



**US Army Corps
of Engineers**[®]
New England District
696 Virginia Road
Concord, MA 01742-2751

PUBLIC NOTICE

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."

AUTHORITY

Permits are required pursuant to:

- Section 10 of the Rivers and Harbors Act of 1899
- 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)

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.
- Permit from Local Wetland Agency or Conservation Commission.
- 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

MAYOR

EDWARD A. BETTENCOURT, JR.

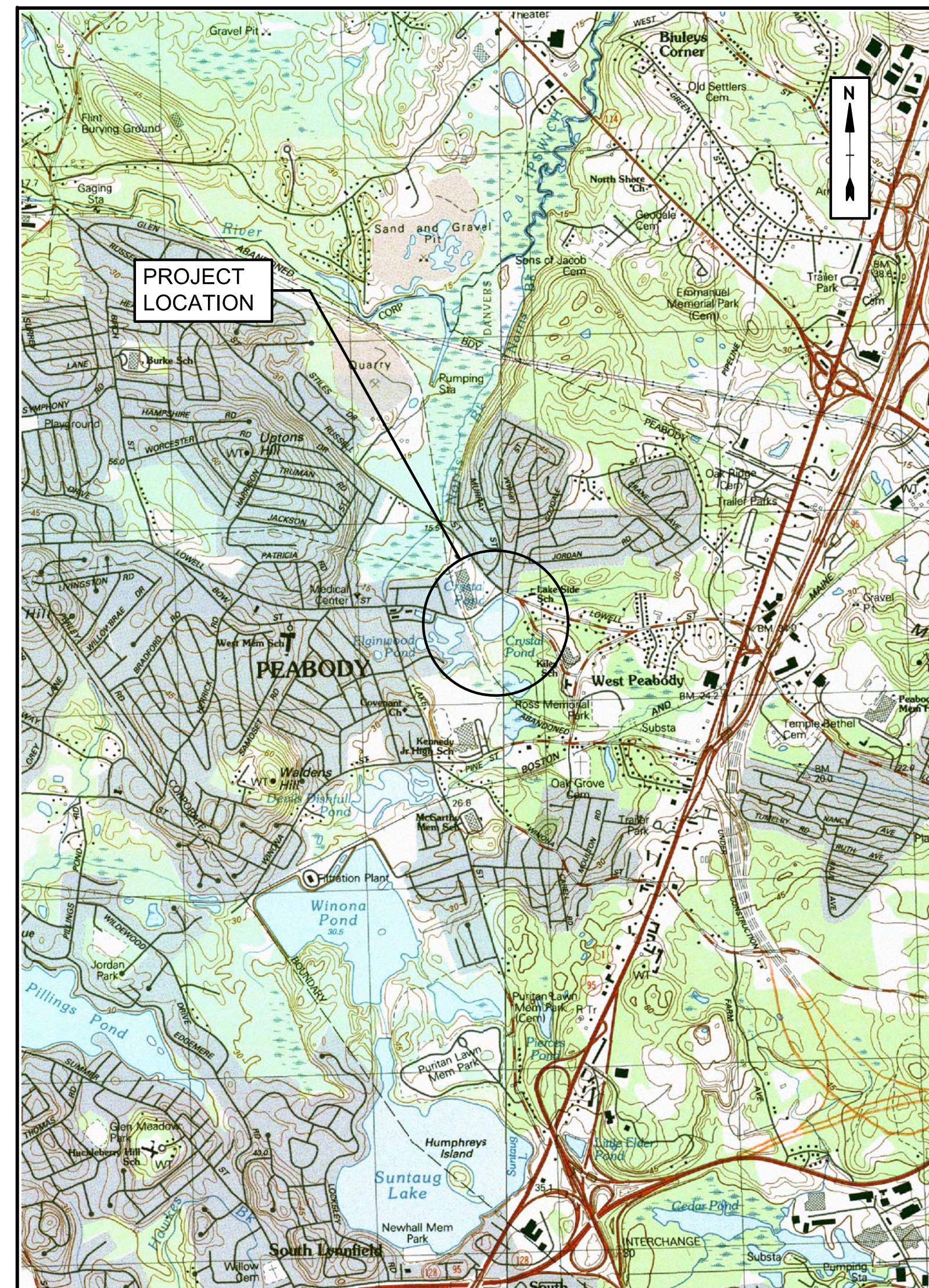


Tighe & Bond
Consulting Engineers

PERMIT SET

NOT FOR CONSTRUCTION

COMPLETE SET 15 SHEETS



LOCATION PLAN

1"=2000'

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

**PERMIT SET
NOT FOR
CONSTRUCTION**

City of Peabody

**Crystal Lake
Dredging Project**

**Crystal Drive
Peabody,
Massachusetts**

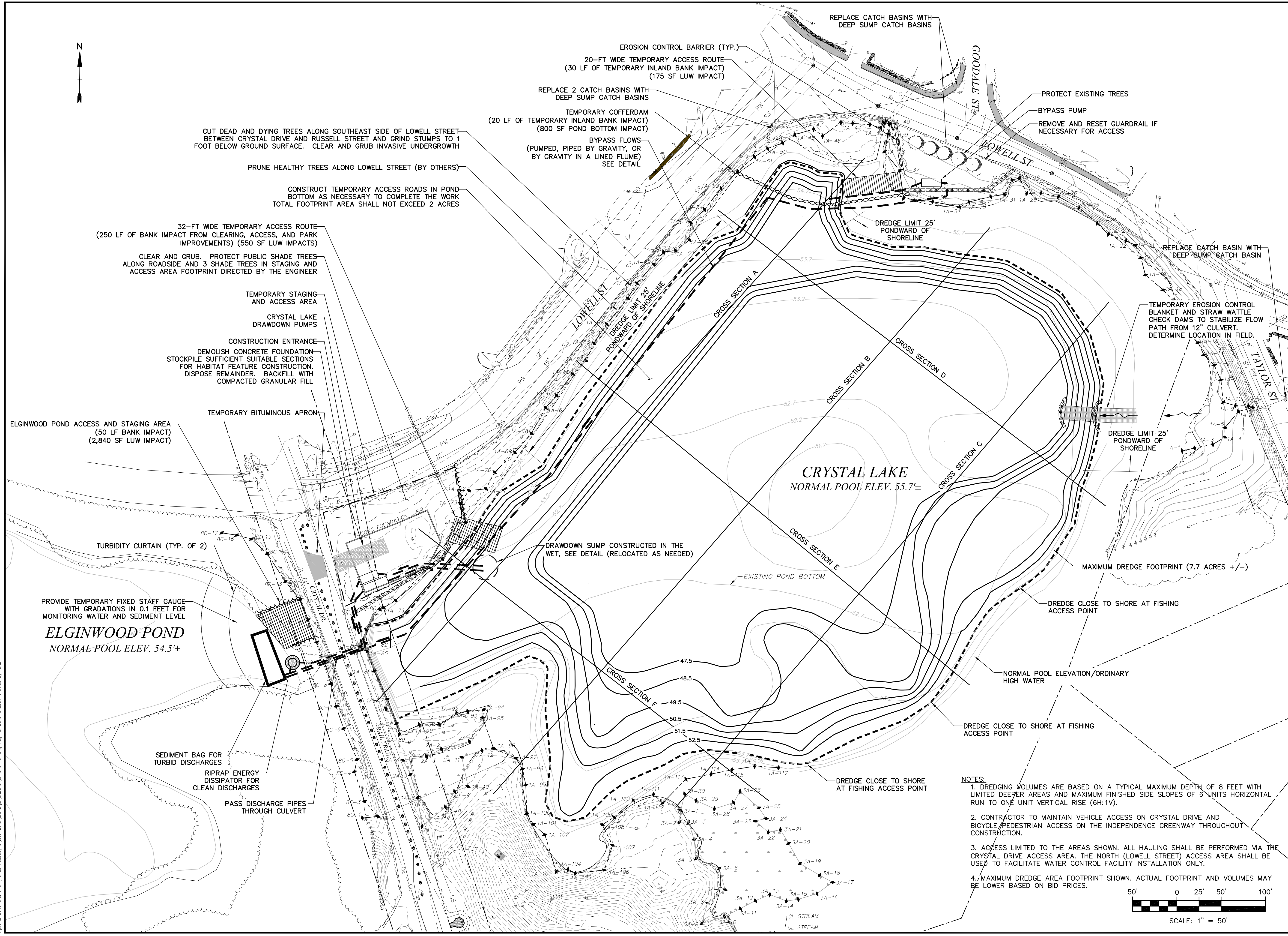
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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PROJECT NO:	P0723	
FILE:	P0723\Drawings\ SHTS 04 05 06	
DRAWN BY:	DRB	
CHECKED:	DAM	
APPROVED BY:	DAM	

CRYSTAL LAKE DREDGING PLAN

SCALE: 1"=50'

SHEET 4



CUT DEAD AND DYING TREES ALONG SOUTHEAST SIDE OF LOWELL STREET BETWEEN CRYSTAL DRIVE AND RUSSELL STREET AND GRIND STUMPS TO 1 FOOT BELOW GROUND SURFACE. CLEAR AND GRUB INVASIVE UNDERGROWTH

PRUNE HEALTHY TREES ALONG LOWELL STREET (BY OTHERS)

CONSTRUCT TEMPORARY ACCESS ROADS IN POND BOTTOM AS NECESSARY TO COMPLETE THE WORK. TOTAL FOOTPRINT AREA SHALL NOT EXCEED 2 ACRES

32-FT WIDE TEMPORARY ACCESS ROUTE (250 LF OF BANK IMPACT FROM CLEARING, ACCESS, AND PARK IMPROVEMENTS) (550 SF LUW IMPACTS)

CLEAR AND GRUB. PROTECT PUBLIC SHADE TREES ALONG ROADSIDE AND 3 SHADE TREES IN STAGING AND ACCESS AREA FOOTPRINT DIRECTED BY THE ENGINEER

TEMPORARY STAGING AND ACCESS AREA

CRYSTAL LAKE DRAWDOWN PUMPS

CONSTRUCTION ENTRANCE
DEMOLISH CONCRETE FOUNDATION STOCKPILE SUFFICIENT SUITABLE SECTIONS FOR HABITAT FEATURE CONSTRUCTION. DISPOSE REMAINDER. BACKFILL WITH COMPACTED GRANULAR FILL

TEMPORARY BITUMINOUS APRON

ELGINWOOD POND ACCESS AND STAGING AREA (50 LF BANK IMPACT) (2,840 SF LUW IMPACT)

TURBIDITY CURTAIN (TYP. OF 2)

PROVIDE TEMPORARY FIXED STAFF GAUGE WITH GRADATIONS IN 0.1 FEET FOR MONITORING WATER AND SEDIMENT LEVEL

ELGINWOOD POND
NORMAL POOL ELEV. 54.5±

SEDIMENT BAG FOR TURBID DISCHARGES

RIPRAP ENERGY DISSIPATOR FOR CLEAN DISCHARGES

PASS DISCHARGE PIPES THROUGH CULVERT

EROSION CONTROL BARRIER (TYP.)
20-FT WIDE TEMPORARY ACCESS ROUTE (30 LF OF TEMPORARY INLAND BANK IMPACT) (175 SF LUW IMPACT)

REPLACE 2 CATCH BASINS WITH DEEP SUMP CATCH BASINS

TEMPORARY COFFERDAM (20 LF OF TEMPORARY INLAND BANK IMPACT) (800 SF POND BOTTOM IMPACT)

BYPASS FLOWS (PUMPED, PIPED BY GRAVITY, OR BY GRAVITY IN A LINED FLUME) SEE DETAIL

REPLACE CATCH BASINS WITH DEEP SUMP CATCH BASINS

PROTECT EXISTING TREES

BYPASS PUMP

REMOVE AND RESET GUARDRAIL IF NECESSARY FOR ACCESS

REPLACE CATCH BASIN WITH DEEP SUMP CATCH BASIN

TEMPORARY EROSION CONTROL BLANKET AND STRAW WATTLE CHECK DAMS TO STABILIZE FLOW PATH FROM 12" CULVERT. DETERMINE LOCATION IN FIELD.

DRAWDOWN SUMP CONSTRUCTED IN THE WET, SEE DETAIL (RELOCATED AS NEEDED)

CRYSTAL LAKE
NORMAL POOL ELEV. 55.7±

MAXIMUM DREDGE FOOTPRINT (7.7 ACRES +/-)

DREDGE CLOSE TO SHORE AT FISHING ACCESS POINT

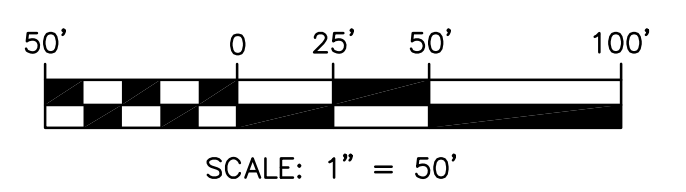
NORMAL POOL ELEVATION/ORDINARY HIGH WATER

DREDGE CLOSE TO SHORE AT FISHING ACCESS POINT

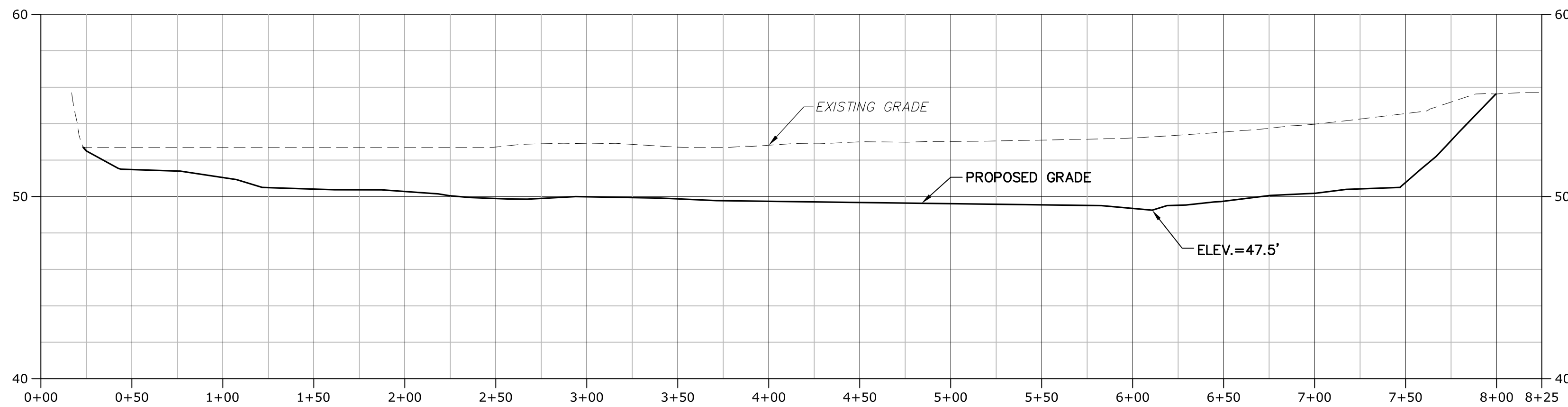
DREDGE CLOSE TO SHORE AT FISHING ACCESS POINT

NOTES:

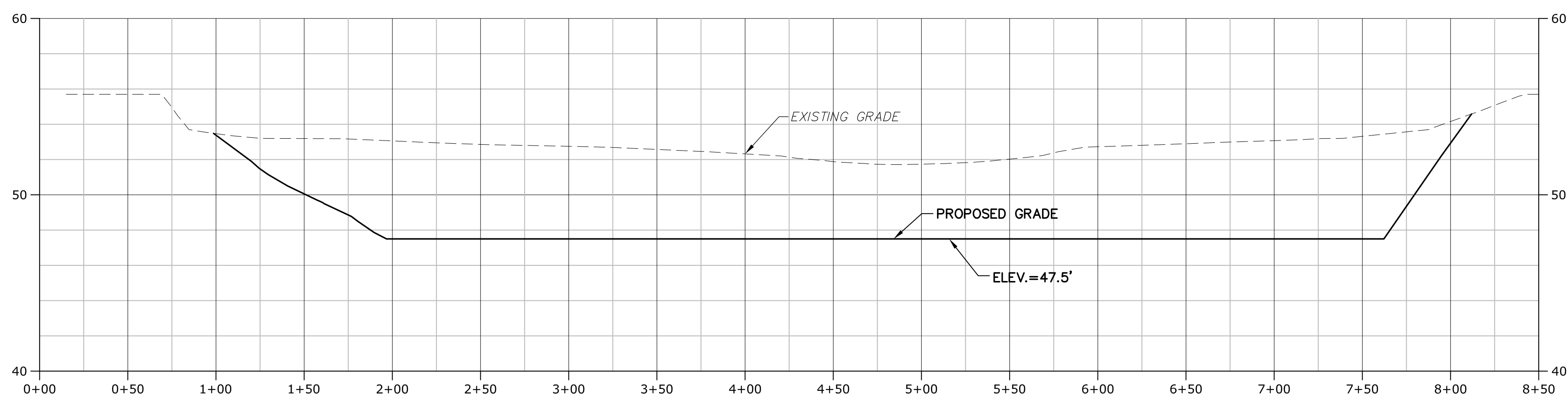
1. DREDGING VOLUMES ARE BASED ON A TYPICAL MAXIMUM DEPTH OF 8 FEET WITH LIMITED DEEPER AREAS AND MAXIMUM FINISHED SIDE SLOPES OF 6 UNITS HORIZONTAL RUN TO ONE UNIT VERTICAL RISE (6H:1V).
2. CONTRACTOR TO MAINTAIN VEHICLE ACCESS ON CRYSTAL DRIVE AND BICYCLE/PEDESTRIAN ACCESS ON THE INDEPENDENCE GREENWAY THROUGHOUT CONSTRUCTION.
3. ACCESS LIMITED TO THE AREAS SHOWN. ALL HAULING SHALL BE PERFORMED VIA THE CRYSTAL DRIVE ACCESS AREA. THE NORTH (LOWELL STREET) ACCESS AREA SHALL BE USED TO FACILITATE WATER CONTROL FACILITY INSTALLATION ONLY.
4. MAXIMUM DREDGE AREA FOOTPRINT SHOWN. ACTUAL FOOTPRINT AND VOLUMES MAY BE LOWER BASED ON BID PRICES.



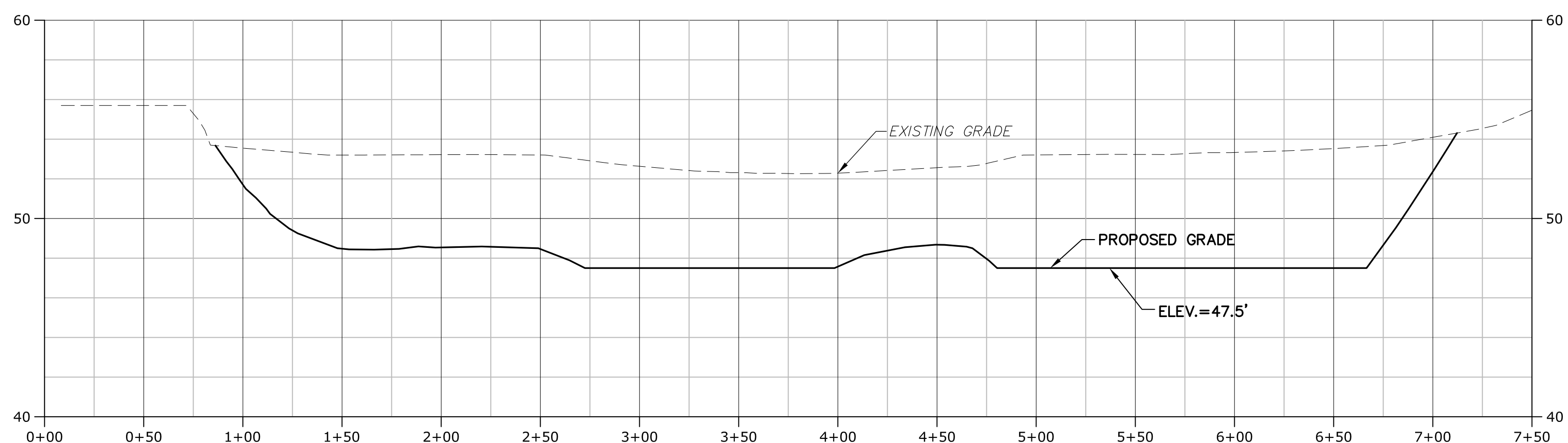
Tighe & Bond, Inc. \A\VP\0723 Peabody Crystal Lake\Drawings\SHTS 04 05 06 Aug 19, 2015-9:25am Printed By: DRB



SECTION A



SECTION B



SECTION C

VERIFY SCALE
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PERMIT SET
NOT FOR CONSTRUCTION

City of Peabody

Crystal Lake Dredging Project

Crystal Drive Peabody, Massachusetts

VERIFY SCALE
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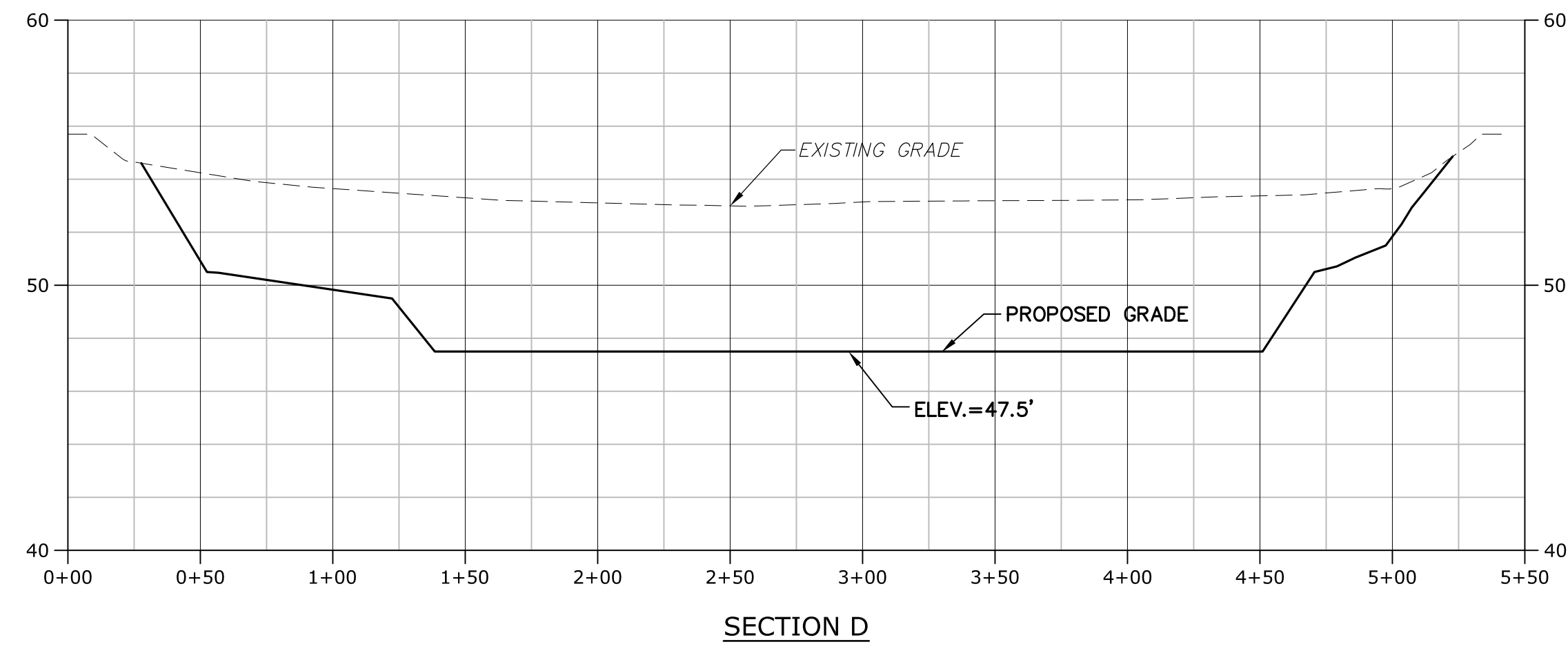
NOTES:
1. ALL UNITS ARE FEET

Mark	Date	Description
PROJECT NO:	P0723	
FILE:	P0723\Drawings\ SHT05	
DRAWN BY:	MAH	
CHECKED:	DRB	
APPROVED BY:	DAM	

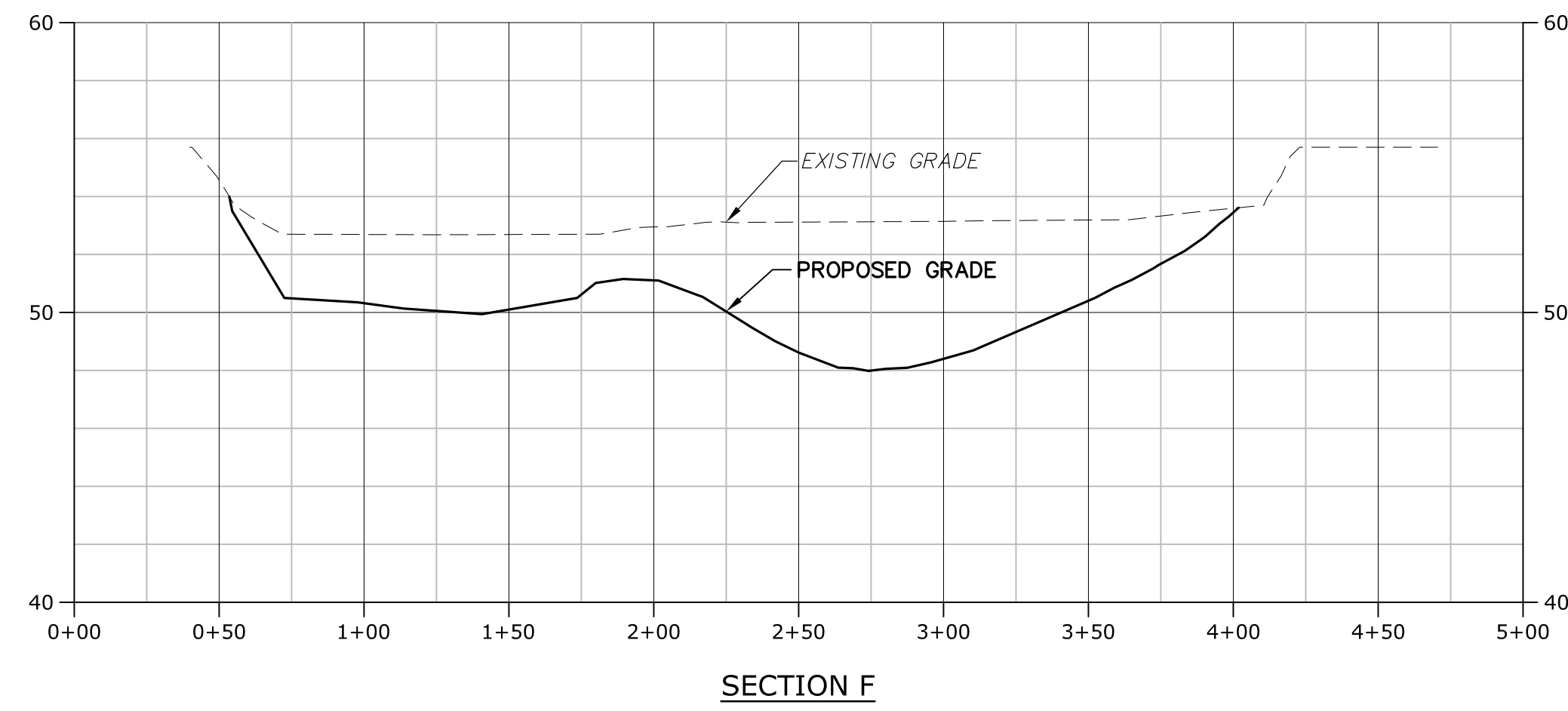
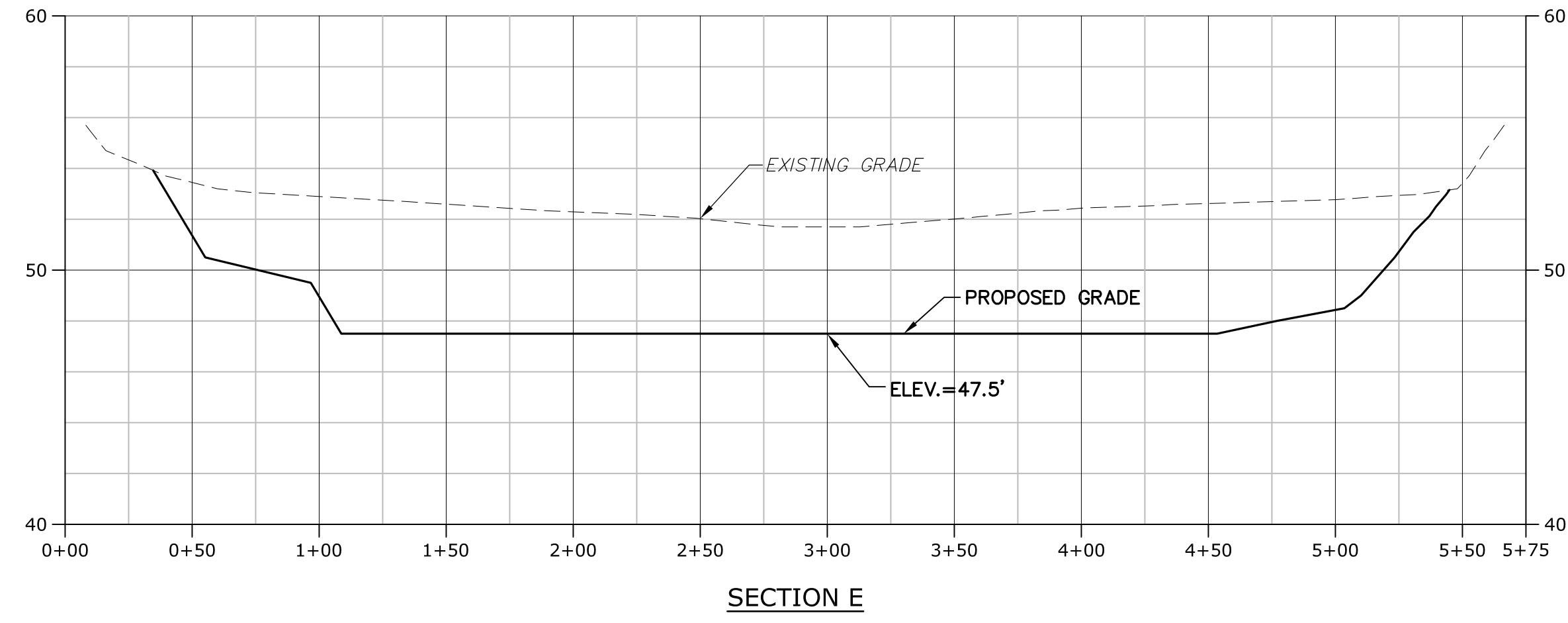
SECTION VIEWS - 1

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

SHEET 5



VERIFY SCALE
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NOTES:
1. ALL UNITS ARE FEET

PERMIT SET
NOT FOR CONSTRUCTION

City of Peabody

Crystal Lake Dredging Project

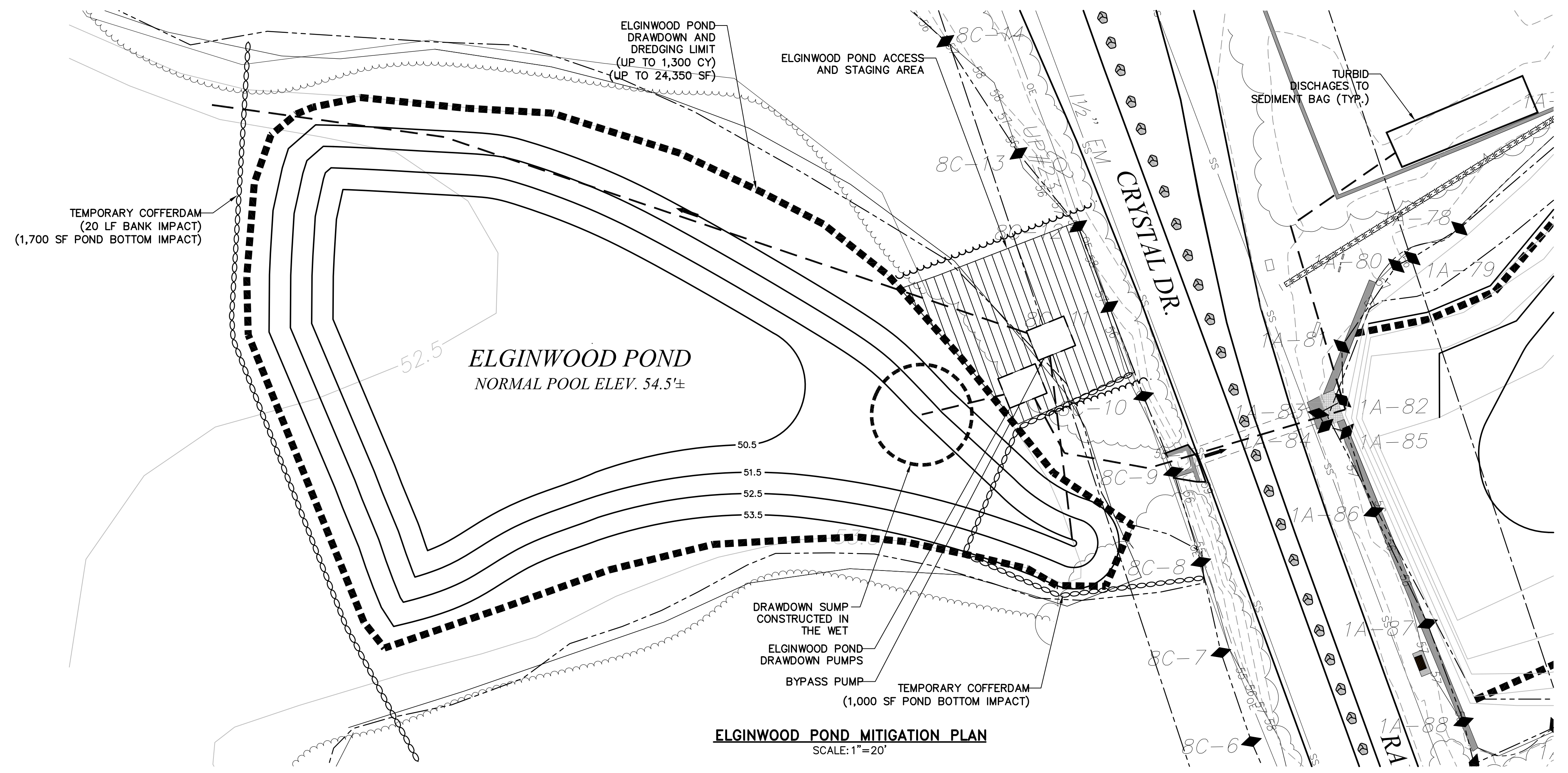
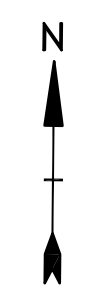
**Crystal Drive
Peabody,
Massachusetts**

VERIFY SCALE
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FILE:	P0723\Drawings\ SHT05	
DRAWN BY:	MAH	
CHECKED:	DRB	
APPROVED BY:	DAM	

SECTION VIEWS - 2

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



ELGINWOOD POND MITIGATION PLAN
SCALE: 1"=20'

**FOR PERMIT
NOT FOR
CONSTRUCTION**

City of Peabody

**Crystal Lake
Dredging Project**

Crystal Drive
Peabody,
Massachusetts

VERIFY SCALE
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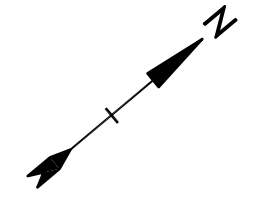
- NOTES:**
1. REMOVE CRYSTAL LAKE DREDGING WATER CONTROLS, INCLUDING ENERGY DISSIPATORS AND DEWATERING BAGS, FROM ELGINWOOD POND IN THE WET. REMOVE TURBIDITY CURTAINS LAST. DE-MINIMIS SEDIMENT MAY BE REMOVED AS PART OF THIS WORK.
 2. ASSESS WHETHER MEASURABLE QUANTITIES OF SEDIMENT ACCUMULATED IN ELGINWOOD POND DURING THE PROJECT. IF SO, DREDGE ACCUMULATED SEDIMENT AT NO ADDITIONAL COST TO THE OWNER. EXISTING SEDIMENT MAY BE REMOVED AS A 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 BE LOWER.

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PROJECT NO:	P0723	
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APPROVED BY:	DAM	

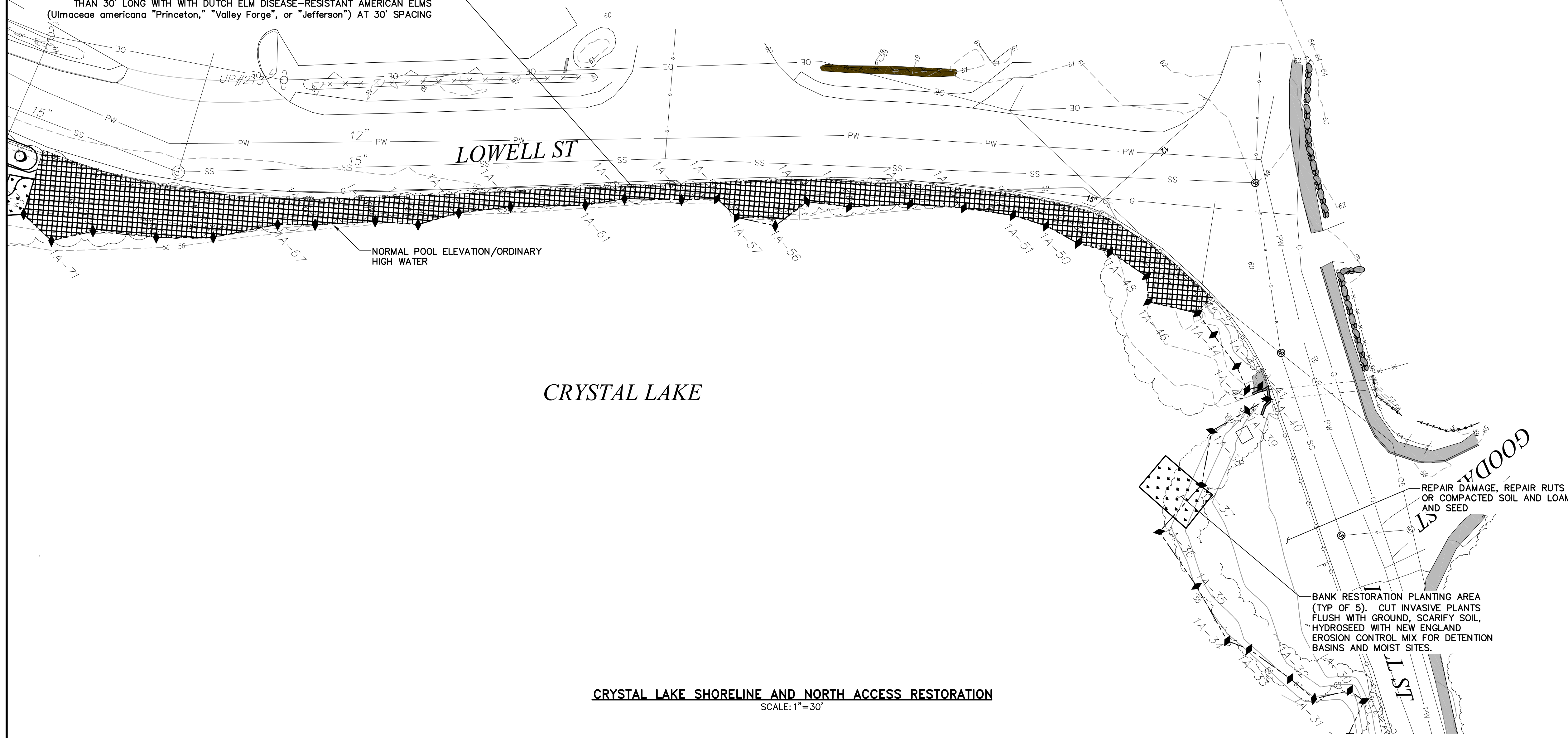
**ELGINWOOD POND
MITIGATION PLAN**

SCALE: 1"=20'

Tighe & Bond, Inc. \A\VP\0723 Peabody Crystal Lake\Drawings\SHTS 04 07.dwg Aug 19, 2015-9:23am Plotted By: DRB



CUT DEAD AND DYING TREES ALONG SOUTHEAST SIDE OF LOWELL STREET BETWEEN CRYSTAL DRIVE AND RUSSELL STREET AND GRIND STUMPS TO 1 FOOT BELOW GROUND SURFACE. CUT INVASIVE UNDERGROWTH FLUSH WITH GROUND PLANT GAPS MORE THAN 30' LONG WITH WITH DUTCH ELM DISEASE-RESISTANT AMERICAN ELMS (*Ulmaceae americana* "Princeton," "Valley Forge", or "Jefferson") AT 30' SPACING



CRYSTAL LAKE

CRYSTAL LAKE SHORELINE AND NORTH ACCESS RESTORATION
SCALE: 1"=30'

PERMIT SET
NOT FOR CONSTRUCTION

City of Peabody

Crystal Lake Dredging Project

Crystal Drive
Peabody,
Massachusetts

VERIFY SCALE
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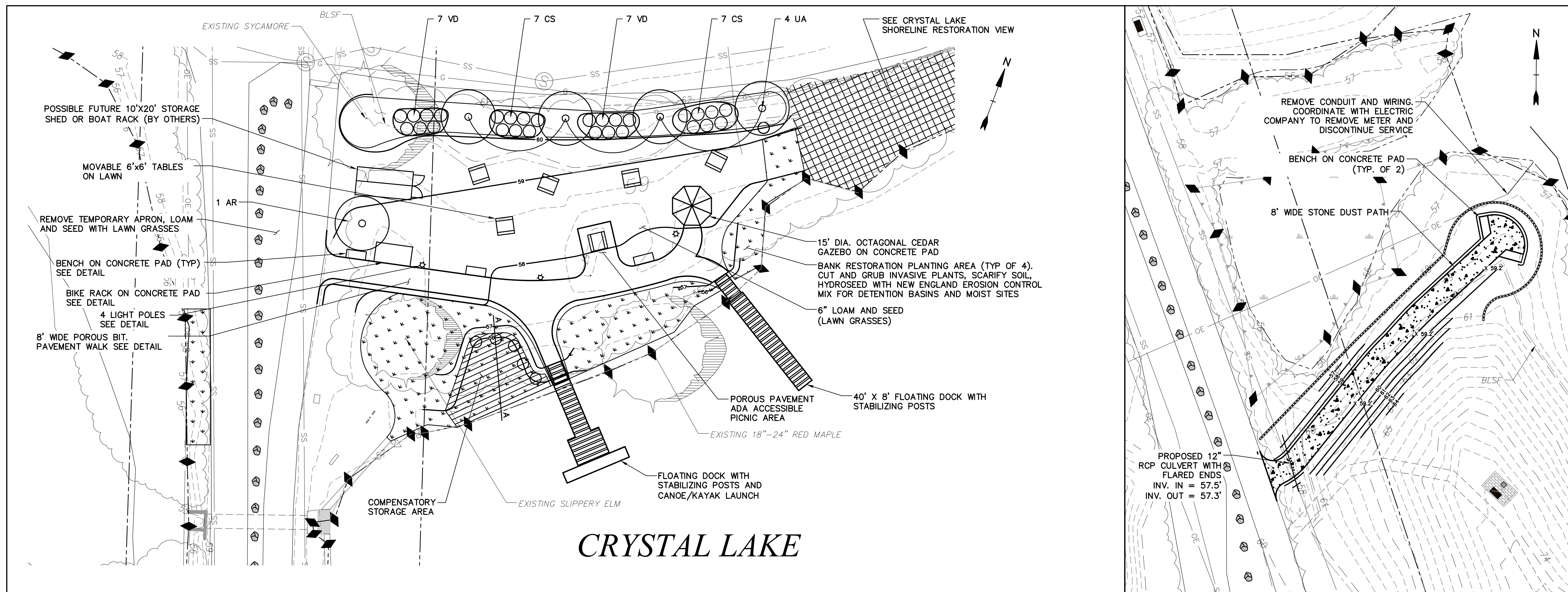
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FILE:	P0723\Drawings\CONCEPTUAL 22X34	
DRAWN BY:	DRB	
CHECKED:	DAM	
APPROVED BY:	DAM	

RESTORATION PLAN

SCALE: AS SHOWN

SHEET 8

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CRYSTAL LAKE PARK
SCALE: 1"=20'

CRYSTAL LAKE SCENIC OVERLOOK
SCALE: 1"=20'

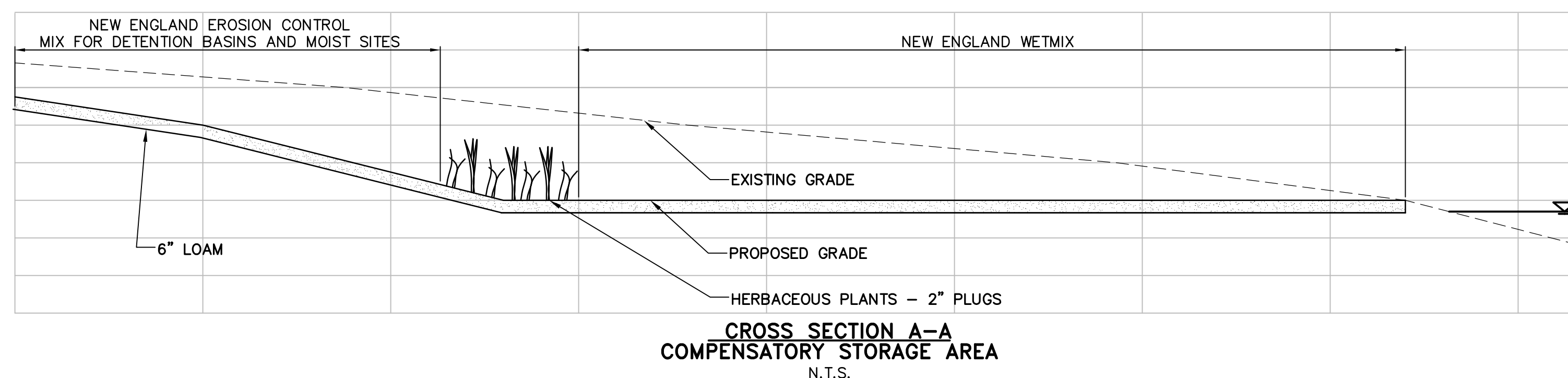
PERMIT SET
NOT FOR CONSTRUCTION

City of Peabody

Crystal Lake Dredging Project

Crystal Drive Peabody, Massachusetts

PLANT 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	CORNUS SERICEA 'ALLEMANS COMPACTA'	ALLEMANS RED STEM DOGWOOD	5 GALLON	CONTAINER
HERBACEOUS				
MIX RANDOMLY 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



CROSS SECTION A-A
COMPENSATORY STORAGE AREA
N.T.S.

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

VERIFY SCALE
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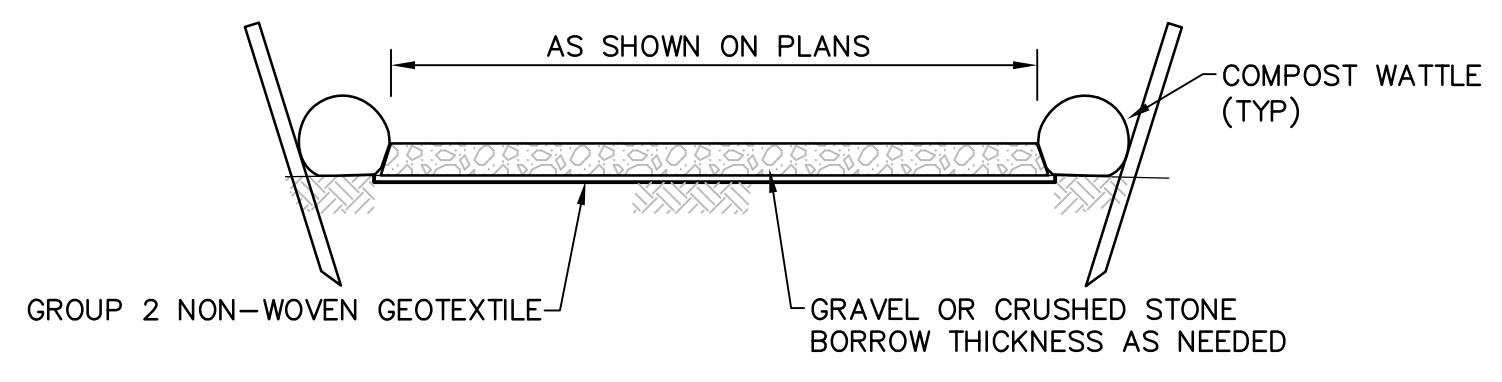
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PROJECT NO: P0723
FILE: P0723\Drawings\ Park Plan
DRAWN BY: DRB, TMP
CHECKED BY: DAM
APPROVED BY: DAM

PARK PLAN

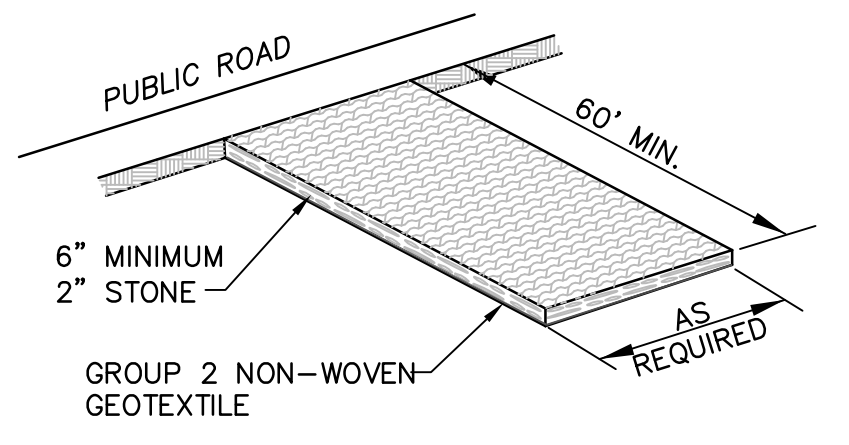
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SHEET 9

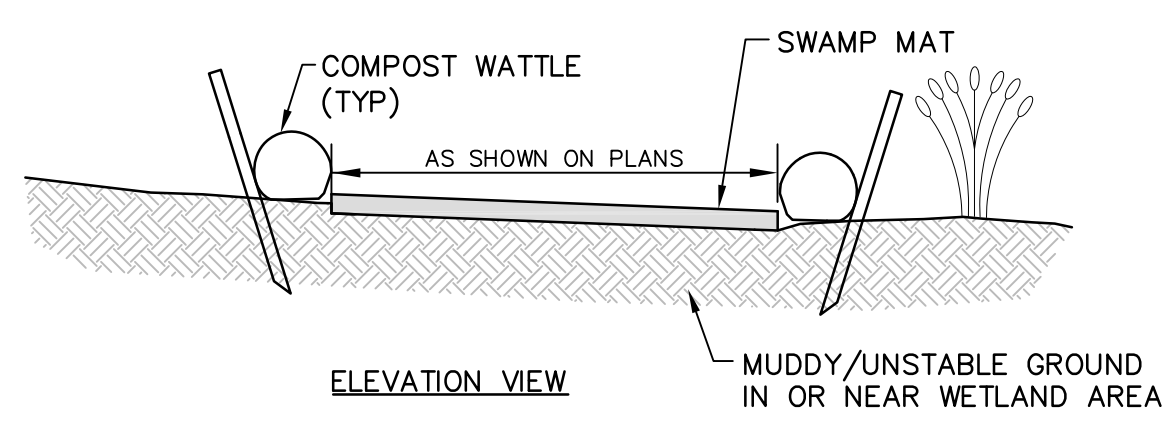


**TYPICAL CROSS-SECTION
TEMPORARY ACCESS ROAD - UPLAND AREAS**
NO SCALE

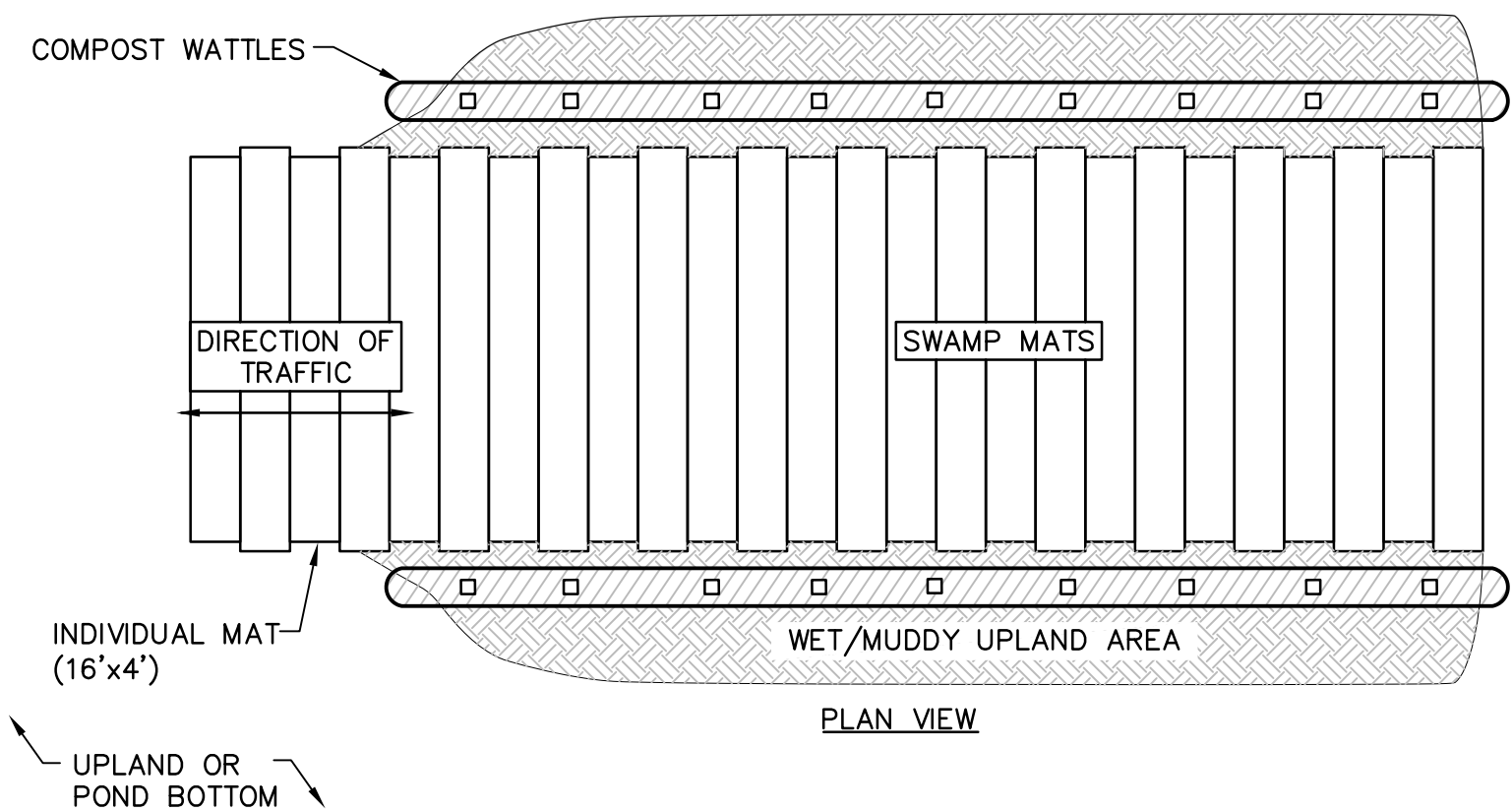
- NOTES:**
1. USE ABOVE DETAIL IN WET OR SOFT UPLAND AREAS TO PREVENT SINKING OF EQUIPMENT.
 2. UPON COMPLETION OF THE PROJECT, REMOVE ALL MATERIAL, LOOSEN THE TOPSOIL BY HAND, RESTORE PRE-PROJECT GRADES, AND SEED.
 3. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED.



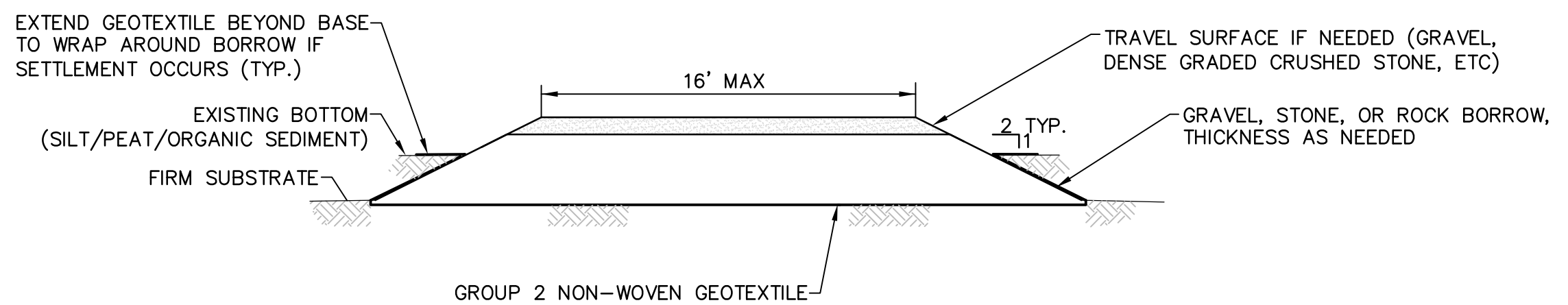
TEMPORARY CONSTRUCTION ENTRY PAD
NO SCALE



- 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.

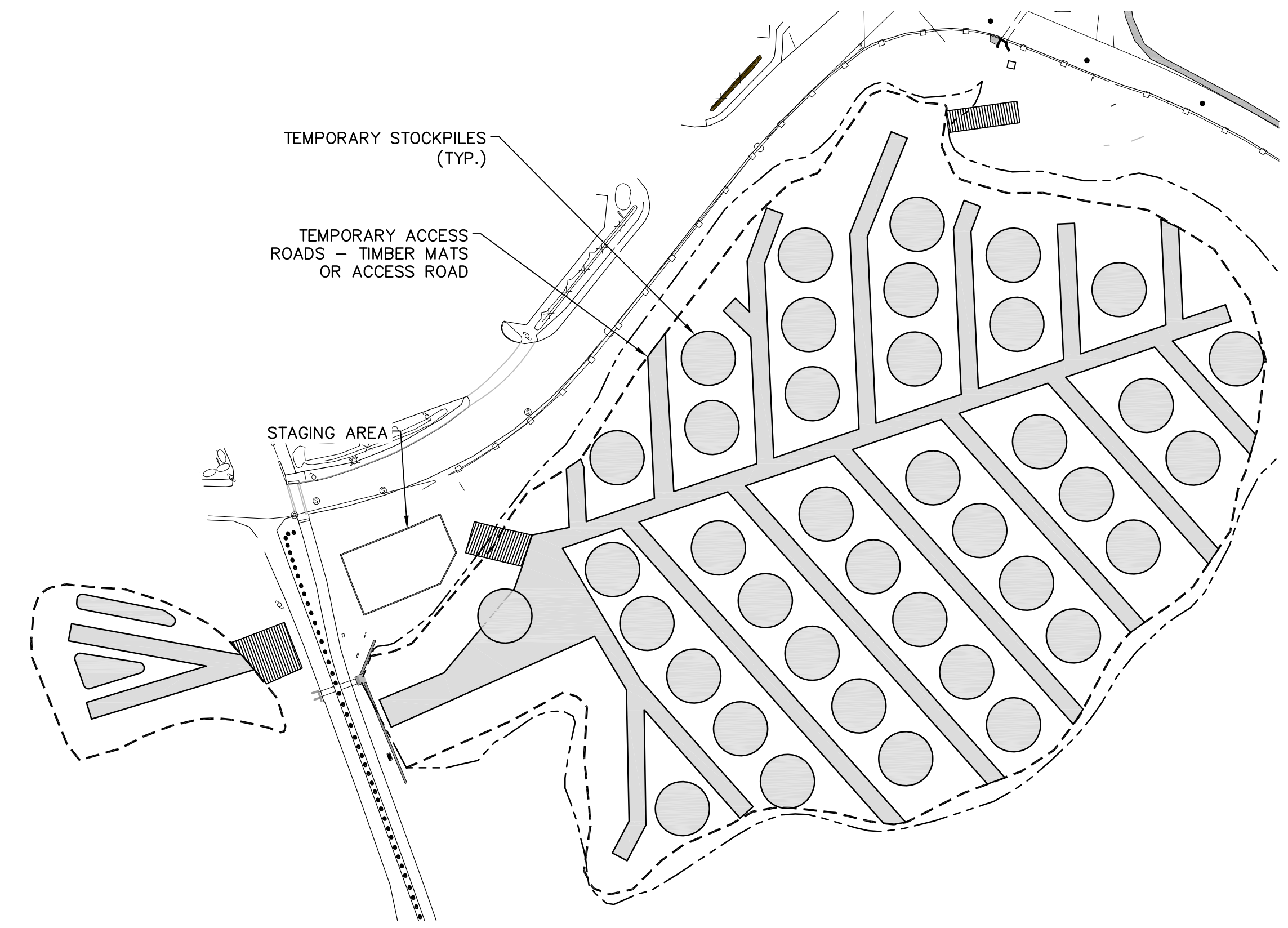


SWAMP MAT
NO SCALE



**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.



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.

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Dredging Project**

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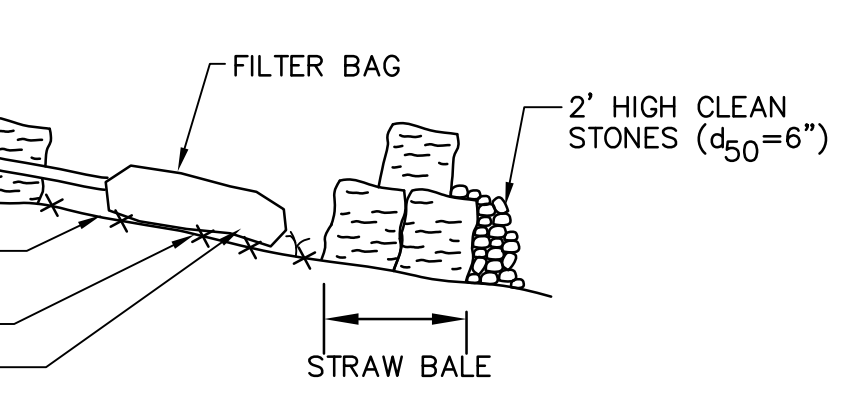
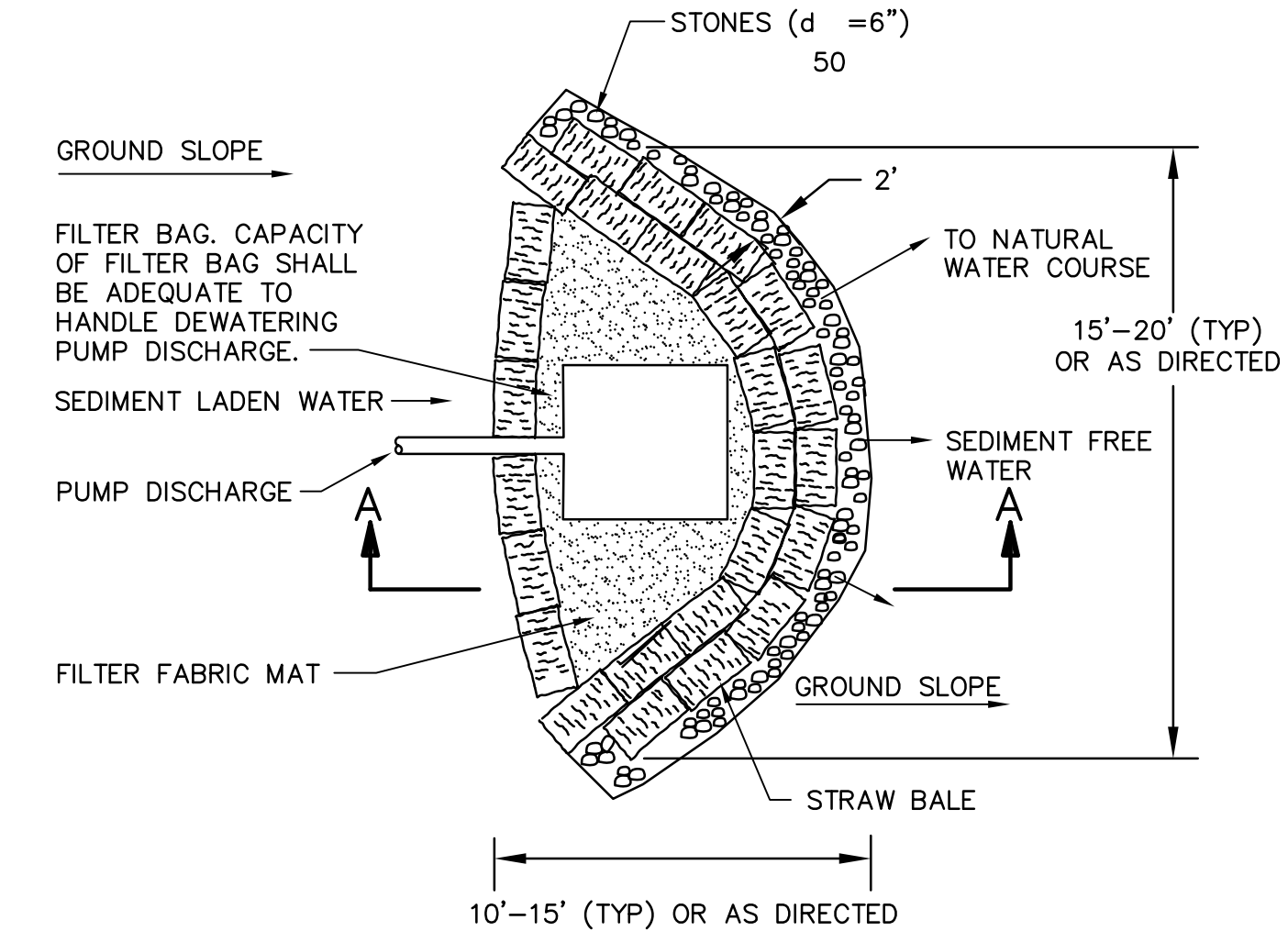
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APPROVED BY:	DAM	

DETAILS - 1

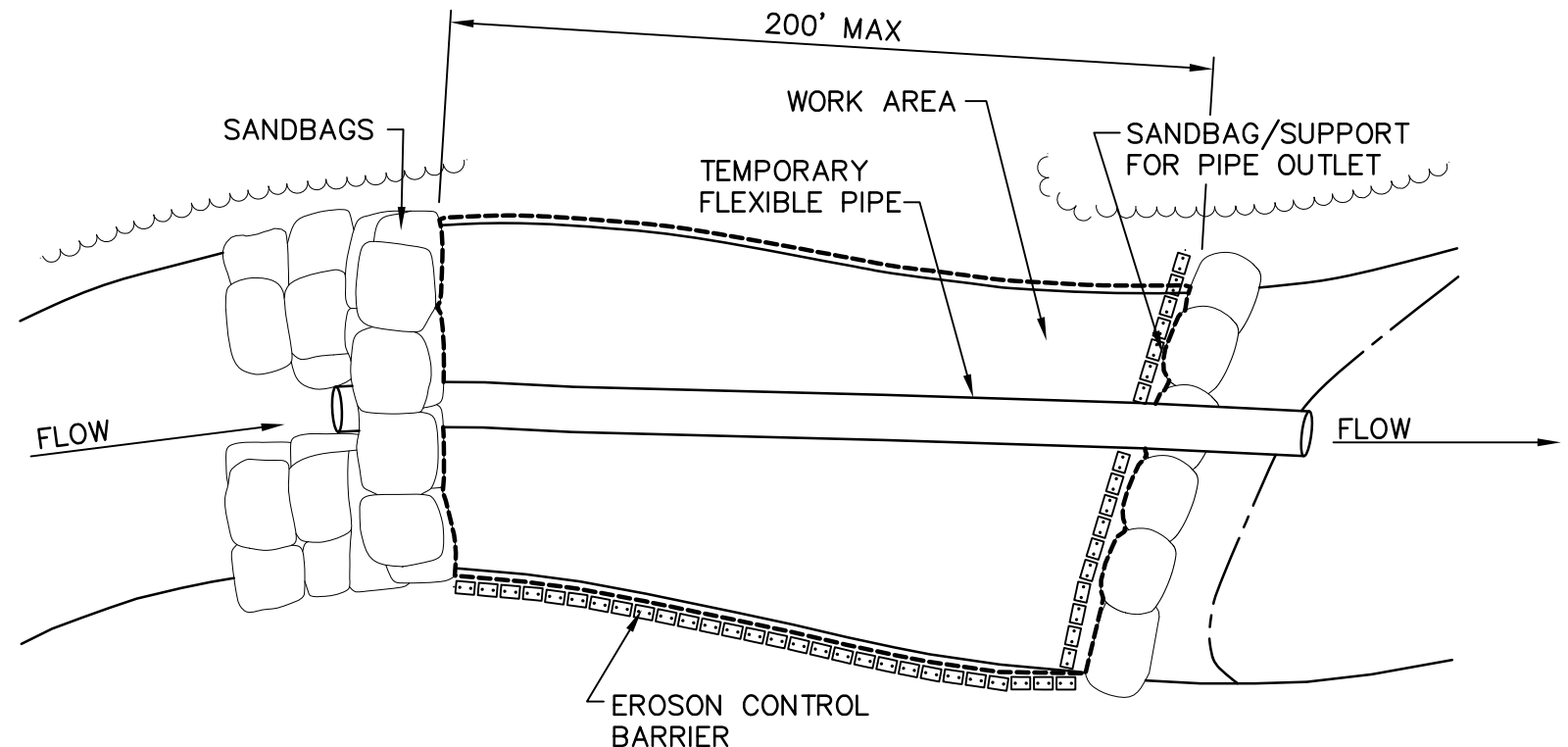
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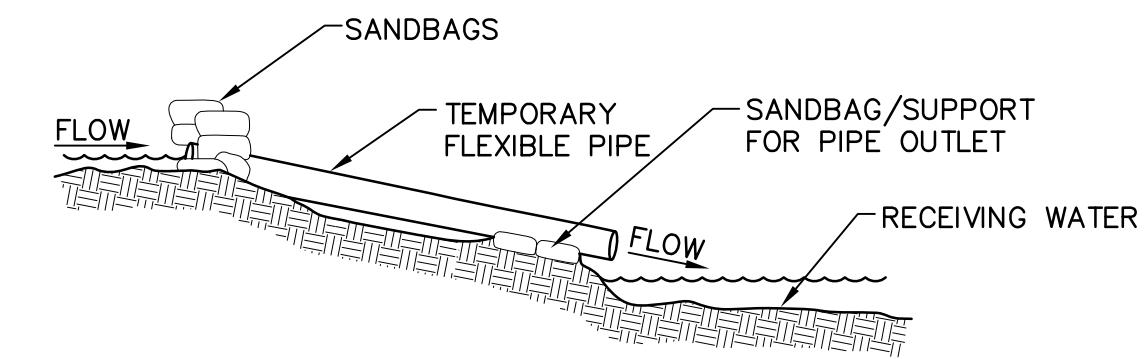


SECTION A-A
SEDIMENT TRAP
NO SCALE

- NOTE:**
1. LOCATION OF SEDIMENT TRAP SUBJECT TO APPROVAL OF ENGINEER.
 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.



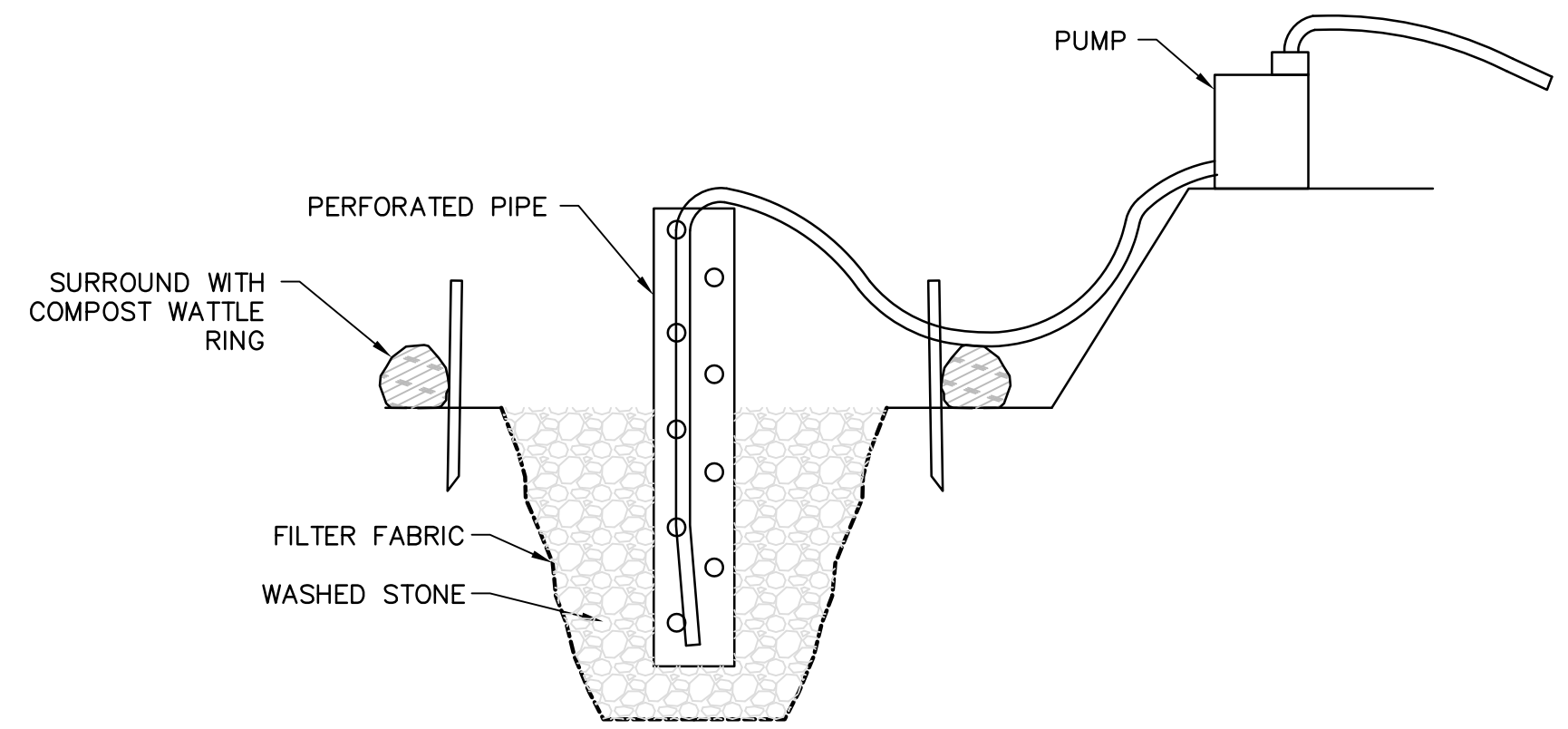
PLAN VIEW



BYPASS
NO SCALE

INLET DIVERSION:

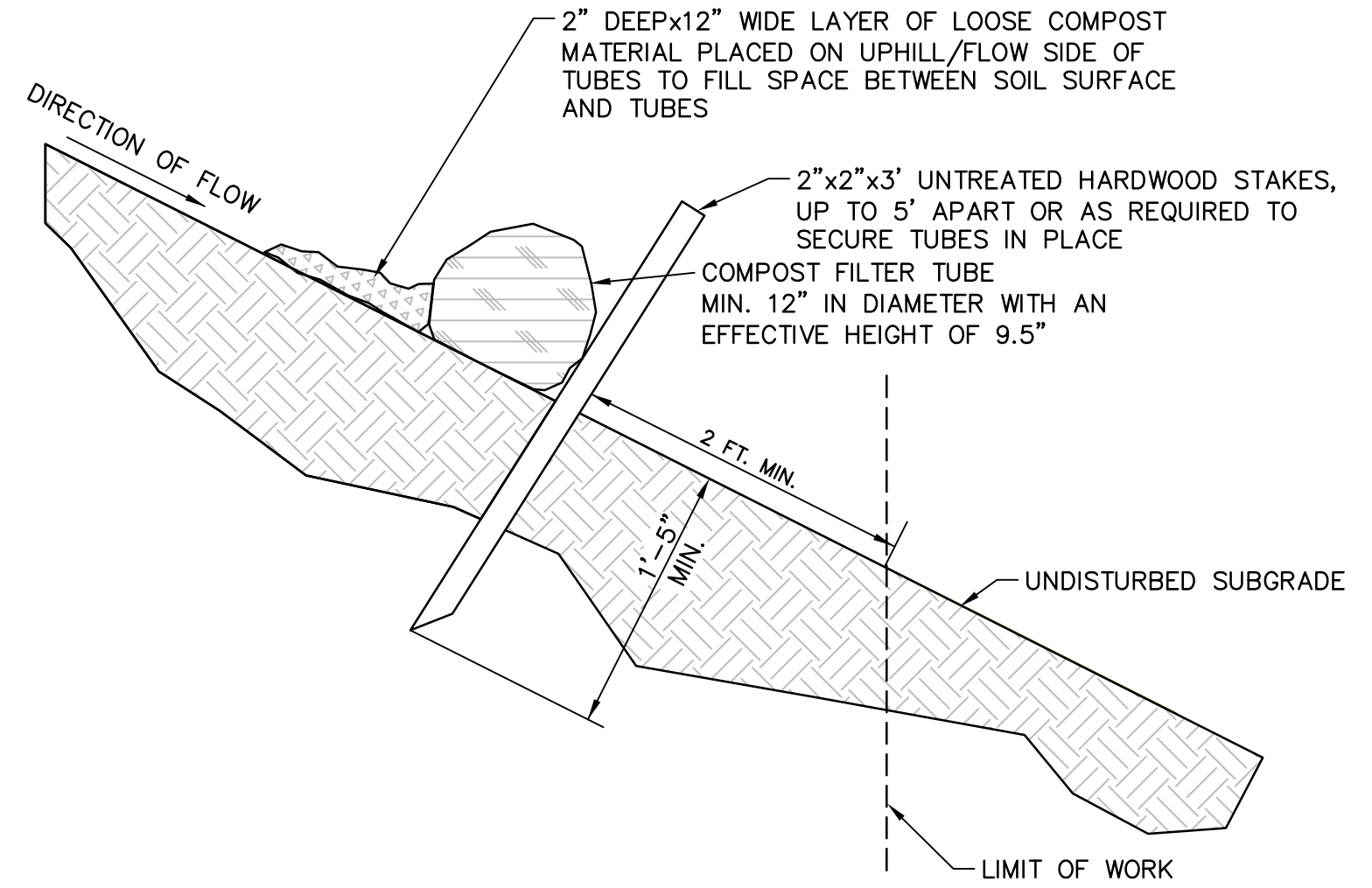
1. INSTALL TEMPORARY COFFER DAMS (SAND BAG, WATER FILLED BARRIER, PORTA-DAM, OR EQUIVALENT) TO MAINTAIN A DRY WORK AREA FOR CONSTRUCTION ACTIVITIES AND TO PREVENT SEDIMENTATION AS A RESULT OF THE PROPOSED WORK.
2. ONE COFFER DAM SHALL BE LOCATED UPSTREAM OF THE WORK AREA. A GRAVITY FLUME PIPE OR PUMP 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.



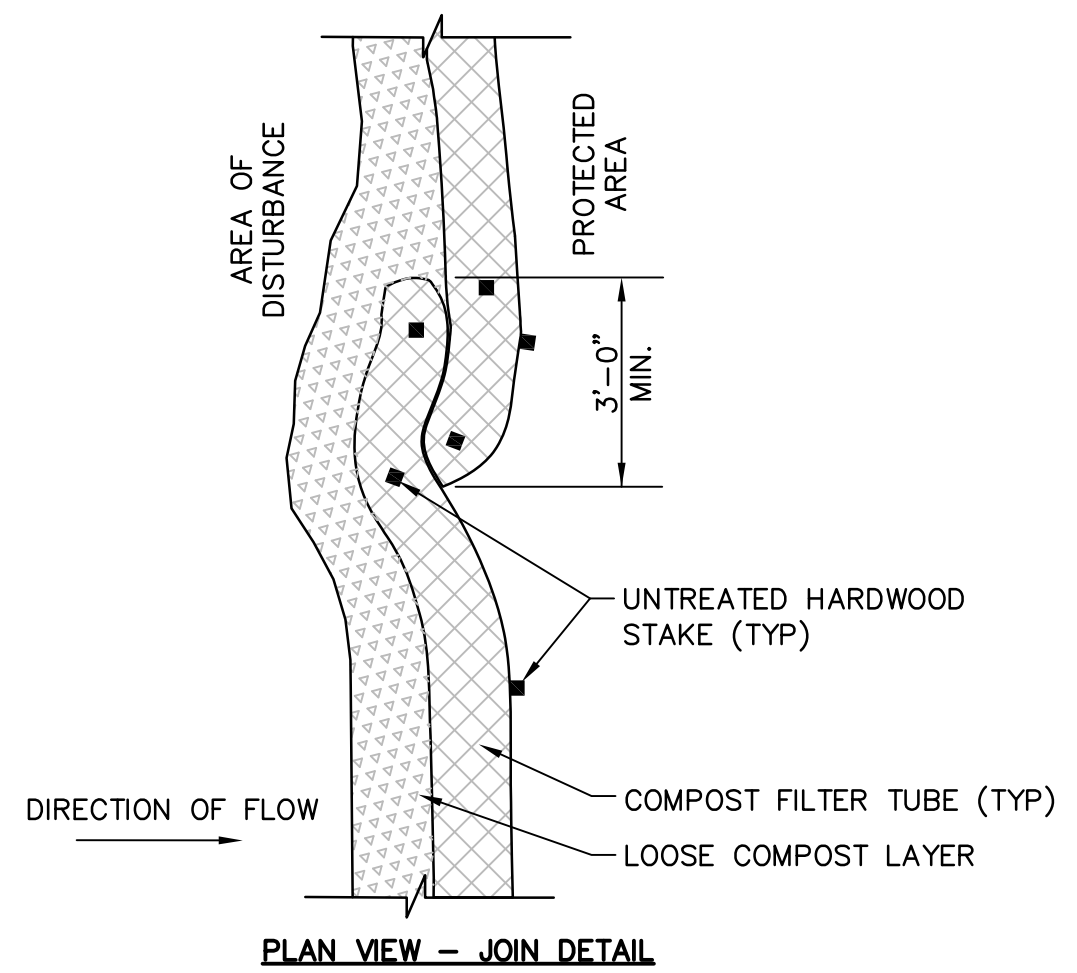
LOW-LEVEL SUMP
NO SCALE

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.
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.



SECTION VIEW



PLAN VIEW - JOIN DETAIL

EROSION CONTROL 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.

GENERAL COMPOST FILTER TUBE NOTES:

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 CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE 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.
7. CURVE ENDS UPHILL TO PREVENT DIVERSION OF UNFILTERED RUN-OFF.
8. COMPOST FILTER TUBES MAY BE STACKED IN A PYRAMID FOR ADDITIONAL PROTECTION.
9. STRAW WATTLES MAY BE SUBSTITUTED FOR COMPOST FILTER TUBES ONLY FOR SUPPLEMENTAL PROTECTION.

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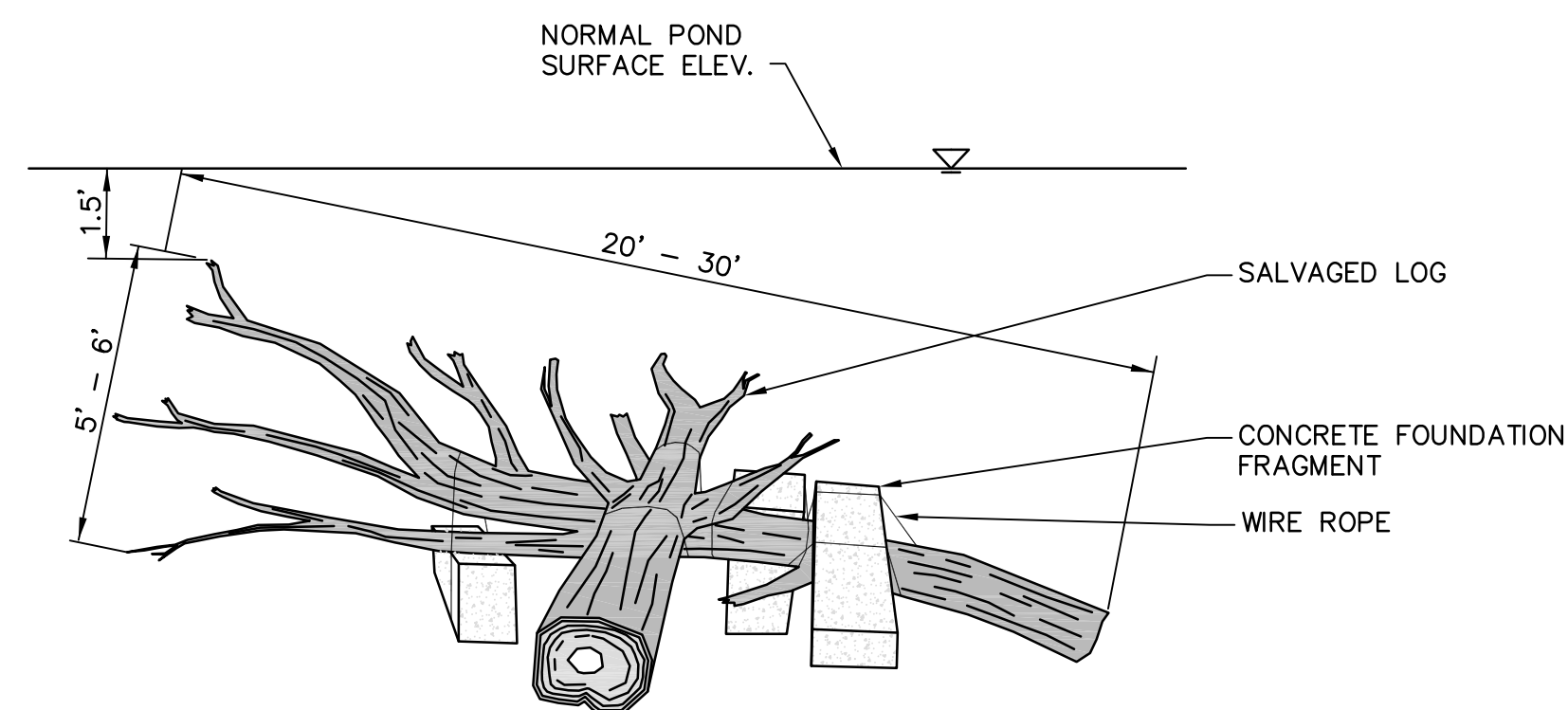
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DETAILS - 2

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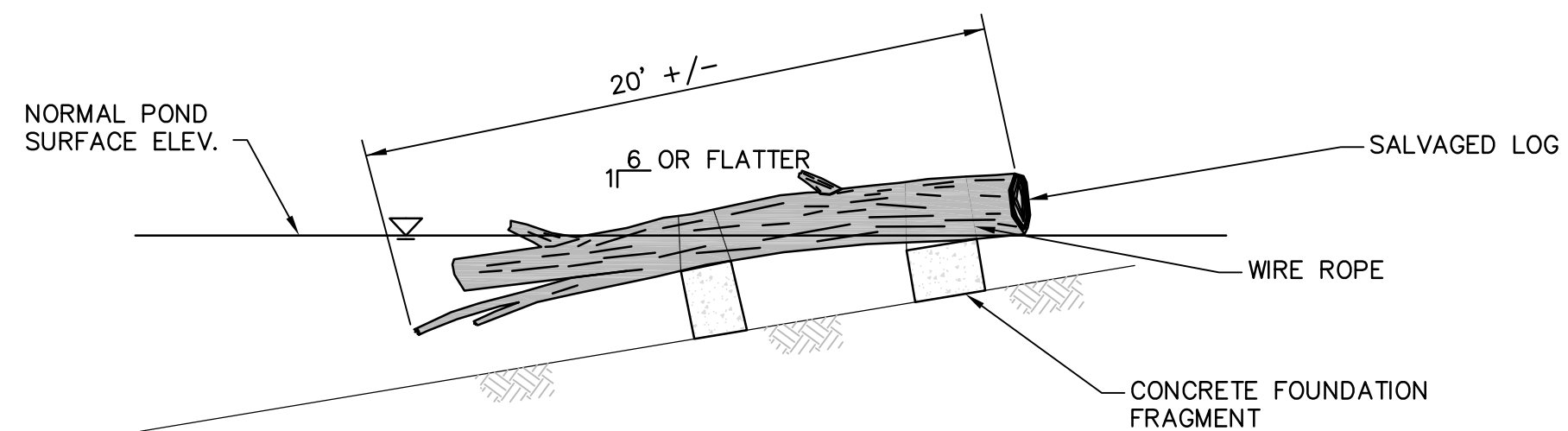
SHEET 11



SUBMERGED HABITAT STRUCTURE
NO SCALE

NOTES:

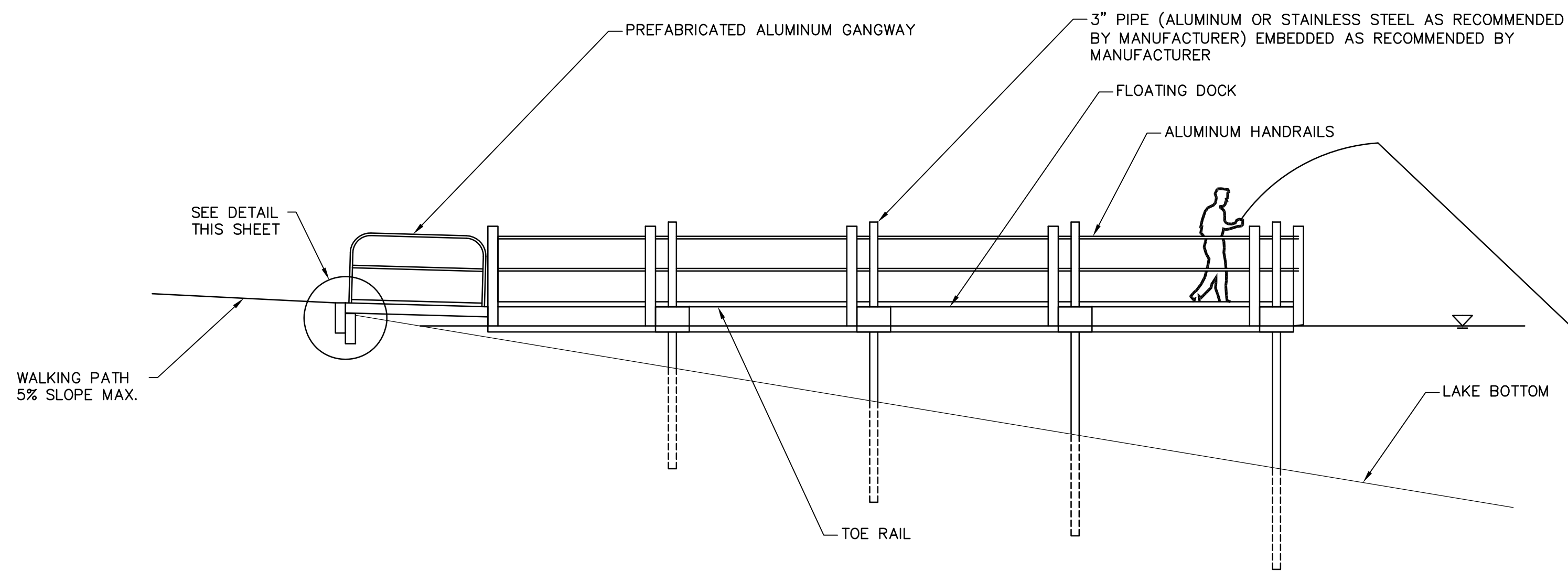
1. CONSTRUCT EACH HABITAT STRUCTURE FROM 2-3 RECENTLY CUT TREES WITH 14 TO 20 INCH DIA. AT BASE AND 20 TO 30 FOOT LENGTH AND LARGE CONCRETE FRAGMENTS FROM FOUNDATION TO BE REMOVED. LOGS SHALL BE FREE FROM ROT AND HAVE GENERALLY INTACT BARK.
2. ANCHOR THE TREES AGAINST FLOATATION TO EACH OTHER AND TO 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
NO SCALE

NOTES:

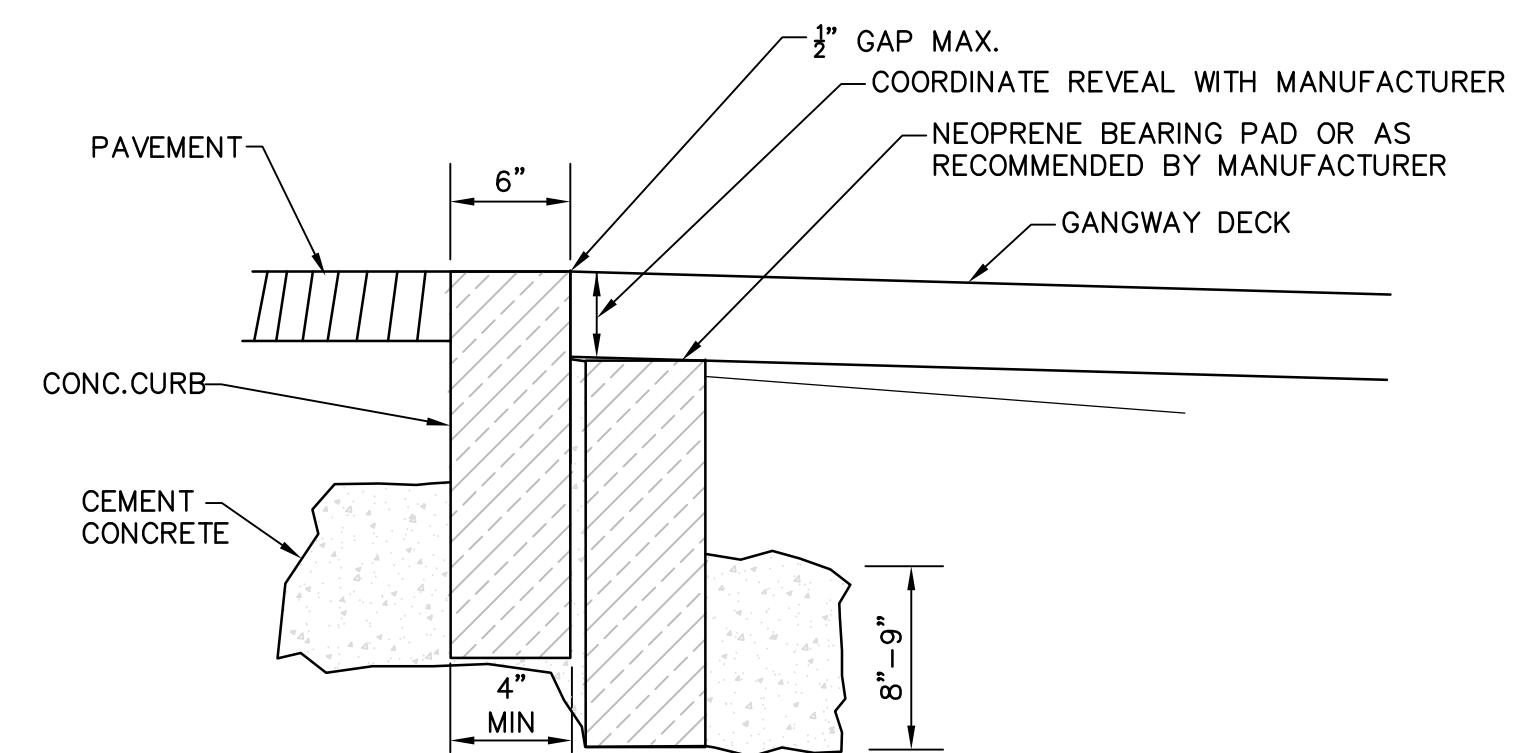
1. CONSTRUCT EACH BASKING STRUCTURE FROM A RECENTLY CUT LOG OF 18 TO 24 INCH DIA. AND CONCRETE FRAGMENTS FROM FOUNDATION TO BE REMOVED. LOGS SHALL BE FREE FROM ROT AND SHALL HAVE GENERALLY INTACT BARK. TRIM BRANCHES FROM LOG.
2. ANCHOR THE TREES AGAINST FLOATATION TO THE FOUNDATION FRAGMENTS USING WIRE 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 1/2 INCH.
3. PLACE THE LOG AT A SLOPE OF 6H:1V OR FLATTER WITH APPROXIMATELY 1/3 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.



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Dredging Project**

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Peabody,
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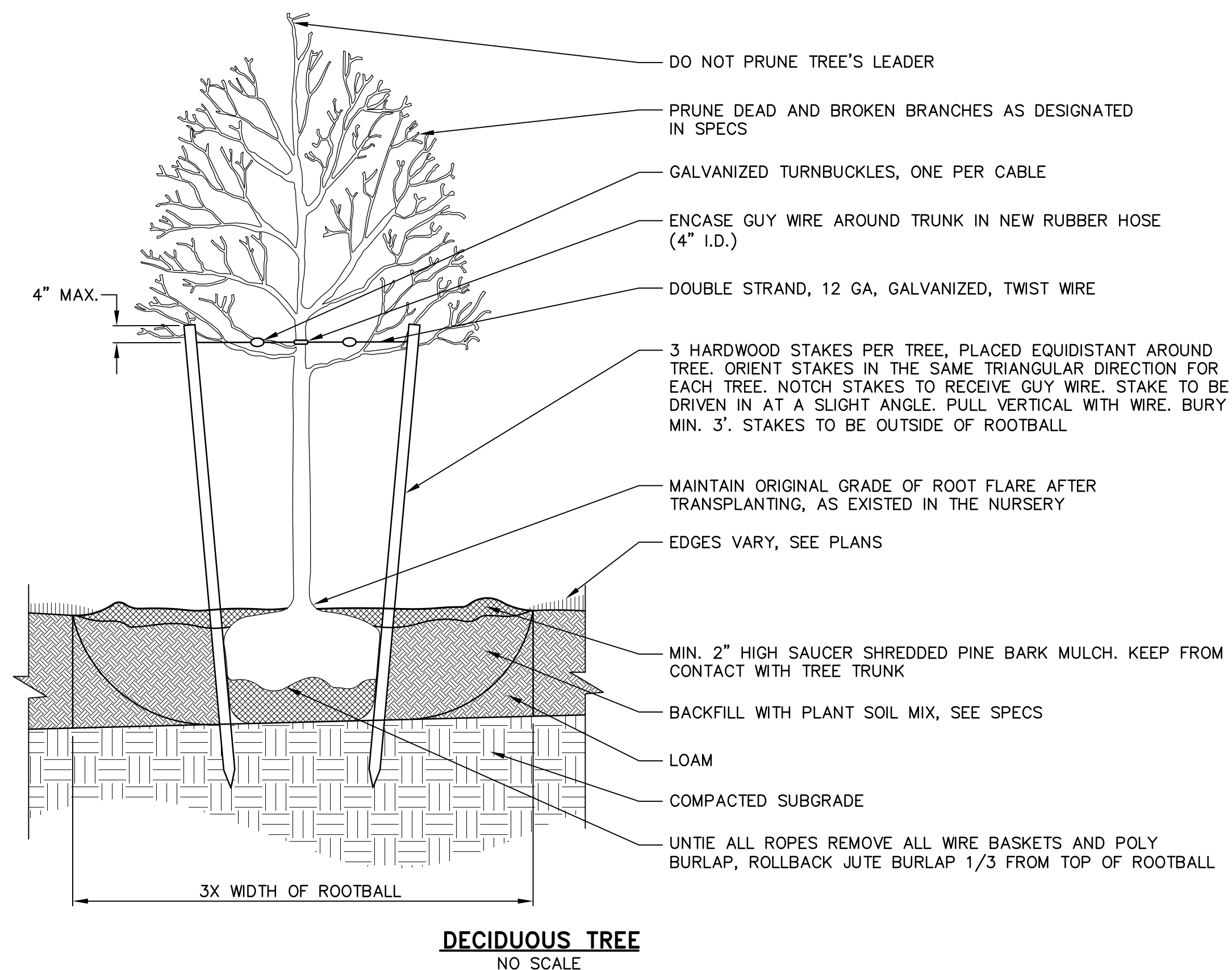
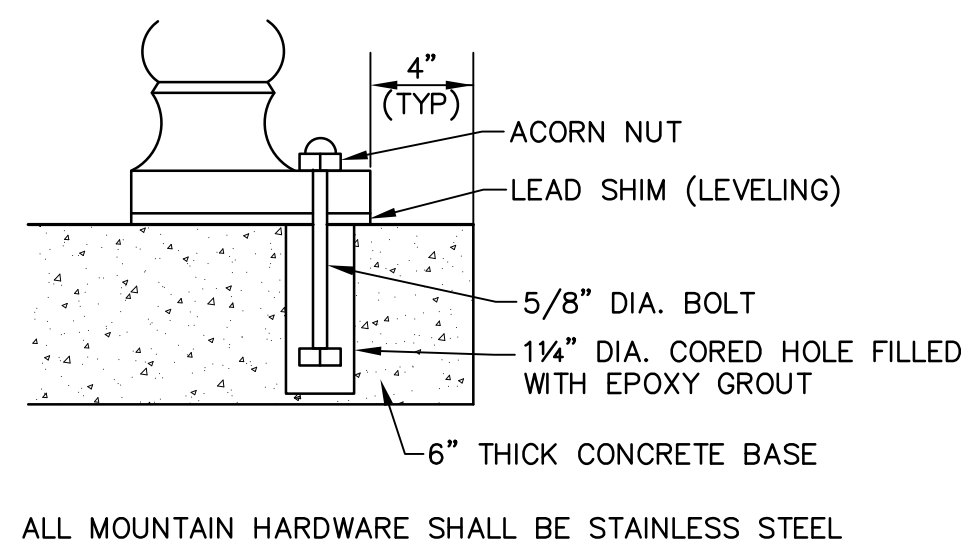
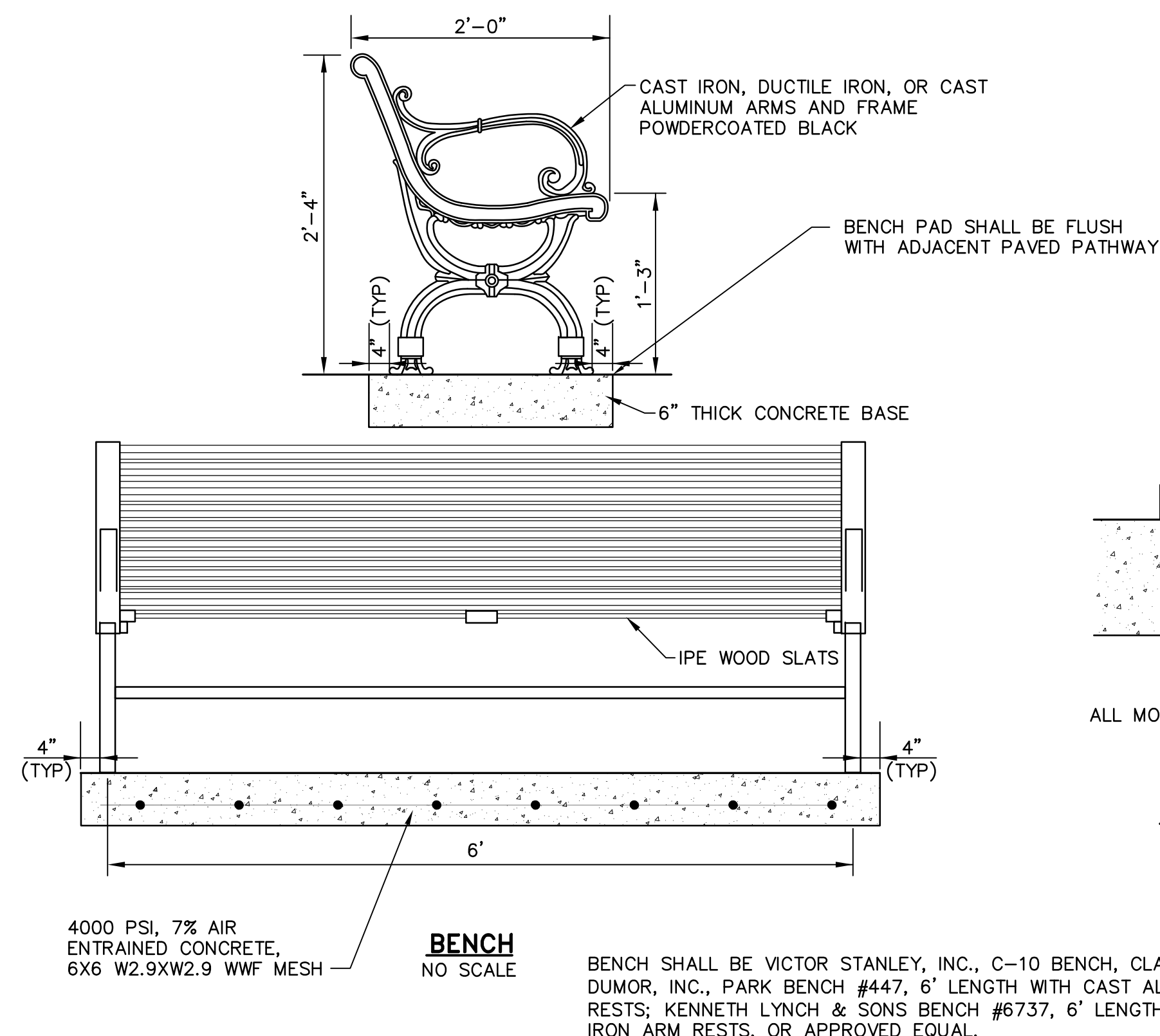
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DETAILS - 3

SCALE: AS SHOWN

SHEET 12



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Crystal Lake Dredging Project

Crystal Drive Peabody, Massachusetts

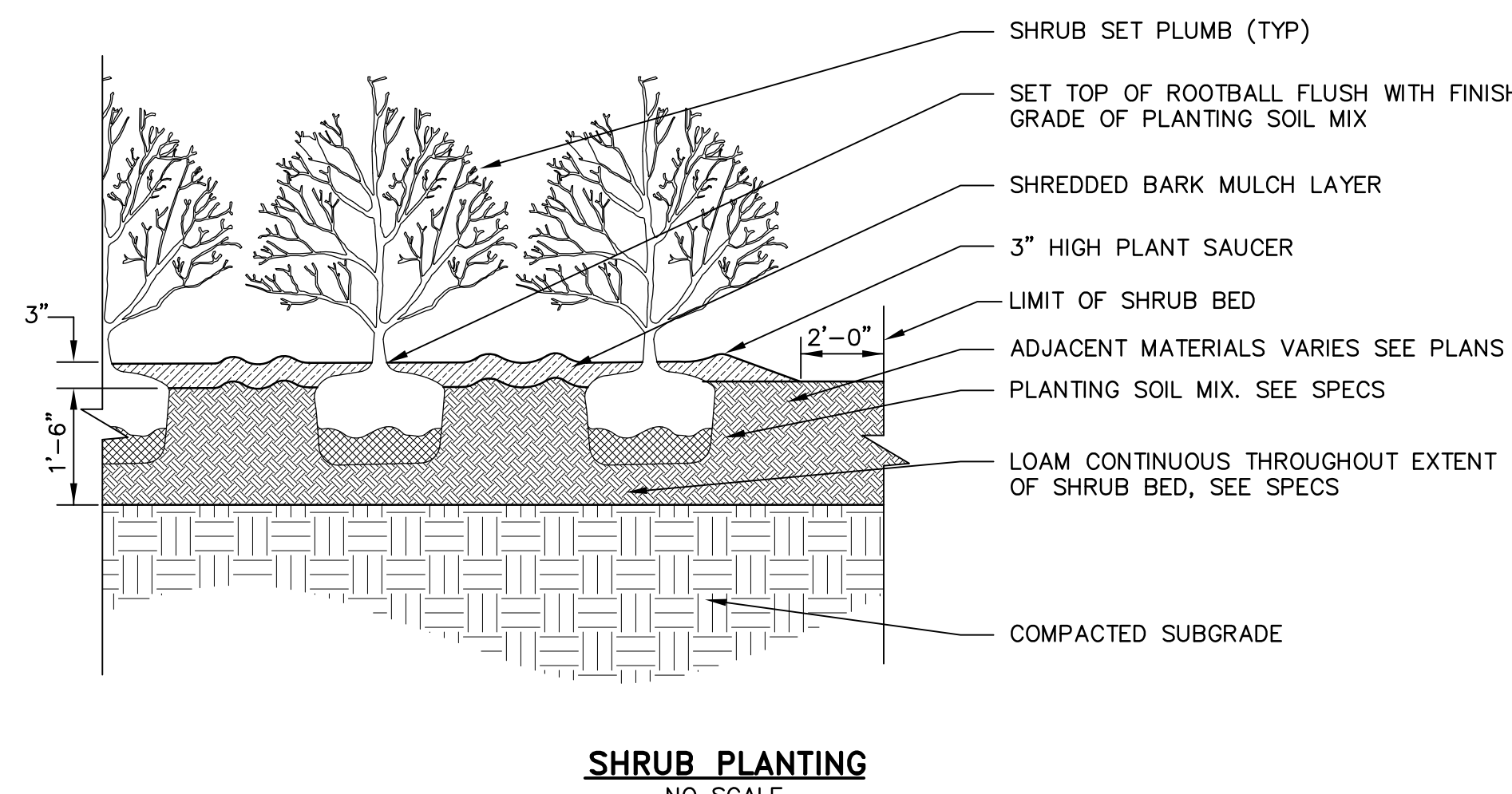
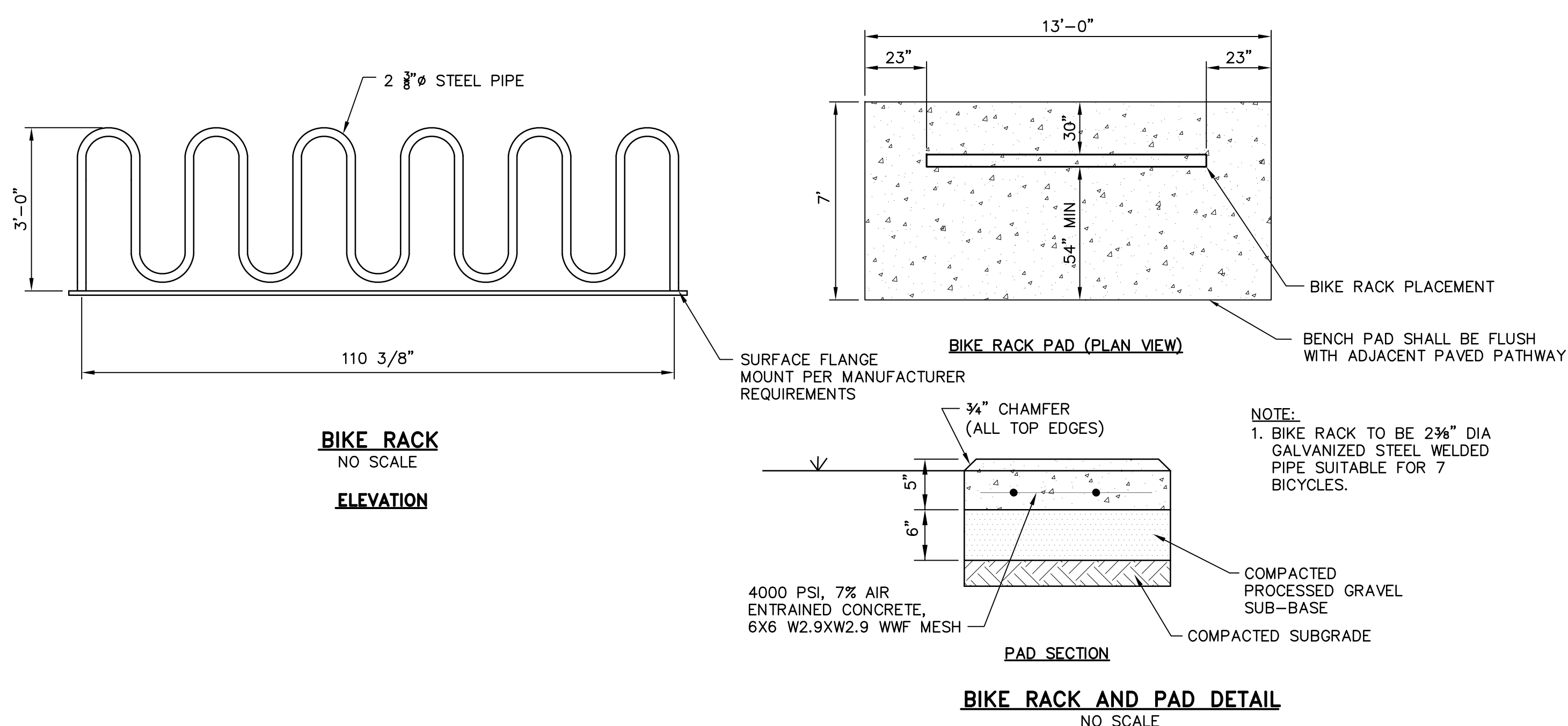
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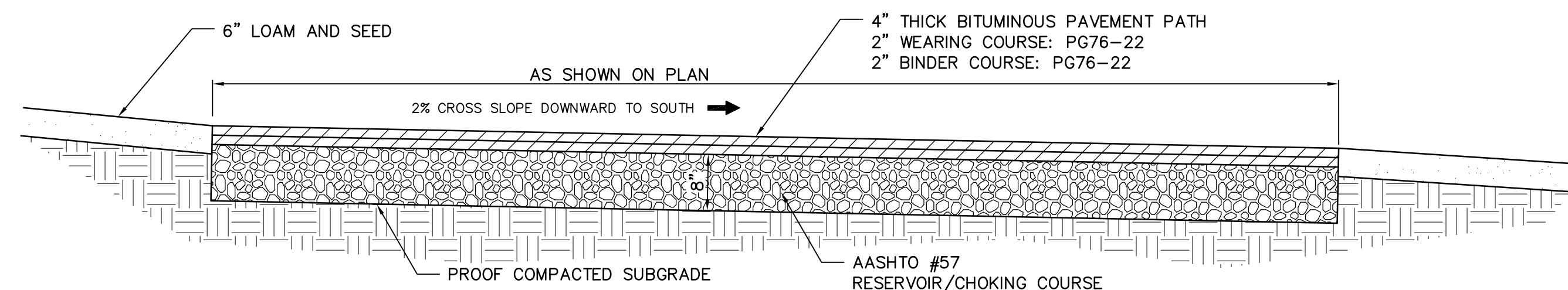
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APPROVED BY: DAM

LANDSCAPE DETAILS
SCALE: NO SCALE

SHEET 13

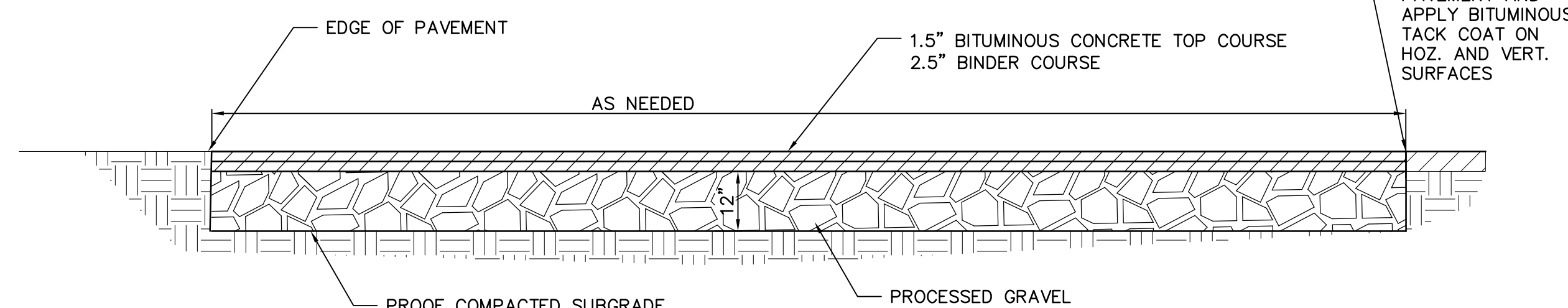




POROUS BITUMINOUS PAVEMENT
NO SCALE

NOTES:

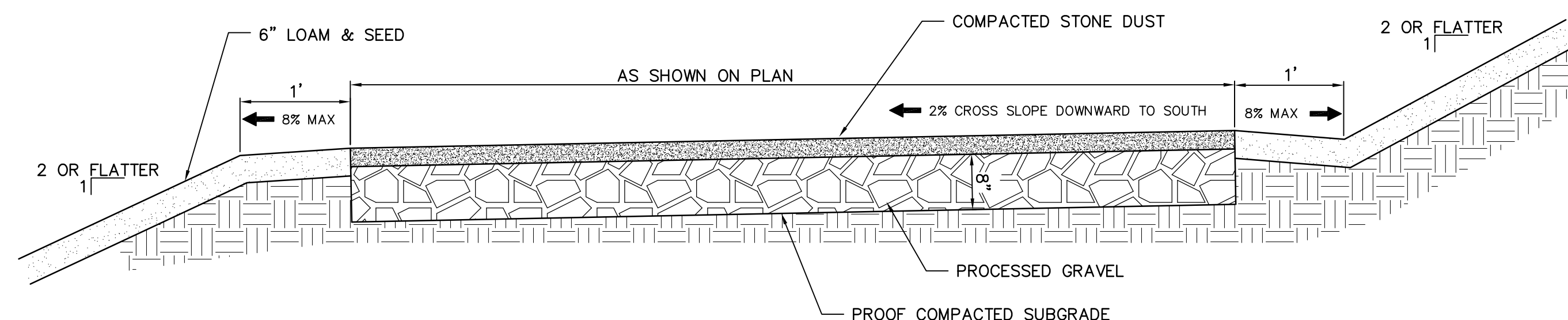
- 1) SEE SITE PLAN FOR POROUS ASPHALT LOCATIONS, LAYOUT, AND GRADES.



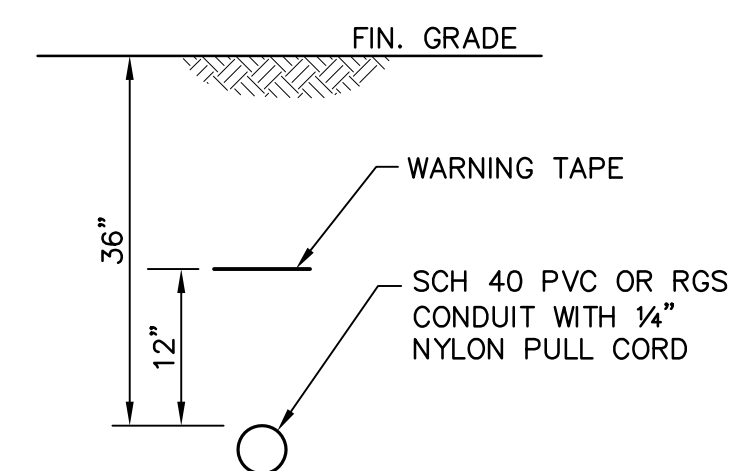
STANDARD BITUMINOUS PAVEMENT
NO SCALE

NOTES:

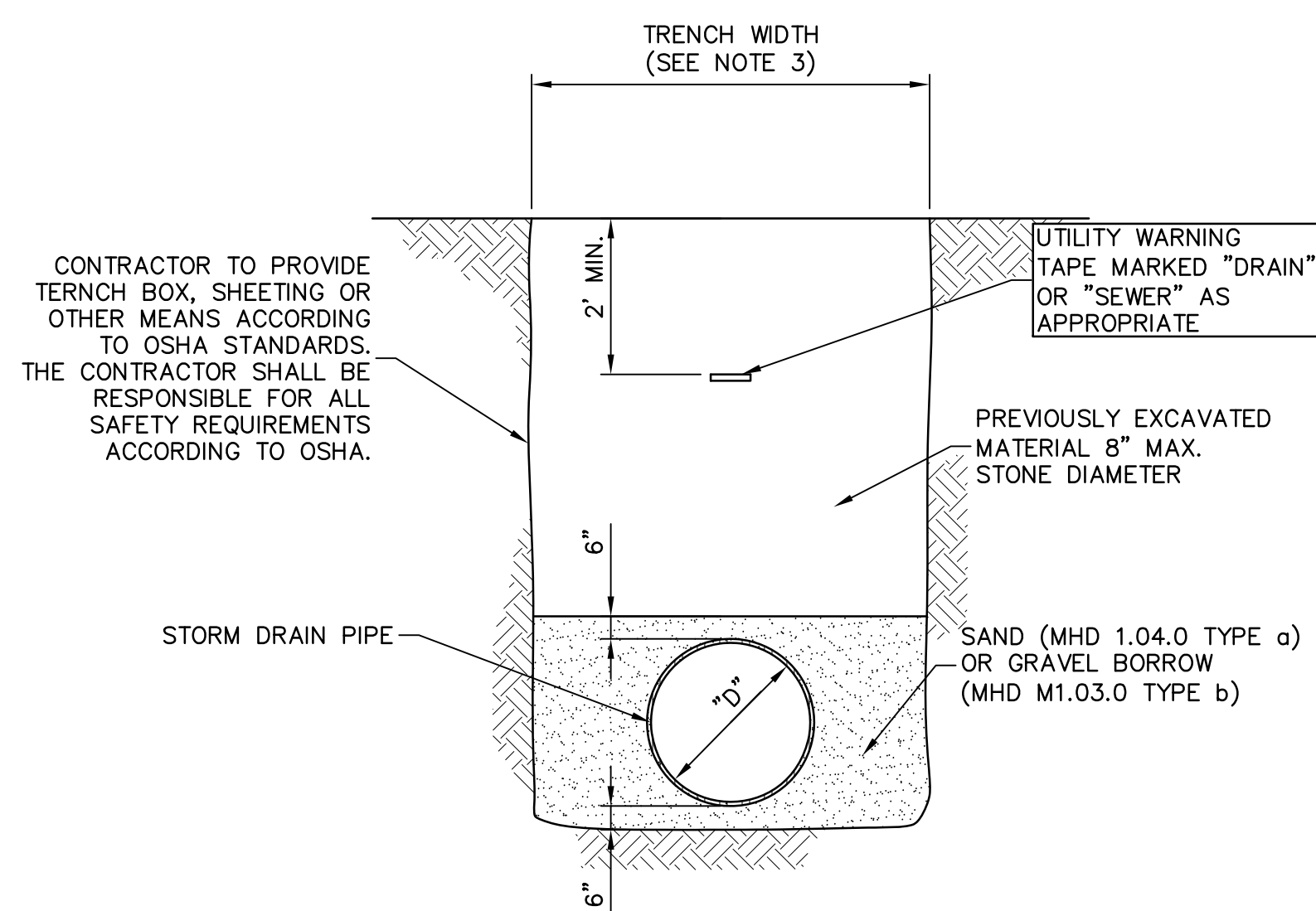
- 1) USE STANDARD BITUMINOUS PAVEMENT FOR REPAIR OF EXISTING PAVED SURFACES AND TEMPORARY APRONS.



ADA ACCESSIBLE STONE DUST PATH
NO SCALE

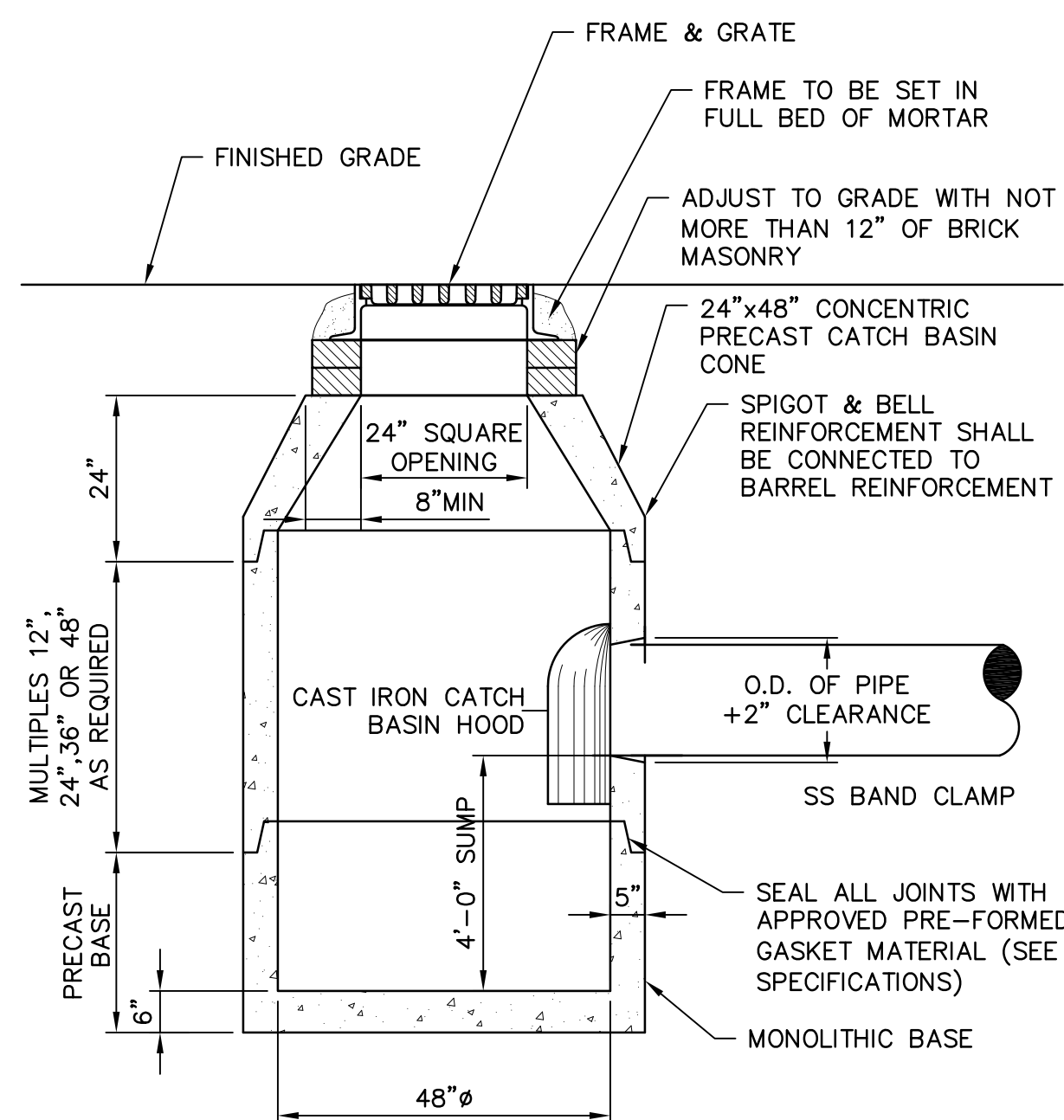


UNDERGROUND ELECTRICAL CONDUIT
NO SCALE



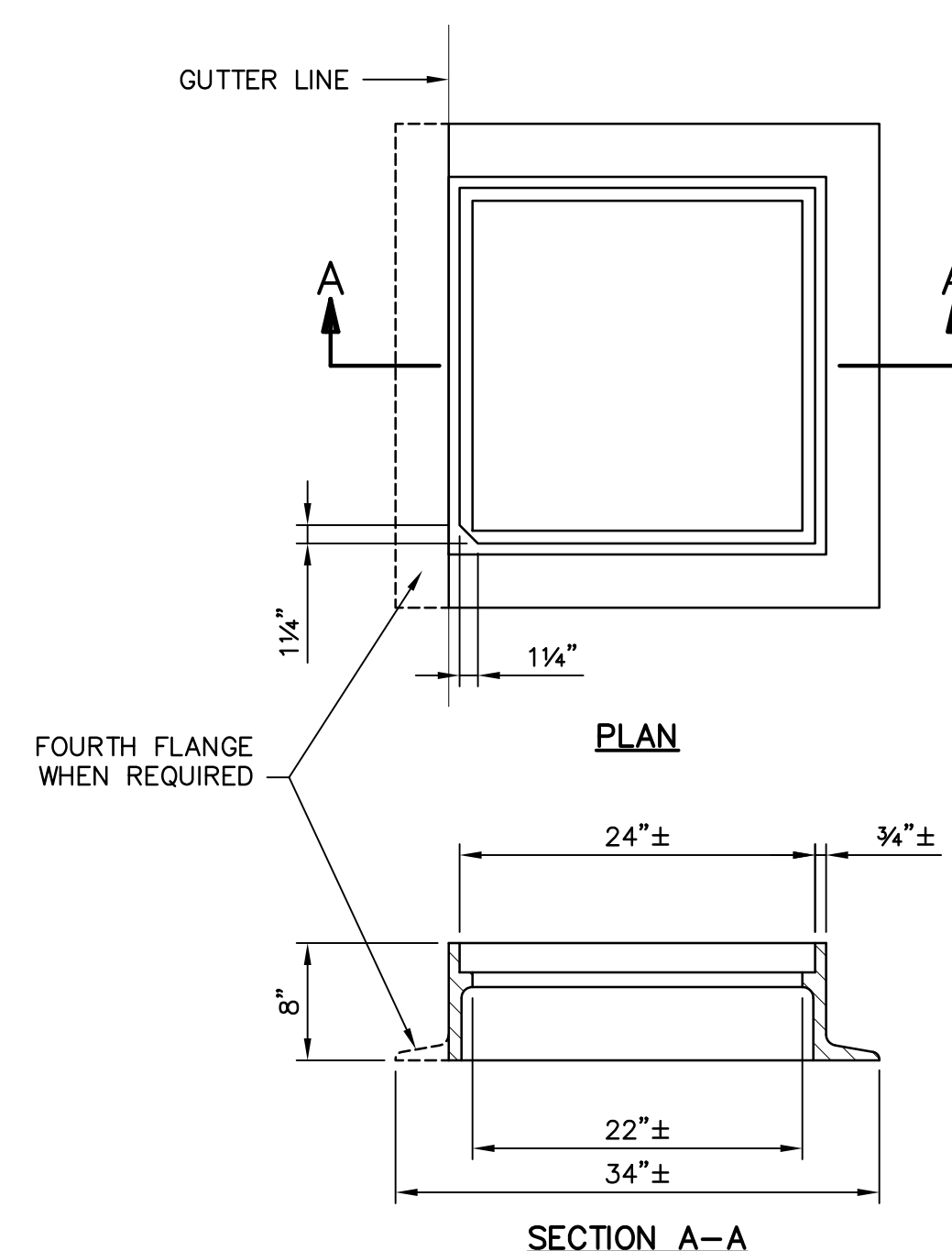
TYPICAL DRAIN LINE TRENCH SECTION
NO SCALE

- CONTRACTOR TO PROVIDE TRENCH BOX, SHEETING OR OTHER MEANS ACCORDING TO OSHA STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY REQUIREMENTS ACCORDING TO OSHA.
- NOTES:
1. COMPACT ALL BACKFILL MATERIAL WITH TO A MINIMUM DENSITY OF 92 PERCENT OF THE MODIFIED PROCTOR DENSITY AS DETERMINED BY ASTM D698.
 2. PLACE BACKFILL MATERIAL IN MAXIMUM ONE FOOT LIFTS.
 3. FOR PIPES LESS THAN 24" IN DIAMETER THE TRENCH WIDTH SHALL BE 5.0' OR LESS. FOR PIPES 24" IN DIAMETER AND GREATER, TRENCH WIDTH SHALL BE THE PIPE DIAMETER + 3.0' OR LESS.



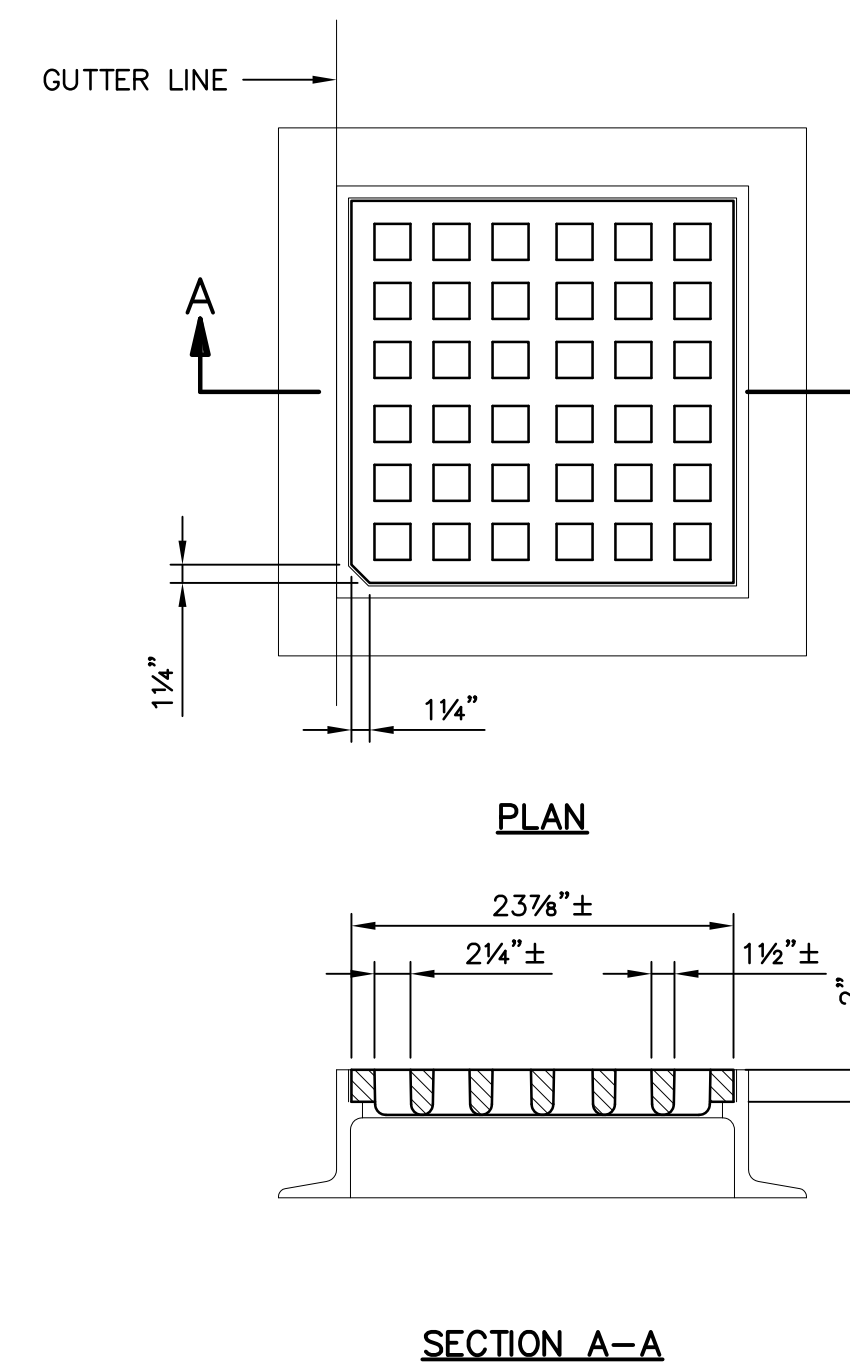
PRECAST CONCRETE CATCH BASIN
NO SCALE

- NOTES:
1. FOR USE WITH PVC PIPE, PROVIDE RUBBER BOOT AND STAINLESS STEEL BAND CLAMP.
 2. CONTRACTOR TO VERIFY EXISTING PIPE ELEVATIONS, MATERIALS, AND CONNECTION REQUIREMENTS.
 3. PROVIDE FLAT SLAB TOP FOR SHALLOW CATCH BASINS.



CATCH BASIN FRAME
NO SCALE

- NOTES:
1. MINIMUM FRAME WEIGHT:
4 FLANGE - 295± LBS
3 FLANGE - 265± LBS
 2. MATERIAL - CAST IRON, SEE SPECIFICATIONS
 3. FOR ADDITIONAL INFORMATION SEE MHD 201.6.0



CATCH BASIN GRATE
NO SCALE

- NOTES:
1. MINIMUM WEIGHT OF GRATE - 190 LBS.
 2. MATERIAL - CAST IRON, SEE SPECIFICATIONS.

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Crystal Lake Dredging Project

Crystal Drive Peabody, Massachusetts

VERIFY SCALE
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APPROVED BY: DAM

SITE DETAILS

SCALE: NO SCALE

