

CONSTRUCTION DRAWINGS
FOR
MAIN STEM RESTORATION PROJECT
LONG CREEK, SOUTH PORTLAND, MAINE

JUNE 2019

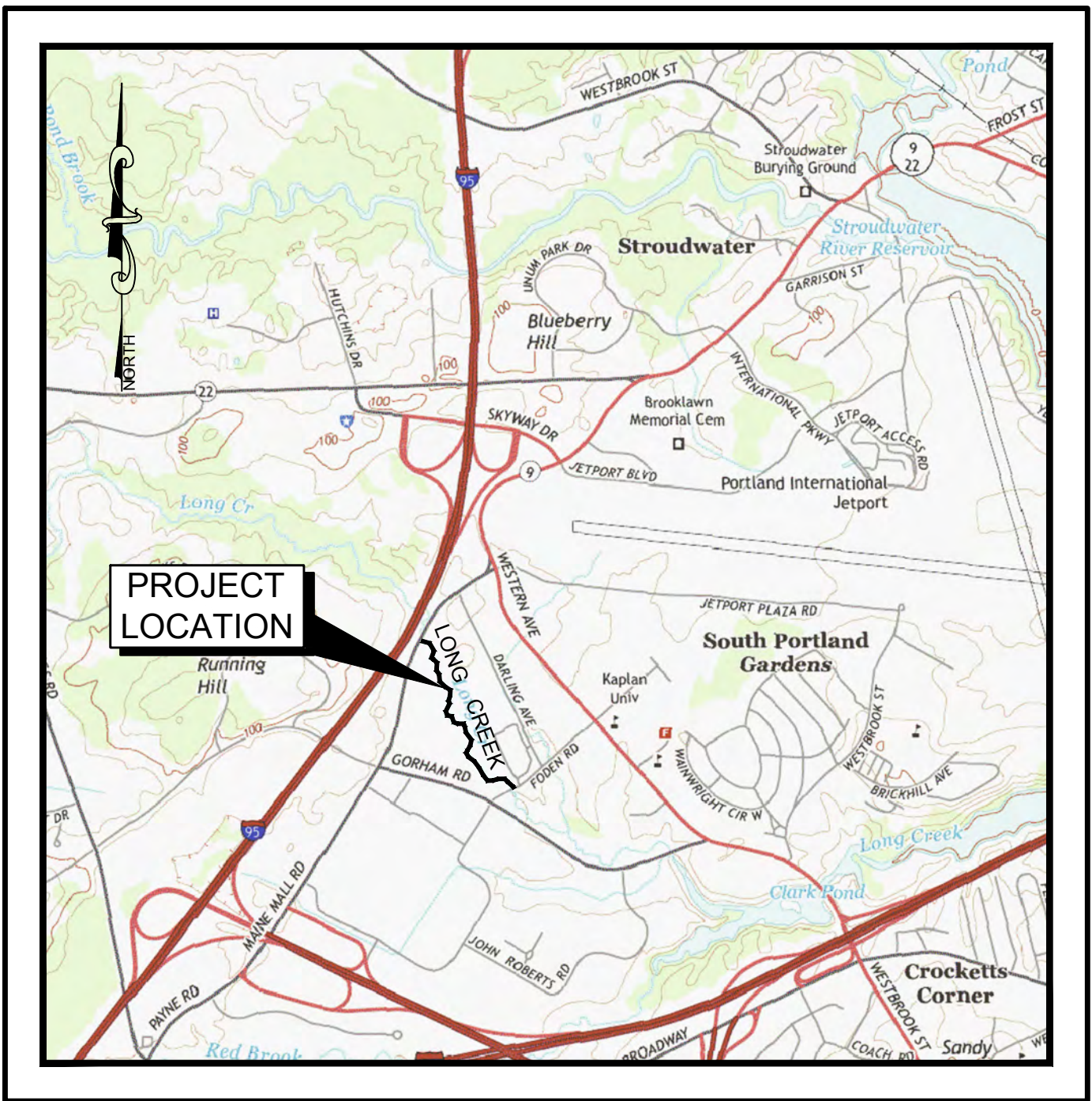
RED LINE DRAWINGS

12/05/2019



AERIAL VIEW

SCALE: 1" = 200'
SOURCE: GOOGLE EARTH, DATED 05-09-2016



SITE LOCATION MAP

SCALE: 1" = 2,000'
SOURCE: MEGIS, PORTLAND-WEST QUAD, 2014

DRAWING LIST:

- C-001 COVER SHEET
- SBS-001 STANDARD BOUNDARY SURVEY - NOTES AND DETAILS
- SBS-002 STANDARD BOUNDARY SURVEY - WEST
- SBS-003 STANDARD BOUNDARY SURVEY - EAST
- C-100 EXISTING CONDITIONS/OVERALL SITE PLAN
- C-101 PROPOSED ACCESS AND RESTORATION PLAN - SHEET 1
- C-102 PROPOSED ACCESS AND RESTORATION PLAN - SHEET 2
- C-103 PROPOSED ACCESS AND RESTORATION PLAN - SHEET 3
- C-104 PROPOSED ACCESS AND RESTORATION PLAN - SHEET 4
- C-105 PLANTING PLAN OVERVIEW
- C-106 PLANTING PLAN AND DETAILS
- C-301 EROSION AND SEDIMENT CONTROL PLAN - NOTES AND DETAILS
- C-302 DETAILS-1
- C-303 DETAILS-2

*** Please Note - Red Highlighted Pages Above have red line modifications, all other work not specifically highlighted was installed "per-plan".

COVER SHEET

MAIN STEM RESTORATION PROJECT
LONG CREEK
SOUTH PORTLAND, MAINE

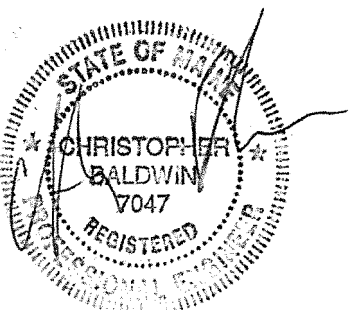
LONG CREEK WATERSHED MANAGEMENT DISTRICT
35 MAIN STREET, SUITE 3
WINDHAM, ME 04062

St. Germain Collins

846 Main St., Westbrook, ME 04092 • 207-591-7000 • StGermainCollins.com

C-001

7	6/03/2019	REMOVED PHASING	DB	CB
6	3/28/2019	REVISED FOR PHASE DEVELOPMENT	DB	CB
5	12/20/2018	RELEASED FOR BIDDING AND PERMITTING	DB	CB
4	3/15/2018	REVISED TO ADD BACK EDGE OF FLOODPLAIN	DB	CB
3	2/26/2018	REVISED FOR 95% DESIGN SUBMITTAL	DB	CB
2	2/23/2018	REVISED FOR 95% DESIGN SUBMITTAL	DB	CB
1	1/18/2018	REVISED PER LCWMD COMMENTS ON 30% SUBMITTAL	DB	CB
REV.	DATE	REVISION DESCRIPTION	DRAWN	CHK'D
DATE:	1/03/2018	SCALE:	PROJECT NO.: 4175	FILE: 4175 COVER



PROFESSIONAL CONTACTS:

APPLICANT:
LONG CREEK WATERSHED
MANAGEMENT DISTRICT
PETER CARNEY, EXECUTIVE DIRECTOR
35 MAIN STREET, SUITE 3
WINDHAM, ME 04062



STREAM RESTORATION DESIGN:
FIELD GEOLOGY SERVICES
PO BOX 824
PORTLAND, ME 04101



ENGINEERING & DESIGN:
ST. GERMAIN COLLINS
846 MAIN STREET
WESTBROOK, ME 04092



RESTORATION PLANTING DESIGN:
GZA GEOENVIRONMENTAL
477 CONGRESS STREET, SUITE 700
PORTLAND, ME 04101



PERMITTING:
FIDDLEHEAD ENVIRONMENTAL CONSULTING
PO BOX 783
HARRISON, ME 04040



SURVEYOR:
BOMBAHOOK LAND SURVEYS
30 CHESTNUT STREET
GARDINER, ME 04345



HYDRAULIC MODELLING:
JORDAN ENVIRONMENTAL ENGINEERING
199 CONCORD STREET
PORTLAND, ME 04103

Plan References:

1) Plan and CAD file entitled "Topographic Plan of thes Darling Avenue Project" by Aerial Survey & Photo, Inc. dated May 4, 2009.

2) Plan entitled "Plan of Property made for Francis X.; Langlois" by H.I. and E.C. Jordan dated Feb. 1, 1983 and recorded in Plan Book 138, Page 134.

3) Plan entitled "Plan of Property made for Greater Portland Building Fund (Airport Industrial Park)" made by H.I. and E.C. Jordan dated May 4, 1976 and recorded in Plan Book 113, Page 58.

4) Plan entitled "ALTA/ACSM Land Title Survey made for Dead River Cornerbrook, LLC" by Owen Haskell, Inc. dated Feb. 28, 2000 and recorded in Plan Book 203, Page 411.

5) Maine Turnpike Authority Plan entitled "Section 1-K(ittery to Portland, South Portland) Supplemental Sheet No. 14 by H.N.T.B dated November 1996).

6) Maine Turnpike Authority Plan entitled "Section 1-K(ittery to Portland,, Relocation of Payne Road South Portland" Supplemental Sheets No. 11 and 2 by H.N.T.B dated May 1947.

7) Maine Turnpike Authority Plan entitled "Section 1-K(ittery to Portland, South Portland" Sheet No. 2 by H.N.T.B dated October 1946.

8) Plan entitled "Plan of Easement across land of South Portland Gardens located in South Portland Maine" by Portland Water District dated Feb 15, 1987 and recorded in Plan Book 73, Page 38.

9) Plan entitled " Appeals Board Exhibit A of Maine Mall Prompto for E.I.C. Inc." by Sebago Technics dated Jan. 8, 1998 and recorded in Plan Book 1598, Page 75.

10) Plan entitled "City of South Portland Maine, Right of Way Plan of Payne Road" Sheets 1 and 2 by Edward C. Jordan Co., Inc. dated June 1988.

11) Plan entitled "City of South Portland Maine, Right of Way Plan Gorham Road Sheet 1 dated June 1988.

12) Maine Department of Transportation Right of Way Plan entitled "State Highway 7" State Project Number M-STP-0515(4)(X), D.O.T. File No. 3-408 dated December 1993, Sheets 1-6.

13) Plan entitled "ALTA/ACSM Land Title Survey of Dairling Avenue Property" for Darling Avenue Realty, LLC by Sebago Technics dated Jan. 22, 2015 recorded in Plan Book 215, Page 158.

14) City of South Portland Public Works Department Drawing entitled "Foden Road", File LC#6, Drawer 36, undated.

15) Plan entitled "Maine Mall Road Shopping Center, Final Site Plan/Subdivision" dated November 8, 1985 last revised February 25, 1986 by The Sheridan Corporation recorded in Plan Book 155, Page 120.

Notes:

1) Bearings are referenced to Grid North Maine State Plane Coordinate System, NAD1983, West Zone (1802) based on RTK GPS Observations.

2) Elevations are referenced to NAVD 1988 based on IRTK GPS observations adjusted (+0.17') to better match Plan Reference 1.

3) Book and Page references are to the Cumberland County Registry of Deeds, unless otherwise noted.

4) This survey is provided to Field Geology Services as a subcontractor for the Long Creek Watershed Management District "Main Stem Restoration Project" as described in a document revised to August 31, 2017.

5) The intent of this survey is to define locate and set pins for the existing property lines near to and crossing Long Creek located southerly of Payne Road (Maine Mall Road) and northerly of Foden Road. This survey is not intended to perform a complete survey of each lot. Pins near to the stream will be set and grade stakes set along boundary lines within the project area (within 755 feet on each side of the stream). A full survey may be completed at a later date for lots over which an agreement for project access has been completed.

6) Plan reference 13 notes a possible discrepancy, orr "gore", in location of the common line between the "Mall Lots" (shown on plan references 5), 8 and 9) on the west side of this line and the "Airport Industrial Park Lots" (shown on plan reference 3 and 13) on the east, which would affect the common line between Tax Lots 68-68 and 48-15A as shown on this plan. None of the original monuments for this line were found; however the former location of these monuments can be calculated based on subsequent plans. This survey has held the west line as shown on plan reference 3 by fitting existing boundary evidence with the calculated former position of a monument marking the northwesterly boundary of land formerly of South Portland Gardens as shown on plan references 3. No gap or gore exists between these lots due to mutual calls for abutting owners in deeds and shown on plans.

7) All features other than boundary information including buildings and edge of pavement shown are derived from plan reference 1 and/or google earth. These locations are approximate and should be used for general geographic reference only.

8) No underground utilities were located as part of this project.

9) The point of beginning of the center line of CMP parcels described in Book 29612, Page 152 and Book 2962, Page 218 is described as being located southerly 885' ± from the Southeasterly corner of land of James Willsie Company Inc. on the common line between ADC Building Fund (shown as "Airport Industrial Park Lots" on this plan) and land of Herbert E. Ginn et al. ("Mall Lots"). The southeasterly corner of the Willsie parcel is not on the described line. The current location of the pole line described in these deeds is found to be 847'± southerly of the northeasterly corner of said Willsie Lot. The current location of the pole line as verified by subsequent deeds, plans and the physical location of the pole line has been held.

10) Mortgages, leases, discharges, UCC statements, etc. (documents typically not used by land surveyors) were not included in the research for this project. A title opinion may be needed for matters concerning these types of conveyances.

11) The boundary evidence found along the entire length of Payne Road from Gorham Road to Darling Avenue does not fit well with the various plans. The right of way for Payne Road as shown is based on a best fit off boundary evidence to Plan Reference 10.

Easements and encumbrances by Lot:

Tax Map 68, Lot 6I (TM68-6I)
N/FF J&L LLC - BK 12293, PG 263

1) Subject to a slope easement as described in Book 11456, Page 279 benefiting the State of Maine.

2) See LC-4.

Tax Map 68, Lot 6B (TM68-6B)
NEGC Mallside BH LLC - BK 34134, PG 154

1) Subject to a pole line easement granted to Central Maine Power Company (CMP) described in Book 2978, Page 14, being a line running easterly from Payne Road to pole #33.1. Easement appears to be near Maine Mall Road and outside the project area. Poles have not been identified to date.

2) Subject to a pole line easement granted to CMP as described in Book 3073, Page 246, being a line running easterly from Payne Road from pole #35 to pole 35.1. Easement appears to be near Maine Mall Road and outside the project area. Poles have not been identified to date.

3) Benefits from drainage rights to Jackson Brook (a.k.a. Long Creek) through existing culverts along with the right to repair existing culverts as described in Book 3148, Page 57.

4) Subject to a pole line easement granted to CMP as described in Book 3287, Page 122, being a line running southeasterly from Payne Road from pole #517 to pole 517.1. Easement appears to be near Maine Mall Road and outside the project area. Poles have not been identified to date.

5) Subject to a pole line easement granted to New England Telephone and Telegraph Company (NET&T) and CMP as described in Book 7498, Page 246. The easement as described can not be located without identifying the utility poles cited. Poles numbers cited have not been found. Possible locations for this easement are shown on this plan.

6) Subject to an approved State of Maine DEEP Site location order as described in Book 10585, Page 176. No described area.

7) Subject to Notice of Layout and Taking as described in Book 114156, Page 276 (now part of Maine Mall Road) and related rights and easements as described in Book 11744, Page 26 (near Maine Mall Road) - not in project area - not shown.

8) Subject to an easement granted to CMP as described in Book 128554, Page 344. Easement is shown on this plan.

9) Subject to an easement granted to CMP as described in Book 128555, Page 1. Easement is shown on this plan.

10) Subject to an approved State of Maine DEEP Site Location Order to transfer a previous order as described in Book 34301, Page 125.

11) See LC-8

Tax Map 68, Lot 6J (TM68-6J)
Colby E. Marvin Trust
Book 13611, Page 208
Reference Deed 2962, Page 152

1) Subject to Run-Off Retention Easement and BMP easement benefiting CMP and the Cumberland County Soil and Water Conservation District as described in Book 277603, Page 304; Book 27603, Page 298 and Book 27600, Page 230. Easement is shown on this plan.

2) See LCC-3.

3) See CCSWD-2.

4) See CCSWD-6

Tax Map 68, Lot 1 (TM68-1)
GMC Family Limited Partnership
Book 11822, Page 31
Book 12118, Page 259

Other partial owners possible.

1) May be subject to a 5 foot wide easement granted to New England Telephone and Telegraph Company being described in Book 3481, Page 1911 as being "between the southwest corner of the proposed Zayre Store and the CMP right of way as described in Book 2962, Page 152." The location of the store is not known at this time. Verbal evidence places the Zayre store on this parcel. The easement can not be shown. This easement could also be on the lot identified as parcel 68-6-8.

2) See CCSWD-2.

3) Subject to a storm water drainage easement as described in Book 176327, Page 71. No area defined.

4) See LC-7.

5) See CCSWD-5.

Tax Map 68, Lot 6E (TM68-6E)
Herrbert E. and Ada P. Ginn Book 2591, Pages 346

1) Subject to a pole line easement benefiting CMP as described in Book 12929, Page 212. Easement is shown on this plan.

Tax Map 68, Lot 6K (TM68-6K)
Central Maine Power Company Book 2962, Page 152

1) Possibly subject to pole line easement (see 68-6B-5).

2) See CCSWD-4.

3) See CCSWD-5.

4) See CCSWD-6.

Tax Map 48, Lot 14
Central Maine Power Company
Book 2962, Page 152

1) See LC-10

2) May benefit from the release of a building height restriction along with neighboring parcels as described in Book 3495, Page 332. Easement is general in nature and not shown.

3) Benefits from and is subject to an intersection agreement pertaining to the intersection of land of CMP and the Portland Water District easement near Darling Avenue as described in Book 3050, Page 637. The general area of the easement is shown.

4) See CCWSW-4.

5) Note: No deed was found that would allow parking by Darling Avenue, LLC (TM48-13A) on land of CMP. Possibly there is a lease involved. One possibility may be found in a memorandum of a lease as described in Book 32242, Page 79. No details are given. See also termination of park restrictions in Book 136299, Page 183.

Easements and encumbrances by Lot:

Tax Map 48, Lot 19 (TM48-19)
N/F McLaughlin Properties, LLC - BK 31651, PG 177

1) Subject to Easement LC-1.

2) Subject to Portland Water District Easement over the easterly 22.5 feet of the property (along Darling Avenue). The portion of the easement encumbering this parcel is shown.

3) Subject to a pole line easement to Central Maine Power Company from pole 512 on Payne Road to pole #512.1. Poles have been renumbered. The general area of this easement is shown.

4) Subject to an access easement benefiting TM49-20 as described in Book 7268, Page 316. Easement is shown.

5) Subject to an access easement to land "lying northerly and northeasterly of TM48-19, benefiting the Greater Portland Building Fund, Inc., and its successors. Only a general area is described, which is shown on this plan.

6) May be subject to restrictions cited in Book 2670, Page 14 regarding buildings, parking, general design, and possible aviation easements. This deed conveys land lying easterly of Westbrook Street and would appear not to apply - not shown.

7) May be subject to aviation easements cited in Book 31651, Page 177.

8) Subject to slope easement as described in Book 11456, Page 279 benefiting the State of Maine. The easement is shown.

Tax Map 67, Lot 9 (TM67-9)
341 Park, LLC - Book 31653, Page 217

1) Subject to and benefits from a drainage easement agreement with land formerly of Herbert E. and Ada P. Ginn as described in Book 5018, Page 134. The easement pertains to drainage rights to the stream extending 728' ± northerly of Foden Road. The opposite parties appears to include the remaining land of Dead River Cornerbrook LLC, land of CMP and land of GMC, LLC. The easement appears to be the same easement cited in Book 20156, 27; Book 13531, Page 225 and Book 6207, Page 22. The general area of this easement is shown.

2) Subject to Aerial Easements as described in Book 17631, Page 171 and Book 17630, Page 84. The location of both easements is shown.

3) Benefits from easement over remaining land of Dead River Cornerbrook, LLC (BK 13531, Pg 2225) to land lying adjacent to the westerly sideline of locus property to the western side of the stream. The general location is shown.

4) Subject to an approved State of Maine DEP Environmental Protection Order as described in Book 20267, Page 186. No area described - not shown.

5) Subject to BMP Easements (see LC-2).

6) Subject to a memorandum of agreement as described in Book 27868, Page 245. Terms of agreement are not disclosed in this document. Applies to lots shown as Tax Map 67, Lot 9 as well as Tax Map 67, Lot 5C.

7) omitted intentionally

8) Subject to an approved State of Maine DEP Site Location order to build a 24' by 32' garage as described in Book 11226, Page 128. The assumed general location is shown (actual garage found is 20' ± by 24' ±).

9) Subject to a drainage easement as described in Book 6207, Page 22 (see TM67-9-1). Benefits from rights to use land located southerly of Foden Road for drainage.

10) Subject to 20 foot wide gas easement running from Darling Avenue. The location of the easement is not described.

Tax Map 67, Lot 5C (TM67-5C)
Dead River Cornerbrook, LLC - Book 13531, Page 225

1) Subject to and benefits from a drainage easement agreement benefiting and encumbering land formerly of Herbert E. and Ada P. Ginn as described in Book 5018, Page 134. The easement pertains to drainage rights to the stream extending 728' ± northerly of Foden Road. The opposite parties appear to include land of 341 Park, LLC, land of CMP and land of GMC, LLC. The general area of this easement is shown.

2) Subject to a memorandum of agreement as described in Book 27868, Page 245. Terms of agreement are not disclosed in this document. Applies to lots shown as Tax Map 67, Lot 9 as well as Tax Map 67, Lot 5C.

3) May be subject to rights of "others" to cross the foot bridge as shown (labeled as 67-9-7).

4) Subject to a drainage easement as described in Book 20156, Page 27 benefiting the westerly portion of 341 Park, LLC. The general area is shown.

5) Subject to an approved State of Maine DEP Site location order for construction and drainage as described in Book 20267, Page 186. No defined area.

Access Lots - Easements and encumbrances by Lot:
(Lots not abutting Long Creek, but through which access may be required.)

Lots on Tax Map 48, numbered 13A, 14, 15A may benefit from a termination of park restrictions (restrictions described in Book 2670,, Page 14) as described in Book 13629, Page 183. No defined area.

Tax Map 48, Lot 15A (TM48-15A)
My Darling, LLC - Book 155354, Page 24

1) See CCSWD-3.

2) See LC-5.

3) Subject to a storm water management maintenance agreement as described in Book 29884, Page 36 benefiting the City of South Portland and abutting parcels. The agreement pertains to land along Darling Avenue. The general location is shown.

4) Subject to a CMP easement as described in Book 4500, Page 1115. Easement runs southwesterly from utility pole 8 on Darling Avenue through poles 80 and 8001. The general location of pole 8 is shown. Poles may have been renumbered.

5) Subject to a CMP easement as described in Book 4525, Page 733. Easement runs southwesterly from utility pole number 7 through poles 7.1, 7.2, to transformer 7.33. Poles etc. have not been identified to date. The general area of pole number 7 is shown. Other poles may have been renumbered.

6) Subject to restrictions, agreements and possible aviation easements as described in Book 4141,, Page 70. No easement area defined.

7) Subject to a multiple services agreement with the Portland Water District as described in Book 3743, Page 238. No specific area defined.

8) May benefit from the release of a 75 foot wide easement as described in Book 3008, Page 177. A new 75 foot wide easement described does not impact the subject parcel.

9) Subject to a 22.5 foot wide water line easement as shown hereon and on plan reference 3.

10) May be subject to a pipeline easement given to Socony-Vacumm Oil Company as described in Book 1891, Page 31. No specific location is defined.

Tax Map 48, Lot 14 (TM48-14)
Central Maine Power Company - Book 2962, Page 218

1) Excepts a strip owned by Portland Water District. The strip is not defined. This may be referring to the 22.5 foot wide easement along Darling Avenue which is shown.

Tax Map 48, Lot 13A (TM48-13A)
Darling Avenue Realty, LLC - Book 32242, Page 35

1) Benefits from an easement modification agreement as described in Book 24593, Page 233, allowing a sign to stay within the Portland Water District easement along Darling Avenue.

2) Subject to a 22.5 foot wide water line easement as shown hereon and on plan reference 3.

3) Benefits from the release of a 75 foot wide easement as described in Book 2991, Page 897. Parcel is subject to a new 75 foot easement described in the same deed. Most of the new easement appears to fall within Darling Avenue leaving the parcel subject to a 22.5' strip.

4) Subject to a Stormwater System Maintenance Agreement benefiting the City of South Portland and abutting parcels as described in Book 31419, Page 134. The agreement pertains to land along Darling Avenue. The general location is shown.

5) Subject to an assignment of a BMP Easement. See LC-6. See also memorandum of agreement in Book 27869, Page 16.

6) Subject to and benefits from a BMP Easement as described in Book 27633, Page 116. See LC-6.

7) See LC-9

Tax Map 68, Lot 6H (TM68-6H)
GMC Family Limited Partnership
Book 27444, Page 66

1) New England Telephone and Telegraph Easement extending from utility pole 22 (identified but not located) northeasterly 160 feet, more or less. The general area is shown.

2) See CCSWD-2

3) See CCSWD-5.

Tax Map 48, Lot 14
Central Maine Power Company
Book 2962, Page 218

1) See LC-10

2) May benefit from the release of a building height restriction along with neighboring parcels as described in Book 3495, Page 332. Easement is general in nature and not shown.

3) Benefits from and is subject to an intersection agreement pertaining to the intersection of land of CMP and the Portland Water District easement near Darling Avenue as described in Book 3050, Page 637. The general area of the easement is shown.

4) See CCWSW-4.

5) Note: No deed was found that would allow parking by Darling Avenue, LLC (TM48-13A) on land of CMP. Possibly there is a lease involved. One possibility may be found in a memorandum of a lease as described in Book 32242, Page 79. No details are given

INCOMPLETE TO DATE

Easements and encumbrances directly affecting the Long Creek Watershed Management District (hereon abbreviated as LCWMD).
Numbering below is arbitrary and is used to identify easements only:

LC-1) The LCWMD benefits from, a "Best Practices Easement Deed" (BMP) and Temporary Construction Easement as described in Book 31630, Page 159 over TM 48-19, subject to covenants, conditions, etc. The BMP is shown on this plan. The access easement expired on 12/31/2014 and is not shown.

LC-2) Benefits from BMP Easements as described in Book 27633, Page 125 over TM67-9, said easement being assigned to the Long Creek Watershed Management District in Book 27903, Page 136. Easements are outside the project area - the general area is shown.

LC-3) Benefits from and is subject to a memorandum of agreement as described in Book 27868, Page 217 with the Colby E. Marvin Trust over TM68-6J. The terms and area are not expressly described. The apparent general area is shown.

LC-4) Benefits from a general BMP easement over land of J & L LLC (TM 68, Lot 6I) as described in Book 31630, Page 144. The deed describes temporary construction easements which have expired and are not shown.

LC-5) May benefit from and be subject to an unspecified agreement with My Darling, LLC (TM48-L15A) described in a memorandum of agreement recorded in Book 278683, Page 293.

LC-6) Benefits from the assignment of an easement as described in Book 27903, Page 140 over the lot shown as TM48-13A. Said deed conveys all interest in the Best Management Practices Easement as described in Book 27633, Page 116 from the Cumberland County Soil and Water Conservation District to the Long Creek Watershed Management District. The location of the easement, originally described in Book 27633, Page 116, is shown on this plan.

LC-7) May be subject to and/or benefit from a memorandum of agreement as described in Book 277868, Page 251 over Tax Lot 68-1. Details of the agreement not described.

LC-8) May be subject to and/or benefit from a memorandum of agreement as described in Book 277868, Page 270 over Tax Lot 68-6B. Details of agreement not described.

LC-9) May be subject to and/or benefit from a memorandum of agreement as described in Book 32242, Page 79 over Tax Lot 48-13A. Details of agreement not described.

LC-10) May benefit from and be subject to a memorandum of agreement over land of CMP (TM48-14) as described in Book 2789, Page 19. Details of the agreement are not described.

LC-11) Benefits from two BMP easements over Tax Map 48, Lot 21A as described in Book 31531, Page 82. Easements "H" and "J" are outside the current project area but are shown.

Easements and encumbrances directly affecting the Cumberland County Soil and Water Conservation District hereon abbreviated CCSWD.
Numbering below is arbitrary for identification only:

CCSWD-1) Benefits from an easement described in Book 27603, Page 298 over land formerly of GMC, LLC (TM68-6J). Easement is labeled TM68-6J-1 on plan.

CCSWD-2) Subject to and benefits from a general Stormwater Management System Maintenance Agreement as described in Book 29973, Page 52. Appears to affect Tax Parcels 68-6-1; 68-6J; and 68-6H.

CCSWD-3) Benefits from a BMP easement over land of My Darling, LLC (TM48-L15A) as described in Book 27633, Page 136. Easement is shown on this plan.

CCSWD -4) Benefits from three easements over land of CMP (TM68-6K) and land of Adah P. Ginn (TM 68-6J - which is encumbered by an easement granted to CMP in Book 13524, Page 110) as described in Book 27603, Page 298. The easements are granted by CMP to override previous restrictions, rights, etc. preventing construction, etc., in order to install equipment collectively called BMP's. These easement areas override other easements. The easement areas are shown on this plan.

CCSWD -5) Benefits from several BMP storm drain maintenance easements over land of GMC Family Limited Partnership (TM68-1) and (TM68-6H) as described in Book 27600, Page 239. Easements A, C, and D as described are shown. Other easements described are outside the project area and are not shown.

Owners of Record:
As shown

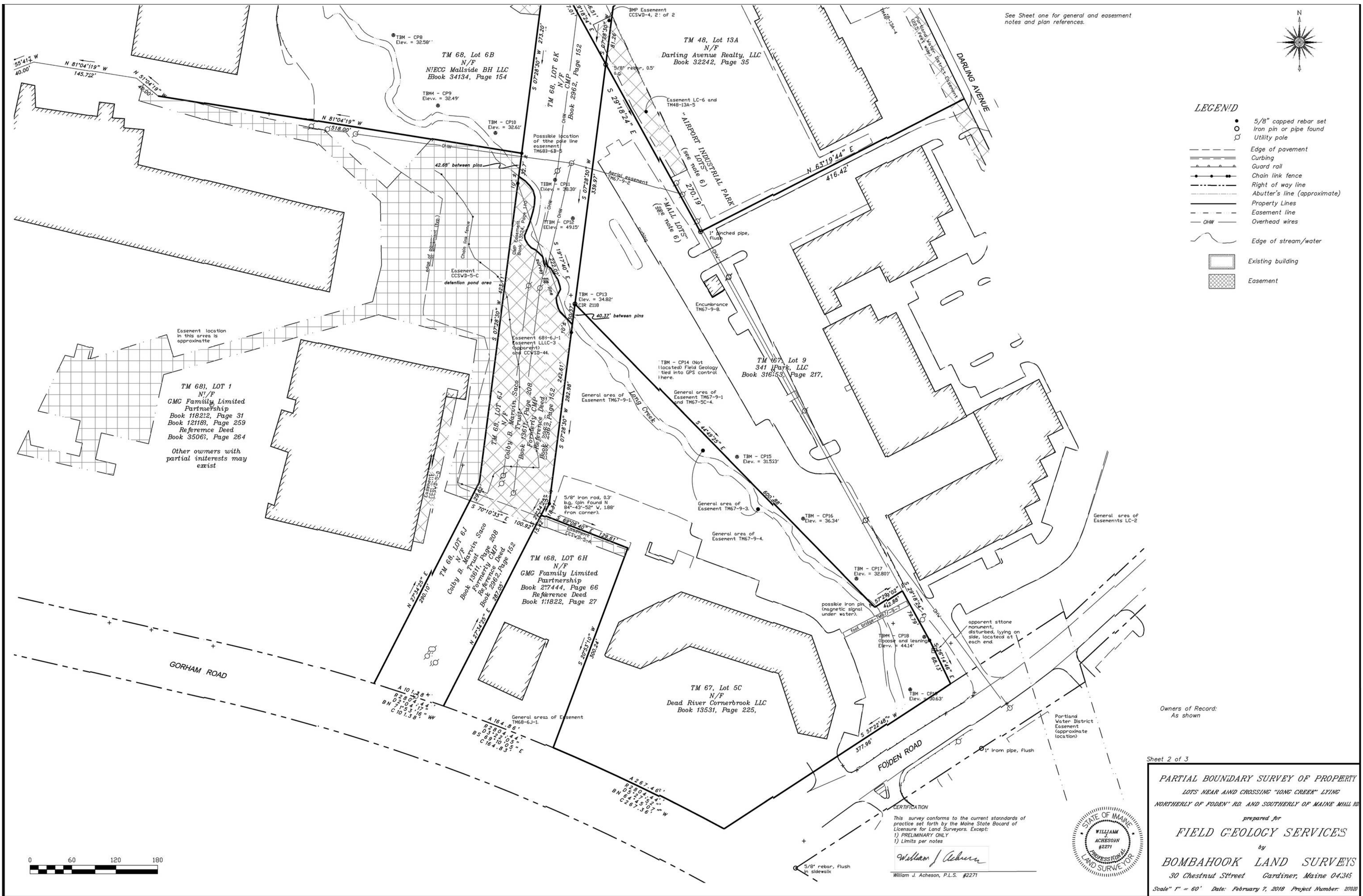
Sheet 1 of 3

PARTIAL BOUNDARY SURVEY OF PROPERTY
LOTS NEAR AND CROSSING "LONG CREEK" LYING
NORTHERLY OF FODEN RD. AND SOUTHERLY OF MAINE MALL RD.

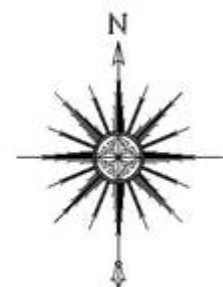
prepared for
FIELD GEOLOGY SERVICES

by
BOMBAHOOK LAND SURVEYS
30 Chestnut Street Gardiner, Maine 04345

Scale" 1" = 60' Date: February 7, 2018 Project Number: 20700



See Sheet one for general and easement notes and plan references.



LEGEND

- 5/8" capped rebar set
- Iron pin or pipe found
- Utility pole
- Edge of pavement
- Curbbing
- Guard rail
- Chain link fence
- Right of way line
- Abutter's line (approximate)
- Property Lines
- Easement line
- Overhead wires
- Edge of stream/water
- Existing building
- Easement

CERTIFICATION

This survey conforms to the current standards of practice set forth by the Maine State Board of Licensure for Land Surveyors. Except:

- 1) PRELIMINARY ONLY
- 1) Limits per notes

William J. Acheson
William J. Acheson, P.L.S. #2271



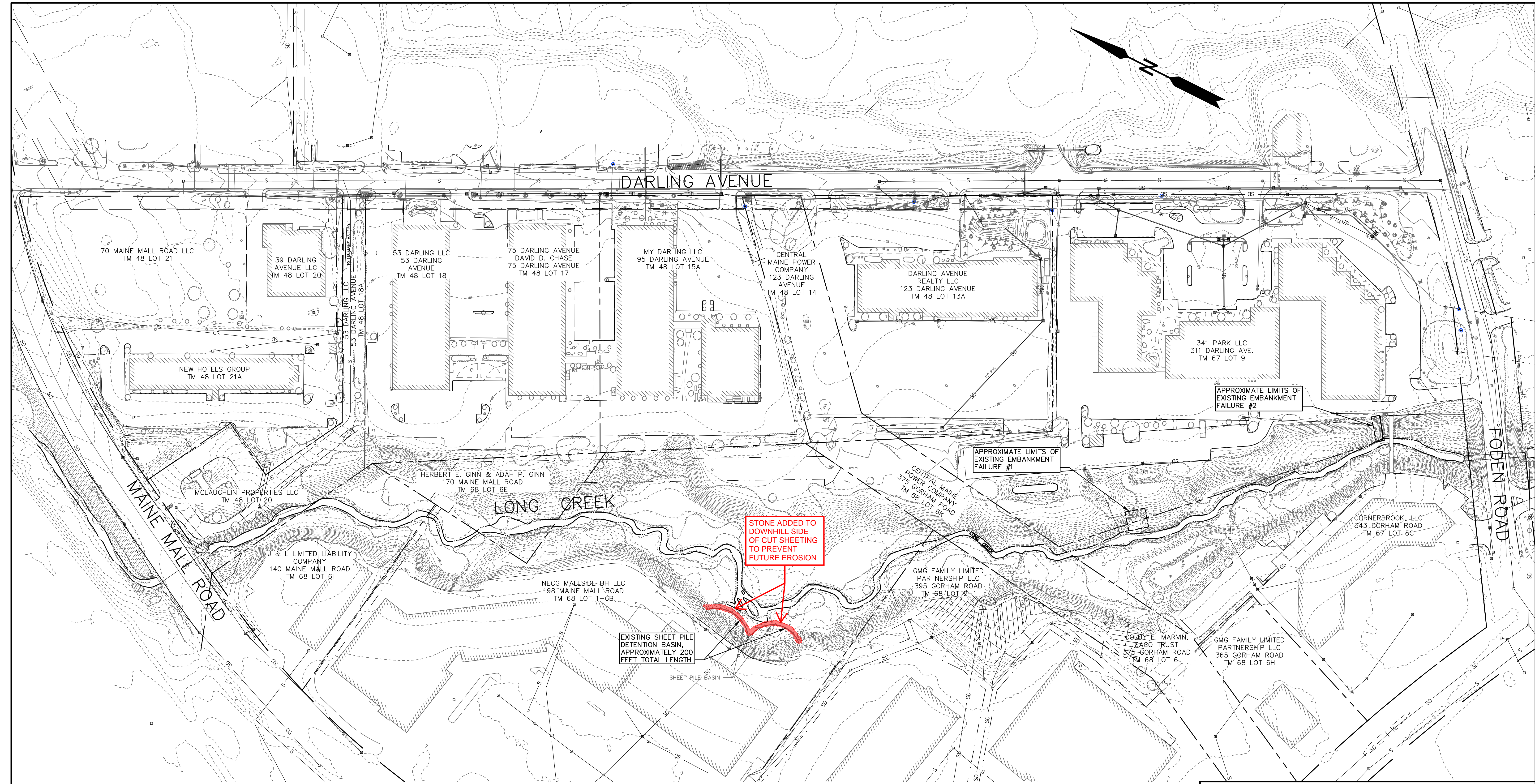
Sheet 3 of 3

PARTIAL BOUNDARY SURVEY OF PROPERTY
LOTS NEAR AND CROSSING "LONG CREEK" LYING
NORTHERLY OF FODEN RD. AND SOUTHERLY OF MAINE MALL RD.

prepared for
FIELD GEOLOGY SERVICES

by
BOMBAHOOK LAND SURVEYS
30 Chestnut Street Gardiner, Maine 04345

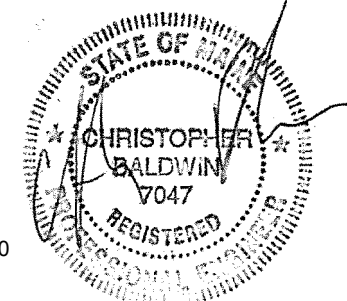
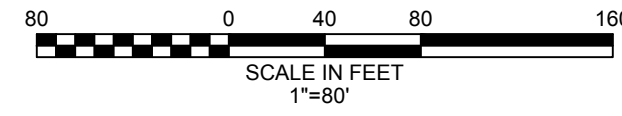
Scale: 1" = 60' Date: February 7, 2018 Project Number: 20700



LEGEND	
---	PROPERTY LINE
- - - -	CONTOUR
- - - - -	DEPRESSED CONTOUR
---	EDGE OF PAVEMENT
---	TREELINE
---	WATER LINE
○	UTILITY POLE
■	CATCH BASIN
SD	STORM DRAIN
S	SANITARY SEWER
---	UNDERDRAIN SOIL FILTER
---	PHASE DELINEATION

- REFERENCE NOTES:
- DETAILED PLAN REFERENCES FOR PROPERTY LINES AND LANDOWNERS ARE PROVIDED ON SURVEY SHEET 1 OF 3 PROVIDED BY BOMBAHOOK LAND SURVEYS AND DATED FEBRUARY 7, 2018.
 - EXISTING CONDITIONS TOPOGRAPHY AND SITE CONDITIONS WERE PROVIDED BY THE LONG CREEK WATERSHED MANAGEMENT DISTRICT VIA ELECTRONIC FILE. EXISTING CONDITION SURVEY, DATED MAY 4, 2009, DEVELOPED BY ROYAL RIVER SURVEY AND SUPPLEMENTED WITH STATE OF MAINE LIDAR AND CITY OF SOUTH PORTLAND GIS DATA.
 - ADDITIONAL FIELD TOPOGRAPHY AND BOUNDARY SURVEY PROVIDED BY BOMBAHOOK LAND SURVEYS, DATED DECEMBER 2017.
 - GIS DATA FOR THE LONG CREEK WATERSHED. TECHNICAL SPECIFICATIONS FOR DATA ARE AS FOLLOWS:
 - DATA WERE OBTAINED FROM THE MAINE OFFICE OF GIS ON FEBRUARY 14, 2013.
 - DATA DERIVED FROM THE LIDAR FOR THE NORTH EAST PROJECT. THE LIDAR WAS COLLECTED IN THE FALL OF 2010 AND THE FALL OF 2011 AT A 2-METER OR BETTER NOMINAL POST SPACING (2-METER GSD) WHILE NO SNOW WAS ON THE GROUND AND RIVERS WERE AT OR BELOW NORMAL LEVELS.
 - PRECISION OF DATA: TWO-FOOT CONTOURS; 2-METER DIGITAL ELEVATION MODEL (DEM); AND 2-METER HILLSHADE DATA.
 - DATA WERE DEVELOPED BASED ON:
 - HORIZONTAL PROJECTION/DATUM OF UTM NAD83 (2007), UTM ZONE 19, METERS
 - VERTICAL DATUM OF NAVD1988 (GEOID09), METERS.
 - ALL UTILITIES ARE SHOWN AS MAPPED ON THE CITY OF SOUTH PORTLAND GIS MAPS/WEBSITE. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING DIGSAFE AND A PRIVATE UNDERGROUND UTILITY FINDING COMPANY IN ORDER TO MARK ANY AND ALL UTILITIES LOCATED ON PUBLIC AND PRIVATE LANDS.

- PERMIT NOTES:
- MEDEP: SECTION 13, PERMIT-BY-RULE. IN PROGRESS, RESPONSIBILITY OF OWNER/ENGINEER.
 - MEDEP: CONSTRUCTION GENERAL PERMIT. RESPONSIBILITY OF CONTRACTOR.
 - CITY OF SOUTH PORTLAND: FLOOD MANAGEMENT PERMIT AND SITE PLAN AMENDMENTS. IN PROGRESS, RESPONSIBILITY OF OWNER/ENGINEER.
 - US ARMY CORPS OF ENGINEER: WETLAND DELINEATION AND GENERAL PERMIT. IN PROGRESS, RESPONSIBILITY OF OWNER/ENGINEER.



EXISTING CONDITIONS
OVERALL SITE PLAN

MAIN STEM RESTORATION PROJECT
LONG CREEK
SOUTH PORTLAND, MAINE

LONG CREEK WATERSHED MANAGEMENT DISTRICT
35 MAIN STREET, SUITE 3
WINDHAM, ME 04062

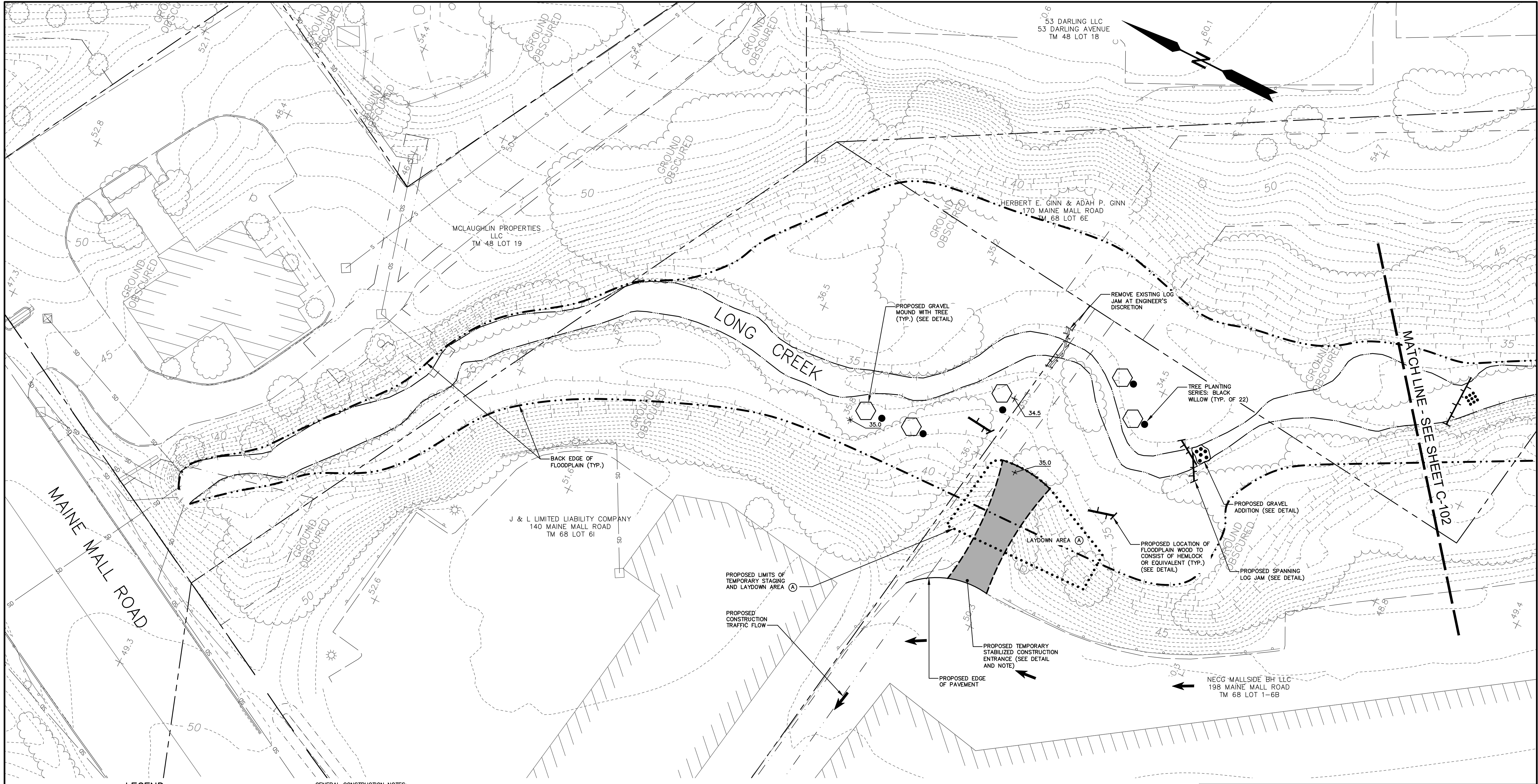
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C-100

REV.	DATE	REVISION DESCRIPTION	DRAWN	CHKD
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6	3/28/2019	REVISED FOR PHASE DEVELOPMENT	DB	CB
5	12/20/2018	RELEASED FOR BIDDING AND PERMITTING	DB	CB
4	3/15/2018	REVISED TO ADD BACK EDGE OF FLOODPLAIN	DB	CB
3	2/26/2018	REVISED FOR 95% DESIGN SUBMITTAL	DB	CB
2	2/23/2018	REVISED FOR 95% DESIGN SUBMITTAL	DB	CB
1	1/18/2018	REVISED PER LCWMD COMMENTS ON 30% SUBMITTAL	DB	CB
DATE:	1/03/2018	SCALE: 1"=80'	PROJECT NO.: 4175	FILE: 4175 EXCOND

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LEGEND

EXISTING

PROPERTY LINE

CONTOUR

DEPRESSED CONTOUR

EDGE OF PAVEMENT

CURB

TREELINE

WATER LINE

SPOT GRADE

UTILITY POLE

GUY WIRE

LIGHT

RIPRAP AREA

CATCH BASIN

EXISTING SPANNING LOG JAM

SEWER

STORM DRAIN

PROPOSED

CONTOUR

EDGE OF PAVEMENT

SPANNING LOG JAM

SPANNING SILL LOG

FLOODPLAIN WOOD

COBBLE ADDITION

GRAVEL ADDITION

GRAVEL MOUND WITH TREE

BOULDERS

RIPRAP

SPOT GRADE

LAYDOWN AREA LIMITS

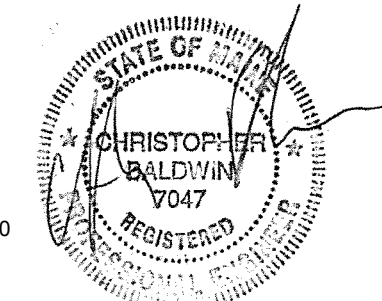
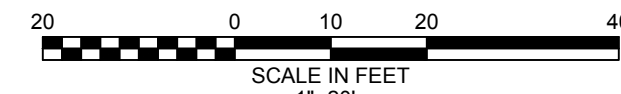
TEMPORARY CONSTRUCTION TRAFFIC FLOW DIRECTION

SEDIMENT BARRIER

LIMIT OF FILL REMOVAL

- GENERAL CONSTRUCTION NOTES:
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- CONTRACTOR TO HAVE ON-SITE ADEQUATE SPILL RESPONSE MATERIALS WHENEVER WORKING IN THE FLOODPLAIN.



PROPOSED ACCESS AND RESTORATION PLAN - SHEET 1

MAIN STEM RESTORATION PROJECT

LONG CREEK

SOUTH PORTLAND, MAINE

LONG CREEK WATERSHED MANAGEMENT DISTRICT

35 MAIN STREET, SUITE 3

WINDHAM, ME 04062

St. Germain Collins

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C-101

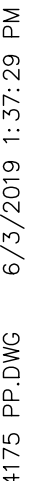
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6	3/28/2019	REVISED FOR PHASE DEVELOPMENT	DB	CB
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3	2/26/2018	REVISED FOR 95% DESIGN SUBMITTAL	DB	CB
2	2/23/2018	REVISED FOR 95% DESIGN SUBMITTAL	DB	CB
1	1/18/2018	REVISED PER LCWMD COMMENTS ON 30% SUBMITTAL	DB	CB

DATE: 1/03/2018

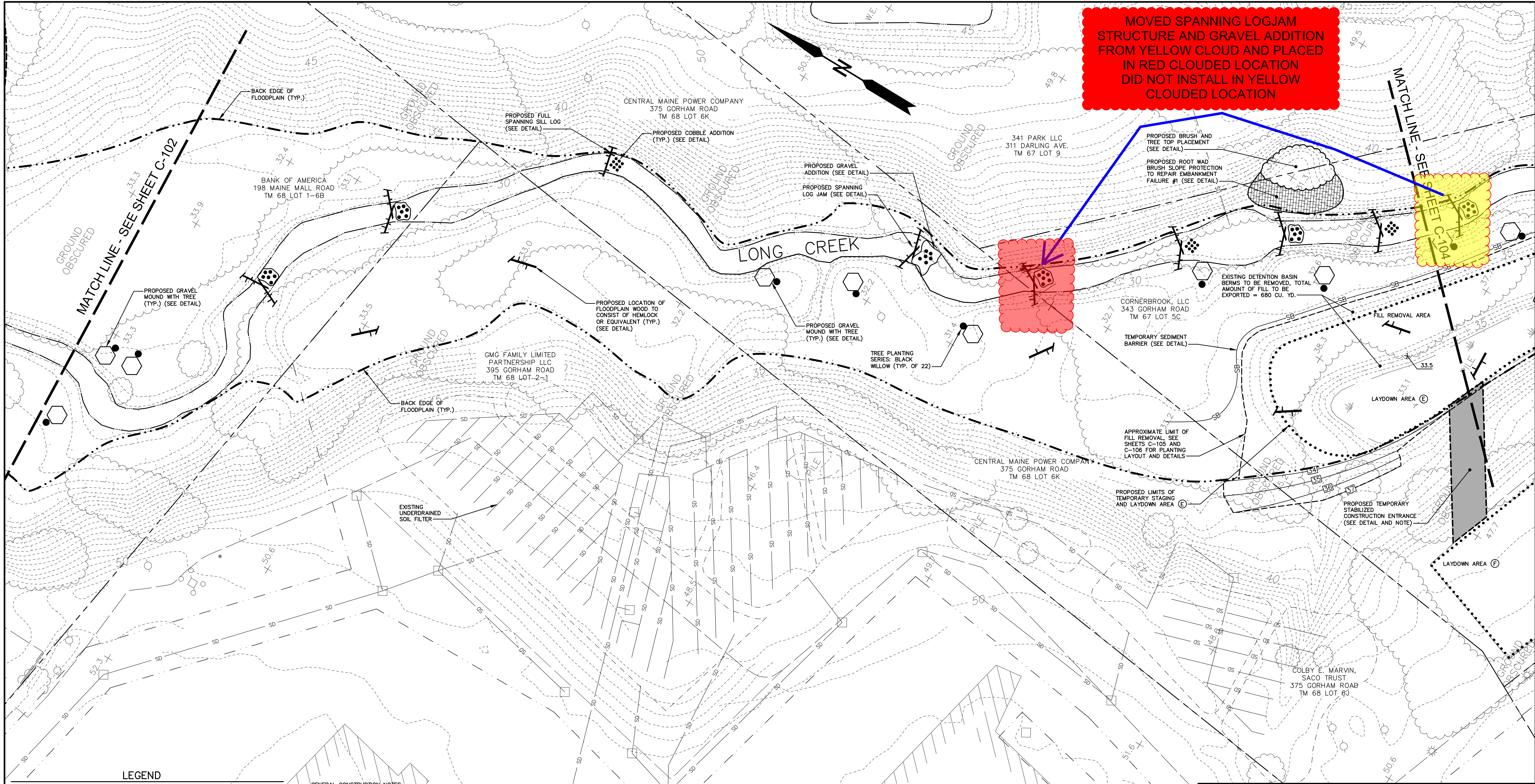
SCALE: 1" = 20'

PROJECT NO.: 4175

FILE: 4175 PP



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5	12/20/2018	RELEASED FOR BIDDING AND PERMITTING	DB	CB
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1	1/18/2018	REVISED PER LCWMD COMMENTS ON 30% SUBMITTAL	DB	CB
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DATE:	1/03/2018	SCALE: 1" = 20'	PROJECT NO.: 4175	FILE: 4175 PP

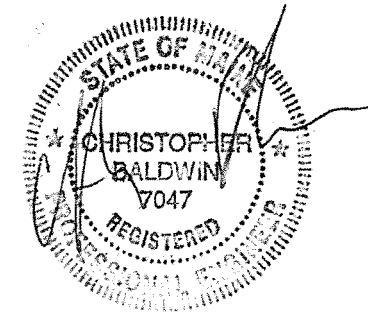
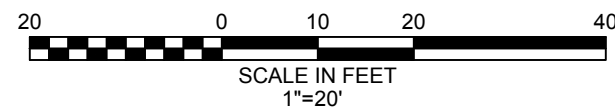


LEGEND

EXISTING	PROPOSED
--- PROPERTY LINE	--- 37 --- CONTOUR
--- 50 --- CONTOUR	--- 34 --- EDGE OF PAVEMENT
--- 30 --- DEPRESSED CONTOUR	--- 33 --- SPANNING LOG JAM
--- EDGE OF PAVEMENT	--- 32 --- SPANNING SILL LOG
--- CURB	--- 31 --- FLOODPLAIN WOOD
--- TREELINE	--- 30 --- COBBLE ADDITION
--- WATER LINE	--- 29 --- GRAVEL ADDITION
--- SPOT GRADE	--- 28 --- GRAVEL MOUND WITH TREE
--- UTILITY POLE	--- 27 --- BOULDERS
--- GUY WIRE	--- 26 --- RIPRAP
--- LIGHT	--- 25 --- SPOT GRADE
--- RIPRAP AREA	--- 24 --- LAYDOWN AREA LIMITS
--- CATCH BASIN	--- 23 --- TEMPORARY CONSTRUCTION TRAFFIC FLOW DIRECTION
--- EXISTING SPANNING LOG JAM	--- 22 --- SEDIMENT BARRIER
--- S --- SEWER	--- 21 --- LIMIT OF FILL REMOVAL
--- SD --- STORM DRAIN	--- 20 --- PHASE DELINEATION

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PROPOSED ACCESS AND RESTORATION PLAN - SHEET 3
MAIN STEM RESTORATION PROJECT
LONG CREEK
SOUTH PORTLAND, MAINE

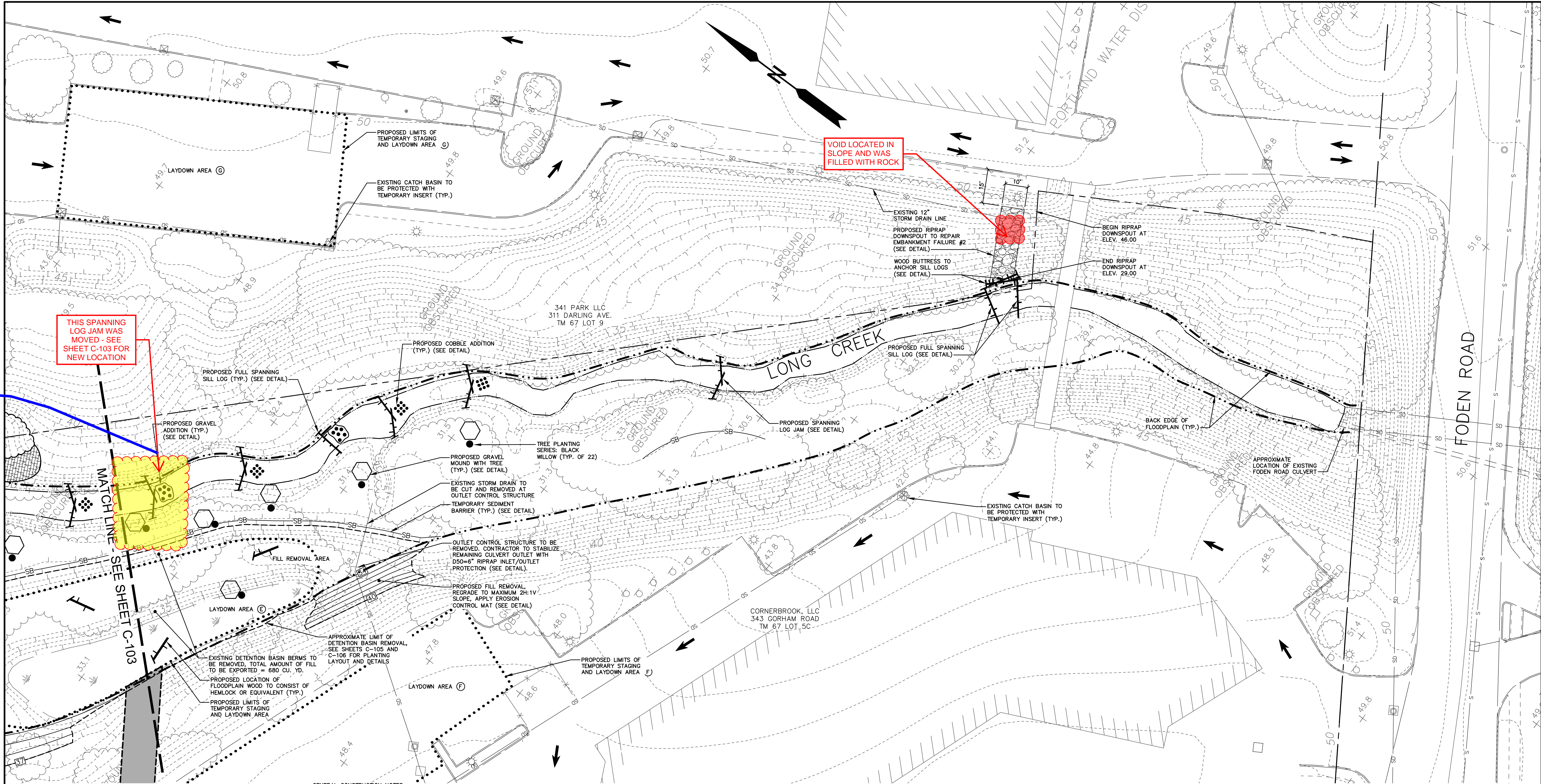
LONG CREEK WATERSHED MANAGEMENT DISTRICT
35 MAIN STREET, SUITE 3
WINDHAM, ME 04062

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REV.	DATE	REVISION DESCRIPTION	DRAWN	CHKD
7	6/03/2019	REMOVED PHASING	DB	CB
6	3/28/2019	REVISED FOR PHASE DEVELOPMENT	DB	CB
5	12/20/2018	RELEASED FOR BIDDING AND PERMITTING	DB	CB
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2	2/23/2018	REVISED FOR 95% DESIGN SUBMITTAL	DB	CB
1	1/18/2018	REVISED PER LCWMD COMMENTS ON 30% SUBMITTAL	DB	CB
DATE:	1/03/2018	SCALE: 1" = 20'	PROJECT NO.: 4175	FILE: 4175 PP



LEGEND	
EXISTING	PROPOSED
--- PROPERTY LINE	--- 37 --- CONTOUR
--- 50 --- CONTOUR	--- SPANNING LOG JAM
--- 30 --- DEPRESSED CONTOUR	--- SPANNING SILL LOG
--- EDGE OF PAVEMENT	--- FLOODPLAIN WOOD
--- CURB	--- COBBLE ADDITION
--- TREELINE	--- GRAVEL ADDITION
--- WATER LINE	--- GRAVEL MOUND WITH TREE
+ 49.7 --- SPOT GRADE	--- BOULDERS
--- UTILITY POLE	--- RIPRAP
--- GUY WIRE	--- SPOT GRADE
--- LIGHT	--- LAYDOWN AREA LIMITS
--- RIPRAP AREA	--- TEMPORARY CONSTRUCTION TRAFFIC FLOW DIRECTION
--- CATCH BASIN	--- SB --- SEDIMENT BARRIER
--- EXISTING SPANNING LOG JAM	--- --- LIMIT OF FILL REMOVAL
--- S --- SEWER	
--- SD --- STORM DRAIN	

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- DATE: 1/03/2018 SCALE: 1" = 20' PROJECT NO.: 4175 FILE: 4175 PP

PROPOSED ACCESS AND RESTORATION PLAN - SHEET 4

MAIN STEM RESTORATION PROJECT
LONG CREEK
SOUTH PORTLAND, MAINE

LONG CREEK WATERSHED MANAGEMENT DISTRICT
35 MAIN STREET, SUITE 3
WINDHAM, ME 04062






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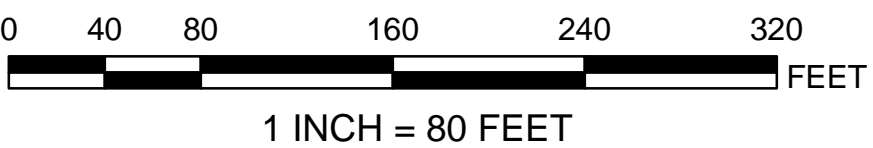
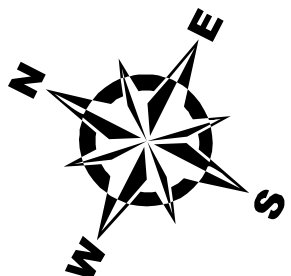
C-104



Legend:

-  Approximate Extent of Japanese Knotweed (*Fallopia japonica*) and/or Giant Knotweed (*Fallopia sachalinensis*)
-  Approximate Extent of Common Reed or Phragmites (*Phragmites australis*)
-  Approximate Extent of Multiflora Rose (*Rosa multiflora*)
-  Planting Area (See Sheet C-106 for Planting Area Details)
-  Edge of Stream

Note:
1. Location and extent of invasive species were mapped by GZA in December 2017 using a hand-held GPS unit that has a horizontal accuracy of approximately three meters. Location and extent should be considered approximate as current conditions may vary.



Data Sources: Maine GeoLibrary and Maine Office of GIS (MEGIS)
GZA File No.: 09.0025954.00

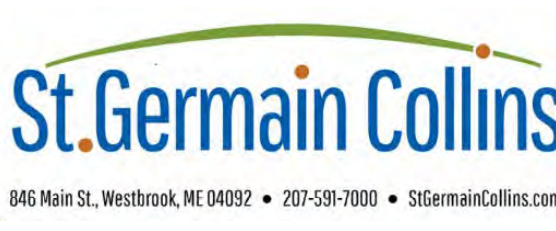
Drawn By: A. Mountain 12/19/2018

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PLANTING PLAN OVERVIEW

LONG CREEK MAIN STEM RESTORATION



Sheet:
C-105

EROSION AND SEDIMENTATION CONTROL NOTES

- TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES INCLUDE THE USE OF SEDIMENT BARRIER, EROSION CONTROL MIX, STONE CHECK DAMS, HAY BALE BARRIERS, CATCH BASIN INLET BARRIERS, CATCH BASIN SEDIMENT COLLECTION BAGS, EROSION CONTROL BLANKET, AND TEMPORARY SEEDING AND MULCHING AS REQUIRED. PERMANENT DEVICES INCLUDE THE USE OF RIP RAP AT EXPOSED STORM DRAIN AND CULVERT INLETS AND OUTLETS, RIP RAPPED SLOPES, AND PERMANENT VEGETATION.
- A. GENERAL
1. IT IS ANTICIPATED THAT CONSTRUCTION WILL BEGIN IN SPRING 2019 FOLLOWING RECEIPT OF NECESSARY PERMITS.
2. THE PROJECT SHALL CONFORM TO THE DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARDS PERFORMANCE FOR EXCAVATIONS FOR CLAY, TOPSOIL OR SILT IN ACCORDANCE WITH STATE EROSION CONTROL LAW 38 MRS-A 422-C.
3. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES (BMP) PUBLISHED BY THE CUMBERLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT AND THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MAY 2003, OR AS CURRENTLY REVISED.
4. ANY CONTRACTOR EROSION AND SEDIMENTATION CONTROL DEEMED NECESSARY BY THE OWNER'S REPRESENTATIVE, DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) PERSONNEL AND/OR MUNICIPAL OFFICIALS SHALL BE INSTALLED.
5. THE CONTRACTOR IS RESPONSIBLE FOR ALL FINES RESULTING DURING CONSTRUCTION FROM EROSION OR SEDIMENTATION FROM THE SITE TO SURROUNDING PROPERTIES, WATER BODIES, OR WETLANDS AS A RESULT OF THIS PROJECT.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR/REPLACEMENT/MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED TO THE SATISFACTION OF THE ABOVE PERSONNEL. DESCRIPTIONS OF ACCEPTABLE PERMANENT STABILIZATION FOR VARIOUS COVER TYPES FOLLOWS:
- A. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS 90% COVERAGE OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.
- B. FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.
- C. FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH MULCH. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE BMP APPLICATION RATES AND LIMITATIONS.
- D. FOR AREAS STABILIZED WITH RIP RAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIP RAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIP RAP. STONE MUST BE SIZED APPROPRIATELY.
- E. FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED.
- F. FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH WELL-GRADED RIP RAP, OR WITH ANOTHER NON-EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE LINING, UNDERCUTTING OF THE BANKS, OR DOWN CUTTING OF THE CHANNEL.
- B. EROSION AND SEDIMENTATION CONTROL MEASURES
1. REMOVAL OF SOD, TREES, BUSHES AND OTHER VEGETATION AND SOIL DISTURBANCE WILL BE KEPT TO A MINIMUM WHILE ALLOWING PROPER SITE DEVELOPMENT.
2. GRUBBINGS AND ANY UNUSABLE TOPSOIL SHALL BE STRIPPED AND REMOVED FROM THE PROJECT SITE AND DISPOSED OF IN AN APPROVED MANNER.
3. ANY SUITABLE TOPSOIL WILL BE STRIPPED AND STOCKPILED FOR REUSE IN FINAL GRADING. TOPSOIL WILL BE STOCKPILED IN A MANNER SUCH THAT NATURAL DRAINAGE IS NOT OBSTRUCTED AND NO OFF-SITE SEDIMENT DAMAGE WILL RESULT. IF A STOCKPILE IS NECESSARY, THE SIDE SLOPES OF THE TOPSOIL STOCKPILE WILL NOT EXCEED 2:1. TOPSOIL STOCKPILES WILL BE TEMPORARILY SEEDDED WITH AROOSTOOK RYE, ANNUAL OR PERENNIAL RYE GRASS (DEPENDING ON DATE SEEDING) WITHIN 7 DAYS OF FORMATION, OR TEMPORARILY MULCHED IF SEEDING CANNOT BE DONE WITHIN THE RECOMMENDED SEEDING DATES.
4. TEMPORARY DIVERSION BERMS AND DRAINAGE SWALES SHALL BE CONSTRUCTED AS NECESSARY.
5. TEMPORARY STABILIZATION SHALL BE CONDUCTED WITHIN 7 DAYS OF INITIAL DISTURBANCE OF SOILS, PRIOR TO ANY RAIN EVENT, AND PRIOR TO ANY WORK SHUT DOWN LASTING MORE THAN ONE DAY. TEMPORARY STABILIZATION INCLUDES SEED, MULCH, OR OTHER NON-ERODABLE COVER, AREAS WITHIN 75 FEET OF WETLANDS SHALL BE TEMPORARILY STABILIZED WITHIN 48 HOURS OR PRIOR TO RAIN EVENT.
6. APPLY HAY OR STRAW MULCH AT A RATE OF 2 TONS PER ACRE, AND ANCHOR AS NECESSARY.
7. TEMPORARY SEEDING SPECIFICATIONS. WHERE THE SEED BED HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 4 INCHES BEFORE APPLYING SEED. UNIFORMLY APPLY SEED AT THE RECOMMENDED SEEDING RATES AND DATES, APPLY HAY OR STRAW MULCH AT A RATE OF 2 TONS PER ACRE, AND ANCHOR AS NECESSARY.
- RECOMMENDED TEMPORARY SEEDING DATES AND APPLICATION RATES ARE AS FOLLOWS:
- AROOSTOOK RYE: RECOMMENDED SEEDING DATES: 8/15 - 10/1
APPLICATION RATE: 112 LBS./ACRE
- ANNUAL RYE GRASS: RECOMMENDED SEEDING DATES: 4/1 - 7/1
APPLICATION RATE: 40 LBS./ACRE
- PERENNIAL RYE GRASS: RECOMMENDED SEEDING DATES: 8/15 - 9/15
APPLICATION RATE: 40 LBS./ACRE
8. IF THE AREA WILL REMAIN UNWORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO STABILIZATION USING VEGETATION THROUGH PLANTING, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH OR RIP RAP. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS. AMEND AREAS OF DISTURBED SUBSOIL WITH TOP SOIL OR OTHER ORGANIC AMENDMENTS. PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS, AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROST. NEWLY SEED OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL ESTABLISHED. AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT.
9. PERMANENT SEEDING SPECIFICATION. IF A LANDSCAPE PLAN HAS BEEN PREPARED FOR THE PROJECT, SOIL PREPARATION AND SEEDING SPECIFICATIONS OF THAT PLAN SHALL SUPERSEDE THESE GENERAL PERMANENT SEEDING SPECIFICATIONS. IT IS RECOMMENDED THAT PERMANENT SEEDING BE COMPLETED BETWEEN APRIL 1 AND AUGUST 15 OF EACH YEAR. LATE SEASON SEEDING MAY BE DONE BETWEEN AUGUST 15 AND SEPTEMBER 15. AREAS NOT SEED OR WHICH DO NOT OBTAIN A SATISFACTORY GROWTH BY OCTOBER 1 SHALL BE SEED WITH AROOSTOOK RYE OR MULCHED AT RATES PREVIOUSLY SPECIFIED. SEE WINTER CONDITIONS NOTES FOR SEEDING STABILIZATION AFTER NOVEMBER 1.
- A. APPLY TOPSOIL TO A MINIMUM DEPTH OF 6 INCHES. MIX TOPSOIL WITH THE SUBSOIL TO A MINIMUM DEPTH OF 6 INCHES.
- B. UNIFORMLY APPLY SEED MIXTURE AT THE RECOMMENDED SEEDING RATES AND DATES. APPLY HAY OR STRAW MULCH AT A RATE OF 2 TONS PER ACRE, AND ANCHOR AS NECESSARY.
- C. THE SEED MIXTURE FOR LAWN AREAS SHALL CONSIST OF SEEDS PROPORTIONED BY WEIGHT AS FOLLOWS:
- 10 % CREEPING RED FESCUE
30 % KENTUCKY BLUEGRASS
60 % PERENNIAL RYE GRASS
- D. THE SEED MIXTURE FOR WET AREAS SHALL CONSIST OF SEEDS PROPORTIONED BY WEIGHT AS FOLLOWS:
- 50 % REED CANARY GRASS
25 % RED TOP
15 % CREEPING RED FESCUE
10 % PERENNIAL RYE GRASS
10. MULCH ALL AREAS SEED SO THAT SOIL IS NOT VISIBLE THROUGH THE MULCH.
11. DITCH LININGS, STONE CHECK DAMS, AND RIP RAP INLET AND OUTLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OF COMPLETING THE GRADING OF THAT SECTION OF DITCH OR INSTALLATION OF CULVERT.
12. RIP RAP REQUIRED AT CULVERTS AND STORM DRAIN INLETS AND OUTLETS SHALL CONSIST OF FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. STONES SHALL WEIGH FROM 10 LBS. TO 200 LBS. AND 50% OF THE STONES BY VOLUME SHALL EXCEED A UNIT WEIGHT OF APPROXIMATELY 50 LBS.
13. EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL PERMANENT SLOPES STEEPER THAN 3:1, IN THE BASE OF DITCHES NOT OTHERWISE PROTECTED, AND ANY DISTURBED AREAS WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE (E.G. WETLANDS AND WATER BODIES). EROSION CONTROL BLANKET SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
14. TEMPORARY CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER PERMANENT

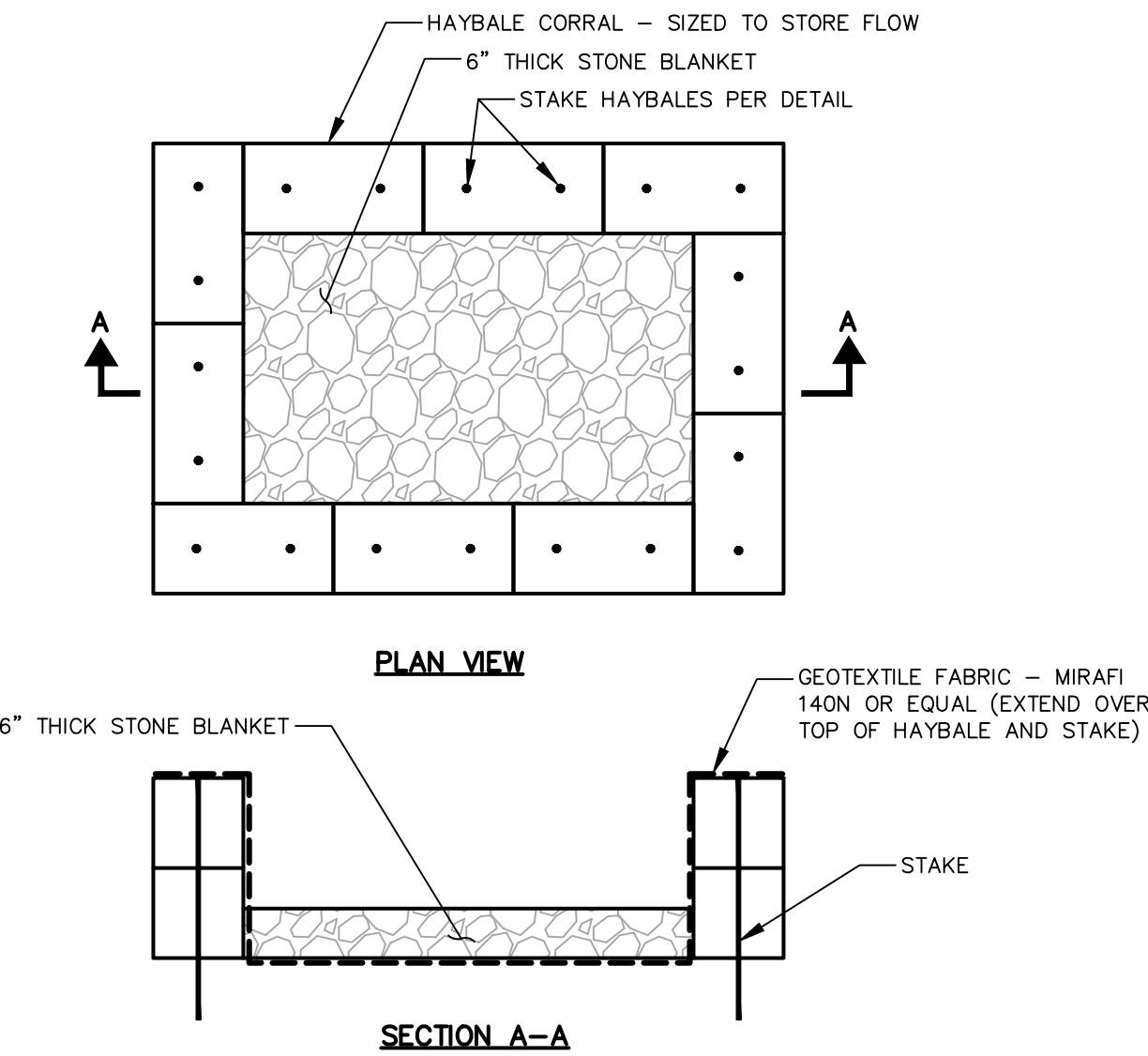
STABILIZATION IS ATTAINED.

C. HOUSEKEEPING

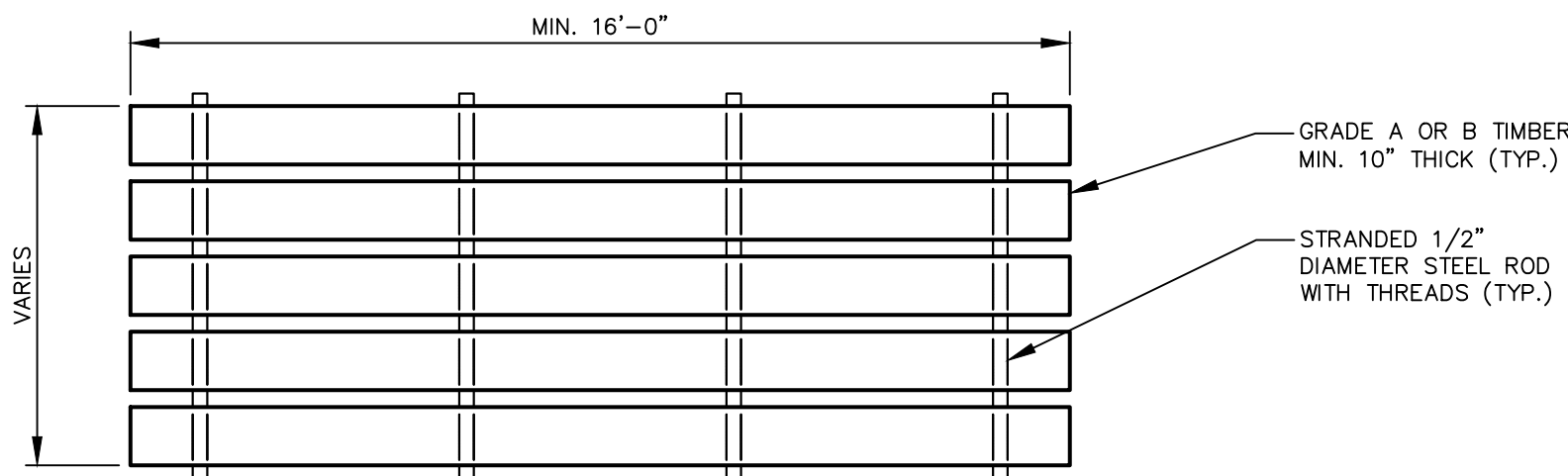
1. SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORM WATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION.
2. GROUNDWATER PROTECTION. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS, ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SLUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.
3. FUGITIVE SEDIMENT AND DUST. ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL.
4. DEBRIS AND OTHER MATERIAL, LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORM WATER, MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.
5. TRENCH OR FOUNDATION DE-WATERING. TRENCH DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, MUST BE FILTERED THROUGH A DIRT BAG, HAYBAIL CORRAL OR OTHER SILTATION BASIN PRIOR TO DISCHARGE.
- D. INSPECTION AND MAINTENANCE
1. INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION AND STORMWATER CONTROL MEASURES, AREAS USED FOR STORAGE THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE AT LEAST ONCE A WEEK AS WELL AS BEFORE AND AFTER STORM EVENTS. PRIOR TO COMPLETION OF PERMANENT STABILIZATION, A PERSON WITH KNOWLEDGE OF EROSION AND STORM WATER CONTROLS, INCLUDING THE STANDARDS IN THE MAINE CONSTRUCTION GENERAL PERMIT AND ANY DEP OR MUNICIPAL COMPANION DOCUMENTS, MUST CONDUCT THE INSPECTION. THIS PERSON MUST BE IDENTIFIED IN THE INSPECTION LOG. IF BEST MANAGEMENT PRACTICES BMPs NEED TO BE MODIFIED OR IF ADDITIONAL BMPs ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.
2. AN INSPECTION AND MAINTENANCE LOG MUST BE KEPT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME AND QUALIFICATIONS OF THE PERSON PERFORMING THE INSPECTION, DATE, AND MAJOR OBSERVATIONS RELATING TO OPERATION OF EROSION AND SEDIMENTATION CONTROLS AND POLLUTION PREVENTION MEASURES. MAJOR OBSERVATIONS MUST INCLUDE: BMPs THAT NEED TO BE MAINTAINED, LOCATION(S) OF BMPs THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATION(S) WHERE ADDITIONAL BMPs ARE NEEDED THAT DID NOT EXIST AT THE TIME OF THE INSPECTION. FOLLOW-UP TO CORRECT DEFICIENCIES OR ENHANCE CONTROLS MUST ALSO BE INDICATED IN THE LOG AND DATED; INCLUDING WHAT ACTION WAS TAKEN AND WHEN.

STREAM & DEWATERING NOTES

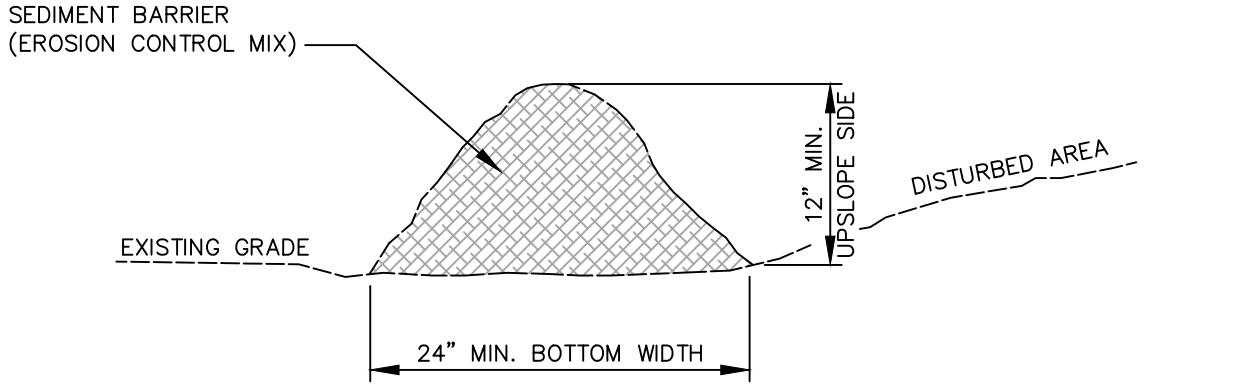
1. THE CONTRACTOR SHALL TAKE SPECIAL ENVIRONMENTAL AND SAFETY PRECAUTIONS WORKING IN THE STREAM AND THE RIPARIAN AREAS IN THE IMMEDIATE VICINITY OF STREAM TO LIMIT SOIL DISTURBANCE AND PREVENT SPILLS OF HAZARDOUS MATERIAL.
2. WETLAND VEGETATIVE LAYERS SHALL BE REMOVED AND SALVAGED FOR RESTORATION OF DISTURBED AREAS.
3. WHEELED OR TRACKED EQUIPMENT MAY NOT BE OPERATED WITHIN THE STREAM. EQUIPMENT OPERATING ON SHORE MAY REACH INTO THE STREAM WITH A BUCKET OR SIMILAR EXTENSION. EQUIPMENT MAY CROSS STREAM ON ROCK, LEDGE, CRANE MAT OR GRAVEL BOTTOM.
4. ALL EXCAVATOR WORK TO BE PERFORMED WITHIN THE FLOODPLAIN WILL BE CONDUCTED OUT OF THE SOIL/WATER BY UTILIZING TIMBER CRANE MATS AS NEEDED TO ENSURE AGAINST SOIL DISTURBANCE.
5. TEMPORARY DIVERSION OF THE STREAM FLOW WITHIN THE CHANNEL TO MAINTAIN NORMAL FLOWS SHALL BE PROVIDED BY THE CONTRACTOR. PUMPS MAY BE USED FOR TEMPORARY DIVERSION BUT MUST BE EQUIPPED WITH PROTECTION AGAINST A SPILL OF FUEL.
6. PUMPING SYSTEMS REQUIRED DURING CONSTRUCTION WILL LIKELY VARY DEPENDING ON ACTUAL WEATHER CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE PUMPING SYSTEMS THROUGHOUT THE LIFE OF THE CONSTRUCTION PROJECT.
7. DISPOSE OF WATER PUMPED OR DRAINED FROM THE CONSTRUCTION SITE IN A SUITABLE MANNER TO AVOID SILTATION OF ADJACENT RIPARIAN AREA OR STREAM. TREATMENT OF PUMPED WATER SHOULD BE THROUGH THE USE OF A SEDIMENT BAG ("DIRT BAG") OR SEDIMENT BASIN AS DETAILED HEREIN.
8. ALL WORK WITHIN THE STREAM LIMITS MUST BE PERFORMED BETWEEN JULY 15 AND OCTOBER 1, 2018 UNLESS OTHERWISE ALLOWED IN A WAIVER FROM MAINE IF&W.



TEMPORARY HAYBALE CORRAL SEDIMENT BASIN



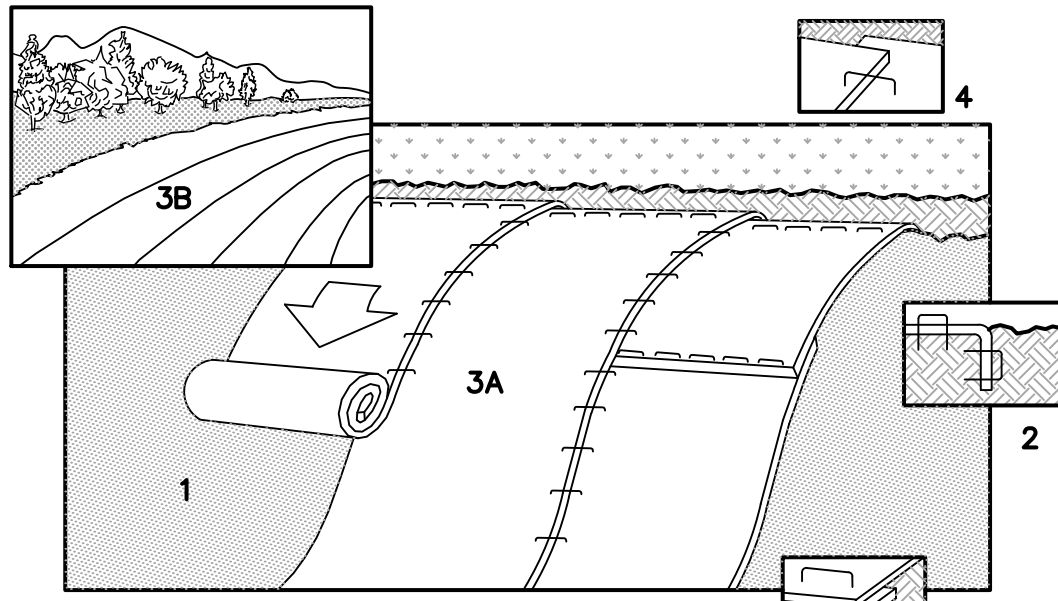
TIMBER CRANE MAT



IN ORDER FOR EROSION CONTROL MIX TO BE USED IN LIEU OF SILT FENCE IT MUST MEET THE FOLLOWING STANDARDS:

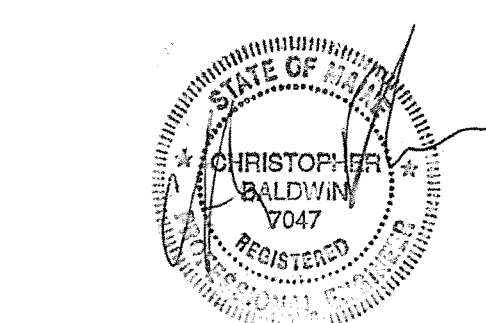
1. THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 50 AND 100%, DRY WEIGHT BASIS.
2. PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70%, MAXIMUM OF 85%, PASSING A 0.75" SCREEN.
3. THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
4. LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
5. SOLUBLE SALTS CONTENT SHALL BE <4.0 mmhos/cm.
6. THE pH SHOULD FALL BETWEEN 5.0 AND 8.0.
7. THE EROSION CONTROL MIX SHALL CONTAIN A WELL GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4" DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH.
8. PLACE BARRIER ALONG A RELATIVELY FLAT CONTOUR. CUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES WHERE FINES CAN WASH UNDER THE BARRIER THROUGH GRASS BLADES AND BRANCHES.
9. PLACEMENT OF BARRIER SHOULD BE:
- AT TOE OF THE SLOPE.
 - ON FROZEN GROUND, BEDROCK OR ROOTED FORESTED AREAS.
 - AT THE EDGE OF GRAVEL AND AREAS UNDER CONSTRUCTION.
10. BARRIER SHALL NOT BE USED ADJACENT TO WETLANDS
11. REMOVE SEDIMENT DEPOSITS WHEN THEY REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER.
12. WHEN BARRIER IS DECOMPOSED, CLOGGED WITH SEDIMENT, ERODED OR INEFFECTIVE, IT MUST BE REPLACED OR REPAIRED. THE BARRIER SHOULD BE RESHAPED AS NECESSARY.

SEDIMENT BARRIER (EROSION CONTROL MIX)

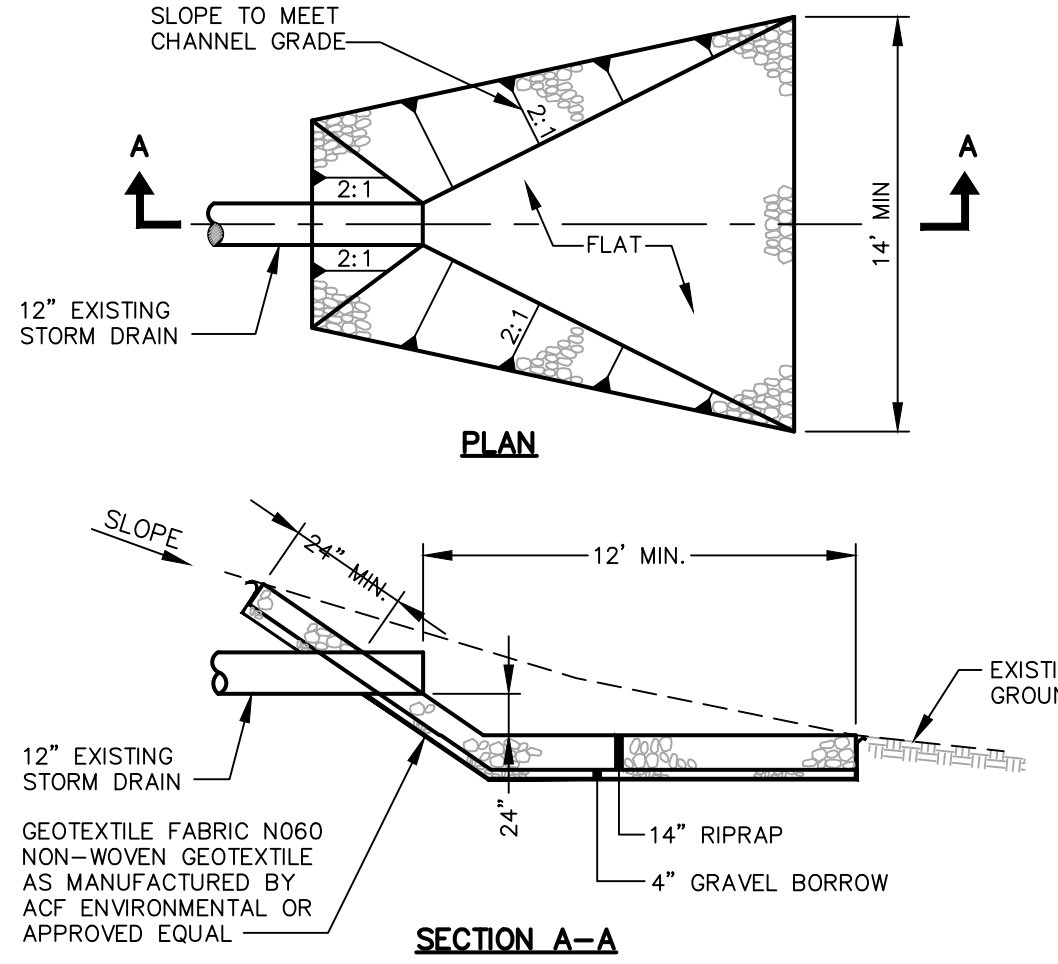


- NOTE:
- REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS. BLANKET TO BE A BIODEGRADABLE DOUBLE NET STRAW MAT.
- INSTALLATION STEPS:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP, STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.

EROSION CONTROL BLANKET (SLOPE INSTALLATION)

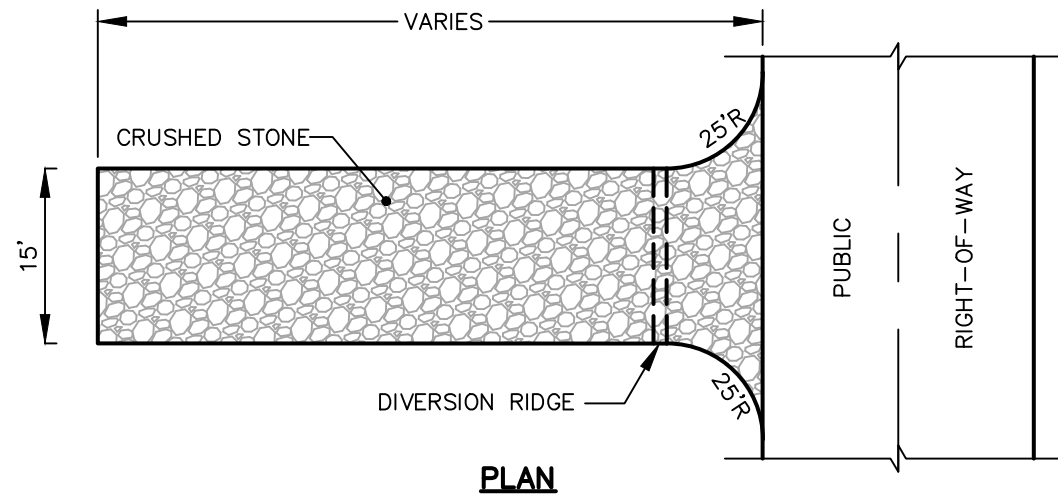


7	6/03/2019	REMOVED PHASING	DB	CB
6	3/28/2019	REVISED FOR PHASE DEVELOPMENT	DB	CB
5	12/20/2018	RELEASED FOR BIDDING AND PERMITTING	DB	CB
4	3/15/2018	REVISED TO ADD BACK EDGE OF FLOODPLAIN	DB	CB
3	2/26/2018	REVISED FOR 95% DESIGN SUBMITTAL	DB	CB
2	2/23/2018	REVISED FOR 95% DESIGN SUBMITTAL	DB	CB
1	1/18/2018	REVISED PER LCWMD COMMENTS ON 90% SUBMITTAL	DB	CB
REV.	DATE	REVISION DESCRIPTION	DRAWN	CHKD
DATE: 1/03/2018		SCALE: NONE	PROJECT NO.: 4175	FILE: 4175_DETAILS



- NOTES:
1. RIPRAP SIZE D50 = 6"
2. IN DEFINED CHANNELS, APRON SHALL EXTEND FULL WIDTH OF BOTTOM AND ONE FOOT ABOVE MAX. TAILWATER OR UP TO BANK FULL, WHICHEVER IS LESS.

RIPRAP INLET/OUTLET PROTECTION



- NOTES:
1. USE CRUSHED STONE OR ACCEPTABLE ON-SITE MATERIAL. (STONE AGGREGATE SIZE - 2" TO 3").
2. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA TO BE COVERED WITH AGGREGATE. ACCEPTABLE MATERIALS ARE TREVIRA SPUNBOND 1135 MIRAFI 600X, OR EQUIVALENT.
3. LENGTH - AS SHOWN.
4. THICKNESS - NOT LESS THAN SIX (6) INCHES.
5. PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND PUBLIC RIGHT-OF-WAY. INGRESS OR EGRESS.
6. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THE REMOVAL OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY WILL REQUIRE PERIODIC REPAIR AND TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
7. WHEN COMPLETE, CONTRACTOR TO REMOVE STONE AND GRADE SUBBASE TO MATCH EXISTING OR PROPOSED GRADES. COVER WITH MINIMUM 6-INCH LAYER OF LOAM, APPLY WETLAND SEED MIX WHEN IN FLOODPLAIN (ELEVATION 40 AND BELOW) AND CONSERVATION MIX ABOVE. COVER WITH BIODEGRADABLE DOUBLE NET STRAW MAT.

STABILIZED CONSTRUCTION ENTRANCE AND ACCESS ROADS

EROSION AND SEDIMENT CONTROL PLAN - NOTES AND DETAILS

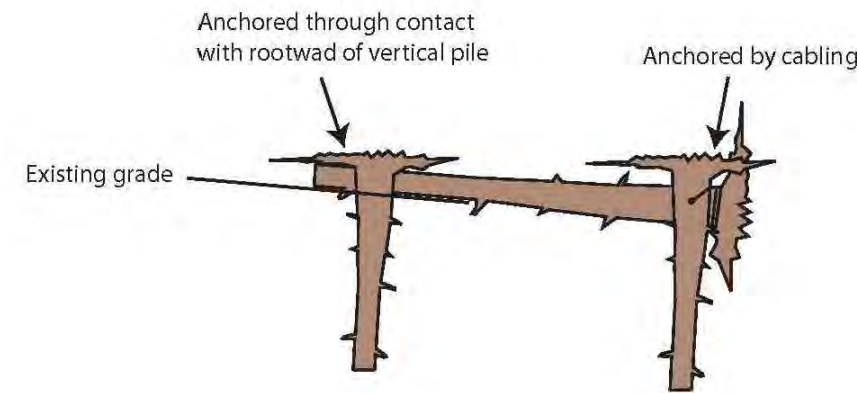
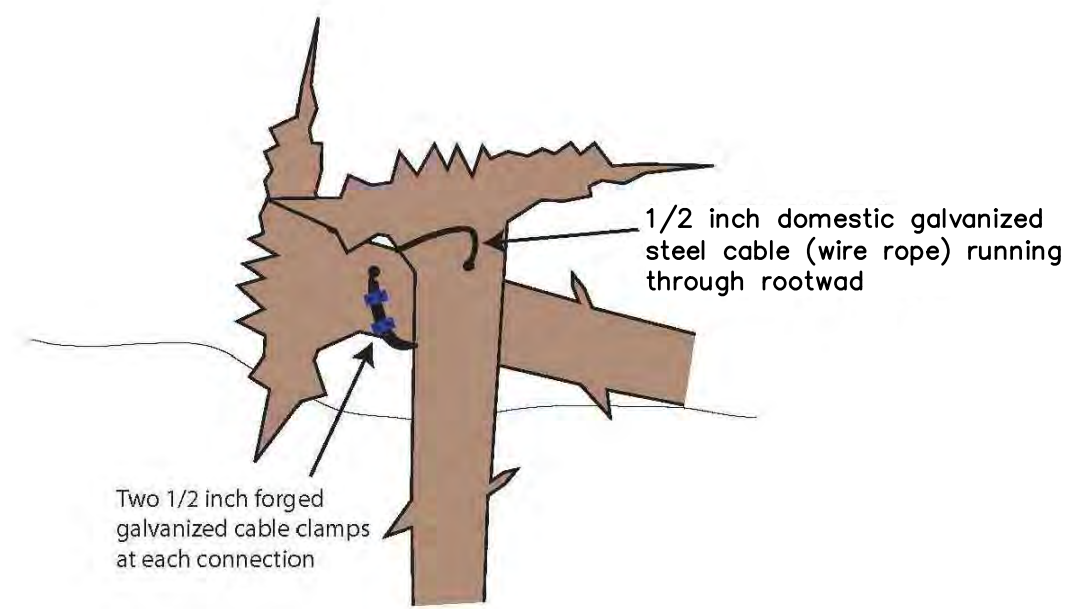
MAIN STEM RESTORATION PROJECT
LONG CREEK
SOUTH PORTLAND, MAINE

LONG CREEK WATERSHED MANAGEMENT DISTRICT
35 MAIN STREET, SUITE 3
WINDHAM, ME 04062

St. Germain Collins

C-301

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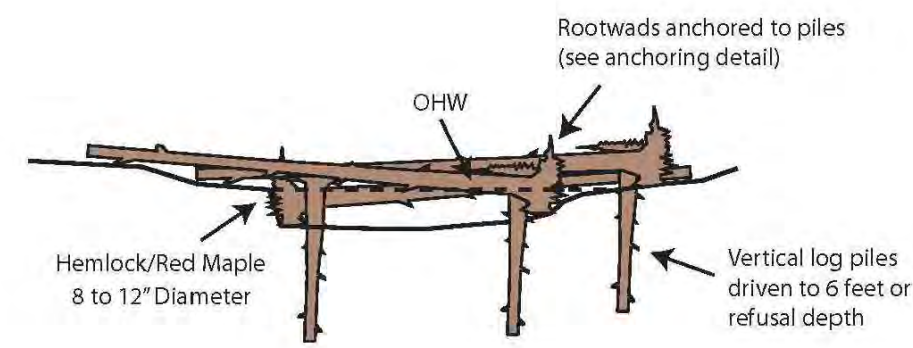


* Wood installed as part of restoration is not intended to be mobile. Installed rootwads must be cabled or otherwise anchored to the satisfaction of the overseeing engineer / fluvial geomorphologist. Wood shall resist the expected forces of flow and buoyancy as determined by the overseeing engineer / fluvial geomorphologist.

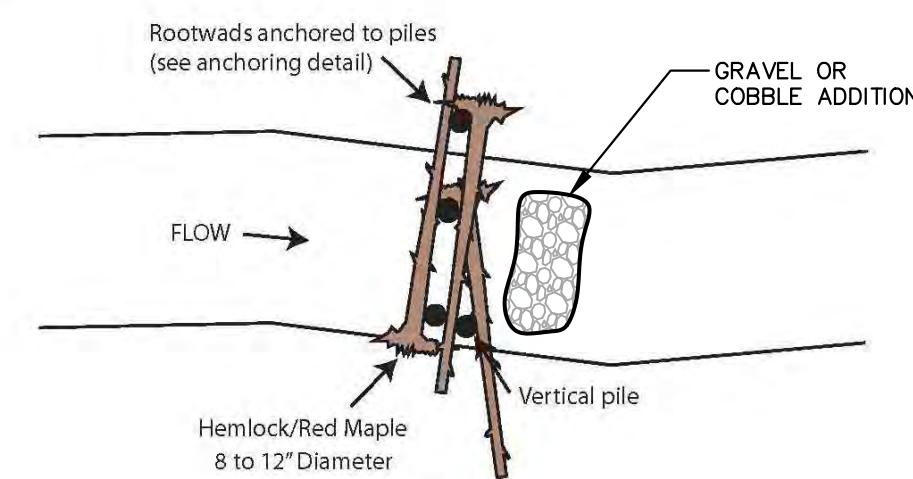
ANCHORING

NOT TO SCALE

CROSS SECTION VIEW



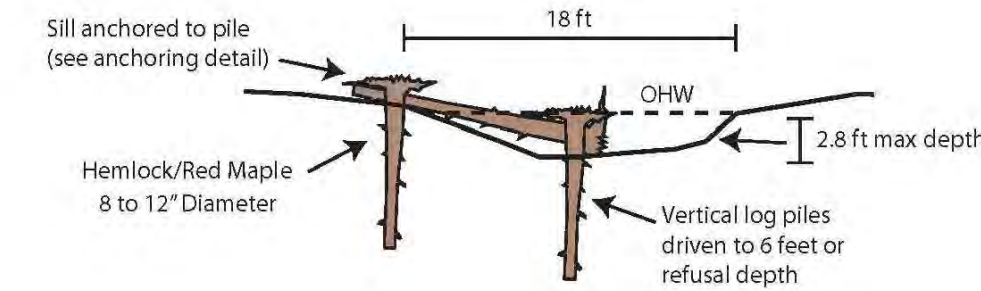
PLAN VIEW



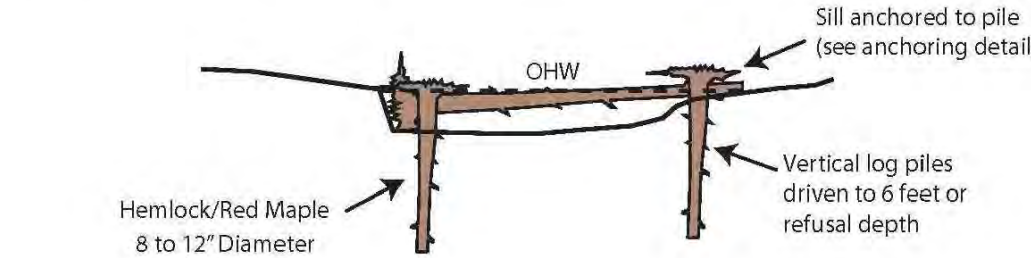
CHANNEL-SPANNING LOG JAM

NOT TO SCALE

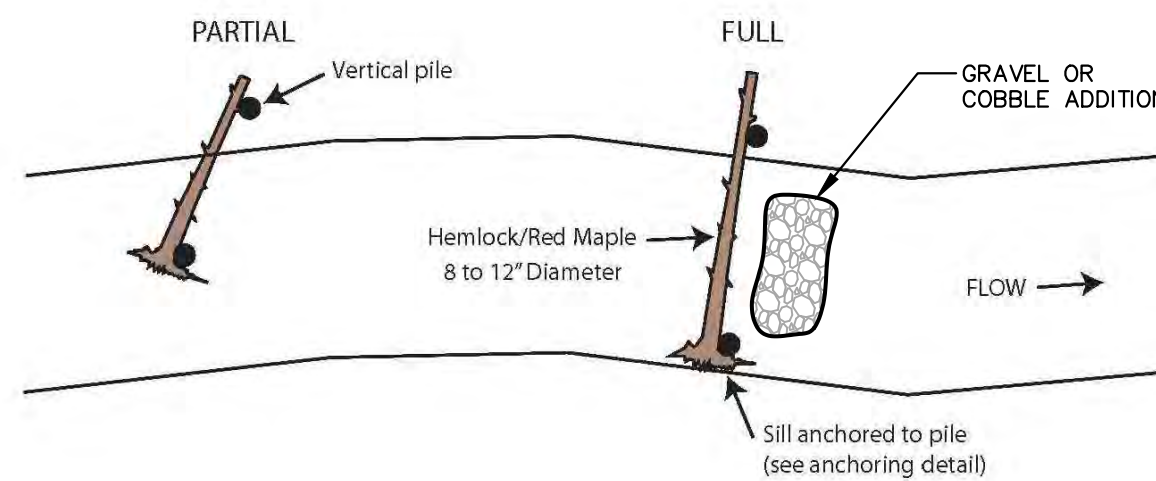
CROSS SECTION VIEW



CROSS SECTION VIEW



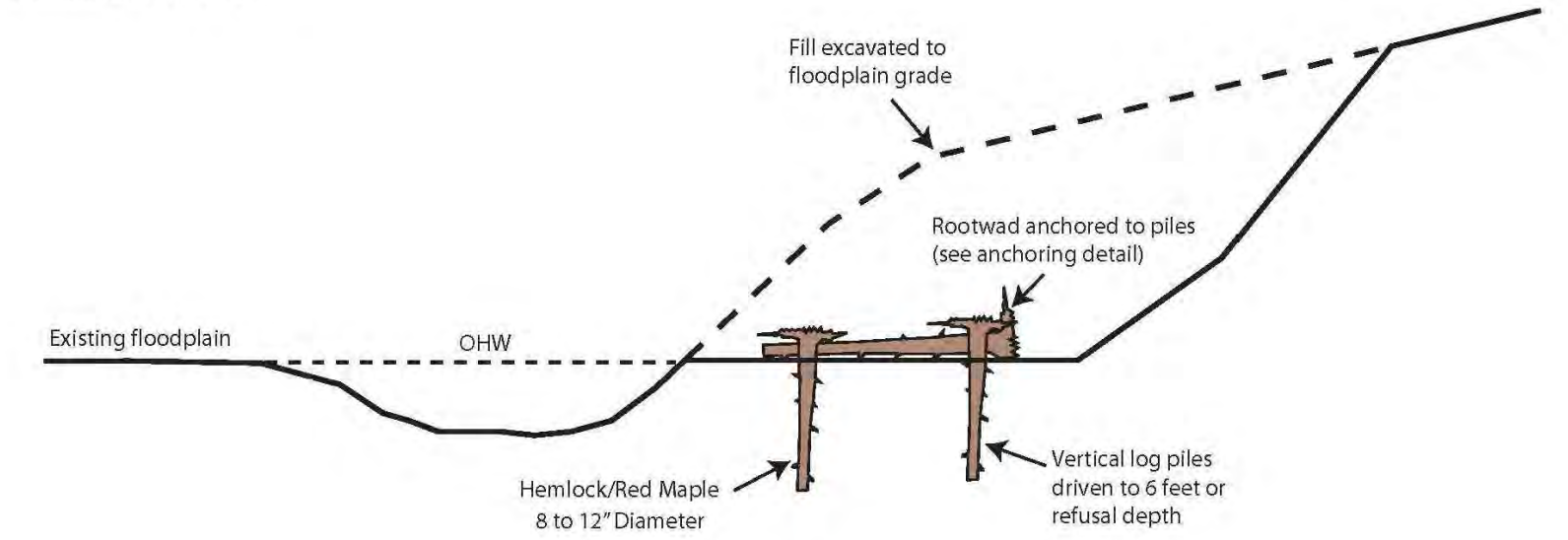
PLAN VIEW



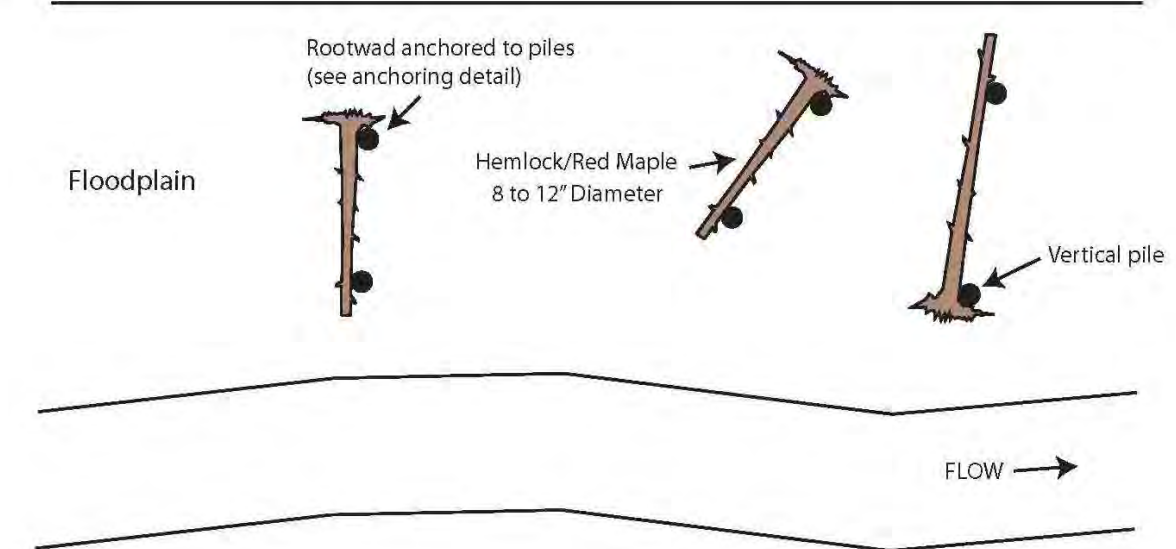
PARTIAL AND FULL CHANNEL-SPANNING LOG SILLS

NOT TO SCALE

CROSS SECTION VIEW



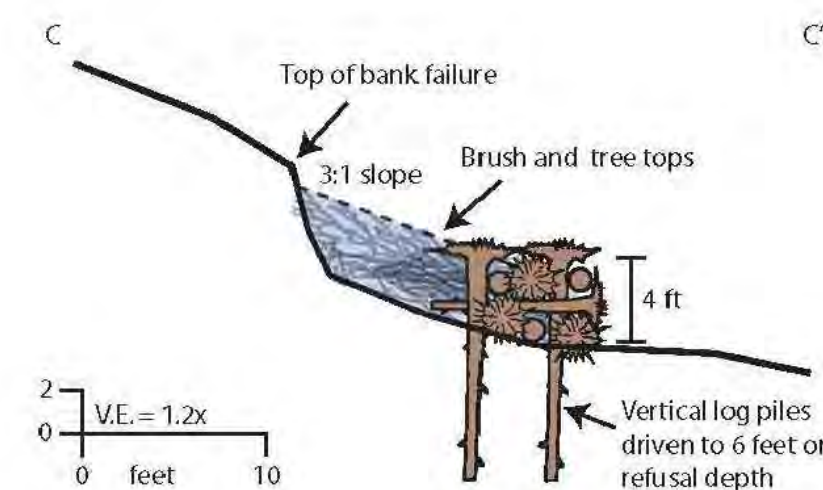
PLAN VIEW



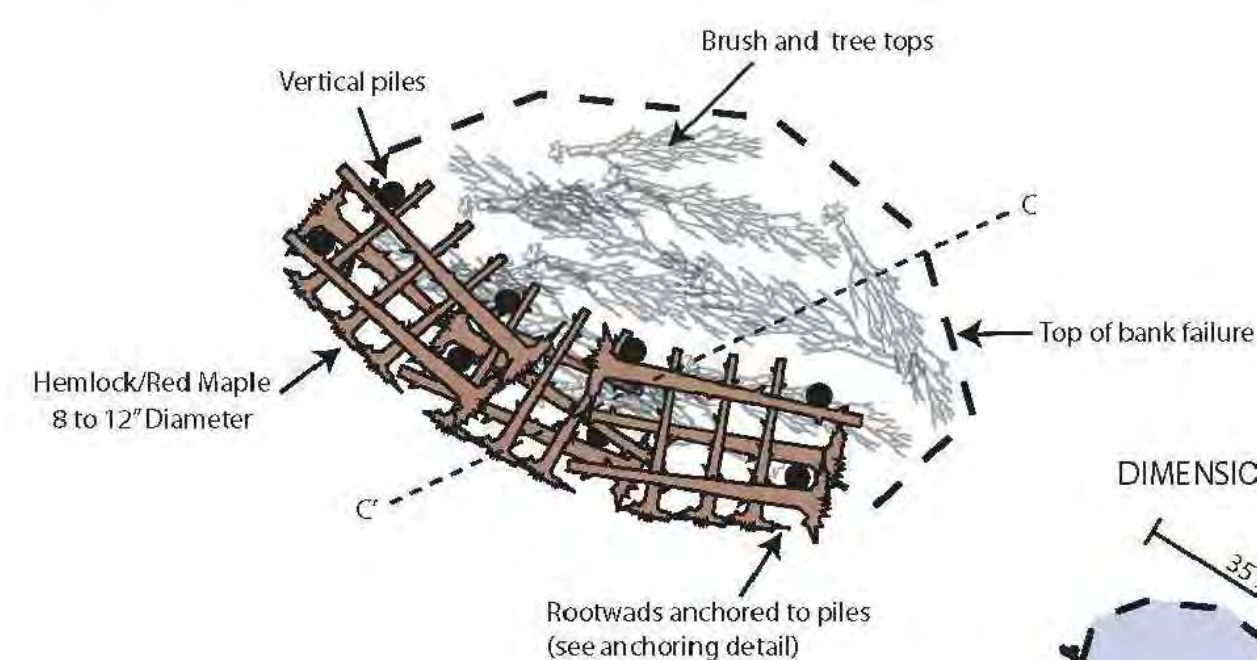
FLOODPLAIN WOOD

NOT TO SCALE

CROSS SECTION VIEW

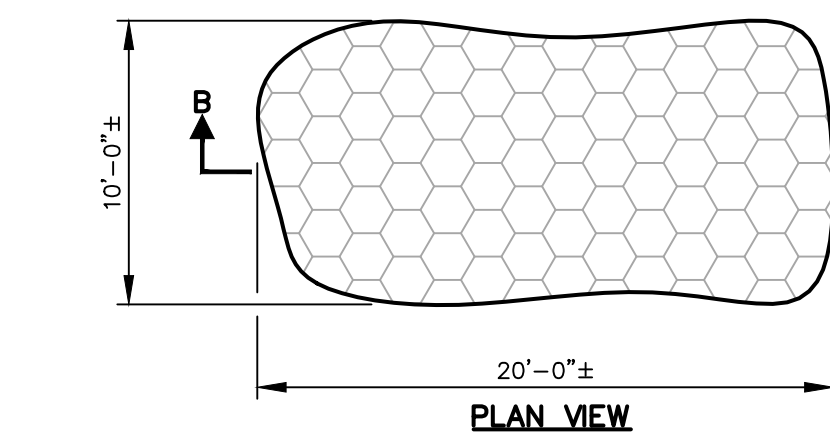


PLAN VIEW

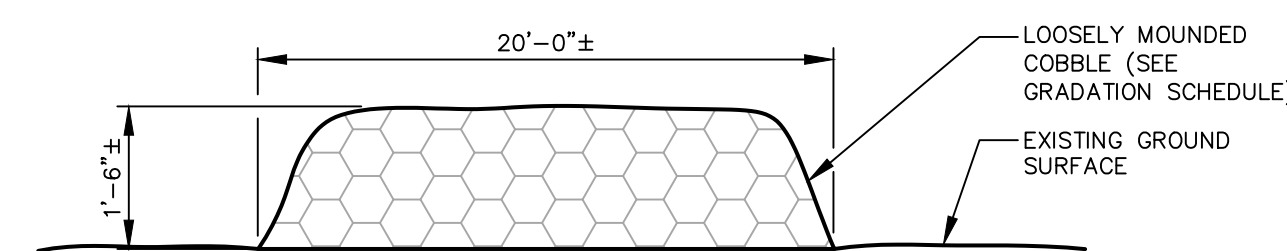


ROOTWAD BRUSH SLOPE PROTECTION AT EMBANKMENT FAILURE #1

NOT TO SCALE



COBBLE GRADATION		
SIEVE SIZE	% BY WEIGHT	
12"	100%	
6"	40%	
3"	20%	
1"	10%	
1/4"	<3%	

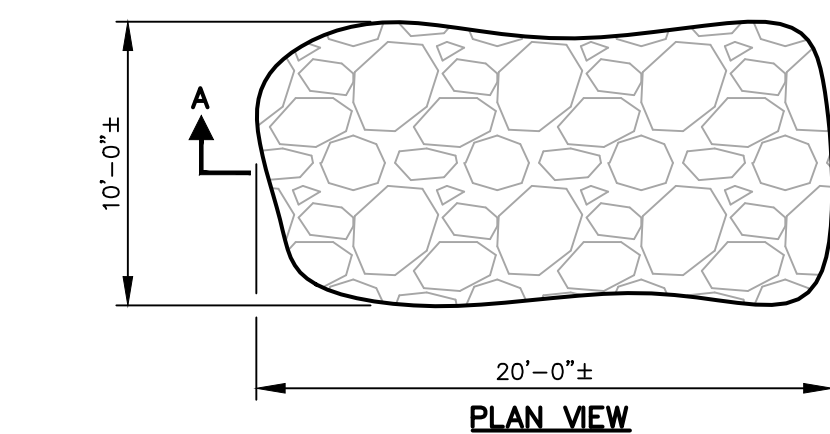


SECTION B-B

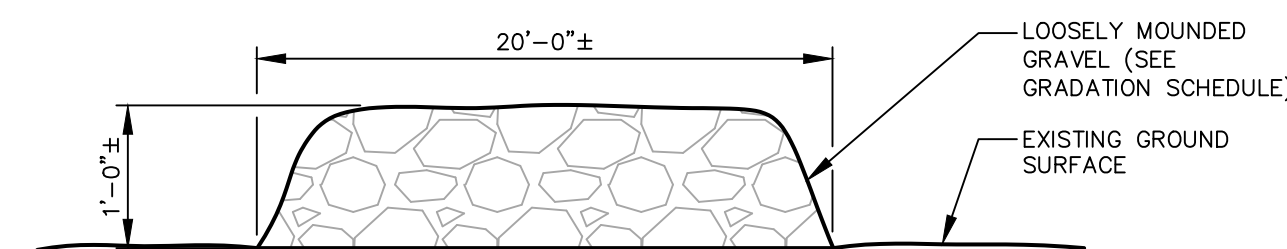
COBBLE ADDITION

NOT TO SCALE

NOTE:
COBBLE AND GRAVEL TO BE ROUND RIVER RUN STONE RELATIVELY FREE OF FINES AND ORGANIC MATTER.



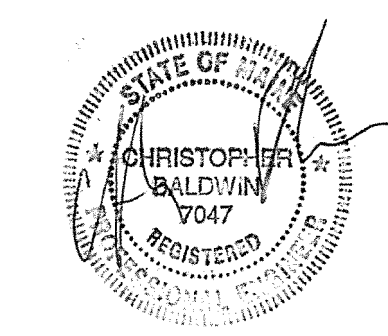
GRAVEL GRADATION		
SIEVE SIZE	% BY WEIGHT	
3"	100%	
2"	80%	
1"	40%	
1/4"	<10%	



SECTION A-A

GRAVEL ADDITION

NOT TO SCALE



DETAILS - 1

MAIN STEM RESTORATION PROJECT
LONG CREEK
SOUTH PORTLAND, MAINE

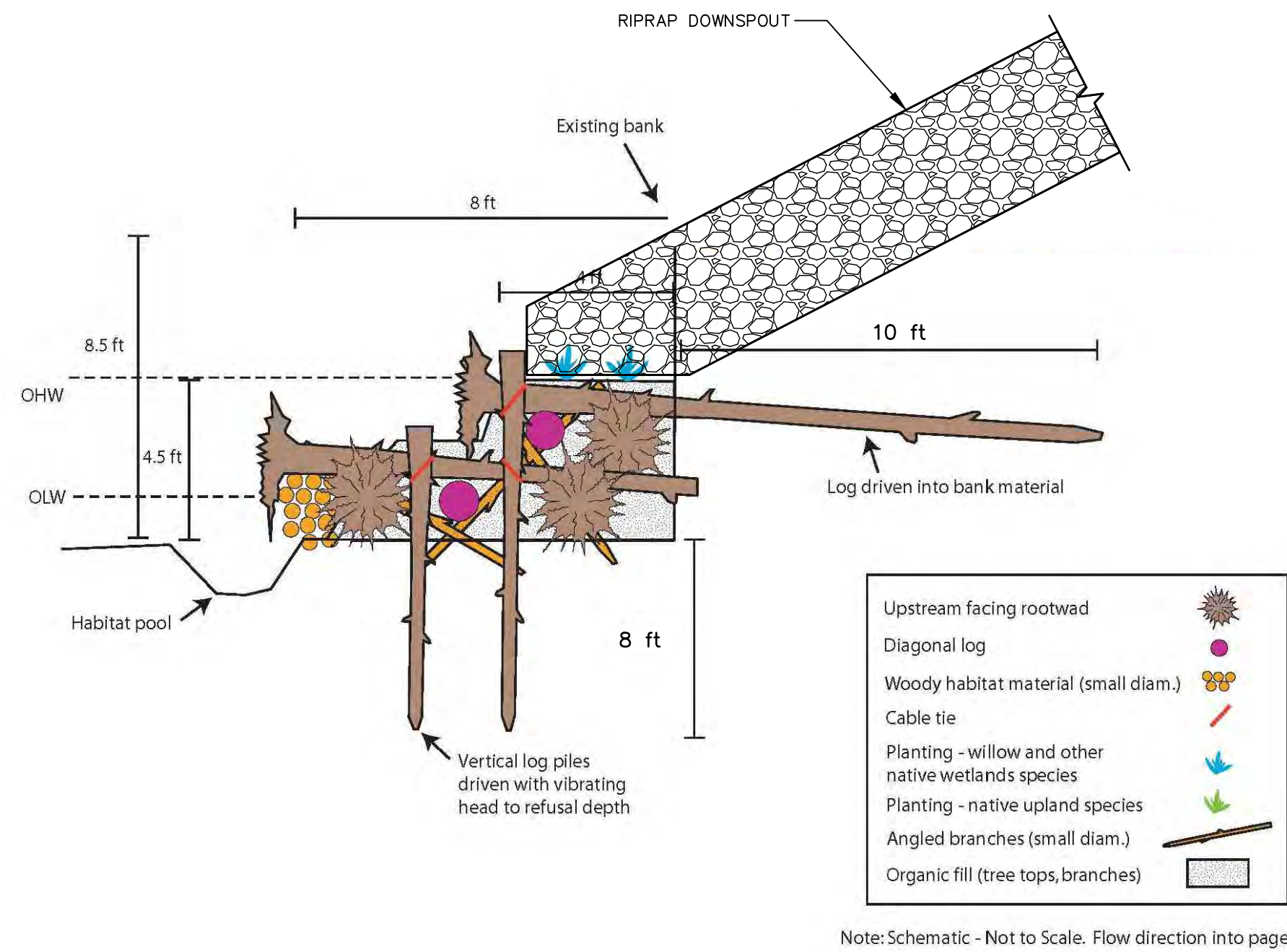
LONG CREEK WATERSHED MANAGEMENT DISTRICT
35 MAIN STREET, SUITE 3
WINDHAM, ME 04062

St. Germain Collins

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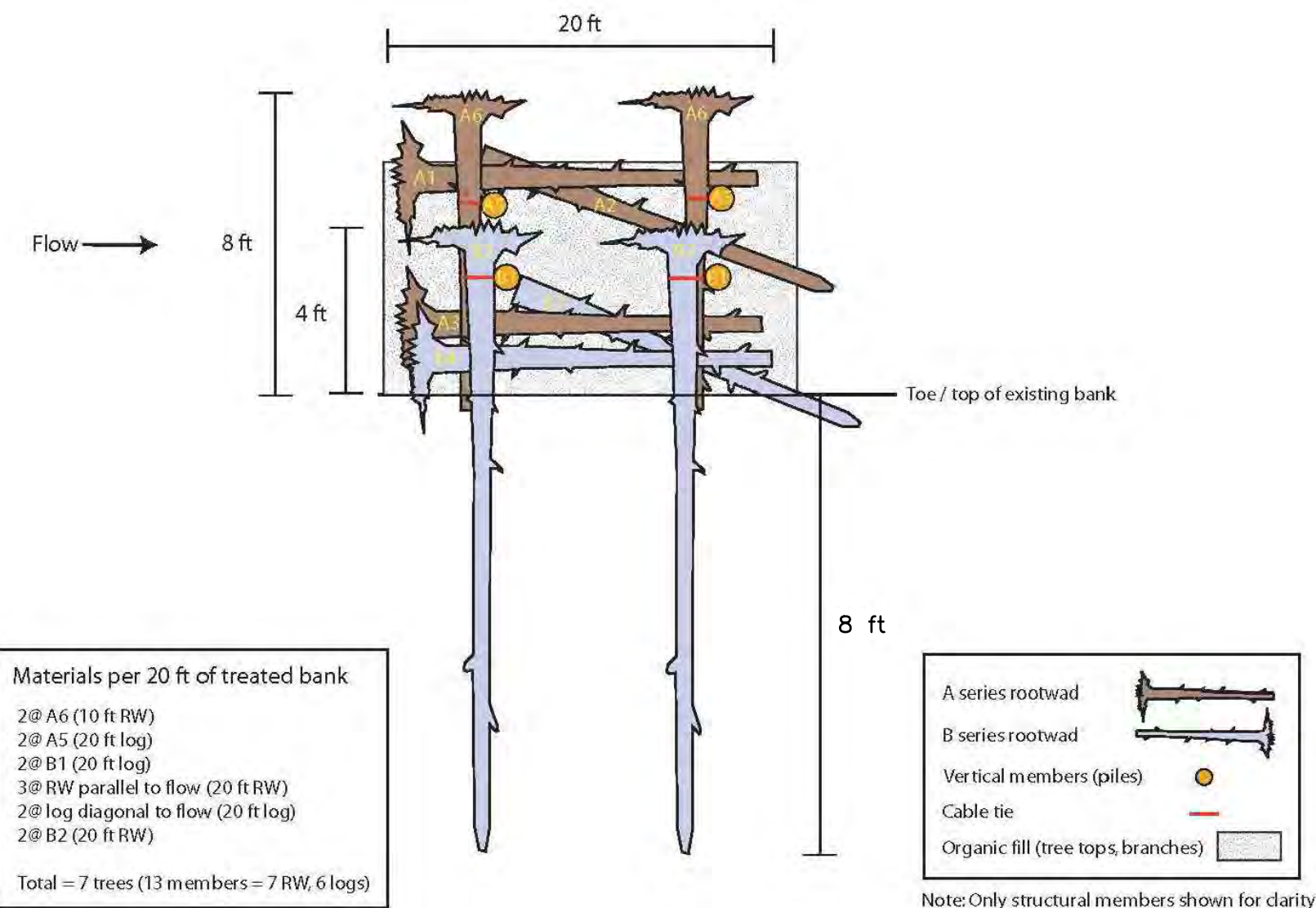
C-302

7	6/03/2019	REMOVED PHASING	DB	CB
6	3/28/2019	REVISED FOR PHASE DEVELOPMENT	DB	CB
5	12/20/2018	RELEASED FOR BIDDING AND PERMITTING	DB	CB
4	3/15/2018	REVISED TO ADD BACK EDGE OF FLOODPLAIN	DB	CB
3	2/26/2018	REVISED FOR 95% DESIGN SUBMITTAL	DB	CB
2	2/23/2018	REVISED FOR 95% DESIGN SUBMITTAL	DB	CB
1	1/18/2018	REVISED PER LCWMD COMMENTS ON 30% SUBMITTAL	DB	CB
REV.	DATE	REVISION DESCRIPTION	DRAWN	CHK'D
DATE:	1/03/2018	SCALE: NONE	PROJECT NO.: 4175	FILE: 4175_DETAILS



Note: Schematic - Not to Scale. Flow direction into page

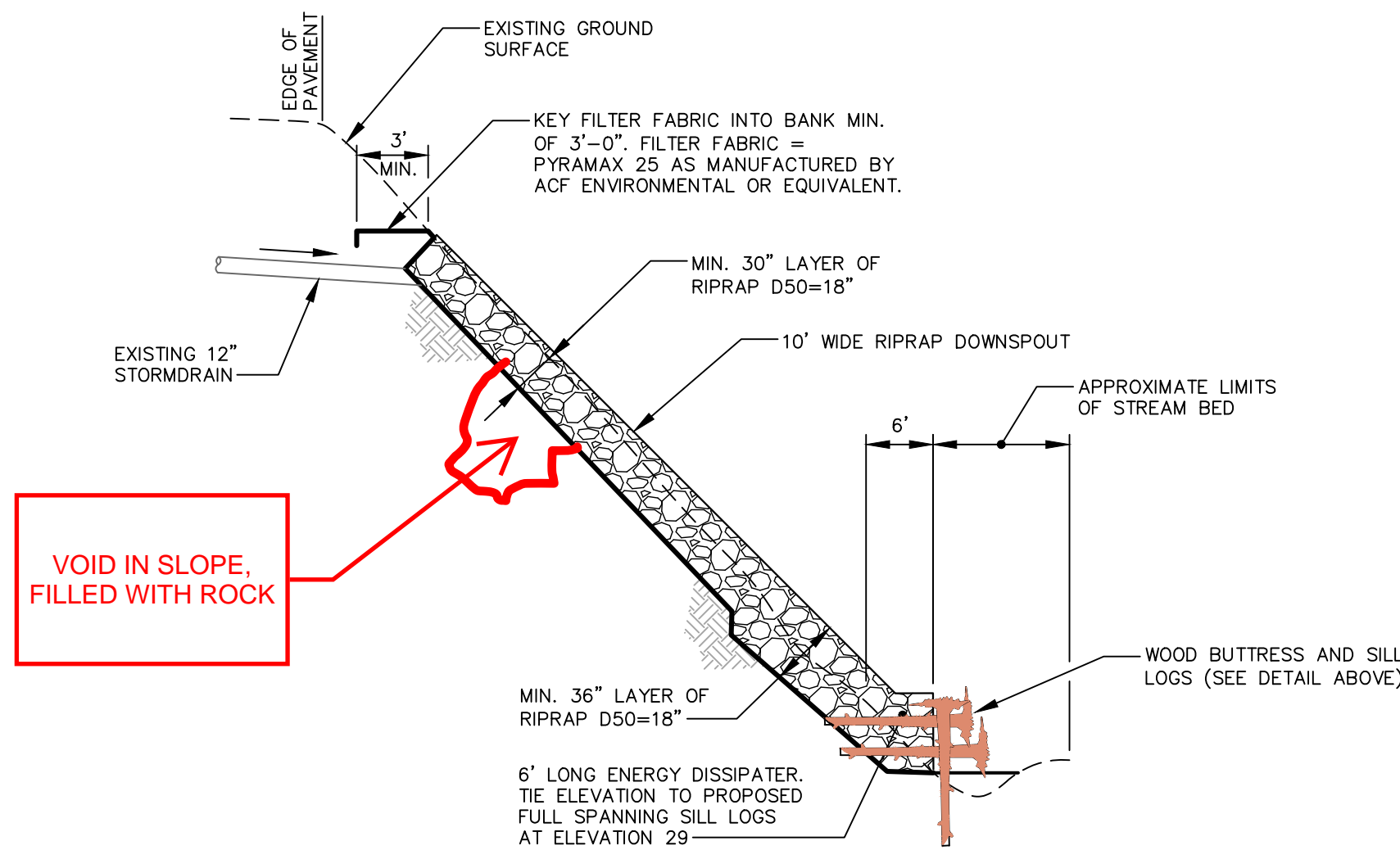
CROSS SECTION VIEW
WOOD BUTTRESS
NOT TO SCALE



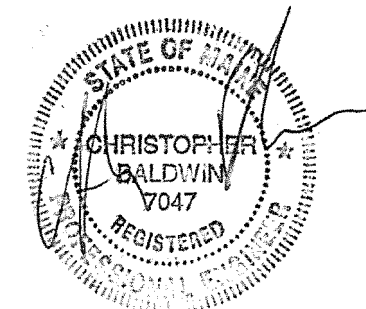
Materials per 20 ft of treated bank
2@ A6 (10 ft RW)
2@ A5 (20 ft log)
2@ B1 (20 ft log)
3@ RW parallel to flow (20 ft RW)
2@ log diagonal to flow (20 ft log)
2@ B2 (20 ft RW)
Total = 7 trees (13 members = 7 RW, 6 logs)

Note: Only structural members shown for clarity

PLAN VIEW
WOOD BUTTRESS
NOT TO SCALE



RIPRAP DOWNSPOUT REPAIR
AT EMBANKMENT FAILURE #2
NOT TO SCALE



7	6/03/2019	REMOVED PHASING	DB	CB
6	3/28/2019	REVISED FOR PHASE DEVELOPMENT	DB	CB
5	12/20/2018	RELEASED FOR BIDDING AND PERMITTING	DB	CB
4	3/15/2018	REVISED TO ADD BACK EDGE OF FLOODPLAIN	DB	CB
3	2/26/2018	REVISED FOR 95% DESIGN SUBMITTAL	DB	CB
2	2/23/2018	REVISED FOR 95% DESIGN SUBMITTAL	DB	CB
1	1/18/2018	REVISED PER LCWMD COMMENTS ON 30% SUBMITTAL	DB	CB
REV.	DATE	REVISION DESCRIPTION	DRAWN	CHK'D
DATE: 1/03/2018	SCALE: NONE	PROJECT NO.: 4175	FILE: 4175_DETAILS	

DETAILS - 2

MAIN STEM RESTORATION PROJECT
LONG CREEK
SOUTH PORTLAND, MAINE

LONG CREEK WATERSHED MANAGEMENT DISTRICT
35 MAIN STREET, SUITE 3
WINDHAM, ME 04062

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