Notice of Scoping for the Ox Brook Flood Control Master Plan

Project Title: Ox Brook Flood Control Master Plan

Municipality where proposed action might be located: Bridgeport

Address of possible location: Various locations along Ox Brook in the City of Bridgeport, extending from Elton Rogers Park at the north end to Lincoln Boulevard at the south end of the Project (see Figures 1 and 2 below)

Project Description: The proposed Project is implementation of the Ox Brook Flood Control Master Plan, a six-phase project, Phase 1 of which is currently funded by the Connecticut Department of Energy and Environmental Protection (CT DEEP). CT DEEP is the Sponsoring Agency for the Project. The Project is located generally along Ox Brook in the City of Bridgeport, CT, roughly extending from Elton Rogers Park at the north (upstream) end (off Kaechele Place) to Lincoln Boulevard at the south (downstream) end (between Lincoln Ave. and Garfield Ave.). Phase 1 of the Project has progressed through permitting level design with permit applications submitted, while the remaining Phases (Phases 2-6) are at the preliminary design phase. Note that the overall Project is anticipated to take decades to complete and that funding has only been identified for Phase 1 at this time. The Project is being proposed to address a long history of flooding along the corridor, resulting in roadway flooding and repeated damages to properties along Ox Brook. The six phases of the Project are:

- **Phase 1:** Construction of a storage impoundment within Elton Rogers Park, via rehabilitation of the existing dam and construction of two dikes within the park property, to provide storage and reduce the peak flow discharged to Ox Brook.

- **Phase 2:** Three main components: (1) construction of a detention pond for storage within Svihra Park with a 18-inch outlet pipe to Island Brook, (2) construction of 3,850 linear feet of 9-ft x 5-ft box culvert in Wayne Street, Bronx Avenue, and Hunting Street, to divert Ox Brook flows to the new detention area, and (3) construction of a 12-ft x 5-ft box culvert to reroute a segment of Ox Brook from a point approximately 100 feet south of Rocton Avenue along Amsterdam Avenue, through several backyards, down Tremont Avenue to Wayne Street to Quince Street. From Quince Street, a 60-inch diameter pipe will discharge flow back to the existing Ox Brook channel. The remainder of the flow would be discharged to the 9-ft x 5-ft box culvert at Wayne Street. The existing Ox Brook channel in the affected reach would remain in place to convey local runoff.

- **Phase 3:** Channel and crossing improvements from Lincoln Boulevard upstream to Quince Street. Open channel segments would be improved to either a trapezoidal or rectangular cross-sections within this reach. Five street crossings would be improved with box culverts.

- **Phase 4:** Channel and crossing improvements from Rocton Avenue to Burnsford Avenue. Open channel segments will be improved to either a trapezoidal or rectangular cross-sections within this reach. The culvert beneath Burnsford Avenue would be replaced. Three additional crossings would be improved with larger diameter culverts.

- **Phase 5:** Channel and crossing upgrades from Burnsford Avenue upstream to Lourmel Street. The existing open channel segment between Burnsford Avenue and Stoehr Place would be improved to a trapezoidal cross-section. Between Lourmel Street and Stoehr Place, the existing brook is
piped and improved sections will be installed, ranging in size from 54-inches to 84-inches in diameter.

- **Phase 6:** Construction of the Island Brook diversion to the Elton Rogers Park storage area. This will consist of approximately 650 LF of 10-ft x 3-ft box culvert in Old Town Road. This phase would also include the construction of an 18-inch pipe discharging flow from the dam to Ox Brook at Lourmel Street.

The EIE will evaluate the No Action Alternative, the Master Plan Alternative, Subalternates within the Master Plan, and other Flood Protection Measures.

**Project Map(s):** Click on the following link(s) to view:

Click here to view a **Locus Map (Figure 1)** for the general area.

Click here to view a **Project Phasing Plan (Figure 2)**, showing the general location of the Project Area and Project Phases.

Written comments from the public are welcomed and will be accepted until the close of business on: **Thursday November 4, 2021.**

There will be a Virtual Public Scoping Meeting for this project:

**DATE:** Monday October 18, 2021  
**TIME:** 7:00 PM EST  
**PLACE:** Virtual  
**NOTES:** The meeting will be held virtually using Zoom and can be accessed using the following link and passcode:  
[https://gza.zoom.us/j/92724122339](https://gza.zoom.us/j/92724122339)  
Meeting ID: 927 2412 2339  
Passcode: 958744  
Individuals with limited internet access can listen to the meeting by calling 646-876-9923 and entering the Meeting ID/Participant Code when prompted: 927 2412 2339.

Information about the project can be viewed in person at CT DEEP at 79 Elm Street, Hartford, CT (contact Fred Riese at 860-424-4110 for access) or online at:  
Written comments and/or questions about the meeting, project, or the scoping for this project (email preferred) should be sent to the following (Please use “OX BROOK” in the subject line):

**NAME:** Fred Riese

**AGENCY:** Connecticut Department of Energy and Environmental Protection (CT DEEP)

**ADDRESS:** 79 Elm Street, Hartford, CT 06106

**PHONE:** 860-424-4110

**FAX:** 860-424-4053

**E-MAIL:** Frederick.riese@ct.gov

**What Happens Next:** The sponsoring agency will prepare a Post-Scoping Notice which will appear in a future edition of the *Environmental Monitor.* The agency expects to release an Environmental Impact Evaluation (EIE) for this project, for public review and comment, in winter of 2021/2022.
OX BROOK FLOOD CONTROL MASTER PLAN EIE
BRIDGEPORT, CT
PROJECT PHASING PLAN

LEGEND
- Roads
- Waterbody
- Waterways
- Phase 1 - Elton Rogers Park Detention Area
- Phase 2 - Svihra Park Detention Area and Diversion
- Phase 3 - Channel Improvements (Lincoln Blvd. to Quince St.)
- Phase 4 - Channel Improvements (Rocton Ave. to Burnsford Ave.)
- Phase 5 - Channel Improvements (Burnsford Ave. to Lourmel St.)
- Phase 6 - Island Brook Diversion/Dam to Lourmel St. Improvements

Elton Rogers Park Detention Area
Ox Brook Master Plan Watershed Area
Lincoln Blvd Diversion Structure
Svihra Park Detention Area and Diversion
ADDITIONAL INFORMATION
PHASE 1 - TIGHE AND BOND DAM RECONSTRUCTION DRAWINGS (2019)
CITY OF BRIDGEPORT, CONNECTICUT
ELTON ROGERS PARK DAM RECONSTRUCTION
CTDEEP DAM ID #1512
DAM CONSTRUCTION PERMIT SUBMISSION
JUNE 24, 2019

COMPLETE SET 34 SHEETS
### General Notes

1. All elevations shown are in the North American Vertical Datum of 1988 (NAVD).
2. All locations and sizes shown are to be verified by the contractor in the field. All plans and specifications are subject to change by the owner or architect at any time.
3. The contractor shall verify that all utilities and existing conditions shown on these plans are correct and are not concealed by overlying or adjacent construction. The owner reserves the right to change any part of the plans or specifications.

### Abbreviations

- AASHTO: Association of State Highway and Transportation Officials
- ASTM: American Society for Testing and Materials
- BW: Bottom of Wall Elevation
- CPESC: Certified Professional Erosion and Sediment Control
- CTDOT: Connecticut Department of Transportation
- CPESC: Certified Professional Erosion Control Specialist
- E1: Existing Structure
- E2: Existing Source
- E3: Existing Source
- EL: Elevation
- EW: Endwall
- EXIST: Existing
- EXISTING: Existing
- F/S: Floodplain
- FT: Foot/Foots
- FW: Wetland Flag
- ID: Inside Diameter
- IN: Inches
- MH: Manhole
- MIN: Minimum
- ML: Millimeter
- LF: Linear Feet
- LB: Pound
- LBL: Linear Feet
- H: Horizontal
- LS: Letter Size
- N/F: Now or Formerly
- NIMBY: Not In My Back Yard
- NO: Number
- PF: Pressure Force
- PS: Professional Consultant
- PWS: Professional Wetland Scientist
- PSI: Pounds Per Square Inch
- PWP: Public Works Project
- Q: Quarter
- R: Reuse
- RCP: Reinforced Concrete Pipe
- RFD: Residential Farm Development
- V: Vertical
- VERT: Vertical Feet
- W: Water
- WAR: Watershed Area
- WBG: Wetland Biota Group
- WT: Weight
- WF: Wetland Flag
- X: Cross-Section Identifier
- Y: Year
- Z: Zero

### Material Specifications

- **Gravel**: Shall conform to the following standards and material specifications.
- **Rock**: Shall meet the specified size and shape requirements and shall be placed in the specified lifts.
- **Soil**: Shall be free from foreign materials and shall conform to the specified size and shape requirements.

### Typical Sections, General Notes, Abbreviations, and Legend

- **Legend**: Various symbols and identifiers are used in the diagrams to represent different elements of the project.
- **Typical Sections**: Specific cross-sectional details and elevations are provided for various parts of the project.

### Technical Details

- **Geotechnical Reports**: Include detailed soil studies and recommendations for the construction of the dam.
- **Construction Specifications**: Outline the specific requirements and guidelines for the construction phase.

### Acknowledgments

- **City of Bridgeport**: Recognizes the efforts and contributions of all parties involved in the project.

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City of Bridgeport
Bridgewater, Connecticut
September 30, 2018
Elton Rogers
Park Dam
Reconstruction
City of Bridgeport

Bridgeport, Connecticut

September 30, 2018

DAM

WETLAND IMPACTS
DIRECT: 19,777 S.F 0.454 ACRE
INDIRECT: 9,228 S.F. 0.211 ACRE
TOTAL: 29,005 S.F. 0.665 ACRE

UPLAND REVIEW IMPACTS
DIRECT: 27,638 S.F 0.634 ACRE
INDIRECT: 4,239 S.F. 0.097 ACRE
TOTAL: 31,877 S.F. 0.731 ACRE

WEDGEWOOD PLACE

STAGING AREA

WETLAND IMPACTS
NONE

UPLAND REVIEW IMPACTS
DIRECT: 4,231 S.F 0.097 ACRE
INDIRECT: 0 S.F. 0 ACRE
TOTAL: 4,231 S.F. 0.097 ACRE

WATERCOURSE IMPACTED 85 L.F.

1/02/19

REMOVED EXTRA STORAGE AREA

SCALE IN FEET
1" = 100'
NOTES:
1. EXISTING CONDITIONS INFORMATION IS COMPILED FROM CITY OF BRIDGEPORT GEOGRAPHIC INFORMATION SYSTEMS AND SURVEY INFORMATION PROVIDED BY PEREIRA ENGINEERING, SHELTON, CONNECTICUT.
2. VERTICAL DATUM IS NAVD88.
NOTES:
1. EXISTING CONDITIONS INFORMATION IS COMPILED FROM CITY OF BRIDGEPORT GEOGRAPHIC INFORMATION SYSTEMS AND SURVEY INFORMATION PROVIDED BY PEREIRA ENGINEERING, SHELTON, CONNECTICUT.
2. VERTICAL DATUM IS NAVD88.
NOTES:
1. EXISTING CONDITIONS INFORMATION IS COMPLIED FROM CITY OF BRIDGEPORT GEOGRAPHIC INFORMATION SYSTEMS AND SURVEY INFORMATION PROVIDED BY PEREIRA ENGINEERING, SHELTON, CONNECTICUT.
2. VERTICAL DATUM IS NAVD88.
3. REFER TO SEDIMENTATION AND EROSION DRAWINGS FOR SEQUENCING AND REQUIRED CONTROLS.
4. ORGANIC SOILS AND MATERIALS AND UNSUITABLE MATERIALS BELOW EXISTING GRADE ARE TO BE REMOVED. ENGINEER TO DETERMINE DEPTH OF REMOVAL AND SUITABILITY OF MATERIAL. WHERE SUCH MATERIAL IS REMOVED, IT SHALL BE REPLACED WITH SUITABLE FILL MATERIAL AND COMPACTED AS DIRECTED BY THE ENGINEER.

Elton Rogers
Park Dam
Reconstruction
City of Bridgeport
Bridgeport, Connecticut
September 30, 2018

Plotted On: Jun 17, 2019-11:26am By: CanasJ
Last Saved: 5/8/2019
Tighe & Bond: J:\B\B0694\Drawing\Sheet\Design\B0694-C-200-PREP.dwg

www.tighebond.com
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

NOTES:
1. REMOVE EXISTING MASONRY WALLS
2. REMOVE ALL WOODY VEGETATION ON THE EMBANKMENT OR WITHIN 25' OF THE EMBANKMENT
3. REMOVE ALL WOODY VEGETATION IN CONFLICT WITH WORK
4. AREA OF SEEPAGE THROUGH EXISTING DAM EMBANKMENT AND REMOVAL MATERIAL AS DIRECTED BY THE ENGINEER
5. REMOVE ALL WOODY VEGETATION ON THE EMBANKMENT OR WITHIN 25' OF THE EMBANKMENT
6. REMOVE ALL WOODY VEGETATION ON THE EMBANKMENT OR WITHIN 25' OF THE EMBANKMENT
7. LIMIT OF PROPOSED DAM EMBANKMENT
8. AREA OF SEEPAGE THROUGH EXISTING DAM EMBANKMENT AND REMOVAL MATERIAL AS DIRECTED BY THE ENGINEER

SITE
PREPARATION PLAN
NOTE

1. DATUM: NAVD88

LEGEND:
- AREA TO BE EXCAVATED TO CREATE STORAGE VOLUME
- EXISTING CONTOUR ELEVATION
- PROPOSED CONTOUR ELEVATION
NOTE
1. DATUM: NAVD88

4' WIDE, GRATED METAL ACCESSWAY, CONNECTING CREST TO OUTLET CONTROL STRUCTURE

CONCRETE ENDWALL, EW-02
INV. 184.0
PROVIDE SECURITY SCREEN

OUTLET CONTROL STRUCTURE SEE DRAWING S4.00

INSTALL 84 LF 48" DUCTILE IRON RCP @ 3.00%
INSTALL ON CONCRETE CRADLE 2.5H:1V SLOPE

STANDARD RIPRAP SPILLWAY
ELEV: 201.0
CONCRETE APRON

13'

100' UPLAND REVIEW AREA
KAECHELE PLACE CREST EL:206.0
IN 187.0X
X
TW: 206.0
BW: 201.0
X
TW: 206.0
BW: 201.0

INTERMEDIATE RIPRAP TO ELEVATION 190

WEST CONCRETE TRAINING WALL

A
C5.00
B
C5.00
C
C5.00

BIT. CONC.
DRIVEWAY APRON
CRUSHED STONE PARKING AREA

35'
70'

R=15'

INSTALL WEIR PLATE ON WALL AT END OF TOE DRAIN
INV. 184.50 45° BEND
INSTALL 100 LF - 6" PERFORATED PVC TOE DRAIN @ 0.50%
INSTALL WEIR PLATE ON WALL AT END OF TOE DRAIN
INV. 184.50
INSTALL 28 LF - 6" PERFORATED PVC TOE DRAIN @ 1.50%
INSTALL WEIR PLATE ON WALL AT END OF TOE DRAIN
INV. 186.50
INSTALL 28 LF - 6" PERFORATED PVC TOE DRAIN @ 1.00%

DAM SAFETY COMMENTS
Elton Rogers
Park Dam
Reconstruction
City of
Bridgeport
Bridgeport, Connecticut
September 30, 2018
CONSTRUCTION SEQUENCE - PHASE 1
1. FIELD STORM CONSTRUCTION LIMITS.
2. FIELD STORM CONSTRUCTION ENTRANCE.
3. CLEAR AND GRADE CONSTRUCTION LIMITS.
4. INSTALL PERIMETER SOIL AND EROSION CONTROLS.
5. INSTALL CONSTRUCTION ACCESS ROAD.
6. INSTALL STABILIZED TEMPORARY VEGETATION.

CONSTRUCTION SEQUENCE - PHASE 2
1. FIELD STORM CONSTRUCTION LIMITS.
2. FIELD STORM CONSTRUCTION ENTRANCE.
3. CLEAR AND GRADE CONSTRUCTION LIMITS.
4. INSTALL PERIMETER SOIL AND EROSION CONTROLS.
5. INSTALL OUTLET PIPING.
6. INSTALL CONSTRUCTION CONTENTS.
7. INSTALL CONSTRUCTION CONTENTS.
8. INSTALL CONSTRUCTION CONTENTS.
9. INSTALL CONSTRUCTION CONTENTS.
10. INSTALL CONSTRUCTION CONTENTS.

NOTE:
1. ACCESS TO CONSTRUCTION AREAS SHALL BE SECURED BY TEMPORARY 8' CHAIN LINK FENCE. FENCING SECURED AREA MUST BE MINIMUM TO CONDUCT WORK TO ALLOW PUBLIC ACCESS TO REMAINDER OF PARK.
2. PROVIDE OPEN BOUNDARY BARRED AT EXISTING BARRIERS. PROVIDE TEMPORARY FENCING WHERE NOT SHOWN ON THE PLANS.
3. PROVIDE PERMANENT FENCING WHERE NOT SHOWN ON THE PLANS.
4. ESTABLISH PERMANENT VEGETATION COVER.
5. CONSTRUCTION SEQUENCE - PHASE 3
6. FIELD STORM CONSTRUCTION LIMITS.
7. CLEAR AND GRADE CONSTRUCTION LIMITS.
8. INSTALL CONSTRUCTION CONTENTS.
9. INSTALL CONSTRUCTION CONTENTS.
10. INSTALL CONSTRUCTION CONTENTS.
11. INSTALL CONSTRUCTION CONTENTS.
12. INSTALL CONSTRUCTION CONTENTS.
13. INSTALL CONSTRUCTION CONTENTS.
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22. INSTALL CONSTRUCTION CONTENTS.
23. INSTALL CONSTRUCTION CONTENTS.
24. INSTALL CONSTRUCTION CONTENTS.
25. INSTALL CONSTRUCTION CONTENTS.
26. INSTALL CONSTRUCTION CONTENTS.
1. CONDUCT A PRECONSTRUCTION MEETING WITH THE OWNER OR OWNER'S REPRESENTATIVE, CITY ENGINEER, DESIGN ENGINEER, CONTRACTOR, AND SITE SUPERVISOR TO ESTABLISH THE LIMITS OF CONSTRUCTION, CONSTRUCTION SEQUENCE - PHASE 1.

2. FIELD STAKE THE LIMITS OF CONSTRUCTION.

3. INSTALL APPLICABLE SOIL AND EROSION CONTROL MEASURES AROUND THE SITE PERIMETER TO THE MAXIMUM EXTENT POSSIBLE.

4. INSTALL CONSTRUCTION ENTRANCE AND FENCING AROUND CONSTRUCTION STAGING AND STORAGE AREAS.

5. INSTALL SILT SACKS ON THE FIRST SET OF CATCH BASINS NORTH AND SOUTH OF THE SITE ENTRANCE ON KAECHLE PLACE.

6. REMOVE ALL WOODY VEGETATION ON THE EMBANKMENT OR WITHIN 25' OF THE EMBANKMENT.

7. STOCKPILE MATERIAL IN DESIGNATED AREAS, AND HAUL OFF SITE.

8. PROVIDE STABILIZED GRAVEL SURFACE A FOR ACCESSWAY.

MDS
JAC
DH
C4.10

Elton Rogers Park Dam Reconstruction
City of Bridgeport
Bridgeport, Connecticut
September 30, 2018

CONSTRUCTION SEQUENCE - PHASE 1
- ECB  EROSION CONTROL BLANKET
- RW  TEMPORARY BOULDER RETAINING WALL
- CE  CONSTRUCTION ENTRANCE
- GSF  GEOTEXTILE SILT FENCE

NOTE:
- STRAW WATTLES MAY BE USED ON DAM IN LIEU OF GEOTEXTILE SILT FENCE.

1. CONDUCT A PRECONSTRUCTION MEETING WITH THE OWNER OR OWNER'S REPRESENTATIVE, CITY ENGINEER, DESIGN ENGINEER, CONTRACTOR, AND SITE SUPERVISOR TO ESTABLISH THE LIMITS OF CONSTRUCTION, CONSTRUCTION SEQUENCE - PHASE 1.

2. FIELD STAKE THE LIMITS OF CONSTRUCTION.

3. INSTALL APPLICABLE SOIL AND EROSION CONTROL MEASURES AROUND THE SITE PERIMETER TO THE MAXIMUM EXTENT POSSIBLE.

4. INSTALL CONSTRUCTION ENTRANCE AND FENCING AROUND CONSTRUCTION STAGING AND STORAGE AREAS.

5. INSTALL SILT SACKS ON THE FIRST SET OF CATCH BASINS NORTH AND SOUTH OF THE SITE ENTRANCE ON KAECHLE PLACE.

6. REMOVE ALL WOODY VEGETATION ON THE EMBANKMENT OR WITHIN 25' OF THE EMBANKMENT.

7. STOCKPILE MATERIAL IN DESIGNATED AREAS, AND HAUL OFF SITE.

8. PROVIDE STABILIZED GRAVEL SURFACE A FOR ACCESSWAY.

LEGEND:
- GEOTEXTILE SILT FENCE
- TEMPORARY BOULDER RETAINING WALL
- CONSTRUCTION ENTRANCE
- PRESSURE CONTROL BLANKET

NOTES:
- BISTRO CLOSING INFORMATION IS AVAILABLE FROM THE CITY OF BRIDGEPORT.
- WILDLIFE CONTROL INFORMATION PROVIDED BY M & M WILDLIFE CONTROL.
- VERTICAL CLOSING INFORMATION PROVIDED BY M & M WILDLIFE CONTROL.
- STRAW WATTLES MAY BE USED ON DAM IN LIEU OF GEOTEXTILE SILT FENCE.
NOTE

1. DATUM: NAVD88

2. FIELD STAKE CONSTRUCTION LIMITS.
3. MAINTAIN AND REFRESH PHASE 1 EROSION CONTROLS.
4. CLEAR AND GRUB CONSTRUCTION LIMITS.
5. INSTALL PERIMETER EROSION CONTROLS.
6. INSTALL OUTLET PIPING
7. CONSTRUCT OUTLET CONTROL STRUCTURE.
8. CONSTRUCT AUXILIARY SPILLWAY.
9. DEPOSIT AND COMPACT FILL MATERIALS TO FORM DAM CREST.
10. STABILIZE UPSTREAM AND DOWNSTREAM SLOPES.
11. PLACE DOWNSTREAM AND UPSTREAM RIPRAP PROTECTION.
12. ESTABLISH VEGETATED SLOPE ON DOWNSTREAM SIDE.
13. STABILIZE SURROUNDING DISTURBED AREA.

ELEVATION 186.1 (EXIST. 500 YEAR DOWNSTREAM ELEVATION). STORAGE OF MATERIALS THAT ARE HAZARDOUS, FLAMMABLE, EXPANSIVE, BUOYANT IS PROHIBITED BELOW THIS ELEVATION.

ELEVATION 195 (EXIST. 500 YEAR UPSTREAM ELEVATION). STORAGE OF MATERIALS THAT ARE HAZARDOUS, FLAMMABLE, EXPANSIVE, BUOYANT IS PROHIBITED BELOW THIS ELEVATION.

LEGEND:
- CONSTRUCTION ENTRANCE
- CONSTRUCTION CONTROL BARRIER
- TEMPORARY 8' CHAIN LINK CONSTRUCTION FENCE
- SOIL STOCKPILE AREA
- TEMPORARY 8' CHAIN LINK CONSTRUCTION FENCE
- FIXED 8' CONSTRUCTION LIMITS
- CE CONSTRUCTION ENTRANCE
- Innovation Design Envelope
- Construction Erosion Blanket
- Interim Protection
- Critical/Erosion Blanket
- Silt Fence
- Thatching
- Soil Mix
- Construction Entrance
- Site Protection
- ProjectSpecific
- Specific
- Topsoil & Seed
- Permanent Seed
- Mulch for Seed
- Wetland
- Vegetated
- Construction Silt Fence
- Construction Blanket
- Construction Entrance

TEMPORARY 8' CHAIN LINK CONSTRUCTION FENCE

Elton Rogers Park Dam Reconstruction
City of Bridgeport
Bridgeport, Connecticut
September 30, 2018
1. THE PROPOSED PROJECT IS TITLED “ELTON ROGERS PARK DAM RECONSTRUCTION” IN BRIDGEPORT, CONNECTICUT.

2. ESTIMATED PROJECT START: SPRING 2020

3. WORKS CONSTRUCTION PERIOD: FALL 2020

4. THE SITE IS LOCATED AT ELTON ROGERS PARK IN BRIDGEPORT, CONNECTICUT.

5. THE CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AND MAINTENANCE OF ALL CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD.

6. ADDITIONAL CONTROL MEASURES SHALL BE INSTALLED DURING THE CONSTRUCTION PERIOD AS ORDERED BY THE ENGINEER.

7. ALL SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.

8. SEDIMENT REMOVED SHALL BE DISPOSED OF OFF SITE OR IN A MANNER AS REQUIRED BY THE ENGINEER.

9. THE CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AND MAINTENANCE OF ALL CONTROL MEASURES DURING THE CONSTRUCTION PERIOD.

10. HAYBALE BARRIERS AND SILT FENCING SHALL BE INSTALLED ALONG THE TOE OF CRITICAL CUT AND FILL SLOPES.

11. TREAT ALL UPAVED SURFACE WITH 4" MINIMUM OF TOPSOIL PRIOR TO FINAL STABILIZATION.

12. THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A SUPPLY OF SILT FENCE/HAYBALES AND ANTI-TRACKING CRUSHED STONE.

13. KEEP ALL PAVED ROADS CLEAN. SWEEP AND SCRAPE BEFORE FORECASTED STORMS.

14. SWEEP AND SCRAPE PAVED ROADS BEFORE FORECASTED STORMS TO PREVENT RUNOFF.

15. ALL TRUCKS LEAVING THE SITE MUST BE COVERED.

16. ALL TRUCKS LEAVING THE SITE MUST BE COVERED.

17. ALL SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE CHECKED WEEKLY AND/OR AFTER EACH RAINFALL EVENT. NECESSARY REPAIRS SHALL BE MADE WITHOUT DELAY.

18. LAND DISTURBANCE SHALL BE KEPT TO THE MINIMUM NECESSARY FOR CONSTRUCTION OPERATIONS.

19. ADDITIONAL CONTROL MEASURES SHALL BE INSTALLED DURING THE CONSTRUCTION PERIOD AS ORDERED BY THE ENGINEER.

20. SOME CONTROL MEASURES ARE PERMANENT. THESE STRUCTURES SHALL BE CLEANED AND REPLENISHED AT THE END OF THE CONSTRUCTION PERIOD.

21. EROSION CONTROL NARRATIVE REFERS TO DRAWINGS C4.00 THROUGH C4.30

22. SITE IS LOCATED AT ELTON ROGERS PARK IN BRIDGEPORT, CONNECTICUT.

23. SEDIMENT REMOVED SHALL BE DISPOSED OF OFF SITE OR IN A MANNER AS REQUIRED BY THE ENGINEER.

24. INSTALLATION NOTES:

25. ALL SEDIMENTATION AND EROSION CONTROL MEASURES PROPOSED FOR THIS DEVELOPMENT HAVE BEEN DESIGNED IN ACCORDANCE WITH THE “2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL” AS PUBLISHED BY THE CONNECTICUT COUNCIL ON SOIL EROSION AND WATER CONSERVATION. ADDITIONAL GUIDELINES HAVE ALSO BEEN RECOMMENDED BY THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION.

26. THE STORMWATER MANAGEMENT MEASURES WILL ADDRESS THE STORMWATER QUALITY ONCE THE SITE HAS BEEN COMPACTED AND ALL AMENDMENTS AND ADDENDA THERETO AS PUBLISHED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.

27. THE STORMWATER MANAGEMENT MEASURES WILL ADDRESS THE STORMWATER QUALITY ONCE THE SITE HAS BEEN COMPACTED AND ALL AMENDMENTS AND ADDENDA THERETO AS PUBLISHED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.

28. INSTALLATION NOTES:

29. THE STORMWATER MANAGEMENT MEASURES WILL ADDRESS THE STORMWATER QUALITY ONCE THE SITE HAS BEEN COMPACTED AND ALL AMENDMENTS AND ADDENDA THERETO AS PUBLISHED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.

30. THE STORMWATER MANAGEMENT MEASURES WILL ADDRESS THE STORMWATER QUALITY ONCE THE SITE HAS BEEN COMPACTED AND ALL AMENDMENTS AND ADDENDA THERETO AS PUBLISHED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.

31. THE STORMWATER MANAGEMENT MEASURES WILL ADDRESS THE STORMWATER QUALITY ONCE THE SITE HAS BEEN COMPACTED AND ALL AMENDMENTS AND ADDENDA THERETO AS PUBLISHED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.

32. THE STORMWATER MANAGEMENT MEASURES WILL ADDRESS THE STORMWATER QUALITY ONCE THE SITE HAS BEEN COMPACTED AND ALL AMENDMENTS AND ADDENDA THERETO AS PUBLISHED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.

33. THE STORMWATER MANAGEMENT MEASURES WILL ADDRESS THE STORMWATER QUALITY ONCE THE SITE HAS BEEN COMPACTED AND ALL AMENDMENTS AND ADDENDA THERETO AS PUBLISHED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.

34. THE STORMWATER MANAGEMENT MEASURES WILL ADDRESS THE STORMWATER QUALITY ONCE THE SITE HAS BEEN COMPACTED AND ALL AMENDMENTS AND ADDENDA THERETO AS PUBLISHED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.

35. THE STORMWATER MANAGEMENT MEASURES WILL ADDRESS THE STORMWATER QUALITY ONCE THE SITE HAS BEEN COMPACTED AND ALL AMENDMENTS AND ADDENDA THERETO AS PUBLISHED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.

36. THE STORMWATER MANAGEMENT MEASURES WILL ADDRESS THE STORMWATER QUALITY ONCE THE SITE HAS BEEN COMPACTED AND ALL AMENDMENTS AND ADDENDA THERETO AS PUBLISHED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION.
1. Prepare soil before installing blankets, including any necessary applications of lime, fertilizer, and seed.

2. Begin at the top of the slope, 36" over the grade break, by anchoring the blanket in a 6" deep x 6" wide trench with appropriately 12" of blanket extended beyond the crossover portion of the trench. Install the blanket such that it completely fills the slope trench. Spot anchor the slope blanket with a row of staples or stakes 12" apart in the bottom of the trench. Secure blanket over compacted soil with a row of staples/stakes 12" apart across the width of the blanket.

3. Roll the blankets down the slope. All blankets must be securely fastened to the soil surface by placing staples in appropriate locations as shown on the staple pattern guide.

4. Staple lengths shall be a minimum of 8 inches.

5. Erosion control blankets shall extend beyond the upslope portion of the trench. Anchor the blanket in a 6" deep x 6" wide trench with approximately 12" of blanket extended beyond the trench.

6. Place the blankets end over end (shingle style) with a 6" overlap. Use a double row of staggered staples 4" apart to overlaps and seams.

7. In high flow channel applications, a staple check slot is recommended at 30 to 40 foot intervals. Use a row of staples 4' apart over the entire width of the channel. Place a second row 4" below the first row in a staggered pattern. Secure blankets.


9. Silt fence installation at critical points along the channel surface for slope protection.

10. Catch basin installation at low points such that the bottom of the catch basin is higher than the top of the blanket. Erosion control details for critical points.
OUTLET CONTROL STRUCTURE

24" LAYER RIPRAP
GRANULAR FILL
FILTER SAND BLANKET 12" MIN.
ROLLED GRAVEL CREST
EXISTING MATERIAL

SECTION D

GEOTEXTILE MIRAFI FW700 OR APPROVED EQUAL
GRATED METAL ACCESSORY
LOW PERMEABILITY BORROW
EXISTING MATERIAL

CONCRETE PIPE CRADLE
ENDWALL WITH WINGWALLS
48" DIP DRAWDOWN
PIPE INLET

Elton Rogers Park Dam Reconstruction
City of Bridgeport
Bridgeport, Connecticut
September 30, 2018
Elton Rogers  
Park Dam Reconstruction  
City of Bridgeport  
Bridgeport, Connecticut  
September 30, 2018

WETLAND IMPACTS

DAM UPSTREAM
WETLAND IMPACTS
PERMANENT: 7,788 S.F 0.179 ACRE
TEMPORARY: 9,228 S.F 0.212 ACRE
TOTAL: 17,016 S.F 0.391 ACRE
(SEE DRAWING C7.11)

DAM UPSTREAM
WETLAND IMPACTS
PERMANENT: 11,989 S.F 0.275 ACRE
TEMPORARY: 4,961 S.F 0.114 ACRE
TOTAL: 16,950 S.F 0.389 ACRE
(SEE DRAWING C7.11)
NOTE:

1. VERTICAL DATUM: NAVD88
2. ALL UPLAND AREAS THAT ARE DISTURBED SHALL BE SEeded with A NATIVE UPLAND SEED MIXTURE.
3. PROTECT NEWLY PLANTED WOODY VEGETATION FROM DEER BROWSING.
4. AFTER THE SILT FENCING IS INSTALLED, AND PRIOR TO TREE REMOVAL AND DISTURBANCE, THE EXISTING WOODED AREAS TO BE DISTURBED SHALL BE SEARCHED FOR WILDLIFE. SMALLER WILDLIFE (SUCH AS TURTLES AND SALAMANDERS) SHALL BE COLLECTED BY AN EXPERIENCED WILDLIFE PROFESSIONAL AND RELOCATED TO THE NON-DISTURBANCE SIDE OF THE SILT FENCING.
5. PRIOR TO THE START OF SITE WORK, A BOND OR OTHER SURETY SHALL BE POSTED WITH THE CITY IN THE AMOUNT OF $25,000 TO COVER COSTS ASSOCIATED WITH THE NEW MITIGATION PLANTINGS, PROPER INSTALLATION OF THE PROPOSED DRAINAGE SYSTEM, PROPER MAINTENANCE OF THE SEDIMENT AND EROSION CONTROLS, AND TO INSURE THAT THE PROPOSED PROJECT IS DEVELOPED AS PER THE APPROVED SITE PLANS.

Elton Rogers
Park Dam
Reconstruction
City of Bridgeport
Bridgeport, Connecticut
September 30, 2018

NOTE:

1. VERTICAL DATUM: NAVD88
2. ALL UPLAND AREAS THAT ARE DISTURBED SHALL BE SEeded with A NATIVE UPLAND SEED MIXTURE.
3. PROTECT NEWLY PLANTED WOODY VEGETATION FROM DEER BROWSING.
4. AFTER THE SILT FENCING IS INSTALLED, AND PRIOR TO TREE REMOVAL AND DISTURBANCE, THE EXISTING WOODED AREAS TO BE DISTURBED SHALL BE SEARCHED FOR WILDLIFE. SMALLER WILDLIFE (SUCH AS TURTLES AND SALAMANDERS) SHALL BE COLLECTED BY AN EXPERIENCED WILDLIFE PROFESSIONAL AND RELOCATED TO THE NON-DISTURBANCE SIDE OF THE SILT FENCING.
5. PRIOR TO THE START OF SITE WORK, A BOND OR OTHER SURETY SHALL BE POSTED WITH THE CITY IN THE AMOUNT OF $25,000 TO COVER COSTS ASSOCIATED WITH THE NEW MITIGATION PLANTINGS, PROPER INSTALLATION OF THE PROPOSED DRAINAGE SYSTEM, PROPER MAINTENANCE OF THE SEDIMENT AND EROSION CONTROLS, AND TO INSURE THAT THE PROPOSED PROJECT IS DEVELOPED AS PER THE APPROVED SITE PLANS.
**REINFORCEMENT**

- **G3**
- **R8**
- **R5**
- **R6**
- **R7**
- **R3**

**SPLICE LENGTH**

**PLAN OF HORIZONTAL REINFORCING**

(SEEN TABLE)

REINFORCEMENT SECURELY IN POSITION: MINIMUM REQUIREMENTS SHALL BE: HIGH CHAIRS, 4'-0" PROVIDE AND SCHEDULE ON SHOP DRAWINGS, ALL NECESSARY ACCESSORIES TO HOLD REINFORCED CONCRETE STRUCTURES (ACI 315), LATEST EDITION.

DETAILING, FABRICATION, AND ERECTION OF REINFORCEMENT UNLESS OTHERWISE PROVIDED CAULKING AT ALL CONTROL JOINTS. PROVIDE COMPRESSIBLE FILLER AND LOCATION AND DIMENSIONS OF ALL CHASES, INSERTS, OPENINGS, SLEEVES AND PROJECT.

REINFORCEMENT SHALL BE SET BEFORE PLACING CONCRETE. SETTING ANY PRIOR TO SCHEDULED COMPLETION OF PLACEMENT OR REINFORCEMENT.

REINFORCEMENT COUPLER SPLICES SHALL BE MECHANICAL DEVICES CAPABLE OF TRANSMITTING THE ULTIMATE TENSILE AND COMPRESSIVE STRENGTH OF THE BAR. TYPICAL WHEREVER THE SECTION APPLIES.

WHERE CONTINUOUS BARS ARE CALLED FOR THEY SHALL BE RUN CONTINUOUSLY AROUND CORNERS AND LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS.

SUPERVISION OF AN APPROVED CONCRETE TESTING AGENCY OR THE ENGINEER.

REINFORCEMENT OF CONCRETE SLABS AND WALLS SHALL BE CONTROLLED CONCRETE, PROPORTED, MIXED AND PLACED UNDER THE SUPERVISION OF AN APPROVED CONCRETE TESTING AGENCY OR THE ENGINEER.

MINIMUM REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318), AND SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 318), LATEST EDITION.

CONCRETE SHALL BE PLACED WITHOUT HORIZONTAL CONSTRUCTION JOINTS EXCEPT WHERE INDICATED ON THE DRAWINGS.

CONCRETE SLABS SHALL BE CAST SO THAT THE SLAB THICKNESS IS AT NO POINT LESS THAN 4 INCHES.

REINFORCEMENT STRUCTURES (ACI 318), LATEST EDITION.

CONCRETE SHALL BE QUALITY CONTROLLED CONCRETE, PROPORTED, MIXED AND PLACED UNDER THE SUPERVISION OF AN APPROVED CONCRETE TESTING AGENCY OR THE ENGINEER.

WATERSTOP MATERIALS SHALL BE FULLY IMMERSED IN WATER FOR NOT LESS THAN 24 HOURS PRIOR TO INSTALLATION. INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH THE MANUFACTURER’S INSTRUCTIONS.

ALL EMBANKMENT MATERIALS SHALL BE PLACED ON FIRM, UNSATURATED MATERIALS, FREE OF OMISSIONS, ADDITIONS OR CHANGES SHALL NOT BE MADE EXCEPT WITH THE SUBMISSION OF A WRITTEN REQUEST TO THE ENGINEER.
**Spillway Plan and Elevation as Noted**

**File:** B0694-S-100-STRUC.dwg

**Checked:**

**Drawn By:**

**Project No:** B0694

**Bridgeport, Connecticut**

**September 30, 2018**

**Approved:** 06/17/2019

---

**Spillway Detail - Plan View**

**Scale:** 1" = 10'

**Elevation:**

**Stillway Cutoff Wall Elevation**

**Scale:** 1/8" = 1'

**Dam Safety Comments**
Lower Spillway Section

- 2" Chamfer All Exposed Edges (TYP.)
- #5 @ 12" O.C. Top & Bottom

WALL TYPE TR-1

- 4" PVC Waterstop
- #8 DOWELS @ 6" O.C.

Embankment Elev. Varies

3'-0" #8 @ 12" O.C. Top & Bottom

WALL TYPE TR-2

- 4" PVC Waterstop
- #8 DOWELS @ 6" O.C.

Embankment Elev. Varies

8'-0" #8 @ 12" O.C. Top & Bottom

WALL TYPE TR-4

- 4" PVC Waterstop
- #8 DOWELS @ 6" O.C.

Embankment Elev. Varies

10'-0" #8 @ 12" O.C. Top & Bottom

NOTE: Rebar is #5 @ 12" O.C. unless otherwise noted.

Scale: 1/2" = 1'
SPILLWAY WALL

SECTION

SCALE: 1/2" = 1'

NOTE

REINFORCING IS #5 @ 12" O.C. UNLESS OTHERWISE NOTED

EL. 201.0

2'-0" 2'-0" 45°

19'-6"

12"

18"

LOWER SPILLWAY APRON, ELEV. VARIES

#8 @ 12" O.C. TOP & BOTTOM

#5 @ 12" O.C. TOP & BOTTOM

#5 @ 12" O.C.

9'-6"

15'-6"

FACE OF SPILLWAY WALL

NOTE

REINFORCING IS #5 @ 12" O.C. UNLESS OTHERWISE NOTED

EL. 205.0

18"

4'-0" 4'-0" 4'-0"

9'-6"

CUTOFF WALL

SECTION

SCALE: 1/2" = 1'

NOTE

REINFORCING IS #5 @ 12" O.C. UNLESS OTHERWISE NOTED

EL. 206.0

6" PVC WATERSTOP

24"

NOTE

REINFORCING IS #5 @ 12" O.C. UNLESS OTHERWISE NOTED

EL. 187.0

#5 @ 12" O.C. TOP & BOTTOM

LOWER SPILLWAY APRON

SECTION

SCALE: 1/2" = 1'

NOTE

REINFORCING IS #5 @ 12" O.C. UNLESS OTHERWISE NOTED

EL. 186.0

24" 24" 45°

55.51'
OVERFLOW STRUCTURE DETAILS - PLAN VIEW

SCALE: 1"=5'

PEDESTRIAN BRIDGE OVER SPILLWAY

OVERFLOW STRUCTURE DETAILS - ELEVATION

SCALE: 1" = 5'

PEDESTRIAN BRIDGE OVER SPILLWAY
1. Use 5/16" DIA. TORX BUTTON HEAD GR8 ACQ OLIVE DRAB PLATED SELF-TAPPING SCREWS FOR PLANK ATTACHMENT.

2. Use one screw per plank at each plank hold down and two screws per plank at center nailer.
Notes:
1. Reinforcing ASTM A615-75, Grade 60, 1” min. cover.
2. Concrete compressive strength 6,000 psi at 28 days.
3. Fit openings with trash rack.
4. Buoyant force: 319,988 lbs
   Structure weight: 473,400 lbs
   *Structure wt. excludes appurtenances
5. Refer to foundation preparation notes F6 + F7 on drawing S1.00.
6. Sluice gate operator.

Elton Rogers
Park Dam
Reconstruction
City of Bridgeport

September 30, 2018
NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING.
2. STEEL TO CONFORM TO ASTM A36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALAVANIZING COMPOUND AFTER WELDING.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS.
5. TRASH RACK SHALL BE REMOVABLE.

TRASH RACK A

TRASH RACK B

SLUICE GATE

TOP MOUNTED GUARD RAIL DETAIL

1. SLUICE GATE SHALL BE MOUNTED USING CAST-IN-PLACE THIMBLES.
2. GATE TO BE 48" x 48" CAST IRON INTEGRAL FRAME SLIDE GATE BY RODNEY HUNT, ORANGE, MA, MODEL A-103.
KASPER OX BROOK FLOOD CONTROL MASTER PLAN (2001)
OXBROOK FLOOD CONTROL STUDY

KASPER GROUP INC.
968 FAIRFIELD AVENUE
BRIDGEPORT, CT 06606

PRELIMINARY

April 30, 2001
CONTENTS

HYDROLOGIC CALCULATIONS FOR EXISTING CONDITIONS
HYDROLOGIC CALCULATIONS FOR UPSTREAM DRAINAGE IMPROVEMENTS
HYDRAULIC CALCULATIONS
<table>
<thead>
<tr>
<th>Sub Area</th>
<th>Street name</th>
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<th>PROP. ESTIMATED FLOWS</th>
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<td>Woodside Ave.</td>
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<td>Woodmont Ave.</td>
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<td>Glendale Ave.</td>
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<td>Englewood Ave.</td>
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<td>6</td>
<td>Jewett Ave</td>
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<td>7</td>
<td>Golden Rod Ave.</td>
<td>428  539  610 739</td>
<td>450  559  626  752</td>
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<tr>
<td></td>
<td>Ruth St.</td>
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<tr>
<td>8</td>
<td>Stoehrs Pl.</td>
<td>484  608  686 829</td>
<td>598  742  833  1001</td>
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<tr>
<td></td>
<td>Merritt St.</td>
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<td></td>
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<tr>
<td>42&quot; pipe</td>
<td>Burnsford Ave.</td>
<td>168  175  179 185</td>
<td>340  422  473  568</td>
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<tr>
<td>9+10</td>
<td>Birmingham St.</td>
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<td>Clarke St.</td>
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<td>Thorne St.</td>
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<td>12</td>
<td>Keeler Ave.</td>
<td>278  312  332 369</td>
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<td>Terry Pl.</td>
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<td>13</td>
<td>Rocton Ave.</td>
<td>426  495  539 618</td>
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<tr>
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<td>Savoy St.</td>
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<td></td>
<td>Lincoln Blvd.</td>
<td></td>
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</tbody>
</table>

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- Roger's Park storage
- Full capacity pipe
- To Svihra are detention
I. INTRODUCTION

The intent of this flood control project is to implement improvements along Ox Brook to reduce the potential for flooding. This project will serve as a continuation to improvements already in place downstream for the Rooster River and the section of Ox Brook located west (downstream) of Lincoln Boulevard.

This office performed a study for the City of Bridgeport Flood and Erosion Control Board entitled Flood Control Study, Ox Brook, Bridgeport, Connecticut dated February, 1980. This study defined discharges resulting from storms of various frequencies and the extent of flooding under existing conditions. Improvements were evaluated which would relieve flooding in a manner consistent with existing and anticipated future development. The recommendations made in the study will be the basis of design and construction of the improvements for this flood control project.

II. EXISTING CONDITIONS

A. Purpose and Need

Review of published flood maps reveals approximately 225 residential structures are impacted by a flood of this magnitude. In addition to the main residences, approximately 160 additional structures (garages and sheds) and 2 commercial structures would be inundated during the flood.

The State of Connecticut Department of Economic and Community Development lists the median sale price of a home in the City of Bridgeport as $92,000 for the year of 1999. Using this value, an estimated $20,700,000.00 of real estate can be adversely impacted by Ox Brook floodwaters.

In addition to the financial implications of the Ox Brook flooding, a serious threat to life and safety is present. Several roads are flooded and impassable during flooding events. Floodwaters would negate several emergency access routes leading to an increase in response time. In addition, floodwaters flowing over the roadways are a significant threat to people and vehicles that underestimate the danger and attempt to cross.

B. Study Area

Ox Brook is located in the northwesterly portion of the City of Bridgeport as shown in Figure 1. The project limits for this study are shown in Figure 2. The area includes the watershed for the Ox Brook extending from just south of the Merritt Parkway (Rte. 15) to Lincoln Avenue. The watershed is approximately 1.08 square miles in size and consists primarily of single and multi-family residential developments on quarter acre lots with minor areas of commercial development located along Main Street and Madison Avenue. The Ox Brook Flood Control project has its southerly (downstream) extent at Lincoln Boulevard where it meets improvements already in place and constructed as part of the Rooster River Flood Control Project. A diversion chamber is located within Lincoln Boulevard to which the improvements
proposed in this study will be connected. A plan and cross-section of this chamber is included as Figures 3a and 3b.

Due to intense development and encroachment on the brook occurring over the years, the area has compiled a long history of flooding. Significant additional development in this area is unlikely due to the lack of available land. Any future development would be on such a small scale that the effect on the watershed would be negligible.

C. Existing Channel

Ox Brook travels through the western portion of the City of Bridgeport from the Trumbull townline in the north to its confluence with the Rooster River near Long Island Sound. The total reach within the city is between 14,000 and 15,000 feet and the brook travels through a variety of environs and channel sections throughout its run. A more thorough discussion of the brook and its characteristics, beginning at its downstream extent follows:

1. As mentioned previously, the Ox Brook is a tributary to the Rooster River. The confluence of the two is located in the vicinity of Hughes Avenue and Laurel Avenue. Prior to this, the brook flows through a diversion chamber located in Lincoln Boulevard. The chamber contains a 30-inch pipe that allows dry weather flows to continue in the Ox Brook channel, while excessive flows are diverted via an overflow weir to a 108-inch concrete pipe flowing to the Rooster River. Schematic diagrams of the chamber are included as Figures 3 and 4.

2. Northward from Lincoln Boulevard to Madison Avenue, the brook flows behind residential houses in an open channel. Side slopes consist of a combination of vertical concrete retaining walls and natural side slopes. The channel width varies from 4 to 15 feet. Ox Brook flows under several garages within this reach and just prior to crossing Madison Terrace; it flows under a commercial building.

3. North of Madison Terrace, channel flow is maintained with the exception of street crossings. In this reach the brook flows through the rear yard of several residences.

4. The brook is contained in a 3.5-foot wide concrete box culvert from Harlem Avenue to Amsterdam Avenue. The depth of the culvert varies from 3.5 feet to 7.4 feet. Channel flow resumes on the south side of Fairview Avenue.

5. Between Fairview Avenue and Savoy Street, the brook alternates between channel and pipe flow. The channels are predominately contained within concrete walls with an approximate width of 2 feet and a depth varying from 2.3 feet to 5 feet. Pipe sizes range from 42-inches to 72-inches. Larger pipe diameters are located upstream of smaller ones, a practice going against hydraulic engineering convention.

6. Ox Brook flows through a natural channel between Savoy Street and Thorne Street with several short areas of stone and concrete walls up to Rocton Avenue. The channel is approximately 3 to 4 feet deep and travels through a somewhat
wooded area with various sections containing randomly placed stone and stone
wall side slopes. There are several bends in the brook’s alignment through this
reach.

7. North of Thorne Street the brook remains channeled through yard areas
alternating with street culvert crossings up to Stoehrs Place. The 42” pipe under
Burnsford Avenue acts as a control for the flow downstream channel even
though this reduces frequency flooding downstream it is the cause for flooding
upstream of Burnsford Avenue. The channel in this reach is very silted due to
street drainage. The brook is piped between Stoehrs Place and Lourmel Street
with the exception of a short channel section next to Glendale Avenue. Pipe
sizes range from 30-inch to 48-inch.

III. HYDRAULICS

A detailed review of the hydrologic and hydraulic data from the 1980 study was performed and
compared to present conditions. This data was supplemented with updated information as
required in order to perform the revised analysis.

Kasper Group, Inc. (KGI) retained Leonard Jackson Associates (LJA) to provide hydrologic and
hydraulic consulting services for the project. LJA reviewed supplemented data provided by KGI
to determine the existing hydrology within the Ox Brook study area. The Army Corps of
Engineers HEC-1 computer model was employed in the analysis. The study area was divided
into twenty separate sub-areas to more accurately represent the contribution of tributary
drainage systems within the watershed. The sub-areas are shown in Figure 4.

Runoff hydrographs were developed for each sub-area for the 10, 25, 50, and 100-year 24-hour
duration design storms. Hydrographs were developed using an SCS Type III rainfall distribution
and the SCS dimensionless hydrograph method within HEC-1. Times of concentration were
computed form each sub-area using SCS methodology and converted to the “SCS lag” time for
input into the model. Curve numbers were computed based on soil types, land use data
obtained from the City of Bridgeport zoning maps, and field observations. A summary of the
curve numbers is included as Table 1.

The HEC-1 computer program was used to generate, lag and combine hydrographs as shown
in Figure 5. In addition, the routing affect of the Burnsford Avenue culvert was modeled using
the Modified Puls Routine. Computed flows for the 10, 25, 50, and 100-year design storms are
presented in Table 2.

Under current conditions the culvert beneath Burnsford Avenue plays a significant role in the
hydraulics of the Ox Brook. The brook flows under the road through a 42-inch pipe. The
elevation of the road crown, approximately 20 feet above the invert of the pipe, effectively
makes Burnsford Avenue a dam during high-flow events.

The culvert beneath Burnsford Avenue must be replaced in order to alleviate flood conditions
upstream of it. The improvement in upstream conditions by removal of the damming effect of
the road will, unfortunately, merely shift the worst of the flooding farther downstream.
Floodwaters at various crossroads are presented in Table 2. The table shows floodwater
## OXBROOK FLOOD CONTROL PROJECT
BRIDGEPORT, CONNECTICUT

### TABLE 1
SUMMARY OF SUBBASIN CHARACTERISTICS

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<tr>
<th>SUBAREA</th>
<th>BASIN AREA</th>
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<td>(sq.mi.)</td>
<td>(hours)</td>
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</table>

Prep. By: RK
quantities for both existing conditions and those that would exist if an adequately sized culvert were to be installed in Burnsford Avenue. Examination of the table reveals that in a 100-year storm event, flood waters reaching Lincoln Avenue will increase from 1293 cubic feet per second (cfs) to 1937 cfs, a net increase of 644 cfs. The flood control structure located in Lincoln Avenue has a maximum capacity of 1000 cfs, or merely 52% of the anticipated flow.

V. PROPOSED IMPROVEMENTS

A. Available Alternates

Three options were identified pertaining to the Ox Brook Flood Control Study. The first alternative examined was a "No Action" alternative. The routine flooding of the area coupled with its threat to the life, safety, and economic well being of the residents in the area make this alternative unacceptable.

The remaining alternatives explore improvements to the channel and routing of water at the downstream limit of the study area. Improvements to Ox Brook can be divided into two segments, those upstream of the existing diversion and those downstream of it. The available options for improvements upstream of the diversion chamber are somewhat limited by hydraulics and the intense development in the area. Options are limited to conduit size, type and location. These are areas best explored and more thoroughly evaluated during the final design phase of the project.

Two options were evaluated for the reach south of the diversion chamber. These options are shown in Figure 5. The first option explored included piping of the Ox Brook from Lincoln Boulevard westward within Capitol Avenue to Laurel Avenue then proceeding southward to discharge into the Rooster River. This option would involve installation of approximately 5500 linear feet of conduit within a developed street. In addition, reconstruction of the diversion chamber in Lincoln Boulevard would be required. The second option considered piping flow through Bronx Avenue to a retention area to be constructed in Shvihra Park. This option involves installation of approximately 3500 feet of pipe and would not require the reconstruction of the diversion chamber. These two options are shown in Figure 5.

VI. RECOMMENDED IMPROVEMENTS

Options to adequately address the flooding of Ox Brook within the confines of the watershed are limited, costly and would require unacceptable disruptions of residences and businesses in the area to implement.

The limited capacity of the existing diversion chamber in Lincoln Boulevard prohibits simple upgrading of pipe, channel and culvert sizes throughout the project area. As previously discussed, improvements that limit flooding and allow free flow to Lincoln Boulevard will result in nearly 700 cfs of excessive flow to the diversion chamber. Alternates were explored which would eliminate flooding in the area for the design storm and yet, not result in flows exceeding the capacity of the diversion chamber. Schemes developed under these criteria would solve the flooding problem and not require excessive and expensive rework of recently completed flood control projects downstream from the diversion chamber in Lincoln Boulevard.
ALTERNATE 1: 3500' (RECOMMENDED ALTERNATE)
ALTERNATE 2: 5500'
3,200' OF ADDITIONAL CHANNEL IMPROVEMENT NEEDED FOR ALTERNATE 2

PROPOSED ALTERNATES
OX BUNCH FLOOD CONTROL PROJECT
BRIDGEPORT, CONNECTICUT
PREPARED FOR
THE CITY OF BRIDGEPORT

FIG. 5
A regional approach was adopted to economically address the flooding associated with the Ox Brook. The potential for attenuation of floodwaters in both the Ox Brook and the Island Brook drainage basins was explored. Methods and quantities of water transfer between the two were examined to establish design criteria that would eliminate flooding in the Ox Brook channel without shifting the flooding to other parts of the City.

A schematic plan of the proposed design is included as Figure 6. Rogers Park, a 90-acre open space is located in the upper reaches of the Ox Brook basin. The park is currently undeveloped and represents a significant storage potential. A dam is needed in order to utilize the full potential.

Construction of the dam and outlet structure coupled with replacement of the culvert under Burnsford Avenue will improve conditions in the channel but will cause flooding in the vicinity of Lincoln Boulevard due to the limited capacity of the diversion chamber and conduit downstream of it. Peak flows calculated at the chamber with the above listed improvements in place were 1676 cfs, or 676 cfs greater than the capacity of the chamber.

In order to maintain a maximum flow rate of 1000 cfs at the diversion chamber, an additional transfer between the basins is proposed for Fairview Avenue. A flow of 676 cfs will be diverted from the Ox Brook back to the Island Brook basin at this location. Additional storage is proposed for Shvihra Park with an outflow back to Island Brook of 20 cfs.

Additional improvements to the channel are proposed for the various reaches of the Ox Brook. These improvements are designed based upon the flows resulting from construction of the two detention areas and transfer of stormwaters between the basins. The improvements are shown in Figure 10, attached to this report.

Phasing of the improvements is critical to ensure maintenance of adequate capacity within the two affected waterways. Figure 7 reflects a proposed plan where the flood control project is divided into six phases. The phases are proposed to allow improvements to the channel without creating additional flooding problems in downstream reaches. The phasing of the project is detailed below:

A. Phase One

The first phase of the project consists of construction of a series of berms in Roger's Park. Outlet control will consist of an 18-inch pipe discharging to the Ox Brook at Lourmel Street. This phase will reduce the peak flow in the Ox Brook and, therefore, the frequency of flooding events.

B. Phase Two

The second phase of flood improvements to the Ox Brook consists of three items. The first item is construction of a detention pond in the Svihra area.
Floodwaters will be outlet through an 18-inch pipe to the Island Brook. The second item consists of construction of construction of 3850 LF of 9' x 5' box culvert in Wayne Street, Bronx Avenue, and Hunting Street. This conduit will eventually discharge into the Sviha detention pond. The final construction included in this phase consists of rerouting of Ox Brook from a point approximately 100 feet south of Rocton Avenue. The brook will be rerouted along Amsterdam Avenue, through several backyards, and Wayne Street to Quince Street using a 12' x 5' box culvert. A 60-inch pipe beneath Quince Street will discharge the maximum manageable flow back into the existing Ox Brook channel. The existing channel in the affected reach will remain in place to convey local runoff.

Construction of this phase will reduce localized flooding and make upstream improvements possible without adverse impacts elsewhere.

C. Phase Three

The third proposed phase of the flood control project includes improvement of the existing channel and culverts under crossing streets from Lincoln Boulevard to Quince Street. The channel cross-section will be improved to a trapezoidal or rectangular section.

Completion of this phase will reduce local flooding and allow for additional upstream improvements without adverse impacts.

D. Phase Four

The fourth phase of the proposed project consists of upgrades to the Ox Brook channel from Rocton Avenue to Burnsford Avenue. The culvert beneath Burnsford Avenue would be replaced in this phase. Channel improvements would consist of construction of either a rectangular or trapezoidal cross-section.

This fourth phase of construction will be a continuation of the improvements implemented in the second and third phase. This phase will allow for further improvements upstream and remove the constriction at Burnsford Avenue.

E. Phase Five

The fifth phase of construction is further upgrades to the existing Ox Brook channel. These improvements, which would also include the installation of a culvert, would occur between Burnsford Avenue and Lourmel Street.

Construction of this phase will decrease local flooding and complete the improvements to the channel so the final phase can be implemented.
F. Phase Six

The final phase of construction for the Ox Brook Flood Control Project will consist of the installation of approximately 650 LF of 10' x 3' box culvert in Old Town Road. This culvert will divert approximately 200 cfs from the Island Brook to the detention area in Roger's Park, constructed in Phase 1.

Completion of this phase will enable transfer of floodwaters from Island Brook to the Ox Brook at this location and a transfer back to Island Brook from Ox Brook through the detention area at Svihra Park. With the completion of this phase, both streams will adequately convey waters resulting from a 100-year storm event.

VII. ESTIMATED COSTS

The estimated construction costs for the Ox Brook Flood Control Project were calculated. Several references were utilized in the preparation of this estimate. Sources that were consulted included the Means book for construction costs, Connecticut Department of Transportation, "Weighted Unit Prices", pricing from applicable suppliers and Kasper Group, Inc.'s knowledge and data base regarding local bidding practices.

Estimated costs are included in Table 3. No allowance has been made to project the costs through an anticipated project schedule. A total project cost of $24.2 million has been derived.
### Table 3: Cost Estimate of Recommended Improvements

**April 24, 2001**

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
<th>Phase 1 Price</th>
<th>Phase 2 Price</th>
<th>Phase 3 Price</th>
<th>Phase 4 Price</th>
<th>Phase 5 Price</th>
<th>Phase 6 Price</th>
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**Notes:**
1. Above costs do not include costs involved with easements and acquisitions, engineering services and government administration costs.
2. Unit prices for piping & box culvert include paving, rock excavation, curb & sidewalk restoration, misc. costs.
SECTION E-E

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

- 12" CIP Block Wall Reinforced With #8 Bars Vert.
  Fill Voids With Conc.
  For Horiz Rein. Drill Holes In Conc Block. Only Corner To Be Picked At This Time.