TUSCAN VILLAGE

FLOODPLAIN IMPROVEMENTS

SALEM, NEW HAMPSHIRE

NOVEMBER 28, 2016

LAST REVISED: AUGUST 24, 2018

PERMITS & APPROVALS:

TYPE	PERMIT NUMBER	APPROVED
NHDES WETLANDS	2016-03374	8/28/2017
NHDES ALTERATION OF TERRAIN	AoT-1315	9/25/2017
FEMA CLOMR	17-01-0965R	10/20/2017
ACOE GENERAL PERMIT	NAE-2017-00133	10/31/2017
TOWN OF SALEM CONDITIONAL USE	N/A	3/28/2017
TOWN OF SALEM SITE PLAN APPROVAL	N/A	5/8/2018

SALEM PLANNING BOARD:

1. ON MARCH 28, 2017 THE SALEM PLANNING BOARD VOTED TO APPROVE A CONDITIONAL USE PERMIT TO ALLOW 11,170 SQUARE FEET OF PERMANENT WETLAND IMPACT AND 65,531 SQUARE FEET OF TEMPORARY WETLAND IMPACT RELATED TO THE REDEVELOPMENT OF THE FORMER ROCKINGHAM RACE TRACK PROPERTY.

2.A ON MARCH 28, 2017 THE PLANNING BOARD VOTED TO APPROVE THIS SITE PLAN SUBJECT TO THE FOLLOWING CONDITIONS:

PRIOR TO SITE WORK PERMIT:
- 2.1. SUBMIT APPROVAL FROM ENGINEERING DIVISION PER 3/22/17 MEMO;
- 2.2. PAY FOR OUTSIDE INSPECTION PER DIRECTION OF ENGINEERING DIVISION;
- 2.3. SUBMIT STATE PERMITS (WETLANDS PRIOR TO WETLAND IMPACT, ALTERATION OF TERRAIN);
- 2.4. SUBMIT APPROVAL FROM ARMY CORPS OF ENGINEERS AND FEMA;
- 2.5. SUBMIT APPROVAL FROM NHDOT AND KIMCO (ABUTTING PROPERTY OWNERS) PRIOR TO WORK ON THOSE PROPERTIES;
- 2.6. NOTE CONDITIONAL USE PERMIT FOR WETLAND IMPACT ON PLAN;

PRIOR TO OCCUPANCY:
- 2.7. CONSTRUCT ALL SITE IMPROVEMENTS IN ACCORDANCE WITH APPROVED PLAN;
- 2.8. SUBMIT AS-BUILT TOPOGRAPHIC PLAN AND CERTIFY THAT WETLAND MITIGATION AND COMPENSATORY FLOOD STORAGE AREAS WERE CONSTRUCTED AND PLANTED ACCORDING TO APPROVED PLAN;
- 2.9. SUBMIT PERFORMANCE GUARANTY FOR COST OF PLANTINGS IN MITIGATION AREA TO BE HELD FOR 3 YEARS;
- 2.10. RELOCATE OSPREY NESTS PER DIRECTION OF NH FISH AND GAME DEPT.;

OTHER:
- 2.11. MAINTAIN PROPOSED POND SURFACE ELEVATION OF 122.00 FOR NEW POND;
- 2.12. SUBMIT MONITORING REPORTS FROM WETLAND SCIENTIST FOR 3 YEARS;
- 2.13. ALL REPRESENTATIONS MADE BY APPLICANT OR AGENTS AND ALL NOTES ON PLANS ARE INCORPORATED AS PART OF APPROVAL.

2.B ON MAY 8, 2018 THE PLANNING BOARD VOTED TO APPROVE THIS SITE PLAN SUBJECT TO THE FOLLOWING CONDITIONS:

- 2.1. PAY FOR OUTSIDE INSPECTIONS PER DIRECTION OF ENGINEERING DIVISION;
- 2.2. COMPLY WITH STATE PERMIT (WETLANDS, ALTERATION OF TERRAIN);
- 2.3. SUBMIT FINAL APPROVAL FROM FEMA AFTER FLOODPLAIN IMPROVEMENTS ARE COMPLETED;
- 2.4. SUBMIT FINAL APPROVAL FROM NHDOT PRIOR TO WORK ON THEIR PROPERTY;
- 2.5. SUBMIT PERFORMANCE GUARANTY FOR COST OF PLANTINGS IN MITIGATION AREA TO BE HELD FOR 3 YEARS;
- 2.6. SUBMIT MONITORING REPORTS FROM WETLAND SCIENTIST FOR 3 YEARS;
- 2.7. REVIEW EROSION POTENTIAL PER RECOMMENDATION FROM RCCD;
- 2.8. SUBMIT APPROVAL FROM ENGINEERING DIVISION FOR PLAN REVISIONS PRIOR TO CONSTRUCTION AND SUBM1T HYDROLOGY STUDY AND MEMORANDUM OF UNDERSTANDING ON MAINTENANCE RESPONSIBILITIES PRIOR TO FIRST OCCUPANCY PERMIT FOR SOUTH VILLAGE;
- 2.9. CONSTRUCT ALL SITE IMPROVEMENTS IN ACCORDANCE WITH APPROVED PLAN;
- 2.10. SUBMIT AS BUILT TOPOGRAPHIC PLAN AND CERTIFY THAT WETLAND MITIGATION AND COMPENSATORY FLOOD STORAGE AREAS WERE CONSTRUCTED AND PLANTED ACCORDING TO APPROVED PLAN;
- 2.11. ALL REPRESENTATIVE MADE BY APPLICANT OR AGENT AND ALL NOTES ON PLANS ARE INCORPORATED AS PART OF APPROVAL.

COMPLETE SET 26 SHEETS

COVER SHEET

FLOODPLAIN IMPROVEMENT PROJECT
SALEM PROPERTY MAP 98 LOTS 7887, 12502, 12507, 12543
39 PLEASANT STREET
56-60 SOUTH BROADWAY
71 ROCKINGHAM PARK BOULEVARD
SALEM, NEW HAMPSHIRE 03079

Tighe&Bond
www.tighebond.com
177 Corporate Drive
Portsmouth, NH 03801
(603) 433-8818

STATE OF NEW HAMPSHIRE – JOSEPH M. PERSICHINO No. 12230 LICENSED PROFESSIONAL ENGINEER – 8/24/18

SCALE: AS SHOWN

DATE: NOVEMBER 28, 2016

SALEM PLANNING BOARD APPROVAL

PREPARED FOR
OMJ REALTY, LLC
63 MAIN STREET
SALEM, NH 03079

STATE OF NEW HAMPSHIRE – BRADLEE M. BLOCKTA No. 09350 LICENSED PROFESSIONAL ENGINEER – 8/24/18

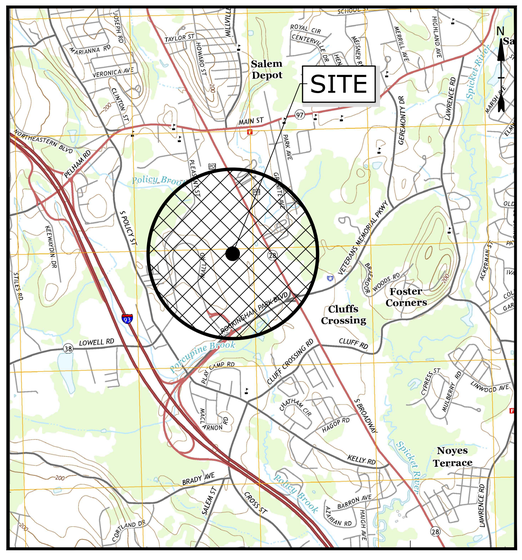
ZONE: COMMERCIAL - INDUSTRIAL 'C' & RESIDENTIAL

PROJECT NO:	FILE:	DRAWN BY:	CHECKED:	APPROVED:	SHEET:
M1775-1	M1175-1-G_100.dwg	NSC	JMP	BLM	G.100

LIST OF DRAWINGS

SHEET NO.	SHEET TITLE	LAST REVISED
G.100	COVER SHEET	8/24/2018
1 OF 1	EXISTING CONDITIONS PLAN	7/26/2018
C.101	ABUTTERS VICINITY PLAN	8/24/2018
C.201A	WETLAND IMPACT VICINITY PLAN	8/24/2018
C.201B	WETLAND IMPACT PLAN	3/12/2018
C.201C	WETLAND IMPACT PLAN	3/12/2018
C.201D	SALEM JURISDICTIONAL WETLAND IMPACT VICINITY PLAN	8/24/2018
C.301	WETLAND MITIGATION PLAN	8/24/2018
C.401A	POLICY BROOK GRADING & DRAINAGE PLAN	8/24/2018
C.401B	POLICY BROOK GRADING & DRAINAGE PLAN	8/24/2018
C.401C	WEST CHANNEL POLICY BROOK GRADING & DRAINAGE PLAN	8/24/2018
C.401D	WEST CHANNEL POLICY BROOK GRADING & DRAINAGE PLAN	8/24/2018
C.501A	POLICY BROOK EROSION CONTROL PLAN	8/24/2018
C.501B	POLICY BROOK EROSION CONTROL PLAN	8/24/2018
C.501C	WEST CHANNEL POLICY BROOK EROSION CONTROL PLAN	8/24/2018
C.501D	WEST CHANNEL POLICY BROOK EROSION CONTROL PLAN	8/24/2018
C.601A	POLICY BROOK WETLAND PLANTING PLAN	8/24/2018
C.601B	POLICY BROOK WETLAND PLANTING PLAN	8/24/2018
C.601C	WEST CHANNEL POLICY BROOK WETLAND PLANTING PLAN	8/24/2018
C.601D	WEST CHANNEL POLICY BROOK WETLAND PLANTING PLAN	8/24/2018
C.701	EROSION CONTROL NOTES & DETAILS SHEET	3/12/2018
C.702	DETAILS SHEET	8/24/2018
C.703	DETAILS SHEET	3/12/2018
C.704	WEST CHANNEL POLICY BROOK STREAM CROSSING DETAILS SHEET	8/15/2018
C.705	POLICY BROOK STREAM CROSSING DETAILS SHEET	3/12/2018
1 OF 1	CONSTRUCTION SEQUENCING PLAN	11/1/2017

PERMIT DRAWINGS



LOCATION MAP
SCALE: 1" = 2,000'

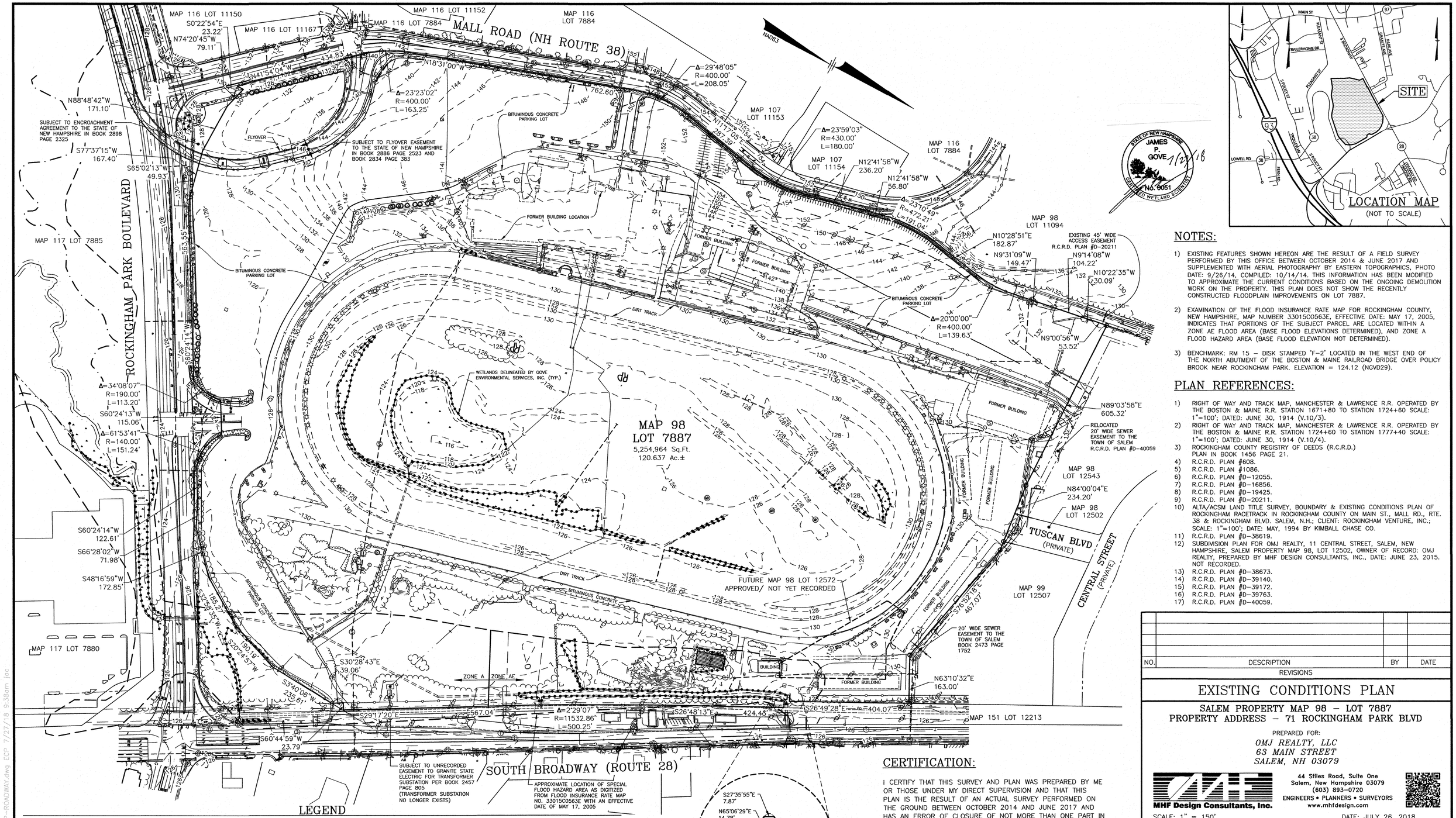
PREPARED BY:
Tighe&Bond
www.tighebond.com
177 Corporate Drive
Portsmouth, NH 03801
(603) 433-8818

APPLICANT:
OMJ Realty, LLC
63 Main Street
Salem, NH

SITE/SURVEY CONSULTANT:
MHF Design Consultants, Inc.
44 Stiles Road, Suite 1
Salem, NH 03079

ENVIRONMENTAL CONSULTANT:
Gove Environmental Services, Inc.
8 Continental Drive, Bldg. 2, Unit H
Exeter, NH 03833

Last Saved: 8/23/2018
Plotted On: Aug 24, 2018 9:01am By: NSC
Tighe & Bond: J:\M\1775 MHF Design Consultants\Drawings, Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1175-1-G_100.dwg



NOTES:

1) EXISTING FEATURES SHOWN HEREON ARE THE RESULT OF A FIELD SURVEY PERFORMED BY THIS OFFICE BETWEEN OCTOBER 2014 & JUNE 2017 AND SUPPLEMENTED WITH AERIAL PHOTOGRAPHY BY EASTERN TOPOGRAPHICS, PHOTO DATE: 9/26/14, COMPILED: 10/14/14. THIS INFORMATION HAS BEEN MODIFIED TO APPROXIMATE THE CURRENT CONDITIONS BASED ON THE ONGOING DEMOLITION WORK ON THE PROPERTY. THIS PLAN DOES NOT SHOW THE RECENTLY CONSTRUCTED FLOODPLAIN IMPROVEMENTS ON LOT 7887.
2) EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0563E, EFFECTIVE DATE: MAY 17, 2005, INDICATES THAT PORTIONS OF THE SUBJECT PARCEL ARE LOCATED WITHIN A ZONE AE FLOOD AREA (BASE FLOOD ELEVATIONS DETERMINED), AND ZONE A FLOOD HAZARD AREA (BASE FLOOD ELEVATION NOT DETERMINED).
3) BENCHMARK: RM 15 – DISK STAMPED 'F–2' LOCATED IN THE WEST END OF THE NORTH ABUTMENT OF THE BOSTON & MAINE RAILROAD BRIDGE OVER POLICY BROOK NEAR ROCKINGHAM PARK. ELEVATION = 124.12 (NGVD29).

PLAN REFERENCES:

1) RIGHT OF WAY AND TRACK MAP, MANCHESTER & LAWRENCE R.R. OPERATED BY THE BOSTON & MAINE R.R. STATION 1671+80 TO STATION 1724+60 SCALE: 1"=100'; DATED: JUNE 30, 1914 (V.10/3).
2) RIGHT OF WAY AND TRACK MAP, MANCHESTER & LAWRENCE R.R. OPERATED BY THE BOSTON & MAINE R.R. STATION 1724+60 TO STATION 1777+40 SCALE: 1"=100'; DATED: JUNE 30, 1914 (V.10/4).
3) ROCKINGHAM COUNTY REGISTRY OF DEEDS (R.C.R.D.) PLAN IN BOOK 1456 PAGE 21.
4) R.C.R.D. PLAN #608.
5) R.C.R.D. PLAN #1086.
6) R.C.R.D. PLAN #D–12055.
7) R.C.R.D. PLAN #D–16856.
8) R.C.R.D. PLAN #D–19425.
9) R.C.R.D. PLAN #D–20211.
10) ALTA/ACSM LAND TITLE SURVEY, BOUNDARY & EXISTING CONDITIONS PLAN OF ROCKINGHAM RACETRACK IN ROCKINGHAM COUNTY ON MAIN ST., MALL RD., RTE. 38 & ROCKINGHAM BLVD. SALEM, N.H.; CLIENT: ROCKINGHAM VENTURE, INC.; SCALE: 1"=100'; DATE: MAY, 1994 BY KIMBALL CHASE CO.
11) R.C.R.D. PLAN #D–38619.
12) SUBDIVISION PLAN FOR OMJ REALTY, 11 CENTRAL STREET, SALEM, NEW HAMPSHIRE, SALEM PROPERTY MAP 98, LOT 12502, OWNER OF RECORD: OMJ REALTY, PREPARED BY MHF DESIGN CONSULTANTS, INC., DATE: JUNE 23, 2015. NOT RECORDED.
13) R.C.R.D. PLAN #D–38673.
14) R.C.R.D. PLAN #D–39140.
15) R.C.R.D. PLAN #D–39172.
16) R.C.R.D. PLAN #D–39763.
17) R.C.R.D. PLAN #D–40059.

LEGEND

SGC	SLOPED GRANITE CURB	G	GAS LINE	UTILITY POLE	E ELECTRIC MANHOLE
VGC	VERTICAL GRANITE CURB	T	UNDERGROUND TELEPHONE	GUY WIRE	W WATER MANHOLE
SCC	SLOPED CONCRETE CURB	W	OVERHEAD WIRE	TREELINE	M MANHOLE
VCC	VERTICAL CONCRETE CURB	E	UNDERGROUND ELECTRIC	PB PULL BOX	GAS VALVE
CCB	CAPE COD BERM		CHAIN LINK FENCE	SIGN	WATER VALVE
DSLY	DOUBLE SOLID LINE YELLOW		STOCKADE FENCE	SPOT ELEVATION	WATER SHUT OFF
DDLY	DOUBLE DASHED LINE YELLOW		POST & RAIL FENCE	DRAIN MANHOLE	FIRE HYDRANT
SDLY	SINGLE DASHED LINE YELLOW	x	WIRE FENCE	CATCH BASIN	BOLLARD
SSLY	SINGLE SOLID LINE YELLOW	90	CONTOUR ELEVATION	SEWER MANHOLE	GM GAS METER
SSLW	SINGLE SOLID LINE WHITE		TREE	TELEPHONE MANHOLE	E ELECTRIC METER
SDLW	SINGLE DASHED LINE WHITE		LIGHT POLE		MONITORING WELL

CERTIFICATION:

I CERTIFY THAT THIS SURVEY AND PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION AND THAT THIS PLAN IS THE RESULT OF AN ACTUAL SURVEY PERFORMED ON THE GROUND BETWEEN OCTOBER 2014 AND JUNE 2017 AND HAS AN ERROR OF CLOSURE OF NOT MORE THAN ONE PART IN TEN THOUSAND.

JOEL A. CONNOLLY, LLS 997 — DATE 7/27/2018

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

NO.	DESCRIPTION	BY	DATE

REVISIONS

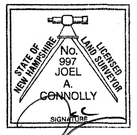
EXISTING CONDITIONS PLAN

SALEM PROPERTY MAP 98 – LOT 7887
PROPERTY ADDRESS – 71 ROCKINGHAM PARK BLVD

PREPARED FOR:
OMJ REALTY, LLC
63 MAIN STREET
SALEM, NH 03079

MHF Design Consultants, Inc.
44 Stiles Road, Suite One
Salem, New Hampshire 03079
(603) 893–0720
ENGINEERS • PLANNERS • SURVEYORS
www.mhfdesign.com

SCALE: 1" = 150' DATE: JULY 26, 2018



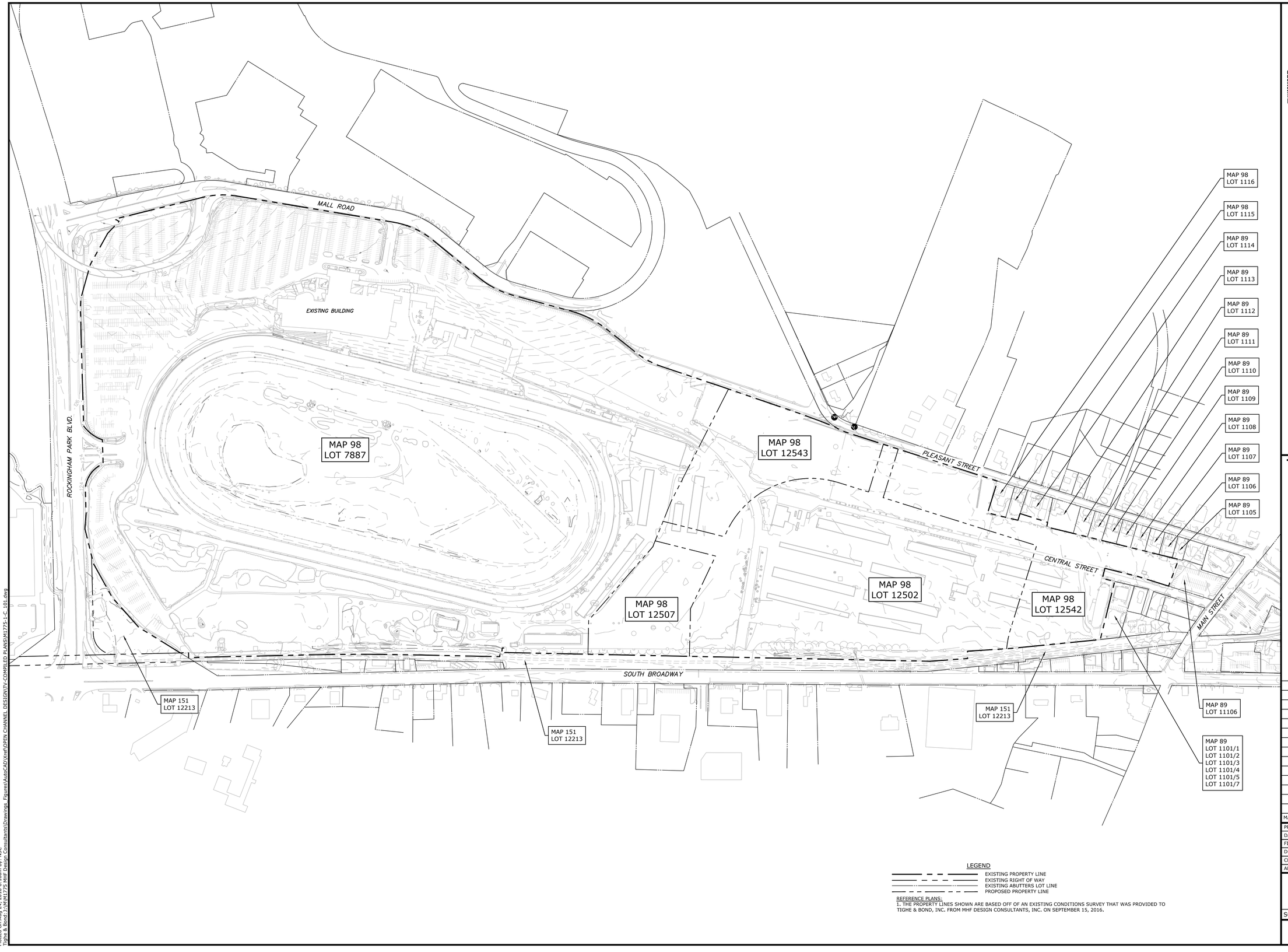
OWNER OF RECORD
ROCK ACQUISITION, LLC
63 MAIN STREET
SALEM, NH 03079
BOOK 5763 PAGE 52

SALEM PLANNING BOARD
APPROVAL

ZONE: COMMERCIAL – INDUSTRIAL 'C'

DESIGNED BY:	DRAWN/CHECKED	DWG. NAME	PROJECT No.	SHEET No.
–	JAC	4040ECP–ROADWAY.dwg	404018	1 OF 1

F:\Projects\CAD\404018\4040ECP–ROADWAY.dwg ECP 7/27/18 9:38am jpc



LEGEND

- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING ABUTTERS LOT LINE
- PROPOSED PROPERTY LINE

REFERENCE PLANS:

1. THE PROPERTY LINES SHOWN ARE BASED OFF OF AN EXISTING CONDITIONS SURVEY THAT WAS PROVIDED TO TIGHE & BOND, INC. FROM MHF DESIGN CONSULTANTS, INC. ON SEPTEMBER 15, 2016.

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

SCALE IN FEET
0 200' 400'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
3	8/24/2018	REV. PER NHDOT COMMENTS
2	3/12/2018	REV. PER TOWN COMMENTS
1	11/17/2017	ISSUED FOR PRICING

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_101.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

ABUTTERS VICINITY PLAN

SCALE: AS SHOWN

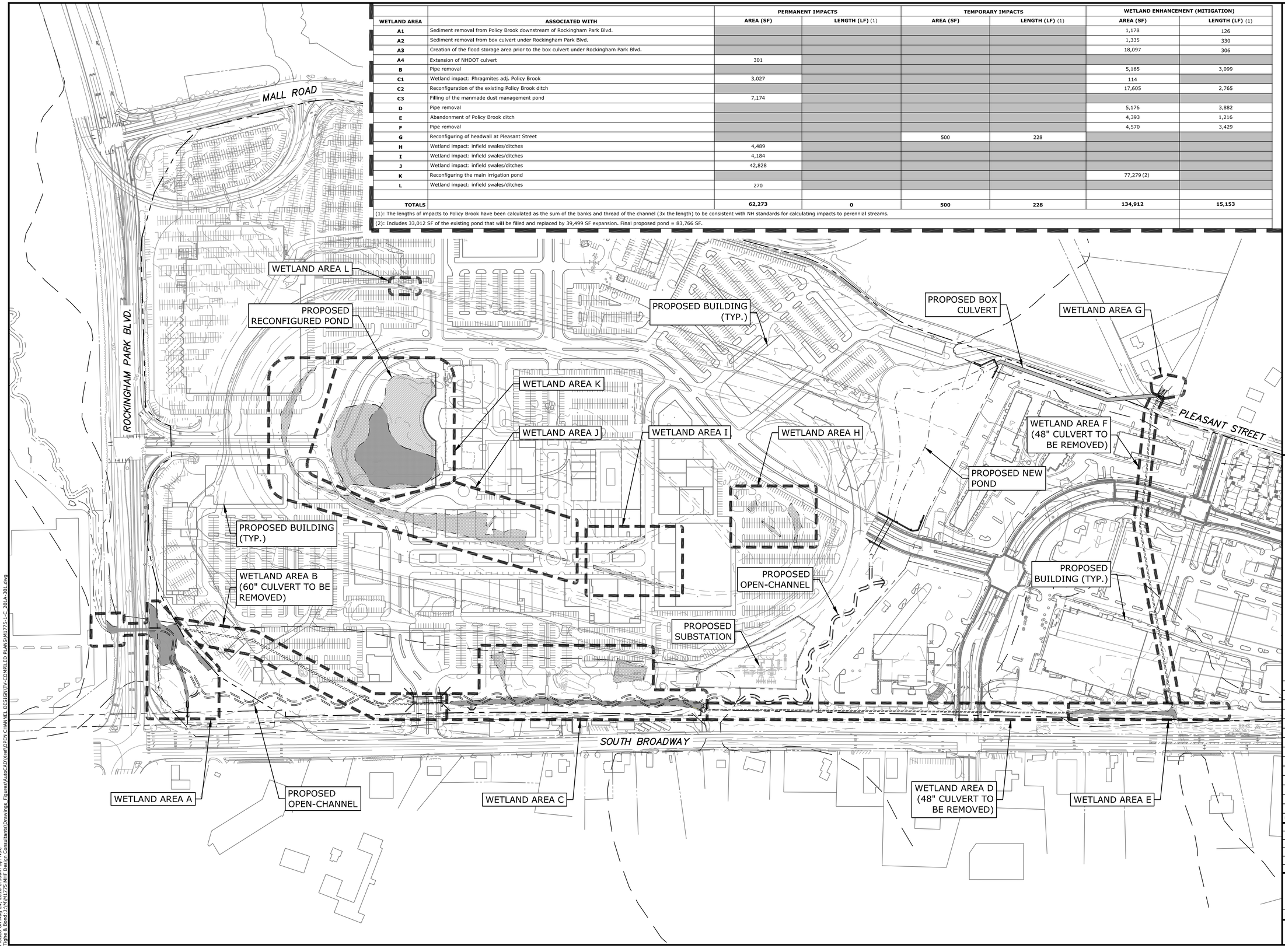
C.101

Last Saved: 3/14/2018
Plotted On: Aug 24, 2018 - 8:16am By: NSC
Tighe & Bond: J:\M\M1775 MHF Design Consultants\Drawings, Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_101.dwg

WETLAND AREA	ASSOCIATED WITH	PERMANENT IMPACTS		TEMPORARY IMPACTS		WETLAND ENHANCEMENT (MITIGATION)	
		AREA (SF)	LENGTH (LF) (1)	AREA (SF)	LENGTH (LF) (1)	AREA (SF)	LENGTH (LF) (1)
A1	Sediment removal from Policy Brook downstream of Rockingham Park Blvd.					1,178	126
A2	Sediment removal from box culvert under Rockingham Park Blvd.					1,335	330
A3	Creation of the flood storage area prior to the box culvert under Rockingham Park Blvd.					18,097	306
A4	Extension of NHDOT culvert	301					
B	Pipe removal					5,165	3,099
C1	Wetland impact: Phragmites adj. Policy Brook	3,027				114	
C2	Reconfiguration of the existing Policy Brook ditch					17,605	2,765
C3	Filling of the manmade dust management pond	7,174					
D	Pipe removal					5,176	3,882
E	Abandonment of Policy Brook ditch					4,393	1,216
F	Pipe removal					4,570	3,429
G	Reconfiguring of headwall at Pleasant Street			500	228		
H	Wetland impact: infield swales/ditches	4,489					
I	Wetland impact: infield swales/ditches	4,184					
J	Wetland impact: infield swales/ditches	42,828					
K	Reconfiguring the main irrigation pond					77,279 (2)	
L	Wetland impact: infield swales/ditches	270					
TOTALS		62,273	0	500	228	134,912	15,153

(1): The lengths of impacts to Policy Brook have been calculated as the sum of the banks and thread of the channel (3x the length) to be consistent with NH standards for calculating impacts to perennial streams.

(2): Includes 33,012 SF of the existing pond that will be filled and replaced by 39,499 SF expansion. Final proposed pond = 83,766 SF.



Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

STATE OF NEW HAMPSHIRE
JOSEPH M. PERSECHINO
No. 12393
LICENSED PROFESSIONAL ENGINEER
8/24/18

STATE OF NEW HAMPSHIRE
BRADLEE MEDEIROS
No. 04350
LICENSED PROFESSIONAL ENGINEER
8-24-18

SCALE IN FEET
0 150' 300'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
10	8/24/2018	REV. PER NHDOT COMMENTS
9	3/12/2018	REV. PER TOWN COMMENTS
8	12/20/2017	REV. IMPACT AREAS
7	11/20/2017	REV. IMPACT AREAS
6	11/17/2017	ISSUED FOR PRICING
5	11/3/2017	REV. IMPACT AREAS
4	5/8/2017	REV. PER NHDES COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

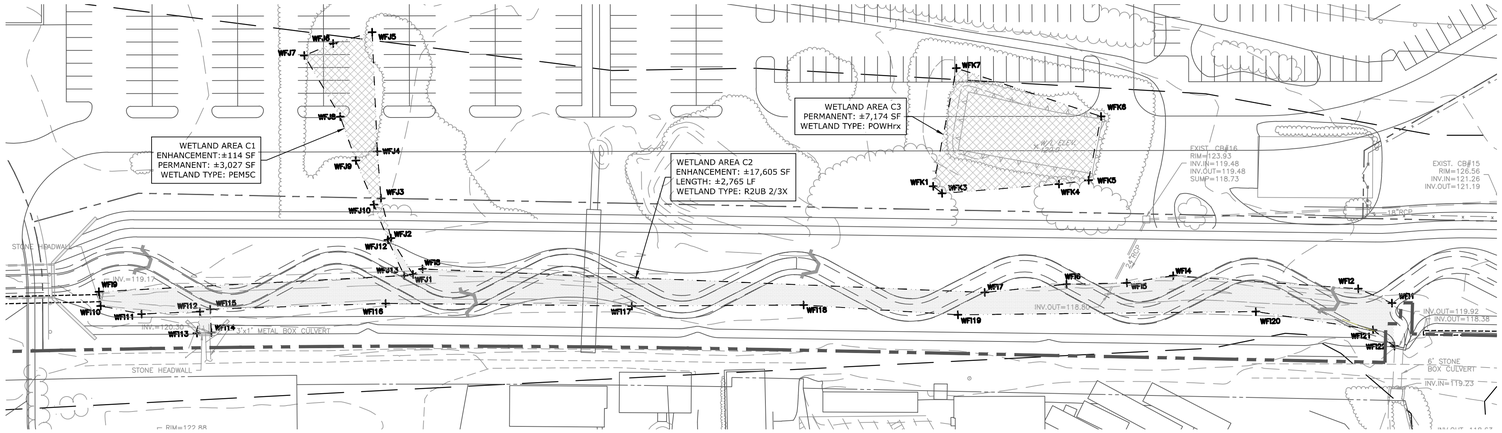
PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_201A-301.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

WETLAND IMPACT VICINITY PLAN

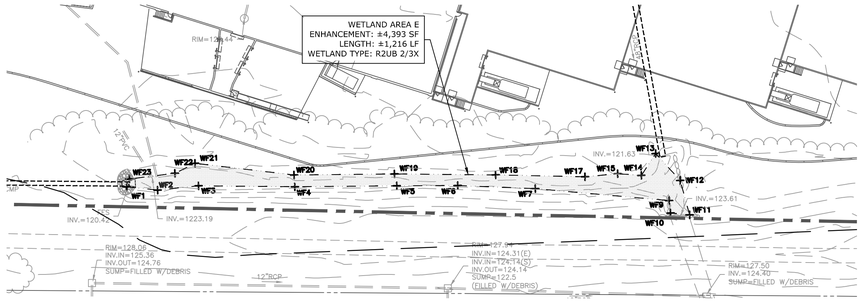
SCALE: AS SHOWN

C.201A

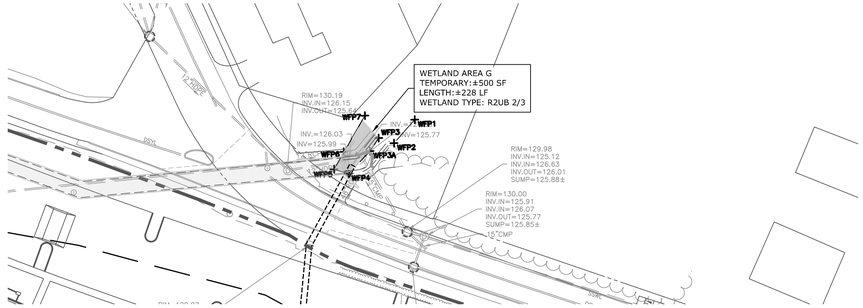
Last Saved: 3/14/2018
Plotted On: Aug 24, 2018 8:53am By: NSC
Tighe & Bond: J:\M\M1775 MHF Design Consultants\Drawings, Figures\AutoCAD\Xref\OPEN_CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_201A-301.dwg



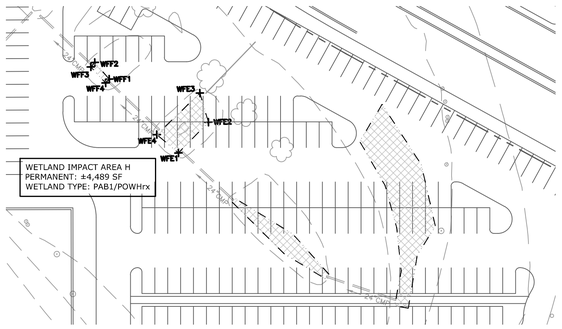
AREA C



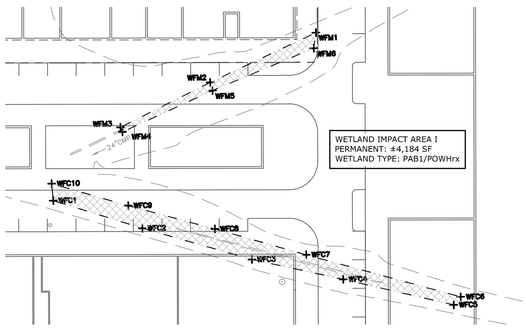
AREA E



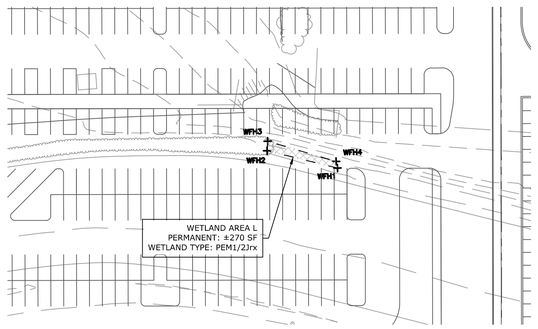
AREA G



AREA H

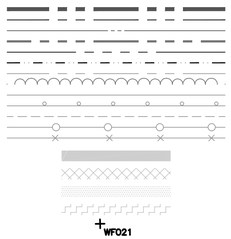


AREA I



AREA L

LEGEND



- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- EXISTING ABUTTERS LOT LINE
- EXISTING RIGHT OF WAY
- EXISTING EASEMENT
- EXISTING EDGE OF WETLAND
- EXISTING STREAM CENTERLINE
- EXISTING TREE LINE
- EXISTING RETAINING WALL
- EXISTING GUARD RAIL
- EXISTING EDGE OF RAILROAD TRACK
- EXISTING FENCE
- EXISTING FENCE
- TEMPORARY WETLAND IMPACT
- PERMANENT WETLAND IMPACT
- WETLAND ENHACNEMENT
- EXISTING POND EXPANSION AREA
- WETLAND FLAG

WF021

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

JOSEPH H. PERSECHINO No. 12329 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
3/12/18

BRADLEE MEZQUITA No. 08030 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
3/12/18

N

SCALE IN FEET
0 50' 100'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
6	3/12/2018	REV. PER TOWN COMMENTS
5	11/20/2017	REV. IMPACT AREAS
4	11/17/2017	ISSUED FOR PRICING
3	11/3/2017	REV. IMPACT AREAS
2	5/8/2017	REV. PER NHDES COMMENTS
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_201A-301.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

WETLAND IMPACT PLAN

SCALE: AS SHOWN

C.201B

Last Saved: 3/14/2018
Plotted On: Mar 14, 2018 11:37am By: NSC
Tighe & Bond: J:\M\M1775 MHF Design Consultants\Drawings, Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_201A-301.dwg

POND PLANTING SCHEDULE

	LAYER	SCIENTIFIC NAME	COMMON NAME	PLANT SIZE	PLANTING ELEVATION	* PLANTING DISTANCE - O.C.	QUANTITY
BUFFER AREA #1	NEW ENGLAND WETLAND MIX	YEARLY DEPENEDENT	HTTP://NEWP.COM/CATALOG/SEED-MIXES	-	124 - 127 FT.	-	1 LB. / 2,500 SF
	SHRUBS (WETMIX AREA)	LINDERA BENZOIN	SPICEBUSH	2-3' CONTAINER GROWN	124 - 127 FT.	10 FT.	50
	SHRUBS (WETMIX AREA)	CORNUS SERICEA	RED-OSIER DOGWOOD	2-3' CONTAINER GROWN	124 - 127 FT.	10 FT.	50
BUFFER AREA #2	NEW ENGLAND SHOWY WILDFLOWER MIX	YEARLY DEPENDENT	HTTP://NEWP/COM/CATALOG/SEED-MIXES	-	127 - 129 FT.	-	1 LB. / 1,900 SF
	SHRUBS (WILDFLOWER AREA)	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	2-3' CONTAINER GROWN	127 - 129 FT.	10 FT.	50
	SHRUBS (WILDFLOWER AREA)	CORNUS AMOMUM	SILKY DOGWOOD	2-3' CONTAINER GROWN	127 - 129 FT.	10 FT.	50
BUFFER AREA #3	SEE PLAN	SEE PLAN	SEE PLAN	SEE PLAN	SEE PLAN	SEE PLAN	SEE PLAN
AQUATIC SHELF (SEE PLAN)	AQUATIC/EMERGENT	PONTEDERIA CORDATA	PICKERELWEED	2" TUBERS / BARE ROOT STOCK	123-124 FT.	2 FT.	250
	AQUATIC/EMERGENT	PELTANDRA VIRGINICA	ARROW ARUM	2" TUBERS / BARE ROOT STOCK	123-124 FT.	2 FT.	250
	AQUATIC/FLOATING	NYMPHAEA ODORATA	WHITE WATER LILY	2" TUBERS / BARE ROOT STOCK	122 - 123 FT.	2 FT.	250
	AQUATIC/FLOATING	POTAMOGETON NODUSUS	LONG LEAF PONDWEED	2" TUBERS / BARE ROOT STOCK	122 - 123 FT.	2 FT.	250

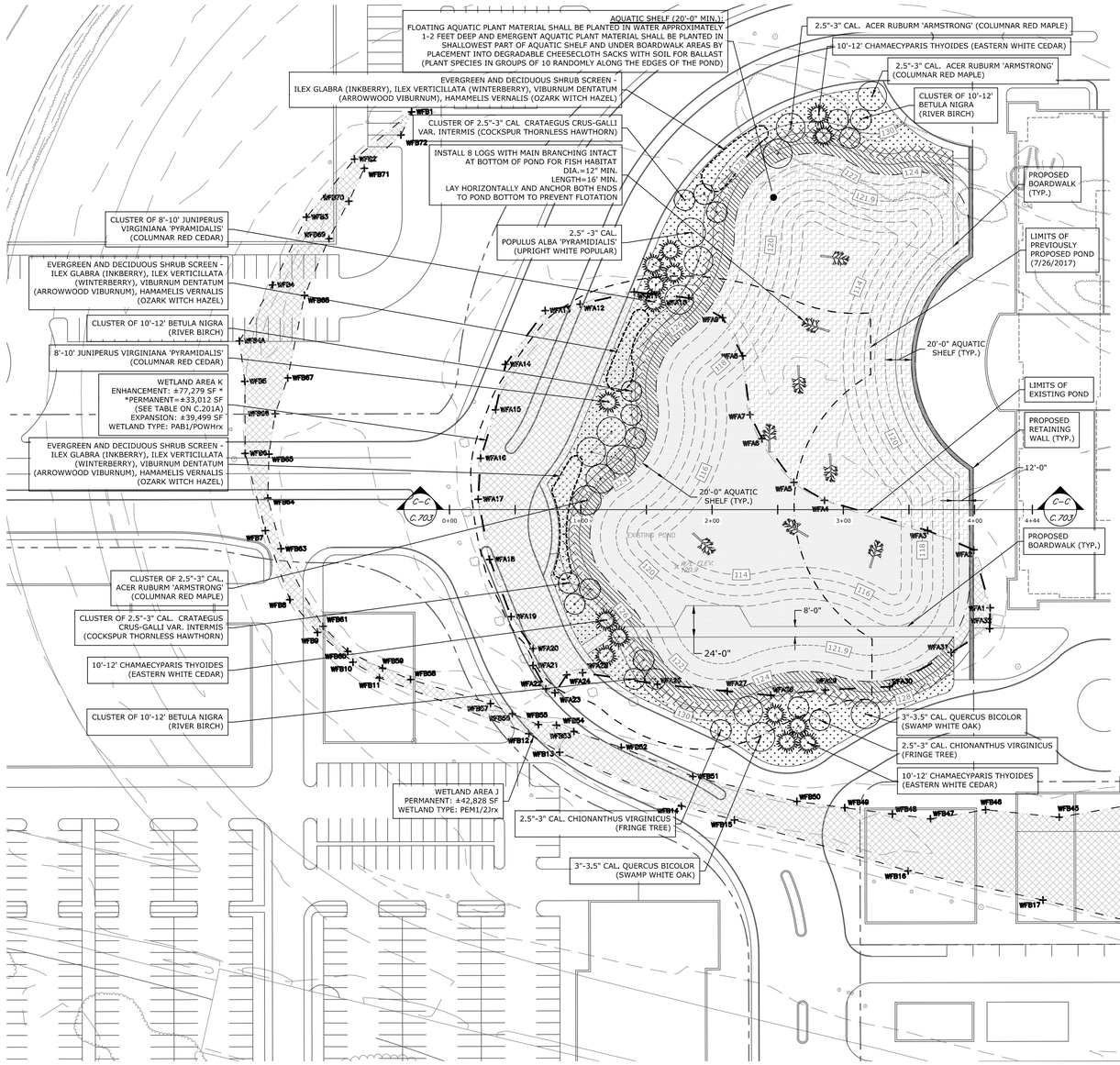
* PLANT SHRUB SPECIES IN GROUPS RANDOMLY ALONG POND EDGE. COORDINATE NUMBER AND LOCATION WITH LANDSCAPE ARCHITECT.

PROPOSED BUFFER AREA #1 (WETLAND MIX W/ SHRUBS) AREA=±10,067 SF

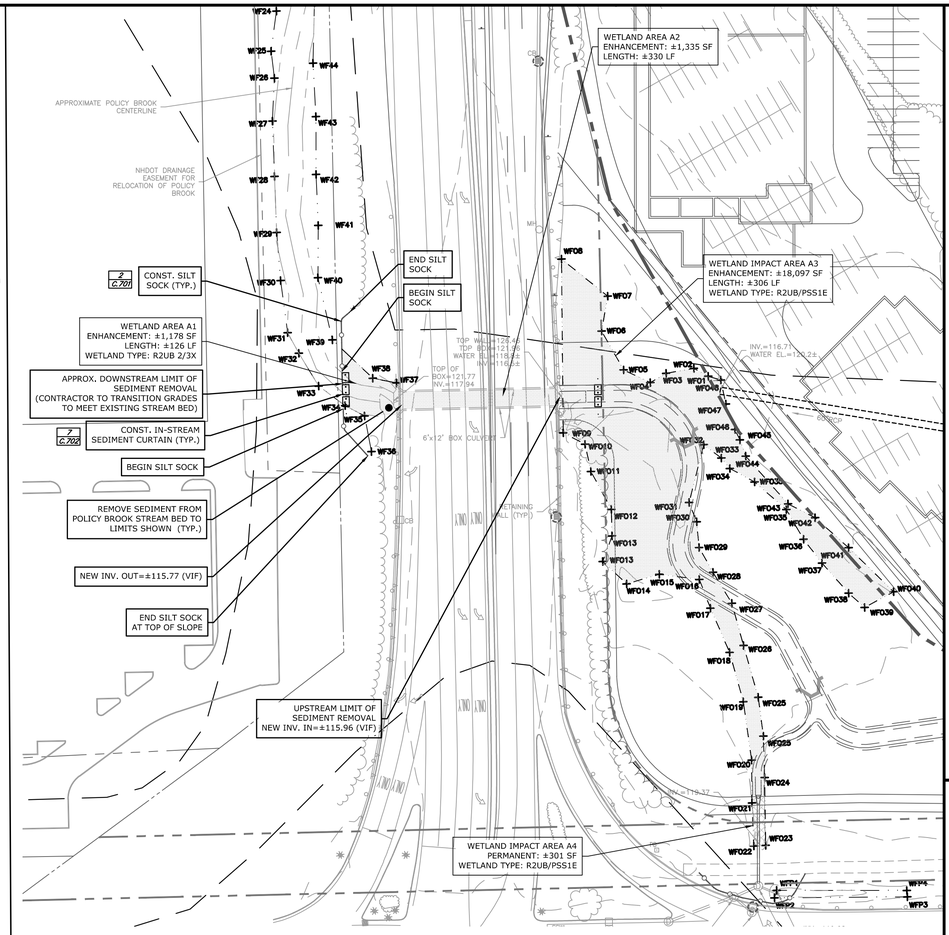
PROPOSED BUFFER AREA #2 (WILDFLOWER MIX W/ SHRUBS) AREA=±6,758 SF

PROPOSED BUFFER AREA #3 (COMBINATION LAWN/WILDFLOWER MIX/NATIVE DECIDUOUS & EVERGREEN SHRUB/TREE PLANTINGS) (SEE PLAN) AREA=±18,975 SF

TOTAL: AREA=±35,800 SF



AREA J & AREA K



AREA A

LEGEND

	EXISTING PROPERTY LINE
	PROPOSED PROPERTY LINE
	EXISTING ABUTTERS LOT LINE
	EXISTING RIGHT OF WAY
	EXISTING EASEMENT
	EXISTING EDGE OF WETLAND
	EXISTING STREAM CENTERLINE
	EXISTING TREE LINE
	EXISTING RETAINING WALL
	EXISTING GUARD RAIL
	EXISTING EDGE OF RAILROAD TRACK
	EXISTING FENCE
	EXISTING FENCE
	TEMPORARY WETLAND IMPACT
	PERMANENT WETLAND IMPACT
	WETLAND ENHACNEMENT
	EXISTING POND EXPANSION AREA
WF021	WETLAND FLAG

ABBREVIATIONS:

CB	CATCH BASIN
CONST.	CONSTRUCT
COORD.	COORDINATE
DIA.	DIAMETER
DMH	DRAIN MANHOLE
ELEV.	ELEVATION
FES	FLARED END SECTION
HDPE	HIGH-DENSITY POLYETHYLENE
INV.	INVERT
INV. IN	INVERT IN
INV. OUT	INVERT OUT
LF	LINEAR FEET
MAX.	MAXIMUM
MIN.	MINIMUM
PDMH	PROPOSED DRAIN MANHOLE
S	SLOPE
SMH	SEWER MANHOLE
TB	TOP OF BANK
TR	TOP OF RIFFLE
TBR	TO BE REMOVED
THLWG	THALWEG
TW	TOP OF WALL
TYP.	TYPICAL
VIF	VERIFY IN FIELD
W/	WITH

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

JOSEPH M. PERSICHINO No. 12329 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 2/10/18

BRADLEE MEZQUITA No. 09030 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 2/12/18

SCALE IN FEET 0 50' 100'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
8	3/12/2018	REV. PER TOWN COMMENTS
7	12/20/2017	REV. IMPACT AREAS
6	11/20/2017	REV. IMPACT AREAS
5	11/17/2017	ISSUED FOR PRICING
4	11/3/2017	REV. IMPACT AREAS
3	5/8/2017	REV. PER NHDES COMMENTS
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_201A-301.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

WETLAND IMPACT PLAN

SCALE: AS SHOWN

C.201C

Last Saved: 2/14/2018
Plotted On: Mar 14, 2018 - 11:36am By: NSC
Tighe & Bond - J:\MM\1775 MHF Design Consultants\Drawings, Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_201A-301.dwg

SUMMARY OF WETLAND IMPACTS

AREA A:
TEMPORARY:
AREA=±1,178 SF
TYPE:R2UB 2/3X

AREA B:
TEMPORARY:
AREA=±18,097 SF
PERMANENT:
AREA=±301 SF
TYPE:R2UB/PSS1E

AREA C1:
TEMPORARY:
AREA=±114 SF
PERMANENT:
AREA=±3,027 SF
TYPE:PEM5C

AREA C2:
TEMPORARY:
AREA=±17,605 SF
TYPE:R2UB 2/3X

AREA D:
PERMANENT:
AREA=±4,393 SF
TYPE:R2UB 2/3X

AREA E:
TEMPORARY:
AREA=±500 SF
TYPE:R2UB 2/3

WETLAND IMPACT TOTALS

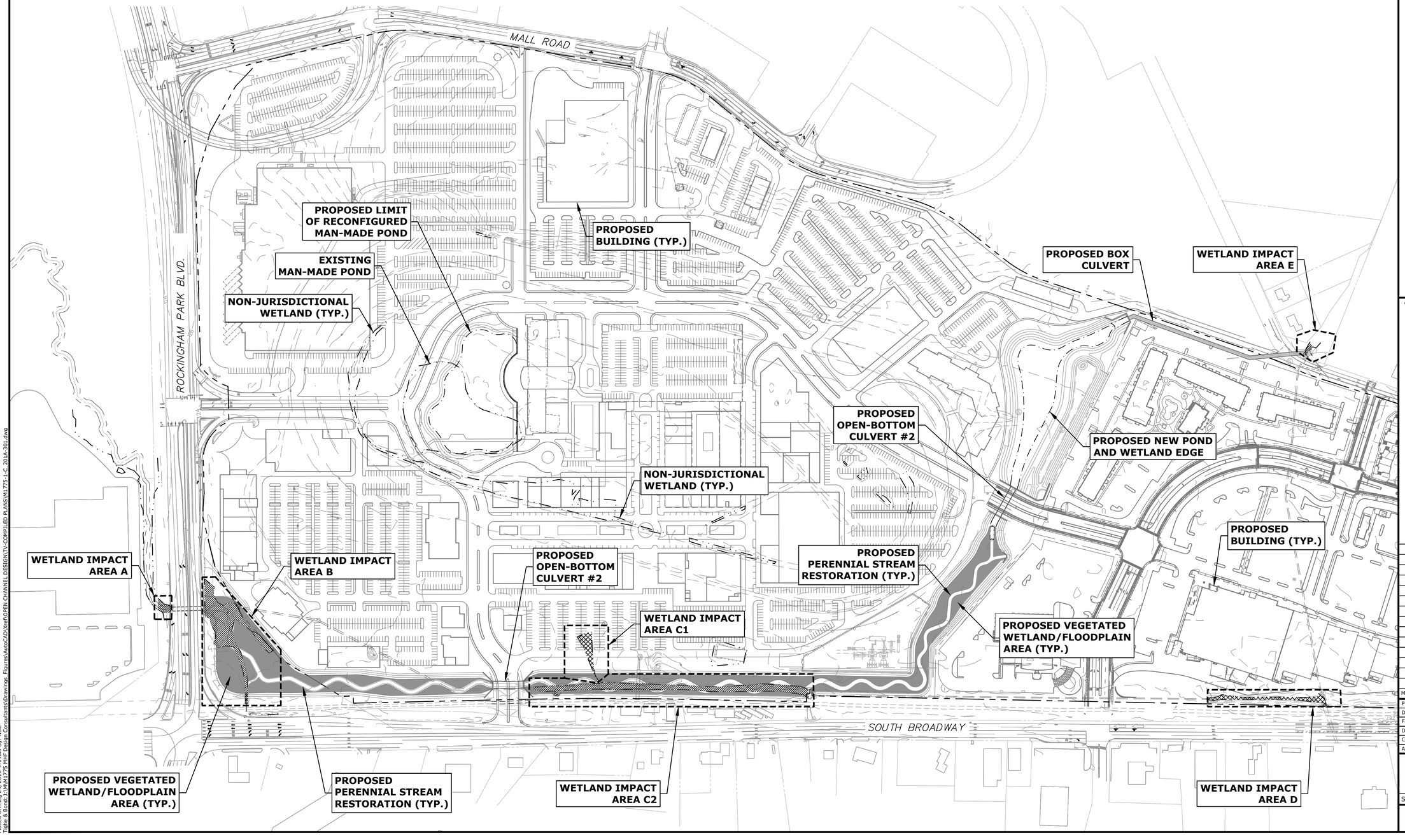
TEMPORARY WETLAND IMPACTS:
AREA=±37,494 SF

PERMANENT WETLAND IMPACTS:
AREA=±7,721 SF

NON-JURISDICTIONAL WETLANDS
(MAN-MADE PONDS & DRAINAGE SWALES)

WETLAND MITIGATION TOTALS

PROPOSED WETLAND/FLOODPLAIN:
AREA=±134,492 SF



Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

STATE OF NEW HAMPSHIRE
JOSEPH M. PERSECHINO
No. 12393
LICENSED PROFESSIONAL ENGINEER
8/24/18

STATE OF NEW HAMPSHIRE
BRADLEE MEDEIROS
No. 04350
LICENSED PROFESSIONAL ENGINEER
8-24-18

SCALE IN FEET
0 150' 300'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
5	8/24/2018	REV. PER NHDOT COMMENTS
4	3/12/2018	REV. PER TOWN COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_201A-301.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

SALEM JURISDICTIONAL WETLAND IMPACT VICINITY PLAN

SCALE: AS SHOWN

C.201D

Last Saved: 8/24/2018
Plotted On: Aug 24, 2018 - 9:19am By: NSC
Tighe & Bond: J:\M\M1775 MHF Design Consultants\Drawings Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_201A-301.dwg

Impact Type	Impact (SF)	Proposed Mitigation (SF)(creation)	Mitigation Ratio
Vegetated Wetland	55,099	134,492	2.4:1
Pond & Wetland Edge	7,174	63,679	8.9:1
Perennial Stream	0 SF	33,168	N/A
Combined	62,273	231,339	3.7:1

* PROPOSED RECONFIGURED POND IS NOT INCLUDED IN TABLE ABOVE AS IT IS SELF-MITIGATING (SEE SHEETS C.201A AND C.201C).

MALL ROAD

ROCKINGHAM PARK BLVD.

PLEASANT STREET

SOUTH BROADWAY

*PROPOSED RECONFIGURED POND

PROPOSED BUILDING (TYP.)

PROPOSED BOX CULVERT

PROPOSED NEW POND & WETLAND EDGE

PROPOSED OPEN-BOTTOM CULVERT #1

PROPOSED PERENNIAL STREAM RESTORATION (TYP.)

PROPOSED BUILDING (TYP.)

PROPOSED VEGETATED WETLAND (TYP.)

PROPOSED OPEN-BOTTOM CULVERT #2

PROPOSED VEGETATED WETLAND/FLOODPLAIN AREA (TYP.)

PROPOSED VEGETATED WETLAND/FLOODPLAIN AREA (TYP.)

N

SCALE IN FEET
0 150' 300'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
9	8/24/2018	REV. PER NHDOT COMMENTS
8	3/12/2018	REV. PER TOWN COMMENTS
7	12/20/2017	REV. IMPACT AREAS
6	11/20/2017	REV. IMPACT AREAS
5	11/17/2017	ISSUED FOR PRICING
4	11/3/2017	REV. IMPACT AREAS
3	5/8/2017	REV. PER NHDES COMMENTS
2	3/9/2017	REV. BOX CULVERT DESIGN
1	2/10/2017	REV. BOX CULVERT DESIGN

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_201A-301.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

WETLAND MITIGATION PLAN

SCALE: AS SHOWN

C.301

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

STATE OF NEW HAMPSHIRE
JOSEPH M. PERSECHINO No. 12393 LICENSED PROFESSIONAL ENGINEER
8/24/18

STATE OF NEW HAMPSHIRE
BRADLEE MEDEIROS No. 14350 LICENSED PROFESSIONAL ENGINEER
8-24-18

Last Saved: 2/14/2018
Plotted On: Aug 24, 2018 8:55am By: NSC
Tighe & Bond: J:\MM\1775 MHF Design Consultants\Drawings, Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_201A-301.dwg

GRADING AND DRAINAGE NOTES:

1. COMPACTION REQUIREMENTS:

BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREAS	90%

* ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.

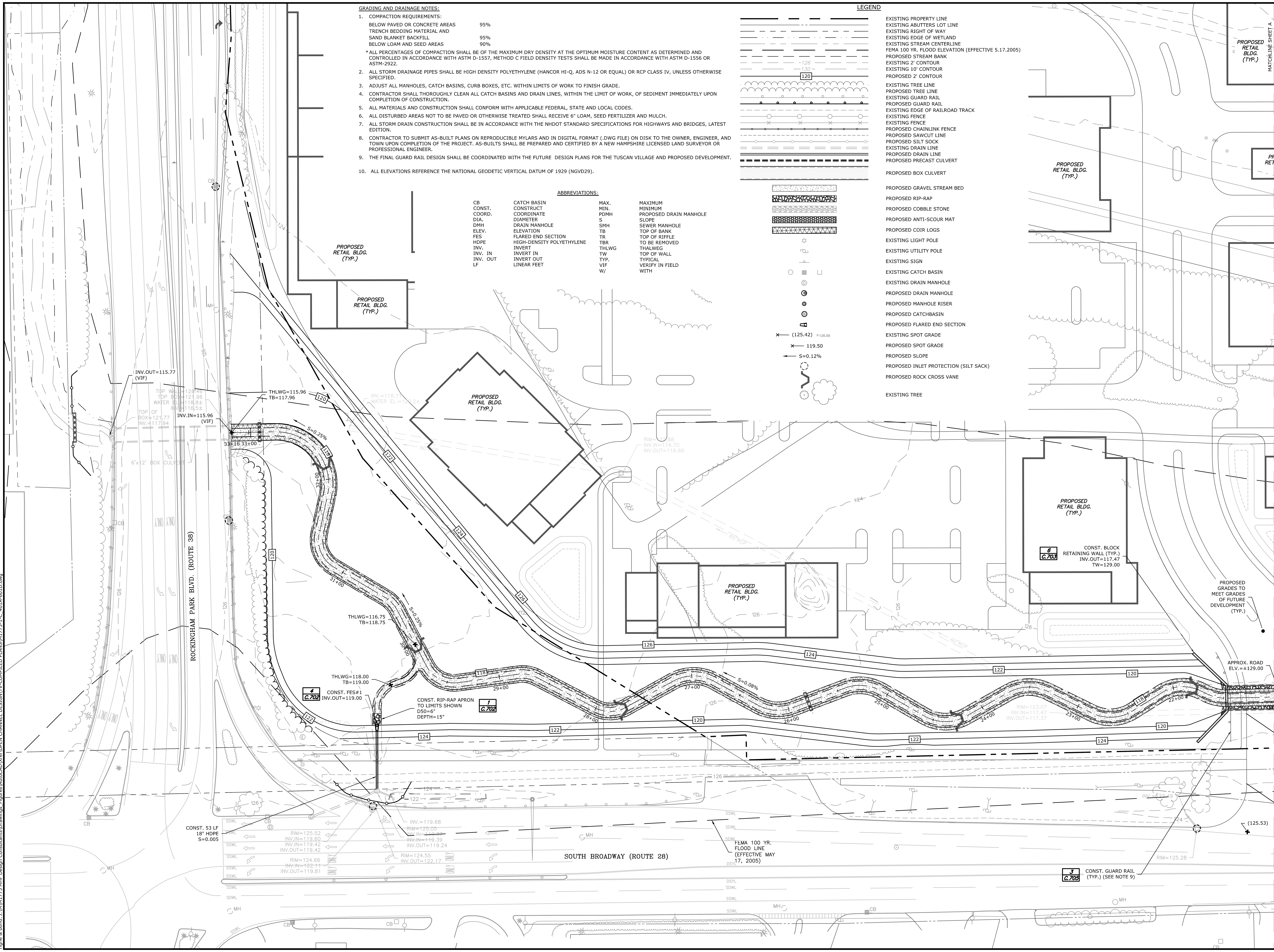
2. ALL STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR EQUAL) OR RCP CLASS IV, UNLESS OTHERWISE SPECIFIED.
3. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
4. CONTRACTOR SHALL THOROUGHLY CLEAN ALL CATCH BASINS AND DRAIN LINES, WITHIN THE LIMIT OF WORK, OF SEDIMENT IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
5. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
6. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.
7. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NHDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.
8. CONTRACTOR TO SUBMIT AS-BUILT PLANS ON REPRODUCIBLE MYLARS AND IN DIGITAL FORMAT (.DWG FILE) ON DISK TO THE OWNER, ENGINEER, AND TOWN UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER.
9. THE FINAL GUARD RAIL DESIGN SHALL BE COORDINATED WITH THE FUTURE DESIGN PLANS FOR THE TUSCAN VILLAGE AND PROPOSED DEVELOPMENT.
10. ALL ELEVATIONS REFERENCE THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).

ABBREVIATIONS:

CB	CATCH BASIN	MAX.	MAXIMUM
CONST.	CONSTRUCT	MIN.	MINIMUM
COORD.	COORDINATE	PDMH	PROPOSED DRAIN MANHOLE
DIA.	DIAMETER	S	SLOPE
DMH	DRAIN MANHOLE	SMH	SEWER MANHOLE
ELEV.	ELEVATION	TB	TOP OF BANK
FES	FLARED END SECTION	TR	TOP OF RIFFLE
HDPE	HIGH-DENSITY POLYETHYLENE	TBR	TO BE REMOVED
INV.	INVERT	THLWG	THALWEG
INV. IN	INVERT IN	TW	TOP OF WALL
INV. OUT	INVERT OUT	TYP.	TYPICAL
LF	LINEAR FEET	VIF	VERIFY IN FIELD
		W/	WITH

LEGEND

EXISTING PROPERTY LINE
EXISTING ABUTTERS LOT LINE
EXISTING RIGHT OF WAY
EXISTING EDGE OF WETLAND
EXISTING STREAM CENTERLINE
FEMA 100 YR. FLOOD ELEVATION (EFFECTIVE 5.17.2005)
PROPOSED STREAM BANK
126 — EXISTING 2' CONTOUR
130 — EXISTING 10' CONTOUR
120 — PROPOSED 2' CONTOUR
EXISTING TREE LINE
PROPOSED TREE LINE
EXISTING GUARD RAIL
PROPOSED GUARD RAIL
EXISTING EDGE OF RAILROAD TRACK
EXISTING FENCE
EXISTING FENCE
PROPOSED CHAINLINK FENCE
PROPOSED SAWCUT LINE
PROPOSED SILT SOCK
EXISTING DRAIN LINE
PROPOSED DRAIN LINE
PROPOSED PRECAST CULVERT
PROPOSED BOX CULVERT
PROPOSED GRAVEL STREAM BED
PROPOSED RIP-RAP
PROPOSED COBBLE STONE
PROPOSED ANTI-SCOUR MAT
PROPOSED COIR LOGS
EXISTING LIGHT POLE
EXISTING UTILITY POLE
EXISTING SIGN
EXISTING CATCH BASIN
EXISTING DRAIN MANHOLE
PROPOSED DRAIN MANHOLE
PROPOSED MANHOLE RISER
PROPOSED CATCHBASIN
PROPOSED FLARED END SECTION
(125.42) ×126.59 — EXISTING SPOT GRADE
119.50 — PROPOSED SPOT GRADE
S=0.12% — PROPOSED SLOPE
PROPOSED INLET PROTECTION (SILT SACK)
PROPOSED ROCK CROSS VANE
EXISTING TREE



Last Saved: 8/15/2018
Plotted On:Aug 23, 2018-4:20pm By: NSC
Tighe & Bond:J:\M\M1775 MHF Design Consultants\Drawings_Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_401A-601D.dwg

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

STATE OF NEW HAMPSHIRE - JOSEPH M. PERSECHINO No. 12309 LICENSED PROFESSIONAL ENGINEER
8/24/18

STATE OF NEW HAMPSHIRE - BRADLEE MEZQUITA No. 0?350 LICENSED PROFESSIONAL ENGINEER
8-24-18

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 ▬ 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
13	8/24/2018	REV. PER NHDOT COMMENTS
12	3/12/2018	REV. PER TOWN COMMENTS
11	11/17/2017	ISSUED FOR PRICING
10	10/12/2017	REV. PER FEMA COMMENTS
9	9/18/2017	REV. PER FEMA RFMI
8	7/26/2017	REV. PER NHDES COMMENTS
7	6/20/2017	REV. PER FEMA RFMI
6	6/5/2017	REV. STREAM CROSSINGS
5	5/8/2017	REV. PER NHDES COMMENTS
4	3/24/2017	REV. PER TOWN COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_401A-601D.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

POLICY BROOK GRADING & DRAINAGE PLAN

SCALE: AS SHOWN

C.401A

GRADING AND DRAINAGE NOTES:

1. COMPACTION REQUIREMENTS:

BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREAS	90%

* ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.

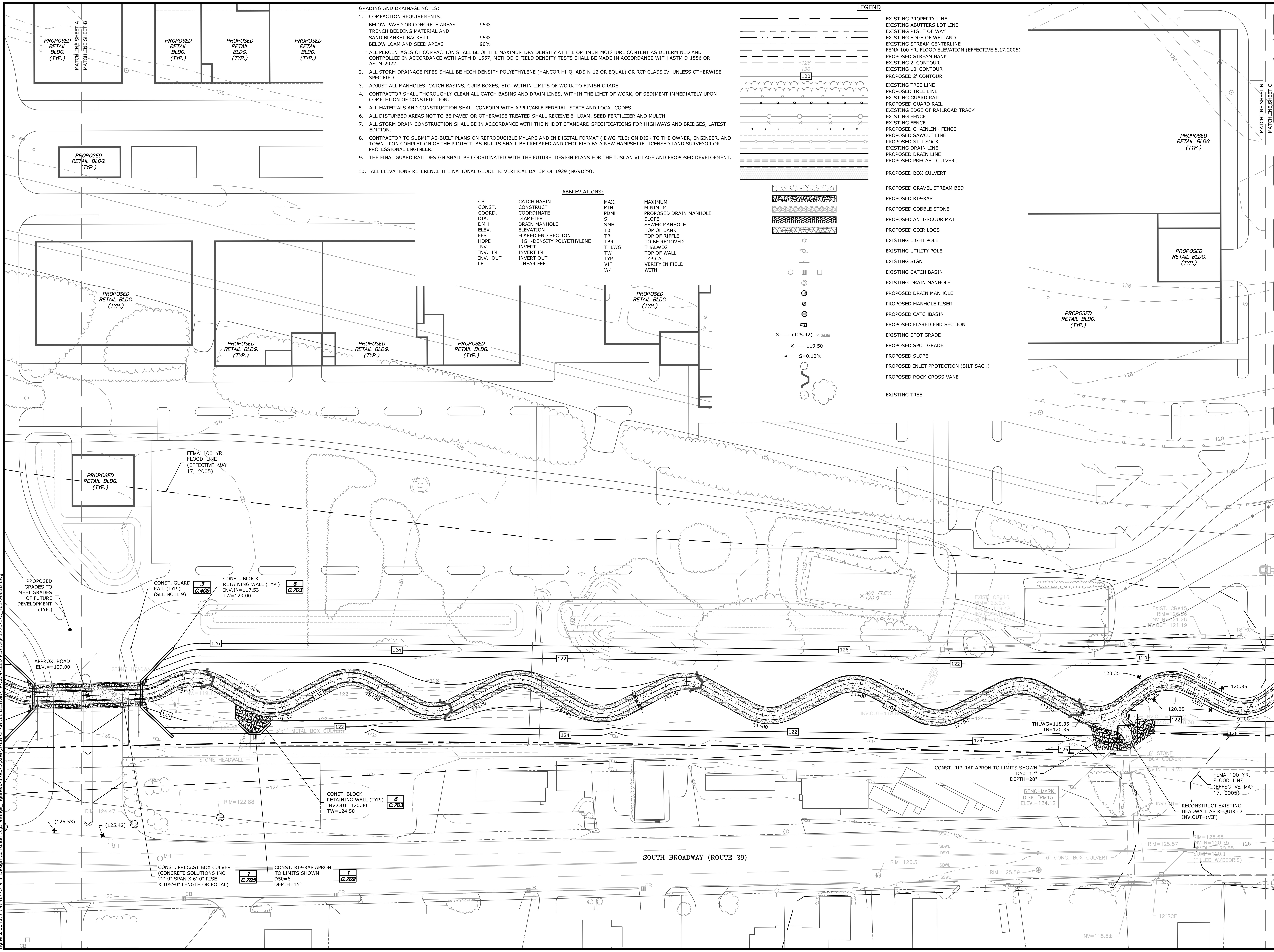
2. ALL STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR EQUAL) OR RCP CLASS IV, UNLESS OTHERWISE SPECIFIED.
3. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
4. CONTRACTOR SHALL THOROUGHLY CLEAN ALL CATCH BASINS AND DRAIN LINES, WITHIN THE LIMIT OF WORK, OF SEDIMENT IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
5. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
6. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.
7. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NHDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.
8. CONTRACTOR TO SUBMIT AS-BUILT PLANS ON REPRODUCIBLE MYLARS AND IN DIGITAL FORMAT (.DWG FILE) ON DISK TO THE OWNER, ENGINEER, AND TOWN UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER.
9. THE FINAL GUARD RAIL DESIGN SHALL BE COORDINATED WITH THE FUTURE DESIGN PLANS FOR THE TUSCAN VILLAGE AND PROPOSED DEVELOPMENT.
10. ALL ELEVATIONS REFERENCE THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).

ABBREVIATIONS:

CB	CATCH BASIN	MAX.	MAXIMUM
CONST.	CONSTRUCT	MIN.	MINIMUM
COORD.	COORDINATE	PDMH	PROPOSED DRAIN MANHOLE
DIA.	DIAMETER	S	SLOPE
DMH	DRAIN MANHOLE	SMH	SEWER MANHOLE
ELEV.	ELEVATION	TB	TOP OF BANK
FES	FLARED END SECTION	TR	TOP OF RIFFLE
HDPE	HIGH-DENSITY POLYETHYLENE	TBR	TO BE REMOVED
INV.	INVERT	THLWG	THALWEG
INV. IN	INVERT IN	TW	TOP OF WALL
INV. OUT	INVERT OUT	TYP.	TYPICAL
LF	LINEAR FEET	VIF	VERIFY IN FIELD
		W/	WITH

LEGEND

EXISTING PROPERTY LINE
EXISTING ABUTTERS LOT LINE
EXISTING RIGHT OF WAY
EXISTING EDGE OF WETLAND
EXISTING STREAM CENTERLINE
FEMA 100 YR. FLOOD ELEVATION (EFFECTIVE 5.17.2005)
PROPOSED STREAM BANK
126 EXISTING 2' CONTOUR
130 EXISTING 10' CONTOUR
120 PROPOSED 2' CONTOUR
EXISTING TREE LINE
PROPOSED TREE LINE
EXISTING GUARD RAIL
PROPOSED GUARD RAIL
EXISTING EDGE OF RAILROAD TRACK
EXISTING FENCE
EXISTING FENCE
PROPOSED CHAINLINK FENCE
PROPOSED SAWCUT LINE
PROPOSED SILT SOCK
EXISTING DRAIN LINE
PROPOSED DRAIN LINE
PROPOSED PRECAST CULVERT
PROPOSED BOX CULVERT
PROPOSED GRAVEL STREAM BED
PROPOSED RIP-RAP
PROPOSED COBBLE STONE
PROPOSED ANTI-SCOUR MAT
PROPOSED COIR LOGS
EXISTING LIGHT POLE
EXISTING UTILITY POLE
EXISTING SIGN
EXISTING CATCH BASIN
EXISTING DRAIN MANHOLE
PROPOSED DRAIN MANHOLE
PROPOSED MANHOLE RISER
PROPOSED CATCHBASIN
PROPOSED FLARED END SECTION
(125.42) ×126.59 EXISTING SPOT GRADE
119.50 PROPOSED SPOT GRADE
S=0.12% PROPOSED SLOPE
PROPOSED INLET PROTECTION (SILT SACK)
PROPOSED ROCK CROSS VANE
EXISTING TREE



Last Saved: 8/24/2018
Plotted On:Aug 24, 2018-8:45am By: NSC
Tighe & Bond:J:\M\M1775 MHF Design Consultants\Drawings_Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_401A-601D.dwg

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

STATE OF NEW HAMPSHIRE JOSEPH M. PERSECHINO No. 12309 LICENSED PROFESSIONAL ENGINEER
8/24/18

STATE OF NEW HAMPSHIRE BRADLEE MEZQUITA No. 09350 LICENSED PROFESSIONAL ENGINEER
8-24-18

N

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

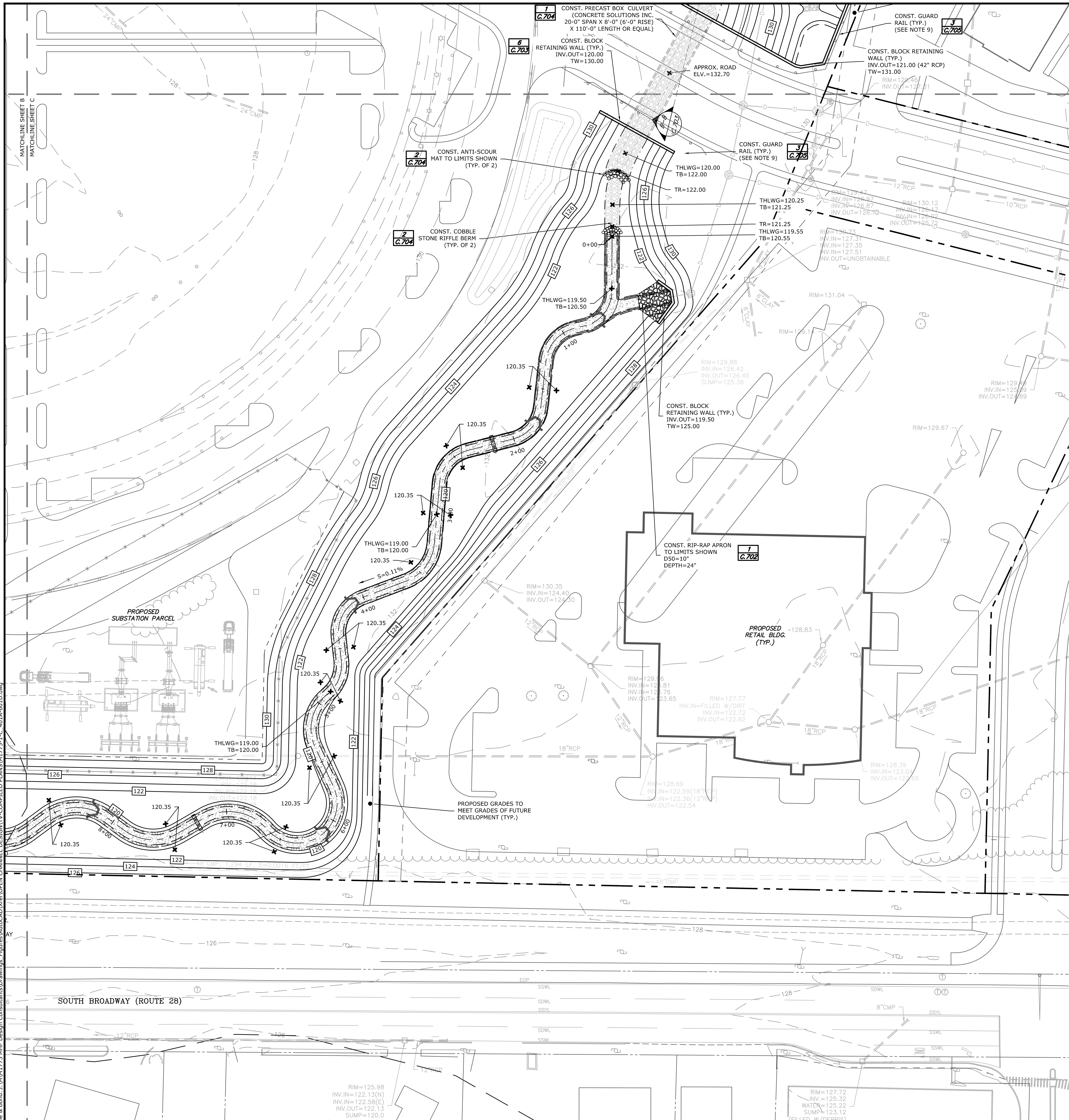
MARK	DATE	DESCRIPTION
13	8/24/2018	REV. PER NHDOT COMMENTS
12	3/12/2018	REV. PER TOWN COMMENTS
11	11/17/2017	ISSUED FOR PRICING
10	10/12/2017	REV. PER FEMA COMMENTS
9	9/18/2017	REV. PER FEMA RFMI
8	7/26/2017	REV. PER NHDES COMMENTS
7	6/20/2017	REV. PER FEMA RFMI
6	6/5/2017	REV. STREAM CROSSINGS
5	5/8/2017	REV. PER NHDES COMMENTS
4	3/24/2017	REV. PER TOWN COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_401A-601D.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

POLICY BROOK GRADING & DRAINAGE PLAN

SCALE: AS SHOWN

C.401B



GRADING AND DRAINAGE NOTES:

1. COMPACTION REQUIREMENTS:
   BELOW PAVED OR CONCRETE AREAS 95%
   TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL 95%
   BELOW LOAM AND SEED AREAS 90%

   * ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.
2. ALL STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR EQUAL) OR RCP CLASS IV, UNLESS OTHERWISE SPECIFIED.
3. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
4. CONTRACTOR SHALL THOROUGHLY CLEAN ALL CATCH BASINS AND DRAIN LINES, WITHIN THE LIMIT OF WORK, OF SEDIMENT IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
5. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
6. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.
7. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NHDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.
8. CONTRACTOR TO SUBMIT AS-BUILT PLANS ON REPRODUCIBLE MYLARS AND IN DIGITAL FORMAT (.DWG FILE) ON DISK TO THE OWNER, ENGINEER, AND TOWN UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER.
9. THE FINAL GUARD RAIL DESIGN SHALL BE COORDINATED WITH THE FUTURE DESIGN PLANS FOR THE TUSCAN VILLAGE AND PROPOSED DEVELOPMENT.
10. ALL ELEVATIONS REFERENCE THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTERS LOT LINE
- EXISTING RIGHT OF WAY
- EXISTING EDGE OF WETLAND
- EXISTING STREAM CENTERLINE
- FEMA 100 YR. FLOOD ELEVATION (EFFECTIVE 5.17.2005)
- PROPOSED STREAM BANK
- 126 EXISTING 2' CONTOUR
- 130 EXISTING 10' CONTOUR
- 120 PROPOSED 2' CONTOUR
- EXISTING TREE LINE
- PROPOSED TREE LINE
- EXISTING GUARD RAIL
- PROPOSED GUARD RAIL
- EXISTING EDGE OF RAILROAD TRACK
- EXISTING FENCE
- EXISTING FENCE
- PROPOSED CHAINLINK FENCE
- PROPOSED SAWCUT LINE
- PROPOSED SILT SOCK
- EXISTING DRAIN LINE
- PROPOSED DRAIN LINE
- PROPOSED PRECAST CULVERT
- PROPOSED BOX CULVERT
- PROPOSED GRAVEL STREAM BED
- PROPOSED RIP-RAP
- PROPOSED COBBLE STONE
- PROPOSED ANTI-SCOUR MAT
- PROPOSED COIR LOGS
- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING SIGN
- EXISTING CATCH BASIN
- EXISTING DRAIN MANHOLE
- PROPOSED DRAIN MANHOLE
- PROPOSED MANHOLE RISER
- PROPOSED CATCHBASIN
- PROPOSED FLARED END SECTION
- (125.42) ×126.59 EXISTING SPOT GRADE
- 119.50 PROPOSED SPOT GRADE
- S=0.12% PROPOSED SLOPE
- PROPOSED INLET PROTECTION (SILT SACK)
- PROPOSED ROCK CROSS VANE
- EXISTING TREE

ABBREVIATIONS:

CB	CATCH BASIN	MAX.	MAXIMUM
CONST.	CONSTRUCT	MIN.	MINIMUM
COORD.	COORDINATE	PDMH	PROPOSED DRAIN MANHOLE
DIA.	DIAMETER	S	SLOPE
DMH	DRAIN MANHOLE	SMH	SEWER MANHOLE
ELEV.	ELEVATION	TB	TOP OF BANK
FES	FLARED END SECTION	TR	TOP OF RIFFLE
HDPE	HIGH-DENSITY POLYETHYLENE	TBR	TO BE REMOVED
INV.	INVERT	THLWG	THALWEG
INV. IN	INVERT IN	TW	TOP OF WALL
INV. OUT	INVERT OUT	TYP.	TYPICAL
LF	LINEAR FEET	VIF	VERIFY IN FIELD
		W/	WITH

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

STATE OF NEW HAMPSHIRE JOSEPH M. PERSECHINO No. 12309 LICENSED PROFESSIONAL ENGINEER
[illegible] 8/24/18

STATE OF NEW HAMPSHIRE BRADLEE MEZQUITA No. 09550 LICENSED PROFESSIONAL ENGINEER
[illegible] 8-24-18

N

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 ▬ 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
13	8/24/2018	REV. PER NHDOT COMMENTS
12	3/12/2018	REV. PER TOWN COMMENTS
11	11/17/2017	ISSUED FOR PRICING
10	10/12/2017	REV. PER FEMA COMMENTS
9	9/18/2017	REV. PER FEMA RFMI
8	7/26/2017	REV. PER NHDES COMMENTS
7	6/20/2017	REV. PER FEMA RFMI
6	6/5/2017	REV. STREAM CROSSINGS
5	5/8/2017	REV. PER NHDES COMMENTS
4	3/24/2017	REV. PER TOWN COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_401A-601D.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

WEST CHANNEL POLICY BROOK GRADING & DRAINAGE PLAN

SCALE: AS SHOWN

C.401C

Last Saved: 8/24/2018
Plotted On:Aug 24, 2018-8:47am By: NSC
Tighe & Bond:J:\M\M1775 MHF Design Consultants\Drawings_Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_401A-601D.dwg

ABBREVIATIONS:

CB	CATCH BASIN	MAX.	MAXIMUM
CONST.	CONSTRUCT	MIN.	MINIMUM
COORD.	COORDINATE	PDMH	PROPOSED DRAIN MANHOLE
DIA.	DIAMETER	S	SLOPE
DMH	DRAIN MANHOLE	SMH	SEWER MANHOLE
ELEV.	ELEVATION	TB	TOP OF BANK
FES	FLARED END SECTION	TR	TOP OF RIFFLE
HDPE	HIGH-DENSITY POLYETHYLENE	TBR	TO BE REMOVED
INV.	INVERT	THLWG	THALWEG
INV. IN	INVERT IN	TW	TOP OF WALL
INV. OUT	INVERT OUT	TYP.	TYPICAL
LF	LINEAR FEET	VIF	VERIFY IN FIELD
		W/	WITH

GRADING AND DRAINAGE NOTES:

1. COMPACTION REQUIREMENTS:

BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREAS	90%

* ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.

2. ALL STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR EQUAL) OR RCP CLASS IV, UNLESS OTHERWISE SPECIFIED.
3. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.
4. CONTRACTOR SHALL THOROUGHLY CLEAN ALL CATCH BASINS AND DRAIN LINES, WITHIN THE LIMIT OF WORK, OF SEDIMENT IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
5. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES.
6. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.
7. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NHDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.
8. CONTRACTOR TO SUBMIT AS-BUILT PLANS ON REPRODUCIBLE MYLARS AND IN DIGITAL FORMAT (.DWG FILE) ON DISK TO THE OWNER, ENGINEER, AND TOWN UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER.
9. THE FINAL GUARD RAIL DESIGN SHALL BE COORDINATED WITH THE FUTURE DESIGN PLANS FOR THE TUSCAN VILLAGE AND PROPOSED DEVELOPMENT.
10. ALL ELEVATIONS REFERENCE THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29).

PROPOSED RETAIL BLDG. (TYP.)
PROPOSED MAINTENANCE BLDG. (TYP.)
CONST. BLOCK RETAINING WALL (TYP.) 6 C.703 INV.OUT=123.95 TW=132.00
THLWG=122.80 TB=123.80
TR=123.80
POND WATER SURFACE ELEVATION=122.00
B-B C.703
CONST. GUARD RAIL (TYP.) (SEE NOTE 9) 3 C.705
CONST. CHAIN-LINK FENCE (TYP.) 8 C.702
CONST. 610 LF 11'X5' PRECAST CONCRETE BOX CULVERT S=0.0012
SEE PLEASANT STREET AS-BUILT PLAN AND PROFILE BY MHF REVISED 4/3/18 FOR AS-BUILT DRAINAGE, WATER, AND SEWER INFORMATION
PLEASANT STREET
RIM=131.45 INV.IN=127.35 INV.IN=126.85 INV.OUT=126.80
RIM=130.24 INV.IN=126.87 INV.IN=127.04 INV.OUT=126.79 SUMP=124.04±
CONST. RIP-RAP APRON TO LIMITS SHOWN (TYP.) D50=12" DEPTH=28"
CONST. BLOCK RETAINING WALL (TYP.) INV.IN=124.65 TW=131.50
CONST. ROCK CROSS-VANE (TYP.) 5 C.702
THLWG=124.70 TB=125.70
CONTRACTOR TO VERIFY EXISTING GRADES IN FIELD (TYP.)
CONST. NATURAL STREAMBED (TYP.) 2 C.702
CONST. FES (TYP.) 4 C.702
CONST. RIP-RAP APRON TO LIMITS SHOWN D50=16" DEPTH=36" 1 C.702
CONST. COBBLE STONE RIFFLE BERM (TYP.) 2 C.704
CONST. ANTI-SCOUR MAT TO LIMITS SHOWN (TYP.) 2 C.704
RECONSTRUCT EXISTING CHAIN-LINK FENCE AS REQUIRED (TYP.) (MATCH EXISTING)
CONST. MANHOLE RISER (TYP. OF 3) 1 C.703
CONST. PDMH (TYP.) 1 C.704
CONST. GUARDRAIL (TYP.)
RECONSTRUCT BITUMINOUS CONCRETE SIDEWALK AND CURB AS REQUIRED (TYP.) (MATCH EXISTING)
CONST. PCB (TYP.) 4 C.705
PROPOSED APARTMENT BLDG. (TYP.)
PROPOSED GRADES TO MEET GRADES OF FUTURE DEVELOPMENT (TYP.)
PROPOSED RETAIL BLDG. (TYP.)
CONST. PROPOSED POND 5 C.703
PROPOSED GRADES TO MEET GRADES OF FUTURE DEVELOPMENT (TYP.)
CONST. BLOCK RETAINING WALL (TYP.) INV.IN=120.00 TW=131.00
1 C.704 CONST. PRECAST BOX CULVERT (CONCRETE SOLUTIONS INC, 20-0" SPAN X 8'-0" (6'-0" RISE) X 110'-0" LENGTH OR EQUAL)
6 C.703 CONST. BLOCK RETAINING WALL (TYP.) INV.OUT=120.00 TW=130.00
APPROX. ROAD ELV.=132.70
CONST. GUARD RAIL (TYP.) (SEE NOTE 9) 3 C.705
CONST. BLOCK RETAINING WALL (TYP.) INV.OUT=121.00 (42" RCP) TW=131.00
PROPOSED GRADES TO MEET GRADES OF FUTURE DEVELOPMENT (TYP.)
MATCHLINE SHEET D
MATCHLINE SHEET C

LEGEND

	EXISTING PROPERTY LINE
	EXISTING ABUTTERS LOT LINE
	EXISTING RIGHT OF WAY
	EXISTING EDGE OF WETLAND
	EXISTING STREAM CENTERLINE
	FEMA 100 YR. FLOOD ELEVATION (EFFECTIVE 5.17.2005)
	PROPOSED STREAM BANK
	EXISTING 2' CONTOUR
	EXISTING 10' CONTOUR
	PROPOSED 2' CONTOUR
	EXISTING TREE LINE
	PROPOSED TREE LINE
	EXISTING GUARD RAIL
	PROPOSED GUARD RAIL
	EXISTING EDGE OF RAILROAD TRACK
	EXISTING FENCE
	EXISTING FENCE
	PROPOSED CHAINLINK FENCE
	PROPOSED SAWCUT LINE
	PROPOSED SILT SOCK
	EXISTING DRAIN LINE
	PROPOSED DRAIN LINE
	PROPOSED PRECAST CULVERT
	PROPOSED BOX CULVERT
	PROPOSED GRAVEL STREAM BED
	PROPOSED RIP-RAP
	PROPOSED COBBLE STONE
	PROPOSED ANTI-SCOUR MAT
	PROPOSED COIR LOGS
	EXISTING LIGHT POLE
	EXISTING UTILITY POLE
	EXISTING SIGN
	EXISTING CATCH BASIN
	EXISTING DRAIN MANHOLE
	PROPOSED DRAIN MANHOLE
	PROPOSED MANHOLE RISER
	PROPOSED CATCHBASIN
	PROPOSED FLARED END SECTION
(125.42) ×126.59	EXISTING SPOT GRADE
119.50	PROPOSED SPOT GRADE
S=0.12%	PROPOSED SLOPE
	PROPOSED INLET PROTECTION (SILT SACK)
	PROPOSED ROCK CROSS VANE
	EXISTING TREE

SCALE IN FEET 0 40' 80'
GRAPHIC SCALE

Last Saved: 8/24/2018
Plotted On: Aug 24, 2018 8:48am By: NSC
Tighe & Bond: J:\W\M1775 MHF Design Consultants\Drawings Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_401A-601D.dwg

Tighe&Bond
www.tighebond.com
MHF Design Consultants, Inc.

STATE OF NEW HAMPSHIRE JOSEPH M. PERSECHINO No. 12333 LICENSED PROFESSIONAL ENGINEER 8/24/18

STATE OF NEW HAMPSHIRE BRADLEE M. ROTA No. 9350 LICENSED PROFESSIONAL ENGINEER 8/24/18

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
14	8/24/2018	REV. PER NHDOT COMMENTS
13	8/15/2018	REV. PER TOWN COMMENTS
12	3/12/2018	REV. PER TOWN COMMENTS
11	11/17/2017	ISSUED FOR PRICING
10	10/12/2017	REV. PER FEMA COMMENTS
9	9/18/2017	REV. PER FEMA RFMI
8	7/26/2017	REV. PER NHDES COMMENTS
7	6/20/2017	REV. PER FEMA RFMI
6	6/5/2017	REV. STREAM CROSSINGS
5	5/8/2017	REV. PER NHDES COMMENTS
4	3/24/2017	REV. PER TOWN COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_401A-601D.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

WEST CHANNEL POLICY BROOK GRADING & DRAINAGE PLAN

SCALE: AS SHOWN

C.401D

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTERS LOT LINE
- EXISTING RIGHT OF WAY
- EXISTING EDGE OF WETLAND
- EXISTING STREAM CENTERLINE
- FEMA 100 YR. FLOOD ELEVATION (EFFECTIVE 5.17.2005)
- PROPOSED STREAM BANK
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING TREE LINE
- PROPOSED TREE LINE
- PROPOSED SAWCUT LINE
- PROPOSED SILT SOCK
- EXISTING DRAIN LINE
- PROPOSED DRAIN LINE
- PROPOSED PRECAST CULVERT
- PROPOSED LIMIT OF C125 EROSION CONTROL BLANKET
- PROPOSED GRAVEL STREAM BED
- PROPOSED COIR LOGS
- PROPOSED RIP-RAP
- PROPOSED COBBLE STONE
- PROPOSED ANTI-SCOUR MAT
- PROPOSED INLET PROTECTION (SILT SACK)
- PROPOSED ROCK CROSS VANE
- EXISTING TREE

EROSION CONTROL NOTES:

1. INSTALL EROSION CONTROL BARRIERS AS SHOWN AS FIRST ORDER OF WORK.
2. SEE GENERAL EROSION CONTROL NOTES ON "EROSION CONTROL NOTES & DETAILS SHEET".
3. PROVIDE INLET PROTECTION AROUND ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED.
4. INSTALL STABILIZED CONSTRUCTION EXITS.
5. INSPECT INLET PROTECTION AND PERIMETER EROSION CONTROL MEASURES DAILY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.
6. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
7. CONSTRUCT EROSION CONTROL BLANKET ON ALL SLOPES STEEPER THAN 3:1.
8. PRIOR TO ANY WORK OR SOIL DISTURBANCE COMMENCING ON THE SUBJECT PROPERTY, INCLUDING MOVING OF EARTH, THE APPLICANT SHALL INSTALL ALL EROSION AND SILTATION MITIGATION AND CONTROL MEASURES AS REQUIRED BY STATE AND LOCAL PERMITS AND APPROVALS.
9. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SPRINKLING WATER ON UNSTABLE SOILS SUBJECT TO ARID CONDITIONS.
10. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
11. ALL CATCH BASIN SUMPS AND PIPING SHALL BE THOROUGHLY CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS AFTER THE PROJECT HAS BEEN FULLY PAVED.
12. TEMPORARY SOIL STOCKPILE SHALL BE SURROUNDED BY SILT FENCE AND SHALL BE STABILIZED BY TEMPORARY EROSION CONTROL SEEDING. STOCKPILE AREAS TO BE LOCATED AS FAR AS POSSIBLE FROM THE DELINEATED EDGE OF WETLANDS.
13. SAFETY FENCING SHALL BE PROVIDED AROUND STOCKPILES OVER 10 FT.
14. CONCRETE TRUCKS WILL BE REQUIRED TO WASH OUT (IF NECESSARY) SHOOTS ONLY WITHIN AREAS WHERE CONCRETE HAS BEEN PLACED. NO OTHER WASH OUT WILL BE ALLOWED.

ABBREVIATIONS:

CB	CATCH BASIN
CONST.	CONSTRUCT
COORD.	COORDINATE
DIA.	DIAMETER
DMH	DRAIN MANHOLE
ELEV.	ELEVATION
FES	FLARED END SECTION
HDPE	HIGH-DENSITY POLYETHYLENE
INV.	INVERT
INV. IN	INVERT IN
INV. OUT	INVERT OUT
LF	LINEAR FEET
MAX.	MAXIMUM
MIN.	MINIMUM
PDMH	PROPOSED DRAIN MANHOLE
S	SLOPE
SMH	SEWER MANHOLE
TB	TOP OF BANK
TR	TOP OF RIFFLE
TBR	TO BE REMOVED
THLWG	THALWEG
TW	TOP OF WALL
TYP.	TYPICAL
VIF	VERIFY IN FIELD
W/	WITH

PROPOSED RETAIL BLDG. (TYP.)

CONST. EROSION CONTROL BLANKET NORTH AMERICAN GREEN C125 OR APPROVED EQUAL (TYP.) — 4 C.701

CONST. STREAM BED (TYP.) — 3 C.702

CONST. ROCK CROSS VANE (TYP.) — 5 C.702

CONST. SEDIMENT CURTAIN (TYP.) — 7 C.702

CONST. COIR LOGS (TYP.) — 3 C.702

CONST. INLET PROTECTION BARRIER (TYP.) — 1 C.701

CONST. SILT SOCK (TYP.) — 2 C.701

BEGIN SILT SOCK

END SILT SOCK

CONST. SILT SOCK (TYP.)

PROPOSED TREE LINE (TYP.)

FEMA 100 YR. FLOOD LINE (EFFECTIVE MAY 17, 2005)

MATCHLINE SHEET A

MATCHLINE SHEET B

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

STATE OF NEW HAMPSHIRE — JOSEPH M. PERSECHINO No. 12393 LICENSED PROFESSIONAL ENGINEER — 8/24/18

STATE OF NEW HAMPSHIRE — BRADLEE MEDEIROS No. 04350 LICENSED PROFESSIONAL ENGINEER — 8-24-18

N

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
9	8/24/2018	REV. PER NHDOT COMMENTS
8	8/15/2018	REV. PER TOWN COMMENTS
7	3/12/2018	REV. PER TOWN COMMENTS
6	11/17/2017	ISSUED FOR PRICING
5	5/8/2017	REV. PER NHDES COMMENTS
4	3/24/2017	REV. PER TOWN COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_401A-601D.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

POLICY BROOK EROSION CONTROL PLAN

SCALE: AS SHOWN

C.501A

Last Saved: 8/15/2018
Printed On: Aug 23, 2018-4:26pm By: NSC
Tighe & Bond 3:\M\M1775 MHF Design Consultants\Drawings - Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_401A-601D.dwg

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTERS LOT LINE
- EXISTING RIGHT OF WAY
- EXISTING EDGE OF WETLAND
- EXISTING STREAM CENTERLINE
- FEMA 100 YR. FLOOD ELEVATION (EFFECTIVE 5.17.2005)
- PROPOSED STREAM BANK
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING TREE LINE
- PROPOSED TREE LINE
- PROPOSED SAWCUT LINE
- PROPOSED SILT SOCK
- EXISTING DRAIN LINE
- PROPOSED DRAIN LINE
- PROPOSED PRECAST CULVERT
- PROPOSED LIMIT OF C125 EROSION CONTROL BLANKET
- PROPOSED GRAVEL STREAM BED
- PROPOSED COIR LOGS
- PROPOSED RIP-RAP
- PROPOSED COBBLE STONE
- PROPOSED ANTI-SCOUR MAT
- PROPOSED INLET PROTECTION (SILT SACK)
- PROPOSED ROCK CROSS VANE
- EXISTING TREE

EROSION CONTROL NOTES:

1. INSTALL EROSION CONTROL BARRIERS AS SHOWN AS FIRST ORDER OF WORK.
2. SEE GENERAL EROSION CONTROL NOTES ON "EROSION CONTROL NOTES & DETAILS SHEET".
3. PROVIDE INLET PROTECTION AROUND ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED.
4. INSTALL STABILIZED CONSTRUCTION EXITS.
5. INSPECT INLET PROTECTION AND PERIMETER EROSION CONTROL MEASURES DAILY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.
6. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
7. CONSTRUCT EROSION CONTROL BLANKET ON ALL SLOPES STEEPER THAN 3:1.
8. PRIOR TO ANY WORK OR SOIL DISTURBANCE COMMENCING ON THE SUBJECT PROPERTY, INCLUDING MOVING OF EARTH, THE APPLICANT SHALL INSTALL ALL EROSION AND SILTATION MITIGATION AND CONTROL MEASURES AS REQUIRED BY STATE AND LOCAL PERMITS AND APPROVALS.
9. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SPRINKLING WATER ON UNSTABLE SOILS SUBJECT TO ARID CONDITIONS.
10. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
11. ALL CATCH BASIN SUMPS AND PIPING SHALL BE THOROUGHLY CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS AFTER THE PROJECT HAS BEEN FULLY PAVED.
12. TEMPORARY SOIL STOCKPILE SHALL BE SURROUNDED BY SILT FENCE AND SHALL BE STABILIZED BY TEMPORARY EROSION CONTROL SEEDING. STOCKPILE AREAS TO BE LOCATED AS FAR AS POSSIBLE FROM THE DELINEATED EDGE OF WETLANDS.
13. SAFETY FENCING SHALL BE PROVIDED AROUND STOCKPILES OVER 10 FT.
14. CONCRETE TRUCKS WILL BE REQUIRED TO WASH OUT (IF NECESSARY) SHOOTS ONLY WITHIN AREAS WHERE CONCRETE HAS BEEN PLACED. NO OTHER WASH OUT WILL BE ALLOWED.

ABBREVIATIONS:

CB	CATCH BASIN
CONST.	CONSTRUCT
COORD.	COORDINATE
DIA.	DIAMETER
DMH	DRAIN MANHOLE
ELEV.	ELEVATION
FES	FLARED END SECTION
HDPE	HIGH-DENSITY POLYETHYLENE
INV.	INVERT
INV. IN	INVERT IN
INV. OUT	INVERT OUT
LF	LINEAR FEET
MAX.	MAXIMUM
MIN.	MINIMUM
PDMH	PROPOSED DRAIN MANHOLE
S	SLOPE
SMH	SEWER MANHOLE
TB	TOP OF BANK
TR	TOP OF RIFFLE
TBR	TO BE REMOVED
THLWG	THALWEG
TW	TOP OF WALL
TYP.	TYPICAL
VIF	VERIFY IN FIELD
W/	WITH

PROPOSED RETAIL BLDG. (TYP.)

MATCHLINE SHEET A

MATCHLINE SHEET B

MATCHLINE SHEET C

FEMA 100 YR. FLOOD LINE (EFFECTIVE MAY 17, 2005)

CONST. COIR LOGS (TYP.) 3 C.702

CONST. STREAM BED (TYP.) 3 C.702

7 C.702 CONST. SEDIMENT CURTAIN (TYP.)

CONST. ROCK CROSS VANE (TYP.) 5 C.702

4 C.701 CONST. EROSION CONTROL BLANKET NORTH AMERICAN GREEN C125 OR APPROVED EQUAL (TYP.)

W.A. ELEV. 120.0

CONST. INLET PROTECTION BARRIER (TYP.) 1 C.701

MH

CB

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

STATE OF NEW HAMPSHIRE
JOSEPH M. PERSECHINO
No. 12393
LICENSED PROFESSIONAL ENGINEER
8/24/18

STATE OF NEW HAMPSHIRE
BRADLEE MEDEIROS
No. 04350
LICENSED PROFESSIONAL ENGINEER
8-24-18

N

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
9	8/24/2018	REV. PER NHDOT COMMENTS
8	8/15/2018	REV. PER TOWN COMMENTS
7	3/12/2018	REV. PER TOWN COMMENTS
6	11/17/2017	ISSUED FOR PRICING
5	5/8/2017	REV. PER NHDES COMMENTS
4	3/24/2017	REV. PER TOWN COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

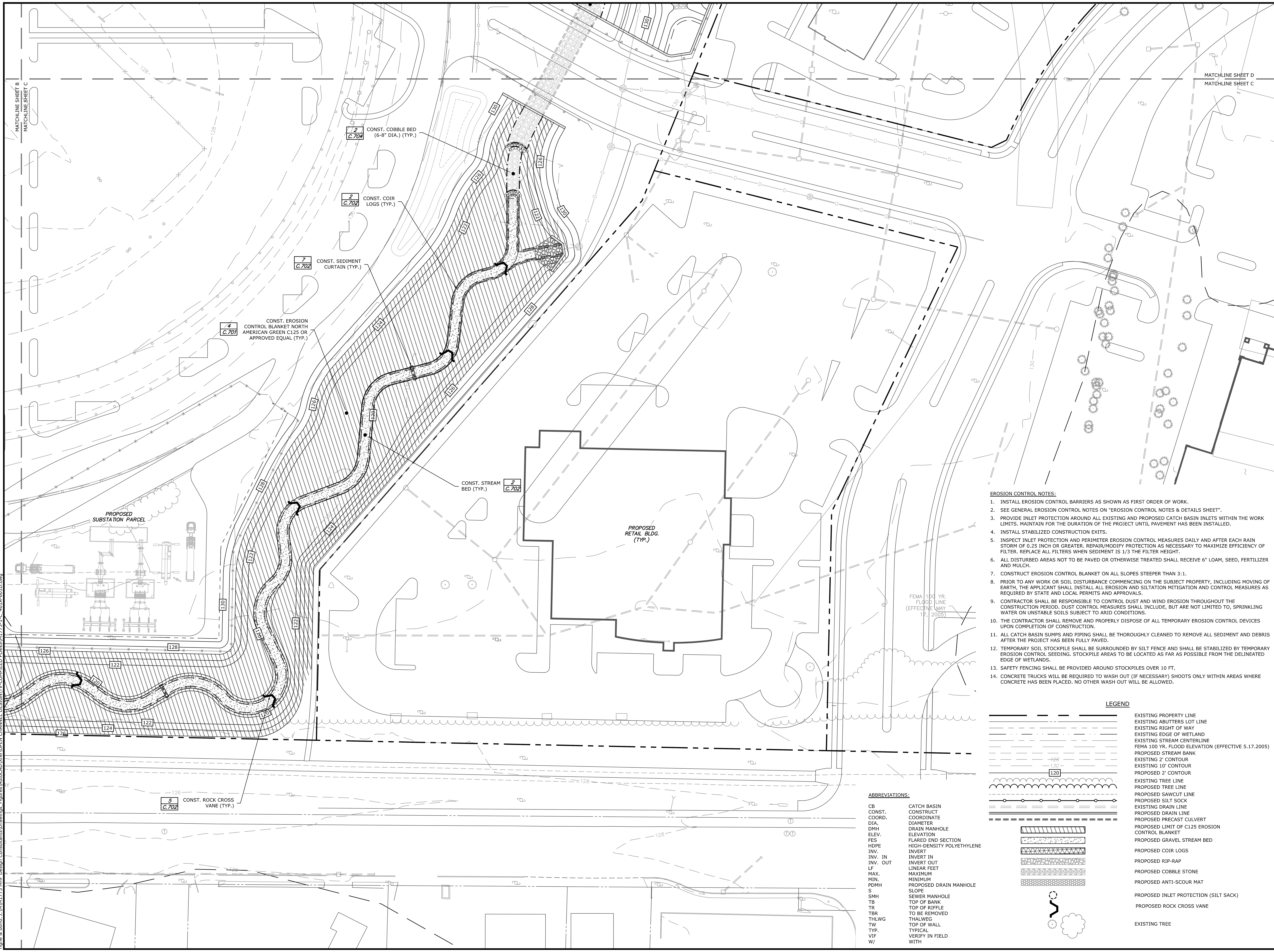
PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_401A-601D.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

POLICY BROOK EROSION CONTROL PLAN

SCALE: AS SHOWN

C.501B

Last Saved: 8/15/2018
Plotted On: Aug 23, 2018 4:27pm By: NSC
Tighe & Bond: J:\M\M1775 MHF Design Consultants\Drawings Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_401A-601D.dwg



EROSION CONTROL NOTES:

1. INSTALL EROSION CONTROL BARRIERS AS SHOWN AS FIRST ORDER OF WORK.
2. SEE GENERAL EROSION CONTROL NOTES ON "EROSION CONTROL NOTES & DETAILS SHEET".
3. PROVIDE INLET PROTECTION AROUND ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED.
4. INSTALL STABILIZED CONSTRUCTION EXITS.
5. INSPECT INLET PROTECTION AND PERIMETER EROSION CONTROL MEASURES DAILY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.
6. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
7. CONSTRUCT EROSION CONTROL BLANKET ON ALL SLOPES STEEPER THAN 3:1.
8. PRIOR TO ANY WORK OR SOIL DISTURBANCE COMMENCING ON THE SUBJECT PROPERTY, INCLUDING MOVING OF EARTH, THE APPLICANT SHALL INSTALL ALL EROSION AND SILTATION MITIGATION AND CONTROL MEASURES AS REQUIRED BY STATE AND LOCAL PERMITS AND APPROVALS.
9. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SPRINKLING WATER ON UNSTABLE SOILS SUBJECT TO ARID CONDITIONS.
10. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
11. ALL CATCH BASIN SUMPS AND PIPING SHALL BE THOROUGHLY CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS AFTER THE PROJECT HAS BEEN FULLY PAVED.
12. TEMPORARY SOIL STOCKPILE SHALL BE SURROUNDED BY SILT FENCE AND SHALL BE STABILIZED BY TEMPORARY EROSION CONTROL SEEDING. STOCKPILE AREAS TO BE LOCATED AS FAR AS POSSIBLE FROM THE DELINEATED EDGE OF WETLANDS.
13. SAFETY FENCING SHALL BE PROVIDED AROUND STOCKPILES OVER 10 FT.
14. CONCRETE TRUCKS WILL BE REQUIRED TO WASH OUT (IF NECESSARY) SHOOTS ONLY WITHIN AREAS WHERE CONCRETE HAS BEEN PLACED. NO OTHER WASH OUT WILL BE ALLOWED.

LEGEND

EXISTING PROPERTY LINE
EXISTING ABUTTERS LOT LINE
EXISTING RIGHT OF WAY
EXISTING EDGE OF WETLAND
EXISTING STREAM CENTERLINE
FEMA 100 YR. FLOOD ELEVATION (EFFECTIVE 5.17.2005)
PROPOSED STREAM BANK
126 EXISTING 2' CONTOUR
130 EXISTING 10' CONTOUR
120 PROPOSED 2' CONTOUR
EXISTING TREE LINE
PROPOSED TREE LINE
PROPOSED SAWCUT LINE
PROPOSED SILT SOCK
EXISTING DRAIN LINE
PROPOSED DRAIN LINE
PROPOSED PRECAST CULVERT
▨ PROPOSED LIMIT OF C125 EROSION CONTROL BLANKET
PROPOSED GRAVEL STREAM BED
PROPOSED COIR LOGS
PROPOSED RIP-RAP
PROPOSED COBBLE STONE
PROPOSED ANTI-SCOUR MAT
PROPOSED INLET PROTECTION (SILT SACK)
PROPOSED ROCK CROSS VANE
EXISTING TREE

ABBREVIATIONS:

CB	CATCH BASIN
CONST.	CONSTRUCT
COORD.	COORDINATE
DIA.	DIAMETER
DMH	DRAIN MANHOLE
ELEV.	ELEVATION
FES	FLARED END SECTION
HDPE	HIGH-DENSITY POLYETHYLENE
INV.	INVERT
INV. IN	INVERT IN
INV. OUT	INVERT OUT
LF	LINEAR FEET
MAX.	MAXIMUM
MIN.	MINIMUM
PDMH	PROPOSED DRAIN MANHOLE
S	SLOPE
SMH	SEWER MANHOLE
TB	TOP OF BANK
TR	TOP OF RIFFLE
TBR	TO BE REMOVED
THLWG	THALWEG
TW	TOP OF WALL
TYP.	TYPICAL
VIF	VERIFY IN FIELD
W/	WITH

Last Saved: 8/15/2018
Plotted On:Aug 23, 2018-4:29pm By: NSC
Tighe & Bond:J:\M\M1775 MHF Design Consultants\Drawings_Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_401A-601D.dwg

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

STATE OF NEW HAMPSHIRE JOSEPH M. PERSECHINO No. 12369 LICENSED PROFESSIONAL ENGINEER
8/24/18

STATE OF NEW HAMPSHIRE BRADLEE MEZQUITA No. 09550 LICENSED PROFESSIONAL ENGINEER
8-24-18

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

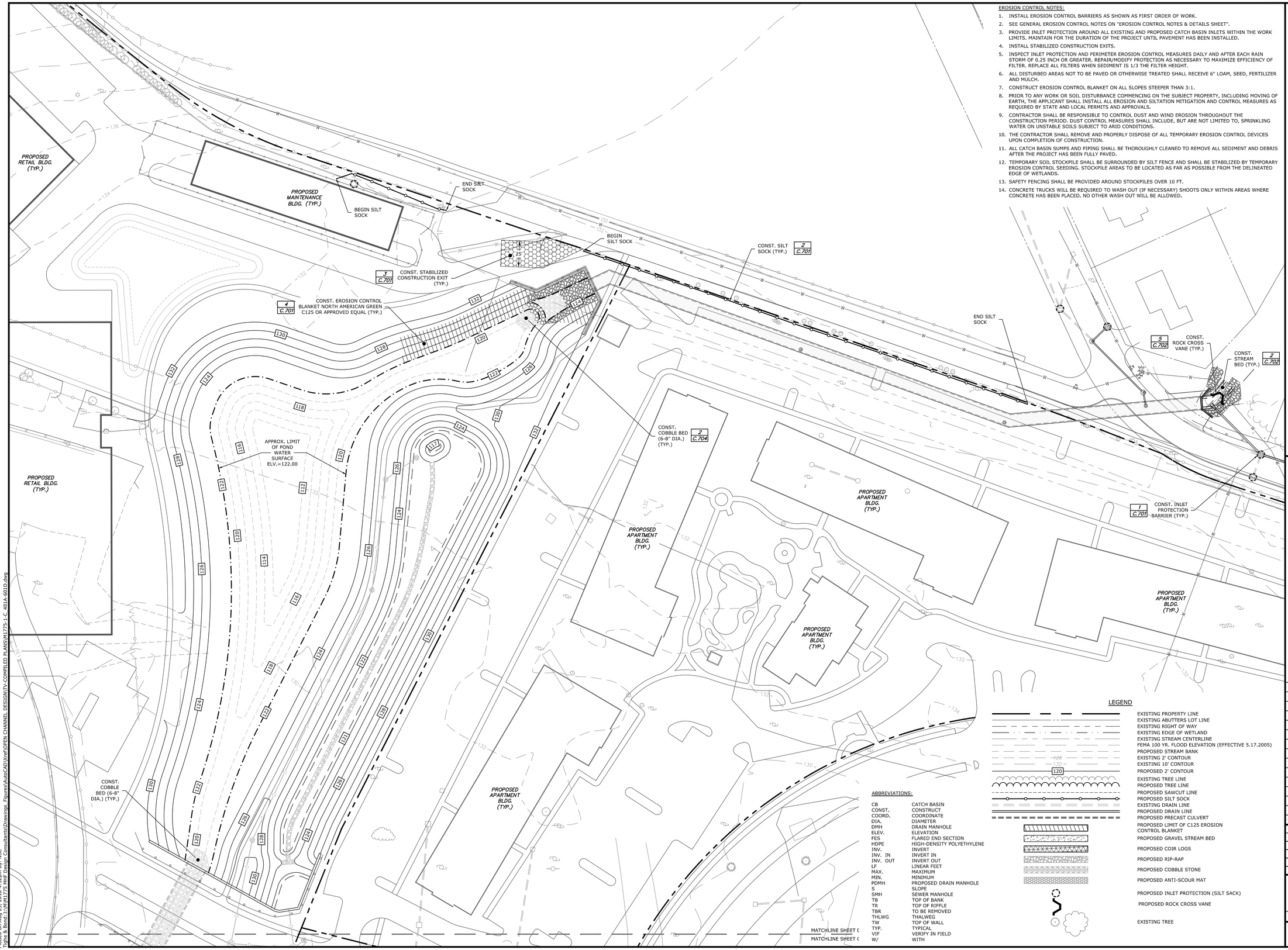
MARK	DATE	DESCRIPTION
9	8/24/2018	REV. PER NHDOT COMMENTS
8	8/15/2018	REV. PER TOWN COMMENTS
7	3/12/2018	REV. PER TOWN COMMENTS
6	11/17/2017	ISSUED FOR PRICING
5	5/8/2017	REV. PER NHDES COMMENTS
4	3/24/2017	REV. PER TOWN COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_401A-601D.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

WEST CHANNEL POLICY BROOK EROSION CONTROL PLAN

SCALE: AS SHOWN

C.501C



EROSION CONTROL NOTES:

1. INSTALL EROSION CONTROL BARRIERS AS SHOWN AS FIRST ORDER OF WORK.
2. SEE GENERAL EROSION CONTROL NOTES ON "EROSION CONTROL NOTES & DETAILS SHEET".
3. PROVIDE INLET PROTECTION AROUND ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED.
4. INSTALL STABILIZED CONSTRUCTION EXITS.
5. INSPECT INLET PROTECTION AND PERIMETER EROSION CONTROL MEASURES DAILY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.
6. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER AND MULCH.
7. CONSTRUCT EROSION CONTROL BLANKET ON ALL SLOPES STEEPER THAN 3:1.
8. PRIOR TO ANY WORK OR SOIL DISTURBANCE COMMENCING ON THE SUBJECT PROPERTY, INCLUDING MOVING OF EARTH, THE APPLICANT SHALL INSTALL ALL EROSION AND SILTATION MITIGATION AND CONTROL MEASURES AS REQUIRED BY STATE AND LOCAL PERMITS AND APPROVALS.
9. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, SPRINKLING WATER ON UNSTABLE SOILS SUBJECT TO ARID CONDITIONS.
10. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
11. ALL CATCH BASIN SUMPS AND PIPING SHALL BE THOROUGHLY CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS AFTER THE PROJECT HAS BEEN FULLY PAVED.
12. TEMPORARY SOIL STOCKPILE SHALL BE SURROUNDED BY SILT FENCE AND SHALL BE STABILIZED BY TEMPORARY EROSION CONTROL SEEDING. STOCKPILE AREAS TO BE LOCATED AS FAR AS POSSIBLE FROM THE DELINEATED EDGE OF WETLANDS.
13. SAFETY FENCING SHALL BE PROVIDED AROUND STOCKPILES OVER 10 FT.
14. CONCRETE TRUCKS WILL BE REQUIRED TO WASH OUT (IF NECESSARY) SHOOTS ONLY WITHIN AREAS WHERE CONCRETE HAS BEEN PLACED. NO OTHER WASH OUT WILL BE ALLOWED.

ABBREVIATIONS:

CB	CATCH BASIN
CONST.	CONSTRUCT
COORD.	COORDINATE
DIA.	DIAMETER
DMH	DRAIN MANHOLE
ELEV.	ELEVATION
FES	FLARED END SECTION
HDPE	HIGH-DENSITY POLYETHYLENE
INV.	INVERT
INV. IN	INVERT IN
INV. OUT	INVERT OUT
LF	LINEAR FEET
MAX.	MAXIMUM
MIN.	MINIMUM
PDMH	PROPOSED DRAIN MANHOLE
S	SLOPE
SMH	SEWER MANHOLE
TB	TOP OF BANK
TR	TOP OF RIFFLE
TBR	TO BE REMOVED
THLWG	THALWEG
TW	TOP OF WALL
TYP.	TYPICAL
VIF	VERIFY IN FIELD
W/	WITH

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTERS LOT LINE
- EXISTING RIGHT OF WAY
- EXISTING EDGE OF WETLAND
- EXISTING STREAM CENTERLINE
- FEMA 100 YR. FLOOD ELEVATION (EFFECTIVE 5.17.2005)
- PROPOSED STREAM BANK
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING TREE LINE
- PROPOSED TREE LINE
- PROPOSED SAWCUT LINE
- PROPOSED SILT SOCK
- EXISTING DRAIN LINE
- PROPOSED DRAIN LINE
- PROPOSED PRECAST CULVERT
- PROPOSED LIMIT OF C125 EROSION CONTROL BLANKET
- PROPOSED GRAVEL STREAM BED
- PROPOSED COIR LOGS
- PROPOSED RIP-RAP
- PROPOSED COBBLE STONE
- PROPOSED ANTI-SCOUR MAT
- PROPOSED INLET PROTECTION (SILT SACK)
- PROPOSED ROCK CROSS VANE
- EXISTING TREE

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

STATE OF NEW HAMPSHIRE — JOSEPH M. PERSECHINO No. 12333 LICENSED PROFESSIONAL ENGINEER — 8/24/18

STATE OF NEW HAMPSHIRE — BRADLEE MEDEIROS No. 04350 LICENSED PROFESSIONAL ENGINEER — 8-24-18

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
9	8/24/2018	REV. PER NHDOT COMMENTS
8	8/15/2018	REV. PER TOWN COMMENTS
7	3/12/2018	REV. PER TOWN COMMENTS
6	11/17/2017	ISSUED FOR PRICING
5	5/8/2017	REV. PER NHDES COMMENTS
4	3/24/2017	REV. PER TOWN COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_401A-601D.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

WEST CHANNEL POLICY BROOK EROSION CONTROL PLAN

SCALE: AS SHOWN

C.501D

Last Saved: 8/15/2018
Printed On: Aug 23, 2018 4:32pm By: NSC
Tighe & Bond: J:\M\M1775 MHF Design Consultants\Drawings, Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_401A-601D.dwg

ABBREVIATIONS:

CB	CATCH BASIN
CONST.	CONSTRUCT
COORD.	COORDINATE
DIA.	DIAMETER
DMH	DRAIN MANHOLE
ELEV.	ELEVATION
FES	FLARED END SECTION
HDPE	HIGH-DENSITY POLYETHYLENE
INV.	INVERT
INV. IN	INVERT IN
INV. OUT	INVERT OUT
LF	LINEAR FEET
MAX.	MAXIMUM
MIN.	MINIMUM
PDMH	PROPOSED DRAIN MANHOLE
S	SLOPE
SMH	SEWER MANHOLE
TB	TOP OF BANK
TR	TOP OF RIFFLE
TBR	TO BE REMOVED
THLWG	THALWEG
TW	TOP OF WALL
TYP.	TYPICAL
VIF	VERIFY IN FIELD
W/	WITH

LEGEND

EXISTING PROPERTY LINE
EXISTING ABUTTERS LOT LINE
EXISTING RIGHT OF WAY
EXISTING EDGE OF WETLAND
EXISTING STREAM CENTERLINE
PROPOSED STREAM BANK
EXISTING 2' CONTOUR
EXISTING 10' CONTOUR
PROPOSED 2' CONTOUR
EXISTING TREE LINE
PROPOSED TREE LINE
EXISTING GUARD RAIL
EXISTING EDGE OF RAILROAD TRACK
EXISTING FENCE
EXISTING FENCE
AREA A: STREAM BANK MARGIN
AREA B: NARROW CHANNEL
AREA C: PIT & MOUND SCRUB/SHRUB
AREA D: EMBANKMENT
PROPOSED GRAVEL STREAM BED
PROPOSED RIP-RAP
PROPOSED COBBLE STONE
PROPOSED ANTI-SCOUR MAT
EXISTING LIGHT POLE
EXISTING UTILITY POLE
EXISTING SIGN
EXISTING CATCH BASIN
EXISTING DRAIN MANHOLE
PROPOSED INLET PROTECTION (SILT SACK)
PROPOSED ROCK CROSS VANE
EXISTING TREE

WETLAND PLANT & SEED SCHEDULE				
LAYER	SCIENTIFIC NAME	COMMON NAME	TYPE/SIZE	NUMBER
AREA A: STREAM BANK MARGIN (LENGTH = ±6,700 LF)				
SHRUB	SALIX SP.	WILLOW	DORMANT CUTTINGS 1/4" TO 3/4" IN DIAMETER 12"-36" LONG	25,000
SHRUB	CORNUS AMOMUM	SILKY DOGWOOD	DORMANT CUTTINGS 1/4" TO 3/4" IN DIAMETER 12"-36" LONG	15,000
AREA B: NARROW CHANNEL (AREA = ±75,500SF)				
SHRUB	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	1GAL. POTS 18"-24"	345
HERB	CALTHA PALUSTRIS	MARSH MARIGOLD	2" PLUGS	460
HERB	CAREX STRICTA	TUSSOCK SEDGE	2" PLUGS	460
HERB	HIBISCUS MOSCHUETOS	CRIMSONEYED ROSEMALLOW	2" PLUGS	460
SEED MIX	NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES		35 LBS./AC.	61 LBS.
AREA C: PIT & MOUND SCRUB/SHRUB (AREA = ±101,250 SF)				
SHRUB	VIBURNUM RECOGNITUM	ARROWWOOD	1GAL. POTS 18"-24"	230
SHRUB	CORNUS SERICEA	RED OSIER DOGWOOD	1GAL. POTS 18"-24"	325
SHRUB	VACCINIUM CORYMBOSUM	HIGHBLUSH BLUEBERRY	1GAL. POTS 18"-24"	230
SHRUB	ILEX VERTICILLATA	WINTERBERRY	1GAL. POTS 18"-24"	325
SHRUB	SAMBUCUS CANADENSIS	ELDERBERRY	1GAL. POTS 18"-24"	230
SEED MIX	NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES		35 LBS./AC.	82 LBS.
AREA D: EMBANKMENT (AREA = ±118,500 SF)				
SHRUB	VIBURNUM ACERIFOLIUM	MAPLELEAF VIBURNUM	1GAL. POTS 18"-24"	415
SHRUB	GAYLUSSACIA BACCATA	HUCKLBERRY	1GAL. POTS 18"-24"	415
SHRUB	ARONIA MELANOCARPA	BLACK CHOKECHERRY	1GAL. POTS 18"-24"	375
SHRUB	AMELANCHIER CANADENSIS	SHADBUSH	1GAL. POTS 18"-24"	250
SHRUB	COMPTONIA PEREGRINE	SWEETFERN	1GAL. POTS 18"-24"	375
SHURB	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	1GAL. POTS 18"-24"	375
SEED MIX	NEW ENGLAND EROSION CONTROL/RESTORATION MIX BY NEW ENGLAND WETLAND PLANTS		25 LBS./AC	68 LBS.

PROPOSED RETAIL BLDG. (TYP.)

LIMIT OF AREA D: EMBANKMENT 3 C.703

LIMIT OF AREA C: PIT & MOUND SCRUB/SHRUB 3 C.703

LIMIT OF AREA A: STREAM BANK MARGIN 3 C.702

LIMIT OF AREA B: NARROW CHANNEL 3 C.703

MATCHLINE SHEET A

MATCHLINE SHEET B

SOUTH BROADWAY (ROUTE 28)

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
6	8/24/2018	REV. PER NHDOT COMMENTS
5	3/12/2018	REV. PER TOWN COMMENTS
4	11/17/2017	ISSUED FOR PRICING
3	5/8/2017	REV. PER NHDES COMMENTS
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_401A-601D.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

POLICY BROOK WETLAND PLANTING PLAN

SCALE: AS SHOWN

C.601A

Last Saved: 8/23/2018
Plotted On: Aug 24, 2018 8:05am By: NSC
Tighe & Bond: J:\M\M1775 MHF Design Consultants\Drawings - Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_401A-601D.dwg

ABBREVIATIONS:

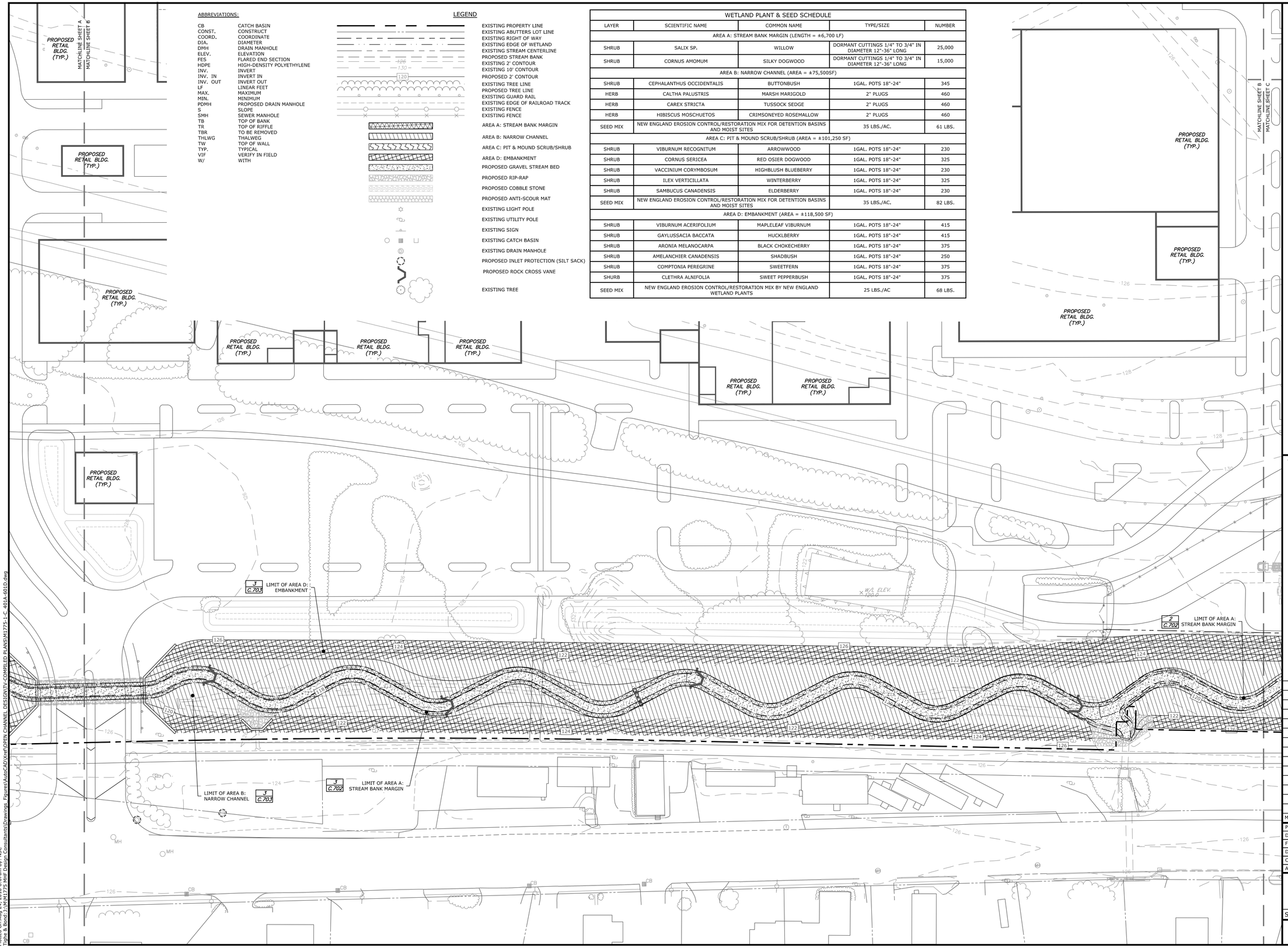
CB	CATCH BASIN
CONST.	CONSTRUCT
COORD.	COORDINATE
DIA.	DIAMETER
DMH	DRAIN MANHOLE
ELEV.	ELEVATION
FES	FLARED END SECTION
HDPE	HIGH-DENSITY POLYETHYLENE
INV.	INVERT
INV. IN	INVERT IN
INV. OUT	INVERT OUT
LF	LINEAR FEET
MAX.	MAXIMUM
MIN.	MINIMUM
PDMH	PROPOSED DRAIN MANHOLE
S	SLOPE
SMH	SEWER MANHOLE
TB	TOP OF BANK
TR	TOP OF RIFFLE
TBR	TO BE REMOVED
THLWG	THALWEG
TW	TOP OF WALL
TYP.	TYPICAL
VIF	VERIFY IN FIELD
W/	WITH

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ABUTTERS LOT LINE
- EXISTING RIGHT OF WAY
- EXISTING EDGE OF WETLAND
- EXISTING STREAM CENTERLINE
- PROPOSED STREAM BANK
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING TREE LINE
- PROPOSED TREE LINE
- EXISTING GUARD RAIL
- EXISTING EDGE OF RAILROAD TRACK
- EXISTING FENCE
- EXISTING FENCE
- AREA A: STREAM BANK MARGIN
- AREA B: NARROW CHANNEL
- AREA C: PIT & MOUND SCRUB/SHRUB
- AREA D: EMBANKMENT
- PROPOSED GRAVEL STREAM BED
- PROPOSED RIP-RAP
- PROPOSED COBBLE STONE
- PROPOSED ANTI-SCOUR MAT
- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING SIGN
- EXISTING CATCH BASIN
- EXISTING DRAIN MANHOLE
- PROPOSED INLET PROTECTION (SILT SACK)
- PROPOSED ROCK CROSS VANE
- EXISTING TREE

WETLAND PLANT & SEED SCHEDULE

LAYER	SCIENTIFIC NAME	COMMON NAME	TYPE/SIZE	NUMBER
AREA A: STREAM BANK MARGIN (LENGTH = ±6,700 LF)				
SHRUB	SALIX SP.	WILLOW	DORMANT CUTTINGS 1/4" TO 3/4" IN DIAMETER 12"-36" LONG	25,000
SHRUB	CORNUS AMOMUM	SILKY DOGWOOD	DORMANT CUTTINGS 1/4" TO 3/4" IN DIAMETER 12"-36" LONG	15,000
AREA B: NARROW CHANNEL (AREA = ±75,500SF)				
SHRUB	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	1GAL. POTS 18"-24"	345
HERB	CALTHA PALUSTRIS	MARSH MARIGOLD	2" PLUGS	460
HERB	CAREX STRICTA	TUSSOCK SEDGE	2" PLUGS	460
HERB	HIBISCUS MOSCHUETOS	CRIMSONEYED ROSEMALLOW	2" PLUGS	460
SEED MIX	NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES		35 LBS./AC.	61 LBS.
AREA C: PIT & MOUND SCRUB/SHRUB (AREA = ±101,250 SF)				
SHRUB	VIBURNUM RECOGNITUM	ARROWWOOD	1GAL. POTS 18"-24"	230
SHRUB	CORNUS SERICEA	RED OSIER DOGWOOD	1GAL. POTS 18"-24"	325
SHRUB	VACCINIUM CORYMBOSUM	HIGHBLUSH BLUEBERRY	1GAL. POTS 18"-24"	230
SHRUB	ILEX VERTICILLATA	WINTERBERRY	1GAL. POTS 18"-24"	325
SHRUB	SAMBUCUS CANADENSIS	ELDERBERRY	1GAL. POTS 18"-24"	230
SEED MIX	NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES		35 LBS./AC.	82 LBS.
AREA D: EMBANKMENT (AREA = ±118,500 SF)				
SHRUB	VIBURNUM ACERIFOLIUM	MAPLELEAF VIBURNUM	1GAL. POTS 18"-24"	415
SHRUB	GAYLUSSACIA BACCATA	HUCKLBERRY	1GAL. POTS 18"-24"	415
SHRUB	ARONIA MELANOCARPA	BLACK CHOKECHERRY	1GAL. POTS 18"-24"	375
SHRUB	AMELANCHIER CANADENSIS	SHADBUSH	1GAL. POTS 18"-24"	250
SHRUB	COMPTONIA PEREGRINE	SWEETFERN	1GAL. POTS 18"-24"	375
SHURB	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	1GAL. POTS 18"-24"	375
SEED MIX	NEW ENGLAND EROSION CONTROL/RESTORATION MIX BY NEW ENGLAND WETLAND PLANTS		25 LBS./AC	68 LBS.



SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
6	8/24/2018	REV. PER NHDOT COMMENTS
5	3/12/2018	REV. PER TOWN COMMENTS
4	11/17/2017	ISSUED FOR PRICING
3	5/8/2017	REV. PER NHDES COMMENTS
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_401A-601D.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

POLICY BROOK WETLAND PLANTING PLAN

SCALE: AS SHOWN

C.601B

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

MATCHLINE SHEET B
MATCHLINE SHEET C

MATCHLINE SHEET D
MATCHLINE SHEET C

3 / C.703 LIMIT OF AREA D: EMBANKMENT

3 / C.703 LIMIT OF AREA C: PIT & MOUND SCRUB/SHRUB

PROPOSED SUBSTATION PARCEL

PROPOSED RETAIL BLDG. (TYP.)

LIMIT OF AREA B: NARROW CHANNEL 3 / C.703

LIMIT OF AREA A: STREAM BANK MARGIN 2 / C.702

LEGEND

	EXISTING PROPERTY LINE
	EXISTING ABUTTERS LOT LINE
	EXISTING RIGHT OF WAY
	EXISTING EDGE OF WETLAND
	EXISTING STREAM CENTERLINE
	PROPOSED STREAM BANK
126	EXISTING 2' CONTOUR
130	EXISTING 10' CONTOUR
120	PROPOSED 2' CONTOUR
	EXISTING TREE LINE
	PROPOSED TREE LINE
	EXISTING GUARD RAIL
	EXISTING EDGE OF RAILROAD TRACK
	EXISTING FENCE
	EXISTING FENCE
	AREA A: STREAM BANK MARGIN
	AREA B: NARROW CHANNEL
	AREA C: PIT & MOUND SCRUB/SHRUB
	AREA D: EMBANKMENT
	PROPOSED GRAVEL STREAM BED
	PROPOSED RIP-RAP
	PROPOSED COBBLE STONE
	PROPOSED ANTI-SCOUR MAT
	EXISTING LIGHT POLE
	EXISTING UTILITY POLE
	EXISTING SIGN
	EXISTING CATCH BASIN
	EXISTING DRAIN MANHOLE
	PROPOSED INLET PROTECTION (SILT SACK)
	PROPOSED ROCK CROSS VANE
	EXISTING TREE

ABBREVIATIONS:

CB	CATCH BASIN
CONST.	CONSTRUCT
COORD.	COORDINATE
DIA.	DIAMETER
DMH	DRAIN MANHOLE
ELEV.	ELEVATION
FES	FLARED END SECTION
HDPE	HIGH-DENSITY POLYETHYLENE
INV.	INVERT
INV. IN	INVERT IN
INV. OUT	INVERT OUT
LF	LINEAR FEET
MAX.	MAXIMUM
MIN.	MINIMUM
PDMH	PROPOSED DRAIN MANHOLE
S	SLOPE
SMH	SEWER MANHOLE
TB	TOP OF BANK
TR	TOP OF RIFFLE
TBR	TO BE REMOVED
THLWG	THALWEG
TW	TOP OF WALL
TYP.	TYPICAL
VIF	VERIFY IN FIELD
W/	WITH

WETLAND PLANT & SEED SCHEDULE

LAYER	SCIENTIFIC NAME	COMMON NAME	TYPE/SIZE	NUMBER
AREA A: STREAM BANK MARGIN (LENGTH = ±6,700 LF)				
SHRUB	SALIX SP.	WILLOW	DORMANT CUTTINGS 1/4" TO 3/4" IN DIAMETER 12"-36" LONG	25,000
SHRUB	CORNUS AMOMUM	SILKY DOGWOOD	DORMANT CUTTINGS 1/4" TO 3/4" IN DIAMETER 12"-36" LONG	15,000
AREA B: NARROW CHANNEL (AREA = ±75,500SF)				
SHRUB	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	1GAL. POTS 18"-24"	345
HERB	CALTHA PALUSTRIS	MARSH MARIGOLD	2" PLUGS	460
HERB	CAREX STRICTA	TUSSOCK SEDGE	2" PLUGS	460
HERB	HIBISCUS MOSCHUETOS	CRIMSONEYED ROSEMALLOW	2" PLUGS	460
SEED MIX	NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES		35 LBS./AC.	61 LBS.
AREA C: PIT & MOUND SCRUB/SHRUB (AREA = ±101,250 SF)				
SHRUB	VIBURNUM RECOGNITUM	ARROWWOOD	1GAL. POTS 18"-24"	230
SHRUB	CORNUS SERICEA	RED OSIER DOGWOOD	1GAL. POTS 18"-24"	325
SHRUB	VACCINIUM CORYMBOSUM	HIGHBLUSH BLUEBERRY	1GAL. POTS 18"-24"	230
SHRUB	ILEX VERTICILLATA	WINTERBERRY	1GAL. POTS 18"-24"	325
SHRUB	SAMBUCUS CANADENSIS	ELDERBERRY	1GAL. POTS 18"-24"	230
SEED MIX	NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES		35 LBS./AC.	82 LBS.
AREA D: EMBANKMENT (AREA = ±118,500 SF)				
SHRUB	VIBURNUM ACERIFOLIUM	MAPLELEAF VIBURNUM	1GAL. POTS 18"-24"	415
SHRUB	GAYLUSSACIA BACCATA	HUCKLBERRY	1GAL. POTS 18"-24"	415
SHRUB	ARONIA MELANOCARPA	BLACK CHOKECHERRY	1GAL. POTS 18"-24"	375
SHRUB	AMELANCHIER CANADENSIS	SHADBUSH	1GAL. POTS 18"-24"	250
SHRUB	COMPTONIA PEREGRINE	SWEETFERN	1GAL. POTS 18"-24"	375
SHURB	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	1GAL. POTS 18"-24"	375
SEED MIX	NEW ENGLAND EROSION CONTROL/RESTORATION MIX BY NEW ENGLAND WETLAND PLANTS		25 LBS./AC	68 LBS.

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
7	8/24/2018	REV. PER NHDOT COMMENTS
6	3/12/2018	REV. PER TOWN COMMENTS
5	11/20/2017	REV. IMPACT AREAS
4	11/17/2017	ISSUED FOR PRICING
3	5/8/2017	REV. PER NHDES COMMENTS
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_401A-601D.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

WEST CHANNEL POLICY BROOK WETLAND PLANTING PLAN

SCALE: AS SHOWN

C.601C

Last Saved: 8/23/2018
Plotted On: Aug 24, 2018-8:09am By: NSC
Tighe & Bond J:\MM\1775 MHF Design Consultants\Drawings, Figures\AutoCAD\xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_401A-601D.dwg

LEGEND

EXISTING PROPERTY LINE
EXISTING ABUTTERS LOT LINE
EXISTING RIGHT OF WAY
EXISTING EDGE OF WETLAND
EXISTING STREAM CENTERLINE
PROPOSED STREAM BANK
EXISTING 2' CONTOUR
EXISTING 10' CONTOUR
PROPOSED 2' CONTOUR
EXISTING TREE LINE
PROPOSED TREE LINE
EXISTING GUARD RAIL
EXISTING EDGE OF RAILROAD TRACK
EXISTING FENCE
EXISTING FENCE

AREA A: STREAM BANK MARGIN

AREA B: NARROW CHANNEL

AREA C: PIT & MOUND SCRUB/SHRUB

AREA D: EMBANKMENT

PROPOSED GRAVEL STREAM BED

PROPOSED RIP-RAP

PROPOSED COBBLE STONE

PROPOSED ANTI-SCOUR MAT

EXISTING LIGHT POLE

EXISTING UTILITY POLE

EXISTING SIGN

EXISTING CATCH BASIN

EXISTING DRAIN MANHOLE

PROPOSED INLET PROTECTION (SILT SACK)

PROPOSED ROCK CROSS VANE

EXISTING TREE

ABBREVIATIONS:

CB	CATCH BASIN
CONST.	CONSTRUCT
COORD.	COORDINATE
DIA.	DIAMETER
DMH	DRAIN MANHOLE
ELEV.	ELEVATION
FES	FLARED END SECTION
HDPE	HIGH-DENSITY POLYETHYLENE
INV.	INVERT
INV. IN	INVERT IN
INV. OUT	INVERT OUT
LF	LINEAR FEET
MAX.	MAXIMUM
MIN.	MINIMUM
PDMH	PROPOSED DRAIN MANHOLE
S	SLOPE
SMH	SEWER MANHOLE
TB	TOP OF BANK
TR	TOP OF RIFFLE
TBR	TO BE REMOVED
THLWG	THALWEG
TW	TOP OF WALL
TYP.	TYPICAL
VIF	VERIFY IN FIELD
W/	WITH

WETLAND PLANT & SEED SCHEDULE

LAYER	SCIENTIFIC NAME	COMMON NAME	TYPE/SIZE	NUMBER
AREA A: STREAM BANK MARGIN (LENGTH = ±6,700 LF)				
SHRUB	SALIX SP.	WILLOW	DORMANT CUTTINGS 1/4" TO 3/4" IN DIAMETER 12"-36" LONG	25,000
SHRUB	CORNUS AMOMUM	SILKY DOGWOOD	DORMANT CUTTINGS 1/4" TO 3/4" IN DIAMETER 12"-36" LONG	15,000
AREA B: NARROW CHANNEL (AREA = ±75,500SF)				
SHRUB	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	1GAL. POTS 18"-24"	345
HERB	CALTHA PALUSTRIS	MARSH MARIGOLD	2" PLUGS	460
HERB	CAREX STRICTA	TUSSOCK SEDGE	2" PLUGS	460
HERB	HIBISCUS MOSCHUETOS	CRIMSONEYED ROSEMALLOW	2" PLUGS	460
SEED MIX	NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES		35 LBS./AC.	61 LBS.
AREA C: PIT & MOUND SCRUB/SHRUB (AREA = ±101,250 SF)				
SHRUB	VIBURNUM RECOGNITUM	ARROWWOOD	1GAL. POTS 18"-24"	230
SHRUB	CORNUS SERICEA	RED OSIER DOGWOOD	1GAL. POTS 18"-24"	325
SHRUB	VACCINIUM CORYMBOSUM	HIGHBLUSH BLUEBERRY	1GAL. POTS 18"-24"	230
SHRUB	ILEX VERTICILLATA	WINTERBERRY	1GAL. POTS 18"-24"	325
SHRUB	SAMBUCUS CANADENSIS	ELDERBERRY	1GAL. POTS 18"-24"	230
SEED MIX	NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES		35 LBS./AC.	82 LBS.
AREA D: EMBANKMENT (AREA = ±118,500 SF)				
SHRUB	VIBURNUM ACERIFOLIUM	MAPLELEAF VIBURNUM	1GAL. POTS 18"-24"	415
SHRUB	GAYLUSSACIA BACCATA	HUCKLBERRY	1GAL. POTS 18"-24"	415
SHRUB	ARONIA MELANOCARPA	BLACK CHOKECHERRY	1GAL. POTS 18"-24"	375
SHRUB	AMELANCHIER CANADENSIS	SHADBUSH	1GAL. POTS 18"-24"	250
SHRUB	COMPTONIA PEREGRINE	SWEETFERN	1GAL. POTS 18"-24"	375
SHURB	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	1GAL. POTS 18"-24"	375
SEED MIX	NEW ENGLAND EROSION CONTROL/RESTORATION MIX BY NEW ENGLAND WETLAND PLANTS		25 LBS./AC	68 LBS.

PROPOSED MAINTENANCE BLDG. (TYP.)

3 C.703 LIMIT OF AREA D: EMBANKMENT

LIMIT OF AREA C: 3 C.703 PIT & MOUND SCRUB/SHRUB

PROPOSED APARTMENT BLDG. (TYP.)

MATCHLINE SHEET D

SCALE IN FEET
0 40' 80'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
9	8/24/2018	REV. PER NHDOT COMMENTS
8	3/12/2018	REV. PER TOWN COMMENTS
7	11/20/2017	REV. IMPACT AREAS
6	11/17/2017	ISSUED FOR PRICING
5	11/3/2017	REV. IMPACT AREAS
4	5/8/2017	REV. PER NHDES COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_401A-601D.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

WEST CHANNEL POLICY BROOK WETLAND PLANTING PLAN

SCALE: AS SHOWN

C.601D

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

PROJECT NAME AND LOCATION
TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS
79 ROCKINGHAM PARK BOULEVARD 42°-46'-19"N
SALEM, NH 03079 71°-13'-26"W

DESCRIPTION
THE PROJECT CONSISTS OF THE REMOVAL OF EXISTING CULVERTS THAT CONVEY WEST CHANNEL AND POLICY BROOK AND TO DAYLIGHT APPROXIMATELY 6,600 LINEAR FEET OF STREAM. THE PROJECT ALSO INCLUDES THE CONSTRUCTION OF A LARGE RECREATIONAL POND UPSTREAM OF THE STREAM. THE CONSTRUCTION OF THE WORK IS ANTICIPATED TO START IN SPRING 2017, AND BE COMPLETED BY SUMMER 2018.

DISTURBED AREA
THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 18.8 ACRES.

NAME OF RECEIVING WATERS
THE STORM WATER RUNOFF WILL DISCHARGE INTO POLICY BROOK.

SEQUENCE OF MAJOR ACTIVITIES
1. IF PRACTICAL, ALL STREAM CROSSING WORK SHALL OCCUR DURING LOW FLOW PERIODS OF THE BROOK.
2. INSTALL ALL EROSION AND SEDIMENT CONTROL BARRIERS AS FIRST ORDER OF WORK.
3. CONSTRUCT THE PROPOSED STREAM CHANNEL.
4. CONSTRUCT ANY REQUIRED COFFERDAMS AND/OR DEWATERING PRACTICES REQUIRED FOR THE CONSTRUCTION OF THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION.
5. CONSTRUCT THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION AND REMOVE ANY COFFERDAMS AND/OR DEWATERING MEASURES.
6. CONSTRUCT THE FINAL GRADING ABOVE AND ADJACENT TO THE STREAM CROSSING.
7. WHEN THE AREA IS COMPLETELY STABILIZED, REMOVE THE EROSION AND SEDIMENT CONTROL BARRIERS.

NOTES:
1. THE CONSTRUCTION SEQUENCE MUST LIMIT THE DURATION AND AREA OF DISTURBANCE.
2. PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE (BEFORE ROUGH GRADING THE SITE).

EROSION CONTROL NOTES
1. ALL EROSION CONTROL MEASURES AND PRACTICES SHALL CONFORM TO THE "NEW HAMPSHIRE STORMWATER MANUAL VOLUME 3: EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" PREPARED BY THE NHDES.
2. PRIOR TO ANY WORK OR SOIL DISTURBANCE, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EROSION CONTROL MEASURES AS REQUIRED IN THE PROJECT MANUAL.
3. CONTRACTOR SHALL INSTALL TEMPORARY EROSION CONTROL BARRIERS, INCLUDING HAY BALE, SILT FENCES, SILT SACKS AND SILT SOCKS, AS SHOWN IN THESE DRAWINGS AS THE FIRST ORDER OF WORK.
4. SILT SACK INLET PROTECTION SHALL BE INSTALLED IN ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS AND BE MAINTAINED FOR THE DURATION OF THE PROJECT.
5. PERIMETER CONTROLS INCLUDING SILT FENCES, HAY BALE BARRIERS, AND/OR SILT SOCKS SHALL MAINTAINED FOR THE DURATION OF THE PROJECT UNTIL NON-PAVED AREAS HAVE BEEN STABILIZED.
6. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
7. ALL DISTURBED AREAS NOT OTHERWISE BEING TREATED SHALL RECEIVE 6" LOAM, SEED, AND FERTILIZER.
8. INSPECT ALL INLET PROTECTION AND PERIMETER CONTROLS WEEKLY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.
9. CONSTRUCT EROSION CONTROL BLANKETS ON ALL SLOPES STEEPER THAN 3:1.

STABILIZATION
1. AN AREA SHALL BE CONSIDERED STABLE WHEN ONE OF THE FOLLOWING HAS OCCURRED:
   A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
   B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED.
   C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED
   D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
2. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
3. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
4. WINTER STABILIZATION PRACTICES:
   A. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADCANCE OF THAW OR SPRING MELT EVENTS.
   B. AFTER NOVEMBER 15TH, INCOMPLETE ROAD SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.
4. STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES, AND DISTURBED AREAS, WHERE CONSTRUCTION ACTIVITY SHALL NOT OCCUR FOR MORE THAN TWENTY-ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. STABILIZATION MEASURES TO BE USED INCLUDE:
   A. TEMPORARY SEEDING
   B. MULCHING
4. WHEN CONSTRUCTION ACTIVITY PERMANENTLY OR TEMPORARILY CEASES WITHIN 100 FEET OF NEARBY SURFACE WATERS OR DELINEATED WETLANDS, THE AREA SHALL BE STABILIZED WITHIN SEVEN (7) DAYS OR PRIOR TO A RAIN EVENT. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN THESE AREAS, SILT FENCES AND HAY BALE BARRIERS AND ANY EARTH/DIKES SHALL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.
5. DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH HAY BALE BARRIERS AND SILT FENCES OR SILT SOCKS. ALL STORM DRAIN BASIN INLETS SHALL BE PROVIDED WITH FLARED END SECTIONS AND TRASH RACKS. THE SITE SHALL BE STABILIZED FOR THE WINTER BY NOVEMBER 15.

DUST CONTROL:
1. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD.
2. DUST CONTROL METHODS SHALL INCLUDE, BUT BE NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING.
3. DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST.

STOCKPILES
1. LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM CATCH BASINS, SWALES, AND CULVERTS.
2. ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY EROSION CONTROL MEASURES PRIOR TO THE ONSET OF PRECIPITATION.
3. PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIALS FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY.
4. PROTECT ALL STOCKPILES FROM STORMWATER RUN-OFF USING TEMPORARY EROSION CONTROL MEASURES SUCH AS BERMS, SILT SOCK, OR OTHER APPROVED PRACTICE TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILES.

OFF SITE VEHICLE TRACKING
THE CONTRACTOR SHALL CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE(S) PRIOR TO ANY EXCAVATION ACTIVITIES.

VEGETATION
1. TEMPORARY GRASS COVER
   A. SEEDBED PREPARATION:
   APPLY FERTILIZER AT THE RATE OF 600 POUNDS PER ACRE OF 10-10-10. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF THREE (3) TONS PER ACRE.
   B. SEEDING
2. UTILIZE ANNUAL RYE GRASS AT A RATE OF 40 LBS/ACRE.
3. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF TWO (2) INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
4. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). HYDROSEEDINGS, WHICH INCLUDE MULCH,MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10% WHEN HYDROSEEDING.
   C. MAINTENANCE
   TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED. AT A MINIMUM, 95% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER BARRIERS, CHECK DAMS, ETC.).
5. VEGETATIVE PRACTICE
   A. FOR PERMANENT MEASURES AND PLANTINGS.
6. LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF THREE (3) TONS PER ACRE IN ORDER TO PROVIDE A PH VALUE OF 5.5 TO 6.5.
7. FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 800 POUNDS PER ACRE OF 10-20-20 FERTILIZER.
8. SOIL CONDITIONERS AND FERTILIZER SHALL BE APPLIED AT THE RECOMMENDED RATES AND SHALL BE THOROUGHLY WORKED INTO THE LOAM. LOAM SHALL BE RAKED UNTIL THE SURFACE IS FINELY PULVERIZED, SMOOTH AND EVEN, AND THEN COMPACTED TO AN EVEN SURFACE CONFORMING TO THE REQUIRED LINES AND GRADES WITH APPROVED ROLLERS WEIGHING BETWEEN 4-1/2 POUNDS AND 5-1/2 POUNDS PER INCH OF WIDTH.
9. SEED SHALL BE SOWN AT THE RATE SHOWN BELOW. SOWING SHALL BE DONE ON A CALM, DRY DAY, PREFERABLY BY MACHINE, BUT IF BY HAND, ONLY BY EXPERIENCED WORKMEN. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH.
10. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AS INDICATED ABOVE.
11. THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED WITH GRASS SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.
12. THE CONTRACTOR SHALL PROTECT AND MAINTAIN THE SEEDED AREAS UNTIL ACCEPTED.
13. SEE WETLAND PLANTING PLAN FOR SEED MIXTURE TO BE USED.
14. DORMANT SEEDING (SEPTEMBER 15 TO FIRST SNOWFALL)
FOLLOW PERMANENT MEASURES SLOPE, LIME, FERTILIZER AND GRADING REQUIREMENTS. APPLY SEED MIXTURE AT TWICE THE INDICATED RATE. APPLY MULCH AS INDICATED FOR PERMANENT MEASURES.

CONCRETE WASHOUT AREA
1. THE FOLLOWING ARE THE ONLY NON-STORMWATER DISCHARGES ALLOWED. ALL OTHER NON-STORMWATER DISCHARGES ARE PROHIBITED ON SITE.
   A. THE CONCRETE DELIVERY TRUCKS SHALL, WHENEVER POSSIBLE, USE WASHOUT FACILITIES AT THEIR OWN PLANT OR DISPATCH FACILITY.
   B. IF IT IS NECESSARY, SITE CONTRACTOR SHALL DESIGNATE SPECIFIC WASHOUT AREAS AND DESIGN FACILITIES TO HANDLE ANTICIPATED WASHOUT WATER.
   C. CONTRACTOR SHALL LOCATE WASHOUT AREAS AT LEAST 150 FEET AWAY FROM STORM DRAINS, SWALES AND SURFACE WATERS OR DELINEATED WETLANDS.
   D. INSPECT WASHOUT FACILITIES DAILY TO DETECT LEAKS OR TEARS AND TO IDENTIFY WHEN MATERIALS NEED TO BE REMOVED.

ALLOWABLE NON-STORMWATER DISCHARGES
1. DISCHARGES FROM FIRE-FIGHTING ACTIVITIES
2. FIRE HYDRANT FLUSHINGS
3. WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED
4. WATER USED TO CONTROL DUST
5. POTABLE WATER INC. UNCONTAMINATED WATER LINE FLUSHINGS
6. ROUTINE EXTERNAL BUILDING WASH DOWN -NO DETERGENTS
7. PAVEMENT WASH WATERS -NO SPILLS OR DETERGENTS
8. UNCONTAMINATED AIR CONDITIONING/COMPRESSOR CONDENSATE
9. UNCONTAMINATED GROUND WATER OR SPRING WATER
10. FOUNDATION OR FOOTING DRAINS -NOT CONTAMINATED
11. UNCONTAMINATED EXCAVATION DEWATERING
12. LANDSCAPE IRRIGATION

WASTE DISPOSAL
1. WASTE MATERIALS
   A. ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN A DUMPSTER.
   B. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE.
   C. ALL PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
2. HAZARDOUS WASTE
   A. ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER.
   B. SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
3. SANITARY WASTE
   A. ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

SPILL PREVENTION
1. CONTRACTOR SHALL BE FAMILIAR WITH SPILL PREVENTION MEASURES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES. AT A MINIMUM, CONTRACTOR SHALL FOLLOW THE BEST MANAGEMENT SPILL PREVENTION PRACTICES OUTLINED BELOW.
2. THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
   A. GOOD HOUSEKEEPING:
   THE FOLLOWING GOOD HOUSEKEEPING PRACTICES SHALL BE FOLLOWED ON SITE DURING THE CONSTRUCTION PROJECT:
1. ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB SHALL BE STORED ON SITE.
2. ALL MATERIALS STORED ON SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
3. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
4. THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
5. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
6. WHENEVER POSSIBLE ALL OF A PRODUCT SHALL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
   B. HAZARDOUS PRODUCTS:
   THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
1. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
2. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.
3. SURPLUS PRODUCT THAT MUST BE DISPOSED OF SHALL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.
   C. PRODUCT SPECIFICATION PRACTICES
   THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ON SITE:
1. PETROLEUM PRODUCTS:
   a. ALL ON SITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE.
   b. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. FERTILIZERS:
   a. FERTILIZERS USED SHALL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS.
   b. ONCE APPLIED FERTILIZER SHALL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER.
   c. STORAGE SHALL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
3. PAINTS:
   a. ALL CONTAINERS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE.
   b. EXCESS PAINT SHALL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM.
   c. EXCESS PAINT SHALL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
   D. SPILL CONTROL PRACTICES
   IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
1. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
2. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS SHALL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
3. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
4. THE SPILL AREA SHALL BE KEPT WELL VENTILATED AND PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
5. SPILLS OF TOXIC OR HAZARDOUS MATERIAL SHALL BE REPORTED TO THE APPROPRIATE LOCAL, STATE OR FEDERAL AGENCIES AS REQUIRED.
6. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.
   E. VEHICLE FUELING AND MAINTENANCE PRACTICE:
1. CONTRACTOR SHALL MAKE AN EFFORT TO PERFORM EQUIPTMENT/VEHICAL FUELING AND MAINTENANCE AT AN OFF-SITE FACILITY.
2. CONTRACTOR SHALL PROVIDE AN ON-SITE FUELING AND MAINTENANCE AREA THAT IS CLEAN AND DRY.
3. IF POSSIBLE THE CONTRACTOR SHALL KEEP AREA COVERED.
4. CONTRACTOR SHALL KEEP A SPILL KIT AT THE FUELING AND MAINTENANCE AREA.
5. CONTRACTOR SHALL VEHICLES SHALL BE INSPECTED REGULARLY FOR LEAKS AND DAMAGE.
6. CONTRACTOR SHALL USE DRIP PANS, DRIP CLOTHS, OR ABSORBENT PADS WHEN REPLACING SPENT FLUID.

EROSION CONTROL OBSERVATIONS AND MAINTENANCE PRACTICES
THIS PROJECT EXCEEDS ONE (1) ACRE OF DISTURBANCE AND THUS REQUIRE(S) A SWPPP. THE SWPPP SHALL BE PREPARED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE FAMILIAR WITH THE SWPPP AND KEEP AN UPDATED COPY OF THE SWPPP ONSITE AT ALL TIMES.

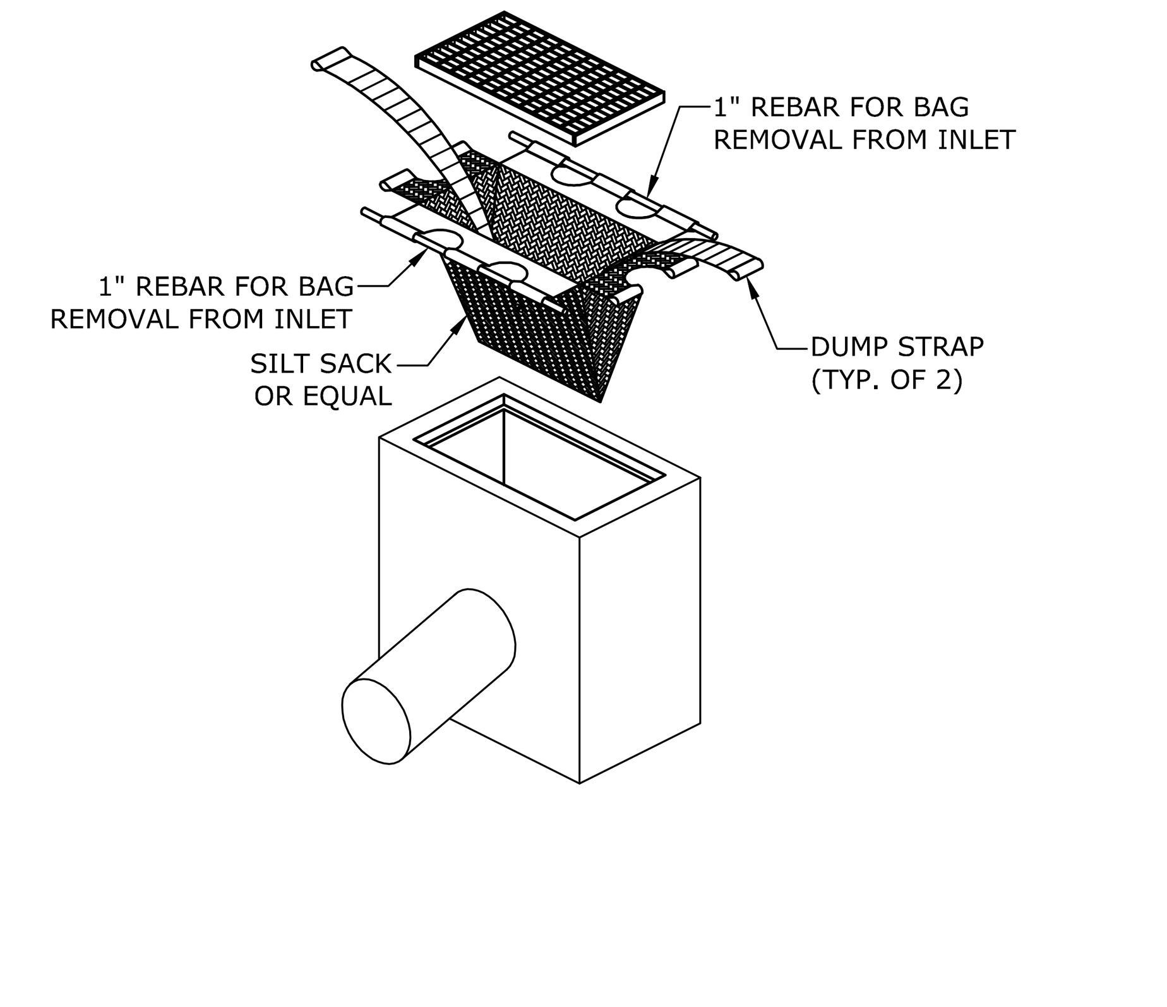
THE FOLLOWING REPRESENTS THE GENERAL OBSERVATION AND REPORTING PRACTICES THAT SHALL BE FOLLOWED AS PART OF THIS PROJECT.
1. OBSERVATIONS OF THE PROJECT FOR COMPLIANCE WITH THE SWPPP SHALL BE MADE BY THE CONTRACTOR AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF A STORM 0.25 INCHES OR GREATER.
2. AN OBSERVATION REPORT SHALL BE MADE AFTER EACH OBSERVATION AND DISTRIBUTED TO THE ENGINEER, THE OWNER, AND THE CONTRACTOR.
3. A REPRESENTATIVE OF THE SITE CONTRACTOR, SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES.
4. IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS OF REPORT.

BLASTING NOTES
1. IF MORE THAN 5000 CUBIC YARDS ARE TO BE BLASTED A BLASTING PLAN SHALL BE PROVIDED. BLASTING PLAN SHALL INCLUDE:
   A. LOCATION AND IDENTIFICATION OF DRINKING WATER WELLS LOCATED WITHIN 2000 FEET OF THE PROPOSED BLASTING ACTIVITIES.
   B. A GROUNDWATER QUALITY SAMPLING PROGRAM, APPROVED BY NHDES PRIOR TO INITIATING BLASTING, TO MONITOR FOR NITRATE AND NITRITE EITHER IN THE DRINKING WATER SUPPLY WELLS OR IN OTHER WELLS THAT ARE REPRESENTATIVE OF THE DRINKING WATER SUPPLY WELLS IN THE AREA.
1. THE GROUNDWATER SAMPLING PROGRAM MUST BE IMPLEMENTED ONCE APPROVED BY NHDES.
2. THE FOLLOWING BEST MANAGEMENT PROCEDURES FOR BLASTING SHALL BE COMPLIED WITH:
   A. LOADING PRACTICES.
   THE FOLLOWING BLASTHOLE LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:
1. DRILLING LOGS SHALL BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE BLASTER. THE LOGS SHALL INDICATE DEPTHS AND LENGTHS OF VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED AS WELL AS GROUNDWATER CONDITIONS.
2. EXPLOSIVE PRODUCTS SHALL BE MANAGED ON-SITE SO THAT THEY ARE EITHER USED IN THE BOREHOLE, RETURNED TO THE DELIVERY VEHICLE, OR PLACED IN SECURE CONTAINERS FOR OFF-SITE DISPOSAL.
3. SPILLAGE AROUND THE BOREHOLE SHALL EITHER BE PLACED IN THE BOREHOLE OR CLEANED UP AND RETURNED TO AN APPROPRIATE VEHICLE FOR HANDLING OR PLACEMENT IN SECURED CONTAINERS FOR OFF-SITE DISPOSAL.
4. LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND SHALL NOT BE LEFT IN THE BLASTHOLES OVERNIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED.
5. LOADING EQUIPMENT SHALL BE CLEANED IN AN AREA WHERE WASTEWATER CAN BE PROPERLY CONTAINED AND HANDLED IN A MANNER THAT PREVENTS RELEASE OF CONTAMINANTS TO THE ENVIRONMENT.
6. EXPLOSIVES SHALL BE LOADED TO MAINTAIN GOOD CONTINUITY IN THE COLUMN LOAD TO PROMOTE COMPLETE DETONATION. INDUSTRY ACCEPTED LOADING PRACTICES FOR PRIMING, STEMMING, DECKING AND COLUMN RISE NEED TO BE ATTENDED TO.
   B. EXPLOSIVE SELECTION
   THE FOLLOWING BMPS SHALL BE FOLLOWED TO REDUCE THE POTENTIAL FOR GROUNDWATER CONTAMINATION WHEN EXPLOSIVES ARE USED:
1. EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXECUTION.
2. EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT HAVE THE APPROPRIATE WATER RESISTANCE FOR THE SITE CONDITIONS PRESENT TO MINIMIZE THE POTENTIAL FOR HAZARDOUS EFFECT OF THE PRODUCT UPON GROUNDWATER.
   C. PREVENTION OF MISFIRES. APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISFIRES.
   D. MUCK PILE MANAGEMENT
   MUCK PILES (THE BLASTED PIECES OF ROCK) AND ROCK PILES SHALL BE MANAGED IN A MANNER TO REDUCE THE POTENTIAL FOR CONTAMINATION BY IMPLEMENTING THE FOLLOWING MEASURES:
1. REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.
2. MANAGE THE INTERACTION OF BLASTED ROCK PILES AND STORMWATER TO PREVENT CONTAMINATION OF WATER SUPPLY WELLS OR SURFACE WATER.
   E. SPILL PREVENTION MEASURES AND SPILL MITIGATION
   SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED SUBSTANCES TO THE ENVIRONMENT. THE MEASURES SHALL INCLUDE AT A MINIMUM:
1. THE FUEL STORAGE REQUIREMENTS SHALL INCLUDE:
   a. STORAGE OF REGULATED SUBSTANCES ON AN IMPERVIOUS SURFACE;
   b. SECURE STORAGE AREAS AGAINST UNAUTHORIZED ENTRY;
   c. LABEL REGULATED CONTAINERS CLEARLY AND VISIBLY;
   d. INSPECT STORAGE AREAS WEEKLY;
   e. COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS;
   f. WHEREVER POSSIBLE, KEEP REGULATED CONTAINERS THAT ARE STORED OUTSIDE MORE THAN 50 FEET FROM SURFACE WATER AND STORM DRAINS, 75 FEET FROM PRIVATE WELLS, AND 400 FEET FROM PUBLIC WELLS; AND
   g. SECONDARY CONTAINMENT IS REQUIRED FOR CONTAINERS CONTAINING REGULATED SUBSTANCES STORED OUTSIDE, EXCEPT FOR ON PREMISE USE HEATING FUEL TANKS, OR ABOVEGROUND OR UNDERGROUND STORAGE TANKS OTHERWISE REGULATED.
2. THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
   a EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED;
   b. PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS;
   c. HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS;
   d. USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES; AND
   e. PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
3. THE TRAINING OF ON-SITE EMPLOYEES AND THE ON-SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.
4. FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION RELATED EQUIPMENT SHALL COMPLY WITH THE REGULATIONS OF THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES THESE REQUIREMENTS ARE SUMMARIZED IN WD-DWGB-22-6 BEST MANAGEMENT PRACTICES FOR FUELING AND MAINTENANCE OF EXCAVATION AND EARTHMOVING EQUIPMENT" OR ITS SUCCESSOR DOCUMENT. (SEE HTTP://DES.NH.GOV/ORGANIZATION/COMMISSIONER/PIP/FACTSHEETS/DWGB/DOCUMENTS/DWGB-22-6.PDF)

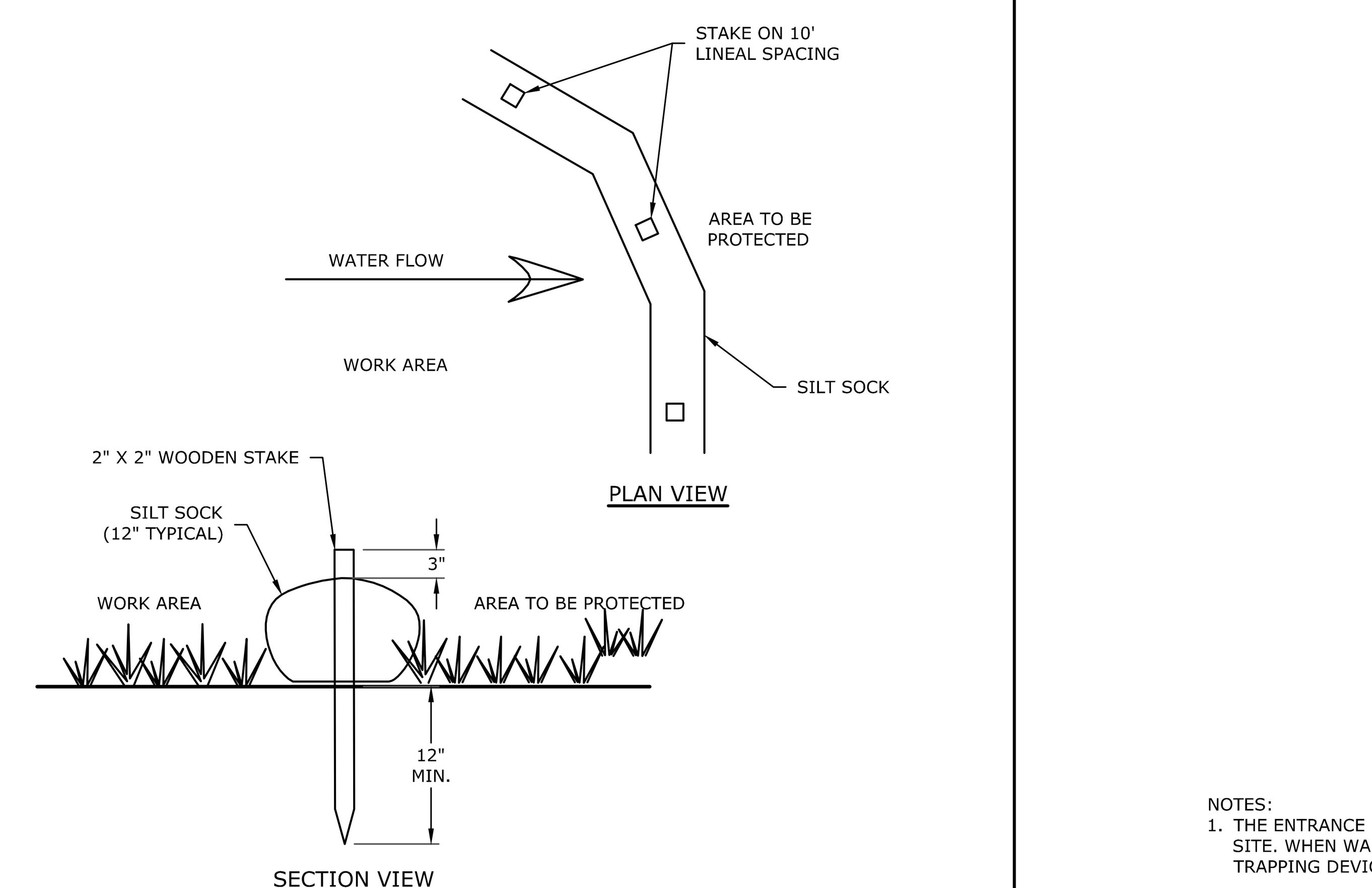
INVASIVE SPECIES
1. THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

ABBREVIATIONS:

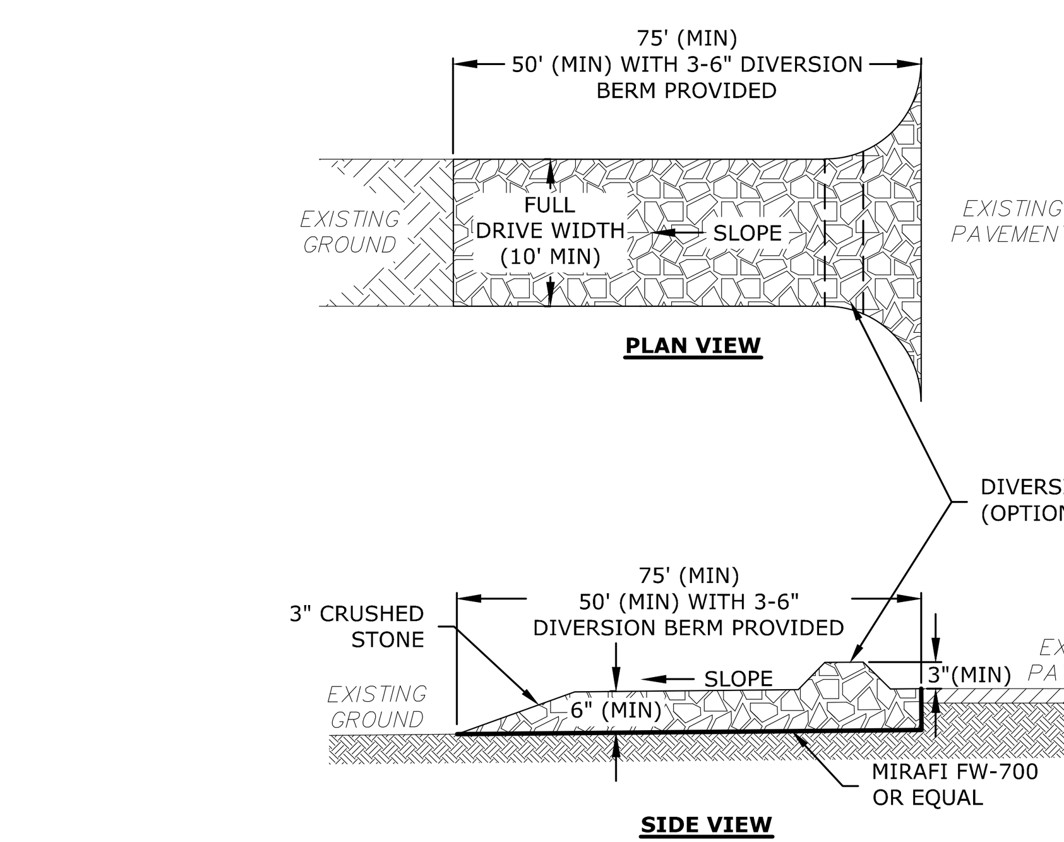
APPROX.	APPROXIMATE	LF	LINEAR FEET
CB	CATCH BASIN	MAX.	MAXIMUM
CONST.	CONSTRUCT	MIN.	MINIMUM
COORD.	COORDINATE	S	SLOPE
DIA.	DIAMETER	SMH	SEWER MANHOLE
DMH	DRAIN MANHOLE	TB	TOP OF BANK
ELEV.	ELEVATION	TR	TOP OF RIFFLE
HDPE	HIGH-DENSITY POLYETHYLENE	TBR	TO BE REMOVED
INV.	INVERT	THLWG	THALWEG
INV. IN	INVERT IN	TW	TOP OF WALL
INV. OUT	INVERT OUT	TYP.	TYPICAL
		VIF	VERIFY IN FIELD
		W/	WITH



SILT SACK 1/-
NO SCALE

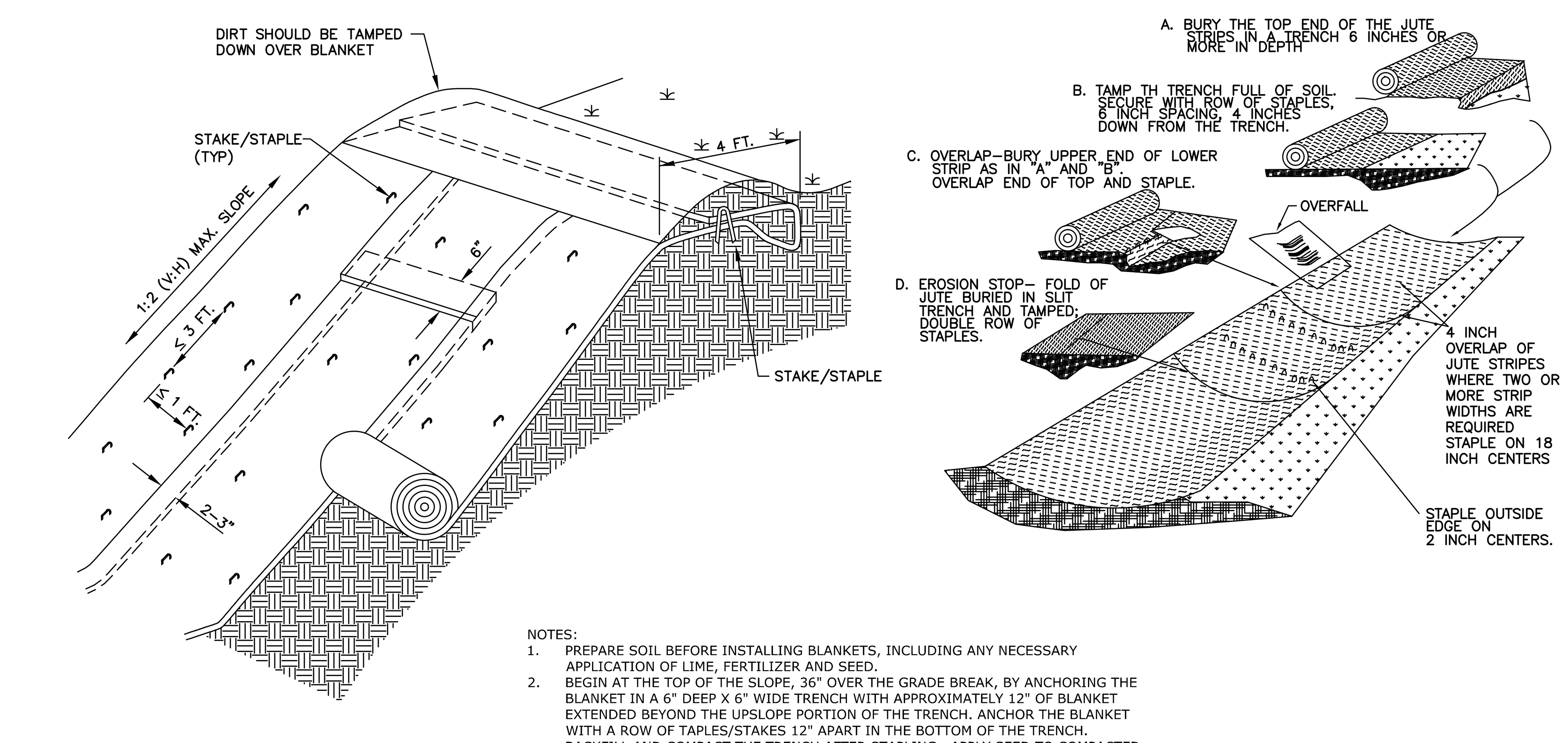


SILT SOCK 2/-
NO SCALE



NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT FROM THE SITE. WHEN WASHING IS REQUIRED, IT SHALL BE DONE SO RUNOFF DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS

STABILIZED CONSTRUCTION EXIT 3/-
NO SCALE



NOTES:
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION 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 APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UPSLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF TAPLES/STAKES 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES SPACED 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.

EROSION CONTROL BLANKET FOR SLOPE PROTECTION 4/-
NO SCALE

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
5	3/12/2018	REV. PER TOWN COMMENTS
4	11/17/2017	ISSUED FOR PRICING
3	6/20/2017	REV. PER FEMA RFMI
2	3/24/2017	REV. PER TOWN COMMENTS
1	3/9/2017	REV. BOX CULVERT DESIGN

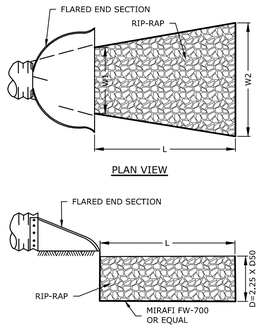
PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_701-705.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

EROSION CONTROL NOTES & DETAILS SHEET

SCALE: AS SHOWN

C.701

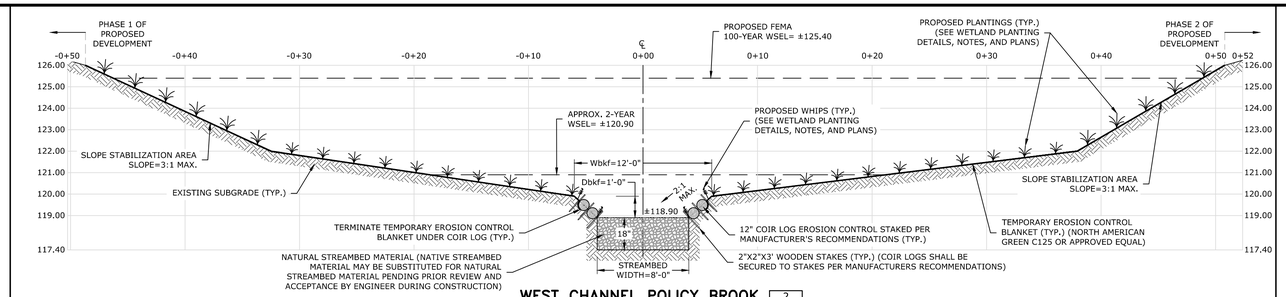
Last Saved: 3/13/2018
Plotted On:Mar 13, 2018-7:01am By: NSC
Tighe & Bond: J:\M\M1775 MHF Design Consultants\Drawings_Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_701-705.dwg



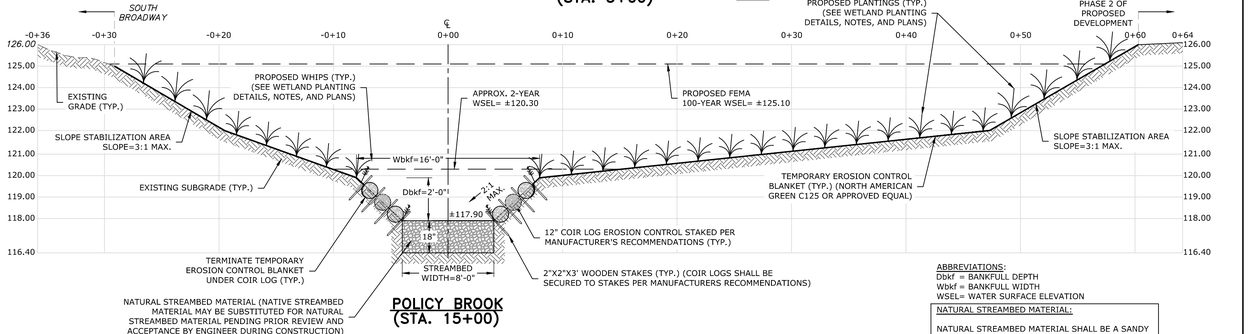
NOTES:

1. STONE SIZE AND MAT DIMENSIONS DETAILED ON PLANS.
2. STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. FLAT OR ROUND ROCKS ARE NOT ACCEPTABLE. THE STONE SHALL BE HARD AND OF SUCH QUALITY THAT IT WILL NOT DISINTEGRATE ON EXPOSURE TO WATER OR WEATHERING, BE CHEMICALLY STABLE AND IT SHALL BE SUITABLE IN ALL OTHER RESPECTS FOR THE PURPOSE INTENDED. THE BULK SPECIFIC GRAVITY (SATURATED SURFACE-DRY BASIS) OF THE INDIVIDUAL STONES SHALL BE AT LEAST 2.5.
3. THE STONE SHALL BE COMPOSED OF A WELL-GRADED MIXTURE DOWN TO THE ONE-INCH SIZE PARTICLE SUCH THAT 50 PERCENT OF THE MIXTURE BY WEIGHT SHALL BE LARGER THAN THE D50 SIZE SPECIFIED. A WELL-GRADED MIXTURE IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF THE LARGER STONE SIZE BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE PROGRESSIVELY SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE SIZE IN SUCH A MIXTURE SHALL BE 1.5 TIMES THE D50 SIZE.

RIP–RAP APRON DETAIL
1 | -
NO SCALE



WEST CHANNEL POLICY BROOK (STA. 5+00)
2 | -



POLICY BROOK (STA. 15+00)

ABBREVIATIONS:
Dbkf = BANKFULL DEPTH
Wbkf = BANKFULL WIDTH
WSEL= WATER SURFACE ELEVATION

NATURAL STREAMBED MATERIAL:

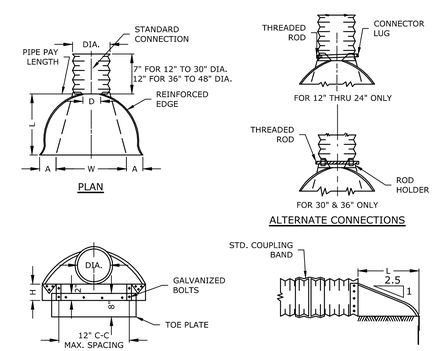
NATURAL STREAMBED MATERIAL SHALL BE A SANDY GRAVELLY MIX INTERSPERSED WITH 4-6" COBBLE, MEETING THE FOLLOWING GRADATION:

SIEVE SIZE	PERCENT PASSING BY WEIGHT
6"	100
#4	15-30
#200	0-12*

*PERCENT PASSING THE #4 SIEVE

NOTES:
1. SEE SITE PLAN SHEETS C.501A-C.501D FOR EROSION CONTROL BLANKET TYPE AND LOCATION.
2. SEE WETLAND PLANTING PLAN SHEETS C.601A-C.601D FOR TYPE AND LOCATION OF PLANTS.
3. ALL AREAS TO BE PLANTED SHALL ALSO RECEIVE 6" OF LOAM AND SEED. SEE WETLAND PLANTING SHEETS C.601A-C.601D FOR SEED MIX.

TYPICAL STREAM CROSS–SECTIONS
3 | -
NO SCALE

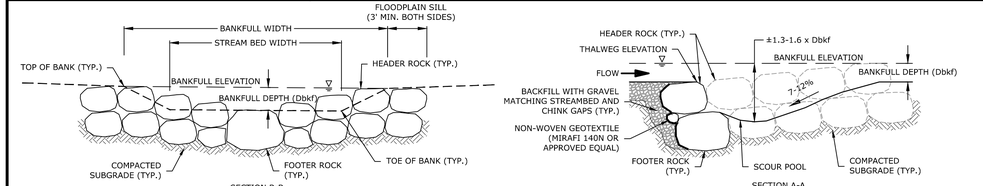


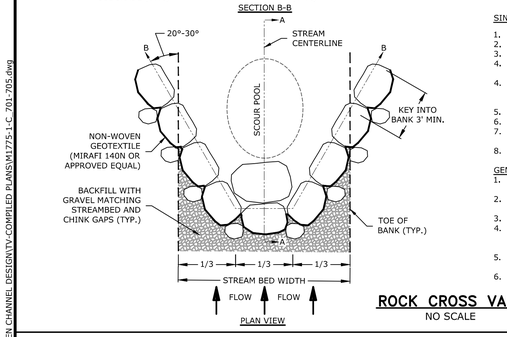
PIPE DIA.	METAL GAGE	DIMENSIONS A (1" TOL.)	B MAX.	H (1" TOL.)	L (1 " TOL.)	W (2" TOL.)
12"	16	6"	6"	6"	21"	24"
15"	16	7"	8"	6"	26"	30"
18"	16	8"	13"	6"	31"	36"
24"	16	10"	16"	6"	41"	48"

NOTES:

1. END SECTION FOR 12" TO 30" DIA. PIPE IN ONE PIECE, FOR 36" TO 48" DIA. PIPE TO BE MADE FROM TWO SHEETS JOINED BY RIVETING OR BOLTING ON CENTER LINE.
2. CONNECTOR SECTION, CORNER PLATE AND TOE PLATE TO BE SAME THICKNESS AS END SECTION AND EACH TO BE GALVANIZED.

METAL FLARED END SECTION
4 | -
NO SCALE





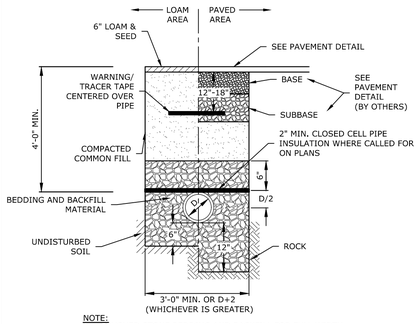
SINGLE ROCK VANE CONSTRUCTION SEQUENCE:

1. EXCAVATE A TRENCH FOR THE VANE.
2. SET THE FOOTER ROCKS
3. SET THE HEADER ROCKS.
4. EXCAVATE A TRENCH FOR THE GEOTEXTILE FABRIC ON THE UPSTREAM SIDE OF THE VANE. THE TRENCH SHALL BE AT LEAST 3' DEEP.
4. INSTALL NON-WOVEN GEOTEXTILE (MIRAFI 140N OR APPROVED EQUAL) UPSTREAM OF ROCK CROSS VANE FROM THE TOP OF THE TOP ROCK TO THE BOTTOM OF THE FOOTER ROCK AND EXTEND TO THE END OF BOTH ROCK VANES.
5. BACKFILL THE UPSTREAM SIDE OF THE VANE WITH GRAVEL MATCHING STREAMBED MATERIAL.
6. EXCAVATE A SILL TRENCH (MINIMUM LENGTH OF 3') AT THE BANK-END OF THE VANE.
7. CONSTRUCT THE SILL: CONTINUE ROCK VANE FOR MINIMUM OF 3' INTO SILL TRENCH, COVER WITH GEOTEXTILE (MIRAFI 140N OR APPROVED EQUAL), AND BACKFILL.
8. WEAVE ONE CONTINUOUS GEOTEXTILE ALONG VANE AND SILL.

GENERAL NOTES:

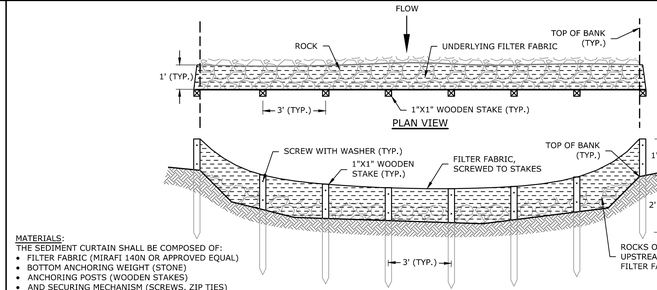
1. FOOTER ROCKS SHALL BE ROUNDED STONE WITH BOULDERS NO SMALLER THAN 18" AND WITH AN AVERAGE SIZE OF AT LEAST 24".
2. HEADER ROCKS SHALL BE ROUNDED STONE WITH BOULDERS NO SMALLER THAN 12" AND WITH AN AVERAGE SIZE OF AT LEAST 18"
3. VANE ARM ROCKS SHALL BE KEYED INTO THE BANK WITH A SILL OF A MINIMUM LENGTH OF 3'.
4. INSTALL NON-WOVEN GEOTEXTILE (MIRAFI 140N OR EQUAL) UPSTREAM OF ROCK CROSS VANE FROM THE TOP OF THE TOP ROCK TO THE BOTTOM OF THE FOOTER ROCK AND EXTEND A MINIMUM OF 1' BEYOND TOP OF BANK ON BOTH SIDES OF STREAM.
5. SET THE ELEVATION OF THE TOP OF THE ROCK VANE TO THE DESIGNED THALWEG (CENTERLINE) ELEVATION OF THE STREAMBED.
6. SCOUR POOLS SHALL BE ±1.3-1.6 X THE BANKFULL DEPTH.

ROCK CROSS VANE
5 | -
NO SCALE



NOTE:
1. CRUSHED STONE BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 6" ABOVE TOP OF PIPE.
2. ALL UTILITIES SHALL BE INSTALLED PER THE INDIVIDUAL UTILITY COMPANY STANDARDS. COORDINATE ALL INSTALLATIONS WITH INDIVIDUAL UTILITY COMPANIES AND THE TOWN OF SALEM.

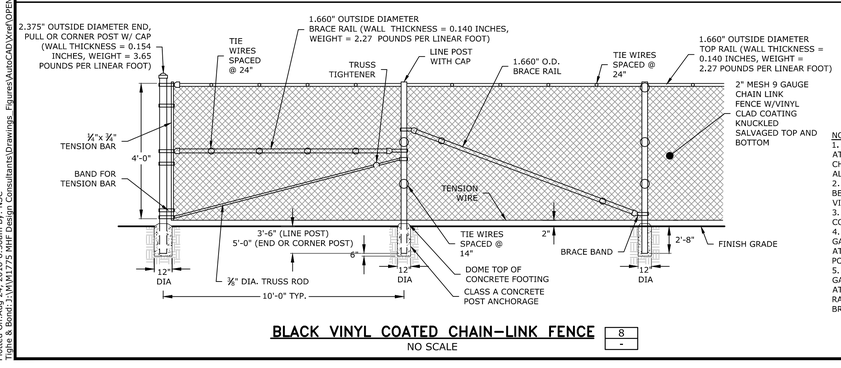
STORM DRAIN TRENCH
6 | -
NO SCALE



MATERIALS:
THE SEDIMENT CURTAIN SHALL BE COMPOSED OF:
- FILTER FABRIC (MIRAFI 140N OR APPROVED EQUAL)
- BOTTOM ANCHORING WEIGHT (STONE)
- ANCHORING POSTS (WOODEN STAKES)
- AND SECURING MECHANISM (SCREWS, ZIP TIES)
- ROCK (RIPRAP: D50=6")

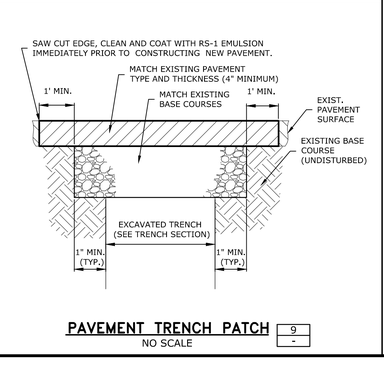
CONSTRUCTION DETAILS:
1. INSTALLATION
1.1. THE SEDIMENT CURTAIN SHALL BE INSTALLED WHERE SHOWN ON THE PLANS.
1.2. STAKES (1 in BY 1 in) SHALL BE INSTALLED FROM ONE BANK TO THE OTHER, ON 3 ft CENTERS. STAKES SHALL BE DRIVEN AT LEAST 2 ft INTO THE GROUND, AND BE EXPOSED NO MORE THAN 12 in WHERE THEY ARE IN WATER.
1.3. A SCREW WITH WASHER SHALL CONNECT THE GEOTEXTILE TO THE STAKES (STAKES ON THE DOWNSTREAM SIDE OF THE FABRIC). SCREWS POSITIONED 6 in ON CENTERS. AT THE TOP OF THE STAKES, CABLE TIES MAY BE USED IF NEEDED TO FASTEN A FLAP OF GEOTEXTILE OVER THE TOP OF THE STAKE.
1.4. AT THE STREAMBED, A GEOTEXTILE FLAP SHALL EXTEND AT LEAST 1 ft UPSTREAM OF THE STAKES. STONE SHALL SIT ON THIS FLAP TO ANCHOR THE GEOTEXTILE TO THE BED.
2. MAINTENANCE
2.1. THE SEDIMENT CURTAIN SHALL BE INSPECTED DAILY, WITH ADDITIONAL MONITORING OF PERFORMANCE DURING STORMS OR SIGNIFICANT FLOW EVENTS.
2.2. BED LOAD SEDIMENT ESCAPING THE DOWNSTREAM-MOST SEDIMENT CURTAIN SHALL CONSTITUTE INADEQUATE PERFORMANCE. THE CONTRACTOR SHALL IMMEDIATELY MODIFY, ADJUST, REPAIR OR REPLACE THE SEDIMENT CURTAIN TO CORRECT INADEQUACIES.
2.3. THE SEDIMENT CURTAIN SHALL BE REMOVED EITHER WHEN MORE THAN 0.25 in OF RAIN IS FORECAST OR HAS FALLEN IN A 4 hr - OR SHORTER - PERIOD; OR WHEN IN-STREAM CONSTRUCTION ACTIVITIES WILL CEASE FOR MORE THAN 16 hrs (E.G. OVER WEEKENDS).
2.4. THE SEDIMENT CURTAIN SHALL REMAIN IN PLACE UNTIL THE PROTECTED CONSTRUCTION ACTIVITIES HAVE CEASED AND THE TURBIDITY OF THE WATER ENCLOSED IS REDUCED TO ACCEPTABLE LEVELS. THE CURTAIN SHALL BE REMOVED WITHIN 72 HOURS OF THIS CONDITION BEING MET.

IN–STREAM SEDIMENT CURTAIN
7 | -
NO SCALE



NOTES:
1. CORNER POSTS SHALL BE USED AT SHARP BREAKS IN GRADE AND CHANGES IN HORIZONTAL ALIGNMENT OF 15° OR MORE.
2. POSTS, RAILS & BRACES SHALL BE TYPE I, SCHEDULE 40 BLACK VINYL COATED PIPE.
3. FABRIC TO BE BLACK VINYL COATED.
4. TIE WIRES SHALL BE 9 GAUGE GALVANIZED STEEL WIRE FOR ATTACHMENT OF FABRIC TO LINE POSTS.
5. TIE WIRES SHALL BE 13 GAUGE GALVANIZED STEEL WIRE FOR ATTACHMENT OF FABRIC TO RAILS, TENSION WIRE, AND BRACES.

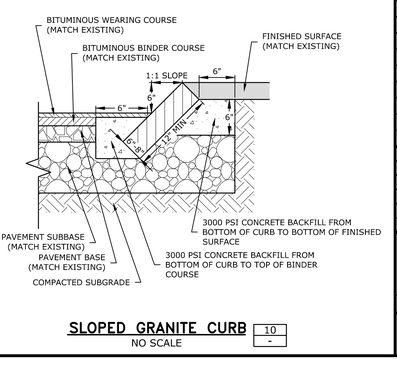
BLACK VINYL COATED CHAIN–LINK FENCE
8 | -
NO SCALE



PAVEMENT TRENCH PATCH
9 | -
NO SCALE

CURB RADIUS TABLE	
RADIUS	MAX LENGTH
<2'	USE CURVED CURB
2'-15'	USE RADIAL JOINTS
16'-28'	1'-6"
29'-41'	2'
42'-55'	3'
56'-68'	4'
69'-82'	5'
83'-96'	6'
97'-110'	7'
>110'	8'

NOTES:
1. SEE SITE PLAN(S) FOR LIMITS OF VERTICAL GRANITE CURB (VGC).
2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. MINIMUM LENGTH OF STRAIGHT CURB STONES = 18"
4. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 8'
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES (SEE TABLE).
6. JOINTS BETWEEN STONES SHALL HAVE A MAXIMUM SPACING OF 1/2" AND SHALL BE MORTARED.



SLOPED GRANITE CURB
10 | -
NO SCALE

Tighe&Bond
www.tighebond.com
MHF Design Consultants, Inc.

STATE OF NEW HAMPSHIRE
JOSEPH M. PERSECHINO
No. 12393
LICENSED PROFESSIONAL ENGINEER
8/24/18

STATE OF NEW HAMPSHIRE
BRADLEE MEDEIROS
No. 019350
LICENSED PROFESSIONAL ENGINEER
8/24/18

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
10	8/24/2018	REV. PER NHDOT COMMENTS
9	3/12/2018	REV. PER TOWN COMMENTS
8	11/17/2017	ISSUED FOR PRICING
7	7/26/2017	REV. PER NHDES COMMENTS
6	6/20/2017	REV. PER FEMA RFMI
5	5/8/2017	REV. PER NHDES COMMENTS
4	3/24/2017	REV. PER TOWN COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

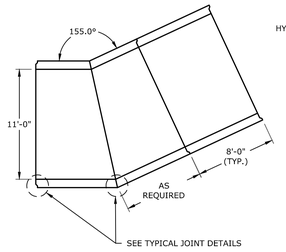
PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_701-705.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

DETAILS SHEET

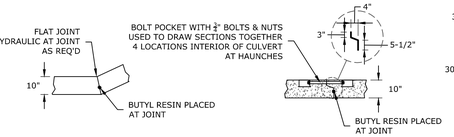
SCALE: AS SHOWN

C.702

Last Saved: 8/14/2018
Plotted On: Aug 24, 2018-8:36am By: NSC
Tighe & Bond: J:\M\M1775 MHF Design Consultants\Drawings, Figures\AutoCAD\xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_701-705.dwg



PLAN VIEW



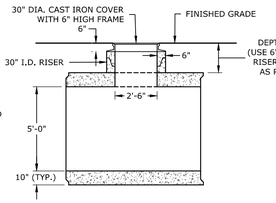
TYPICAL JOINT DETAILS

NOTES:
1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 5,000 PSI (MIN.) AFTER 28 DAYS.
2. DESIGN SHALL BE PER ASTM C1433 FOR BOX CULVERT.
3. ALL REINFORCEMENT SHALL BE PER ASTM A-615.
4. DESIGNED AASHTO H-20 LOADING, 1 TO 5 FEET OF COVER.
5. TONGUE AND GROOVE JOINT SEALED WITH BUTYL RESIN
6. WEIGHT: BOX CULVERT 34,000 LBS PER 8FT SECTION
7. CRUSHED STONE BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 6" ABOVE TOP OF PIPE.

CONCRETE BOX CULVERT (11' X 5')

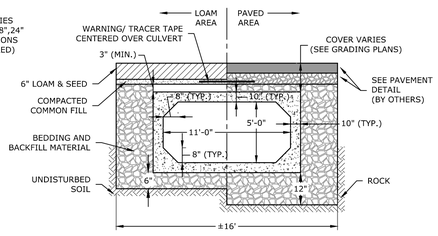
NO SCALE

1 -

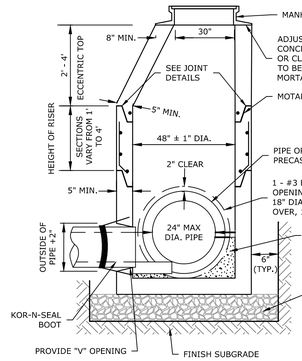


MANHOLE RISER SECTION VIEW

NOTES:
1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 4,000 PSI (MIN.) AFTER 28 DAYS.
2. ALL REINFORCEMENT SHALL BE PER ASTM C478-06.
3. DESIGNED AASHTO H-20 LOADING.
4. TONGUE AND GROOVE JOINT SEALED WITH BUTYL RESIN



SECTION VIEW

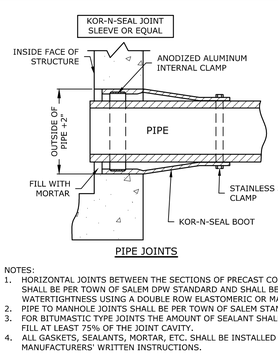


NOTES:
1. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE.
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
3. THE TONGUE AND GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCHES PER LINEAR FOOT.
4. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
5. CONSTRUCT CRUSHED STONE BEDDING AND BACKFILL UNDER STRUCTURE (6" MIN. THICKNESS)
6. THE TONGUE AND GROOVE JOINT SHALL BE SEALED WITH ONE STRIP OF BUTYL RUBBER SEALANT.

4' DIAMETER DRAIN MANHOLE

NO SCALE

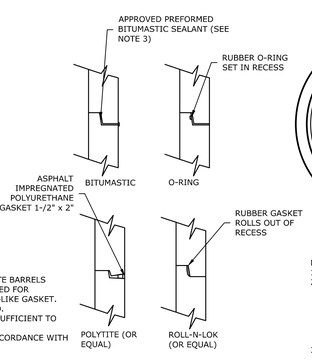
2 -



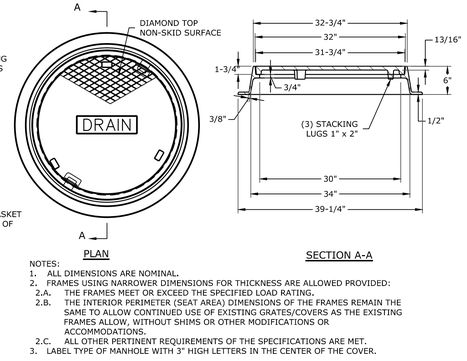
PIPE JOINTS

NOTES:
1. HORIZONTAL JOINTS BETWEEN THE SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE PER TOWN OF SALEM DPW STANDARD AND SHALL BE SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW ELASTOMERIC OR MASTIC-LIKE GASKET.
2. PIPE TO MANHOLE JOINTS SHALL BE PER TOWN OF SALEM STANDARD.
3. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY.
4. ALL GASKETS, SEALANTS, MORTAR, ETC. SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS.

DRAIN MANHOLE JOINT DETAILS



HORIZONTAL JOINTS

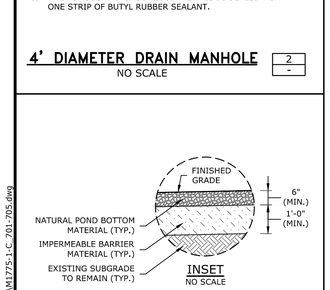


PLAN

SECTION A-A

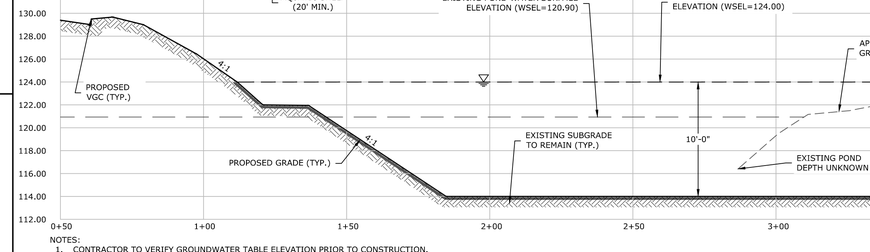
NOTES:
1. ALL DIMENSIONS ARE NOMINAL.
2. FRAMES USING NARROWER DIMENSIONS FOR THICKNESS ARE ALLOWED PROVIDED:
   2.A. THE FRAMES MEET OR EXCEED THE SPECIFIED LOAD RATING.
   2.B. THE INTERIOR PERIMETER (SEAT AREA) DIMENSIONS OF THE FRAMES REMAIN THE SAME TO ALLOW CONTINUED USE OF EXISTING GRATES/COVERS AS THE EXISTING FRAMES ALLOW, WITHOUT SHIMS OR OTHER MODIFICATIONS OR ACCOMMODATIONS.
   2.C. ALL OTHER PERTINENT REQUIREMENTS OF THE SPECIFICATIONS ARE MET.
3. LABEL TYPE OF MANHOLE WITH 3" HIGH LETTERS IN THE CENTER OF THE COVER.

DRAIN MANHOLE COVER



INSET

NO SCALE

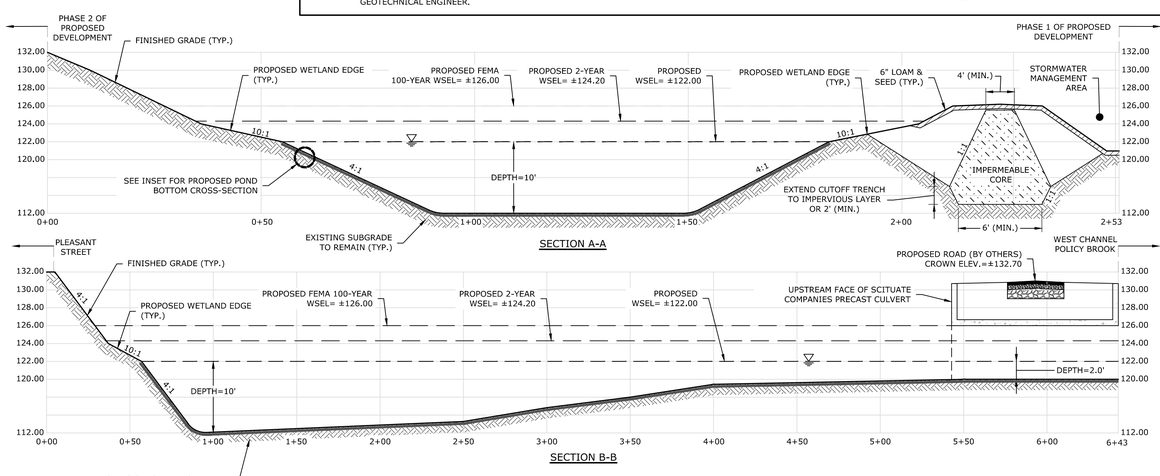


NOTES:
1. CONTRACTOR TO VERIFY GROUNDWATER TABLE ELEVATION PRIOR TO CONSTRUCTION.
2. FINAL DEPTH OF POND TO BE DETERMINED.
3. THE POND BOTTOM SHALL BE CONSTRUCTED WITH A NATURAL IMPERMEABLE BARRIER AS SPECIFIED BY THE PROJECT GEOTECHNICAL ENGINEER. THE INTENT IS TO REUSE THE EXISTING EXCAVATED POND BOTTOM MATERIAL TO THE EXTENT PRACTICAL, PENDING REVIEW AND APPROVAL BY THE GEOTECHNICAL ENGINEER.

EXISTING RECONFIGURED POND PROFILE

NO SCALE

4 -



SECTION A-A

SECTION B-B

NOTES:
1. CONTRACTOR TO VERIFY GROUNDWATER TABLE ELEVATION PRIOR TO CONSTRUCTION.

2. IMPERMEABLE CORE AND BARRIER MATERIAL SHALL MEET USCS CLASSIFICATIONS SC, SM, CL, OR ML AND HAVE A MAXIMUM PARTICLE SIZE OF 3" AND A PERMEABILITY LESS THAN 0.000001 CM/S WITH A P.I. GREATER THAN 6, AND MEET THE FOLLOWING GRADATION:

SIEVE SIZE	PERCENT FINER BY WEIGHT
3 INCH	100
NO. 200	40 TO 100

3. ALL FILL SHALL BE PLACED IN HORIZONTAL LIFTS AND BE COMPACTED TO 95% OF ASTM B-1557. LIFT THICKNESS SHALL BE NO GRATER THAN 12" PRE-COMPACTED OR LOOSE CONDITION.

4. IMPERMEABLE CORE AND BARRIER FOUNDATION SHALL BE CLEARED OF TREES, BRUSH, TOPSOIL, ETC. PRIOR TO PLACEMENT OF FILL.

5. THE IMPERMEABLE BARRIER SHALL HAVE A MINIMUM 6 INCHES COVER OF NATURAL POND BOTTOM MATERIAL.

6. NATURAL POND BOTTOM MATERIAL SHALL BE A SANDY GRAVELLY MIX INTERSPERSED WITH 4-6" COBBLE, MEETING THE FOLLOWING GRADATION:

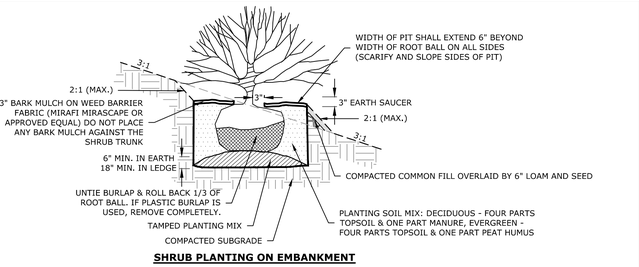
SIEVE SIZE	PERCENT PASSING BY WEIGHT
6"	100
#4	15-30
#200	0-12*

*PERCENT PASSING THE #4 SIEVE

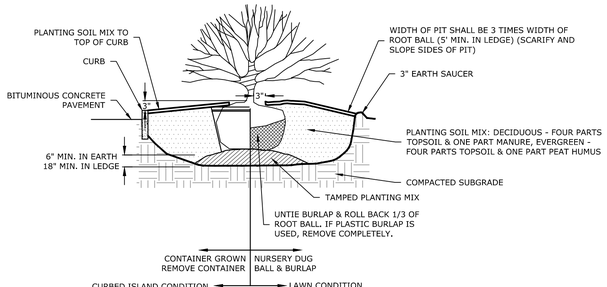
PROPOSED POND PROFILES

NO SCALE

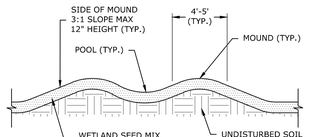
5 -



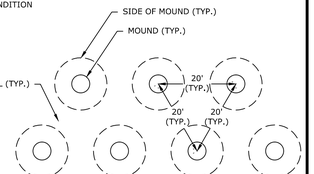
SHRUB PLANTING ON EMBANKMENT



SHRUB PLANTING



SECTION VIEW



PLAN VIEW

PIT & MOUND SHRUB PLANTING

GRADING NOTES:
1. SUB-GRADE WITHIN THE SCRUB SHRUB PIT & MOUND AND MIDDLE CHANNEL AREAS SHALL BE ESTABLISHED SUFFICIENTLY BELOW THE FINAL GRADE TO ALLOW 12" OF ORGANIC RICH TOPSOIL TO BE ADDED TO ACHIEVE FINAL GRADE.
2. SURFACE OF SCRUB SHRUB PIT AND MOUND AREA SHALL BE LEFT ROUGH WITH A HUMMOCK-HOLLOW MICRO-TOPOGRAPHY VARYING BY 12" (SEE DETAILS).
3. MOUNDS SHALL BE 3-5 FEET ACROSS AND SPACED ROUGHLY 20-FEET-ON-CENTER (SEE DETAILS)

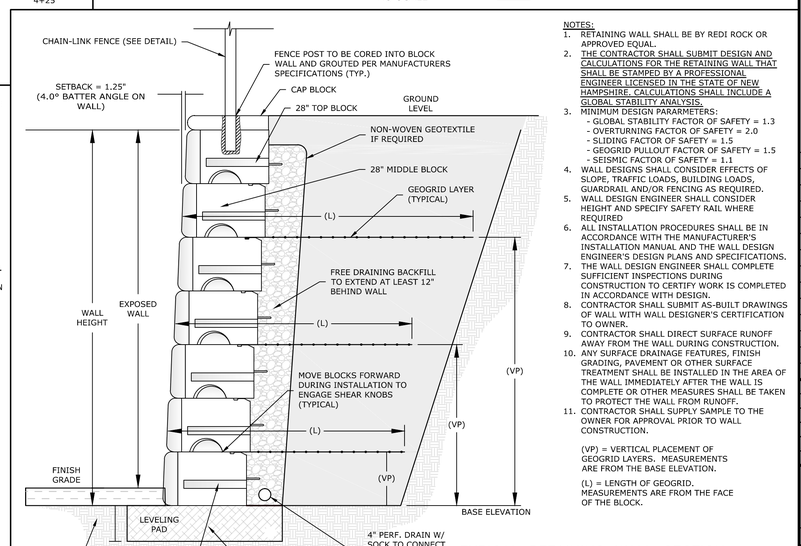
PLANTING NOTES:
1. PLANTING IN THE SCRUB SHRUB PIT & MOUND AREAS AND EMBANKMENT AREAS WILL BE PLANTED WITH THE SPECIES LISTED IN TABLE 1 TO ACHIEVE AN OVERALL DENSITY OF 8-FOOT-ON-CENTER. PLANTS ARE GENERALLY TO BE INSTALLED IN GROUPINGS OF 3 TO 4 MIXED SPECIES IN A RANDOM AND NATURALISTIC MANNER.
2. THE MIDDLE PLANTING AREA IS INTENDED TO BE MORE OPEN. BUTTONBUSH TO BE PLANTED IN APPROPRIATELY WET AREAS RANDOMLY SPACED THROUGHOUT THE AREA. HERBACEOUS PLANTINGS SHALL BE PLANTED WITH IN GROUPS APPROXIMATELY 2-FOOT-ON-CENTER.
3. THE PLACEMENT OF SPECIES IN ALL PLANTING AREAS SHALL BE ADJUSTED ACCORDING TO SPECIFIC SITE CONDITIONS AT THE DIRECTION OF THE WETLAND SCIENTIST.

STREAM BANK COIR LOG TREATMENT NOTES:
1. DOORMAT WOODY CUTTINGS SHALL BE USED TO ESTABLISH THICKET FORMING VEGETATION ALONG THE BANKS OF THE STREAM IN CONJUNCTION WITH THE COIR LOGS.
2. WOODY CUTTINGS TO BE INSTALLED 6 PER LINEAR FOOT IN AT TOP AND BETWEEN COIR LOGS
3. PLANTING MUST BE ACCOMPLISHED USING DORMANT CUTTINGS THAT HAVE BEEN EITHER HARVESTED IMMEDIATELY BEFORE INSTALLATION IN LATE FALL OR WINTER OR PROPERTY STORED UNTIL USE. TIMING WILL BE DEPENDENT ON CONSTRUCTION SCHEDULE AND AVAILABILITY OF CUTTINGS.

WETLAND PLANTINGS

NO SCALE

3 -



TYPICAL RETAINING WALL SECTION

NO SCALE

6 -

NOTES:
1. RETAINING WALL SHALL BE BY REDI ROCK OR APPROVED EQUAL.
2. THE CONTRACTOR SHALL SUBMIT DESIGN AND CALCULATIONS FOR THE RETAINING WALL THAT SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE. CALCULATIONS SHALL INCLUDE A GLOBAL STABILITY ANALYSIS.
3. MINIMUM DESIGN PARARMETERS:
   - GLOBAL STABILITY FACTOR OF SAFETY = 1.3
   - OVERTURNING FACTOR OF SAFETY = 2.0
   - SLIDING FACTOR OF SAFETY = 1.5
   - GEOGRID PULLOUT FACTOR OF SAFETY = 1.5
   - SEISMIC FACTOR OF SAFETY = 1.1
4. WALL DESIGNS SHALL CONSIDER EFFECTS OF SLOPE, TRAFFIC LOADS, BUILDING LOADS, GUARDRAIL AND/OR FENCING AS REQUIRED.
5. WALL DESIGN ENGINEER SHALL CONSIDER HEIGHT AND SPECIFY SAFETY RAIL WHERE REQUIRED
6. ALL INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION MANUAL AND THE WALL DESIGN ENGINEER'S DESIGN PLANS AND SPECIFICATIONS.
7. THE WALL DESIGN ENGINEER SHALL COMPLETE SUFFICIENT INSPECTIONS DURING CONSTRUCTION TO CERTIFY WORK IS COMPLETED IN ACCORDANCE WITH DESIGN.
8. CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS OF WALL WITH WALL DESIGNER'S CERTIFICATION TO OWNER.
9. CONTRACTOR SHALL DIRECT SURFACE RUNOFF AWAY FROM THE WALL DURING CONSTRUCTION.
10. ANY SURFACE DRAINAGE FEATURES, FINISH GRADING, PAVEMENT OR OTHER SURFACE TREATMENT SHALL BE INSTALLED IN THE AREA OF THE WALL IMMEDIATELY AFTER THE WALL IS COMPLETE OR OTHER MEASURES SHALL BE TAKEN TO PROTECT THE WALL FROM RUNOFF.
11. CONTRACTOR SHALL SUPPLY SAMPLE TO THE OWNER FOR APPROVAL PRIOR TO WALL CONSTRUCTION.

(VP) = VERTICAL PLACEMENT OF GEOGRID LAYERS. MEASUREMENTS ARE FROM THE BASE ELEVATION.

(L) = LENGTH OF GEOGRID. MEASUREMENTS ARE FROM THE FACE OF THE BLOCK.

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 — 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
10	3/12/2018	REV. PER TOWN COMMENTS
9	11/17/2017	ISSUED FOR PRICING
8	11/3/2017	REV. IMPACT AREAS
7	7/26/2017	REV. PER NHDES COMMENTS
6	6/20/2017	REV. PER FEMA RFMI
5	5/8/2017	REV. PER NHDES COMMENTS
4	3/24/2017	REV. PER TOWN COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

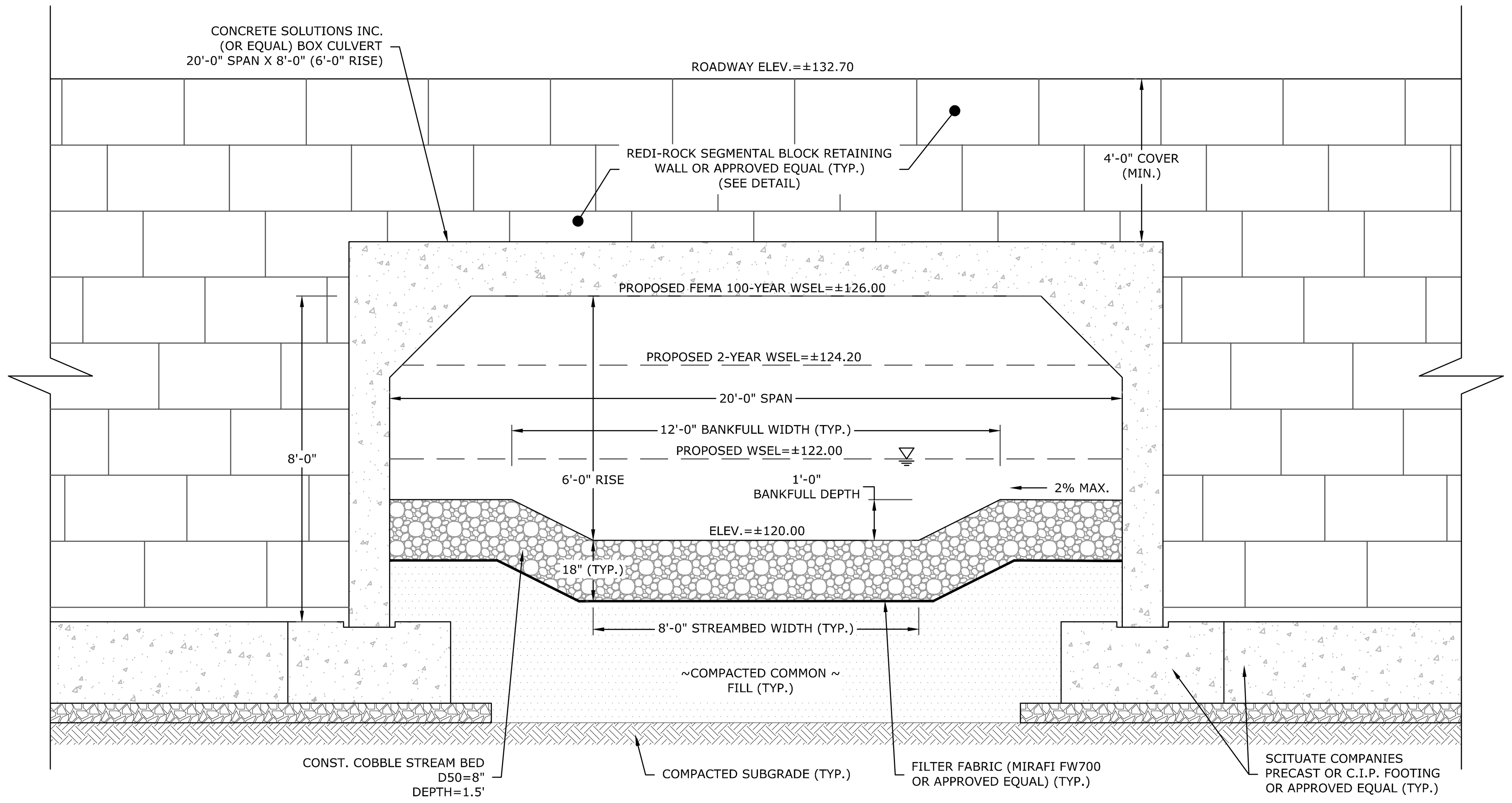
PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_701-705.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

DETAILS SHEET

SCALE: AS SHOWN

C.703

Last Saved: 3/15/2018
Plotted On: Mar 18, 2018 - 12:25pm By: NSC
Tighe & Bond: J:\M\M1775 MHF Design Consultants\Drawings, Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_701-705.dwg



WEST CHANNEL POLICY BROOK STREAM CROSSING SIMULATION SECTION

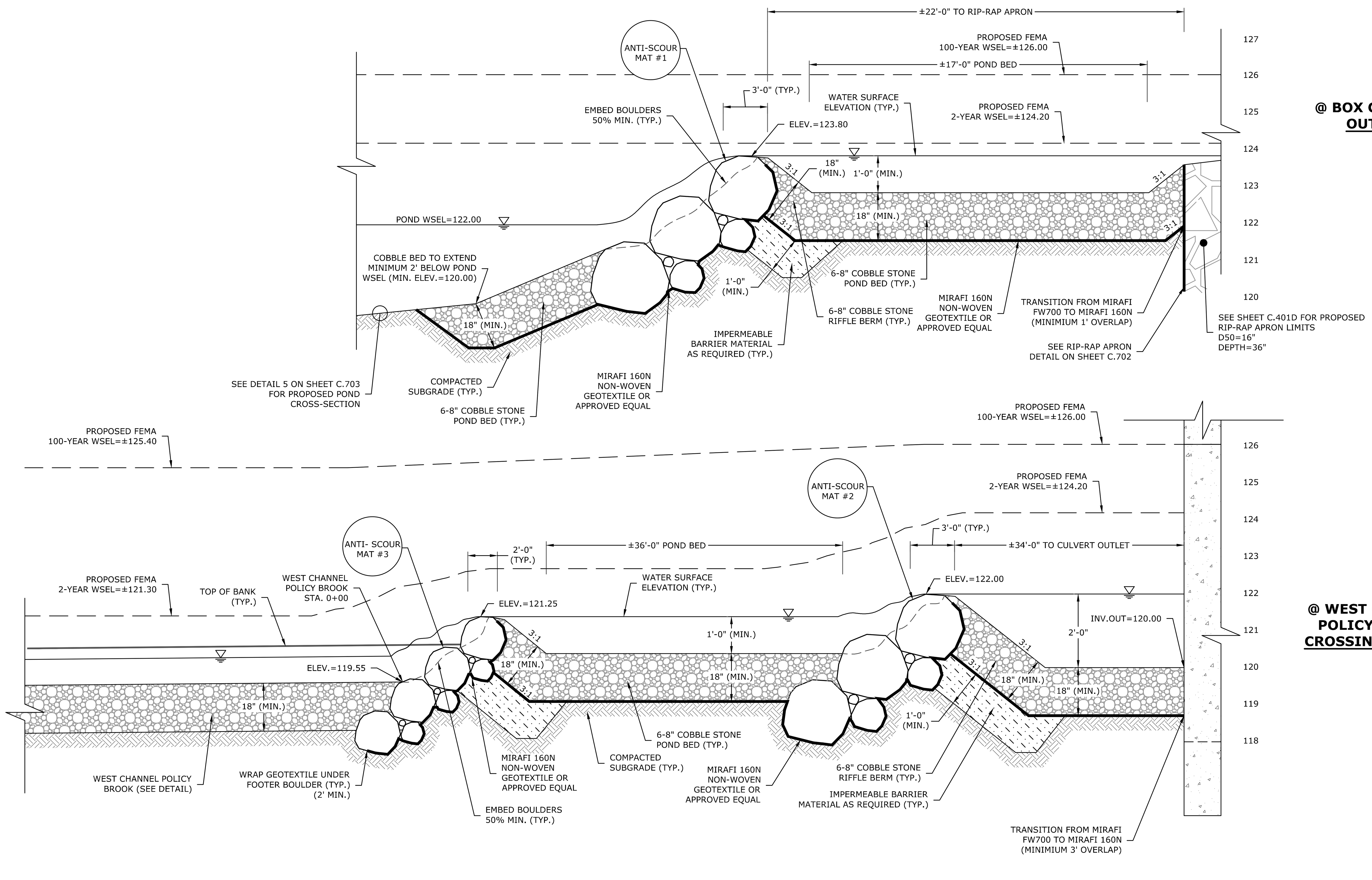
1
-

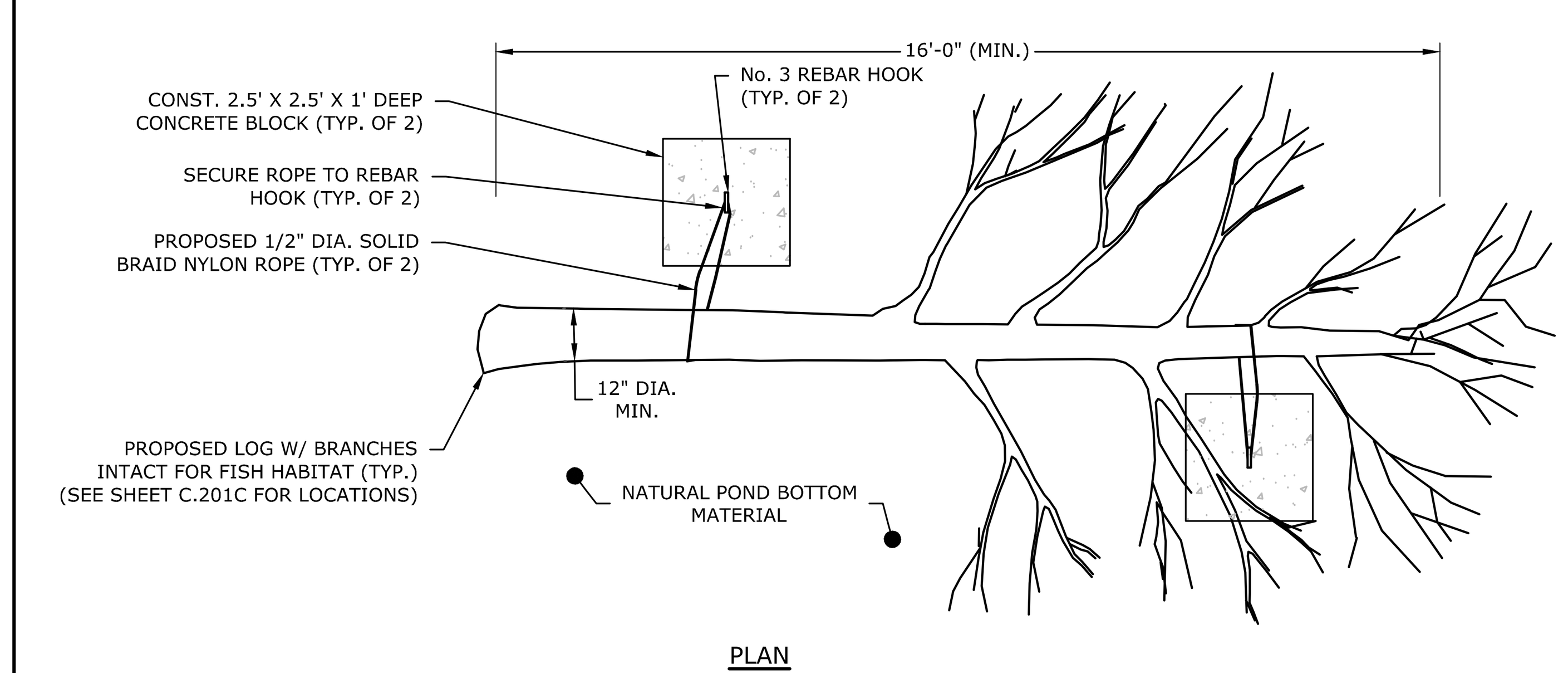
NO SCALE

CULVERT NOTES:
1. THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION SHALL BE BY CON/SPAN BRIDGE SYSTEMS OR APPROVED EQUAL.
2. THE DESIGN OF THE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" 17TH EDITION, ADOPTED BY THE AMERICAN ASSOCIATION OF STATE TRANSPORTATION OFFICIALS (AASHTO), 2002, THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT), 2010 AND THE MANUFACTURER'S SPECIFICATIONS.
3. THE STRUCTURE SHALL BE DESIGNED AND CONSTRUCTED TO WITHSTAND AASHTO HS-20-44 LOADING.
4. THE DESIGN OF THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. THE DESIGN AND SUBMITTAL SHALL INCLUDE THE FOLLOWING REQUIREMENTS:
   A. THE DESIGN SHALL INCLUDE DETAILED COMPUTATIONS AND ALL DETAILS, DIMENSIONS, QUANTITIES AND CROSS SECTIONS NECESSARY TO CONSTRUCT THE STRUCTURE.
   B. THE DESIGN SHALL CONFORM TO ALL OF THE REQUIREMENTS NOTED ABOVE. IN THE EVENT THAT TWO OR MORE SPECIFICATIONS APPLY TO THE WORK, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.
   C. THE DESIGN PLANS SHALL BE ON 24"X36" PLANS WITH THE PROJECT NAME, NUMBER AND DESIGN FIRM NOTED.
   D. THE DESIGN SHALL INCLUDE ALL BEDDING, BACKFILL AND INSTALLATION PROCEDURES.
   E. THE DESIGN SHALL INCLUDE A SCOUR ANALYSIS OF THE PROPOSED STREAM CROSSING AS PART OF THE FOUNDATION DESIGN.
   F. ALL PLANS AND COMPUTATIONS SHALL BE PREPARED, STAMPED AND SIGNED BY A NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER.
5. THE DESIGN ENGINEER FOR THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION SHALL PERFORM SUFFICIENT INSPECTIONS DURING CONSTRUCTION TO CERTIFY THAT THE INSTALLATION IS IN ACCORDANCE WITH THE DESIGN PLANS AND SPECIFICATIONS.

TEMPORARY WATER CONTROL AND DEWATERING NOTES:
1. THE CONTRACTOR SHALL PROVIDE, OPERATE AND MAINTAIN ADEQUATE PUMPING, DIVERSION AND DRAINAGE FACILITIES TO MAINTAIN THE EXCAVATED AREA SUFFICIENTLY DRY FROM GROUNDWATER AND/OR SURFACE RUNOFF SO AS NOT TO ADVERSELY AFFECT CONSTRUCTION PROCEDURES NOR CAUSE EXCESSIVE DISTURBANCE OF UNDERLYING OR SURROUNDING NATURAL GROUND.
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED FOR DEWATERING ACTIVITIES AND TAKE ACTIONS NECESSARY TO ENSURE THAT DEWATERING DISCHARGES COMPLY WITH PERMITS APPLICABLE TO THE PROJECT. THE CONTRACTOR SHALL DISPOSE OF WATER FROM THE TRENCHES AND EXCAVATIONS IN SUCH A MANNER AS TO AVOID PUBLIC NUISANCE, INJURY TO PUBLIC HEALTH OR THE ENVIRONMENT, DAMAGE TO PUBLIC OR PRIVATE PROPERTY, OR DAMAGE TO THE WORK COMPLETED OR IN PROGRESS.
3. THE CONTRACTOR SHALL BRACE OR OTHERWISE PROTECT PIPELINES AND STRUCTURES NOT STABLE AGAINST UPLIFT DURING CONSTRUCTION.
4. THE CONTRACTOR SHALL NOT EXCAVATE UNTIL THE DEWATERING SYSTEM IS OPERATIONAL AND THE EXCAVATION MAY PROCEED WITHOUT DISTURBANCE TO THE FINAL SUBGRADE OR SURROUNDING AREAS.
5. THE CONTRACTOR SHALL CONTINUE DEWATERING UNINTERRUPTED UNTIL THE STRUCTURES, PIPES AND APPURTENANCES TO BE INSTALLED HAVE BEEN COMPLETED SUCH THAT THEY WILL NOT FLOAT OR BE OTHERWISE DAMAGED BY AN INCREASE IN GROUNDWATER ELEVATION.
6. DEWATERING DISCHARGE:
   A. INSTALL SAND AND GRAVEL, OR CRUSHED STONE, FILTERS IN CONJUNCTION WITH SUMPS, WELL POINTS, AND/OR DEEP WELLS TO PREVENT THE MIGRATION OF FINES FROM THE EXISTING SOIL DURING THE DEWATERING OPERATION.
   B. WATER PUMPED FROM EXCAVATIONS MUST BE PASSED THROUGH A SILT FILTER BAG OR OTHER SUCH BEST MANAGEMENT PRACTICE (BMP) FEATURE PRIOR TO BEING DISCHARGED BACK TO A SURFACE WATER BODY.
   C. DO NOT DISCHARGE WATER INTO ANY SANITARY SEWER SYSTEM.
   D. ALL DEWATERING DISCHARGES SHALL BE OUTSIDE OF ANY WETLAND SYSTEMS.
   E. FOLLOWING TREATMENT IN AN APPROPRIATE BMP, WATER PUMPED FROM EXCAVATIONS SHOULD GENERALLY DISCHARGED ON THE DOWNSTREAM SIDE OF THE WORK AREA.
   F. THE DISCHARGE AREA FOR THE PUMP OR SIPHON OUTLET MUST BE PROPERLY PROTECTED TO PREVENT EROSION BY HIGH VELOCITY FLOW.
   G. DISCHARGE FLOW VELOCITY FROM PUMPS OR SIPHONS OVER UNPROTECTED, VEGETATED GROUND MUST NOT EXCEED A MAXIMUM OF 1 FOOT PER SECOND. DISCHARGE FLOW VELOCITY FROM PUMPS OR SIPHONS WITHIN THE UNPROTECTED NATURAL STREAM CHANNEL SHALL NOT EXCEED A MAXIMUM OF 3 FEET PER SECOND. IN THE EVENT EROSION RESULTS FROM VELOCITIES OF THE MAGNITUDES, THE CONTRACTOR SHALL TAKE STEPS TO MITIGATE THE EROSION OR SHALL REDUCE DISCHARGE FLOW VELOCITY.
7. THE CONTRACTOR SHALL INSTALL TEMPORARY COFFERDAMS AS REQUIRED. THE EXACT CONSTRUCTION DETAILS OF THE COFFERDAM SHALL BE DETERMINED BY THE CONTRACTOR PERFORMING THE WORK.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY WATER CONTROL, SURFACE WATER AND GROUNDWATER, NECESSARY TO EXECUTE AND COMPLETE THE WORK, SUBJECT TO THE RESTRICTIONS CONTAINED IN THE PROJECT PERMITS.
9. ALL TEMPORARY WATER CONTROL MEASURES SHALL BE IMPLEMENTED IN CONJUNCTION WITH APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES SO AS TO MITIGATE TO THE GREATEST EXTENT POSSIBLE RELEASE OF SEDIMENT INTO WATER BODIES AND POTENTIAL EROSION OF SOIL.
10. PUMPS OR GENERATORS WHICH UTILIZE LIQUID FUEL MUST BE PLACED WITHIN AN IMPERMEABLE SECONDARY CONTAINMENT AREA WITH SUFFICIENT CAPACITY TO CONTAIN THE FULL VOLUME OF THE FUEL TANK.
11. PUMP OR SIPHON INTAKES SHALL BE PLACED SUCH THAT SEDIMENT AND DEBRIS ENTRAINMENT IS MINIMIZED.
12. THE COFFERDAM SHALL NOT BE CONSTRUCTED OF UNCONTAINED FILL (SOIL, ROCK, OR ANY OTHER LOOSE MATERIAL). THESE TYPES OF COFFERDAMS ARE SPECIFICALLY DISALLOWED FOR ENVIRONMENTAL PROTECTION REASONS.

CONSTRUCTION SEQUENCE FOR STREAM CROSSING:
1. IF PRACTICAL, ALL STREAM CROSSING WORK SHALL OCCUR DURING LOW FLOW PERIODS OF THE BROOK.
2. INSTALL ALL EROSION AND SEDIMENT CONTROL BARRIERS AS FIRST ORDER OF WORK.
3. CONSTRUCT THE PROPOSED STREAM CHANNEL.
4. CONSTRUCT ANY REQUIRED COFFERDAMS AND/OR DEWATERING PRACTICES REQUIRED FOR THE CONSTRUCTION OF THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION.
5. CONSTRUCT THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION AND REMOVE ANY COFFERDAMS AND/OR DEWATERING MEASURES.
6. CONSTRUCT THE FINAL GRADING ABOVE AND ADJACENT TO THE STREAM CROSSING.
7. WHEN THE AREA IS COMPLETELY STABILIZED, REMOVE THE EROSION AND SEDIMENT CONTROL BARRIERS.





LOG INSTALLATION FOR POND BED

3
-

NO SCALE

NOTES:
1. COBBLE STONE RIFFLE BERM/BED:
   1.1. SHALL BE INSTALLED PRIOR TO DREDGING - INSTALL STONE BOULDER SCOUR MAT PRIOR TO COBBLE STONE RIFFLE BERM.
   1.2. COBBLE STONE RIFFLE BERM AND POND BED SHALL BE 6" TO 8" SIZED ROUNDED COBBLE.
   1.3. SLOPE SHALL BE 3:1 MAXIMUM.
2. ANTI-SCOUR MAT:
   2.1. ANTI-SCOUR MAT #1 & 2: SHALL BE ROUNDED STONE WITH BOULDERS NO SMALLER THAN 24" AND WITH AN AVERAGE SIZE OF AT LEAST 36".
   2.2. ANTI-SCOUR MAT #3: SHALL BE ROUNDED STONE WITH BOULDERS NO SMALLER THAN 18" AND WITH AN AVERAGE SIZE OF AT LEAST 24".
   2.3. CHINK ANTI-SCOUR MAT BOULDERS TO MID HEIGHT WITH SMALLER STONE TO FORM A DENSE MASS OF STONE.
   2.4. SLOPE SHALL BE 3:1 MAXIMUM.
3. IF BOULDERS ARE NOT PERFECTLY ROUND, THE THICKER END SHALL BE PLACED DOWNSTREAM.
4. COBBLE STONE RIFFLE BERM AND POND BED SHALL BE 6" TO 8" SIZED ROUNDED COBBLE.
5. IMPERMEABLE BARRIER:
   5.1. MATERIAL SHALL MEET USCS CLASSIFICATIONS SC, SM, CL, OR ML AND HAVE A MAXIMUM PARTICLE SIZE OF 3" AND A PERMEABILITY LESS THAN 0.000001 CM/S WITH A P.I. GREATER THAN 6, AND MEET THE FOLLOWING GRADATION:

SIEVE SIZE	PERCENT FINER BY WEIGHT
3 INCH	100
200	40 TO 100

   5.2. ALL FILL SHALL BE PLACED IN HORIZONTAL LIFTS AND BE COMPACTED TO 95% OF ASTM B-1557. LIFT THICKNESS SHALL BE NO GRATER THAN 12" PRE-COMPACTED OR LOOSE CONDITION.
   5.3. IMPERMEABLE BARRIER FOUNDATION SHALL BE CLEARED OF TREES, BRUSH, TOPSOIL, ETC. PRIOR TO PLACEMENT OF FILL.

STEP POOL STREAM DETAIL

2
-

NO SCALE

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

STATE OF NEW HAMPSHIRE - JOSEPH M. PERSECHINO No. 12389 LICENSED PROFESSIONAL ENGINEER
[illegible]

STATE OF NEW HAMPSHIRE - BRADLEE MEZQUITA No. 08650 LICENSED PROFESSIONAL ENGINEER
[illegible]

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 ▬ 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
11	8/15/2018	REV. PER TOWN COMMENTS
10	3/12/2018	REV. PER TOWN COMMENTS
9	11/17/2017	ISSUED FOR PRICING
8	7/26/2017	REV. PER NHDES COMMENTS
7	6/20/2017	REV. PER FEMA RFMI
6	6/5/2017	REV. STREAM CROSSINGS
5	5/8/2017	REV. PER NHDES COMMENTS
4	3/24/2017	REV. PER TOWN COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

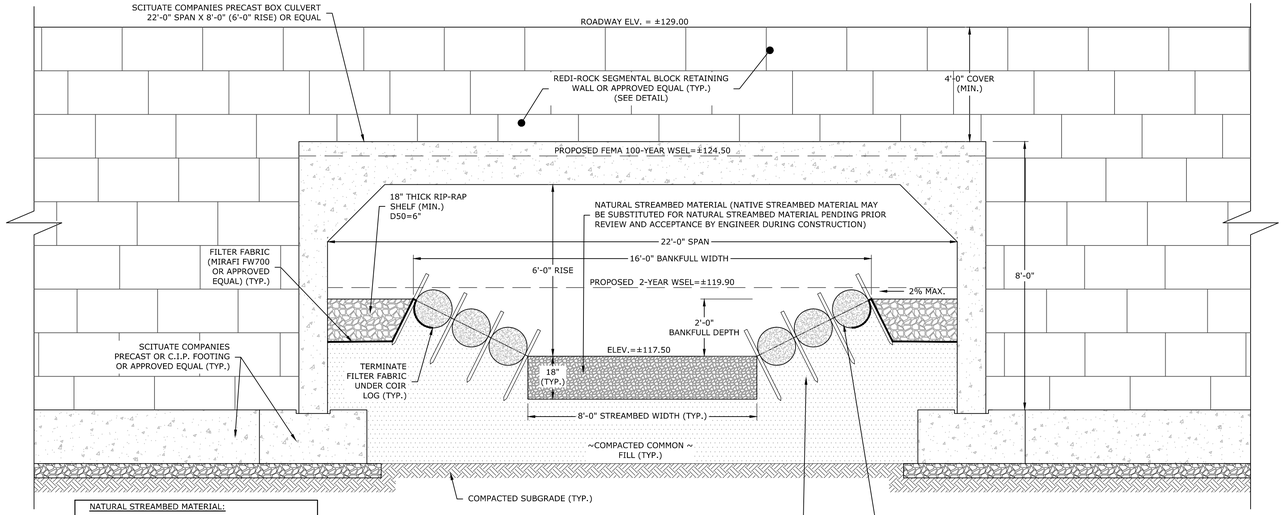
PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_701-705.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

WEST CHANNEL POLICY BROOK STREAM CROSSING DETAILS SHEET

SCALE: AS SHOWN

C.704

Last Saved: 8/14/2018
Plotted On:Aug 15, 2018-8:12am By: NSC
Tighe & Bond:J:\M\M1775 MHF Design Consultants\Drawings_Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_701-705_RCCD.dwg



NATURAL STREAMBED MATERIAL:

NATURAL STREAMBED MATERIAL SHALL BE A SANDY GRAVELLY MIX INTERSPERSED WITH 4-6" COBBLE, MEETING THE FOLLOWING GRADATION:

SIEVE SIZE	PERCENT PASSING BY WEIGHT
6"	100
#4	15-30
#200	0-12*

*PERCENT PASSING THE #4 SIEVE

POLICY BROOK STREAM CROSSING SIMULATION SECTION

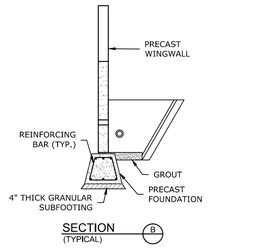
1

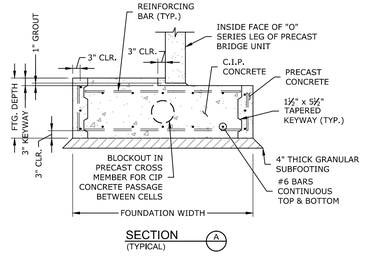
NO SCALE

CULVERT NOTES:
1. THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION SHALL BE BY CON/SPAN BRIDGE SYSTEMS OR APPROVED EQUAL.
2. THE DESIGN OF THE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" 17TH EDITION, ADOPTED BY THE AMERICAN ASSOCIATION OF STATE TRANSPORTATION OFFICIALS (AASHTO), 2002, THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT), 2010 AND THE MANUFACTURER'S SPECIFICATIONS.
3. THE STRUCTURE SHALL BE DESIGNED AND CONSTRUCTED TO WITHSTAND AASHTO HS-20-44 LOADING.
4. THE DESIGN OF THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. THE DESIGN AND SUBMITTAL SHALL INCLUDE THE FOLLOWING REQUIREMENTS:
   A. THE DESIGN SHALL INCLUDE DETAILED COMPUTATIONS AND ALL DETAILS, DIMENSIONS, QUANTITIES AND CROSS SECTIONS NECESSARY TO CONSTRUCT THE STRUCTURE.
   B. THE DESIGN SHALL CONFORM TO ALL OF THE REQUIREMENTS NOTED ABOVE. IN THE EVENT THAT TWO OR MORE SPECIFICATIONS APPLY TO THE WORK, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.
   C. THE DESIGN PLANS SHALL BE ON 24"X36" PLANS WITH THE PROJECT NAME, NUMBER AND DESIGN FIRM NOTED.
   D. THE DESIGN SHALL INCLUDE ALL BEDDING, BACKFILL AND INSTALLATION PROCEDURES.
   E. THE DESIGN SHALL INCLUDE A SCOUR ANALYSIS OF THE PROPOSED STREAM CROSSING AS PART OF THE FOUNDATION DESIGN.
   F. ALL PLANS AND COMPUTATIONS SHALL BE PREPARED, STAMPED AND SIGNED BY A NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER.
5. THE DESIGN ENGINEER FOR THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION SHALL PERFORM SUFFICIENT INSPECTIONS DURING CONSTRUCTION TO CERTIFY THAT THE INSTALLATION IS IN ACCORDANCE WITH THE DESIGN PLANS AND SPECIFICATIONS.

TEMPORARY WATER CONTROL AND DEWATERING NOTES:
1. THE CONTRACTOR SHALL PROVIDE, OPERATE AND MAINTAIN ADEQUATE PUMPING, DIVERSION AND DRAINAGE FACILITIES TO MAINTAIN THE EXCAVATED AREA SUFFICIENTLY DRY FROM GROUNDWATER AND/OR SURFACE RUNOFF SO AS NOT TO ADVERSELY AFFECT CONSTRUCTION PROCEDURES NOR CAUSE EXCESSIVE DISTURBANCE OF UNDERLYING OR SURROUNDING NATURAL GROUND.
2. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED FOR DEWATERING ACTIVITIES AND TAKE ACTIONS NECESSARY TO ENSURE THAT DEWATERING DISCHARGES COMPLY WITH PERMITS APPLICABLE TO THE PROJECT. THE CONTRACTOR SHALL DISPOSE OF WATER FROM THE TRENCHES AND EXCAVATIONS IN SUCH A MANNER AS TO AVOID PUBLIC NUISANCE, INJURY TO PUBLIC HEALTH OR THE ENVIRONMENT, DAMAGE TO PUBLIC OR PRIVATE PROPERTY, OR DAMAGE TO THE WORK COMPLETED OR IN PROGRESS.
3. THE CONTRACTOR SHALL BRACE OR OTHERWISE PROTECT PIPELINES AND STRUCTURES NOT STABLE AGAINST UPLIFT DURING CONSTRUCTION.
4. THE CONTRACTOR SHALL NOT EXCAVATE UNTIL THE DEWATERING SYSTEM IS OPERATIONAL AND THE EXCAVATION MAY PROCEED WITHOUT DISTURBANCE TO THE FINAL SUBGRADE OR SURROUNDING AREAS.
5. THE CONTRACTOR SHALL CONTINUE DEWATERING UNINTERRUPTED UNTIL THE STRUCTURES, PIPES AND APPURTENANCES TO BE INSTALLED HAVE BEEN COMPLETED SUCH THAT THEY WILL NOT FLOAT OR BE OTHERWISE DAMAGED BY AN INCREASE IN GROUNDWATER ELEVATION.
6. DEWATERING DISCHARGE:
   A. INSTALL SAND AND GRAVEL, OR CRUSHED STONE, FILTERS IN CONJUNCTION WITH SUMPS, WELL POINTS, AND/OR DEEP WELLS TO PREVENT THE MIGRATION OF FINES FROM THE EXISTING SOIL DURING THE DEWATERING OPERATION.
   B. WATER PUMPED FROM EXCAVATIONS MUST BE PASSED THROUGH A SILT FILTER BAG OR OTHER SUCH BEST MANAGEMENT PRACTICE (BMP) FEATURE PRIOR TO BEING DISCHARGED BACK TO A SURFACE WATER BODY.
   C. DO NOT DISCHARGE WATER INTO ANY SANITARY SEWER SYSTEM.
   D. ALL DEWATERING DISCHARGES SHALL BE OUTSIDE OF ANY WETLAND SYSTEMS.
   E. FOLLOWING TREATMENT IN AN APPROPRIATE BMP, WATER PUMPED FROM EXCAVATIONS SHOULD GENERALLY DISCHARGED ON THE DOWNSTREAM SIDE OF THE WORK AREA.
   F. THE DISCHARGE AREA FOR THE PUMP OR SIPHON OUTLET MUST BE PROPERLY PROTECTED TO PREVENT EROSION BY HIGH VELOCITY FLOW.
   G. DISCHARGE FLOW VELOCITY FROM PUMPS OR SIPHONS OVER UNPROTECTED, VEGETATED GROUND MUST NOT EXCEED A MAXIMUM OF 1 FOOT PER SECOND. DISCHARGE FLOW VELOCITY FROM PUMPS OR SIPHONS WITHIN THE UNPROTECTED NATURAL STREAM CHANNEL SHALL NOT EXCEED A MAXIMUM OF 3 FEET PER SECOND. IN THE EVENT EROSION RESULTS FROM VELOCITIES OF THE MAGNITUDES, THE CONTRACTOR SHALL TAKE STEPS TO MITIGATE THE EROSION OR SHALL REDUCE DISCHARGE FLOW VELOCITY.
7. THE CONTRACTOR SHALL INSTALL TEMPORARY COFFERDAMS AS REQUIRED. THE EXACT CONSTRUCTION DETAILS OF THE COFFERDAM SHALL BE DETERMINED BY THE CONTRACTOR PERFORMING THE WORK.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY WATER CONTROL, SURFACE WATER AND GROUNDWATER, NECESSARY TO EXECUTE AND COMPLETE THE WORK, SUBJECT TO THE RESTRICTIONS CONTAINED IN THE PROJECT PERMITS.
9. ALL TEMPORARY WATER CONTROL MEASURES SHALL BE IMPLEMENTED IN CONJUNCTION WITH APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES SO AS TO MITIGATE TO THE GREATEST EXTENT POSSIBLE RELEASE OF SEDIMENT INTO WATER BODIES AND POTENTIAL EROSION OF SOIL.
10. PUMPS OR GENERATORS WHICH UTILIZE LIQUID FUEL MUST BE PLACED WITHIN AN IMPERMEABLE SECONDARY CONTAINMENT AREA WITH SUFFICIENT CAPACITY TO CONTAIN THE FULL VOLUME OF THE FUEL TANK.
11. PUMP OR SIPHON INTAKES SHALL BE PLACED SUCH THAT SEDIMENT AND DEBRIS ENTRAINMENT IS MINIMIZED.
12. THE COFFERDAM SHALL NOT BE CONSTRUCTED OF UNCONTAINED FILL (SOIL, ROCK, OR ANY OTHER LOOSE MATERIAL). THESE TYPES OF COFFERDAMS ARE SPECIFICALLY DISALLOWED FOR ENVIRONMENTAL PROTECTION REASONS.

CONSTRUCTION SEQUENCE FOR STREAM CROSSING:
1. IF PRACTICAL, ALL STREAM CROSSING WORK SHALL OCCUR DURING LOW FLOW PERIODS OF THE BROOK.
2. INSTALL ALL EROSION AND SEDIMENT CONTROL BARRIERS AS FIRST ORDER OF WORK.
3. CONSTRUCT THE PROPOSED STREAM CHANNEL.
4. CONSTRUCT ANY REQUIRED COFFERDAMS AND/OR DEWATERING PRACTICES REQUIRED FOR THE CONSTRUCTION OF THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION.
5. CONSTRUCT THE PRECAST CONCRETE CULVERT, HEADWALLS, WINGWALLS AND FOUNDATION AND REMOVE ANY COFFERDAMS AND/OR DEWATERING MEASURES.
6. CONSTRUCT THE FINAL GRADING ABOVE AND ADJACENT TO THE STREAM CROSSING.
7. WHEN THE AREA IS COMPLETELY STABILIZED, REMOVE THE EROSION AND SEDIMENT CONTROL BARRIERS.



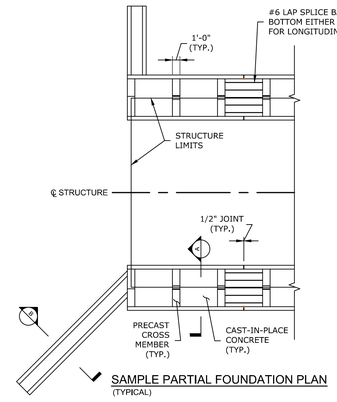


NOTE:
FOUNDATION DETAILS SHOWN ARE CONSIDERED 'TYPICAL' AND REPRESENTS MINIMUM DIMENSIONS. FINAL DESIGN SHALL BE COMPLETED BY CULVERT DESIGNER PRIOR TO CONSTRUCTED, AND STAMPED BY A NEW HAMPSHIRE LICENSED PROFESSIONAL ENGINEER.

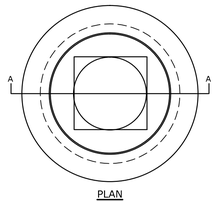
TYPICAL FOUNDATION DETAILS

2

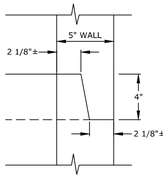
NO SCALE



SAMPLE PARTIAL FOUNDATION PLAN
(TYPICAL)

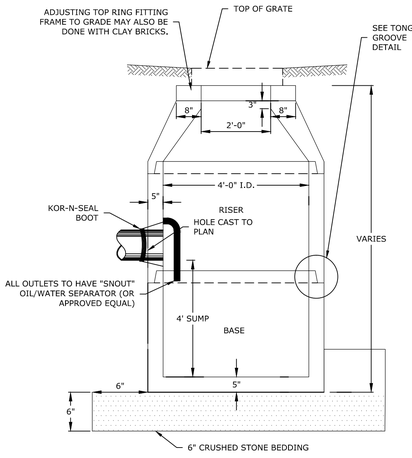


PLAN



TONGUE & GROOVE JOINT

NOTES:
1. ALL SECTIONS SHALL BE CONCRETE CLASS AA(4000 psi).
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ.IN. PER LINEAR FT. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF WALL.
3. THE TONGUE AND GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
4. RISERS OF 1', 2', 3', & 4' CAN BE USED TO REACH DESIRED DEPTH.
5. THE STRUCTURES SHALL BE DESIGN FOR H20 LOADING.
6. THE TONGUE AND GROOVE JOINT SHALL BE SEALED WITH ONE STRIP OF BUTYL RUBBER SEALANT.

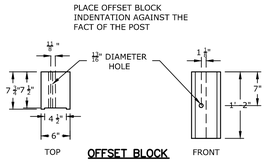


SECTION A-A

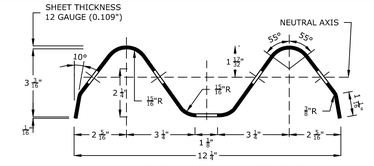
4' DIAMETER CATCHBASIN WITH SEPARATOR

4

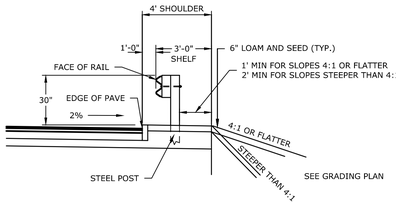
NO SCALE

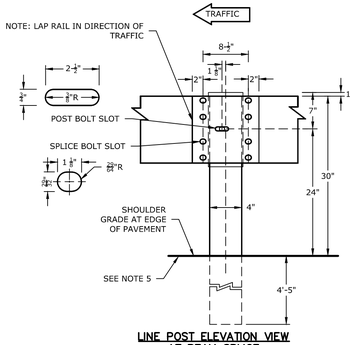


OFFSET BLOCK

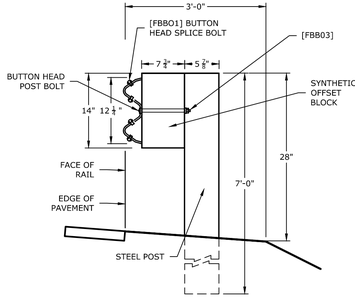


SECTION THRU RAIL ELEMENT
[4 SPACE W-BEAM GUARDRAIL DESIGNATED RWM04M18 (NOMINALLY 12'-6")]
[8 SPACE W-BEAM GUARDRAIL UNDESIGNATED AT THIS TIME (NOMINALLY 25'-0")]





LINE POST ELEVATION VIEW AT BEAM SPLICE
(SHOWN WITHOUT FASTENERS)



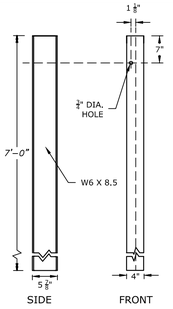
TYPICAL SIDE VIEW
(SHOWN WITH FASTENERS)

NOTES:
1. THE LENGTH OF NEED IS THE TOTAL LENGTH OF A LONGITUDINAL BARRIER NEEDED TO SHIELD AN AREA OF CONCERN. TO DETERMINE THE LENGTH OF NEED, REFER TO THE "ROADSIDE DESIGN GUIDE" - AASHTO (1989).
2. DESIGNATION PROVIDED IN BRACKETS ( ) REFERENCE STANDARD ELEMENTS DETAILED IN "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE" (1979) - AASHTO - AGC - ARTBA JOINT COOPERATIVE COMMITTEE.
3. USE 12'-6" LENGTH RAIL ELEMENT IN CURVES OF LESS THAN 100' RAIL RADIUS.
4. ALL DIMENSIONS SUBJECT TO MANUFACTURER'S TOLERANCES.
5. ESTABLISH RAIL HEIGHT AS FOLLOWS:
   5.1. SET THE HEIGHT OF RAIL FROM THE EDGE OF THE PAVEMENT (EP) WHEN THE FACE OF RAIL IS AT THE EDGE OF PAVEMENT.
   5.2. SET THE HEIGHT OF RAIL FROM THE GROUND AT THE FACE OF RAIL WHEN:
   5.2.1. THE FACE OF RAIL IS OFFSET FROM THE EP AND THE CROSS SLOPE FROM THE EP TO THE FACE OF RAIL IS 10:1 OR FLATTER OR
   5.2.2. THE FACE OF RAIL IS AT THE BACK OF A CURBED SIDEWALK AND THE CURB IS AT THE EDGE OF PAVEMENT.
   5.3. WHEN SITUATIONS OTHER THAN THOSE DESCIRBED IN 5.1 OR 5.2 ABOVE ARE ENCOUNTERED, ESTABLISH RAIL HEIGHT THROUGH AN ENGINEERING REVIEW TO ENSURE APPROPRIATE SYSTEM PERFORMANCE.
6. USE 6'-0" LONG POSTS WHEN FILL SLOPE IS 4:1 OR FLATTER AND/OR WHEN FIELD CONDITIONS DICTATE (e.g., LEDGE FILLS), AS DETERMINED BY THE ENGINEER.
7. WHEN GUARDRAIL IS INSTALLED BEHIND CURB, EITHER 6'-0" BEHIND SLOPE CURB ON A CLOSED RAMP OR AT THE BACK OF SIDEWALK WITH BARRIER CURB. THE RAIL HEIGHT SHALL BE SET FROM THE GRADE AT THE FACE OF RAIL.
8. SEE MOST RECENT NHDOT "BEAM GUARDRAIL STANDARD SECTION" (GR-2) FOR ADDITIONAL DETAILS

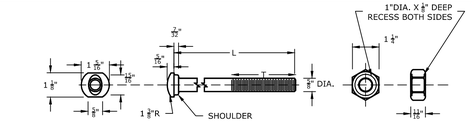
STEEL POST/STEEL BEAM GUARDRAIL

3

NO SCALE

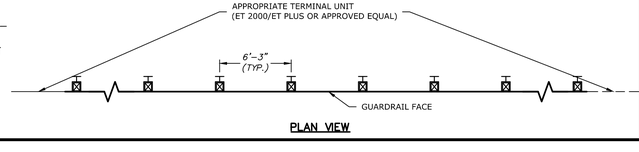


STRUCTURAL SHAPE
STEEL POST



DESIGNATOR	L	T	INTENDED USE
FBB01	1 3/4"	FULL LENGTH THREAD	RAIL SPLICE BOLTS
FBB02	2"	1 3/4" MIN. THREAD LENGTH	POST BOLT (STEEL POSTS)
FBB03	9 3/4"	4" MIN. THREAD LENGTH	POST BOLT

3/4" BUTTON HEAD BOLT AND RECESSED NUT
[FBB01-03]



PLAN VIEW

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

JOSEPH M. PERSECHINO No. 12329 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
2/10/18

BRADLEE MEZQUITA No. 08630 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
2/10/18

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

OMJ REALTY, LLC
Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
10	3/12/2018	REV. PER TOWN COMMENTS
9	11/17/2017	ISSUED FOR PRICING
8	7/26/2017	REV. PER NHDES COMMENTS
7	6/20/2017	REV. PER FEMA RFMI
6	6/5/2017	REV. STREAM CROSSINGS
5	5/8/2017	REV. PER NHDES COMMENTS
4	3/24/2017	REV. PER TOWN COMMENTS
3	3/9/2017	REV. BOX CULVERT DESIGN
2	2/10/2017	REV. BOX CULVERT DESIGN
1	1/19/2017	REV. PER RCCD REVIEW #1

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1-C_701-705.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

POLICY BROOK STREAM CROSSING DETAILS SHEET

SCALE: AS SHOWN

C.705

Last Saved: 3/13/2018
Plotted On: Mar 13, 2018 8:7:02am By: NSC
Tighe & Bond: J:\M\M1775 MHF Design Consultants\Drawings Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\TV-COMPILED PLANS\M1775-1-C_701-705.dwg

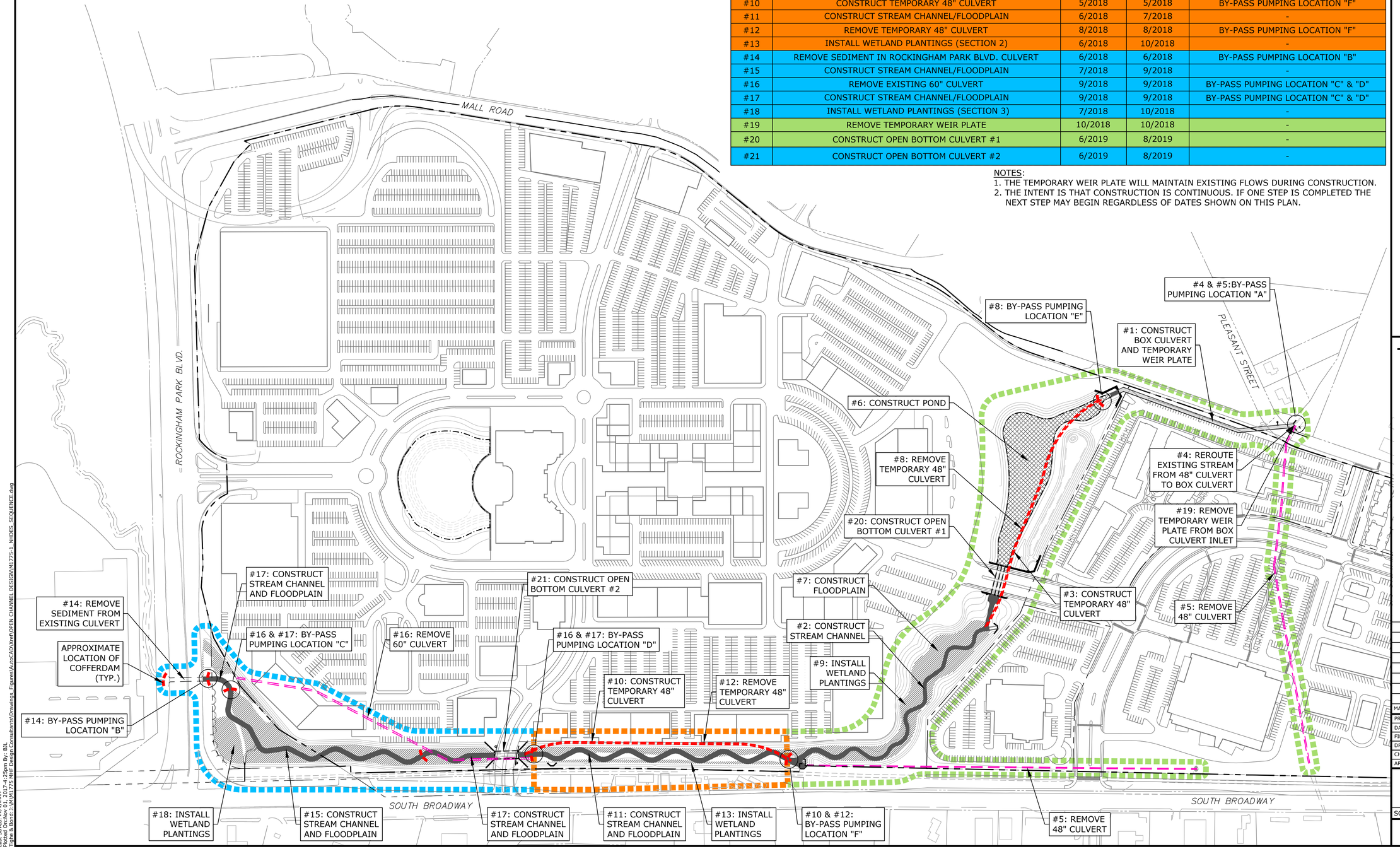
LEGEND

- APPROXIMATE LIMIT OF SECTION 1
- APPROXIMATE LIMIT OF SECTION 2
- APPROXIMATE LIMIT OF SECTION 3
- PROPOSED POND
- PROPOSED VEGETATED WETLAND
- PROPOSED STREAM CHANNEL

CONSTRUCTION SEQUENCE TABLE

ITEM NO.	DESCRIPTION	START DATE (APPROX.)	END DATE (APPROX.)	NOTES
#1	CONSTRUCT 5' X 11' BOX CULVERT AND TEMPORARY WEIR PLATE	9/2017	11/2017	SEE NOTE #1
#2	CONSTRUCT STREAM CHANNEL	9/2017	11/2017	-
#3	CONSTRUCT TEMPORARY 48" CULVERT	10/2017	11/2017	-
#4	REROUTE STREAM	11/2017	11/2017	BY-PASS PUMPING LOCATION "A"
#5	REMOVE EXISTING 48" CULVERTS	11/2017	12/2017	BY-PASS PUMPING LOCATION "A"
#6	CONSTRUCT POND	12/2017	4/2018	-
#7	CONSTRUCT FLOODPLAIN	5/2018	7/2018	-
#8	REMOVE TEMPORARY 48" CULVERT	5/2018	5/2018	BY-PASS PUMPING LOCATION "E"
#9	INSTALL WETLAND PLANTINGS (SECTION 1)	5/2018	10/2018	-
#10	CONSTRUCT TEMPORARY 48" CULVERT	5/2018	5/2018	BY-PASS PUMPING LOCATION "F"
#11	CONSTRUCT STREAM CHANNEL/FLOODPLAIN	6/2018	7/2018	-
#12	REMOVE TEMPORARY 48" CULVERT	8/2018	8/2018	BY-PASS PUMPING LOCATION "F"
#13	INSTALL WETLAND PLANTINGS (SECTION 2)	6/2018	10/2018	-
#14	REMOVE SEDIMENT IN ROCKINGHAM PARK BLVD. CULVERT	6/2018	6/2018	BY-PASS PUMPING LOCATION "B"
#15	CONSTRUCT STREAM CHANNEL/FLOODPLAIN	7/2018	9/2018	-
#16	REMOVE EXISTING 60" CULVERT	9/2018	9/2018	BY-PASS PUMPING LOCATION "C" & "D"
#17	CONSTRUCT STREAM CHANNEL/FLOODPLAIN	9/2018	9/2018	BY-PASS PUMPING LOCATION "C" & "D"
#18	INSTALL WETLAND PLANTINGS (SECTION 3)	7/2018	10/2018	-
#19	REMOVE TEMPORARY WEIR PLATE	10/2018	10/2018	-
#20	CONSTRUCT OPEN BOTTOM CULVERT #1	6/2019	8/2019	-
#21	CONSTRUCT OPEN BOTTOM CULVERT #2	6/2019	8/2019	-

NOTES:
1. THE TEMPORARY WEIR PLATE WILL MAINTAIN EXISTING FLOWS DURING CONSTRUCTION.
2. THE INTENT IS THAT CONSTRUCTION IS CONTINUOUS. IF ONE STEP IS COMPLETED THE NEXT STEP MAY BEGIN REGARDLESS OF DATES SHOWN ON THIS PLAN.



Last Saved: 11/1/2017
Plotted On: Nov 01, 2017 - 4:25pm By: BJL
Tighe & Bond: J:\M\M1775 MHF Design Consultants\Drawings, Figures\AutoCAD\Xref\OPEN CHANNEL DESIGN\M1775-1_NHDES_SEQUENCE.dwg

Tighe&Bond
www.tighebond.com

MHF Design Consultants, Inc.

SCALE IN FEET
0 150' 300'
GRAPHIC SCALE

PERMIT DRAWINGS

TUSCAN VILLAGE FLOODPLAIN IMPROVEMENTS

TUSCAN VILLAGE

OMJ REALTY, LLC

Salem, New Hampshire

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION
6	11/1/2017	REV. PER NHDES COMMENTS
5	10/11/2017	REV. PER SEQUENCING PLAN
4	9/7/2017	REV. PER PHASING PLAN
3	5/8/2017	REV. PER NHDES COMMENTS
2	3/9/2017	REV. BOX CULVERT DESIGN
1	2/10/2017	REV. BOX CULVERT DESIGN

PROJECT NO:	M-1775-1
DATE:	11/28/2016
FILE:	M1775-1_NHDES_SEQUENCE.dwg
DRAWN BY:	NSC
CHECKED:	JMP
APPROVED:	BLM

CONSTRUCTION SEQUENCING PLAN

SCALE: AS SHOWN

1 OF 1