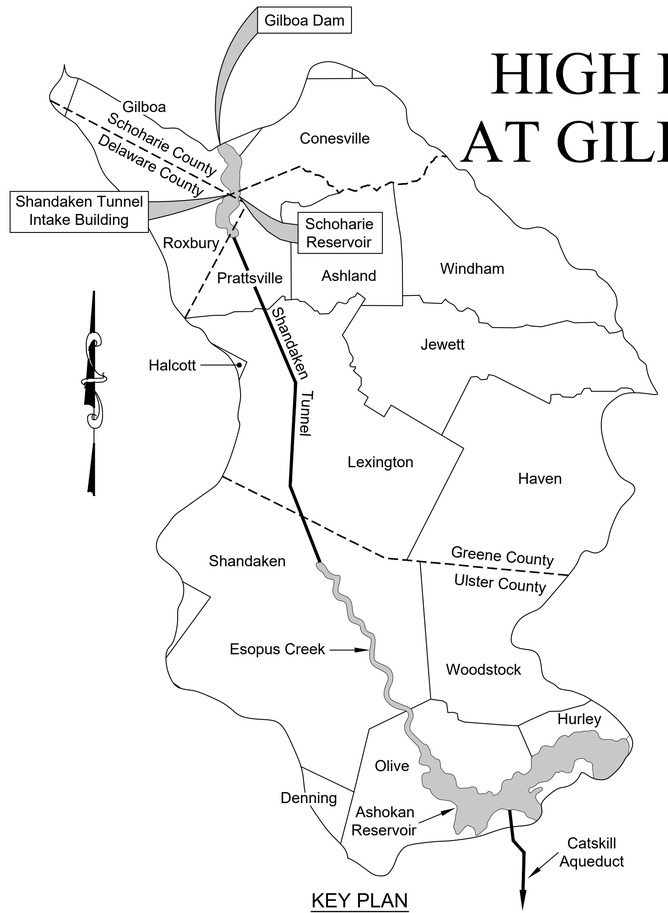
NEW YORK CITY
ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN AND CONSTRUCTION

# SCHOHARIE RESERVOIR
# CAT-475

## HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL

GILBOA, NY
AUGUST 2026




KEY PLAN


Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018


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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**

GENERAL
DRAWING LIST

DATE: AUGUST 2026
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## GENERAL NOTES:

1. SITE SURVEY OBTAINED FROM THE FOLLOWING SOURCES:
   a. AERIAL SURVEY: HIRANI LAND SURVEYING, P.C. (2005-2006)
   b. LAND SURVEY: GANNETT FLEMING, GANNETT FLEMING/HAZEN AND SAWYER, A JOINT VENTURE (2004-2014), AND DARRAH LAND SURVEYING (2020, 2024)
   c. LIDAR TERRESTRIAL SCANNING: DARRAH LAND SURVEYING (2024)
   d. BATHYMETRIC SURVEY: THEW ASSOCIATES, INC. (2024)

2. SURVEY CONTROL:
   a. HORIZONTAL CONTROL IS REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM, EAST ZONE, BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD 83).
   b. VERTICAL CONTROL IS REFERENCED TO THE NYC, DEP BUREAU OF WATER SUPPLY (BWS) DATUM.
   c. THE CONTRACTOR'S ATTENTION IS DRAWN TO THE VARIOUS VERTICAL DATUMS THAT HAVE BEEN USED IN THE PROJECT'S HISTORY, SPECIFICALLY AS IT RELATES TO THE INFORMATION REFERENCED BY THE CONTRACT DOCUMENTS. AS INDICATED ON THE CONTRACT DRAWINGS, THE PRESENT VERTICAL DATUM IS CONSISTENT WITH THE BWS DATUM (ALSO PREVIOUSLY DESCRIBED AS THE “1917 PROJECT DATUM”), AND NOT THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
   d. ELEVATIONS PROVIDED FOR THE VERTICAL BENCHMARKS LOCATED ON THE SITE, TOPOGRAPHY, AND PROJECT FEATURES DEPICTED ON THE CONTRACT DRAWINGS ARE WITH RESPECT TO THE BWS DATUM. USING THE BWS VERTICAL DATUM, THE SPILLWAY CREST IS INTENDED TO BE ELEVATION 1130.0 FEET, CONSISTENT WITH THE ORIGINAL DESIGN AS SHOWN ON THE ARCHIVAL DRAWINGS, HYDROLOGIC DATA PUBLISHED BY THE USGS, HYDRAULIC RECORDS KEPT BY THE CITY, AND HYDROLOGIC MODELING CONDUCTED DURING ENGINEER'S DESIGN.
   e. CONVERSION BETWEEN BWS DATUM AND NAVD88 IS: BWS DATUM = NAVD88 + 1.47 FEET.

3. ACTUAL EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN ON THE CONTRACT DRAWINGS DUE TO ONGOING CONSTRUCTION ACTIVITIES UNDER CONTRACT CAT-212C AND CAT-212E. CONTRACTOR SHALL VERIFY FIELD CONDITIONS BEFORE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS WHERE NEW WORK WILL MATCH EXISTING. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO THE COMMENCEMENT OF WORK.

4. CONTRACTOR SHALL AVOID DAMAGE TO EXISTING STRUCTURES AND PAVEMENT THAT ARE NOT INDICATED TO BE DEMOLISHED OR REMOVED. ANY DAMAGE TO EXISTING STRUCTURES AND PAVEMENT, IF CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. PARKING BEYOND THE DESIGNATED GATE 19 POTENTIAL PARKING AREA ALONG THE WEST ACCESS ROAD IS PROHIBITED.

5. UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEY INFORMATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXACT LOCATION OF UTILITIES AND TO AVOID DAMAGE TO UTILITIES. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL CONTACT DIG SAFELY NEW YORK AT PHONE NUMBER 811 OR 1-800-962-7962 TO REQUEST UNDERGROUND UTILITY LOCATION MARK-OUT AT LEAST TWO (2) WORKING DAYS BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO BEGINNING EXCAVATION, INCLUDING SOIL DRILLING. THE CONTRACTOR SHALL ALSO CONTACT AND REQUEST UTILITY LOCATION MARK-OUT FROM BURIED UTILITY OWNERS WITH UTILITIES ON THE PROJECT SITE THAT ARE NOT PARTICIPANTS OF DIG SAFELY NEW YORK. UTILITIES SHALL NOT BE DISTURBED, UNLESS NOTED OTHERWISE.

6. ALL TEMPORARY FACILITIES ARE SUBJECT TO THE SAME HEALTH AND SAFETY REQUIREMENTS AS PERMANENT FACILITIES, AS SPECIFIED IN THE CONTRACT DOCUMENTS AND HEALTH SAFETY PLAN (HASP).

7. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF EXISTING INFRASTRUCTURE LOCATED ON SITE. CONTRACTOR IS RESPONSIBLE FOR REPAIR OF EXISTING INFRASTRUCTURE, SHOULD DAMAGE CAUSED BY CONTRACTOR OCCUR. INFRASTRUCTURE TO BE MAINTAINED AND REPAIRED INCLUDES, BUT IS NOT LIMITED TO: POST-TENSIONED ANCHORS, STORM DRAINS, STORMWATER STRUCTURES, UNDERDRAINS, SWALES, SEDIMENT BASINS, STORMWATER TREATMENT/DETENTION FACILITIES, ROADWAYS, CONSTRUCTION ENTRANCES, TRUCK WASHES, UTILITY POLES, POLE MOUNTED LIGHTS AND CAMERAS, ELECTRICAL AND/OR INSTRUMENTATION DUCTBANKS, MANHOLES, PANELS, CONDUITS AND WIRING, EQUIPMENT PADS, SILT FENCING, TREE FENCING, JERSEY BARRIERS, WATER LINES, AND SANITARY SEWER LINES.

8. REFER TO INDIVIDUAL DISCIPLINE DRAWINGS FOR SPECIFIC EQUIPMENT IDENTIFIERS OF KEY MECHANICAL, ELECTRICAL, AND/OR INSTRUMENTATION EQUIPMENT. CITY-ISSUED P&ID NUMBERS WILL BE PROVIDED IN THE FUTURE FOR INCLUSION ON SELECT FINAL RECORD DRAWINGS.

## OPERATION OF DAM, CONSTRAINTS, AND CONTRACTOR'S RESPONSIBILITIES DURING CONSTRUCTION:

1. THE CONTRACTOR SHALL SCHEDULE ALL WORK SO THAT THE DAM AND ALL APPURTENANCES, INCLUDING THE SPILLWAY, ARE MAINTAINED IN CONTINUOUS OPERATION.
   a. "AT NO EXTRA COST TO THE CITY" IS NOT ENFORCEABLE IF THE CONTRACTOR IS IN COMPLIANCE WITH CONTRACT DOCUMENT REQUIREMENTS.
   b. "AT NO EXTRA COST TO THE CITY" MAY BE ENFORCEABLE IF THE NEED FOR THE TEMPORARY WORK IS A RESULT OF THE CONTRACTOR'S NON-COMPLIANCE WITH CONTRACT DOCUMENT REQUIREMENTS IN THE OPINION OF THE CITY.

2. WORK UNDER THIS CONTRACT SHALL BE SCHEDULED AND CONDUCTED BY THE CONTRACTOR SO AS NOT TO IMPEDE OPERATION OF THE DAM EXCEPT AS EXPLICITLY PERMITTED. IN PERFORMING THE WORK SHOWN AND SPECIFIED, THE CONTRACTOR SHALL PLAN AND SCHEDULE WORK TO MEET THE DAM'S OPERATING REQUIREMENTS, AND THE CONSTRAINTS OF CONSTRUCTION REQUIREMENTS AND SCHEDULES.

3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PROVIDING TEMPORARY POWER AS NECESSARY FOR ALL WORK.

4. TEMPORARY WORK INCLUDING, BUT NOT LIMITED TO, FACILITIES, ROADS OR ACCESS THEREOF, WALKS, PROTECTION OF EXISTING STRUCTURES, ETC. THAT MAY BE REQUIRED WITHIN THE CONTRACTOR'S WORK LIMITS TO MAINTAIN CONTINUOUS AND DEPENDABLE DAM OPERATION SHALL BE FURNISHED BY THE CONTRACTOR AT THE DIRECTION OF THE ENGINEER AT NO EXTRA COST TO THE CITY.

5. THE CITY SHALL HAVE THE AUTHORITY TO ORDER WORK STOPPED OR PROHIBITED THAT WOULD, IN CITY'S OPINION, UNREASONABLY RESULT IN INTERRUPTING THE NECESSARY FUNCTIONS OF THE DAM'S OPERATIONS, INCLUDING THE SPILLWAY.

6. IF THE CONTRACTOR IMPAIRS PERFORMANCE OR OPERATION OF THE DAM'S SPILLWAY AS A RESULT OF NOT COMPLYING WITH CONTRACT DOCUMENT REQUIREMENTS, INCLUDING BUT NOT LIMITED TO SPECIFIED PROVISIONS FOR MAINTAINING DAM'S OPERATIONS, THEN THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REPAIRS OR REPLACEMENTS AND DO ALL WORK NECESSARY TO RESTORE THE DAM'S SPILLWAY OPERATION TO THE SATISFACTION OF THE ENGINEER, AT THE CONTRACTOR'S OWN COST/EXPENSE. SUCH WORK SHALL PROGRESS CONTINUOUSLY TO COMPLETION ON A 24-HOURS PER DAY, SEVEN WORK-DAYS PER WEEK BASIS.

7. AN UNOBSTRUCTED TRAFFIC ROUTE AROUND THE DAM SITE SHALL BE MAINTAINED AT ALL TIMES FOR THE CITY'S OPERATIONS PERSONNEL AND MAINTENANCE EQUIPMENT. PARKING FOR PERSONAL VEHICLES OF CONSTRUCTION PERSONNEL WILL BE ALLOWED AS APPROVED BY ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND MAINTAINING PARKING AREAS, AS REQUIRED BY THE CONTRACT DOCUMENTS.

8. AN UNOBSTRUCTED TRAFFIC ROUTE AROUND THE DAM SITE, AND EGRESS TO AND FROM THE NYCDEP POLICE PRECINCT SHALL BE MAINTAINED AT ALL TIMES. THE LOCATION OF THE NYCDEP POLICE PRECINCT IS SHOWN ON DRAWING 475-G-005.

9. CITY PERSONNEL SHALL HAVE ACCESS TO ALL AREAS THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL LOCATE STORED MATERIAL, DISPOSE OF CONSTRUCTION DEBRIS AND TRASH, PROVIDE TEMPORARY WALKWAYS, PROVIDE TEMPORARY POWER, AND OTHER SUCH WORK AS REQUIRED BY THE ENGINEER TO MAINTAIN PERSONNEL ACCESS TO AREAS IN OPERATION.

10. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE OPERATION, MAINTENANCE AND REPAIR OF THE EXISTING DEBRIS BOOM FOR THE DURATION OF THE CONSTRUCTION ACTIVITIES THE SITE. AT THE CONCLUSION OF THE WORK, THE DEBRIS BOOM SHALL BE PROPERLY DISPOSED OFFSITE BY THE CONTRACTOR.

11. THROUGHOUT CONSTRUCTION, MAINTENANCE AND OPERATION OF THE GUARD BOOTHS AT GATES 16 AND 19 SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY. GATE LOCATIONS ARE SHOWN ON DRAWING 475-G-005. REFER TO SPECIFICATION SECTION 01 35 55 FOR ADDITIONAL REQUIREMENTS.

12. TEMPORARY INTERRUPTION IN POWER, LIGHT, COMMUNICATION, SECURITY, AND INSTRUMENTATION SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 01 73 12 - MAINTENANCE OF OPERATIONS AND CONSTRUCTION STAGING. EXISTING SERVICES IN THESE LOCATIONS INCLUDE TWO POOL LEVEL TRANSDUCERS ON THE UPSTREAM FACE OF THE DAM, A RAIN GAGE AND WEATHER STATION ON THE CREST OF THE DAM, INTERIOR GALLERY COMMUNICATIONS, EXTERIOR AND INTERIOR LIGHTING, AND INTERIOR VENTILATION. ANY DAMAGE CAUSED BY CONTRACTOR SHALL BE IMMEDIATELY REPAIRED AND ITS ASSOCIATED SERVICE RESTORED.

## DRAWING SET NOTES:

1. REFERENCE TO STANDARD DETAILS IS MADE MOSTLY VIA DETAIL CALL-OUT BLOCKS LOCATED ON THE PRIMARY PLAN(S) FOR SAID DETAIL, THUS NOT ALL PLANS SHOW ALL DETAIL CALL-OUTS, JUST THOSE PERTINENT TO THE PRIMARY CONTENT OF THE PLAN. WHERE MULTIPLE DETAILS ARE PRESENT FOR A PARTICULAR FEATURE, A REFERENCE NOTE IS USED IN PLACE OF THE DETAIL CALL-OUT BLOCK. CALL-OUTS AND STANDARD DETAIL BLOCKS ARE GENERALLY PROVIDED ONLY ONCE PER DRAWING.

2. LINEWORK FOR UTILITY INFRASTRUCTURE (E.G. DUCTBANK, CONDUIT, ETC.) MAY REPRESENT MULTIPLE LINES WITHIN CLOSE PROXIMITY. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO COMMENCEMENT OF WORK.

3. FEATURES LABELED FOR DEMOLITION ARE SHOWN ON DRAWINGS SHOWING BOTH EXISTING FEATURES AND NEW WORK. THE CONTRACTOR MAY CHOOSE TO PERFORM DEMOLITION DURING ANY PHASE WHICH BEST SUITS CONSTRUCTION NEEDS, UNLESS NOTED OTHERWISE ON THE CONTRACT DRAWINGS.

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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CHECKED BY: BH
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PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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**BUREAU OF ENGINEERING DESIGN & CONSTRUCTION**
96-05 HORACE HARDING EXPRESSWAY 5th FLOOR
CORONA, NEW YORK 11368
www.nyc.gov/dep

**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**

GENERAL NOTES

DATE: AUGUST 2026
SHEET NO: 3 of 112
DRAWING NO. 475-G-002

All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.

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Date & Time Plotted: 8/5/2026 5:37 PM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb

| | |
|---|---|
| ~ | APPROXIMATELY |
| & | AND |
| Ø | DIAMETER |
| # | NUMBER |
| < | ANGLE |
| @ | AT |

## A

| | |
|---|---|
| ABC | ASBESTOS CEMENT |
| ABDN | ABANDON (ED) |
| ABV | ABOVE |
| AD | AREA DRAIN |
| AD | ALGEBRAIC DIFFERENCE |
| ADDL | ADDITIONAL |
| ADJ | ADJUSTABLE, ADJUST |
| AFF | ABOVE FINISHED FLOOR |
| AFG | ABOVE FINISHED GRADE |
| AL | ALUMINUM |
| ALT | ALTERNATE (ING) |
| APPROX | APPROXIMATE (LY) |
| ARCH | ARCHITECT (URAL) (URE) |
| ARND | AROUND |
| ARV | AIR RELEASE VALVE |
| ASPH | ASPHALT |
| AUTO | AUTOMATIC |
| AVG | AVERAGE |
| AWL | AVERAGE WATER LEVEL |
| AZ | AZIMUTH |

## B

| | |
|---|---|
| B TO B | BACK TO BACK |
| BEL | BELOW |
| BEV | BEVEL (ED) |
| BF | BLIND FLANGE |
| BFP | BACK FLOW PREVENTER |
| BFV | BUTTERFLY VALVE |
| BITUM | BITUMINOUS |
| BL, $B_L$ | BASELINE |
| BLDG | BUILDING |
| BLK | BLOCK(ING) |
| BM | BENCHMARK |
| BO | BLOW OFF |
| BOF | BOTTOM OF FOOTING |
| BOT | BOTTOM |
| BRG | BEARING |
| BRK | BRICK |
| BTWN | BETWEEN |
| BYP | BYPASS |

## C

| | |
|---|---|
| C | STEEL CHANNEL |
| C/C | CENTER TO CENTER |
| CAP | CAPACITY |
| CATV | CABLE TV |
| CB | CATCH BASIN |
| CCW | COUNTER CLOCKWISE |
| CEM | CEMENT |
| CFM | CUBIC FEET PER MINUTE |
| CFS | CUBIC FEET PER SECOND |
| CHAN | CHANNEL |
| CHKD | CHECKERED |
| CIP | CAST IRON PIPE |
| CIR | CIRCLE |
| CIRC | CIRCUMFERENTIAL |
| CJ | CONSTRUCTION JOINT |
| CL, ℄ | CENTERLINE |
| CLJ | CONTROL JOINT |
| CLKG | CAULKING |
| CLR | CLEAR |
| CMON | CONCRETE MONUMENT |
| CMP | CORRUGATED METAL PIPE |
| CMU | CONCRETE MASONRY UNITS |
| CO | CLEAN OUT |
| COL | COLUMN |
| COMB | COMBINATION |
| CONC | CONCRETE |
| CONN | CONNECTION |
| CONST | CONSTRUCTION |
| CONT | CONTINUOUS, CONTINUATION, CONTINUED |
| CORRPIP | CORRUGATED POLYETHYLENE PIPE |
| CPLG | COUPLING |
| CPVC | CHLORINATED POLYVINYLCHLORIDE PIPE |
| CRS | COURSE (S) |
| CS | CARBON STEEL |
| CTR | CENTER (ED) |
| CTWR | CATSKILL TREATED WATER RETURN |
| CTWS | CATSKILL TREATED WATER SUPPLY |
| CU | COPPER |
| CF | CUBIC FOOT (FEET) |
| CY | CUBIC YARD(S) |
| CUP | COPPER PIPE |
| CV | CHECK VALVE |
| CW | COLD WATER |

## D

| | |
|---|---|
| DBL | DOUBLE |
| DBW | DOUBLE WALL CONTAINMENT PIPE |
| DET | DETAIL |
| DI | DUCTILE IRON (PIPE) |
| DIA | DIAMETER |
| DIAG | DIAGONAL |
| DIM | DIMENSION |
| DIR | DIRECTION |
| DISCH | DISCHARGE |
| DIV | DIVISION |
| DL | DEAD LOAD |

## D

| | |
|---|---|
| DN | DOWN |
| DO | DITTO |
| DPRG | DAMPPROOFING |
| DR | DRAIN |
| DS | DETAILED SPECIFICATION |
| DWG | DRAWING |
| D/S | DOWNSTREAM |

## E

| | |
|---|---|
| E | EAST |
| EA | EACH |
| EF | EACH FACE |
| EFF | EFFLUENT |
| EL | ELEVATION |
| ELEC | ELECTRIC(AL) |
| EMD | EMERGENCY DRAIN |
| ENTR | ENTRANCE |
| EOP | EDGE OF PAVEMENT |
| EP | ELECTRICAL PANEL |
| EQ | EQUAL (LY) |
| EQPT | EQUIPMENT |
| ES | EACH SIDE |
| ESMT | EASEMENT |
| EST | ESTIMATE (D) |
| ETC | ET CETERA |
| EW | EACH WAY |
| EXIST | EXISTING |
| EXP JT | EXPANSION JOINT |
| EXTD | EXTENDED |
| E&SC | EROSION AND SEDIMENT CONTROL |

## F

| | |
|---|---|
| F | FAHRENHEIT |
| FAB | FABRICATE (OR, ED) |
| FD | FRENCH DRAIN |
| FDN | FOUNDATION |
| FES | FLARED END SECTION |
| FF | FINISHED FLOOR |
| FH | FIRE HYDRANT |
| FIG | FIGURE |
| FLG | FLANGE(D) |
| FLR | FLOOR |
| FM | FORCE MAIN, FLOW METER |
| FO | FUEL OIL |
| FOT | FLAT ON TOP |
| FOV | FUEL OIL VENT |
| FPM | FEET PER MINUTE |
| FS | FIRE SERVICE |
| FT | FEET/FOOT |
| FURN | FURNISHED |

## G

| | |
|---|---|
| G | NATURAL GAS, GROUND |
| GA | GAGE |
| GL | GLASS |
| GPD | GALLONS PER DAY |
| GPM | GALLONS PER MINUTE |
| GR | GRADE |
| GRAV | GRAVITY |
| GRTG | GRATING |
| GS | GENERAL SPECIFICATION |
| GSKT | GASKET |
| GUTS | GUARANTEED ULTIMATE TENSILE STRENGTH |
| GV | GATE VALVE |

## H

| | |
|---|---|
| H | HORIZONTAL (AS SLOPE) |
| HDPE | HIGH DENSITY POLYETHYLENE |
| HGT | HEIGHT |
| HH | HANDHOLE |
| HLI | HIGH LEVEL INTAKE (STIC) |
| HLO | HIGH LEVEL OUTLET |
| HLRP | HIGH LEVEL RELEASE PIPE |
| HLRT | HIGH LEVEL RELEASE TOWER |
| HOR | HORIZONTAL |
| HPT | HIGH POINT |
| HVAC | HEATING/VENTILATING/AIR CONDITIONING |

## I

| | |
|---|---|
| ID | INSIDE DIAMETER |
| IN | INCH(ES) |
| INSUL | INSULATION |
| INT | INTERIOR |
| INV | INVERT (ELEVATION) |
| IP | IRON PIPE |
| IR | IRON ROD |
| ISO | ISOMETRIC |

## J

| | |
|---|---|
| JB | JUNCTION BOX |
| JCT | JUNCTION |
| JT | JOINT |
| JT FLR | JOINT FILLER |

## K

## L

| | |
|---|---|
| LAD | LADDER |
| LB | POUND |
| LBS | POUNDS |
| LF | LINEAR FEET |
| LG | LONG |
| LL | LIVE LOAD |
| LOC | LOCATION/LOCATED |
| LONG | LONGITUDINAL |
| LPT | LOW POINT |
| LP | LIGHT POLE, LIGHTING PANEL |
| LT | LEFT, LIGHT (S) |
| LVC | LENGTH OF VERTICAL CURVE |

## M

| | |
|---|---|
| M&P | MEASUREMENT AND PAYMENT |
| MAS | MASONRY |
| MATL | MATERIAL |
| MAX | MAXIMUM |
| MECH | MECHANICAL |
| MFR | MANUFACTURER |
| MGD | MILLION GALLONS PER DAY |
| MH | MANHOLE |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| MJ | MECHANICAL JOINT |
| MON | MONUMENT |
| MPH | MILES PER HOUR |
| MTD | MOUNTED |
| MTL | METAL |

## N

| | |
|---|---|
| N | NORTH, NEUTRAL |
| NAD | NORTH AMERICAN DATUM |
| NIC | NOT IN CONTRACT |
| NO | NUMBER |
| NOM | NOMINAL |
| NPW | (NON-POTABLE) RAW WATER |
| NSG | NON-SHRINK GROUT |
| NTS | NOT TO SCALE |

## O

| | |
|---|---|
| O/E | OR EQUAL |
| OC | ON CENTER |
| OD | OUTSIDE DIAMETER |
| OE | OVERHEAD ELECTRIC |
| OPNG | OPENING |
| OPP | OPPOSITE |
| OPT | OPTION(AL) |
| OT | OVERHEAD TELEPHONE |
| OVHD | OVERHEAD |
| OW | OBSERVATION WELL |
| OZ | OUNCE |

## P

| | |
|---|---|
| P | PROTECTED/PROTECTED WATER |
| PB | PULLBOX |
| PC | POINT OF CURVE (ATURE) |
| PCC | POINT OF COMPLEX CURVATURE |
| PCCP | PRESTRESSED CONCRETE CYLINDER PIPE |
| PCF | POUNDS PER CUBIC FOOT |
| PE | PLAIN END |
| PERF | PERFORATED |
| PERIM | PERIMETER |
| pH | HYDROGEN ION CONCENTRATION |
| PI | POINT OF INTERSECTION |
| PJF | PREMOLDED JOINT FILLER |
| PL | PROPERTY LINE, PLATE |
| PLYWD | PLYWOOD |
| PNL | PANEL |
| POJ | PUSH ON JOINT |
| PP | POWER POLE, POWER PANEL |
| PPM | PARTS PER MILLION |
| PRC | POINT OF REVERSE CURVE |
| PRCST | PRECAST |
| PREFAB | PRE-FABRICATED |
| PRESS | PRESSURE |
| PS | PUMP STATION |
| PSD | PIPE SLOPE DRAIN |
| PSF | POUNDS PER SQUARE FOOT |
| PSI | POUNDS PER SQUARE INCH |
| PSIA | POUNDS PER SQUARE INCH ABSOLUTE |
| PSIG | POUNDS PER SQUARE INCH GAGE |
| PT | POINT, POINT OF TANGENCY |
| PREST | PRESSURE TREATED |
| PUD | PERFORATED UNDERDRAIN |
| PVC | POLYVINYL CHLORIDE (PIPE), POINT OF VERTICAL CURVATURE |
| PVI | POINT OF VERTICAL INTERSECTION |
| PVT | POINT OF VERTICAL TANGENCY |
| PVMT | PAVEMENT |
| PW | POTABLE WATER |

## Q

| | |
|---|---|
| QTY | QUALITY, QUANTITY |

## R

| | |
|---|---|
| R | RISER(S), RADIUS |
| RC | REINFORCED CONCRETE |
| RCP | REINFORCED CONCRETE PIPE |
| RD | ROOF DRAIN |
| RECM | ROLLED EROSION CONTROL MATTING |
| RECPT | RECEPTACLE |
| REF | REFERENCE/REFER |
| REINF | REINFORCE (D, ING) |
| REQD | REQUIRED |
| REV | REVISION/REVISED |
| RGSC | RIGID GALVANIZED STEEL CONDUIT |
| RJ | RESTRAINED JOINT |
| RND | ROUND |
| RO | ROUGH OPENING |
| ROW | RIGHT-OF-WAY |
| RPBP | REDUCED PRESSURE BACKFLOW PREVENTER |
| RPD | REDUCED PRESSURE ZONE BACKFLOW PREVENTER |
| RPM | REVOLUTIONS PER MINUTE |
| RR | RAILROAD |
| RT | RIGHT |

## S

| | |
|---|---|
| S | SOUTH |
| SAN | SANITARY |
| SB | STONE MONUMENT BOUNDARY |
| SCHED | SCHEDULE |
| SD | STORM DRAIN |
| SEC | SECONDS, SECONDARY |
| SECT | SECTION |
| SF | SILT FENCE, SQUARE FEET |
| SHT | SHEET |
| SIM | SIMILAR |
| SLV | SLEEVE |
| SMH | SANITARY SEWER MANHOLE |
| SMPP | SUMP PUMPS |
| SP | SPACE (S, ED) |
| SPDES | STATE POLLUTION DISCHARGE ELIMINATION SYSTEM |
| SPEC | SPECIFICATION, SPECIFIED |
| SQ | SQUARE |
| SR | STATE ROUTE |
| SS | STORM SEWER, STAINLESS STEEL |
| SSC | STAINLESS STEEL CONDUIT |
| SSP | STAINLESS STEEL PIPE |
| STA | STATION |
| STD | STANDARD |
| STIC | SHANDAKEN TUNNEL INTAKE CHAMBER |
| STL | STEEL (PIPE) |
| STRUC | STRUCTURE (S, URAL) |
| SWPPP | STORMWATER POLLUTION PREVENTION PLAN |
| SYM | SYMMETRICAL |

## T

| | |
|---|---|
| T | TANK |
| T&B | TOP AND BOTTOM |
| TAN | TANGENCY/TANGENT |
| TD | TRENCH DRAIN |
| TEL | TELEPHONE |
| TEMP | TEMPERATURE, TEMPORARY |
| THD | THREADED |
| THK | THICK(NESS) |
| TOB | TOP OF BERM/BANK |
| TOC | TOP OF CONCRETE/CURB |
| TOF | TOP OF FOOTING |
| TOW | TOP OF WALL |
| TP | TURNING POINT |
| TR | TRIANGULATION POINT |
| TRM | TURF REINFORCEMENT MATTING |
| TYP | TYPICAL |

## U

| | |
|---|---|
| U/S | UPSTREAM |
| UD | UNDERDRAIN |
| UGC | UPPER GATE CHAMBER |
| UGND | UNDERGROUND |
| UNO | UNLESS NOTED OTHERWISE |

## V

| | |
|---|---|
| V | VOLTS, VERTICAL (AS SLOPE) |
| VAR | VARIOUS/VARIABLE |
| VB | VALVE BOX, VAPOR BARRIER |
| VC | VERTICAL CURVE |
| VCP | VITRIFIED CLAY PIPE |
| VERT | VERTICAL |
| VIF | VERIFIED IN FIELD |

## W

| | |
|---|---|
| W | WEST/WIDE FLANGE |
| W/ | WITH |
| W/A | WHERE APPLICABLE |
| W/O | WITHOUT |
| WH | WALL HYDRANT |
| WL | WATER LEVEL |
| WM | WATER MAIN |
| WP | WELDED PIPE |
| WS | WATER SURFACE, WATERSTOP |
| WT | STEEL TEE-SHAPE DESIGNATION, WEIGHT |
| WWF | WELDED WIRE FABRIC |

## X

## Y

| | |
|---|---|
| YD | YARD |
| YH | YARD HYDRANT |
| YI | YARD INLET |

## Z

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CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

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NEW YORK, NEW YORK 10018

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NYC Environmental Protection

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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
GENERAL
ABBREVIATIONS

DATE: AUGUST 2026
SHEET NO: 4 of 112
DRAWING NO. 475-G-003

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## CONTOURS, STATIONING & ELEVATIONS

| SYMBOL | DESCRIPTION |
|---|---|
| 1050 | EXISTING CONTOURS - MAJOR |
| | EXISTING CONTOURS - MINOR |
| 1050 | NEW CONTOURS - MAJOR |
| | NEW CONTOURS - MINOR |
| 7+50 | EXISTING STATIONING |
| 7+50 | NEW STATIONING |
| × 1024.5 | SPOT ELEVATION - EXISTING |
| × 1024.5 | SPOT ELEVATION - NEW |
| | CONCRETE SLOPE |
| | GRADED SLOPE |

## UTILITY SYMBOLS

| SYMBOL | DESCRIPTION |
|---|---|
| OHE | OVERHEAD ELECTRIC/TELEPHONE - EXISTING |
| | UTILITY POLE - EXISTING |
| | EXISTING LIGHT POLE |
| | EXISTING HYDRANT |
| | EXISTING GATE VALVE |
| | EXISTING MISCELLANEOUS MANHOLE |
| S | EXISTING SANITARY MANHOLE |
| D | EXISTING STORM WATER MANHOLE |
| T | EXISTING TELEPHONE MANHOLE |
| E | EXISTING ELECTRICAL MANHOLE |
| W | EXISTING WATER MANHOLE |
| PI | EXISTING POST, VALVE INDICATOR |
| | EXISTING CATCH BASIN |
| E | EXISTING ELECTRICAL JUNCTION BOX |
| G | EXISTING GAS PUMP STATION |
| | EXISTING STORM SEWER AND INLET |
| | EXISTING STORM SEWER/CULVERT AND ENDWALL |
| | NEW STORM SEWER MANHOLE AND INLET |

## LANDSCAPE SYMBOLS

| SYMBOL | DESCRIPTION |
|---|---|
| | EXISTING TREE LINE |
| | NEW TREE LINE |
| | EVERGREEN TREES - EXISTING |
| | DECIDUOUS TREES - EXISTING |

## BOUNDARY AND MARKER SYMBOLS

| SYMBOL | DESCRIPTION |
|---|---|
| | EXISTING GUIDE RAIL |
| | EDGE OF WATER |
| | COUNTY BOUNDARY |
| | 100-YEAR FLOOD PLAIN |
| LOW | LIMIT OF WORK |
| | 212C LIMIT OF WORK |
| | JERSEY BARRIER |
| X X | FENCE |
| | EXISTING RIGHT OF WAY (R/W) |
| IP | IRON PIPE |
| SB | STONE BOUNDARY |
| TP-1 | TURNING POINT |
| TR-3 | TRIANGULATION POINT |
| 319.8664 BM-A | BENCHMARK |
| CM3 | CONCRETE MONUMENT |

## EROSION AND SEDIMENT CONTROL SYMBOLS

| SYMBOL | DESCRIPTION |
|---|---|
| | TURBIDITY (SILT) CURTAIN |
| PF PF | PROTECTIVE SAFETY FENCE |
| | REINFORCED SILT FENCE |
| | DIVERSION SWALE |
| | FILTER FABRIC DROP INLET PROTECTION |
| T | TEMPORARY ACCESS CULVERT |
| | CURB/YARD INLET PROTECTION |
| | RIPRAP OUTLET |
| | CHECK DAM |
| | TEMPORARY SEDIMENT TRAP W/FILTER |
| | STABILIZED CONSTRUCTION ENTRANCE |
| | SEDIMENT FILTER |

## TRAVELED / ROADWAY SYMBOLS

| SYMBOL | DESCRIPTION |
|---|---|
| | EXISTING PAVED ROAD |
| | EXISTING GRAVEL ROAD |
| | EXISTING DIRT ROAD |
| | EXISTING RAILROAD TRACKS |
| 24' ASPH PAVT | PAVED ROADWAY, SIZE AND TYPE |
| | BRIDGE |
| | BOX CULVERT |
| 2-36" RCP | CULVERT, PIPE SIZES AND TYPE |

## MISCELLANEOUS SYMBOLS

| SYMBOL | DESCRIPTION |
|---|---|
| | EXISTING SIGN |
| A63 | POST-TENSIONED ANCHOR & NUMBER |
| | CONCRETE PEDESTAL |
| | SAND BAG DIKE SYSTEM |
| M13 | SPILLWAY MONOLITH NUMBER |
| GIL-I-1 | EXTENSOMETER & NUMBER |
| | FLAG POLE |
| 12 | STAKING POINT |
| FP | FALL PROTECTION SYSTEM |
| | HANDRAIL |
| SEE DWG C-CW-001 OR C-CW-002 FOR BORING LEGEND | CORE BORING & NUMBER |
| SEE DWG I-CG-101 & I-CG-102 FOR INSTRUMENTATION LEGEND | INSTRUMENT TYPE & NUMBER |
| | APPROX/ASSUMED TOP OF ROCK |

## DRAWING, SECTION AND DETAIL TITLES

SECTION NUMBER (ALPHABET) — A — 475-S-201 — SECTION — SCALE: 1/2"=1'-0"
SHEET WHERE SECTION FIRST CUT IS TAKEN

DETAIL NUMBER (NUMERICAL) — 1 — 475-S-206 — DETAIL — SCALE: 1"=1'-0"
SHEET WHERE DETAIL IS TAKEN

DESCRIPTION OF TITLE — PLAN — SCALE: 1/2"=1'-0"

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SECTION LINE — C — 475-S-204 — SECTION ID
SHEET WHERE SECTION IS SHOWN.

## SECTION SYMBOL

## HATCH PATTERNS

| PATTERN | DESCRIPTION | PATTERN | DESCRIPTION |
|---|---|---|---|
| | SIPHON | | EXISTING REINFORCED CONCRETE |
| | NO HEAVY EQUIPMENT | | TO BE REMOVED/DEMOLISHED |
| | CONCRETE | | CLEARING AND GRUBBING |
| | WETLANDS | | SLOPE MATTING |
| | 50-FT WETLAND BUFFER ZONE | | GRAVEL ROADWAY |

GENERAL NOTE:

SCREENED-BACK GREY LINES REPRESENT EXISTING FEATURES, WHEREAS BLACK LINEWORK IS GENERALLY INTENDED TO DEPICT NEW CONSTRUCTION OR DEMOLITION AS INDICATED. THE ABOVE LINEWORK / SCREENING MAY VARY ON ISOMETRIC VIEWS

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PORTFOLIO MANAGER: GEORGE SCHMITT, PE

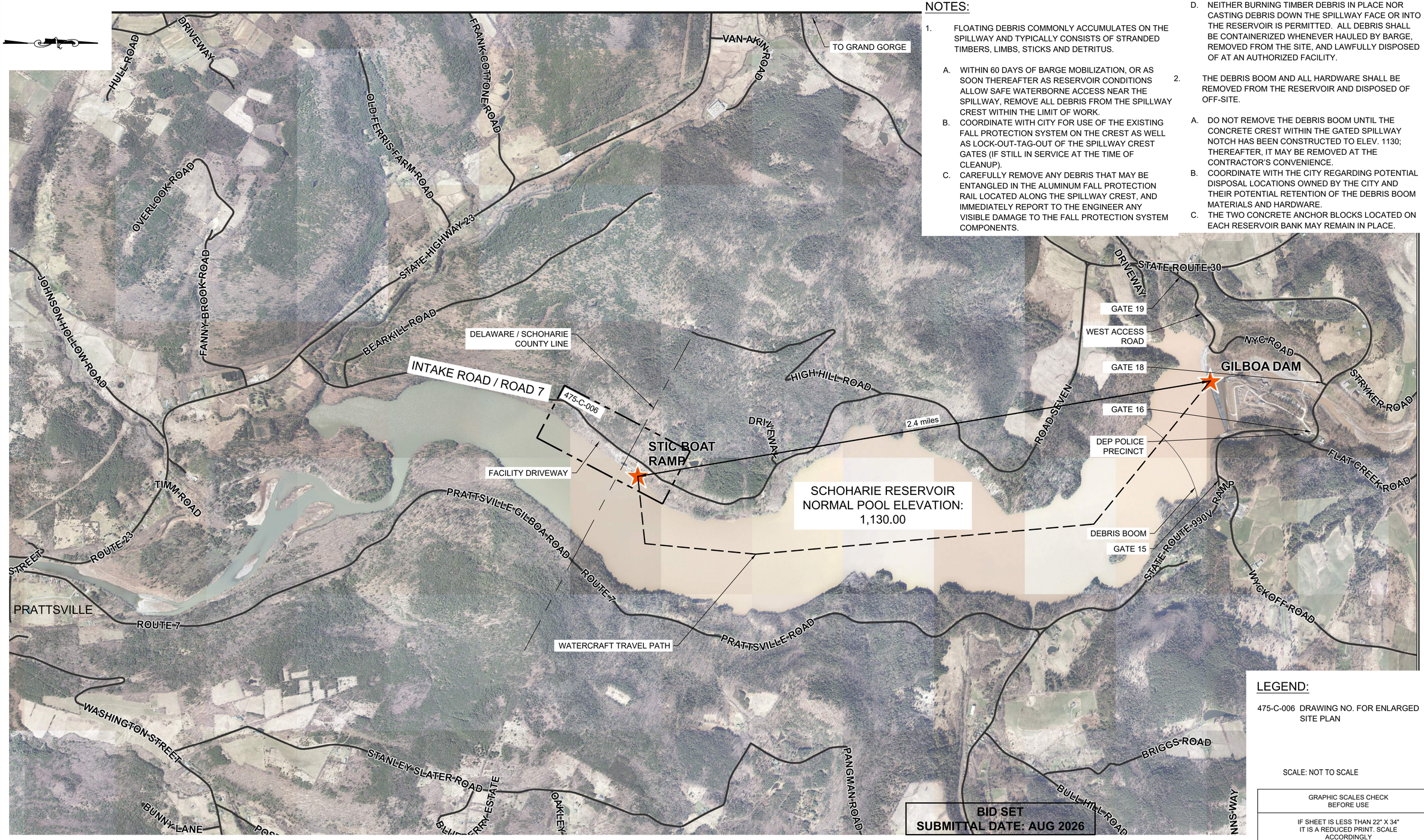
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
GENERAL
SYMBOLS

DATE: AUGUST 2026
SHEET NO: 5 of 112
DRAWING NO. 475-G-004

Last Saved By: JStone
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Drawing File Name & Drive Location: C:\Users\JStone\DOCACCDocs\Hazen and Sawyer\90441-001_CAT-475-DES Gilboa Dam HLO\Project Files\07_Design\General\475-G-004.dwg
Last Date Saved: 7/30/2026 9:05 AM
Date & Time Plotted: 8/6/2026 8:03 AM
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## NOTES:

1. FLOATING DEBRIS COMMONLY ACCUMULATES ON THE SPILLWAY AND TYPICALLY CONSISTS OF STRANDED TIMBERS, LIMBS, STICKS AND DETRITUS.
   - A. WITHIN 60 DAYS OF BARGE MOBILIZATION, OR AS SOON THEREAFTER AS RESERVOIR CONDITIONS ALLOW SAFE WATERBORNE ACCESS NEAR THE SPILLWAY, REMOVE ALL DEBRIS FROM THE SPILLWAY CREST WITHIN THE LIMIT OF WORK.
   - B. COORDINATE WITH CITY FOR USE OF THE EXISTING FALL PROTECTION SYSTEM ON THE CREST AS WELL AS LOCK-OUT-TAG-OUT OF THE SPILLWAY CREST GATES (IF STILL IN SERVICE AT THE TIME OF CLEANUP).
   - C. CAREFULLY REMOVE ANY DEBRIS THAT MAY BE ENTANGLED IN THE ALUMINUM FALL PROTECTION RAIL LOCATED ALONG THE SPILLWAY CREST, AND IMMEDIATELY REPORT TO THE ENGINEER ANY VISIBLE DAMAGE TO THE FALL PROTECTION SYSTEM COMPONENTS.
   - D. NEITHER BURNING TIMBER DEBRIS IN PLACE NOR CASTING DEBRIS DOWN THE SPILLWAY FACE OR INTO THE RESERVOIR IS PERMITTED. ALL DEBRIS SHALL BE CONTAINERIZED WHENEVER HAULED BY BARGE, REMOVED FROM THE SITE, AND LAWFULLY DISPOSED OF AT AN AUTHORIZED FACILITY.
2. THE DEBRIS BOOM AND ALL HARDWARE SHALL BE REMOVED FROM THE RESERVOIR AND DISPOSED OF OFF-SITE.
   - A. DO NOT REMOVE THE DEBRIS BOOM UNTIL THE CONCRETE CREST WITHIN THE GATED SPILLWAY NOTCH HAS BEEN CONSTRUCTED TO ELEV. 1130; THEREAFTER, IT MAY BE REMOVED AT THE CONTRACTOR'S CONVENIENCE.
   - B. COORDINATE WITH THE CITY REGARDING POTENTIAL DISPOSAL LOCATIONS OWNED BY THE CITY AND THEIR POTENTIAL RETENTION OF THE DEBRIS BOOM MATERIALS AND HARDWARE.
   - C. THE TWO CONCRETE ANCHOR BLOCKS LOCATED ON EACH RESERVOIR BANK MAY REMAIN IN PLACE.

## LEGEND:

475-C-006 DRAWING NO. FOR ENLARGED SITE PLAN

SCALE: NOT TO SCALE

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DESIGNED BY: EK
DRAWN BY: WS
CHECKED BY: BH
DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE

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STATE OF NEW YORK EVERETTE H. KNIGHT 086771 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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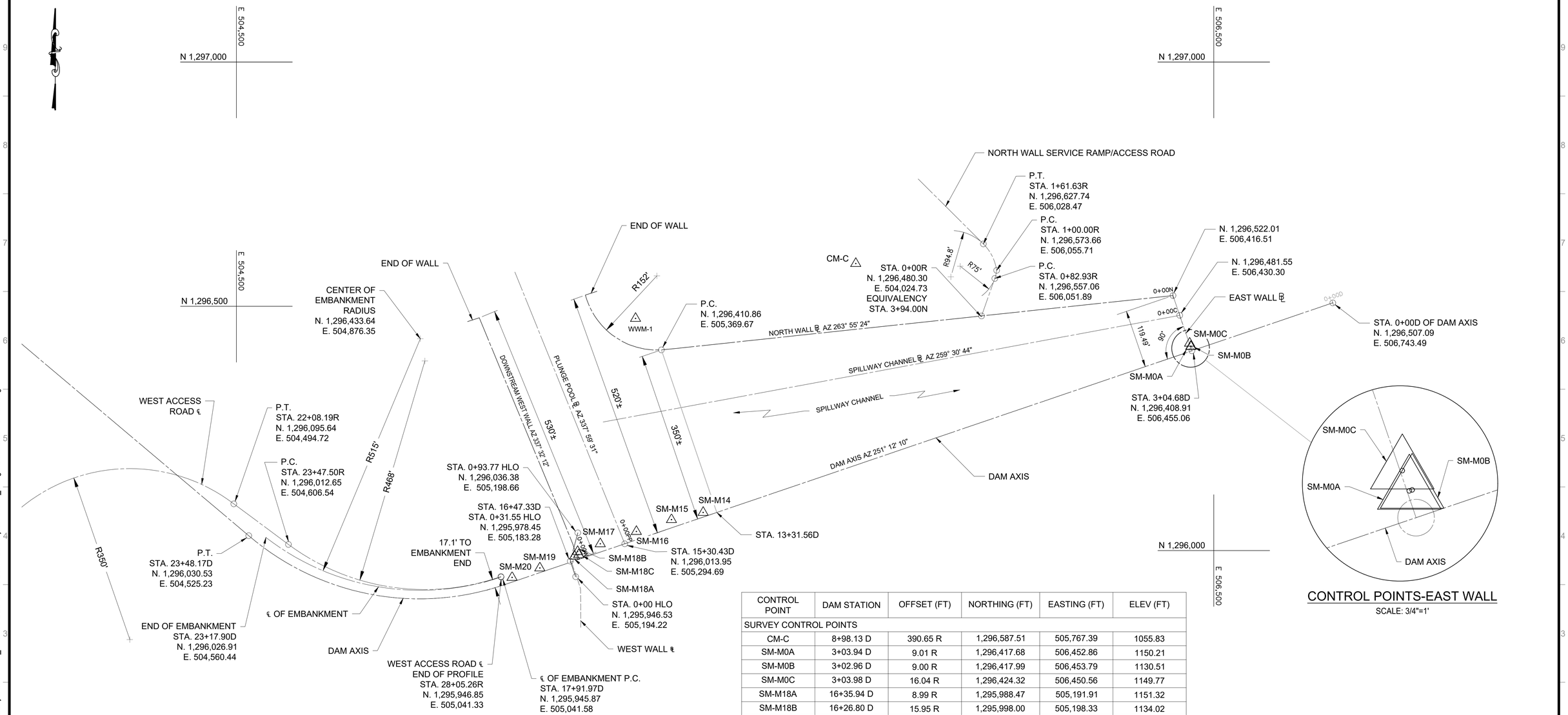
**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**

GENERAL
RESERVOIR PLAN

DATE: AUGUST 2026
SHEET NO: 6 of 112
DRAWING NO. 475-G-005

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Date & Time Plotted: 8/5/2026 5:37 PM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb




## CONTROL POINTS-EAST WALL

SCALE: 3/4"=1'

| CONTROL POINT | DAM STATION | OFFSET (FT) | NORTHING (FT) | EASTING (FT) | ELEV (FT) |
|---|---|---|---|---|---|
| SURVEY CONTROL POINTS | | | | | |
| CM-C | 8+98.13 D | 390.65 R | 1,296,587.51 | 505,767.39 | 1055.83 |
| SM-M0A | 3+03.94 D | 9.01 R | 1,296,417.68 | 506,452.86 | 1150.21 |
| SM-M0B | 3+02.96 D | 9.00 R | 1,296,417.99 | 506,453.79 | 1130.51 |
| SM-M0C | 3+03.98 D | 16.04 R | 1,296,424.32 | 506,450.56 | 1149.77 |
| SM-M18A | 16+35.94 D | 8.99 R | 1,295,988.47 | 505,191.91 | 1151.32 |
| SM-M18B | 16+26.80 D | 15.95 R | 1,295,998.00 | 505,198.33 | 1134.02 |
| SM-M18C | 16+26.87 D | 8.99 R | 1,295,991.39 | 505,200.50 | 1134.04 |
| ADDITIONAL REFERENCE MONUMENTS | | | | | |
| SM-M14 | 13+57.85 D | 8.99 R | 1,296,078.07 | 505,455.17 | 1130.13 |
| SM-M15 | 14+23.95 D | 15.99 R | 1,296,063.40 | 505,390.34 | 1122.50 |
| SM-M16 | 14+99.83 D | 15.99 R | 1,296,038.95 | 505,318.51 | 1122.47 |
| SM-M17 | 15+77.90 D | 15.98 R | 1,296,013.79 | 505,244.60 | 1122.48 |
| SM-M19 | 17+10.89 D | 8.99 R | 1,295,964.32 | 505,120.96 | 1150.84 |
| SM-M20 | 17+70.91 D | 8.99 R | 1,295,944.98 | 505,064.14 | 1150.71 |

NOTES:

1. DIMENSIONS SHOWN FROM DAM BASELINE TO POINTS ON WALLS ARE APPROXIMATE, BASED ON INFORMATION FROM ORIGINAL CONSTRUCTION DRAWINGS.
2. CONTROL POINT DATA: ROUND BRASS DISKS SET ON DAM CREST. WWM-1: NEAR WESTERN END OF NORTH TRAINING WALL - CONCRETE PEDESTAL WITH STEEL MOUNTING BRACKET FOR SURVEY INSTRUMENT.
3. DO NOT DAMAGE OR DISTURB EXISTING MONUMENTS.
4. HORIZONTAL CONTROL IS REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM, EAST ZONE, BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD 83). VERTICAL CONTROL IS REFERENCED TO THE "BWS DATUM" SUBTRACT 1.47' FROM PROJECT DATUM TO EQUAL NAVD88.

REF. CONTRACT 203 WORKING DRAWINGS
SHEET 6A (ACC. 27010)
AND SHEET 6B (ACC. 27482)
AND SHEET 6G (ACC. 29599)

0 100 200 FT.
1"=100'

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: BH
DRAWN BY: JS
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

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NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
GENERAL
DAM ALIGNMENT / LAYOUT
PLAN

DATE: AUGUST 2026
SHEET NO: 7 of 112
DRAWING NO. 475-G-006

ALL INQUIRIES REGARDING THIS DRAWING(S) OR PROJECT SHOULD BE MADE TO NYC ENVIRONMENTAL PROTECTION, BUREAU OF ENGINEERING DESIGN AND CONSTRUCTION.

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Date & Time Plotted: 8/6/2026 8:03 AM
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## DIVERSION DURING CONSTRUCTION NARRATIVE

REFER TO SPECIFICATION SECTION 02 68 00 - WORK ON RESERVOIR AND DIVERSION OF WATER, FOR ADDITIONAL INFORMATION.

BACKGROUND INFORMATION

1. THE RESERVOIR IMPOUNDED BY GILBOA DAM HAS THREE EXISTING FACILITIES THAT WERE DESIGNED TO TRANSFER WATER OUT OF THE RESERVOIR:

   a. A 1,324-FOOT-LONG BROAD-CRESTED SPILLWAY ON THE DAM. EXCEPT FOR RECENT MODIFICATIONS AS NOTED BELOW, THE HISTORICAL FIXED CREST LEVEL WAS ELEVATION 1130.0±, AND IT HAD NO HYDRAULIC CONTROLS.
   b. THE SHANDAKEN TUNNEL INTAKE CHAMBER (STIC) CURRENTLY DIVERTS WATER FROM THE RESERVOIR TO THE NEW YORK CITY WATER SUPPLY SYSTEM VIA THE SHANDAKEN TUNNEL, WHICH DISCHARGES TO ESOPUS CREEK AND WHICH IN TURN FEEDS INTO ASHOKAN RESERVOIR, WHERE IT ENTERS A SEPARATE WATER SUPPLY TUNNEL LEADING TO THE NEW YORK CITY WATER DISTRIBUTION SYSTEM. THE SHANDAKEN TUNNEL'S FLOW CAPACITY IS RELATIVELY LOW COMPARED TO STORM INFLOWS TO THE SCHOHARIE RESERVOIR. THE SHANDAKEN TUNNEL WILL NOT BE OPERATED BY THE CITY TO REGULATE THE RESERVOIR LEVEL TO FACILITATE THE CONTRACTOR'S OPERATIONS UNDER CONTRACT CAT-475.
   c. A LOW-LEVEL OUTLET FACILITY (LLO) HAS BEEN CONSTRUCTED UNDER CONSTRUCTION CONTRACT CAT-212C, WHICH INCLUDES A GATE SHAFT EAST OF ROUTE 990V NEAR THE END OF THE SPILLWAY AND A VALVE BUILDING ON THE EAST BANK OF THE SCHOHARIE CREEK DOWNSTREAM OF THE PLUNGE POOL. THE LLO MIGHT BE USED TO MAKE MANDATED CONSERVATION RELEASES INTO SCHOHARIE CREEK UNTIL THE NEW HIGH LEVEL RELEASE TOWER (HLRT) IS COMPLETED UNDER CONTRACT CAT-475, BUT IT WILL NOT BE OPERATED BY THE CITY TO REGULATE THE RESERVOIR LEVEL TO FACILITATE THE CONTRACTOR'S OPERATIONS UNDER CONTRACT CAT-475.

2. THE FOLLOWING SPILLWAY MODIFICATIONS HAVE BEEN MADE UNDER RECENT CONSTRUCTION CONTRACTS, WHICH AFFECTED THE FACILITY'S DISCHARGE CAPACITY:
   a. DURING FEBRUARY 11-21, 2006, A SPILLWAY NOTCH WAS DEMOLISHED TO A DEPTH OF APPROXIMATELY 5 FEET ACROSS THE 221-FOOT COMBINED WIDTH OF MONOLITHS M15, M16 AND M17.
   b. IN 2011, THE EXISTING INFLATABLE CREST GATE SYSTEM WAS INSTALLED WITHIN THE SPILLWAY NOTCH (CONTRACT CAT-359), WHICH SUBSEQUENTLY ALLOWED SEASONAL VARIATION OF THE SPILLWAY'S HYDRAULIC CONTROL LEVEL AT EITHER ELEVATION 1130.0± (GATES UP) OR 1125.1 (GATES DOWN). THIS INFLATABLE GATE SYSTEM SHALL BE REMOVED UNDER CONTRACT CAT-475.
   c. TWO GENERATIONS OF A TEMPORARY SIPHON SYSTEM WERE INSTALLED BEGINNING IN MARCH 2006. THE SIPHONS HAVE BEEN RECENTLY DECOMMISSIONED UNDER CONSTRUCTION CONTRACT CAT-212C.
   d. DURING 2011-2014, SPILLWAY RECONSTRUCTION UNDER CONTRACT CAT-212B NECESSITATED A PHASED TEMPORARY COFFERDAM INSTALLATION THROUGHOUT THE SPILLWAY'S WIDTH. RECONSTRUCTION OF THE SPILLWAY CREST RESULTED IN AN AS-BUILT FIXED CREST ELEVATION 1130.1±. THE 24-FOOT-WIDE SPILLWAY CREST AT MONOLITH M18 WAS ALSO PERMANENTLY RAISED FROM ELEVATION 1130.0 TO 1134.0.

3. WHEN THE INFLATABLE CREST GATES AT THE WEST END OF THE SPILLWAY ARE FULLY LOWERED, THE FLOW CAPACITY THROUGH THE GATED NOTCH (MONOLITHS M15, M16 & M17) IS ESTIMATED TO BE APPROXIMATELY 7,300 CUBIC FEET PER SECOND (CFS) WITH A CORRESPONDING POOL LEVEL OF 1130.0±. ABOVE POOL LEVEL 1130.0±, THE REMAINDER OF THE SPILLWAY CREST WOULD BEGIN TO SPILL THROUGH ITS LOWEST AREAS. 7,300 CFS IS ESTIMATED TO BE APPROXIMATELY THE PEAK OUTFLOW FOR A 2-YEAR FLOOD FOR THIS PARTICULAR CREST CONFIGURATION. SPILLWAY FLOWS EXCEEDING THE GATED NOTCH'S CAPACITY WITH GATES DOWN WILL ALSO OVERTOP THE SPILLWAY'S FIXED CREST AT AVERAGE EL. 1130.13.

4. UPON NOTICE TO PROCEED, THE CITY SHALL RELINQUISH ITS USUAL OPERATION OF THE INFLATABLE CREST GATES. AT CONTRACTOR'S DISCRETION, CITY MAY BE ALLOWED TO CONTINUE USUAL GATE OPERATIONS UNTIL SUCH TIME AS IT INTERFERES WITH CONTRACTOR'S INTENDED WORK SEQUENCE.

5. IN THE EVENT THAT THE CONTRACTOR PERMITS THE CITY TO OPERATE THE INFLATABLE CREST GATES, THE CITY SHALL BE SOLELY RESPONSIBLE FOR PHYSICALLY OPERATING THE INFLATABLE CREST GATES.

## FREQUENCY AND PROBABILITIES OF RESERVOIR LEVELS

1. TO DETERMINE THE HISTORIC FREQUENCY OF SPILLWAY FLOWS, A SIMPLE STATISTICAL ANALYSIS WAS PERFORMED ON RESERVOIR LEVEL RECORDS COLLECTED BY THE U.S. GEOLOGICAL SURVEY (USGS), AS RECORDED BY GAGE NO. 01350100. RECORDS WERE GROUPED BY MONTH TO OBTAIN THE RELATIONSHIP BETWEEN PROBABILITY OF EXCEEDANCE AND RESERVOIR ELEVATION. RESULTS OF THESE STATISTICAL ANALYSES ARE SUMMARIZED ON DWGS 475-G-101 AND 475-G-102.

2. THESE STATISTICS DO NOT DIFFERENTIATE THE INFLUENCES OF THE SPILLWAY MODIFICATIONS NOTED ABOVE THAT EACH AFFECTED, TO SOME DEGREE, BOTH THE NORMAL POOL LEVEL AND THE RESERVOIR'S RESPONSE TO FLOOD INFLOWS. HISTORIC RESERVOIR LEVELS ALSO REFLECT THE INFLUENCE OF SHANDAKEN TUNNEL WATER SUPPLY WITHDRAWALS, WHICH VARY SEASONALLY BUT ARE LIMITED TO A MAXIMUM OF APPROXIMATELY 900 CFS.

3. IN ADDITION TO THE USGS RESERVOIR LEVEL GAGE NO. 01350100, CONTRACTOR'S ATTENTION IS DRAWN TO USGS STREAM GAGE NO. 01350101, LOCATED NEAR THE RTE. 990V BRIDGE JUST DOWNSTREAM OF THE DAM, WHICH PROVIDES HISTORICAL SCHOHARIE CREEK STREAMFLOW DATA THAT CONSISTS PRIMARILY OF GILBOA DAM DISCHARGE FLOWS.

## DIVERSION AND CARE OF WATER REQUIREMENTS

1. THE RESERVOIR LEVEL WILL VARY SUBSTANTIALLY DURING THE CONTRACT PERIOD IN RESPONSE TO NATURAL INFLOW TO SCHOHARIE CREEK AND THE CITY'S DAILY WATER SUPPLY WITHDRAWALS. THE CONTRACTOR SHALL PLAN HIS WORK TO ACCOMMODATE THESE FLUCTUATIONS.

2. THE CONTRACTOR SHALL NOT EXPECT THE RESERVOIR LEVEL TO BE MANIPULATED BY THE CITY TO FACILITATE CONSTRUCTION AT ANY TIME DURING THE WORK OF CONTRACT CAT-475.

3. AT LEAST FOUR WORK AREAS WILL REQUIRE TEMPORARY DIVERSION OF WATER:

   a. HIGH LEVEL RELEASE TOWER (HLRT),
   b. DOWNSTREAM TEMPORARY WORK PLATFORM AND ASSOCIATED TEMPORARY ACCESS STAIRS ON THE SPILLWAY STEPS AT MONOLITH M18 (SHOWN CONCEPTUALLY ON DRAWING 475-C-021),
   c. GATED SPILLWAY NOTCH IN MONOLITHS M15, M16 AND M17, AND
   d. PLUNGE POOL END SILL.

4. HLRT: A COFFERDAM SYSTEM THAT IS INTEGRAL WITH THE EXTERIOR CONCRETE FORMWORK FOR THE HLRT IS INCLUDED IN THE DESIGN SHOWN ON THESE DRAWINGS.

   a. THE COFFERDAM SHALL EXTEND TO A MINIMUM ELEVATION 1140.0 AND BE RETAINED FOR THE DURATION OF HLRT CONSTRUCTION UP TO THAT LEVEL.
   b. ANY PROPOSED VARIATION IN THE HLRT COFFERDAM DESIGN DETAILS SHOWN ON THESE DRAWINGS SHALL BE DEVELOPED BY THE CONTRACTOR, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, AND SUBMITTED FOR ENGINEER REVIEW FOR CONSISTENCY WITH PROJECT OBJECTIVES AND OTHER CONTRACT REQUIREMENTS.
   c. DURING FLOOD EVENTS THAT EXCEED ELEVATION 1140.0, THE HLRT COFFERDAM SHOULD BE EXPECTED TO OVERTOP, POTENTIALLY INUNDATING THE INTERIOR HLRT CHAMBERS AND SPILLING THROUGH THE HLRT PIPE TUNNEL.

5. TUNNELING: TUNNELING ACTIVITIES THROUGH THE SPILLWAY FOR THE HLRT PIPE SHALL RETAIN AN UNTUNNELED LENGTH OF AT LEAST 20 FEET UNTIL SUCH TIME AS THE HLRT COFFERDAM HAS BEEN FULLY ERECTED, DEWATERED, INSPECTED, AND ACCEPTED BY THE ENGINEER.

6. GATED SPILLWAY NOTCH AT MONOLITHS M15, M16 & M17, DOWNSTREAM TEMPORARY WORK PLATFORM, AND DOWNSTREAM HLO OUTFALL ACCESS STAIRWAY AT MONOLITH M18:

   a. THE SPILLWAY STEPS DOWNSTREAM OF MONOLITH M18 ARE SHIELDED FROM DIRECT SPILLWAY OVERTOPPING BY MONOLITH M18'S HIGHER CREST ELEVATION, 1134.0. NONETHELESS, FLOW THROUGH THE GATED NOTCH CAN, TO SOME DEGREE, SPLASH AND SPREAD LATERALLY ONTO THE WORK AREA AT THE M18 DOWNSTREAM SPILLWAY STEPS, POTENTIALLY AFFECTING THE DOWNSTREAM TEMPORARY WORK PLATFORM.
   b. AT THE CONTRACTOR'S OPTION, THE CONDITIONS DESCRIBED UNDER 6.a. CAN BE MITIGATED WHEN AT LEAST THE WESTERN PORTION OF A TEMPORARY COFFERDAM AND/OR FORMWORK IS EMPLACED AT THE GATED NOTCH. ALTERNATIVELY, A TEMPORARY DIVERSION WALL COULD BE CONSTRUCTED ALONG THE MONOLITH M17/M18 JOINT. THE DOWNSTREAM TEMPORARY DIVERSION WALL LOCATION IS SHOWN CONCEPTUALLY ON DRAWING 475-C-021.
   c. CONTRACTOR IS RESPONSIBLE FOR DESIGNING, INSTALLING, AND REMOVING TEMPORARY DIVERSION FEATURES THAT ARE NEEDED TO PROTECT THE GATED SPILLWAY NOTCH WORK AREA, THE MONOLITH M18 SPILLWAY STEPS WORK AREA AND THE DOWNSTREAM TEMPORARY WORK PLATFORM.
   d. THE COFFERDAM SHALL BE INSTALLED ACROSS THE GATED NOTCH AND ACCEPTED BY THE CITY PRIOR TO THE CONTRACTOR COMMENCING ANY WORK THAT DISABLES THE CREST GATES. UPON INSTALLATION OF THE COFFERDAM, THE CONTRACTOR WILL BE FREE TO OPERATE THE GATES AS NECESSARY, WITHOUT CITY INVOLVEMENT, TO FACILITATE THE GATE'S FINAL REMOVAL.
   e. DURING WORK IN THE GATED SPILLWAY NOTCH AREA, THE MINIMUM REQUIRED LEVEL OF PROTECTION ALONG THE SPILLWAY CREST / UPSTREAM DAM FACE IS ELEVATION 1132.0.
   f. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE DOWNSTREAM TEMPORARY WORK PLATFORM AND TEMPORARY ACCESS STAIRS.

7. END SILL WORK AREA: THE PLUNGE POOL AND END SILL ARE SUBJECT TO A CONTINUOUS DISCHARGE FROM THE TWO SPILLWAY CHANNEL UNDERDRAINS REGARDLESS OF THE RESERVOIR LEVEL (SEE DWG 475-C-008). IN THE ABSENCE OF SPILLWAY FLOW, UNDERDRAIN DISCHARGE HAS HISTORICALLY BEEN OBSERVED TO PASS THROUGH THE 30-INCH-WIDE NOTCH IN THE END SILL WHEN THE STOPLOGS ARE REMOVED FROM THE NOTCH. AT THE CONTRACTOR'S DISCRETION, CONTRACTOR MAY REMOVE THE END SILL STOPLOGS AS NEEDED. WORK AT THE END SILL SHALL BE PERFORMED DURING PERIOD(S) WHEN THE RESERVOIR IS AT REDUCED RISK OF OVERTOPPING THE SPILLWAY.

8. DURING PERIODS OF HIGH SPILLWAY FLOW, LIMIT OR TEMPORARILY SUSPEND CONSTRUCTION WORK WITHIN THE SPILLWAY AND DOWNSTREAM CHANNEL, AS WELL AS ANY USE OF UPSTREAM WATERCRAFT SUPPORT NEAR THE SPILLWAY CREST. REFER TO SPECIFICATION SECTION 02 68 00 - DIVERSION OF WATER, FOR ADDITIONAL COORDINATION REQUIREMENTS IN THIS REGARD.

9. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FLOOD IMPACTS AND ANY ASSOCIATED DAMAGE TO EXISTING FEATURES OR TO NEW PERMANENT OR TEMPORARY WORK FOR RESERVOIR POOL LEVELS UP TO ELEVATION 1132.0.

## SUGGESTED CONSTRUCTION SEQUENCE RELATED TO TEMPORARY DIVERSION OF WATER

1. A SUGGESTED SEQUENCE OF CONSTRUCTION AS IT RELATES TO TEMPORARY FLOW DIVERSION IS AS FOLLOWS:

   a. ERECT TEMPORARY DIVERSION COFFERDAM ACROSS THE UPSTREAM FACE OF THE GATED SPILLWAY NOTCH TO FACILITATE CONSTRUCTION OF THE DOWNSTREAM TEMPORARY WORK PLATFORM AND HLRT PIPE TUNNELING OPERATIONS.

   b. ERECT THE COFFERDAM/FORMWORK FOR THE HLRT.

   c. COMPLETE THE HLRT PIPE TUNNELING OPERATIONS, PIPE INSTALLATION, AND INSTALLATION OF PERMANENT ACCESS STAIRWAYS AT MONOLITH M18, AND THEN REMOVE THE DOWNSTREAM TEMPORARY WORK PLATFORM.

   d. REMOVE INFLATABLE GATE SYSTEM FROM MONOLITHS M15, M16, AND M17 AND CONSTRUCT THE RAISED CONCRETE SPILLWAY CREST (INCLUDING THE CONCRETE VANES AND SPILLWAY STEPS MODIFICATIONS) AT ANYTIME DURING STEPS 2 AND 3.

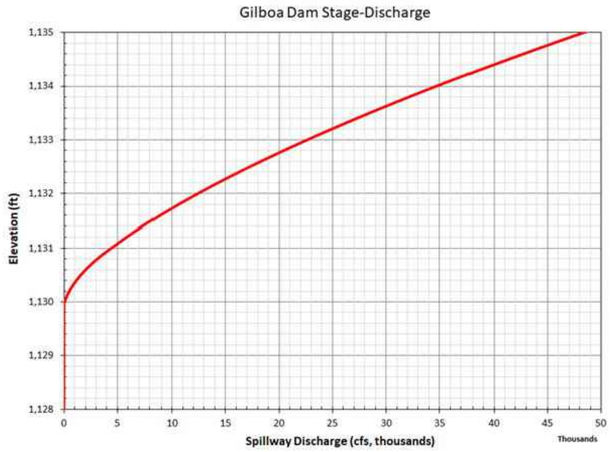
   e. REMOVE THE TEMPORARY DIVERSION COFFERDAM AT THE UPSTREAM FACE OF THE GATED SPILLWAY NOTCH, RESTORING USUAL SPILLWAY DISCHARGE.

   f. COMPLETE THE HLRT ABOVE NORMAL POOL EL. 1130.0.

   g. WORK AT THE PLUNGE POOL END SILL CAN BE PERFORMED AT THE CONTRACTOR'S DISCRETION DURING PERIODS OF LOW FLOW OR NO FLOW OVER THE SPILLWAY.

2. CONTRACTOR SHALL SUBMIT A DIVERSION OF WATER PLAN AS SPECIFIED IN SECTION 02 68 00 - DIVERSION OF WATER, WHICH SHALL ALSO DETAIL ANY ALTERATIONS TO THE SEQUENCE SUGGESTED ABOVE.

3. WORK IN A GIVEN AREA MAY BE INTERRUPTED BY SEASONAL VARIATIONS, CLIMATE CONDITIONS OR OTHER SEQUENCING THAT MAY NECESSITATE MODIFYING THE APPROACH OR THE ORDER OF WORK FROM THAT SHOWN ON THESE DRAWINGS.




NOTE: GRAPH REPRESENTS CREST GATES IN THE RAISED POSITION.

**BID SET**
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SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK · CHRISTOPHER S. BAILEY · 086350-01 · LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**
GENERAL
TEMPORARY DIVERSION OF WATER
NOTES AND REQUIREMENTS

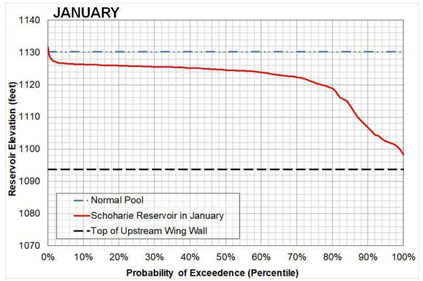
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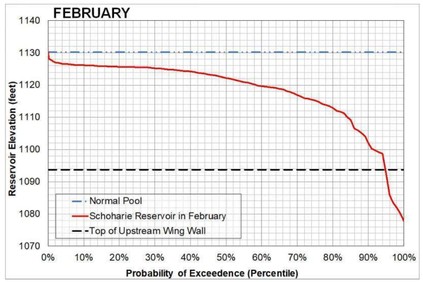
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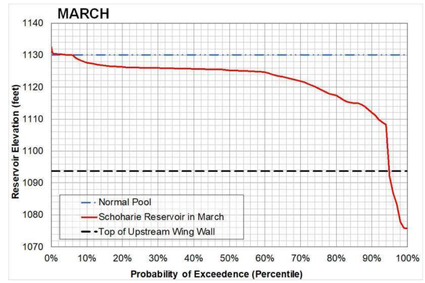
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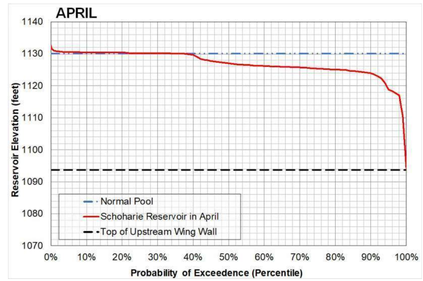
# RESERVOIR ELEVATION PROBABILITY CHARTS

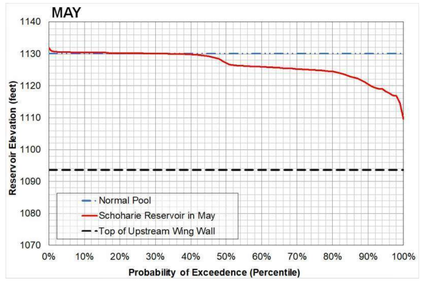
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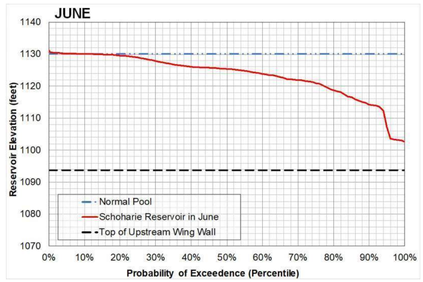


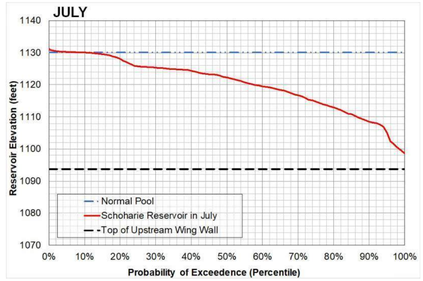



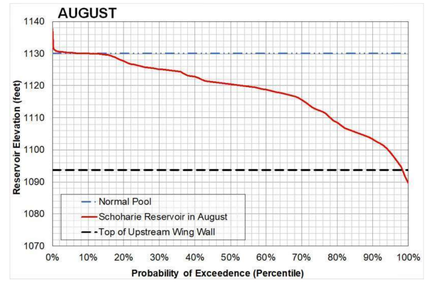



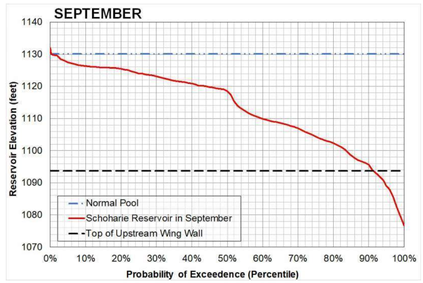



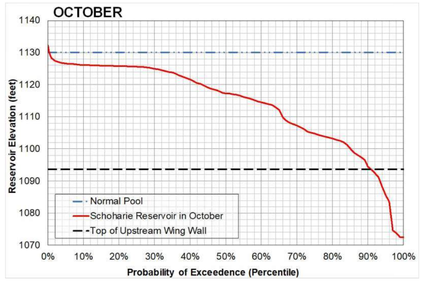



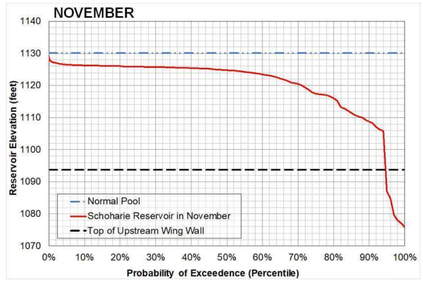



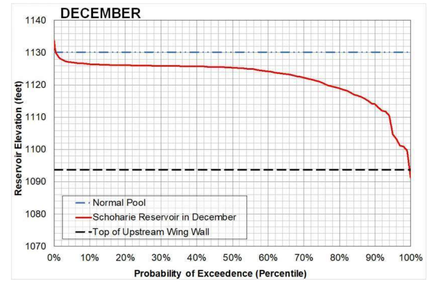




## TABLE 1: RESERVOIR LEVELS FOR VARIOUS EXCEEDANCE PROBABILITIES, BY MONTH

| MONTH | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 99% |
|---|---|---|---|---|---|---|---|---|---|
| JAN | 1127.8 | 1126.5 | 1126.3 | 1125.8 | 1124.5 | 1120.6 | 1105.7 | 1102.5 | 1100.0 |
| FEB | 1127.6 | 1126.4 | 1126.1 | 1125.5 | 1122.2 | 1115.2 | 1100.3 | 1092.6 | 1080.2 |
| MAR | 1130.4 | 1130.0 | 1127.7 | 1126.1 | 1125.3 | 1119.6 | 1111.3 | 1092.1 | 1075.9 |
| APR | 1131.0 | 1130.5 | 1130.4 | 1130.3 | 1127.0 | 1125.4 | 1123.5 | 1118.7 | 1110.4 |
| MAY | 1130.8 | 1130.5 | 1130.4 | 1130.2 | 1127.1 | 1124.9 | 1119.8 | 1118.3 | 1114.5 |
| JUN | 1130.5 | 1130.2 | 1130.1 | 1128.9 | 1125.4 | 1120.9 | 1114.1 | 1107.3 | 1103.1 |
| JUL | 1130.7 | 1130.2 | 1130.0 | 1125.8 | 1122.2 | 1114.7 | 1108.3 | 1105.1 | 1099.6 |
| AUG | 1130.8 | 1130.2 | 1130.1 | 1126.1 | 1120.5 | 1112.2 | 1102.7 | 1099.1 | 1091.9 |
| SEP | 1129.8 | 1127.1 | 1126.4 | 1124.0 | 1118.5 | 1104.4 | 1093.9 | 1089.1 | 1079.5 |
| OCT | 1128.2 | 1126.5 | 1126.2 | 1125.6 | 1117.4 | 1104.7 | 1093.5 | 1085.7 | 1072.6 |
| NOV | 1127.3 | 1126.5 | 1126.3 | 1125.9 | 1124.7 | 1117.4 | 1108.2 | 1087.1 | 1077.2 |
| DEC | 1129.1 | 1126.8 | 1126.5 | 1126.0 | 1125.4 | 1120.7 | 1113.0 | 1104.7 | 1099.7 |

NOTE:

1. PERIOD OF RECORD FOR THIS DATA ANALYSIS IS 10/01/2007 THROUGH 9/23/2024, USING 15-MINUTE DATA FROM USGS GAGE NO. 0135010, WITH SPILLWAY CREST NOTCH PRESENT IN MONOLITHS M15-M17.

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DRAWN BY: JS
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

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TEMPORARY DIVERSION OF WATER
POOL LEVEL DATA, SHEET 1 OF 2

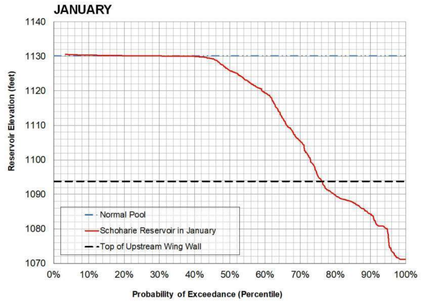
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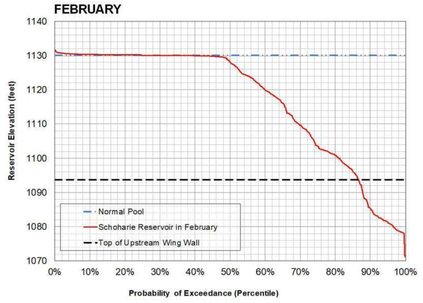
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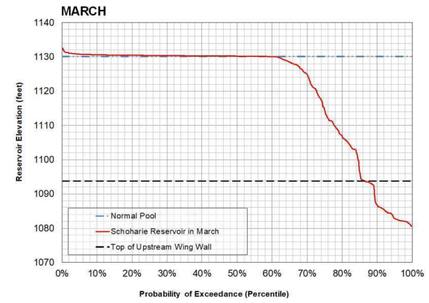
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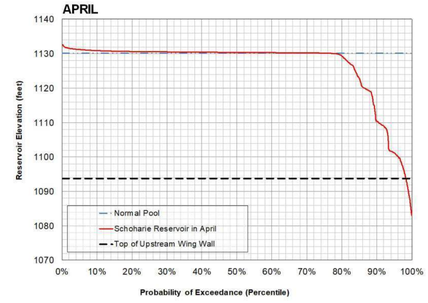
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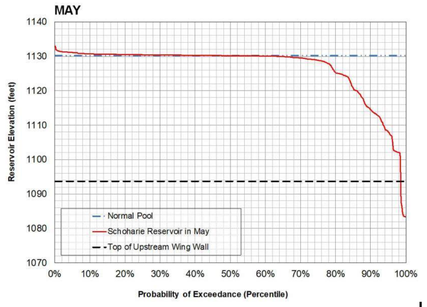
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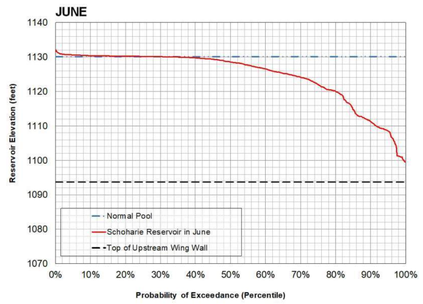


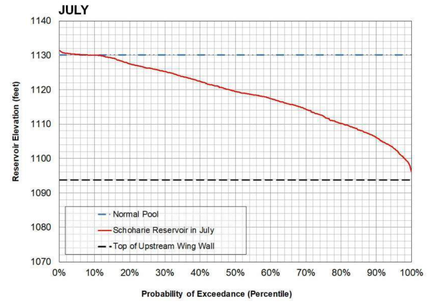



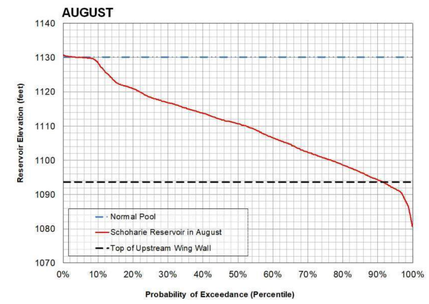



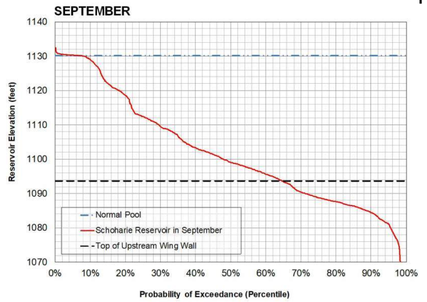



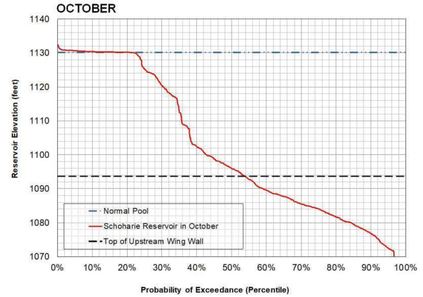



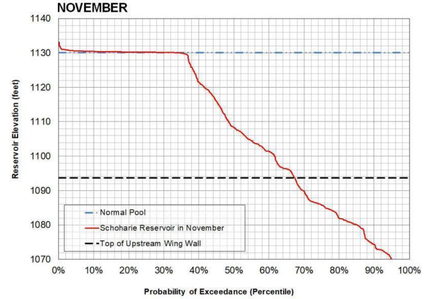



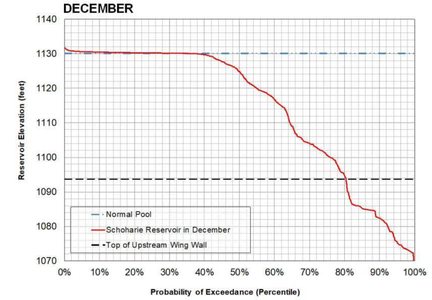




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| MONTH | 1% | 5% | 10% | 25% | 50% | 75% | 90% | 95% | 99% |
|---|---|---|---|---|---|---|---|---|---|
| JAN | 1131.2 | 1130.4 | 1130.3 | 1130.1 | 1125.9 | 1095.7 | 1083.0 | 1078.9 | 1071.2 |
| FEB | 1130.8 | 1130.4 | 1130.3 | 1130.1 | 1128.1 | 1103.6 | 1083.9 | 1081.3 | 1078.5 |
| MAR | 1131.3 | 1130.7 | 1130.6 | 1130.4 | 1130.2 | 1114.5 | 1086.0 | 1082.9 | 1081.5 |
| APR | 1131.8 | 1131.2 | 1130.9 | 1130.6 | 1130.4 | 1130.2 | 1109.6 | 1101.2 | 1090.1 |
| MAY | 1131.5 | 1130.9 | 1130.7 | 1130.5 | 1130.2 | 1128.8 | 1113.5 | 1108.2 | 1086.2 |
| JUN | 1130.0 | 1130.6 | 1130.4 | 1130.2 | 1128.6 | 1122.0 | 1110.5 | 1108.6 | 1101.0 |
| JUL | 1130.7 | 1130.2 | 1130.0 | 1126.3 | 1119.5 | 1112.3 | 1105.6 | 1103.0 | 1099.0 |
| AUG | 1130.4 | 1130.0 | 1128.3 | 1118.4 | 1110.6 | 1100.5 | 1093.9 | 1091.7 | 1086.1 |
| SEP | 1130.7 | 1130.2 | 1128.9 | 1112.4 | 1099.0 | 1088.8 | 1083.9 | 1081.2 | 1066.5 |
| OCT | 1131.0 | 1130.5 | 1130.3 | 1125.3 | 1096.0 | 1084.0 | 1076.3 | 1072.6 | 1063.2 |
| NOV | 1131.0 | 1130.5 | 1130.4 | 1130.2 | 1108.4 | 1085.8 | 1073.0 | 1070.1 | 1067.2 |
| DEC | 1131.0 | 1130.5 | 1130.4 | 1130.2 | 1124.8 | 1100.6 | 1081.8 | 1075.6 | 1072.7 |

NOTE:

1. PERIOD OF RECORD FOR THIS DATA ANALYSIS IS JANUARY 1975 TO JANUARY 2005, PRIOR TO THE CONSTRUCTION OF THE SPILLWAY CREST NOTCH IN MONOLITHS M15-M17, USING AVERAGE DAILY DATA FROM USGS GAGE NO. 01350100.

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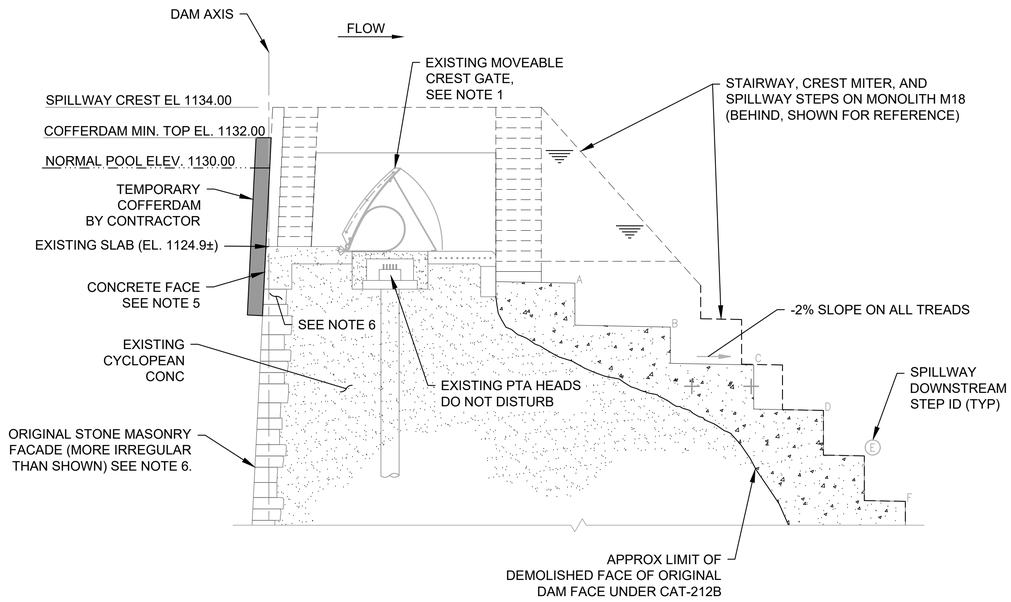
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GENERAL
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POOL LEVEL DATA, SHEET 2 OF 2

DATE: AUGUST 2026
SHEET NO: 10 of 112
DRAWING NO. 475-G-102

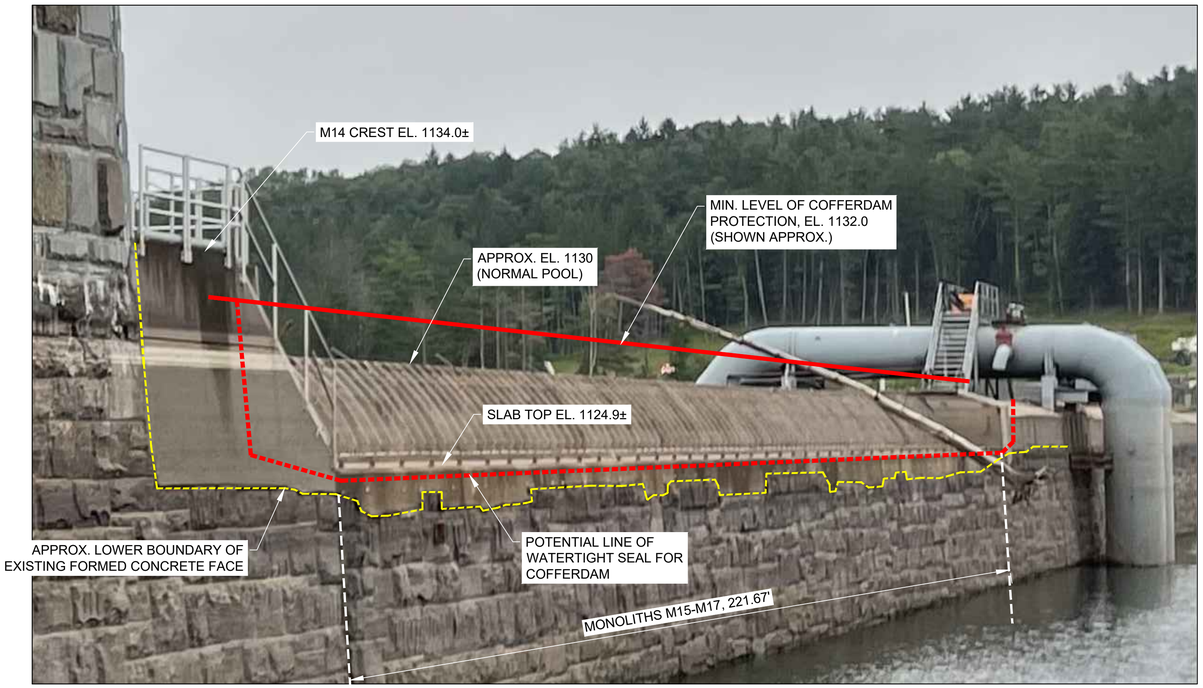
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## TYPICAL SECTION THROUGH GATED NOTCH

SCALE: 1"=5'-0"




## OBLIQUE VIEW OF GATED SPILLWAY NOTCH - MONOLITHS M15-M17

NOT TO SCALE

NOTES:

1. WORK AREA SCOPE: MOVEABLE CREST GATES SHALL BE REMOVED FROM GATED NOTCH MONOLITHS M15-M17, SPILLWAY CREST AND DOWNSTREAM STEPS A, B AND C SHALL BE RECONSTRUCTED TO MATCH ADJACENT SPILLWAY, AND EXISTING ACCESS STAIRWAYS AT MONOLITHS M14 AND M18 SHALL BE ABANDONED / RECONFIGURED TO ACCOMMODATE RECONSTRUCTED SPILLWAY CREST LEVEL. SEE STRUCTURAL AND MECHANICAL DRAWINGS.
2. GATED SPILLWAY NOTCH COFFERDAM IS SHOWN CONCEPTUALLY ON THIS SHEET SOLELY FOR CONTRACTOR CONSIDERATION. AS SHOWN, DOWNSTREAM FACE OF COFFERDAM COULD POTENTIALLY DOUBLE AS FORMWORK FOR CONCRETE PLACEMENT. CONTRACTOR IS FULLY RESPONSIBLE FOR DESIGN OF COFFERDAM SYSTEM. SEE SPECIFICATION SECTION 02 68 00 FOR ADDITIONAL DIVERSION OF WATER REQUIREMENTS.
3. TEMPORARY COFFERDAM FEATURES SHALL BE FULLY REMOVED UPON COMPLETION OF WORK.
4. AS SHOWN, ERECTION AND REMOVAL OF TEMPORARY NOTCH WOULD LIKELY REQUIRE UNDERWATER WORK DUE TO TYPICAL RESERVOIR LEVEL FLUCTUATION.
5. BOTTOM EL. OF CONCRETE PLACED UNDER CAT-212B VARIES. SEE PHOTO ENLARGEMENT, THIS SHEET.
6. EXISTING MASONRY FACING STONES ARE IRREGULARLY SIZED, AND DIMENSIONS IN EACH DIRECTION WILL VARY FROM THE SCHEMATIC DEPICTION SHOWN ON THIS SHEET. EXTERIOR SURFACE TEXTURE IS HIGHLY IRREGULAR. DO NOT SCALE STONE SIZES FROM DRAWINGS.

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1"=5'-0"

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ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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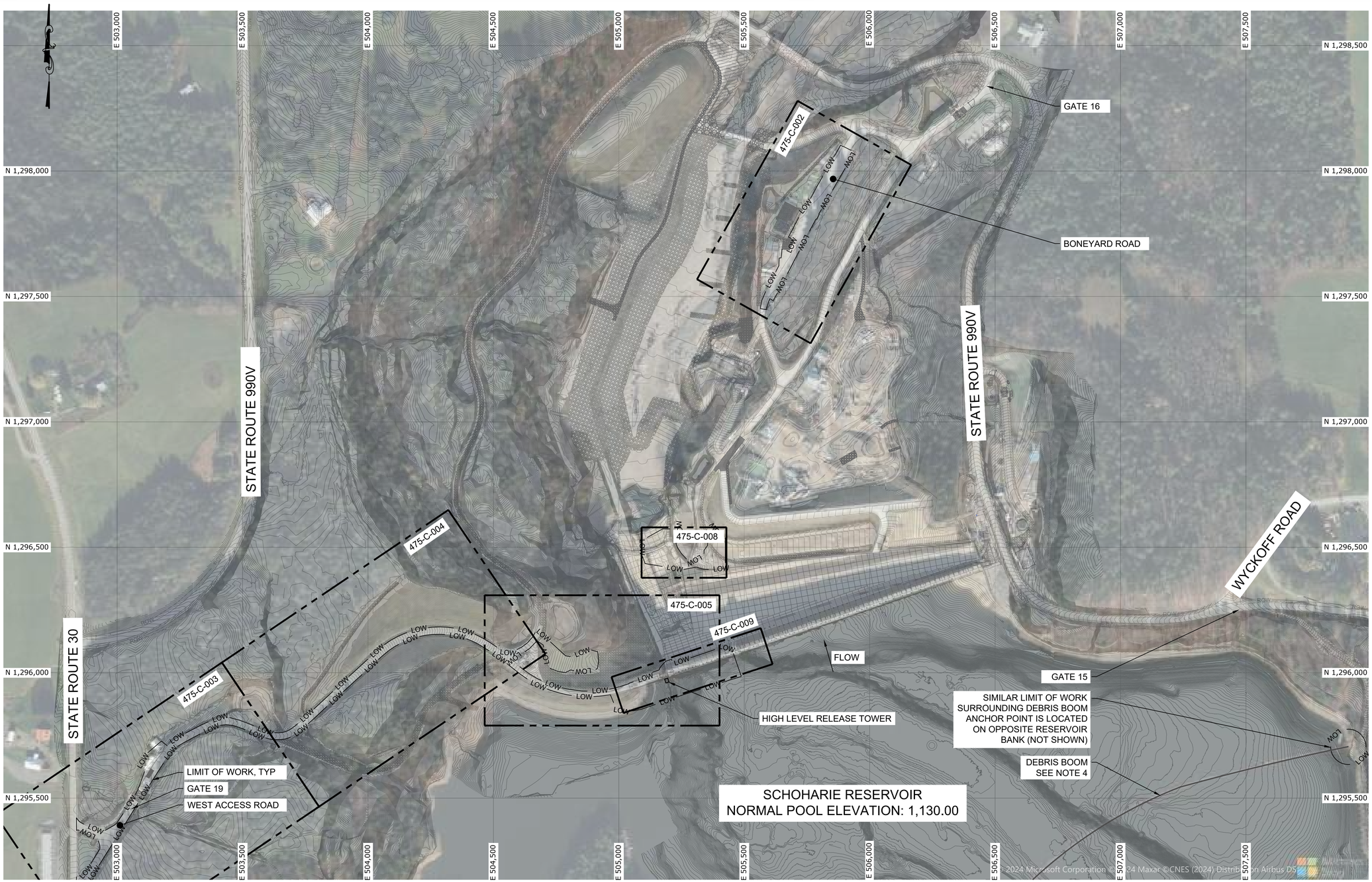
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**BUREAU OF ENGINEERING DESIGN & CONSTRUCTION**
96-05 HORACE HARDING EXPRESSWAY 5th FLOOR
CORONA, NEW YORK 11368
www.nyc.gov/dep

**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
GENERAL
TEMPORARY DIVERSION OF WATER
GATED SPILLWAY NOTCH - CONCEPTUAL

DATE: AUGUST 2026
SHEET NO: 11 of 112
DRAWING NO. 475-G-103

Last Saved By: JStone
Last Date Saved: 7/27/2026 11:41 AM
Plot Style Table: BEDC_Acad_2021.ctb
Date & Time Plotted: 8/6/2026 8:04 AM
Paper Size Printed/Plotted: ANSI full bleed D (22.00 x 34.00 Inches)
Plot Scale: 1:1
Drawing File Name & Drive Location: C:\Users\JStone\DOACCDocs\Hazen and Sawyer\90441-001_CAT-475-DES Gilboa Dam HLO\Project Files\01_Design\General\475-G-103.dwg

All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.




## NOTES:

1. CONTOURS IN AREAS DISTURBED BY CAT-212 E SEQUENCE. CONTRACTS MAY DIFFER FROM THOSE SHOWN.
2. NO NEW CONSTRUCTION SHOWN ON THIS PLAN. PROVIDED FOR INFORMATION ONLY.
3. SEE DWG 475-C-006 FOR PLAN OF STIC CAMPUS, WHICH IS TO BE USED ONLY FOR WATERBORNE SITE ACCESS.
4. COORDINATE WITH CITY TO IDENTIFY LOCATION OF "PASS-THROUGH" IN DEBRIS BOOM.

## LEGEND:

475-C-004 DRAWING NO. FOR ENLARGED SITE PLAN

0 200 400 FT.
1"=200'

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

**BID SET**
**SUBMITTAL DATE: AUG 2026**

| NO. | DATE | REVISIONS/DESCRIPTION | APPR'D. |
|---|---|---|---|
| 0 | AUG 26 | ISSUED FOR BIDS | CSB |

DESIGNED BY: EK
DRAWN BY: WS
CHECKED BY: BH
DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK EVERETTE H. KNIGHT 086771 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**

CIVIL
GENERAL SITE PLAN

DATE: AUGUST 2026
SHEET NO: 12 of 112
DRAWING NO. 475-C-001

Last Saved By: WStrzepka
Paper Size Printed/Plotted: ANSI full bleed D (34.00 X 22.00 Inches)
Drawing File Name & Drive Location: C:_DO\ACCDocs\Hazen and Sawyer\90441-001_CAT-475-DES Gilboa Dam HLO\Project Files\01_Design\Civil\475-C-001.dwg
Last Date Saved: 4/1/2026 1:37 PM
Plot Style Table: BEDC_Acad_2021.ctb
Plot Scale: 1:1
Date & Time Plotted: 8/5/2026 5:29 PM

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## NOTES:

1. USE OF THIS AREA REQUIRES WRITTEN APPROVAL FROM THE ENGINEER.

0 30 60 FT.
1"=30'

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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STATE OF NEW YORK — EVERETTE H. KNIGHT — 086771 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**

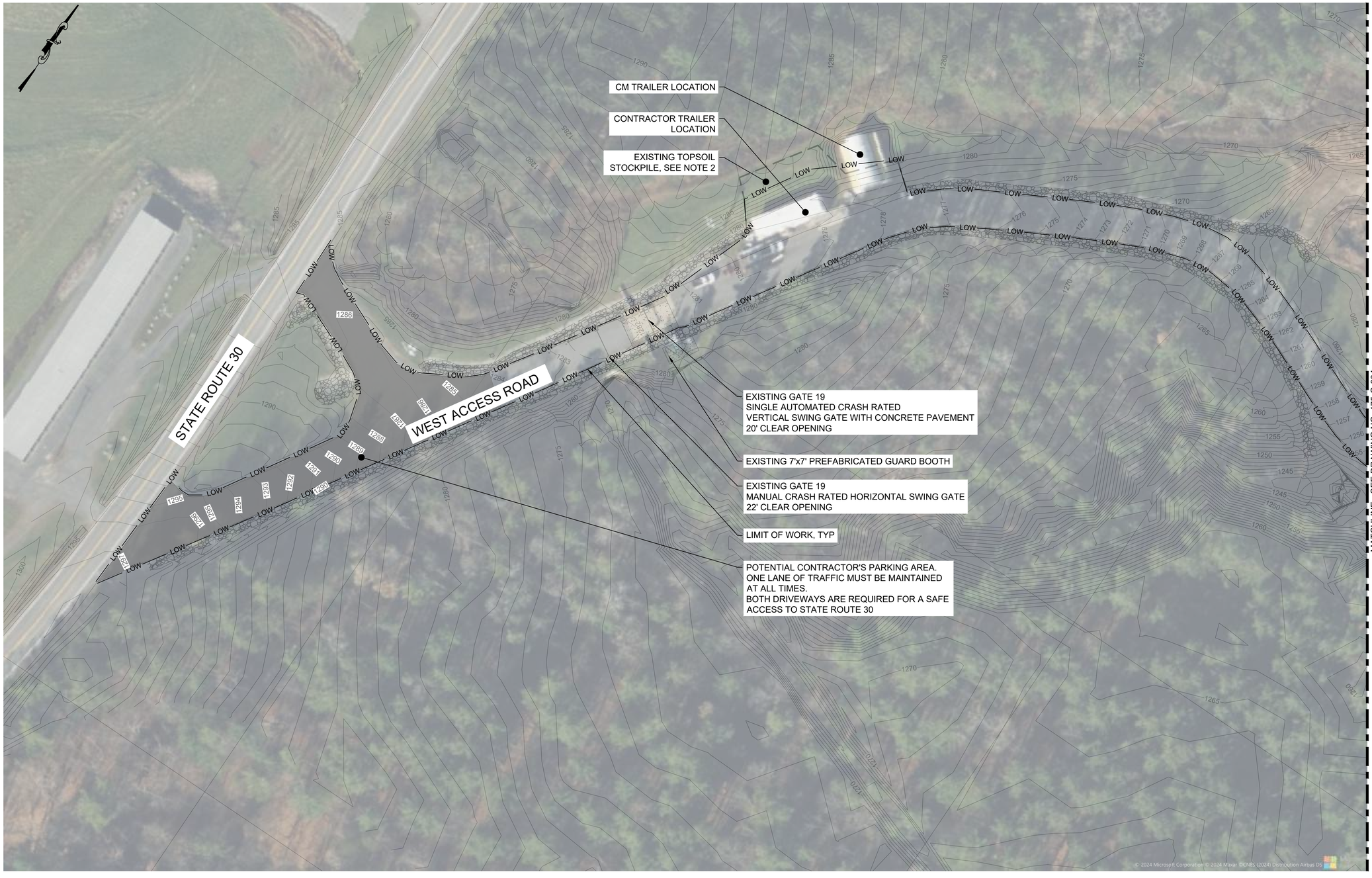
CIVIL

BONEYARD ROAD STAGING AREA

DATE: AUGUST 2026
SHEET NO: 13 of 112
DRAWING NO. 475-C-002

All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.

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Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
Drawing File Name & Drive Location: C:_DCACCDocs\Hazen and Sawyer\90441-001_CAT-475-DES Gilboa Dam HLO\Project Files\01_Design\Civil\475-C-002.dwg
Last Date Saved: 12/16/2025 3:13 PM
Date & Time Plotted: 8/5/2026 5:29 PM
Plot Scale: 1:1
Plot Style Table: BEDC Acad 2021.ctb




## NOTES:

1. CONTRACTOR PARKING AREA SUBJECT TO THE CONTRACTOR SUBMITTING A PARKING PLAN FOR APPROVAL THAT SHOWS HOW CONSTRUCTION TRAFFIC SHALL BE SIMULTANEOUSLY MAINTAINED.
2. TOPSOIL WAS STOCKPILED IN THIS AREA UNDER PREVIOUS CONTRACT AND WILL BE LEFT IN-PLACE AT THE START OF CAT-475 FOR SUBSEQUENT REUSE. GRAVEL WILL BE PLACED (BY OTHERS) FOR THE CAT-475-CM TRAILER. UPON COMPLETION OF WORK AND REMOVAL OF TRAILERS, REMOVE GRAVEL AND RESTORE THE AREA WITH THE AVAILABLE TOPSOIL. TOPSOIL AND SEED WITH WILDFLOWER SEED MIX IN ACCORDANCE WITH SPECIFICATION SECTION 32 90 00.
3. PROVIDE TWO (2) LEVEL 2 EV CHARGING STATIONS ATTACHED TO EXTERIOR OF DEP CM TRAILER. LOCATION TO BE FIELD VERIFIED AND APPROVED BY THE RESIDENT ENGINEER.

1"=40' 0 40 80 FT.

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

**BID SET**
**SUBMITTAL DATE: AUG 2026**

| NO. | DATE | REVISIONS/DESCRIPTION | APPR'D. |
|---|---|---|---|
| 0 | AUG 26 | ISSUED FOR BIDS | CSB |

DESIGNED BY: EK
DRAWN BY: WS
CHECKED BY: BH
DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK · EVERETTE R. KNIGHT · 086771 · LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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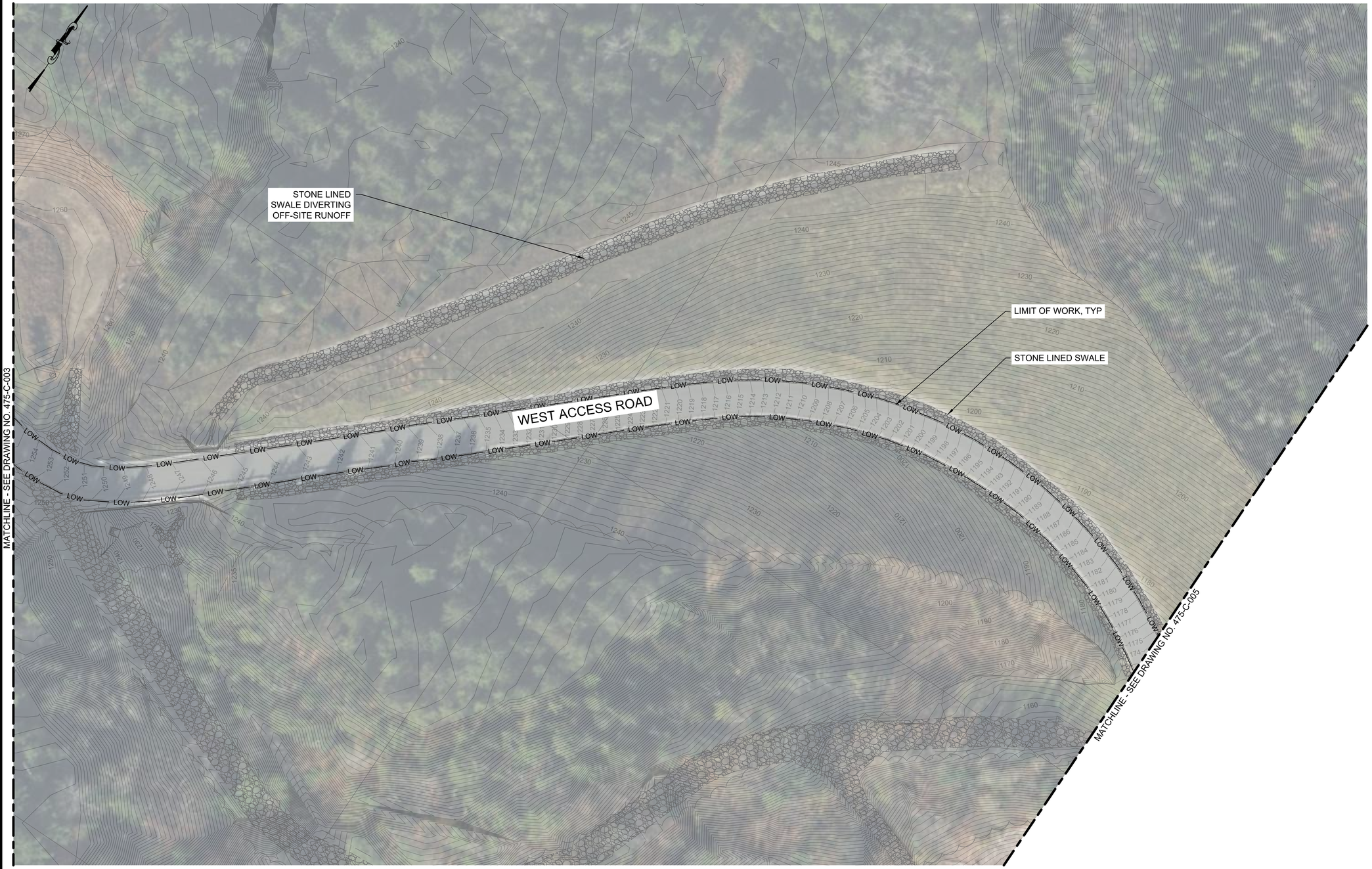
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
GATE 19 WEST ACCESS ROAD
EXISTING SITE PLAN

DATE: AUGUST 2026
SHEET NO: 14 of 112
DRAWING NO. 475-C-003

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Last Date Saved: 4/7/2026 3:10 PM
Paper Size Printed/Plotted: ANSI full bleed D (34.00 X 22.00 Inches)
Drawing File Name & Drive Location: C:_DC\ACDocs\Hazen and Sawyer\90441-001_CAT-475-DES Siltoca Dam HLO\Project Files\01_Design\Civil\475-C-003.dwg
Date & Time Plotted: 8/5/2026 5:29 PM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb




0 40 80 FT.
1"=40'

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**BID SET**
**SUBMITTAL DATE: AUG 2026**

| NO. | DATE | REVISIONS/DESCRIPTION | APPR'D. |
|---|---|---|---|
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DESIGNED BY: EK
DRAWN BY: WS
CHECKED BY: EC
DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE

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HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK — EVERETTE H. KNIGHT — 086771 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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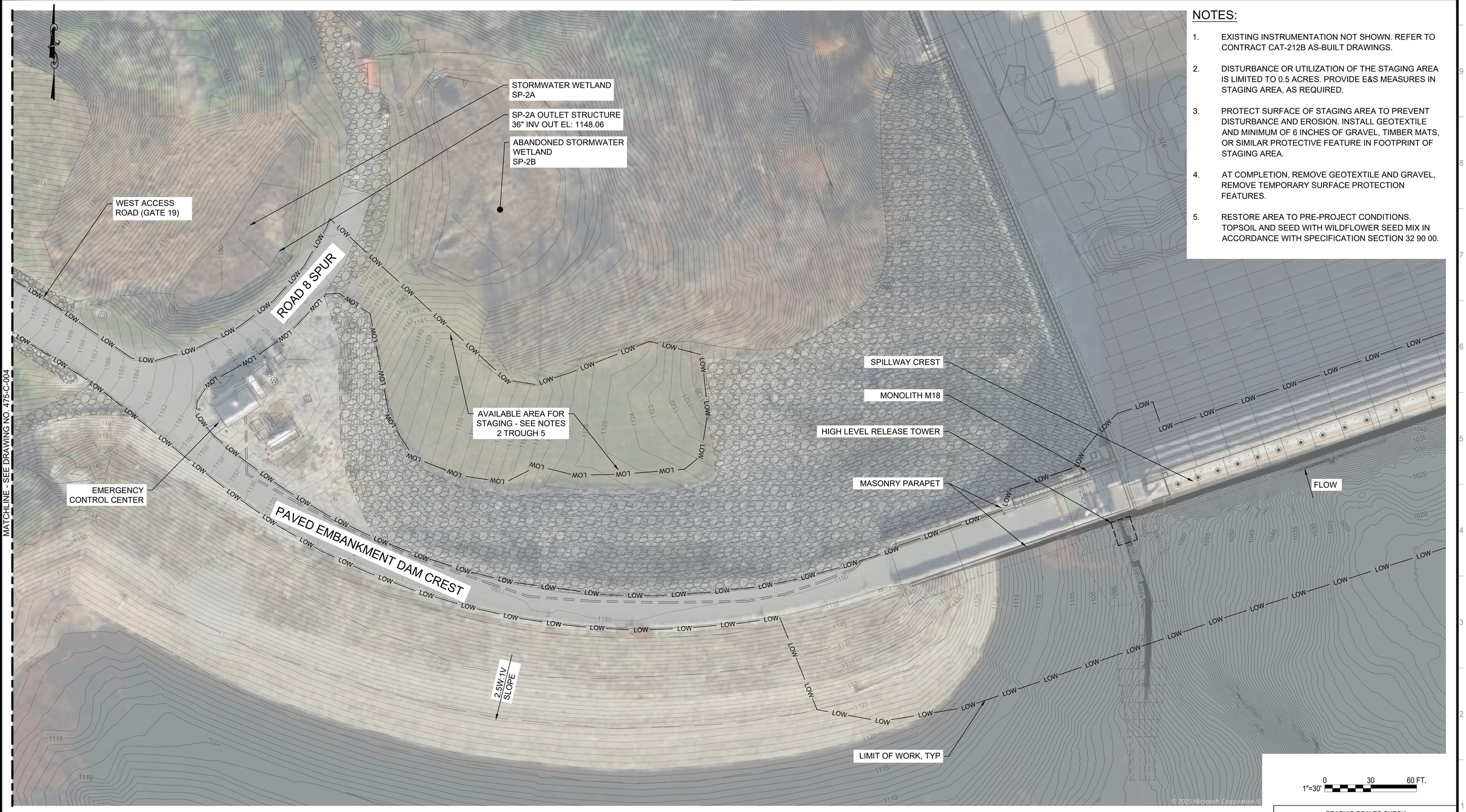
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
WEST ACCESS ROAD
EXISTING SITE PLAN

DATE: AUGUST 2026
SHEET NO: 15 of 112
DRAWING NO. 475-C-004

Last Saved By: WStrzepka
Last Date Saved: 12/15/2025 1:34 PM
Date & Time Plotted: 8/5/2026 5:29 PM
Paper Size Printed/Plotted: ANSI full bleed D (34.00 X 22.00 Inches)
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb
Drawing File Name & Drive Location: C:_DCA\CCDocs\Hazen and Sawyer\90441-001_CAT-475-DES Gilboa Dam HLO\Project Files\01_Design\Civil\475-C-004.dwg

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## NOTES:

1. EXISTING INSTRUMENTATION NOT SHOWN. REFER TO CONTRACT CAT-212B AS-BUILT DRAWINGS.
2. DISTURBANCE OR UTILIZATION OF THE STAGING AREA IS LIMITED TO 0.5 ACRES. PROVIDE E&S MEASURES IN STAGING AREA, AS REQUIRED.
3. PROTECT SURFACE OF STAGING AREA TO PREVENT DISTURBANCE AND EROSION. INSTALL GEOTEXTILE AND MINIMUM OF 6 INCHES OF GRAVEL, TIMBER MATS, OR SIMILAR PROTECTIVE FEATURE IN FOOTPRINT OF STAGING AREA.
4. AT COMPLETION, REMOVE GEOTEXTILE AND GRAVEL, REMOVE TEMPORARY SURFACE PROTECTION FEATURES.
5. RESTORE AREA TO PRE-PROJECT CONDITIONS. TOPSOIL AND SEED WITH WILDFLOWER SEED MIX IN ACCORDANCE WITH SPECIFICATION SECTION 32 90 00.

1"=30' 0 30 60 FT.

GRAPHIC SCALES CHECK BEFORE USE

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**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DRAWN BY: WS
CHECKED BY: BH
DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE

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STATE OF NEW YORK — EVERETTE H. KNIGHT — 086771 — LICENSED PROFESSIONAL ENGINEER

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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
WEST ACCESS ROAD STAGING AREA
EXISTING SITE PLAN

DATE: AUGUST 2026
SHEET NO: 16 of 112
DRAWING NO. 475-C-005

Last Saved By: WStrzepka
Paper Size Printed/Plotted: ANSI full bleed D (34.00 X 22.00 Inches)
Drawing File Name & Drive Location: C:_DOACCDocs\Hazen and Sawyer\90441-001_CAT-475-DES Gilboa Dam HLO\Project Files\01_Design\Civil\475-C-005.dwg
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Plot Scale: 1:1
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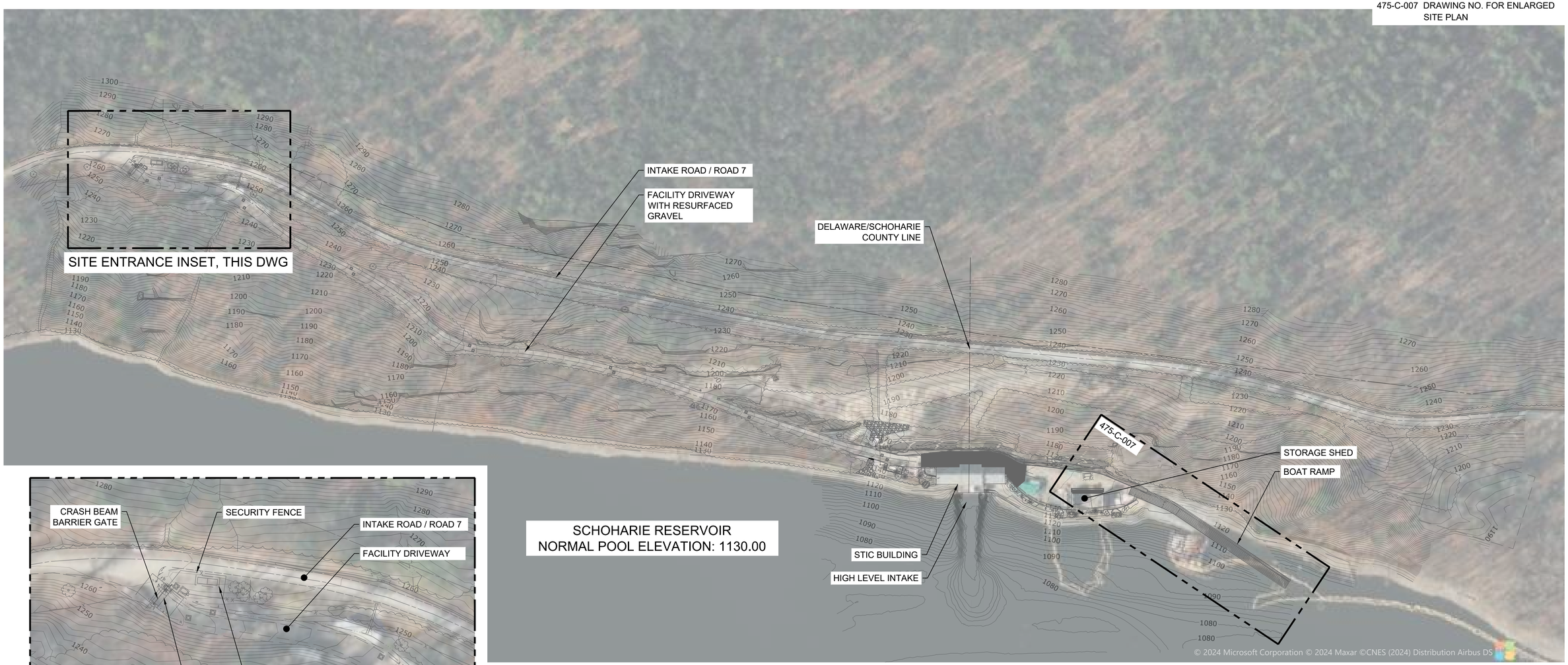
All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.

## NOTES:

1. SEE DWG 475-G-005 FOR LOCATION OF STIC CAMPUS ON RESERVOIR.
2. CONTRACTOR TO COORDINATE SITE ACCESS AND PROVISIONS FOR SECURITY AT THE STIC AS REQUIRED BY NYCDEP.

## LEGEND:

475-C-007 DRAWING NO. FOR ENLARGED SITE PLAN







SITE ENTRANCE INSET

SCALE: 1" - 50'-0"

1"=50' 0 50 100 FT.

1"=100' 0 100 200 FT.

GRAPHIC SCALES CHECK BEFORE USE

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**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: EK
DRAWN BY: WS
CHECKED BY: BH
DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
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STATE OF NEW YORK — EVERETTE H. KNIGHT — LICENSED PROFESSIONAL ENGINEER — 086771

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**

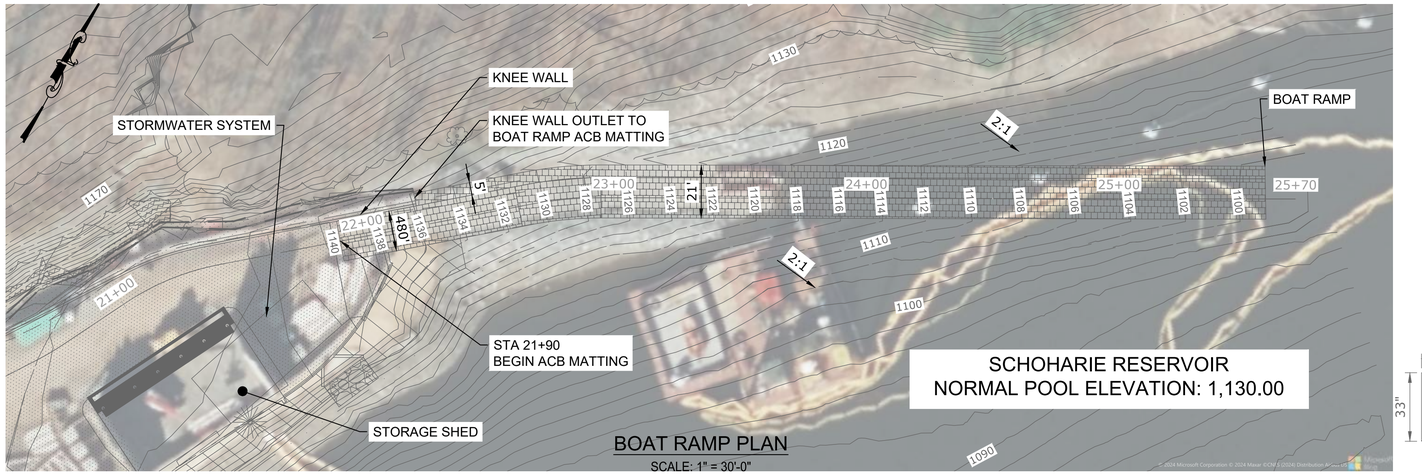
CIVIL

RESERVOIR ACCESS AT STIC CAMPUS

DATE: AUGUST 2026
SHEET NO: 17 of 112
DRAWING NO. 475-C-006

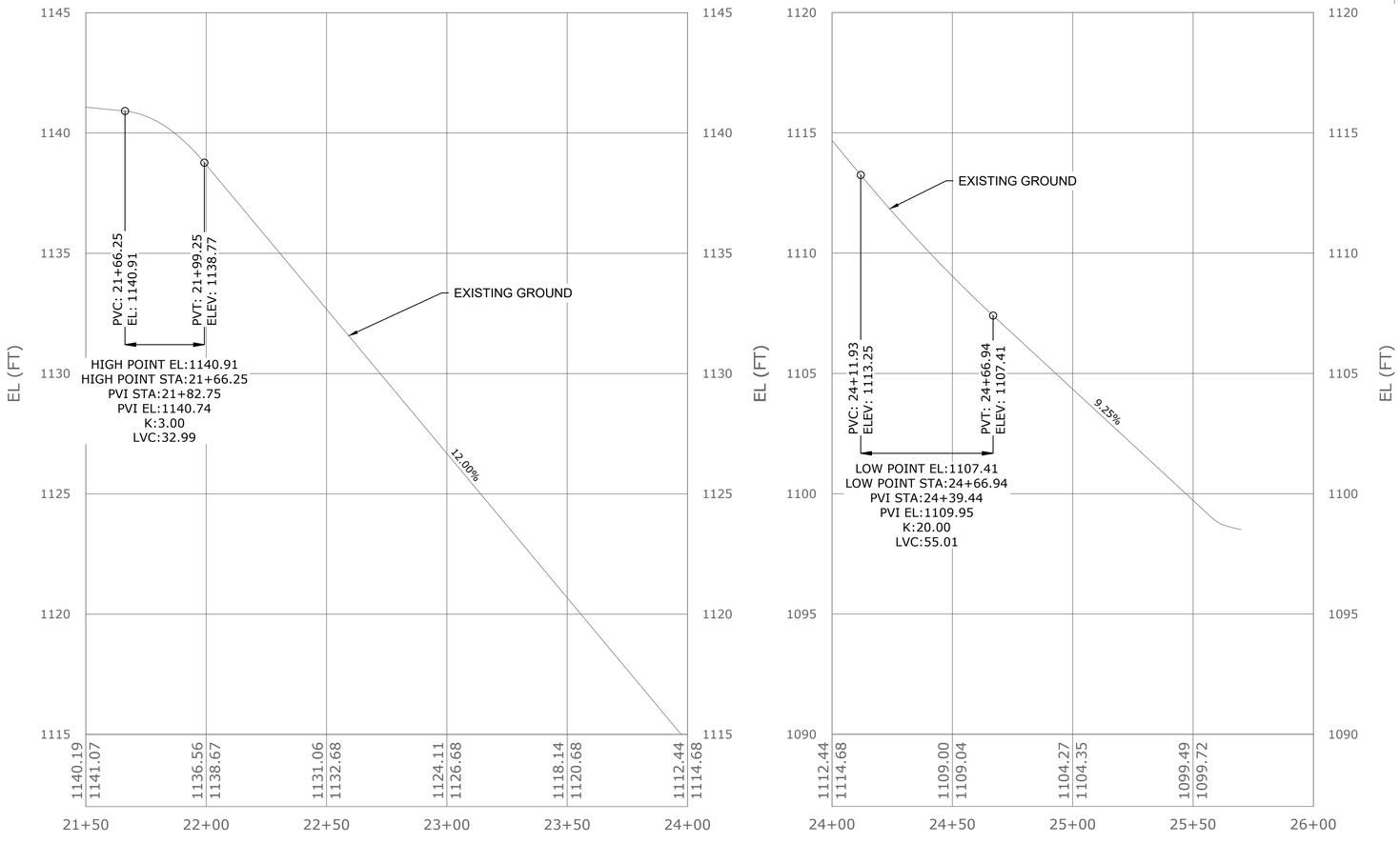
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Last Save Date Saved: 4/2/2026 8:11 AM
Date & Time Plotted: 8/5/2026 5:30 PM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb




## BOAT RAMP PLAN

SCALE: 1" = 30'-0"

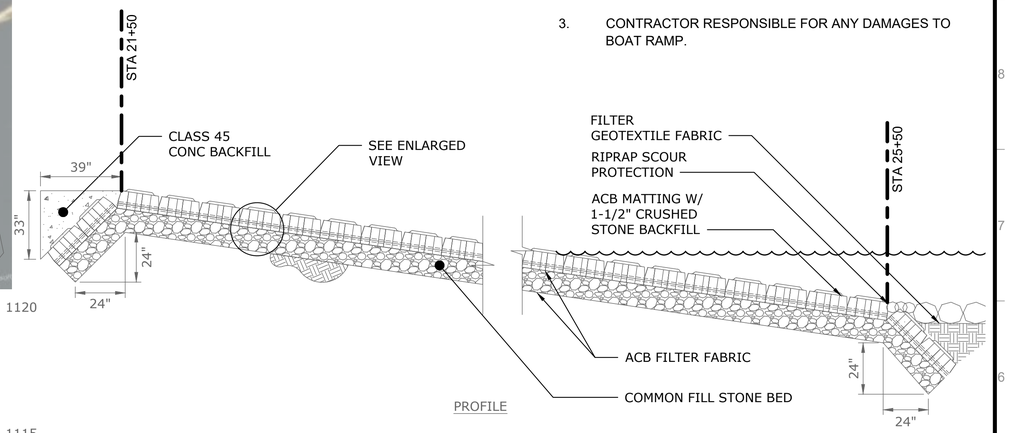



## BOAT RAMP PROFILE

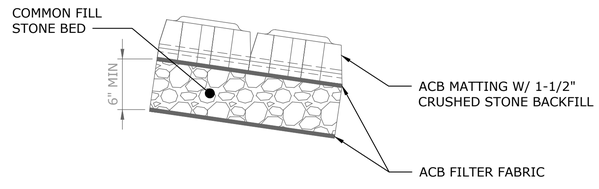
H: 1" = 30'-0" V: 1" = 3'-0"

## NOTES:

1. CONTRATOR'S USE OF THE STIC CAMPUS IS LIMITED TO WATERCRAFT ACCESS TO/FROM THE RESERVOIR, AND NO STAGING OR LAYDOWN OF MATERIALS IS PERMITTED UNLESS APPROVED IN WRITING BY DEP OPERATIONS.
2. SEE DWG 475-G-006 FOR LOCATION OF BOAT RAMP ON STIC CAMPUS.
3. CONTRACTOR RESPONSIBLE FOR ANY DAMAGES TO BOAT RAMP.




PROFILE




ENLARGED VIEW

A — BOAT RAMP SURFACE - EXISTING CONDITIONS

SCALE: NTS

1"=30' 0 30 60 FT.

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

**BID SET**
**SUBMITTAL DATE: AUG 2026**

| NO. | DATE | REVISIONS/DESCRIPTION | APPR'D. |
|---|---|---|---|
| 0 | AUG 26 | ISSUED FOR BIDS | CSB |

DESIGNED BY: EK
DRAWN BY: WS
CHECKED BY: BH
DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
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STATE OF NEW YORK — EVERETTE H. KNIGHT — 086771 — LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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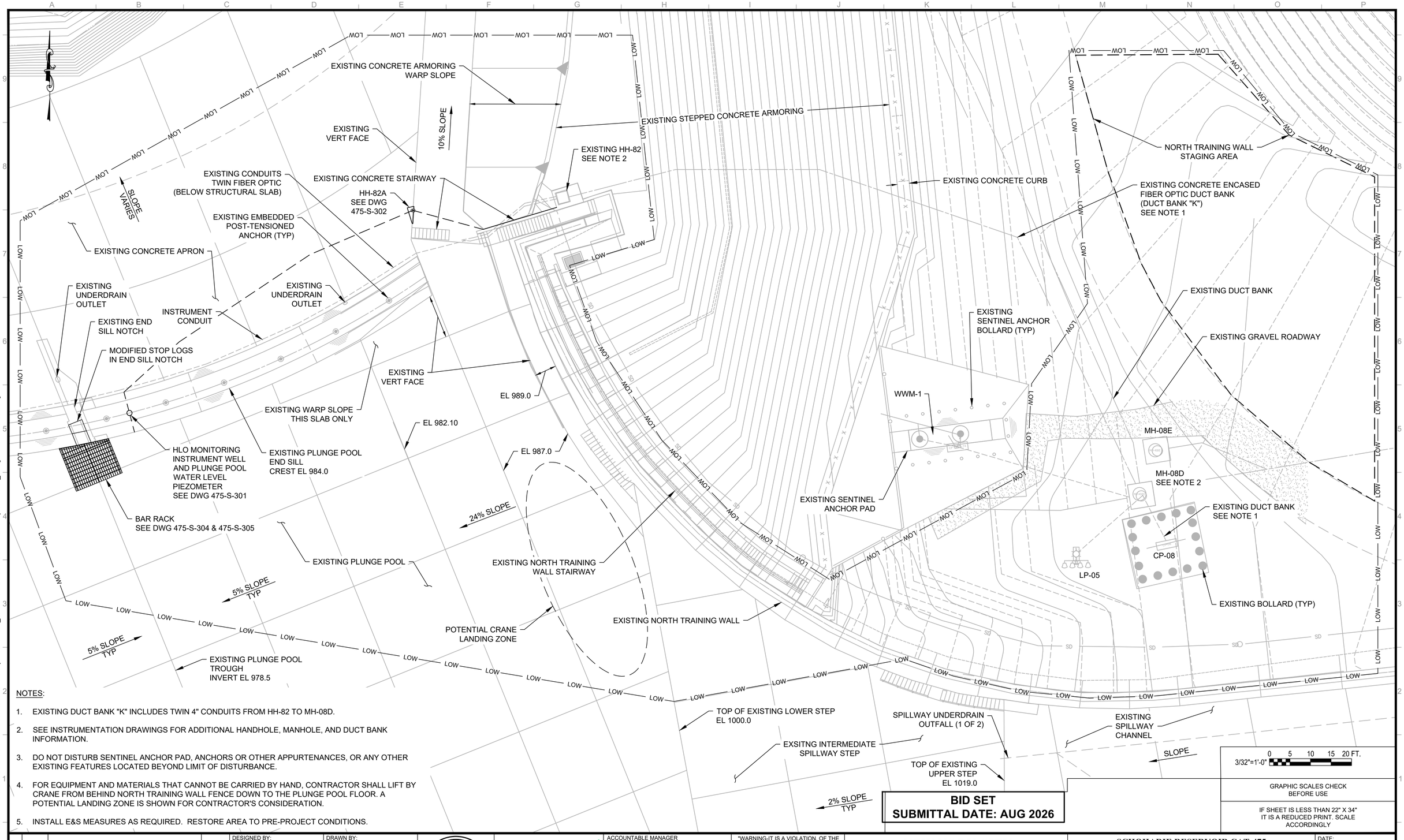
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
STIC FACILITY, BOAT RAMP PLAN, PROFILE & DETAIL

DATE: AUGUST 2026
SHEET NO: 18 of 112
DRAWING NO. 475-C-007

Last Saved By: WStrzepka
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Date & Time Plotted: 8/5/2026 5:30 PM

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NOTES:

1. EXISTING DUCT BANK "K" INCLUDES TWIN 4" CONDUITS FROM HH-82 TO MH-08D.
2. SEE INSTRUMENTATION DRAWINGS FOR ADDITIONAL HANDHOLE, MANHOLE, AND DUCT BANK INFORMATION.
3. DO NOT DISTURB SENTINEL ANCHOR PAD, ANCHORS OR OTHER APPURTENANCES, OR ANY OTHER EXISTING FEATURES LOCATED BEYOND LIMIT OF DISTURBANCE.
4. FOR EQUIPMENT AND MATERIALS THAT CANNOT BE CARRIED BY HAND, CONTRACTOR SHALL LIFT BY CRANE FROM BEHIND NORTH TRAINING WALL FENCE DOWN TO THE PLUNGE POOL FLOOR. A POTENTIAL LANDING ZONE IS SHOWN FOR CONTRACTOR'S CONSIDERATION.
5. INSTALL E&S MEASURES AS REQUIRED. RESTORE AREA TO PRE-PROJECT CONDITIONS.

**BID SET**
**SUBMITTAL DATE: AUG 2026**

3/32"=1'-0" 0 5 10 15 20 FT.

GRAPHIC SCALES CHECK BEFORE USE

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| 0 | AUG 26 | ISSUED FOR BIDS | CSB |

DESIGNED BY: EF
DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172-07 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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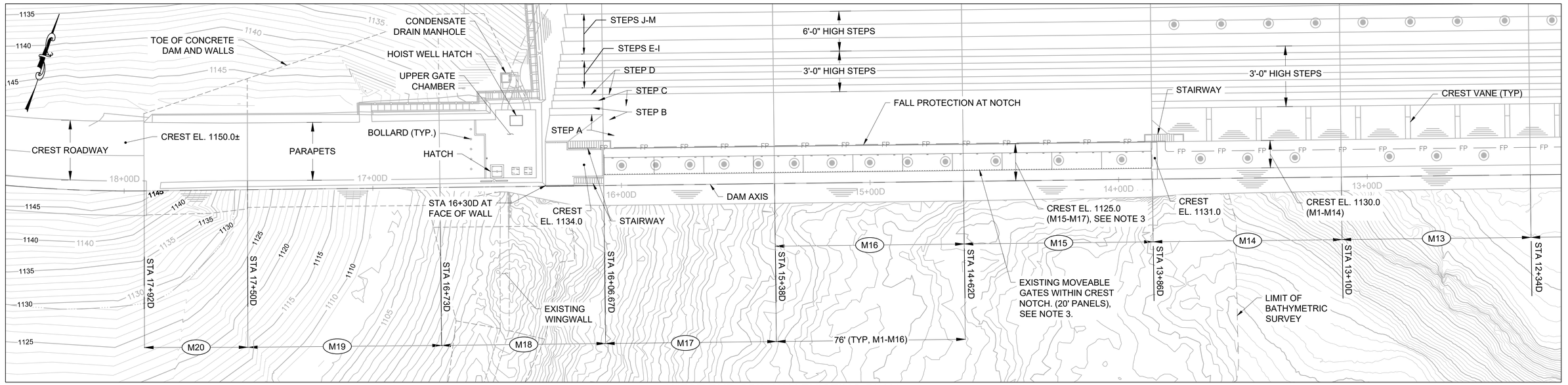
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
NORTH TRAINING WALL & END SILL
NEW PLAN & STAGING AREA

DATE: AUGUST 2026
SHEET NO: 19 of 112
DRAWING NO. 475-C-008

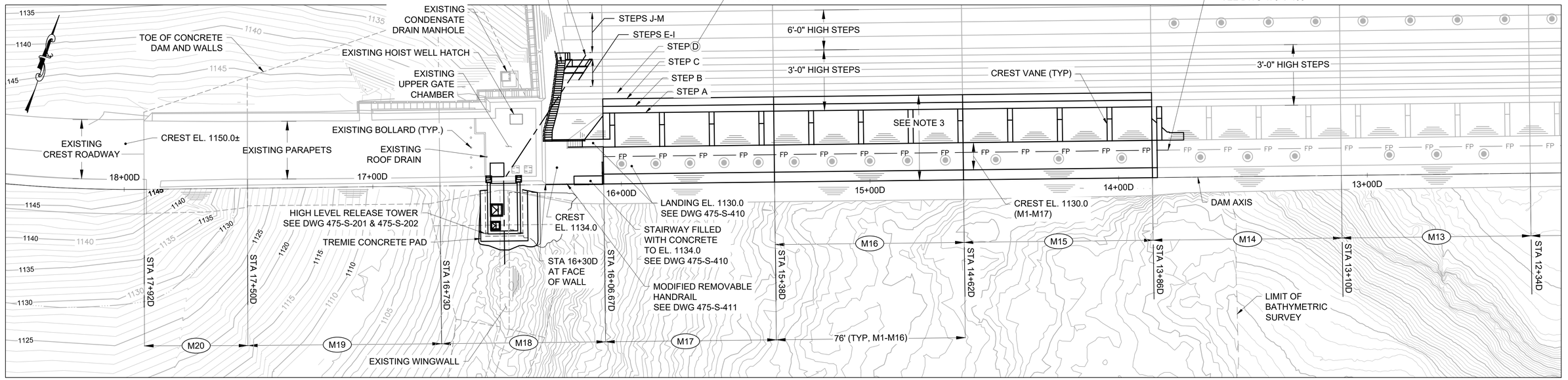
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## WEST END SPILWAY EXISTING PLAN

SCALE: 1"=20'




## WEST END SPILWAY NEW PLAN

SCALE: 1"=20'

LEGEND:

- EXISTING POST-TENSIONED ANCHOR & ANCHOR HEAD (DO NOT DISTURB)
- (M19) MONOLITH NUMBERS

NOTES:

1. NEW HLO PIPE AND VALVES NOT SHOWN ON THIS SHEET.
2. SEE INFORMATION FOR BIDDERS-NOT IN CONTRACT FOR AS-BUILT DRAWINGS OF MOVEABLE CREST GATES, POST-TENSIONED ANCHORS AND ANCHOR HEADS.
3. SEE DWG NO 475-S-401 FOR DETAILS OF GATED CREST SECTION DEMOLITION, CREST REPLACEMENT, CREST VANES AND STEPS.
4. DOWNSTREAM TEMPORARY WORK PLATFORM ON THE SPILLWAY STEPS AT MONOLITH M18, NOT SHOWN. SEE DRAWING 475-C-021.

0 20 40 FT.
1"=20'

GRAPHIC SCALES CHECK BEFORE USE

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**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: BH
DRAWN BY: JS
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD LICENSED PROFESSIONAL ENGINEER 099172-01

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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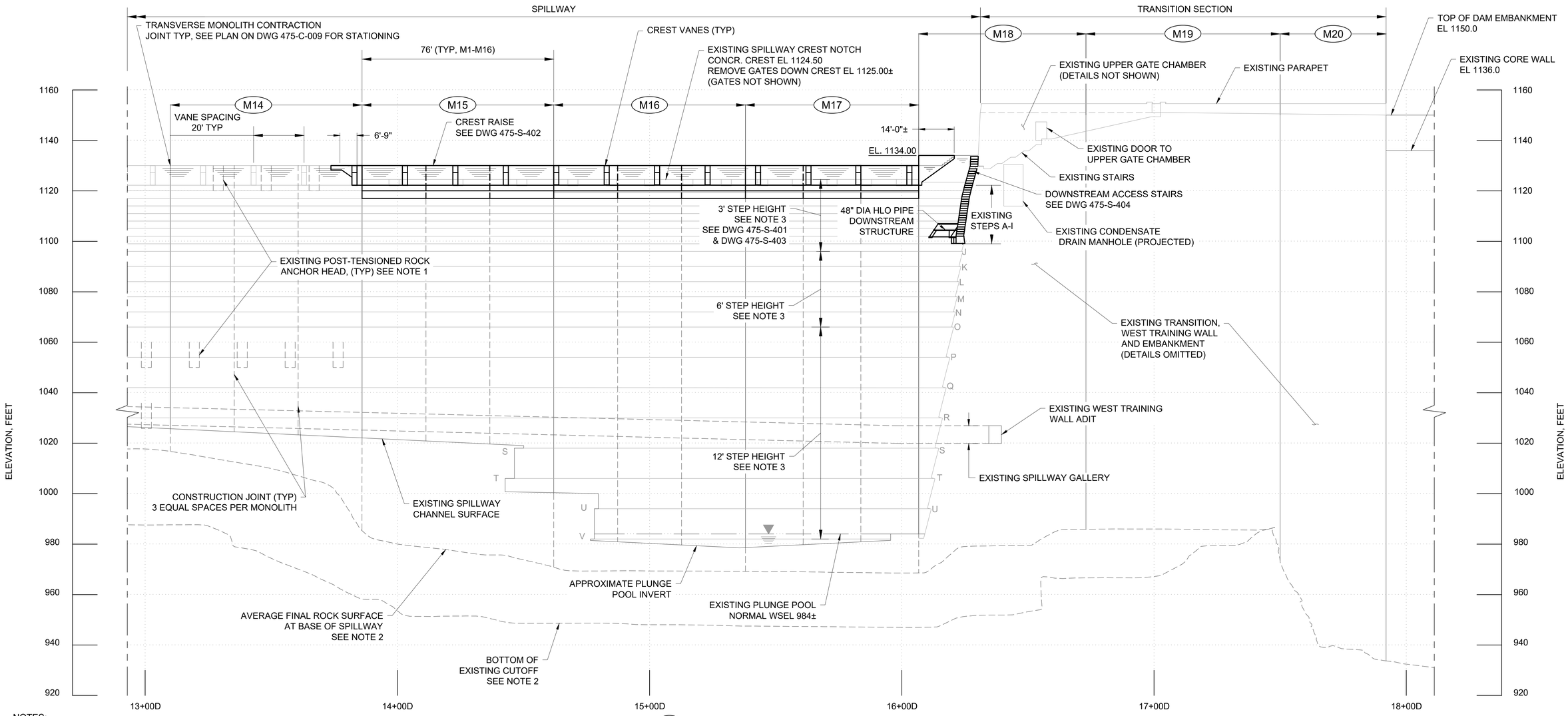
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
WEST END SITE PLAN
EXISTING & NEW

DATE: AUGUST 2026
SHEET NO: 20 of 112
DRAWING NO. 475-C-009

ALL INQUIRIES REGARDING THIS DRAWING(S) OR PROJECT SHOULD BE MADE TO NYC ENVIRONMENTAL PROTECTION, BUREAU OF ENGINEERING DESIGN AND CONSTRUCTION.

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A 475-C-009 WEST END DAM PROFILE

(LOOKING UPSTREAM) 1"=20'-0"

NOTES:

1. EXISTING POST-TENSIONED ROCK ANCHORS EXTEND INTO BEDROCK. REFER TO CONTRACT CAT-275 RECORD DRAWINGS FOR CONSTRUCTION DETAILS OF PT ANCHORS AND ANCHOR HEAD.
2. AVERAGE FINAL ROCK SURFACE AND BOTTOM OF CUTOFF WALL ARE APPROXIMATE GRADES TAKEN FROM 1927 CONSTRUCTION RECORD DRAWINGS: ACCESSION NO. RS-1091 SHEETS 1 & 2.
3. FOR DETAILED SPILLWAY STEP DIMENSIONS AND ARRANGEMENT, SEE CAT-212B REFERENCE DWG S-CG-111.
4. REMOVE CREST GATES AND ABANDON ASSOCIATED MECHANICAL SYSTEM AS SHOWN ON MECHANICAL DRAWINGS.
5. CONSTRUCT CONCRETE SPILLWAY CREST AND DOWNSTREAM STEPS IN MONOLITHS M15, M16, M17, AND TIE INTO STEPS AT MONOLITHS M14 AND M18, TO MATCH STANDARD STEPS OF MONOLITHS M1 THROUGH M14. SEE STRUCTURAL DRAWINGS.
6. DOWNSTREAM TEMPORARY WORK PLATFORM ON THE SPILLWAY STEPS AT MONOLITH M18 NOT SHOWN. SEE DRAWING 475-C-021.

LEGEND

J SPILLWAY STEP ID

M15 MONOLITH ID

1"=20' 0 20 40 FT.

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DESIGNED BY: BH
DRAWN BY: JS
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

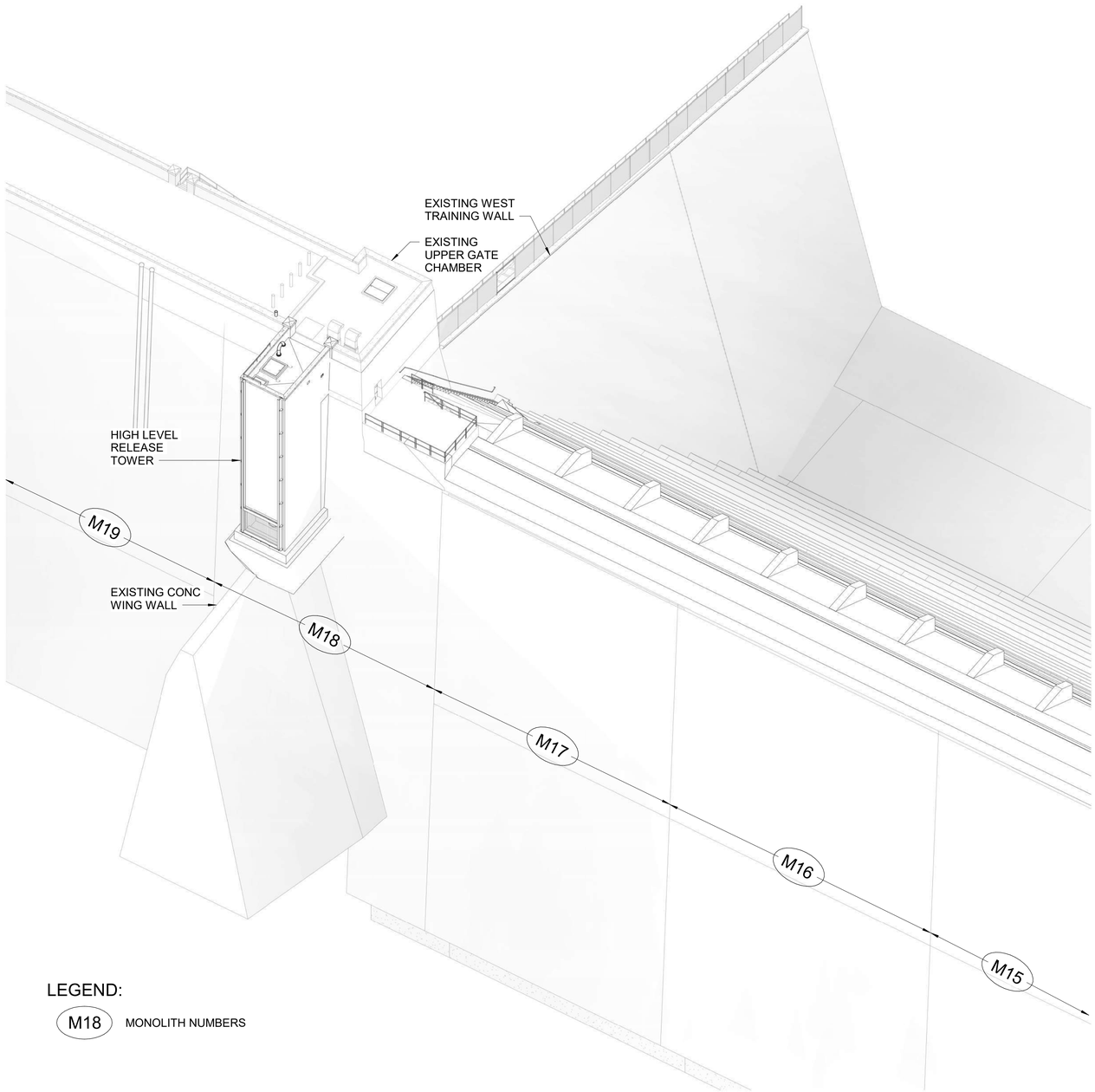
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
WEST END DOWNSTREAM PROFILE
EXISTING & NEW

DATE: AUGUST 2026
SHEET NO: 21 of 112
DRAWING NO. 475-C-010

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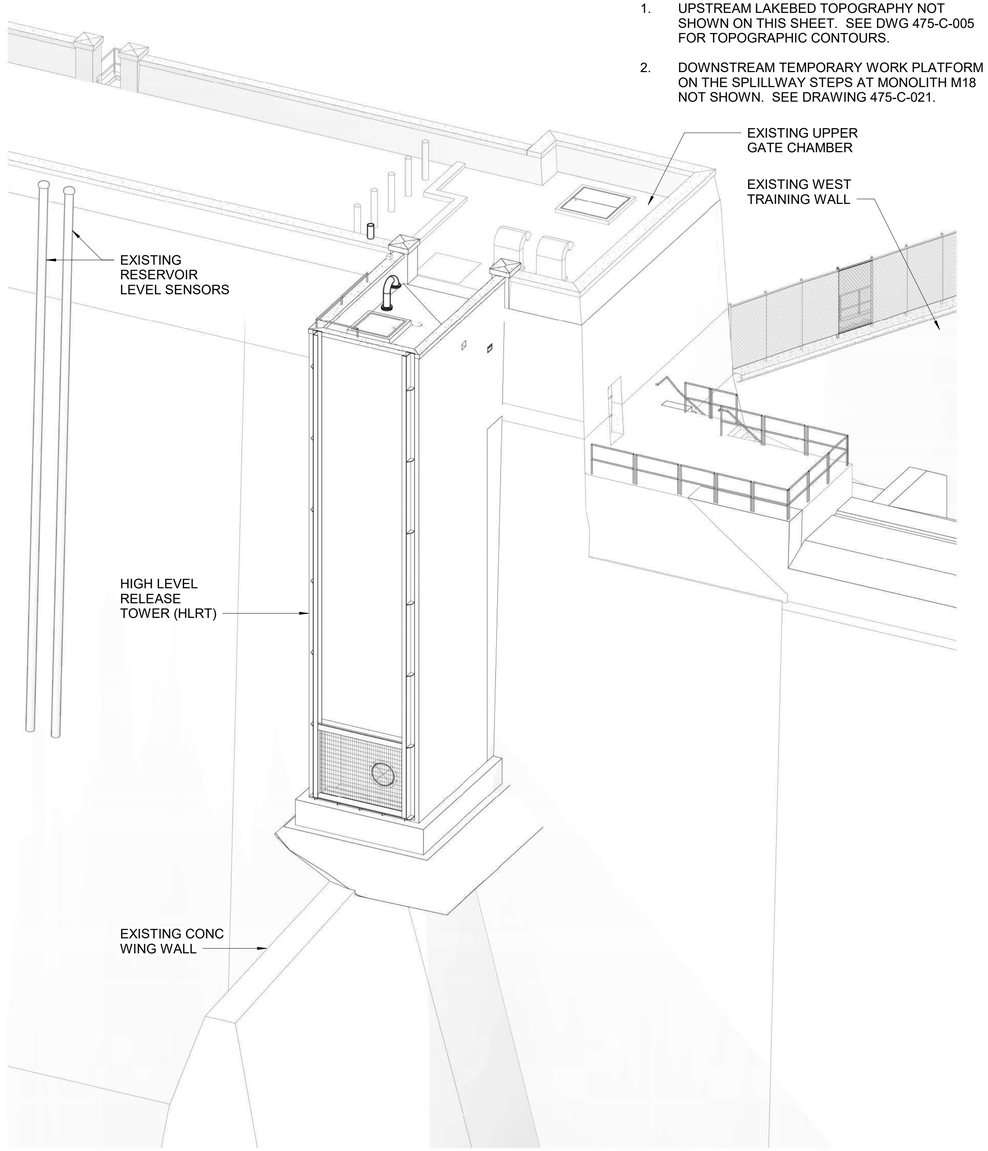

LEGEND:

M18 MONOLITH NUMBERS

OVERALL ISOMETRIC VIEW - MONOLITHS 15 - 19
NTS

NOTES:

1. UPSTREAM LAKEBED TOPOGRAPHY NOT SHOWN ON THIS SHEET. SEE DWG 475-C-005 FOR TOPOGRAPHIC CONTOURS.
2. DOWNSTREAM TEMPORARY WORK PLATFORM ON THE SPLILLWAY STEPS AT MONOLITH M18 NOT SHOWN. SEE DRAWING 475-C-021.




ISOMETRIC VIEW - HIGH LEVEL RELEASE TOWER
NTS

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: EK
CHECKED BY: BH
DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE
DRAWN BY: CDS

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK — EVERETTE R. KNIGHT — 086771 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
HIGH LEVEL RELEASE TOWER
ISOMETRIC VIEWS - UPSTREAM

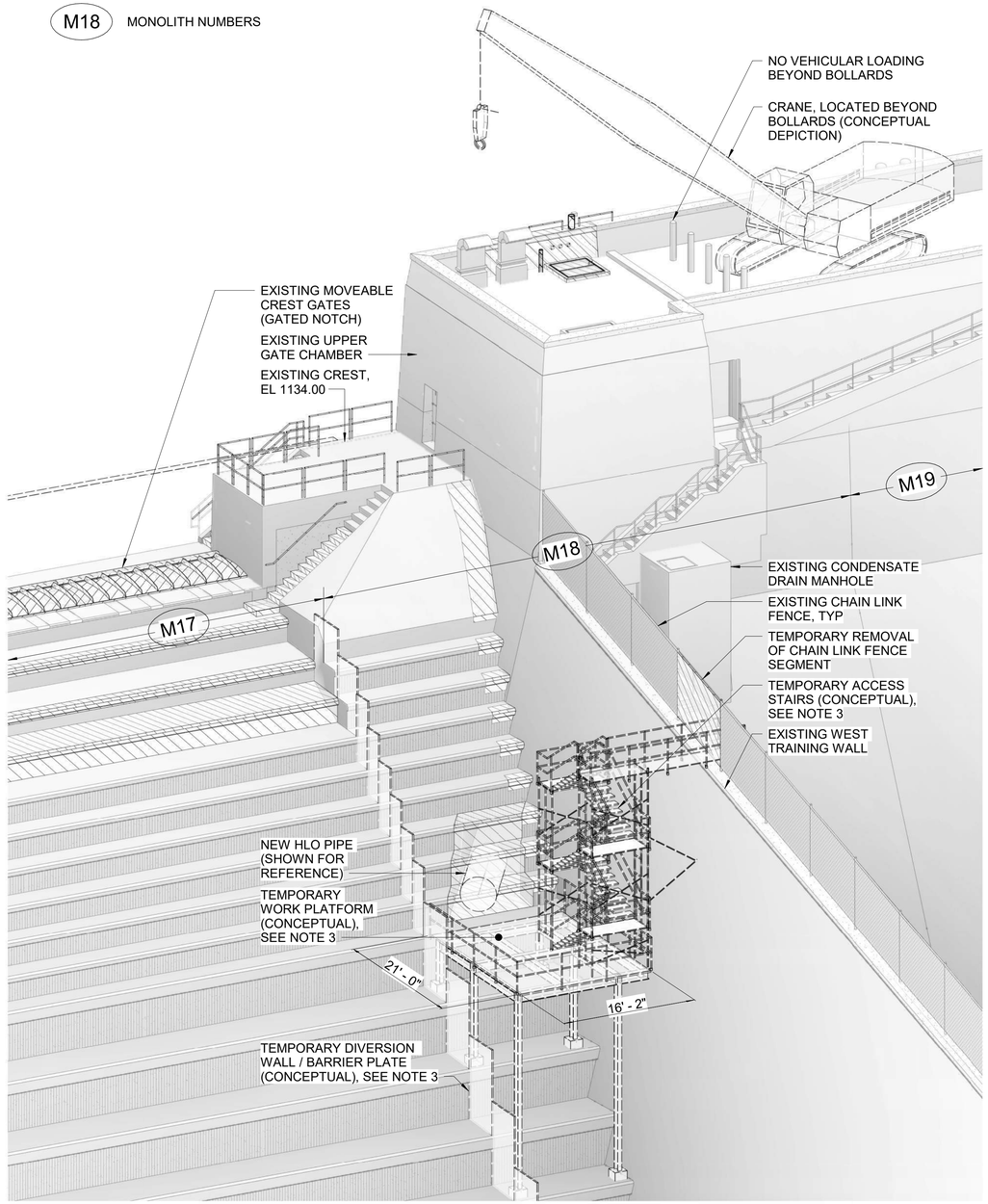
DATE: AUGUST 2026
SHEET NO: 22 of 112
DRAWING NO. 475-C-020

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LEGEND:

M18 MONOLITH NUMBERS

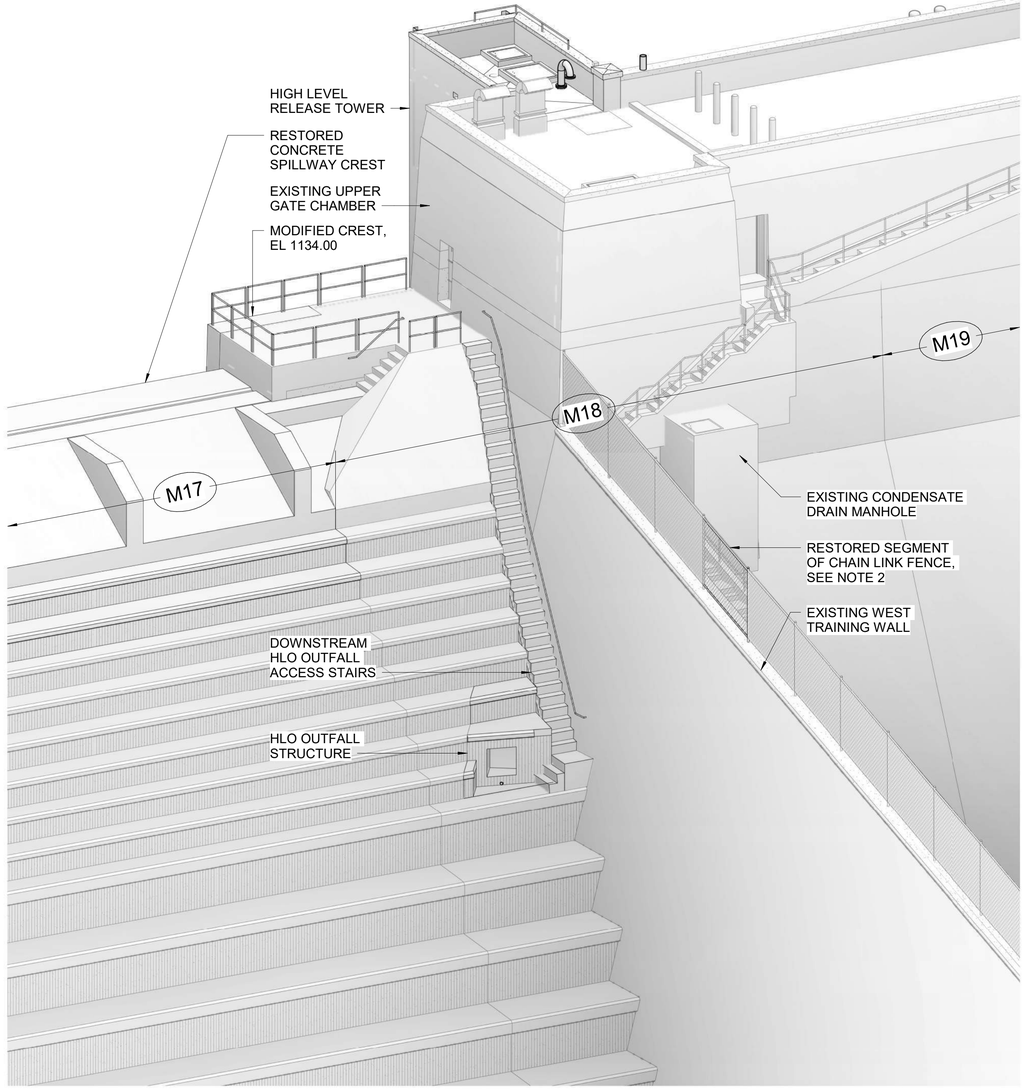



ISOMETRIC VIEW - OUTFALL STRUCTURE AND TEMPORARY STRUCTURES AND EXISTING CONDITIONS

NTS

NOTES:

1. GROUND SURFACE NOT SHOWN ON THIS SHEET. SEE DWG 475-C-005 FOR TOPOGRAPHIC CONTOURS.
2. EXISTING CHAIN LINK FENCE SHALL BE RESTORED UPON COMPLETION TO ITS CONDITION AT THE START OF WORK. ANY REPLACEMENT OF MATERIALS SHALL MATCH EXISTING.
3. SEE SPECIFICATION SECTION 02 41 10, DEMOLITION AND REMOVALS, FOR REQUIREMENTS RELATED TO REMOVING THE TEMPORARY WORK PLATFORM, TEMPORARY ACCESS STAIRS, AND TEMPORARY DIVERSION WALL/BARRIER PLATE UPON COMPLETION OF WORK.




ISOMETRIC VIEW - OUTFALL STRUCTURE PROPOSED CONDITIONS

NTS

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: EK
CHECKED BY: BH
DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE
DRAWN BY: CDS

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK — EVERETTE H. KNIGHT — 086771 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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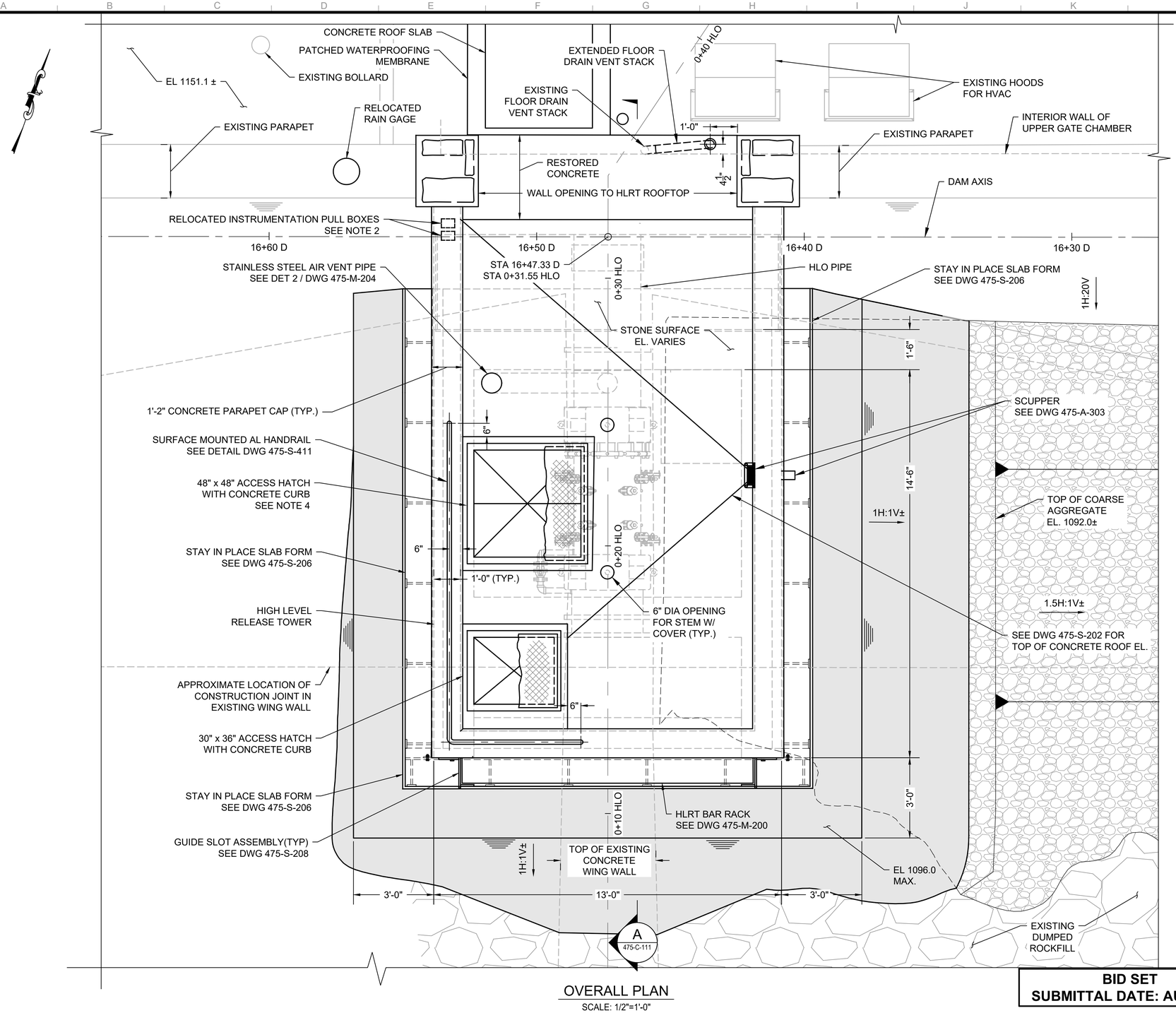
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
HIGH LEVEL RELEASE TOWER
ISOMETRIC VIEWS - DOWNSTREAM

DATE: AUGUST 2026
SHEET NO: 23 of 112
DRAWING NO. 475-C-021

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OVERALL PLAN

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

NOTES:

1. EXISTING INSTRUMENTATION CONDUITS AND LIGHTING PROTECTION AND GROUNDING SYSTEM NOT SHOWN.
2. RELOCATE INSTRUMENTATION CONDUITS AND PULL BOXES AS NEEDED.
3. MODIFY EXISTING LIGHTING PROTECTION SYSTEM TO ACCOMMODATE PARAPET WALL OPENING. EXTEND GROUNDING LOOP AROUND PERIMETER OF HLRT PARAPET. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
4. HATCH SIZE BASED ON DIMENSIONS OF HILTON 30" BONNETED KNIFE GATE VALVE WITH EXTENDED FLANGES, AS DESCRIBED IN SECTION 40 05 58. IF THE CONTRACTOR ELECTS TO USE AN APPROVED EQUAL MANUFACTURER, THE CONTRACTOR SHALL CONFIRM THAT THE HATCH DIMENSIONS ARE ADEQUATE FOR VALVE INSTALLATION AND REMOVAL.

LEGEND:

- COARSE AGGREGATE
- EXISTING DUMPED ROCKFILL
- TREMIE CONCRETE

0 1 2 3 4 FT.
1/2"=1'-0"

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**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: VC
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE
DRAWN BY: EF

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172-01 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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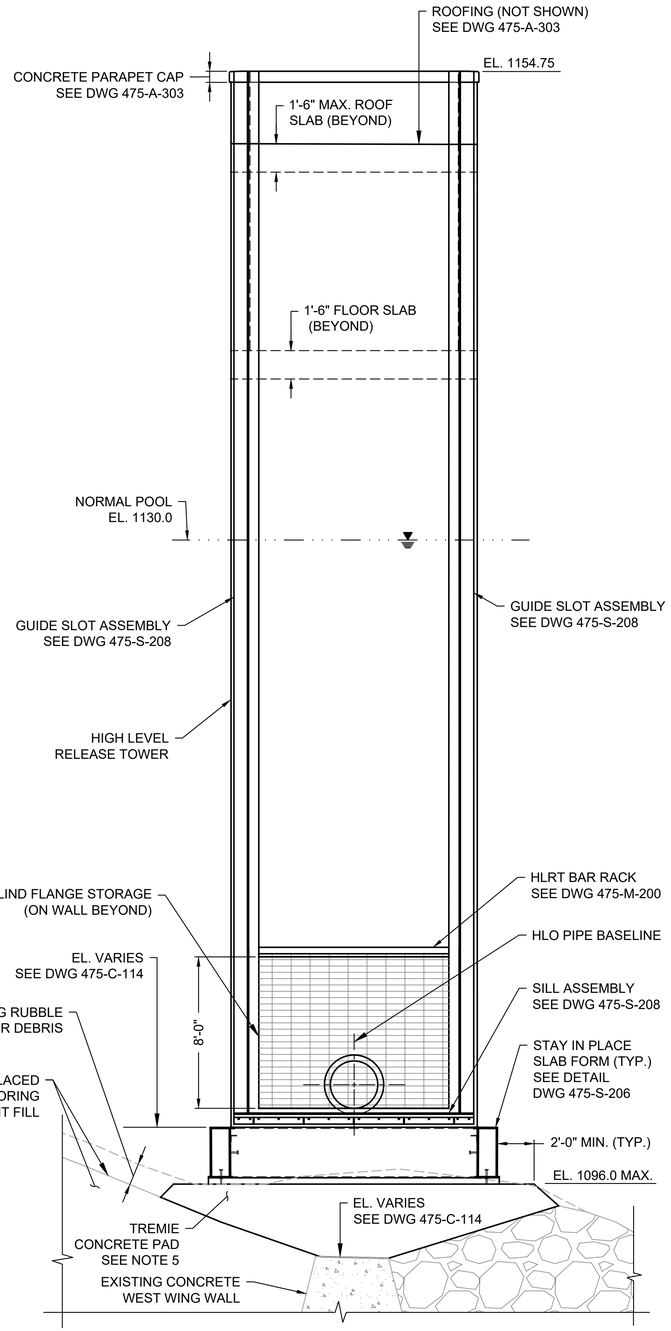
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
HIGH LEVEL RELEASE TOWER
OVERALL PLAN

DATE: AUGUST 2026
SHEET NO: 24 of 112
DRAWING NO. 475-C-110

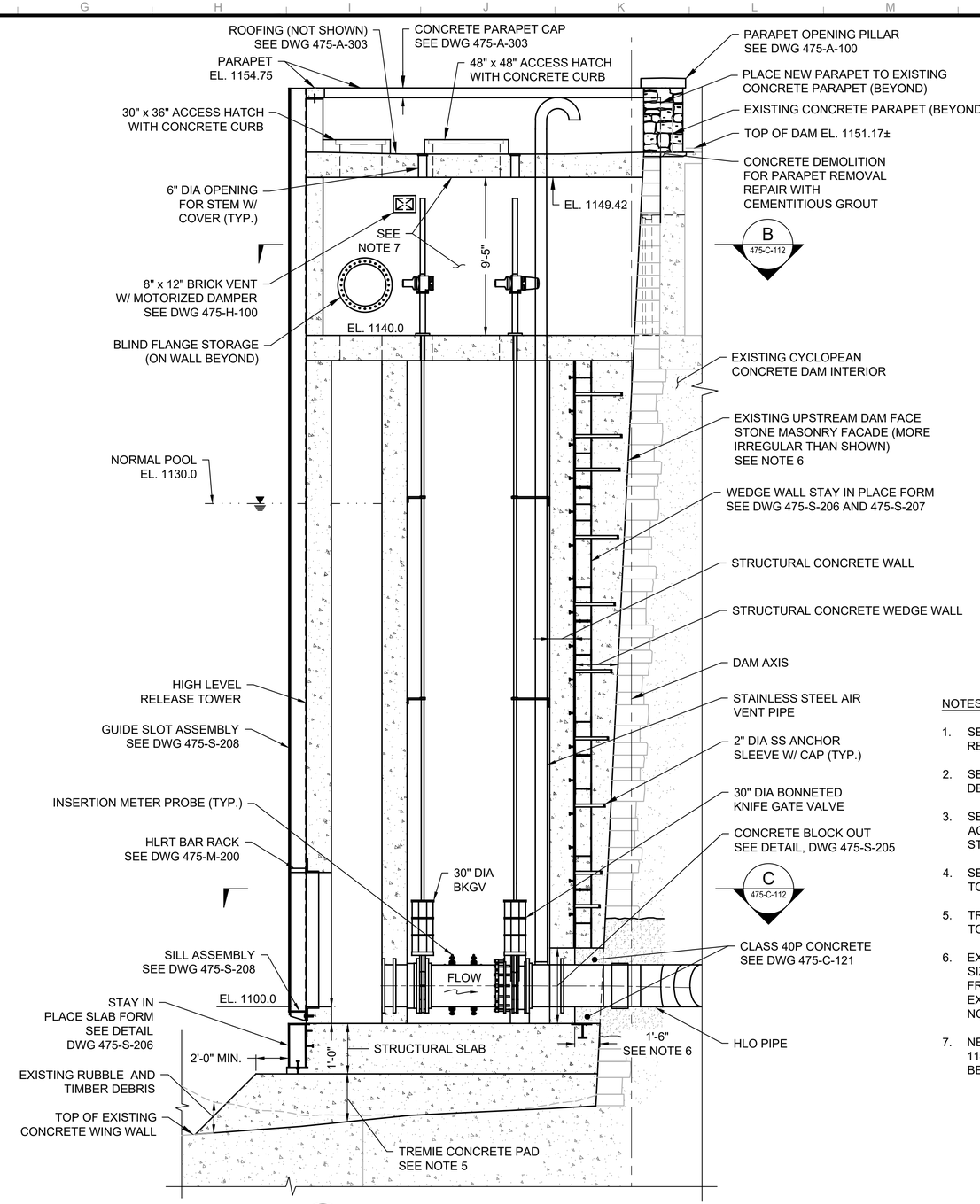
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Last Date Saved: 8/3/2026 4:11 PM
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Plot Scale: 1:1
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UPSTREAM FACE ELEVATION VIEW

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




A
475-C-110
SECTION

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

NOTES:

1. SEE STRUCTURAL DRAWINGS FOR FORMING AND REINFORCEMENT DETAILS.
2. SEE MECHANICAL DRAWINGS FOR EQUIPMENT AND PIPING DETAILS.
3. SEE ELECTRICAL/INSTRUMENTATION DRAWINGS FOR GATE ACTUATION AND HIGH LEVEL RELEASE TOWER SUPER STRUCTURE ELECTRICAL DETAILS.
4. SEE ARCHITECTURAL DRAWINGS FOR HIGH LEVEL RELEASE TOWER FACING TREATMENT DETAILS.
5. TREMIE CONCRETE SHALL BE IN DIRECT CONTACT WITH TOP OF CONCRETE WING WALL.
6. EXISTING MASONRY FACING STONES ARE IRREGULARLY SIZED AND DIMENSIONS IN EACH DIRECTION WILL VARY FROM THE SCHEMATIC DEPICTION SHOWN ON THIS SHEET. EXTERIOR SURFACE TEXTURE IS HIGHLY IRREGULAR. DO NOT SCALE STONE SIZES FROM DRAWINGS.
7. NEW INTERIOR CONCRETE WALLS AND CEILING ABOVE EL. 1140.0 SHALL BE PAINTED PER SECTION 09 91 00. COLOR TO BE CHOSEN BY THE OWNER.

1/4"=1'-0" 0 4 8 FT.

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**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: VC
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE
DRAWN BY: EF

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK · BOYD HOWARD · 099172 · LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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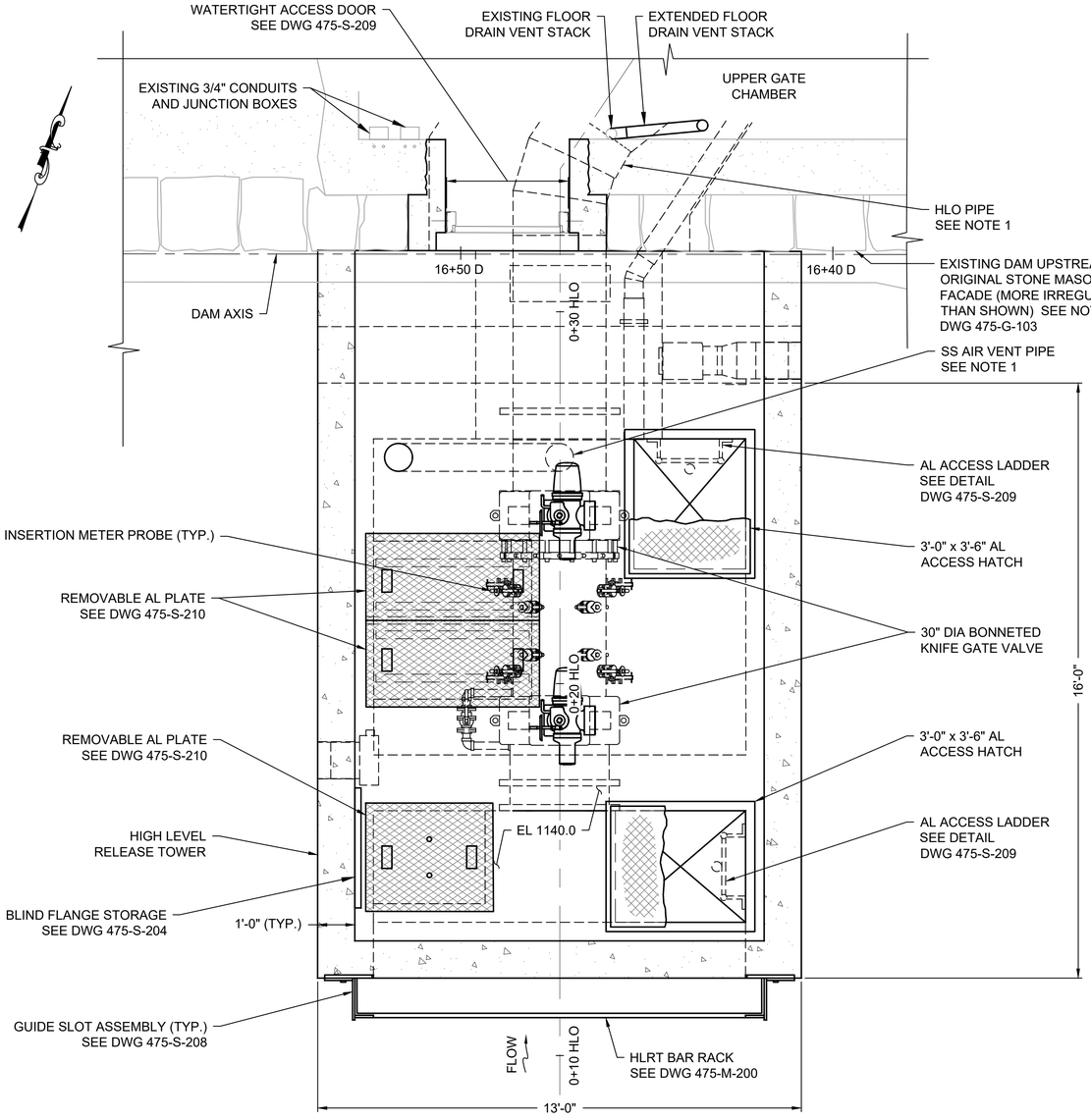
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CORONA, NEW YORK 11368
www.nyc.gov/dep

**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
HIGH LEVEL RELEASE TOWER
SECTIONS - SHEET 1 OF 2

DATE: AUGUST 2026
SHEET NO: 25 of 112
DRAWING NO. 475-C-111

Last Saved By: JStone
Paper Size Printed/Plotted: ANSI full bleed D (22.00 x 34.00 Inches)
Drawing File Name & Drive Location: C:\Users\JStone\DCACCDocs\Hazen and Sawyer\90441-001_CAT-475-DES Gilboa Dam HLO\Project Files\01_Design\Civil\475-C-111.dwg
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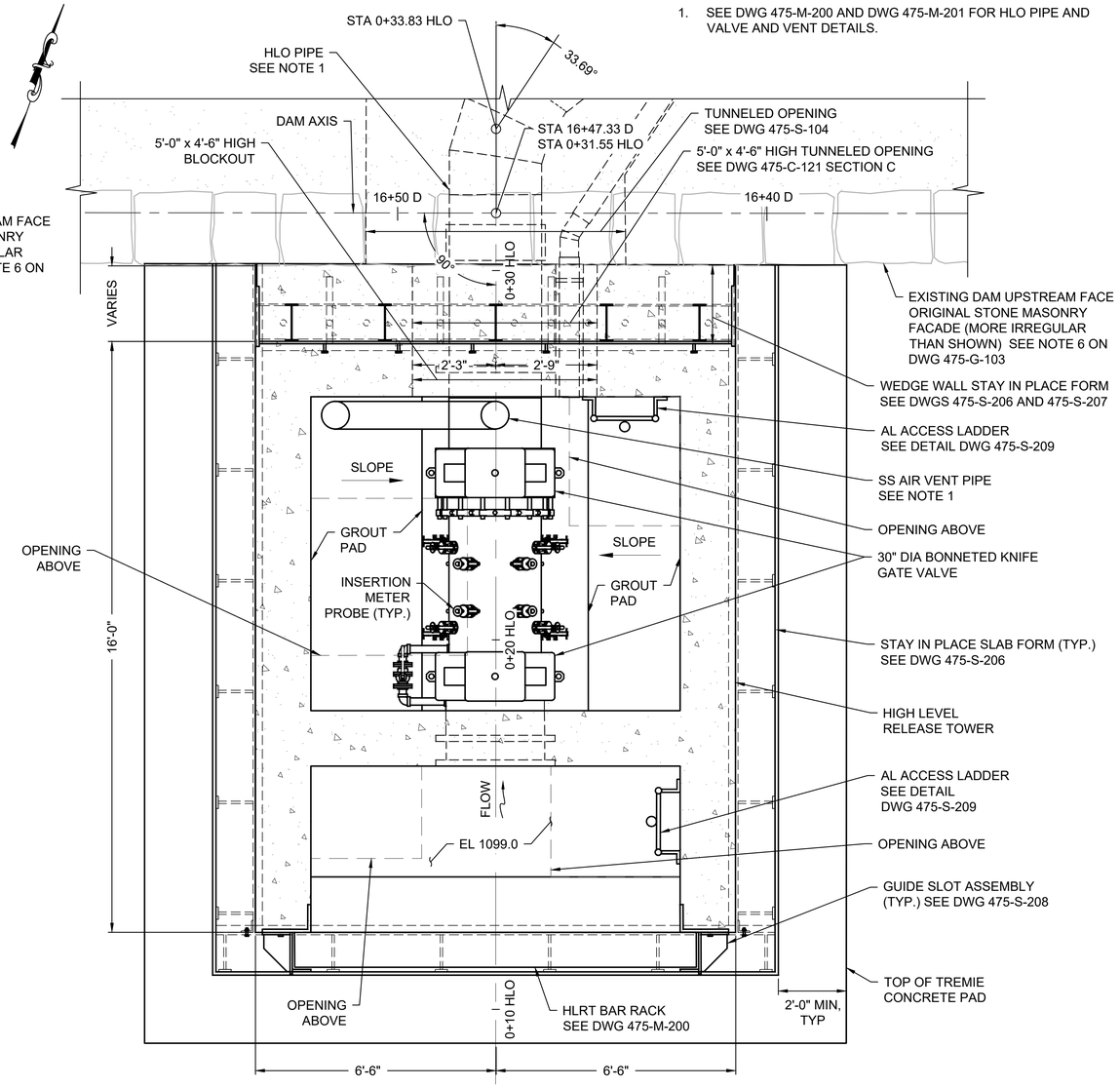

OPERATING FLOOR PLAN - EL 1140.0

B 475-C-111 SECTION

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

NOTES:

1. SEE DWG 475-M-200 AND DWG 475-M-201 FOR HLO PIPE AND VALVE AND VENT DETAILS.




BOTTOM FLOOR PLAN - EL. 1099.0 (SECTION AT EL 1111.0)

C 475-C-111 SECTION

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

0 1 2 3 4 FT.

1/2"=1'-0"

GRAPHIC SCALES CHECK BEFORE USE

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**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: VC
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE
DRAWN BY: EF

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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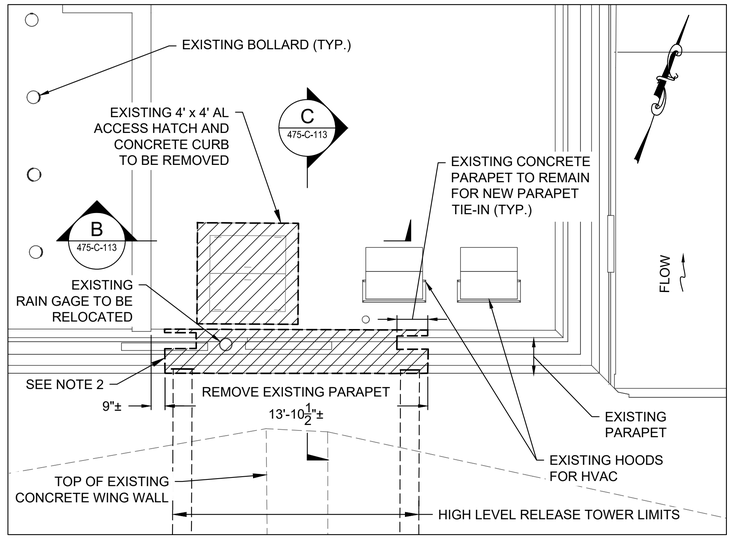
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CIVIL
HIGH LEVEL RELEASE TOWER
SECTIONS - SHEET 2 OF 2

DATE: AUGUST 2026
SHEET NO: 26 of 112
DRAWING NO. 475-C-112

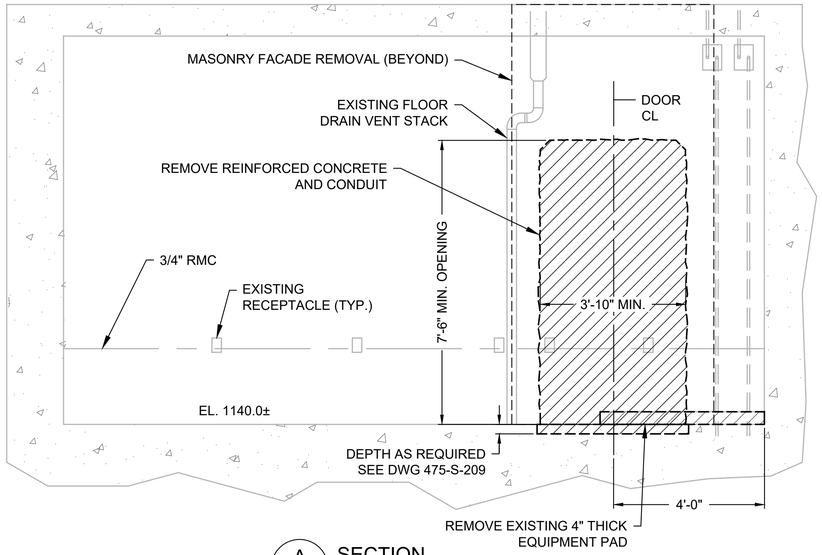
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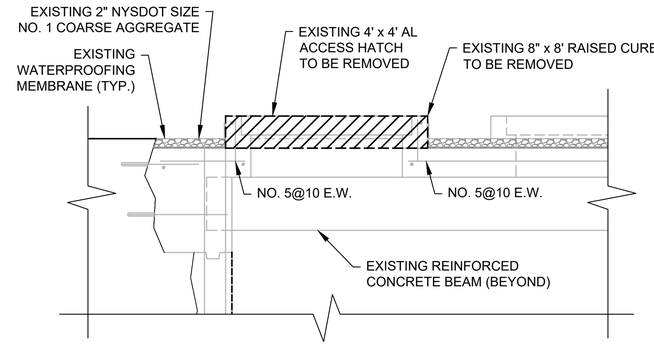

## UPPER GATE CHAMBER DEMOLITION PLAN

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



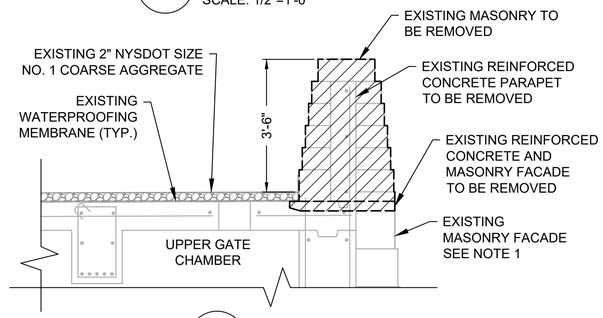

A 475-C-113 SECTION

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



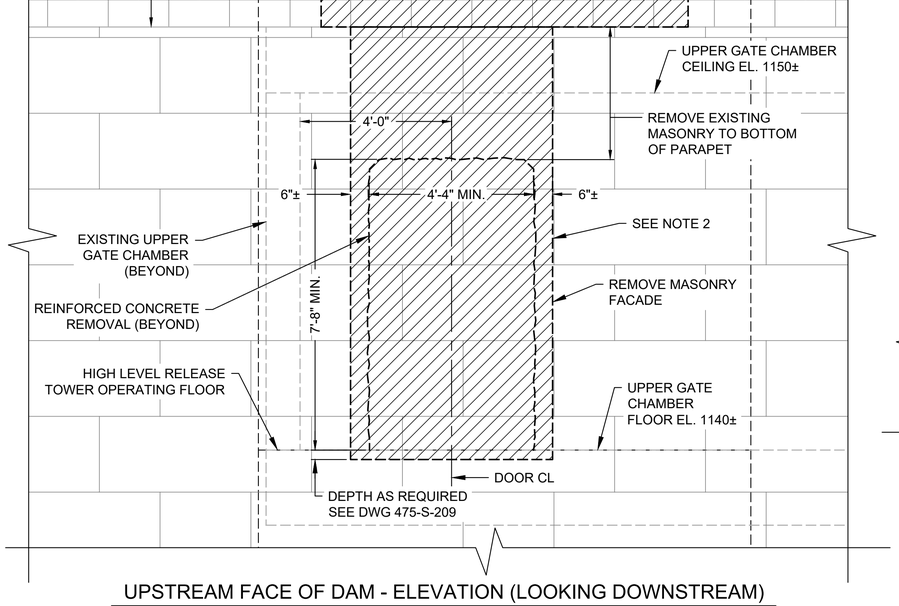

B 475-C-113 SECTION

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



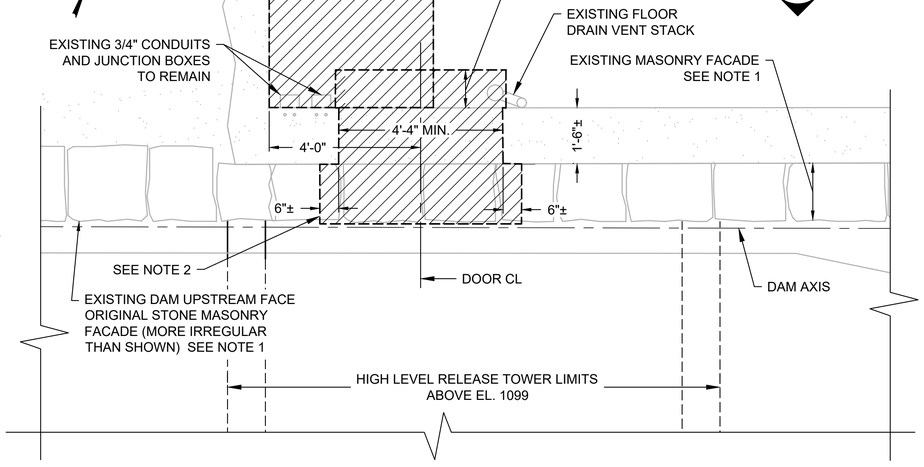

C 475-C-113 SECTION

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




## UPSTREAM FACE OF DAM - ELEVATION (LOOKING DOWNSTREAM)

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




## UPPER GATE CHAMBER DEMOLITION PLAN - EL. 1143.0

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

NOTES:

1. EXISTING MASONRY FACING STONES ARE IRREGULARLY SIZED, AND DIMENSIONS IN EACH DIRECTION WILL VARY FROM THE SCHEMATIC DEPICTION SHOWN ON THIS SHEET. EXTERIOR SURFACE TEXTURE IS HIGHLY IRREGULAR. DO NOT SCALE STONE SIZES FROM DRAWINGS.
2. EDGES OF DEMOLITION SHALL HAVE A SAWCUT PERIMETER 2" DEEP ON SMOOTH CONCRETE SURFACE AND 4" MIN. DEEP ON MASONRY FACADE. WIRESAW OPENING THROUGH CONCRETE WALL TO ACHIEVE CLEAN OPENING SURFACE.

LEGEND:

SELECT DEMOLITION

0 2 4 6 8 FT.
1/4"=1'-0"

0 1 2 3 4 FT.
1/2"=1'-0"

GRAPHIC SCALES CHECK BEFORE USE

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DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

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NEW YORK, NEW YORK 10018

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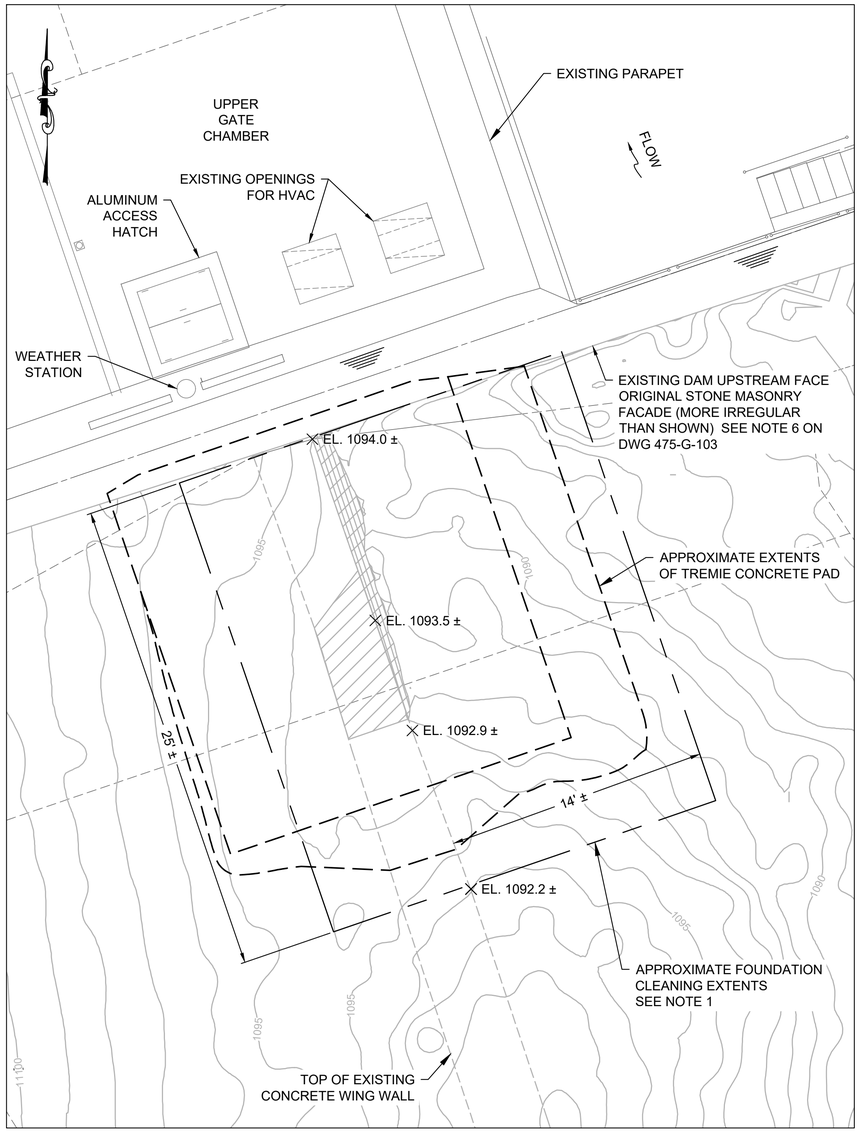
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**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
HIGH LEVEL RELEASE TOWER
UPPER GATE CHAMBER SELECT DEMOLITION

DATE: AUGUST 2026
SHEET NO: 27 of 112
DRAWING NO. 475-C-113

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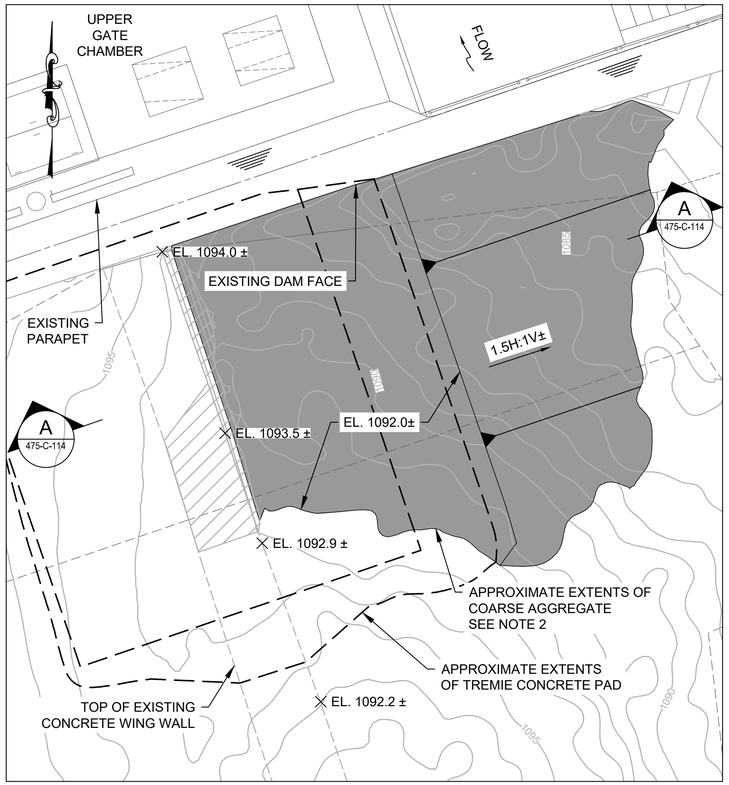



## TREMIE CONCRETE FOUNDATION PLAN - STAGE 1

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

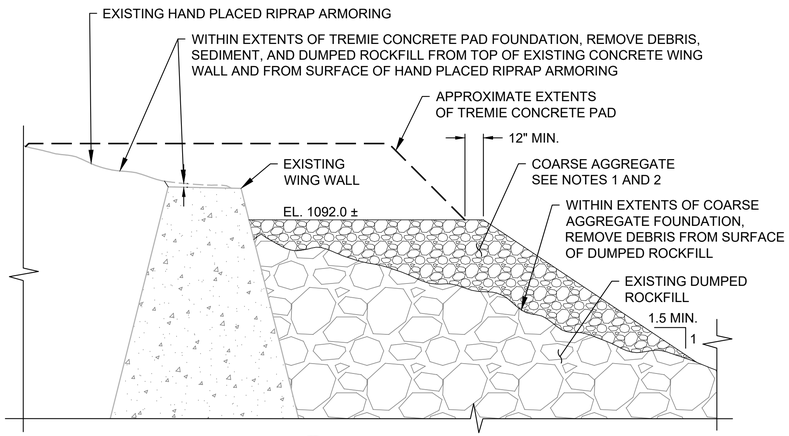
LEGEND:

- COARSE AGGREGATE
- APPROXIMATE EXTENTS OF EXPOSED TOP OF EXISTING CONCRETE WINGWALL
- EL. XXXX.X — SPOT ELEVATION ON TOP OF CONCRETE WINGWALL




## TREMIE CONCRETE FOUNDATION PLAN - STAGE 2

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



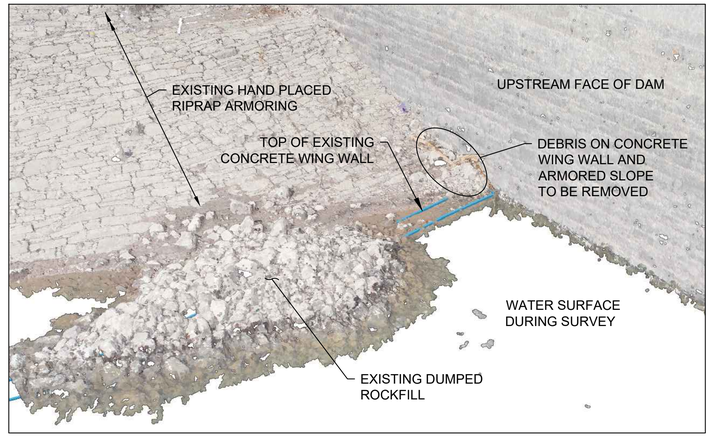

A 475-C-114 SECTION

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




## CONCRETE WING WALL AND ROCK FILL DURING LOW POOL

NOTE: ROCKFILL AND CONCRETE WING WALL WILL LIKELY BE SUBMERGED DURING CONSTRUCTION




## CONCRETE WING WALL AND ROCKFILL - 3D POINT CLOUD

NOTE: ROCKFILL AND CONCRETE WING WALL WILL BE SUBMERGED DURING CONSTRUCTION

NOTES:

1. STAGE 1: PERFORM UNDERWATER REMOVAL OF DEBRIS AND SEDIMENT TO EXPOSE THE TOP OF THE CONCRETE WING WALL AND THE SURFACE OF THE HAND PLACED RIPRAP ARMORING WITHIN THE APPROXIMATE EXTENTS OF THE TREMIE CONCRETE PAD FOUNDATION. DEBRIS INCLUDES LARGE STONES, METAL SEGMENTS, SUNKEN TIMBERS AND LIMBS (> 1 INCH IN DIAMETER), ROPE, AND GENERAL DETRITUS. SEE REPRESENTATIVE PHOTOS ON DWG 475-C-115. REMOVE TREE, METAL AND OTHER DEBRIS FROM WITHIN THE APPROXIMATE EXTENTS OF THE COARSE AGGREGATE FOUNDATION. REMOVE ROCKFILL WITHIN THE EXTENTS OF TREMIE CONCRETE FOUNDATION FROM THE ABOVE AND ON TOP OF THE EXISTING CONCRETE WING WALL AS SHOWN ON DWG 475-C-115.
2. STAGE 2: PERFORM UNDERWATER PLACEMENT OF COARSE AGGREGATE TO APPROXIMATE ELEVATION 1092.0 FEET TO A MINIMUM OF ONE FOOT BEYOND THE APPROXIMATE HORIZONTAL EXTENTS OF THE TREMIE CONCRETE PAD FOUNDATION. PROVIDE 1.5H MIN:1V SIDE SLOPES FOR THE COARSE AGGREGATE.
3. PROVIDE FINAL CLEANUP OF TOP OF THE CONCRETE WING WALL AND THE SURFACE OF THE HAND PLACED RIPRAP ARMORING BY BRUSHING OR HYDRO-JETTING AWAY ANY REMAINING STONES, SILT, AND SEDIMENT FROM THE TOP SURFACE OF THE CONCRETE WING WALL AND THE SURFACE OF THE HAND PLACED RIPRAP AMORING. THE INTENT IS TO MAXIMIZE, TO THE EXTENT PRACTICABLE, THE CLEAN CONCRETE SURFACE AREA ON TOP OF THE CONCRETE WING WALL AND THE SURFACE OF THE HAND PLACE RIPRAP ARMORING THAT WILL BE IN CONTACT WITH THE TREMIE CONCRETE.

0 4 8 FT.
1/4"=1'-0"

GRAPHIC SCALES CHECK BEFORE USE

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DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

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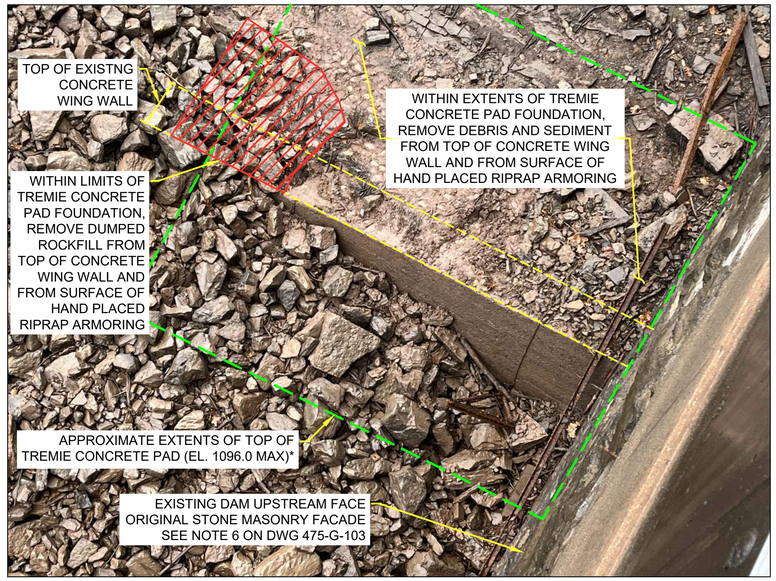
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
HIGH LEVEL RELEASE TOWER
FOUNDATION PREPARATION

DATE: AUGUST 2026
SHEET NO: 28 of 112
DRAWING NO. 475-C-114

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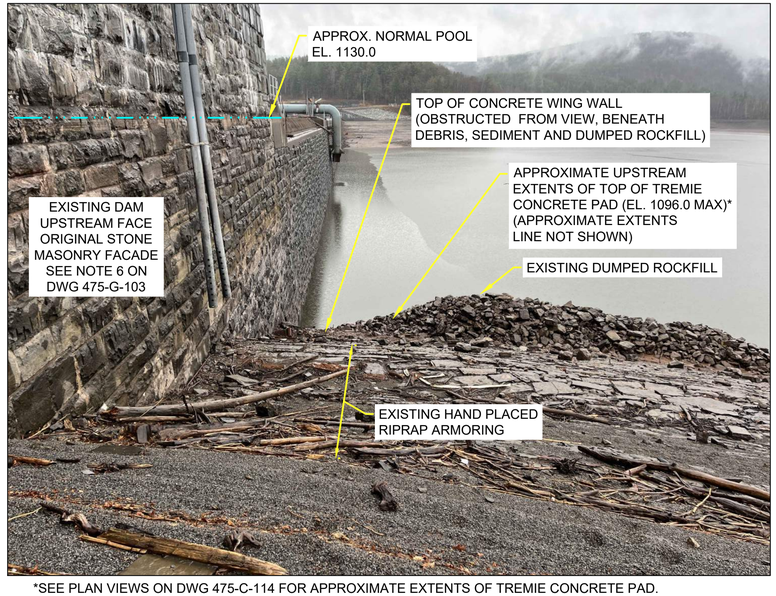



*SEE PLAN VIEWS ON DWG 475-C-114 FOR APPROXIMATE EXTENTS OF TREMIE CONCRETE PAD.

CONCRETE WING WALL AND ROCK FILL VIEWED LOOKING DOWN FROM TOP OF DAM

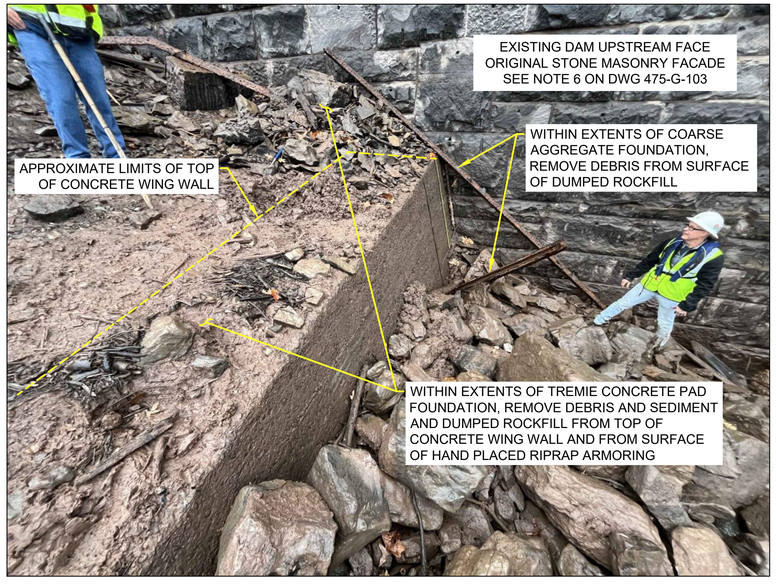



EXPOSED SECTION OF CONCRETE WING WALL VIEWED LOOKING WEST TOWARD LEFT ABUTMENT




*SEE PLAN VIEWS ON DWG 475-C-114 FOR APPROXIMATE EXTENTS OF TREMIE CONCRETE PAD.

VIEW LOOKING EAST TOWARD CONCRETE WING WALL AND ROCK FILL FROM TOP OF LEFT ABUTMENT




EXPOSED SECTION OF CONCRETE WING WALL VIEWED LOOKING DOWNSTREAM

NOTES:

1. PHOTOS TAKEN ON 11/12/2024.
2. RESERVOIR SURFACE AT EL. 1085± DURING SITE VISIT.
3. DO NOT DISTURB EXISTING HAND PLACED RIPRAP ARMORING BEYOND SPECIFIED CLEANING.
4. SEE STAGE 1, STAGE, 2 AND FINAL CLEANUP NOTES ON DWG 475-C-114.

**BID SET**
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DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE
DRAWN BY: EF

Gannett Fleming Hazen A Joint Venture
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498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172-01 LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
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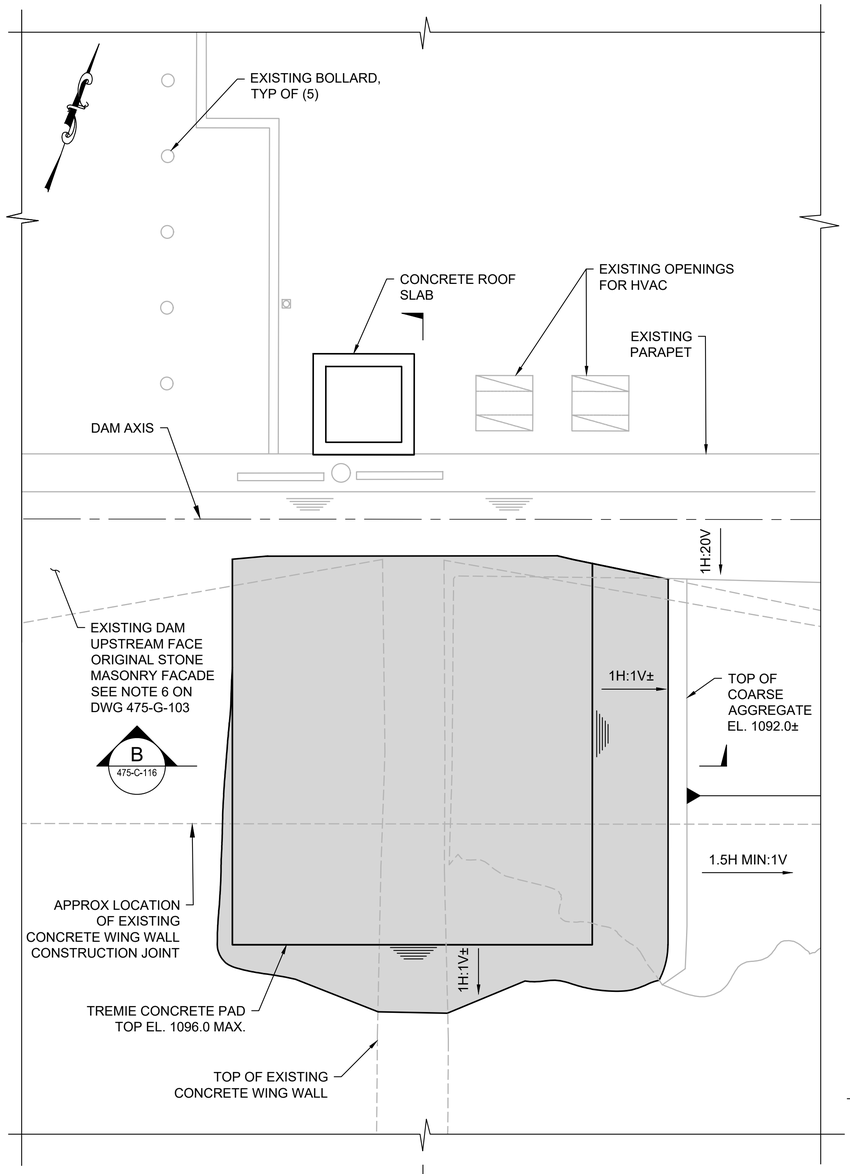
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CIVIL
HIGH LEVEL RELEASE TOWER
CONCRETE WING WALL LOW POOL PHOTOS

DATE: AUGUST 2026
SHEET NO: 29 of 112
DRAWING NO. 475-C-115

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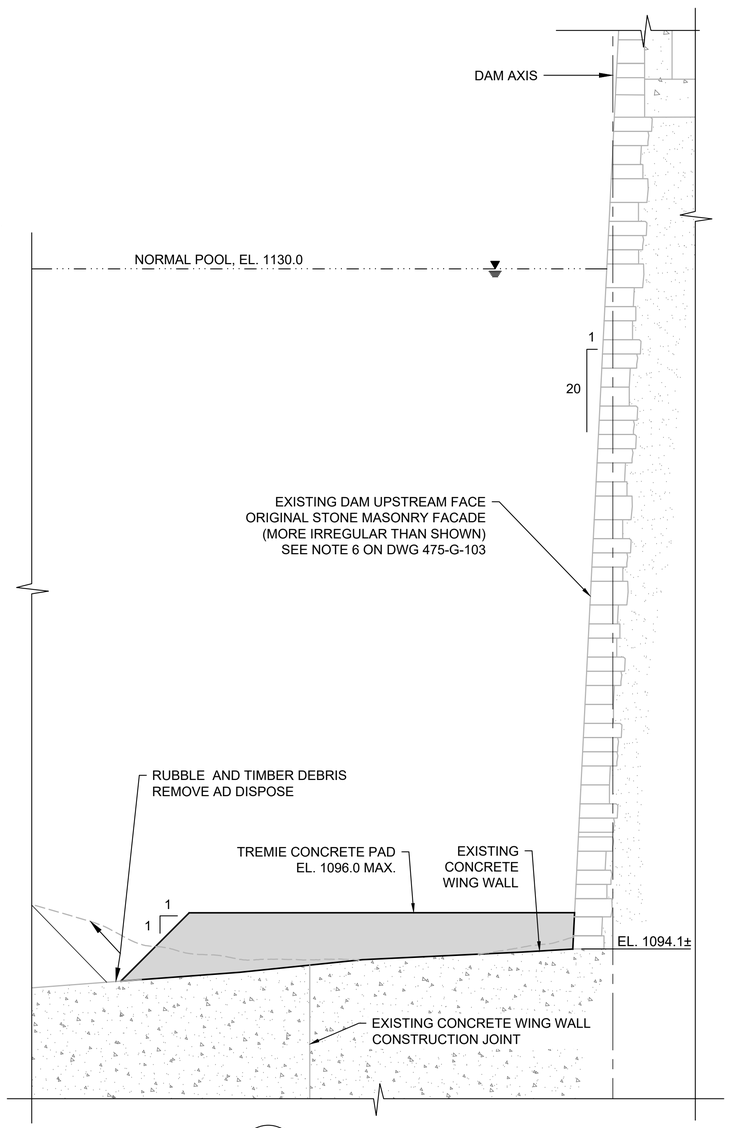
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Last Date Saved: 7/24/2026 3:28 PM




A 475-C-116

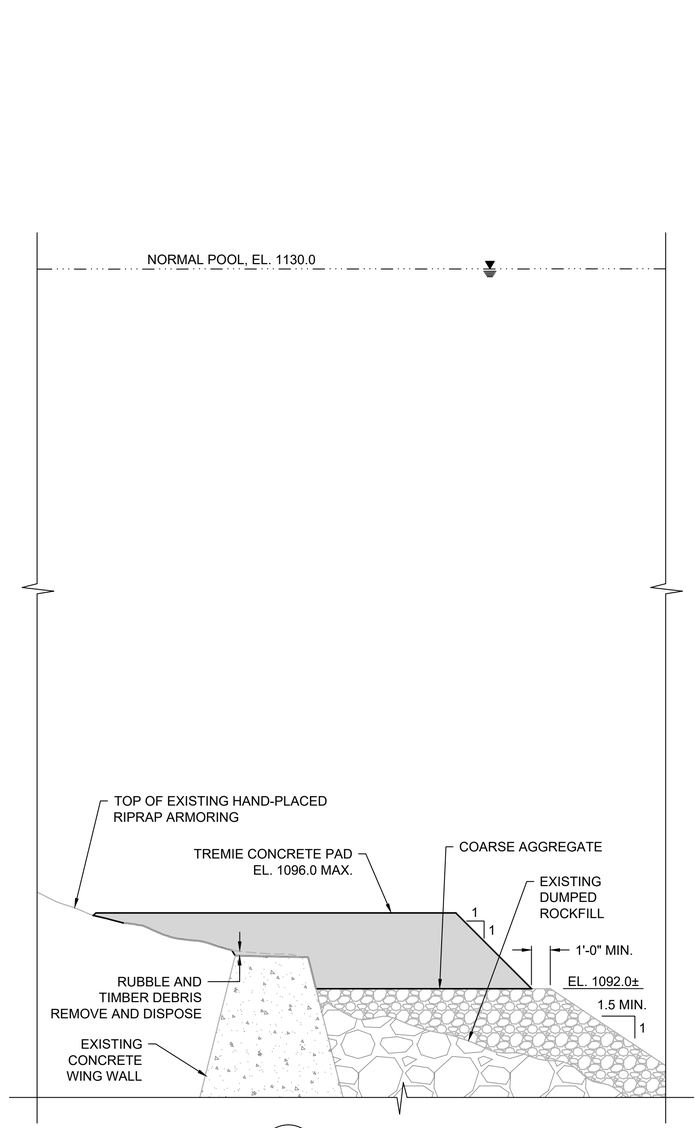
PLAN

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




A 475-C-116 SECTION

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




B 475-C-116 SECTION

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

PHASE I CONSTRUCTION SEQUENCE AND NOTES:

1. WORK DURING THIS PHASE WILL LIKELY BE CONSTRUCTED UNDERWATER DEPENDING ON PREVAILING POOL ELEVATION.
2. SEE DWGS 475-C-114 AND 475-C-115 FOR FOUNDATION PREPARATION PRIOR TO PHASE I.

LEGEND:

CONCRETE PLACEMENT DURING PHASE.

1/4"=1'-0" 0 4 8 FT.

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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STATE OF NEW YORK BOYD HOWARD 099122 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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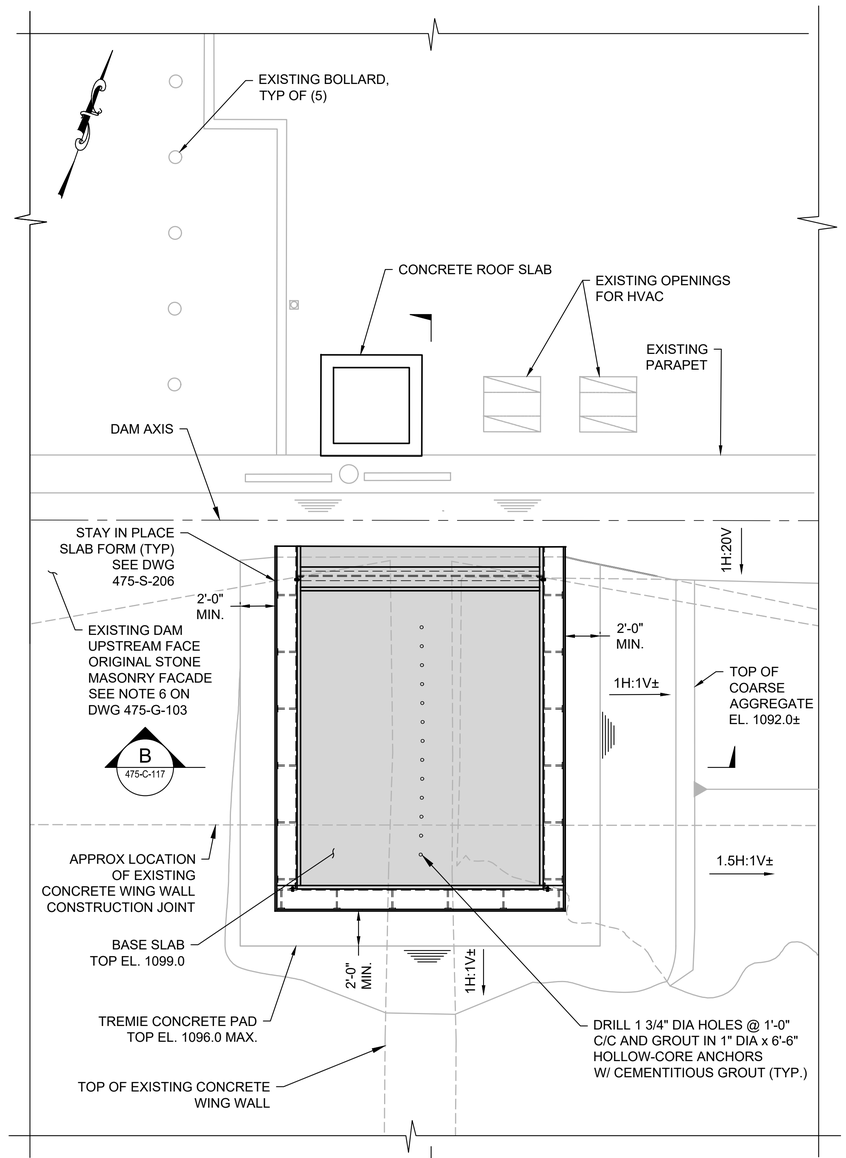
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**BUREAU OF ENGINEERING DESIGN & CONSTRUCTION**
96-05 HORACE HARDING EXPRESSWAY 5th FLOOR
CORONA, NEW YORK 11368
www.nyc.gov/dep

**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
HIGH LEVEL RELEASE TOWER
CONSTRUCTION SEQUENCE - PHASE I

DATE: AUGUST 2026
SHEET NO: 30 of 112
DRAWING NO. 475-C-116

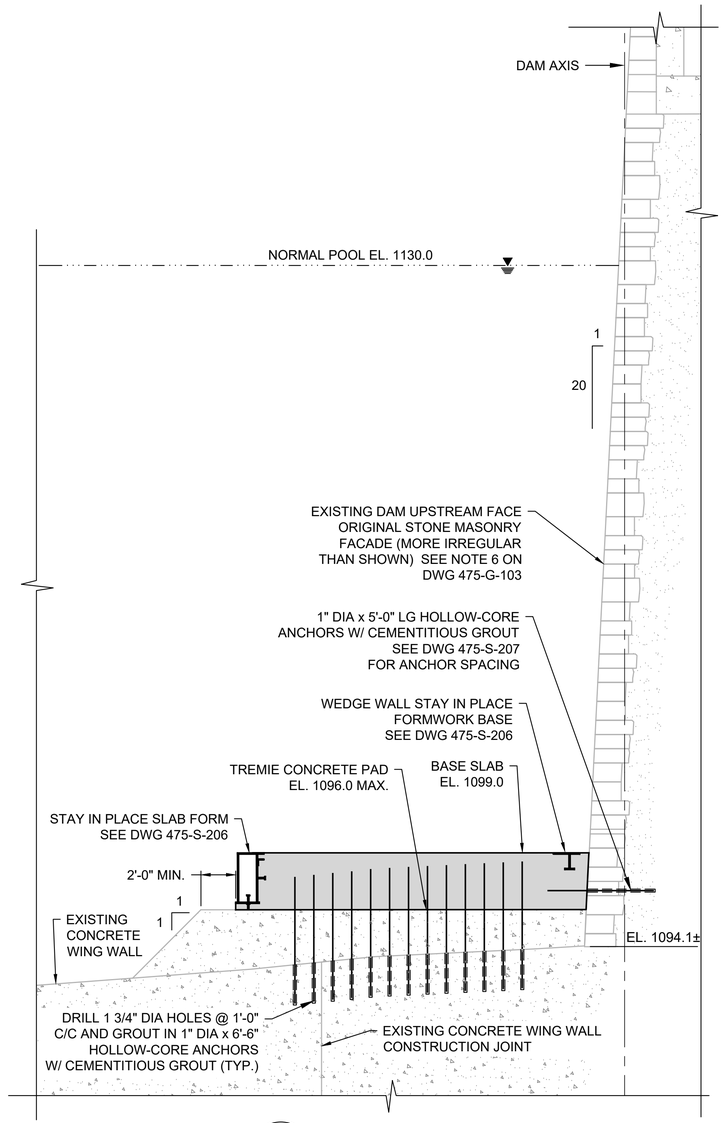
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Plot Scale: 1:1

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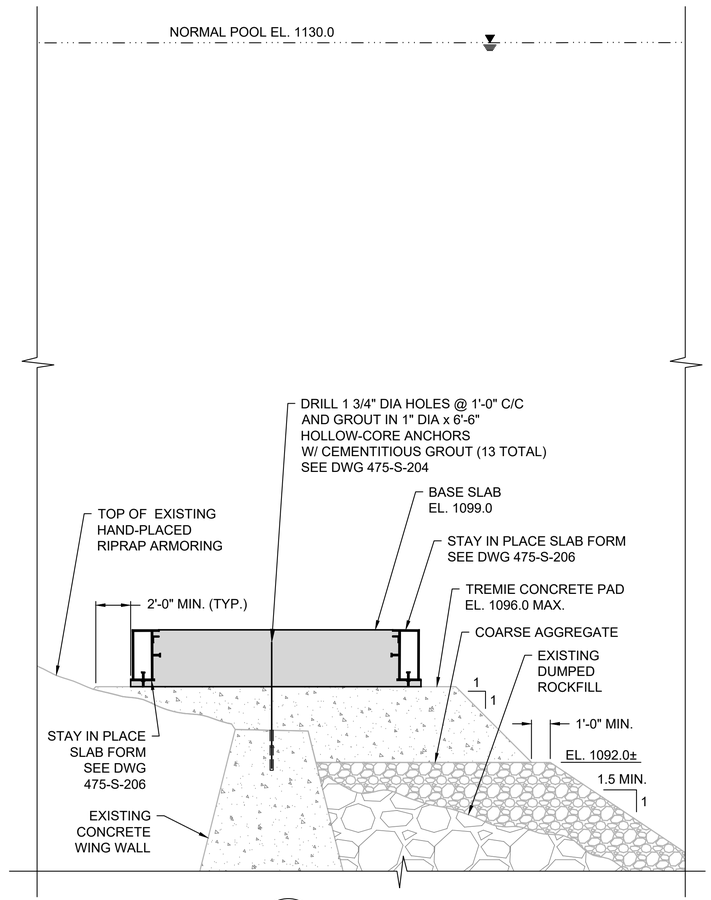

PLAN

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




SECTION

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




SECTION

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

PHASE II CONSTRUCTION SEQUENCE AND NOTES:

1. WORK DURING THIS PHASE WILL LIKELY BE CONSTRUCTED UNDERWATER DEPENDING ON PREVAILING POOL ELEVATION.
2. INSTALL STAY IN PLACE FORMS ON TREMIE CONCRETE PAD, LEVEL AND INSTALL REINFORCING.
3. DRILL AND GROUT HORIZONTAL AND VERTICAL SLAB ANCHORS. SEE STRUCTURAL DRAWINGS FOR DETAILS. DRILL AND CLEAN HOLES, INSTALL ANCHORS IN GROUT, ALL IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. PLACE BASE SLAB ON THE TOP OF THE TREMIE CONCRETE PAD TO EL 1099.0. SEE STRUCTURAL DRAWINGS FOR BASE SLAB DETAILS, INCLUDING SLAB REINFORCING.

LEGEND:

CONCRETE PLACEMENT DURING PHASE.

0 4 8 FT.
1/4"=1'-0"

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

**BID SET**
**SUBMITTAL DATE: AUG 2026**

| NO. | DATE | REVISIONS/DESCRIPTION | APPR'D. |
|---|---|---|---|
| 0 | AUG 26 | ISSUED FOR BIDS | CSB |

DESIGNED BY: VC
DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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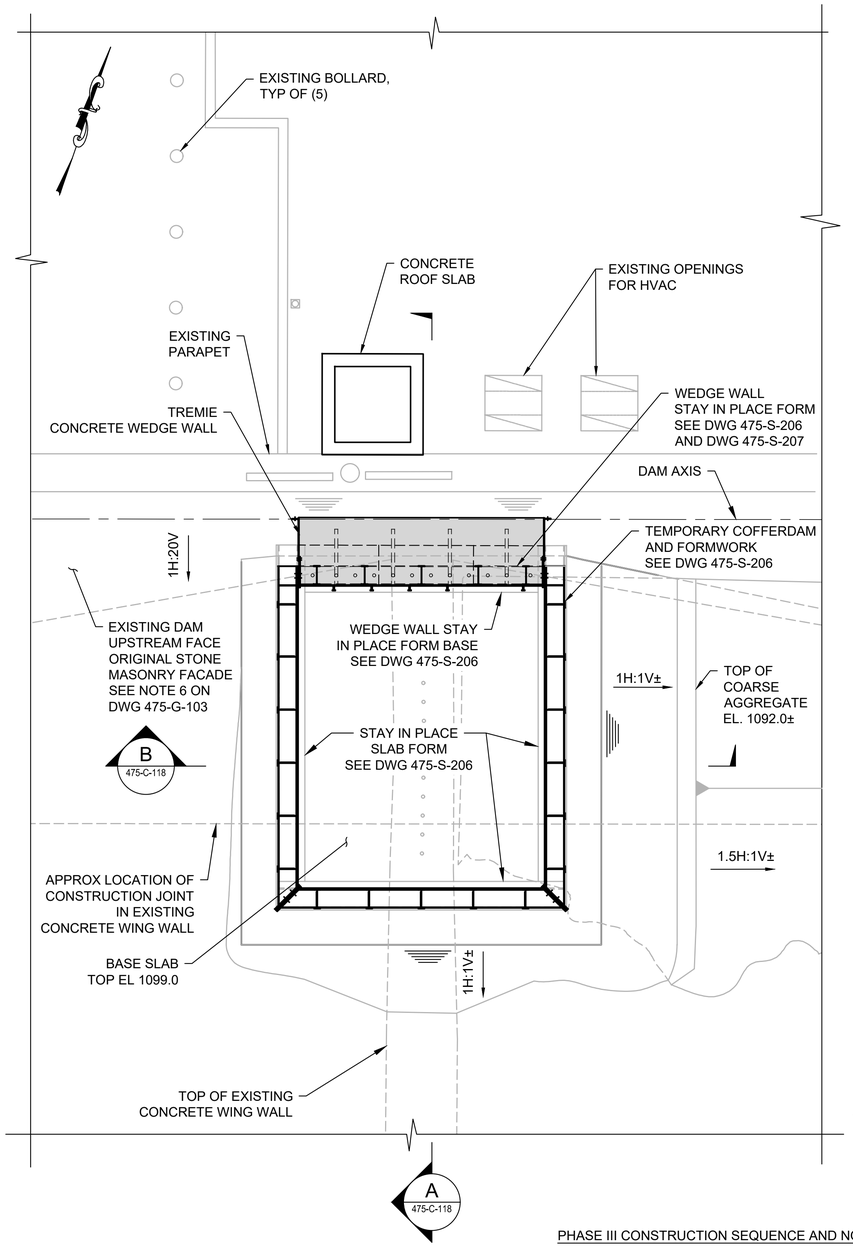
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
HIGH LEVEL RELEASE TOWER
CONSTRUCTION SEQUENCE - PHASE II

DATE: AUGUST 2026
SHEET NO: 31 of 112
DRAWING NO. 475-C-117

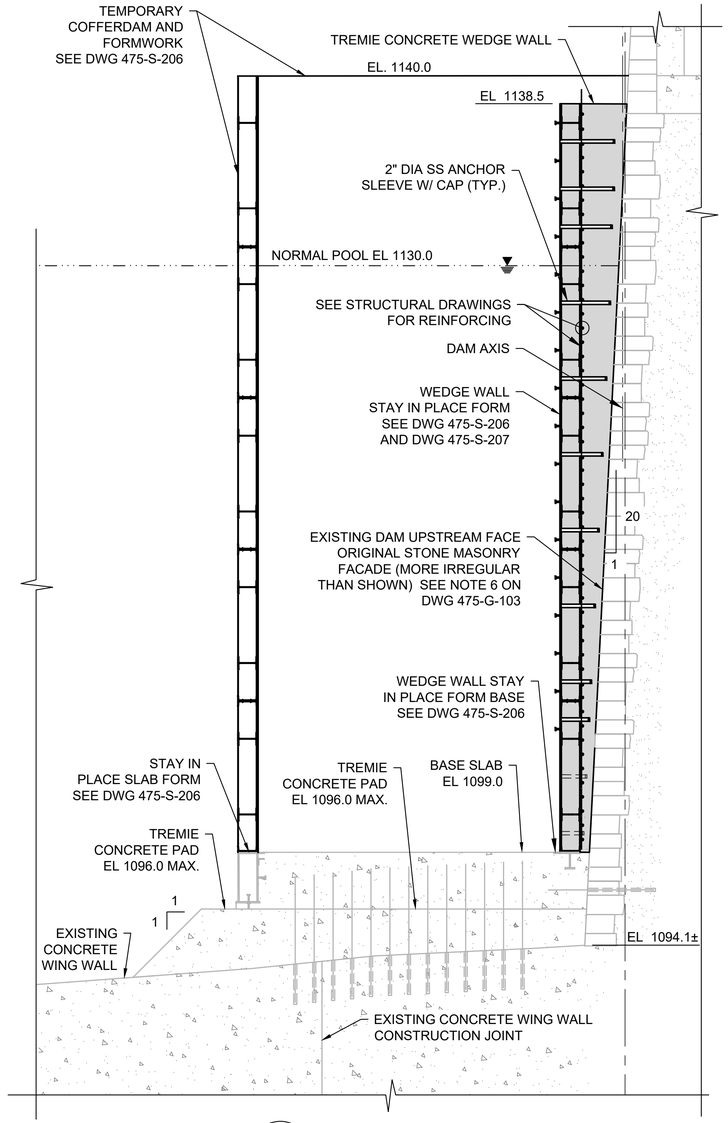
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Plot Scale: 1:1
Last Date Saved: 7/24/2026 3:32 PM



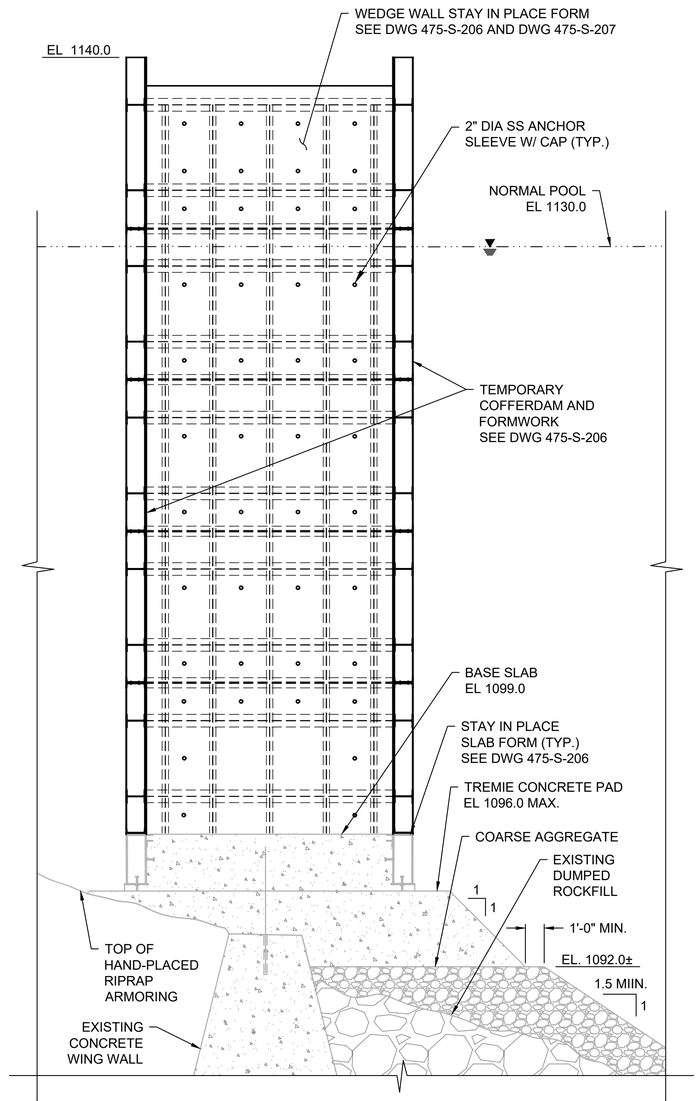

PLAN

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




A 475-C-118 SECTION

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




B 475-C-118 SECTION

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

PHASE III CONSTRUCTION SEQUENCE AND NOTES:

1. INSTALL WEDGE WALL STAY IN PLACE FORMWORK AND TEMPORARY COFFERDAM FORMWORK PER DETAILS ON DWG 475-S-206.
2. PLACE TREMIE CONCRETE WEDGE WALL.
3. WORK DURING THIS PHASE BELOW EL. 1130 ± WILL LIKELY BE CONSTRUCTED UNDERWATER DEPENDING ON PREVAILING POOL ELEVATION.

LEGEND:

CONCRETE PLACEMENT DURING PHASE.

0 4 8 FT.
1/4"=1'-0"

**BID SET**
**SUBMITTAL DATE: AUG 2026**

GRAPHIC SCALES CHECK BEFORE USE

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|---|---|---|---|
| 0 | AUG 26 | ISSUED FOR BIDS | CSB |

DESIGNED BY: VC
DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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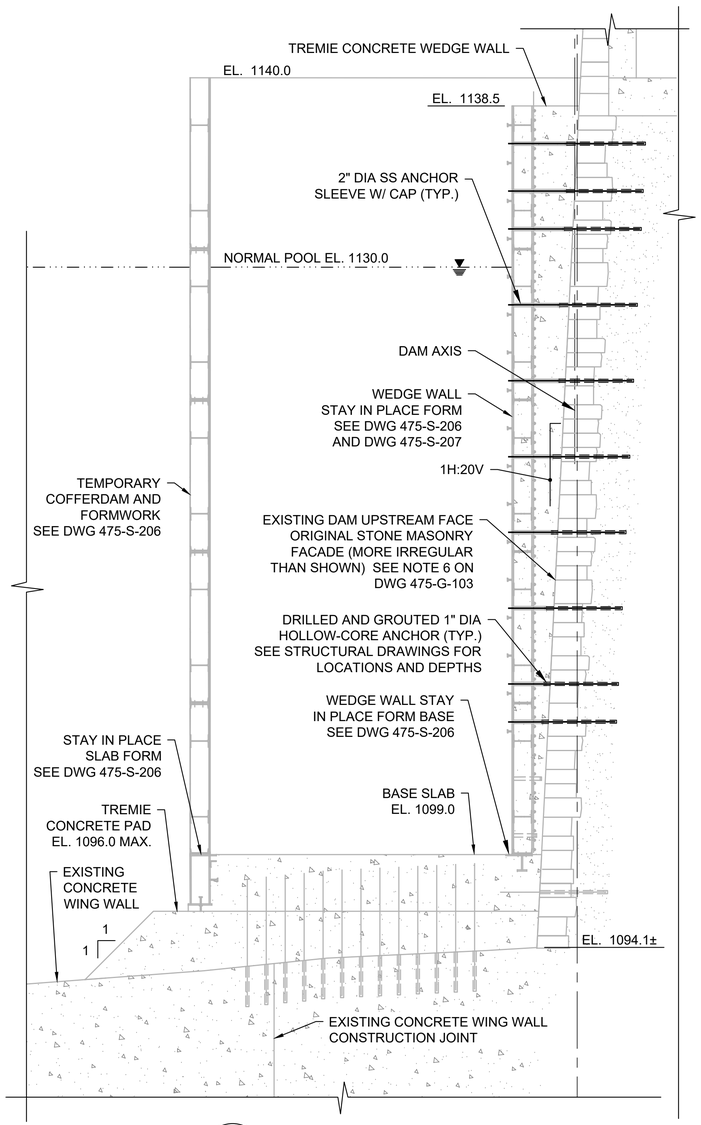
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
HIGH LEVEL RELEASE TOWER
CONSTRUCTION SEQUENCE - PHASE III

DATE: AUGUST 2026
SHEET NO: 32 of 112
DRAWING NO. 475-C-118

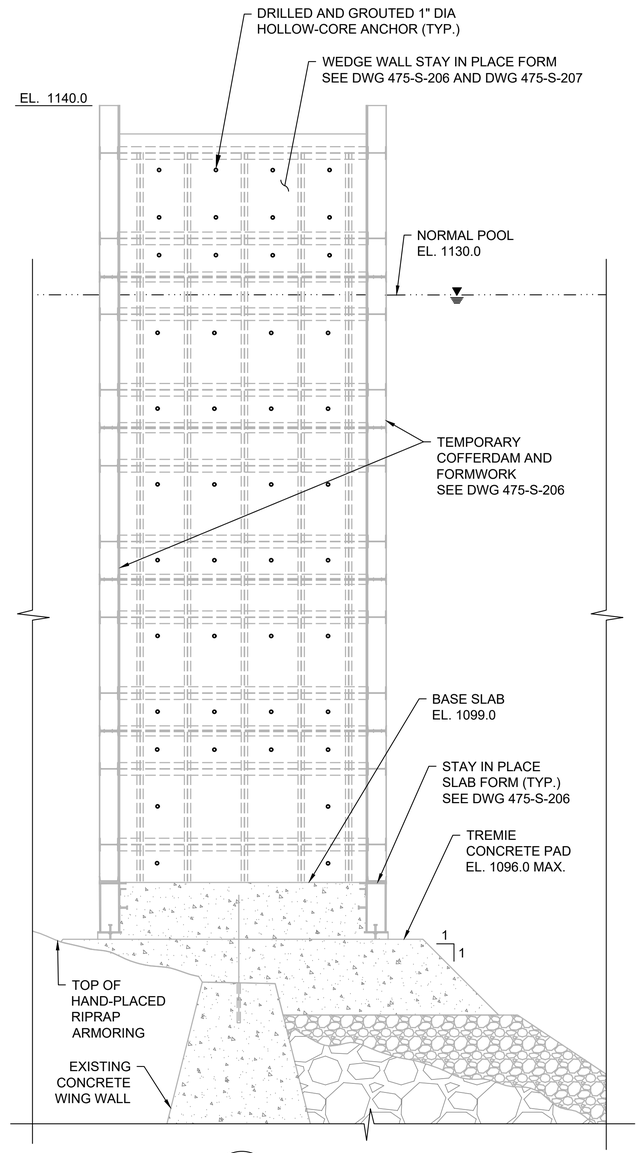
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Plot Scale: 1:1
Date & Time Plotted: 8/6/2026 8:07 AM




A 475-C-118 SECTION

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




B 475-C-118 SECTION

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

PHASE IV CONSTRUCTION SEQUENCE AND NOTES:

1. DRILL AND GROUT 1" DIA HOLLOW-CORE ANCHORS IN EXISTING DAM FACE.
2. WORK DURING THIS PHASE BELOW EL. 1130 ± WILL LIKELY BE CONSTRUCTED UNDERWATER DEPENDING ON PREVAILING POOL ELEVATION.

**BID SET**
**SUBMITTAL DATE: AUG 2026**

0 4 8 FT.
1/4"=1'-0"

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DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

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HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172-GC LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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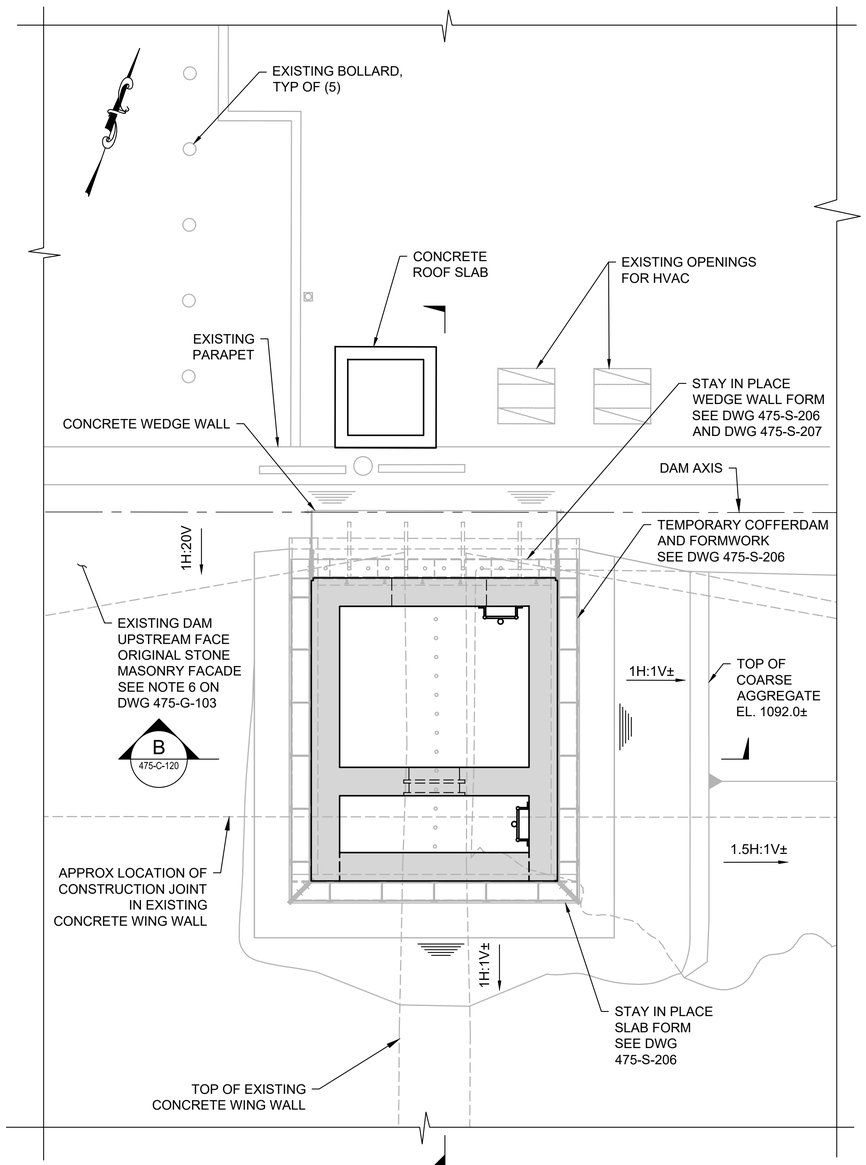
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
HIGH LEVEL RELEASE TOWER
CONSTRUCTION SEQUENCE - PHASE IV

DATE: AUGUST 2026
SHEET NO: 33 of 112
DRAWING NO. 475-C-119

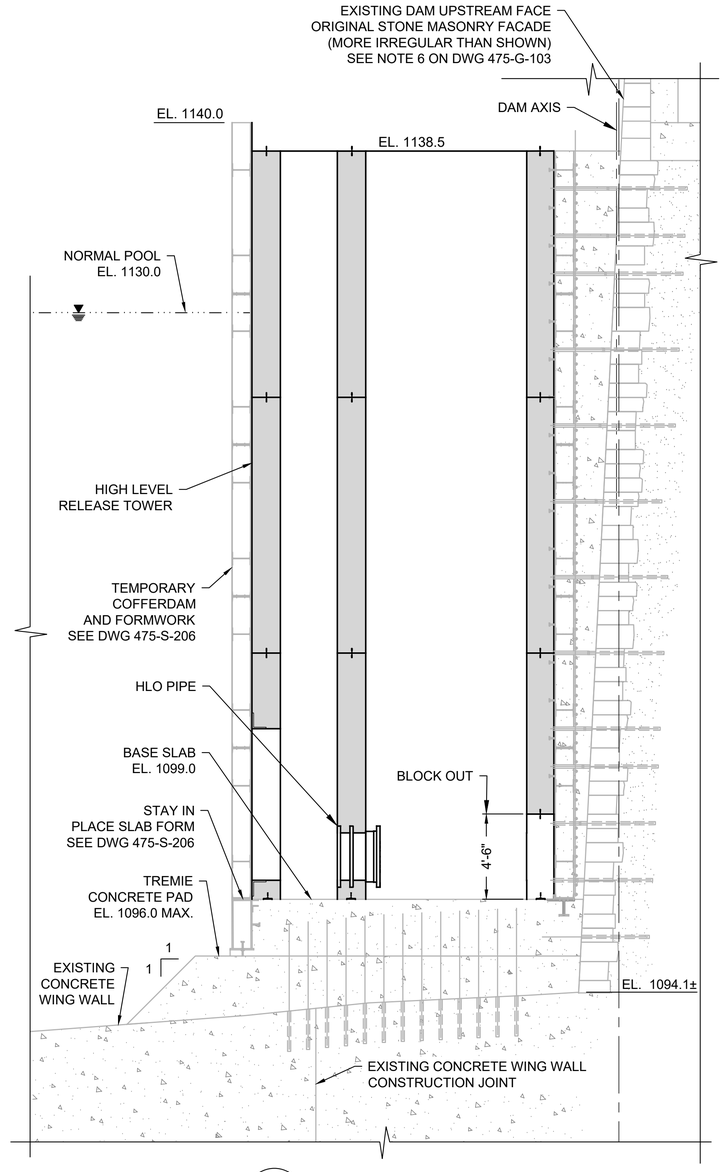
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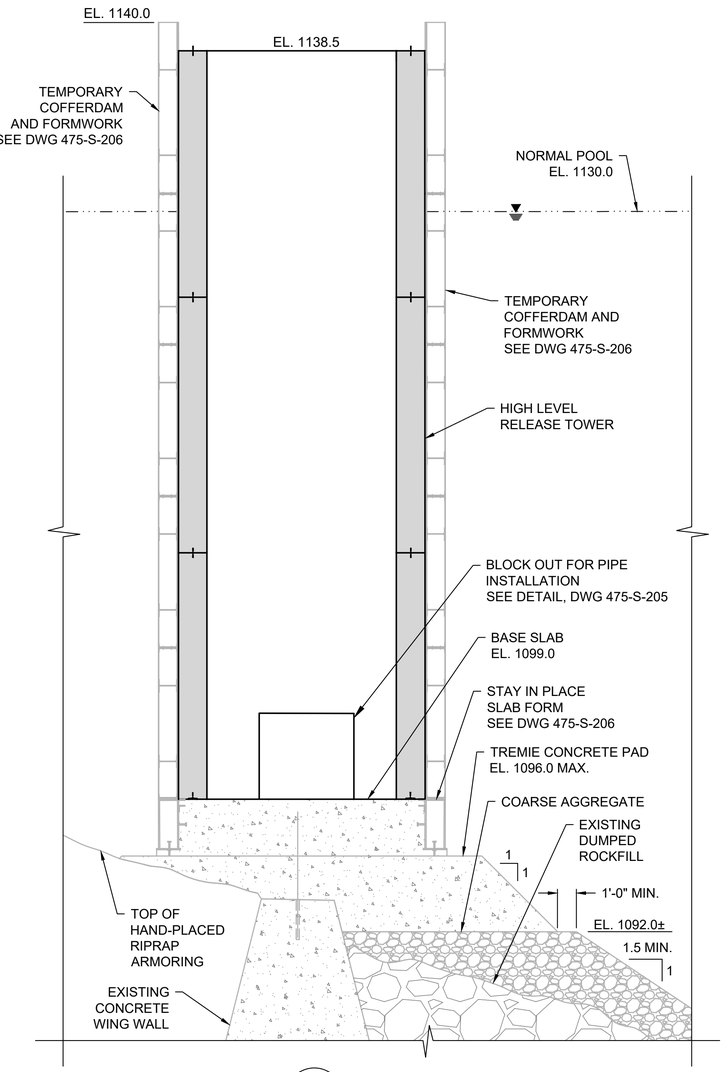

PLAN

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




A 475-C-120 SECTION

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




B 475-C-120 SECTION

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

PHASE V CONSTRUCTION SEQUENCE AND NOTES:

1. DEWATER THE AREA INSIDE THE TEMPORARY COFFERDAM AND FORMWORK.
2. INSTALL RETROFIT WATERSTOP ALONG THE BASE OF THE HLRT CONCRETE WALLS.
3. INSTALL CONCRETE WALLS IN LIFTS TO EL. 1138.5 AS SHOWN ON THE STRUCTURAL DRAWINGS.
4. COORDINATE WITH STRUCTURAL AND MECHANICAL DRAWINGS FOR GUIDE SLOT ASSEMBLY, PIPE SLEEVES, BLOCKOUTS, AND SUPPORTS.

LEGEND:

CONCRETE PLACEMENT DURING PHASE.

1/4"=1'-0" 0 4 8 FT.

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**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: VC
DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172-01 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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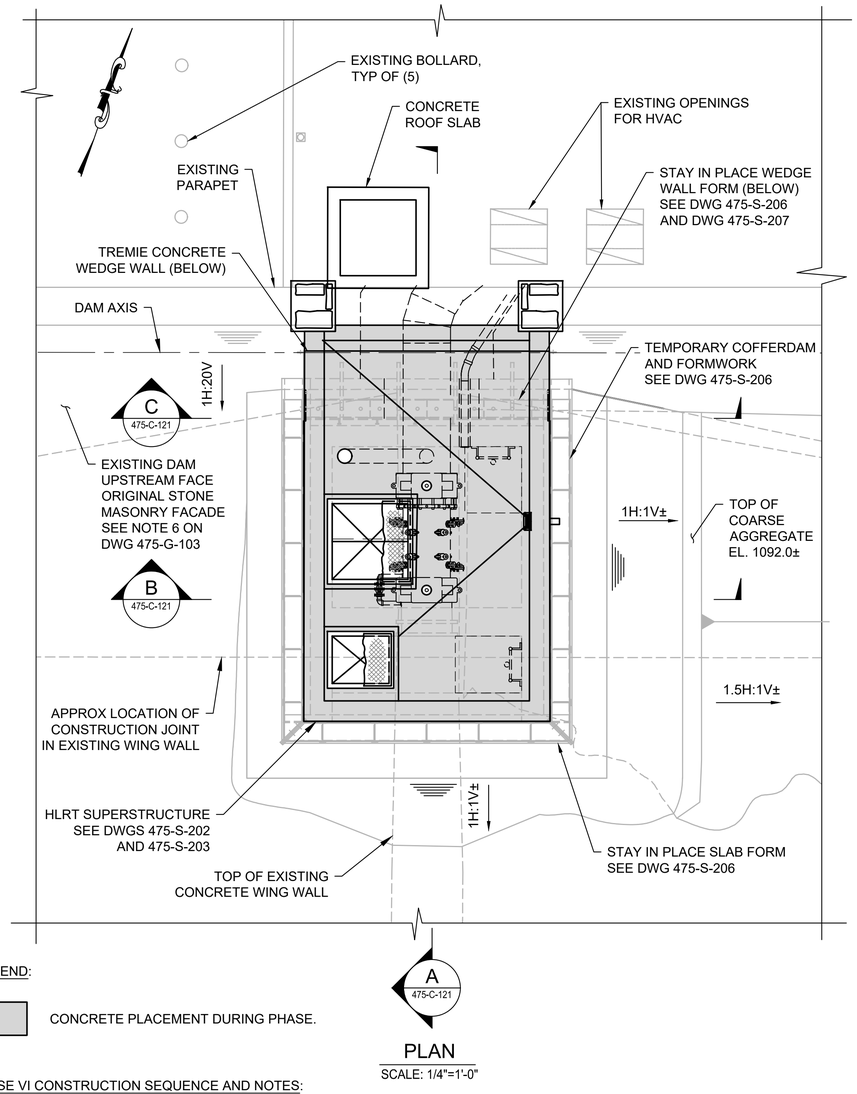
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
HIGH LEVEL RELEASE TOWER
CONSTRUCTION SEQUENCE - PHASE V

DATE: AUGUST 2026
SHEET NO: 34 of 112
DRAWING NO. 475-C-120

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Last Date Saved: 7/24/2026 3:34 PM
Plot Style Table: BEDC_Acad_2021.ctb
Plot Scale: 1:1
Date & Time Plotted: 8/6/2026 8:07 AM




PLAN

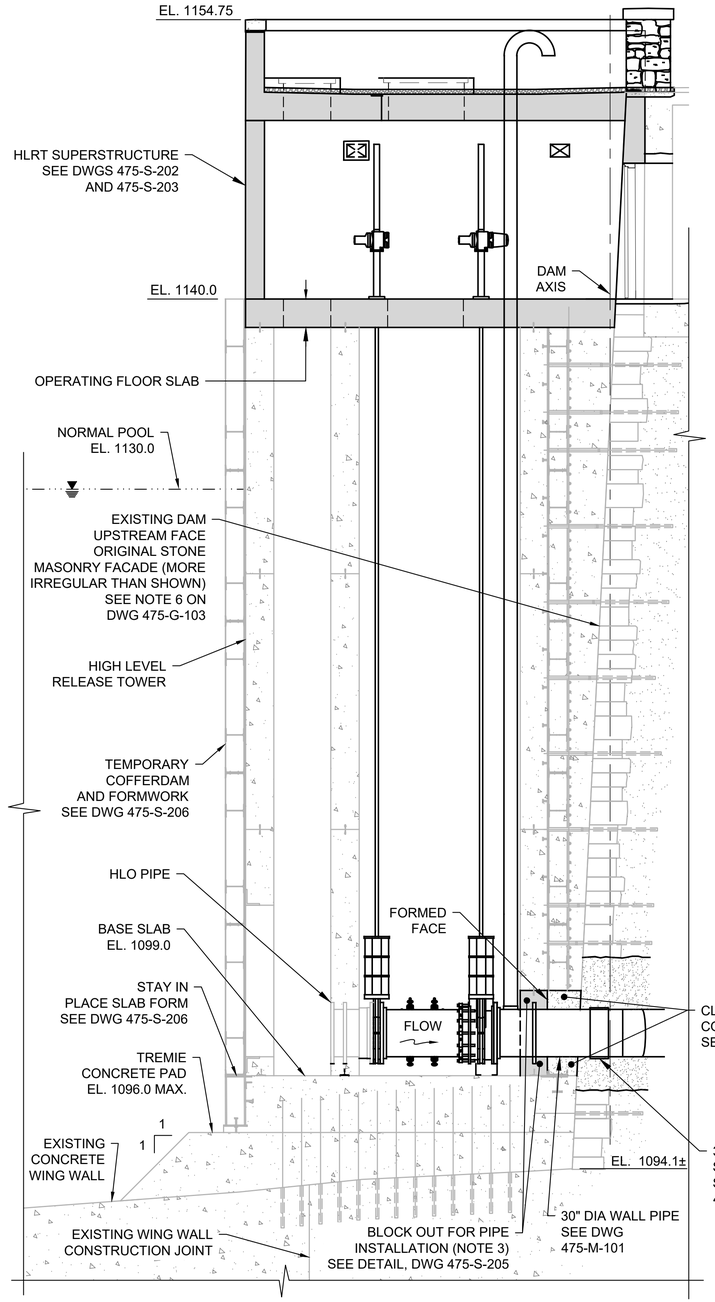
SCALE: 1/4"=1'-0"

LEGEND:

CONCRETE PLACEMENT DURING PHASE.

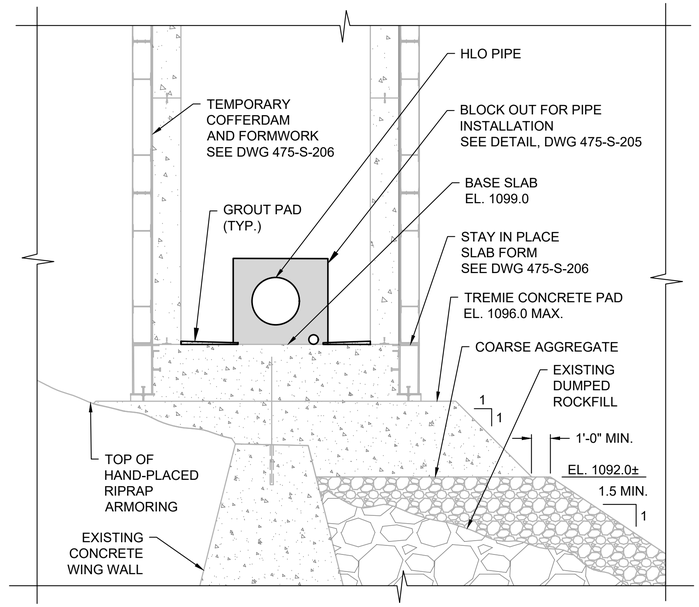
PHASE VI CONSTRUCTION SEQUENCE AND NOTES:

1. TUNNEL THROUGH SECTION OF DOWNSTREAM TREMIE CONCRETE WEDGE WALL AND WEDGE WALL STAY IN PLACE FORM FOR INSTALLATION OF THE 30" DIA WALL PIPE.
2. INSTALL 30" DIA WALL PIPE AND FILL THE ANNULAR SPACE AROUND THE 30" DIA WALL PIPE WITH CLASS 40P CONCRETE WITHIN THE TUNNELED OPENING MADE DURING PHASE V.
3. INSTALL REINFORCED CONCRETE BLOCK OUT CLOSURE.
4. INSTALL OPERATING FLOOR SLAB.
5. INSTALL THE HLRT SUPERSTRUCTURE.
6. INSTALL HLO PIPING AND VALVES IN THE HLRT INTERIOR THROUGH THE ACCESS HATCHES IN THE OPERATING FLOOR SLAB AND SUPERSTRUCTURE. THE CONTRACTOR SHALL ESTABLISH PICK POINTS FOR VALVE INSTALLATION AND POSSIBLE FUTURE VALVE REMOVAL DURING THE INITIAL PIPING INSTALLATION PROCESS. SUBMIT FOR APPROVAL ALL PICK POINT LOCATIONS AND HARDWARE, WHICH SHALL REMAIN AS PART OF PERMANENT INSTALLATION.
7. REMOVE TEMPORARY COFFERDAM AND FORMWORK AND INSTALL GUIDE SLOT ASSEMBLIES AND FABRICATED BAR RACK.



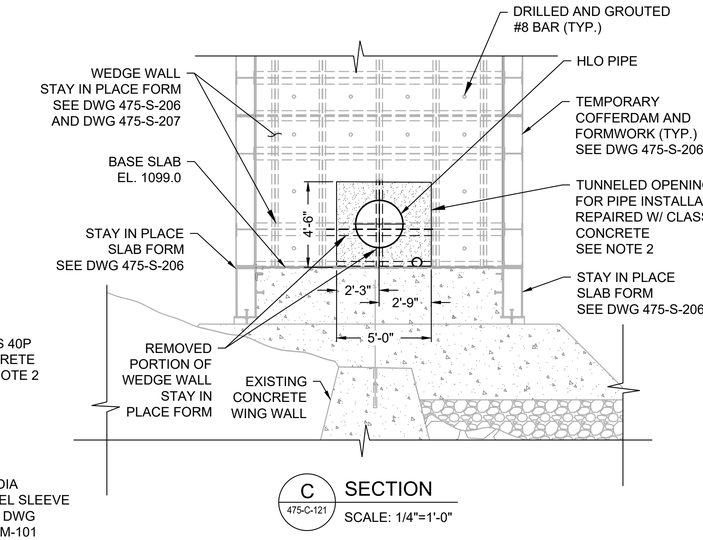

A 475-C-121 SECTION

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




B 475-C-121 SECTION

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




C 475-C-121 SECTION

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

0 4 8 FT.

1/4"=1'-0"

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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|---|---|---|---|
| 0 | AUG 26 | ISSUED FOR BIDS | CSB |

DESIGNED BY: VC
DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 999172-E LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**
CIVIL
HIGH LEVEL RELEASE TOWER
CONSTRUCTION SEQUENCE - PHASE VI

DATE: AUGUST 2026
SHEET NO: 35 of 112
DRAWING NO. 475-C-121

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Date & Time Plotted: 8/6/2026 8:07 AM
Plot Style Table: BEDC_Acad_2021.ctb
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# GENERAL STRUCTURAL NOTES

A. GENERAL

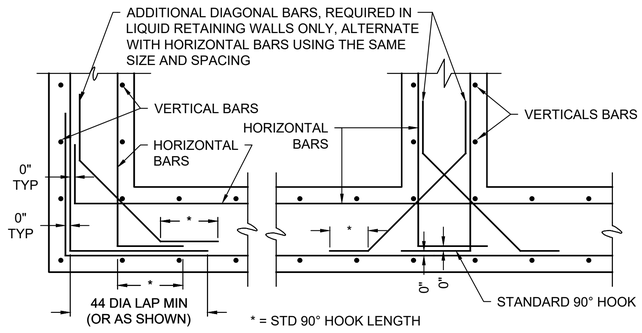
1. WORK SHALL BE COORDINATED WITH THE VARIOUS TRADES TO AVOID CONFLICT OR INTERFERENCE WITH REINFORCING STEEL.

B. DESIGN CRITERIA

1. BUILDING CODE 2020 NEW YORK STATE BUILDING CODE

C. CONCRETE

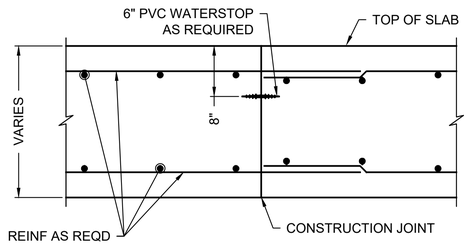
1. ALL CONCRETE FOR STRUCTURES SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 03 30 00, AIR-ENTRAINED CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH SPECIFIED UNLESS OTHERWISE NOTED.
2. REINFORCEMENT BARS SHALL BE NEW BILLET STEEL CONFORMING TO A.S.T.M. DESIGNATION A615, GRADE 60, DEFORMED.
3. WELDED WIRE FABRIC SHALL CONFORM TO A.S.T.M. DESIGNATION A185.
4. WATERSTOPS SHALL BE POLYVINYL CHLORIDE, 6"X3/8" IN CONSTRUCTION JOINTS UNLESS SHOWN OTHERWISE. ALL WATERSTOP JOINTS SHALL BE SHOP FABRICATED UNLESS OTHERWISE APPROVED.
5. CONCRETE DESIGN IS IN CONFORMANCE WITH "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (A.C.I. 318-014 AND A.C.I. 350-06).
6. DETAIL, FABRICATE AND ERECT REINFORCEMENT BARS, INCLUDING BAR SUPPORTS, SPACERS, ETC. IN ACCORDANCE WITH "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT." (A.C.I. 315-99)
7. UNLESS SHOWN OTHERWISE, BARS AT SPLICES SHALL BE LAPPED IN ACCORDANCE WITH THE TABLE "REINFORCING STEEL LAP SPLICES AND EMBEDMENTS" SHOWN ON THIS SHEET.
8. CONCRETE COVER FOR REINFORCEMENT BARS SHALL CONFORM TO THE FOLLOWING, UNLESS INDICATED OTHERWISE ON THE DRAWINGS:
   A. BOTTOM OF HLRT BASE SLAB — 4 INCHES
   B. 12 INCH WALLS — 2 INCHES
   C. TOP OF HLRT BASE SLAB AND 18 INCH WALLS — 3 INCHES
   D. TOP AND BOTTOM OF HLRT ROOF SLAB — 2 INCHES
   E. TOP AND BOTTOM OF HLRT OPERATING FLOOR SLAB — 3 INCHES
9. CHAMFER EXPOSED CONCRETE EDGES 3/4 INCH X 3/4 INCH UNLESS NOTED OTHERWISE.
10. PROVIDE ADDITIONAL REINFORCING AT ALL WALL AND SLAB OPENINGS PER DETAIL THIS SHEET.
11. PAINT ALL ALUMINUM SURFACES THAT ARE EMBEDDED IN CONCRETE OR SURFACE MOUNTED TO CONCRETE ON ALL CONTACT SURFACES, PER SPECIFICATION SECTION 09 91 00.
12. BEFORE NEW CONCRETE IS PLACED AGAINST STONE FACADE OR EXISTING CONCRETE:
    A. PREPARE EXISTING SURFACE BY ROUGHENING IN THE AREA OF CONTACT TO PRODUCE EXPOSED AGGREGATE, AND REMOVING ANY LAITANCE, DIRT, DEBRIS, OIL, FOREIGN MATTER, OR LOOSE SUBSTRATE MATERIALS.
    B. APPLY EPOXY BONDING COMPOUND OVER EXISTING PREPARED CONCRETE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
    C. PLACE WATERSTOPS AND DOWELS AT JOINTS ONLY WHERE SHOWN ON THE DRAWINGS.
    D. NEITHER JOINT FILLER NOR SEALANT IS REQUIRED ON SPILLWAY CONCRETE JOINTS.
13. ALL EXTERIOR EXPOSED-TO-VIEW CONCRETE SHALL BE INTEGRALLY COLORED AS IDENTIFIED IN SPECIFICATION SECTION 03 30 00, TABLE 2.
14. REFER TO SPECIFICATIONS FOR CONCRETE REQUIREMENTS, INCLUDING MIX DESIGN, JOINT TREATMENT, WATERSTOPS, FINISHING, ETC.




CORNER INTERSECTION

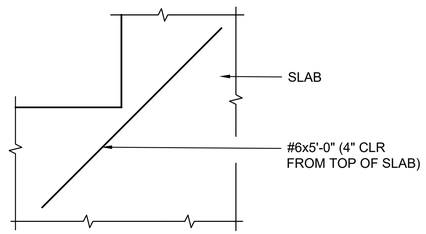
## TYPICAL WALL REINFORCING

NOT TO SCALE



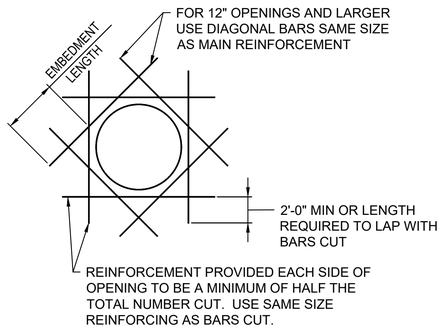

## FLUSH CONSTRUCTION JOINT DETAIL

NOT TO SCALE




## TYPICAL SLAB DETAIL AT INSIDE CORNER

NOT TO SCALE

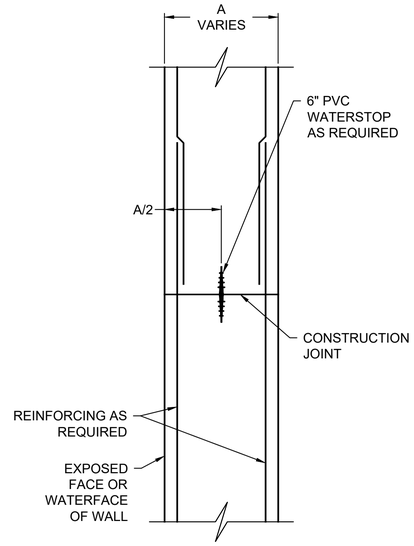



NOTES:

1. CIRCULAR OPENING SHOWN, RECTANGULAR OPENING SIMILAR.
2. EXTRA REINFORCING SHALL BE PROVIDED IN BOTH FACES OF WALL UNLESS TYPICAL REINFORCING IS PLACED IN SINGLE LAYER ONLY.
3. WHEN DOWEL BARS ARE CUT PROVIDE DOWELS EACH SIDE OF OPENING IN ACCORDANCE WITH THIS DETAIL.

## REINFORCING AT WALL AND SLAB OPENINGS

NOT TO SCALE




## FLUSH CONSTRUCTION JOINT DETAIL (IN WALL)

NOT TO SCALE

WATERSTOP NOTES:

1. FOR ALL WATERSTOP JUNCTIONS OR ABRUPT CHANGES IN DIRECTION PROVIDE MANUFACTURER'S PREFABRICATED TEE, Ls, CROSSES, ETC. AS APPLICABLE.
2. SEE SPECIFICATION SECTION 03 30 00 FOR SURFACE WATERSTOP INFORMATION AND ADDITIONAL WATERSTOP INFORMATION AND REQUIREMENTS RELATED TO CONTRACTOR QUALIFICATIONS, WATERSTOP MATERIALS AND INSTALLATION PROCEDURES.

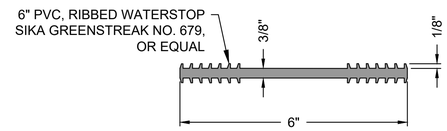
## REINFORCING STEEL LAP SPLICES AND EMBEDMENTS

| BAR SIZE | MIN LAP SPLICE LENGTH ( INCHES ) | | MIN EMBEDMENT LENGTH ( INCHES ) | |
|---|---|---|---|---|
| | TOP BARS | OTHER BARS | TOP BARS | OTHER BARS |
| 3 | 15 | 12 | 12 | 12 |
| 4 | 20 | 15 | 15 | 12 |
| 5 | 29 | 23 | 23 | 17 |
| 6 | 40 | 31 | 31 | 24 |
| 7 | 43 | 33 | 33 | 25 |
| 8 | 49 | 37 | 37 | 29 |
| 9 | 60 | 46 | 46 | 36 |
| 10 | 74 | 57 | 57 | 44 |
| 11 | 89 | 68 | 68 | 53 |

NOTES:

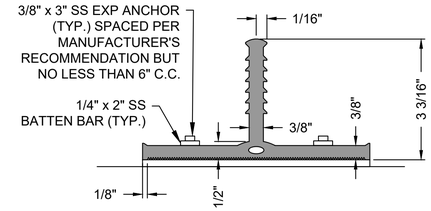
1. TABLE BASED ON A.C.I. 318-14.
2. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES DEPTH OF CONCRETE CAST BELOW THE REINFORCEMENT.
3. HORIZONTAL WALL REINFORCEMENT IS CONSIDERED A TOP BAR.
4. FOR EPOXY-COATED BARS MULTIPLY VALUE BY 1.5.

**BID SET**
**SUBMITTAL DATE: AUG 2026**




## 6" RIBBED WATERSTOP DETAIL

NOT TO SCALE

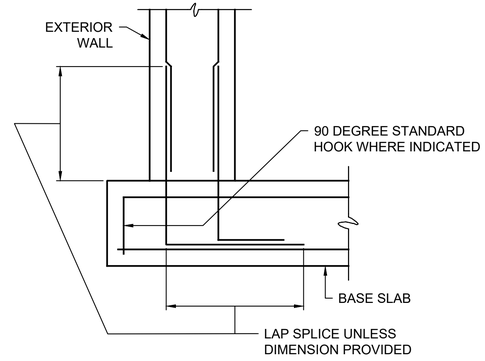



RETROFIT WATERSTOP NOTES:

1. RETROFIT WATERSTOP SHALL BE GREENSTREAK 609 OR EQUAL AND SHALL BE FACTORY SPLICED AND WELDED AT EACH CORNER.
2. CONTRACTOR SHALL INSTALL RETROFIT WATERSTOP AND WELD ALL PVC JOINTS PER MANUFACTURER'S INSTRUCTIONS. INSTALL ON CLEAN EXISTING CONCRETE SURFACE.
3. APPLY A LAYER OF EPOXY GEL BETWEEN WATERSTOP AND CONCRETE SURFACE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. APPLY NEOPRENE PAD AND CAULK PER MANUFACTURER'S RECOMMENDATION WHERE CLEAN CONCRETE SURFACE IS UNEVEN. RECORD ALL VARIATION ON AS-BUILT DRAWINGS.

## RETROFIT WATERSTOP DETAIL

NOT TO SCALE




## TYPICAL WALL DOWELS

NOT TO SCALE

GRAPHIC SCALES CHECK BEFORE USE

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|---|---|---|---|
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DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172-01 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

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PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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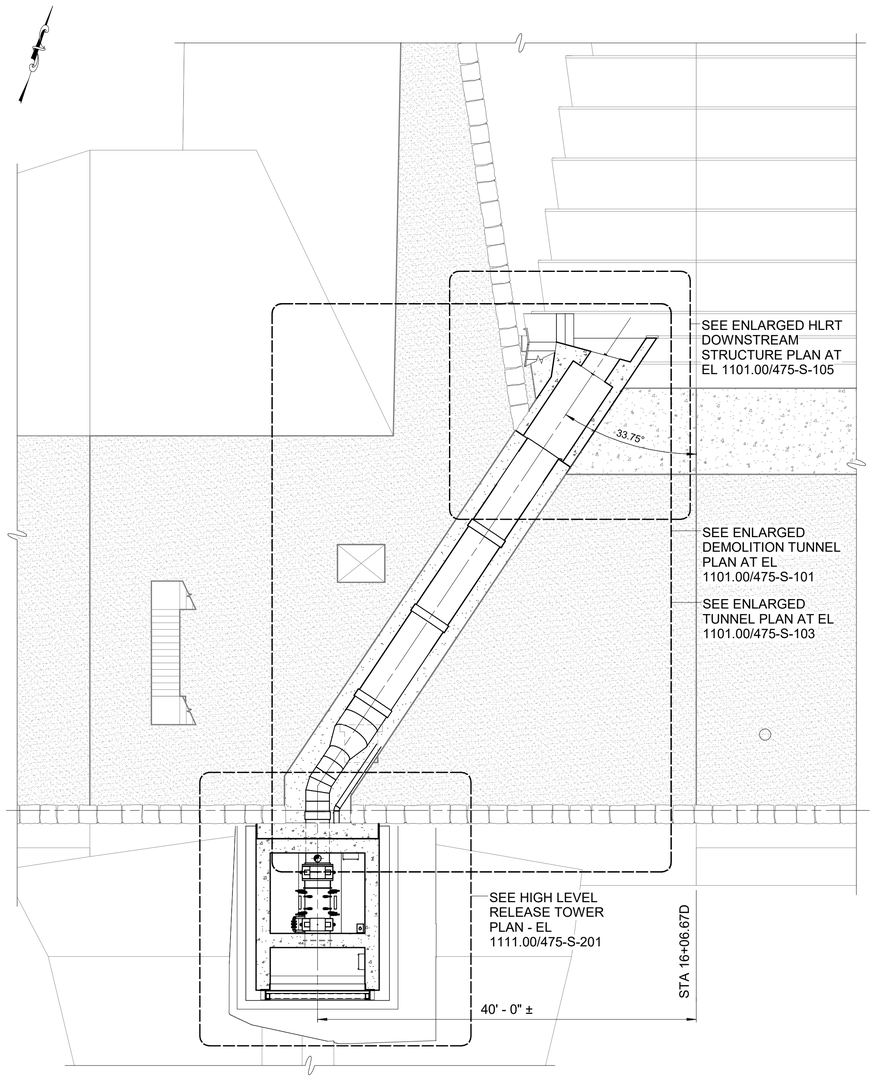
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
GENERAL NOTES & TYPICAL SECTIONS

DATE: AUGUST 2026
SHEET NO: 36 of 112
DRAWING NO. 475-S-001

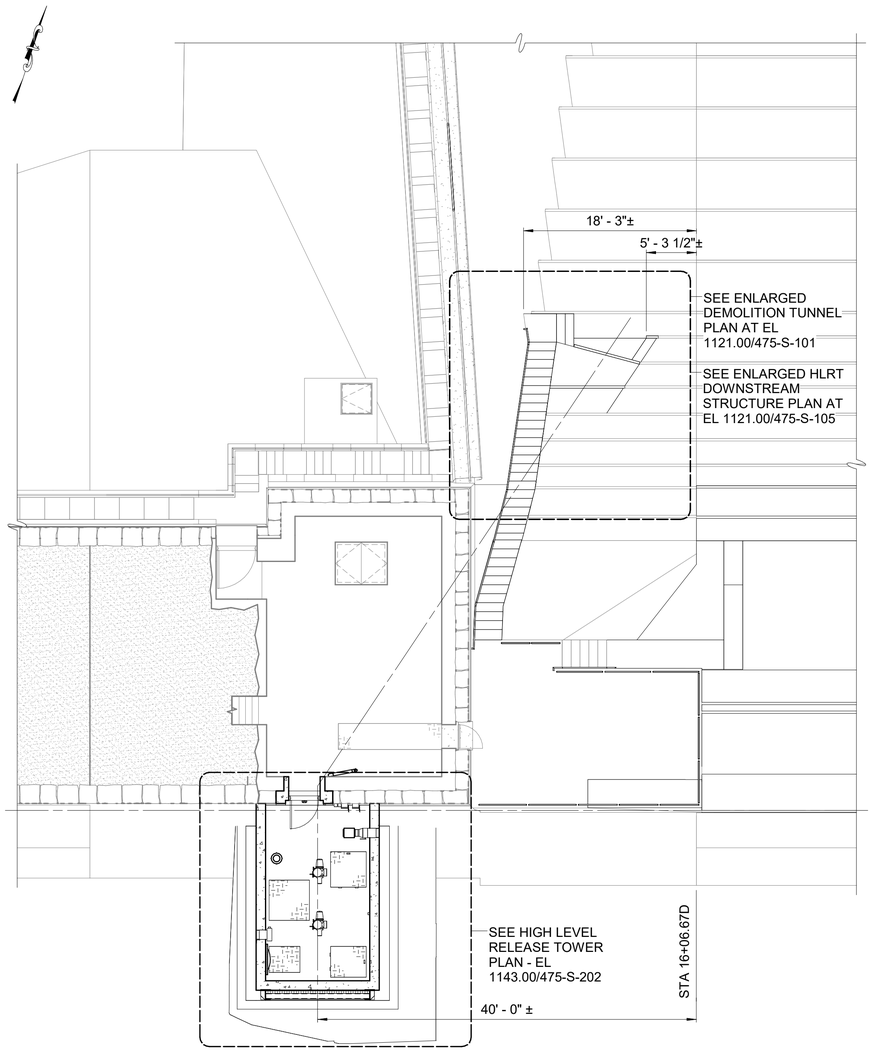
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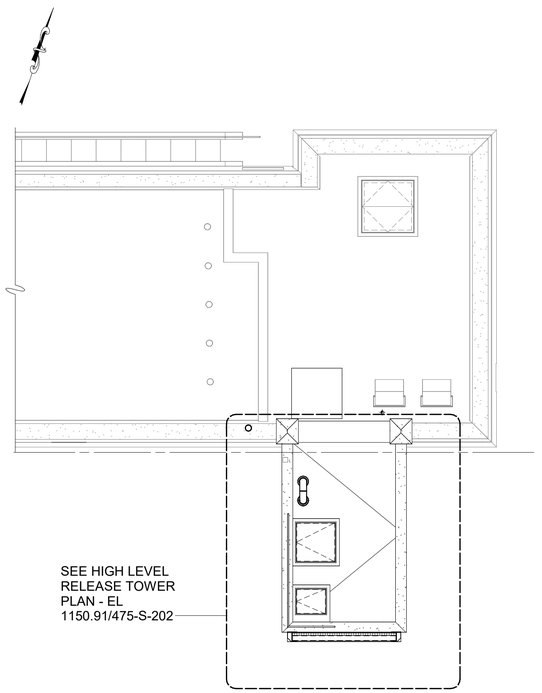

OVERALL MONOLITH 18 - BOTTOM PLAN AT EL 1103.00

1/8" = 1'-0"




OVERALL MONOLITH 18 - TOP PLAN AT EL 1144.00

1/8" = 1'-0"




OVERALL MONOLITH 18 - ROOF PLAN AT EL 1155.00

1/8" = 1'-0"

0 5 10 15 FT.

1/8"=1'-0"

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DRAWN BY: CDS
CHECKED BY: BH
DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE

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NEW YORK, NEW YORK 10018

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Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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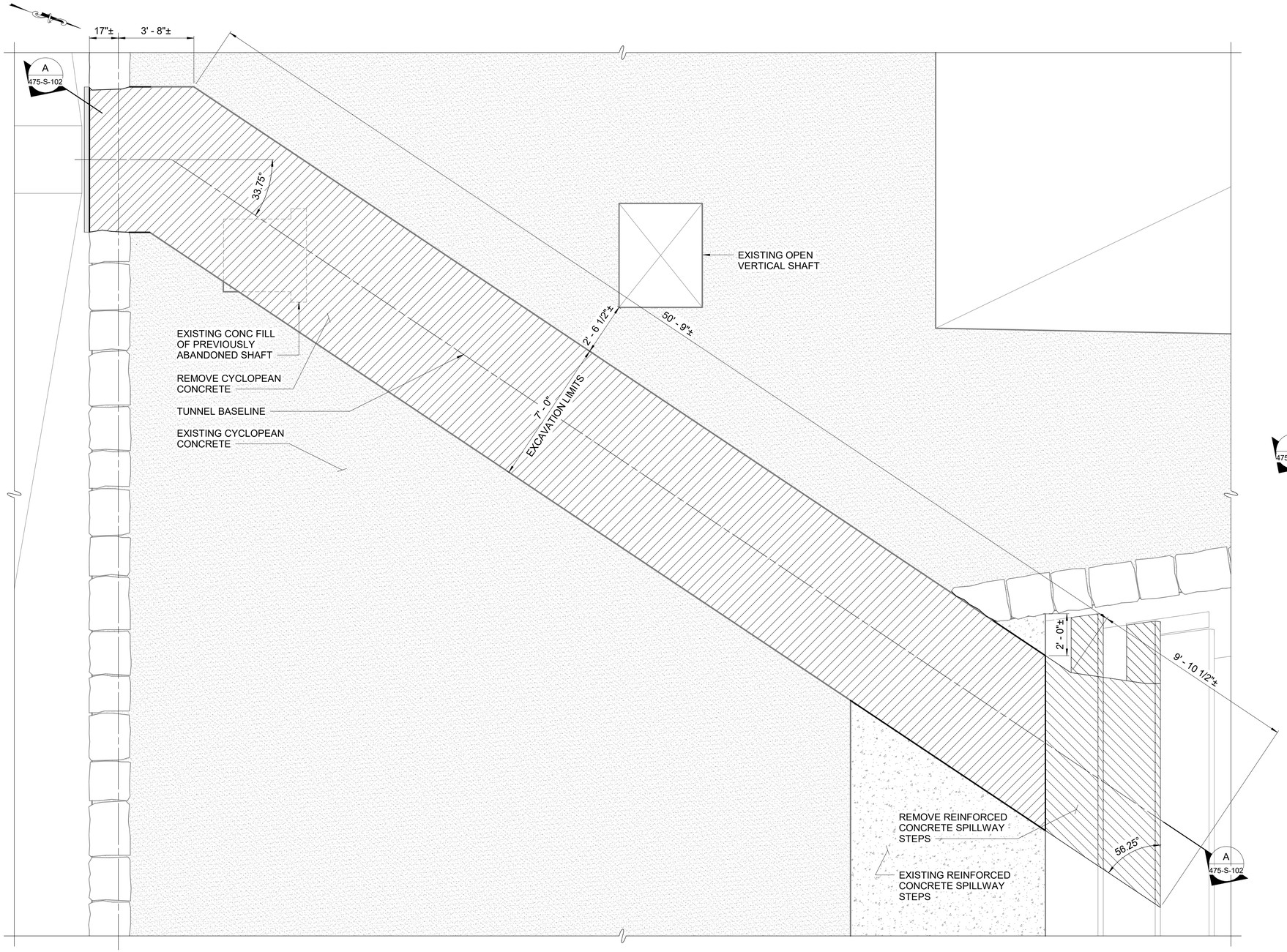
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL OUTLET
OVERALL PLANS AT MONOLITH 18

DATE: AUGUST 2026
SHEET NO: 37 of 112
DRAWING NO. 475-S-100

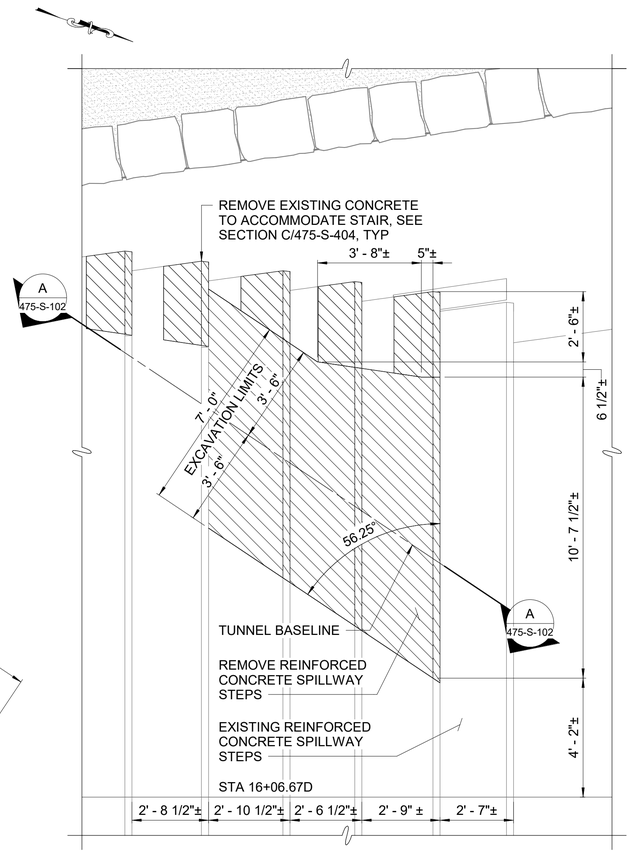
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ENLARGED DEMOLITION TUNNEL PLAN AT EL 1103.00

3/8" = 1'-0"




ENLARGED DEMOLITION TUNNEL PLAN AT EL 1121.00

3/8" = 1'-0"

3/8"=1'-0" 0 1 2 3 5 FT.

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DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE
DRAWN BY: CDS

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498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK — EVERETTE H. KNIGHT — 086771 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

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PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL OUTLET
ENLARGED DEMOLITION TUNNEL PLAN

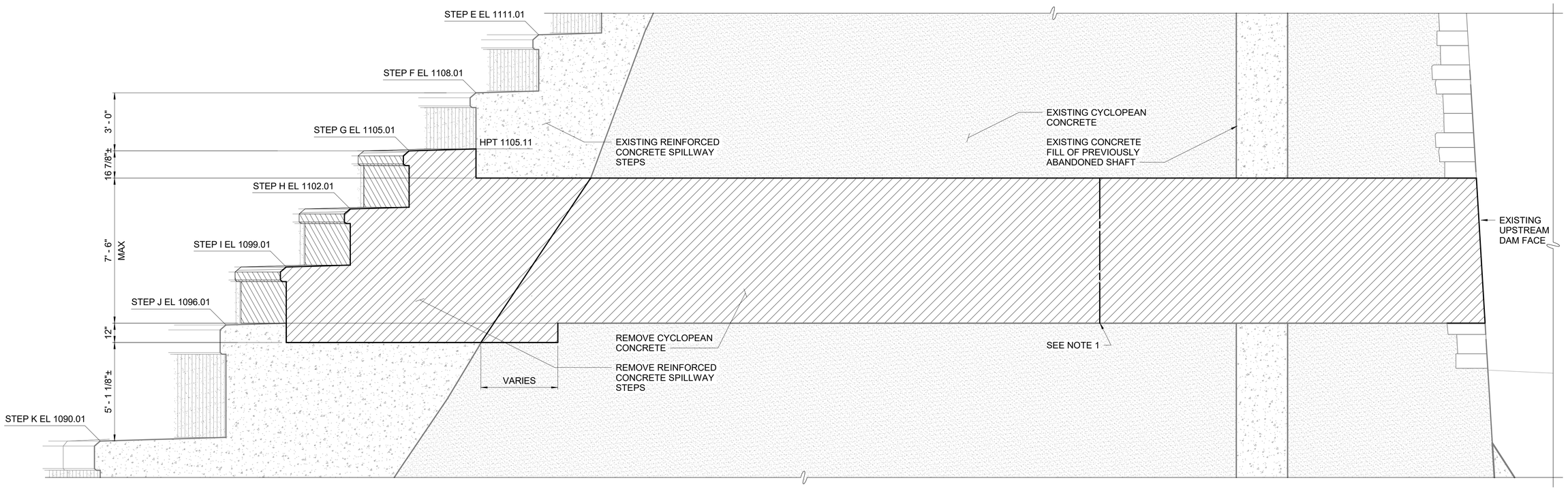
DATE: AUGUST 2026
SHEET NO: 38 of 112
DRAWING NO. 475-S-101

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## NOTES:

1. TUNNELING ACTIVIITIES THROUGH THE SPILLWAY FOR THE HLRT PIPE SHALL RETAIN AN UNTUNNELED LENGTH OF AT LEAST 20 FEET UNTIL SUCH TIME AS THE HLRT COFFERDAM HAS BEEN FULLY ERECTED, DEWATERED, INSPECTED, AND ACCEPTED BY THE ENGINEER.




DEMOLITION TUNNEL PROFILE

A 475-S-101 SECTION

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

0 1 2 3 5 FT.
3/8"=1'-0"

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DRAWN BY: CDS

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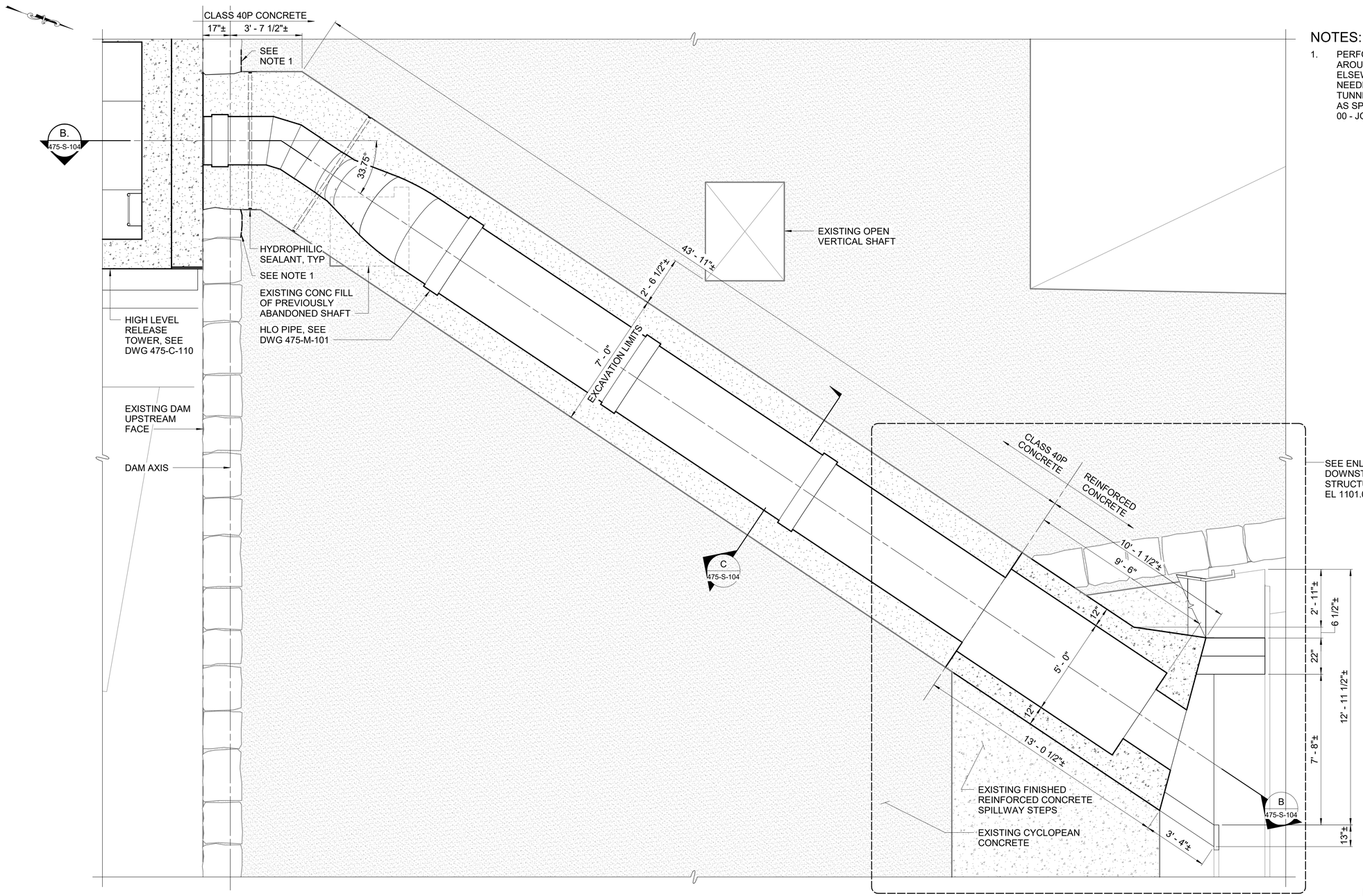
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL OUTLET
ENLARGED DEMOLITION TUNNEL PROFILE

DATE: AUGUST 2026
SHEET NO: 39 of 112
DRAWING NO. 475-S-102

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## NOTES:

1. PERFORM INJECTION CHEMICAL GROUTING AROUND MASONRY FACADE STONES AND/OR ELSEWHERE ALONG THE TUNNEL LENGTH AS NEEDED TO ELIMINATE SEEPAGE INTO THE TUNNEL. USE HYDROPHYLIC INJECTION RESIN AS SPECIFIED IN SPECIFICATION SECTION 03 32 00 - JOINTS IN CONCRETE.

## ENLARGED TUNNEL PLAN AT EL 1101.00

3/8" = 1'-0"

**BID SET**
**SUBMITTAL DATE: AUG 2026**

3/8"=1'-0" 0 1 2 3 5 FT.

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DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE
DRAWN BY: CDS

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
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NEW YORK, NEW YORK 10018

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NYC Environmental Protection

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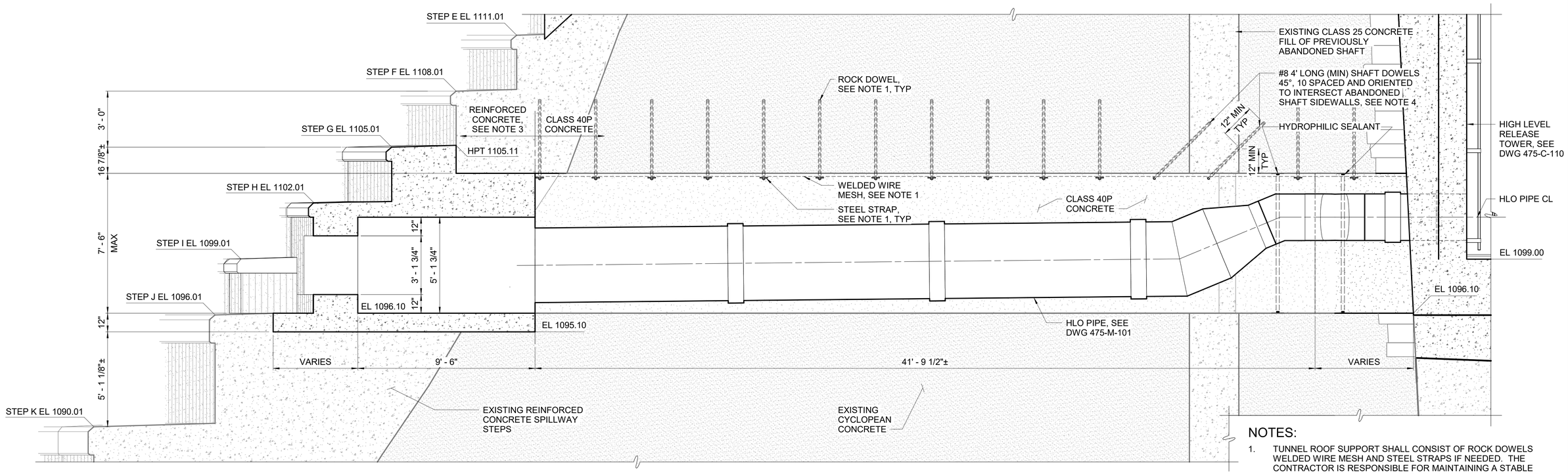
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL OUTLET
ENLARGED TUNNEL PLAN

DATE: AUGUST 2026
SHEET NO: 40 of 112
DRAWING NO. 475-S-103

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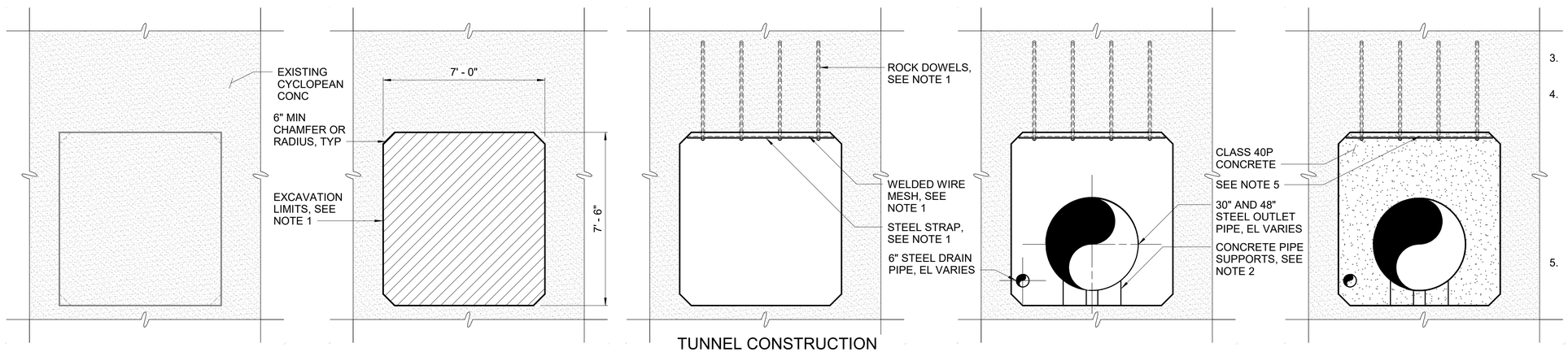
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TUNNEL PROFILE

B / 475-S-103 SECTION

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




TUNNEL CONSTRUCTION SEQUENCING

C / 475-S-103 SECTION

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

## NOTES:

1. TUNNEL ROOF SUPPORT SHALL CONSIST OF ROCK DOWELS WELDED WIRE MESH AND STEEL STRAPS IF NEEDED. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A STABLE TUNNEL ROOF AND TUNNEL ROOF SUPPORT SHALL BE DESIGNED BY THE CONTRACTOR. SEE SPECIFICATION SECTIONS 31 71 22 AND 31 72 15 FOR EXCAVATION AND STABILIZATION. PROVIDE STRUCTURAL DRAWINGS AND CALCULATIONS BOTH SEALED BY A CURRENTLY REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NEW YORK.
2. CONTRACTOR SHALL DESIGN CONCRETE PIPE SUPPORTS AND TIE-DOWN STRAPS FOR 30" AND 48" STEEL OUTLET PIPE. TIMBER BLOCKING IS NOT PERMITTED. PROVIDE STRUCTURAL DRAWINGS AND CALCULATIONS BOTH SEALED BY A CURRENTLY REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NEW YORK.
3. REFER TO SHEETS 475-S-105 AND 475-S-106 FOR REINFORCEMENT DETAILING.
4. THE INTENT OF THESE SHAFT DOWELS IS TO PRECLUDE COLLAPSE OF THE OVERLYING EXISTING CONCRETE THAT FILLS THE ABANDONED SHAFT ONCE HLO TUNNELING PASSES THROUGH THE ENTIRETY OF THE SHAFT'S INFILL CONCRETE. UNLESS AN ALTERNATE METHOD IS APPROVED SPECIFICALLY TO SATISFY THIS PURPOSE, THE SHAFT DOWELS ARE REQUIRED REGARDLESS OF ALTERNATE TUNNEL ROOF SUPPORT METHODS THAT MIGHT BE PROPOSED/APPROVED ALONG THE LENGTH OF THE TUNNEL. ALL TEN SHAFT DOWELS SHALL BE INSTALLED PRIOR TO MINING THE FINAL THIRD OF SUPPORTING CONCRETE WITHIN THE TUNNEL. THE SHAFT DOWEL LOCATIONS SHALL BE DISTRIBUTED ACROSS ALL FOUR SIDES OF THE ABANDONED SHAFT, WITH THEIR FINAL ORIENTATION APPROVED BY THE ENGINEER.
5. SEE ADDITIONAL REQUIREMENTS FOR A TUNNEL BACKFILLING WORK PLAN, INCLUDING FINAL STAGE PRESSURE GROUTING, AS STIPULATED IN SPECIFICATION SECTION 31 74 22 – TUNNEL BACKFILLING.

0 1 2 3 5 FT.
3/8"=1'-0"

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DRAWN BY: CDS
CHECKED BY: BH
DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK EVERETTE H. KNIGHT 086771 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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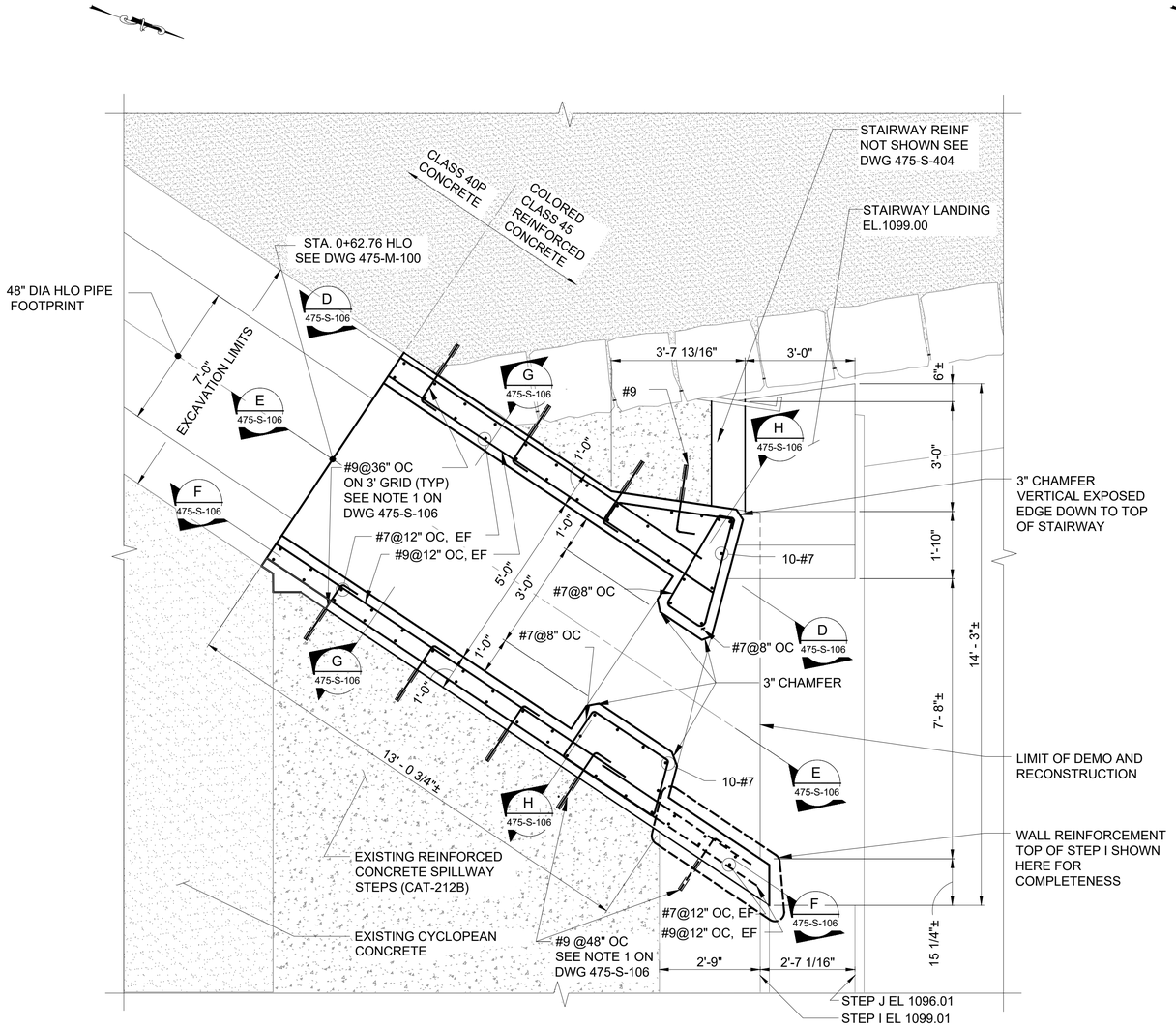
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL OUTLET
ENLARGED TUNNEL PROFILE AND SECTIONS

DATE: AUGUST 2026
SHEET NO: 41 of 112
DRAWING NO. 475-S-104

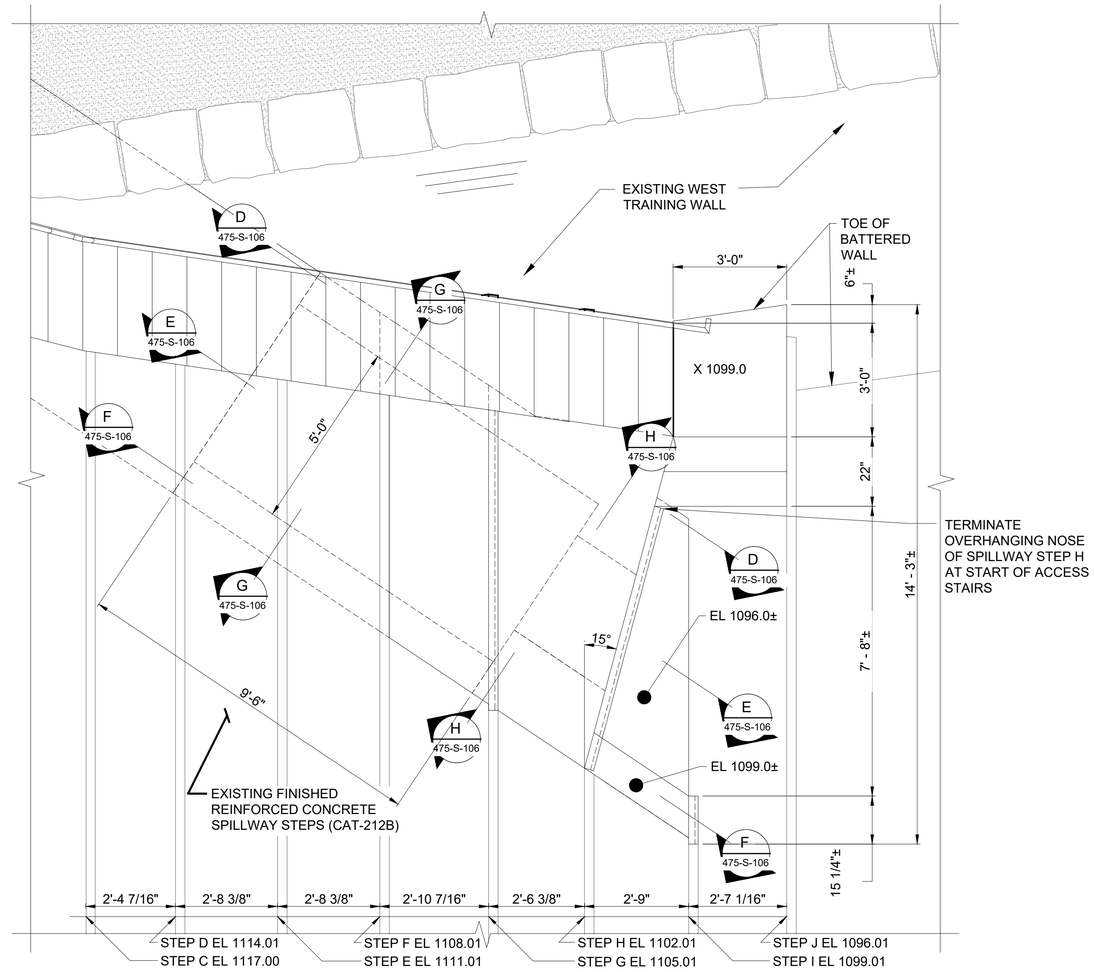
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8/5/2026 6:01:22 PM

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## ENLARGED OUTFALL STRUCTURE PLAN AT EL 1101.00

1/2" = 1'-0"




## ENLARGED OUTFALL STRUCTURE PLAN AT EL 1121.00

1/2" = 1'-0"

NOTES:
1. NEW CONCRETE IS NOT HATCHED ON REINFORCING DETAILS ONLY EXISTING CONCRETE IS SHOWN HATCHED.

1/2"=1'-0" 0 1 2 3 4 FT.

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DRAWN BY: DM
CHECKED BY: JC
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK JEFFREY S CHU LICENSED PROFESSIONAL ENGINEER 112098 7/31/26

NYC Environmental Protection

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PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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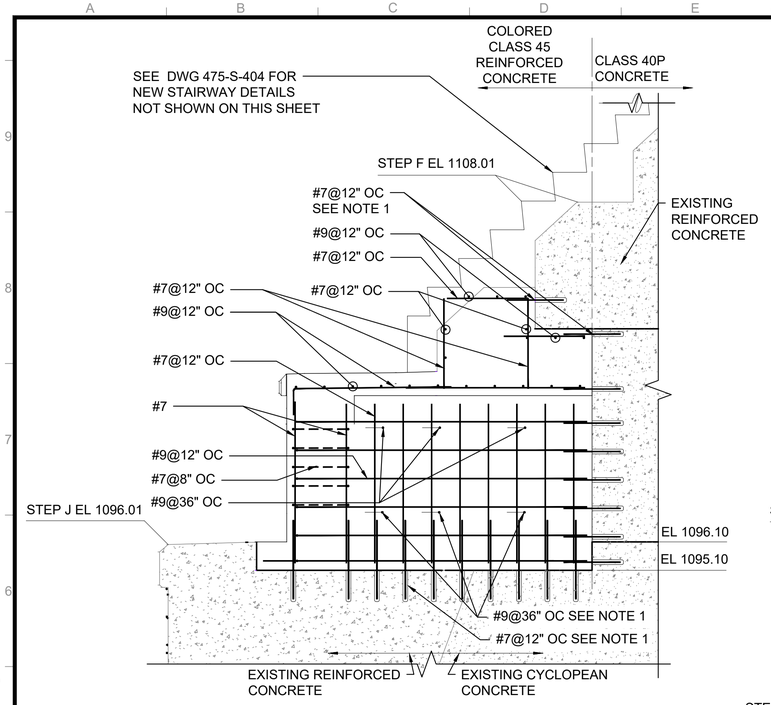
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL OUTLET
ENLARGED OUTFALL STRUCTRE PLANS

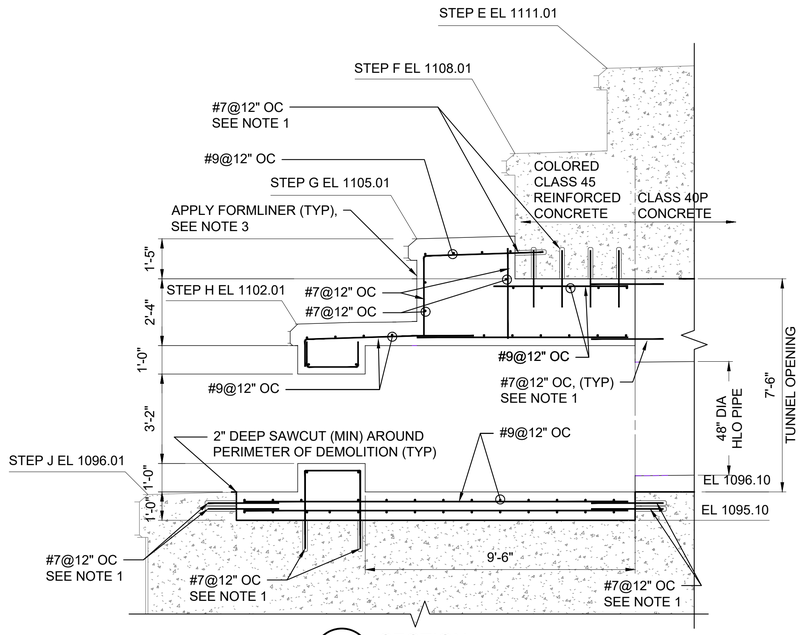
DATE: AUGUST 2026
SHEET NO: 42 of 112
DRAWING NO. 475-S-105

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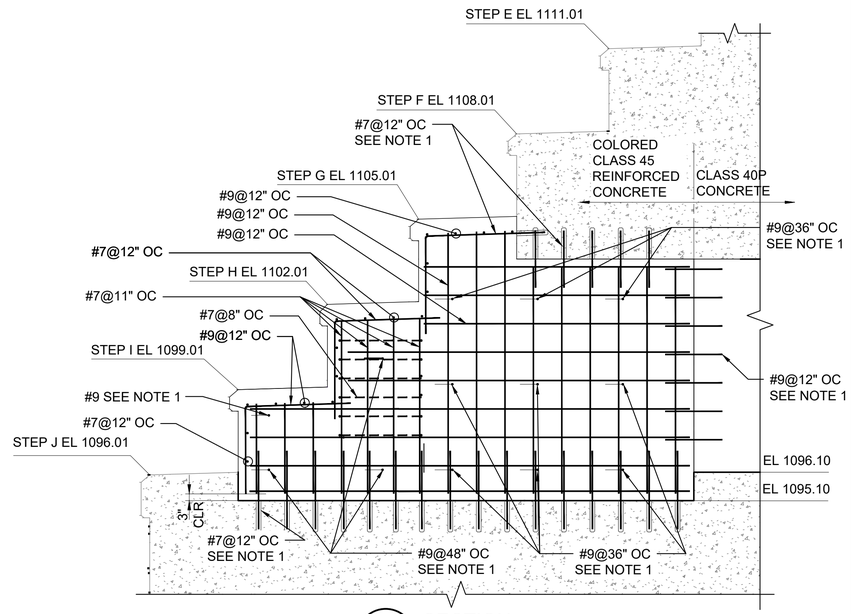
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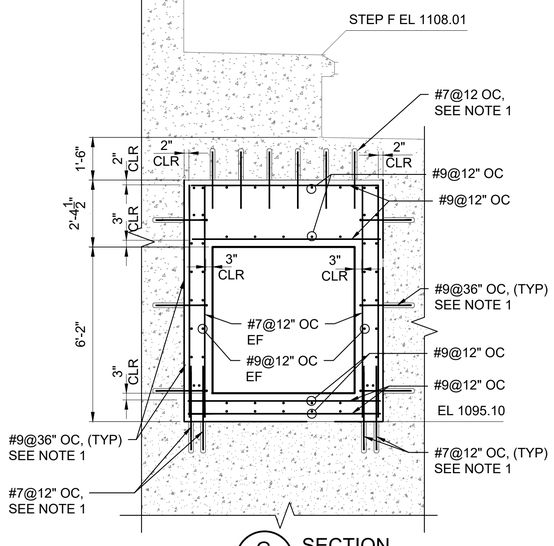

D 475-S-105 SECTION
SCALE: 3/8" = 1'-0"




E 475-S-105 SECTION
SCALE: 3/8" = 1'-0"

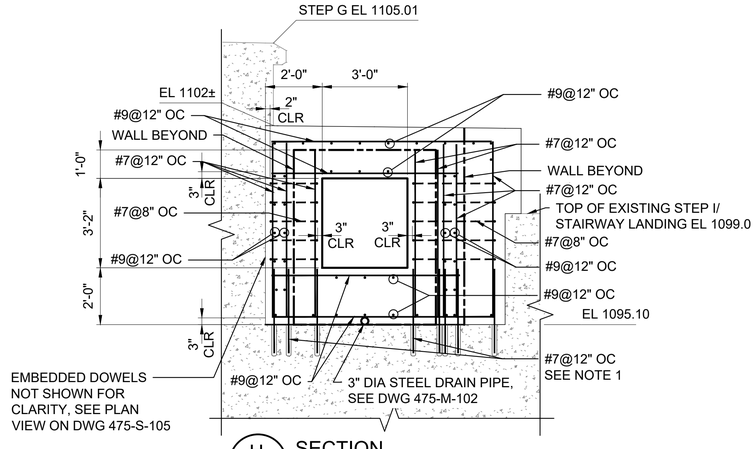



F 475-S-105 SECTION
SCALE: 3/8" = 1'-0"




G 475-S-105 SECTION
SCALE: 3/8" = 1'-0"

SEE DWG 475-A-301 FOR
SPILLWAY STEP
FORMLINER DETAILS.




H 475-S-105 SECTION
SCALE: 3/8" = 1'-0"

NOTES:
1. ALL EMBEDDED DOWELS TO BE DRILLED 12 INCHES DEEP INTO EXISTING CONCRETE AND GROUTED WITH EPOXY ADHESIVE.
2. THOROUGHLY CLEAN DRILLED DOWEL HOLES AND GROUT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. SEE DWG 475-A-301 FOR SPILLWAY STEP FORMLINER DETAILS.
4. NEW CONCRETE IS NOT HATCHED ON REINFORCING DETAILS ONLY EXISTING CONCRETE IS SHOWN HATCHED.

3/8"=1'-0" 0 1 2 3 5 FT.

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DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK · JEFFREY S GHIU · 112098 · LICENSED PROFESSIONAL ENGINEER · 7/9/26

NYC Environmental Protection

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PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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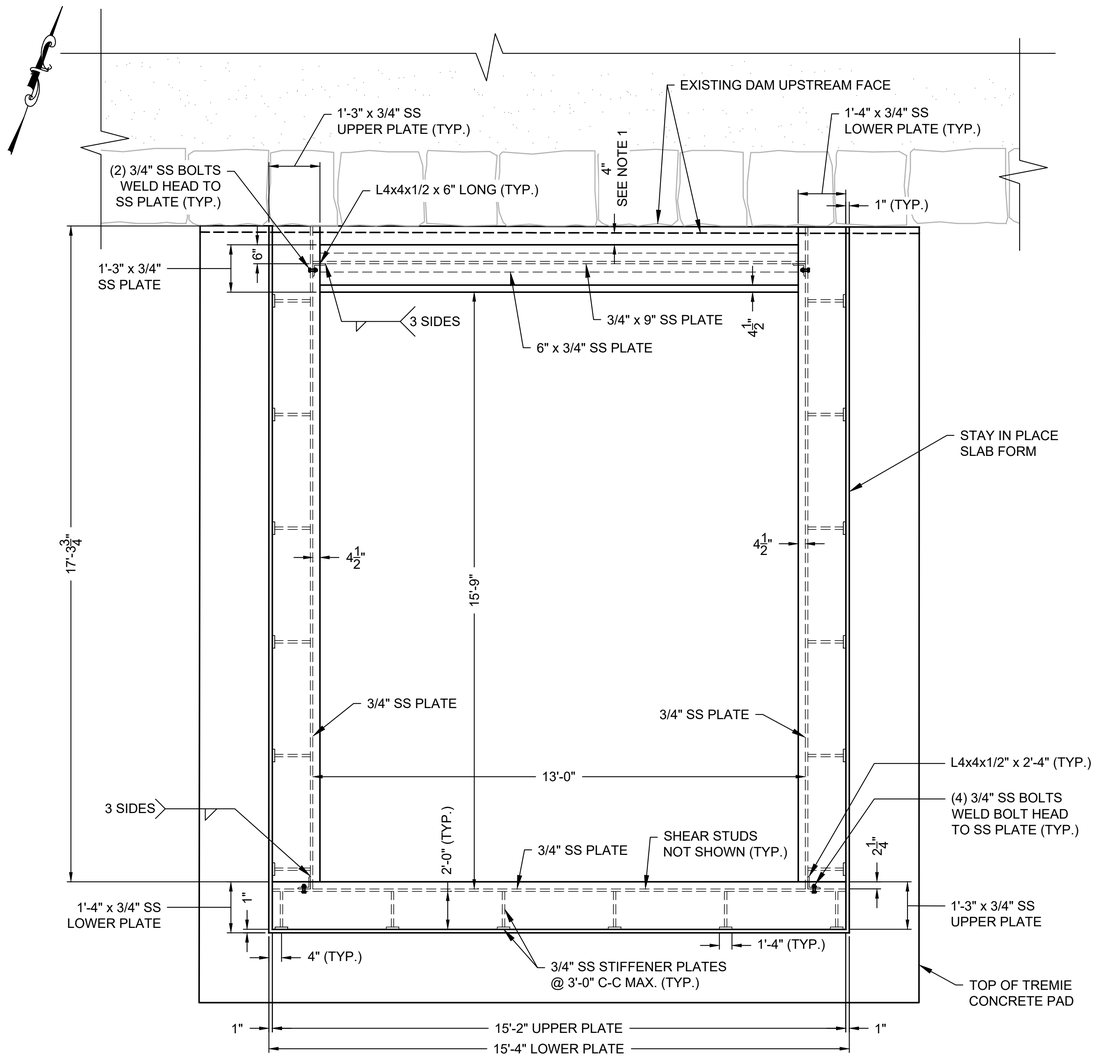
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL OUTLET
ENLARGED OUTFALL STRUCTRE SECTIONS

DATE: AUGUST 2026
SHEET NO: 43 of 112
DRAWING NO. 475-S-106

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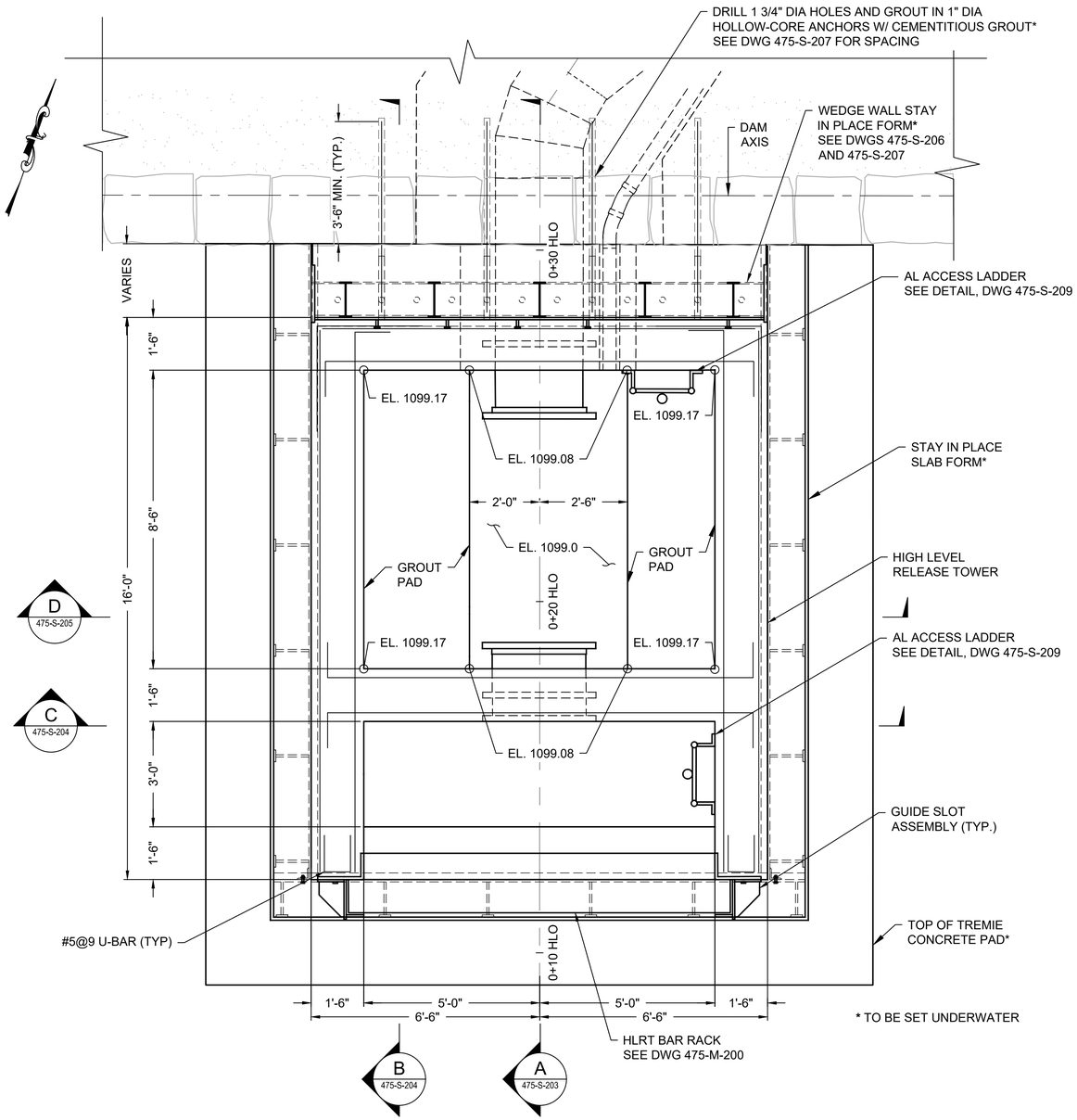
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Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021-162.ctb




NOTE: FEATURES SHOWN IN THIS PLAN WILL LIKELY BE CONSTRUCTED UNDERWATER DEPENDING ON PREVAILING POOL ELEVATION.

## PLAN - EL. 1099.0

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




* TO BE SET UNDERWATER

## PLAN - EL. 1111.0

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

1/2"=1'-0" 0 1 2 3 4 FT.

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NOTES:

1. EXISTING MASONRY FACING STONES ARE IRREGULARLY SIZED AND DIMENSIONS IN EACH DIRECTION WILL VARY FROM THE SCHEMATIC DEPICTION SHOWN ON THIS SHEET. EXTERIOR SURFACE TEXTURE IS HIGHLY IRREGULAR. DO NOT SCALE STONE SIZES FROM DRAWINGS.

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**SUBMITTAL DATE: AUG 2026**

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HAZEN AND SAWYER
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NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

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PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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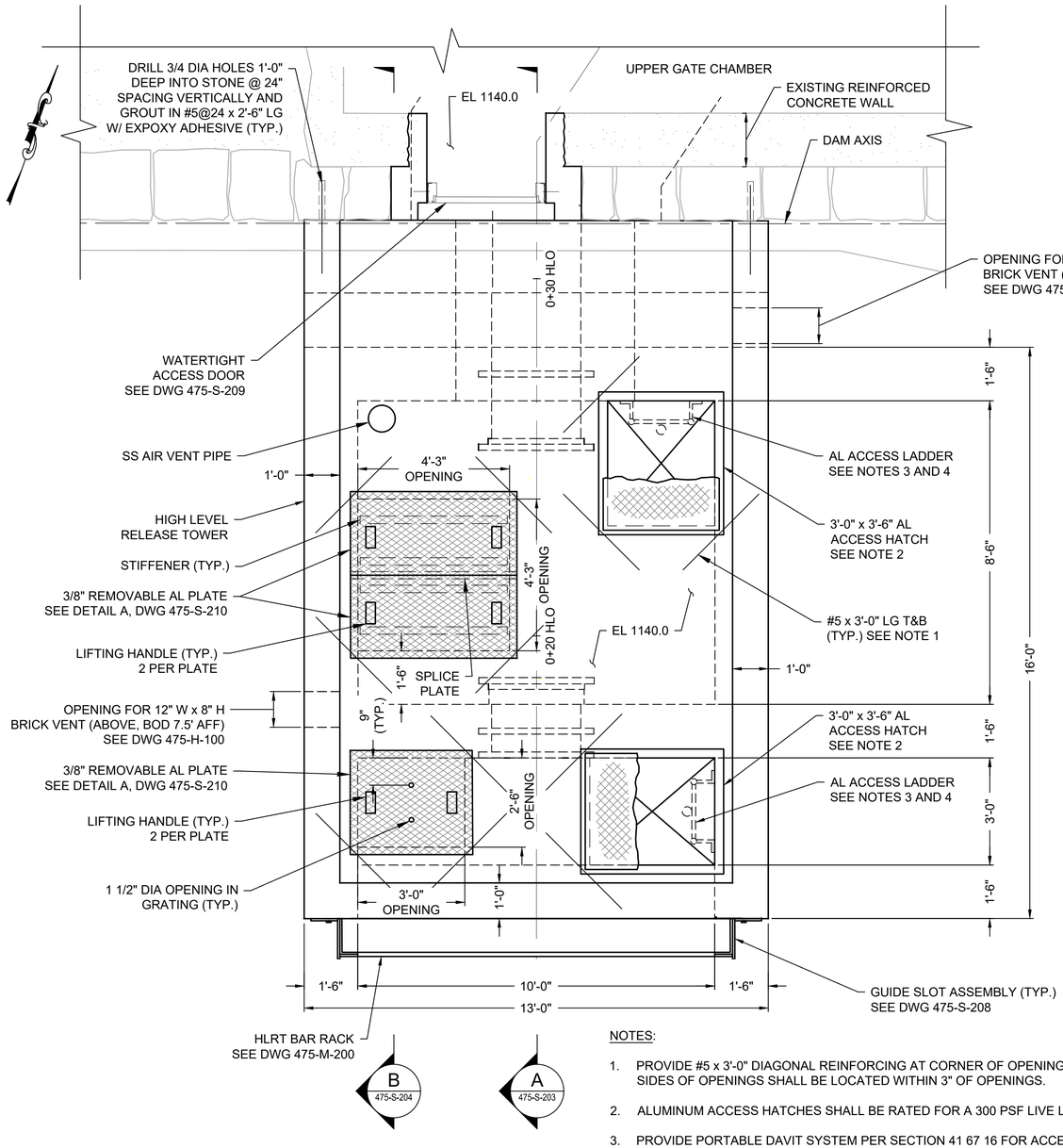
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SCHOHARIE RESERVOIR CAT-475
HIGH LEVEL OUTLET (HLO) INSTALLATION
AT GILBOA DAM AND CREST GATE REMOVAL
STRUCTURAL
HIGH LEVEL RELEASE TOWER
SECTIONAL PLANS - SHEET 1 OF 2

DATE: AUGUST 2026
SHEET NO: 44 of 112
DRAWING NO. 475-S-201

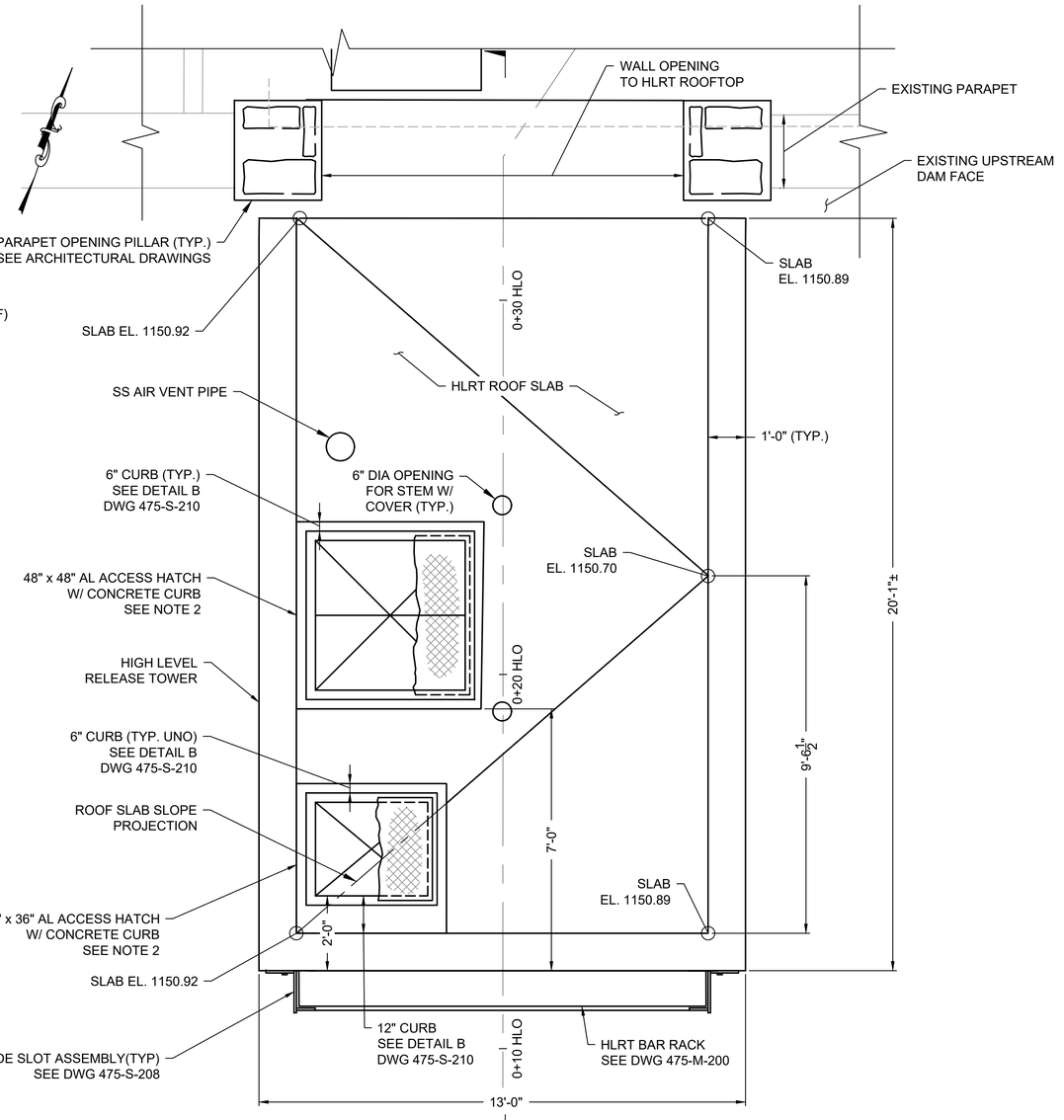
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Plot Scale: 1:1
Date & Time Plotted: 8/6/2026 8:07 AM




PLAN - EL. 1143.0

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




PLAN - EL. 1150.92

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

NOTES:

1. PROVIDE #5 x 3'-0" DIAGONAL REINFORCING AT CORNER OF OPENINGS AS SHOWN. REINFORCING BARS ALONG SIDES OF OPENINGS SHALL BE LOCATED WITHIN 3" OF OPENINGS.
2. ALUMINUM ACCESS HATCHES SHALL BE RATED FOR A 300 PSF LIVE LOAD.
3. PROVIDE PORTABLE DAVIT SYSTEM PER SECTION 41 67 16 FOR ACCESS LADDER FALL PROTECTION. RECESSED BASES SHALL BE PROVIDED IN THE OPERATING FLOOR SLAB AT EACH ACCESS LADDER FOR INSTALLATION OF THE PORTABLE DAVIT SYSTEM. THE LOCATION OF THE RECESSED BASES SHALL BE COORDINATED WITH THE PORTABLE DAVIT SYSTEM MANUFACTURER AND INCLUDED IN THE SHOP DRAWING SUBMITTAL FOR REVIEW AND APPROVAL.
4. PROVIDE REMOVABLE GUARDRAIL SYSTEM PER SECTION 41 67 16 AT EACH ACCESS HATCH. PROVIDE RECESSES IN THE OPERATING FLOOR SLAB FOR INSTALLATION OF THE REMOVABLE GUARDRAIL SYSTEM. THE LOCATION OF THE RECESSES SHALL BE COORDINATED WITH THE REMOVABLE GUARDRAIL SYSTEM MANUFACTURER AND INCLUDED IN THE SHOP DRAWING SUBMITTAL FOR REVIEW AND APPROVAL.

**BID SET**
**SUBMITTAL DATE: AUG 2026**

0 1 2 3 4 FT.
1/2"=1'-0"

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DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

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HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 098172-01 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

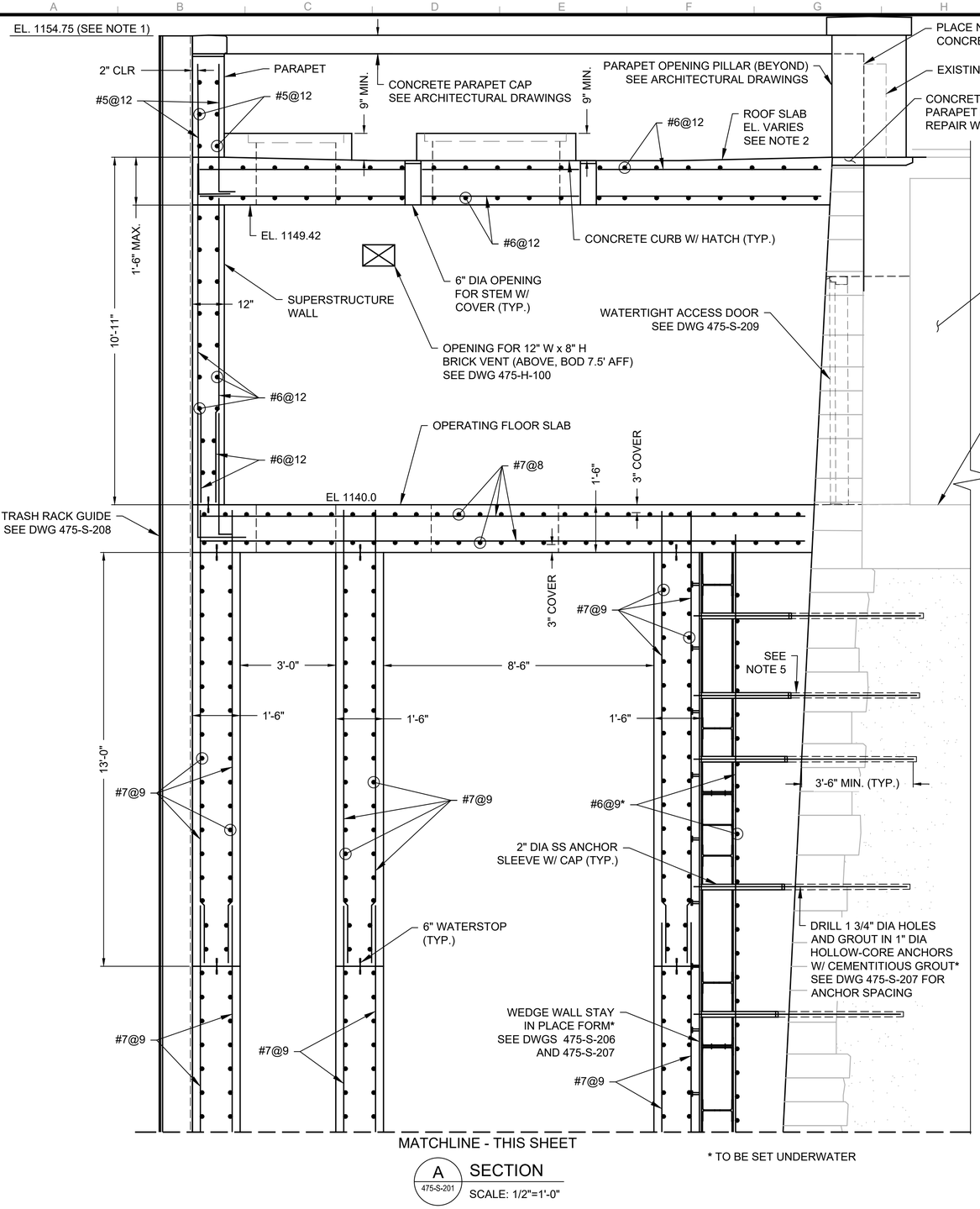
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL RELEASE TOWER
SECTIONAL PLANS - SHEET 2 OF 2

DATE: AUGUST 2026
SHEET NO: 45 of 112
DRAWING NO. 475-S-202

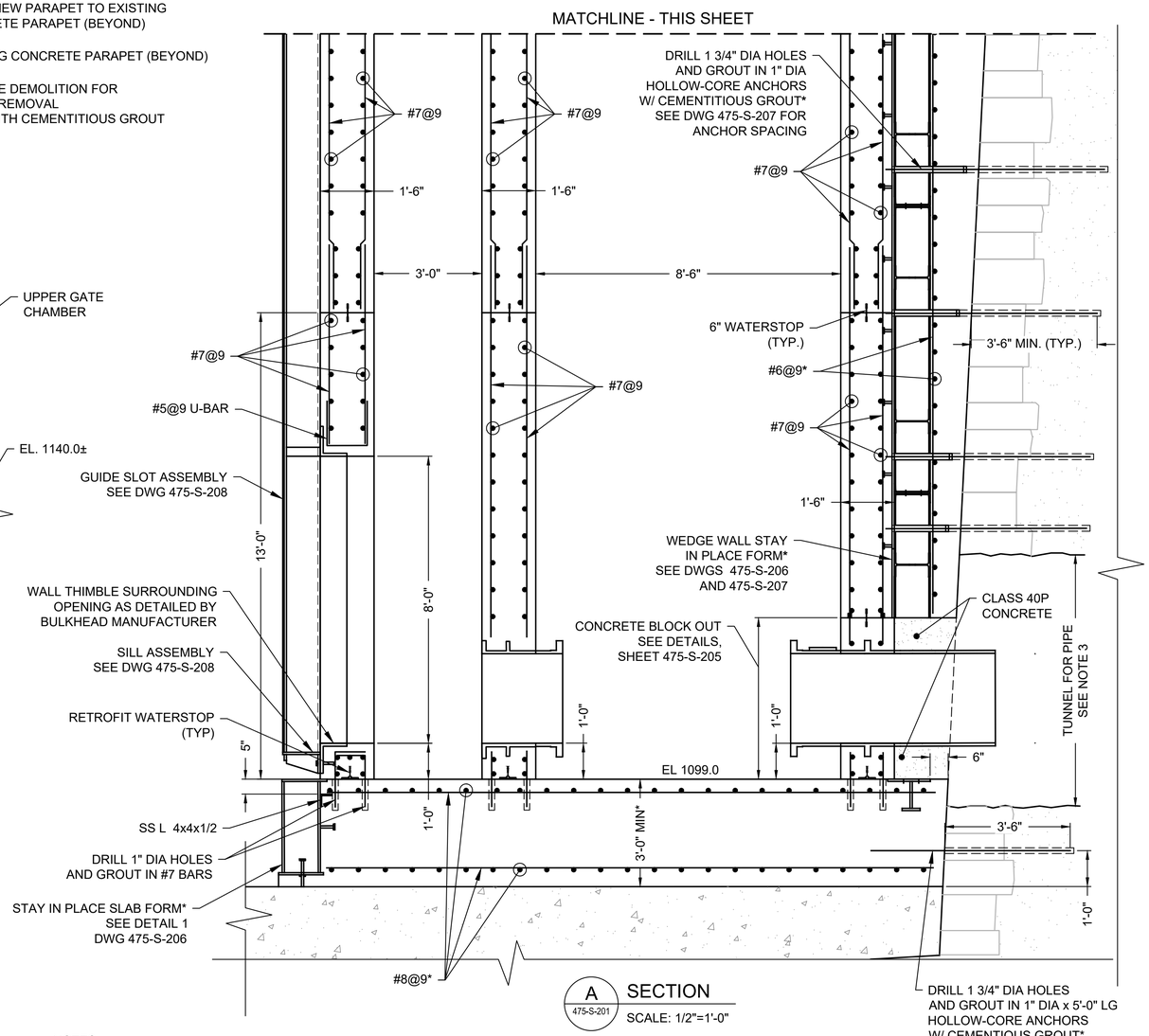
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A 475-S-201 SECTION

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

* TO BE SET UNDERWATER




A 475-S-201 SECTION

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

NOTES:

1. TOP OF HLRT PARAPET SHALL MATCH TOP OF EXISTING PARAPET ON CREST OF DAM AT INTERSECTION OF THE TWO WALLS.
2. CONCRETE ROOF SHALL SLOPE AT 2% TO DRAIN TO SCUPPER.
3. SEE DWG 475-S-105 AND 475-S-106 FOR TUNNEL DETAILS.
4. SEE ARCHITECTURAL DRAWINGS FOR HIGH LEVEL RELEASE TOWER FACING TREATMENT DETAILS.
5. GAP BETWEEN MASONRY FACING AND SS ANCHOR SLEEVES SHALL BE BETWEEN 1" AND 6".
6. CONFIRM DIMENSION IN FIELD AND CUT SLEEVES AS NECESSARY TO AVOID CONFLICT WITH EACH EXISTING FACING STONE.

**BID SET**
**SUBMITTAL DATE: AUG 2026**

1/2"=1'-0" 0 1 2 3 4 FT.

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DESIGNED BY: AZ
DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172 LICENSED PROFESSIONAL ENGINEER 8/04/26

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL RELEASE TOWER
SECTIONS - SHEET 1 OF 3

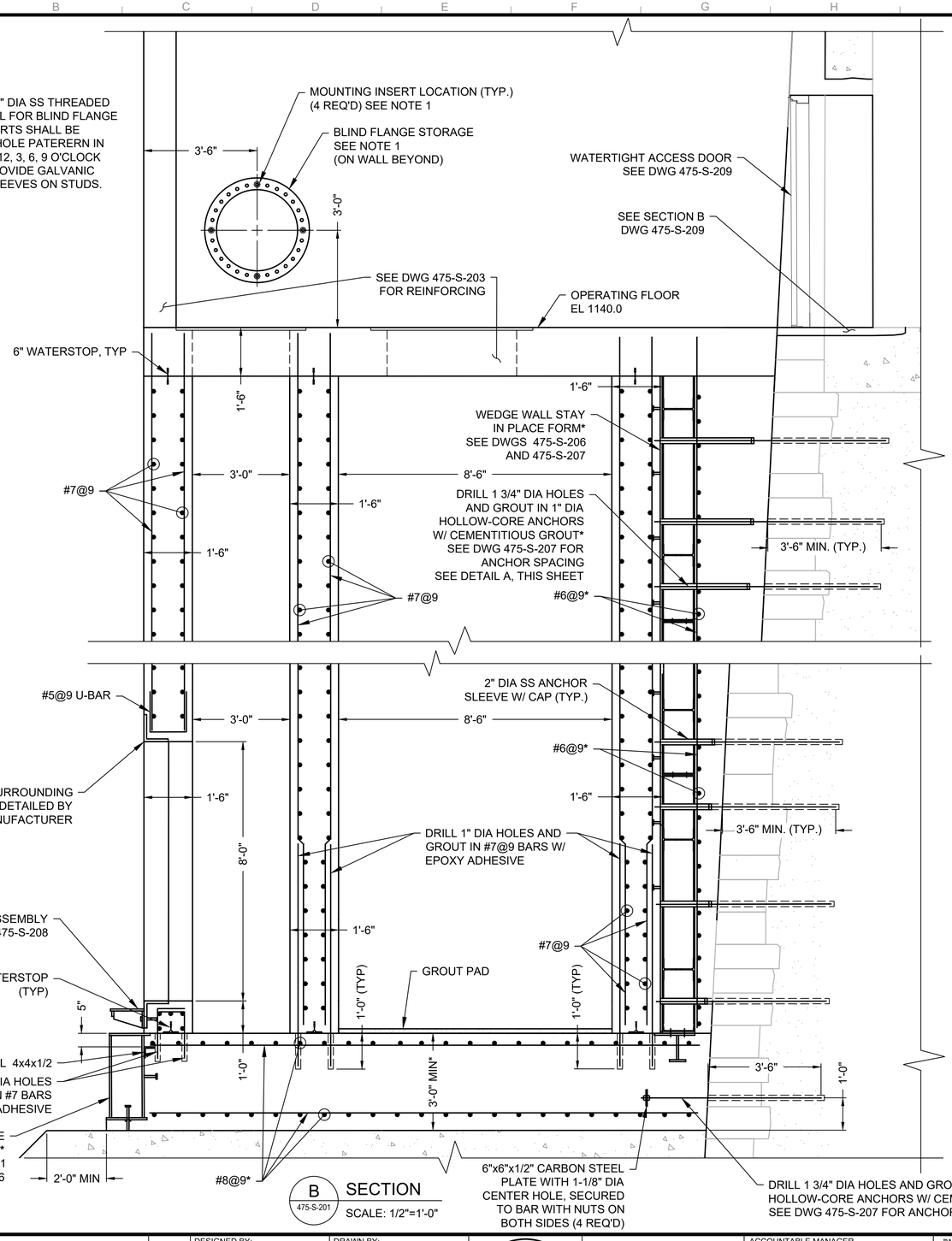
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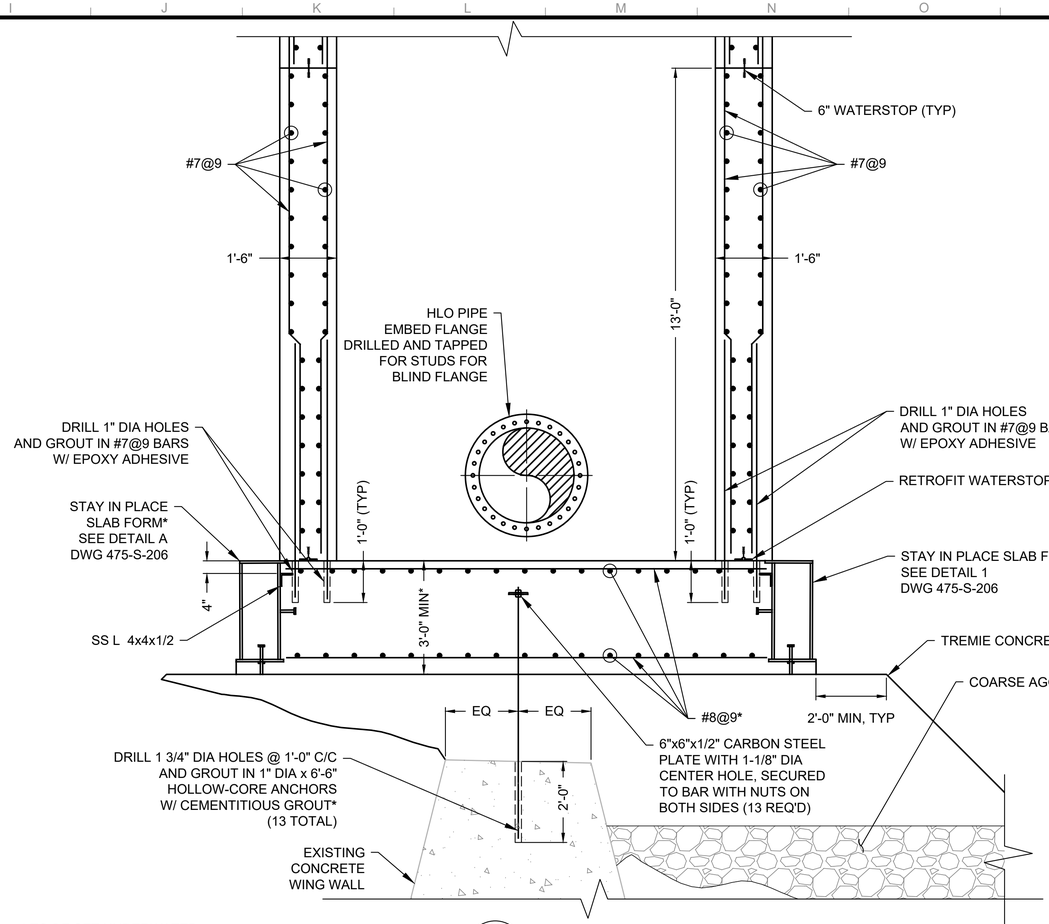
All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.

NOTES:

1. INSTALL (4) 1-1/4" DIA SS THREADED INSERTS IN WALL FOR BLIND FLANGE STORAGE. INSERTS SHALL BE ALIGNED WITH HOLE PATERERN IN BLIND FLANGE (12, 3, 6, 9 O'CLOCK POSITIONS). PROVIDE GALVANIC PROTECTION SLEEVES ON STUDS.

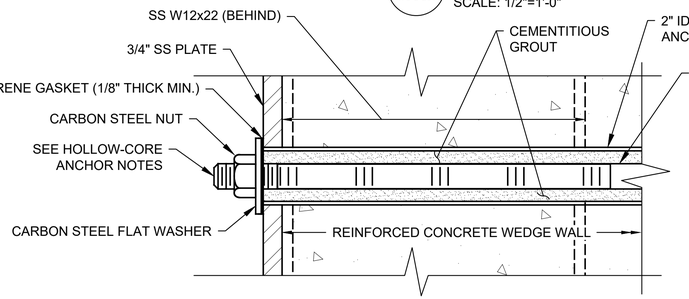



B 475-S-201 SECTION
SCALE: 1/2"=1'-0"




* TO BE SET UNDERWATER

C 475-S-201 SECTION
SCALE: 1/2"=1'-0"




HOLLOW-CORE ANCHOR NOTES:

1. CONTRACTOR SHALL PROVIDE SCHEDULE OF INDIVIDUAL ANCHOR LENGTHS AND ANCHOR SLEEVE LENGTHS.
2. THREADED PORTION OF HOLLOW-CORE ANCHOR BARS SHALL BE CUT TO LENGTH AS NEEDED.
3. DRILL AND CLEAN HOLES, INSTALL ANCHORS AND GROUT, ALL IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

A 475-C-112 ANCHOR HEAD DETAIL
NOT TO SCALE

0 1 2 3 4 FT.
1/2"=1'-0"

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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| 0 | AUG 26 | ISSUED FOR BIDS | CSB |

DESIGNED BY: AZ
DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD H. HOWARD 099172 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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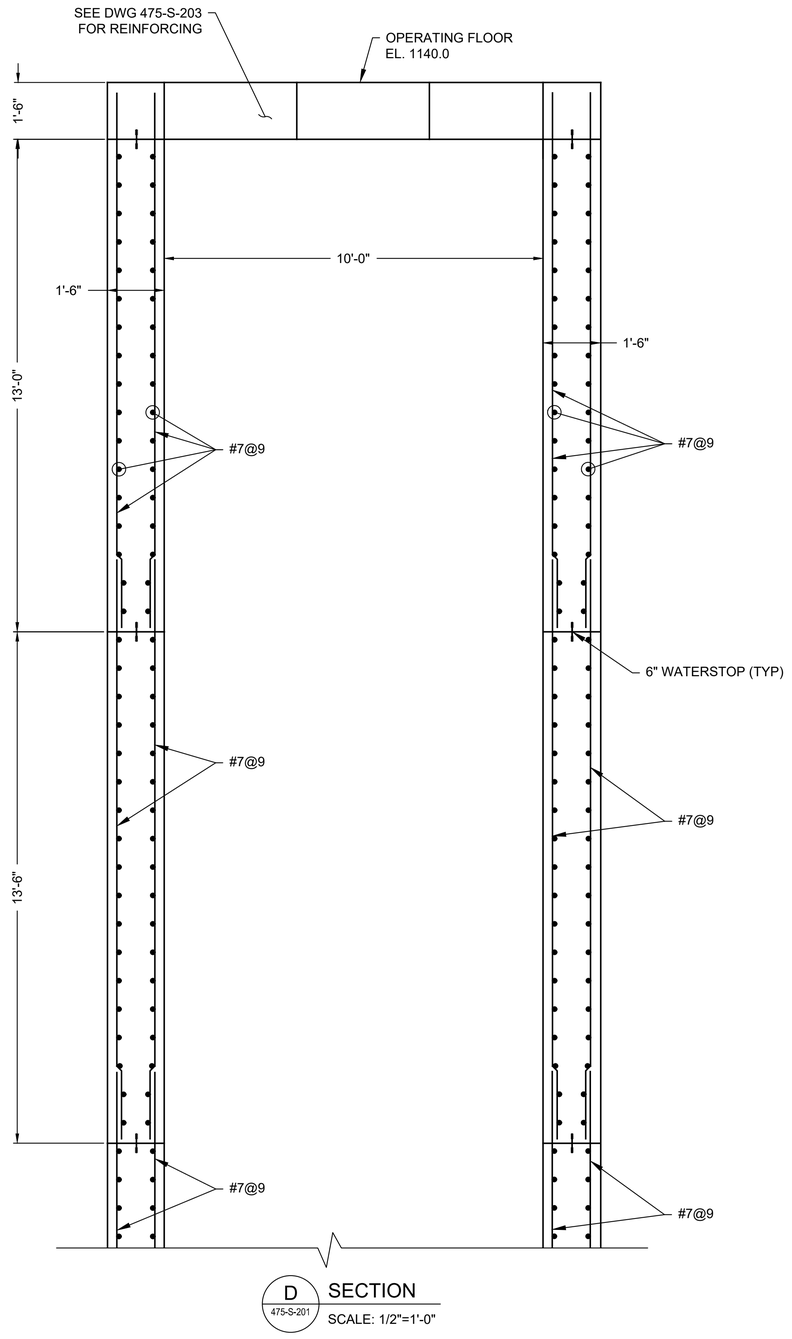
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL RELEASE TOWER
SECTIONS - SHEET 2 OF 3

DATE: AUGUST 2026
SHEET NO: 47 of 112
DRAWING NO. 475-S-204

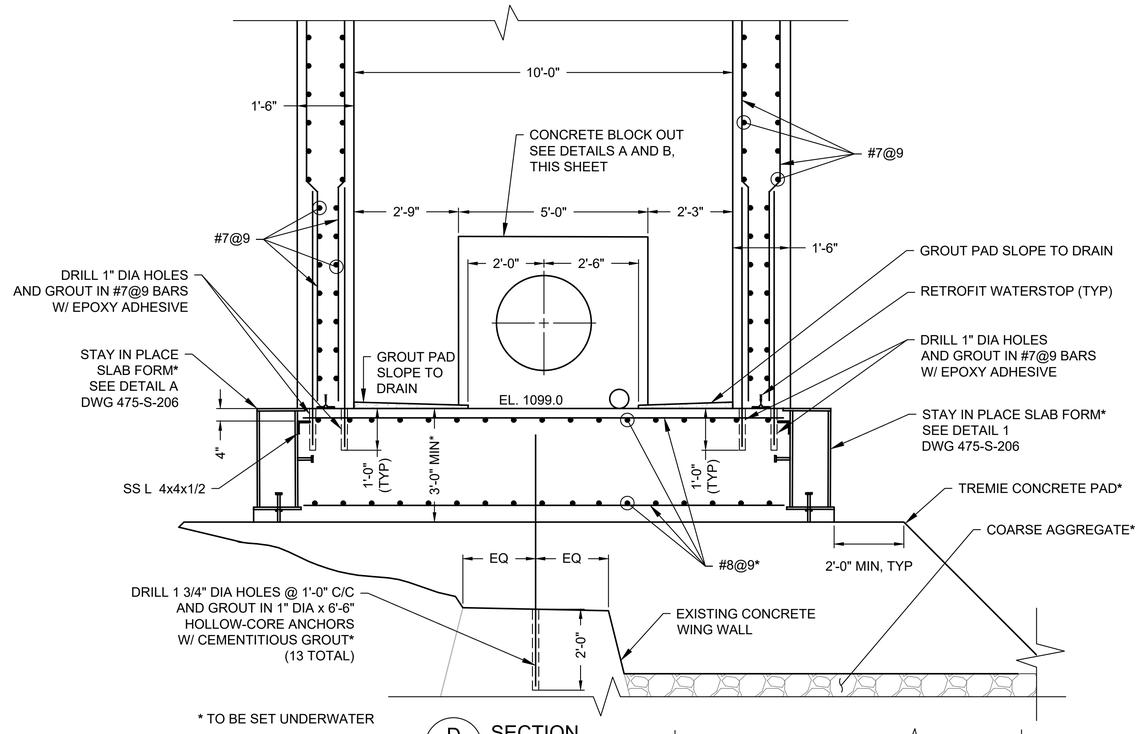
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D 475-S-201 SECTION

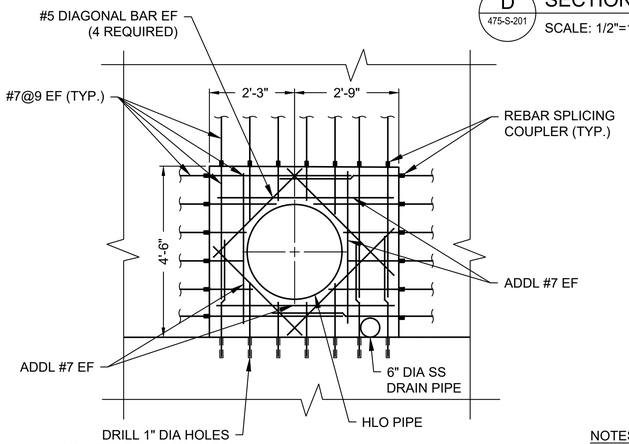
SCALE: 1/2"=1'-0"




* TO BE SET UNDERWATER

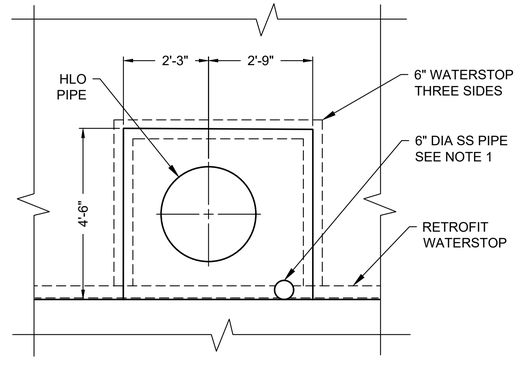
D 475-S-201 SECTION

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




A 475-C-112 BLOCK OUT REINFORCING DETAIL

NOT TO SCALE




B 475-C-112 BLOCK OUT WATERSTOP DETAIL

NOT TO SCALE

NOTES:

1. CUT RETROFIT WATERSTOP AT DRAIN PIPE LOCATION AND SEAL PIPE WITH HYDROPHILIC SWELLING WATERSTOP SEALANT AROUND PIPE AND OVERLAP MINIMUM 6" OVER RETROFIT WATERSTOP (BOTH SIDES).

0 1 2 3 4 FT.
1/2"=1'-0"

GRAPHIC SCALES CHECK BEFORE USE

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**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: AZ
DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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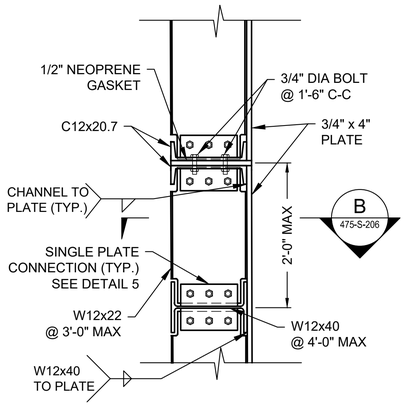
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL RELEASE TOWER
SECTIONS - SHEET 3 OF 3

DATE: AUGUST 2026
SHEET NO: 48 of 112
DRAWING NO. 475-S-205

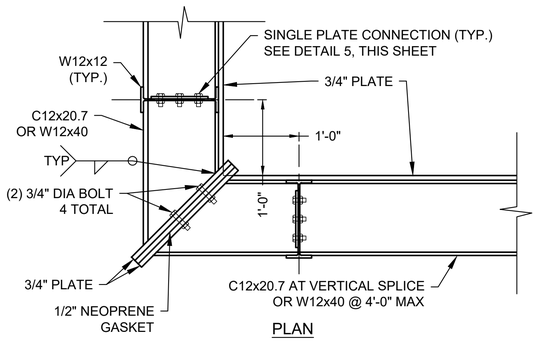
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Date & Time Plotted: 8/6/2026 8:08 AM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb

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2 475-S-206 VERTICAL SPLICE DETAIL

SCALE: 1"=1'-0"



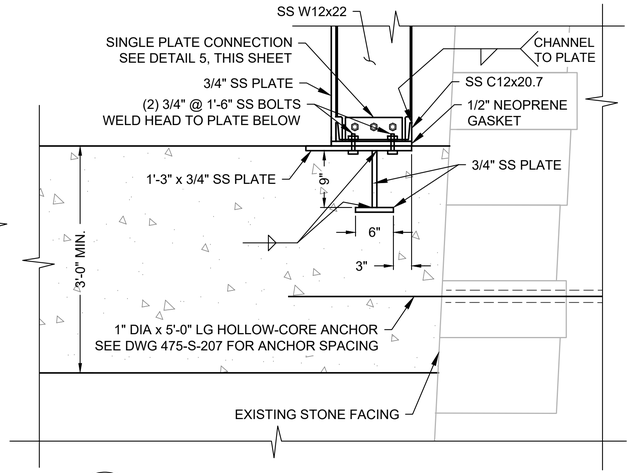

PLAN

NOTES:

1. TYPICAL ABOVE EL 1099.0.
2. TEMPORARY FORMWORK.

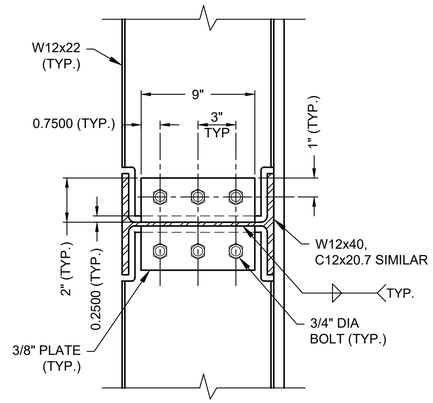
3 475-S-206 HORIZONTAL CORNER SPLICE DETAIL

SCALE: 1"=1'-0"



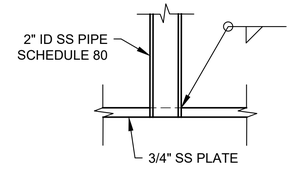

4 475-S-201 WEDGE WALL FORMWORK BASE DETAIL

SCALE: 1"=1'-0"



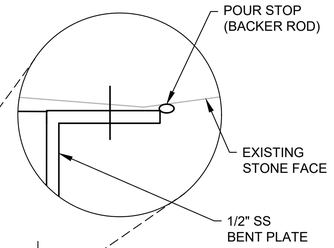

5 475-S-206 SINGLE PLATE CONNECTION DETAIL

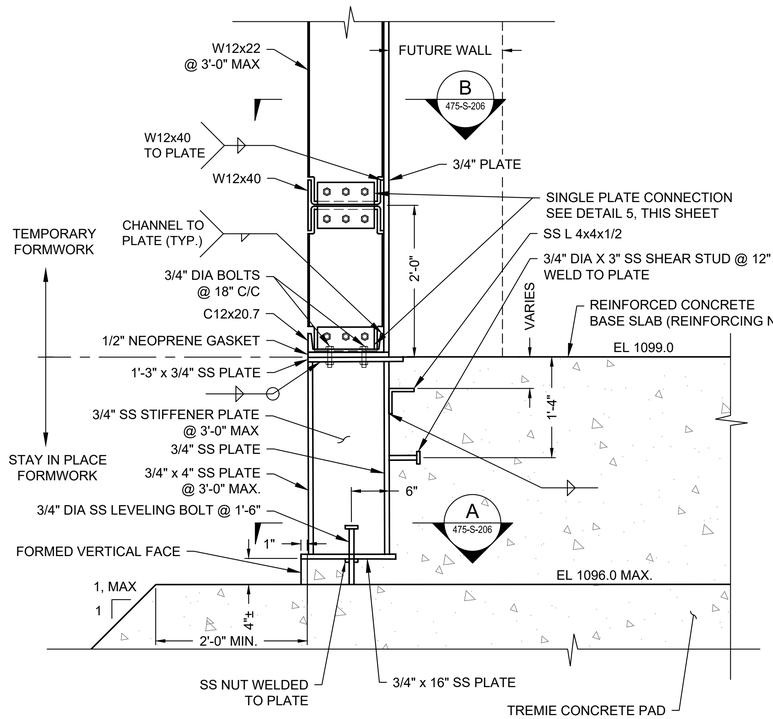
SCALE: 2"=1'-0"




6 475-S-206 ANCHOR SLEEVE DETAIL

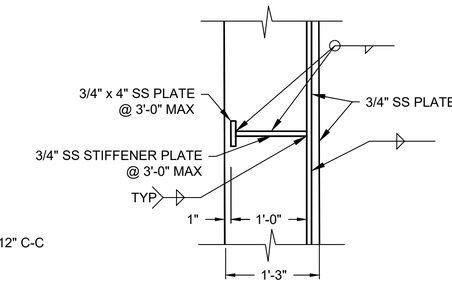
SCALE: 2"=1'-0"




1 475-S-203 STAY IN PLACE SLAB FORM AND WALL FORMWORK DETAIL

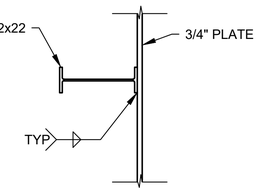
SCALE: 1"=1'-0"




NOTE: 3/4" DIA LEVELING BOLT NOT SHOWN.

A 475-S-206 SECTION

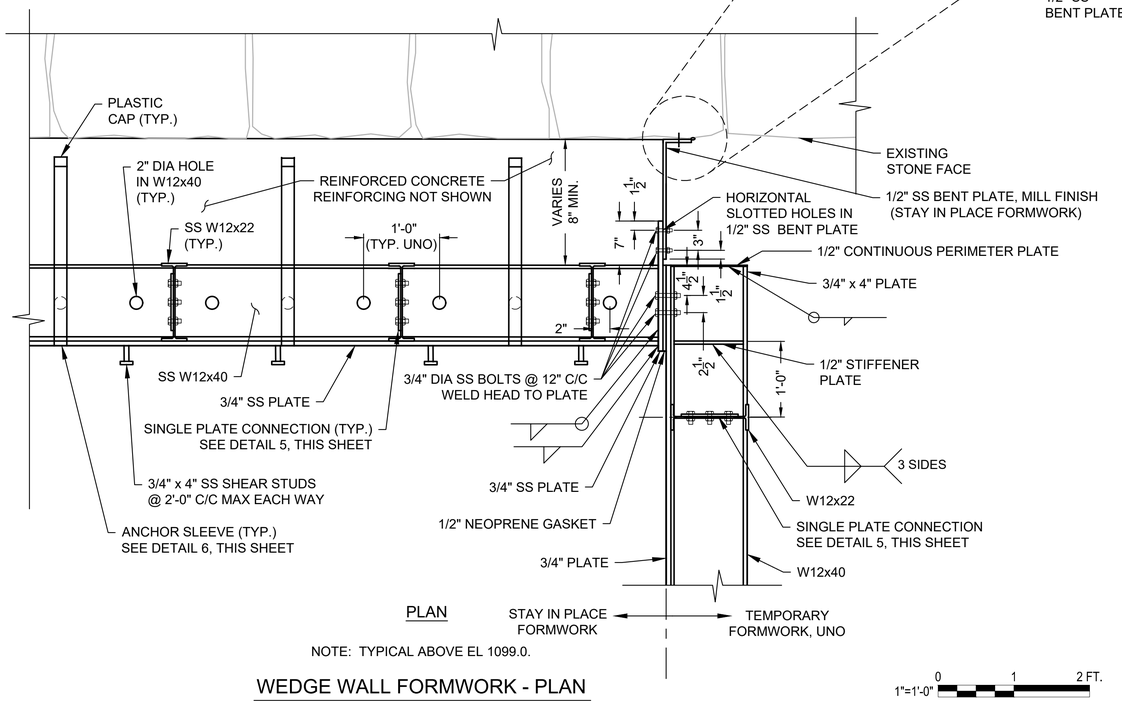
SCALE: 1"=1'-0"




NOTE: TYPICAL FROM EL 1099 TO EL 1138 UNO.

B 475-S-206 SECTION

SCALE: 1"=1'-0"




NOTE: TYPICAL ABOVE EL 1099.0.

WEDGE WALL FORMWORK - PLAN

SCALE: 1"=1'-0"

1"=1'-0" 0 1 2 FT.

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK · BOYD HOWARD · 099172-01 · LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

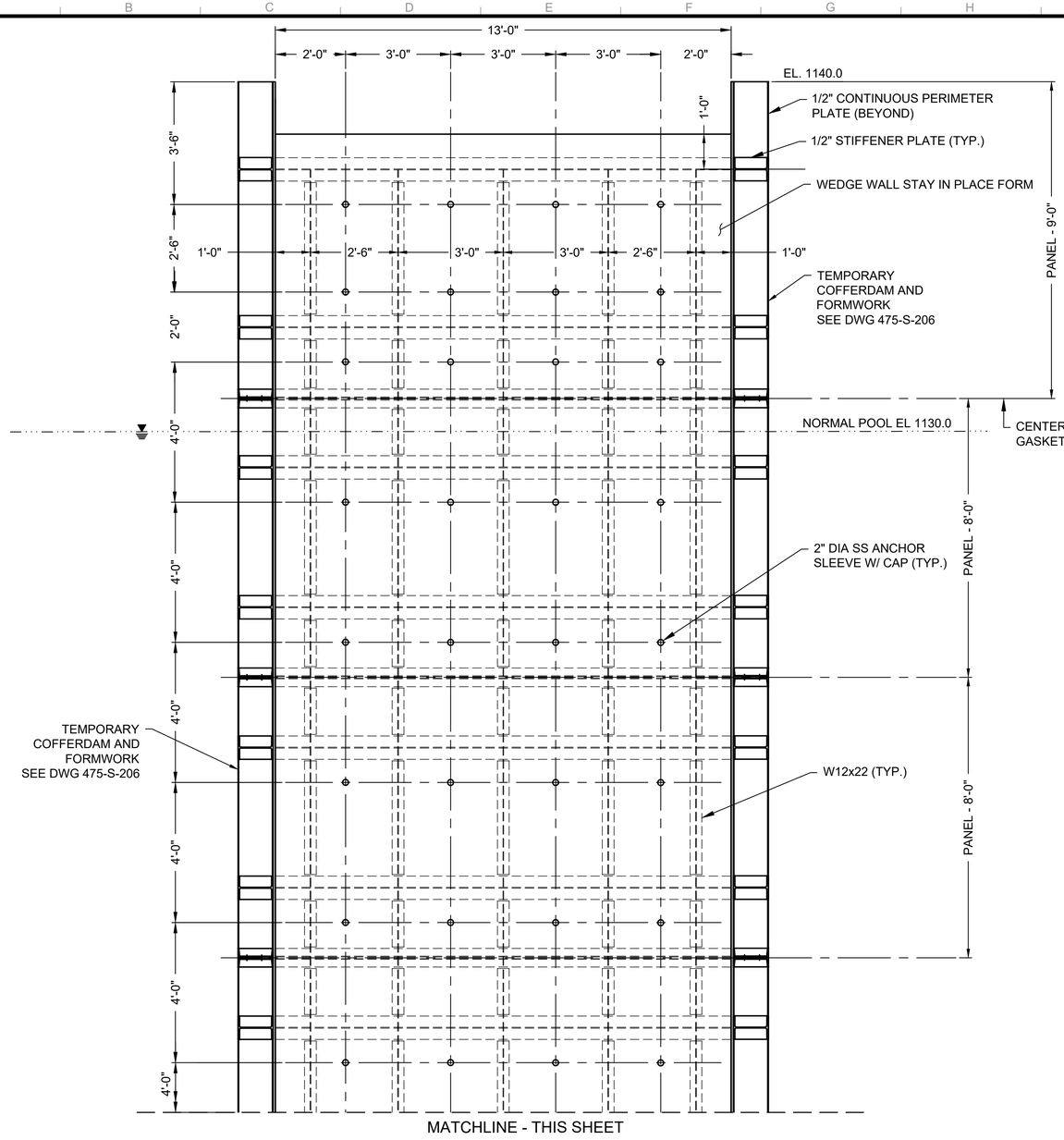
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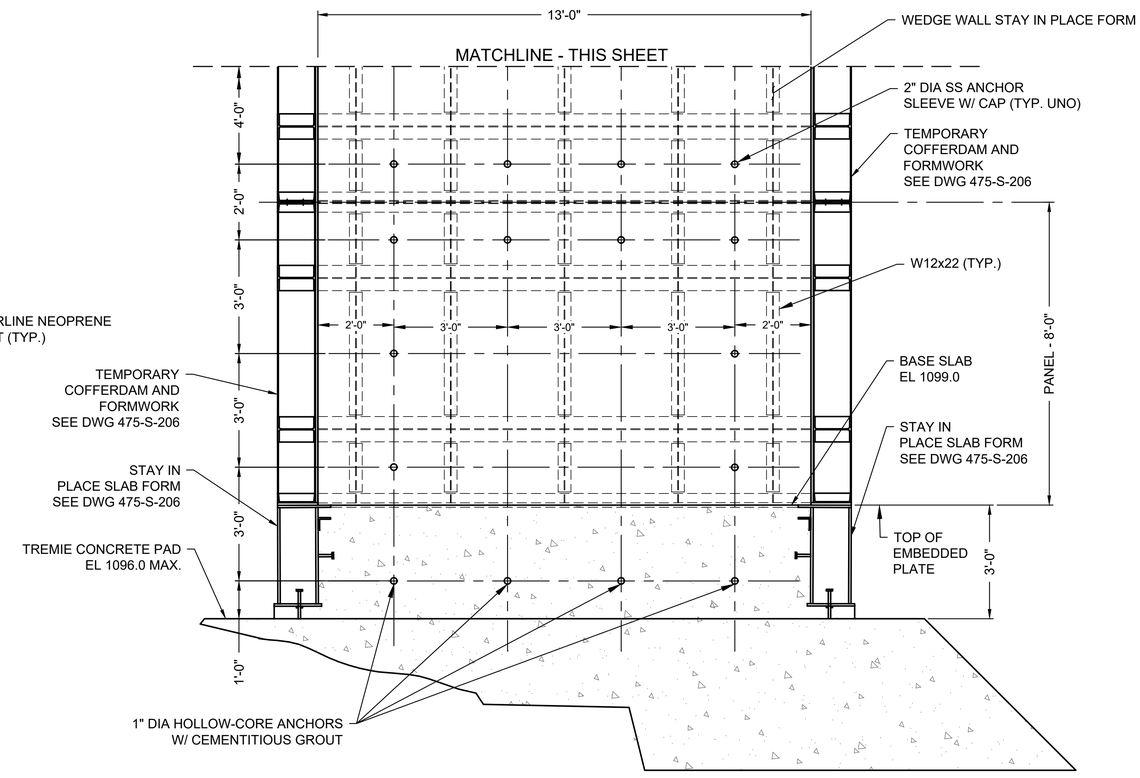
**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL RELEASE TOWER
COFFERDAM & FORMWORK DETAILS

DATE: AUGUST 2026
SHEET NO: 49 of 112
DRAWING NO. 475-S-206

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Last Date Saved: 7/27/2026 8:50 AM
Date & Time Plotted: 8/6/2026 6:08 AM
Plot Style Table: BEDC_Acad_2021.ctb
Plot Scale: 1:1




WEDGE WALL STAY IN PLACE FORM ELEVATION




WEDGE WALL STAY IN PLACE FORM ELEVATION

0 1 2 3 4 FT.
1/2"=1'-0"

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**SUBMITTAL DATE: AUG 2026**

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CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE
DRAWN BY: EF

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172-E1 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

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PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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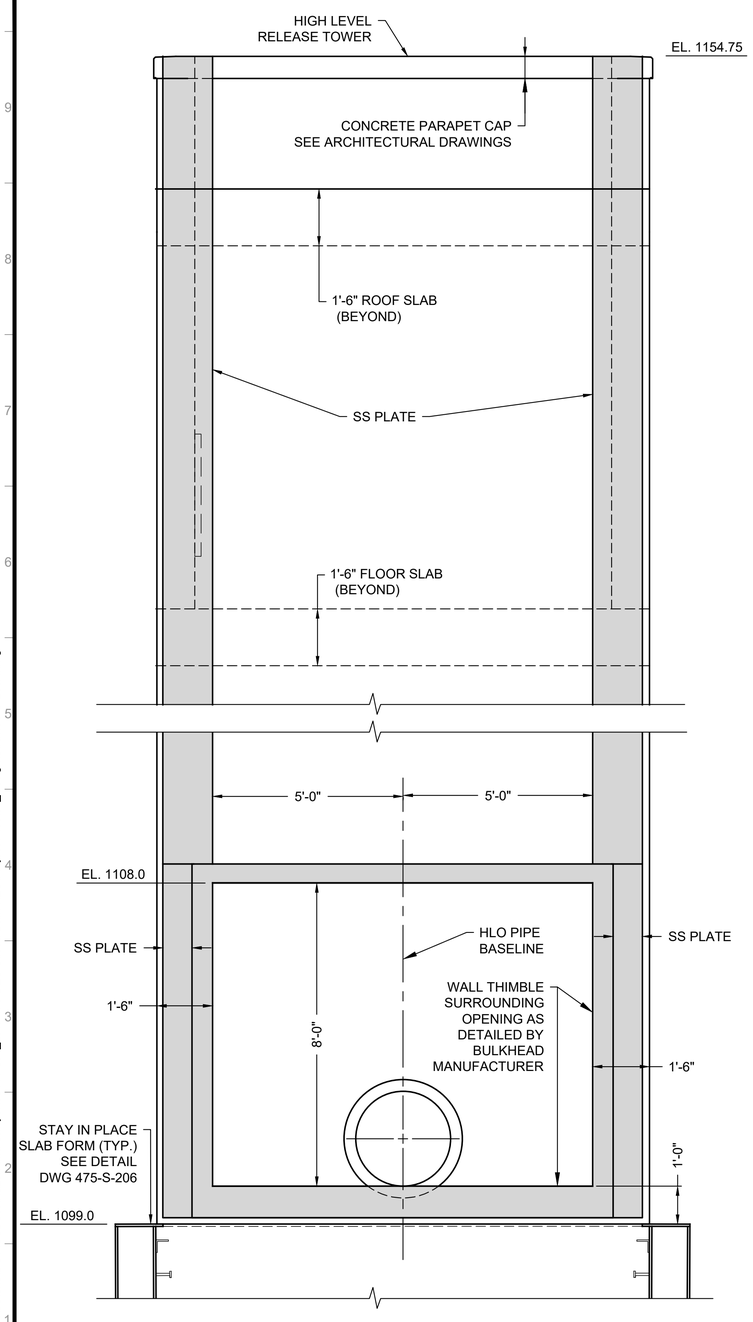
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL RELEASE TOWER
WEDGE WALL STAY IN PLACE FORM ELEVATION

DATE: AUGUST 2026
SHEET NO: 50 of 112
DRAWING NO. 475-S-207

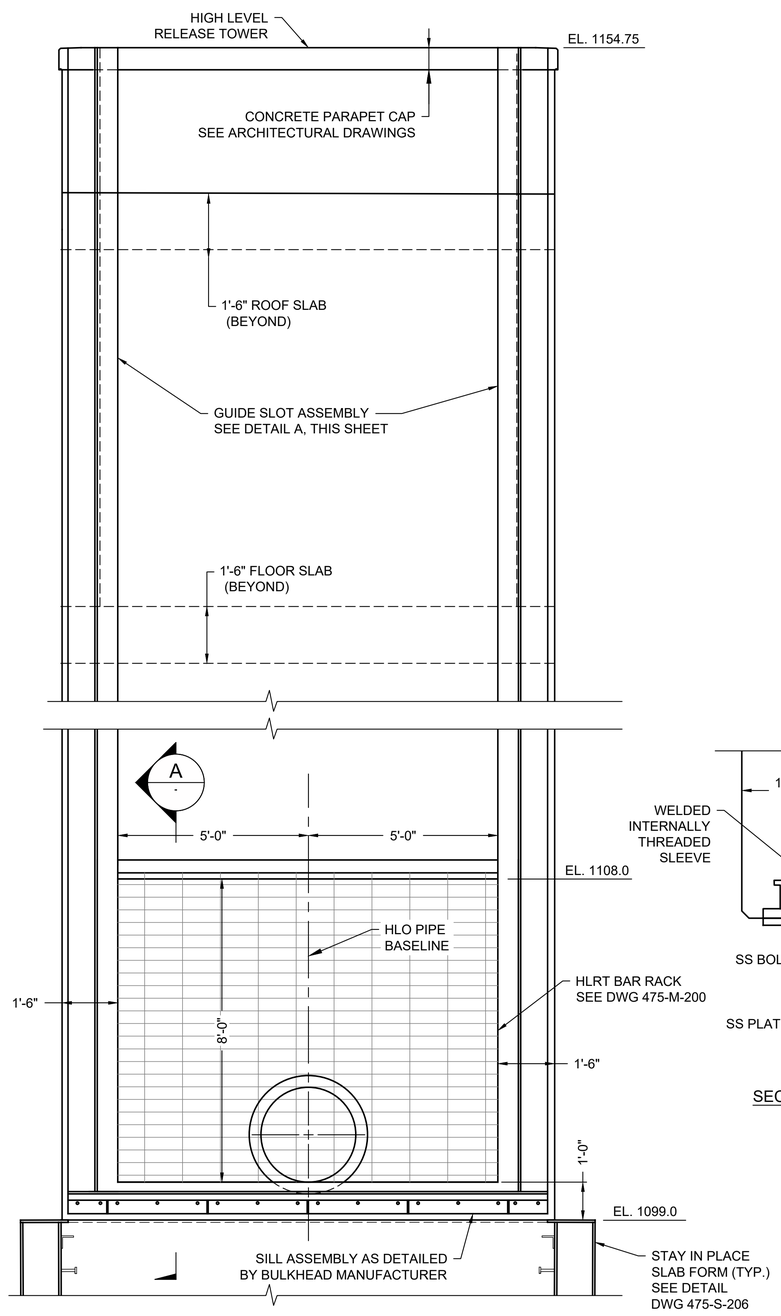
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Plot Scale: 1:1
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UPSTREAM FACE ELEVATION VIEW - EMBEDDED FEATURES

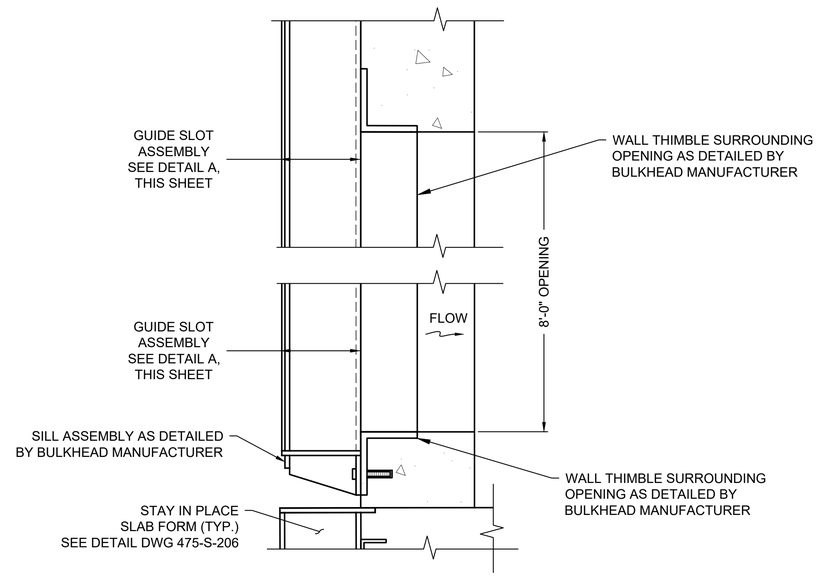
SCALE: 1"=2'-0"




UPSTREAM FACE ELEVATION VIEW - COMPLETE ASSEMBLY

SCALE: 1"=2'-0"

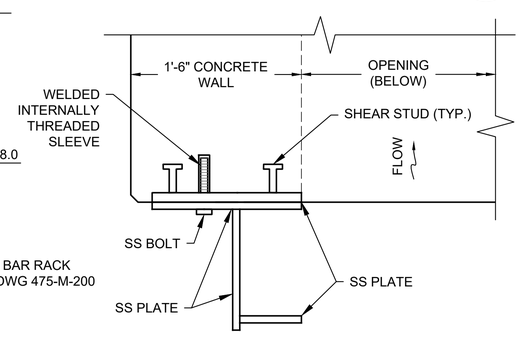
NOTE: GUIDE SLOT ASSEMBLY FEATURES SHALL BE AS DETAILED BY THE BULKHEAD MANUFACTURER.



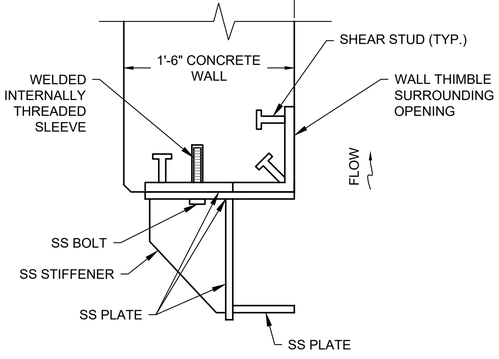

NOTE: GUIDE SLOT ASSEMBLY FEATURES SHALL BE AS DETAILED BY THE BULKHEAD MANUFACTURER.

A 475-S-208 SECTION

NOT TO SCALE




SECTIONAL PLAN ABOVE EL. 1108.0




SECTIONAL PLAN BELOW EL. 1108.0

NOTE: GUIDE SLOT ASSEMBLY FEATURES SHALL BE AS DETAILED BY THE BULKHEAD MANUFACTURER.

A 475-S-208 GUIDE SLOT ASSEMBLY DETAIL

NOT TO SCALE

1/2"=1'-0" 0 1 2 3 4 FT.

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**SUBMITTAL DATE: AUG 2026**

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DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099122 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

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PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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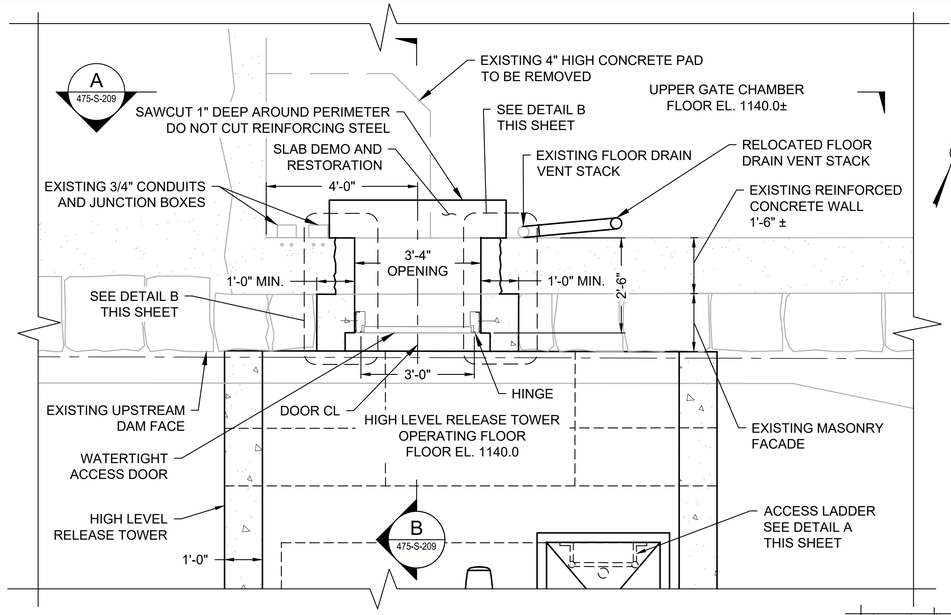
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL RELEASE TOWER
GUIDE SLOT AND SILL DETAILS

DATE: AUGUST 2026
SHEET NO: 51 of 112
DRAWING NO. 475-S-208

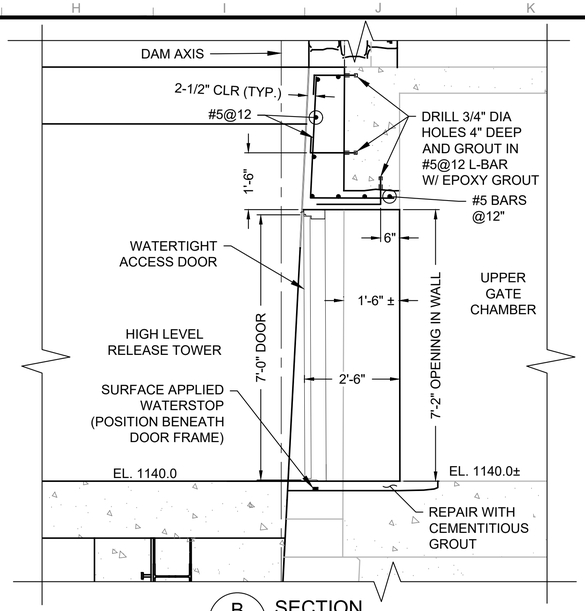
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Last Date Saved: 7/27/2026 9:00 AM
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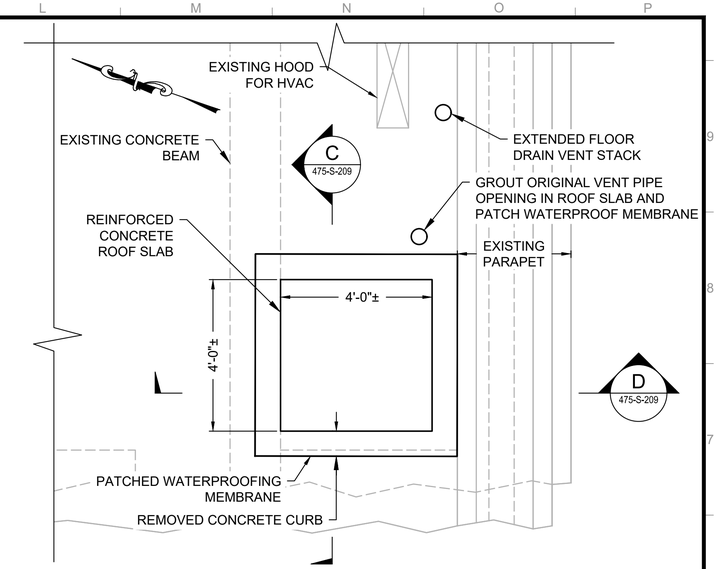

## WATERIGHT ACCESS DOOR - PLAN - EL. 1143.0

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




B
475-S-209
SECTION

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

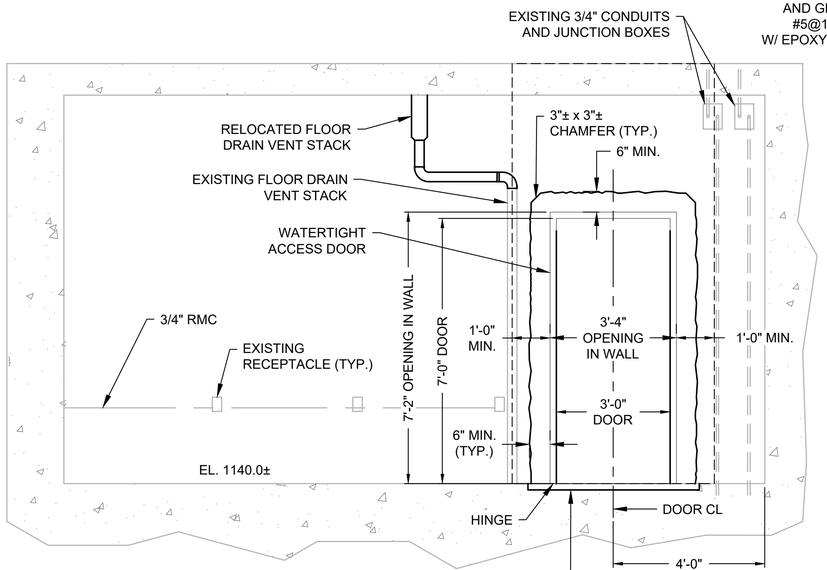



## REINFORCED CONCRETE SLAB PLAN

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

NOTES:

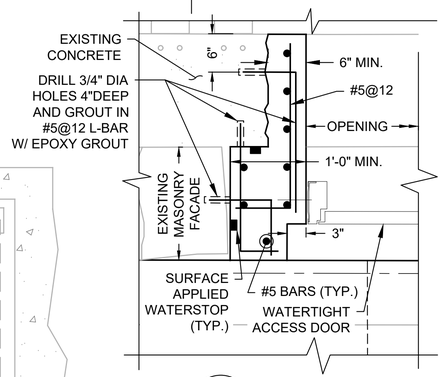
1. SEE DWG 475-C-113 FOR EXISTING HATCH LOCATION AND DEMOLITION.
2. WATERPROOF MEMBRANE ON THE UGC ROOF SHALL BE PATCHED WHEREVER IMPACTED BY THIS WORK, AND COMPATIBLE WATERPROOFING SYSTEM EXTENDED WITHOUT INTERRUPTION THROUGHOUT THE ROOF OF THE NEW HLRT, EACH IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.




PREPARE SURFACE AND CHIP OUT CONCRETE TO MINIUM THICKNESS REQUIRED TO INSTALL SURFACE APPLIED WATERSTOP AND PER REPAIR MORTAR MANUFACTURER RECOMMENDATIONS

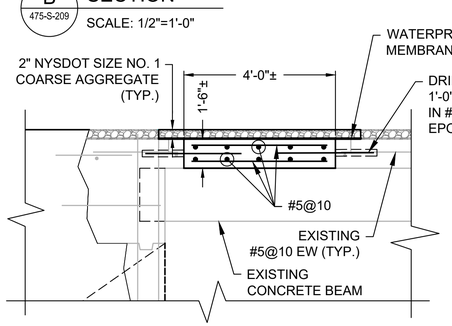
A
475-S-209
SECTION

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



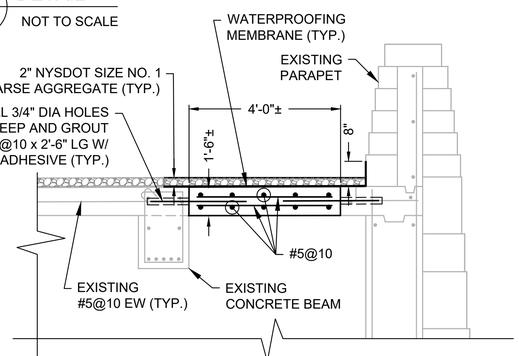

B
475-S-209
DETAIL

NOT TO SCALE



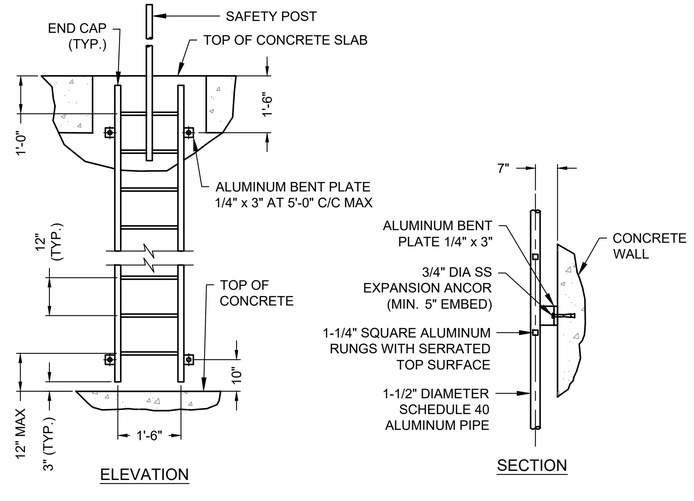

C
475-S-209
SECTION

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




D
475-S-209
SECTION

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




A
475-C-112
ACCESS LADDER DETAIL

NOT TO SCALE

0 1 2 3 4 FT.
1/2"=1'-0"

**BID SET**
**SUBMITTAL DATE: AUG 2026**

GRAPHIC SCALES CHECK BEFORE USE

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DESIGNED BY: AZ
DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD O. HOWARD LICENSED PROFESSIONAL ENGINEER 299172-01

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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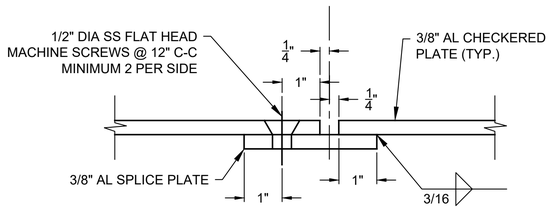
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL RELEASE TOWER
UPPER GATE CHAMBER ACCESS MODIFICATIONS

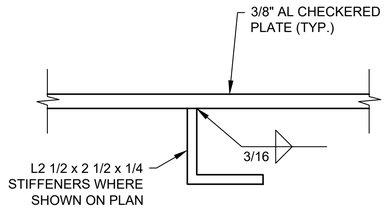
DATE: AUGUST 2026
SHEET NO: 52 of 112
DRAWING NO. 475-S-209

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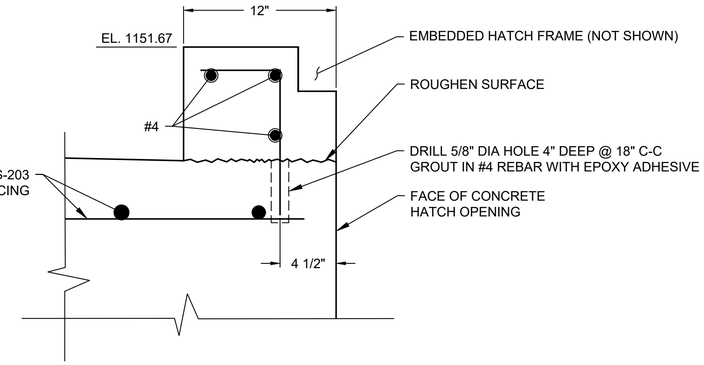
Last Saved By: JStone
Paper Size Printed/Plotted: ANSI full bleed D (22.00 x 34.00 Inches)
Drawing File Name & Drive Location: C:\Users\JStone\DCA\CADDocs\Hazen and Sawyer\90441-001_CAT-475-DES Gilboa Dam HLO\Project Files\01_Design\Stru\475-S-206.dwg
Last Date Saved: 7/27/2026 8:48 AM
Date & Time Plotted: 8/6/2026 8:08 AM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb




SPLICE PLATE

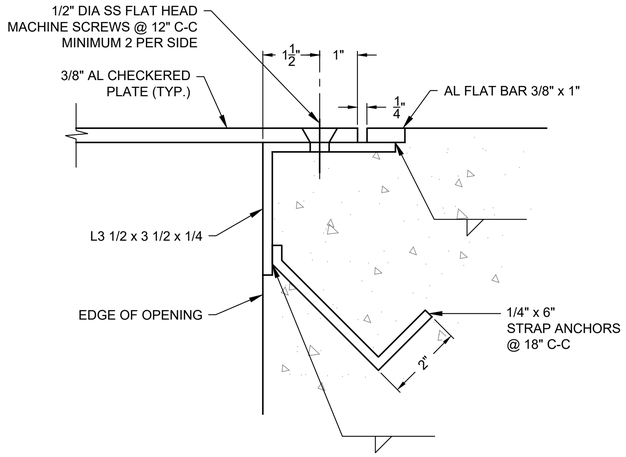



STIFFENER ANGLE

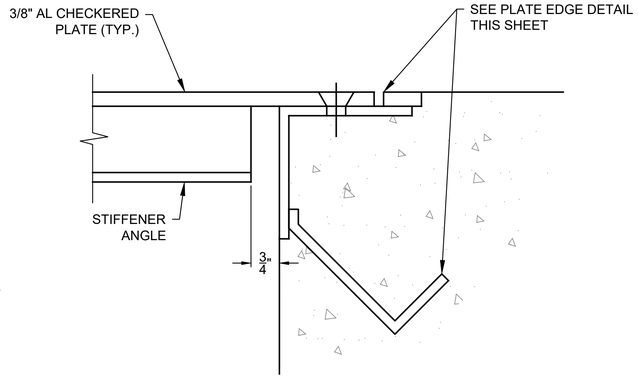



B 475-S-202 12-INCH CURB DETAIL

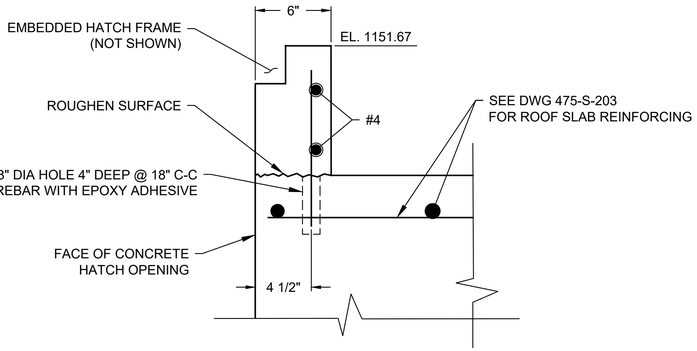
NOT TO SCALE




EDGE - SECTION

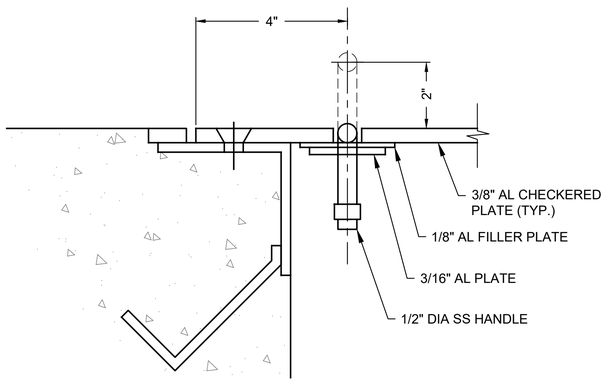



EDGE - SECTION AT STIFFENER



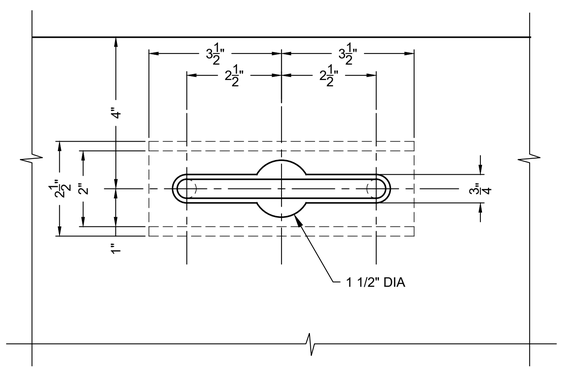

C 475-S-202 6-INCH CURB DETAIL

NOT TO SCALE




NOTE: WELD PLATES TO UNDERSIDE OF CHECKERED PLATE.

LIFTING HANDLE - ELEVATION




LIFTING HANDLE - PLAN

A 475-C-112 REMOVALE AL PLATE DETAILS

NOT TO SCALE

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DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 098172-01 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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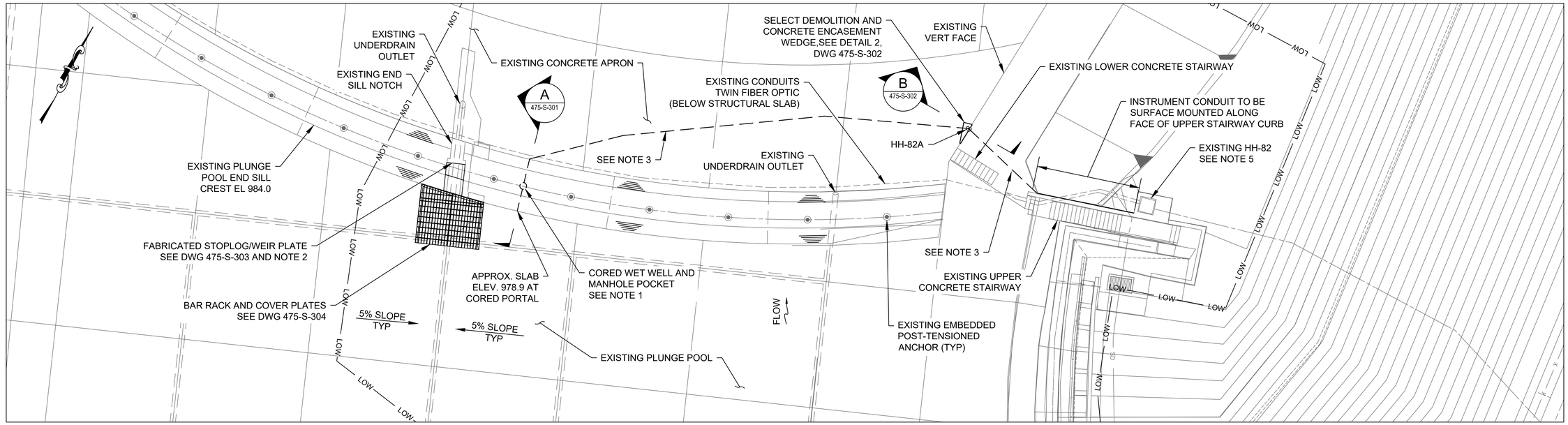
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HIGH LEVEL RELEASE TOWER
MISCELLANEOUS DETAILS

DATE: AUGUST 2026
SHEET NO: 53 of 112
DRAWING NO. 475-S-210

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Date & Time Plotted: 8/6/2026 8:08 AM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb
Last Date Saved: 7/27/2026 9:07 AM




## END SILL MONITORING PLAN

SCALE: 1"=10'-0"




A 475-S-301 SECTION

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

NOTES:

1. CORE 6" DIA. VERTICAL WET WELL TO DEPTH OF 7.0 FT AND A CONCENTRIC 16" DIA. CORED HOLE TO DEPTH OF 14" (MIN) FOR MONITORING WELL MANHOLE (SEE DWG 475-I-001, DET. 1). MONITORING WELL MANHOLE TO BE GROUTED INTO PLACE.
2. CORE 2" DIA. HORIZONTAL PORTAL AT EL. 980.0 TO INTERSECT WET WELL. HOLE TO BE KEPT OPEN AND UNOBSTRUCTED.
3. SAWCUT AND DEMOLISH A 3" WIDE BY 3" DEEP RACEWAY FOR INSTRUMENT CONDUIT. RESTORE WITH NON-SHRINK GROUT UPON COMPLETION OF INSTRUMENTATION WORK.
4. SEE CONSTRUCTION CONTRACT CAT-212B AS-BUILT REFERENCE DWG S-CG-306 FOR REINFORCEMENT TO BE ENCOUNTERED IN END SILL AND APRON SLAB.
5. SEE INSTRUMENTATION DRAWINGS FOR ADDITIONAL HANDHOLE, MANHOLE, AND DUCT BANK INFORMATION.




EXISTING END SILL REINFORCING AND PTA'S - 09/16/2014

(#5 BARS @ 12" EW)

NOT TO SCALE

0 10 20 FT.
1"=10'-0"
0 4 8 FT.
1/4"=1'-0"

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**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: BH
DRAWN BY: EF
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
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498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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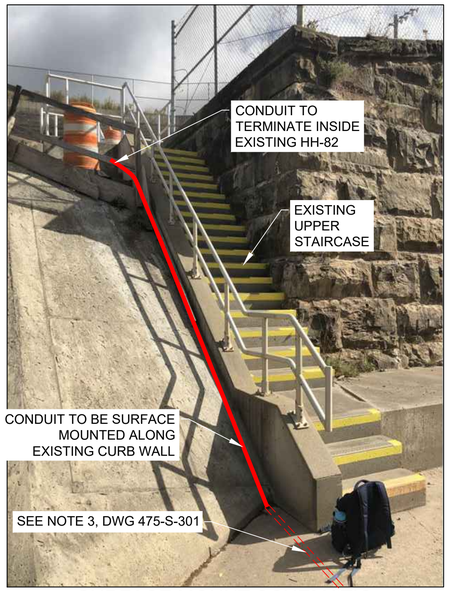
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
END SILL MONITORING
PLAN SECTIONS AND DETAILS

DATE: AUGUST 2026
SHEET NO: 54 of 112
DRAWING NO. 475-S-301

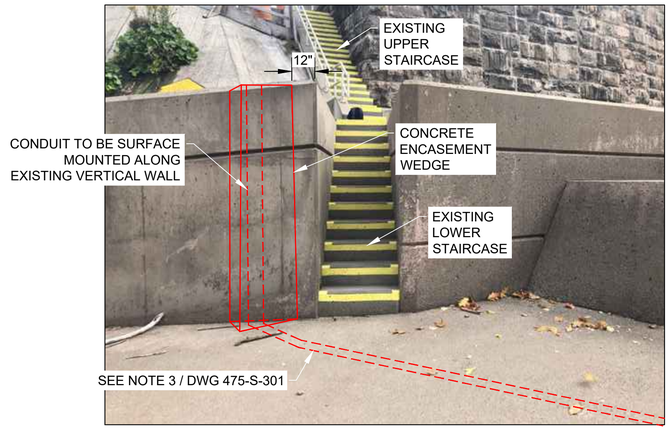
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Last Date Saved: 7/27/2026 9:09 AM
Date & Time Plotted: 8/6/2026 8:09 AM
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Plot Style Table: BEDC_Acad_2021.ctb




SURFACE MOUNT SCHEMATIC

NTS

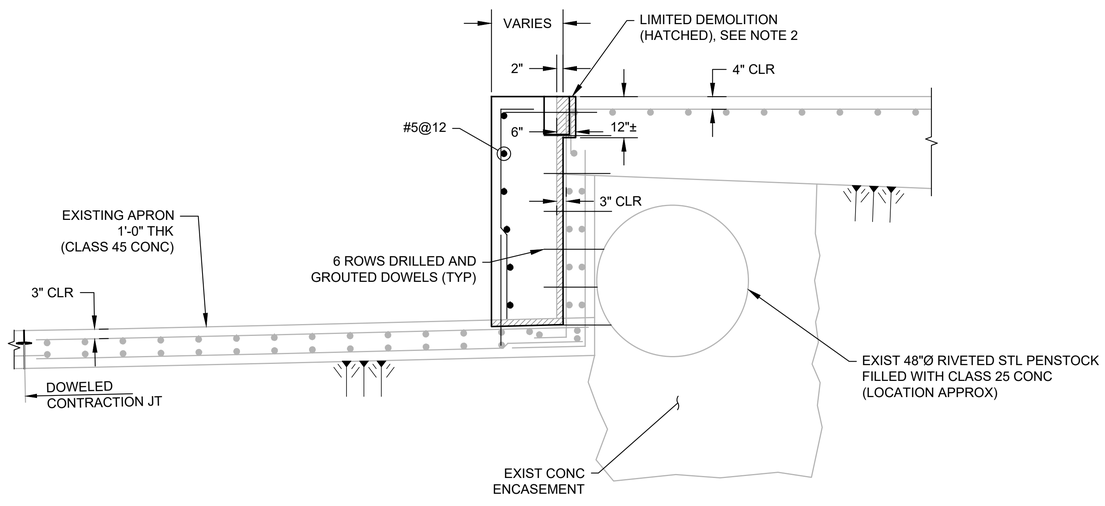



CONCRETE ENCASEMENT SCHEMATIC

NTS

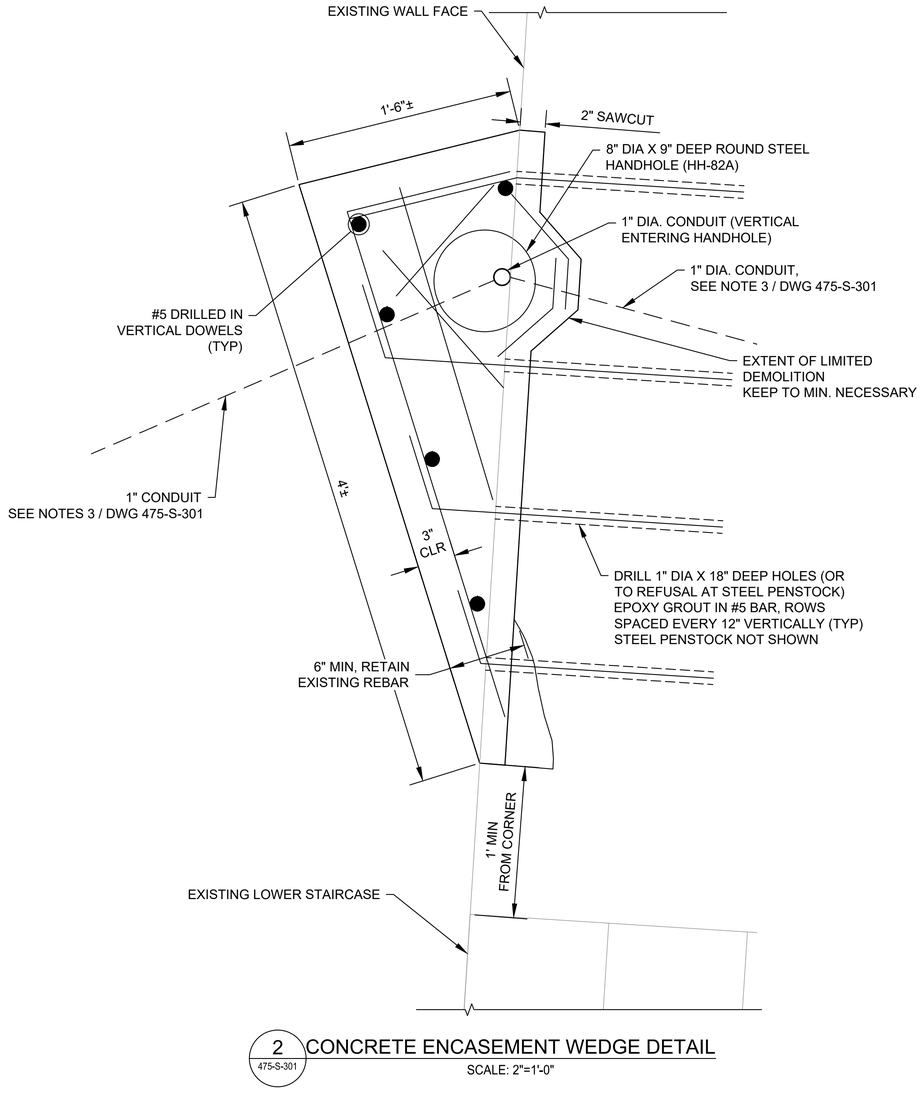
NOTES:

1. SAWCUT EXISTING CONCRETE 2" DEEP AROUND FULL PERIMETER OF NEW ENCASEMENT WEDGE AND DEMOLISH EXISTING CONCRETE SURFACE ON HORIZONTAL APRON SLAB, AND WHERE NECESSARY ON VERTICAL WALL TO PROVIDE MINIMUM 3" COVER FOR NEW REINFORCING BARS.
2. DEMOLISH AS NEEDED TO ALLOW EMBEDMENT INTO NEW ENCASEMENT WEDGE OF 8" DIA., 9" DEEP HANDHOLE, TO BE CENTERED ON WALL FACE AT LOCATION OF VERTICAL CONDUIT RUN.
3. SEE CONSTRUCTION CONTRACT CAT-212B REFERENCE DWG S-CG-303/ SECTION 6 FOR EXISTING CONCRETE REINFORCEMENT DETAILS.
4. INSTRUMENT CONDUIT NOT SHOWN. SEE NOTE 3 / DWG 475-S-209.
5. SEE DWG 475-I-011, DETAIL 2 FOR HANDHOLE HH-82A DETAILS.
6. PROVIDE 90 DEGREE CONDUIT ELBOW WITH 12-INCH RADIUS AT TRANSITIONS BETWEEN HORIZONTAL AND VERTICAL.




B 475-S-301 CONCRETE ENCASEMENT SECTION

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




2 475-S-301 CONCRETE ENCASEMENT WEDGE DETAIL

SCALE: 2"=1'-0"

0 1 2 3 4 FT.
1/2"=1'-0"
0 1/2 1 FT.
2"=1'-0"

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**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: AZ
DRAWN BY: JS
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
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**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
END SILL MONITORING
DETAILS

DATE: AUGUST 2026
SHEET NO: 55 of 112
DRAWING NO. 475-S-302

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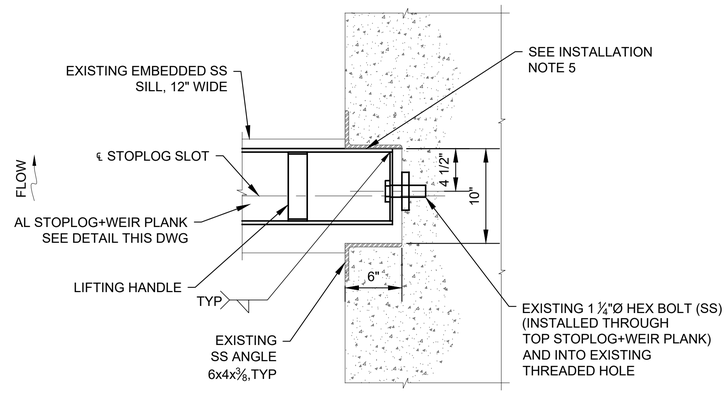
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Last Date Saved: 7/27/2026 9:19 AM
Plot Style Table: BEDC_Acad_2021.ctb
Plot Scale: 1:1
Date & Time Plotted: 8/6/2026 6:09 AM




EXISTING STOPLOG PLANKS SHOWN
IN PLACE AT END SILL NOTCH
NTS
(VIEWED IN UPSTREAM DIRECTION)

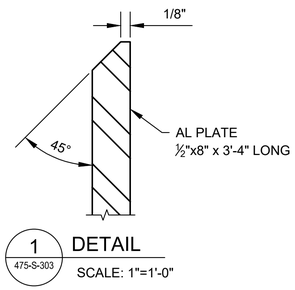
STOPLOG INSTALLATION NOTES:

1. CITY OWNS EIGHT (8) EXISTING STOPLOG PLANKS AND HOLD DOWN BOLTS THAT, AT PRESENT, MIGHT BE STORED REMOTELY. IF STORED REMOTELY, CITY SHALL SELECT AND PROVIDE TWO (2) EXISTING STOPLOG PLANKS FOR INSTALLATION WITH THE NEW STOPLOG/WEIR PLANK.
2. CONTRACTOR SHALL FIELD-VERIFY ALL DIMENSIONS OF EXISTING STOPLOGS AND END SILL FEATURES AND MAKE ANY NECESSARY ADJUSTMENTS TO DETAILS SHOWN ON THIS SHEET PRIOR TO SUBMITTING SHOP DRAWINGS FOR APPROVAL. DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION.
3. AT CITY'S DISCRETION, THE EXISTING TOP STOPLOG PLANK (CONTAINING END PLATES FOR HOLDDOWN BOLTS) MAY BE RETROFITTED WITH THE WEIR PLATE DETAILED HEREIN TO SERVE AS THE NEW STOPLOG+WEIR PLANK.
4. AFTER COMPLETION OF BOTH END SILL INSTRUMENTATION WORK AND END SILL BAR RACK INSTALLATION, INSTALL TWO (2) EXISTING STOPLOG PLANKS IN THE END SILL NOTCH, WITH THE NEW STOPLOG+WEIR PLANK INSTALLED AS THE TOP (THIRD) PLANK, AND SECURE TO THE EXISTING STOPLOG SLOTS WITH TWO HOLD DOWN BOLTS.
5. AS EACH PLANK IS INSTALLED, CLEAN EACH BEARING SURFACE AND APPLY A BEAD OF SIKA-1A CAULK TO EACH BEARING EDGE. THIS APPLIES TO BOTH THE BOTTOM DOWNSTREAM EDGE OF EACH PLANK AND THE VERTICAL FACE OF THE EXISTING VERTICAL ANGLES THAT FORM THE DOWNSTREAM FACE OF THE STOPLOG SLOT. IF NECESSARY, INCLUDE A COMPRESSED NEOPRENE STRIP (4" WIDE BY 2'-0" LONG, 2 REQ'D) TO SEAL ANY OVERSIZED GAP ALONG THE FACE OF THE VERTICAL ANGLES.
6. IF NOT ALREADY IN PLACE, REPLACE THE BLIND FLANGE ON THE UPSTREAM END OF THE EXISTING 12-INCH-DIAMETER DRAIN PIPE ADJACENT TO THE END SILL NOTCH.
7. CONTRACTOR IS REMINDED THAT THE PLUNGE POOL WILL BEGIN TO FILL WITH WATER AS SOON AS THE BLIND FLANGE AND STOPLOGS ARE EMPLACED.
8. THIS WORK SHALL BE CONDUCTED WHEN NO SPILLWAY OVERFLOW IS OCCURRING OR FORECAST. CONTRACTOR IS SPECIFICALLY ALERTED THAT SPILLWAY CHANNEL UNDERDRAINS PRODUCE A CONTINUOUS DISCHARGE. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY DIVERSION OF WATER SO ALL WORK AT THE END SILL CAN BE PERFORMED IN SUITABLY DRY CONDITIONS.



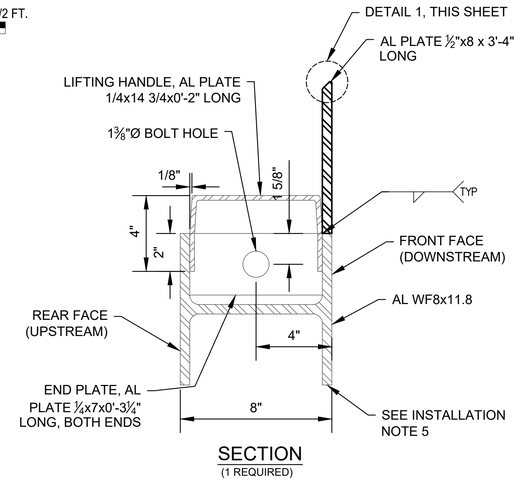

2 / 475-S-303 STOPLOG SLOT DETAIL (PARTIAL PLAN)

1-1/2"=1'-0" (0, 1, 1-1/2 FT.)

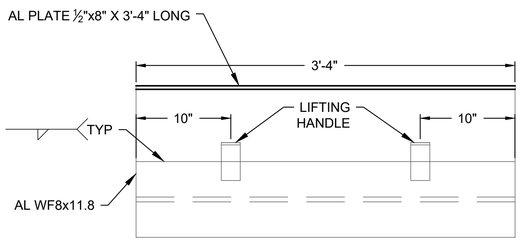



1 / 475-S-303 DETAIL

SCALE: 1"=1'-0"




SECTION
(1 REQUIRED)




REAR ELEVATION
PLANK DETAILS
NTS

0, 1, 1-1/2 FT.
1-1/2"=1'-0"
0, 1, 2 FT.
1"=1'-0"

GRAPHIC SCALES CHECK
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DRAWN BY: JS
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK · BOYD HOWARD · 099172-01 · LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER
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PORTFOLIO MANAGER
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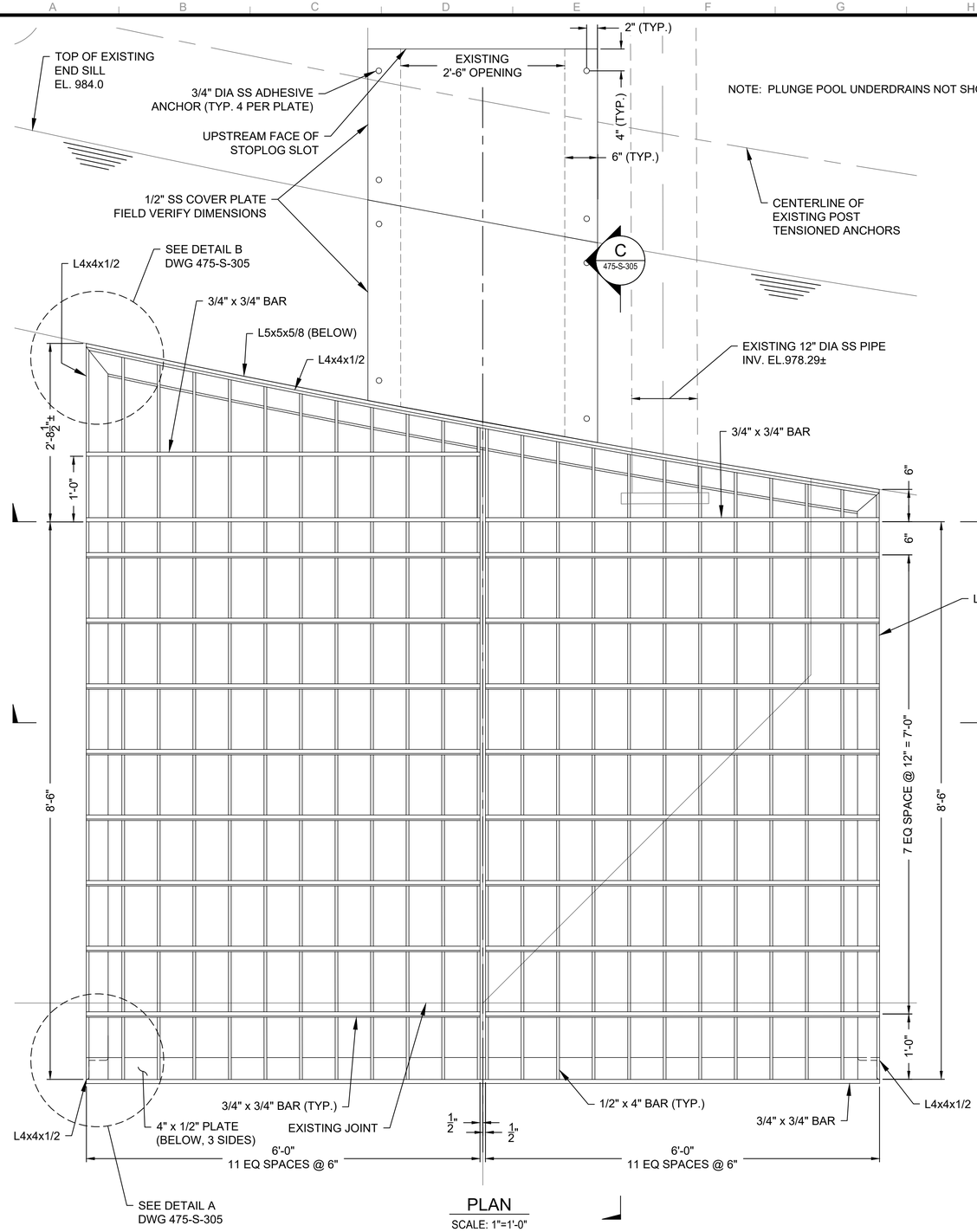
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
END SILL STOPLOG MODIFICATIONS

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SHEET NO: 56 of 112
DRAWING NO. 475-S-303

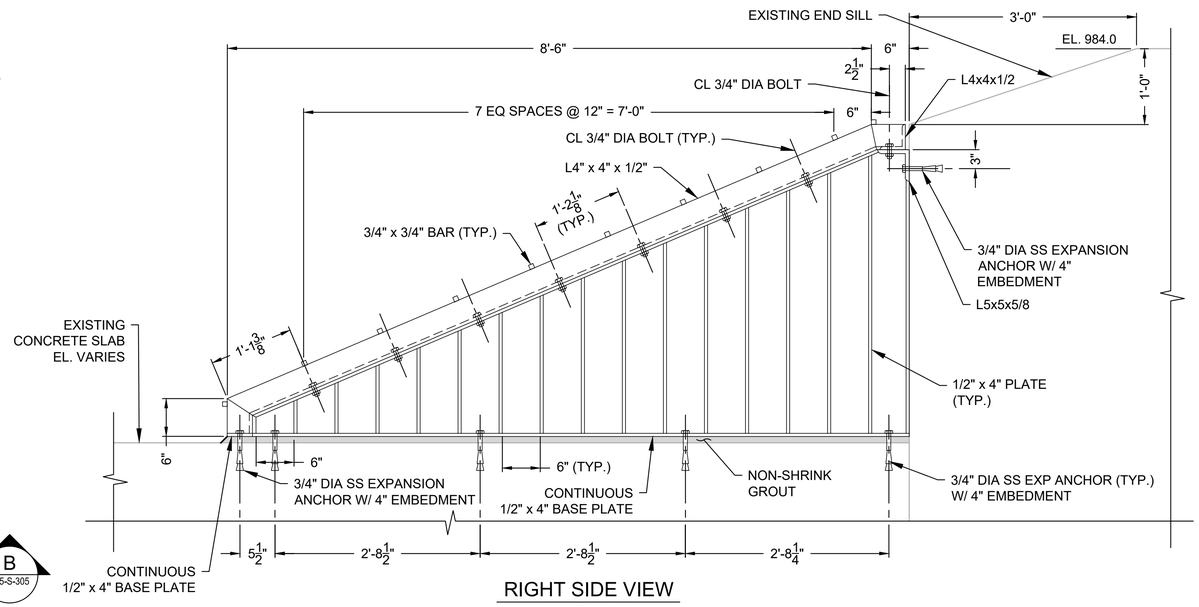
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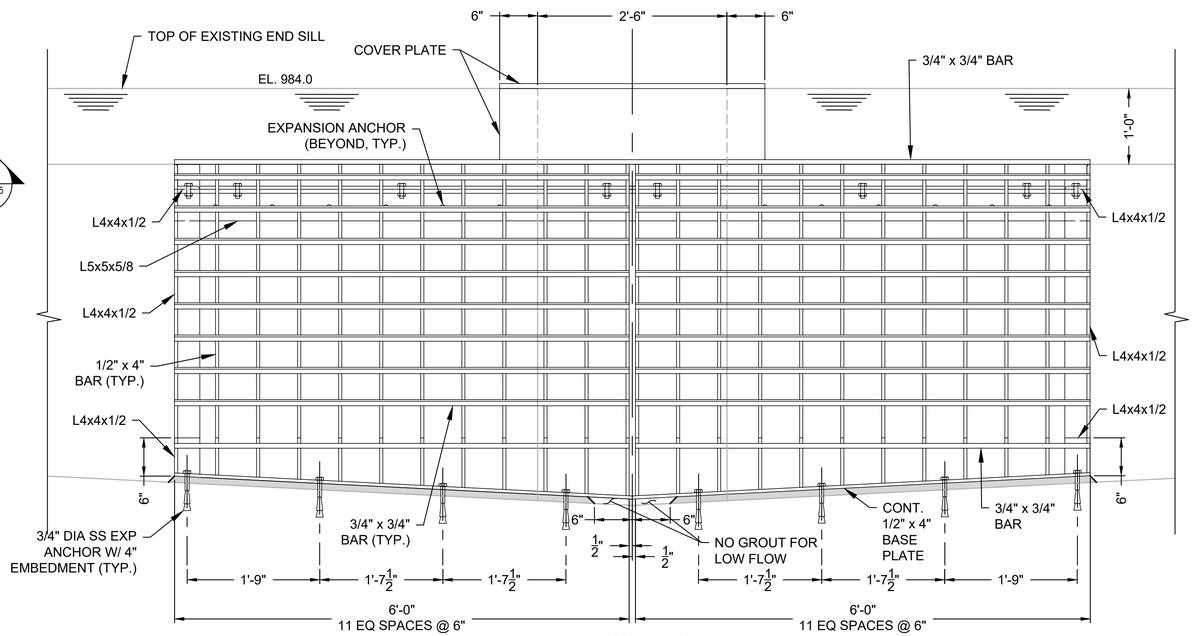

PLAN

SCALE: 1"=1'-0"




RIGHT SIDE VIEW

SCALE: 1"=1'-0"




FRONT VIEW

SCALE: 1"=1'-0"

NOTES:

1. ALL MATERIAL IS STAINLESS STEEL UNLESS NOTED OTHERWISE.

1"=1'-0" 0 1 2 FT.

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SECTION MANAGER: CHRISTOPHER BAILEY, PE

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HAZEN AND SAWYER
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NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

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PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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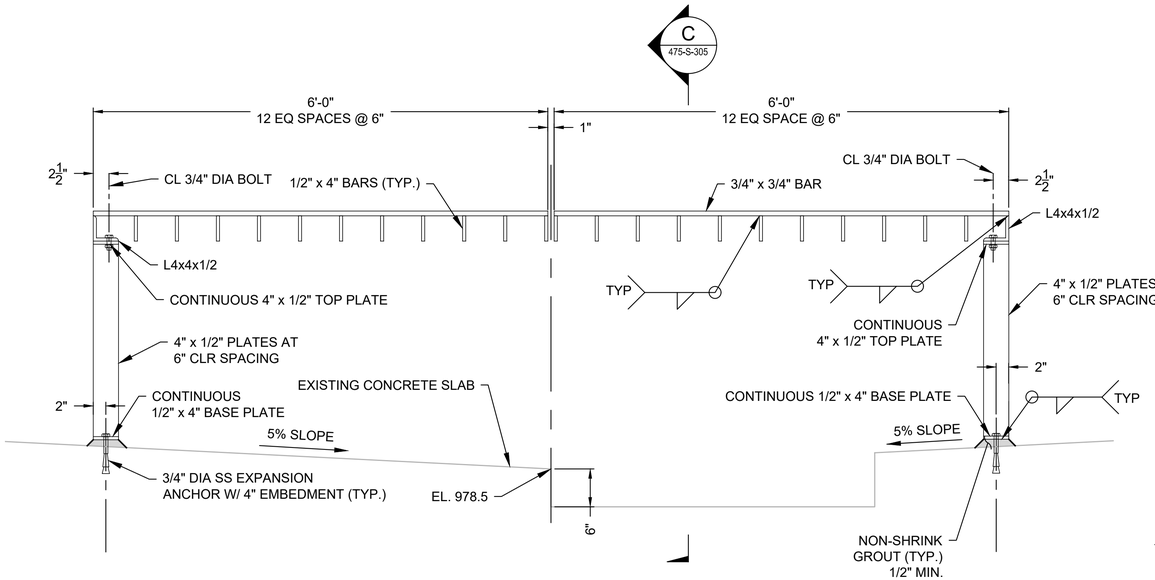
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
END SILL BAR RACK
SHEET 1 OF 2

DATE: AUGUST 2026
SHEET NO: 57 of 112
DRAWING NO. 475-S-304

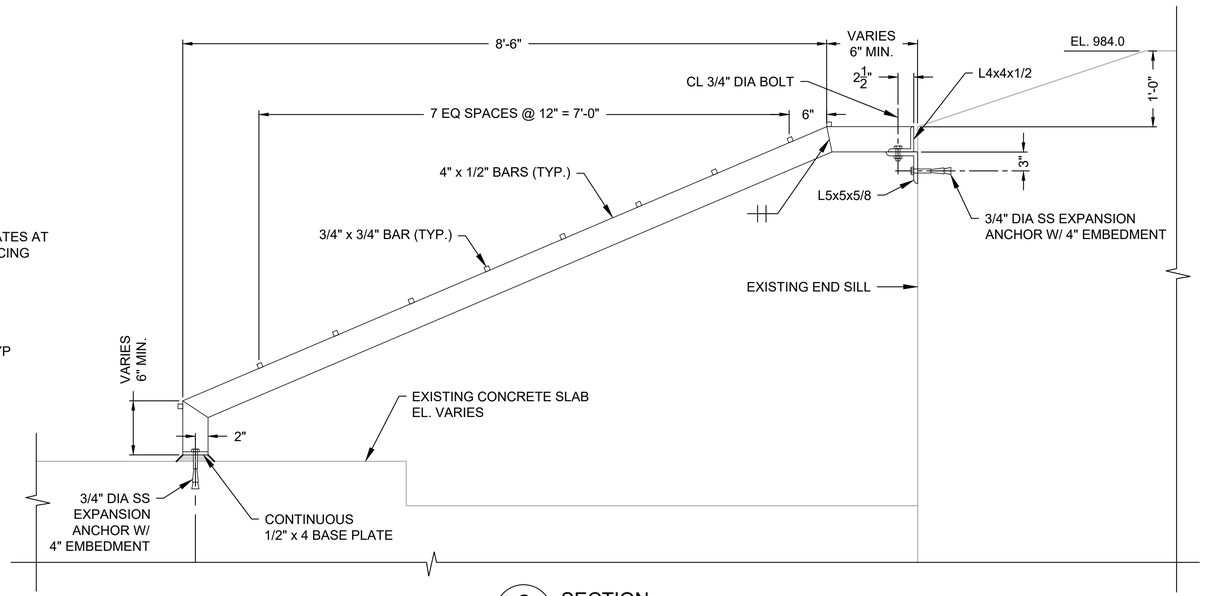
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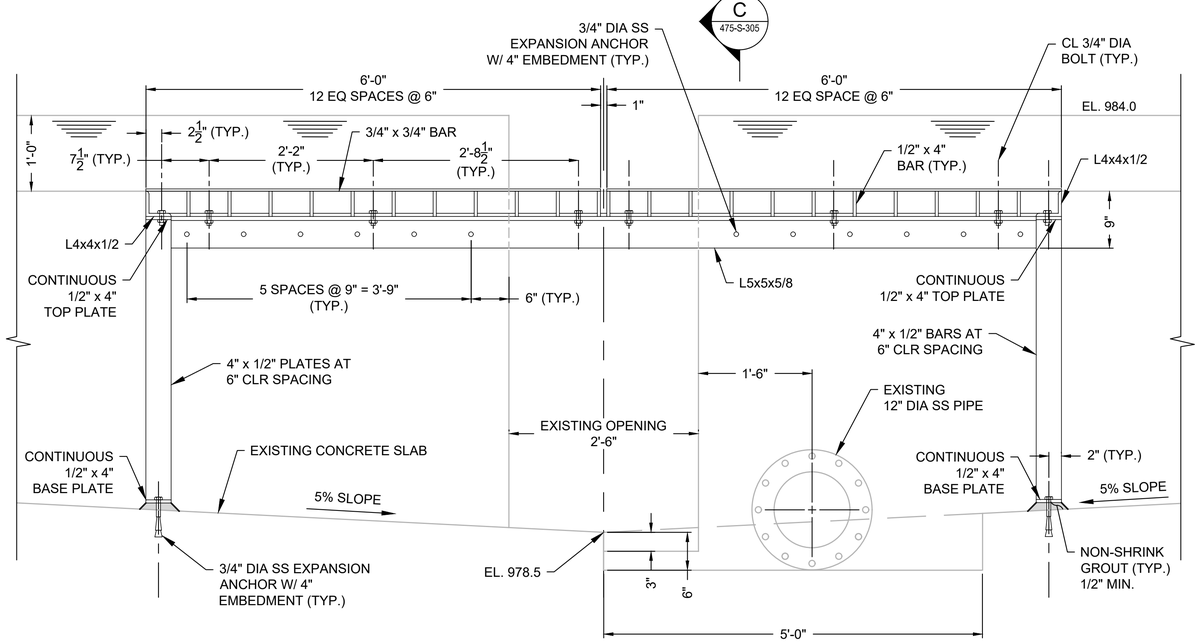

A 475-S-304 **SECTION**

SCALE: 1"=1'-0"



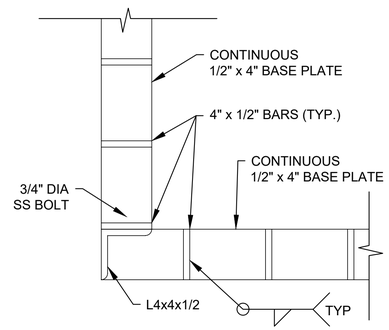

C 475-S-304 **SECTION**

SCALE: 1"=1'-0"



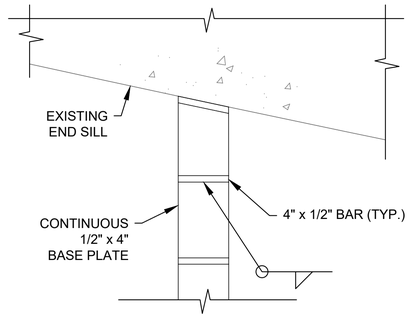

B 475-S-304 **SECTION**

SCALE: 1"=1'-0"

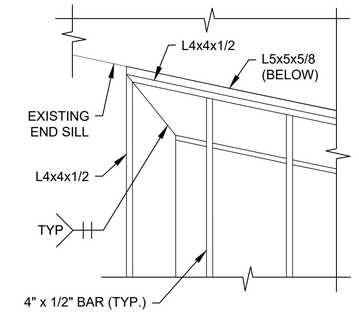



A 475-S-304 **DETAIL - BOTTOM PLAN**

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




BOTTOM PLAN




TOP PLAN

B 475-S-304 **DETAIL - TRASH RACK AT END SILL**

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

NOTES:

1. ALL MATERIAL IS STAINLESS STEEL UNLESS NOTED OTHERWISE.

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**SUBMITTAL DATE: AUG 2026**

1/2"=1'-0" 0 1 2 3 4 FT.

1"=1'-0" 0 1 2 FT.

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SECTION MANAGER: CHRISTOPHER BAILEY, PE

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STATE OF NEW YORK BOYD HOWARD LICENSED PROFESSIONAL ENGINEER 099122-01

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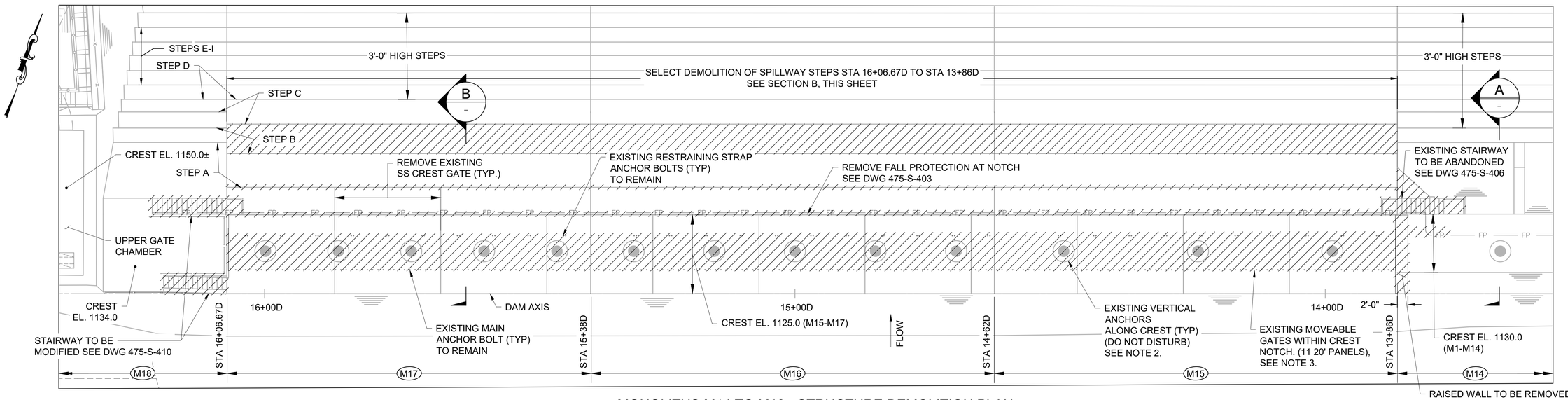
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
END SILL BAR RACK
SHEET 2 OF 2

DATE: AUGUST 2026
SHEET NO: 58 of 112
DRAWING NO. 475-S-305

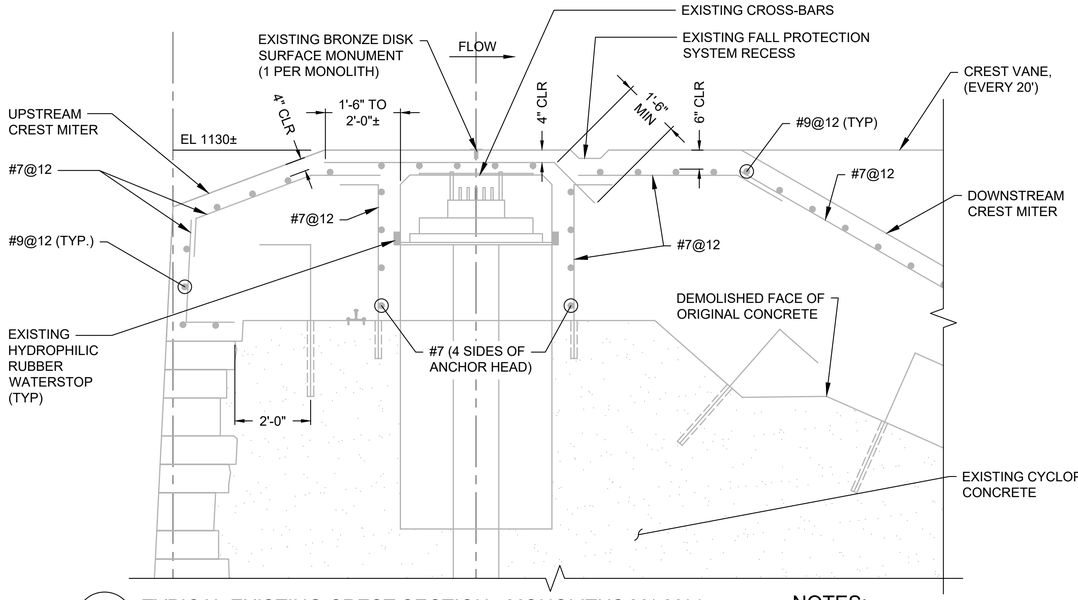
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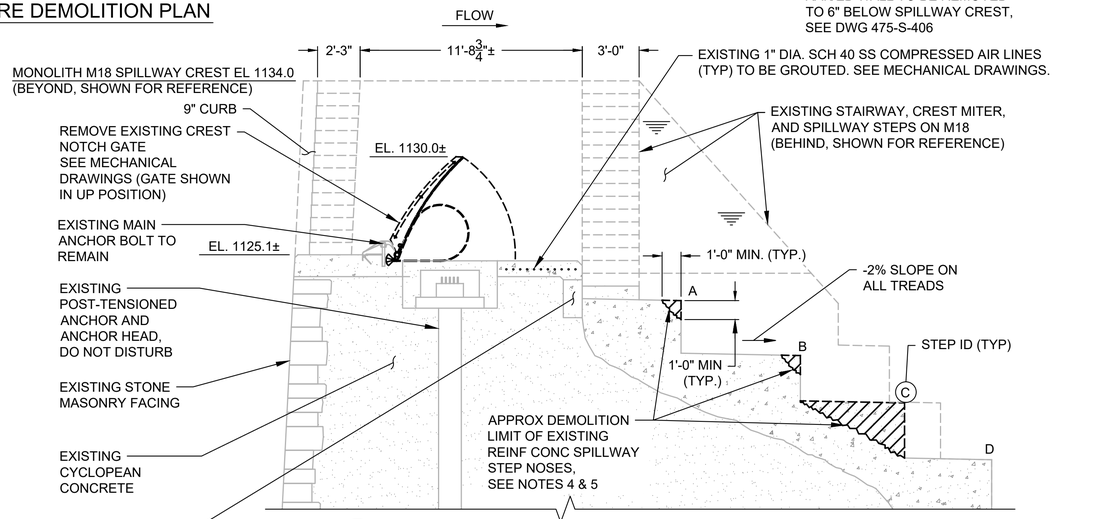

## MONOLITHS M14 TO M18 - STRUCTURE DEMOLITION PLAN

SCALE: 1"=10'




A — TYPICAL EXISTING CREST SECTION - MONOLITHS M1-M14

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




B — TYPICAL STRUCTURAL DEMOLITION SECTION - MONOLITHS M15-M17

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

## NOTES:

1. NEW HLO VALVES AND PIPE NOT SHOWN ON THIS SHEET.
2. SEE INFORMATION FOR BIDDERS-NOT IN CONTRACT FOR AS-BUILT DRAWINGS OF POST-TENSIONED ANCHORS AND ANCHOR HEADS.
3. SEE DWG NO 475-S-403 FOR DETAILS OF GATED CREST SECTION DEMOLITION, CREST REPLACEMENT, CREST VANES AND STEPS.
4. DEMOLISH EXISTING SPILLWAY STEP NOSES TO CREATE A MIN 12" CHAMFER AND TO PROVIDE 2' MIN THICKNESS OF NEW CONCRETE PLACEMENT (SEE DWG 475-S-402
5. STEEL REINF WITHIN EXISTING SPILLWAY STEPS MATCHES NEW CONSTRUCTION SHOWN ON DWG 475-S-403. EXISTING REINF IS NOT REQUIRED TO BE CUT OFF AND MAY REMAIN.

## LEGEND:

- EXISTING POST-TENSIONED ANCHOR & ANCHOR HEAD (DO NOT DISTURB)
- M19 — MONOLITH NUMBERS
- TO BE REMOVED

**BID SET**
**SUBMITTAL DATE: AUG 2026**

0 4 8 FT.
1/4"=1'-0"

0 1 2 3 4 FT.
1/2"=1'-0"

0 10 20 FT.
1"=10'

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DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
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NEW YORK, NEW YORK 10018

STATE OF NEW YORK · JEFFREY S. CHEN · 112098 · LICENSED PROFESSIONAL ENGINEER · 7/31/26

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
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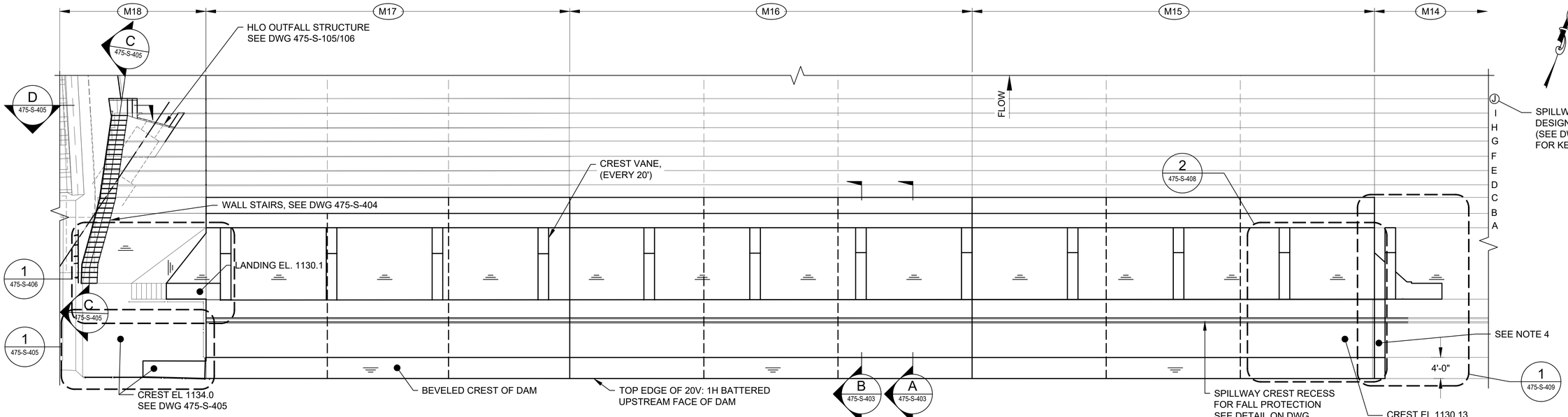
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
SPILLWAY MONOLITHS M14-M18
EXISTING CONDITIONS & DEMOLITION

DATE: AUGUST 2026
SHEET NO: 59 of 112
DRAWING NO. 475-S-401

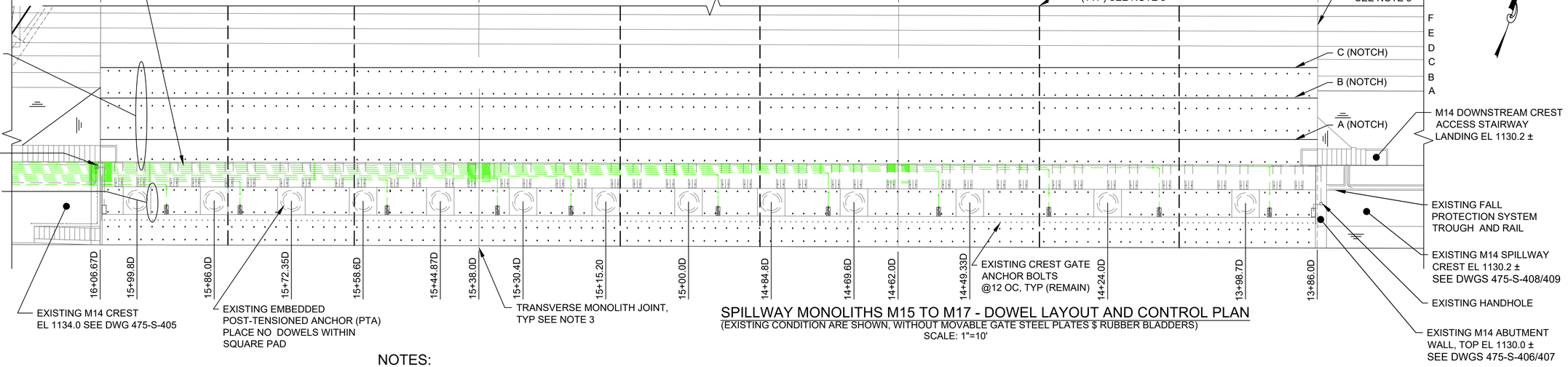
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## SPILLWAY MONOLITHS M15 TO M17 - CREST RAISE PLAN & MONOLITH M18 WALL STAIR MODIFICATION PLAN

(EXISTING CONDITIONS ARE SHOWN, WITHOUT MOVABLE GATE STEEL PLATE & RUBBER BLADDERS)
SCALE: 1"=10'




## SPILLWAY MONOLITHS M15 TO M17 - DOWEL LAYOUT AND CONTROL PLAN

(EXISTING CONDITION ARE SHOWN, WITHOUT MOVABLE GATE STEEL PLATES $ RUBBER BLADDERS)
SCALE: 1"=10'

## NOTES:

1. SEE DRAWING 475-S-403 FOR TYPICAL SECTIONS AND DETAILS RELATED TO CREST RAISE, NEW VANES AND SPILLWAY STEP MODIFICATIONS. SEE DRAWING 475-S-401 FOR ASSOCIATED CONCRETE DEMOLITION.
2. SEE M-SERIES DRAWINGS FOR EXISTING CREST GATE AND APPURTENANT FEATURES (NOT SHOWN) AND RELATED MECHANICAL REMOVALS (NOT SHOWN).
3. TO CONTROL SHRINKAGE, CONCRETE FOR THE SPILLWAY STEPS WILL BE PLACED IN 3 EQUAL PLACEMENT WIDTHS PER MONOLITH, SEPARATED BY CONSTRUCTION JOINTS. PLACEMENT IS ALSO SUBJECT TO MAXIMUM DEPTH AND TIMING LIMITATIONS. CONTRACTION JOINTS WITH BONDBREAKER SHALL BE MADE COINCIDENT WITH THE EXISTING TRANSVERSE JOINTS SEPARATING EACH MONOLITH AT LOCATIONS SHOWN.
4. SEE DWG 405-S-410 FOR HANDRAILS NOT SHOWN ON THIS SHEET.

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1"=10' 0 10 20 FT.

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STATE OF NEW YORK JEFFREY S CHIO LICENSED PROFESSIONAL ENGINEER 112098 7/31/26

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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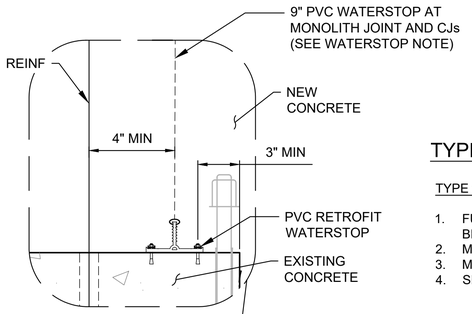
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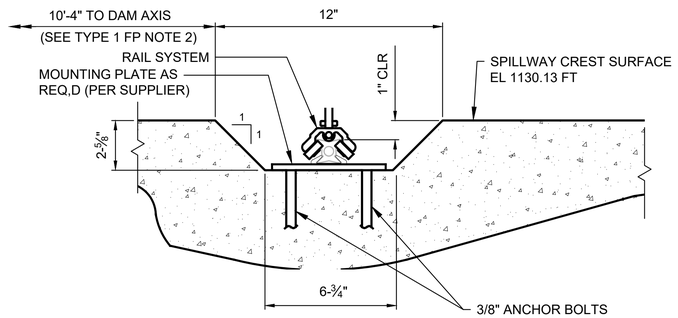
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**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
SPILLWAY MONOLITHS M14-M18
CREST RAISE & DOWNSTEAM ACCESS PLANS

DATE: AUGUST 2026
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DRAWING NO. 475-S-402

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WATERSTOP NOTE:
PROVIDE FLAT AT JOINTS M15/M16 & M16/M17 AND CJs AND RETROFIT AT JOINTS M14/M15 & M17/M18.



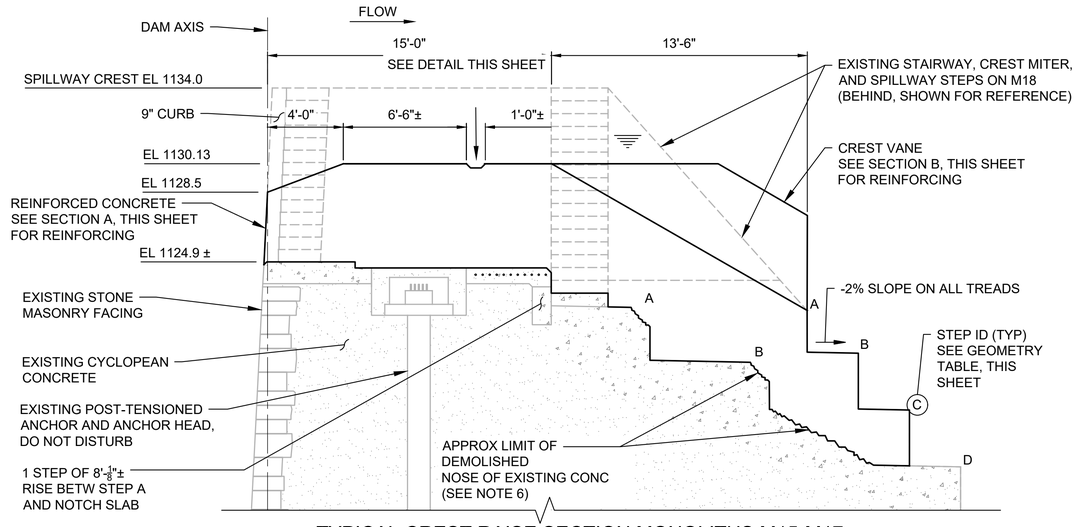




## TYPICAL SPILLWAY CREST RECESS DETAIL FOR TYPE 1 FALL PROTECTION SYSTEM

NTS

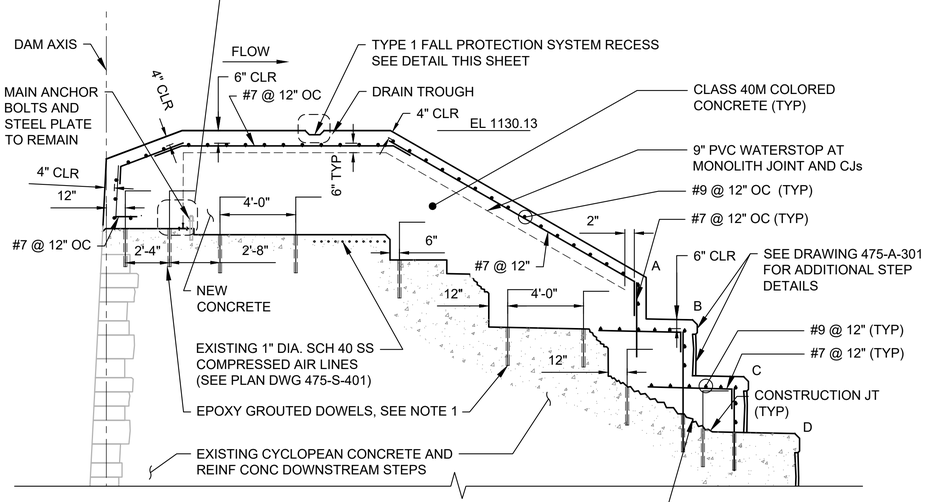
TYPE 1 FALL PROTECTION SYSTEM NOTES:

1. FURNISH & INSTALL TYPE 1 FALL PROTECTION AS SHOWN HORIZONTALLY RECESSED INTO SPILLWAY CREST EXTENDING BETWEEN EXISTING SYSTEM AT 90 DEG BEND ON MONOLITH M14 CREST, AND VERTICAL WALL AT MONOLITH M18.
2. MATCH EXISTING PERIODIC DRAINAGE TROUGHS LEADING TO DOWNSTREAM EDGE CREST IN BOTH STYLE AND SPACING.
3. MAINTAIN A 1:1 SLOPE ALONG PERIMETER WALLS OF THE CREST RECESS.
4. SEE SPECIFICATION SECTION 47 67 16 FOR ADDITIONAL FALL PROTECTION SYSTEM DETAILS.




## TYPICAL CREST RAISE SECTION MONOLITHS M15-M17

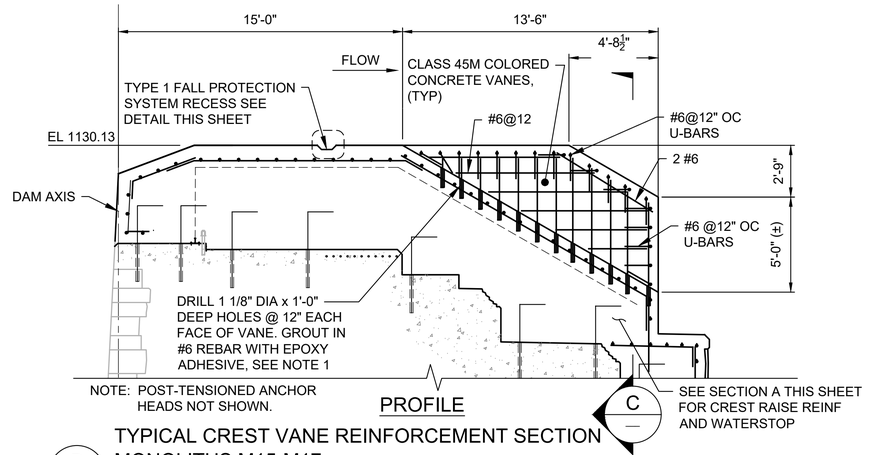
SCALE: 1/4"=1'-0"




A 475-S-402

## TYPICAL CREST RAISE REINFORCMENT SECTION MONOLITHS M15-M17

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



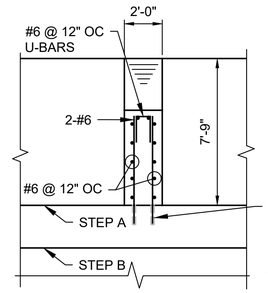

B 475-S-402

## TYPICAL CREST VANE REINFORCEMENT SECTION MONOLITHS M15-M17

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

| SPILLWAY STEP GEOMETRY | | |
|---|---|---|
| STEP | NOSE EL | TREAD |
| A | 1122.25 | N/A |
| B | 1120.00 | 2'-8 3/8" |
| C | 1117.00 | 3'-0 3/8" |
| D | 1114.00 | 2'-4 7/16" |

SEE ARCH DWG 475-A-301 FOR SPILLWAY STEP FORMWORK DETAILS NOT SHOWN ON THIS SHEET




C — SECTION

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

## NOTES:

1. DRILL 1 1/2" DIA x 2'-0" DEEP HOLES. GROUT IN #8x5'-4" DOWEL BAR WITH EPXOY ADHSIVE (TYP) SEE DWG 475-S-402 FOR DRILL AND GROUT DOWEL BAR LAYOUT PLAN. THOROUGHLY CLEAN DRILLED DOWEL HOLES AND GROUT IN STRICT ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
2. DO NOT DISTURB EXISTING POST-TENSIONED ANCHORS OR ANCHOR HEADS.
3. SEE MECHANICAL DRAWINGS FOR REMOVAL OF CREST GATES AND ABANDONMENT OF AIR LINES.
4. WATERSTOPS SHOWN IN DETAILS, THIS SHEET.
5. EXISTING MASONRY FACING STONES ARE IRREGULARLY SIZED, DIMENSIONS IN EACH DIRECTION WILL VARY FROM THE SCHEMATIC DEPICTION SHOWN ON THIS SHEET. EXTERIOR SURFACE TEXTURE IS HIGHLY IRREGULAR. DO NOT SCALE STONE SIZES FROM DRAWINGS.
6. AT A MINIMUM, DEMOLISH EXISTING SPILLWAY STEPS TO CREATE A MIN 12" CHAMFER AT NOSE AND TO PROVIDE 2' MINIMUM THICKNESS OF NEW CONCRETE.
7. ALL NEW SPILLWAY STEP TREADS SHALL HAVE A 2% SLOPE TO DRAIN TO THE NOSE ELEVATION LISTED IN THE TABLE ON THIS SHEET.
8. PROVIDE THERMAL MONITORING OF CLASS 40M CONCRETE PLACEMENTS AS DETAILED IN SPECIFICATION SECTION 03 30 00.
9. PRIOR TO PLACING CONCRETE FOR THE SPILLWAY CREST, SURVEY THE LEVEL OF THE CONCRETE FORMWORK TO CONFIRM, TO ENGINEER'S SATISFACTION, THAT THE INTENDED FINISHED GRADE OF CONCRETE WILL BE MET. THE INTENTION IS TO REPLICATE THE EXISTING SPILLWAY STEPS AND VANES TO MATCH MONOLITHS M1 TO M14.

0 4 8 FT.
1/4"=1'-0"

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

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DRAWN BY: DM
CHECKED BY: JC
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRIS BAILEY, PE

Gannett Fleming Hazen A Joint Venture
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NEW YORK, NEW YORK 10018

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NYC Environmental Protection

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PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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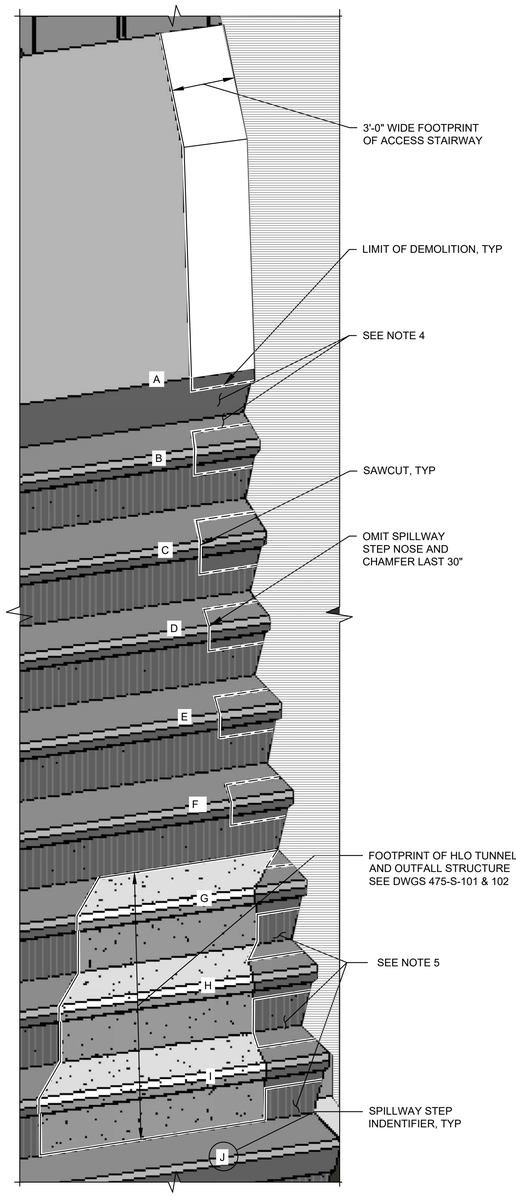
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
SPILLWAY MONOLITHS M15-M17
CREST RAISE SECTIONS & DETAILS

DATE: AUGUST 2026
SHEET NO: 61 of 112
DRAWING NO. 475-S-403

Last Saved By: Dmitchell
Last Date Saved: 9/6/2026 9:57 AM
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Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021-162.ctb
Drawing File Name & Drive Location: C:\Users\dmitchell\DCACDocs\Hazen and Sawyer\90441-001_CAT-475-DES Gilboa Dam HLO\Project Files\01_Design\Stru\475-S-403.dwg
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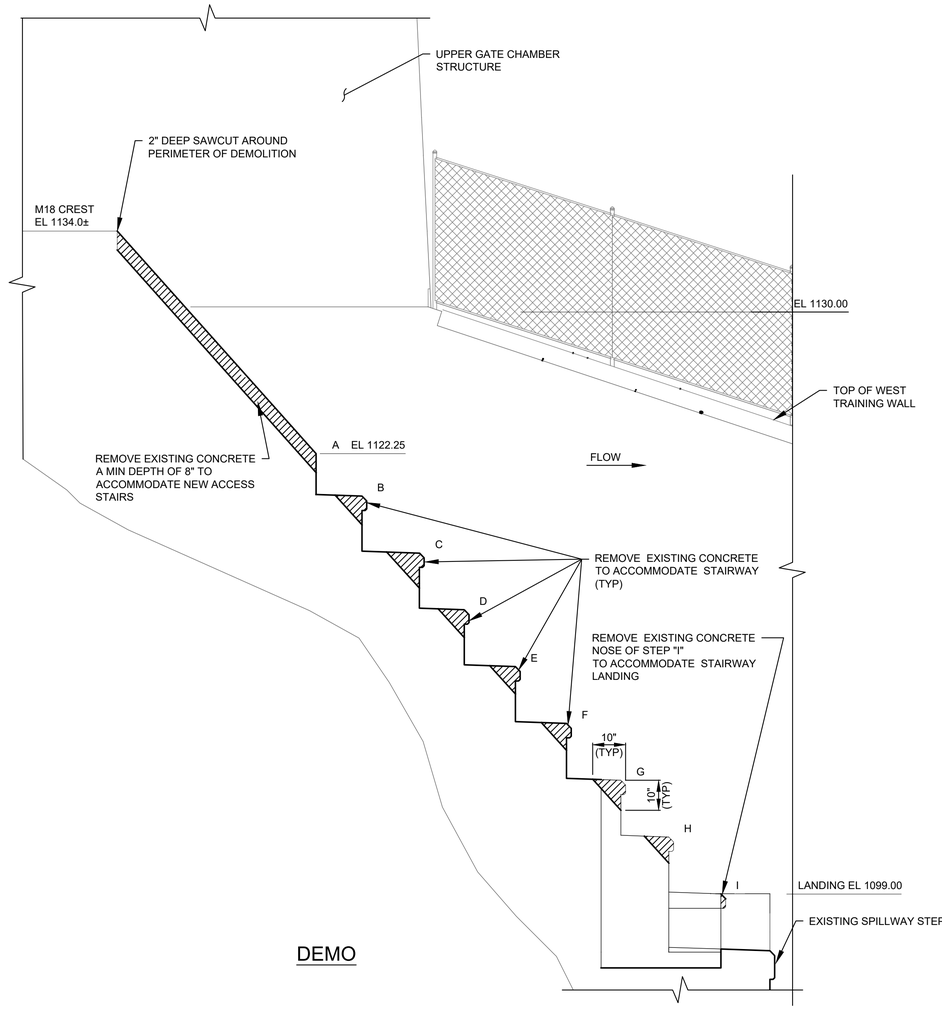



SCHEMATIC OF SAWCUTS ALONG DEMOLITION LIMITS

NTS

NOTES:

1. SAWCUT BOTH HORIZONTAL TREAD AND VERTICAL RISER OF EXISTING SPILLWAY STEPS AS NEEDED TO BOUND THE EDGE OF DEMOLITION. SAWCUTS SHALL BE 2" MINIMUM DEPTH.
2. SAWCUTS ARE NOT NEEDED WHERE DEMOLITION BOUNDARY WILL BE FULLY EMBEDDED IN NEW CONCRETE, BUT ARE REQUIRED WHEREVER DEMOLITION BOUNDARY MAY BE EXPOSED TO VIEW ALONG EDGE OF NEW WORK.
3. SAWCUT AND LATERAL LIMIT OF SPILLWAY STEP DEMOLITION FOR STAIRWAY SHALL BE COINCIDENT WITH OUTSIDE EDGE OF THE NEW 3-FOOT-WIDE ACCESS STAIRWAY.
4. BEFORE CONCRETE PLACEMENT, PREPARE EXISTING CONCRETE SURFACES TO RECEIVE NEW CONCRETE OVERLAY AS REQUIRED BY SPECIFICATION SECTION 03 30 00.
5. AT CONTRACTOR'S OPTION, AND IF APPROVED BY ENGINEER, REMNANT PORTIONS OF SPILLWAY STEPS G, H, AND I BETWEEN HLO TUNNEL AND WEST TRAINING WALL MAY BE ENTIRELY REMOVED.




DEMO

C 475-S-402 DEMOLITION SECTION

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

1/4"=1'-0" 0 4 8 FT.

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CHECKED BY: JM
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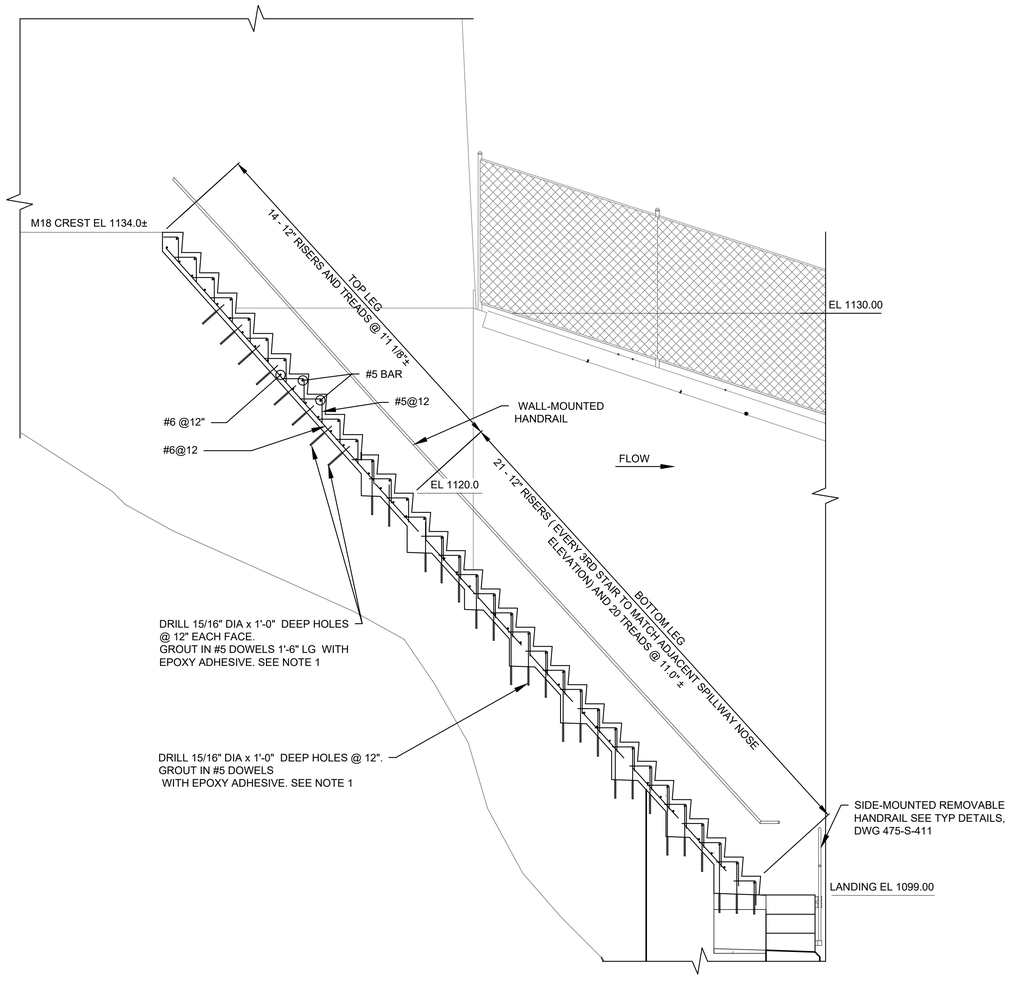
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
SPILLWAY MONOLITH M18 WALL STAIRWAY
DEMOLITION SECTIONS & DETAILS

DATE: AUGUST 2026
SHEET NO: 62 of 112
DRAWING NO. 475-S-404

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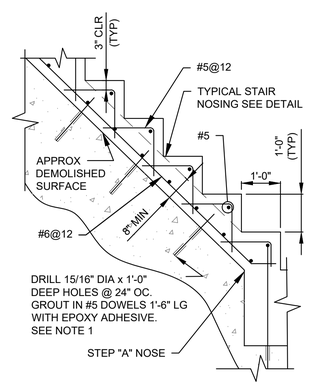



C 475-S-402 STAIRWAY CONSTRUCTION SECTION

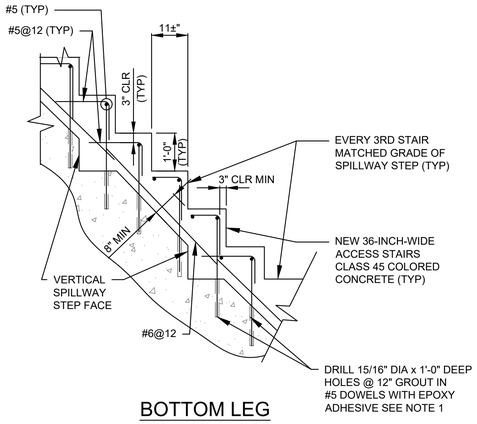
SCALE: 1/4"=1'-0"

NOTES:

1. ADJUST HOLE DIAMETER IN ACCORDANCE WITH GROUT MANUFACTURER'S RECOMMENDATIONS. THOROUGHLY CLEAN DRILLED DOWEL HOLES AND GROUT IN STRICT ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
2. PROVIDE 11 TYPE 2 SINGLE POINT FALL PROTECTION ANCHORS IN WEST TRAINING WALL, SPACED EVENLY ALONG STAIRWAY.



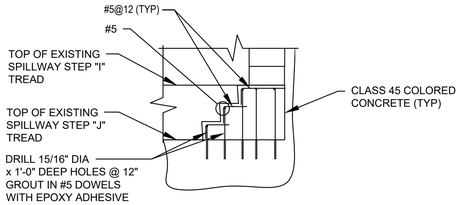

TOP LEG




BOTTOM LEG

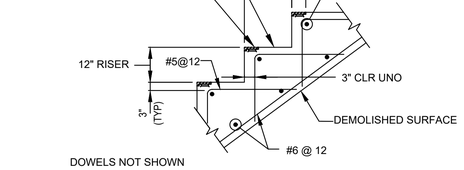
TYPICAL STAIR DETAIL ALONG WEST TRAINING WALL

NTS




D 475-S-402 SECTION

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




TYPICAL STAIR NOSING DETAIL

NTS

0 4 8 FT.
1/4"=1'-0"

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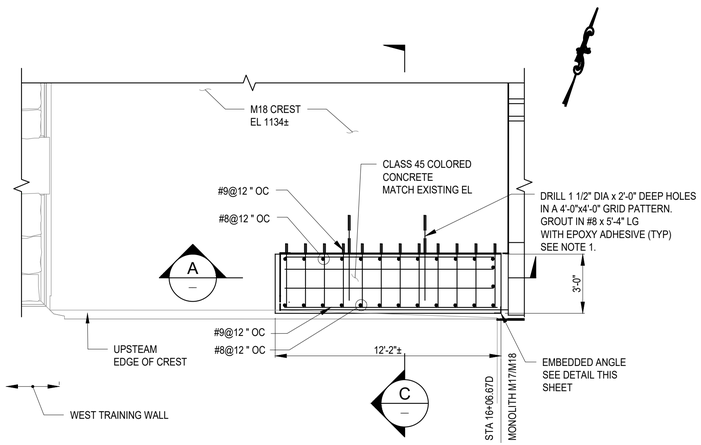
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**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
SPILLWAY MONOLITH M18 WALL STAIRWAY SECTIONS & DETAILS

DATE: AUGUST 2026
SHEET NO: 63 of 112
DRAWING NO. 475-S-405

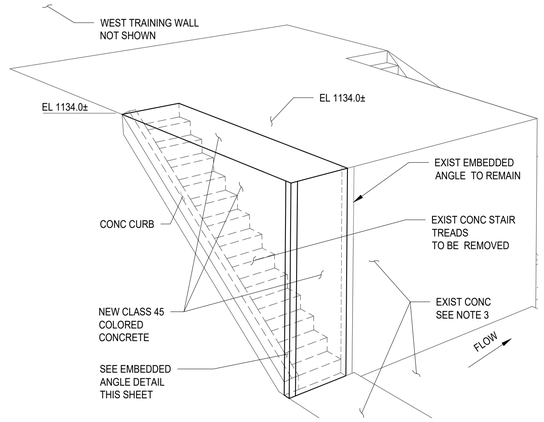
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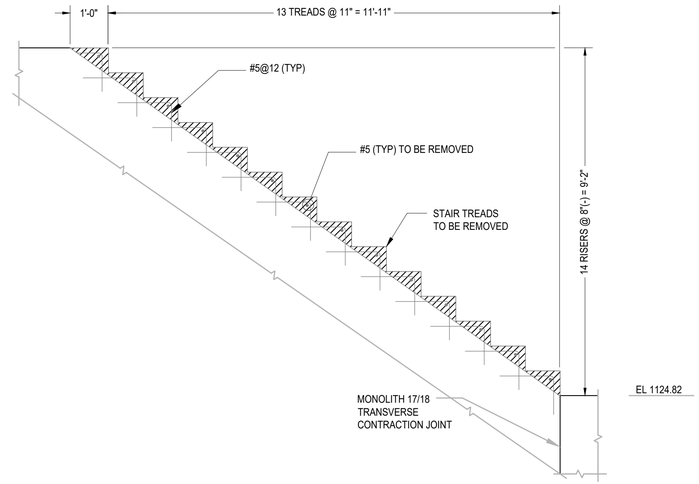

## PLAN, MONOLITH M18 SPILLWAY CREST, UPSTREAM STAIRWAY

1/4"=1'-0"



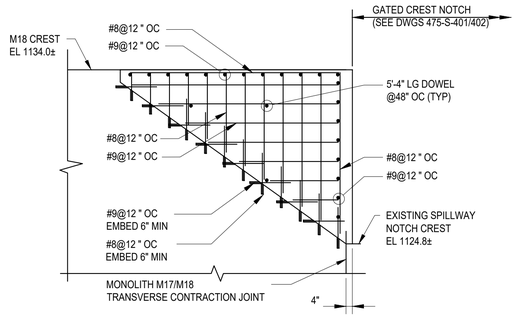

## MONOLITH M18 UPSTREAM ISOMETRIC

NTS



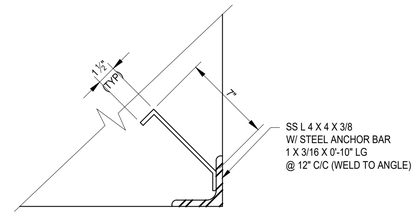

## A — M18 UPSTEAM CREST STAIRWAY DEMOLITION SECTION (EXISTING FEATURES)

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



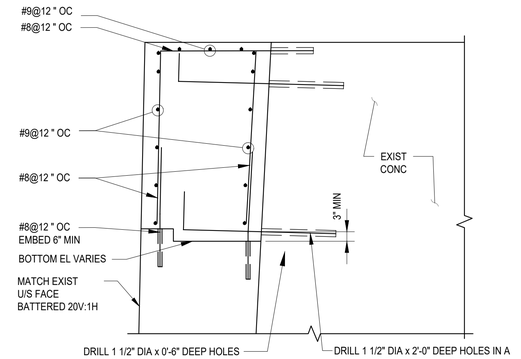

## PROFILE (LOOKING DOWNSRTREAM)

1/4"=1'-0"




## EMBEDDED ANGLE DETAIL

NTS




## C — SECTIONAL VIEW

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

## 1 — 475-S-406 — M18 UPSTREAM CREST STAIRWAY REINF DETAIL

1/4" = 1'-0"

NOTES:

1. THOROUGHLY CLEAN DRILLED DOWEL HOLES AND GROUT IN STRICT ACCORDANCE WITH MFR RECOMMENDATION.
2. REMOVABLE HANDRAILS ARE NOT SHOWN ON THIS SHEET. REFER TO DWGS 475-S-410/411 FOR MODIFICATION DETAILS OF MONOLITH M18 HANDRAILS.
3. EXISTING CREST GATES AND NEW M17 CONCRETE SPILLWAY CREST CONCRETE NOT SHOWN ON THIS SHEET. SEE DWGS 475-S-401/402 FOR WORK WITHIN THE SPILLWAY NOTCH.
4. ROUGHEN SURFACE OF EXIST CONC TO 1/4" AMPLITUDE, CLEAN, AND PAINT WITH BONDING AGENT.

0 4 8 FT.
1/4"=1'-0"
0 1 2 3 4 FT.
1/2"=1'-0"

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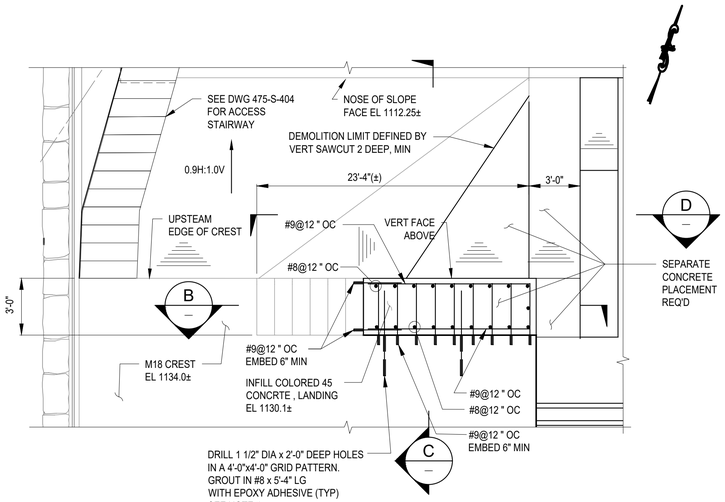
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STRUCTURAL
SPILLWAY MONOLITH M18 CREST
AND UPSTREAM STAIRWAY MODIFICATIONS

DATE: AUGUST 2026
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DRAWING NO. 475-S-406

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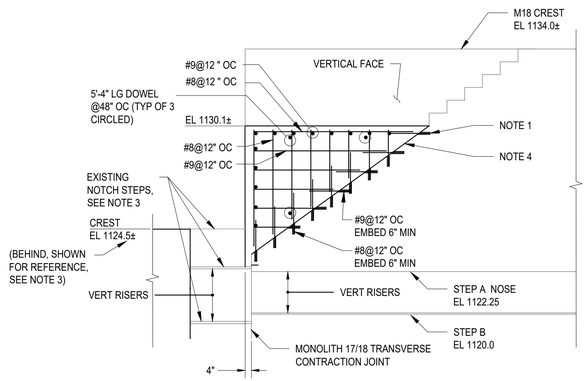



## PLAN, MONOLITH M18 SPILLWAY CREST

1/4"-1'-0"

NOTES:

1. THOROUGHLY CLEAN DRILLED DOWEL HOLES AND GROUT IN STRICT ACCORDANCE WITH MFR RECOMMENDATION.
2. REMOVABLE HANDRAILS ARE NOT SHOWN ON THIS SHEET.
3. EXISTING CREST GATES AND NEW M17 CONCRETE SPILLWAY CREST CONCRETE NOT SHOWN ON THIS SHEET. SEE DWGS 475-S-401/402 FOR WORK WITHIN THE SPILLWAY NOTCH.
4. ROUGHEN SURFACE OF EXIST CONC TO 1/4" AMPLITUDE, CLEAN, AND PAINT WITH BONDING AGENT.




## PROFILE @ LANDING (LOOKING UPSTREAM)

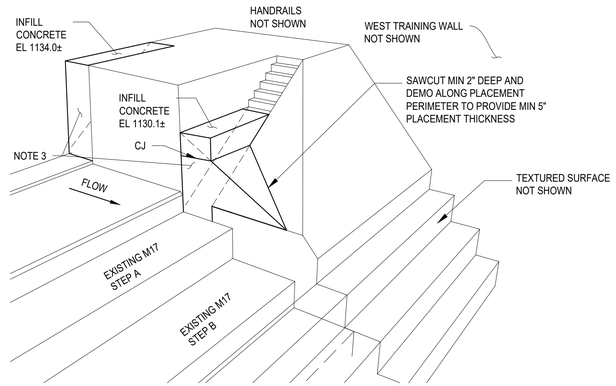
1/4"-1'-0"

## 2 M18 DOWNSTREAM CREST STAIRWAY REINF DETAIL

475-S-407

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

NOTE:
DETAIL 2 SHOWN AS IF M18 WORK PRECEDES M17 WORK. REPEAT SIMILAR REINF ON EXTENSION OF LANDING ON MONOLITH M17 TO REACH CREST VANE. ALL REINFORCING SHALL BE DISCONTINUOUS ACROSS MONOLITH M17/M18 JOINT.

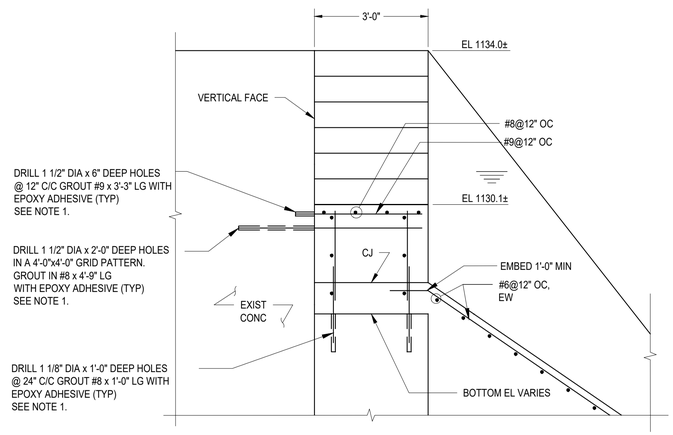



## MONOLITH M18 DOWNSTREAM ISOMETRIC

NTS

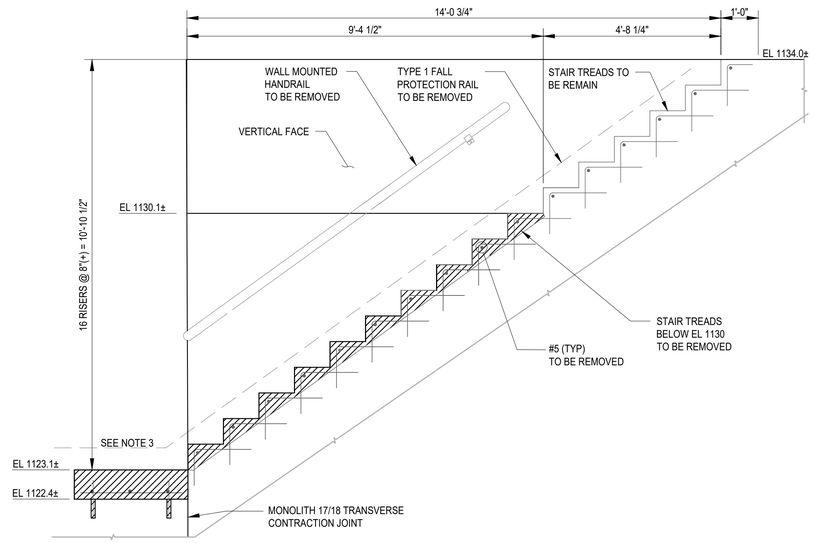
M18 ISOMETRIC NOTES:

1. VIEW IS SHOWN AS IF M18 STAIRWAY MODIFICATIONS PRECEDE PLACEMENT OF CONCRETE WITHIN SPILLWAY NOTCH MONOLITH M17. CONTRACTOR MAY CHOOSE TO SEQUENCE WORK DIFFERENTLY THAN SHOWN ON THIS SHEET.
2. EXISTING CREST GATES AND ASSOCIATED DETAILS NOT SHOWN.
3. VERTICAL CONTRACTION JOINT ALONG MONOLITH M17/M18 BOUNDARY.



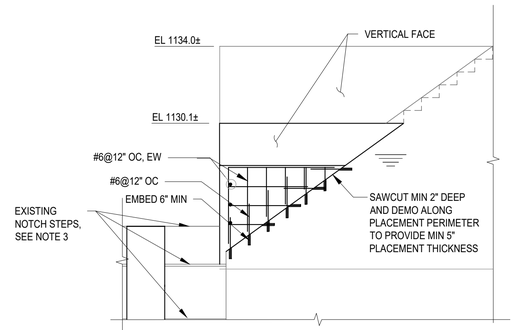

## C SECTIONAL VIEW

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




## B M18 DOWNSTREAM CREST STAIRWAY DEMOLITION SECTION (EXISTING FEATURES)

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




## D SECTIONAL VIEW OF SLOPING FACE REINFORCEMENT

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

1/4"=1'-0" 0 4 8 FT.
1/2"=1'-0" 0 1 2 3 4 FT.

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DRAWN BY: DM
CHECKED BY: JC
DESIGN LEAD: BOYD HOWARD, P.E.
SECTION MANAGER: CHRIS BAILEY, P.E.

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NEW YORK, NEW YORK 10018

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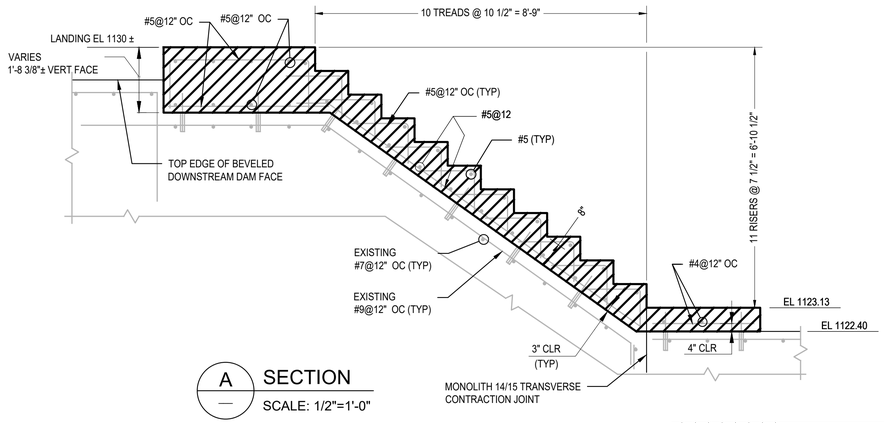
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STRUCTURAL
SPILLWAY MONOLITH M18 CREST
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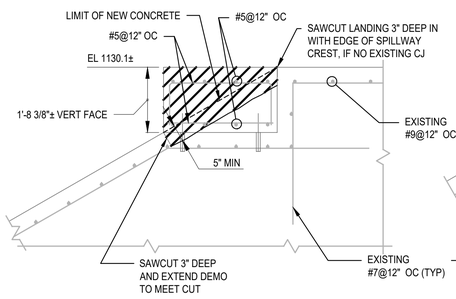
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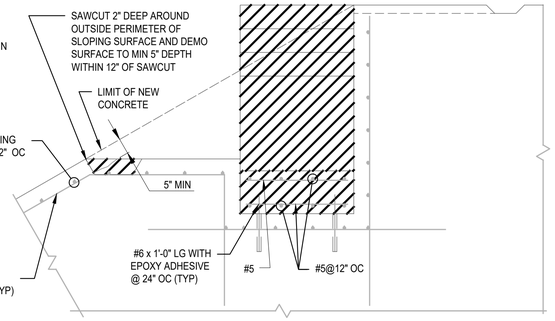
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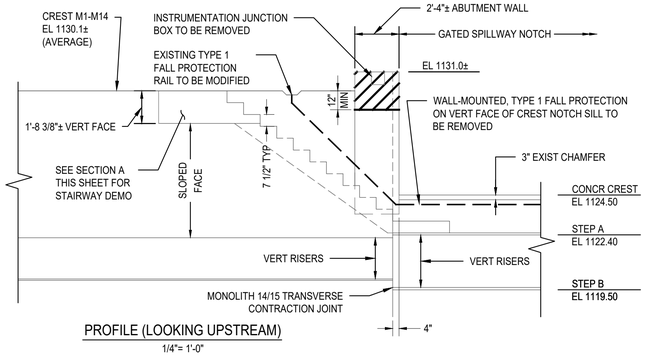

A SECTION
SCALE: 1/2"=1'-0"




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

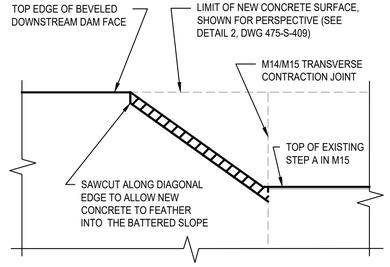



C SECTION
SCALE: 1/2"=1'-0"

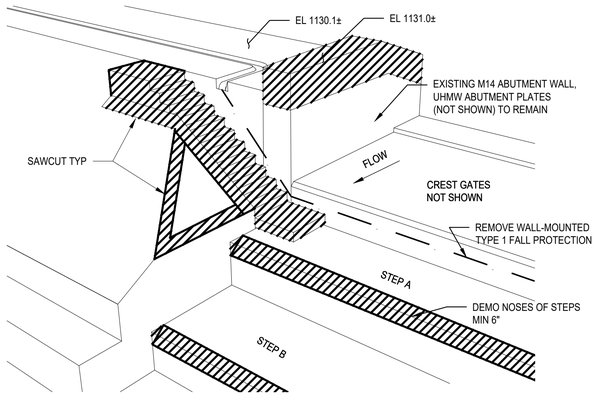



PROFILE (LOOKING UPSTREAM)
1/4"= 1'-0"

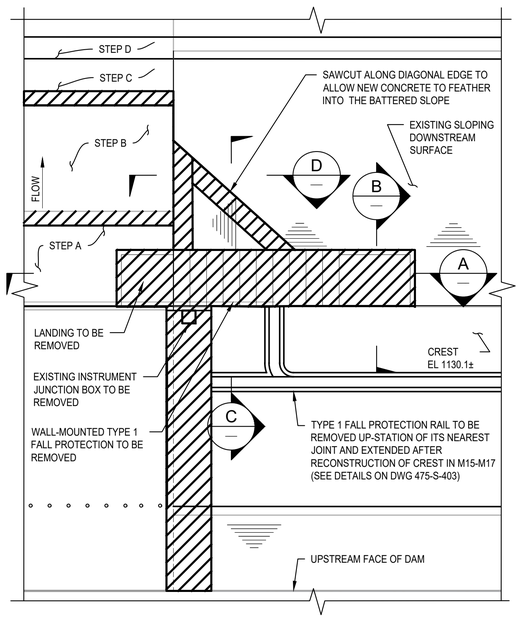
1 475-S-408
MONOLITH M14 CREST DETAILS
AND ABUTMENT WALL DEMO




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



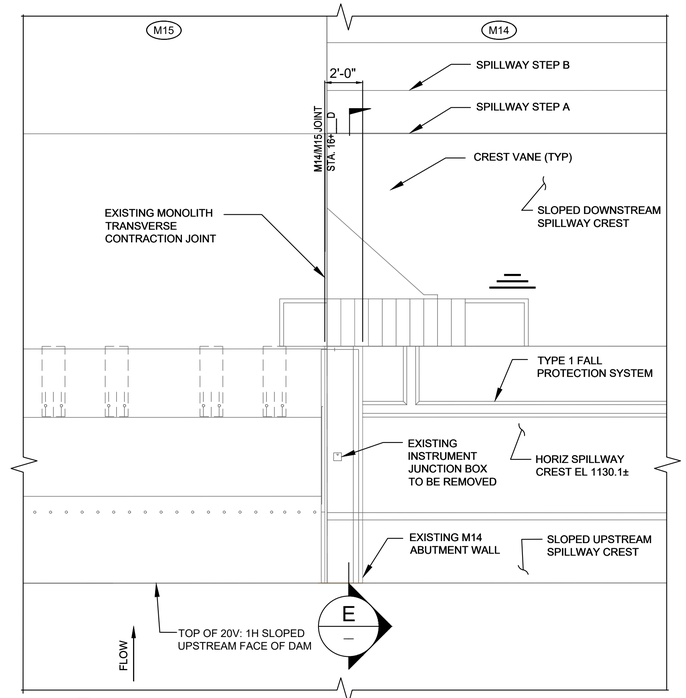

DEMOLITION ISOMETRIC
NTS



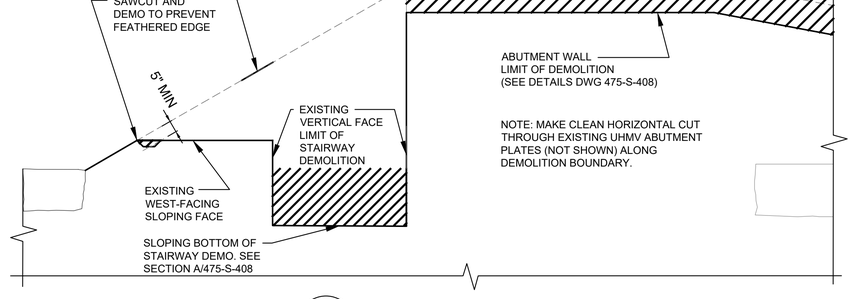

DEMOLITION PLAN
1/4"=1-0"

NOTES:

1. SAWCUTS SHALL BE MADE AROUND PERIMETER OF DEMOLITION AREAS TO PROVIDE A CLEAN EDGE ON ALL PERMANENTLY EXPOSED SURFACES WHERE NEW CONCRETE PLACEMENT WILL MEET EXISTING CONCRETE.
2. DEMOLISH EXISTING CONCRETE SURFACE TO A SUFFICIENT DEPTH WHERE NECESSARY SO AS TO PROVIDE FOR NO LESS THAN 5" THICKNESS OF NEW CONCRETE PLACEMENT THROUGHOUT.
3. SEE DWGS 475-S-401 FOR DETAILS REGARDING SPILLWAY STEP DEMOLITION.
4. WHENEVER EXISTING TYPE 1 FALL PROTECTION IS OUT-OF-SERVICE, OR AT ANY OTHER TIME AND PLACE AS SHALL BE NECESSARY FOR COMPLETE OF THE WORK, PROVIDE OTHER MEANS OF TEMPORARY FALL PROTECTION TO SATISFY APPLICABLE CODES.




1 475-S-402
ENLARGED EXISTING SPILLWAY PLAN AT M14/M15 JOINT
SCALE: 1/4"=10'




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

0 4 8 FT.
1/4"=1'-0"
0 1 2 3 5 FT.
3/8"=1'-0"
0 1 2 3 4 FT.
1/2"=1'-0"

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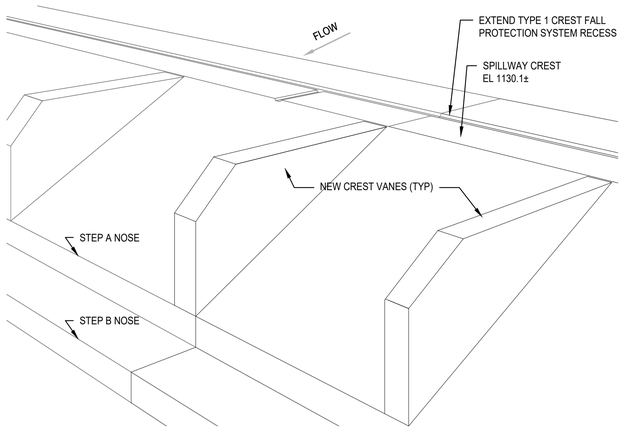
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SPILLWAY MONOLITH M14
CREST AND STAIRWAY DEMOLITION DETAILS

DATE: AUGUST 2026
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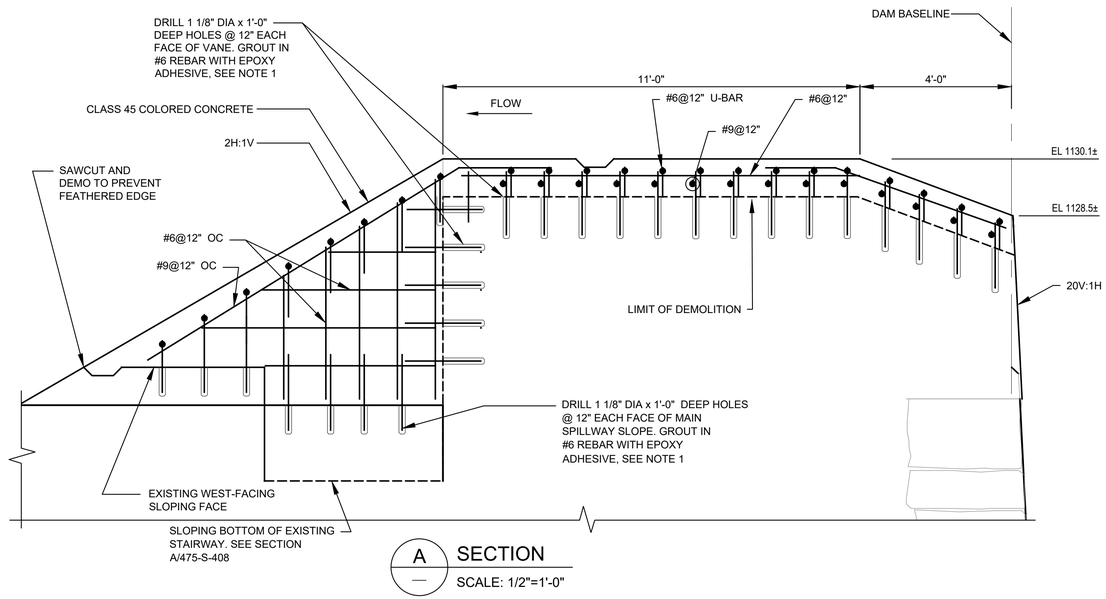
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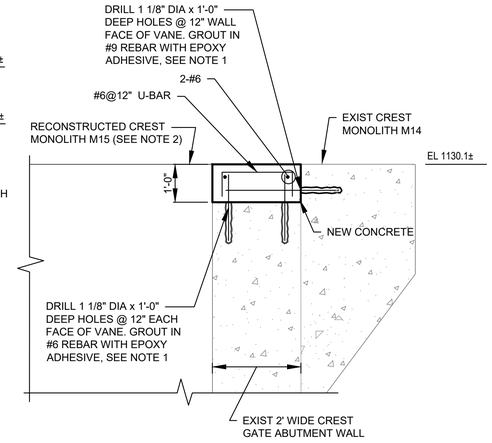



## RECONSTRUCTION ISOMETRIC

NTS

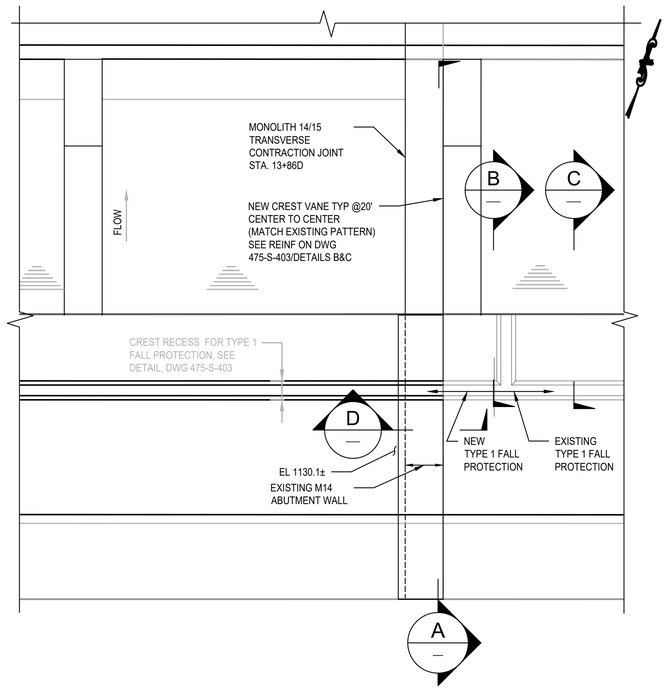



A SECTION
SCALE: 1/2"=1'-0"




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

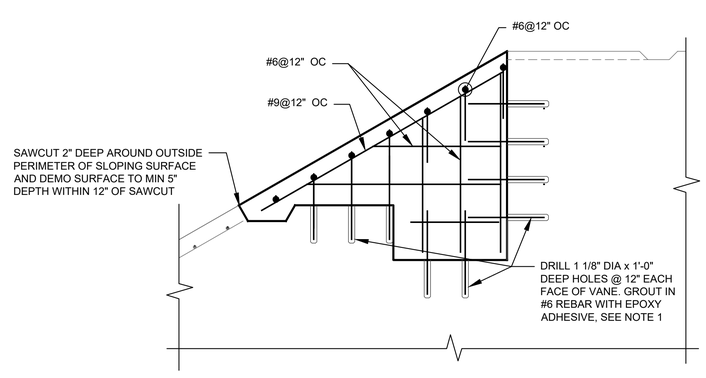
NOTES:
1. THOROUGHLY CLEAN DRILLED DOWEL HOLES AND GROUT IN STRICT ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
2. SEE DWGS 475-S-401, 402 & 403 FOR CREST RECONSTRUCTION IN SPILLWAY NOTCH MONOLITHS M15 TO M17.
3. NEW CREST VANES FROM STA. 13+82D TO STA 16+04D SHALL MATCH EXISTING VANE PATTERN. CREST VANE REINFORCEMENT DETAILS ARE NOT SHOWN ON THIS SHEET; SEE DWG 475-S-403/DETAILS B & C.



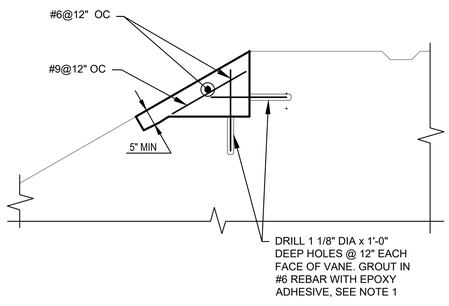

## ENLARGED SPILLWAY PLAN RECONSTRUCTED MONOLITHS M15 TO M14

2 / 475-S-408

NTS




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




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

0 4 8 FT.
1/4"=1'-0"
0 1 2 3 4 FT.
1/2"=1'-0"

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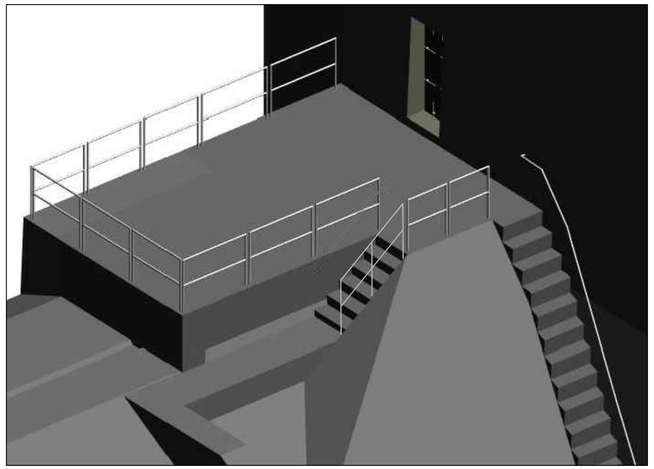
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STRUCTURAL
SPILLWAY MONOLITH M14/M15
CREST RECONSTRUCTION DETAILS

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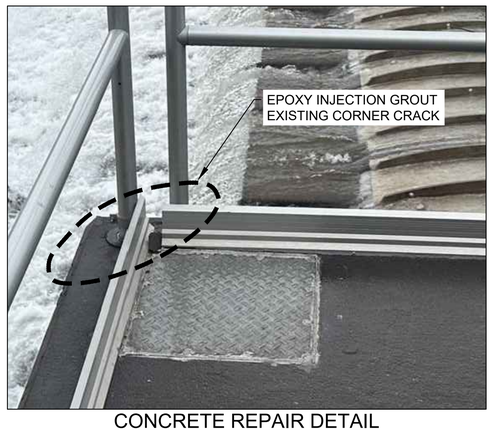
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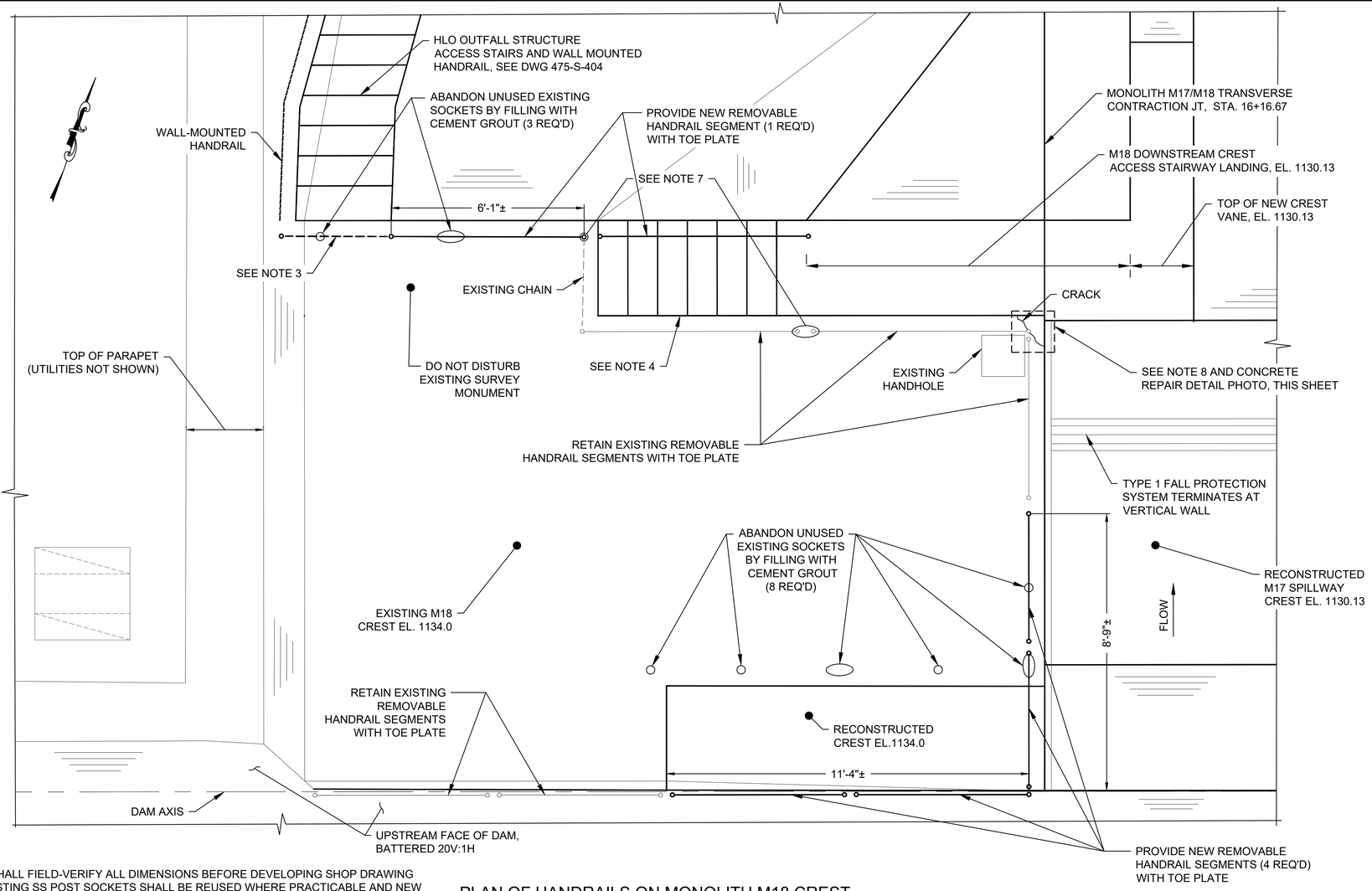
ISOMETRIC VIEW OF PROPOSED MONOLITH M18 CREST RENDERING

NTS




CONCRETE REPAIR DETAIL

NTS




PLAN OF HANDRAILS ON MONOLITH M18 CREST

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

NOTES:

1. CONTRACTOR SHALL FIELD-VERIFY ALL DIMENSIONS BEFORE DEVELOPING SHOP DRAWING SUBMITTAL. EXISTING SS POST SOCKETS SHALL BE REUSED WHERE PRACTICABLE AND NEW SOCKETS REPOSITIONED AS NECESSARY TO ACCOMMODATE NEW RAILING LAYOUT.
2. SEE REMOVABLE HANDRAIL STANDARD DETAILS, DWG 475-S-411.
3. RELOCATE EXISTING CHAIN AND HARDWARE FROM EXISTING UPSTREAM M18 CREST ACCESS STAIRS (TO BE ABANDONED), OR PROVIDE NEW IN-KIND.
4. MODIFY EXISTING WALL MOUNTED HANDRAIL AND HARDWARE TO ACCOMMODATE NEW LENGTH OF M18 DOWNSTREAM CREST ACCESS STAIRWAY, OR PROVIDE NEW RAILING IN-KIND MATERIALS.
5. INSTALL TYPE 2 SINGLE POINT ANCHOR SYSTEMS WHERE DIRECTED BY ENGINEER ALONG M18 DOWNSTREAM CREST ACCESS STAIRWAY LANDING, ALONG VERTICAL WALL OF SPILLWAY CREST AT STA. 16+06.67, AND ON WEST TRAINING WALL ALONG HLO OUTFALL STRUCTURE ACCESS STAIRS.
6. REFER TO SPECIFICATION SECTION 41 67 16 FOR FALL PROTECTION SYSTEM REQUIREMENTS.
7. REPAIR OR REPLACE DAMAGED SS POST SOCKETS WHERE SHOWN AND WHERE DIRECTED BY ENGINEER.
8. REPAIR EXISTING CONCRETE CRACK WITH EPOXY GROUT INJECTION (SIKADUR 35-HI-MOD LV, OR APPROVED EQUAL) DONE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
9. ADD TOE PLATE TO EACH HORIZONTAL SEGMENT OF REMOVABLE HANDRAIL.

0 1 2 3 4 FT.
1/2"=1'-0"

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SECTION MANAGER: CHRISTOPHER BAILEY, PE
DRAWN BY: JS

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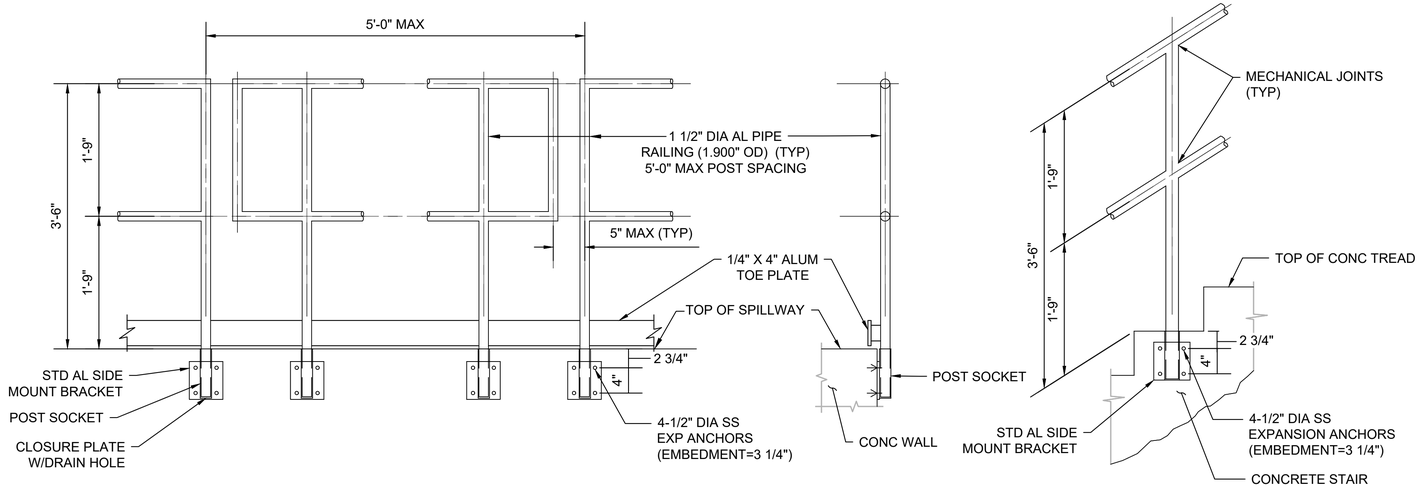
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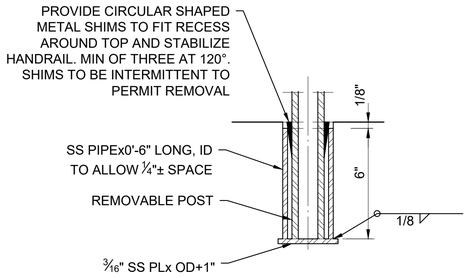
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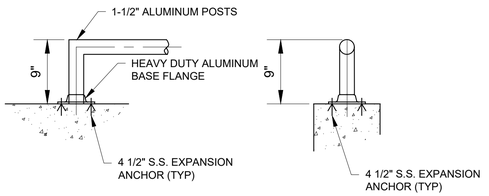

## SIDE MOUNTED REMOVABLE HANDRAIL DETAILS

NTS




## REMOVABLE HANDRAIL SOCKET DETAIL

NTS

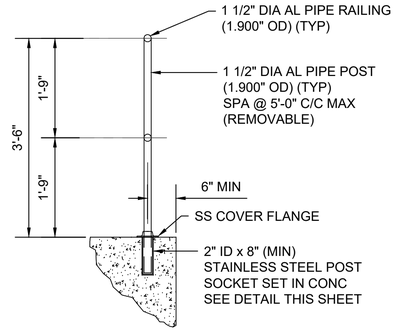



## HLRT PARAPET RAILING

NTS

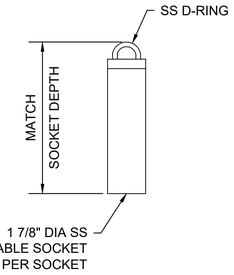
PARAPET RAILING NOTES:

1. FIELD-ADJUST IF NECESSARY TO PROVIDE MIN. 42-INCH-HIGH FALL PROTECTION ABOVE FINAL INSTALLATION OF CONCRETE CURBS AND ROOF HATCHES.



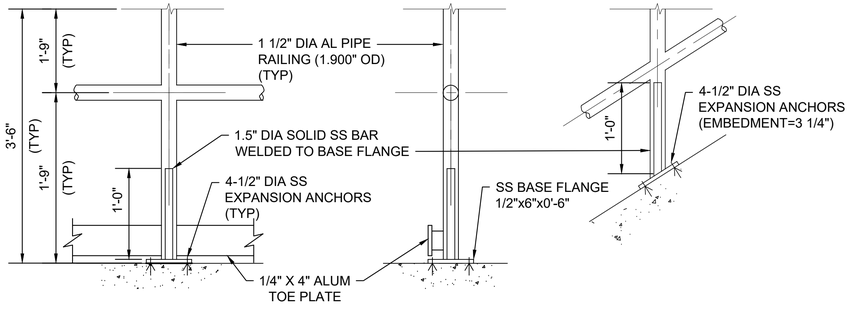

## EMBEDDED REMOVABLE HANDRAIL DETAIL

NTS



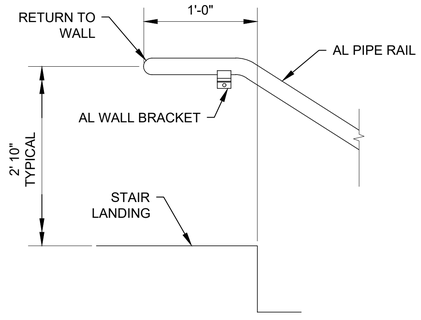

## SOCKET PLUG DETAIL

NTS



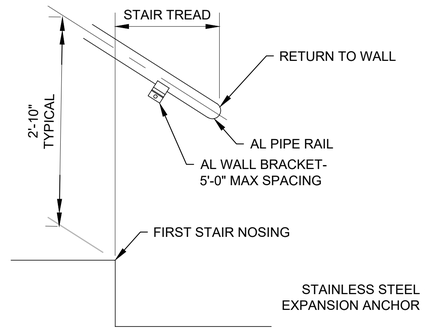

## SURFACE MOUNTED REMOVABLE HANDRAIL DETAILS

NTS



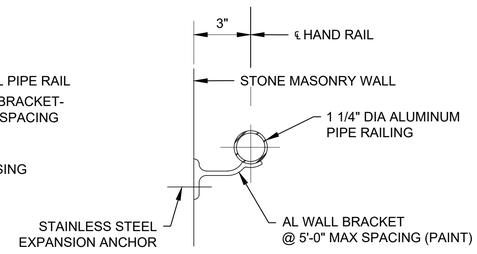

## TOP OF STAIRS

NTS




## BOTTOM OF STAIRS

NTS




NOTE: RETURN HANDRAIL END TO WALL - BOTH ENDS

## SECTION

NTS

0 1 2 FT.
1"=1'-0"

NOTES:

1. COAT ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE PER SPECIFICATION SECTION 09 91 00.
2. ADD TOE PLATE TO EACH HORIZONTAL SEGMENT OF REMOVEABLE HANDRAIL.
3. SEE SPECIFICATION SECTION 05 52 13.07, ALUMINUM PIPE RAILINGS, FOR ADDITIONAL REQUIREMENTS.

## WALL MOUNTED HANDRAIL DETAILS

NTS

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DRAWN BY: JS
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

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HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172-01 LICENSED PROFESSIONAL ENGINEER

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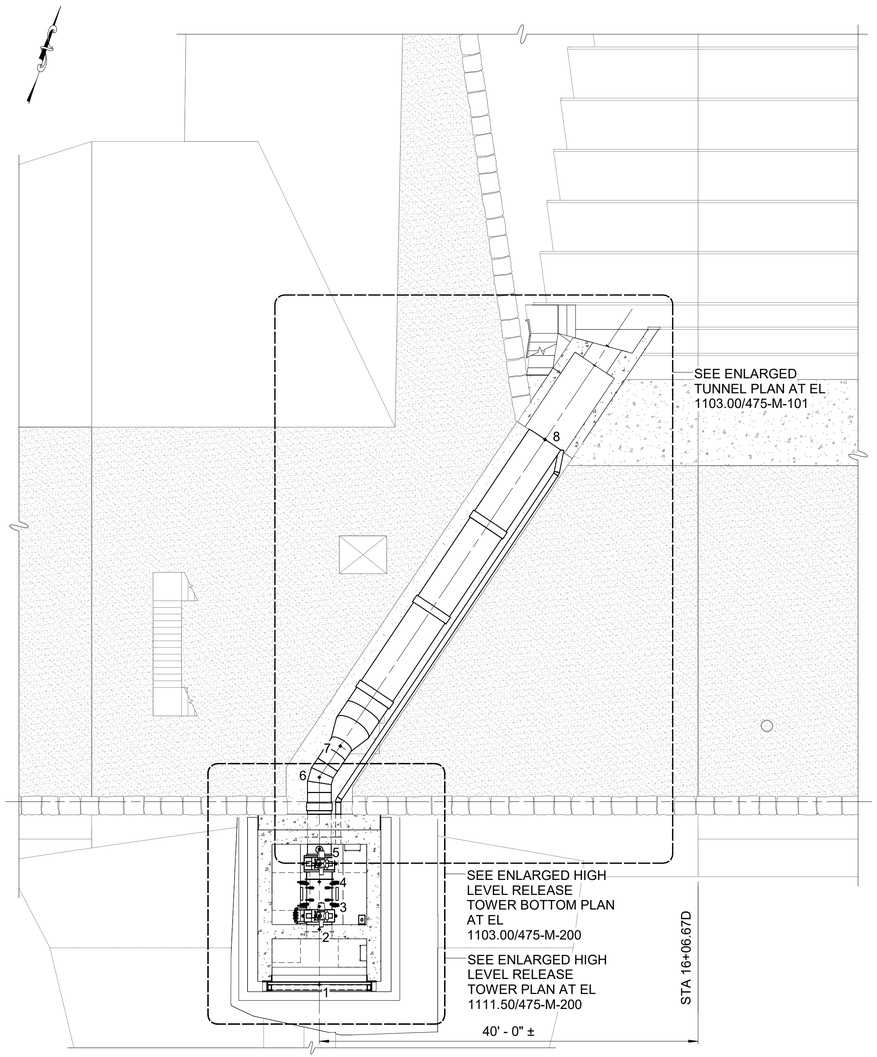
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
STRUCTURAL
HANDRAIL DETAILS

DATE: AUGUST 2026
SHEET NO: 69 of 112
DRAWING NO. 475-S-411

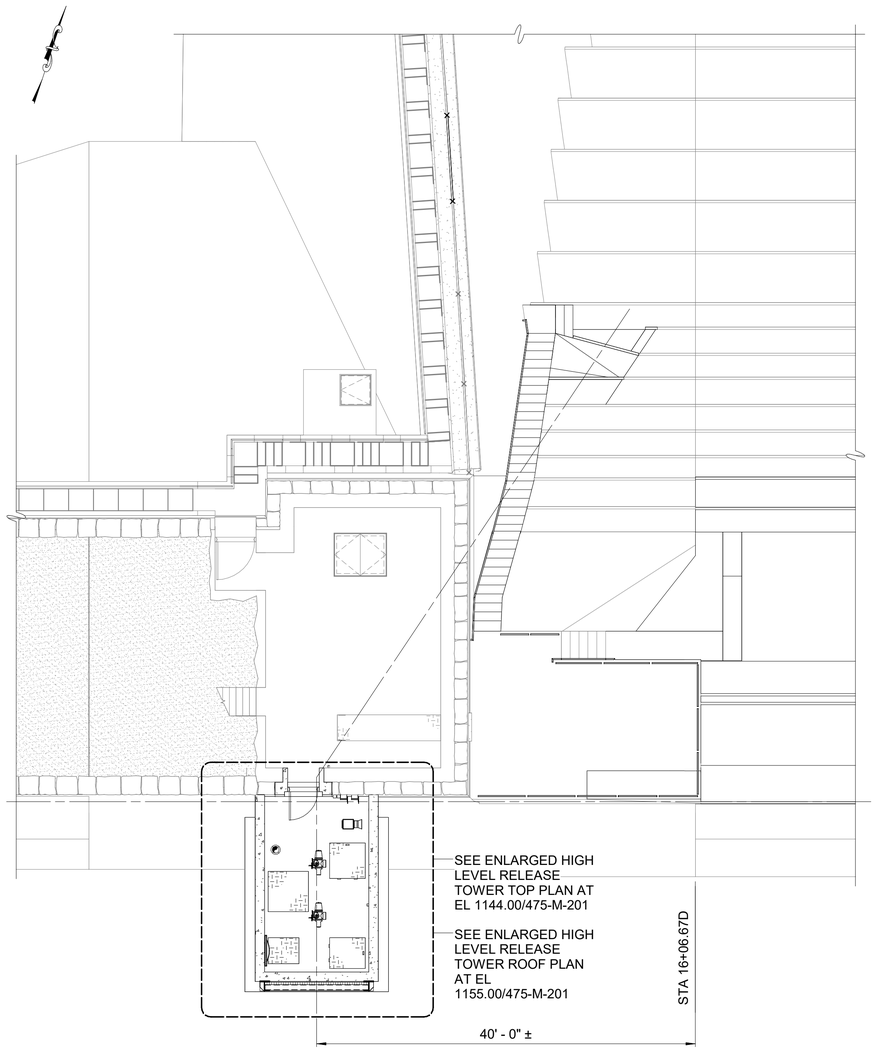
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BOTTOM PLAN AT MONOLITH 18 AT EL 1103.00

1/8" = 1'-0"




TOP PLAN AT MONOLITH 18 AT EL 1144.00

1/8" = 1'-0"

## HLO PIPE LAYOUT SCHEDULE

| POINT ID | PIPE STATION (FT) | ELEVATION, CL (FT) | DESCRIPTION |
|---|---|---|---|
| 1 | 0+00 HLO | 1101.25 | TRASH RACK BAR SCREEN |
| 2 | 0+05.83 HLO | 1101.25 | 30" HLO PIPE INLET |
| 3 | 0+08.26 HLO | 1101.25 | 30" BKGV, GUARD |
| 4 | 0+10.85 HLO | 1101.25 | 30" BKGV, THROTTLING |
| 5 | 0+14.17 HLO | 1101.25 | 8" VENT TAP CONNECTION |
| 6 | 0+21.90 HLO | 1101.19 | 30" 33.75° ELBOW |
| 7 | 0+25.83 HLO | 1101.10 | 48"x30" REDUCER |
| 8 | 0+62.76 HLO | 1098.67 | 48" HLO PIPE OUTLET |

0 5 10 15 FT.

1/8"=1'-0"

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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SECTION MANAGER: KURT MATSCHERZ, PE
DRAWN BY: CDS

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK EVERETTE K. KNIGHT 086771 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

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PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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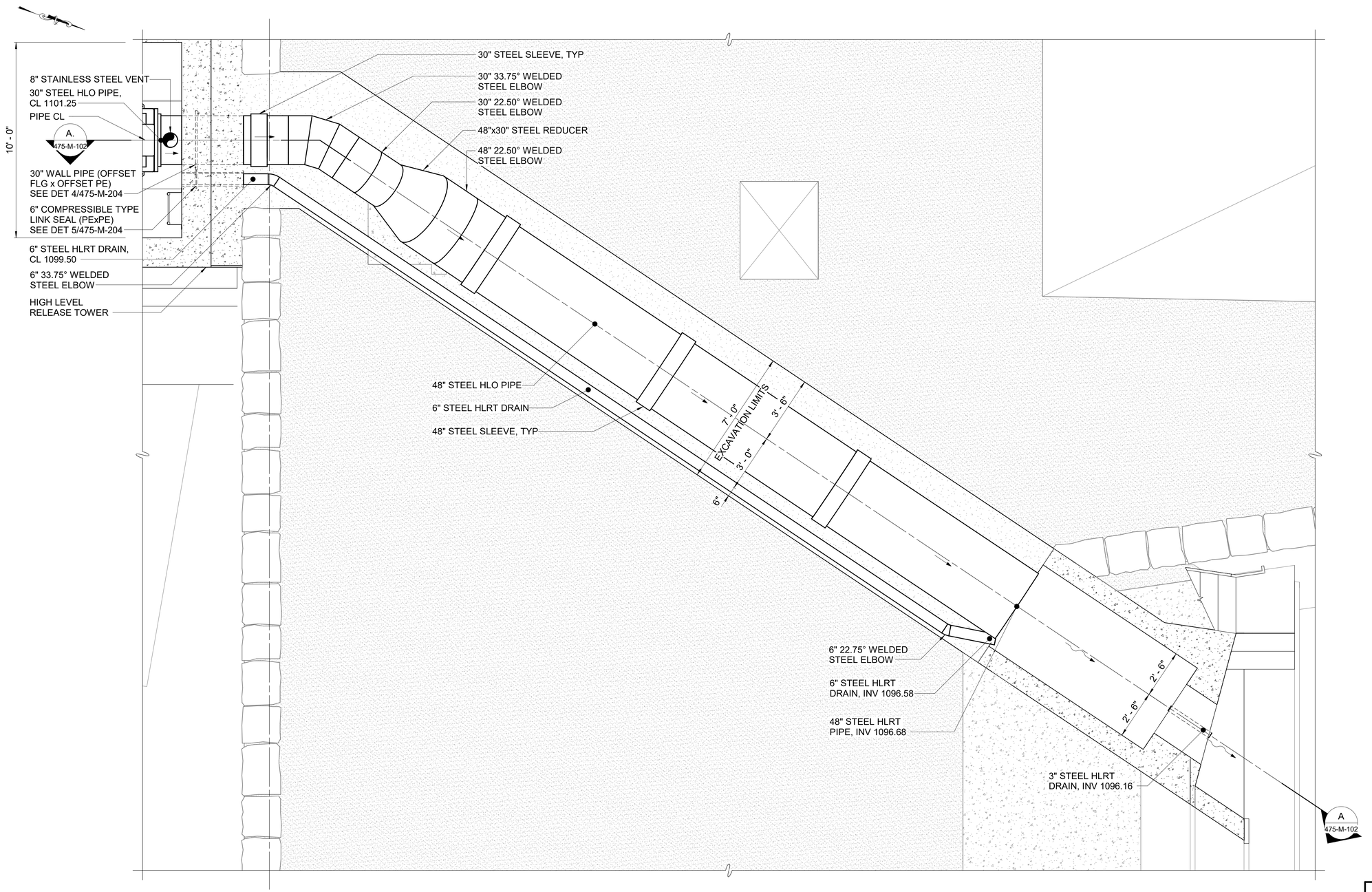
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
MECHANICAL
HIGH LEVEL RELEASE TOWER
OVERALL PLANS AT MONOLITH 18

DATE: AUGUST 2026
SHEET NO: 70 of 112
DRAWING NO. 475-M-100

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## ENLARGED TUNNEL PLAN AT EL 1103.00

3/8" = 1'-0"

0 1 2 3 5 FT.

3/8"=1'-0"

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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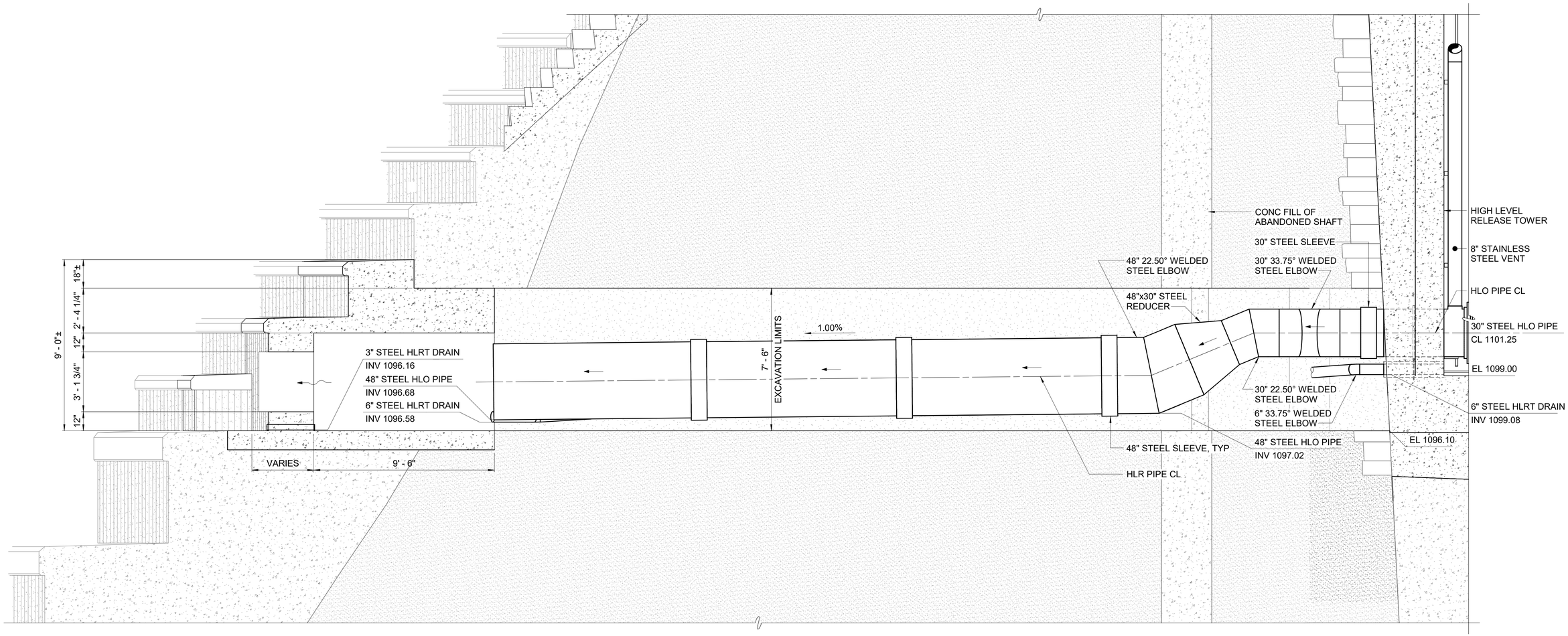
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**AT GILBOA DAM AND CREST GATE REMOVAL**
MECHANICAL
HIGH LEVEL RELEASE TOWER
ENLARGED HLRT TUNNEL PIPING PLAN

DATE: AUGUST 2026
SHEET NO: 71 of 112
DRAWING NO. 475-M-101

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A 475-M-101 SECTION

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

3/8"=1'-0" 0 1 2 3 5 FT.

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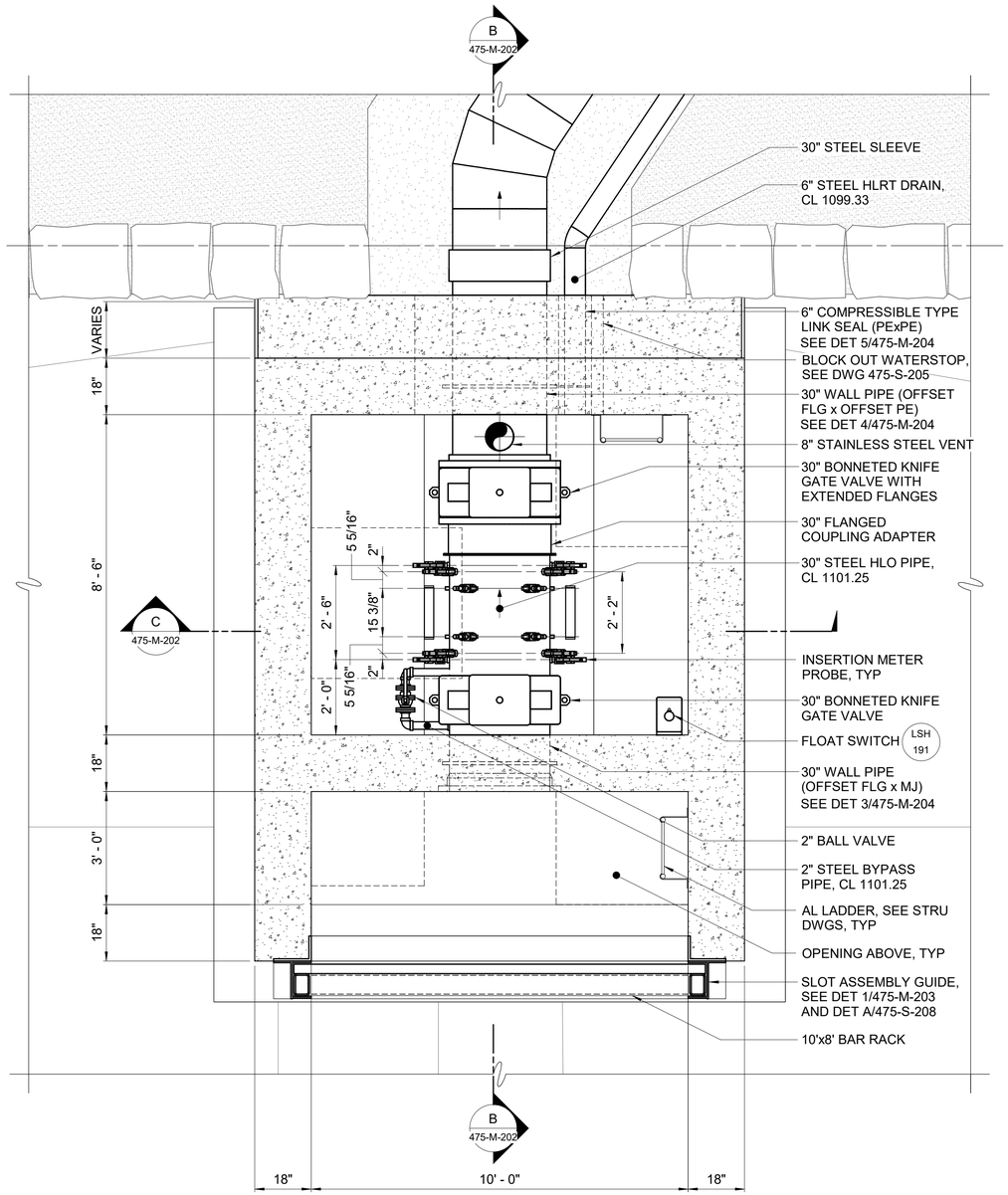
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**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
MECHANICAL
HIGH LEVEL RELEASE TOWER
ENLARGED HLRT TUNNEL PIPING PROFILE

DATE: AUGUST 2026
SHEET NO: 72 of 112
DRAWING NO. 475-M-102

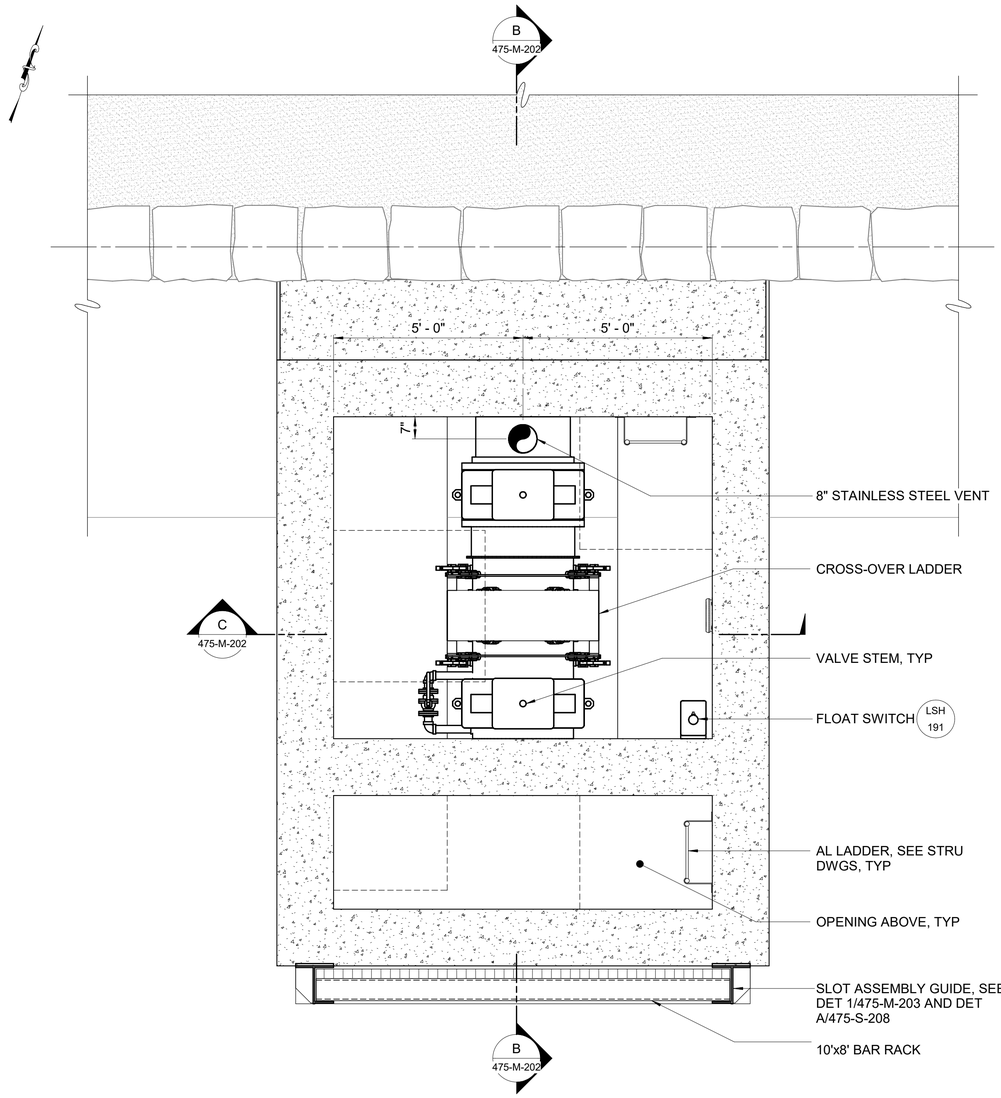
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ENLARGED BOTTOM PLAN AT EL 1103.00

1/2" = 1'-0"




ENLARGED INTERMEDIATE PLAN AT EL 1111.50

1/2" = 1'-0"

3/8"=1'-0" 0 1 2 3 5 FT.

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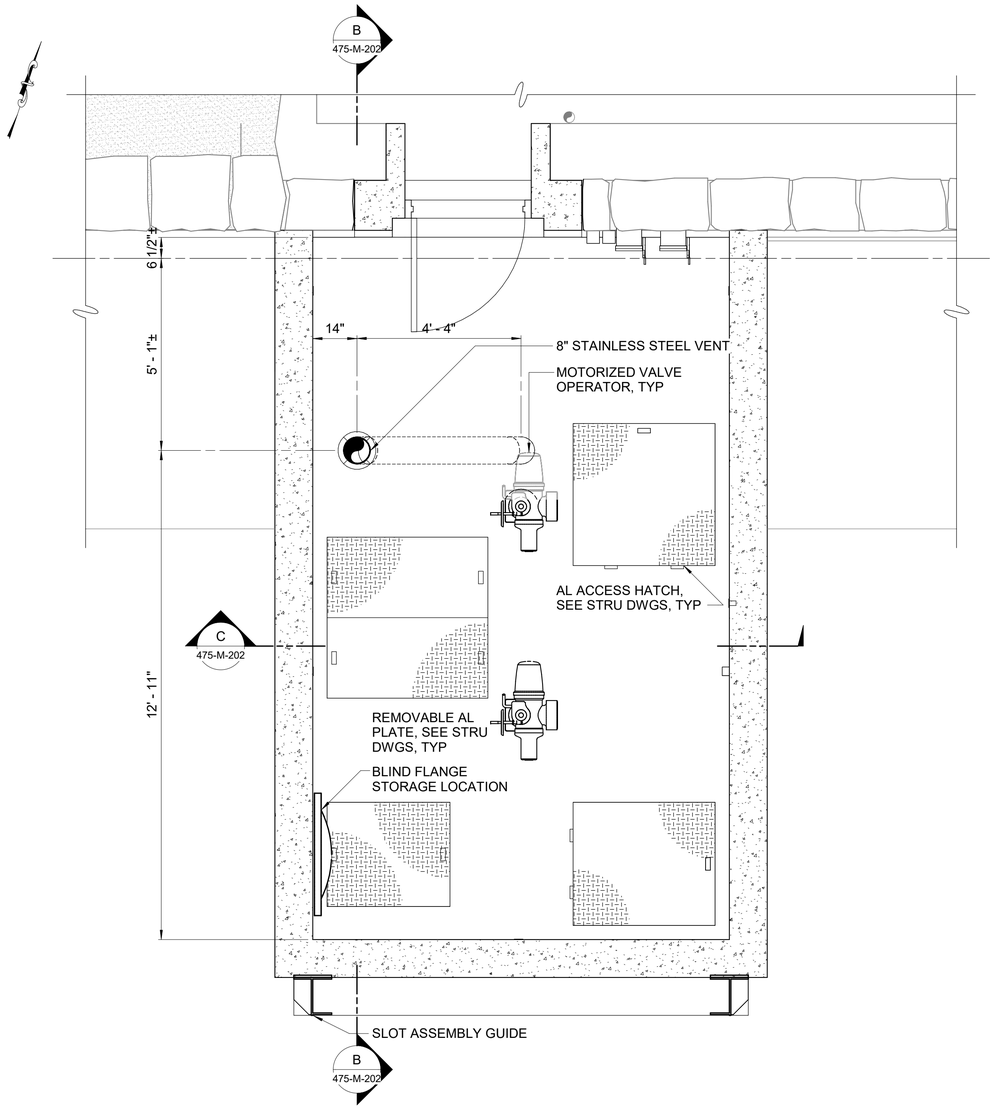
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**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**
MECHANICAL
HIGH LEVEL RELEASE TOWER
ENLARGED HLRT PIPING PLANS - SHEET 1 OF 2

DATE: AUGUST 2026
SHEET NO: 73 of 112
DRAWING NO. 475-M-200

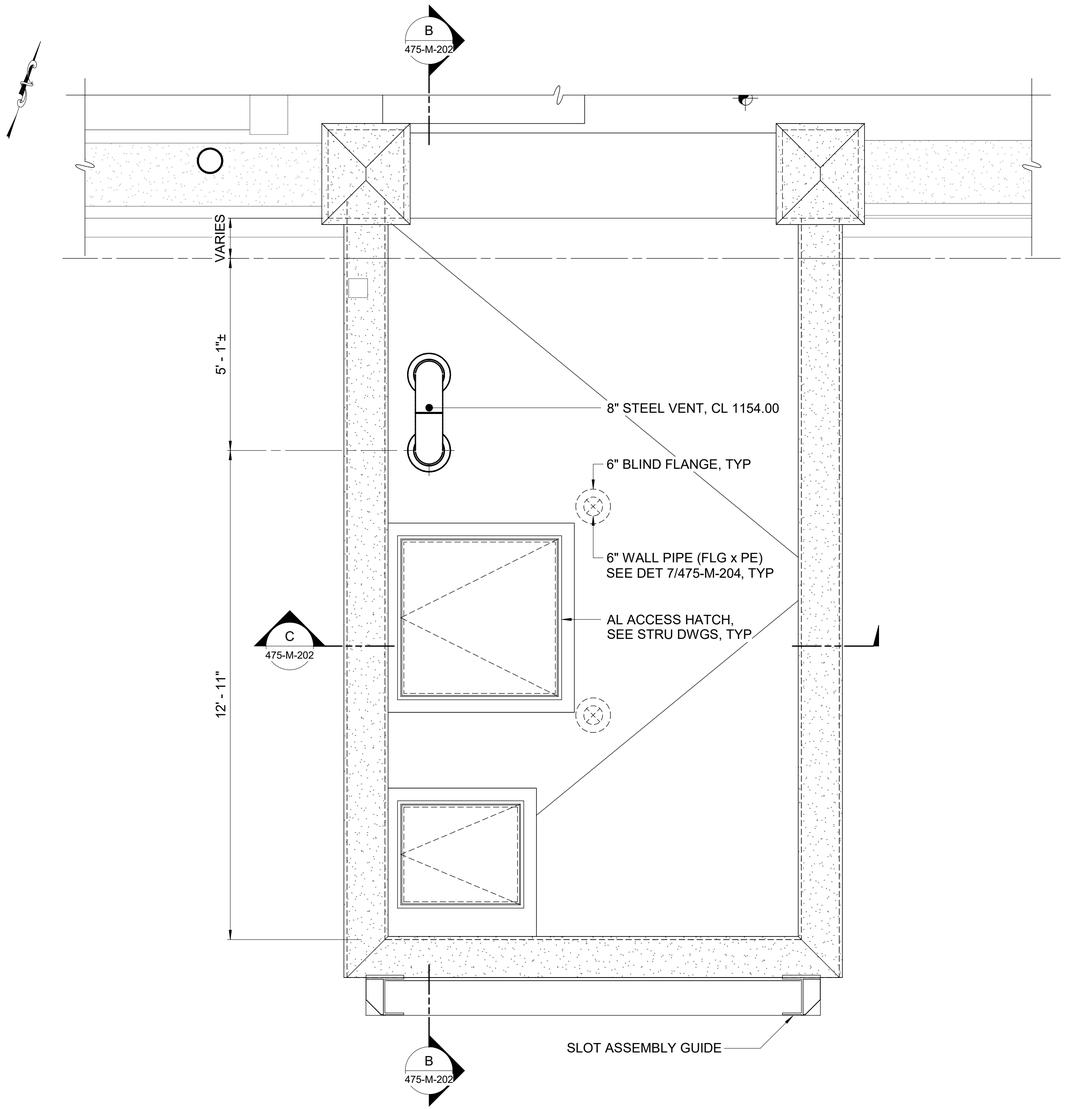
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ENLARGED TOP PLAN AT EL 1144.00

1/2" = 1'-0"




ENLARGED ROOF PLAN AT EL 1155.00

1/2" = 1'-0"

3/8"=1'-0" 0 1 2 3 5 FT.

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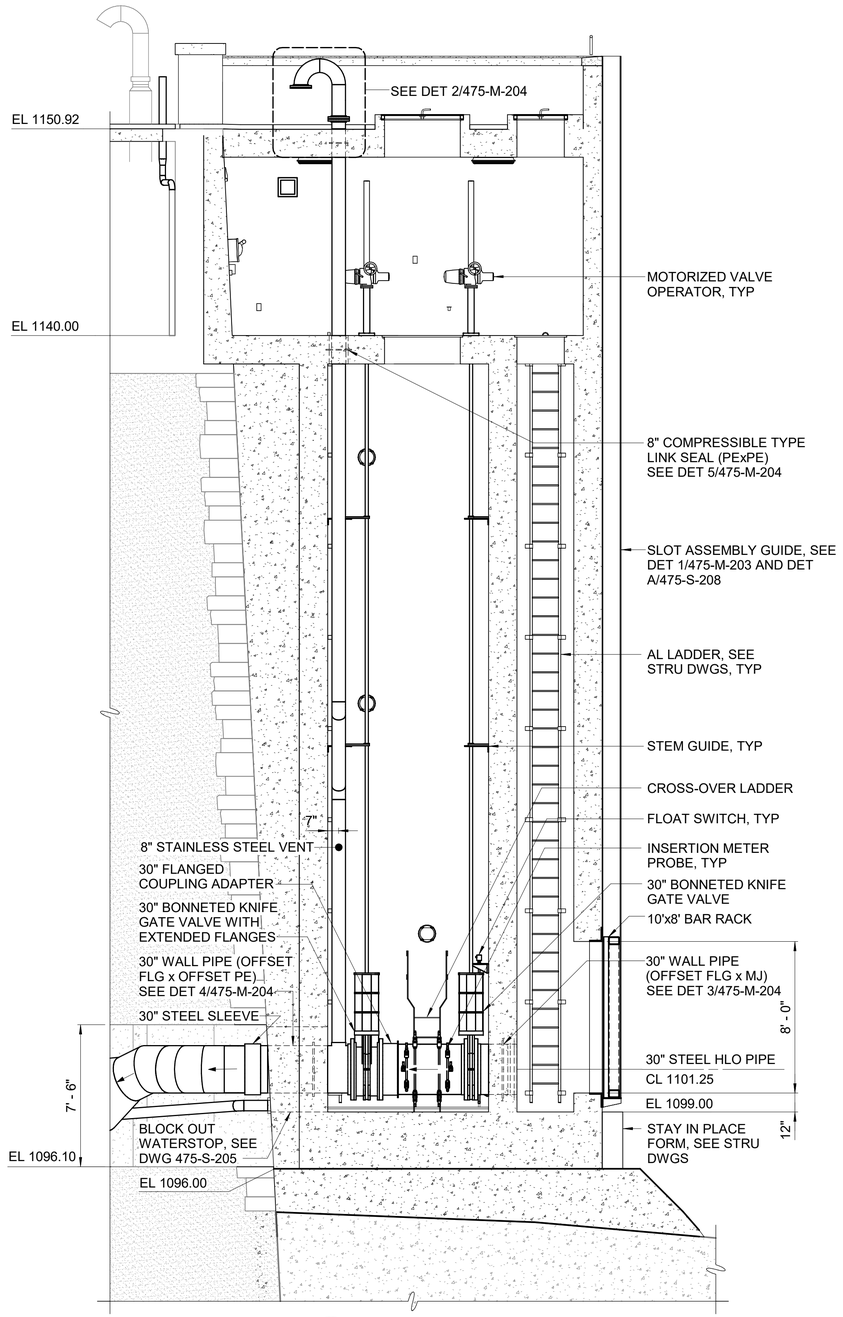
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**AT GILBOA DAM AND CREST GATE REMOVAL**
MECHANICAL
HIGH LEVEL RELEASE TOWER
ENLARGED HLRT PIPING PLANS - SHEET 2 OF 2

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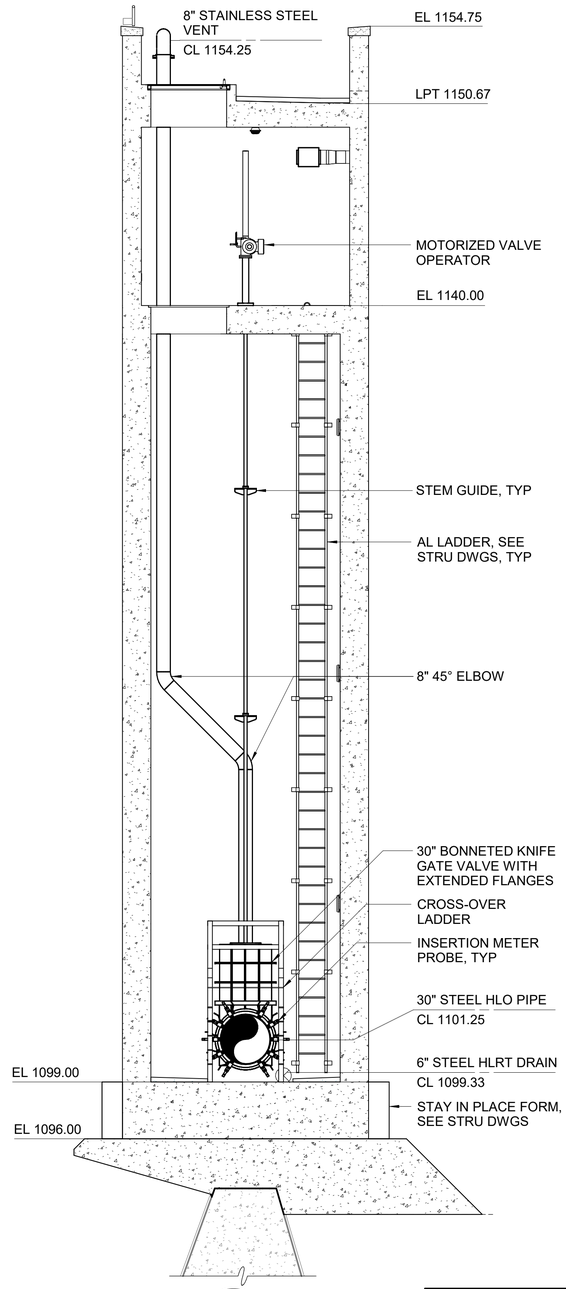
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B 475-M-200 SECTION

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




C 475-M-200 SECTION

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

**BID SET**
**SUBMITTAL DATE: AUG 2026**

0 4 8 FT.
1/4"=1'-0"

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DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE
DRAWN BY: CDS

Gannett Fleming Hazen A Joint Venture
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498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

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NYC Environmental Protection

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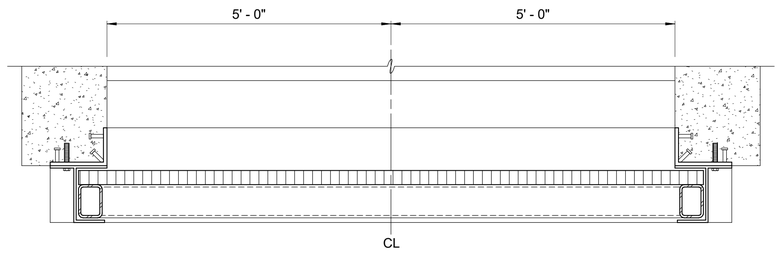
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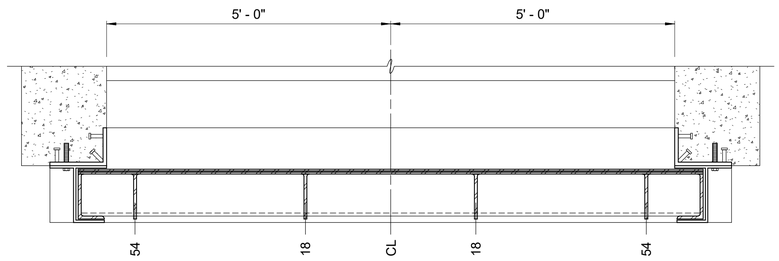
**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
MECHANICAL
HIGH LEVEL RELEASE TOWER
ENLARGED HLRT PIPING SECTIONS

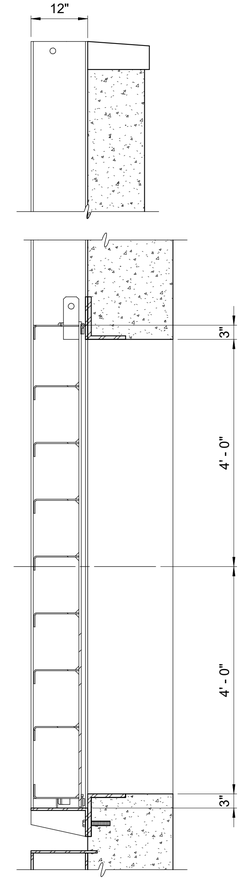
DATE: AUGUST 2026
SHEET NO: 75 of 112
DRAWING NO. 475-M-202

Autodesk Docs://90441-001_CAT-475-DES Gilboa Dam HLO/475-M-DAM_HAZEN.rvt
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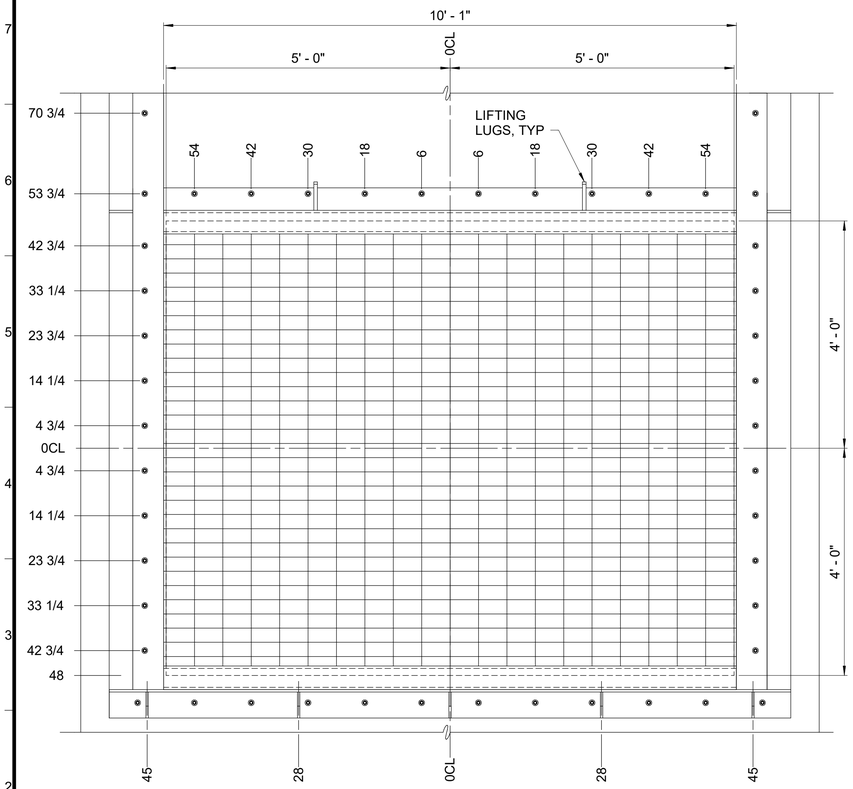
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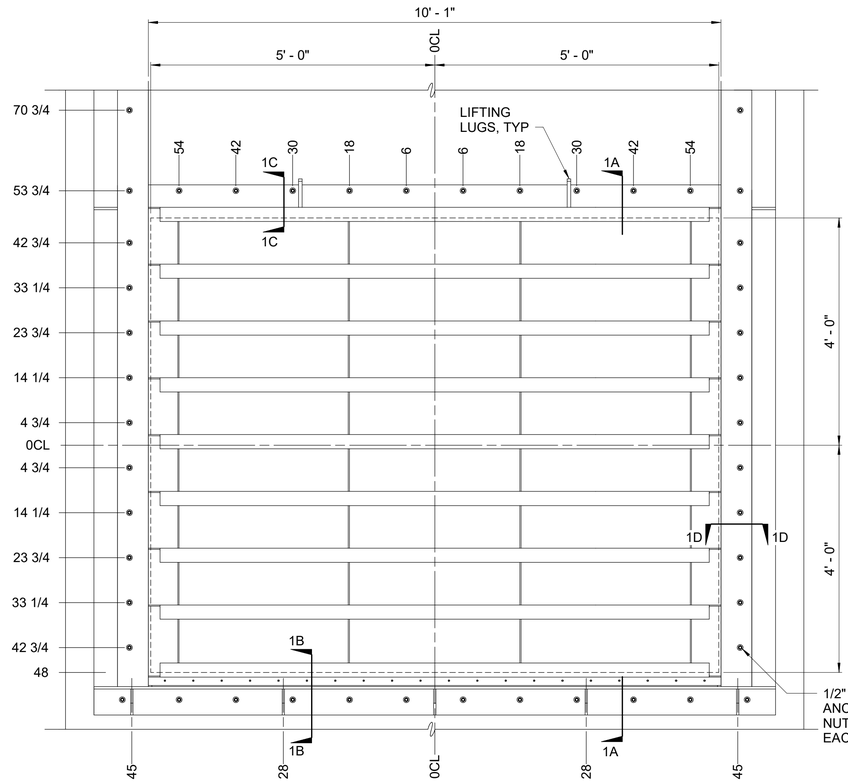




1A SECTION
475-M-203
SCALE: 3/4" = 1'-0"




FABRICATED BAR RACK
PLAN AND SECTION




1/2" Ø X 8 EPOXY STUD ANCHORS W/ TOP NUT, ADJ. NUT, & (2) FLAT WASHERS EACH (SST) EMBED 5", TYP

FABRICATED BULKHEAD
PLAN AND SECTION

FABRICATED BULKHEAD
PLAN AND SECTION

1 DETAIL
475-M-007
SCALE: 3/4" = 1'-0"

## NOTES:

1. THE BULKHEAD PLAN AND SECTION PRESENTED IS A SCHEMATIC DEPICTION OF WHAT IS REQUIRED.
2. THE BULKHEAD IS TO BE MANUFACTURED BY STEEL-FAB, INC. WATERMAN (MCWANE PLANT & INDUSTRIAL), OR APPROVED EQUAL.
3. ALL STEEL MATERIALS FOR THE BULKHEAD SHALL BE STAINLESS STEEL 316L IN ACCORDANCE WITH SPECIFICATION 05 50 00 METAL FABRICATIONS.
4. ALL BULKHEAD SEALS SHALL BE MANUFACTURED BY SEALS UNLIMITED, INC. (HUNTINGTON BRAND SEALS).
5. THE BULKHEAD SHALL BE DESIGNED FOR INSTALLATION WITH RESERVOIR ELEVATION AT 1130 OR LOWER.
6. MAXIMUM BULKHEAD ALLOWABLE LEAKAGE SHALL NOT EXCEED .15 GPM PER LINEAR FOOT OF SEAL UNDER A MAXIMUM DESIGN HEAD OF 48 FEET (RESERVOIR ELEVATION 1148).
7. BULKHEAD DEAD LOAD SHALL BE PAINTED ON TOP PLAT IN ACCORDANCE WITH SPECIFICATION 09 91 00.
8. LIFTING LUGS SHALL BE PROVIDED SO THAT THE BULKHEAD MAY BE PLACED BY CRANE INTO THE SLOT ASSEMBLY.
9. THE BAR SCREEN PLAN AND SECTION PRESENTED IS A SCHEMATIC DEPICTION OF WHAT IS REQUIRED. A BULKHEAD LIFTER WITH AUTOMATIC ENGAGE/DISENGAGE HOOKS IS TO BE PROVIDED FOR ROUTINE MAINTENANCE AS A MEANS TO MINIMIZE THE NEED FOR DIVER ASSISTANCE.
10. THE BAR SCREEN MANUFACTURER SHALL BE THE SAME AS THE BULKHEAD MANUFACTURER AND COORDINATED SUCH THAT BOTH COMPONENTS CAN FIT THE SAME SLOT ASSEMBLY WITHOUT ADDITION OF COMPONENTS TO ACHIEVE THE REQUIRED FIT DESCRIBED BELOW.
11. ALL STEEL MATERIALS FOR THE BAR SCREEN SHALL BE STAINLESS STEEL 316L IN ACCORDANCE WITH SPECIFICATION 05 50 00 METAL FABRICATIONS.
12. THE BAR SCREEN OPENINGS SHALL BE APPROXIMATELY 1 INCH AND DESIGNED FOR A MAXIMUM VELOCITY OF 1 FT/S WITH A FLOW RATE OF 15 MGD AND A RESERVOIR OPERATION LEVEL BETWEEN ELEVATION 1100 AND 1130 FEET.
13. THE BAR SCREEN SHALL BE DESIGNED FOR A MAXIMUM RESERVOIR ELEVATION OF 1148 AND INSTALLATION WITH RESERVOIR ELEVATION AT 1130 OR LOWER.
14. THE BAR SCREEN SHALL FIT WITHIN THE SLOT ASSEMBLY WITH A MAXIMUM TOTAL CLEARANCE OF 1/8 INCH, SUFFICIENT TO ALLOW INSTALLATION WITHOUT BINDING AND LIMITING LEAKAGE.
15. BAR SCREEN DEAD LOAD SHALL BE PAINTED ON TOP PLAT IN ACCORDANCE WITH SPECIFICATION 09 91 00.
16. LIFTING LUGS SHALL BE PROVIDED SO THAT THE BAR SCREEN MAY BE PLACED BY CRANE INTO THE SLOT ASSEMBLY.
17. ALL WORK IS SUBJECT TO THE REQUIREMENTS OF SPECIFICATION 01 43 10 QUALITY ASSURANCE AND 01 43 20 APPROVAL OF PRODUCT MANUFACTURERS

0 4 8 FT.
1/4"=1'-0"

**BID SET**
**SUBMITTAL DATE: AUG 2026**

GRAPHIC SCALES CHECK BEFORE USE

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DESIGNED BY: EK
DRAWN BY: CDS
CHECKED BY: BH
DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK — EVERETTE H. KNIGHT — 086771 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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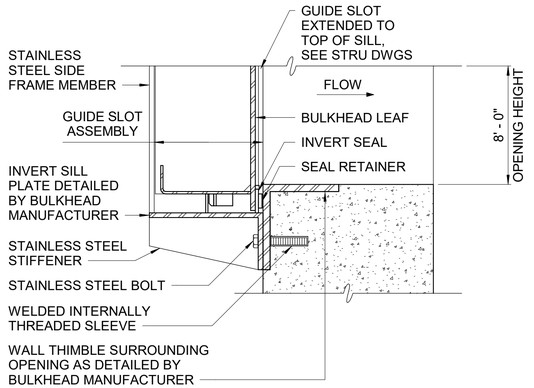
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
MECHANICAL
HIGH LEVEL RELEASE TOWER
DETAILS - SHEET 1 OF 2

DATE: AUGUST 2026
SHEET NO: 76 of 112
DRAWING NO. 475-M-203

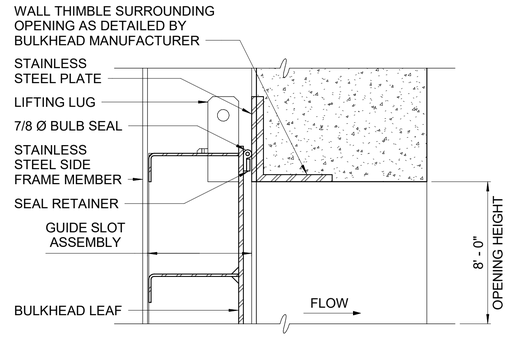
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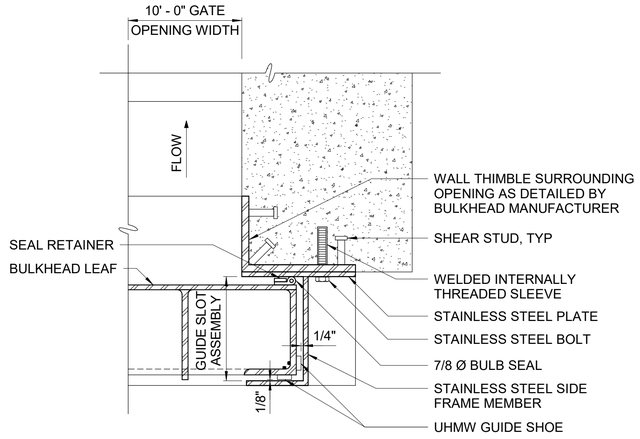

1B 475-M-203 DETAIL

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



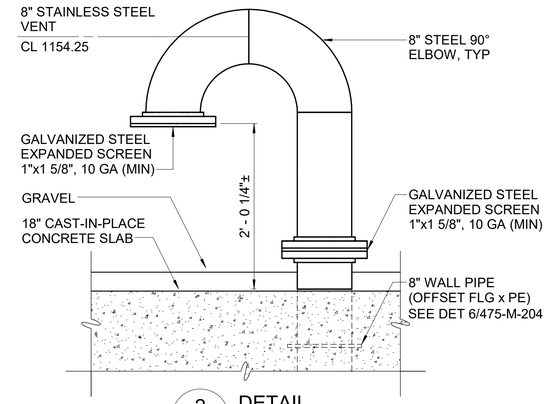

1C 475-M-203 DETAIL

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



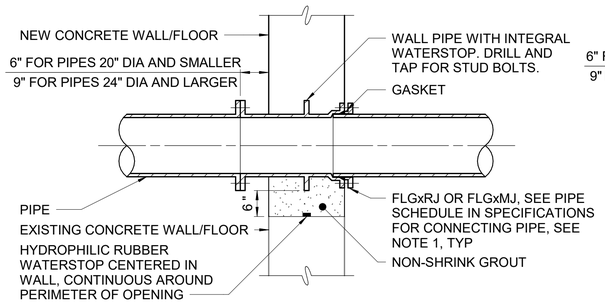

1D 475-M-203 DETAIL

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




2 475-M-202 DETAIL

SCALE: 1" = 1'-0"

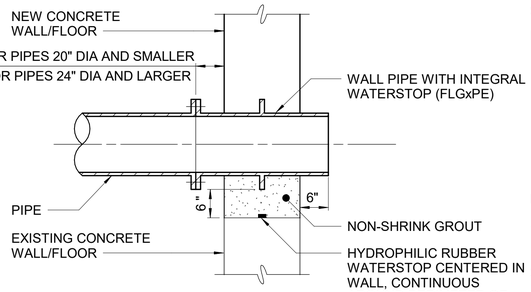



NOTE:

1. FLANGE TO BE TAPPED. PLUG WITH NEOPRENE BOLTS OR SPARE BOLTS UNTIL NEEDED.

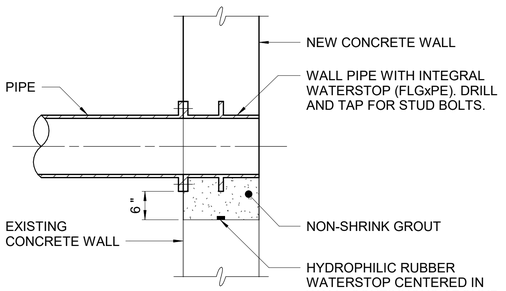
3 475-M-200 DETAIL

SCALE: N.T.S.



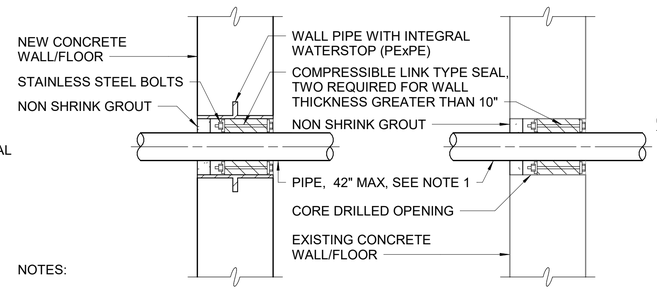

4 475-M-200 DETAIL

SCALE: N.T.S.




7 475-M-200 DETAIL

SCALE: N.T.S.

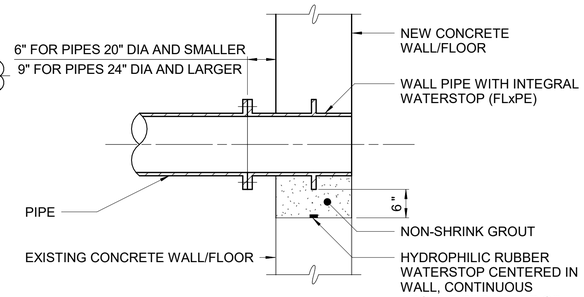



NOTES:

1. THE USE OF COMPRESSIBLE TYPE LINK SEALS ON PIPES LARGER THAN 42" REQUIRES ENGINEER'S APPROVAL.
2. PRIOR TO INSTALLATION OF LINK SEAL, BURN BACK REINFORCEMENT STEEL 1/2" MIN BELOW SURFACE AND FILL VOIDS CREATED WITH EPOXY RESIN BINDER.

5 475-M-200 DETAIL

SCALE: N.T.S.




6 475-M-202 DETAIL

SCALE: N.T.S.

0 4 8 FT.

1/4"=1'-0"

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: EK
DRAWN BY: CDS
CHECKED BY: BH
DESIGN LEAD: EVERETTE KNIGHT, PE
SECTION MANAGER: KURT MATSCHERZ, PE

Gannett Fleming Hazen A Joint Venture
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STATE OF NEW YORK — EVERETTE H. KNIGHT — 086771 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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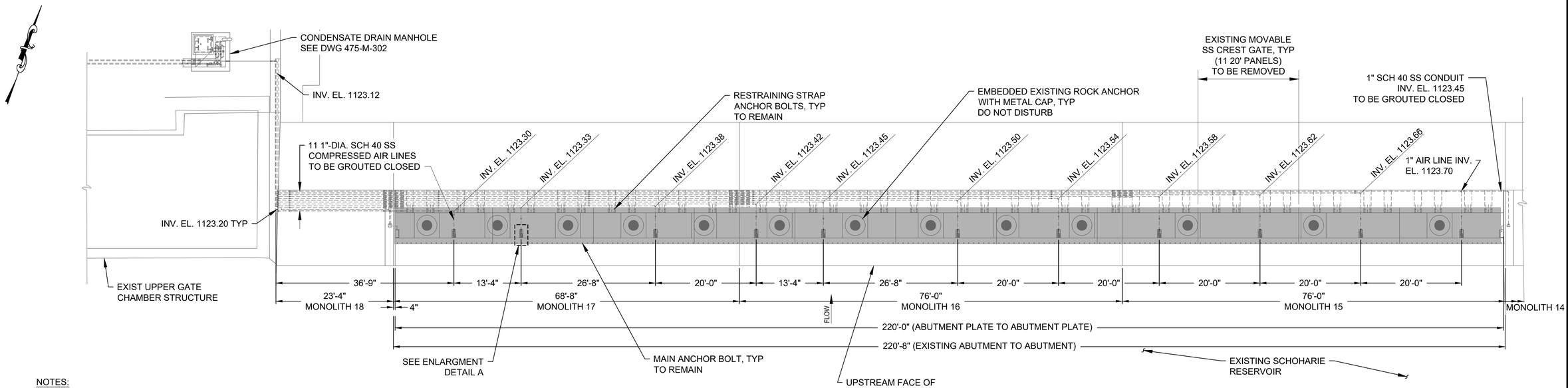
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
MECHANICAL
HIGH LEVEL RELEASE TOWER
DETAILS - SHEET 2 OF 2

DATE: AUGUST 2026
SHEET NO: 77 of 112
DRAWING NO. 475-M-204

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NOTES:

1. CREST GATE BLADDERS (BELOW GATE LEAVES) NOT SHOWN.
2. TOP OF DAM FEATURES NOT SHOWN.
3. ELEVEN 1" SCH. 40 SS COMPRESSED AIR LINES AND SINGLE 1" SCH. 40 SS CONDUIT SHALL BE GROUTED SHUT FROM TERMINUS IN CONDENSATE MANHOLE TO TERMINUS ON EXISTING SPILLWAY CREST. USE CEMENTITIOUS GROUT AND PLUG BOTH ENDS UPON COMPLETION OF GROUT PUMPING. SEE DRAWINGS 475-M-302 AND 475-M-303 FOR GROUTING TERMINUS IN CONDENSATE MANHOLE.

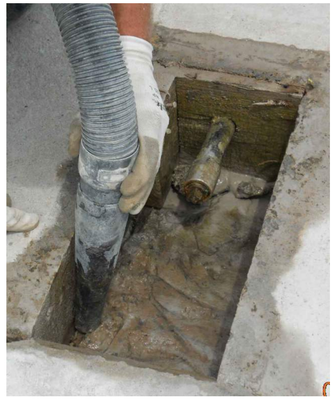
LEGEND:

EXISTING MOVABLE CREST GATES AND ALL NON-EMBEDDED HARDWARE TO BE REMOVED

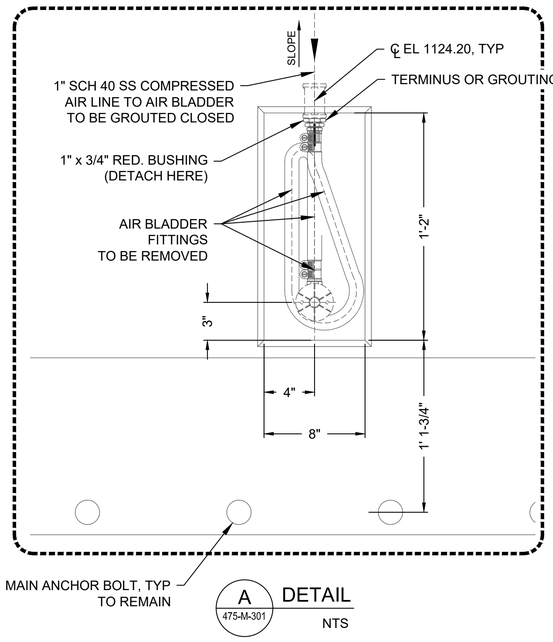
EXISTING POST-TENSIONED ANCHOR & ANCHOR HEAD (DO NOT DISTURB)

## MONOLITHS M15 TO M17
## COMPRESSED AIR LINES ABANDONMENT PLAN

SCALE 1" = 10'-0"



## INTENDED FINAL ARRANGEMENT OF AIR LINE POCKETS AFTER MECHANICAL REMOVALS




0 10 20 FT.
1"=10'

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**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: BH
DRAWN BY: JS
CHECKED BY: BH
DESIGN LEAD: BOYD HOWARD, PE
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 999172-E LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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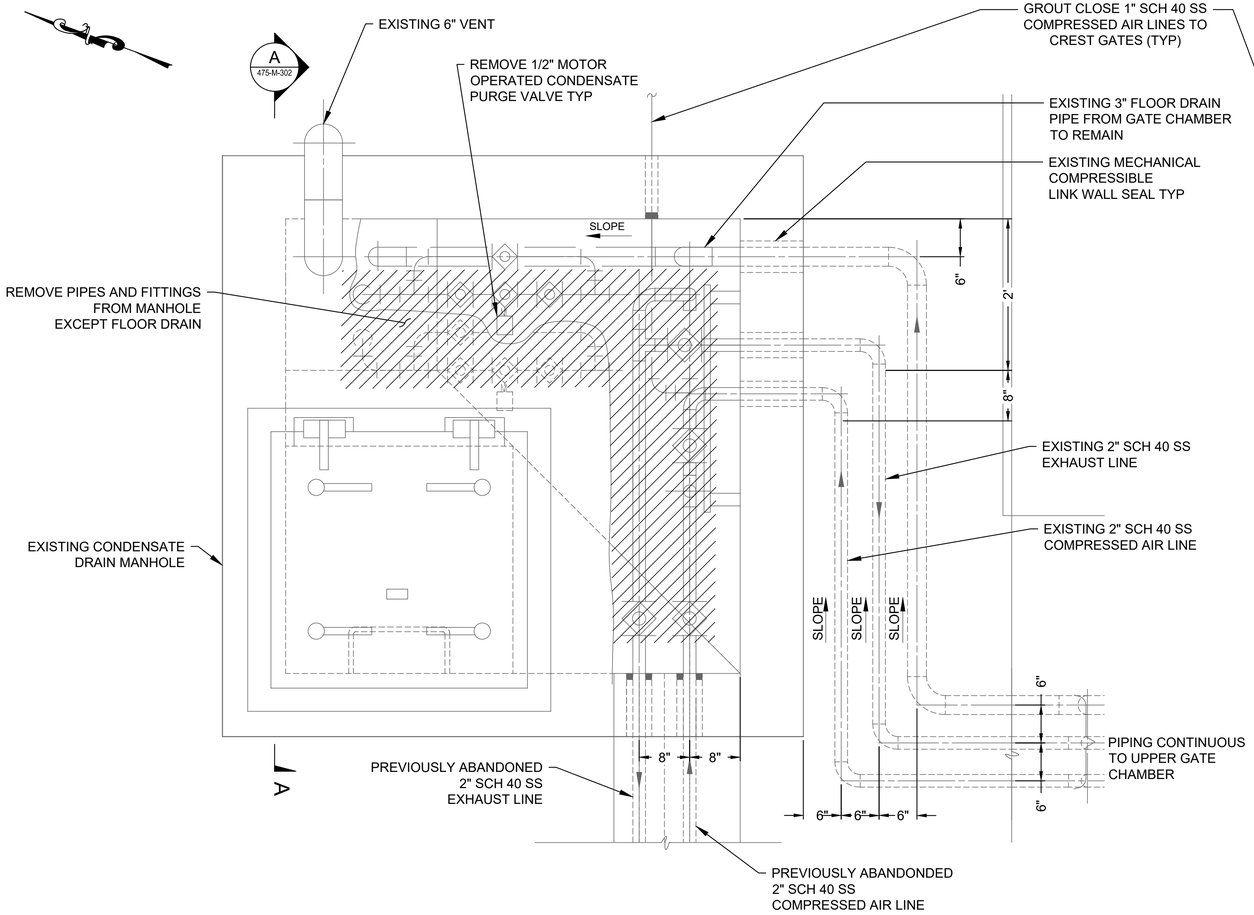
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
MECHANICAL
SPILLWAY MONOLITHS M15-M17
CREST GATE REMOVAL & AIR LINE ABANDONMENT

DATE: AUGUST 2026
SHEET NO: 78 of 112
DRAWING NO. 475-M-301

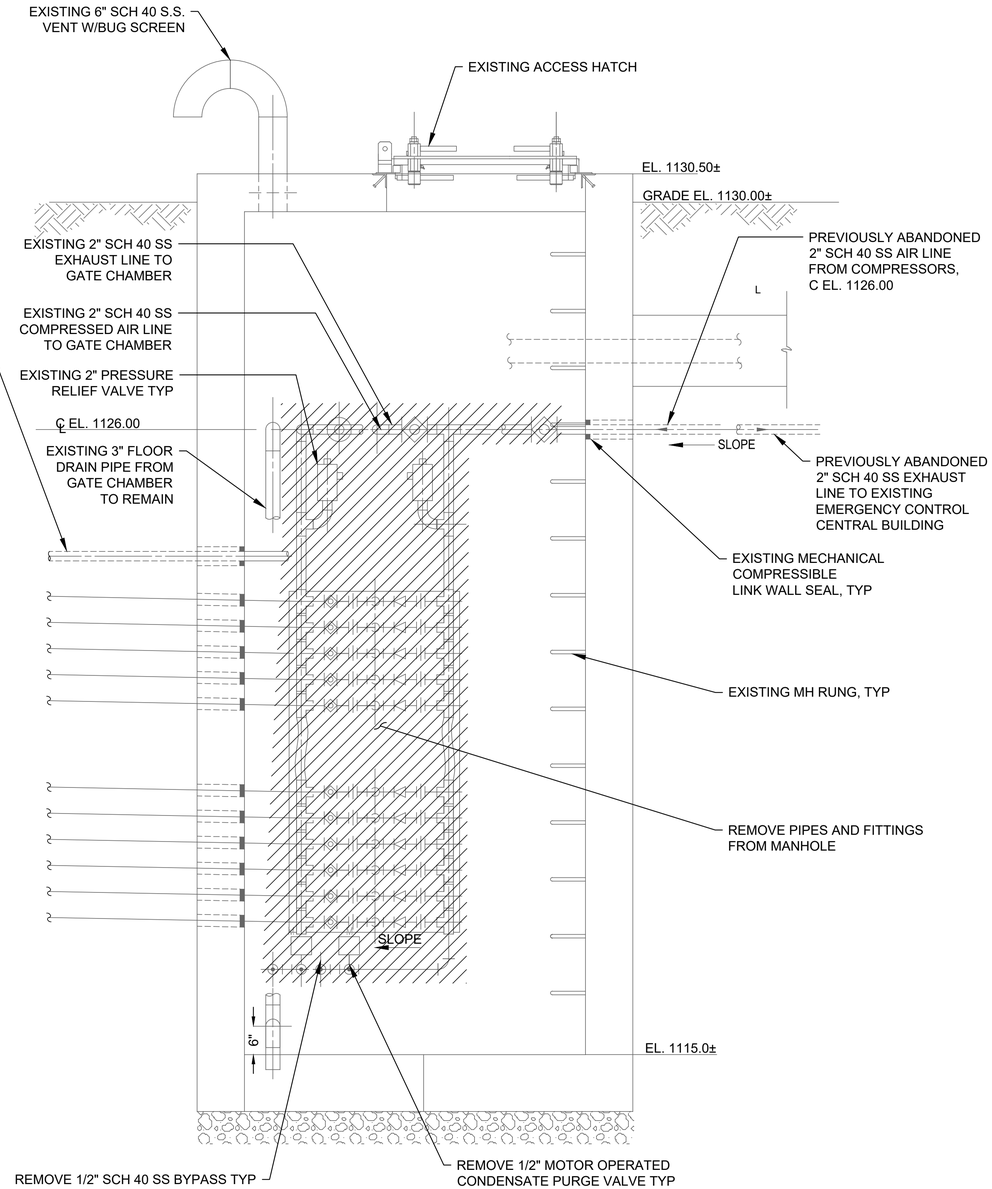
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ENLARGED PARTIAL PLAN

SCALE: 1"=1'-0"




A 475-M-302 SECTION

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

LEGEND:

TO BE REMOVED

**BID SET**
**SUBMITTAL DATE: AUG 2026**

1"=1'-0" 0 1 2 FT.

3/4"=1'-0" 0 1 2 3 FT.

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DRAWN BY: JS
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Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK BOYD HOWARD 099172-01 LICENSED PROFESSIONAL ENGINEER

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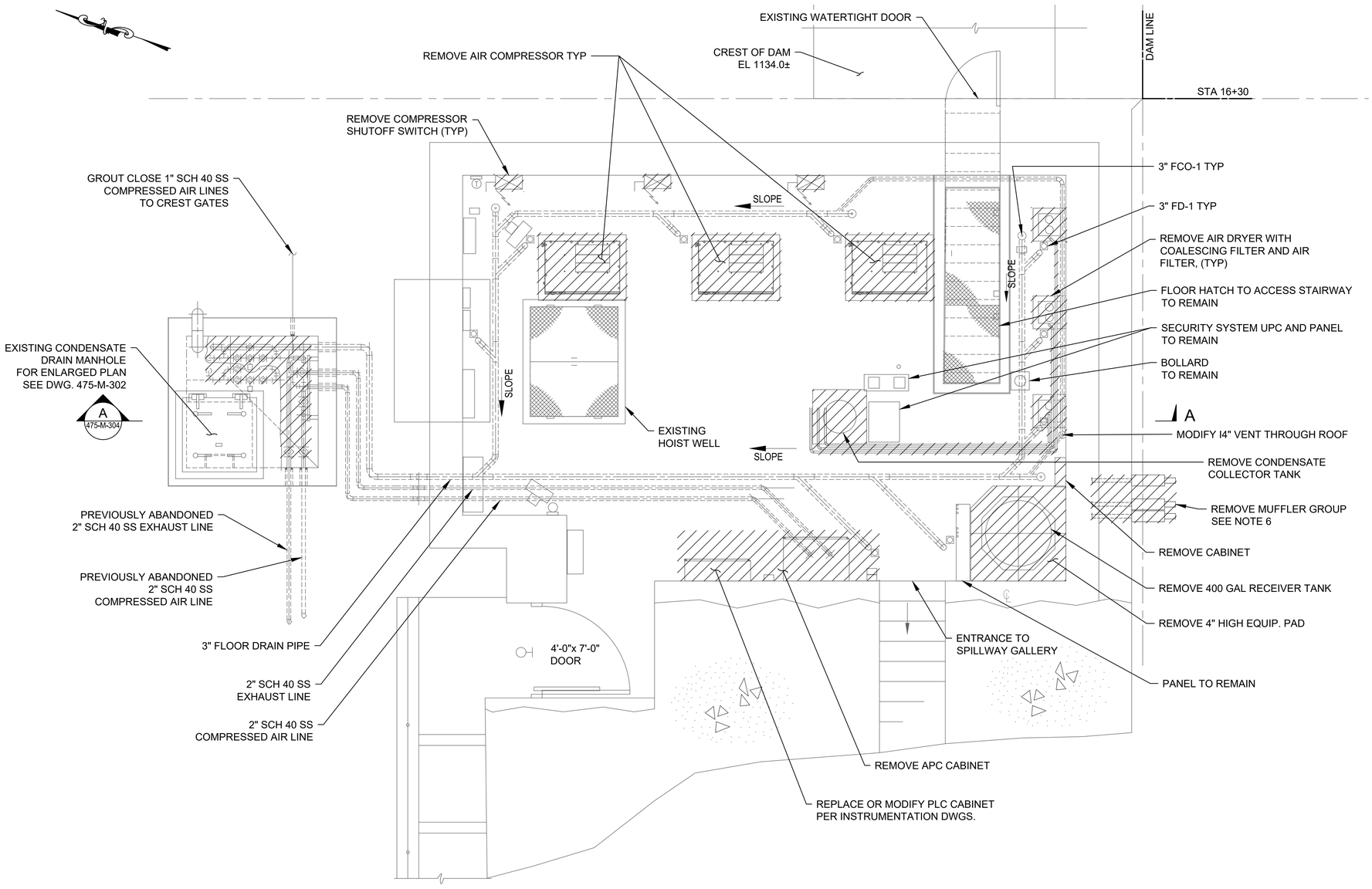
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STRUCTURAL
CONDENSATE DRAIN MANHOLE
EQUIPMENT REMOVAL & AIR LINE ABANDONMENT

DATE: AUGUST 2026
SHEET NO: 79 of 112
DRAWING NO. 475-M-302

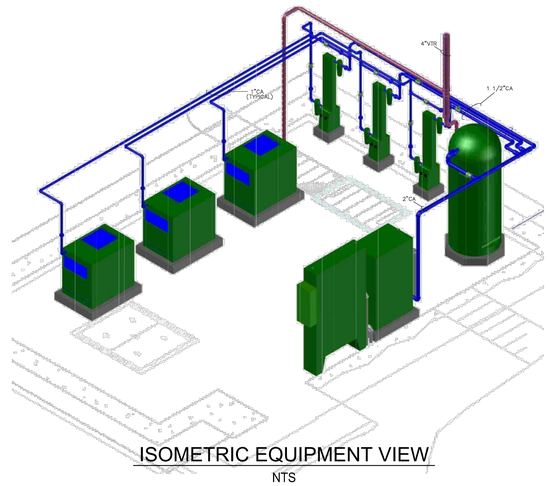
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Plot Scale: 1:1
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## UPPER GATE CHAMBER EQUIPMENT REMOVAL PLAN

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




## ISOMETRIC EQUIPMENT VIEW

NTS

ISOMETRIC EQUIPMENT VIEW NOTES:

1. EXCERPT FROM CONSTRUCTION CONTRACT CAT-212B CONTRACTOR SUBMITTAL NO. 11377-002.
2. NOTE THAT NOT ALL RELATED EXISTING EQUIPMENT IS SHOWN, INCLUDING THE CONDENSATE COLLECTOR TANK.
3. REMOVE ALL EQUIPMENT SHOWN IN GREEN AND PIPING SHOWN IN BLUE.
4. REPLACE PLC PANEL. SELECT PLC CABLES SHALL REMAIN AND BE REROUTED INTO NEW PANEL. SEE I/C DRAWINGS.

GENERAL NOTES:

1. REMOVE ALL PIPING AND HANGERS ASSOCIATED WITH EQUIPMENT TO BE REMOVED BACK TO FITTING THAT IS NEAREST TO WALL OR FLOOR PENETRATION.
2. OBERMEYER HYDRO INC (OHI) CONTROL CABINET INCLUDES 2" FPT BULKHEADS FOR ALL AIR CONNECTIONS, COMPRESSORS AND OTHER EQUIPMENT. CONNECTION BETWEEN VIBRATING MACHINERY AND HARD PIPING IS FLEXIBLE PRESSURE HOSE WITH THREADED FITTINGS.
3. ELECTRICAL CONDUIT AND WIRING NOT SHOWN ON THIS DRAWING.
4. FOR ELECTRICAL SEE DWG 475-E-005.
5. FOR BUILDING DIMENSIONS, REFER TO STRUCTURAL DWGS.
6. THREE (3) MUFFLERS LOCATED ON UPSTREAM FACE WERE SHOWN SCHEMATICALLY. REMOVE MUFFLERS IN CONJUNCTION WITH PARAPET WALL DEMOLITION IN THIS AREA, CUT EMBEDDED PIPES FLUSH WITH CONCRETE SURFACES, AND FILL PIPE SEGMENTS THAT REMAIN EMBEDDED IN CONCRETE WALL WITH NON-SHRINK GROUT.
7. FUNCTIONALLY, ALL LIGHTING, POWER RECEPTACLES, HVAC, SECURITY, AND COMMUNICATION SYSTEMS ARE TO BE RETAINED AND KEPT IN-SERVICE UPON COMPLETION OF WORK. LIMITED INTERRUPTIONS IN SERVICE OF THESE SYSTEMS WILL BE NECESSARY TO COMPLETE THE WORK OF THIS CONTRACT. ONLY THE PNEUMATIC, ELECTRICAL, INSTRUMENTATION AND CONTROL SYSTEM FEATURES ASSOCIATED WITH THE OBERMEYER CREST GATES ARE TO BE PERMANENTLY REMOVED FROM SERVICE.

LEGEND:

TO BE REMOVED

**BID SET**
**SUBMITTAL DATE: AUG 2026**

0 1 2 3 5 FT.
3/8"=1'-0"

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SECTION MANAGER: CHRISTOPHER BAILEY, PE

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HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

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Environmental Protection

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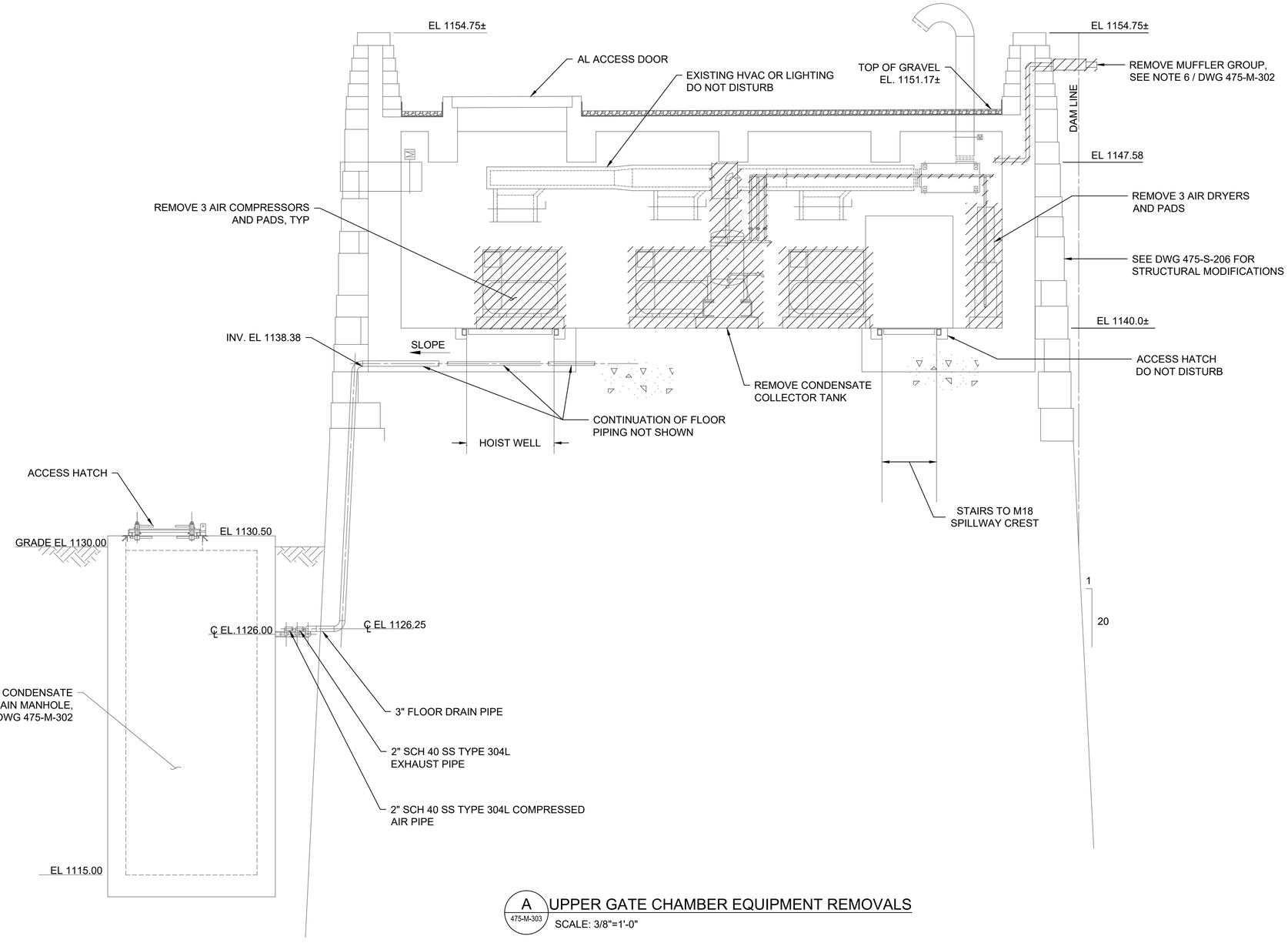
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
MECHANICAL
UPPER GATE CHAMBER
EQUIPMENT REMOVAL PLAN

DATE: AUGUST 2026
SHEET NO: 80 of 112
DRAWING NO. 475-M-303

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A 475-M-303 UPPER GATE CHAMBER EQUIPMENT REMOVALS

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

LEGEND:

TO BE REMOVED

0 1 2 3 5 FT.
3/8"=1'-0"

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**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
MECHANICAL
UPPER GATE CHAMBER
EQUIPMENT REMOVAL SECTION

DATE: AUGUST 2026
SHEET NO: 81 of 112
DRAWING NO. 475-M-304

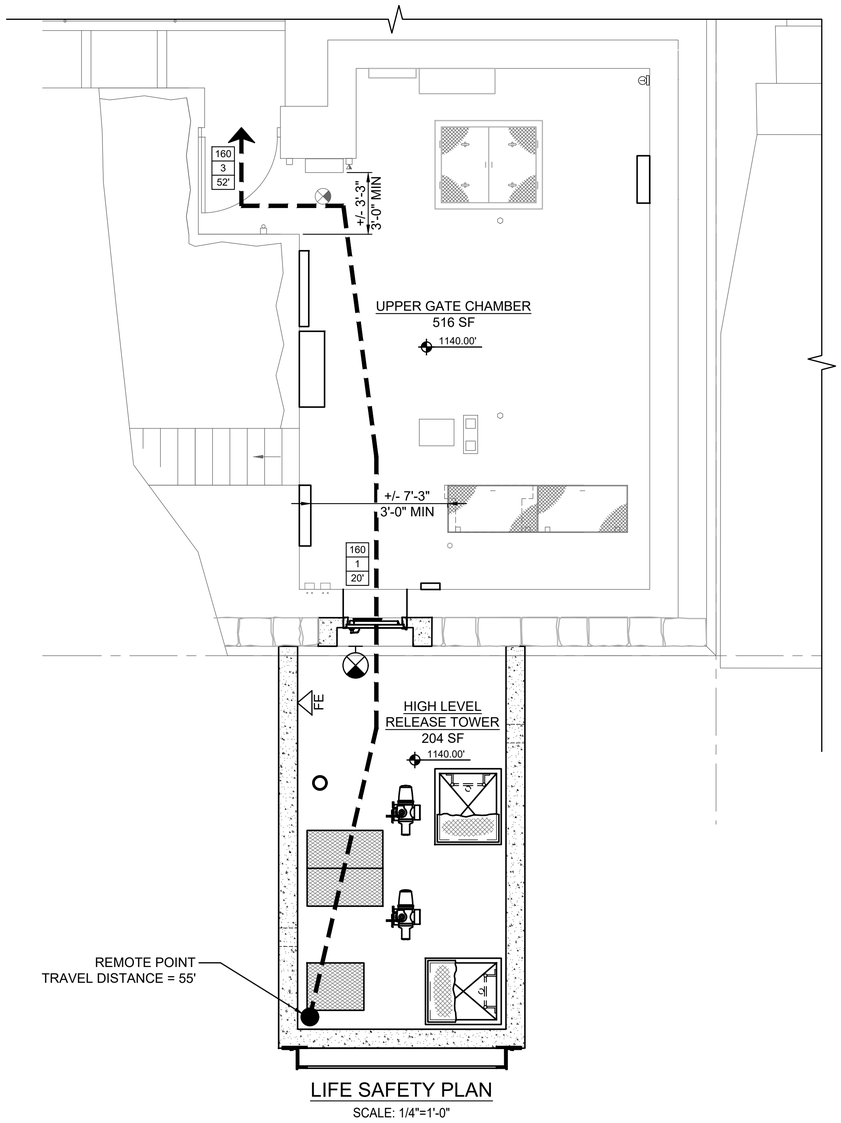
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Plot Style Table: BEDC_Acad_2021.ctb

## CODE ANALYSIS

APPLICABLE CODES:
2020 NEW YORK STATE EXISTING BUILDING CODE (NYSEBC)
2020 NEW YORK STATE BUILDING CODE (NYSBC)
2020 NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE (NYSECC)
2020 NEW YORK STATE FIRE CODE (NYSFC)
2024 NATIONAL FIRE PROTECTION ASSOCIATION 101 - LIFE SAFETY CODE (NFPA-101)

| CODE REFERENCE | REQUIREMENT | PROVIDED |
|---|---|---|
| **PROVISIONS FOR ALL COMPLIANCE METHODS \| NYSEBC - CHAPTER 3** | | |
| NYSEBC 301.3 ALTERATION, ADDITION, OR CHANGE OF OCCUPANCY | WORK AREA COMPLIANCE METHOD - NYSEBC 301.3.2 | UPPER GATE CHAMBER - ALTERATION LEVEL 2 (NYSEBC 603)<br>HIGH LEVEL RELEASE TOWER - ADDITION (NYSEBC 606) |
| NYSEBC 302.6 OCCUPANCY AND USE | OCCUPANCY AND USE SHALL BE DETERMINED IN ACCORDANCE WITH CHAPTER 3 OF NYSBC | OCCUPANCY: U<br>UTILITY AND MISCELLANEOUS |
| NYSBC 1004 OCCUPANT LOAD | MECHANICAL EQUIPMENT ROOM (300 GROSS) | UPPER GATE CHAMBER: 520 SF / 300 GROSS = 2 OCC<br>HIGH LEVEL RELEASE TOWER: 205 SF / 300 GROSS = 1 OCC |
| **ALTERATIONS - LEVEL 2 \| NYSEBC - CHAPTER 8** (UPPER GATE CHAMBER)<br>NYSEBC 801.3 NEW CONSTRUCTION ELEMENTS, COMPONENTS, SYSTEMS, AND SPACES SHALL COMPLY WITH THE REQUIREMENTS OF NYSBC | | |
| FIRE PROTECTION - NYSEBC 803 / NYSBC 903 | AUTOMATIC SPRINKLER SYSTEMS:<br>GROUP U, NOT REQUIRED | NOT PROVIDED |
| MEANS OF EGRESS - NYSEBC 805 / NYSBC CHAPTER 10 | SINGLE EXIT - NYSEBC 805.3.1.1<br>GROUP U - ALLOWED WITH OCCUPANT LOAD LESS THAN 50, EXIT ACCESS TRAVEL DISTANCE LESS THAN 75 FT | SINGLE EXIT<br>OCCUPANT LOAD = 2 OCC<br>EXIT ACCESS TRAVEL DIST = 55' |
| | MEANS OF EGRESS SIZING - NYSBC 1005<br>0.2" PER OCCUPANT (0.2" x 3 OCC = 0.6")<br>DOORS = 32" CLEAR MIN (NYSBC 1010.1.1)<br>EXIT ACCESS = 36" CLEAR MIN (NFPA-101 7.3.4.1) | DOORS = 32" MIN.<br>EXIT ACCESS = 36" MIN. |
| **ADDITIONS \| NYSEBC - CHAPTER 11** (HIGH LEVEL RELEASE TOWER)<br>NYSEBC 1101.1 ADDITION TO A BUILDING OR STRUCTURE SHALL COMPLY WITH THE UNIFORM CODE AS ADOPTED FOR NEW CONSTRUCTION | | |
| FIRE PROTECTION - NYSEBC 1102.3 / NYSBC 903 | AUTOMATIC SPRINKLER SYSTEMS:<br>GROUP U, NOT REQUIRED | NOT PROVIDED |
| MEANS OF EGRESS - NYSBC CHAPTER 10 | SINGLE EXIT - NYSBC TABLE 1006.2.1<br>GROUP U - MAXIMUM OCCUPANT LOAD = 49<br>MAXIMUM COMMON PATH OF EGRESS TRAVEL = 100 FT | SINGLE EXIT<br>OCCUPANT LOAD = 1 OCC<br>COMMON PATH OF EGRESS TRAVEL = 55' |
| | MEANS OF EGRESS SIZING - NYSBC 1005<br>0.2" PER OCCUPANT (0.2" x 1 OCC = 0.2")<br>DOORS = 32" CLEAR MIN (NYSBC 1010.1.1)<br>EXIT ACCESS = 36" CLEAR MIN (NFPA-101 7.3.4.1) | DOORS = 32" MIN.<br>EXIT ACCESS = 36" MIN. |
| **ACCESSIBILITY \| NYSBC - CHAPTER 11** | | |
| NYSBC 1103.2.4 UTILITY BUILDINGS | NOT REQUIRED - GROUP U OCCUPANCIES ARE NOT REQUIRED TO COMPLY WITH CHAPTER 11 - ACCESSIBILITY | NOT PROVIDED |
| **ENERGY CODE \| NYSECC - CHAPTER 4** | | |
| BUILDING ENVELOPE REQUIREMENTS - NYSECC C402 | NOT REQUIRED - LOW-ENERGY BUILDINGS SHALL BE EXEMPT FROM THE BUILDING THERMAL ENVELOPE PROVISIONS. | NOT PROVIDED (NO CONDITIONED SPACE) |




LIFE SAFETY PLAN
SCALE: 1/4"=1'-0"

## EGRESS LEGEND:

- XXX — ALLOWABLE CAPACITY OF DOORS
- ### — ACTUAL OCCUPANT LOAD
- XXX — TRAVEL DISTANCE
- TRAVEL DISTANCE
- EXIT SIGN
- FE — FIRE EXTINGUISHER

1/4"=1'-0" 0 4 8 FT.

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DRAWN BY: DWC
CHECKED BY: EC
DESIGN LEAD: F. ERIC GOSHOW, FAIA
SECTION MANAGER: CHRISTOPHER BAILEY, PE

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HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

REGISTERED ARCHITECT F. ERIC GOSHOW 012251 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
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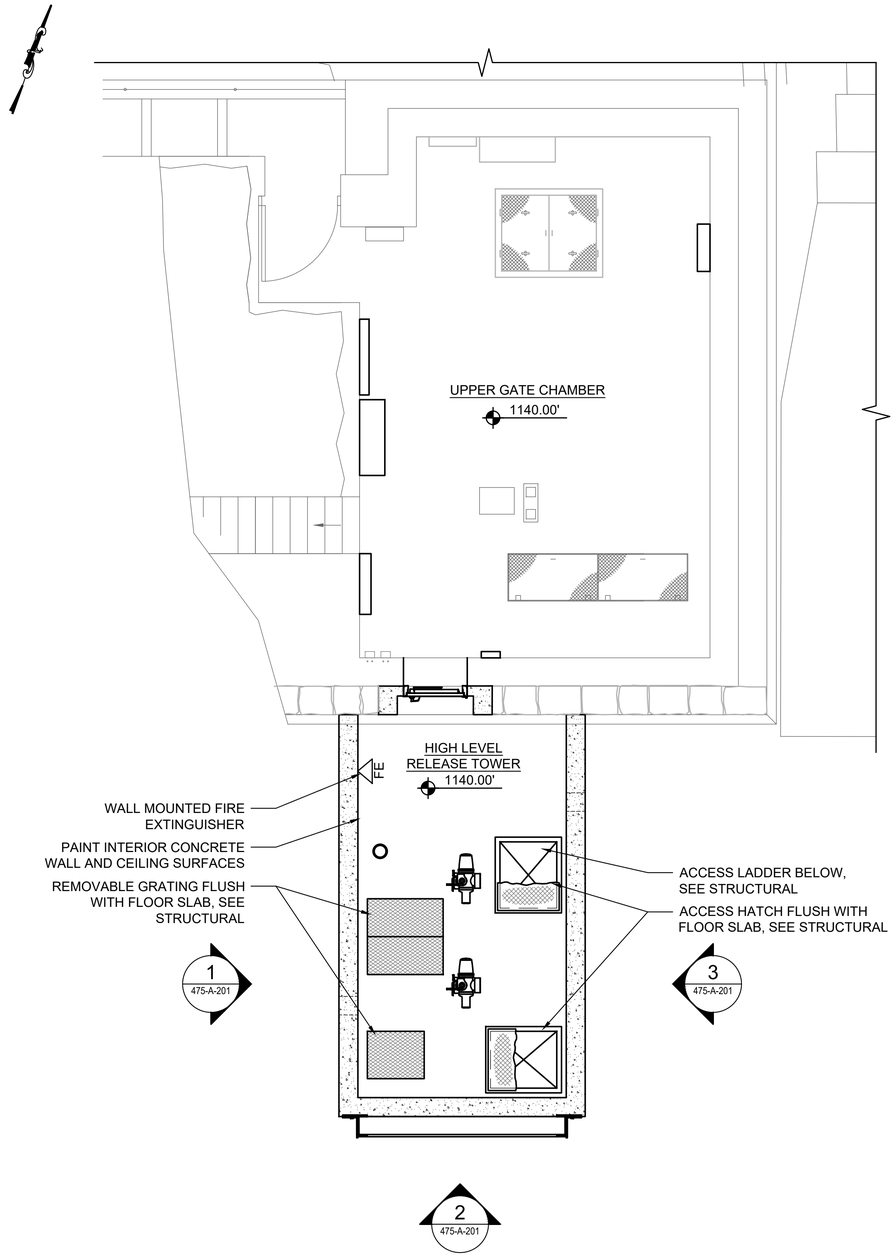
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**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
ARCHITECTURAL
CODE NOTES AND LIFE SAFETY PLAN

DATE: AUGUST 2026
SHEET NO: 82 of 112
DRAWING NO. 475-A-001


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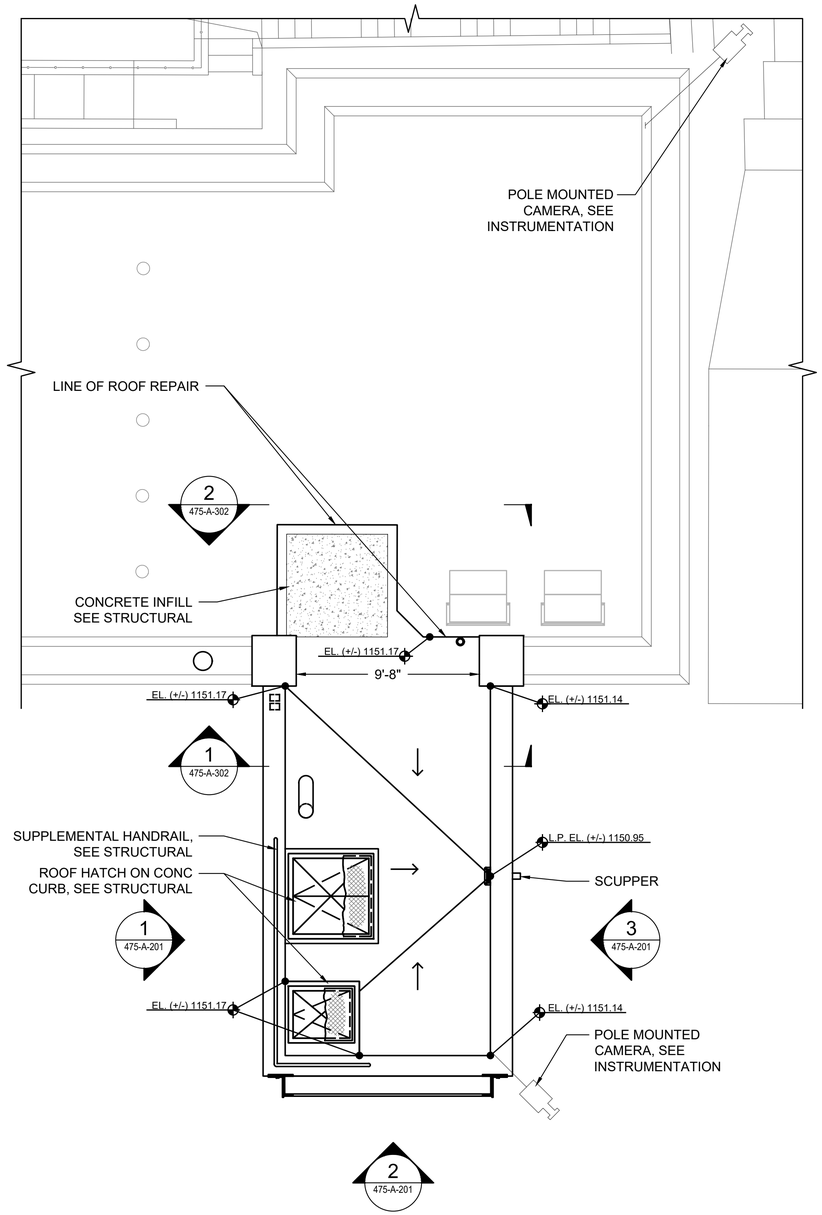


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PLAN AT EL. 1140.00

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




PLAN AT EL. 1155.00

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

1/4"=1'-0" 0 4 8 FT.

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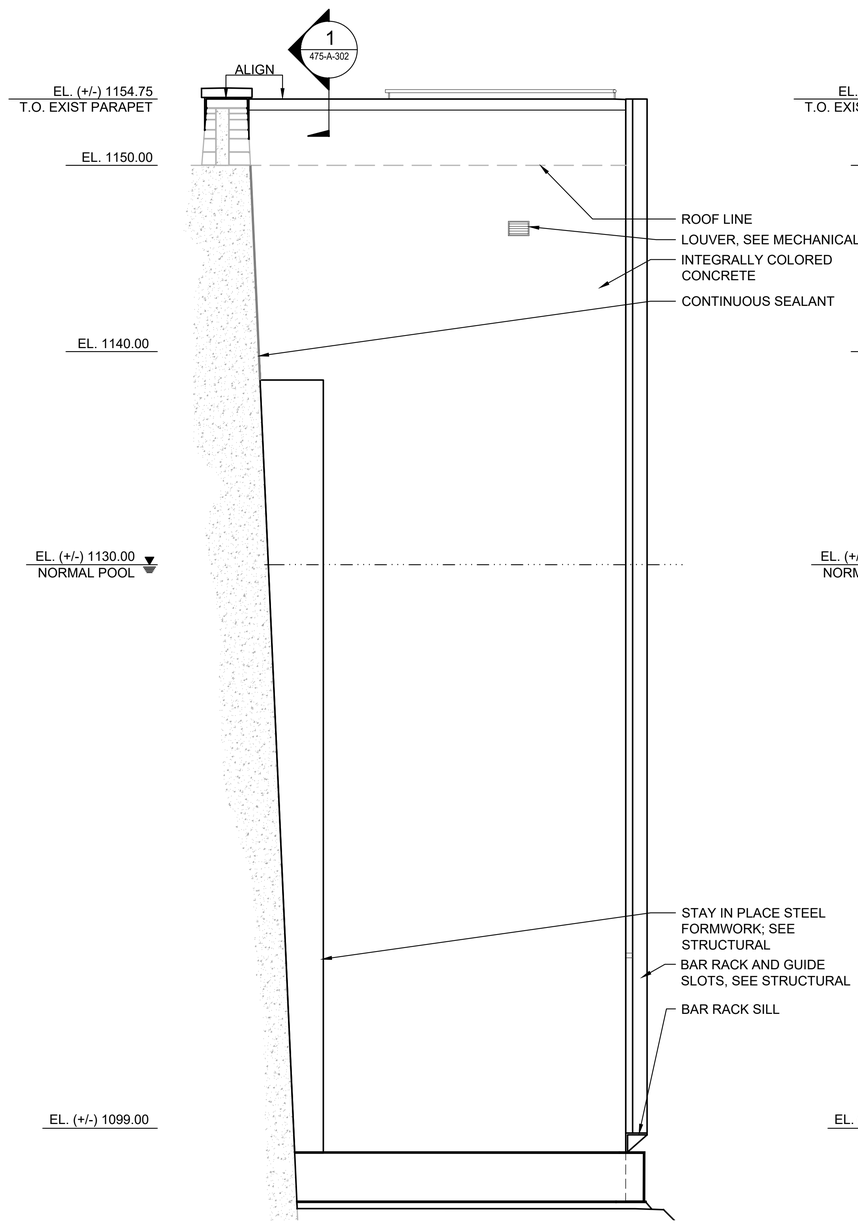
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
ARCHITECTURAL
HIGH LEVEL RELEASE TOWER
FLOOR AND ROOF PLAN

DATE: AUGUST 2026
SHEET NO: 83 of 112
DRAWING NO. 475-A-100

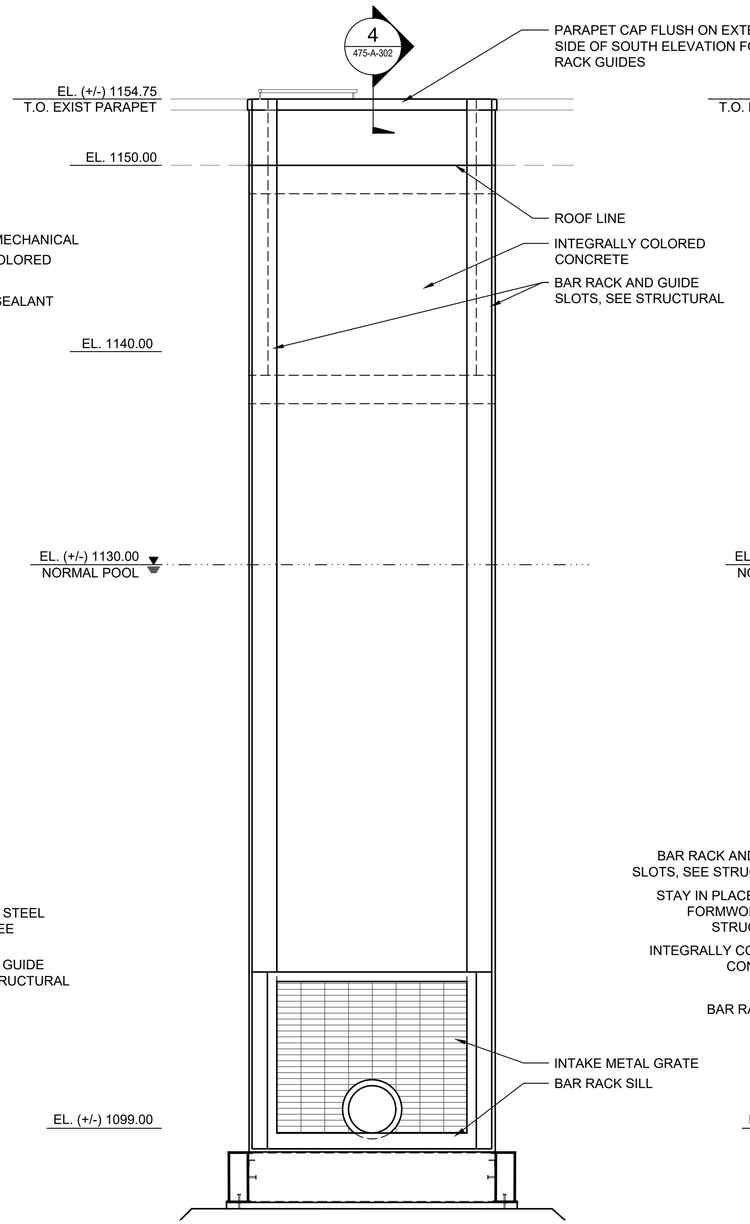
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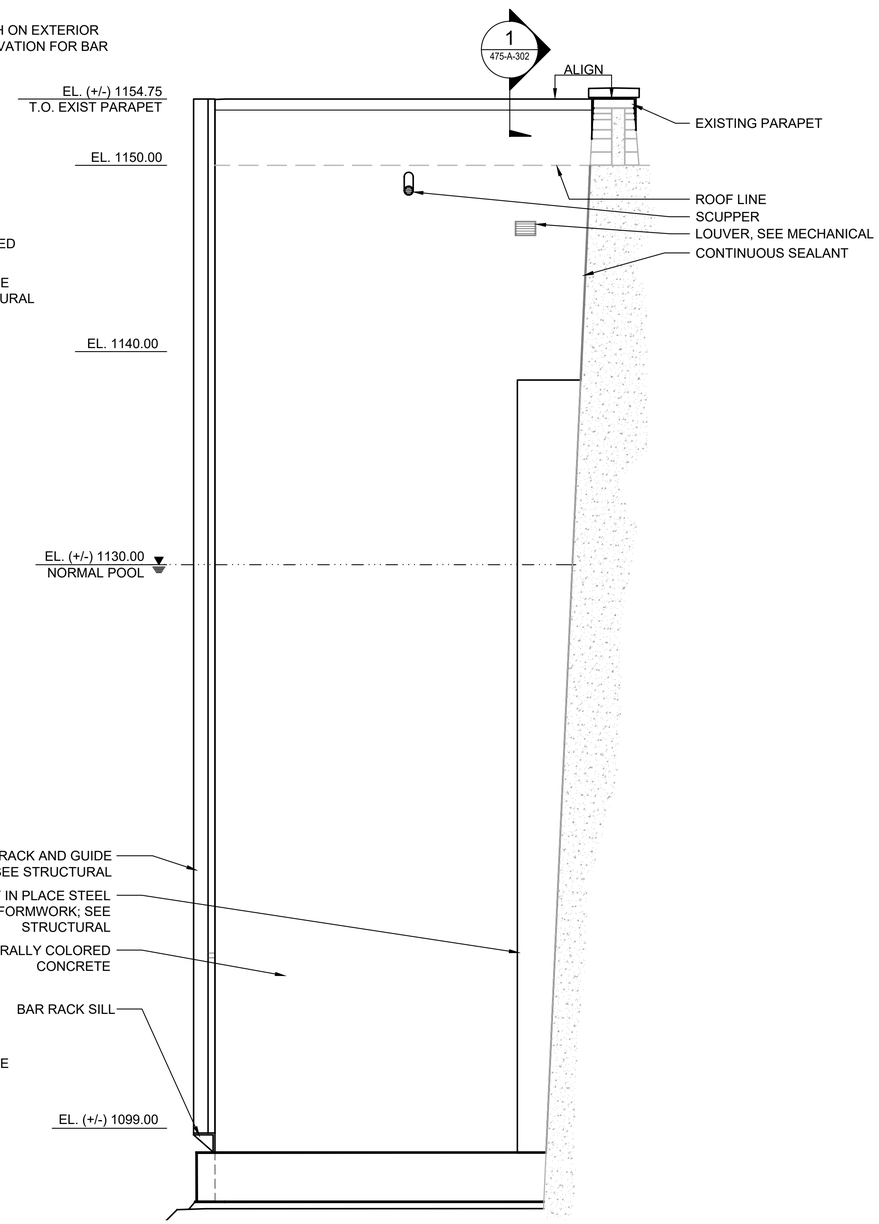

1 475-A-201 **WEST ELEVATION**

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




2 475-A-201 **SOUTH ELEVATION**

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




3 475-A-201 **EAST ELEVATION**

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

0 4 8 FT.
1/4"=1'-0"

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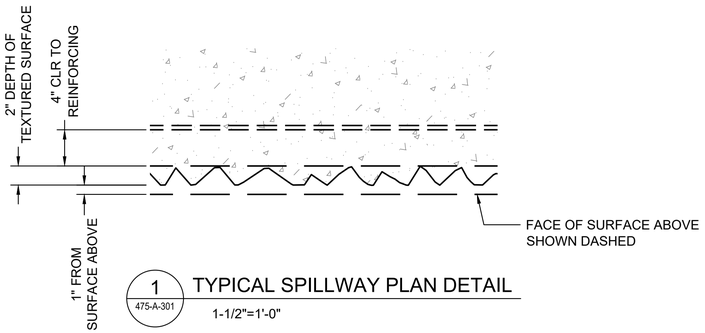
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
ARCHITECTURAL
HIGH LEVEL RELEASE TOWER ELEVATIONS

DATE: AUGUST 2026
SHEET NO: 84 of 112
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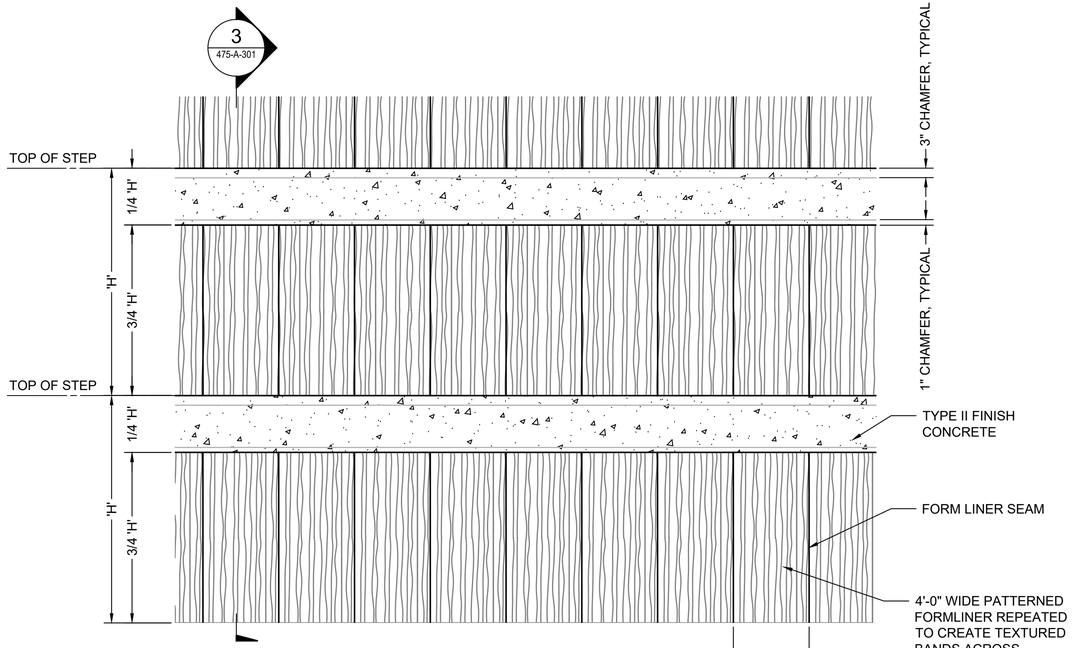
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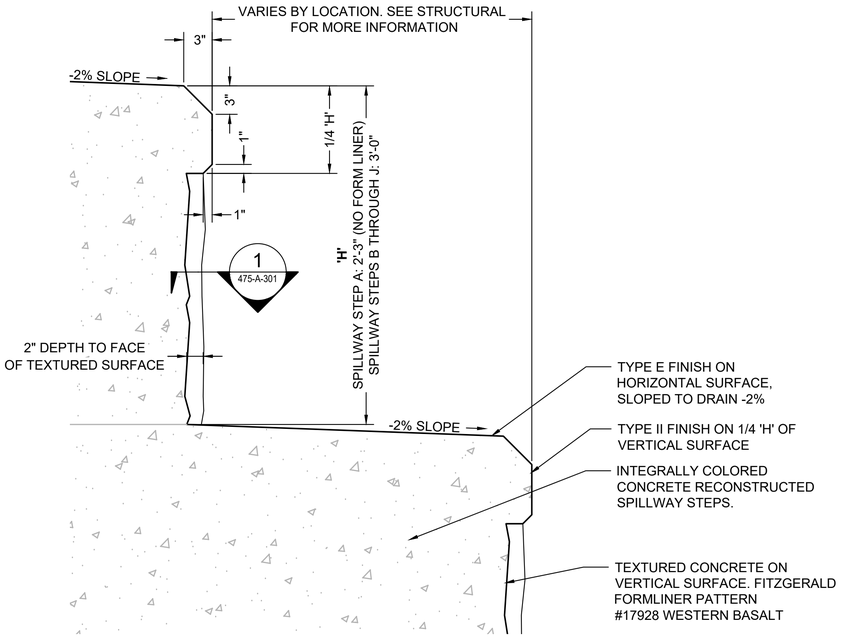

1 475-A-301 **TYPICAL SPILLWAY PLAN DETAIL**

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




2 475-A-301 **TYPICAL SPILLWAY ELEVATION**

1/4"=1'-0"




3 475-A-301 **TYPICAL SPILLWAY STEP DETAIL**

1 1/2"=1'-0"

0 4 8 FT.
1/4"=1'-0"
0 1 1-1/2 FT.
1-1/2"=1'-0"

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DRAWN BY: DWC
CHECKED BY: EC
DESIGN LEAD: F. ERIC GOSHOW, FAIA
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
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NYC Environmental Protection

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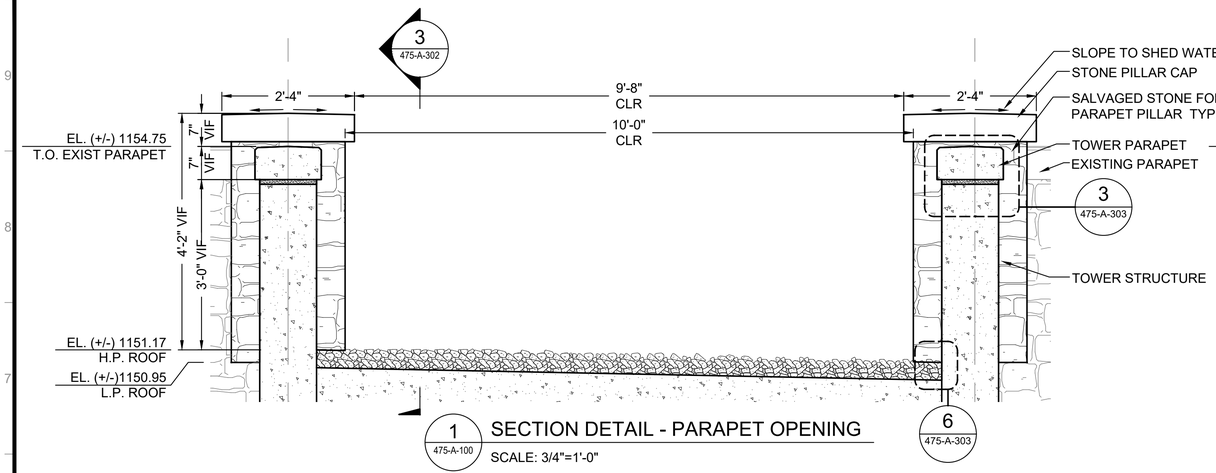
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**AT GILBOA DAM AND CREST GATE REMOVAL**
ARCHITECTURAL
SPILLWAY STEPS
CONCRETE FORM LINER DETAILS

DATE: AUGUST 2026
SHEET NO: 85 of 112
DRAWING NO. 475-A-301

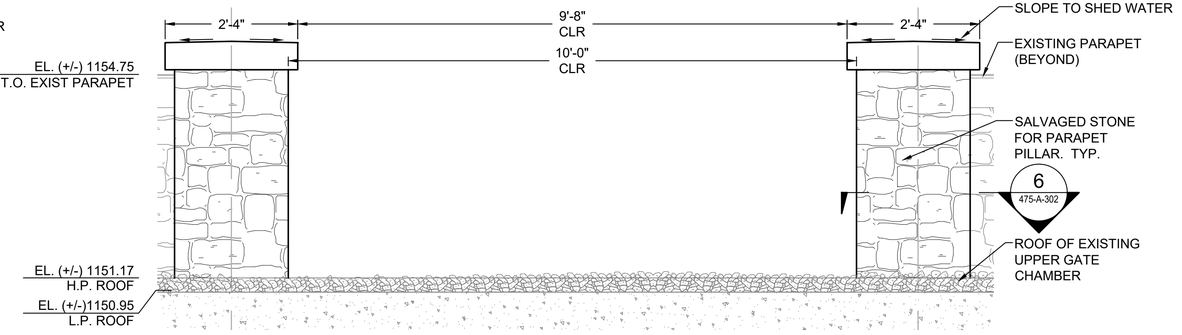
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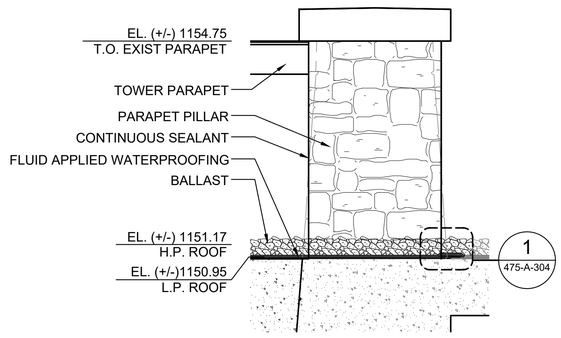

1 475-A-100 SECTION DETAIL - PARAPET OPENING

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



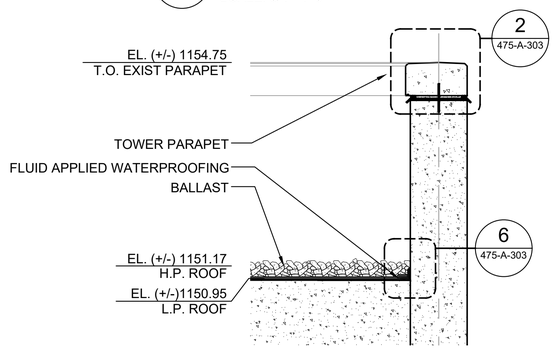

2 475-A-100 SECTION DETAIL - PARAPET OPENING

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



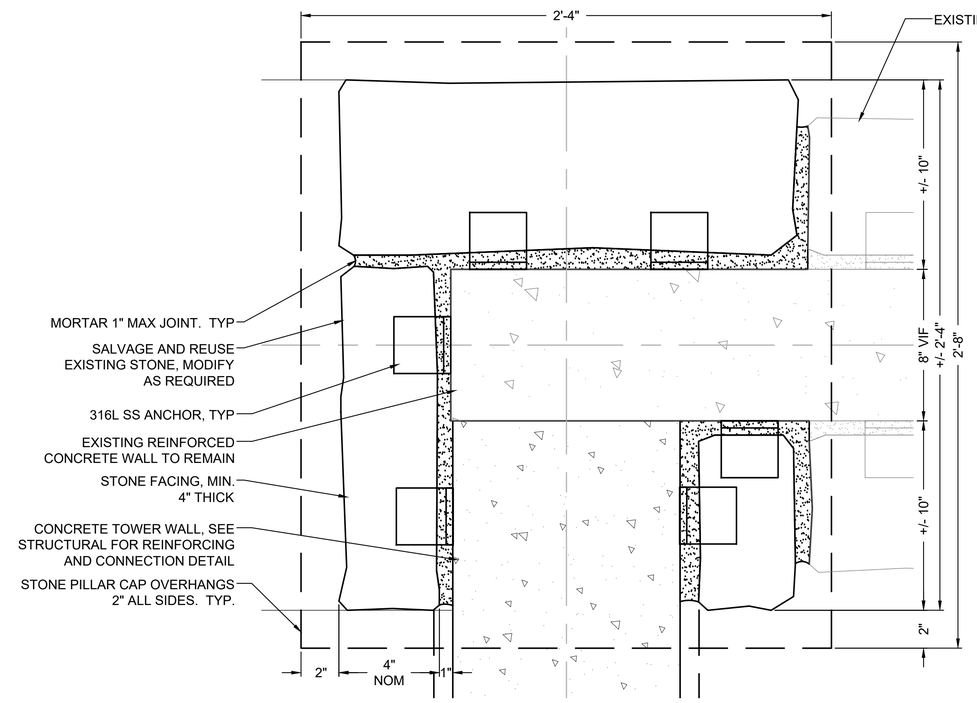

3 475-A-302 SECTION DETAIL - PARAPET OPENING

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




4 475-A-201 SECTION DETAIL - TOWER PARAPET

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




5 475-A-302 PLAN DETAIL - STONE PILLAR

SCALE: 3"=1'-0"

3"=1'-0" 0 3 6 9 IN.

3/4"=1'-0" 0 1 2 3 FT.

GRAPHIC SCALES CHECK BEFORE USE

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DESIGNED BY: EC
DRAWN BY: DWC
CHECKED BY: EC
DESIGN LEAD: F. ERIC GOSHOW, FAIA
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
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NEW YORK, NEW YORK 10018

REGISTERED ARCHITECT F. ERIC GOSHOW 012251 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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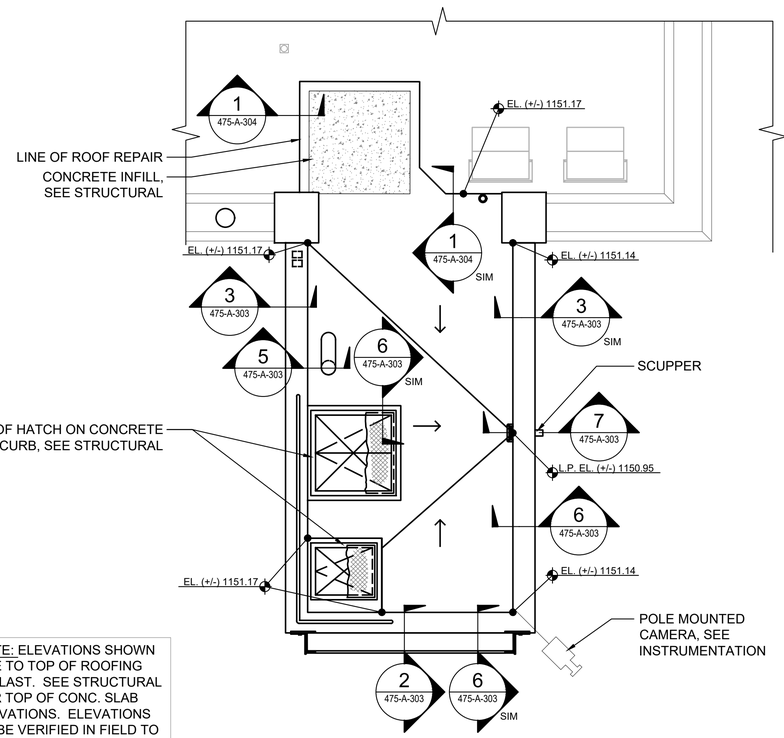
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
ARCHITECTURAL
HIGH LEVEL RELEASE TOWER
MASONRY DETAILS

DATE: AUGUST 2026
SHEET NO: 86 of 112
DRAWING NO. 475-A-302

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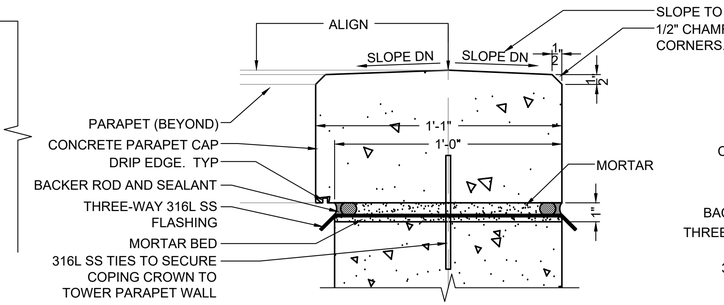
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Last Date Saved: 8/4/2026 10:33 AM
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Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb




NOTE: ELEVATIONS SHOWN ARE TO TOP OF ROOFING BALLAST. SEE STRUCTURAL FOR TOP OF CONC. SLAB ELEVATIONS. ELEVATIONS TO BE VERIFIED IN FIELD TO MATCH TOP OF EXISTING ROOF BALLAST ON UPPER GATE CHAMBER

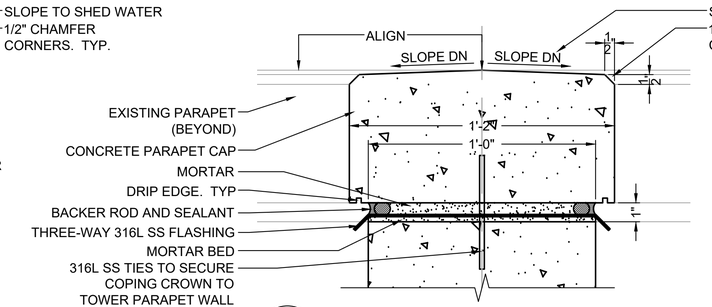
1 / 475-A-303 — PLAN - TOWER ROOF

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



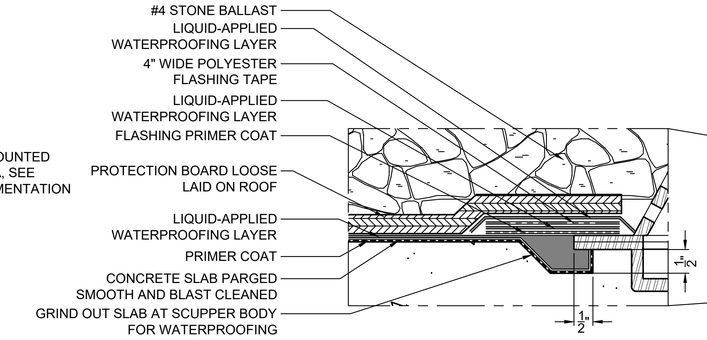

2 / 475-A-302 — DETAIL-CONCRETE PARAPET CAP SOUTH WALL

SCALE: 3"=1'-0"



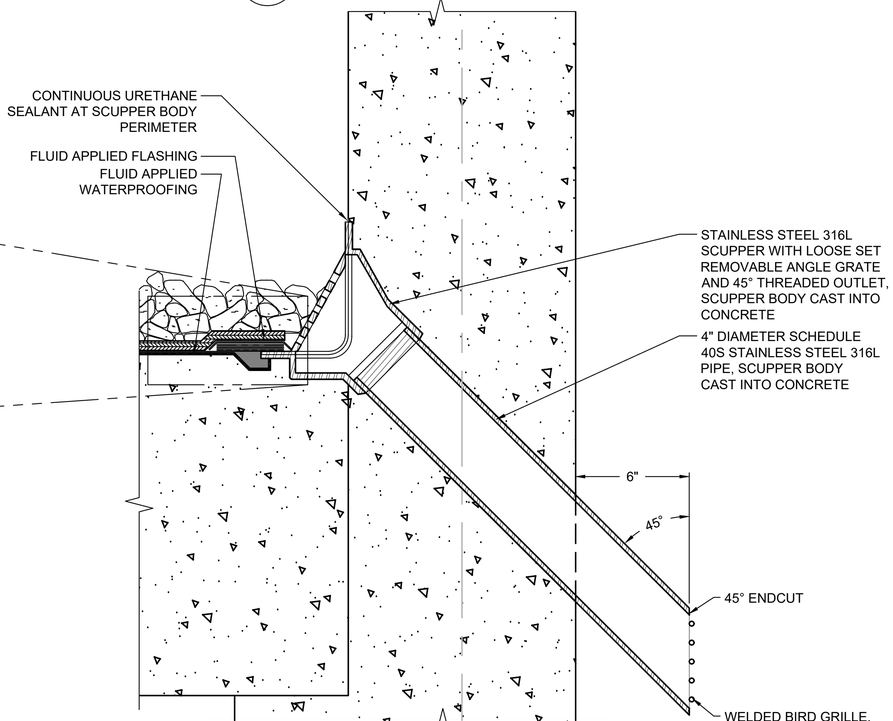

3 / 475-A-302 — DETAIL-CONCRETE PARAPET CAP TYP

SCALE: 3"=1'-0"



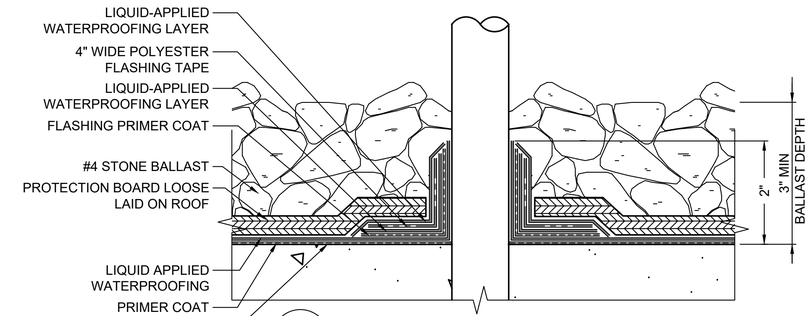

4 / 475-A-303 — DETAIL - FLASHING AT SCUPPER

SCALE: 6"=1'-0"



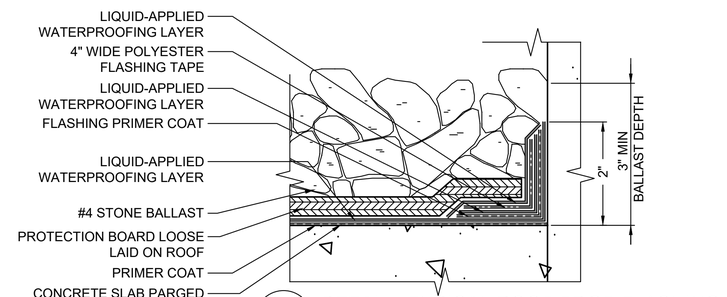

7 / 475-A-303 — DETAIL-SCUPPER ROOF

SCALE: 3"=1'-0"




5 / 475-A-303 — DETAIL - ROOF PENETRATION FLASHING

SCALE: 6"=1'-0"




6 / 475-A-303 — DETAIL - TYPICAL ROOF EDGE FLASHING

SCALE: 6"=1'-0"

0 1 2 5 IN. — 6"=1'-0"

0 3 6 9 IN. — 3"=1'-0"

0 1 2 3 FT. — 3/4"=1'-0"

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DRAWN BY: DWC
CHECKED BY: EC
DESIGN LEAD: F. ERIC GOSHOW, FAIA
SECTION MANAGER: CHRISTOPHER BAILEY, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
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NEW YORK, NEW YORK 10018

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NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
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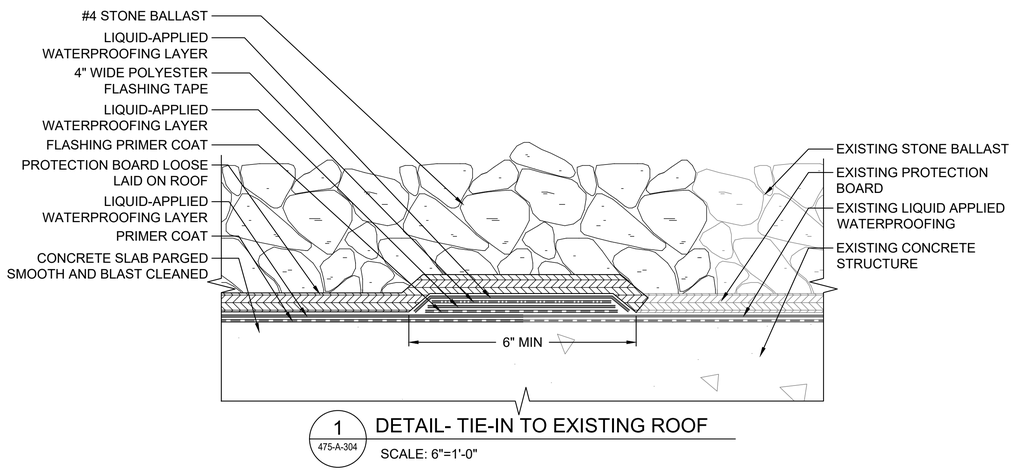
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION AT GILBOA DAM AND CREST GATE REMOVAL**
ARCHITECTURAL
HIGH LEVEL RELEASE TOWER
ROOF DETAILS - SHEET 1 OF 2

DATE: AUGUST 2026
SHEET NO: 87 of 112
DRAWING NO. 475-A-303

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Date & Time Plotted: 8/6/2026 9:25 AM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb
Last Date Saved: 8/4/2026 10:34 AM




1 / 475-A-304 DETAIL- TIE-IN TO EXISTING ROOF

SCALE: 6"=1'-0"

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0 1 2 5 IN.
6"=1'-0"

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DRAWN BY: DWC
CHECKED BY: EC
DESIGN LEAD: F. ERIC GOSHOW, FAIA
SECTION MANAGER: CHRISTOPHER BAILEY, PE

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**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
ARCHITECTURAL
HIGH LEVEL RELEASE TOWER
ROOF DETAILS - SHEET 2 OF 2

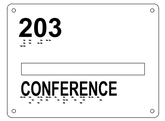
DATE: AUGUST 2026
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DRAWING NO. 475-A-304

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Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb

| FINISH SCHEDULE | | | | |
|---|---|---|---|---|
| ROOM NAME | ROOM FLOOR FINISH | ROOM WALL FINISH | ROOM CEILING FINISH | REMARKS |
| HIGH LEVEL RELEASE TOWER | CONCRETE | PAINT CONC. WALLS | PAINT | EXISTING STONE WALL WITHIN SPACE TO BE CLEANED. SEE SPEC 04 01 00 |
| UPPER GATE CHAMBER | EXISTING | PAINT | PAINT | |

NOTE: SEE SPECIFICATION SECTION 03 35 00 FOR CONCRETE FINISHING REQUIREMENTS




TYPE B-1:
ROOM NAME & NUMBER
SCALE 3" = 1'-0"



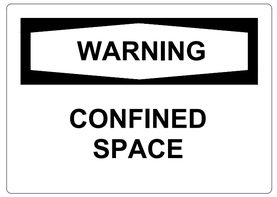

TYPE B-2:
DOOR NUMBER
SCALE 3" = 1'-0"




TYPE E-1:
EXIT
SCALE 3" = 1'-0"




TYPE F-1:
FIRE EXTINGUISHER
3-WAY SIGN
SCALE 3" = 1'-0"




TYPE I-2:
WARNING
SCALE 3" = 1'-0"



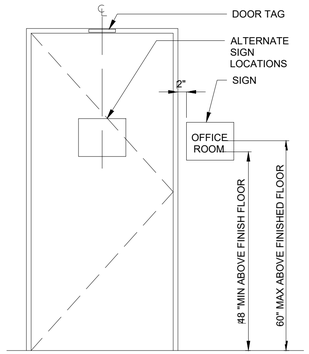

TYPE O-1:
GENERAL
SCALE 3" = 1'-0"




TYPE N-2:
NOTICE
SCALE 3" = 1'-0"




TYPE N-4:
NOTICE
SCALE 3" = 1'-0"




SIGNAGE MOUNTING

0 3 6 9 IN.
3"=1'-0"

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**SCHOHARIE RESERVOIR CAT-475**
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**AT GILBOA DAM AND CREST GATE REMOVAL**
ARCHITECTURAL
HIGH LEVEL RELEASE TOWER
FINISH SCHEDULE AND SIGNAGE

DATE: AUGUST 2026
SHEET NO: 89 of 112
DRAWING NO. 475-A-310

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Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb

## ACTUATORS:

- CYLINDER (XX)
- MOTOR (XX)
- ELECTROPNEUMATIC (XX)
- ELECTROHYDRAULIC (XX)
- MANUAL (SHOWN ONLY FOR CERTAIN HAND OPERATED VALVES)
- SOLENOID (XX)
- DIAPHRAM (SPRING OPPOSED) (XX)
- DIAPHRAM (PRESSURE BALANCED) (XX)
- PRESSURE OR VACUUM RELIEF SPRING OR WEIGHT LOADED

NOTE: ON LOSS OF PRIMARY POWER (PNEUMATIC OR ELECTRICAL)
XX DENOTES ONE OF THE FOLLOWING:
FO = FAIL OPEN
FC = FAIL CLOSED
FI = FAIL TO INTERMEDIATE POSITION
BLANK = FAIL TO LAST POSITION

## EQUIPMENT TAGGING:

X-NNN
- X DENOTES ONE OF THE FOLLOWING:
  M=MECHANICAL EQUIPMENT
  P=PUMP
  T=TANK
  V=VALVE
  CFD=CHEMICAL FEEDER
- NNN = LOOP NUMBER

## INSTRUMENT & FUNCTION TAGGING:

XXX
NNNX
- XXX=FUNCTIONAL INSTRUMENT IDENTIFICATION LETTERS FROM INSTRUMENT IDENTIFICATION TABLE.
- X=LETTER SUFFIX TO DISTINGUISH BETWEEN INSTRUMENTS IN LOOP WITH SAME FUNCTIONAL IDENTIFICATION. (USED AS REQ'D)
- NNN=LOOP NUMBER

## INSTRUMENT LINE SYMBOLS:

- CONNECTION TO PROCESS
- PNEUMATIC SIGNAL
- ELECTRICAL SIGNAL
- CAPILLARY TUBING
- HYDRAULIC SIGNAL
- ELECTROMAGNETIC, SONIC SIGNAL, OR RADIATION
- SOFTWARE LINK OR MANUFACTURER'S SYSTEM SUPPLIED CONNECTIONS BETWEEN FUNCTIONS

## EQUIPMENT:

- CENTRIFUGAL PUMP (DRY PIT) (XX)
- CENTRIFUGAL PUMP (WET PIT) (XX)
- EJECTOR, EDUCTOR
- METERING PUMP-CHEMICAL
- CENTRIFUGAL COMPRESSOR OR BLOWER (XX)
- RECIPROCATING COMPRESSOR (PD) (XX)
- ROTARY COMPRESSOR (PD) OR BLOWER (XX)
- MOTOR (M)
- MIXER (XX)
- VERTCAL TURBINE PUMP

XX DENOTES ONE OF THE FOLLOWING:
CS = CONSTANT SPEED
2S = TWO SPEED
VS = VARIABLE SPEED

- POSITIVE DISPLACEMENT PUMP

## VALVE STATES:

- TWO-WAY VALVE, NORMALLY OPEN
- TWO-WAY VALVE, NORMALLY CLOSED
- THREE-WAY VALVE, TOTALLY-FILLED PORT BLOCKED AND PARTIALLY-FILLED PORT OPENED WHEN DEACTIVATED. PORT STATES REVERSE WHEN ACTIVATED.

## EXPLANATORY NOTATIONS:

- NN/XX — FLOW STREAM No NN TO SHEET No XX
- FLOW STREAM TO OR FROM EQUIPMENT NOT SHOWN ON OTHER P&ID DRAWINGS
- DETAIL 1 (DETAIL NUMBER) — 1/4" =1'-0" EI-CG-XXX (SHEET WHERE DETAIL IS TAKEN)

## ELECTRONIC INSTRUMENTS:

- EXISTING EXTENSOMETERS - TO BE AUTOMATED
- EXISTING PIEZOMETER - TO BE AUTOMATED
- EXISTING INCLINOMETERS - TO BE AUTOMATED
- NEW INCLINOMETERS TO BE AUTOMATED
- NEW PIEZOMETERS TO BE AUTOMATED
- NEW LOAD CELL ANCHOR TO BE AUTOMATED
- EXISTING SENTINAL LOAD CELL ANCHORS TO BE AUTOMATED
- (RG) NEW RAIN GAUGE TO BE AUTOMATED

## MISCELLANEOUS:

- DIAPHRAGM SEAL
- ANNULAR DIAPHRAGM
- RUPTURE DISK (PRESSURE RELIEF)
- RUPTURE DISK (VACCUUM RELIEF)
- (REGULATED SIDE) PRESSURE REGULATOR
- VENT TO ATMOSPHERE
- AIR GAP
- TWO WAY VALVE FAIL OPEN
- TWO WAY VALVE FAIL CLOSE
- ANY VALVE, FAIL LOCKED (POSITION DOES NOT CHANGE)
- PINCH VALVE
- (XP) PURGE SET
  X DENOTES: W=WATER
  A=AIR
- FLOW STRAIGHTENER
- (X) EQUIPMENT CONNECTION WITH ELECTRICAL INTERLOCK
- (XG) SIGHT GLASS
  X DENOTES: F=FLOW
  L=LEVEL
- PRESSURE GAUGE
- SYSTEM/EQUIPMENT GROUND
- ISOLATED GROUND
- OMNIDIRECTIONAL ANTENNA
- DIRECTIONAL ANTENNA
- CCTV CAMERA
- (PTZ) PAN TILT ZOOM CCTV CAMERA

## VALVES & GATES:

- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE GLOBE, GATE, PINCH OR OTHER IN-LINE VALVE
- ROTARY VALVE
- DIAPHRAM VALVE
- PLUG VALVE
- THREE WAY VALVE (ARROW IF SHOWN INDICATES FAIL OPEN PATH)
- TELESCOPING VALVE
- SLUICE GATE
- PREFABRICATED SLIDE GATE
- UNCLASSIFIED GATE (SEE SPECIFICATIONS)
- KNIFE GATE VALVE

- EXISTING PIEZOMETER TO BE AUTOMATED
- NEW INCLINOMETER TO BE AUTOMATED
- EXISTING INCLINOMETER TO BE AUTOMATED
- NEW PIEZOMETER TO BE AUTOMATED

} ELEVATED WITH TVSS ENCLOSURE

### INSTRUMENT/FUNCTION & LOCATION SYMBOLS

| | FIELD (LOCAL) MOUNTED | PANEL MOUNTED | | MOTOR CONTROL CENTER MOUNTED | |
|---|---|---|---|---|---|
| | | ACCESSIBLE OR EXTERIOR | INACCESSIBLE OR INTERIOR | ACCESSIBLE OR EXTERIOR | INACCESSIBLE OR INTERIOR |
| DESCRETE INSTRUMENT | ○ | ⊖ | ⊖ | ⊖ | ⊖ |
| SHARED DISPLAY/CONTROL | □ | ▭ | ▭ | ▭ | ▭ |
| COMPUTER FUNCTION | ⬡ | ⬡ | ⬡ | ⬡ | ⬡ |
| PROGRAMMABLE LOGIC CONTROL | ◇ | ◇ | ◇ | ◇ | ◇ |
| PILOT LIGHT | ◯ | ◯ | ◯ | ◯ | ◯ |
| HAND SWITCH MAINTAINED CONTACTS | HS | HS | HS | HS | HS |
| HAND SWITCH MOMENTARY CONTACTS | HMS | HMS | HMS | HMS | HMS |
| COMPOUND INSTRUMENTS (SHARE COMMON HOUSING) | ◯◯ | ⊖⊖ | ⊖⊖ | ⊖⊖ | ⊖⊖ |

### INSTRUMENT IDENTIFICATION TABLE ISA-S5.1-1984

| LETTER | FIRST LETTER | | SUCCEEDING LETTER | | |
|---|---|---|---|---|---|
| | MEASURED OR INITIATING VARIABLE | MODIFIER | READOUT OR PASSIVE FUNCTION | OUTPUT FUNCTION | MODIFIER |
| A | ANALYSIS (2) | | ALARM | | |
| B | BURNER, COMBUSTION | | | CLOSE, STOP, DECREASE ( 1 ) | OFF ( 1 ) |
| C | | | | CONTROL | |
| D | | DIFFERENTAL | | OPEN, START, INCREASE ( 1 ) | |
| E | VOLTAGE | | SENSOR (PRIMARY ELEMENT) | | ENABLED ( 1 ) |
| F | FLOW RATE | RATIO (FRACTION) | | | FAIL ( 1 ) |
| G | | | GLASS, VIEWING DEVICE | | |
| H | HAND | | | | HIGH (OPENED) |
| I | CURRENT (ELECTRICAL) | | INDICATE | | |
| J | POWER | SCAN | | | |
| K | TIME, TIME SCHEDULE | TIME RATE OF CHANGE | | CONTROL STATION | |
| L | LEVEL | | LIGHT | | LOW (CLOSED) |
| M | MOTOR, MOTION ( 1 ) | MOMENTARY | | MOTOR ( 1 ) | MIDDLE OR INTERMEDIATE |
| N | | | | | ON OR OPERATE ( 1 ) |
| O | | | ORIFICE, RESTRICTION | | OVERLOAD ( 1 ) |
| P | PRESSURE, VACUUM | | POINT (TEST) CONNECTION | PUMP ( 1 ) | |
| Q | QUANTITY (2) | INTEGRATE, TOTALIZE | | | |
| R | RADIATION | | RECORD | | |
| S | SPEED, FREQUENCY | SAFETY OR SOLENOID | | SWITCH | |
| T | TEMPERATURE | | | TRANSMIT | |
| U | MULTIVARIABLE (2) | | MULTIFUNCTION (2) | MULTIFUNCTION (2) | MULTIFUNCTION (2) |
| V | VIBRATION, MECHANICAL ANALYSIS | | | VALVE, DAMPER, LOUVER | |
| W | WEIGHT, FORCE | | WELL | | |
| X | UNCLASSIFIED (2) | | UNCLASSIFIED (2) | UNCLASSIFIED (2) | UNCLASSIFIED (2) |
| Y | EVENT, STATE, PRESENCE | | | RELAY, COMPUTE, CONVERT | |
| Z | POSITION, DIMENSION | | | DRIVER, ACTUATOR UNCLASSIFIED FINAL CONTROL ELEMENT | |

(1) USER'S CHOICE
(2) WHEN USED, SYMBOL OR SIGNAL LINE IS INDICATED.

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DESIGNED BY: CTS
CHECKED BY: TBA
DESIGN LEAD: THOMAS AUSTIN, PE
SECTION MANAGER: WESLEY HILL, PE
DRAWN BY: CTS

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK · CORRIE TATE SMITH · 104473 · LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
INSTRUMENTATION
SYMBOLS, ABBREVIATIONS, & GENERAL NOTES
(SHEET 1 OF 2)

DATE: AUGUST 2026
SHEET NO: 90 of 112
DRAWING NO. 475-I-001

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## PRIMARY ELEMENT:

### FLOW

- ELECTROMAGNETIC
- CORIOLIS
- THERMAL DISPERSION
- ULTRASONIC TRANSIT-TIME OR DOPPLER
- VENTURI
- ORIFICE PLATE
- PROPELLER OR TURBINE
- VORTEX
- ROTAMETER
- FLUME
- FLOW SWITCH
- WEIR

### LEVEL

- BUBBLER TUBE
- ULTRASONIC
- CAPACITANCE
- ELECTRODES (W/HOLDER)
- FLOAT
- OPTICAL
- RESISTANCE

### TEMPERATURE

- TEMPERATURE ELEMENT WITH TRANSMITTER

## INPUTS & OUTPUTS INTERFACED WITH COMPUTER DATA ACQUISITION & CONTROL SYSTEM:

- ANALOG INPUT
- ANALOG OUTPUT
- DIGITAL INPUT
- DIGITAL OUTPUT
- SERIAL (INPUT/OUTPUT)
- DIGITAL PULSE

## ANALYSIS INSTRUMENTS:

- AE XX — EXPOSED PROBE OR GAS DETECTION
- AE XX — TAPPED OR SAMPLED
- AE XX — IN-LINE

XX DENOTES ONE OF THE FOLLOWING:
CLG=CHLORINE GAS
CLR-CHLORINE RESIDUAL
PH=PH
T=TURBIDITY
FLR=FLOURIDE
SCD=STREAMING CURRENT
PM=PARTICLE MONITOR
PC=PARTICLE COUNTER
TOC=TOTAL ORGANIC CARBON
CON=CONDUCTIVITY
DO=DISOLVED OXYGEN
ORP=OXIDATION-REDUCTION POTENTIAL

## SIGNAL CONVERTERS

X/X — SMALL CIRCLE SIGNIFIES LOGICAL INVERSION OF SIGNAL

X DENOTES ONE OF THE FOLLOWING:

| | |
|---|---|
| A=ANALOG | Q=ELECTROMAGNETIC, SONIC |
| B=BINIARY | P=PNEUMATIC |
| D=DIGITAL | PF=PULSE FREQUENCY |
| E=VOLTAGE | PD=PULSE DURATION |
| F=FREQUENCY | R=RESISTANCE |
| H=HYDRAULIC | |
| I=CURRENT | |

## HAND SWITCHES

- HS XX — SELECTOR SWITCH (MAINTAINED CONTACTS)
- HMS XX — SPRING RETURN SWITCH OR PUSHBUTTONS (MOMENTARY CONTACTS)

XX DENOTES ONE OF THE FOLLOWING:
AM=AUTO/MANUAL
CAM=COMPUTER/AUTO/MANUAL
CL=COMPUTER/LOCAL
CM=COMPUTER/MANUAL
DOB=DRIVE/OFF/BYPASS
FOS=FAST/OFF/SLOW
FOR=FORWARD/OFF/REVERSE
FR=FORWARD/REVERSE
FS=FAST/SLOW
HOA=HAND/OFF/AUTO
KEY=KEYPAD
LOR=LOCAL/OFF/REMOTE
LOS=LOCKOUT/STOP
MFS=MODULATE FASTER/SLOWER
MOC=MODULATE OPEN/CLOSE
OC=OPEN/CLOSE
OO=ON/OFF
OSC=OPEN/STOP/CLOSE
SS=START/STOP
PB=PUSH BUTTON

## EQUIPMENT POWER:

- AC XXX / YYY — AC POWERED INSTRUMENTS
- DC XXX / YYY — DC POWERED INSTRUMENTS

XXX DENOTES POWER VOLTAGE
YYY ALPHANUMERIC CHARACTERS TO IDENTIFY THE SOURCE OF POWER

## ABBREVIATIONS:

| | |
|---|---|
| A or AMP | AMPERE |
| AC | ALTERNATING CURRENT |
| ADAS | AUTOMATIC DATA ACQUISITION SYSTEM |
| AFF | ABOVE FINISHED FLOOR |
| AFG | ABOVE FINISHED GRADE |
| ATS | AUTOMATIC TRANSFER SWITCH |
| AUTO | AUTOMATIC |
| AWG | AMERICAN WIRE GAUGE |
| BLDG | BUILDING |
| BKGV | BONNETED KNIFE GATE VALVE |
| C | CONDUIT |
| CAT5e | CATEGORY 5 ETHERNET CABLE |
| CAM | CAMERA |
| COMMS | COMMUNICATION |
| CP | CONTROL PANEL |
| CON | CONDUCTIVITY |
| CSU/DSU | CHANNEL SERVICE UNIT/DATA SERVICE UNIT |
| CCTV | CLOSED CIRCUIT TELEVISION |
| D | DIAMETER |
| DL | DATA LOGGER |
| DO | DISSOLVED OXYGEN |
| DIV | DIVISION |
| DP | DIFFERENTIAL PRESSURE OR DIGITAL PULSE |
| DSIS | DAM SAFETY INSTRUMENTATION SYSTEM |
| DSP | DIGITAL SIGNAL PROCESSING |
| DWG | DRAWING |
| EC | ELECTRICAL CONTRACTOR |
| E/FO | ETHERNET FIBER-OPTIC |
| EF | EXHAUST FAN |
| EJ | EXPANSION JOINT |
| EL | ELEVATION |
| EP | EXPLOSION PROOF |
| EX | EXTENSOMETER |
| FOPP | FIBER-OPTIC PATCH PANEL |
| FU | FUSE |
| FO | FIBER OPTIC |
| FOC | FIBER OPTIC CONDUIT |
| FP | FOUNDATION PIEZOMETER |
| GFI | GROUND FAULT INTERRUPTER |
| GRD | GROUND |
| GT | GALLERY TVSS ENCLOSURE |
| HH | HAND HOLE |
| HMI | HUMAN MACHINE INTERFACE |
| HP | HORSEPOWER |
| HRS | HOURS |
| ID | IDENTIFICATON |
| I/O | INPUT/OUTPUT |
| INCL | INCLINOMETER |
| INST | INSTRUMENT |
| IPI | IN PLACE INCLINOMETER |
| IS/OS | INDIVIDUALLY SHIELDED/OVERALL SHIELDED |
| JB | JUNCTION BOX |
| KV | KILOVOLT |
| KVA | KILOVOLT AMPERE |
| KW | KILOWATT |
| LP | LIGHT POLE |
| LC | LOAD CELL |
| LTFMC | LIQUID TIGHT FLEXIBLE METAL CONDUIT |
| MC | MEDIA CONVERTER |
| MH | MAN HOLE |
| MMFOC | MULTIMODE FIBER OPTIC CABLE |
| MMFOS8 | 8 PORT MULTIMODE FIBER OPTIC SWITCH |
| MTD | MOUNTED |
| MUX | SIGNAL MULTIPLEXER |
| N/A | NOT APPLICABLE |
| NC | NORMALLY CLOSED |
| NEMA | NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION |
| NIC | NETWORK INTERFACE CARD |
| NO | NORMALLY OPEN |
| No | NUMBER |
| NP | NAME PLATE |
| NTS | NOT TO SCALE |
| OD | OUTSIDE DIAMETER |
| ORP | OXIDATION REDUCTION POTENTIAL |
| PH | POTENTIAL OF HYDROGEN |
| PIEZO | PIEZOMETER |
| PL | POOL LEVEL |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| PNL | PANEL |
| PSTU | PUBLIC SWITCHED TELEPHONE NETWORK |
| PTZ | PAN, TILT, ZOOM |
| PVC | POLYVINYL CHLORIDE (CONDUIT) |
| RECPT | RECEPTACLES |
| REF | REFERENCE |
| RGS | RIGID GALVANIZED STEEL (CONDUIT) |
| RSS | RIGID STAINLESS STEEL |
| RTU | REMOTE TERMINAL UNIT |
| SA | SENTINEL ANCHOR |
| SAMA | SCIENTIFIC APPARATUS MAKERS ASSOCIATION |
| SCADA | SUPERVISORY CONTROL AND DATA ACQUISITION |
| SNMP | SIMPLE NETWORK MANAGEMENT PROTOCOL |
| SS | STAINLESS STEEL 304 |
| SS6 | STAINLESS STEEL 316 |
| SW | SWITCH |
| T | TURBIDITY |
| TBD | TO BE DETERMINED |
| TEMP | TEMPERATURE |
| TOG | TOP OF GROUND |
| TS | TERMINAL SERVER |
| TVSS | TRANSIENT VOLTAGE SURGE SUPPRESSION |
| TYP | TYPICAL |
| UL | UNDERWRITERS LABORATORIES |
| UON | UNLESS OTHERWISE NOTED |
| UPS | UNINTERRUPTIBLE POWER SUPPLY |
| V | VOLT |
| VS | VOLTMETER SELECTOR SWITCH |
| VW | VIBRATING WIRE |
| W | WIRE |
| WP | WEATHERPROOF |
| WS | WATER SUPPLY |
| XFMR | TRANSFORMER |
| 1-PH | SINGLE PHASE |
| 3-PH | THREE PHASE |

**BID SET**
**SUBMITTAL DATE: AUG 2026**

### NOTES:

1. ALL TWISTED SHIELDED ANALOG SIGNAL CABLES SHALL HAVE THE SHIELD GROUNDED AT THE PLC ENCLOSURE, UNLESS OTHERWISE NOTED.
2. ALL INTERCONNECTING WIRING AND TERMINATORS BETWEEN EQUIPMENT BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
3. CONTROL AND INSTRUMENTATION CONTRACTOR SHALL PROVIDE THE ELECTRICAL CONTRACTOR WITH A FULL SIZE SET OF THEIR LOOP DRAWINGS WITH TERMINAL BLOCK NUMBERS FILLED IN.
4. UPON COMPLETION OF THE JOB, THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH A FULL SIZE SET OF AS BUILT DRAWINGS. THE DRAWINGS SHALL CONTAIN ALL TERMINAL BLOCK NUMBERS AND WIRE NUMBERS.
5. UNLESS OTHERWISE NOTED, ALL DISCRETE WIRING SHALL BE #14 AWG, LEVEL 1, AND ANALOG WIRING SHALL BE #22 AWG TWISTED SHIELDED PAIR.

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DRAWN BY: CTS
CHECKED BY: TBA
DESIGN LEAD: THOMAS AUSTIN, PE
SECTION MANAGER: WESLEY HILL, PE

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STATE OF NEW YORK — SOBRIE TATE SMITH — 104473 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
INSTRUMENTATION
SYMBOLS, ABBREVIATIONS, & GENERAL NOTES (SHEET 2 OF 2)

DATE: AUGUST 2026
SHEET NO: 91 of 112
DRAWING NO. 475-I-002

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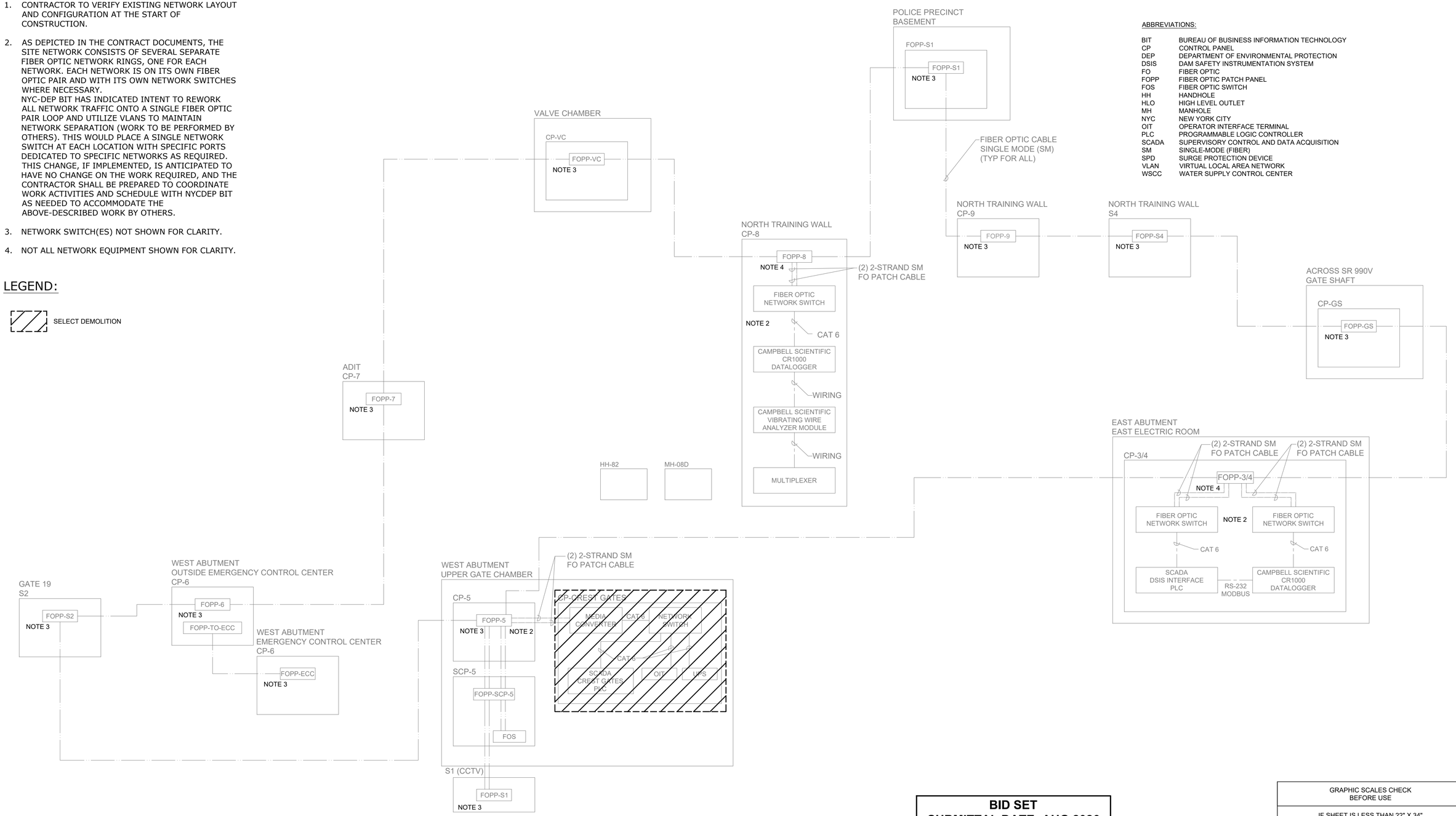
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Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb

## NOTES:

1. CONTRACTOR TO VERIFY EXISTING NETWORK LAYOUT AND CONFIGURATION AT THE START OF CONSTRUCTION.
2. AS DEPICTED IN THE CONTRACT DOCUMENTS, THE SITE NETWORK CONSISTS OF SEVERAL SEPARATE FIBER OPTIC NETWORK RINGS, ONE FOR EACH NETWORK. EACH NETWORK IS ON ITS OWN FIBER OPTIC PAIR AND WITH ITS OWN NETWORK SWITCHES WHERE NECESSARY.
   NYC-DEP BIT HAS INDICATED INTENT TO REWORK ALL NETWORK TRAFFIC ONTO A SINGLE FIBER OPTIC PAIR LOOP AND UTILIZE VLANS TO MAINTAIN NETWORK SEPARATION (WORK TO BE PERFORMED BY OTHERS). THIS WOULD PLACE A SINGLE NETWORK SWITCH AT EACH LOCATION WITH SPECIFIC PORTS DEDICATED TO SPECIFIC NETWORKS AS REQUIRED. THIS CHANGE, IF IMPLEMENTED, IS ANTICIPATED TO HAVE NO CHANGE ON THE WORK REQUIRED, AND THE CONTRACTOR SHALL BE PREPARED TO COORDINATE WORK ACTIVITIES AND SCHEDULE WITH NYCDEP BIT AS NEEDED TO ACCOMMODATE THE ABOVE-DESCRIBED WORK BY OTHERS.
3. NETWORK SWITCH(ES) NOT SHOWN FOR CLARITY.
4. NOT ALL NETWORK EQUIPMENT SHOWN FOR CLARITY.

## LEGEND:

SELECT DEMOLITION




ABBREVIATIONS:

| | |
|---|---|
| BIT | BUREAU OF BUSINESS INFORMATION TECHNOLOGY |
| CP | CONTROL PANEL |
| DEP | DEPARTMENT OF ENVIRONMENTAL PROTECTION |
| DSIS | DAM SAFETY INSTRUMENTATION SYSTEM |
| FO | FIBER OPTIC |
| FOPP | FIBER OPTIC PATCH PANEL |
| FOS | FIBER OPTIC SWITCH |
| HH | HANDHOLE |
| HLO | HIGH LEVEL OUTLET |
| MH | MANHOLE |
| NYC | NEW YORK CITY |
| OIT | OPERATOR INTERFACE TERMINAL |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| SCADA | SUPERVISORY CONTROL AND DATA ACQUISITION |
| SM | SINGLE-MODE (FIBER) |
| SPD | SURGE PROTECTION DEVICE |
| VLAN | VIRTUAL LOCAL AREA NETWORK |
| WSCC | WATER SUPPLY CONTROL CENTER |

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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SECTION MANAGER: WESLEY HILL, PE

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STATE OF NEW YORK CORRIE TATE SMITH 104473 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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INSTRUMENTATION
EXISTING SYSTEM ARCHITECTURE

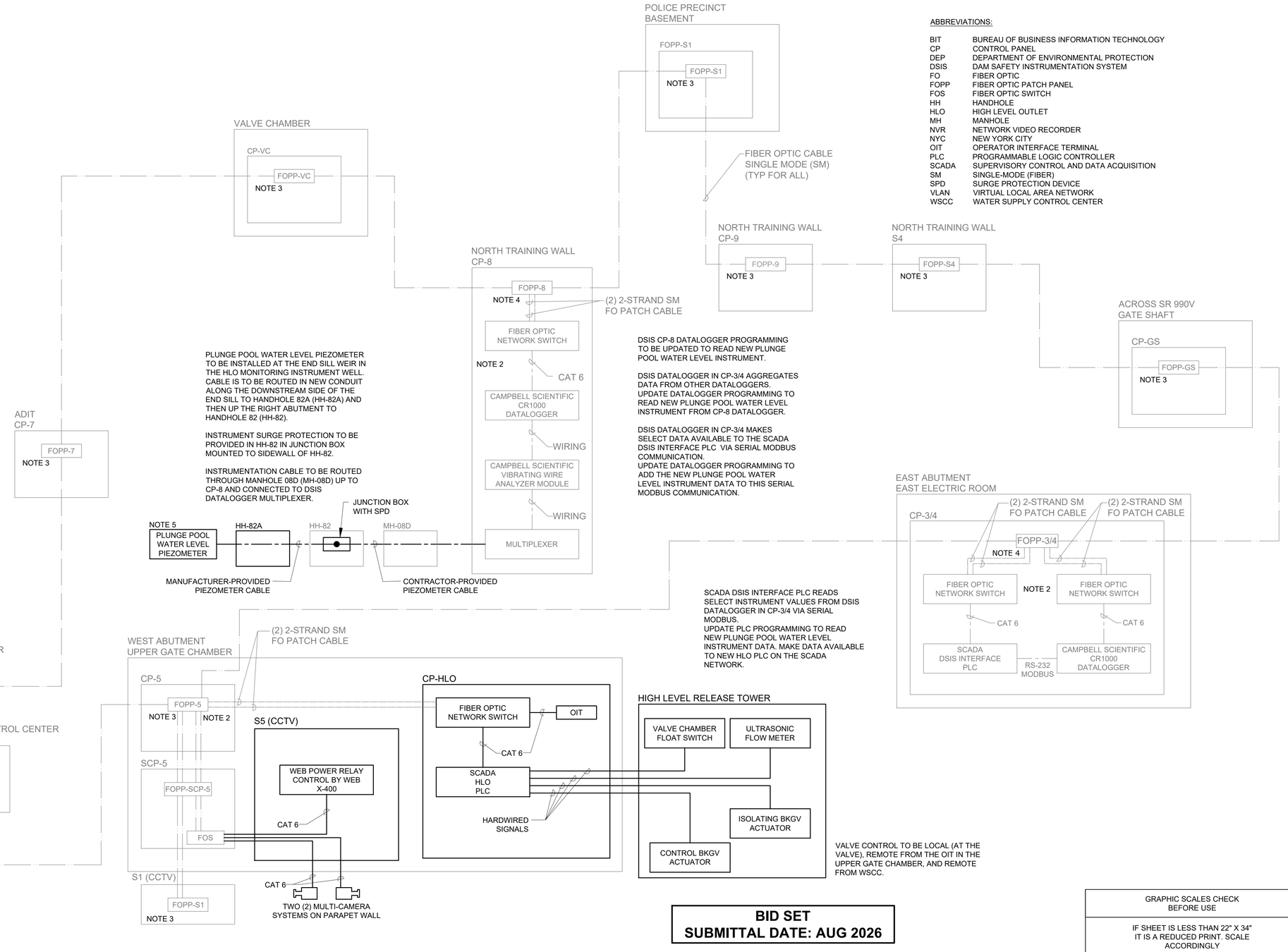
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## NOTES:

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   NYC-DEP BIT HAS INDICATED INTENT TO REWORK ALL NETWORK TRAFFIC ONTO A SINGLE FIBER OPTIC PAIR LOOP AND UTILIZE VLANS TO MAINTAIN NETWORK SEPARATION (WORK TO BE PERFORMED BY OTHERS). THIS WOULD PLACE A SINGLE NETWORK SWITCH AT EACH LOCATION WITH SPECIFIC PORTS DEDICATED TO SPECIFIC NETWORKS AS REQUIRED.
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3. NETWORK SWITCH(ES) NOT SHOWN FOR CLARITY.
4. NOT ALL NETWORK EQUIPMENT SHOWN FOR CLARITY.
5. SEE DWG NO 475-C-005 FOR ADDITIONAL INFORMATION.
6. COORDINATE CONNECTION OF NEW CAMERAS TO TWO EXISTING NVRs WITH BPS AND BWS.
7. THE EXISTING SECURITY SYSTEM, CCTV SYSTEM, AND FIBER OPTIC NETWORK THROUGH THE DAM MUST REMAIN OPERATIONAL THROUGHOUT THE LIFE OF THIS CONTRACT. IF ANY WORK IN THIS CONTRACT REQUIRES ONE OF THESE SYSTEMS TO BE DOWN TEMPORARILY, THE DOWNTIME MUST BE COORDINATED AND SCHEDULED WITH BPS VIA EMAIL BEFORE PERFORMING THE WORK. DOWNTIME OUTSIDE OF NORMAL WORKING HOURS WILL NOT BE PERMITTED.




ABBREVIATIONS:

| | |
|---|---|
| BIT | BUREAU OF BUSINESS INFORMATION TECHNOLOGY |
| CP | CONTROL PANEL |
| DEP | DEPARTMENT OF ENVIRONMENTAL PROTECTION |
| DSIS | DAM SAFETY INSTRUMENTATION SYSTEM |
| FO | FIBER OPTIC |
| FOPP | FIBER OPTIC PATCH PANEL |
| FOS | FIBER OPTIC SWITCH |
| HH | HANDHOLE |
| HLO | HIGH LEVEL OUTLET |
| MH | MANHOLE |
| NVR | NETWORK VIDEO RECORDER |
| NYC | NEW YORK CITY |
| OIT | OPERATOR INTERFACE TERMINAL |
| PLC | PROGRAMMABLE LOGIC CONTROLLER |
| SCADA | SUPERVISORY CONTROL AND DATA ACQUISITION |
| SM | SINGLE-MODE (FIBER) |
| SPD | SURGE PROTECTION DEVICE |
| VLAN | VIRTUAL LOCAL AREA NETWORK |
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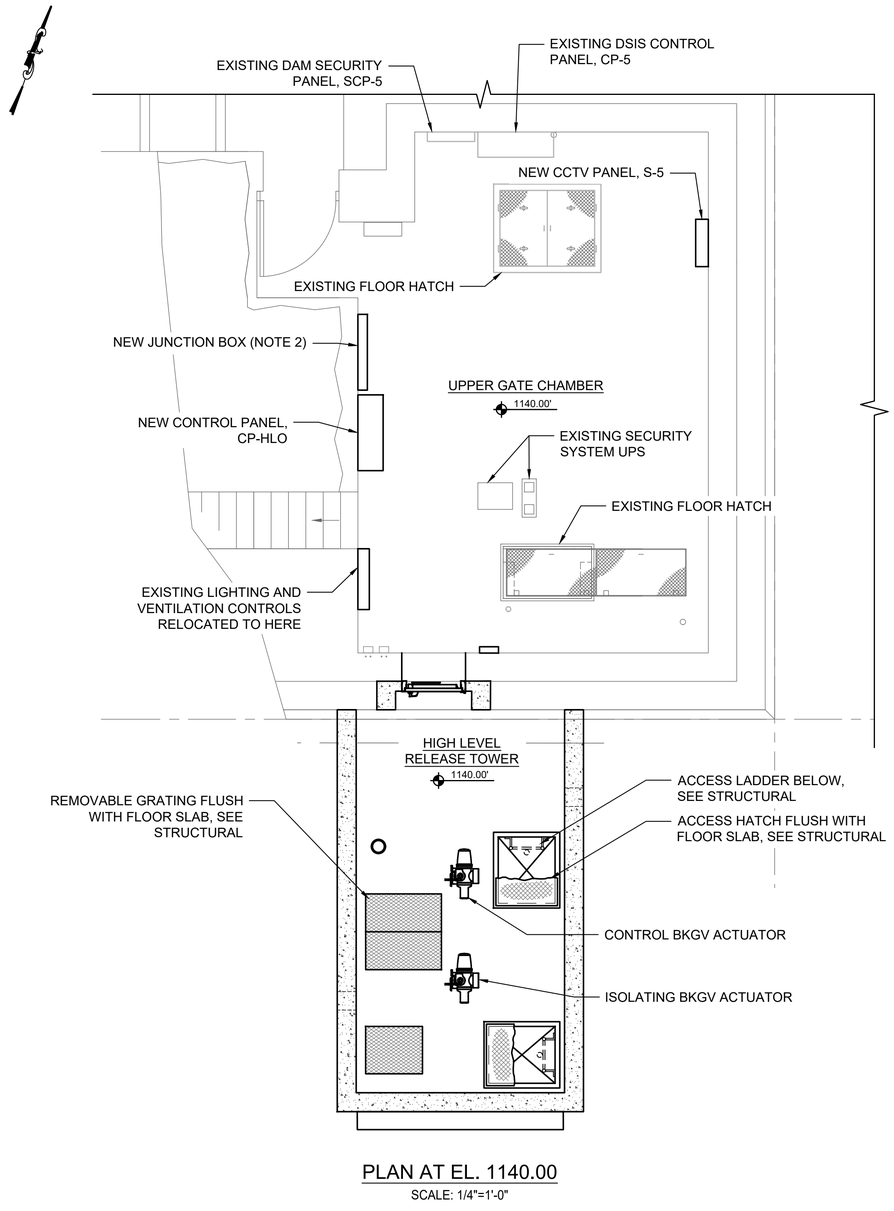
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
INSTRUMENTATION
SYSTEM ARCHITECTURE

DATE: AUGUST 2026
SHEET NO: 93 of 112
DRAWING NO. 475-I-004

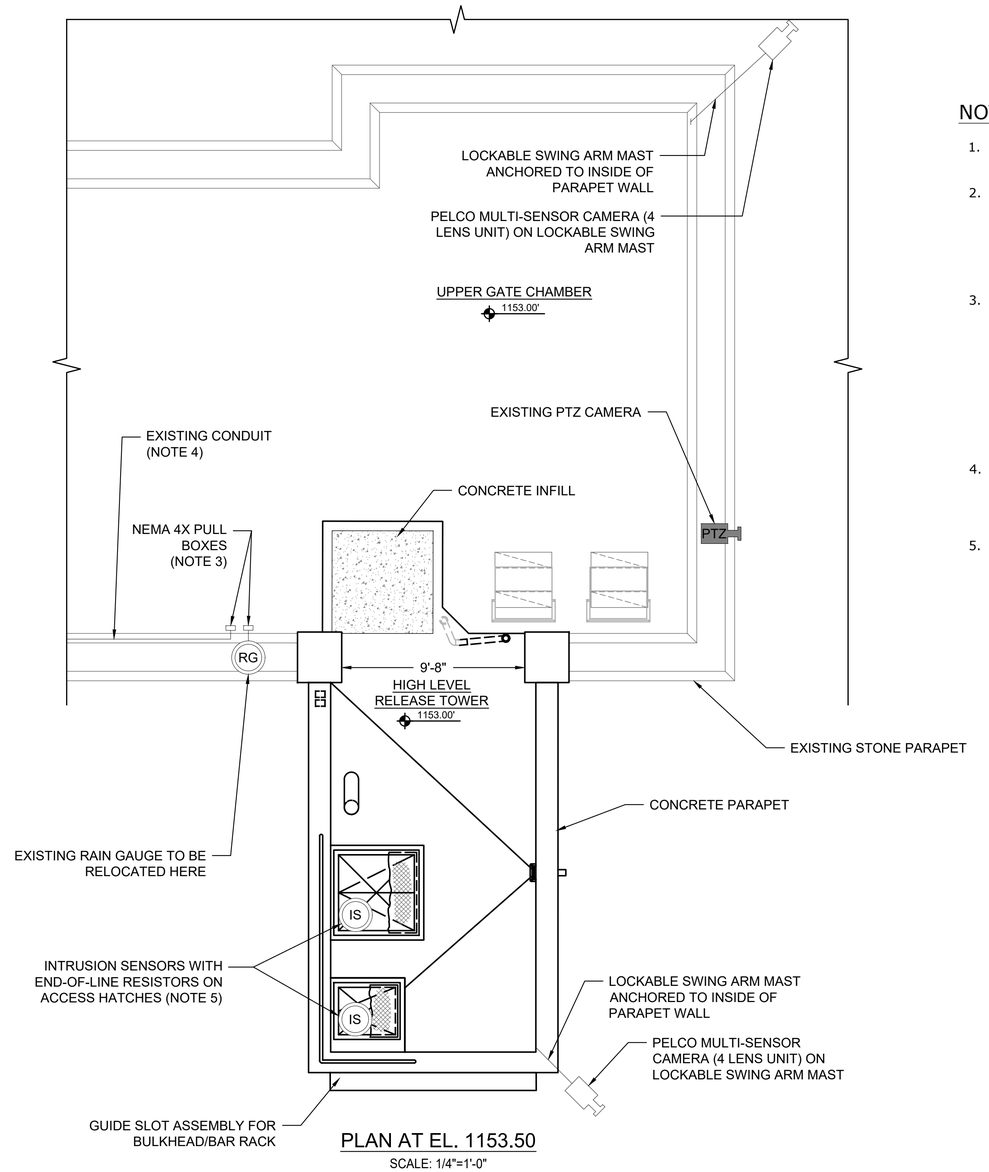
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PLAN AT EL. 1140.00

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




PLAN AT EL. 1153.50

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

## NOTES:

1. EQUIPMENT LOCATIONS AND SIZES ARE APPROXIMATE. VERIFY EXISTING CONDITIONS IN FIELD.
2. PROVIDE NEW NEMA 4X WALL-MOUNTED JUNCTION BOX TO TERMINATE ANY EXISTING SIGNAL WIRING THAT IS DESIGNATED TO REMAIN AND BE CONNECTED TO PLC-HLO. PROVIDE NEW WIRING FROM JUNCTION BOX TO CP-HLO AS REQUIRED. REFER TO I/O LIST IN SPECIFICATION 40 61 93.
3. RAIN GAUGE MUST BE RELOCATED DUE TO DEMOLITION OF A SECTION OF THE EXISTING PARAPET WALL. DEMOLITION IS EXPECTED TO AFFECT THE EXISTING CONDUIT ROUTING FOR THE RAIN GAUGE AND WEATHER STATION SIGNAL WIRING. PROVIDE NEW NEMA 4X PULL BOXES ON INSIDE OF PARAPET WALL NEAR RAIN GAUGE FOR WEATHER STATION AND RAIN GAUGE SIGNAL WIRING. PROVIDE NEW 3/4" RGS CONDUIT FROM PULL BOXES TO CP-HLO. PROVIDE NEW SIGNAL WIRING AS SHOWN IN TABLE 1 BELOW.
4. EXISTING SIGNAL WIRING CONDUIT FROM WEATHER STATION SHALL BE REUSED TO THE EXTENT POSSIBLE. REROUTE THIS CONDUIT AS REQUIRED TO CONNECT IT TO NEW PULLBOX BELOW RAIN GAUGE.
5. INTRUSION SENSORS ON NEW HATCHES SHALL BE WIRED IN SERIES TO A SINGLE INPUT OF EXISTING SECURITY PANEL SCP-5 IN THE UPPER GATE CHAMBER.

TABLE 1: RAIN GAUGE AND WEATHER STATION SIGNAL CABLES

| DESCRIPTION | FROM | TO | TYPE |
|---|---|---|---|
| TEMP. SENSOR | WEATHER STATION | CP-HLO | (1) #16 AWG TSP |
| HUMIDITY SENSOR | WEATHER STATION | CP-HLO | (1) #16 AWG TSP |
| RAIN GAUGE | RAIN GAUGE | CP-HLO | (1) #16 AWG TSP |

**BID SET**
**SUBMITTAL DATE: AUG 2026**

1/4"=1'-0" 0 4 8 FT.

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HAZEN AND SAWYER
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NEW YORK, NEW YORK 10018

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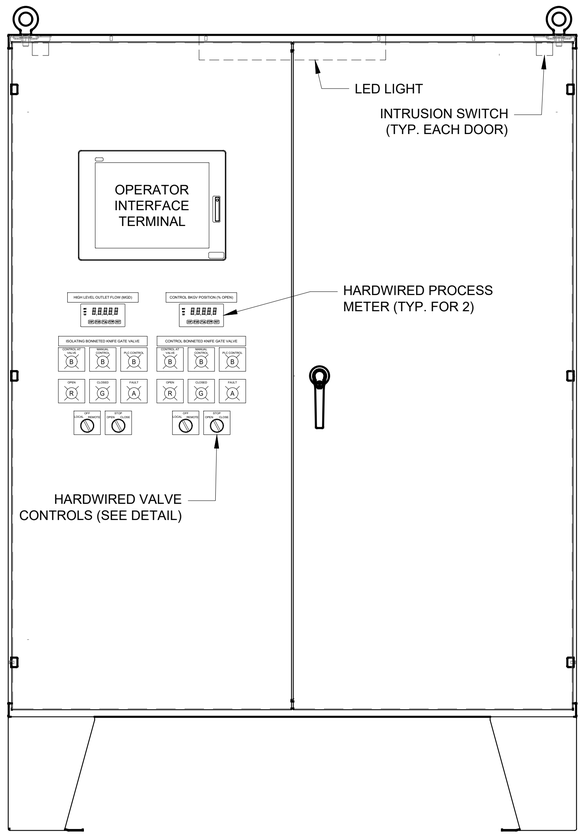
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
INSTRUMENTATION
UPPER GATE CHAMBER & HIGH LEVEL RELEASE TOWER FLOOR PLAN

DATE: AUGUST 2026
SHEET NO: 94 of 112
DRAWING NO. 475-I-005

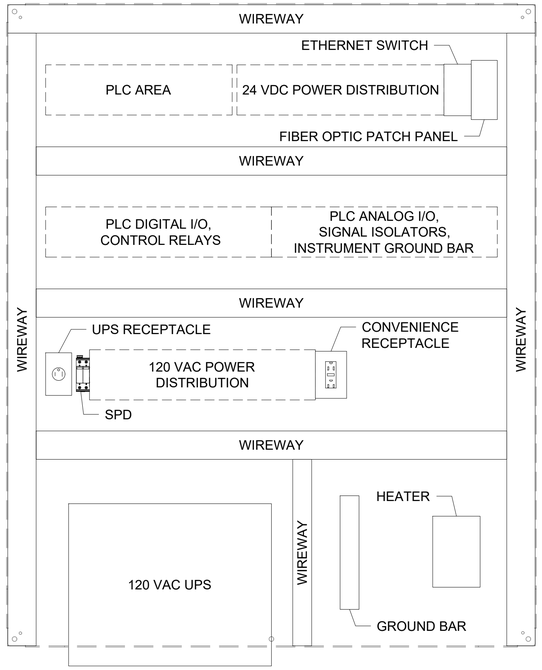
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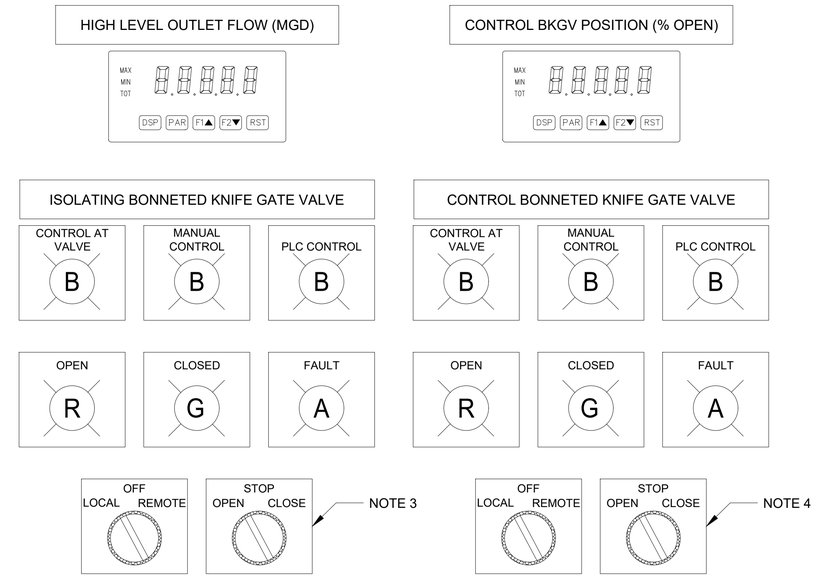

## CP-HLO ENCLOSURE DOOR LAYOUT

NOT TO SCALE




## CP-HLO SUBPANEL LAYOUT

NOT TO SCALE




## CP-HLO HARDWIRED VALVE CONTROLS DETAIL

NOT TO SCALE

## NOTES:

1. FABRICATE CONTROL PANEL IN ACCORDANCE WITH UL-508A. PROVIDE LABELING AS REQUIRED BY UL-508A AND NEC ARTICLE 409.
2. MINIMUM PANEL SCCR = 5KA @ 120V
3. OPEN-STOP-CLOSE SELECTOR SWITCH FOR ISOLATING BKGV SHALL HAVE MAINTAINED ACTION IN ALL THREE POSITIONS.
4. OPEN-STOP-CLOSE SELECTOR SWITCH FOR CONTROL BKGV SHALL HAVE MOMENTARY ACTION WITH SPRING-RETURN TO THE CENTER "STOP" POSITION.

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**SUBMITTAL DATE: AUG 2026**

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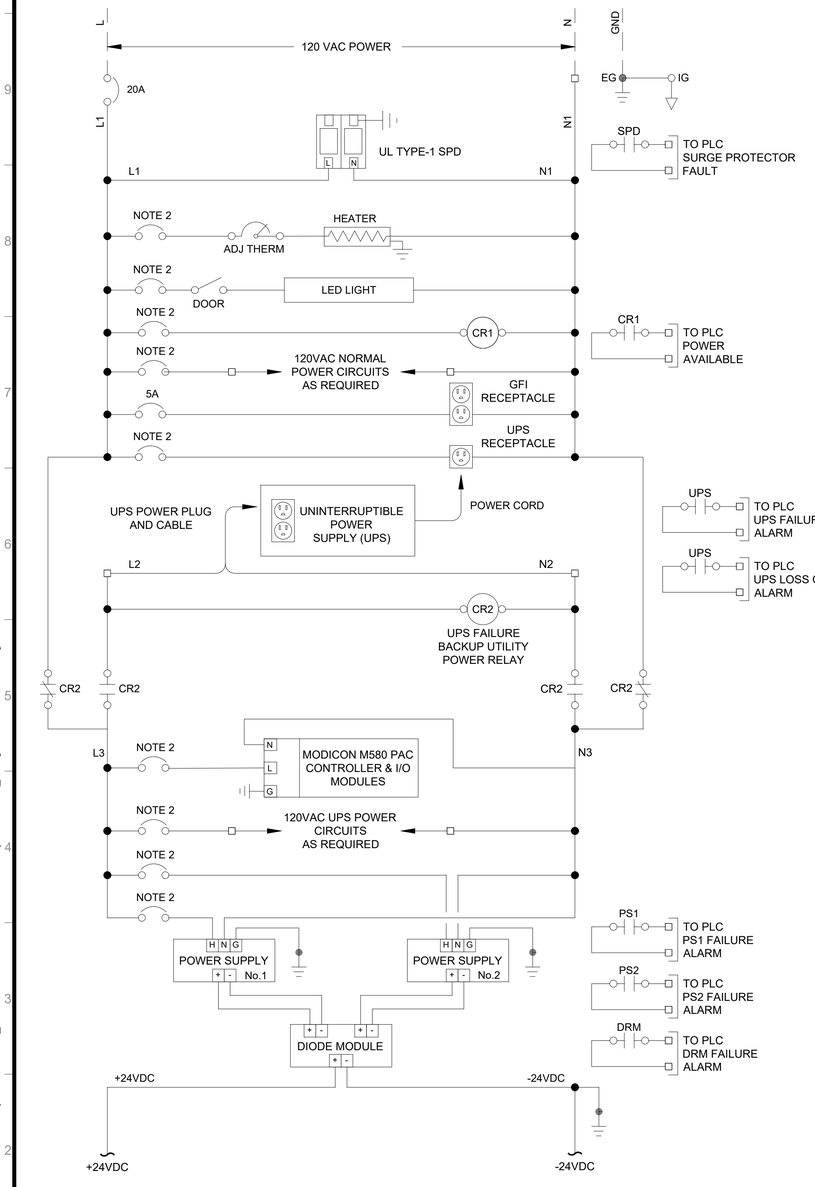
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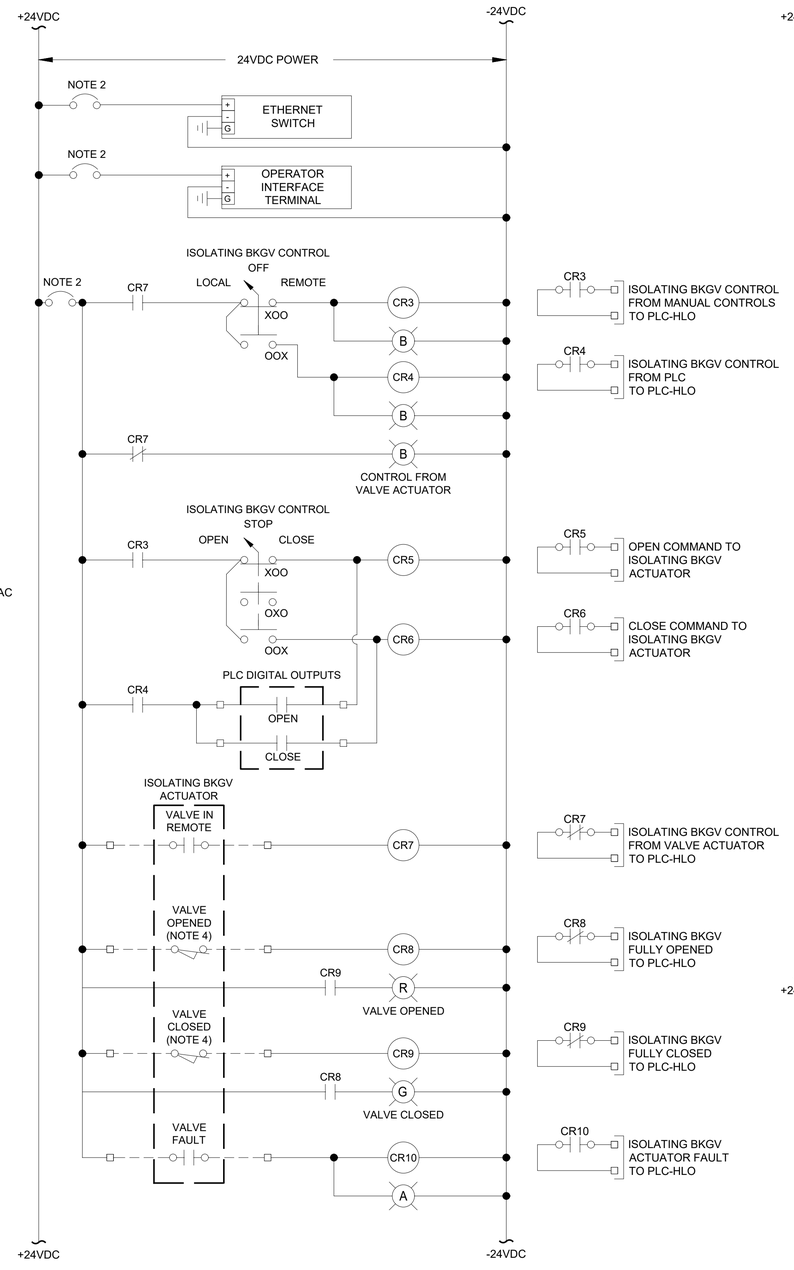
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**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
INSTRUMENTATION
CP-HLO LAYOUT

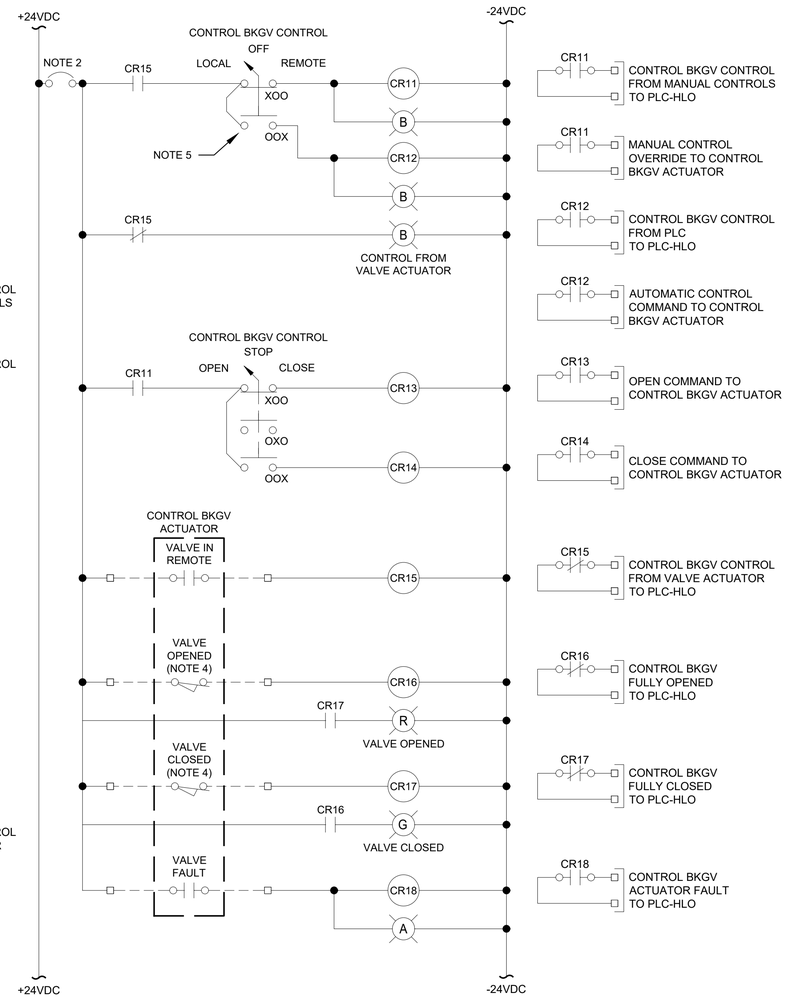
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## NOTES:

1. FABRICATE CONTROL PANEL IN ACCORDANCE WITH UL-508A. PROVIDE LABELING AS REQUIRED BY UL-508A AND NEC ARTICLE 409.
2. SIZE CONTROL CIRCUIT OVERCURRENT PROTECTION IN ACCORDANCE WITH UL-508A. OVERCURRENT PROTECTION FOR 120 VAC CONTROL CIRCUITS SHALL NOT EXCEED 10A.
3. MINIMUM PANEL SCCR = 5KA @ 120V
4. "VALVE OPENED" LIMIT SWITCHES SHALL BREAK CONTACT WHEN VALVE REACHES FULLY OPEN POSITION. "VALVE CLOSED" LIMIT SWITCHES SHALL BREAK CONTACT WHEN VALVE REACHES FULLY CLOSED POSITION. BOTH TYPES OF LIMIT SWITCHES SHALL REMAIN CLOSED FOR ALL INTERMEDIATE VALVE POSITIONS.
5. WHEN THE CONTROL BKGV CONTROL SELECTOR SWITCH IS IN THE "LOCAL" POSITION, THE VALVE SHALL RESPOND TO THE "OPEN" AND "CLOSE" CONTACT CLOSURE SIGNALS. WITH THE SWITCH IN THE "REMOTE" POSITION, THE VALVE SHALL RESPOND TO A 4-20mA POSITION COMMAND SIGNAL FROM PLC-HLO.

# PLC-HLO POWER WIRING DIAGRAM

NO SCALE:

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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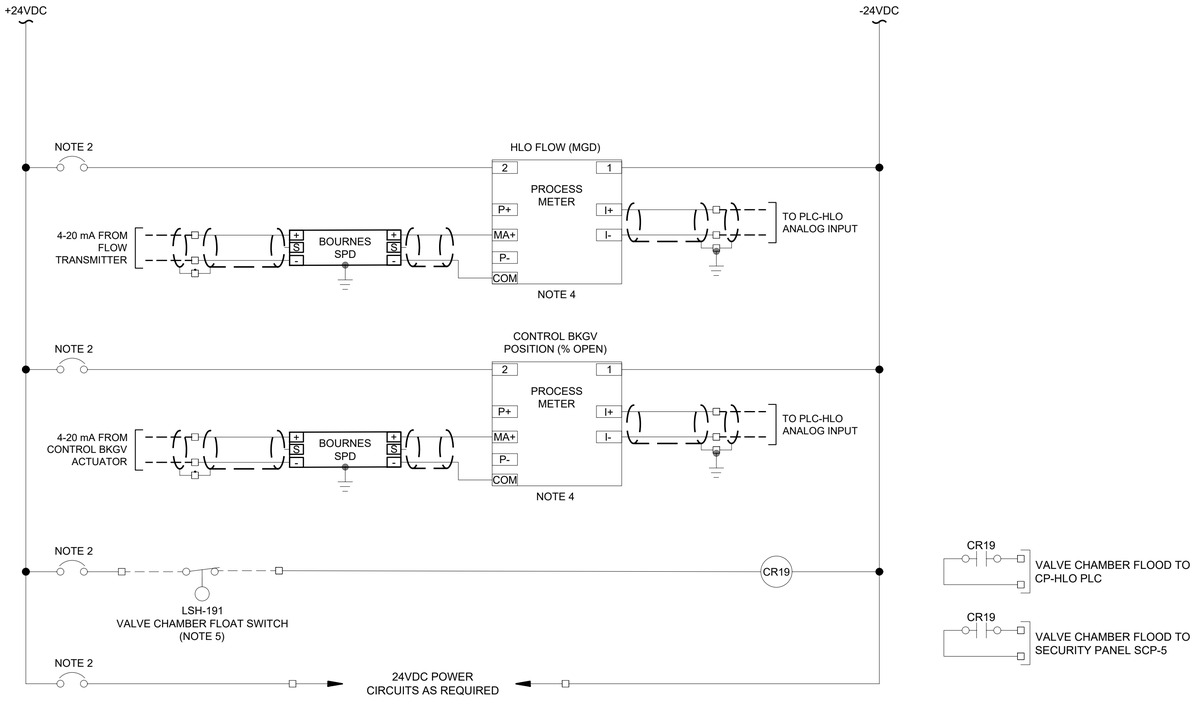
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**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
INSTRUMENTATION
CP-HLO CONCEPTUAL WIRING DIAGRAM
(SHEET 1 OF 2)

DATE: AUGUST 2026
SHEET NO: 96 of 112
DRAWING NO. 475-I-007

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# PLC-HLO POWER WIRING DIAGRAM

NO SCALE:

## NOTES:

1. FABRICATE CONTROL PANEL IN ACCORDANCE WITH UL-508A. PROVIDE LABELING AS REQUIRED BY UL-508A AND NEC ARTICLE 409.
2. SIZE CONTROL CIRCUIT OVERCURRENT PROTECTION IN ACCORDANCE WITH UL-508A. OVERCURRENT PROTECTION FOR 120 VAC CONTROL CIRCUITS SHALL NOT EXCEED 10A.
3. MINIMUM PANEL SCCR = 5KA @ 120V
4. PROCESS METER WIRING SHOWN IS BASED ON PRECISION DIGITAL PD765-6X3-20 PROCESS METERS.
5. VALVE CHAMBER FLOAT SWITCH SHALL BE CONFIGURED FOR NORMALLY CLOSED CONTACTS FOR NORMAL CONDITIONS AND OPEN CONTACTS FOR FLOOD CONDITION. PROVIDE ALL REQUIRED WIRING TO MONITOR FLOAT SWITCH IN CP-HLO PLC AND SECURITY PANEL SCP-5.

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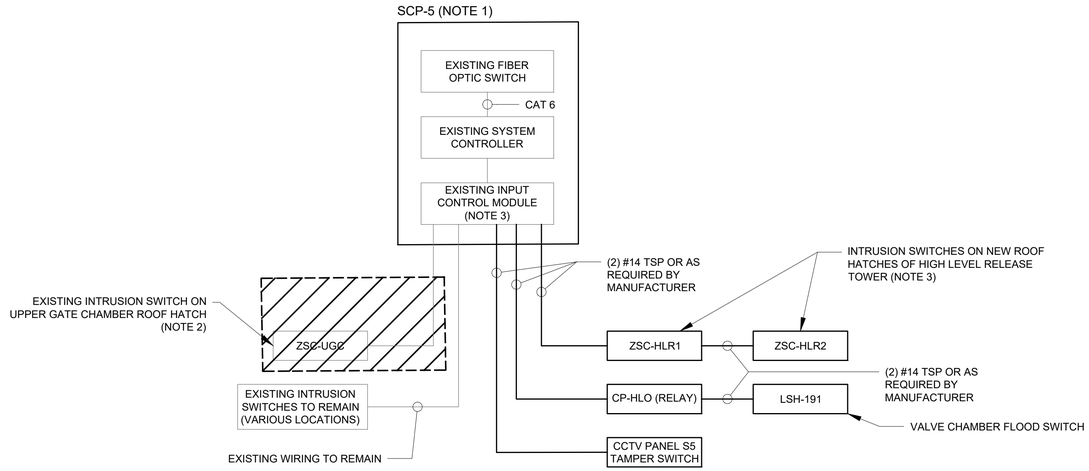
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**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
INSTRUMENTATION
CP-HLO CONCEPTUAL WIRING DIAGRAM
(SHEET 2 OF 2)

DATE: AUGUST 2026
SHEET NO: 97 of 112
DRAWING NO. 475-I-008

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# RISER DIAGRAM - UPPER GATE CHAMBER SECURITY SYSTEM (PARTIAL)

NOT TO SCALE

## NOTES:

1. NOT ALL SECURITY PANEL COMPONENTS ARE SHOWN FOR CLARITY.
2. REMOVE INTRUSION SWITCH AND ASSOCIATED WIRING FOR UPPER GATE CHAMBER ROOF HATCH THAT IS BEING REMOVED.
3. EXISTING LENEL INPUT MODULE HAS 8 TOTAL CHANNELS, 6 OF WHICH ARE CURRENTLY IN USE. AFTER REMOVAL OF INTRUSION SWITCH FOR THE UPPER GATE CHAMBER ROOF HATCH, THERE WILL BE 3 AVAILABLE INPUT CHANNELS. IF THERE ARE INSUFFICIENT SPARE CHANNELS TO CONNECT THE NEW INPUT DEVICES, PROVIDE AN ADDITIONAL INPUT MODULE IN THE PANEL. REFER TO DRAWING 475-I-005 FOR LOCATIONS OF NEW HATCHES AND INTRUSION SWITCHES.
4. THE EXISTING SECURITY SYSTEM MUST REMAIN OPERATIONAL THROUGHOUT THE LIFE OF THIS CONTRACT. IF ANY WORK IN THIS CONTRACT REQUIRES THE SYSTEM TO BE DOWN TEMPORARILY, THE DOWNTIME MUST BE COORDINATED AND SCHEDULED WITH BPS VIA EMAIL BEFORE PERFORMING THE WORK. DOWNTIME OUTSIDE OF NORMAL WORKING HOURS WILL NOT BE PERMITTED.

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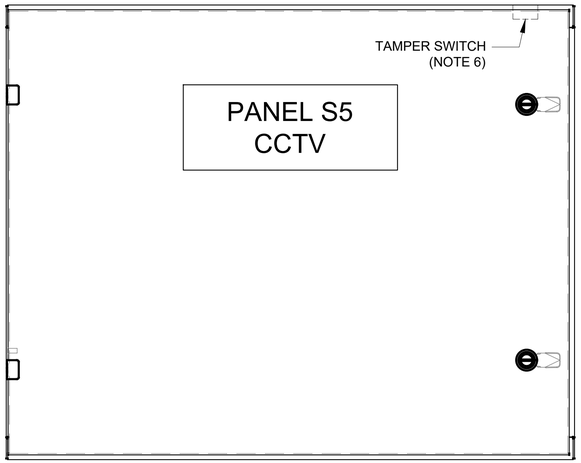
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**AT GILBOA DAM AND CREST GATE REMOVAL**
INSTRUMENTATION
UPPER GATE CHAMBER
SECURITY SYSTEM RISER DIAGRAM (PARTIAL)

DATE: AUGUST 2026
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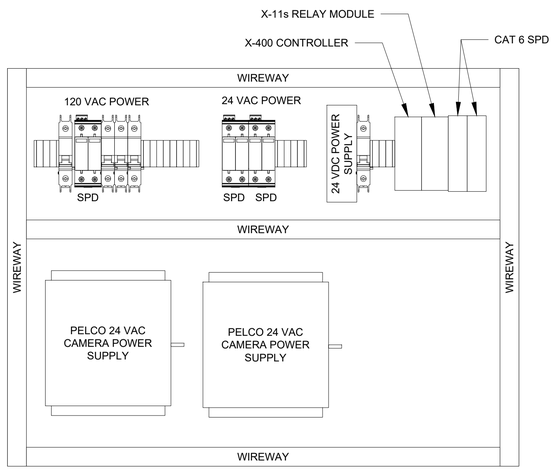
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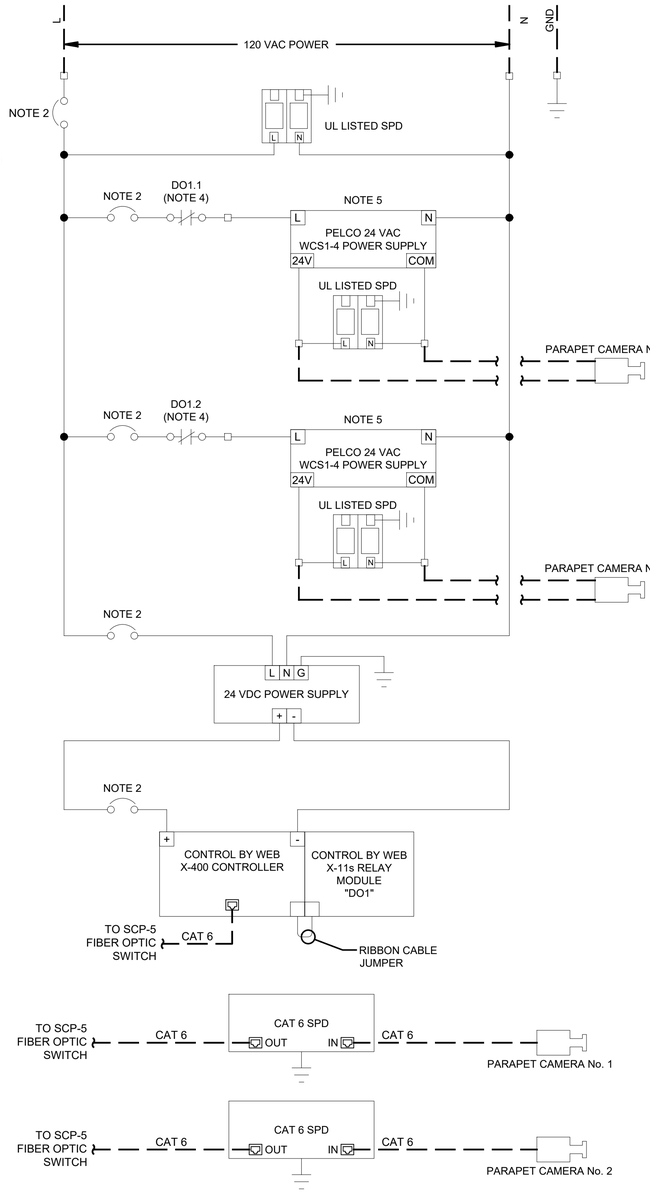

## S5 CCTV ENCLOSURE DOOR LAYOUT

NOT TO SCALE




## S5 CCTV SUBPANEL LAYOUT

NOT TO SCALE




## CONCEPTUAL WIRING DIAGRAM

## NOTES:

1. FABRICATE CONTROL PANEL IN ACCORDANCE WITH UL-508A. PROVIDE LABELING AS REQUIRED BY UL-508A AND NEC ARTICLE 409.
2. SIZE CONTROL CIRCUIT OVERCURRENT PROTECTION IN ACCORDANCE WITH UL-508A. OVERCURRENT PROTECTION FOR 120 VAC CONTROL CIRCUITS SHALL NOT EXCEED 10A.
3. MINIMUM PANEL SCCR = 5KA @ 120V
4. POWER FOR CAMERAS MUST BE WIRED THROUGH RELAY CONTACTS OF THE X-11s MODULE TO PROVIDE A MEANS TO REMOTELY POWER CYCLE THE CAMERAS.
5. PELCO CAMERA POWER SUPPLIES TO BE MOUNTED INSIDE S5 CCTV ENCLOSURE.
6. PANEL TAMPER SWITCH SHALL BE WIRED TO INPUT MODULE IN SECURITY PANEL SCP-5.

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498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK · CORRIE TATE SMITH · 104473 · LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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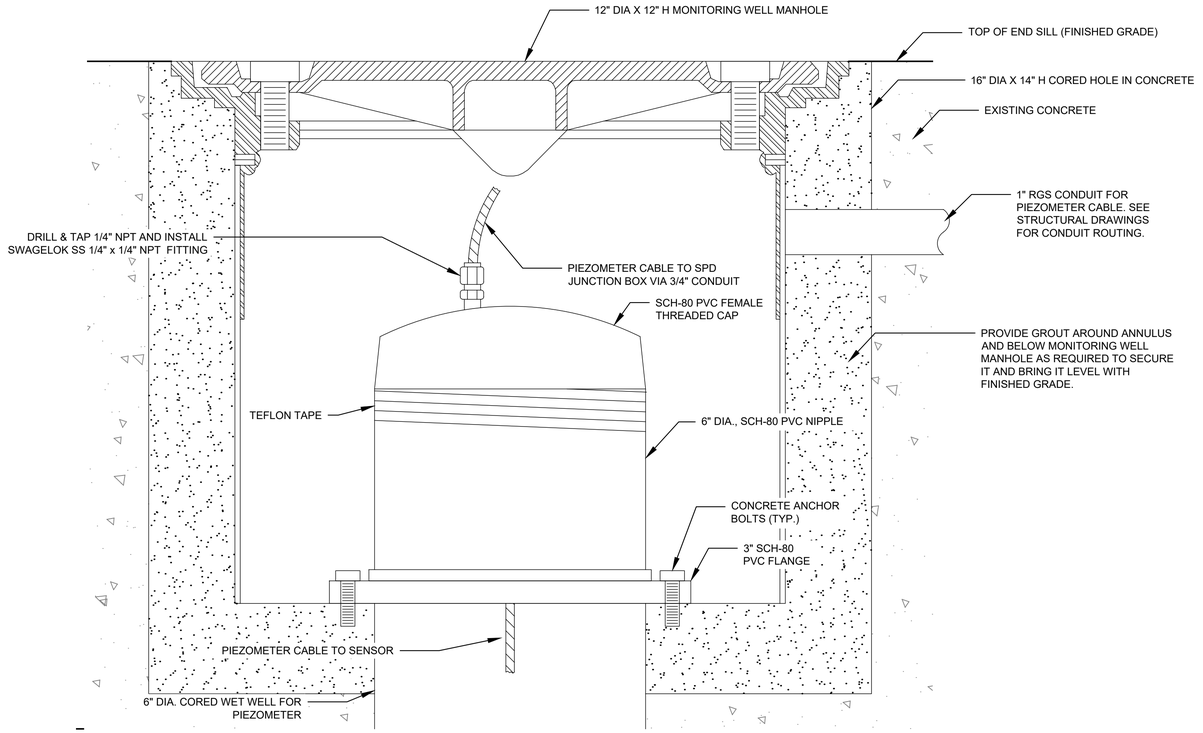
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
INSTRUMENTATION
S5 CCTV PANEL LAYOUT

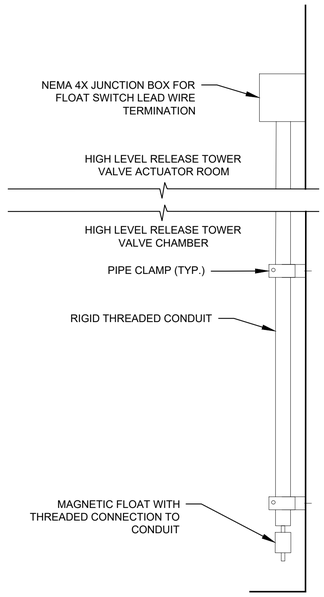
DATE: AUGUST 2026
SHEET NO: 99 of 112
DRAWING NO. 475-I-010

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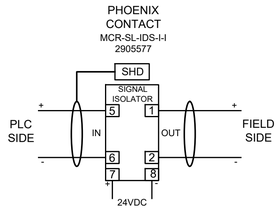



DETAIL 1 / I-012 NO SCALE: MONITORING WELL MANHOLE FOR END SILL PIEZOMETER



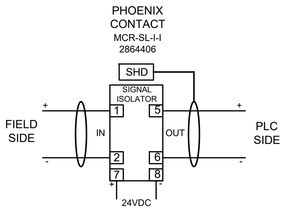

DETAIL 2 / I-012 NO SCALE: FLOAT SWITCH DETAIL

NOTES:
1. PROVIDE SEPARATE JUNCTION BOXES TO TERMINATE LEAD WIRING FOR EACH FLOAT SWITCH.




DETAIL 3 / I-012 NO SCALE: TYPICAL ANALOG OUTPUT ISOLATOR WIRING DETAIL

NOTES:
1. TYPICAL FOR MODULATING VALVE 4-20mA POSITION COMMAND SIGNAL FROM PLC.




DETAIL 4 / I-012 NO SCALE: TYPICAL ANALOG INPUT ISOLATOR WIRING DETAIL

NOTES:
1. TYPICAL FOR MODULATING VALVE 4-20mA POSITION FEEDBACK SIGNAL AND FLOW METER 4-20mA SIGNAL TO PLC.

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CHECKED BY: TBA
DESIGN LEAD: THOMAS AUSTIN, PE
SECTION MANAGER: WESLEY HILL, PE

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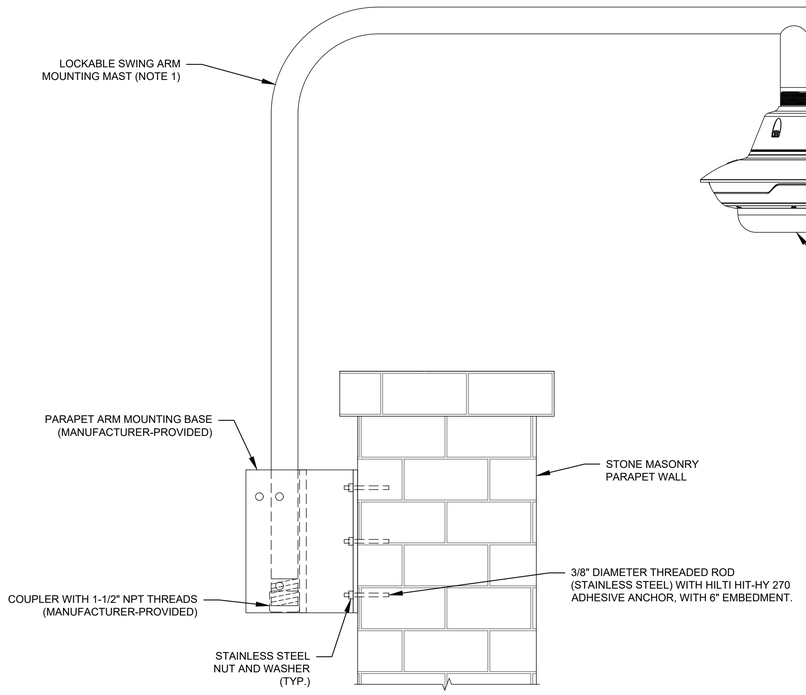
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**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
INSTRUMENTATION
DETAILS (SHEET 1 OF 2)

DATE: AUGUST 2026
SHEET NO: 100 of 112
DRAWING NO. 475-I-011

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DETAIL 5 / I-013 — MULTI-SENSOR CAMERA INSTALLATION DETAIL
NO SCALE:

NOTES:
1. CAMERA MOUNTING MAST SHALL BE AXIS T91D62 TELESCOPIC PARAPET MOUNT OR APPROVED EQUAL. PROVIDE ALL REQUIRED MOUNTING ACCESSORIES AND ADAPTERS FOR A COMPLETE INSTALLATION. PROVIDE EXTENSION ARMS FOR MOUNT IF REQUIRED TO EXTEND CAMERA OVER CORNER OF PARAPET.
2. PROVIDE A NEMA 4X PULL BOX ON THE INSIDE OF THE PARAPET WALL, NEAR THE MOUNTING BASE, FOR CAMERA CABLING. CAMERA WIRING NOT SHOWN IN DETAIL.
3. PROVIDE CAMERA WITH INFRARED ILLUMINATOR OPTION.

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**SUBMITTAL DATE: AUG 2026**

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DETAILS (SHEET 2 OF 2)

DATE: AUGUST 2026
SHEET NO: 101 of 112
DRAWING NO. 475-I-012

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## ELECTRICAL SYMBOLS LIST

| SYMBOL | DESCRIPTION |
|---|---|
| G | EMERGENCY GENERATOR |
| T | POWER TRANSFORMER |
| M | METER AND CURRENT TRANSFORMER<br>PROVIDE LINE VOLTAGE CONNECTION ALSO TO METER |
| | FUSIBLE SWITCH |
| | CIRCUIT BREAKER |
| E L N | AUTOMATIC TRANSFER SWITCH, 4 POLE, 600V<br>E=EMERGENCY N=NORMAL L=LOAD SIDE |
| | GROUNDING |
| | 20A, 2P, 3 WIRE, 125V, SURFACE MOUNTED<br>DUPLEX RECEPTACLE, NEMA 5-20R GFCI TYPE |
| | ELECTRICAL MOTOR |
| | DISCONNECT SWITCH |
| | FUSIBLE DISCONNECT SWITCH |
| | COMBINATION STARTER AND DISCONNECT SWITCH |
| | STARTER |
| MD | MOTORIZED DAMPER |
| $S_{TH}$ | THERMAL SWITCH |
| S | TOGGLE SWITCH FOR LIGHTING |
| $S^3$ | THREE POLE SINGLE THROW SWITCH FOR LIGHTING |
| LC | (3) THREE POLE HEAVY DUTY 120V COIL<br>LIGHTING CONTACTOR IN<br>NEMA 4X STAINLESS STEEL ENCLOSURE<br>WITH LOCAL PUSH BUTTON |
| J (J) | JUNCTION BOX |
| EUH | UNIT HEATER |
| | SURFACE MOUNTED PANELBOARD DOOR IN DOOR TYPE |
| | OVERHEAD ELECTRIC LINES |
| | OVERHEAD TELECOMMUNICATION LINES |
| | CONDUITS FOR ELECTRIC WIRES |
| | CONDUITS FOR TELECOMMUNICATION WIRES |
| | CONCRETE ENCASED DUCT BANK<br>SEE DWG. EP-CG-1016 FOR DETAILS |
| UGE | UNDERGROUND ELECRIC CONDUIT |
| E D | MANHOLE<br>'E' INDICATES FOR ELECTRIC POWER<br>'D' INDICATES FOR DATA/SIGNAL<br>SEE DWG. EP-CG-1016 FOR DETAILS |
| | INTERCOMMUNICATION PHONE<br>SURFACE MOUNTED<br>SEE DWG. EP-CG-1011 FOR DETAILS |
| | SURFACE MOUNTED TELEPNONE |
| | INTRUSION ALARM SIREN/SPEAKER |
| | UTILITY POLE |
| FACP | FIRE ALARM CONTROL PANEL |

## ELECTRICAL SYMBOLS LIST

| SYMBOL | DESCRIPTION |
|---|---|
| F | FIRE ALARM PULLSTATION. |
| F | FIRE ALARM COMBINATION HORN/STROBE |
| S | CEILING MOUNTED SMOKE DETECTOR |
| D | CEILING MOUNTED DUCT DETECTOR |
| H | CEILING MOUNTED HEAT DETECTOR |
| F | FIRE ALARM STROBE |

## LIGHTING FIXTURE SCHEDULE

| SYMBOL | DESCRIPTION |
|---|---|
| | LIGHT FIXTURE TYPE A<br>SURFACE MOUNTED LED LIGHTING FIXTURE<br>FOR HIGH LEVEL RELEASE TOWER<br>EMS L24 6000LM IMACD MD 120 GZ10 40K 80CRI |
| | LIGHT FIXTURE TYPE B<br>RECESSED LED LIGHTING FIXTURE<br>FOR HIGH LEVEL RELEASE TOWER<br>HYDREL SWM 4426 SS 36LED WHT30K 120 FL CLS<br>NM CSL50 SWM |
| | LIGHT FIXTURE TYPE C<br>EMERGENCY LIGHT WITH BATTERY PACK<br>CORTEX CZQ6L UVOLT LTP SDRT<br>BATTERY TO PROVIDE 11W FOR MINIMUM 90 MINUTES<br>MOUNTING HEIGHT 9' |
| | LIGHT FIXTURE TYPE D<br>POLE MOUNTED LIGHT FIXTURE FOR ROAD LIGHTING<br>LITHONIA LIGHTING DSX0 LED P6 40K 70CRI T3M MVOLT<br>RPA DNAXD<br>WITH PHOTOCELL CONTROL<br>ROUND POLE MOUNTED, 20' HIGH, CONCRETE BASE<br>HUBBELL#SPAULDING#RTS05P-DB-CONCRETE<br>ONE LIGHT FIXTURE PER POLE, PRE-WIRED |

## ELECTRICAL ABBREVIATIONS

| | |
|---|---|
| A | AMPERE(S) |
| AC | ALTERNATING CURRENT |
| AFF | ABOVE FINISHED FLOOR |
| ATS | AUTOMATIC TRANSFER SWITCH |
| AWG | AMERICAN WIRE GAUGE |
| BLDG | BUILDING |
| C | CONDUIT |
| CP | CONTROL PANEL |
| CKT | CIRCUIT |
| CKT BKR/CB | CIRCUIT BREAKER |
| COND | CONDUCTOR |
| CO | CONDUIT ONLY |
| CT | CURRENT TRANSFORMER |
| DISC | DISCONNECT |
| DN | DOWN |
| DP | DISTRIBUTION POWER PANEL (BOARD) |
| DWG | DRAWING |
| EBR | ELECTRICAL BASEBOARD RADIATOR |
| ELECT | ELECTRICAL |
| EM | EMERGENCY |
| FACP | FIRE ALARM CONTROL PANEL |
| FBO | FURNISHED BY OTHERS |
| FCO | FUSED CUTOUT |
| FDR | FEEDER |
| FL | FLOOR |
| FS | FUSIBLE SWITCH |
| FT | FEET OR FOOT |
| GEN | GENERATOR |
| GF | GROUND FAULT |
| GRD/G | GROUND |
| HP | HORSEPOWER |
| IAP | INTRUSION ALARM PANEL |
| JB | JUNCTION BOX |
| Kcm | THOUSAND CIRCULAR MIL(S) |
| kVA | KILOVOLT AMPERE(S) |
| kWhr | KILOWATTS (S) HOUR (S) |
| kW | KILOWATT(S) |
| LCS | LIGHTING CONTROL STATION |
| LP | LIGHTING PANEL |
| LTG | LIGHTING |
| MISC | MISCELLANEOUS |
| MTD | MOUNTED |
| MTG | MOUNTING |
| MIN | MINIMUM |
| MDP | MAIN DISTRIBUTION PANEL |
| OL | OUTDOOR LIGHTING |
| OE | OVERHEAD ELECTRIC LINE |
| N | NEUTRAL |
| NYSEG | NEW YORK STATE ELECTRIC AND GAS COMPANY |
| NTS | NOT TO SCALE |
| P | POLE |
| PB | PULL BOX |
| PF | POWER FACTOR |
| Ø | PHASE |
| PNL | PANEL (PANELBOARD) |
| PWR | POWER |
| R | RECESSED |
| REC | RECEPTACLE |
| SPD | SURGE PROTECTION DEVICE (SEE NOTE 33) |
| S/S | SERVICE SWITCH |
| SW | SWITCH |
| SWBD | SWITCHBOARD |
| TC | OVERHEAD TELECOMMUNICATION LINE |
| TEL | TELEPHONE |
| TYP | TYPICAL |
| UON | UNLESS OTHERWISE NOTED |
| V | VOLT(S) |
| VA | VOLTAMP(S) |
| W | WATT(S) |
| WP | WEATHERPROOF |
| XFMR | TRANSFORMER |
| SPD | SURGE PROTECTION DEVICE |
| VCP | VENTILATION CONTROL PANEL |
| VCS | VENTILATION CONTROL STATION |

## GENERAL ELECTRICAL NOTES:

1. THE GENERAL ELECTRICAL NOTES APPLY TO ALL ELECTRICAL DRAWINGS UNDER THIS CONTRACT. REFER TO INDIVIDUAL DRAWINGS FOR ADDITIONAL NOTES.
2. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS. MAINTAIN HEADROOM AND SPACE CONDITIONS CONSISTENT WITH PROJECT CRITERIA.
3. JUNCTION AND PULL BOXES SHALL GENERALLY BE LOCATED FOR FLUSH MOUNTING IN GRADE OR POLES. WHERE NECESSARY, CONDUITS SHALL BE REROUTED OR OTHER ARRANGEMENTS MADE FOR CONCEALMENT. PULL BOXES SHALL BE PROVIDED AS INDICATED AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE AND COORDINATE LOCATIONS WITH OTHER TRADES. COVERS OF JUNCTION AND PULL BOXES SHALL BE ACCESSIBLE. FOR EMPTY RACEWAY RUNS, PULL BOXES SHALL BE PROVIDED EVERY 100 FEET AND AS INDICATED OR NECESSARY.
4. UNLESS OTHERWISE SPECIFIED OR NOTED, ALL WALL MOUNTED ELECTRICAL PANELS, ENCLOSURES, AND SIMILAR EQUIPMENT SHALL BE MOUNTED 6'-6" (MAX) FROM THE TOP OF THE PANEL TO FINISHED FLOOR OR GRADE.
5. UNLESS OTHERWISE NOTED, ALL LIGHTING SWITCHES, CONTROL SWITCHES, AND SIMILAR EQUIPMENT SHALL BE MOUNTED WITH THEIR CENTERLINE APPROXIMATELY 4'-0" ABOVE FINISHED FLOOR, SLAB, OR GRADE.
6. A SEPARATE EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED FOR EACH CIRCUIT (SEPARATE CONDUCTOR IN THE CONDUIT). THE CONDUCTOR SHALL BE TERMINATED AT THE PROPER DEVICE, TERMINAL, OR LUG AT THE POWER SOURCE (MCC GROUND BUS, PANELBOARD GROUND BUS, ETC.). GROUND CONDUCTOR SIZE SHALL BE PER THE LATEST EDITION OF THE NEC.
7. SUFFICIENTLY LONG WIRE SLACK SHALL BE LEFT IN RUNS TO PERMIT MAKING PROPER FINAL CONNECTIONS.
8. THE CONTRACTOR SHALL NOT INSTALL MORE THAN THE NUMBER OF CIRCUITS SHOWN IN ANY HOMERUN CIRCUIT.
9. ALL CONDUITS SHALL BE TAGGED FOR THE PANEL AND CIRCUIT NUMBER.
10. ALL WIRING SHALL BE ROUTED IN AN ORGANIZED AND NEAT MANNER.
11. THE ROUTING AND LOCATION OF CONDUIT RUNS/DUCT BANK ARE GENERALLY NOT DIMENSIONAL ON THE DRAWINGS BUT SHALL BE DETERMINED IN THE FIELD TO SUIT THE LOCATIONS OF EQUIPMENT, TO CONFORM TO CIVIL AND MECHANICAL FEATURES AND TO AVOID INTERFERENCES LIKE SWALES, SLOPES, ROCKS, PIPES, FLARED ENDS, SILT FENCE ETC. REFER TO CIVIL SITE DRAWINGS.
12. ALL SITE EXPOSED ELECTRICAL DEVICES SHALL BE LOCATED AS PER OWNER'S REPRESENTATIVE
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ELECTRIC EQUIPMENT WITH LUGS AND TERMINATIONS TO MATCH ALL FEEDER AND CIRCUIT REQUIREMENTS.
14. THE CONTRACTOR SHALL MAKE ALL PROVISIONS TO ACCOMMODATE ALL REQUIRED TERMINATIONS OF MULTIPLE SETS AND OVERSIZED CONDUCTORS AND PROVIDE SPLICING AND TERMINATIONS TO CONNECT OVER-SIZED BRANCH WIRING.
15. ALL INSTRUMENTATION AND EQUIPMENT CONTROL WIRING SHALL BE IN ACCORDANCE WITH EQUIPMENT OR SYSTEM MANUFACTURER'S INSTRUCTIONS AND INSTRUMENTATION/HVAC/MECHANICAL DRAWINGS. FOR DEVICE LOCATION REFER TO DRAWINGS OF RESPECTIVE TRADE.
16. ALL DEVICES IN UPPER GATE CHAMBER SHALL BE SURFACE MOUNTED UNLESS OTHERWISE NOTED.
17. PROTECT ALL EXISTING STRUCTURES/EQUIPMENT AS INDICATED ON CIVIL, STRUCTURAL, MECHANICAL, INSTRUMENTATION, AND ARCHITECTURAL DRAWINGS.
18. ALL WORK SHALL BE PERFORMED AS PER LATEST APPLICABLE NYCEC, NFPA, NESC, OSHA AND LOCAL CODES.
19. LIGHT LINES REPRESENT APPROXIMATE EXISTING CONDITIONS. BOLD LINES INDICATE NEW WORK.
20. REFER TO CIVIL, STRUCTURAL, MECHANICAL AND ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND CONSTRUCTION DETAILS.
21. ALL BOXES AND ENCLOSURES FOR LIFE SAFETY EMERGENCY CIRCUITS WILL BE PERMANENTLY MARKED SO THEY WILL BE READILY IDENTIFIED AS A COMPONENT OF LIFE SAFETY EMERGENCY CIRCUIT OR SYSTEM.
22. CONTRACTOR AFTER REVIEWING DRAWINGS AND SPECIFICATIONS MUST VISIT THE SITE TO VERIFY FIELD CONDITIONS. ANY DISCREPANCY OBSERVED SHALL BE SUBMITTED TO THE ENGINEER ONE WEEK BEFORE BID DATE.
20. ALL CONCRETE WORK FOR DUCT BANKS, LIGHTING POLE BASES, MANHOLES, HAND HOLES ETC. SHALL BE COORDINATED WITH CIVIL, STRUCTURAL, AND ARCHITECTURAL DRAWINGS AND SPECIFICATIONS AND APPROVED BY THE ENGINEER BEFORE COMMENCING INSTALLATION.
21. STANDARD EQUIPMENT OR DEVICES SHALL BE MODIFIED AND CUSTOMIZED TO COMPLY WITH THE SPECIFICATIONS. THIS APPLIES TO ALL PARAMETERS INCLUDING ENCLOSURES.

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CHECKED BY: GM
DESIGN LEAD: GEORGE MARKOU, PE
SECTION MANAGER: KURT MATSCHERZ, PE

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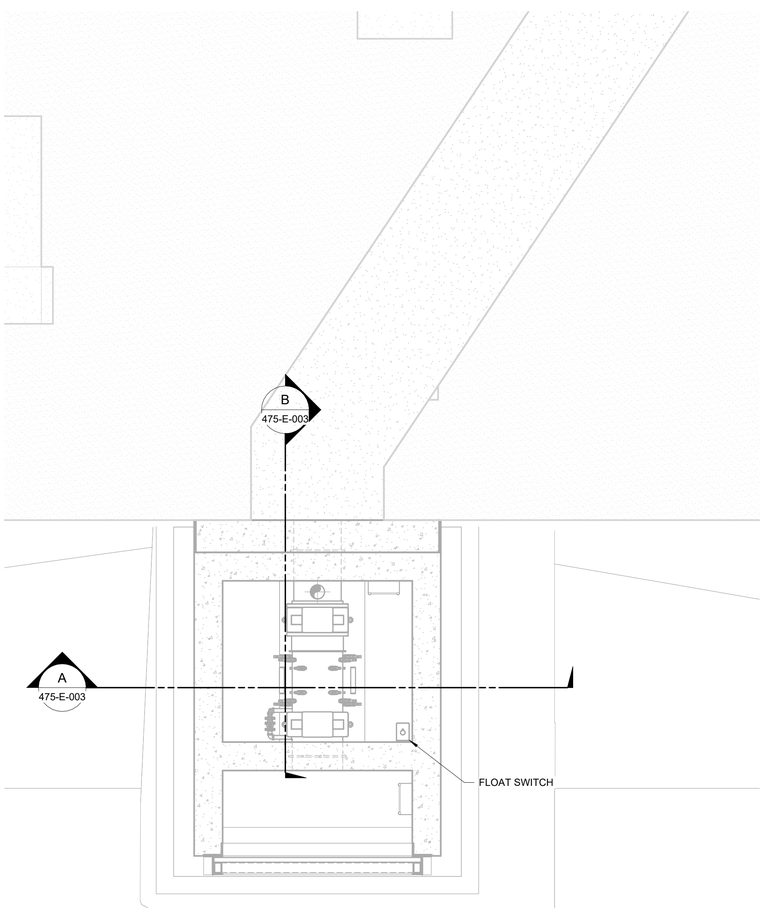
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ELECTRICAL
GENERAL NOTES & ABBREVIATIONS

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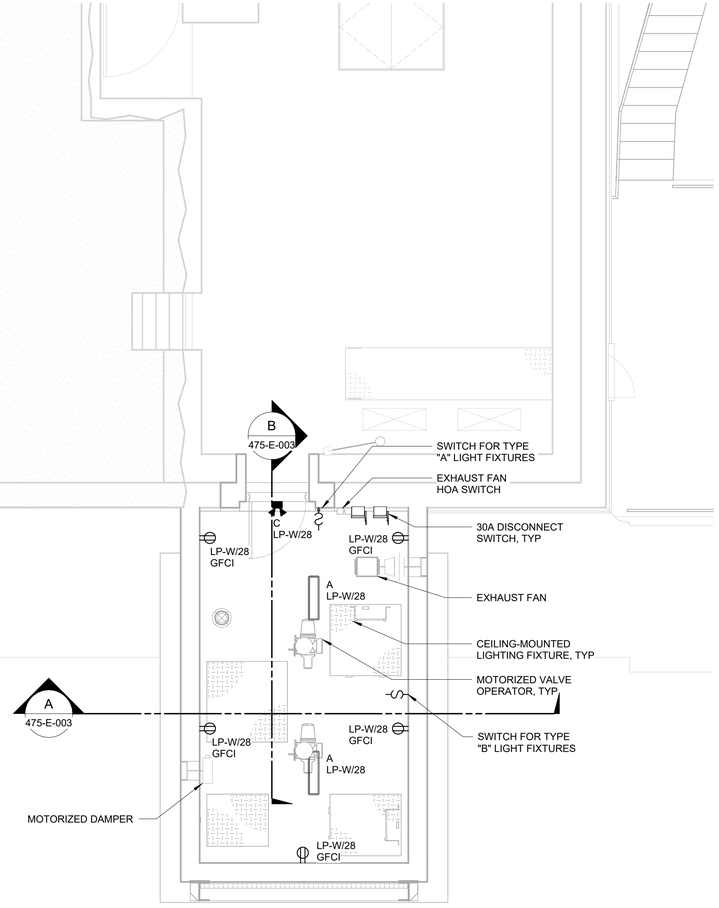
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MONOLITH M18 - PLAN AT EL 1104.00

1/4" = 1'-0"




MONOLITH M18 - PLAN AT EL 1140.00

1/4" = 1'-0"

## NOTES

1. REFER TO DWG 475-I-011 FOR FLOAT SWITCH DETAIL.
2. REFER TO DWG 475-I-005 FOR MULTI-SENSOR CAMERA LOCATIONS.

0 4 8 FT.

1/4"=1'-0"

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ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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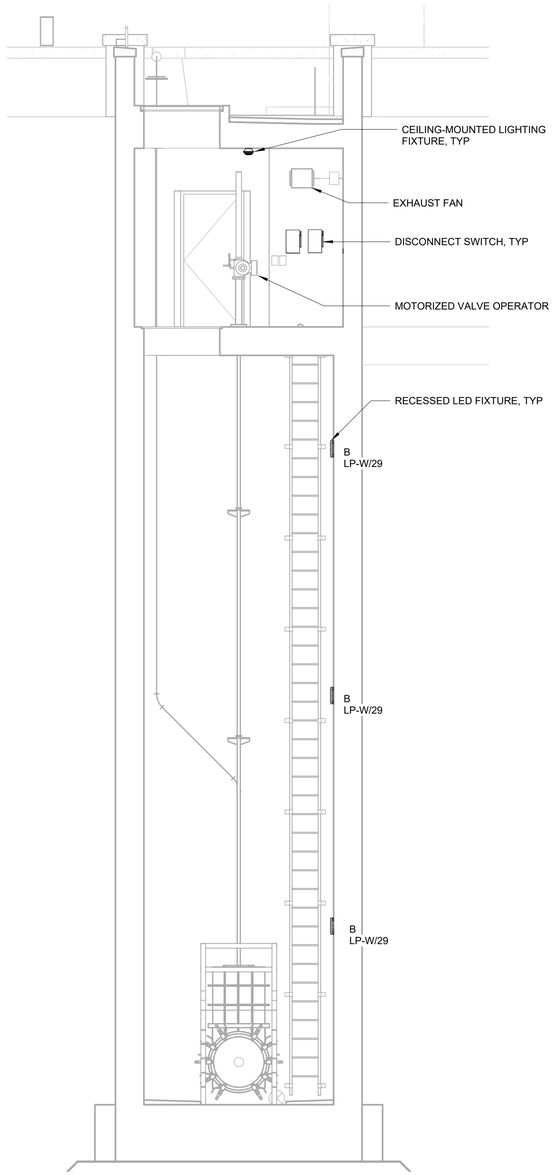
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
ELECTRICAL
OVERALL PLANS AT MONOLITH M18

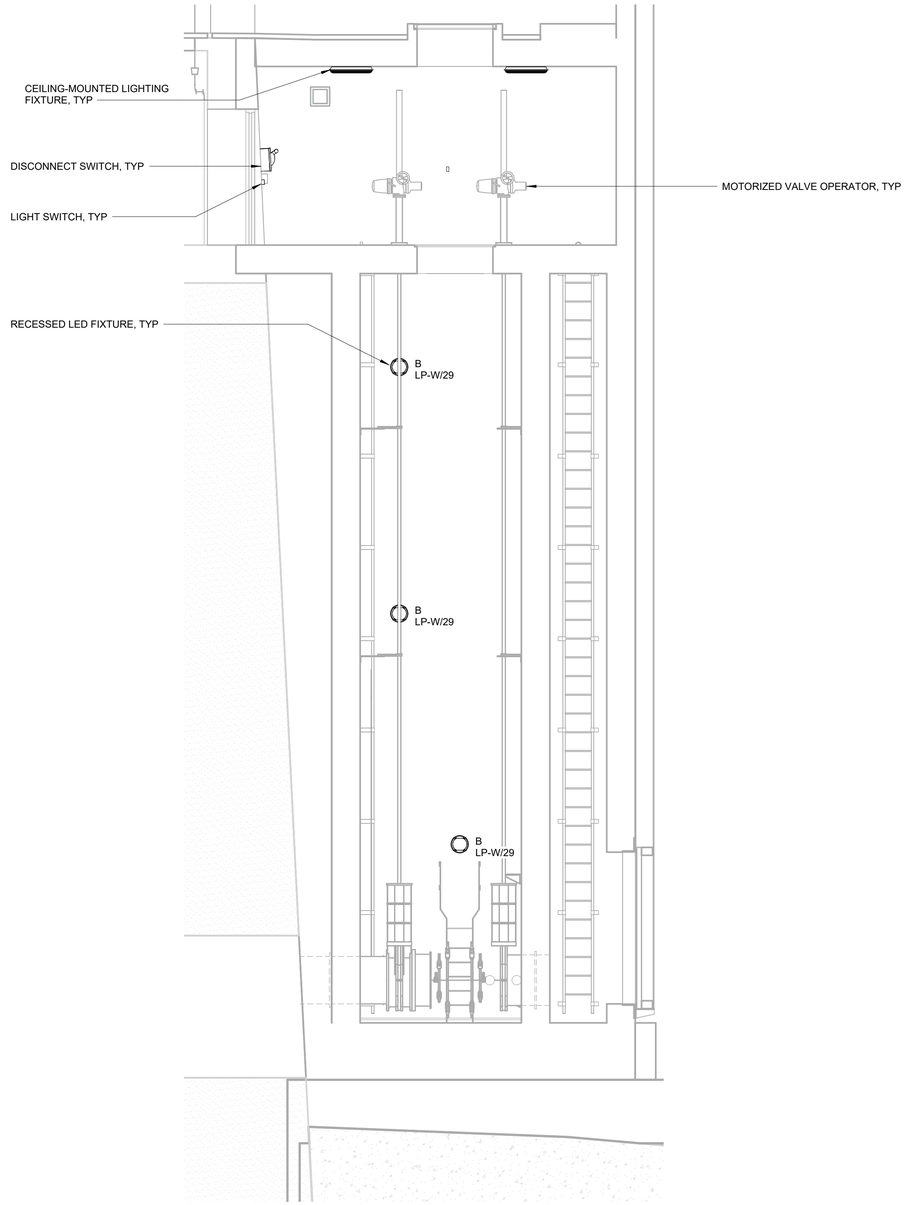
DATE: AUGUST 2026
SHEET NO: 103 of 112
DRAWING NO. 475-E-002

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Autodesk Docs://90441-001_CAT-475-DES Gilboa Dam HLO/475-E-DAM-HAZEN.rvt
8/6/2026 9:38:53 AM




A SECTION
475-E-002
SCALE: 1/4" = 1'-0"




B SECTION
475-E-002
SCALE: 1/4" = 1'-0"

0 4 8 FT.
1/4"=1'-0"

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DESIGNED BY: DK
CHECKED BY: GM
DESIGN LEAD: GEORGE MARKOU, PE
SECTION MANAGER: KURT MATSCHERZ, PE
DRAWN BY: DK

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK · GEORGE MARKOU · 072603 · LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER
PAUL LAFIANDRA
PORTFOLIO MANAGER
GEORGE SCHMITT, PE

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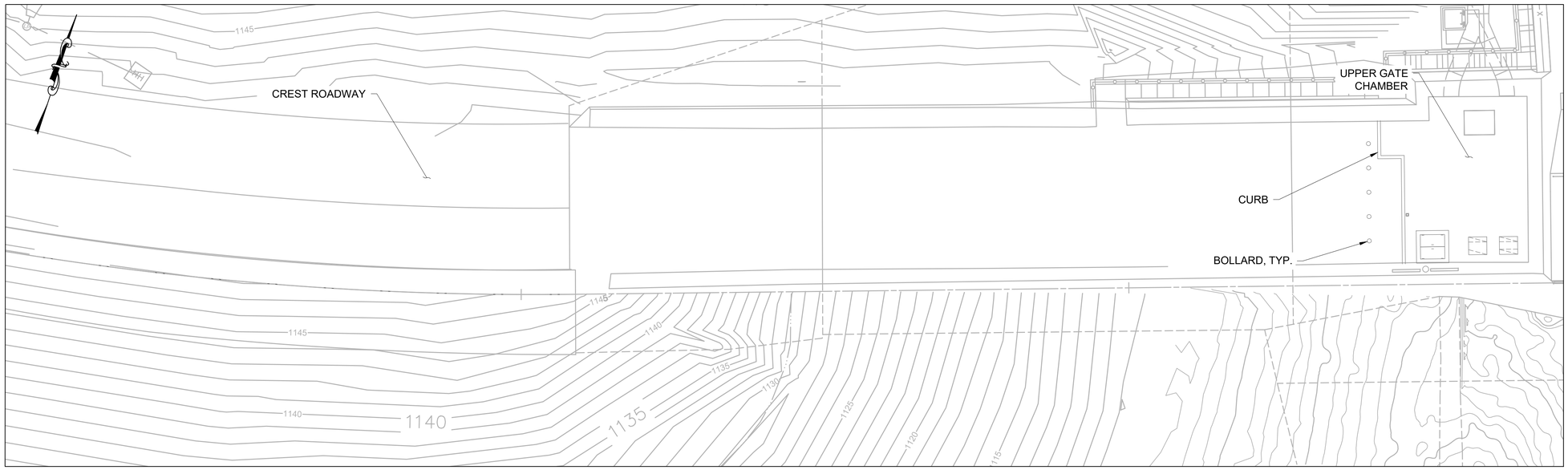
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
ELECTRICAL
GATE OPERATOR POWER PLAN & DETAILS

DATE: AUGUST 2026
SHEET NO: 104 of 112
DRAWING NO. 475-E-003

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8/6/2026 9:38:54 AM

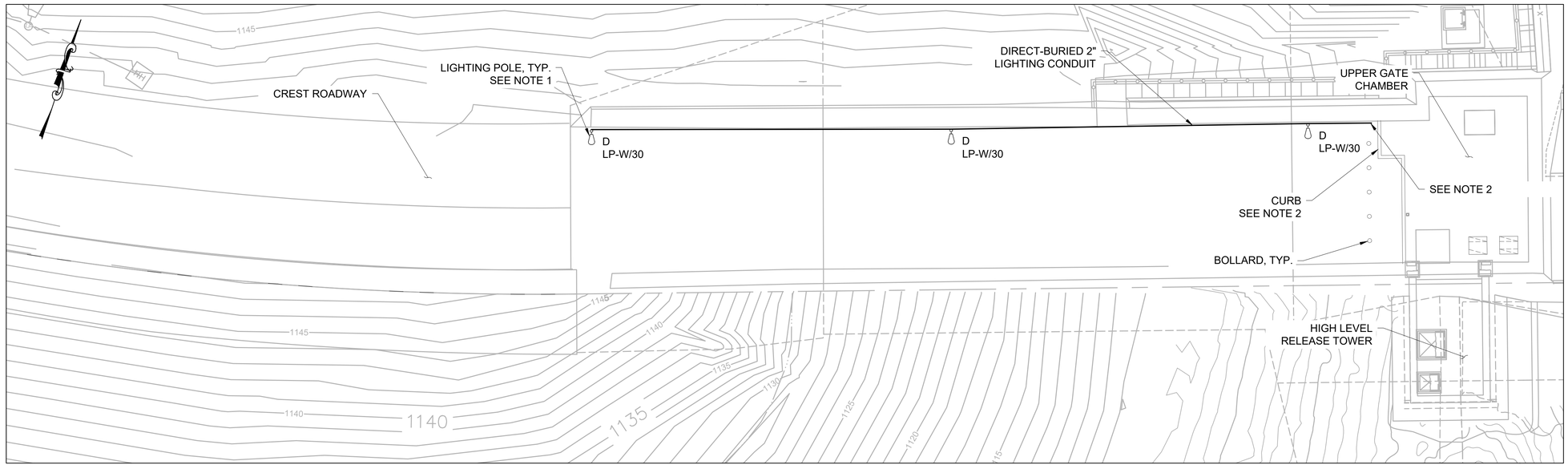



EXTERIOR LIGHTING EXISTING PLAN

SCALE: 1"=10'-0"

NOTES:

1. FURNISH AND INSTALL 20' LIGHTING POLES. PROVIDE POLE MOUNTED TYPE D LIGHTING FIXTURE OR APPROVED EQUAL.
2. CONDUIT PENETRATION FOR LIGHTING CONDUIT SHALL BE CORED FROM THE TOP OF THE DAM INTO THE UPPER GATE CHAMBER WITHOUT COMPROMISING THE CURB AND EXISTING WATERPROOF MEMBRANE ON THE UPPER GATE CHAMBER ROOF. SEAL ALL PENETRATIONS WATERTIGHT USING APPROVED SLEEVE/SEAL. EXACT PENETRATION LOCATION TO BE FIELD VERIFIED AND APPROVED BY THE RESIDENT ENGINEER.
3. PROVIDE TWO (2) LEVEL 2 EV CHARGING STATIONS (CHARGEPOINT HOMEFLEX MODEL # CPH50-NEMA6-50-L23-NACS OR APPROVED EQUAL) ATTACHED TO THE EXTERIOR OF THE DEP CM TRAILER (SEE DRAWING 475-C-003). LOCATION TO BE FIELD VERIFIED AND APPROVED BY THE RESIDENT ENGINEER.




EXTERIOR LIGHTING PROPOSED PLAN

SCALE: 1"=10'-0"

0 10 20 FT.
1"=10'

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**BID SET**
**SUBMITTAL DATE: AUG 2026**

| NO. | DATE | REVISIONS/DESCRIPTION | APPR'D. |
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DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: GM
DESIGN LEAD: GEORGE MARKOU, PE
SECTION MANAGER: KURT MATSCHERZ, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**

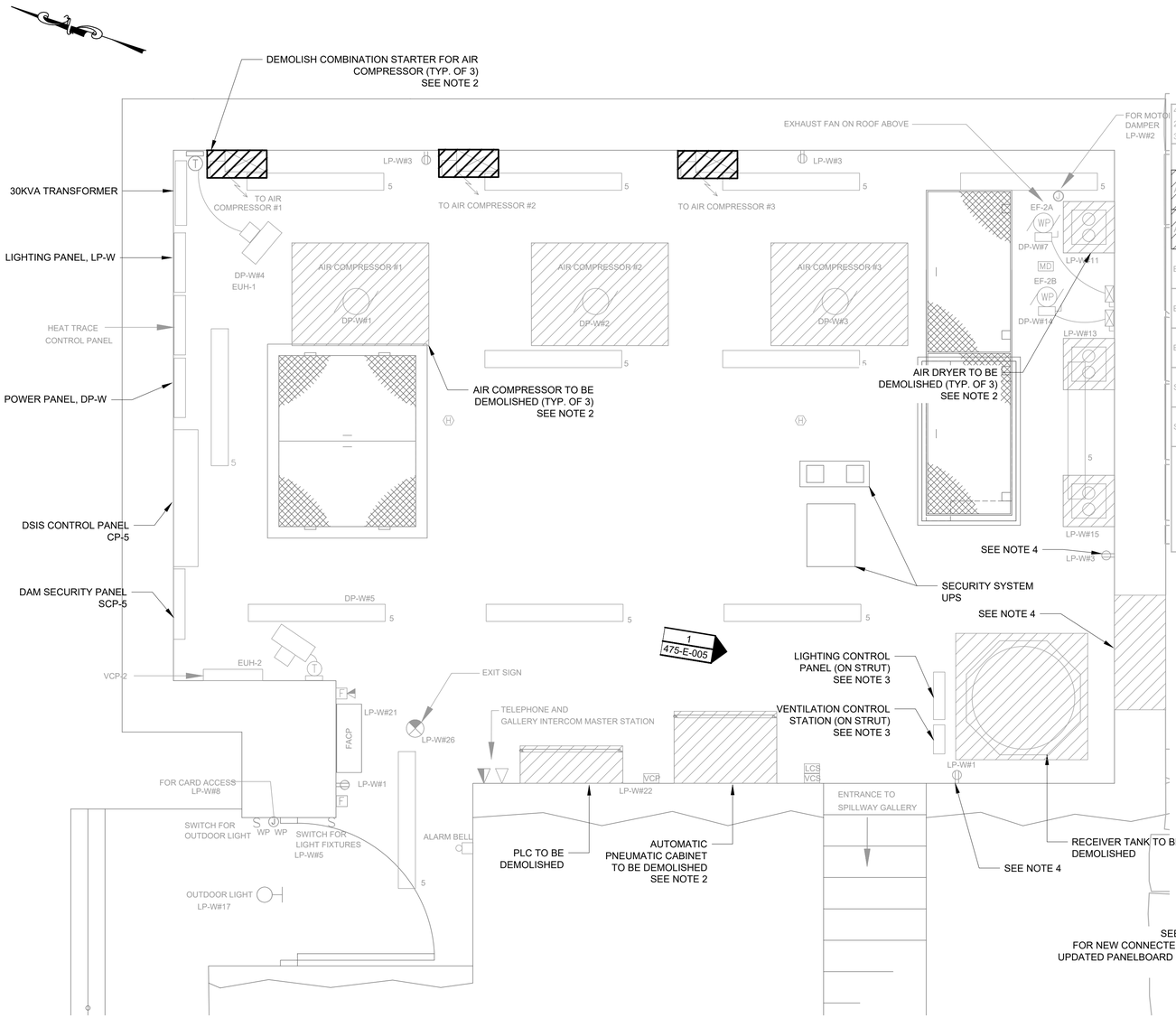
ELECTRICAL

EXTERIOR LIGHTING PLAN EXISTING & PROPOSED

DATE: AUGUST 2026
SHEET NO: 105 of 112
DRAWING NO. 475-E-004

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Last Date Saved: 8/5/2026 5:45 PM
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Date & Time Plotted: 8/6/2026 9:43 AM
Plot Scale: 1 = 1'
Plot Style Table: BEDC_Acad_2021.ctb

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## UPPER GATE CHAMBER DEMOLITION PLAN

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

480/277V, 3P, 4W — DP-W — TYPE: NEMA 4X
225A BUS — MAIN BREAKER — MOUNT: SURFACE
35kA (MINIMUM) — 225AF/150AT, 3P

| DESCRIPTION | TRIP | POLE | CKT No. | KILO-VOLT-AMPERES A | B | C | KILO-VOLT-AMPERES A | B | C | CKT No. | POLE | TRIP | DESCRIPTION | MODS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AIR COMPRESSOR #1 | 30 | 3 | 1 | 4.7 | | | 4.7 | | | 2 | | | | |
| | | | 3 | | 4.7 | | | 4.7 | | 4 | 3 | 30 | AIR COMPRESSOR #2 | - |
| | | | 5 | | | 4.7 | | | 4.7 | 6 | | | | |
| AIR COMPRESSOR #3 | 30 | 3 | 7 | 4.7 | | | 4.0 | | | 8 | | | | |
| | | | 9 | | 4.7 | | | 4.0 | | 10 | 3 | 30 | LP-W XFMER | - |
| | | | 11 | | | 4.7 | | | 4.0 | 12 | | | | |
| EUH-1 | 20 | 3 | 13 | 2.5 | | | 2.5 | | | 14 | | | | |
| | | | 15 | | 2.5 | | | 2.5 | | 16 | 3 | 20 | EUH-2 | - |
| | | | 17 | | | 2.5 | | | 2.5 | 18 | | | | |
| EF-2A | 20 | 3 | 19 | 0.4 | | | 0.4 | | | 20 | | | | |
| | | | 21 | | 0.4 | | | 0.4 | | 22 | 3 | 20 | EF-2B | - |
| | | | 23 | | | 0.4 | | | 0.4 | 24 | | | | |
| EF-1 | 20 | 3 | 25 | 0.4 | | | - | | | 26 | | | | |
| | | | 27 | | 0.4 | | | - | | 28 | 3 | 20 | SPARE | - |
| | | | 29 | | | 0.4 | | | - | 30 | | | | |
| SPARE | 20 | 3 | 31 | - | | | - | | | 32 | | | | |
| | | | 33 | | - | | | - | | 34 | 3 | 20 | SPARE | - |
| | | | 35 | | | - | | | - | 36 | | | | |
| SPARE | 20 | 3 | 37 | - | | | - | | | 38 | | | | |
| | | | 39 | | - | | | - | | 40 | 3 | 20 | SPD | - |
| | | | 41 | | | - | | | - | 42 | | | | |
| | | | TOTAL | 12.7 | 12.7 | 12.7 | 11.6 | 11.6 | 11.6 | TOTAL | | | | |
| | | | | PHASE TOTAL (KVA) | | | TOTAL LOAD (KVA) | | | | | | | |
| | | | | 24.3 | 24.3 | 24.3 | 72.9 | | | | | | | |
| | | | | PHASE TOTAL (A) | | | TOTAL LOAD (A) | | | | | | | |
| | | | | 87.7 | 87.7 | 87.7 | 87.7 | | | | | | | |

NOTES/ACCESSORIES:
100kA SPD

## PANELBOARD DP-W



PHOTO 1 — NO SCALE — 475-E-005

208/120V, 3P, 4W — LP-1 — TYPE: NEMA 4X
100A BUS — MAIN BREAKER — MOUNT: SURFACE
22kA (MINIMUM) — 100AF/70AT, 3P

| DESCRIPTION | TRIP | POLE | CKT No. | KILO-VOLT-AMPERES A | B | C | KILO-VOLT-AMPERES A | B | C | CKT No. | POLE | TRIP | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RECEPTACLES | 20 | 1 | 1 | 0.5 | | | 0.5 | | | 2 | 1 | 20 | DAMPERS |
| RECEPTACLES | 20 | 1 | 3 | | 0.5 | | | 0.5 | | 4 | 1 | 20 | MOV CONTROLS |
| LIGHTING | 20 | 1 | 5 | | | 0.3 | | | 0.3 | 6 | 1 | 20 | CCTV/TRANSDUCERS |
| SPARE | 20 | 1 | 7 | 0.1 | | | 0.2 | | | 8 | 1 | 20 | CARD ACCESS |
| VFC CONTROLS | 20 | 1 | 9 | | 0.1 | | | 0.5 | | 10 | 1 | 20 | INSTRUSION ALARM PANELS |
| SPARE | 20 | 1 | 11 | | | 0.1 | | | 0.2 | 12 | 1 | 20 | THERMOSTATS |
| SPARE | 20 | 1 | 13 | 0.1 | | | 1.2 | | | 14 | 1 | 20 | STAIR LIGHTING |
| SPARE | 20 | 1 | 15 | | 0.1 | | | 0.8 | | 16 | 1 | 20 | OUTDOOR LIGHTING |
| LIGHTING OUTDOOR | 20 | 1 | 17 | | | 0.1 | | | 0.5 | 18 | 1 | 20 | INTERCOM PANEL |
| WIRELESS EQUIPMENT | 20 | 1 | 19 | 0.4 | | | 0.8 | | | 20 | 1 | 20 | CP-5 |
| FACP | 20 | 1 | 21 | | 0.3 | | | 0.5 | | 22 | 1 | 20 | HVAC PANELS |
| LIGHTING CONTROL | 20 | 1 | 23 | | | 0.3 | | | 0.8 | 24 | 1 | 20 | CP-7 |
| UPS | 20 | 1 | 25 | 1.0 | | | 0.1 | | | 26 | 1 | 20 | EXIT SIGNS |
| CP-6 | 20 | 1 | 27 | | 1.0 | | | - | | 28 | 1 | 20 | SPARE |
| SPARE | 20 | 1 | 29 | | | - | | | - | 30 | 1 | 20 | SPARE |
| SPARE | 20 | 1 | 31 | - | | | - | | | 32 | 1 | 20 | SPARE |
| SPARE | 20 | 1 | 33 | | - | | | - | | 34 | 1 | 20 | SPARE |
| SPARE | 20 | 1 | 35 | | | - | | | - | 36 | 1 | 20 | SPARE |
| SPARE | 20 | 1 | 37 | - | | | - | | | 38 | | | |
| SPARE | 20 | 1 | 39 | | - | | | - | | 40 | 3 | 60 | SPD |
| SPARE | 20 | 1 | 41 | | | - | | | - | 42 | | | |
| | | | TOTAL | 2.1 | 2.0 | 0.8 | 2.8 | 2.3 | 1.8 | TOTAL | | | |
| | | | | PHASE TOTAL (KVA) | | | TOTAL LOAD (KVA) | | | | | | |
| | | | | 4.9 | 4.3 | 2.6 | 11.9 | | | | | | |
| | | | | PHASE TOTAL (A) | | | TOTAL LOAD (A) | | | | | | |
| | | | | 41.2 | 36.2 | 21.7 | 33.0 | | | | | | |

NOTES/ACCESSORIES:
100kA SPD

## PANELBOARD LP-W

## NOTES:

1. EQUIPMENT LOCATIONS AND SIZES ARE APPROXIMATE. VERIFY EXISTING CONDITIONS IN FIELD.
2. REMOVE ALL EXPOSED CONDUIT AND WIRING ASSOCIATED WITH EQUIPMENT SCHEDULED FOR DEMOLITION BACK TO THE SOURCE PANELS DP-W AND LP-W.
3. LIGHTING CONTROL PANEL AND VENTILATION CONTROL STATION ON STRUT TO BE RELOCATED TO WALL SHOWN ON DRAWING 475-E-006. EXISTING CONDUITS ARE EMBEDDED IN CONCRETE. REROUTE AND EXTEND AS SURFACE-MOUNTED CONDUITS ALONG WALLS AND CEILING AS REQUIRED (SEE PHOTO 1). VERTICAL LEG OF SIX ABANDONED CONDUITS EMBEDDED IN THE FLOOR SHALL BE CUT AND SEALED FLUSH WITH FLOOR.
4. EXISTING CONCEALED CONDUIT AND WIRING SUPPLYING POWER TO THE TWO RECEPTACLES IS ROUTED WITHIN THE WALL (TO BE DEMOLISHED FOR THE NEW DOORWAY, SEE STRUCTURAL DWGS). CONTRACTOR SHALL REROUTE EXISTING CONDUIT AND WIRING FOR THE TWO RECEPTACLES AROUND THE NEW DOOR OPENING.

0 2 4 FT.
1/2"=1'-0"

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**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: GM
DESIGN LEAD: GEORGE MARKOU, PE
SECTION MANAGER: KURT MATSCHERZ, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK — GEORGE MARKOU — 072603 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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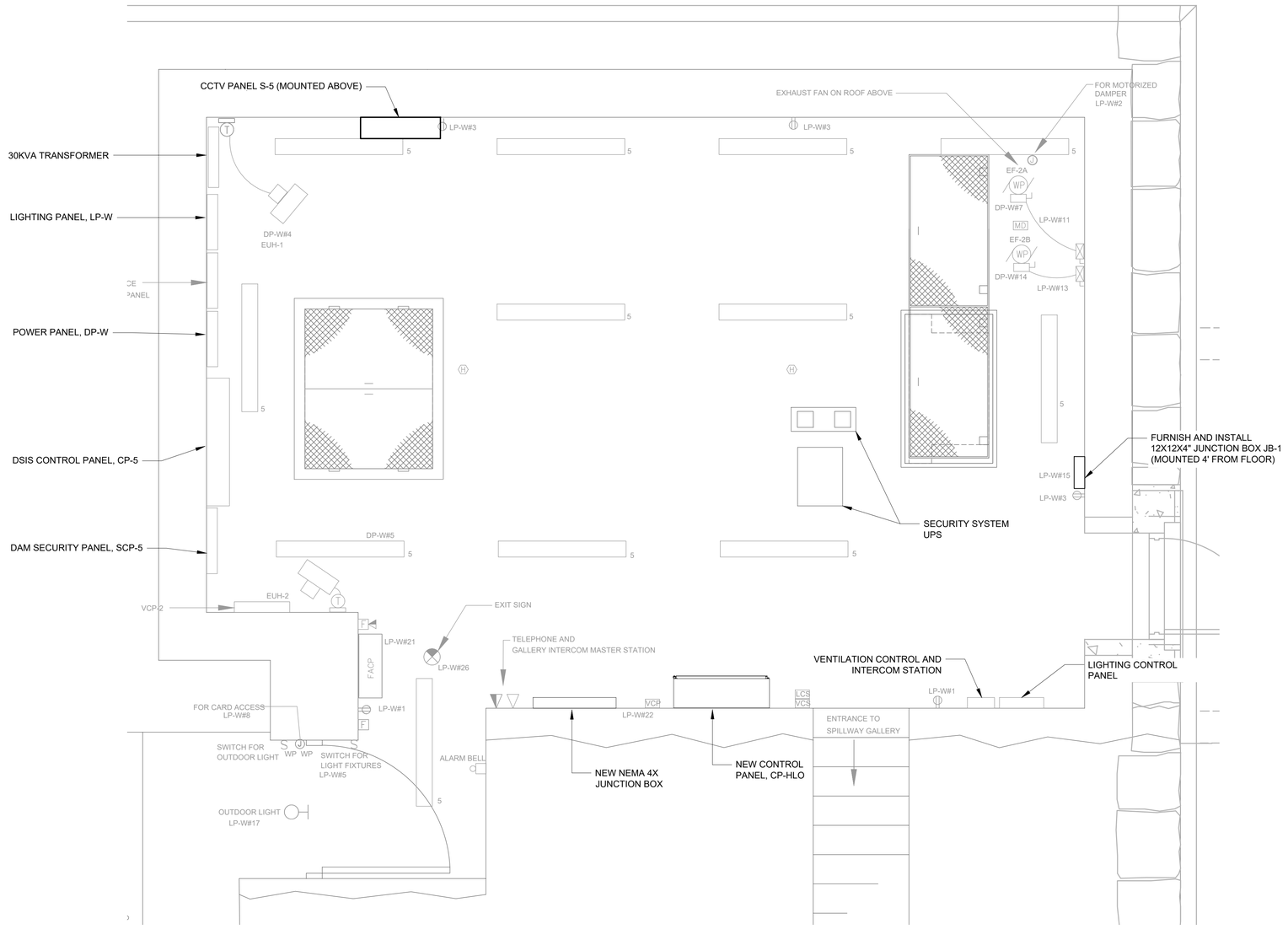
**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**

ELECTRICAL
UPPER GATE CHAMBER, DEMOLITION PLAN

DATE: AUGUST 2026
SHEET NO: 106 of 112
DRAWING NO. 475-E-005

Last Saved By: DKlokathis — Last Date Saved: 8/5/2026 5:42 PM
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Drawing File Name & Drive Location: C:_DCIACCDocs\Hazen and Sawyer\90441-001_CAT-475-DES Gilboa Dam HLO\Project Files\0)_Design\Elec\475-E-005.dwg — Plot Scale: 1:1 — Date & Time Plotted: 8/6/2026 9:43 AM

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## UPPER GATE CHAMBER POWER PLAN

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

## NOTES:

1. EQUIPMENT LOCATIONS AND SIZES ARE APPROXIMATE. VERIFY EXISTING CONDITIONS IN FIELD.

0 2 4 FT.
1/2"=1'-0"

GRAPHIC SCALES CHECK BEFORE USE

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**SUBMITTAL DATE: AUG 2026**

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| 0 | AUG 26 | ISSUED FOR BIDS | CSB |

DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: GM
DESIGN LEAD: GEORGE MARKOU, PE
SECTION MANAGER: KURT MATSCHERZ, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10018

STATE OF NEW YORK — GEORGE MARKOU — 072603 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
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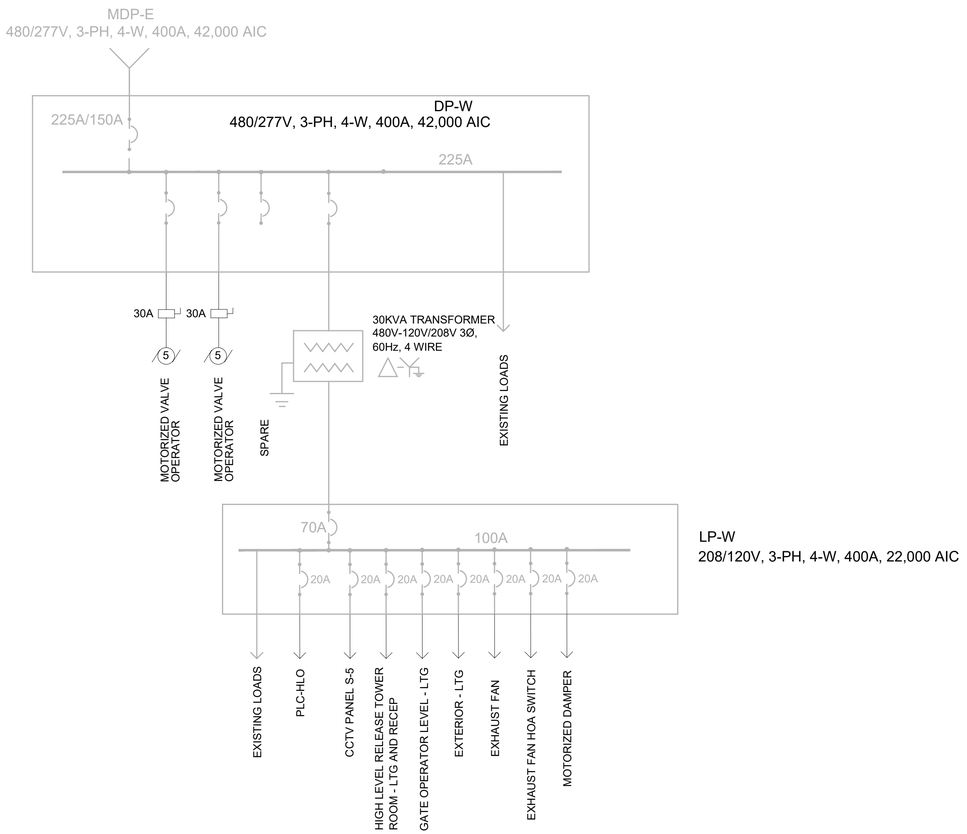
**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**

ELECTRICAL
UPPER GATE CHAMBER, POWER PLAN

DATE: AUGUST 2026
SHEET NO: 107 of 112
DRAWING NO. 475-E-006

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Drawing File Name & Drive Location: C:_DCA\CCDocs\Hazen and Sawyer\90441-001_CA1-475-DES Gilboa Dam HLO\Project Files\01_Design\Elec\475-E-006.dwg
Date & Time Plotted: 8/6/2026 9:44 AM




LP-W
208/120V, 3-PH, 4-W, 400A, 22,000 AIC

## ONE LINE DIAGRAM FOR UPPER GATE CHAMBER/NEW EQUIPMENT

ONLY PROPOSED LOADS ARE REPRESENTED IN THE FIGURE ABOVE (EQUIPMENT TO BE REMOVED NOT SHOWN.)

| CONDUIT NO. | SIZE | FROM | TO | CONDUCTORS | REMARKS |
|---|---|---|---|---|---|
| P-001 | 1" | DP-W | MOTORIZED VALVE OPERATOR | 3#10 & 1#10G | VIA JB-1 AND 30A DISCONNECT |
| P-002 | 1" | DP-W | MOTORIZED VALVE OPERATOR | 3#10 & 1#10G | VIA JB-1 AND 30A DISCONNECT |
| P-003 | 3/4" | LP-W | PLC-HLO | 2#12 & 1#12G | |
| P-004 | 3/4" | LP-W | CCTV PANEL S-5 | 2#12 & 1#12G | |
| P-005 | 3/4" | LP-W | EXHAUST FAN | 2#12 & 1#12G | |
| P-006 | 3/4" | LP-W | HOA SWITCH | 2#12 & 1#12G | |
| P-007 | 3/4" | LP-W | MOTORIZED DAMPER | 2#12 & 1#12G | |
| P-008 | 3/4" | LP-W | HIGH LEVEL RELEASE TOWER ROOM - LTG & RECEPTACLES | 2#12 & 1#12G | |
| P-009 | 3/4" | LP-W | GATE OPERATOR ROOM - LTG | 2#12 & 1#12G | |
| P-010 | 2" | LP-W | EXTERIOR - LTG | 2#12 & 1#12G | |
| C-001 | 1" | PLC-HLO | MOTORIZED VALVE OPERATOR | 16#14 | |
| C-002 | 1" | PLC-HLO | MOTORIZED VALVE OPERATOR | 16#14 | |
| C-003 | 3/4" | PLC-HLO | FLOAT SWITCH | 2#14 | |
| C-004 | 1" | CCTV PANEL S-5 | SCP-5 | CAT6 | |
| C-005 | 1" | SCP-5 | PARAPHET CAMERA NO. 1 | CAT6 | |
| C-006 | 1" | SCP-5 | PARAPHET CAMERA NO. 2 | CAT6 | |
| I-001 | 1" | PLC-HLO | ULTRASONIC TRANSMITTER | 2/C#16TSP | |

## CABLE AND CONDUIT SCHEDULE

480/277V, 3P, 4W — DP-W — TYPE: NEMA 4X
225A BUS — MAIN BREAKER — MOUNT: SURFACE
42kA (MINIMUM) — 225AF/150AT, 3P

| DESCRIPTION | TRIP | POLE | CKT No. | KILO-VOLT-AMPERES A | B | C |
|---|---|---|---|---|---|---|
| MOTORIZED VALVE OPERATOR | 30 | 3 | 1 | 3.2 | | |
| | | | 3 | | 3.2 | |
| | | | 5 | | | 3.2 |
| SPARE | 30 | 3 | 7 | 0.0 | | |
| | | | 9 | | 0.0 | |
| | | | 11 | | | 0.0 |
| EUH-1 | 20 | 3 | 13 | 2.5 | | |
| | | | 15 | | 2.5 | |
| | | | 17 | | | 2.5 |
| EF-2A | 20 | 3 | 19 | 0.4 | | |
| | | | 21 | | 0.4 | |
| | | | 23 | | | 0.4 |
| EF-1 | 20 | 3 | 25 | 0.4 | | |
| | | | 27 | | 0.4 | |
| | | | 29 | | | 0.4 |
| SPARE | 20 | 3 | 31 | - | | |
| | | | 33 | | - | |
| | | | 35 | | | - |
| SPARE | 20 | 3 | 37 | - | | |
| | | | 39 | | - | |
| | | | 41 | | | - |
| TOTAL | | | | 6.5 | 6.5 | 6.5 |
| | | | | PHASE TOTAL (KVA) | | |
| | | | | 16.6 | 16.6 | 16.6 |
| | | | | PHASE TOTAL (A) | | |
| | | | | 59.9 | 59.9 | 59.9 |

| KILO-VOLT-AMPERES A | B | C | CKT No. | POLE | TRIP | DESCRIPTION | MODS |
|---|---|---|---|---|---|---|---|
| 3.2 | | | 2 | | | | |
| | 3.2 | | 4 | 3 | 30 | MOTORIZED VALVE OPERATOR | - |
| | | 3.2 | 6 | | | | |
| 4.0 | | | 8 | | | | |
| | 4.0 | | 10 | 3 | 30 | LP-W XFMER | - |
| | | 4.0 | 12 | | | | |
| 2.5 | | | 14 | | | | |
| | 2.5 | | 16 | 3 | 20 | EUH-2 | - |
| | | 2.5 | 18 | | | | |
| 0.4 | | | 20 | | | | |
| | 0.4 | | 22 | 3 | 20 | EF-2B | - |
| | | 0.4 | 24 | | | | |
| - | | | 26 | | | | |
| | - | | 28 | 3 | 20 | SPARE | - |
| | | - | 30 | | | | |
| - | | | 32 | | | | |
| | - | | 34 | 3 | 20 | SPARE | - |
| | | - | 36 | | | | |
| - | | | 38 | | | | |
| | - | | 40 | 3 | 20 | SPD | - |
| | | - | 42 | | | | |
| TOTAL | 10.1 | 10.1 | 10.1 | TOTAL | | | |
| | TOTAL LOAD (KVA) | | | | | | |
| | 49.8 | | | | | | |
| | TOTAL LOAD (A) | | | | | | |
| | 59.9 | | | | | | |

NOTES/ACCESSORIES:
100kA SPD

## PANELBOARD DP-W

208/120V, 3P, 4W — LP-W — TYPE: NEMA 4X
100A BUS — MAIN BREAKER — MOUNT: SURFACE
22kA (MINIMUM) — 100AF/70AT, 3P

| DESCRIPTION | TRIP | POLE | CKT No. | KILO-VOLT-AMPERES A | B | C |
|---|---|---|---|---|---|---|
| RECEPTACLES | 20 | 1 | 1 | 0.5 | | |
| RECEPTACLES | 20 | 1 | 3 | | 0.5 | |
| LIGHTING | 20 | 1 | 5 | | | 0.3 |
| PLC-HLO | 20 | 1 | 7 | 0.1 | | |
| CCTV PANEL S-5 | 20 | 1 | 9 | | 0.1 | |
| SPARE | 20 | 1 | 11 | | | - |
| SPARE | 20 | 1 | 13 | - | | |
| SPARE | 20 | 1 | 15 | | - | |
| LIGHTING OUTDOOR | 20 | 1 | 17 | | | 0.1 |
| WIRELESS EQUIPMENT | 20 | 1 | 19 | 0.4 | | |
| FACP | 20 | 1 | 21 | | 0.3 | |
| LIGHTING CONTROL | 20 | 1 | 23 | | | 0.3 |
| UPS | 20 | 1 | 25 | 1.0 | | |
| CP-6 | 20 | 1 | 27 | | 1.00 | |
| GATE OPERATOR LEVEL - LTG | 20 | 1 | 29 | | | 0.4 |
| EXHAUST FAN | 20 | 1 | 31 | 0.1 | | |
| MOTORIZED DAMPER | 20 | 1 | 33 | | 0.1 | |
| SPARE | 20 | 1 | 35 | | | - |
| SPARE | 20 | 1 | 37 | - | | |
| SPARE | 20 | 1 | 39 | | - | |
| SPARE | 20 | 1 | 41 | | | - |
| TOTAL | | | | 2.1 | 2.0 | 1.1 |
| | | | | PHASE TOTAL (KVA) | | |
| | | | | 5.0 | 5.4 | 3.2 |
| | | | | PHASE TOTAL (A) | | |
| | | | | 42.0 | 45.2 | 26.3 |

| KILO-VOLT-AMPERES A | B | C | CKT No. | POLE | TRIP | DESCRIPTION |
|---|---|---|---|---|---|---|
| 0.5 | | | 2 | 1 | 20 | DAMPERS |
| | 0.5 | | 4 | 1 | 20 | MOV CONTROLS |
| | | 0.3 | 6 | 1 | 20 | CCTV/TRANSDUCERS |
| 0.2 | | | 8 | 1 | 20 | CARD ACCESS |
| | 0.5 | | 10 | 1 | 20 | INSTRUSION ALARM PANELS |
| | | 0.2 | 12 | 1 | 20 | THERMOSTATS |
| 1.2 | | | 14 | 1 | 20 | STAIR LIGHTING |
| | 0.8 | | 16 | 1 | 20 | OUTDOOR LIGHTING |
| | | 0.5 | 18 | 1 | 20 | INTERCOM PANEL |
| 0.8 | | | 20 | 1 | 20 | CP-5 |
| | 0.5 | | 22 | 1 | 20 | HVAC PANELS |
| | | 0.8 | 24 | 1 | 20 | CP-7 |
| 0.1 | | | 26 | 1 | 20 | EXIT SIGNS |
| | 1.1 | | 28 | 1 | 20 | HIGH LEVEL RELEASE TOWER ROOM - LTG & RECEPTACLES |
| | | 0.3 | 30 | 1 | 20 | EXTERIOR - LTG |
| 0.1 | | | 32 | 1 | 20 | HOA SWITCH |
| | - | | 34 | 1 | 20 | SPARE |
| | | - | 36 | 1 | 20 | SPARE |
| - | | | 38 | | | |
| | - | | 40 | 3 | 60 | SPD |
| | | - | 42 | | | |
| 2.9 | 3.4 | 2.1 | TOTAL | | | |
| TOTAL LOAD (KVA) | | | | | | |
| 13.6 | | | | | | |
| TOTAL LOAD (A) | | | | | | |
| 37.8 | | | | | | |

NOTES/ACCESSORIES:
100kA SPD

## PANELBOARD LP-W

## NOTES:

1. DISTRIBUTION PANELBOARD DP-W IS A TYPE NF SQUARE D PANELBOARD WITH TYPE EJB SQUARE D BRANCH CIRCUIT BREAKERS.
2. LIGHTING PANELBOARD LP-W IS A TYPE NQ SQUARE D PANELBOARD WITH TYPE QOB-VH SQUARE D BRANCH CIRCUIT BREAKERS.

**BID SET**
**SUBMITTAL DATE: AUG 2026**

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DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: GM
DESIGN LEAD: GEORGE MARKOU, PE
SECTION MANAGER: KURT MATSCHERZ, PE

Gannett Fleming Hazen A Joint Venture
HAZEN AND SAWYER
498 SEVENTH AVENUE, 11th FLOOR
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ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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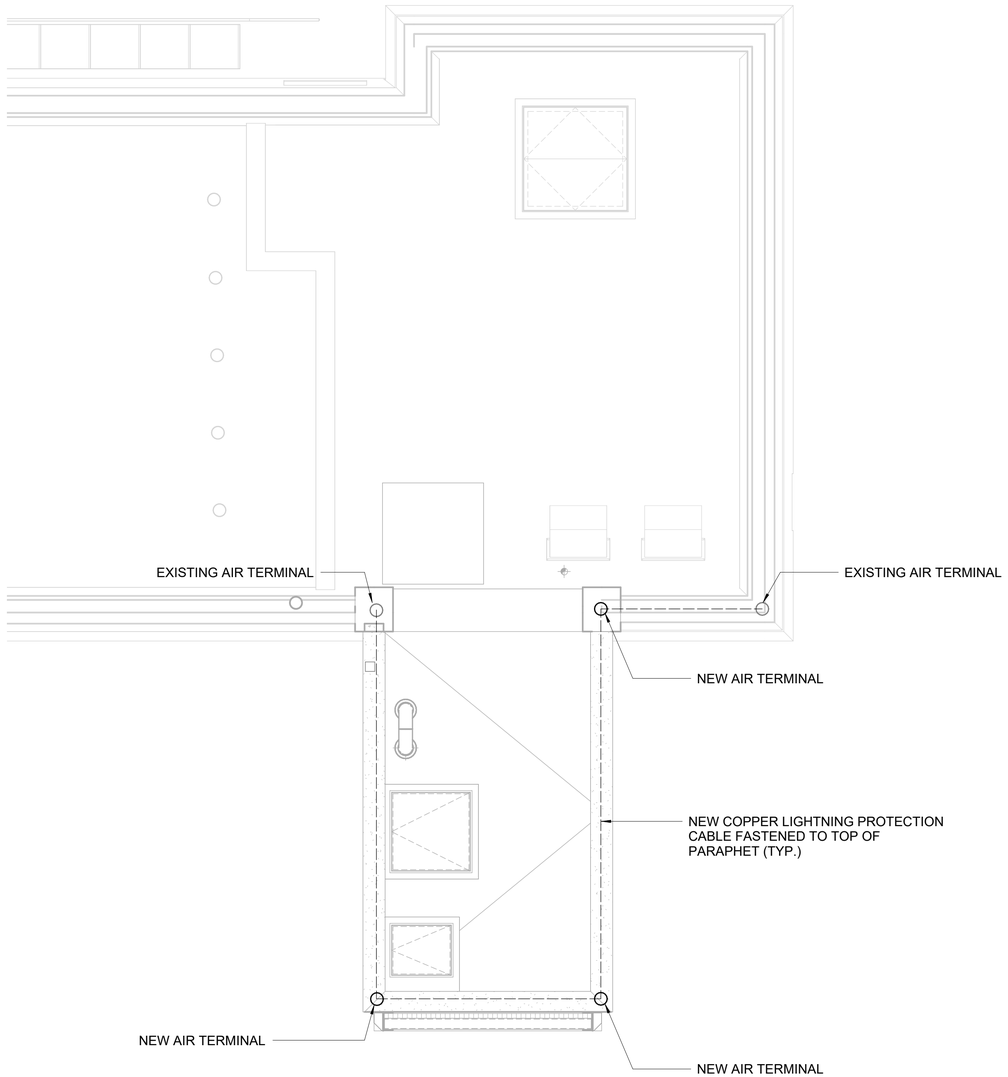
SCHOHARIE RESERVOIR CAT-475
HIGH LEVEL OUTLET (HLO) INSTALLATION
AT GILBOA DAM AND CREST GATE REMOVAL

ELECTRICAL
SINGLE LINE DIAGRAM MODIFICATIONS

DATE: AUGUST 2026
SHEET NO: 108 of 112
DRAWING NO. 475-E-007

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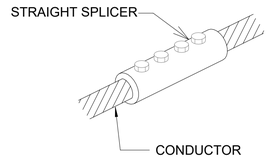



## MONOLITH M18 - LIGHTNING PROTECTION PLAN AT EL 1150.00

1/4" = 1'-0"

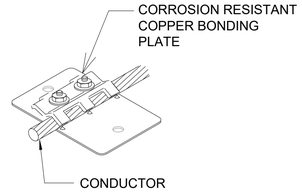
## NOTES

1. ALL EXISTING AIR TERMINALS AND GROUND RODS NOT SHOWN, VERIFY EXISTING CONDITIONS IN FIELD.
2. ALL LIGHTNING PROTECTION CONDUCTORS SHALL BE FASTENED EVERY 3'-0" MAXIMUM.
3. NO BEND OF CONDUCTOR SHALL FORM AN ANGLE OF LESS THAN 90 DEGREES NOR SHALL HAVE A RADIUS OF BEND LESS THAN 8".



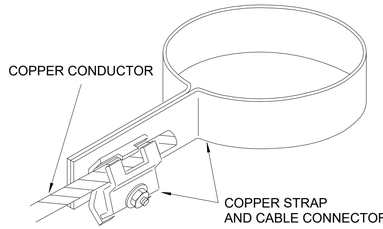

## STRAIGHT SPLICER

NTS



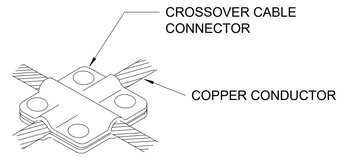

## BONDING PLATE

NTS



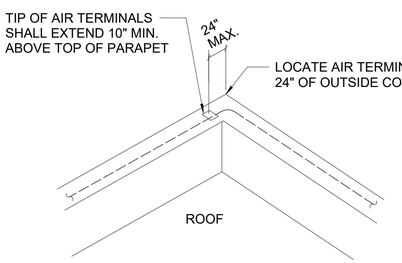

## PIPE CLAMP (RAILINGS, ANTENNAS, ETC.)

NTS



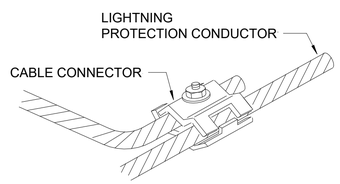

## CROSSOVER CABLE CONNECTOR

NTS




## AIR TERMINALS SHALL BE LOCATED WITHIN 24" OF OUTSIDE CORNERS

NTS




## CABLE CONNECTOR

NTS

0 4 8 FT.

1/4"=1'-0"

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CHECKED BY: GM
DESIGN LEAD: GEORGE MARKOU, PE
SECTION MANAGER: KURT MATSCHERZ, PE

DRAWN BY: DK

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STATE OF NEW YORK — GEORGE MARKOU — 072603 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: PAUL LAFIANDRA
PORTFOLIO MANAGER: GEORGE SCHMITT, PE

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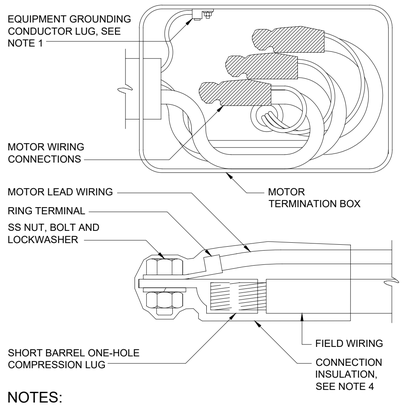
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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
ELECTRICAL
LIGHTNING PROTECTION PLAN

DATE: AUGUST 2026
SHEET NO: 109 of 112
DRAWING NO. 475-E-008

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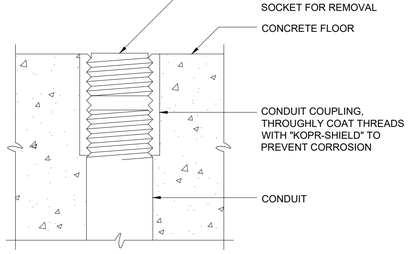



## NOTES:

1. EQUIPMENT GROUNDING CONDUCTOR LUG SHALL BE ATTACHED WITH NUT AND LOCKWASHER TO THE MOTOR GROUNDING STUD. WHERE PROVIDED, FACTORY INSTALLED EQUIPMENT GROUNDING CONDUCTOR LUGS ARE ACCEPTABLE IN LIEU OF THE FIELD INSTALLED EQUIPMENT GROUNDING CONDUCTOR LUG.
2. RING TERMINALS ON MOTOR LEADS SHALL BE FACTORY INSTALLED BY THE MOTOR MANUFACTURER.
3. INSTALL SHORT BARREL COMPRESSION CONNECTOR ON FIELD WIRING WITH MANUFACTURER'S RECOMMENDED COMPRESSION TOOL AND CRIMPING DIE. CONNECTORS SHALL HAVE SMOOTHLY ROUNDED EDGES.
4. HEAT SHRINK OR COLD APPLIED CONNECTOR INSULATION LISTED FOR THE PURPOSE AND AS SPECIFIED.

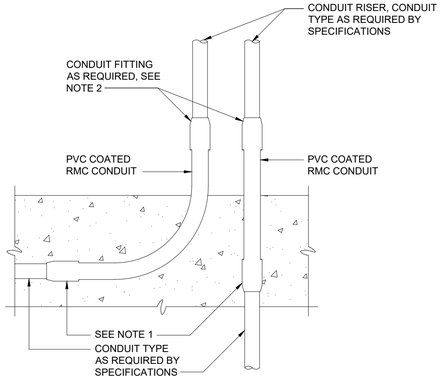
## LOW VOLTAGE MOTOR TERMINATION

NTS




## FLOOR STUP-UP FOR FUTURE CONDUIT

NTS

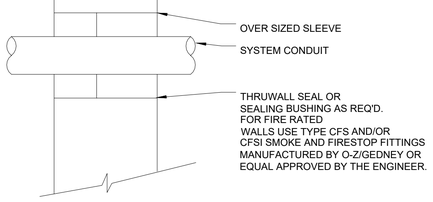



## NOTES:

1. FOR ENCASED PVC CONDUIT USE PVC TERMINAL ADAPTER. FOR ALL OTHER CONDUIT TYPES, USE PVC COATED RMC COUPLINGS.
2. IF ANY THREADS OF THE PVC COATED RMC CONDUIT ARE EXPOSED AFTER INSTALLATION OF THE CONDUIT FITTING, THE CONDUIT FITTING SHALL BE PVC COATED TYPE WITH APPROPRIATE PVC SKIRTS. IF THE THREADS OF THE PVC COATED RMC CONDUIT ARE PROPERLY CUT SO THAT THEY ARE NOT EXPOSED AFTER INSTALLATION OF THE CONDUIT FITTING, THE CONDUIT MATERIAL SHALL BE AS REQUIRED BY THE SPECIFICATIONS, BASED ON THE MATERIAL OF THE CONDUIT RISER.

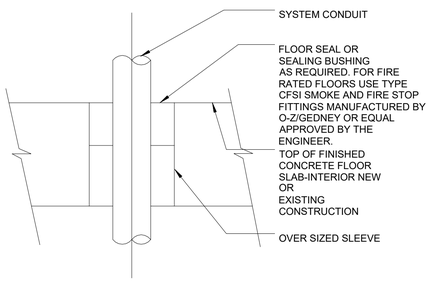
## CONDUIT EXITING CONCRETE ENCASEMENT

NTS



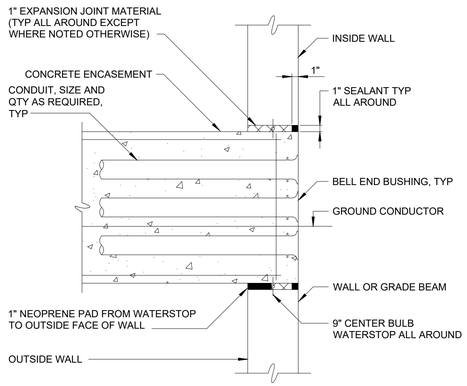

## TYPICAL CONDUIT THRU CONCRETE WALL DETAIL

NTS




## TYPICAL THRU FLOOR CONDUIT DETAIL

NTS

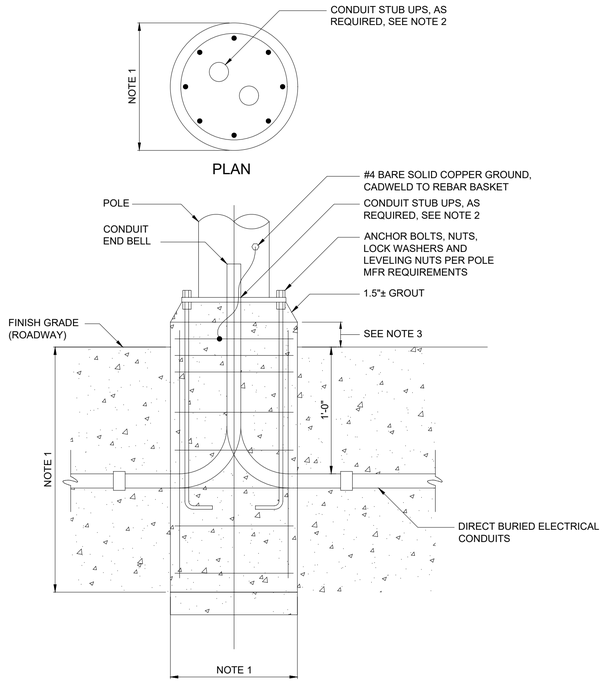



## NOTE:

1. THIS DETAIL IS APPLICABLE ONLY TO PENETRATIONS THROUGH WALLS THAT ARE TO BE INSTALLED UNDER THIS CONTACT, IT IS NOT APPLICABLE TO PENETRATIONS THROUGH EXISTING WALLS. THE OPENING SHALL BE FORMED INTO THE WALL PRIOR TO THE PLACEMENT OF CONCRETE.

## ENCASED ELECTRICAL CONDUITS AT PROPOSED STRUCTURES

NTS




## NOTES:

1. DIAMETER, DEPTH AND REINFORCEMENT SHALL BE DETERMINED BY POLE MANUFACTURER IN ACCORDANCE WITH SECTION 26 50 00. LOADING SHALL BE IN ACCORDANCE WITH SECTION 26 50 00.
2. CONTRACTOR SHALL CAREFULLY COORDINATE LOCATION AND QUANTITY OF CONDUITS IN THE BASE SO THAT WHEN POLE IS INSTALLED, IT WILL FIT OVER THE CONDUITS.
3. PROJECTED HEIGHT ABOVE GRADE SHALL BE AS DESCRIBED IN THE POLE SCHEDULE IN 26 50 00.

## POLE-MOUNTED LIGHTING FIXTURE BASE

NTS

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**SUBMITTAL DATE: AUG 2026**

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CHECKED BY: GM
DESIGN LEAD: GEORGE MARKOU, PE
SECTION MANAGER: KURT MATSCHERZ, PE

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**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**

ELECTRICAL
STANDARD DETAILS

DATE: AUGUST 2026
SHEET NO: 110 of 112
DRAWING NO. 475-E-009

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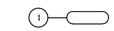
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# SYMBOLS

## SENSOR ABBREVIATIONS

| | |
|---|---|
| T | THERMOSTAT/TEMPERATURE SWITCH |
| FS | FLOW SENSOR |
| AMD | AUTOMATIC MOTORIZED DAMPER |
| GD | GRAVITY DAMPER |
| MD | MANUAL DAMPER |
| VD | VOLUME DAMPER |
| FD | FIRE DAMPER |
| FSD | FIRE/SMOKE DAMPER |

## EQUIPMENT - AIRFLOW DIAGRAMS


DUCT MOUNTED SENSOR


ROOM/SPACE SENSOR


XX-BLDG-QTY

ROOF EXHAUST FAN


XX-BLDG-QTY

INLINE FAN


XX-BLDG-QTY

WALL FAN

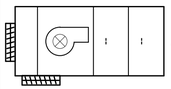

ROOF AIR INTAKE/RELIEF


DAMPER


LOUVER


FILTER


UNIT HEATER


AIR HANDLING UNIT

## DUCT SYSTEMS


SUPPLY AIR DUCT SECTION-UP


RETURN AIR DUCT

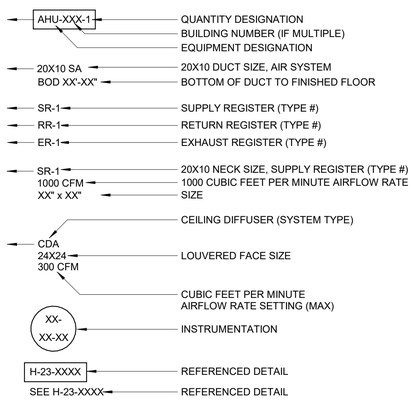

EXHAUST AIR DUCT

FLUE


INFILTRATION/EXFILTRATION


AIRFLOW

## ANNOTATIONS




## DAMPERS

AUTOMATED MOTORIZED DAMPER

BACKDRAFT DAMPER

FIRE DAMPER

FIRE/SMOKE DAMPER

MANUAL DAMPER

VOLUME DAMPER

# ABBREVIATIONS

| | |
|---|---|
| AI | ANALOG INPUT |
| AC | AIR CONDITIONING, AIR CONDITIONING UNIT |
| ACCU | AIR COOLED CONDENSING UNIT |
| ACC | AIR COOLED CONDENSER |
| AD | ACCESS DOOR |
| AFF | ABOVE FINISHED FLOOR |
| AFUE | ANNUAL FUEL UTILIZATION EFFICIENCY |
| AHU | AIR HANDLING UNIT |
| AMD | AUTOMATIC MOTORIZED DAMPER |
| AO | ANALOG OUTPUT |
| APD | AIR PRESSURE DROP |
| ATC | AUTOMATIC TEMPERATURE CONTROL |
| ATU | AIR TERMINAL UNIT |
| B | BOILER |
| BD | GRAVITY BACKDRAFT DAMPER |
| BFP | BACKFLOW PREVENTER |
| BHP | BRAKE HORSEPOWER |
| BOD | BOTTOM OF DUCT |
| BOR | BOTTOM OF REGISTER |
| BOT | BOTTOM |
| CB | CIRCUIT BREAKER |
| CFM | CUBIC FEET OF STANDARD AIR PER MINUTE |
| CH | CABINET UNIT HEATER |
| CLG | CEILING |
| CONN | CONNECTION |
| CWS | CHILLED WATER SUPPLY |
| CWR | CHILLED WATER RETURN |
| DI | DIGITAL INPUT |
| DB | DRY BULB |
| DDC | DIRECT DIGITAL CONTROL |
| DX | DIRECT EXPANSION REFRIGERANT |
| DIA | DIAMETER |
| DM | DAMPER MOTOR |
| DN | DOWN |
| DO | DIGITAL OUTPUT |
| EA | EXHAUST AIR |
| EC | ELECTRICAL CONTRACTOR |
| EAT | ENTERING AIR TEMPERATURE |
| EDH | ELECTRIC DUCT HEATER |
| EG | EXHAUST GRILLE |
| EUH | ELECTRIC UNIT HEATER |
| EF | EXHAUST FAN |
| EL/ELEV | ELEVATION |
| ES | ENTHALPY SENSOR |
| ESP | EXTERNAL STATIC PRESSURE |
| ET | EXPANSION TANK |
| EWT | ENTERING WATER TEMPERATURE |
| FA | FREE AREA |
| FC | FORWARD CURVED OR FAN COIL |
| FD | FIRE DAMPER WITH ACCESS DOOR |
| FLA | FULL LOAD AMPS |
| FOR | FUEL OIL RETURN |
| FOS | FUEL OIL SUPPLY |
| FOV | FUEL OIL VENT |
| FPM | FEET PER MINUTE |
| FTR | FINNED TUBE RADIATION |
| GC | GENERAL CONTRACTOR |
| GPM | GALLONS PER MINUTE |
| HG | HOT GAS |
| HP | HORSEPOWER OR HEAT PUMP |
| HV | HEATING AND VENTILATING UNIT |
| HWS | HOT WATER SUPPLY |
| HWR | HOT WATER RETURN |
| IDEC | INDIRECT EVAPORATIVE COOLING |
| IDH | INLINE DUCT HEATER |
| IN. WG | INCHES OF WATER GAGE |
| KW | KILOWATT (1,000 WATTS) |
| L | LOUVER |
| LAT | LEAVING AIR TEMPERATURE |
| LD | LINEAR DIFFUSER |
| LF | LINEAR FEET |
| LR | LINEAR RETURN |
| LWT | LEAVING WATER TEMPERATURE |
| MAU | MAKEUP AIR UNIT |
| MBH | 1,000 BTU PER HOUR |
| MC | MECHANICAL CONTRACTOR |
| MCA | MINIMUM CIRCUIT AMPACITY |
| MD | MANUAL DAMPER |
| MTD | MOUNTED |
| NC | NORMALLY CLOSED, NOISE CRITERIA |
| NK | NECK |
| NO | NORMALLY OPEN |
| NTS | NOT TO SCALE |
| OA | OUTSIDE AIR |
| OAI | OUTSIDE AIR INTAKE |
| ORP | OXYGEN REDUCTION POTENTIAL |
| P | PUMP |
| PC | PLUMBING CONTRACTOR |
| PD | PRESSURE DROP |
| PF | PROPELLER FAN |
| PH, ∅ | PHASE |
| PPU | POSITIVE PRESSURIZATION UNIT |
| PROP | PROPELLER |
| PRV | PRESSURE REGULATING VALVE |
| PTAC | PACKAGED TERMINAL AIR CONDITIONING UNIT |
| PS | PRESSURE SENSOR |
| PW | POTABLE WATER |
| RA | RETURN AIR |
| RH | RELATIVE HUMIDITY |
| RL | REFRIGERANT LIQUID |
| RLA | RATED LINE AMPS |
| RS | REFRIGERANT SUCTION |
| RPM | REVOLUTIONS PER MINUTE |
| SA | SUPPLY AIR |
| SD | SMOKE DETECTOR |
| SF | SUPPLY AIR FAN |
| SG | SUPPLY GRILLE |
| SHR | SENSIBLE HEAT RATIO |
| SP | STATIC PRESSURE |
| SPEC | SPECIFICATION |
| SS | STAINLESS STEEL |
| SV | SOLENOID VALVE |
| TEMP | TEMPERATURE |
| TF | TRANSFER FAN |
| TH | TOTAL HEAT |
| TOD | TOP OF DUCT |
| TOU | TOP OF UNIT |
| TOR | TOP OF REGISTER |
| TSP | TOTAL STATIC PRESSURE |
| TS | TEMPERATURE SENSOR |
| TYP | TYPICAL |
| UH | UNIT HEATER |
| V | VOLTS |
| VAV | VARIABLE AIR VOLUME |
| VD | VOLUME DAMPER |
| VEL | VELOCITY |
| VH | HEATING CONTROL VALVE |
| VC | COOLING CONTROL VALVE |
| VFD | VARIABLE FREQUENCY DRIVE |
| VVT | VARIABLE VOLUME AND VARIABLE TEMPERATURE |
| WPD | WATER PRESSURE DROP |
| W/ | WITH |
| WB | WET BULB |
| WC | WATER COLUMN |

# LINETYPES

NEW - HVAC

NEW - ALL ADDITIONAL DISCIPLINES

NEW - HIDDEN

NEW - INSULATED DUCT

VENT

EXISTING - HIDDEN

EXISTING - ALL DISCIPLINES

DEMOLITION

# GENERAL NOTES

1. THE SYMBOLS AND ABBREVIATIONS LIST ON THIS SHEET IS A COMPREHENSIVE STANDARD GUIDE INTENDED FOR GENERAL USE ON ALL PROJECTS. THEREFORE, NOT ALL THE SYMBOLS AND ABBREVIATIONS CONTAINED IN THIS LIST ARE NECESSARILY USED ON THIS PARTICULAR PROJECT AND SHOULD BE USED FOR CLARIFICATION ONLY.
2. ALL DUCT DIMENSIONS ARE CLEAR DIMENSIONS TO INSIDE OF DUCT. DIMENSIONS TO DUCTS FROM FLOOR OR WALL SHALL BE TO THE OUTSIDE OF DUCT/INSULATION. WHERE INTERNAL INSULATION IS REQUIRED THE DUCT SIZE SHALL BE INCREASED TO GIVE CLEAR INSIDE DIMENSIONS AS NOTED ON THE DRAWINGS.
3. EQUIPMENT SIZES AND LOCATIONS ARE APPROXIMATE. ACTUAL DIMENSIONS TO BE DETERMINED BY EQUIPMENT FURNISHED. COORDINATE HVAC WORK WTIH THE WORK OF ALL OTHER TRADES.
4. FINAL OPENING DIMENSIONS, CONCRETE PAD SIZES, AND LOCATIONS MUST BE COORDINATED DURING CONSTRUCTION WITH APPROVED EQUIPMENT.
5. FINAL SIZES OF FLOOR OPENINGS, DUCT PLENUMS, TRANSITIONS AND PIPING CONNECTIONS TO ALL EQUIPMENT SHALL BE DETERMINED BY EQUIPMENT FURNISHED.
6. THE DRAWINGS ARE SCHEMATIC IN NATURE AND SHOW INTENDED GENERAL LOCATION OF HVAC EQUIPMENT AND SYSTEMS. NOT ALL OFFSETS AND REQUIRED FITTINGS FOR ACTUAL FIELD INSTALLATION ARE INTENDED TO BE SHOWN FOR INSTALLATION OF SYSTEMS IN THE SPACE AVAILABLE IN CONSIDERATION OF WORK OF OTHER TRADES AND FIELD CONDITIONS. CONTRACTOR SHALL PROVIDE ADDITIONAL OFFSETS IN DUCTWORK AND PIPING AS REQUIRED TO AVOID SUCH INTERFERENCES OR FIELD CONDITIONS AT NO ADDITIONAL COST TO THE ORIGINAL CONTRACT AMOUNT.
7. FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED OR WIDTH OF DUCT IN PLAN VIEW.
8. COORDINATE THE REQUIREMENTS FOR HVAC OPENINGS AND SLEEVES IN BUILDING ELEMENTS WITH THE GC.
9. CONTRACTOR SHALL REFER TO SPECIFICATION SECTION 099000 FOR PAINTING REQUIREMENTS UNLESS OTHERWISE NOTED.
10. REFER TO ELECTRICAL DRAWINGS OR SPECIFICATIONS FOR INTERLOCKING WIRING REQUIREMENTS.
11. CONTRACTOR SHALL COORDINATE DUCTWORK INSTALLATION WITH OTHER TRADES.
12. PROVIDE ADEQUATE SUPPORT, PER THE MANUFACTURER'S RECOMMENDATIONS, FOR ALL HVAC EQUIPMENT.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ELECTRICAL RATINGS FROM CERTIFIED DRAWINGS OF EQUIPMENT AND SHALL MAKE ANY BRANCH CIRCUIT DISTRIBUTION MODIFICATION REQUIREMENTS WITHOUT ANY ADDITIONAL COST TO OWNER. THE CONTRACTOR SHALL SUBMIT A SCHEDULE OF SUCH CHANGES FOR APPROVAL BY ENGINEER.
14. WHEREVER THE REQUIREMENTS AND REGULATIONS OF STATE, FEDERAL AND LOCAL AUTHORITIES HAVING JURISDICTION DIFFER FROM THE DRAWINGS OR SPECIFICATIONS, THEY SHALL TAKE PRECEDENCE AND SHALL BE MADE PART OF THE CONTRACT (EXCEPT WHERE THE DRAWINGS OR SPECIFICATIONS ARE MORE STRINGENT).
15. THE CONTRACTOR SHALL PROVIDE AND INSTALL FIRE AND SMOKE RATED DAMPERS IN HVAC DUCTS WHICH PENETRATE FIRE RATED BUILDING ASSEMBLIES AS SHOWN ON ARCHITECTURAL DRAWINGS.
16. DUCTWORK AND PLENUM TO LOUVERS SHALL BE CONNECTED TO FRAMED OPENINGS AND, SEALED AIRTIGHT AND WEATHER RESISTANT.
17. THERMOSTATS, SENSORS, AND/OR CONTROL PANEL LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE COORDINATED TO SUIT FIELD CONDITIONS.
18. INSTALL WALL MTD SENSORS, CONTROLS AND THERMOSTATS 5'-0" AFF UNLESS OTHERWISE NOTED. ALIGN WITH OTHER NEARBY ITEMS SUCH AS LIGHT SWITCHES. DO NOT INSTALL CLOSER THAN 6-INCHES FROM EDGE OF DOOR FRAME OR CORNER OF WALL AS SHOWN ON ARCH PLANS. WHERE CONFLICTS MAY OCCUR WITH ITEMS SUCH AS LIGHT SWITCHES, MOUNT THE SENSOR OR CONTROL DEVICE 4'-6" AFF CENTERED ABOVE THE LIGHT SWITCH.
19. PROVIDE ADEQUATE MEANS OF ACCESS CLEARANCE FOR ALL HVAC/MECHANICAL EQUIPMENT AND SYSTEMS THAT REQUIRE ACCESS FOR PROPER OPERATION, MAINTENANCE AND REPAIR PER RECOMMENDED MANUFACTURER CLEARANCES. PROVIDE ACCESS DOORS WHERE NECESSARY IN FINISHED WALLS OR DRYWALL CEILINGS FOR ACCESS TO VALVES, DAMPERS, OR CONTROL DEVICES.
20. COORDINATE THE REQUIREMENTS OF HVAC HANGERS AND SUPPORTS W/ OTHER PRIME CONTRACTORS PROVIDING STRUCTURAL AND/OR ARCHITECTURAL BUILDING ELEMENTS WHICH HVAC SUPPORTS SHALL INTERFACE.
21. HVAC CONTRACTOR SHALL PROVIDE ALL FIRESTOPPING AND PIPE SLEEVES FOR ALL PIPE AND DUCT PENETRATIONS THRU FIRE RATED BUILDING ASSEMBLIES.
22. CONTRACTOR SHALL OBTAIN AND PAY ALL FEES RELATED TO PERMITTING, AND INSPECTIONS.
23. FOR ADDITIONAL REQUIREMENTS REFER TO SPECIFICATIONS.
24. WORK SHALL BE EXECUTED IN FULL COMPLIANCE WITH THE APPLICABLE PROVISIONS OF ALL LAWS, BY-LAWS, STATUTES, ORDINANCES, CODES, RULES, REGULATIONS, AND LAWFUL ORDERS OF PUBLIC AUTHORITIES BEARING ON THE PERFORMANCE AND EXECUTION OF THE WORK.
25. THE ENTIRE HVAC SYSTEM SHALL BE IN ACCORDANCE WITH BUT NOT LIMITED TO THE FOLLOWING CODES:
    A. 2020 MECHANICAL CODE OF NEW YORK STATE.
    B. 2020 ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE.
    C. 2020 FIRE CODE OF NEW YORK STATE.
26. THE CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES TO ENSURE ALL AIR CONDITIONING EQUIPMENT, DUCTWORK, PIPING AND RELATED APPERTUNANCES ARE NOT LOCATED ABOVE ELECTRICAL EQUIPMENT.

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CHECKED BY: SB
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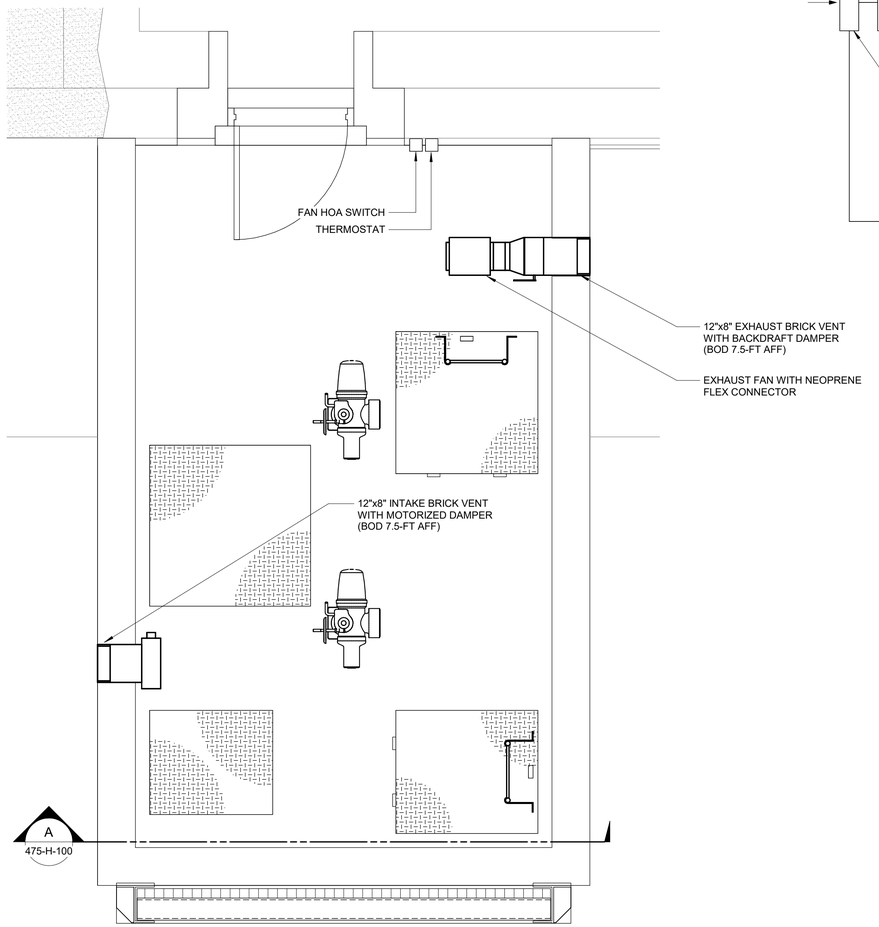
**SCHOHARIE RESERVOIR CAT-475**
**HIGH LEVEL OUTLET (HLO) INSTALLATION**
**AT GILBOA DAM AND CREST GATE REMOVAL**
HVAC
GENERAL NOTES & ABBREVIATIONS

DATE: AUGUST 2026
SHEET NO: 111 of 112
DRAWING NO. 475-H-001

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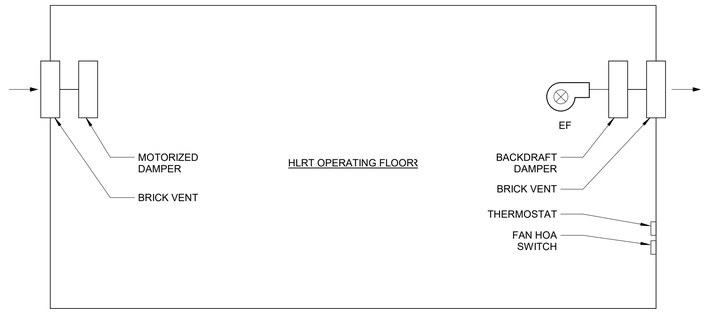
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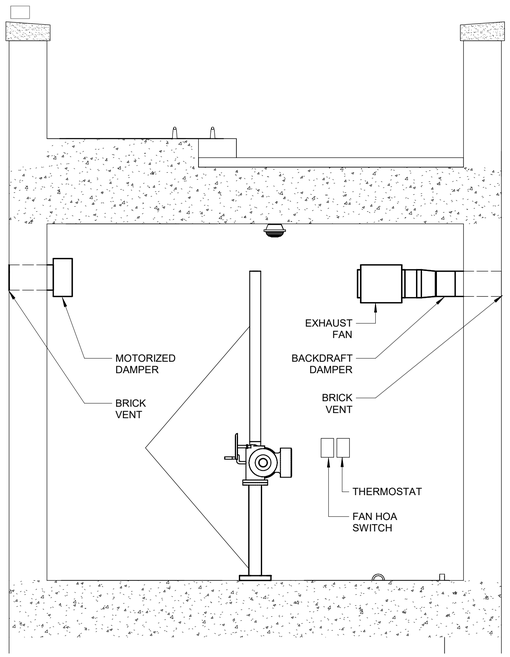



PLAN AT EL 1140.00

1/2" = 1'-0"




HVAC SCHEMATIC




A
475-H-100

SECTION

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

NOTES:

1. EXHAUST FAN SHALL BE RATED FOR 50 CFM AT A STATIC PRESSURE OF 0.4 INWG WITH SPRING ISOLATION HANGERS, OSHA GUARD, AND ALL ALUMINUM HOUSING AND WHEEL. MOTOR SHALL BE ELECTRONICALLY COMMUTATED WITH A 120 VAC SINGLE-PHASE POWER SOURCE WITH APPROXIMATE MOTOR SIZE OF 1/15-HP. BASIS OF DESIGN FOR FAN IS GREENHECK SQ-60-VG, FURNISHED WITH A HAND-OFF-AUTO (HOA) SWITCH AND THERMOSTAT COMPATIBLE WITH THE EC MOTOR. HOA SWITCH SHALL BE CAPABLE OF CONTROLLING THE MOTORIZED DAMPER ON THE INTAKE BRICK VENT. THE HOA SWITCH AND THE MOTORIZED DAMPER SHALL EACH BE PROVIDED WITH DEDICATED 120 VAC CIRCUITS.
2. THE BASIS OF DESIGN FOR THE INTAKE AND EXHAUST BRICK VENTS IS GREENHECK MODEL BVF WITH NOMINAL DIMENSIONS OF 12" WIDTH AND 8" HEIGHT, WITH HEAVY-GAUGE ALL-ALUMINUM CONSTRUCTION, KYNAR FINISH, ALUMINUM WALL SLEEVE, INSECT SCREEN, AND MAXIMUM FREE-AREA VELOCITY OF 250 FPM AT 50 CFM AIRFLOW.
3. THE BASIS DESIGN FOR THE MOTORIZED INTAKE DAMPER IS GREENHECK MODEL VCD-40 WITH ALL ALUMINUM CONSTRUCTION AND NEMA 4X ACTUATOR.
4. ALL DUCTWORK AND THE GRAVITY BACKDRAFT DAMPER SHALL BE CONSTRUCTED OF ALUMINUM IN ACCORDANCE WITH SMACNA PRESSURE CLASS +/- 2.0 INWG.
5. NEW YORK STATE MECHANICAL CODE MINIMUM VENTILATION REQUIRED: 0.06 CFM/SF x 215 SF = 13 CFM MINIMUM. THE ACCESS SHAFT BELOW THE 1140.00 FLOOR ELEVATION IS NOT CONSIDERED A REGULARLY OCCUPIABLE SPACE THUS IS NOT PROVIDED WITH A PERMANENT VENTILATION SYSTEM.
6. HOA SWITCH SHALL BE CAPABLE AUTOMATIC OPERATION BASED ON THE THERMOSTAT OR MANUAL OPERATION.

0 1 2 4 FT.

1/2"=1'-0"

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