETAINED BY THE OWNER AND APPROVED BY THE BUILDING OFFICIAL SHALL INSPECT THE FOLLOWING (SEE EXPANDED LIST ON DRAWING S-00-002, SPECIFICATIONS AND GOVERNING CODE):
1. SOIL COMPACTION AT FOUNDATIONS.
2. REINFORCING BAR, CONCRETE PLACEMENT AND TAKING OF CONCRETE TEST SPECIMENS.
3. ANCHOR BOLTS.
4. ANCHORS INSTALLED USING ADHESIVE.

SI 2 CONTRACTOR SHALL NOTIFY THE TESTING COMPANY FOR ALL INSPECTIONS.

STRUCTURAL OBSERVATIONS

SO 1 THE OWNER SHALL RETAIN A REGISTERED DESIGN PROFESSIONAL TO PERFORM STRUCTURAL OBSERVATIONS. THE CONSTRUCTION MANAGER SHALL NOTIFY THE OWNER AT LEAST 48 HOURS BEFORE A DESIGNATED WORK IS TO BE COVERED. REFER TO SPECIFICATION 01 45 23 FOR ADDITIONAL REQUIREMENTS.

SO 2 REQUIRED STRUCTURAL OBSERVATIONS INCLUDE:
1. STRUCTURAL FILL.
2. FOUNDATIONS PREPARED FOR CONCRETE PLACEMENT.

STRUCTURAL DEFERRED SUBMITTALS

SDS 1 THE CONTRACTOR SHALL SUBMIT DRAWINGS AND CALCULATIONS BEARING THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS TO THE ENGINEER FOR REVIEW AND/OR RECORD FILES. STRUCTURAL DEFERRED SUBMITTALS INCLUDE:
3. ANCHOR BOLTS FOR ALL EQUIPMENT ANCHORAGE.
4. GUARDRAILS AND HANDRAILS.
5. ACCESS PLATFORMS AS SPECIFIED.
6. CONSTRUCTION SHORING.

TENSION DEVELOPMENT AND LAP SPLICE LENGTHS (IN INCHES)

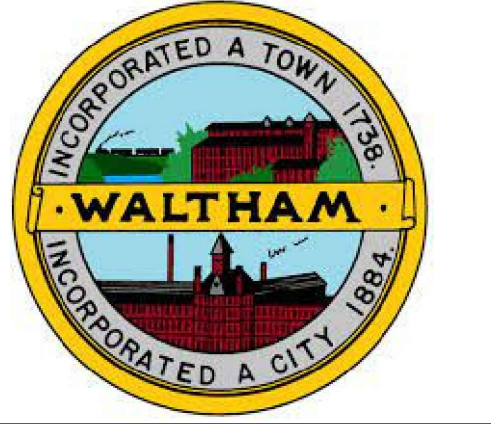
BAR SIZE	APPLICATION	CONCRETE COVER = 2.00 IN.			CONCRETE COVER = 3.00 IN.		
		TOP	OTHER	MIN C/C SPACING	TOP	OTHER	MIN C/C SPACING
#3	DEVELOPMENT LAP SPLICE	12	12	4.50	12	12	6.50
		16	16	4.75	16	16	6.75
#4	DEVELOPMENT LAP SPLICE	15	12	4.50	15	12	6.50
		20	16	5.00	20	16	7.00
#5	DEVELOPMENT LAP SPLICE	19	15	4.75	19	15	6.75
		24	19	5.25	24	19	7.25
#6	DEVELOPMENT LAP SPLICE	22	17	4.75	22	17	6.75
		29	22	5.50	29	22	7.50
#7	DEVELOPMENT LAP SPLICE	33	25	5.00	33	25	7.00
		42	33	5.75	42	33	7.75
#8	DEVELOPMENT LAP SPLICE	37	29	5.00	37	29	7.00
		48	37	6.00	48	37	8.00

NOTES:
1. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 IN. OF FRESH CONCRETE CAST BELOW THE BARS.



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REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
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DESIGNED: KP
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CHECKED:
APPROVED: SAS

FILENAME
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BC PROJECT NUMBER
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CLIENT 160123

STRUCTURAL

**STRUCTURAL
NOTES**

DRAWING NUMBER
S-00-001
SHEET NUMBER OF
8 OF **13**

**TABLE 1
REQUIRED SPECIAL INSPECTIONS - STRUCTURAL SYSTEMS**

SYSTEM OR MATERIAL	REQUIRED INSPECTION	FREQUENCY OF INSPECTION		REMARKS
		CONTINUOUS	PERIODIC	
SOILS	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		X	
	VERIFY SOIL MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE DESIGN BEARING CAPACITY		X	
	PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY		X	
	PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS		X	SEE TABLE 2
	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL	X		SEE TABLE 2
CONCRETE	INSPECT FORMWORK FOR LOCATION AND DIMENSIONS OF MEMBER BEING FORMED		X	
	VERIFY MATERIAL FOR REINFORCEMENT		X	CONTRACTOR TO SUBMIT CERTIFIED MILL TEST REPORTS
	REINFORCING STEEL PLACEMENT		X	
	INSPECT POST-INSTALLED CONCRETE ANCHORS: - HORIZONTAL AND UPWARDLY INCLINED ADHESIVE ANCHORS - OTHER ANCHORS UNLESS ICC REPORT REQUIRED CONTINUOUS INSPECTION	X	X	INSPECTION TO CONFORM TO IBC AND TO ANCHOR MANUFACTURER'S RECOMMENDATIONS AND ICC REPORTS
	VERIFY USE OF REQUIRED CONCRETE MIX DESIGN(S)		X	
	AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND TEMPERATURE OF CONCRETE	X		CONTINUOUS DURING PREPARATION OF SAMPLES
	CONCRETE PLACEMENT	X		
	INSPECTION FOR MAINTENANCE OF CURING PROCEDURES AND TEMPERATURE		X	VERIFY APPROPRIATE CURING METHOD HAS BEEN IMPLEMENTED AFTER EACH POUR
	VERIFY IN-SITU CONCRETE STRENGTH PRIOR TO REMOVAL OF SHORES AND FORMS FROM STRUCTURAL SLABS AND BEAMS		X	
	CEMENTITIOUS GROUTING OF BASE PLATES AND EPOXY GROUTING FOR EQUIPMENT MOUNTING	X		

QUALITY ASSURANCE NOTES

1. QUALITY OF WORKMANSHIP AND MATERIALS OF CONSTRUCTION ARE GOVERNED BY THE INTERNATIONAL BUILDING CODE..
2. STRUCTURAL TESTS, SPECIAL INSPECTION AND STRUCTURAL OBSERVATION WILL BE PERFORMED IN ACCORDANCE WITH IBC, CHAPTER 17.
3. WHERE FREQUENCY OF INSPECTION IS SPECIFIED TO BE CONTINUOUS, THE SPECIAL INSPECTOR IS EXPECTED TO BE PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED AND PROVIDING FULL-TIME OBSERVATION OF THE WORK REQUIRING SPECIAL INSPECTION.
4. WHERE FREQUENCY OF INSPECTION IS SPECIFIED TO BE PERIODIC, THE SPECIAL INSPECTOR IS EXPECTED TO BE PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK (PRIOR TO THE NEXT CONSTRUCTION TASK).
5. SPECIAL INSPECTIONS ARE IN ADDITION TO INSPECTIONS BY THE BUILDING OFFICIALS. CONSTRUCTION IS SUBJECT TO INSPECTION BY THE BUILDING OFFICIAL. COORDINATE WITH BUILDING DEPARTMENT TO DETERMINE REQUIRED INSPECTIONS.
6. CONTRACTOR SHALL PROVIDE ACCESS TO THE WORK FOR REQUIRED INSPECTIONS. CONTRACTOR SHALL PROVIDE NOTIFICATION IN ADVANCE OF REQUIRED INSPECTIONS, TESTING AND STRUCTURAL OBSERVATIONS.

**TABLE 2
REQUIRED TESTING FOR SPECIAL INSPECTIONS**

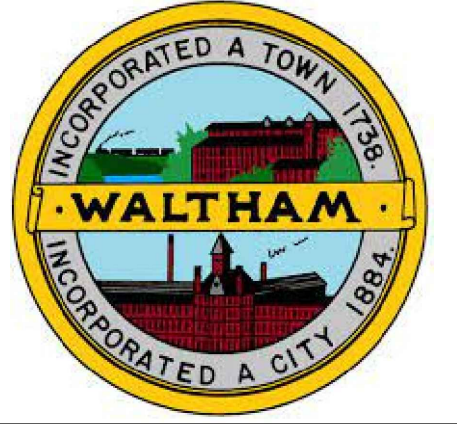
SYSTEM OR MATERIAL	TESTING		
	CODE OR STANDARD REFERENCE	FREQUENCY	
GEOTECHNICAL			
PREPARED SUBGRADE DENSITY	ASTM D6938	EACH 300 SF OF PREPARED SUBGRADE	
FILL IN-PLACE DENSITY	ASTM D6938	EACH 300 SF OF EACH LIFT PLACED EACH DAY	
CONCRETE			
CONCRETE COMPRESSIVE STRENGTH	ASTM C31,ASTM C39,ASTM C172	SEE SPECIFICATION 03305	
CONCRETE SLUMP	ASTM C143	WHENEVER CYLINDERS ARE CAST	
CONCRETE AIR CONTENT	ASTM C231	WHENEVER CYLINDERS ARE CAST	
CONCRETE TEMPERATURE	ASTM C1064	WHENEVER CYLINDERS ARE CAST	
CEMENTITIOUS AND EPOXY GROUT COMPRESSIVE STRENGTH	ASTM C942 (CEMENTITIOUS) ASTM C579 (EPOXY)		TEST 2" CUBES FOR EACH GROUT SHIPMENT TO THE FIELD



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MITIGATION

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE

DESIGNED: KP
DRAWN: JAB
CHECKED: TVA
CHECKED:
APPROVED: SAS

FILENAME
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BC PROJECT NUMBER
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STRUCTURAL

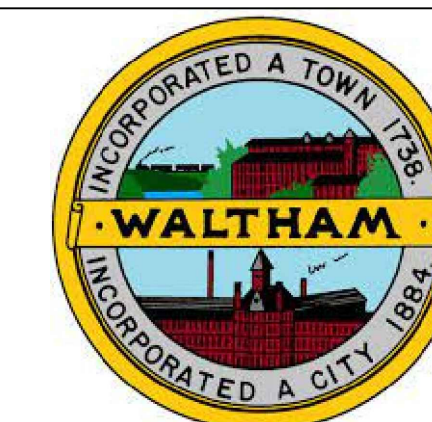
**SPECIAL
INSPECTION
NOTES**

DRAWING NUMBER
S-00-002

9 SHEET NUMBER OF 13

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REV	DATE	DESCRIPTION

LINE IS 2 INCHES
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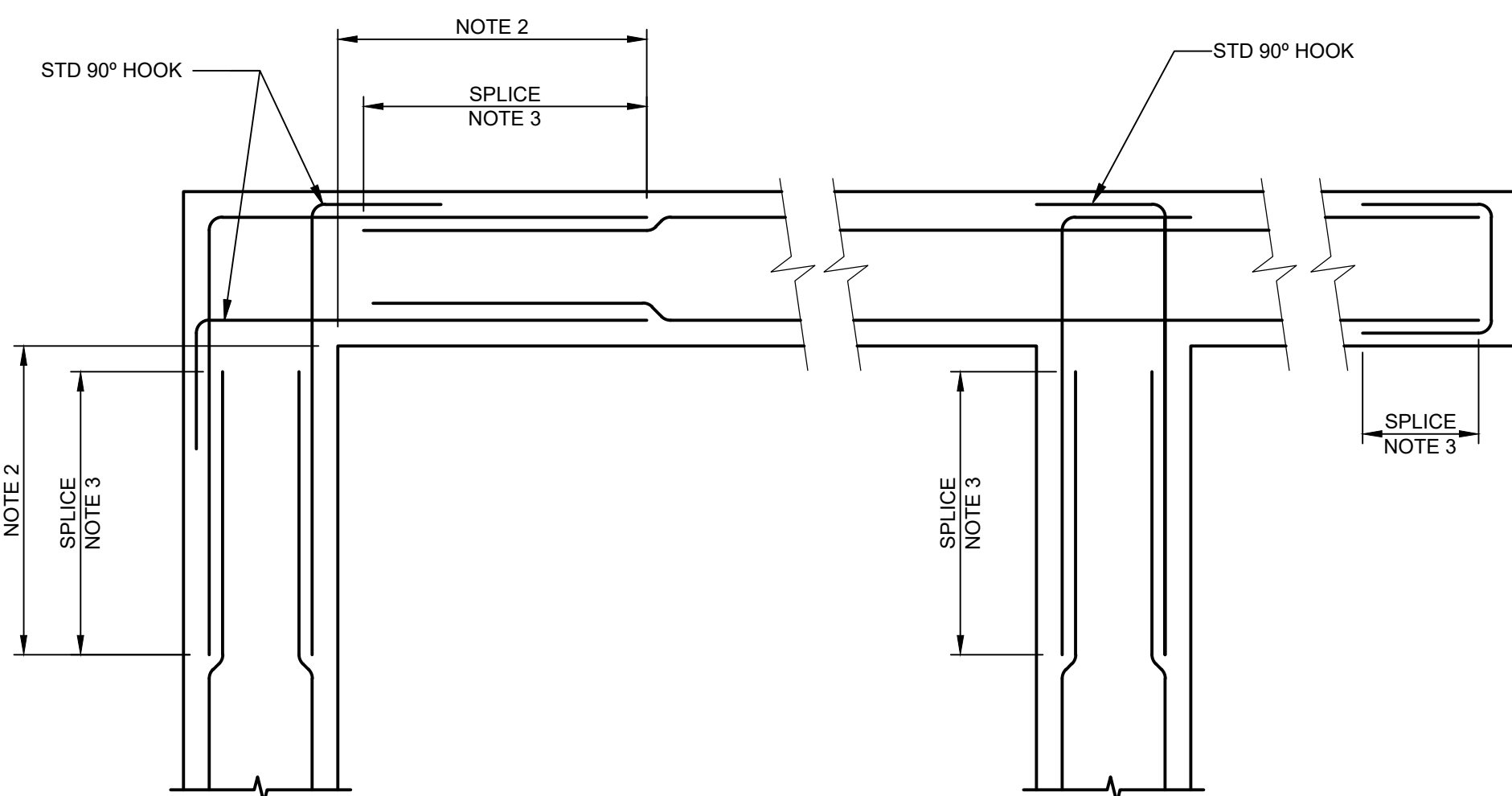
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BC PROJECT NUMBER
PROJECT 160123
CLIENT PROJECT NUMBER
CLIENT 160123

STRUCTURAL

STANDARD
DETAILS

DRAWING NUMBER
S-00-003

10 SHEET NUMBER OF 13



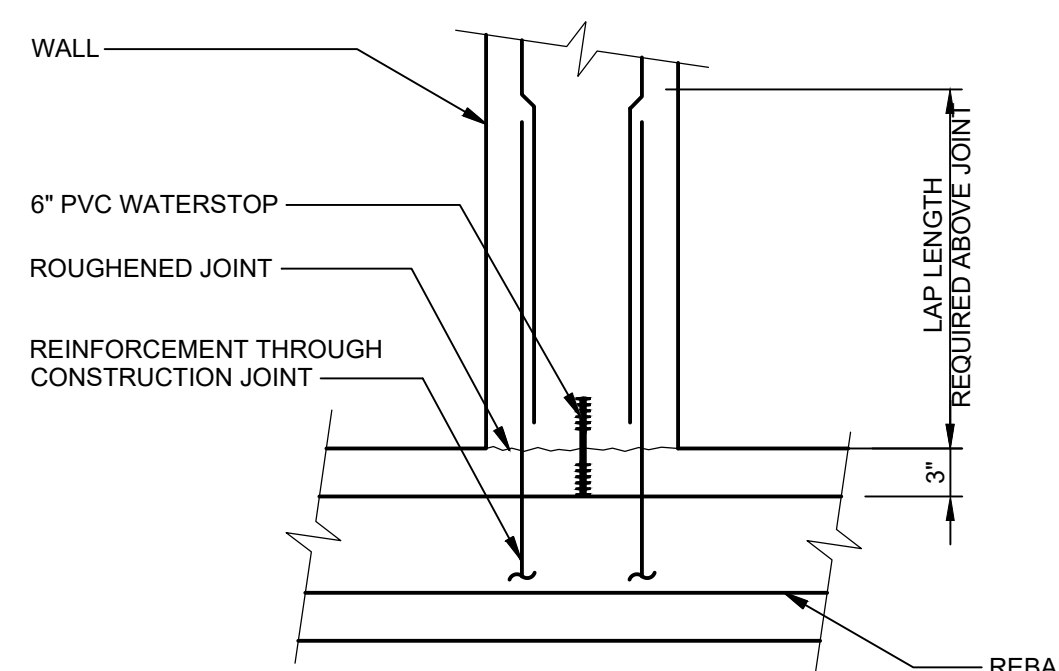
NOTES (FOR HORIZONTAL WALL REINFORCING):

1. SIZE AND SPACING OF CORNER OR INTERSECTION REINFORCING SHALL MATCH REINFORCING SHOWN IN SPECIFIC SECTIONS OR DETAILS. VERTICAL REINFORCING NOT SHOWN FOR CLARITY.
2. UNLESS NOTED OTHERWISE, BAR SPLICE SHALL BE LOCATED OUTSIDE OF CORNER OR INTERSECTION AREA TO AVOID CONGESTION. CONTRACTORS OPTION TO PROVIDE SINGLE BENT BAR IN LIEU OF SPLICE CONFIGURATION.
3. SEE GENERAL STRUCTURAL NOTES FOR SPLICE LENGTH. HORIZONTAL WALL BARS SHALL BE CONSIDERED TOP BARS FOR DEVELOPMENT AND SPLICE LENGTHS.

CONCRETE - TYPICAL HORIZONTAL WALL REINFORCING

DETAIL (S0101)

NO SCALE

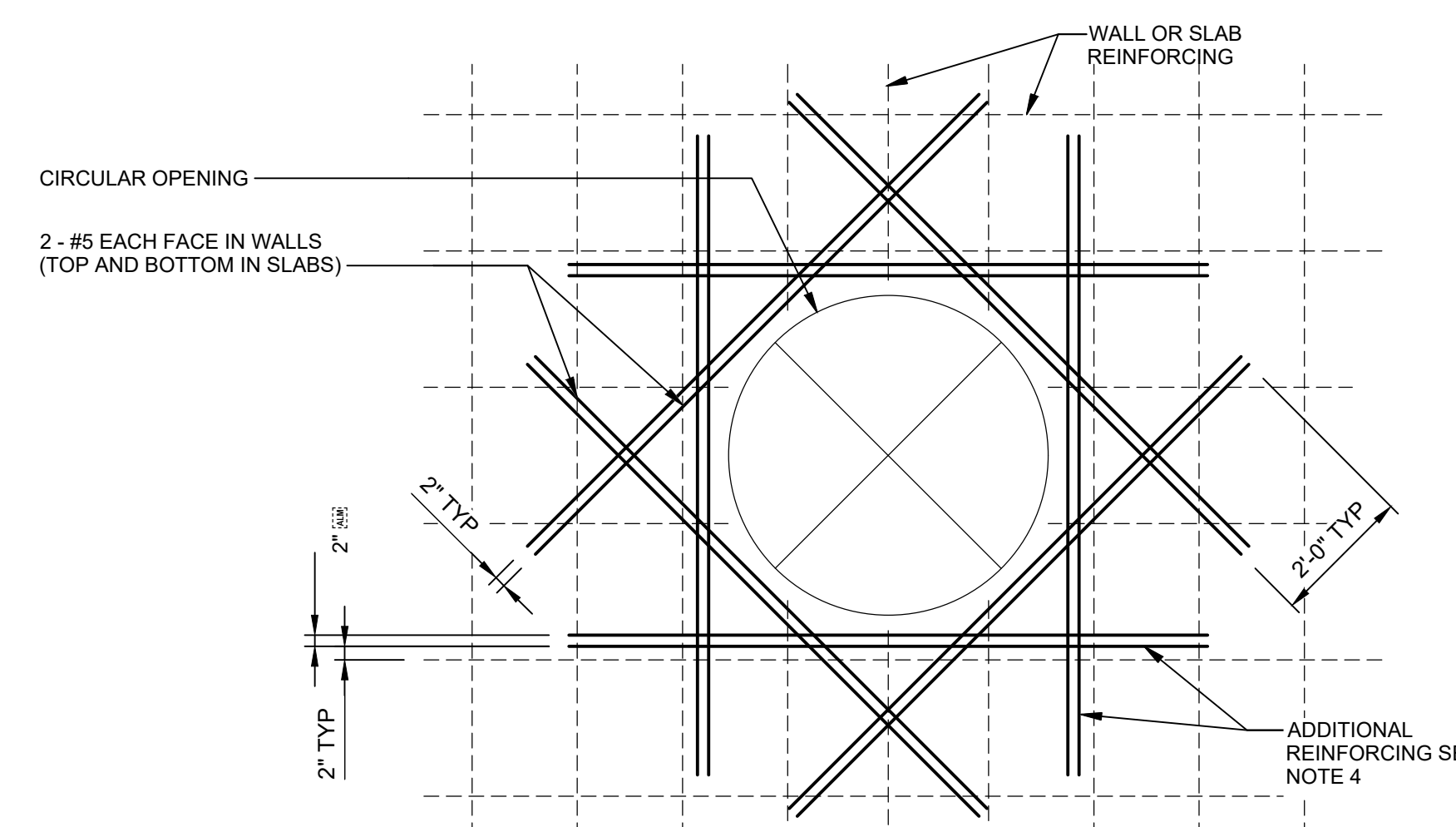
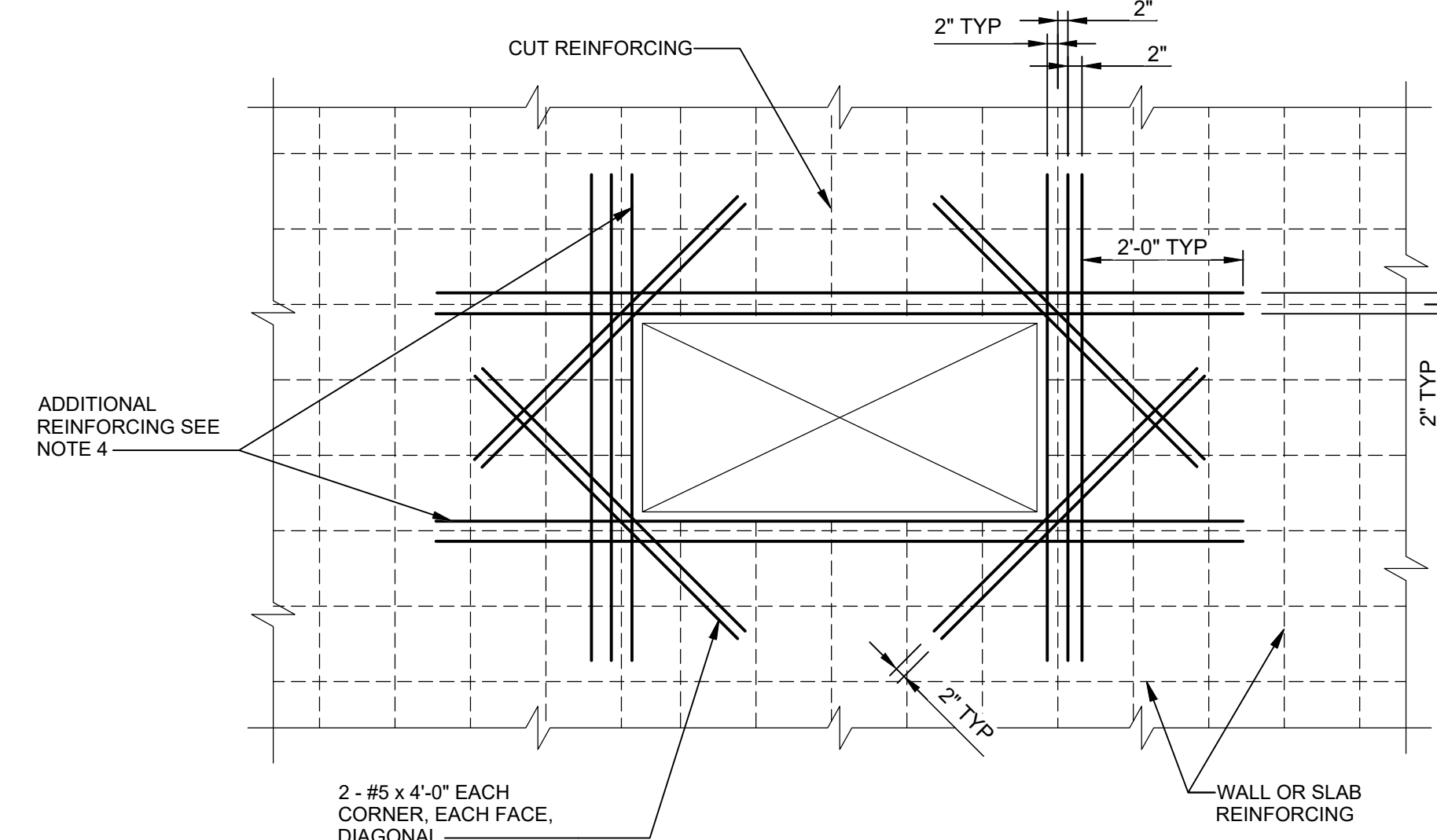


JOINT WITH PVC WATERSTOP

CONCRETE - TYPICAL HORIZONTAL CONSTRUCTION JOINT

DETAIL (S0102)

NO SCALE



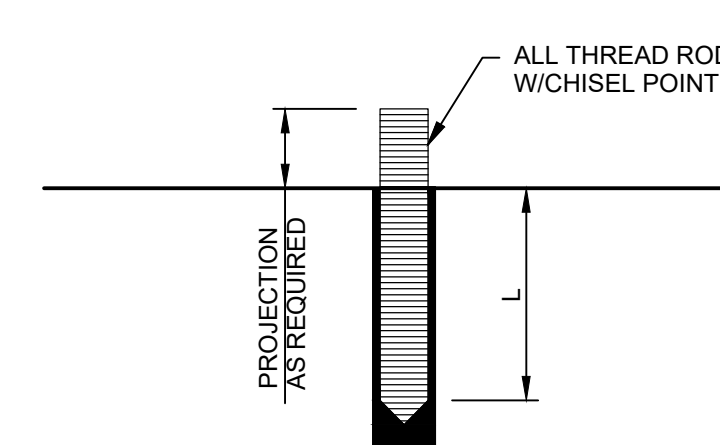
ADDITIONAL REINFORCING NOTES:

1. AT OPENINGS 12" OR LESS, NO ADDITIONAL REINFORCING IS REQUIRED. OFFSET REINFORCING, AS NEEDED.
2. OPENINGS ARE NOT ALL SHOWN ON STRUCTURAL DRAWINGS. PROVIDE OPENINGS IN ACCORDANCE WITH ARCHITECTURAL, MECHANICAL, AND OTHER CONTRACT DRAWINGS.
3. ADDITIONAL REINFORCEMENT MAY BE OMITTED WHERE OPENING IS FRAMED BY BEAMS OR WALLS.
4. ADDITIONAL REINFORCING (4) SIDES OF OPENING, EACH FACE, EQUAL TO NUMBER AND SIZE OF CUT REINFORCING / 2 (MIN 2 ADDITIONAL BARS EACH SIDE). WHERE AN ODD NUMBER OF REBAR ARE CUT, PROVIDE (ODD NO. +1) / 2 EACH SIDE OF OPENING.

CONCRETE - ADDITIONAL REINFORCING AT OPENINGS

DETAIL (S0103)

NO SCALE



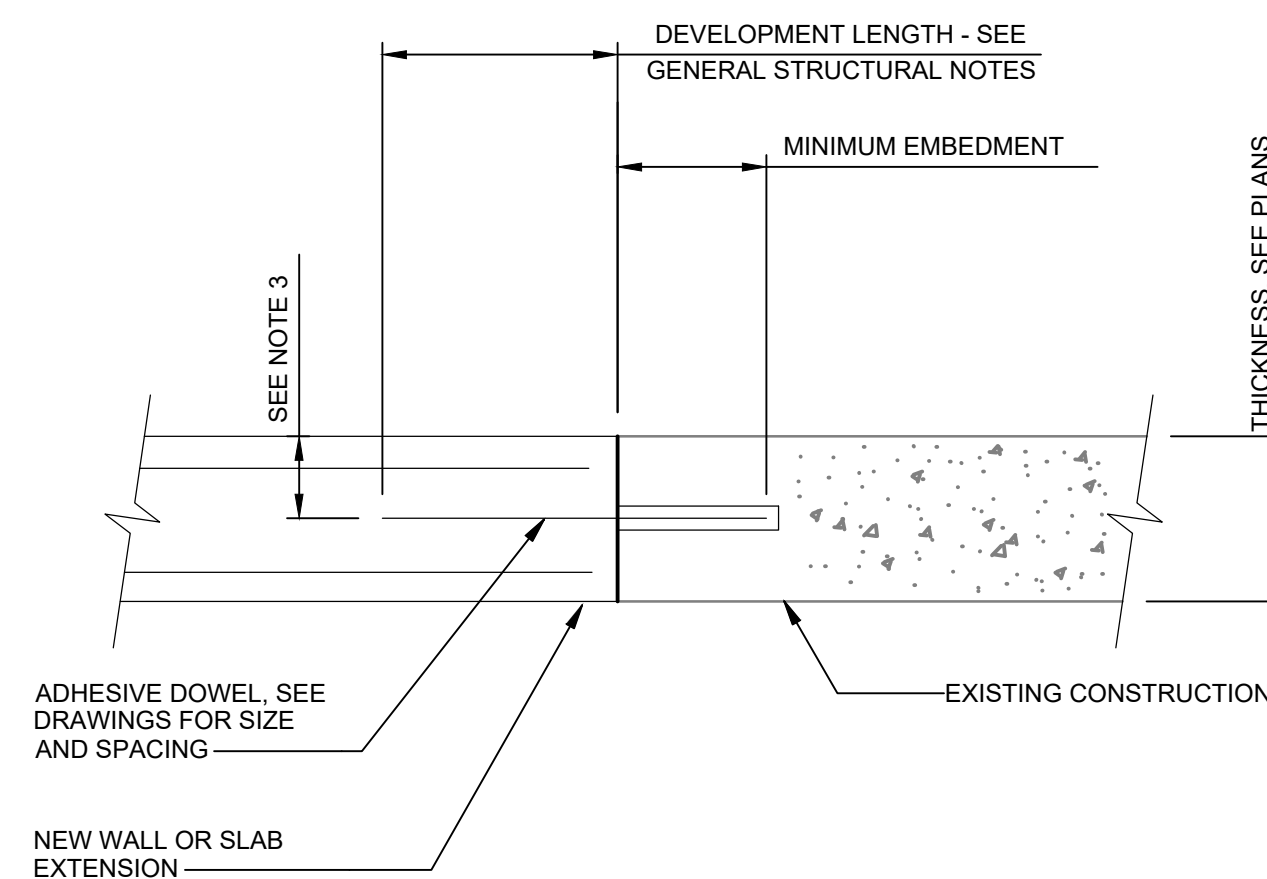
ADHESIVE ANCHOR

DIAMETER	MINIMUM EMBEDMENT LENGTH, L	
	ADHESIVE ANCHOR	EXPANSION ANCHOR
3/8"	4 1/2"	3 1/2"
1/2"	6"	4 3/4"
5/8"	7 1/2"	5 1/2"
3/4"	9"	6 1/2"
7/8"	10 1/2"	-
1"	12"	-

CONCRETE - CONCRETE ANCHORS

DETAIL (S0105)

NO SCALE



NOTES:

1. EMBEDMENT LENGTH IS BASED ON DOWELS SET WITH HILTI HIT-RE 500 V3 ADHESIVE ANCHOR SYSTEM. SUBMIT ICC EVALUATION SERVICE REPORT (ES REPORT) FOR ALTERNATE PRODUCTS.
2. INSTALL DOWELS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND ICC ES REPORT ESR-3814.
3. LOCATE DOWELS CENTERED IN WALL OR SLAB UNLESS NOTED OTHERWISE ON DRAWINGS. WHERE 2 ROWS OF DOWELS ARE INDICATED, STAGGER SPACING AND LOCATE ALTERNATING DOWELS AT MINIMUM EDGE DISTANCE FROM OPPOSITE FACES.
4. SPECIAL INSPECTION IS REQUIRED FOR ADHESIVE DOWEL INSTALLATION.

DOWEL SIZE	MINIMUM EMBEDMENT
#3	5"
#4	7"
#5	8"
#6	10"
#7	12"
#8	14"
#9	16"

CONCRETE - REBAR DOWELS SET WITH ADHESIVE

DETAIL (S0104)

NO SCALE

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GENERAL NOTES:

1. DIMENSIONS OF EXISTING STRUCTURE ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO ORDERING OR FABRICATING MATERIALS. IN EVENT OF DISCREPANCIES, NOTIFY CONSTRUCTION MANAGER IMMEDIATELY.
2. CONSTRUCTION SEQUENCE
 - A. FIELD VERIFY EXISTING STRUCTURE CONDITION AND EXISTING DIMENSIONS.
 - B. EXCAVATE AROUND EXISTING STRUCTURE AND PROVIDE TEMPORARY SHORING SYSTEM AND BYPASS PIPE IF NECESSARY.
 - C. DEMOLISH EXISTING STRUCTURE AND EXCAVATE TO PROPOSED SOIL ELEVATION.
 - D. PREPARE SUBGRADE FOR FOUNDATION AND PLACE CAST-IN-PLACE CONCRETE FOUNDATION AND WALL.
 - E. BACKFILL INTERIOR STRUCTURE WITH CIP CONCRETE OR GRADED ROCK.
 - F. INSTALL THE GATE AND ACCESS PLATFORM.
 - G. BACKFILL AND RE-GRADE SOIL ELEVATION AROUND STRUCTURE.

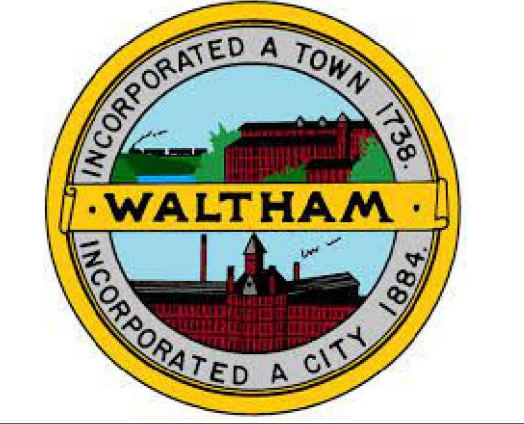
KEY NOTES:

1. CAST-IN-PLACE FORMED OPENING. PROVIDE ADDITIONAL REINFORCEMENT AT OPENING PER STANDARD DETAIL S0103.
2. REFER TO STANDARD DETAIL S0104 FOR DOWELS SET WITH ADHESIVE.
3. REFER TO DETAIL 1/S-01-501 FOR EXPANSION JOINTS INFO.



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CHESTER BROOK
YMCA WETLAND
FLOOD
MITIGATION

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: KP
DRAWN: JAB
CHECKED: TVA
CHECKED:
APPROVED: SAS

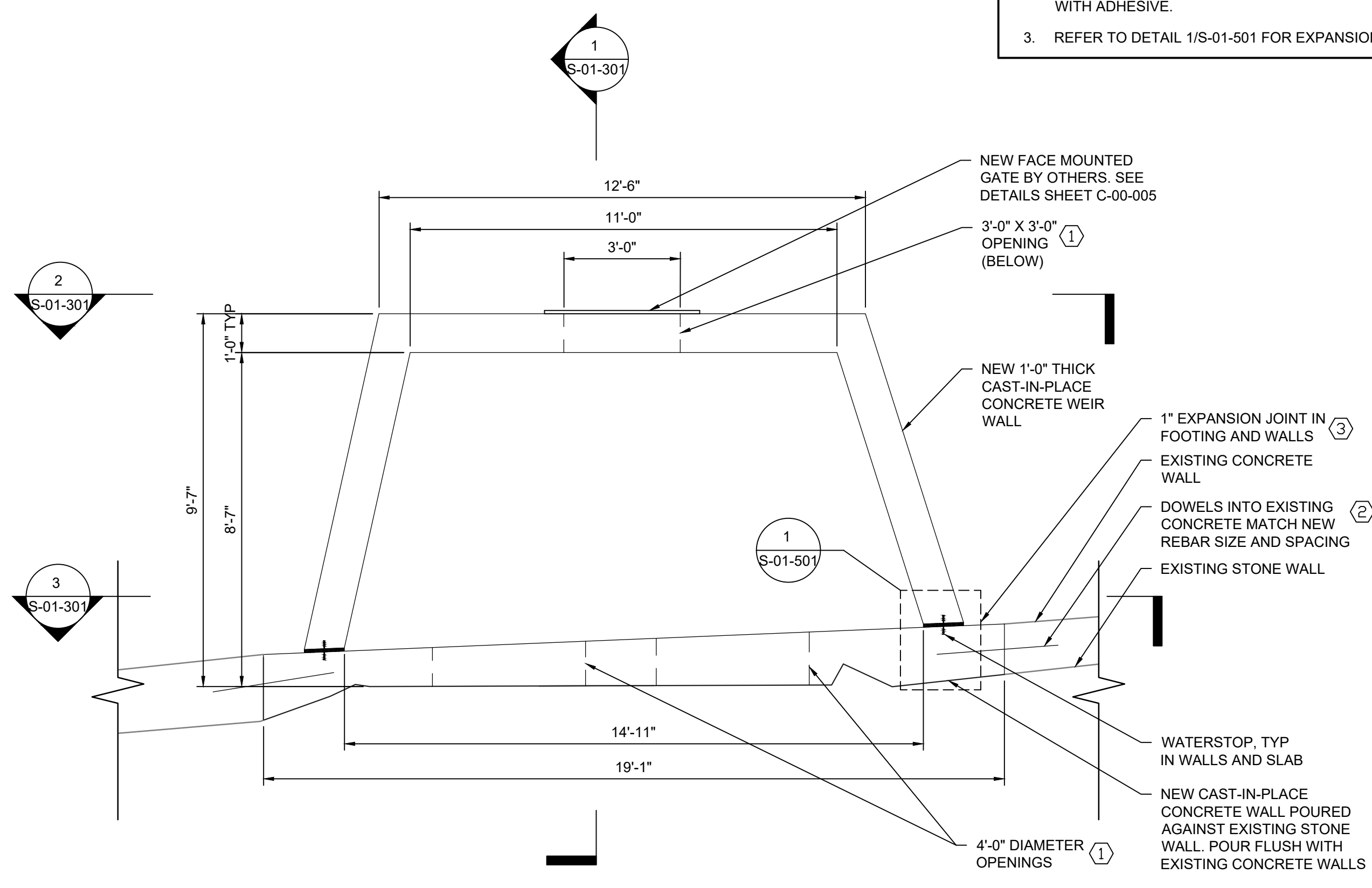
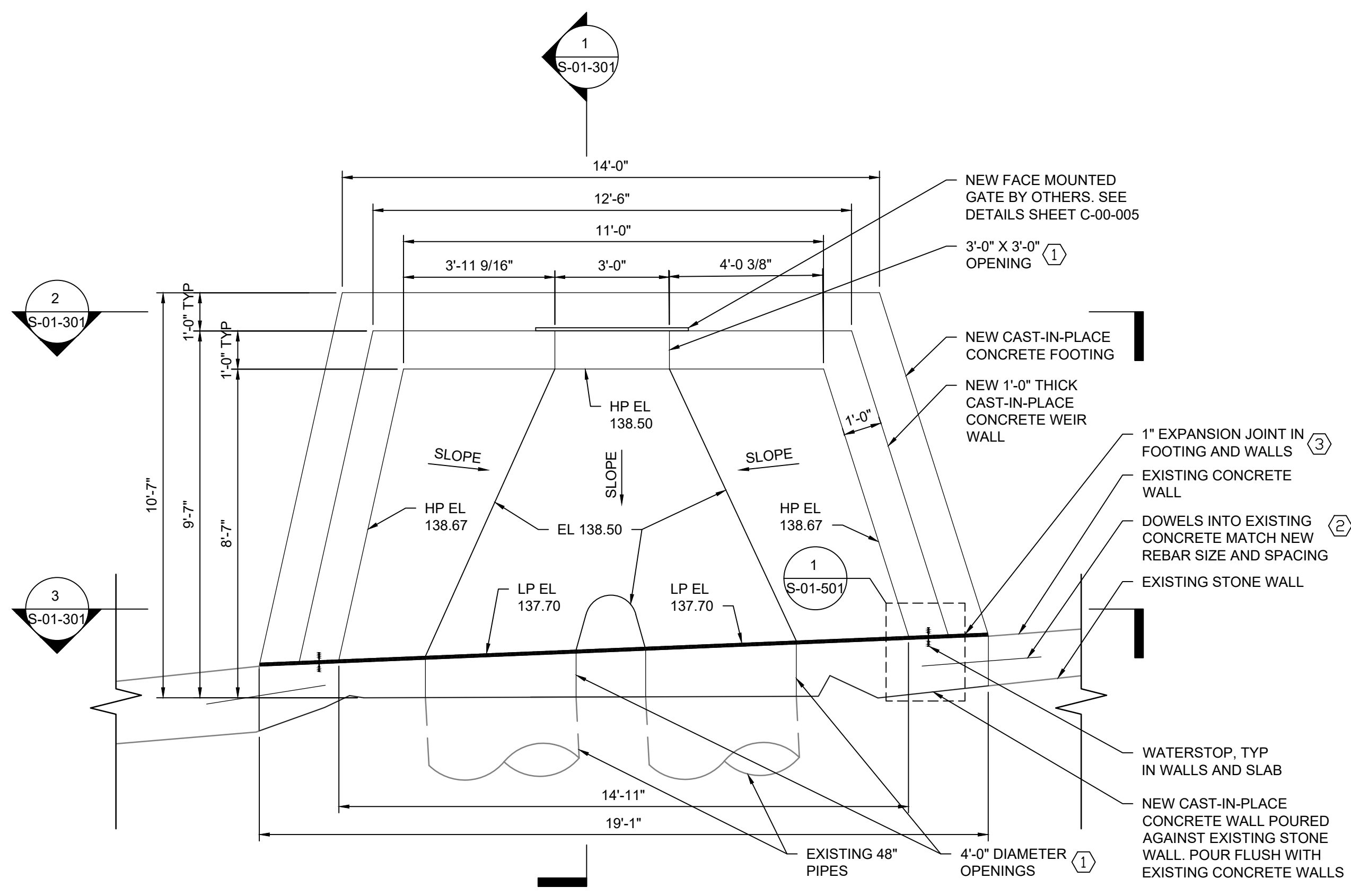
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S-01-101.dwg
BC PROJECT NUMBER
PROJECT 160123
CLIENT PROJECT NUMBER
CLIENT 160123

STRUCTURAL

OUTLET WEIR
STRUCTURE PLANS

DRAWING NUMBER
S-01-101

11 SHEET NUMBER OF 13



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D

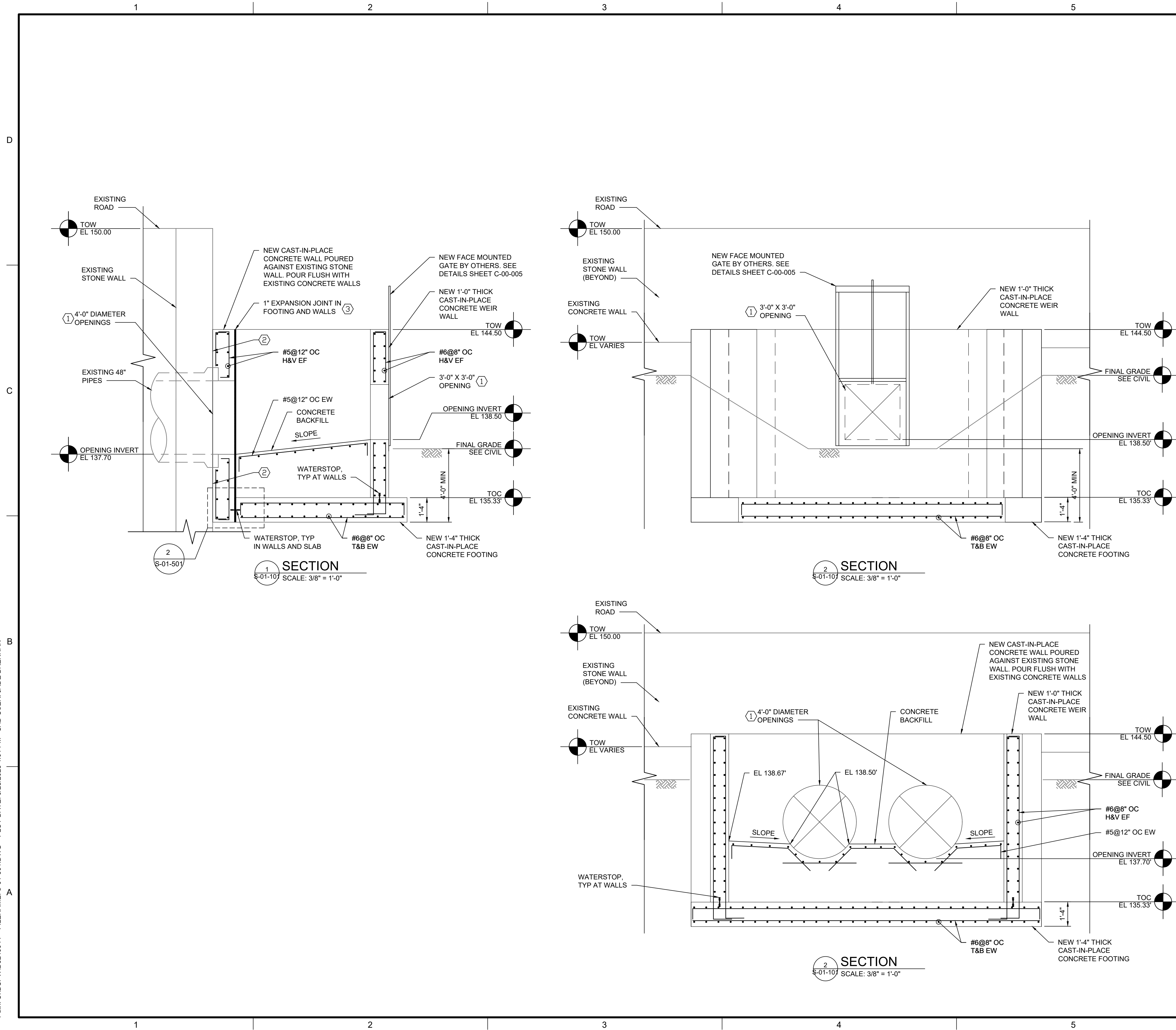
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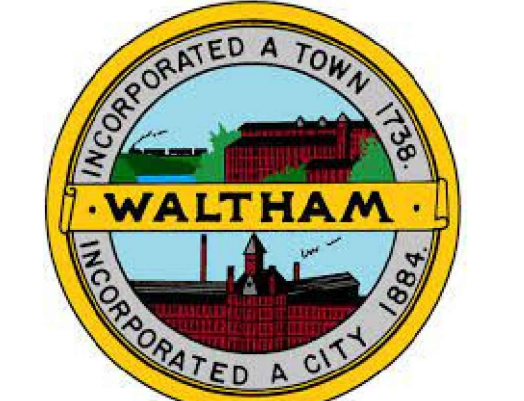
- GENERAL NOTES:**
- DIMENSIONS OF EXISTING STRUCTURE ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO ORDERING OR FABRICATING MATERIALS. IN EVENT OF DISCREPANCIES, NOTIFY CONSTRUCTION MANAGER IMMEDIATELY.
 - CONSTRUCTION SEQUENCE
 - FIELD VERIFY EXISTING STRUCTURE CONDITION AND EXISTING DIMENSIONS.
 - EXCAVATE AROUND EXISTING STRUCTURE AND PROVIDE TEMPORARY SHORING SYSTEM AND BYPASS PIPE IF NECESSARY.
 - DEMOLISH EXISTING STRUCTURE AND EXCAVATE TO PROPOSED SOIL ELEVATION.
 - PREPARE SUBGRADE FOR FOUNDATION AND PLACE CAST-IN-PLACE CONCRETE FOUNDATION AND WALL.
 - BACKFILL INTERIOR STRUCTURE WITH CIP CONCRETE OR GRADED ROCK.
 - INSTALL THE GATE AND ACCESS PLATFORM.
 - BACKFILL AND RE-GRADE SOIL ELEVATION AROUND STRUCTURE.

- KEY NOTES:**
- CAST-IN-PLACE FORMED OPENING. PROVIDE ADDITIONAL REINFORCEMENT AT OPENING PER STANDARD DETAIL S0103.
 - CLEAN AND ABRASIVE BLAST THE EXISTING SURFACE BEFORE PLACEMENT OF CONCRETE.
 - REFER TO DETAIL 1/S-01-501 FOR EXPANSION JOINTS INFO.



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CHECKED: TVA
CHECKED:
APPROVED: SAS

FILENAME
S-01-301.dwg
BC PROJECT NUMBER
PROJECT 160123
CLIENT PROJECT NUMBER
CLIENT 160123

STRUCTURAL

OUTLET WEIR
STRUCTURE
SECTIONS

DRAWING NUMBER
S-01-301

12 SHEET NUMBER OF 13

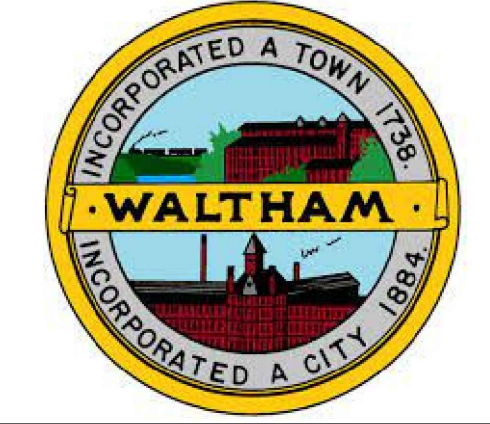
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200 BRICKSTON SQUARE, SUITE 403
ANDOVER, MA 01810

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REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
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DESIGNED: KP
DRAWN: JAB
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APPROVED: SAS

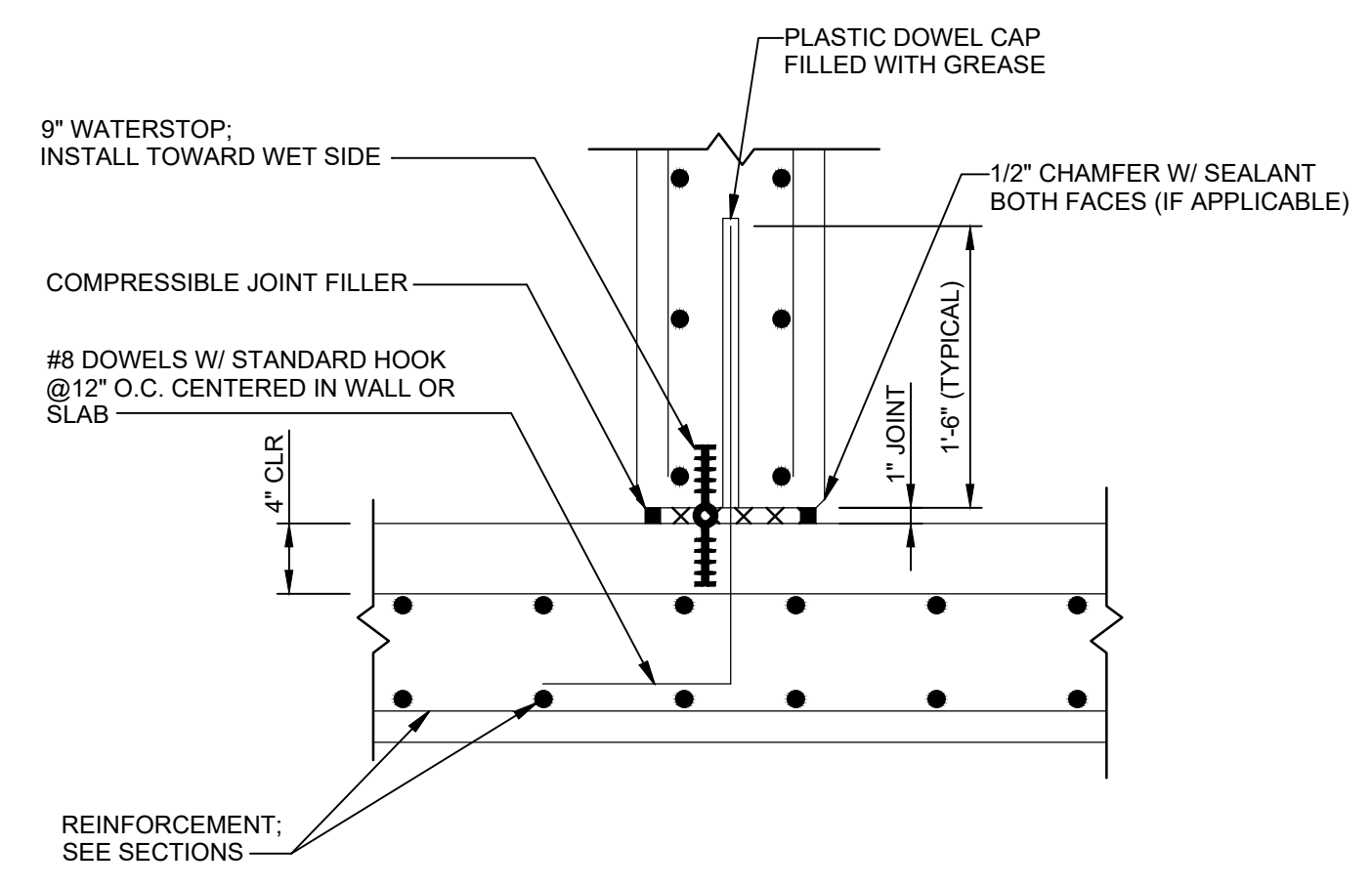
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BC PROJECT NUMBER
PROJECT 160123
CLIENT PROJECT NUMBER
CLIENT 160123

STRUCTURAL

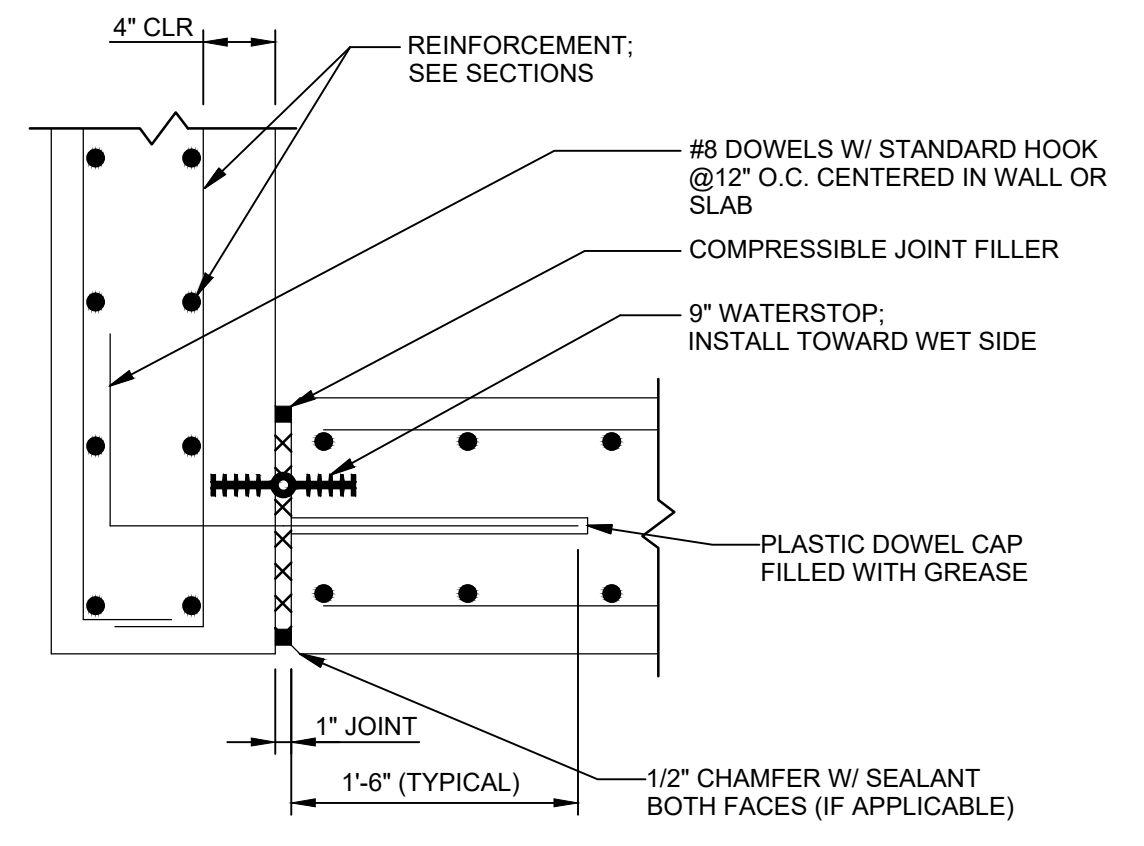
DETAILS

DRAWING NUMBER
S-01-501

13 SHEET NUMBER OF 13



1 DETAIL
S-01-101 SCALE: 1" = 1'-0"



2 DETAIL
S-01-307 SCALE: 1" = 1'-0"