## **PUBLIC NOTICE**



of Engineers R New England District 696 Virginia Road Concord, MA 01742-2751 Comment Period Begins: 13 October 2015 Comment Period Ends: 12 November 2015

File Number: NAE-2014-02548

In Reply Refer To: Phillip Nimeskern

Phone: (978) 318-8660

E-mail: Phillip.W.Nimeskern@usace.army.mil

The District Engineer has received a permit application to conduct work in waters of the United States from the Town of Peabody, Massachusetts. This work is proposed in Crystal Lake and Elginwood Pond at Crystal Drive and Lowell Street, Peabody, Massachusetts. The site coordinates are: Latitude 42.5488803° N, Longitude 71.0007980° W.

The applicant proposes to excavate sediment from Crystal Lake to improve its aquatic habitat and recreational use. Crystal Lake and Elginwood Pond are eutrophic man-made ponds that feed into Norris Brook.

This work involves drawing down Crystal Lake, excavating and dewatering sediments on the lake bottom, and removing the dewatered sediments, approximately 51,500 cubic yards (CY), for disposal at the City of Peabody's Farm Avenue Landfill. A portion of Elginwood Pond will provide an area to receive dewatering discharges from Crystal Lake.

Work in Crystal Lake includes the temporary discharge of dredged or fill material below the ordinary high water line (OHWL) of Waters of the United States (US) consisting of 2.1 acres of pond bottom for construction access roads, which will be either timber mats or temporary gravel roads underlain by filter fabric; 2 acres of pond bottom for dewatering stockpiles; 800 square feet (SF) of pond bottom for a cofferdam at the inlet at Lowell Street; an undetermined area of permanent stone fill to construct a drawdown sump; and 725 SF of pond bottom for 2 Construction Entry pads, which will be constructed of stone and geotextile.

Work in Elginwood Pond in connection with the Crystal Lake work includes the discharge of dredged or fill material below the OHWL of Waters of the US consisting of 2,840 SF of pond bottom for a temporary Construction Entry pad, which will be constructed of stone and geotextile; turbidity curtains; and an undetermined area of temporary fill for a riprap energy dissipater. After completion of the Crystal Lake work, approximately 0.56 acres of Elginwood Pond will be isolated by cofferdams and dewatered to remove sediments that accumulated in the pond as a result of the Crystal Lake work. Up to 1,300 CY of sediment will be removed for disposal at the City of Peabody's Farm Avenue Landfill. Impacts to Elginwood Pond for this later work are 2,700 SF of Cofferdams and an undetermined area of permanent stone fill to construct a drawdown sump.

Impacts caused by the drawdown of these two man-made ponds are secondary impacts to waters of the US.

The work is shown on the attached plans entitled "Crystal Lake Dredging Project," on 11 sheets, and dated, "AUGUST 2015."

#### CENAE-R FILE NO. NAE-2014-02548

#### **AUTHORITY**

Perm	its are required pursuant to:
	Section 10 of the Rivers and Harbors Act of 1899
X	Section 404 of the Clean Water Act
	Section 103 of the Marine Protection, Research and Sanctuaries Act.

The decision whether to issue a permit will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which may reasonably accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are: conservation, economics, aesthetics, general environmental concerns, wetlands, cultural value, fish and wildlife values, flood hazards, flood plain value, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Where the activity involves the discharge of dredged or fill material into waters of the United States or the transportation of dredged material for the purpose of disposing it in ocean waters, the evaluation of the impact of the activity in the public interest will also include application of the guidelines promulgated by the Administrator, U.S Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act, and/or Section 103 of the Marine Protection Research and Sanctuaries Act of 1972, as amended.

#### NATIONAL HISTORIC PRESERVATION ACT

Based on his initial review, the District Engineer has determined that little likelihood exists for the proposed work to impinge upon properties with cultural or Native American significance, or listed in, or eligible for listing in, the National Register of Historic Places. Therefore, no further consideration of the requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, is necessary. This determination is based upon one or more of the following:

- a. The permit area has been extensively modified by previous work.
- b. The permit area has been recently created.
- c. The proposed activity is of limited nature and scope.
- d. Review of the latest published version of the National Register shows that no presence of registered properties listed as being eligible for inclusion therein are in the permit area or general vicinity.
- e. Coordination with the State Historic Preservation Officer and/or Tribal Historic Preservation Officer(s)

#### CENAE-R FILE NO. NAE-2014-02548

#### ENDANGERED SPECIES CONSULTATION

The New England District, Army Corps of Engineers has reviewed the list of species protected under the Endangered Species Act of 1973, as amended, which might occur at the project site. It is our preliminary determination that the proposed activity for which authorization is being sought is designed, situated or will be operated/used in such a manner that it is not likely to adversely affect any Federally listed endangered or threatened species or their designated critical habitat. By this Public Notice, we are requesting that the appropriate Federal Agency concur with our determination.

#### **COASTAL ZONE MANAGEMENT**

The States of Connecticut, Maine, Massachusetts, New Hampshire and Rhode Island have approved **Coastal Zone Management Programs**. Where applicable, the applicant states that any proposed activity will comply with and will be conducted in a manner that is consistent with the approved Coastal Zone Management Program. By this Public Notice, we are requesting the State concurrence or objection to the applicant's consistency statement.

The following authorizations have been applied for, or have been, or will be obtained:

- ( ) Permit, License or Assent from State.
- (x) Permit from Local Wetland Agency or Conservation Commission.
- (x) Water Quality Certification in accordance with Section 401 of the Clean Water Act.

In order to properly evaluate the proposal, we are seeking public comment. Anyone wishing to comment is encouraged to do so. Comments should be submitted in writing by the above date. If you have any questions, please contact Phillip Nimeskern at (978) 318-8660, (800) 343-4789 or (800) 362-4367, if calling from within Massachusetts.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for a public hearing shall specifically state the reasons for holding a public hearing. The Corps holds public hearings for the purpose of obtaining public comments when that is the best means for understanding a wide variety of concerns from a diverse segment of the public.

The initial determinations made herein will be reviewed in light of facts submitted in response to this notice. All comments will be considered a matter of public record. Copies of letters of objection will be forwarded to the applicant who will normally be requested to contact objectors directly in an effort to reach an understanding.

THIS NOTICE IS NOT AN AUTHORIZATION TO DO ANY WORK.

Kevin R. Kotelly, P.E.

Chief, Permits and Enforcement Branch

**Regulatory Division** 

#### CENAE-R FILE NO. NAE-2014-02548

If you would prefer not to continue receiving Public Notices by email, please contact Ms. Tina Chaisson at
(978) 318-8058 or e-mail her at bettina.m.chaisson@usace.army.mil. You may also check here ( ) and return
this portion of the Public Notice to: Bettina Chaisson, Regulatory Division, U.S. Army Corps of Engineers,
696 Virginia Road, Concord, MA 01742-2751.

NAME:	
ADDRESS:	
PHONE:	

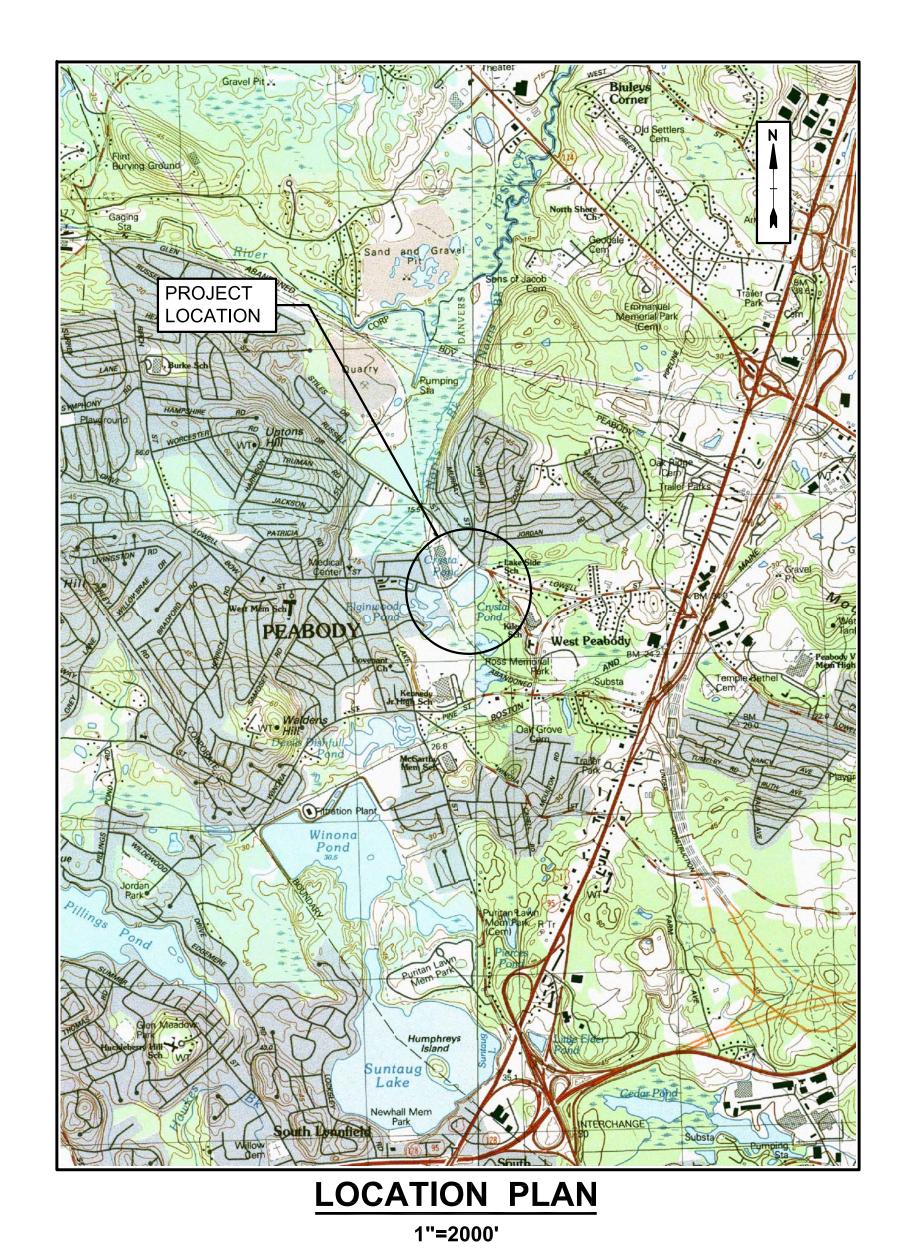
# CRYSTAL LAKE DREDGING PROJECT PEABODY, MA

## **AUGUST 2015**

## AD HOC PROJECT COMMITTEE

EDWARD A. BETTENCOURT, JR., MAYOR
BARRY SINEWITZ, CITY COUNCIL
CHRISTOPHER RYDER, MAYOR'S OFFICE
KAREN SAWYER CONARD, PLANNING
BRENDAN CALLAHAN, PLANNING
ROBERT J. LANGLEY, P.E., PUBLIC SERVICES
WILLIAM STANSFIELD, PUBLIC SERVICES
JOSEPH FINEGAN, P.E., RESIDENT

SHEET NO.	TITLE
1	COVER SHEET
2	LEGEND, GENERAL NOTES, AND ABBREVIATIONS
3	EXISTING CONDITIONS
4	CRYSTAL LAKE DREDGING PLAN
5	CROSS SECTIONS
6	CROSS SECTIONS
7	ELGINWOOD POND MITIGATION PLAN
8	RESTORATION PLAN
9	PARK PLAN
10	DETAILS - 1
11	DETAILS - 2
12	DETAILS - 3
13	LANDSCAPE DETAILS
14	SITE DETAILS
15	SITE DETAILS



## **MAYOR**

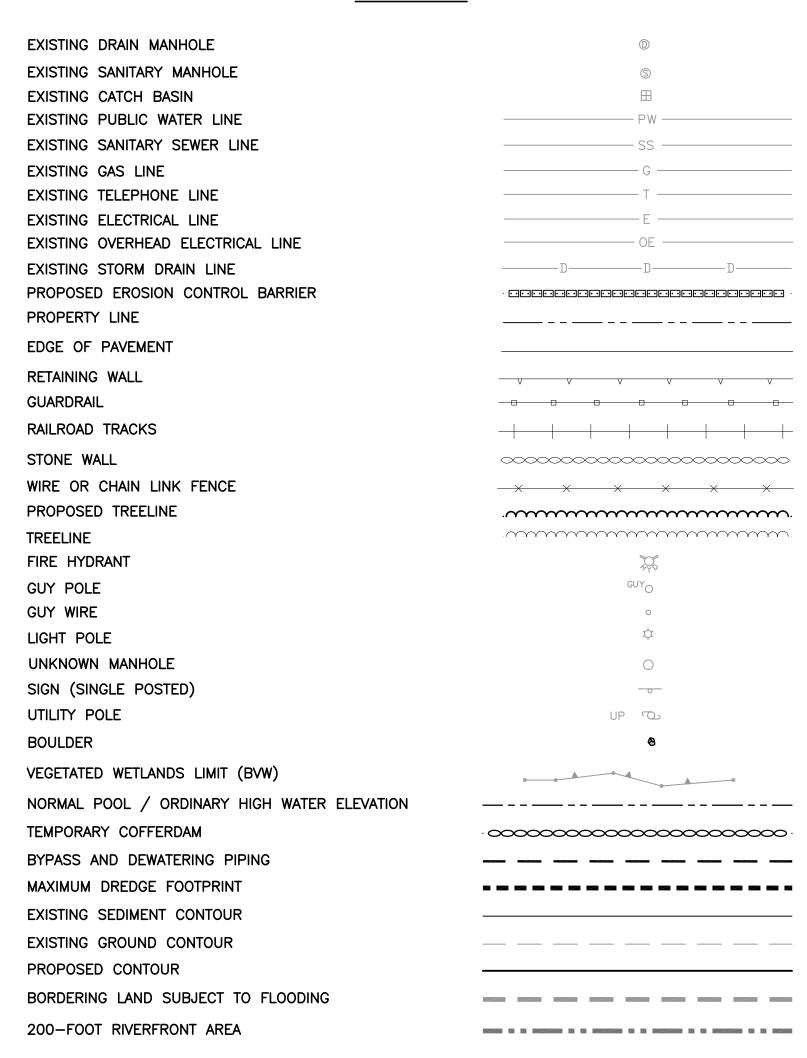
EDWARD A. BETTENCOURT, JR.





PERMIT SET
NOT FOR CONSTRUCTION
COMPLETE SET 15 SHEETS

## **LEGEND**



## **ABBREVIATIONS**

BITUMINOUS CONCRETE BORDERING VEGETATED WETLAND	BIT CONC BVW	LINEAR FEET MAIL BOX	LF MB
CATCH BASIN	CB	MANHOLE	MH
CHAIN LINK FENCE	C/L FEN	NOT TO SCALE	NTS
CONCRETE	CONC	OVERHEAD ELECTRIC	OE
CUBIC YARDS	CY	ORDINARY HIGH WATER	OHW
DRAIN MANHOLE	DMH	POLY-VINYL CHLORIDE	PVC
ELEVATION	ELEV	PROPERTY LINE	PL
EROSION CONTROL	EC	RIGHT OF WAY	ROW
FORCE MAIN	FM	SANITARY MANHOLE	SMH
GAS GATE	GG	SANITARY SEWER	SS
GRANITE CURB	GR CURB	STONE BOUND	SB
GUY POLE	GP	TELEPHONE POLE	TP
GUY WIRE	GW	TEMPORARY BENCH MARK	TBM
HOUSE	HSE	TRAFFIC CONTROL	TC
HYDRANT	HYD	TYPICAL	TYP
INVERT	INV	UTILITY POLE	UP
IRON PIPE	IP		
LAND UNDER WATERBODIES			

### **GENERAL NOTES**

AND WATERWAYS

- 1. SITE LOCATION AND TOPOGRAPHIC INFORMATION SHOWN HEREON ARE THE RESULT OF AN "ON THE GROUND SURVEY" PERFORMED BY CORNER POST LAND SURVEYING, INC. GROUND ELEVATIONS SHOWN ARE NAVD 88 AND ARE BASED ON GPS OBSERVATIONS. PROPERTY LINES ARE BASED ON CITY ASSESSOR'S DATA AND ARE THUS APPROXIMATE.
- 2. BATHYMETRIC AND SEDIMENT THICKNESS INFORMATION OBTAINED FROM A REPORT ENTITLED "CRYSTAL LAKE/ELGINWOOD POND AQUATIC VEGETATION, BATHYMETRIC, AND SEDIMENT DEPTH SURVEY" PREPARED BY GEOSYNTEC CONSULTANTS DATED AUGUST 21, 2008 AND WERE ADJUSTED BASED ON DEPTH MEASUREMENTS BY CR ENVIRONMENTAL, INC. AND TIGHE & BOND ON MAY 12 AND 13, 2015.
- 3. WETLAND BOUNDARIES WERE DELINEATED BY TIGHE & BOND, INC ON AUGUST 12, 2014 AND THE FLAGS LOCATED BY GPS.

## **EROSION AND SEDIMENTATION CONTROL NOTES:**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES NECESSARY TO EXECUTE AND COMPLETE THE WORK OF THE CONTRACT, IN COMPLIANCE WITH THE TERMS AND CONDITIONS CONTAINED IN THE CONTRACT AND PROJECT PERMITS. CONTROLS SHOWN ON THE CONTRACT DRAWINGS AND MENTIONED IN THE TECHNICAL SPECIFICATIONS SHALL BE CONSIDERED MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL EMPLOY WHATEVER SUPPLEMENTARY MEASURES NECESSARY TO PROTECT WETLANDS, WATERS, AND ADJACENT AREAS FROM DISTURBANCE OR DISCHARGE OF SEDIMENTS AT NO ADDITIONAL COST TO THE OWNER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SEDIMENT AND EROSION CONTROLS TO MEET THE CONDITIONS OF ALL APPLICABLE PERMITS AND REGULATIONS. SUCH CONTROLS SHALL BE INSTALLED WHEREVER THE POTENTIAL EXISTS FOR THE DISTURBANCE OF LAND OR THE TRANSPORT OF SEDIMENT.

EROSION AND SEDIMENTATION CONTROLS SHALL CONSIST OF COMPOST WATTLES INSTALLED PER DETAILS PROVIDED ON SHEET 5. STRAW WATTLES MAY BE SUBSTITUTED IN SITUATIONS WHEN THE CONTROLS MUST BE HAND-CARRIED TO THE NEEDED LOCATION.

COMPOST WATTLES SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF GRUBBING OR EARTH MOVING ACTIVITIES. CLEARING MAY OCCUR PRIOR TO WATTLE INSTALLATION IF ALLOWED BY PERMITTING AGENCIES. LOCATION OF COMPOST WATTLES TO BE ADJUSTED UPON COMPLETION OF GRUBBING BUT PRIOR TO COMMENCEMENT OF GRADING ACTIVITIES.

ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE MAINTAINED IN GOOD CONDITION AND PROPER WORKING ORDER. NECESSARY REPAIRS SHALL BE MADE IMMEDIATELY.

ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE PROPERLY DISPOSED OFF-SITE UPON COMPLETION OF WORK, SITE STABILIZATION AND/OR AUTHORIZATION FROM THE OWNER

COFFERDAMS SHALL BE INSTALLED AS INDICATED ON THE CONTRACT DRAWINGS. ALL COFFERDAMS SHALL CONSIST OF NON-ERODIBLE MATERIAL. ADDITIONAL COFFERDAMS MAY BE USED TO CONTROL OTHER SOURCES OF RUNOFF OR CONCENTRATED GROUNDWATER INFLOW POINTS IF REQUIRED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.

## BEST MANAGEMENT PRACTICES

INSPECTION AND MAINTENANCE

SEDIMENT AND EROSION CONTROLS AND BMPS SHALL BE INSTALLED PRIOR TO COMMENCING CONSTRUCTION AT THE SITE. NO WORK WHICH SHALL DISTURB THE SITE OR CREATE THE POTENTIAL FOR SEDIMENT RELEASE SHALL COMMENCE UNTIL THE SEDIMENT AND EROSION CONTROLS HAVE BEEN INSPECTED AND APPROVED BY THE OWNER. ENGINEER, AND REGULATORY AGENCIES. ALL CONTROLS AND BMPS SHALL BE SUBJECT TO INSPECTION BY THE OWNER, HIS REPRESENTATIVE, AND REGULATORY AGENCIES AT ANYTIME THEREAFTER.

PERIODIC INSPECTION, MAINTENANCE, AND CLEANING OF TEMPORARY EROSION OF SEDIMENT CONTROL MEASURES AND BEST MANAGEMENT PRACTICES (BMPS) SHALL BE REQUIRED. ALL CONTROLS AND BMPS SHALL BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF RAINFALL EVENTS OF 0.5 INCHES OR GREATER. ROUTINE INSPECTION AND MAINTENANCE WILL REDUCE THE CHANCE OF POLLUTING STORMWATER BY FINDING AND CORRECTING PROBLEMS BEFORE THE NEXT RAIN EVENT.

THE FOCUS OF THE INSPECTION WILL BE TO DETERMINE:

1) WHETHER OR NOT THE MEASURE WAS INSTALLED / PERFORMED CORRECTLY;

2) WHETHER OR NOT THERE HAS BEEN ANY DAMAGE TO THE MEASURE SINCE IT WAS INSTALLED OR

3) WHAT SHOULD BE DONE TO CORRECT ANY PROBLEMS WITH THE MEASURE. EACH MEASURE IS TO BE OBSERVED TO DETERMINE IF IT IS STILL EFFECTIVE.

IN SOME CASES, SPECIFIC MEASUREMENTS MAY BE TAKEN TO DETERMINE IF MAINTENANCE OF THE MEASURES IS REQUIRED.

PRIOR TO CONSTRUCTION, A SITE MANAGER WILL BE DESIGNATED BY THE CONTRACTOR TO BE RESPONSIBLE FOR INSTALLATION, MONITORING, INSPECTION, AND CORRECTION OF EROSION AND SEDIMENT CONTROL MEASURES.

**CONSTRUCTION SITE ENTRANCE** 

TO REDUCE THE TRACKING OF SEDIMENT FROM THE CONSTRUCTION SITE ONTO OTHER AREAS OF THE PROPERTY AND/OR PUBLIC ROADS, AS WELL AS THE PRODUCTION OF AIRBORNE DUST, A STABILIZED CONSTRUCTION ENTRANCE IS TO BE ESTABLISHED AT ANY AUTHORIZED PERMANENT CONSTRUCTION STAGING OR ACCESS AREA. THE ENTRANCE IS TO CONSIST OF A 6-INCH THICK PAD OF CRUSHED STONE UNDERLAIN WITH FILTER FABRIC OR A BITUMINOUS CONCRETE APRON. IT IS TO BE REMOVED AND THE AREA RESTORED FOLLOWING CONSTRUCTION. ALL PAVED ROAD AND DRIVEWAY SURFACES SHALL BE SCRAPED AND BROOMED FREE OF ACCUMULATED MATERIALS ON AN AS-NEEDED BASIS, UP TO TWICE DAILY.

DURING SITE CLEARING, EXISTING VEGETATION WITHIN THE OVERALL LIMITS OF CLEARING AND GRUBBING SHALL BE CLEARED AND REMOVED, EXCEPT AS OTHERWISE DIRECTED. PRIOR TO ANY SITE CLEARING ACTIVITIES. SEDIMENT CONTROL BARRIERS SHALL BE PLACED ALONG THE OUTER LIMIT OF DISTURBANCE. CLEARING IS TO BE LIMITED TO THOSE AREAS OF PROPOSED WORK. DISTURBED AREAS ARE TO BE KEPT TO A MINIMUM.

**EROSION CONTROL BARRIERS** 

COMPOST WATTLE BARRIERS ARE TO BE PLACED TO TRAP SEDIMENT TRANSPORTED BY RUNOFF BEFORE IT REACHES DEWATERING PUMP INTAKES, DRAINAGE FEATURES, WATERBODIES, OR WETLANDS, IN ADDITION TO AREAS WHERE HIGH RUNOFF VELOCITIES OR HIGH SEDIMENT LOADS ARE EXPECTED. THE COMPOST WATTLES ARE TO BE REPLACED AS DETERMINED BY PERIODIC FIELD INSPECTIONS.

STANDARD DUST CONTROL MEASURES. INCLUDING SPRAYING AND MISTING SHALL BE USED AS NECESSARY. CALCIUM CHLORIDE SHALL NOT BE ALLOWED ON THIS PROJECT.

STAGING AREAS

AREAS AVAILABLE FOR STAGING AND LAYDOWN ARE SHOWN ON THE DRAWINGS. THE CONTRACTOR MAY COORDINATE ADDITIONAL LAYDOWN/STAGING AREAS IN CONJUNCTION WITH OTHERS PROVIDED THAT PERMISSION IS OBTAINED FROM THE PROPERTY OWNERS AND PERMISSION IS OBTAINED FROM APPLICABLE REGULATORY AGENCIES. STAGING AREAS SHALL BE SURROUNDED WITH COMPOST WATTLE EROSION BARRIERS ON THE DOWN HILL SIDE AND CATCH BASINS AND DRAINS SHALL BE PROTECTED. DURING AND AFTER CONSTRUCTION, ALL PAVED ROAD AND DRIVEWAY SURFACES ARE TO BE SCRAPED AND BROOMED FREE OF EXCAVATED MATERIALS ON A DAILY BASIS, UNLESS APPROVED BY THE OWNER.

STOCKPILES OF SOIL CREATED DURING CONSTRUCTION ACTIVITIES ARE TO BE SURROUNDED WITH EROSION CONTROL BARRIER AROUND THE PERIMETER OF THE STOCKPILE. STOCKPILES OF ERODIBLE MATERIAL ARE TO BE COVERED PRIOR TO INCLEMENT WEATHER WITH A MINIMUM OF 20 MIL POLYETHYLENE SHEETING. STOCKPILES LEFT UNDISTURBED LONGER THAN 14 DAYS SHALL BE SEEDED OR COVERED.

EQUIPMENT FUELING AND STORAGE

EQUIPMENT FUELING AND OTHER ACTIVITIES INVOLVING PETROLEUM, OIL, OR OTHER POTENTIALLY HAZARDOUS SUBSTANCES ARE TO BE PERFORMED AT PRE-APPROVED, DESIGNATED AREAS WITH APPROPRIATE SPILL PREVENTION AND CONTROL MEASURES. PORTABLE SECONDARY CONTAINMENT IS TO BE USED, AND SORBENT MATERIALS ARE TO BE PLACED AROUND THE PERIMETER OF THE FUELING AREA. SECONDARY CONTAINMENT SHALL BE PROVIDED FOR PUMPS, GENERATORS, AND OTHER STATIONARY FUEL—BURNING EQUIPMENT. ABSORBENT MATERIAL SHALL BE PLACED UNDER AND AROUND FUEL-BURNING AND OIL-FILLED EQUIPMENT.

DEWATERING AND WATER CONTROL

DEWATERING SHALL BE REQUIRED PRIOR TO AND DURING DREDGING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING DEWATERING TECHNIQUES AND MAINTAINING DEWATERING PROCEDURES THROUGHOUT THE DURATION OF THE PROJECT. EROSION AND SEDIMENT AND TURBIDITY CONTROL SHALL BE PERFORMED THROUGH:

• REDUCTION OF SEDIMENT EROSION POTENTIAL AT AND UPSTREAM OF PUMP OR GRAVITY PIPE INLETS, THROUGH THE USE OF FLOATING PUMP INTAKES; STONE LINED INTAKE SUMPS; COFFERDAMS TO CREATE INTAKE POOLS AT STREAM, STORMWATER, AND GROUNDWATER INFLOW POINTS; STONE AND/OR COMPOST OR STRAW WATTLE

CHECK DAMS, AND OTHER MEASURES AS NECESSARY COFFERDAMS SHALL NOT CONSIST OF UNCONSOLIDATED MATERIAL.

TREATMENT OF DEWATERING DISCHARGE BY PASSING THROUGH AN APPROPRIATELY SIZED FILTER SOCK, SILT BAG, FRACTIONATION / SEDIMENTATION TANK, OR SEDIMENT TRAP PRIOR TO DISCHARGE, AS NECESSARY. REDUCTION OF EROSION POTENTIAL AT THE DISCHARGE THROUGH THE USE OF STONE OR RIPRAP DISCHARGE PADS, COMPOST WATTLE CHECK DAMS, AND OTHER MEASURES AS NECESSARY.

 THE USE OF A TURBIDITY CURTAIN SURROUNDING THE THE DISCHARGE AREA. • TERMINATION OF PUMPING IF TURBIDITY LEVELS BECOME UNACCEPTABLE.

POLYMERS AND OTHER FLOCCULANTS SHALL BE SUBMITTED TO REGULATORY AGENCIES FOR APPROVAL PRIOR TO

FOLLOWING COMPLETION OF THE WORK ALL TREATMENT MEASURES SHALL BE REMOVED. IF SEDIMENT DISCHARGED TO THE RECEIVING WATER DESPITE THE USE OF CONTROLS, THE AREA SHALL BE DEWATERED AND DREDGED AT NO ADDITIONAL COST TO THE OWNER.

DURING DEWATERING OPERATIONS, THE CONTRACTOR SHALL ENSURE THAT THE COBB AVE (AKA ELGINWOOD POND DAM #2) CULVERTS AND ASSOCIATED BEAVER DECEIVER, AND THE ELGINWOOD POND DAM SPILLWAY REMAIN FREE FLOWING AND CLEAR OF DEBRIS. DEWATERING CRYSTAL LAKE SHALL NOT CAUSE THE WATER LEVEL OF ELGINWOOD POND TO RISE BY MORE THAN 6 INCHES NOR ADVERSELY AFFECT DOWNSTREAM RESIDENTS. IF FLOODING OCCURS AS A RESULT OF STORMS OR OTHER NATURAL OR ARTIFICIAL OCCURRENCES UNRELATED TO THE PROJECT, PUMPING SHALL CEASE UNTIL DOWNSTREAM WATER LEVELS SUBSIDE.

APPROPRIATE OUTLET PROTECTION, CONSISTING OF RIPRAP CHANNEL LINING, A LEVEL SPREADER, OR OTHER SUCH MEASURE SHALL BE PROVIDED AT THE OUTLET OF ANY DEWATERING CONDUIT OR STORMWATER CULVERT OR CHANNEL OUTFALL TO REDUCE VELOCITIES AND ENHANCE SEDIMENTATION PRIOR TO DISCHARGE.

FURBIDITY SHALL BE MONITORED BY THE CONTRACTOR. IF TURBIDITY LEVELS ARE UNACCEPTABLE AS JUDGED BY THE OWNER, ENGINEER, OR REGULATORY AGENCY, OR IF IT APPEARS TO THOSE PARTIES THAT THERE IS THE IMMINENT POTENTIAL FOR THE INTAKE AND/OR DISCHARGE OF SEDIMENT, ADDITIONAL MEASURES SHALL BE IMPLEMENTED AT NO EXPENSE TO THE OWNER.

LIMITS OF WORK
THE CONTRACTOR SHALL LINE THE UPGRADIENT BOUNDARY OF WORK AREAS WITH ORANGE SAFETY FENCING

WHEN NECESSARY, TEMPORARY SLOPE PROTECTION SHALL BE PROVIDED BY COMPOST OR STRAW WATTLES AT THE TOE OF FILLS OR CUT SLOPES. IF ADDITIONAL STABILIZATION IS NEEDED, THEN THE CONTRACTOR SHALL EROSION CONTROL BLANKETS. A TACKIFIER SHALL BE USED ON LOOSE MATERIALS USED FOR TEMPORARY EROSION CONTROL. IN THE EVENT THAT DISTURBED UPLAND AREAS OR STOCKPILES AT THE SITE ARE TO BE LEFT UN-WORKED FOR MORE THAN TWO WEEKS, THE AREAS SHALL BE MULCHED WITH STRAW AT A RATE OF 100 LBS. PER 1,000 S.F. TO HELP CONTROL EROSION. EROSION CONTROL BLANKETS OR TWO INCHES OF WOOD CHIP MULCH MAY ALSO BE USED AS TEMPORARY COVER. IN THE EVENT THAT DISTURBED UPLAND AREAS AT THE SITE ARE TO BE LEFT UN-WORKED FOR MORE THAN ONE MONTH, THE AREAS SHALL BE COVERED WITH LOAM AND SEEDED AS PER THE SPECIFICATIONS AND AT NO ADDITIONAL COST TO THE OWNER. LEAVE THE SURFACE OF ALL EXCAVATIONS AND FILLS IN A FIRM AND STABLE CONDITION AT THE END OF EACH DAY. ROLL OR OTHERWISE TREAT THE SURFACE AS NEEDED.

STABILIZATION OF DISTURBED AREAS OR NEW SOIL FILLS SHALL BE IMPLEMENTED WITHIN 14 DAYS AFTER GRADING OR CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED. APPROPRIATE VEGETATIVE SOIL STABILIZATION IS TO BE USED TO MINIMIZE EROSION. TEMPORARY AND PERMANENT VEGETATIVE COVER IS TO BE ESTABLISHED IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF PREVIOUSLY VEGETATED UPLAND AREAS DISTURBED BY CONSTRUCTION ACTIVITIES. RESTORATION OF UPLAND AREAS WILL CONSIST OF REPLACEMENT OF TOPSOIL OR PLACEMENT OF IMPORTED LOAM AS NEEDED SUCH THAT A MINIMUM OF 4 INCHES OF SUITABLE MATERIAL IS PRESENT AND APPROPRIATELY LIMED, FERTILIZED, GRADED, AND SCARIFIED.

DISTURBED NON-LAWN UPLAND AREAS SHALL BE HYDROSEEDED WITH AN APPROVED SEED MIX AT THE RATE RECOMMENDED BY THE MANUFACTURER. SEEDING RATE SHALL BE DOUBLED FOR DORMANT SEEDING. SEED MIX SHALL BE AS FOLLOWS OR AS APPROVED BY THE ENGINEER:

THE NEW ENGLAND CONSERVATION/WILDLIFE MIX:

**COMMON NAME BOTANICAL NAME** Elymus virginicus VIRGINIA WILD RYE Festuca rubra CREEPING RED FESCUE Schizachyrium scoparium LITTLE BLUESTEM BIG BLUESTEM  $Andropogon\ gerardii$ Panicum virgatum SWITCH GRASS Chamaecrista fasciculata PARTRIDGE PEA panicum clandestinum DEER TONGUE sorghastrum nutans INDIAN GRASS OX EYE SUNFLOWER Heliopsis helianthoides COMMON MILKWEED Asclepias syriaca Eupatorium maculatum SPOTTED JOE PYE WEED Euthamia graminifolia GRASS LEAVED GOLDENROD Verbena hastata BLUE VERVAIN NEW ENGLAND ASTER Aster novae-angliae EARLY GOLDENROD Solidago juncea

DISTURBED BANK AREAS SHALL BE SCARIFIED AND HYDROSEEDED WITH AN APPROVED SEED MIX AT THE RATE RECOMMENDED BY THE MANUFACTURER. SEEDING RATE SHALL BE DOUBLED FOR DORMANT SEEDING. SEED MIX SHALL BE AS FOLLOWS OR AS APPROVED BY THE ENGINEER:

THE NEW ENGLAND EROSION CONTROL MIX FOR DETENTION BASINS AND MOIST SITES:

**COMMON NAME BOTANICAL NAME** Elumus virginicus VIRGINIA WILD RYE CREEPING RED FESCUE Festuca rubra LITTLE BLUESTEM Schizachyrium scoparium BIG BLUESTEM Andropogon gerardii Panicum virgatum FOX SEDGE Chamaecrista fasciculata SWITCH GRASS ROUGH BENTGRASS Agrostis scabra Aster novae-angliae NEW ENGLAND ASTER Eupatorium perfoliatum BONESET Euthamia graminifolia GRASS LEAVED GOLDENROD Scirpus atrovirens GREEN BULRUSH BLUE VERVAIN Verbena hastata Juncus effusus SOFT RUSH WOOL GRASS Scirpus cyperinus

EROSION CONTROL BLANKETS, WHEN USED, SHALL BE 100% BIODEGRADABLE.

FINAL STABILIZATION SHALL BE CONSIDERED COMPLETE WHEN ALL SOIL-DISTURBING ACTIVITIES HAVE BEEN COMPLETED AND A UNIFORM, PERENNIAL VEGETATIVE COVER WITH A DENSITY OF EIGHTY PERCENT HAS BEEN ESTABLISHED OR EQUIVALENT STABILIZATION MEASURES (SUCH AS THE USE OF MULCHES OR EROSION CONTROL MATTING) HAVE BEEN EMPLOYED ON ALL UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL VEGETATED SURFACES, INCLUDING WATERING, FERTILIZING, REPAIRING EROSION, AND RE-SEEDING UNTIL ESTABLISHMENT CONDITIONS ARE MET AND UNTIL THE END OF THE CONTRACTUAL MAINTENANCE PERIOD.



# PERMIT NOT FOR CONSTRUCTION

City of Peabody

Crystal Lake Dredging Project

Crystal Drive Peabody, Massachusetts

VERIFY	SCALE
BAR IS 1 ORIGINAL	INCH ON DRAWING
0	1 INCH
IF NOT ON THIS SHEE SCALES AC	T, ADJUST

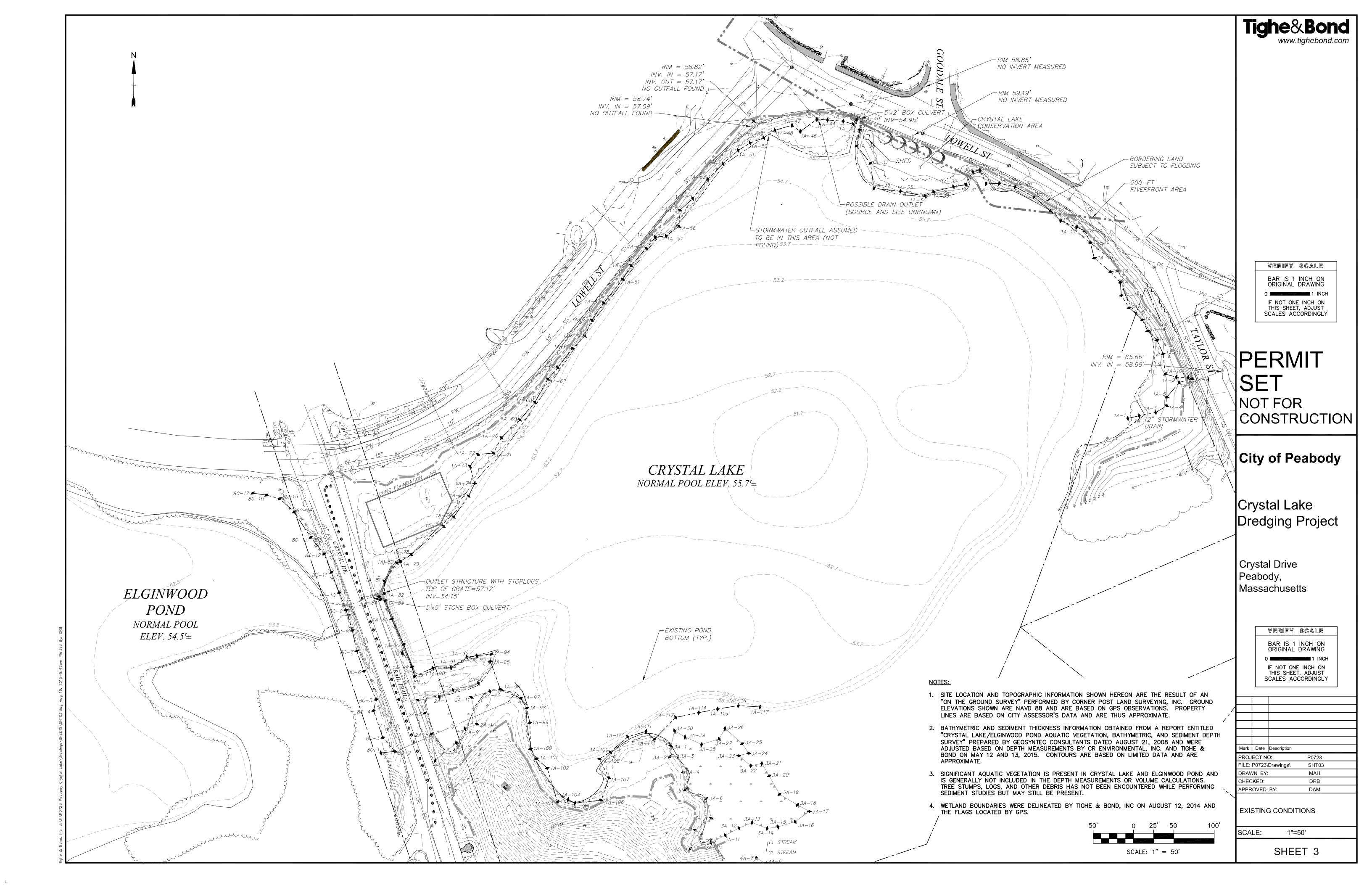
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PRAWN BY:		MAH		
NIECKED:			DDB	

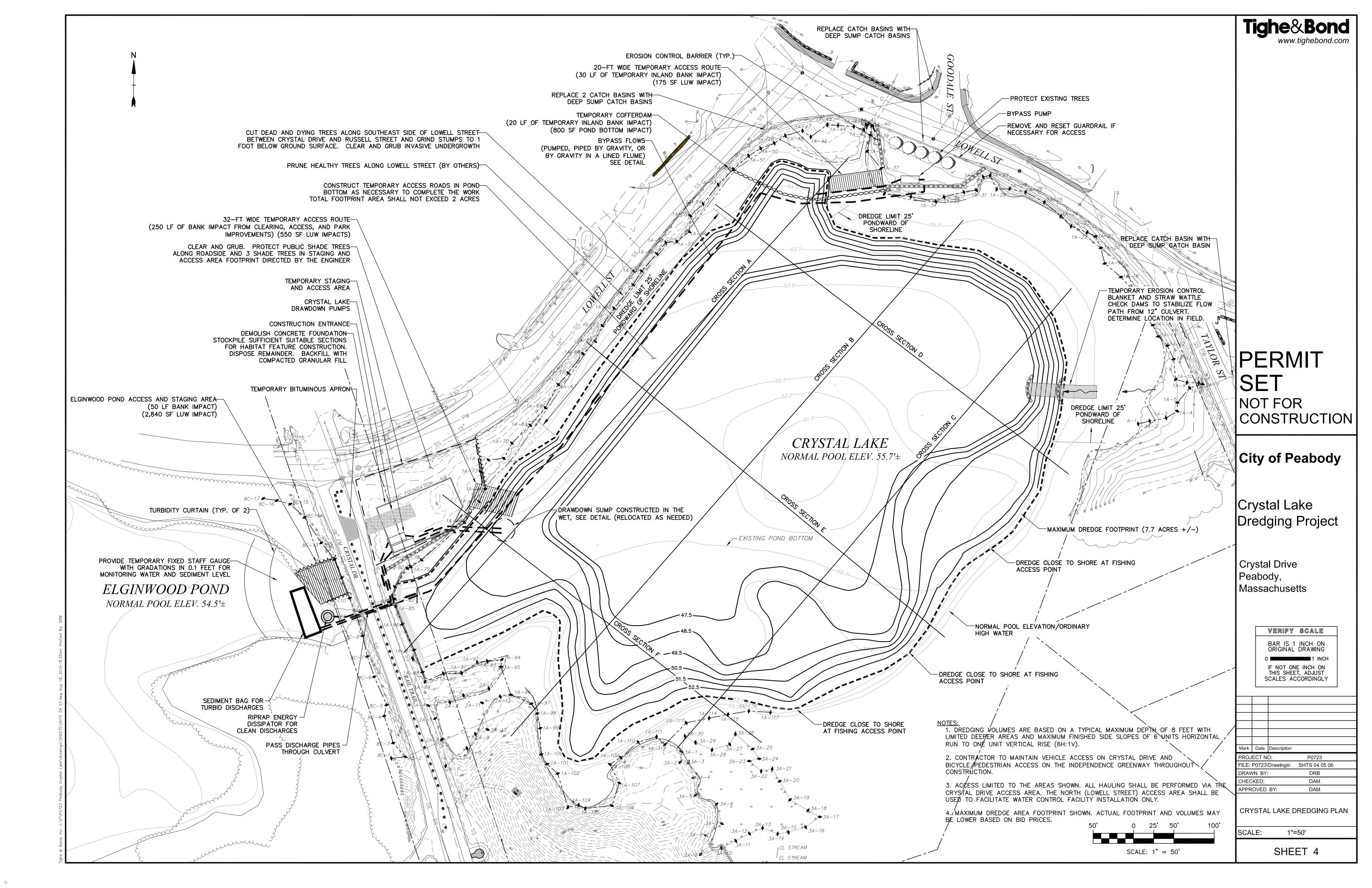
DAM

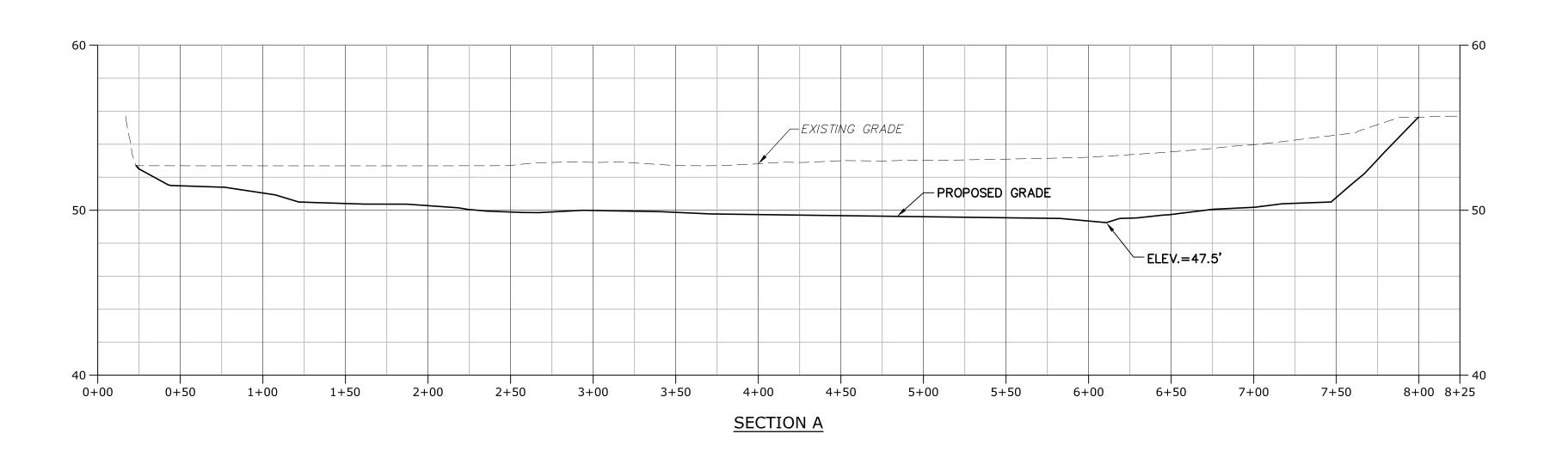
LEGEND, ABBREVIATIONS AND GENERAL NOTES

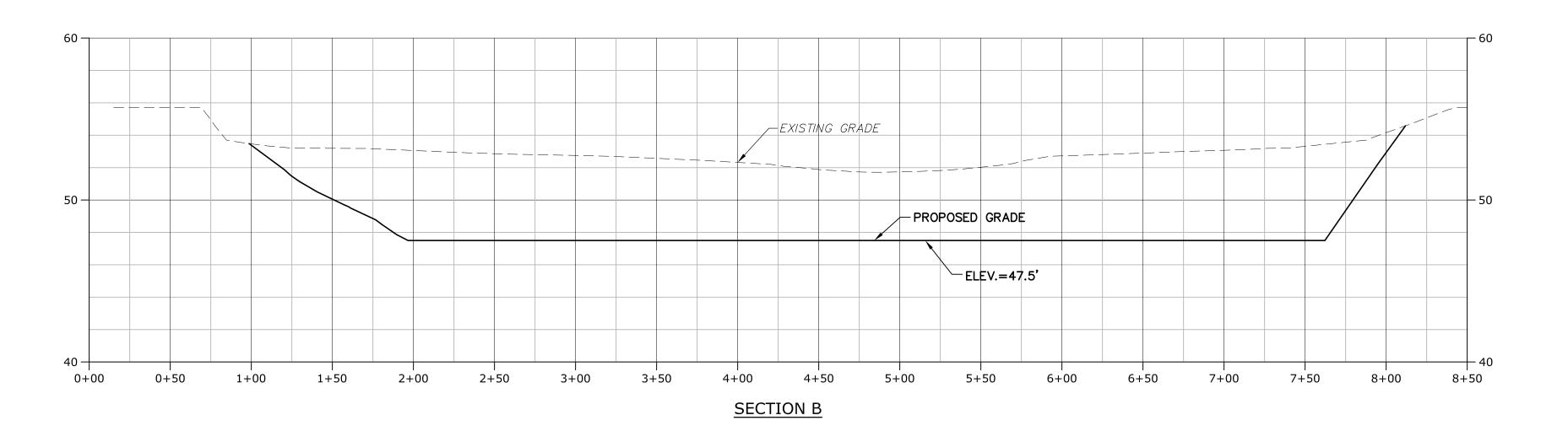
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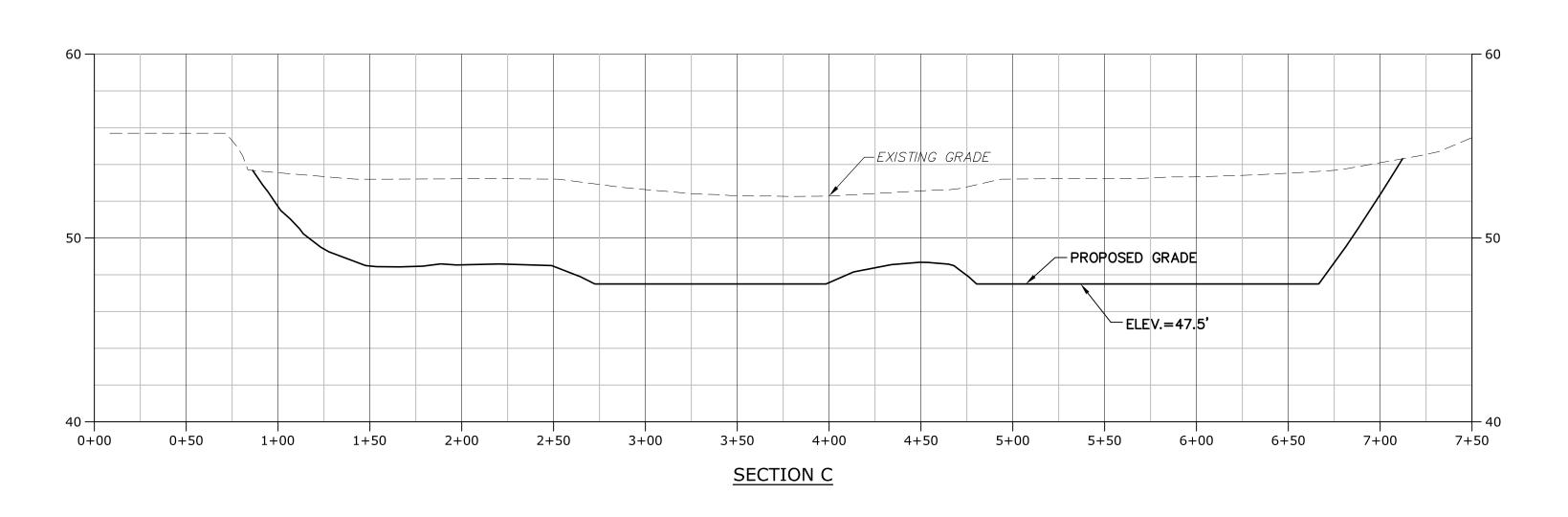
APPROVED BY:











NOTES: 1. ALL UNITS ARE FEET Tighe&Bond
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City of Peabody

Crystal Lake
Dredging Project

Crystal Drive Peabody, Massachusetts

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Mark Date Description

PROJECT NO: P0723

FILE: P0723\Drawings\ SHT05

DRAWN BY: MAH

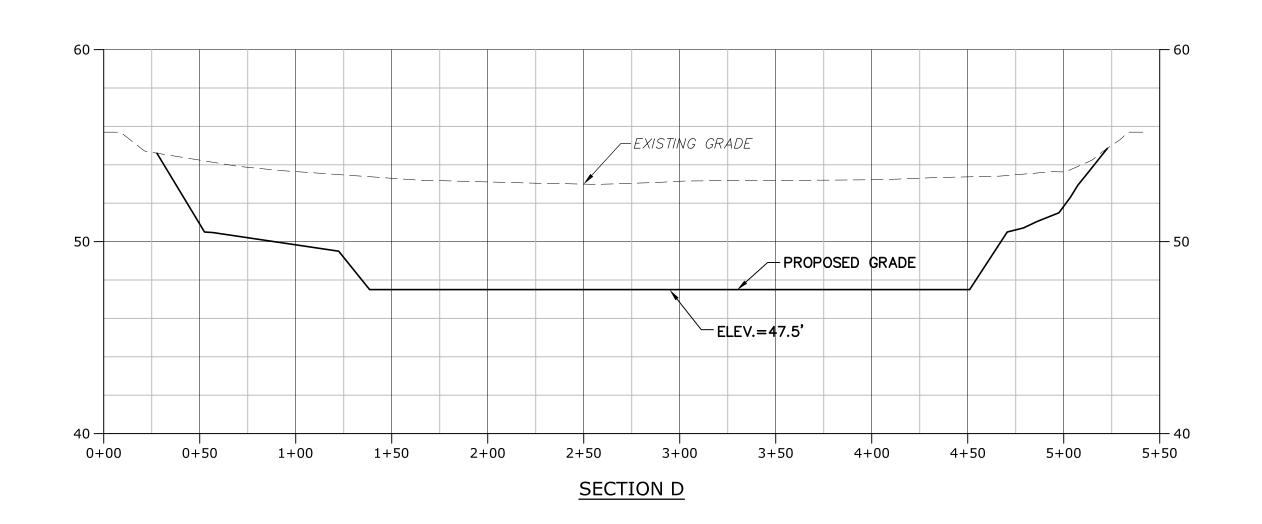
SECTION VIEWS - 1

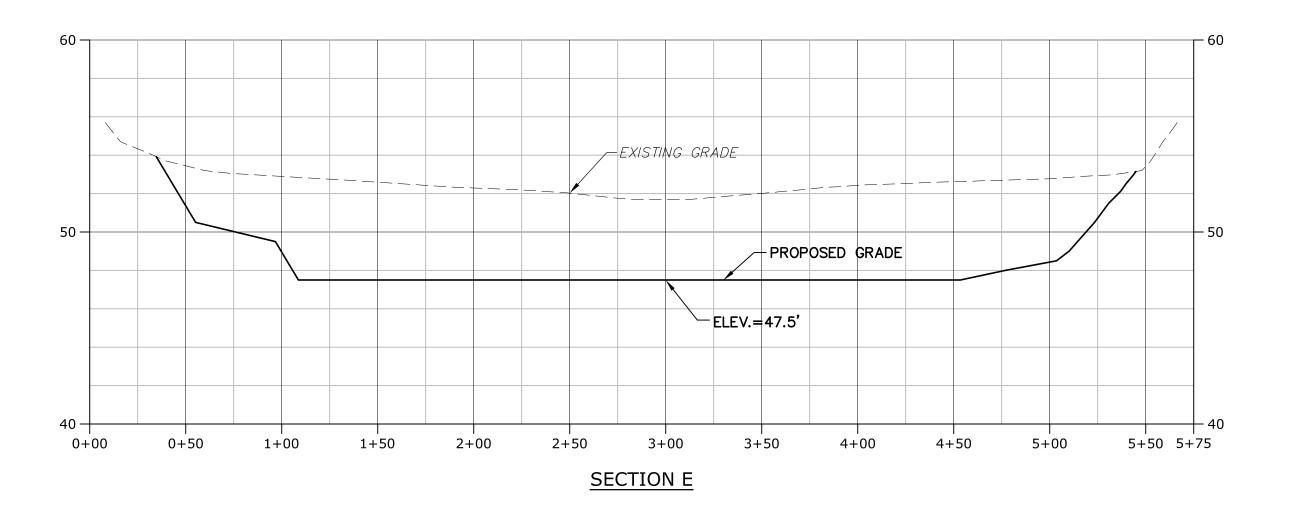
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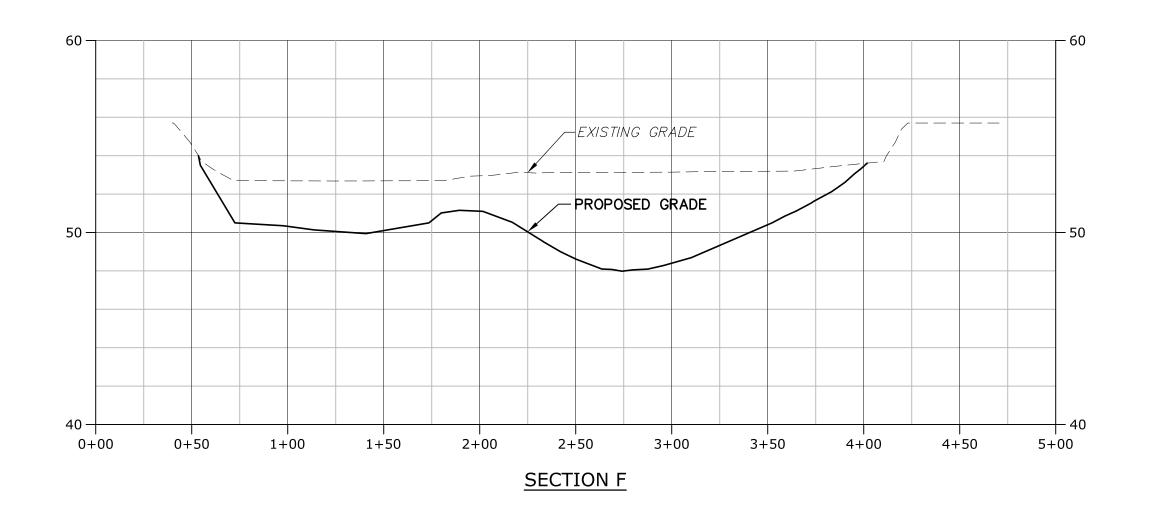
SCALE: 1"=50' H; 1"=5' V

SHEET 5

DRB







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City of Peabody

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Dredging Project

Crystal Drive Peabody, Massachusetts

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Mark Date Description

PROJECT NO: P0723

FILE: P0723\Drawings\ SHT05

DRAWN BY: MAH

SECTION VIEWS - 2

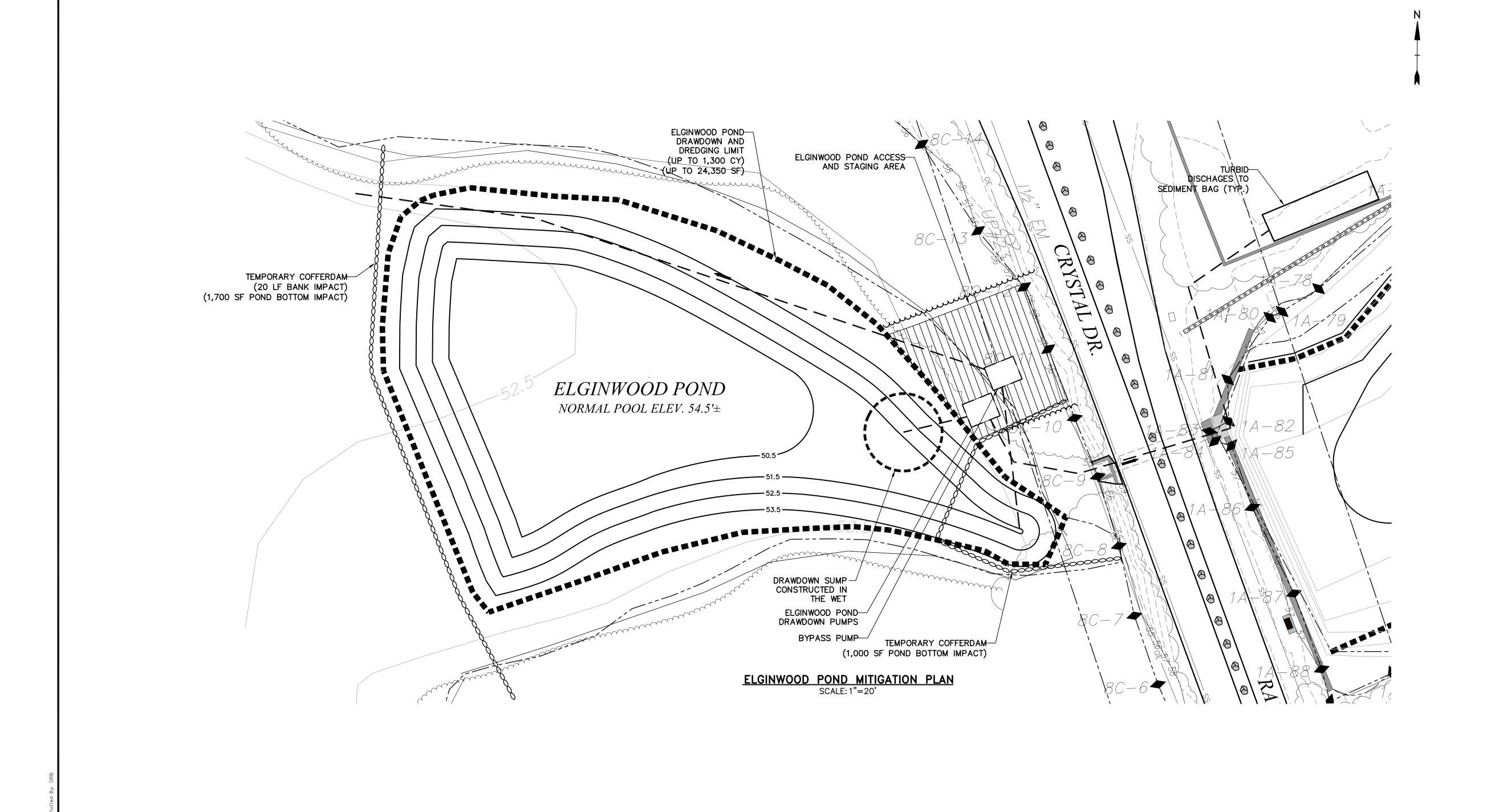
CHECKED:
APPROVED BY:

NOTES:
1. ALL UNITS ARE FEET

SCALE: 1"=50' H; 1"=5' V

SHEET 6

DRB



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# FOR PERMIT NOT FOR CONSTRUCTION

## City of Peabody

Crystal Lake
Dredging Project

Crystal Drive Peabody, Massachusetts

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SCALES ACCORDINGLY

Mark	Date	Description		
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DRAWN BY:		DRB		

DRAWN BY:

CHECKED:

DAM

APPROVED BY:

DAM

DAM

ELGINWOOD POND MITIGATION PLAN

SCALE:

SHEET 7

1"=20'

OTES:

BE LOWER.

1. REMOVE CRYSTAL LAKE DREDGING WATER CONTROLS, INCLUDING ENERGY DISSIPATORS AND DEWATERING BAGS, FROM ELGINWOOD POND IN THE WET. REMOVE TURBIDITY CURTAINS LAST. DE-MINIMIS SEDIMENT MAY BE REMOVED AS PART OF THIS WORK.

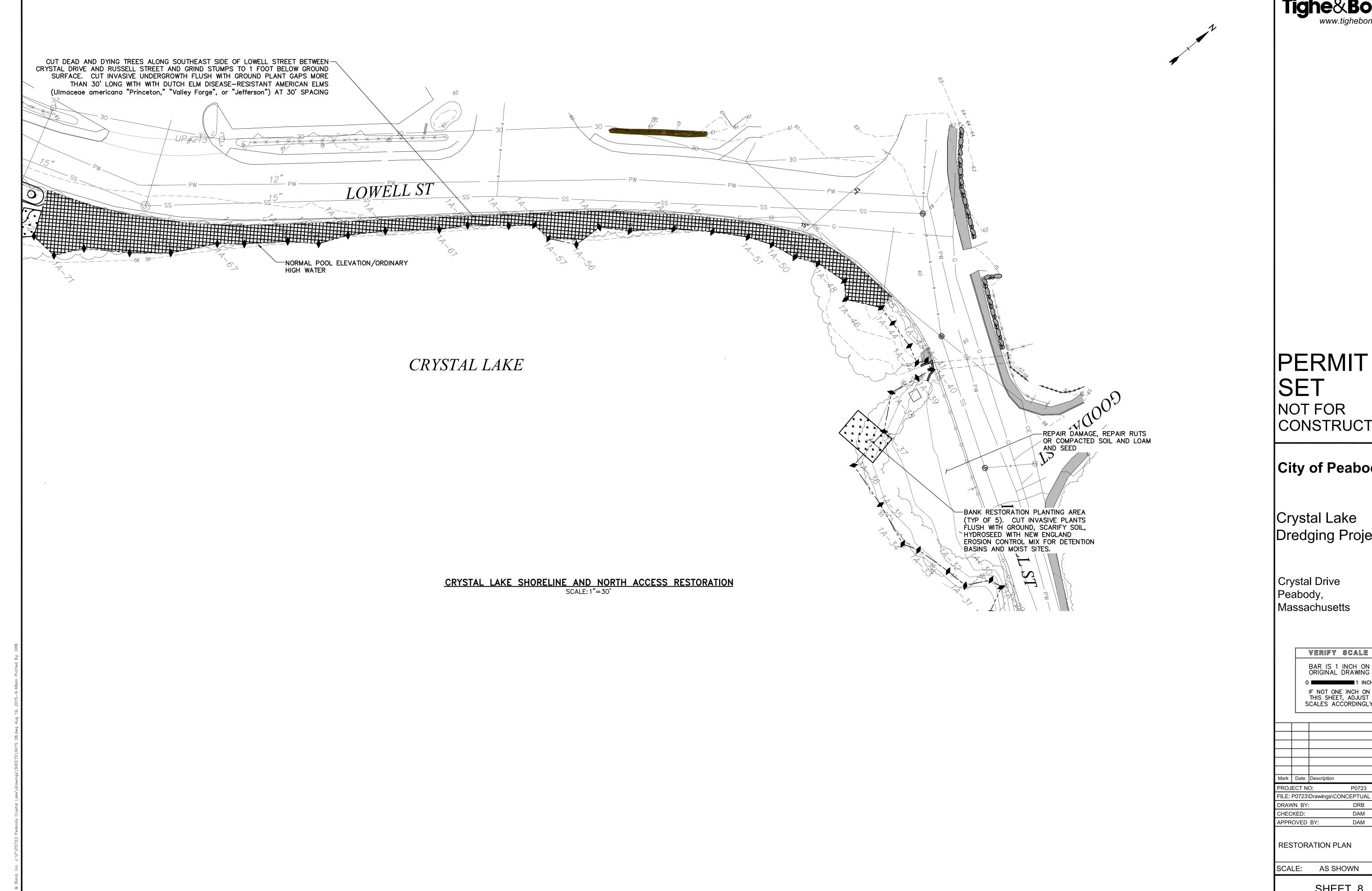
2. ASSESS WHETHER MEASURABLE QUANTITIES OF SEDIMENT ACCUMULATED IN ELGINWOOD POND DURING THE PROJECT. IF SO, DREDGE ACCUMULATED SEDIMENT AT NO ADDITIONAL COST TO THE OWNER. EXISTING SEDIMENT MAY BE REMOVED ASA BYPRODUCT OF THAT WORK UP TO THE LIMITS SHOWN.

3. MAXIMUM FINISHED SIDE SLOPES SHALL BE 6 UNITS HORIZONTAL RUN TO ONE UNIT VERTICAL RISE (6H:1V).

4. CONTRACTOR TO MAINTAIN VEHICLE ACCESS ON CRYSTAL DRIVE AND BICYCLE/PEDESTRIAN ACCESS ON THE INDEPENDENCE GREENWAY THROUGHOUT CONSTRUCTION.

5. ACCESS LIMITED TO THE AREAS SHOWN. ALL HAULING SHALL BE PERFORMED VIA THE CRYSTAL DRIVE ACCESS AREA.

6. MAXIMUM DREDGE AREA FOOTPRINT SHOWN. ACTUAL FOOTPRINT AND VOLUMES MAY



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CONSTRUCTION

City of Peabody

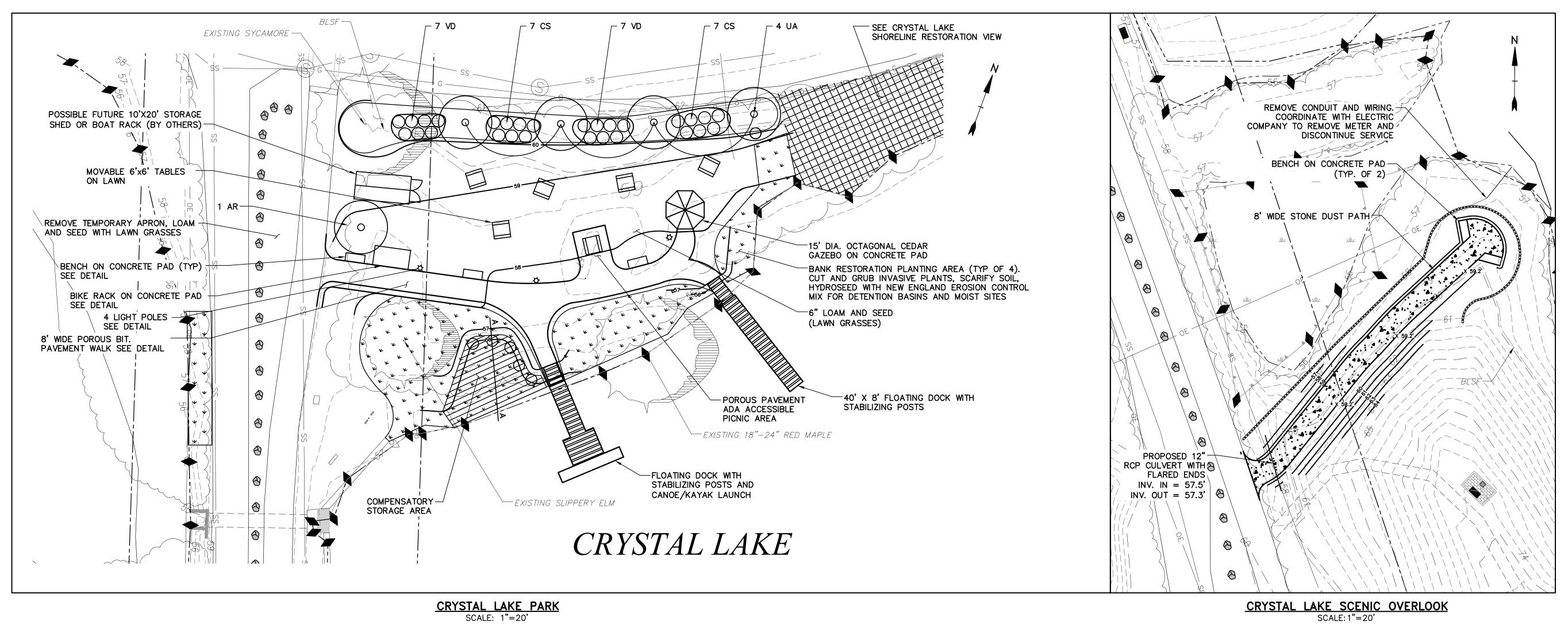
Crystal Lake
Dredging Project

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FILE: P0723\Drawings\CONCEPTUAL 22X34

DAM



CRYSTAL LAKE SCENIC OVERLOOK
SCALE: 1"=20'

PLANT S	SCHEDULE				
CODE	BOTANICAL NAME	COMMON NAME	MINIMUM SIZE	NOTES	
TREES				•	
UA	ULMUS AMERICANA 'PRINCETON'	PRINCETON AMERICAN ELM	2.5-3" CALIPER	B&B/DISEASE RESISTANT	
AR	ACER RUBRUM	RED MAPLE	2.5-3" CALIPER	B&B	
SHRUBS				•	
VD	VIBURNUM DENTATUM	ARROWOOD VIBURNUM	5 GALLON	CONTAINER	
CS	CS CORNUS SERICEA 'ALLEMANS COMPACTA' ALLEMANS RED STEM DOGWOOD 5 GALLON CONTAINER				
HERBACEOUS					
MIX RANDOM	LY IN 12 SQUARE FOOT BEDS SPACED 6" O	C. WHERE INDICATED			
	IRIS VERSICOLOR	BLUE FLAG IRIS	2" PLUG	50 PLANTS	
	LOBELIA CARDINALIS CARDINAL FLOWER 2" PLUS 50 PLANTS				
	RUDBECKIA LACINIATA	GREEN-HEADED CONEFLOWER	2" PLUS	50 PLANTS	
	VERBENA HASTATA	BLUE VERVAIN	2" PLUS	50 PLANTS	
	ZIZIA AUREA	GOLDEN ALEXANDERS	2" PLUG	50 PLANTS	
	ZIZIA AUREA	GOLDEN ALEXANDERS	2" PLUG	50 PLANTS	

## NEW ENGLAND EROSION CONTROL MIX FOR DETENTION BASINS AND MOIST SITES NEW ENGLAND WETMIX -EXISTING GRADE 6" LOAM -PROPOSED GRADE HERBACEOUS PLANTS - 2" PLUGS <u>CROSS SECTION A-A</u> COMPENSATORY STORAGE AREA

1) PLANT SPECIES, CULTIVARS, SIZES, AND LOCATIONS SHALL NOT BE CHANGED EXCEPT BY PERMISSION OF THE LANDSCAPE ARCHITECT.

SET Crystal Drive Peabody, APPROVED BY: PARK PLAN

PERMIT NOT FOR CONSTRUCTION

City of Peabody

Crystal Lake
Dredging Project

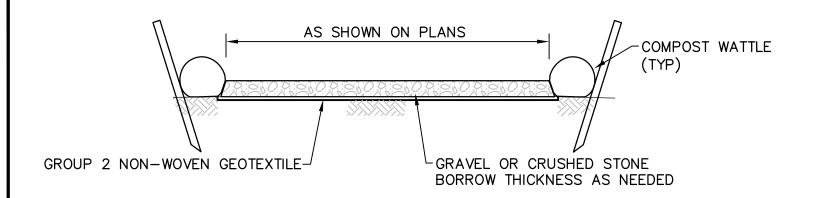
Massachusetts

VERIFY SCALE BAR IS 1 INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

Mark	Date	Description		
PROJECT NO:			P0723	
FILE: P0723\Drawings\			Park Plan	
DRAWN BY:			DRB, TMP	
CHECKED:		DAM		

SCALE: AS SHOWN

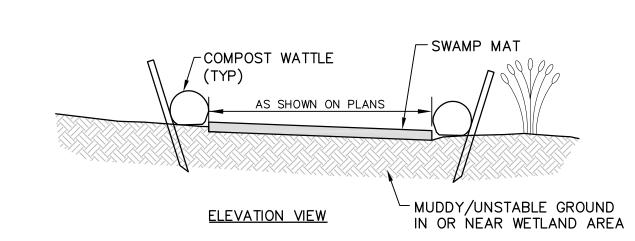
SHEET 9



# TYPICAL CROSS-SECTION TEMPORARY ACCESS ROAD - UPLAND AREAS NO SCALE

#### NOTES

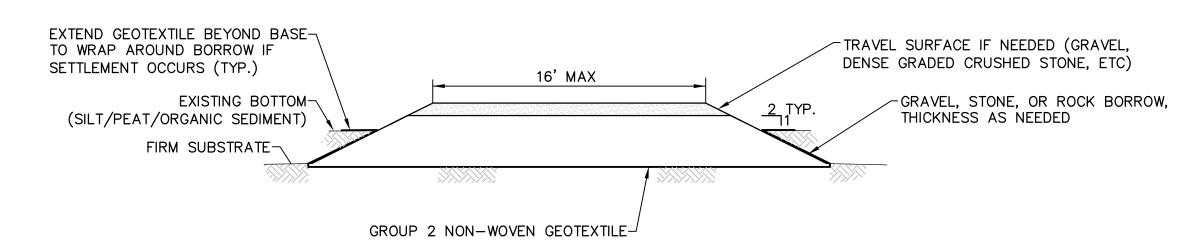
- USE ABOVE DETAIL IN WET OR SOFT UPLAND AREAS TO PREVENT SINKING OF EQUIPMENT.
- 2. UPON COMPLETION OF THE PROJECT, REMOVE ALL MATERIAL, LOOSEN THE TOPSOIL BY HAND, RESTORE PRE—PROJECT GRADES, AND SEED.
- 3. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED.



#### NOTES

- 1. PLACE SWAMP MATS SO PLANKS ARE PERPENDICULAR TO DIRECTION OF TRAFFIC.
- 2. SWAMP MAT DIMENSIONS OF 12'x4'x6", 16'x4'x8" OR OTHER TO BE USED. MULTIPLE LAYERS OF MATS MAY BE NEEDED AS DICTATED BY SITE CONDITIONS, SUCH AS TO FLATTEN VEHICLE ROUTES OVER SLOPED AREAS, TO RAISE THE TRAVEL SURFACE IN AREAS OF EXCESSIVE SETTLEMENT, OR TO PROVIDE A SUFFICIENTLY STABLE WORKING SURFACE.
- 3. COMPOSITE MATS MAY BE SUBSTITUTED AT CONTRACTOR'S DISCRETION.
- 4. COMPOST WATTLES ARE REQUIRED ALONG THE SWAMP MAT EDGES IN VEGETATED WETLAND, AND BANK AREAS ONLY; WATTLES ARE NOT REQUIRED IN THE DEWATERED POND BOTTOM.
- 5. USE IN WET OR SOFT AREAS TO PREVENT SINKING OF EQUIPMENT.
- 6. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED.

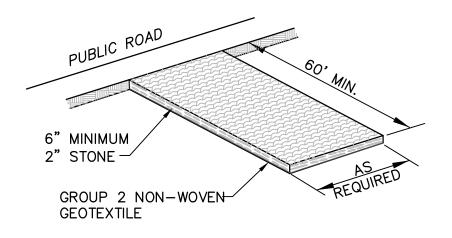




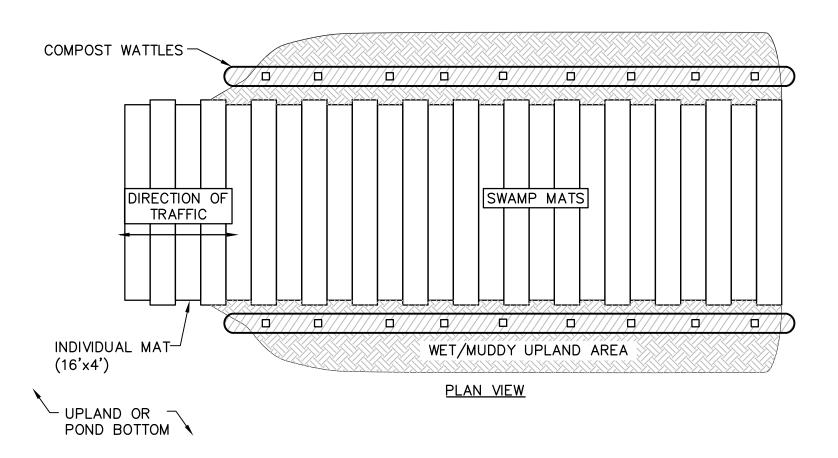
# TYPICAL CROSS-SECTION TEMPORARY ACCESS ROAD FOR POND BOTTOM NO SCALE

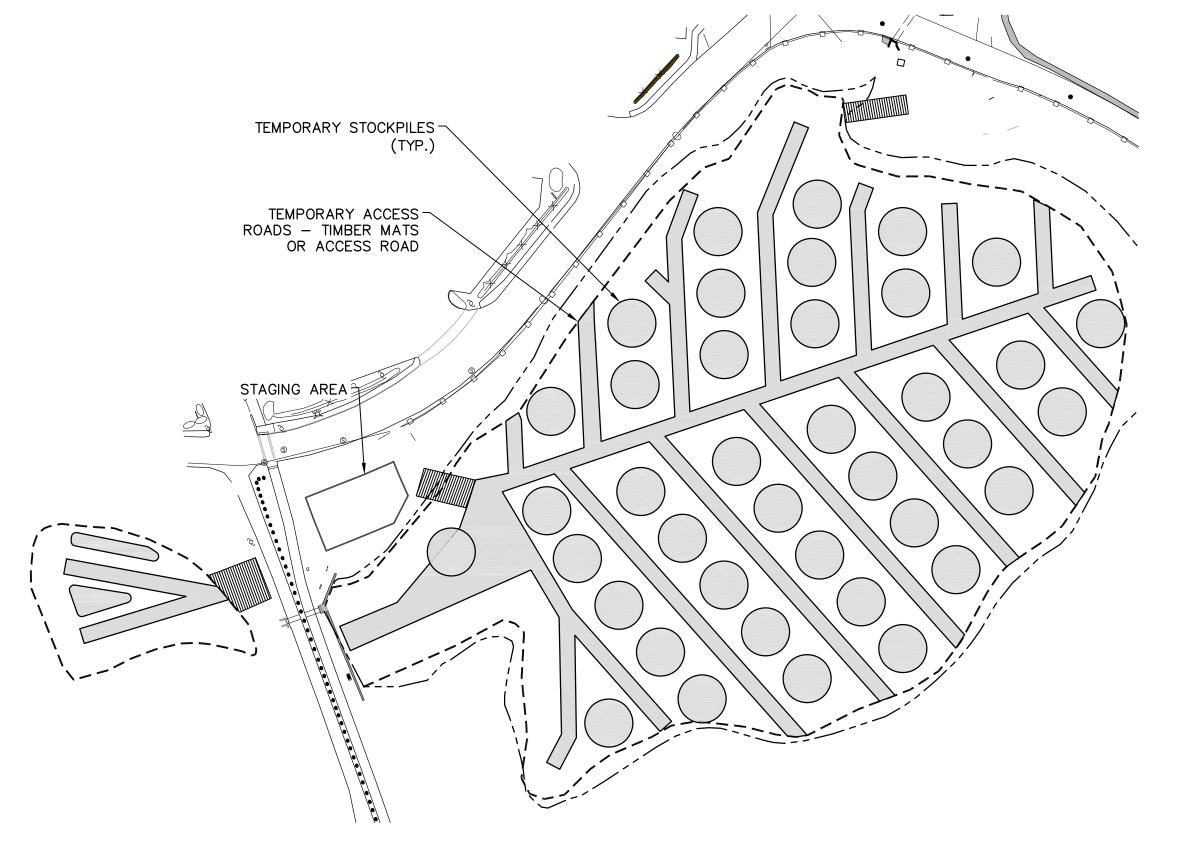
### TEMPORARY ACCESS ROUTE NOTES:

- 1. THE CONTRACTOR MAY USE TEMPORARY ACCESS ROADS, SWAMP MATS, COMPOSITE MATS, AND/OR OPERATION DIRECTLY ON EXISTING SURFACES IN UPLAND AND POND BOTTOM AREAS. ONLY SWAMP MATS OR COMPOSITE MATS MAY BE USED IN BANK AND VEGETATED SHALLOW AREAS.
- 2. ALL TEMPORARY ACCESS ROUTE IMPROVEMENTS SHALL BE IMPLEMENTED AT NO ADDITIONAL COST TO THE OWNER.
- 3. ADDITIONAL EROSION CONTROLS MAY BE NECESSARY.
- 4. UPON COMPLETION OF THE PROJECT, REMOVE ALL TEMPORARY ACCESS ROUTE MATERIAL, RESTORE PRE-PROJECT GRADES, AND SEED.



## TEMPORARY CONSTRUCTION ENTRY PAD NO SCALE





## ACCESS ROAD AND STOCKPILE LAYOUT NO SCALE

### TEMPORARY ACCESS ROUTE NOTES:

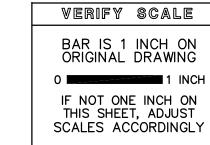
- 1. ONE POSSIBLE LAYOUT OF ACCESS ROUTES AND STOCKPILES SHOWN. CONTRACTOR SHALL SUBMIT AN ACCESS AND STOCKPILING PLAN FOR APPROVAL PRIOR TO CONSTRUCTION.
- 2. TOTAL ACCESS ROAD FOOTPRINT SHOWN IS 90,000 SQUARE FEET. TOTAL STOCKPILE FOOTPRINT SHOWN IS 85,000 SQUARE FEET (UP TO 51,500 CUBIC YARDS). THESE VALUES ARE ESTIMATED CUMULATIVE FOOTPRINT AREAS. MAXIMUM INSTANTANEOUS ACCESS ROAD AND STOCKPILE FOOTPRINT MAY BE SIGNIFICANTLY LOWER.

# PERMIT SET NOT FOR CONSTRUCTION

## City of Peabody

Crystal Lake
Dredging Project

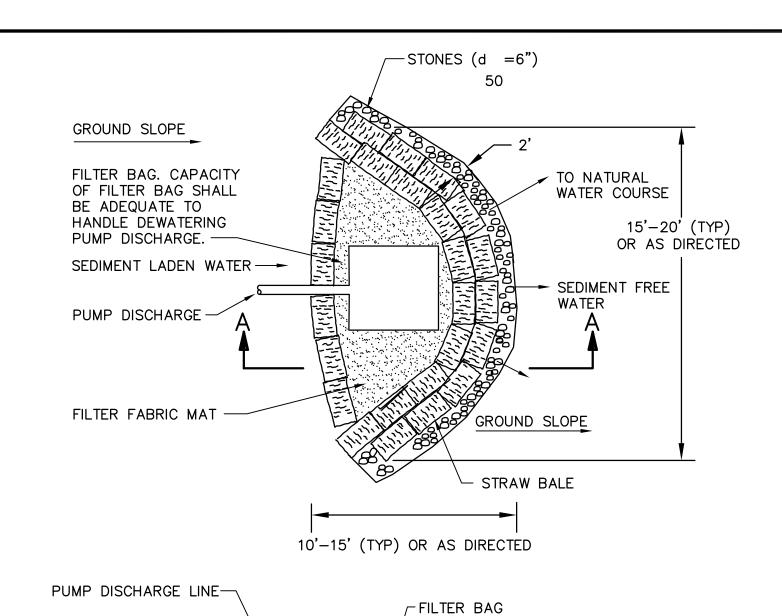
Crystal Drive
Peabody,
Massachusetts

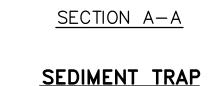


Mark	Date	Description		
PROJ	PROJECT NO: P0723			
FILE:	FILE: P0723\Drawings\details			
DRAV	DRAWN BY: MAH			
CHEC	CHECKED: DRB			
APPR	APPROVED BY: DAM			

DETAILS - 1

SCALE: AS SHOWN





NO SCALE

1. LOCATION OF SEDIMENT TRAP SUBJECT TO APPROVAL OF ENGINEER.

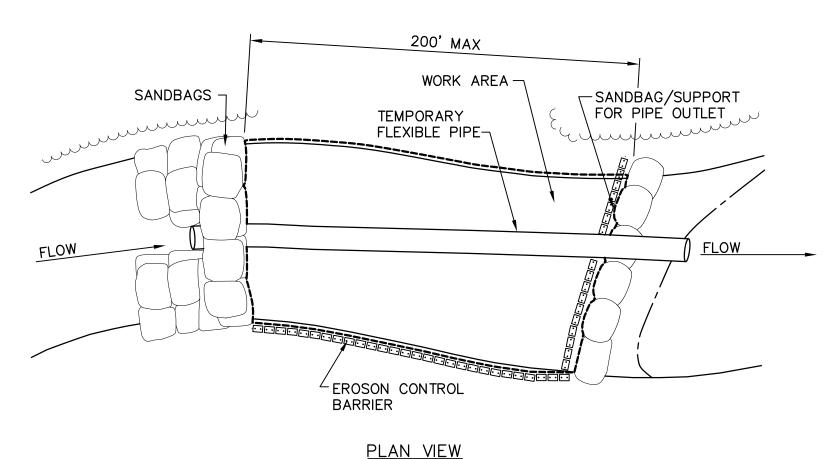
FLAT STONE

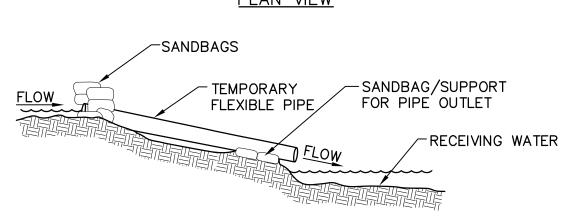
SEDIMENT

FILTER FABRIC MAT-

2. IMPLEMENT ADDITIONAL TURBIDITY CONTROL MEASURES AT NO COST TO THE OWNER IF TURBIDITY LEVELS ARE UNACCEPTABLE AS JUDGED BY THE OWNER, ENGINEER, OR REGULATORY AGENCY. ADDITIONAL MEASURES MAY INCLUDE, BUT ARE NOT LIMITED TO, THE USE OF FLOCCULANTS, POLYMERS, AND FRACTIONATION/SEDIMENTATION TANKS.

STRAW BALE





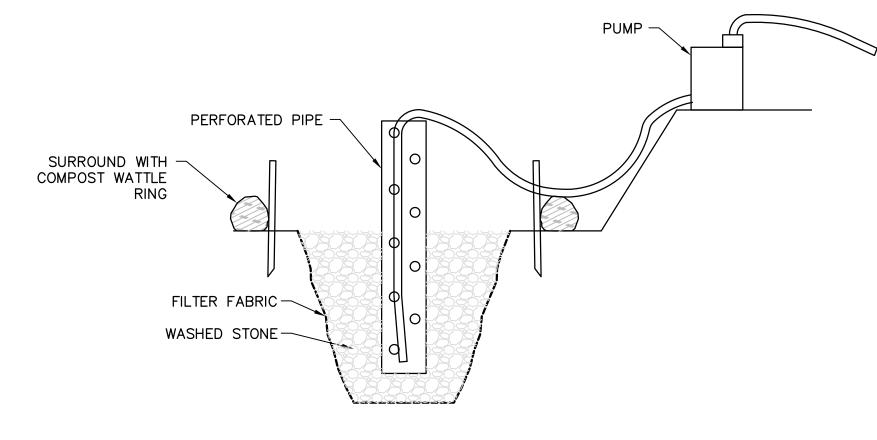
**INLET DIVERSION:** 

1. INSTALL TEMPORARY COFFER DAMS (SAND BAG, WATER FILLED BARRIER, PORTA-DAM, OR EQUIVALENT) TO MAINTAIN A DRY WORK AREA FOR CONSTRUCTION ACTIVITIES AND TO PREVENT SEDIMENTATION AS A RESULT OF THE PROPOSED WORK.

**BYPASS** 

NO SCALE

- 2. ONE COFFER DAM SHALL BE LOCATED UPSTREAM OF THE WORK AREA. A GRAVITY FLUME PIPE OR PUMP AND ASSOCIATED PIPING SHALL CONVEY FLOW DOWNSTREAM OF THE WORK AREA.
- 3. SIZE AND PROVIDE A FLUME PIPE OR PUMP WITH ADEQUATE CAPACITY TO MAINTAIN BASE STREAM FLOW.
- 4. THE WORK AREA LOCATED WITHIN THE COFFER DAMS SHALL BE DEWATERED AS NEEDED TO PERFORM WORK "IN THE DRY." ANY DEWATERING ACTIVITIES SHALL BE PERFORMED USING A DISCHARGE HOSE, FILTER BAG, AND SEDIMENT TRAP.



#### LOW-LEVEL SUMP NO SCALE

#### NOTES:

- 1. USE LOW-LEVEL SUMPS WHEN THE PUMP SUCTION IS DISTURBING AND DRAWING IN SEDIMENT, WHEN THE POND LEVEL IS SUFFICIENTLY LOW THAT THE MOVEMENT OF WATER OVER THE SEDIMENT IS DISTURBING THE SEDIMENT, TO LOWER THE WATER LEVEL BELOW THE SEDIMENT SURFACE TO PROMOTE DRYING, AND AS OTHERWISE NECESSARY.
- 2. MULTIPLE LOW-LEVEL SUMPS MAY BE NEEDED.

**GENERAL COMPOST FILTER TUBE NOTES:** 

CONCENTRATED FLOW.

SUPPLEMENTAL PROTECTION.

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12" FOR SLOPES UP TO 50' IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY

REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES

TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS

FOR SITUATIONS WITH LONGER SLOPES OR STEEPER SLOPES.

2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR

3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.

DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.

5. TUBES CAN BE PLACED DIRECTLY ON EXISTING PAVEMENT WHEN NECESSARY.

6. PLACING TUBES AGAINST THE UPHILL SIDE OF WELL-ANCHORED, STATIONARY FEATURES SUCH AS EXISTING TREES, CAN PROVIDE ADDITIONAL BRACING.

4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE

7. CURVE ENDS UPHILL TO PREVENT DIVERSION OF UNFILTERED RUN-OFF.

8. COMPOST FILTER TUBES MAY BE STACKED IN A PYRAMID FOR ADDITIONAL

9. STRAW WATTLES MAY BE SUBSTITUTED FOR COMPOST FILTER TUBES ONLY FOR

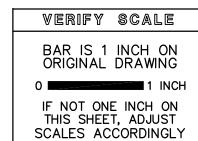
- 3. WHEN THE PROJECT IS COMPLETE, REMOVE THE PUMP, PIPING, COMPOST WATTLE, AND ACCUMULATED SEDIMENT, AND CUT THE PERFORATED PIPE FLUSH WITH THE GROUND SURFACE. THE SUMP MAY OTHERWISE REMAIN IN-PLACE.
- 4. OTHER MEANS TO LOWER WATER LEVELS WITHIN MATERIAL TO BE DREDGED, SUCH AS A WELL POINT NETWORK, MAY BE USED IF FILTERING IS SUFFICIENT TO NOT DRAW IN SURROUNDING SEDIMENT.

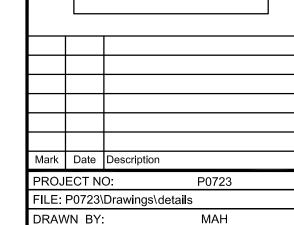
## PERMIT NOT FOR CONSTRUCTION

## City of Peabody

## Crystal Lake Dredging Project

Crystal Drive Peabody, Massachusetts





DETAILS - 2

APPROVED BY:

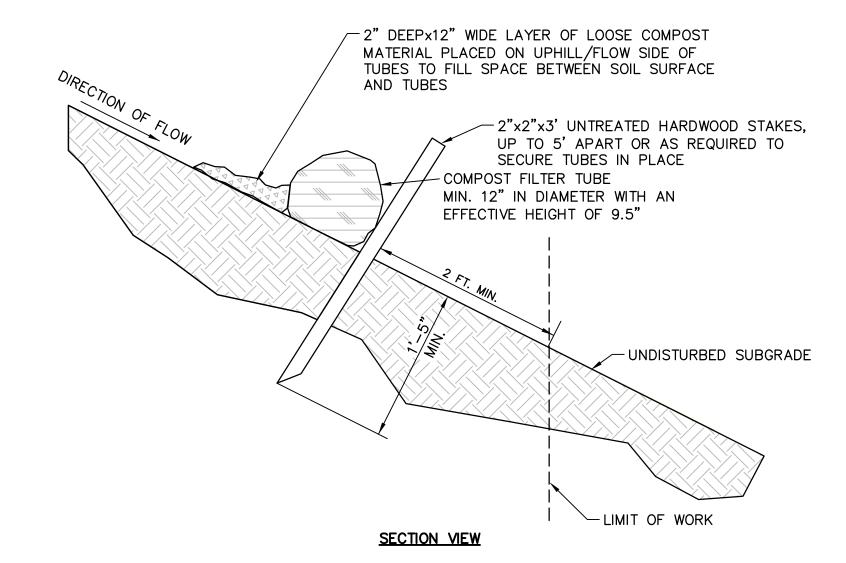
CHECKED:

SCALE: AS SHOWN

SHEET 11

DRB

DAM

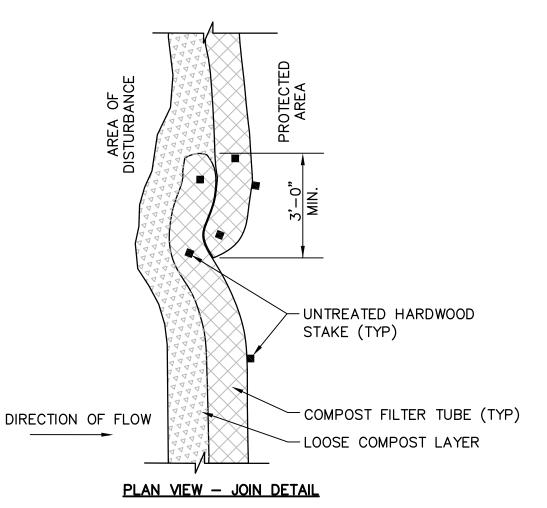


-2' HIGH CLEAN

STONES  $(d_{50}=6")$ 

### **NOTES:**

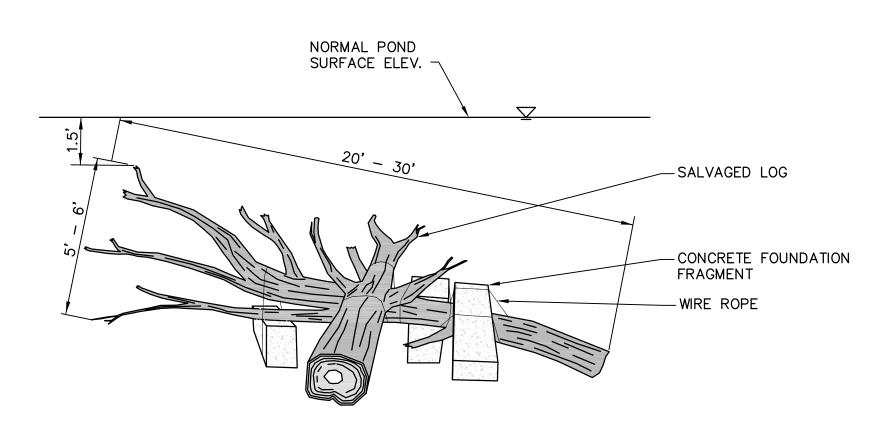
- 1. TUBES FOR COMPOST FILTERS SHALL BE JUTE MESH OR APPROVED BIODEGRADABLE MATERIAL. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
- 2. TAMP TUBES IN PLACE TO ENSURE GOOD CONTACT WITH SOIL SURFACE. IT IS NOT NECESSARY TO TRENCH TUBES INTO EXISTING
- 3. WHEN STAKING IS NOT POSSIBLE, SUCH AS WHEN TUBES MUST BE PLACED ON PAVEMENT, HEAVY CONCRETE OR CINDER BLOCKS CAN BE USED BEHIND TUBES UP TO 5' APART OR AS REQUIRED TO SECURE TUBES IN PLACE.



#### **EROSION CONROL BARRIER COMPOST FILTER TUBE** NO SCALE

### NOTES:

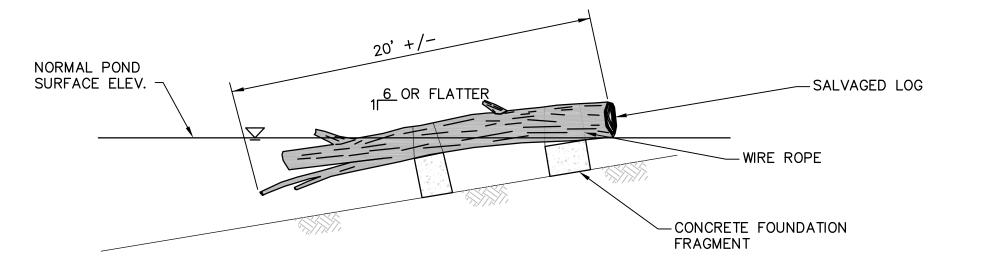
- 1. PROVIDE 3' MINIMUM OVERLAP AT ENDS OF TUBES TO JOIN IN A CONTINUOUS BARRIER AND MINIMIZE UNIMPEDED FLOW.
- 2. STAKE JOINING TUBES SNUGLY AGAINST EACH OTHER TO PREVENT UNFILTERED FLOW BETWEEN THEM.
- 3. SECURE ENDS OF TUBES WITH STAKES SPACED 18" APART THROUGH TOPS OF TUBES.



## SUBMERGED HABITAT STRUCTURE

#### NOTES:

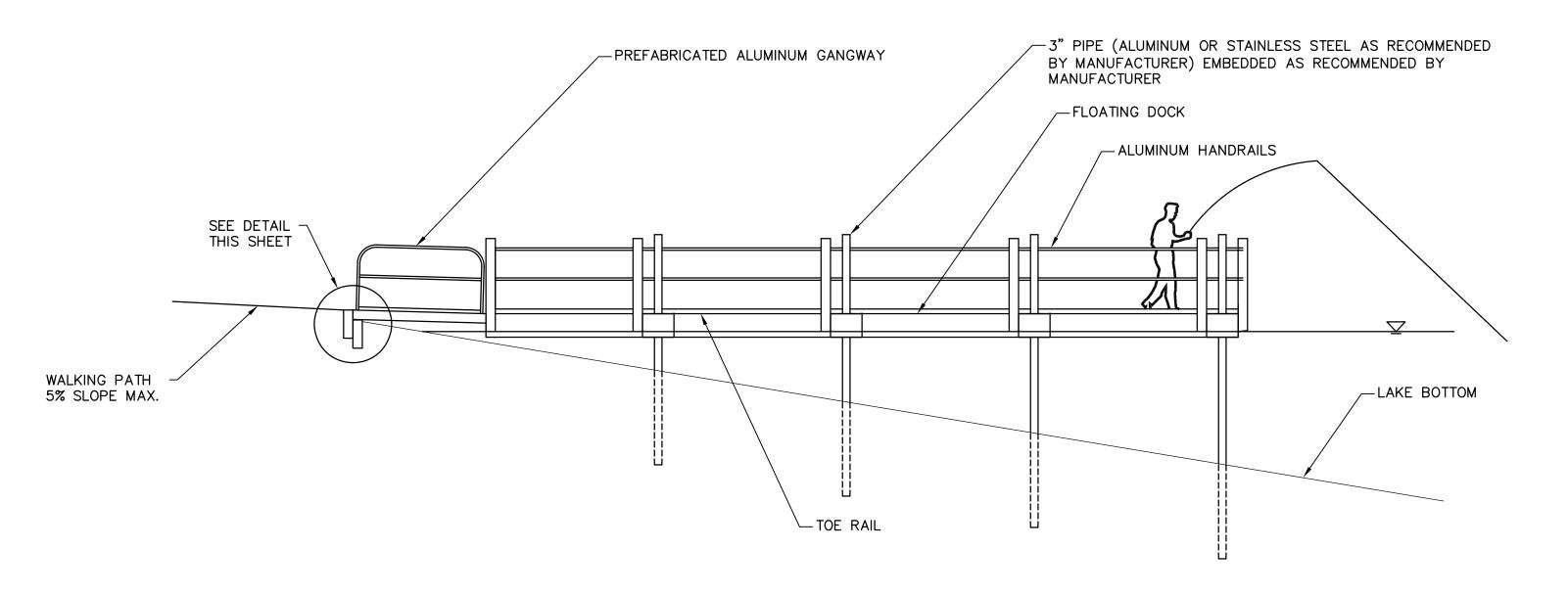
- 1. CONSTRUCT EACH HABITAT STRUCTURE FROM 2-3 RECENTLY CUT TREES WITH 14 TO 20 INCH DIA. AT BASE AND 20 TO 30 FOOT LENGTH AND LARGE CONCRETE FRAGMENTS FROM FOUNDATION TO BE REMOVED. LOGS SHALL BE FREE FROM ROT AND HAVE GENERALLY INTACT BARK.
- 2. ANCHOR THE TREES AGAINST FLOATATION TO EACH OTHER AND TO THE FOUNDATION FRAGMENTS USING WIRE ROPE OR OTHER SUITABLE MEANS. PROVIDE ADDITIONAL SOIL ANCHORS IF NEEDED.
- 3. LEAVE BRANCHES, TWIGS, AND FOLIAGE ON THE TREES TO THE EXTENT PRACTICABLE WHILE CUTTING TO A 5' TO 6' CROWN WIDTH. ONCE SUBMERGED, TRIM BRANCHES TO 1.5' BELOW WATER SURFACE.

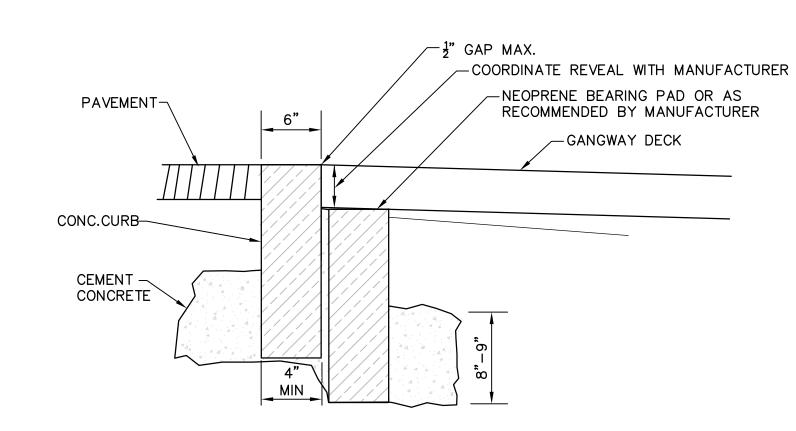


## BASKING HABITAT STRUCTURE

#### NOTES:

- CONSTRUCT EACH BASKING STRUCTURE FROM A RECENTLY CUT LOG OF 18 TO 24 INCH DIA. AND CONCRETE FRAGMENTS FROM FOUNDATION TO BE REMOVED. LOGS SHALL BE FREE FROM ROT AND SHALL HAVE GENERALLY INTACT BARK. TRIM BRANCHES FROM LOG.
- 2. ANCHOR THE TREES AGAINST FLOATATION TO THE FOUNDATION FRAGMENTS USING WIRE ROPE OR OTHER SUITABLE MEANS. PROVIDE ADDITIONAL SOIL ANCHORS IF NEEDED. THE WIRE ROPE SHALL NOT PROTRUDE ABOVE THE SURFACE OF THE LOG BY MORE THAN ½ INCH.
- 3. PLACE THE LOG AT A SLOPE OF 6H:1V OR FLATTER WITH APPROXIMATELY \( \frac{2}{3} \) OF THE LENGTH OF THE LOG ABOVE THE NORMAL WATER SURFACE LEVEL OF THE POND. NO PART OF THE STRUCTURE SHALL BE CLOSER THAN 20 FEET TO SHORE.





## FLOATING DOCK AND PIER NO SCALE

### NOTES:

- 1. DOCK AND PIER SHALL BE A PREFABRICATED FLOATING DOCK SYSTEM WITH STABILIZING POLES, TOE RAIL, SLIP—RESISTANT SURFACE, AND BE SUITABLE FOR COMMERCIAL APPLICATIONS. DOCK AND PIER SYSTEM SHALL SLIDE ON STABILIZING POLES AUGERED INTO POND BOTTOM TO ADJUST TO WATER LEVEL FLUCTUATIONS AND WAVES.
- 2. THE FISHING DOCK SHALL BE BETWEEN 7 AND 8 FEET WIDE AND 40' LONG INCLUDING THE GANGWAY. IT SHALL BE EQUIPPED WITH ADA—ACCESSIBLE HANDRAILS AND TOE RAIL INTEGRAL TO THE MANUFACTURED DOCK SYSTEM.
- 3. THE BOAT LAUNCH DOCK AREA SHALL BE A PLATFORM OF APPROXIMATELY 20' BY 12' EQUIPPED WITH CURBING TO PROVIDE A SAFE BORDER FOR WHEELCHAIRS AND AN ADA ACCESSIBLE ONE WAY BOAT LAUNCH. A SECTION OF DOCK 7' TO 8' WIDE AND APPROXIMATELY 20 FEET LONG SHALL LEAD TO THE THE BOAT LAUNCH SECTION OF THE DOCK.
- 4. THE GANGWAY FOR BOTH DOCKS SHALL SLOPE AT 5% OR LESS.
- 5. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER TO PROVIDE ALL REQUIRED COMPONENTS AND ACCESSORIES FOR A COMPLETE ADA COMPLIANT SYSTEM.
- 6. DOCK SYSTEMS SHALL BE MANUFACTURED BY EZDOCK, DOCK DOCTORS, ACCUDOCK, OR APPROVED EQUAL.

# PERMIT SET NOT FOR CONSTRUCTION

## City of Peabody

Crystal Lake
Dredging Project

Crystal Drive Peabody, Massachusetts

VERIFY SCALE
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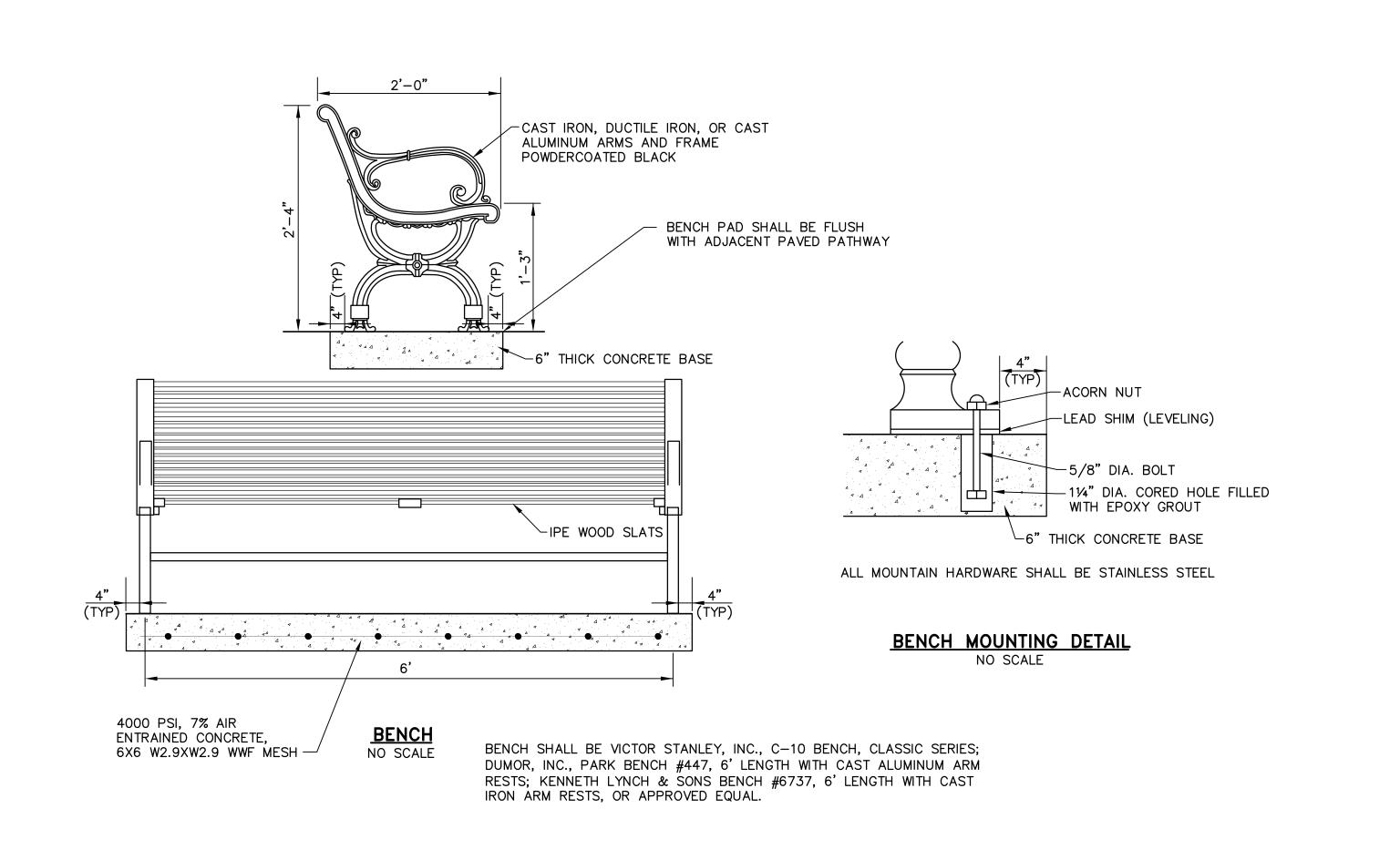
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FILE: P0723\Drawings\details			
DRAWN BY:			MAH
CHECKED:			DRB

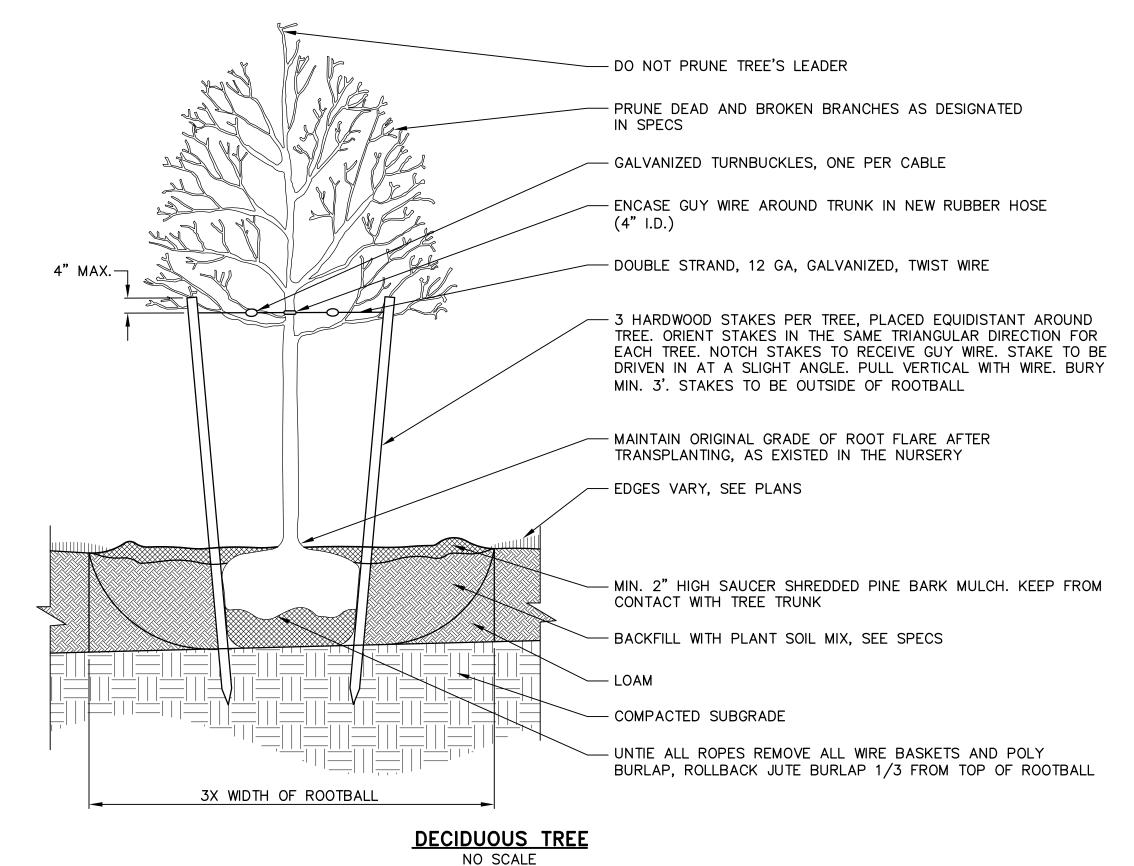
DETAILS - 3

APPROVED BY:

SCALE: AS SHOWN

SHEET 12





SHRUB SET PLUMB (TYP)

— 3" HIGH PLANT SAUCER

- LIMIT OF SHRUB BED

GRADE OF PLANTING SOIL MIX

SHREDDED BARK MULCH LAYER

PLANTING SOIL MIX. SEE SPECS

OF SHRUB BED, SEE SPECS

COMPACTED SUBGRADE

**SHRUB PLANTING** 

NO SCALE

SET TOP OF ROOTBALL FLUSH WITH FINISH

ADJACENT MATERIALS VARIES SEE PLANS

LOAM CONTINUOUS THROUGHOUT EXTENT

PERMIT
SET
NOT FOR
CONSTRUCTION

City of Peabody

Crystal Lake
Dredging Project

Crystal Drive Peabody, Massachusetts

WERIFY SCALE

BAR IS 1 INCH ON ORIGINAL DRAWING

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Mark Date Description

PROJECT NO: P0723

FILE: P0723\Drawings\ LANDSC\_Details

DRAWN BY: TMP

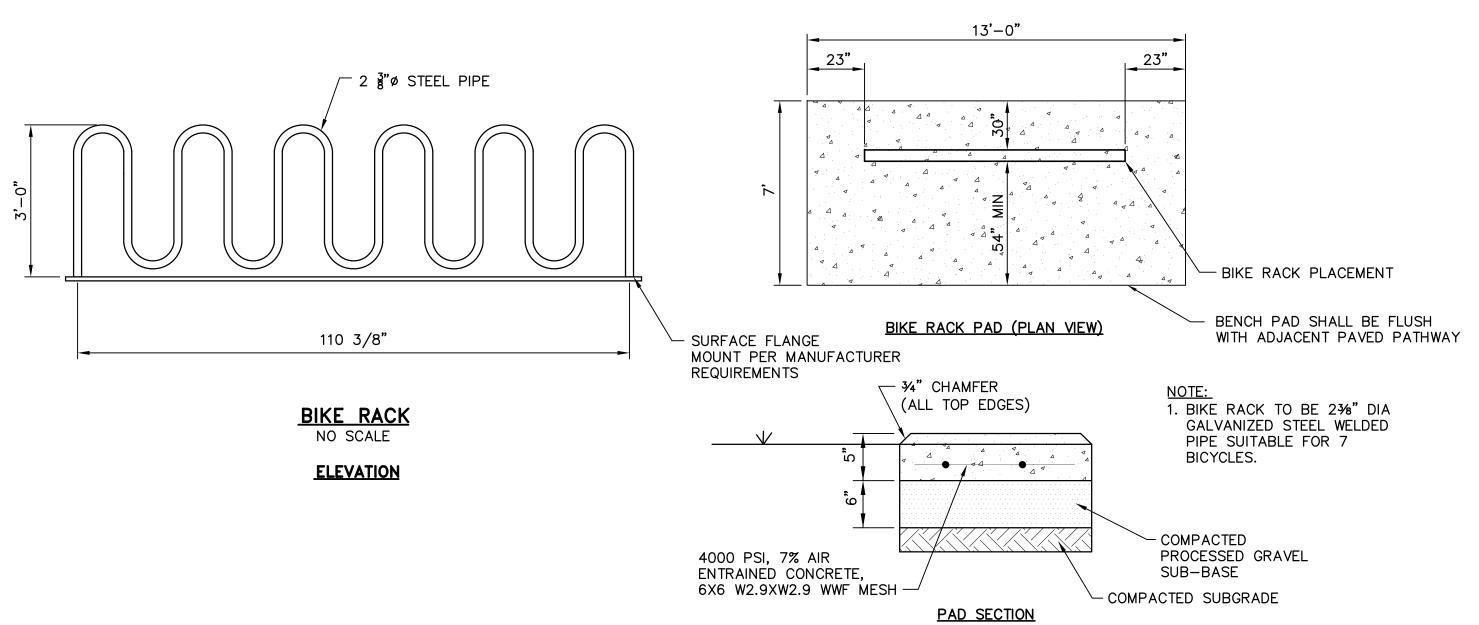
CHECKED: DRB

APPROVED BY: DAM

LANDSCAPE DETAILS

SCALE: NO SCALE

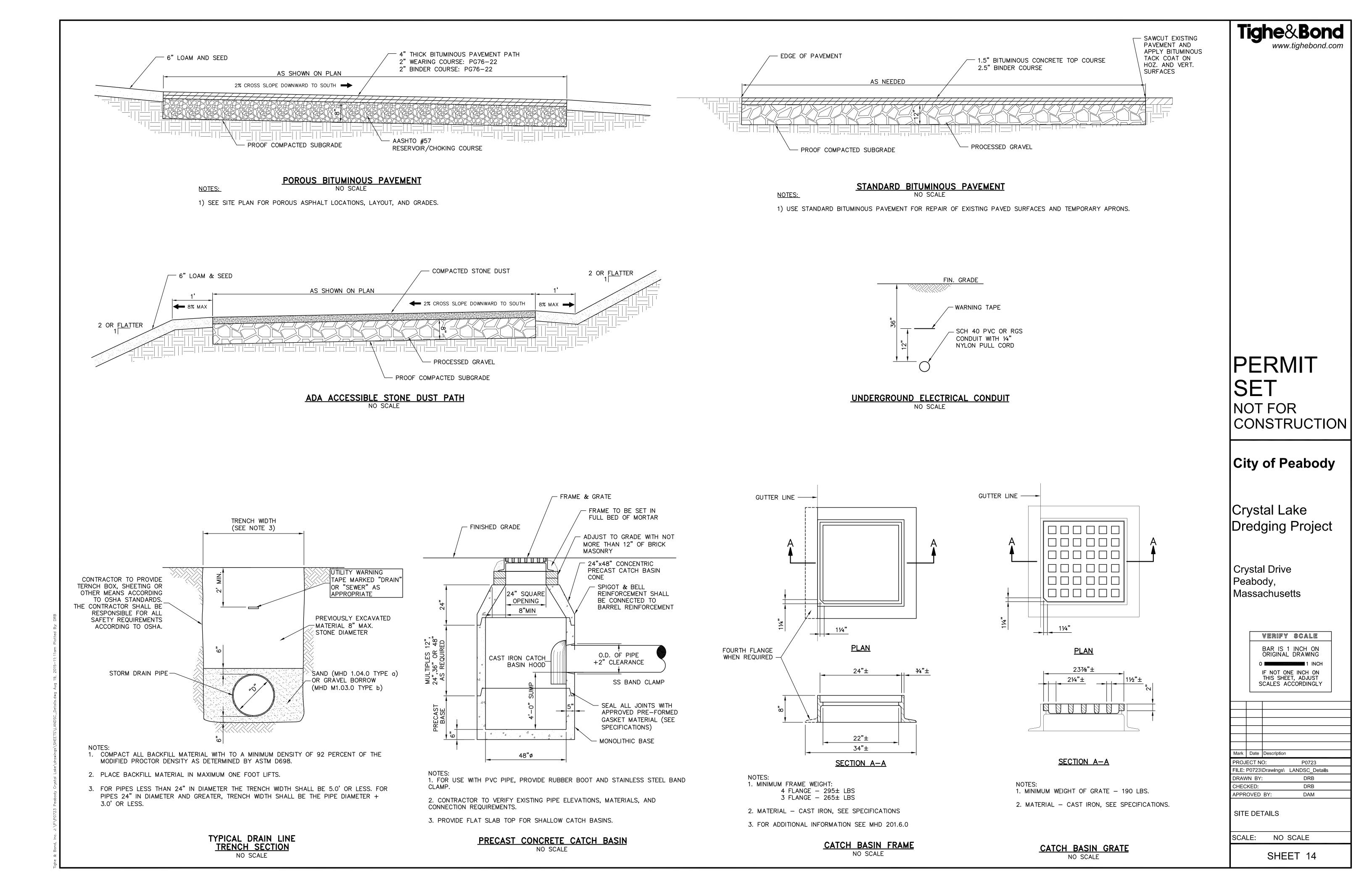
SHEET 13

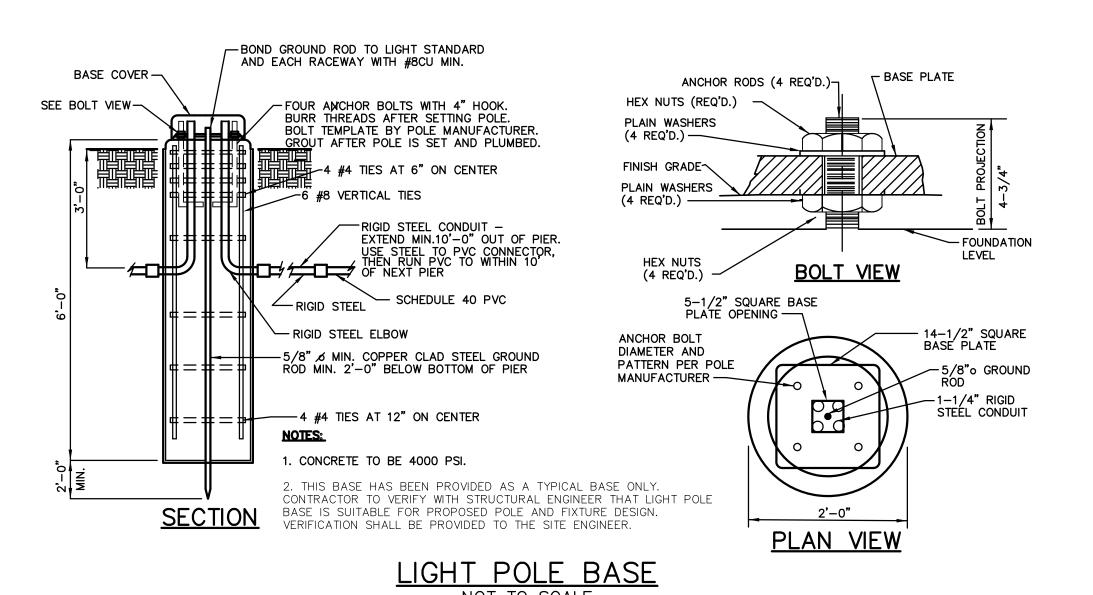


3"-ÎUSH PATHWAY

BIKE RACK AND PAD DETAIL

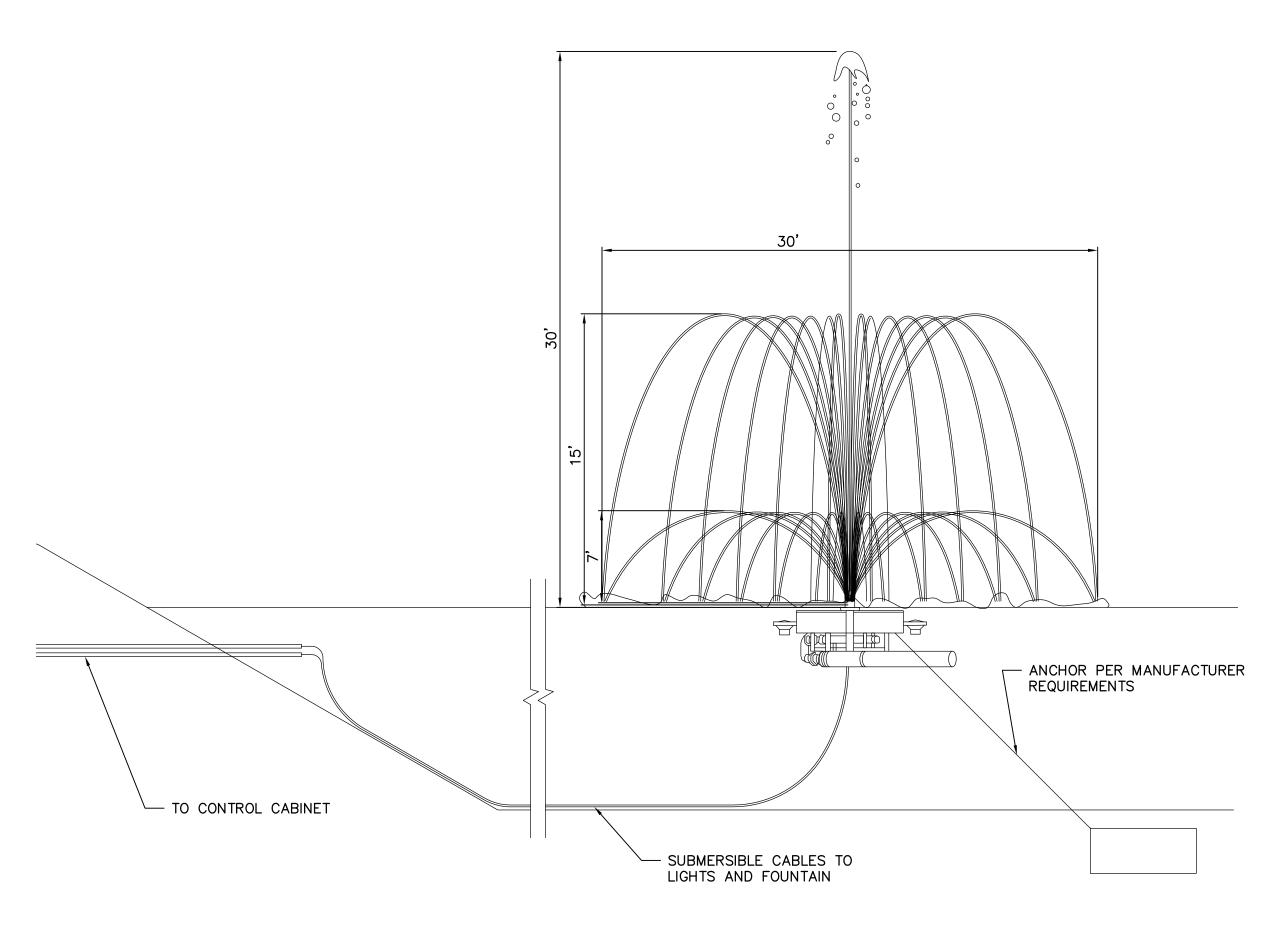
NO SCALE





#### NOTES:

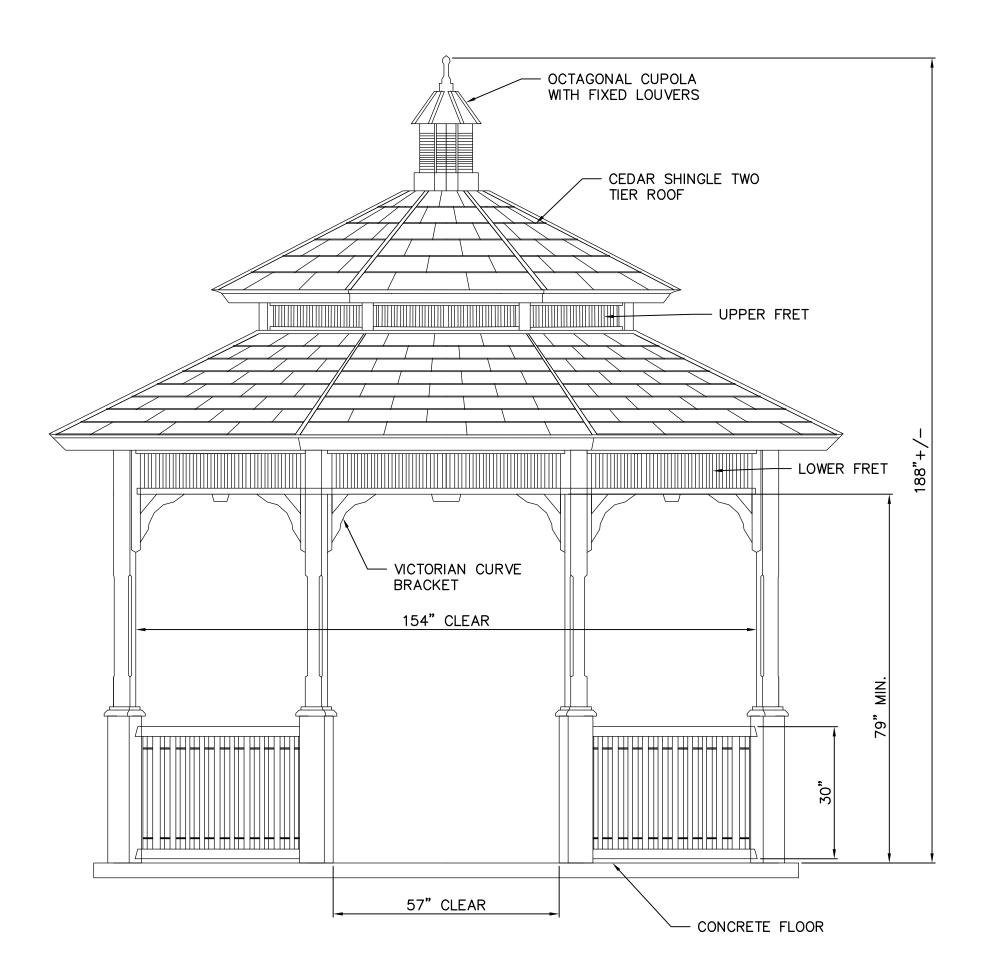
1) 14-FT TALL ORNAMENTAL LIGHT POLES TO BE STERNBERG 3600 WILLIAMSBURG SERIES WITH OLD TOWN ACORN FIXTURE, MEL NORTHEY #8671 PREMIER WASHINGTON 14' HT CAST ALUMINUM POLE PAINTED BLACK WITH CLEAR LEXAN ACORN GLOBE, OR UNION METAL MONTREAL DECORATIVE CAST ALUMINUM POLE PAINTED BLACK WITH CLEAR LEXAN ACORN GLOBE.

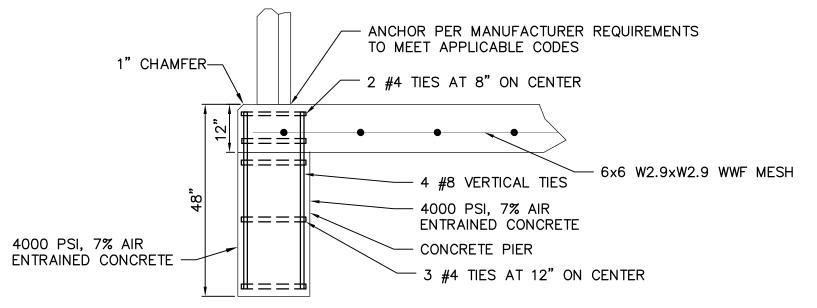


## STANDARD BITUMINOUS PAVEMENT NO SCALE

## NOTES:

- 1) FLOATING 3 TIER FOUNTAIN WITH 30' MAX SPRAY HEIGHT AND 30' SPREAD WITH SINGLE-PHASE 5 HP SUBMERSIBLE TURBINE PUMP AND 2 INTEGRATED LED LIGHTS.
- 2) LOCATION OF FOUNTAIN TO BE FIELD-DETERMINED BUT NO MORE THAN 300' FROM SHORE AREA.
- 3) PROVIDE SUFFICIENT SLACK IN SUBMERSIBLE CABLE TO ALLOW FOUNTAIN TO MOVE WITH WIND AND CURRENTS TO THE DEGREE ALLOWED BY ANCHOR LINE.





## NOTES:

GAZEBO SHALL BE MANUFACTURED OCTAGONAL, VICTORIAN—STYLE, 15' NOMINAL DIAMETER CONSTRUCTED OF WESTERN RED CEDAR OR WHITE CEDAR, PAINTED WHITE, WITH CEDAR SHINGLE ROOFING.
 BEAM, POST, ANCHOR, AND FASTENER TYPES AND SIZES TO BE SPECIFIED BY MANUFACTURER.
 OBTAIN BUILDING PERMIT USING MANUFACTURER—SUPPLIED INFORMATION. GAZEBO SHALL MEET APPLICABLE CODES.

PREFABRICATED CEDAR GAZEBO

NO SCALE

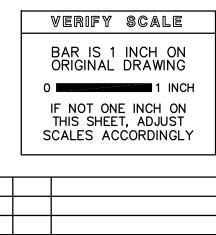
# Tighe&Bond www.tighebond.com

# PERMIT SET NOT FOR CONSTRUCTION

## City of Peabody

Crystal Lake
Dredging Project

Crystal Drive Peabody, Massachusetts



Mark Date Description

PROJECT NO: P0723

FILE: P0723\Drawings\ LANDSC\_Details

DRAWN BY: TMP

CHECKED: DRB

APPROVED BY: DAM

SITE DETAILS

SCALE: NO SCALE