

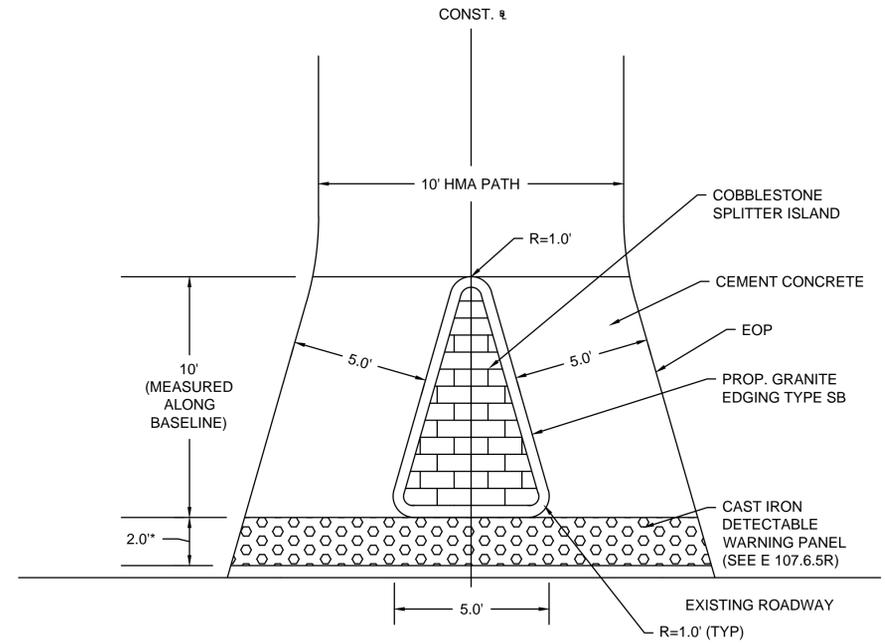
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	245	328
PROJECT FILE NO.		605189	

CONSTRUCTION DETAILS

HISTORIC MARKER INVENTORY			
REFERENCE	DESCRIPTION	REFERENCE	DESCRIPTION
1	BEGINNING OF EXTANT RAILS AND TIES	17	FOOTING
2	RELAY CABINET	18	SWITCH
3	RELAY BOX ON POLE	19	SWITCH
4	NORTHERLY NASHOBA BROOK BRIDGE	20	WAREHOUSE FOUNDATION
5	FLANGER SIGN	21	FOOTING
6	WHISTLE POST	22	FLANGER SIGN
7	WHISTLE POST	23	UNION STATION
8	MILE POST	24	CONCORD JUNCTION DIAMOND
9	SWITCH LEVER	25	BATTERY WELL
10	INTERLOCKING AND TRACK	26	TELEGRAPH POLE
11	RETAINING WALL	27	FOOTING
12	WHISTLE POST	28	FOOTING
13	WHISTLE POST	29	ASSABET RIVER NORTH BRIDGE ABUTMENT
14	COUPLER	30	ASSABET RIVER SOUTH BRIDGE ABUTMENT
15	SWITCH LEVER	31	RELAY BOX
16	SOUTHERLY NASHOBA BROOK BRIDGE	32	EXTANT RAIL AND TIES
		33	MILE POST
		34	FARM CROSSING
		35	RELAY BOX
		36	WHISTLE POST
		37	CULVERT
		38	FLANGER SIGN
		39	FLANGER SIGNS
		40	CROSSBUCK SIGN
		41	CROSSBUCK SIGN
		42	FLANGER SIGN
		43	SEMAPHORE
		44	TROUGH OR CONDUIT
		45	PRIVATE RESIDENTIAL CROSSING
		46	WARNING SIGN
		47	MILE POST
		48	FARM CROSSING

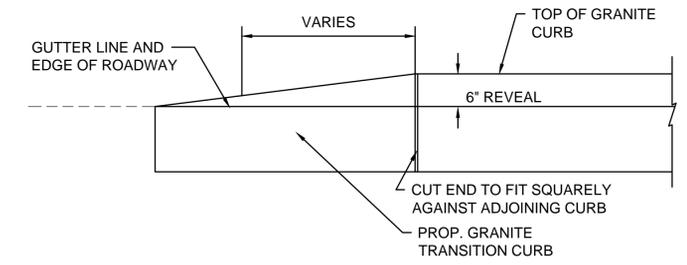
x = REFERENCE NUMBER; SEE PLANS FOR LOCATIONS

NOTE: HISTORIC MARKERS 1-7 ARE LOCATED BEYOND THE PROJECT LIMITS IN BFRT PHASE 2B



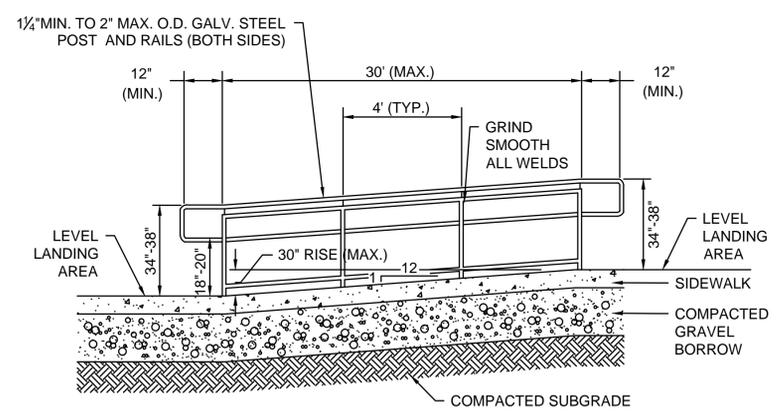
*ENTRANCES WHICH CROSS SIDEWALKS SHALL HAVE SPLITTER ISLANDS SET BEHIND THE SIDEWALK. (SEE SHEET 256 FOR DETAILS)

CEMENT CONCRETE TRAIL ENTRANCE WITH SPLITTER ISLAND
N.T.S.

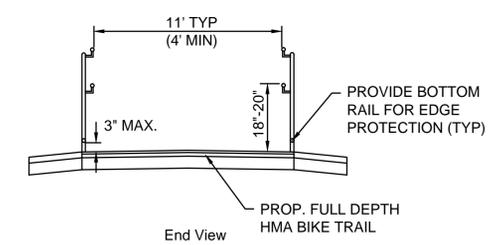


TRANSITION CURB DETAIL
N.T.S.

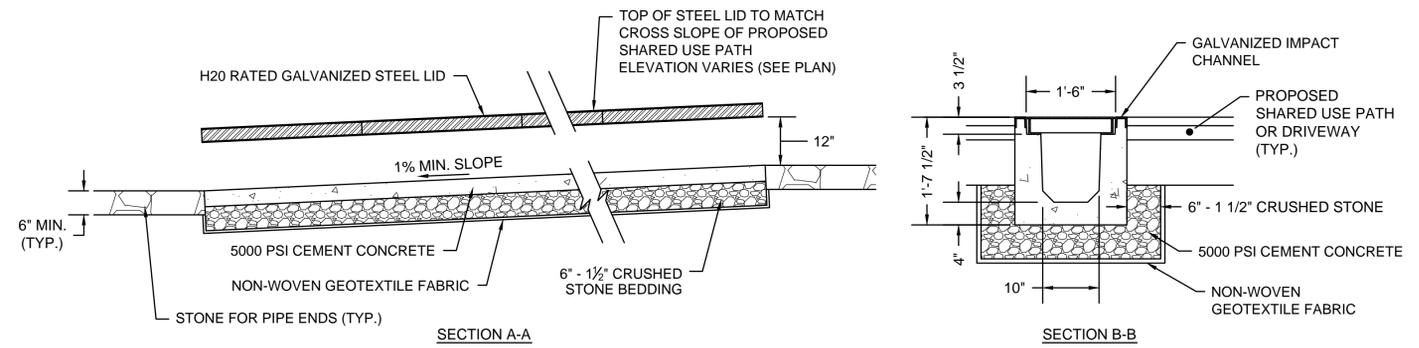
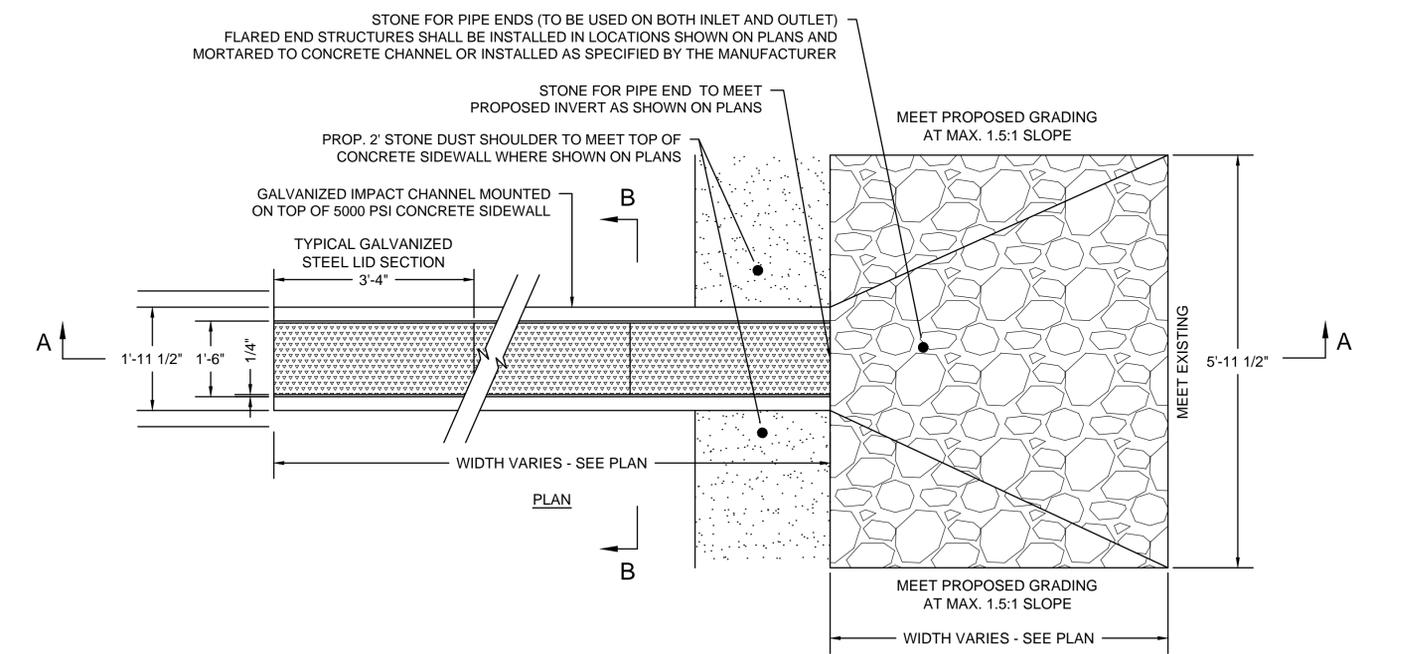
TO BE USED AT ALL LOCATIONS WHERE VERTICAL GRANITE CURB ENDS



RAMP WITH HANDRAIL
N.T.S.



NOTE:
1. FOR ADDITIONAL DETAIL SEE 521 CMR 24.00 RAMPS.

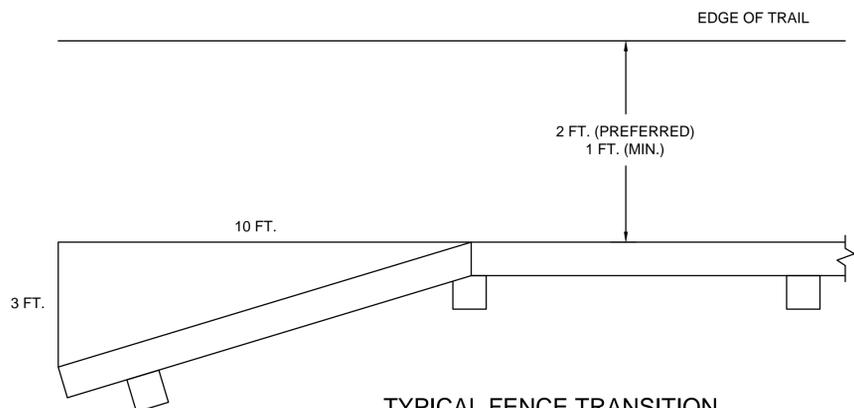


NOTE: PREFABRICATED TRENCH SHALL BE A MINIMUM 12\"/>

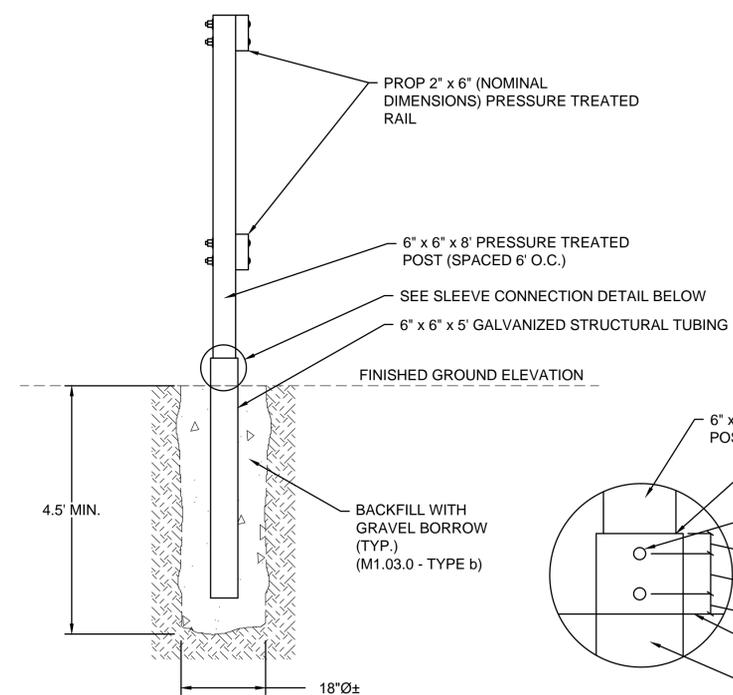
TRENCH DRAIN
N.T.S.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	246	328
PROJECT FILE NO.		605189	

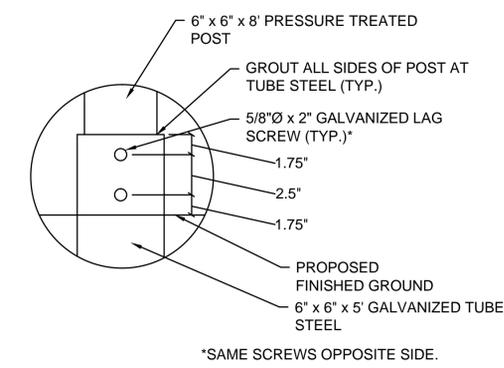
CONSTRUCTION DETAILS



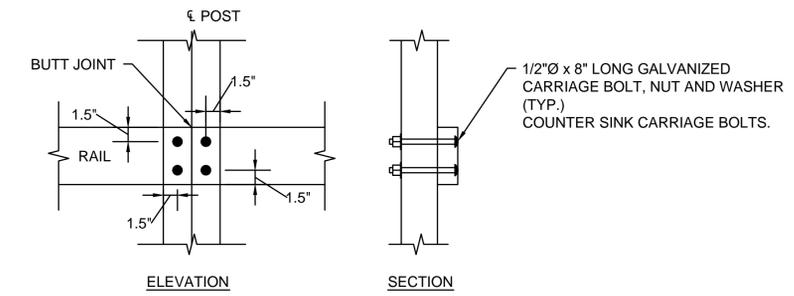
TYPICAL FENCE TRANSITION AT FENCE APPROACHES
N.T.S.



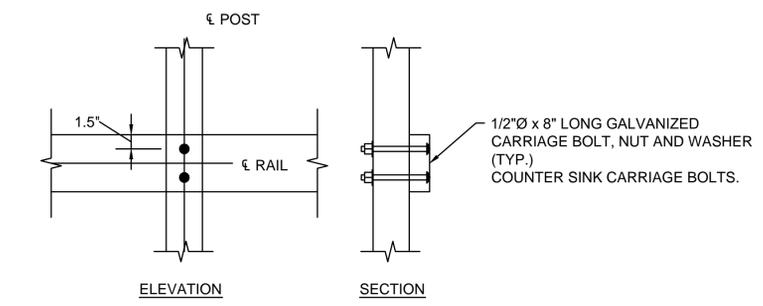
TIMBER RAIL FENCE TUBE STEEL SLEEVE (FOR USE IN SATURATED LOCATIONS AND THROUGH WEST CONCORD CENTER)
N.T.S.



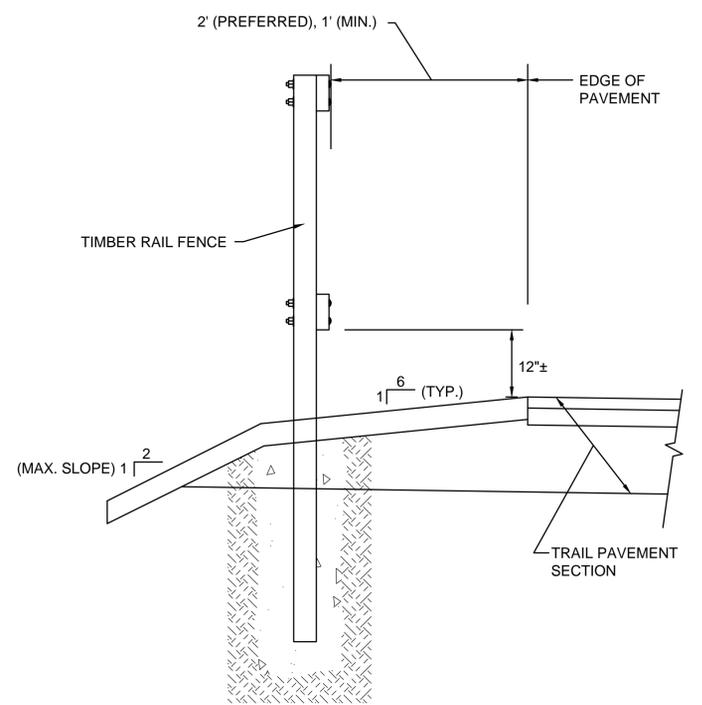
SLEEVE CONNECTION DETAIL
N.T.S.



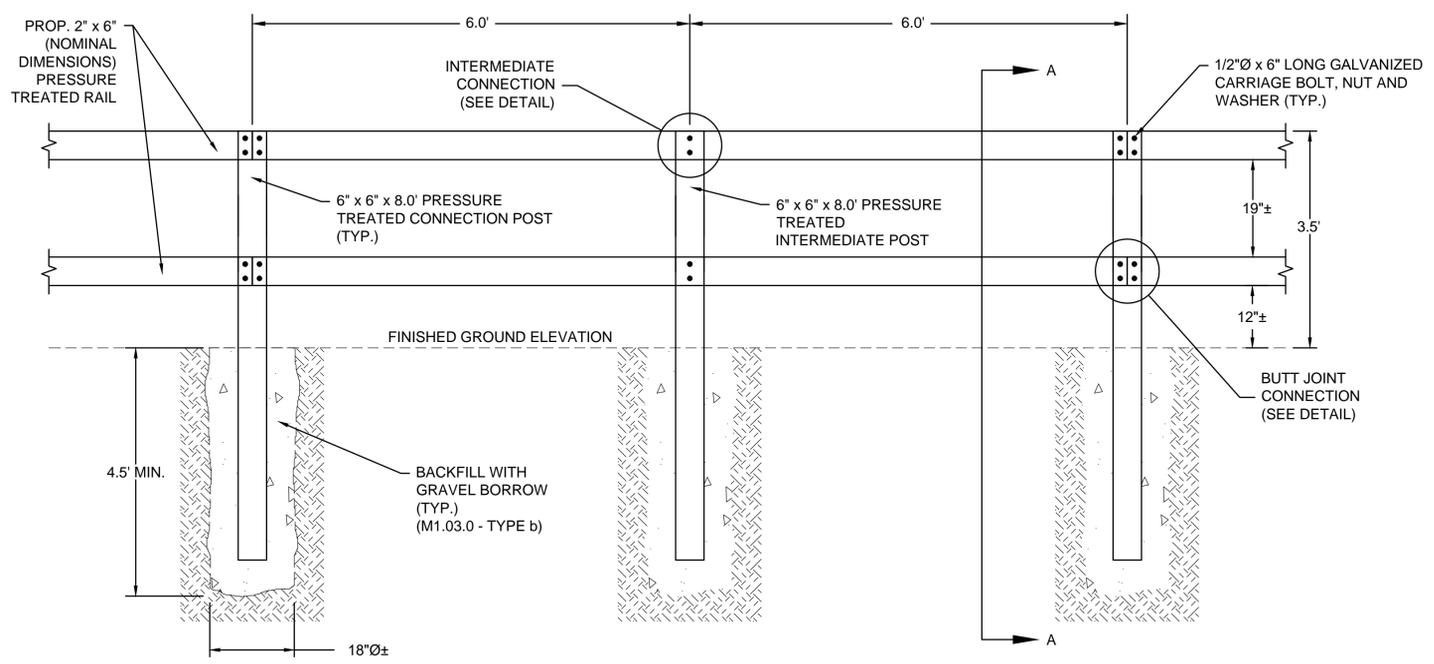
BUTT JOINT CONNECTION
N.T.S.



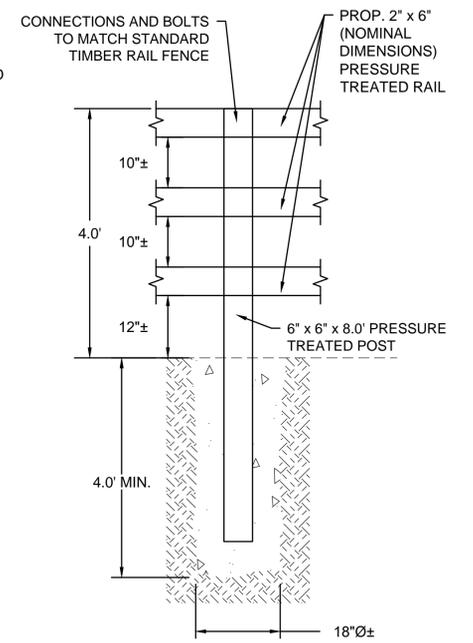
INTERMEDIATE CONNECTION
N.T.S.



SECTION A-A



TIMBER RAIL FENCE ELEVATION
N.T.S.
SEE PLANS FOR LOCATIONS



48" THREE-RAIL BOLTED TIMBER FENCE ELEVATION
N.T.S.

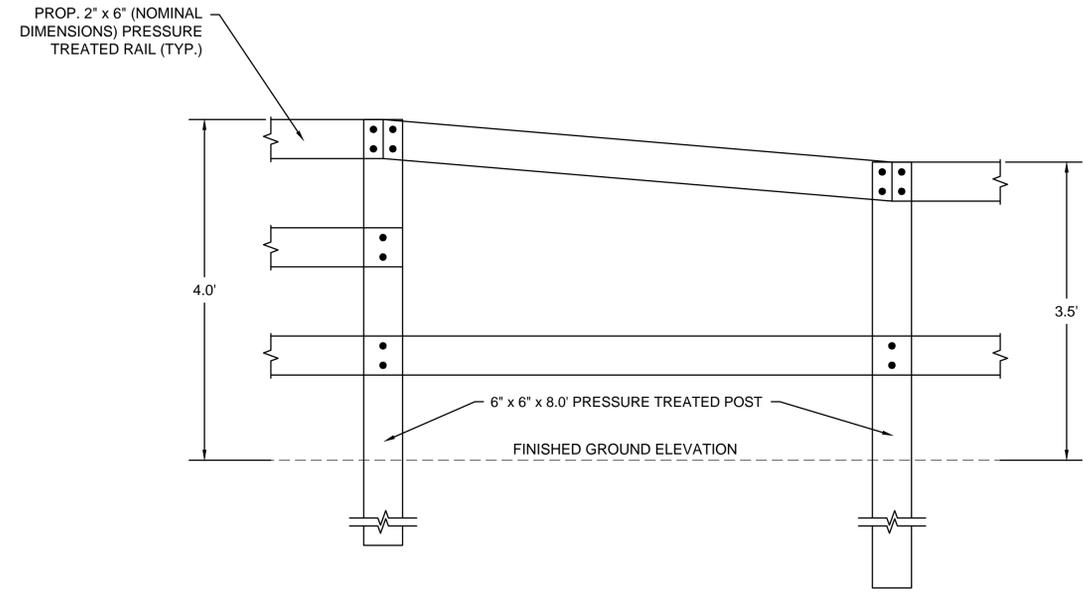
SUGGESTED TIMBER RAIL FENCE CONSTRUCTION SEQUENCE

1. AUGER OR DIG POST HOLE TO REQUIRED DIMENSIONS.
2. IF GROUND IS SATURATED, USE TUBE STEEL SLEEVE. SEE DETAIL ON THIS SHEET.
3. BACKFILL BOTTOM 6"± OF HOLE WITH GRAVEL AND COMPACT THOROUGHLY.
4. SET POST AND HOLD PLUMB DURING BACKFILLING.
5. BACKFILL WITH GRAVEL IN 12" LIFTS. COMPACT EACH LIFT THOROUGHLY.
6. CLAMP RAILS TO POSTS AND FIELD DRILL BOLT HOLES.
7. SET BOLTS, WASHERS AND NUTS.
8. IF CCA PRESSURE TREATED LUMBER IS NOT READILY AVAILABLE AT THE TIME OF CONSTRUCTION OR IT IS DEEMED ENVIRONMENTALLY UNACCEPTABLE FOR COMMERCIAL USES BY THE EPA, USE ACQ PRESSURE TREATED LUMBER.

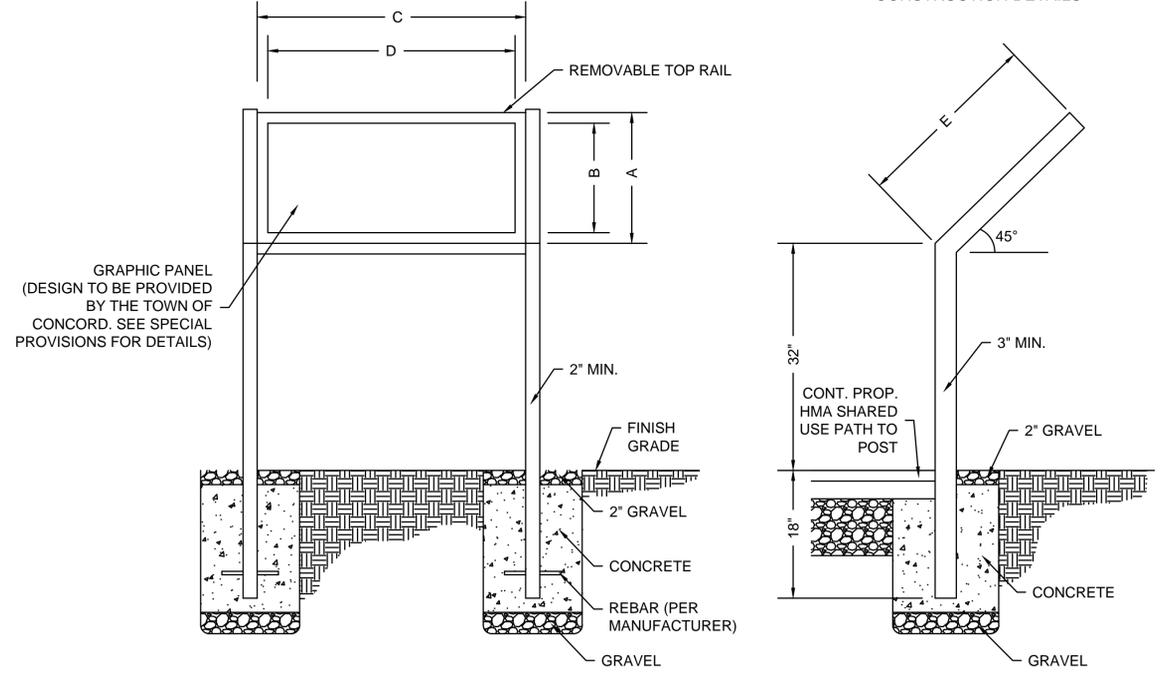
NOTES:
1. FOR RADII LESS THAN 165', USE CONNECTION POSTS SET AT 6.0' O.C. AND SHORTEN RAILS ACCORDINGLY.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	247	328
PROJECT FILE NO.		605189	

CONSTRUCTION DETAILS

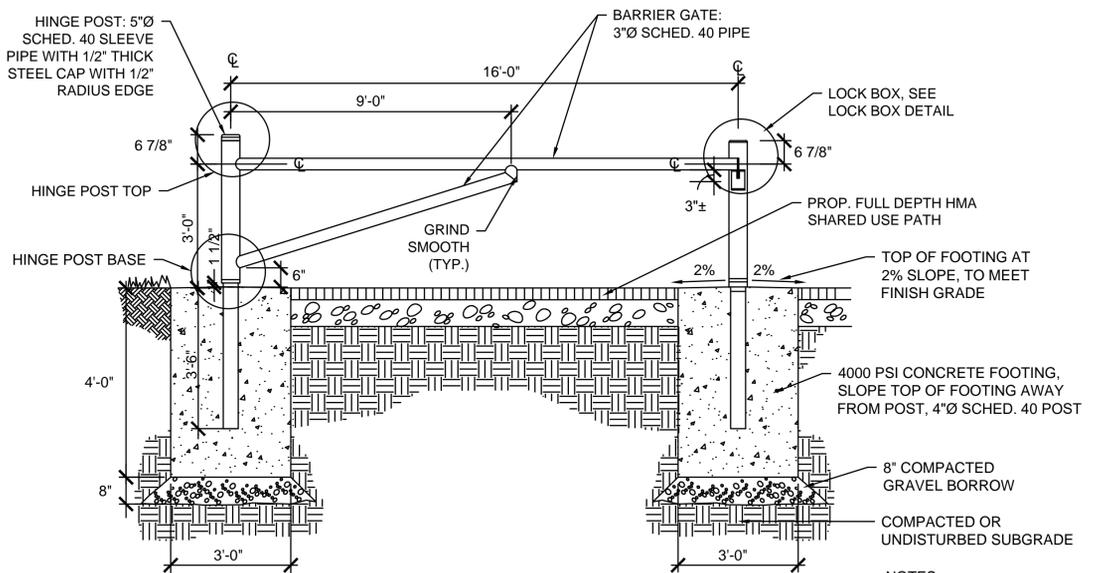


48" THREE-RAIL BOLTED TIMBER FENCE TRANSITION TO STANDARD TIMBER RAIL FENCE
N.T.S.

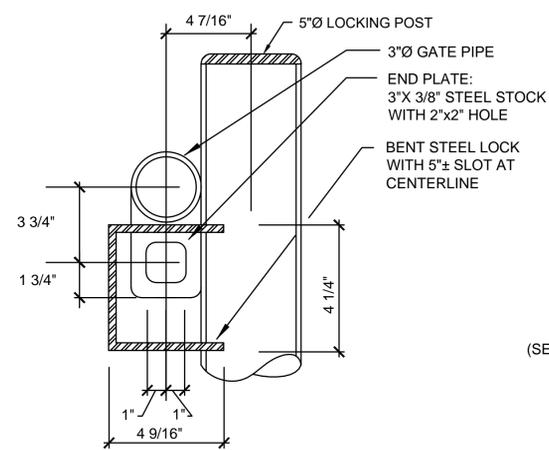


INTERPRETIVE SIGN
N.T.S.

SIGN TYPE	HEIGHT		WIDTH		DEPTH
	A	B	C	D	
26" x 38"	26"	23"	38"	35"	26.5"

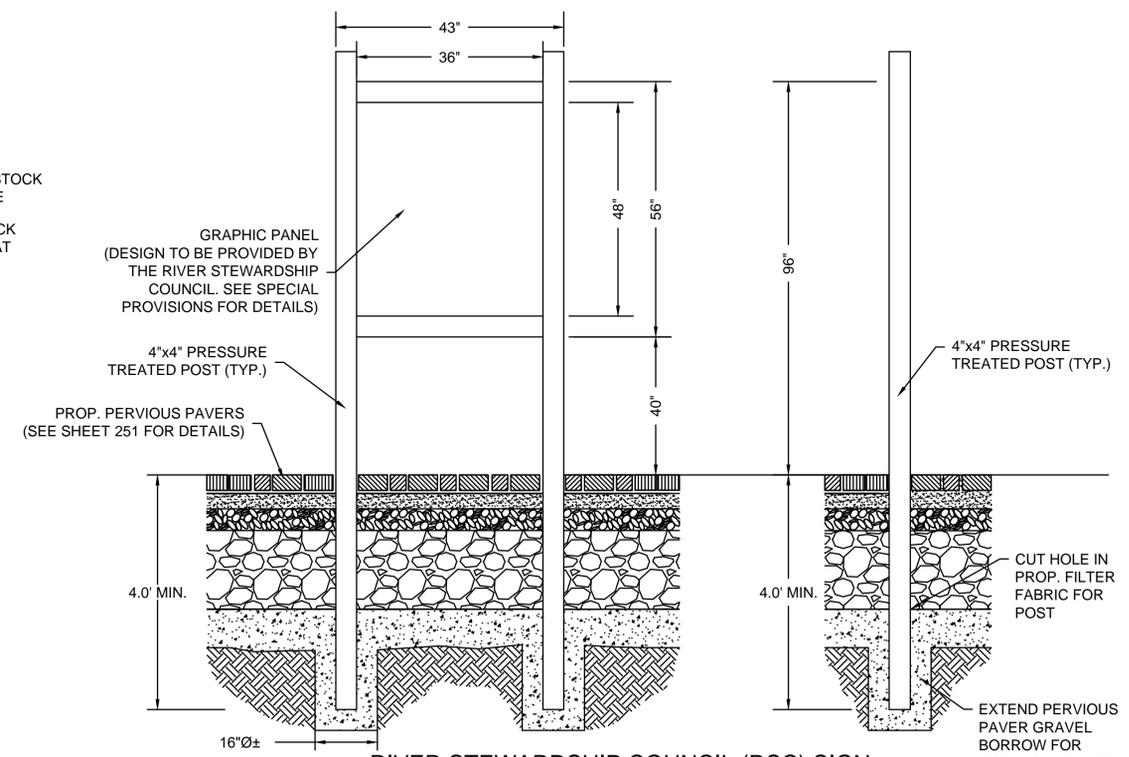


STEEL PIPE ACCESS GATE
N.T.S.



LOCK BOX DETAIL
N.T.S.

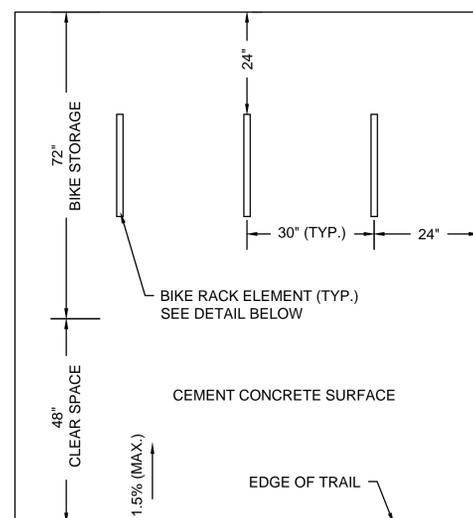
- NOTES:
1. ALL STEEL SHALL BE GALVANIZED INSIDE AND OUT.
 2. PROVIDE 1/2"Ø WEEP HOLES AT WELDED CONNECTIONS (3 PLACES).
 3. INSTALL BRASS BUSHINGS AFTER GALVANIZING.



RIVER STEWARDSHIP COUNCIL (RSC) SIGN
N.T.S.

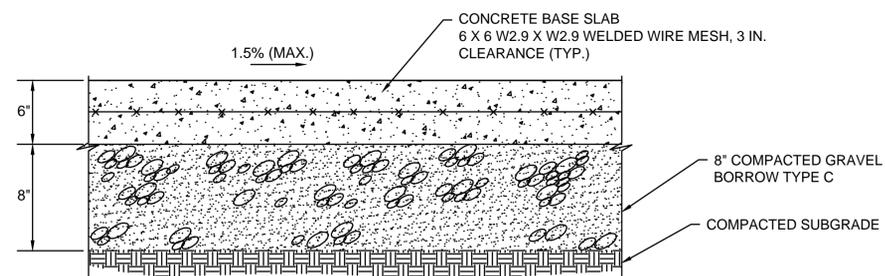
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	248	328
PROJECT FILE NO.		605189	

CONSTRUCTION DETAILS

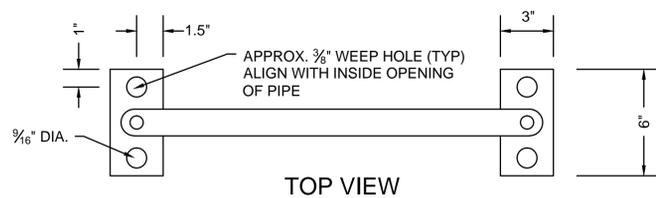
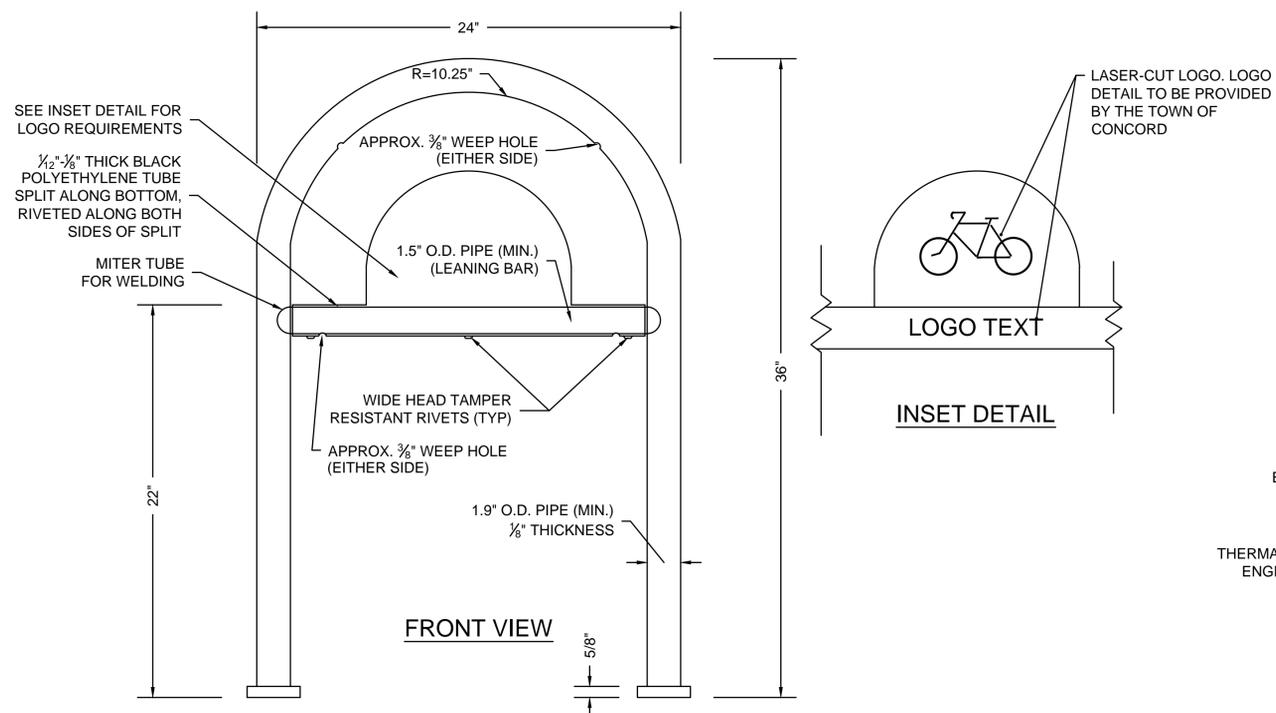


- NOTES:
• ALL DIMENSIONS MINIMUM
• SEE PLANS FOR QUANTITY OF BIKE RACK ELEMENTS

BICYCLE RACK PLACEMENT

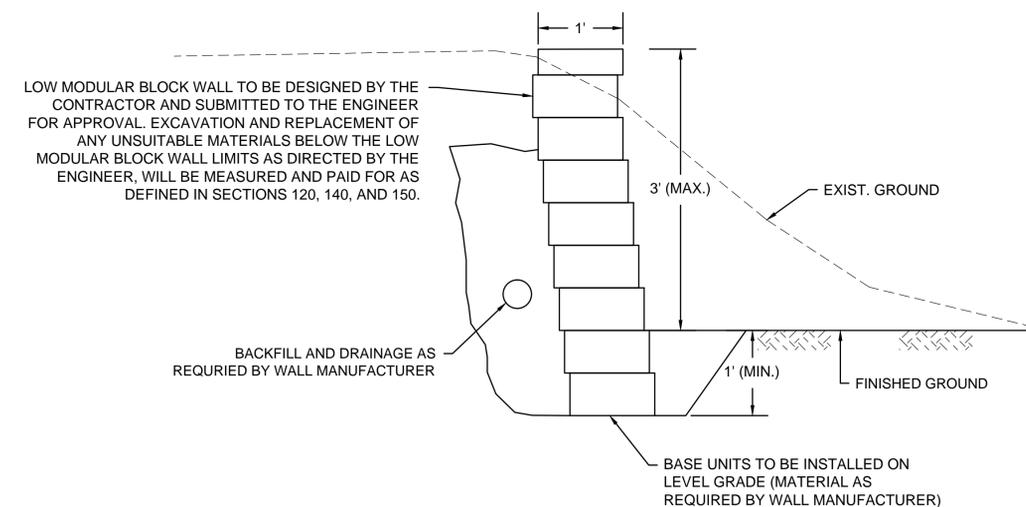


CEMENT CONCRETE FOUNDATION

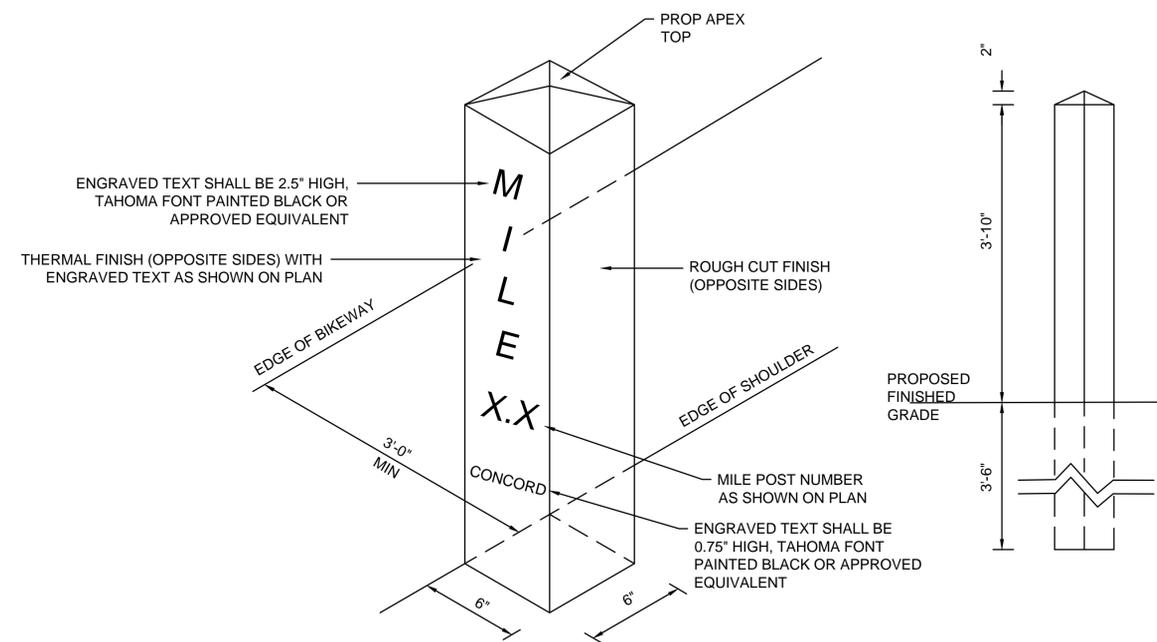


BICYCLE RACK ELEMENT DETAIL
N.T.S.

- NOTES:
1. EACH BIKE RACK SHALL INCLUDE A LASER-CUT LOGO. LOGO DETAIL TO BE PROVIDED BY THE TOWN OF CONCORD.
2. DIMENSIONS ARE APPROXIMATE AND WILL BE DETERMINED IN COORDINATION WITH THE MANUFACTURER. BIKE RACK ELEMENTS TO BE OF THE INVERTED "U" OR "A" TYPE AS DEFINED IN "BICYCLE PARKING GUIDELINES" BY ASSOCIATION OF PEDESTRIAN AND BICYCLE PROFESSIONALS.
3. EACH BIKE RACK SHALL ACCOMMODATE TWO BICYCLES.



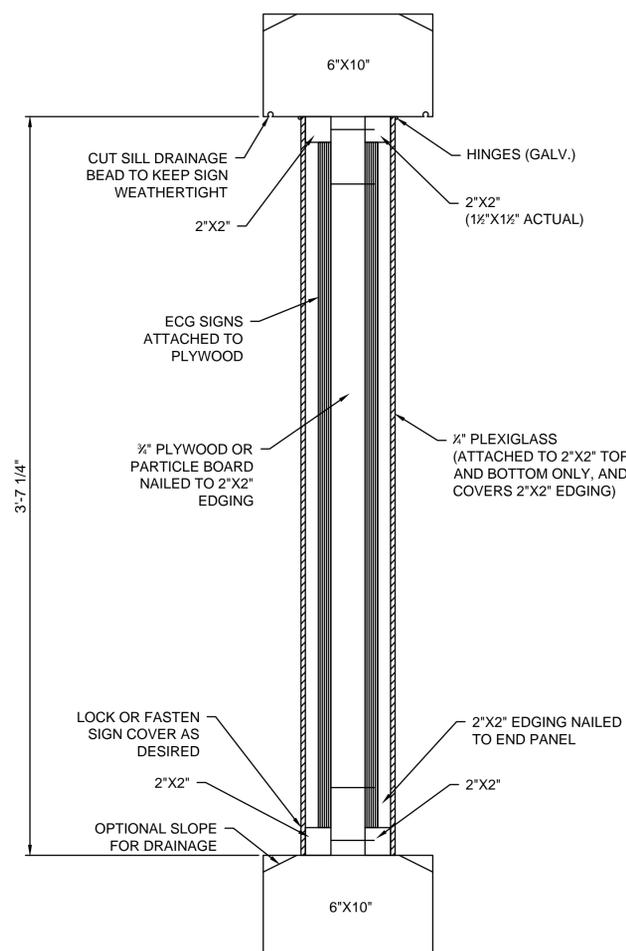
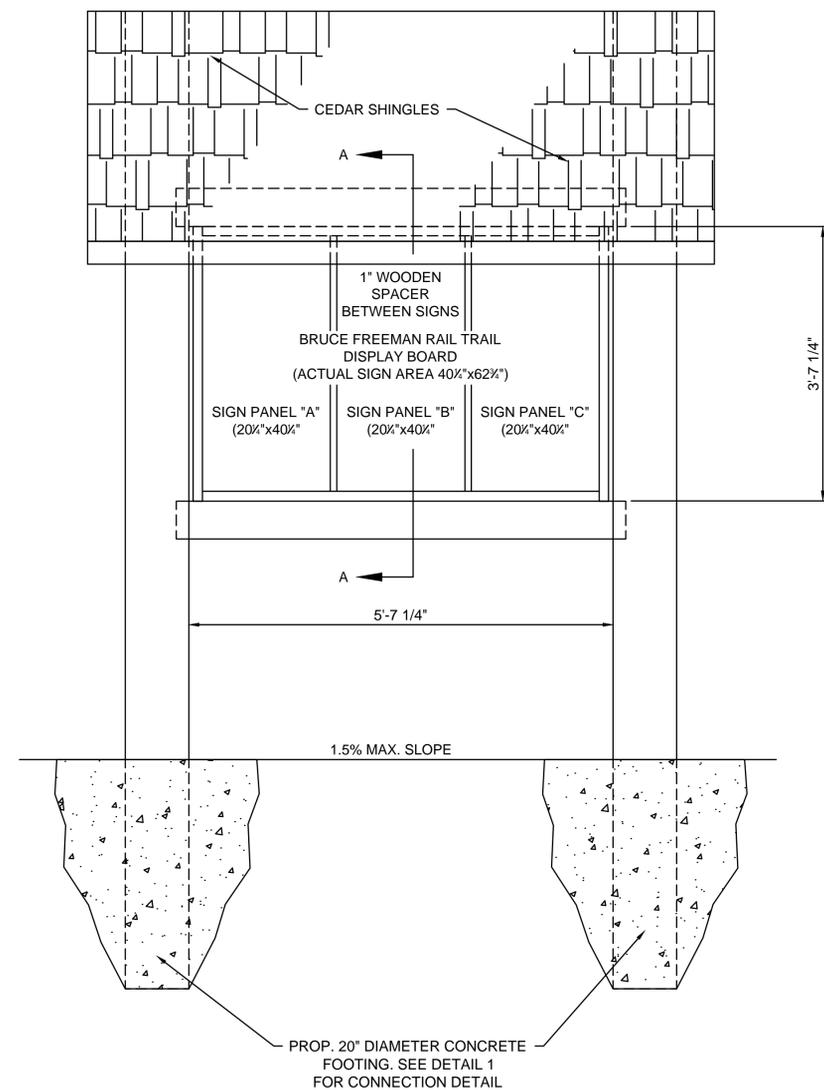
LOW MODULAR BLOCK WALL
(STA. 129+32 TO 129+79)
N.T.S.



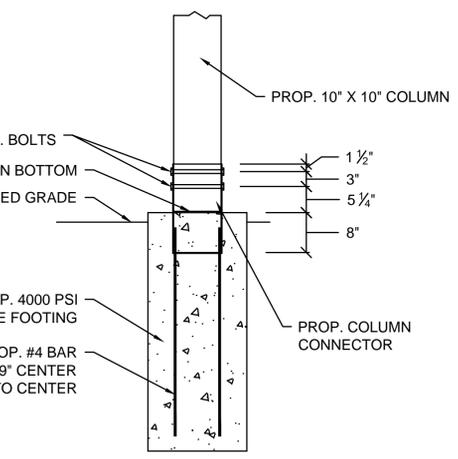
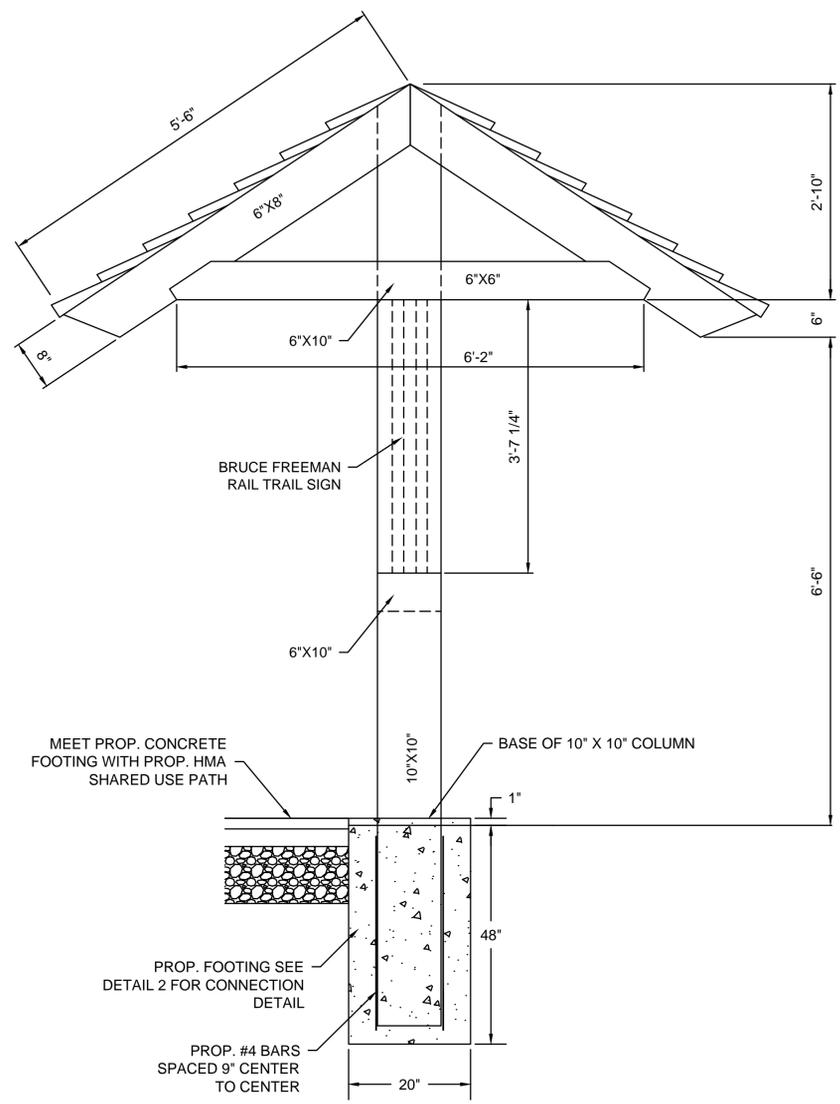
GRANITE MARKER
N.T.S.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	249	328
PROJECT FILE NO.		605189	

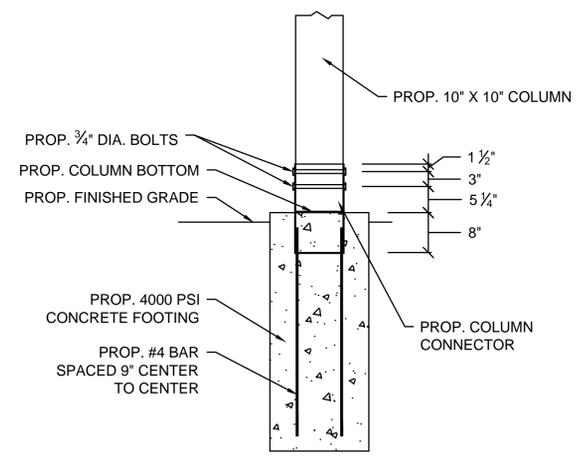
CONSTRUCTION DETAILS



SECTION A-A
DISPLAY BOARD DETAILS
N.T.S.



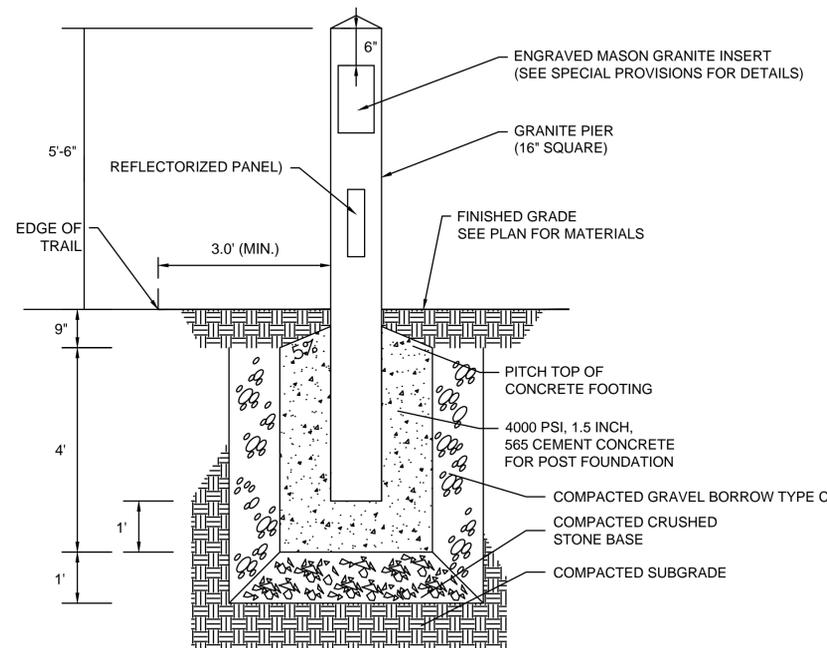
COLUMN BASE - DETAIL 1
N.T.S.



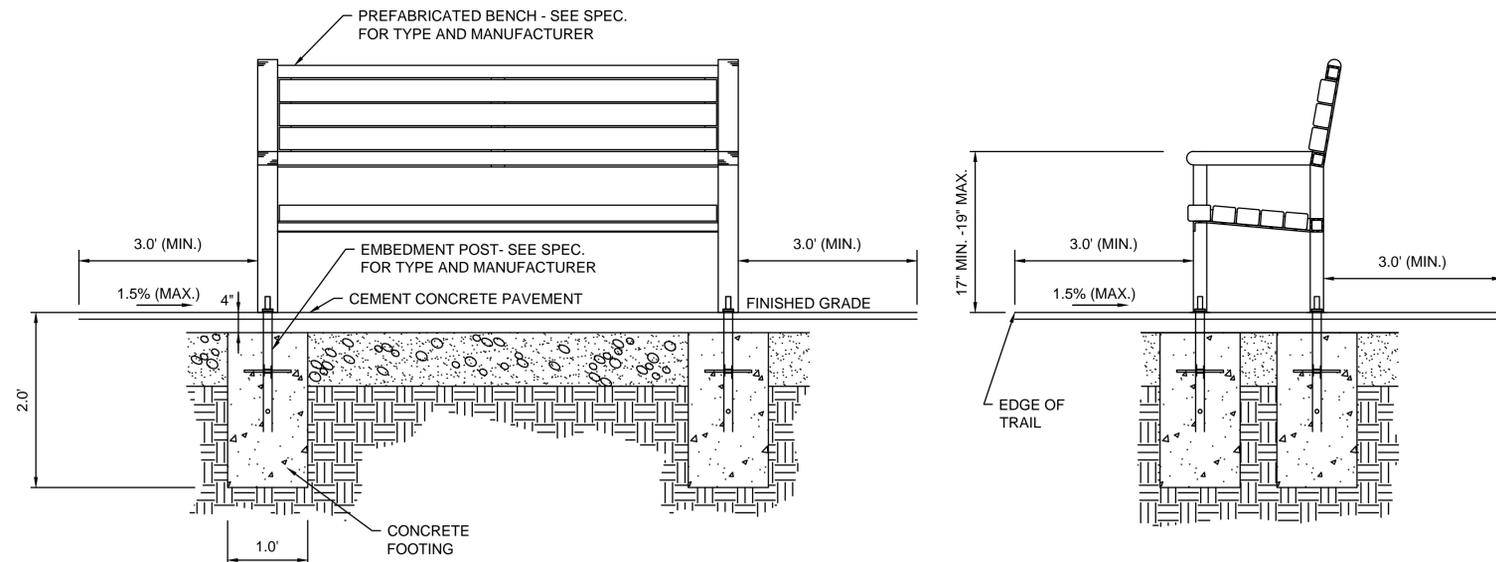
COLUMN BASE - DETAIL 2
N.T.S.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	250	328
PROJECT FILE NO.		605189	

CONSTRUCTION DETAILS

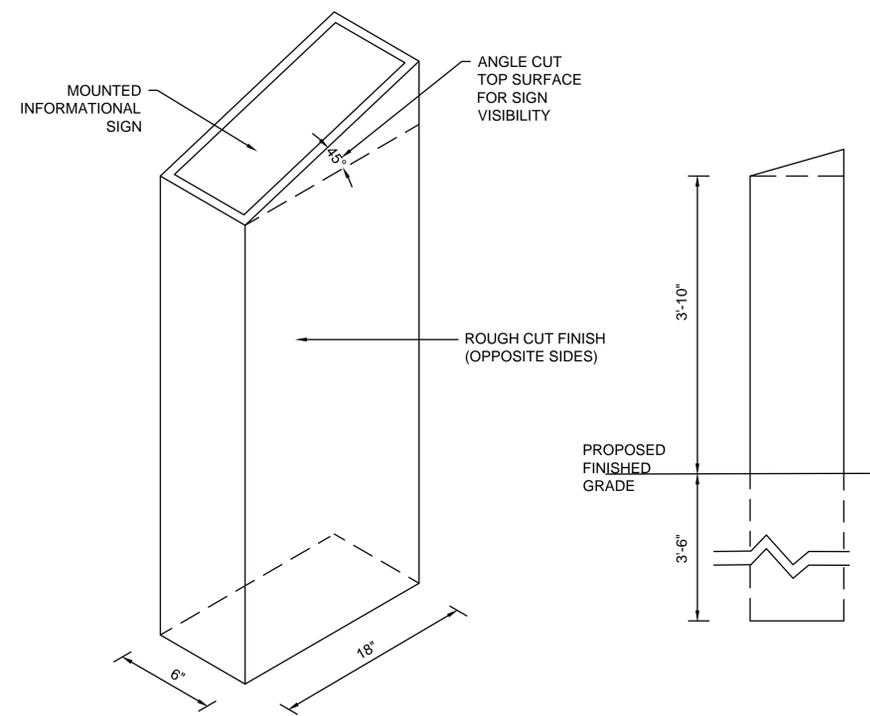


GRANITE PIER
N.T.S.

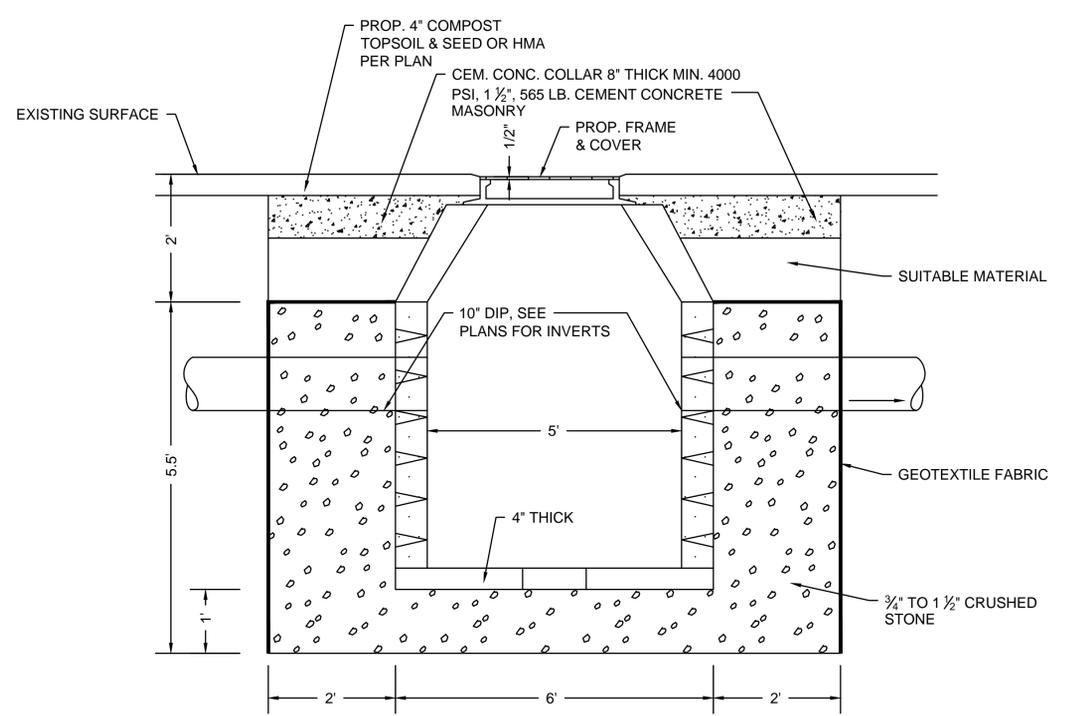


BENCH
N.T.S.

NOTE:
MINIMUM SETBACK OF 3' FROM TRAIL SURFACE



GRANITE INFORMATIONAL SIGN
N.T.S.

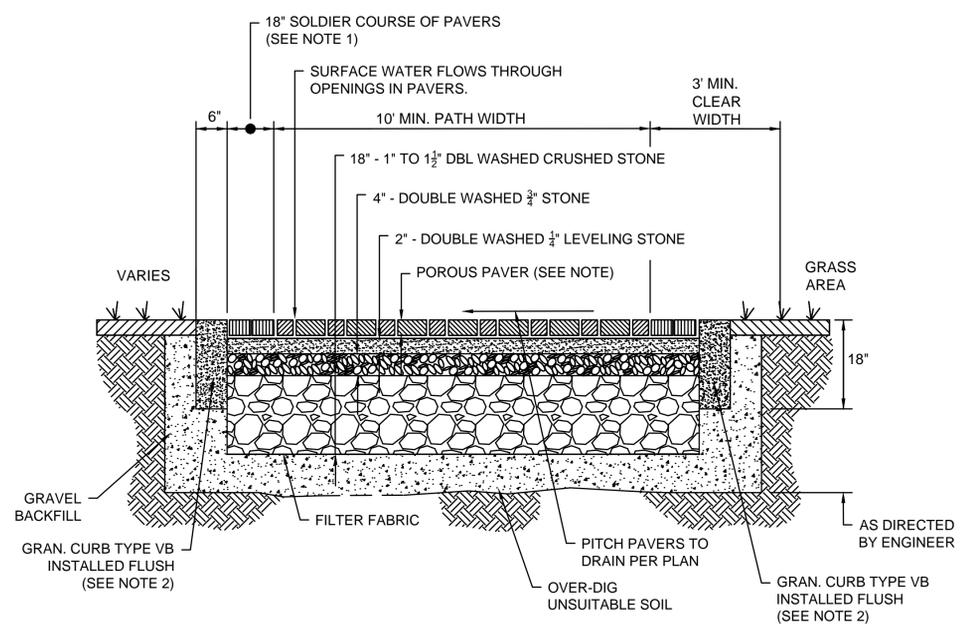


LEACHING BASIN
N.T.S.

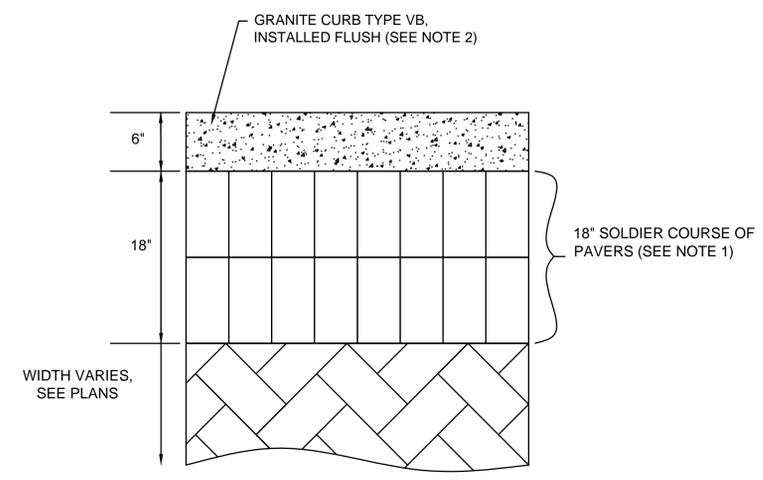
NOTES:
1. CEMENT CONCRETE FOR LEACHING BASIN SHALL BE 4000 PSI, 1 1/2", 565 LB.
2. IF CONCRETE BLOCK, WALL THICKNESS = 6"
3. IF REINFORCED/PRECAST, WALL THICKNESS = 5" MIN.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	251	328
PROJECT FILE NO.		605189	

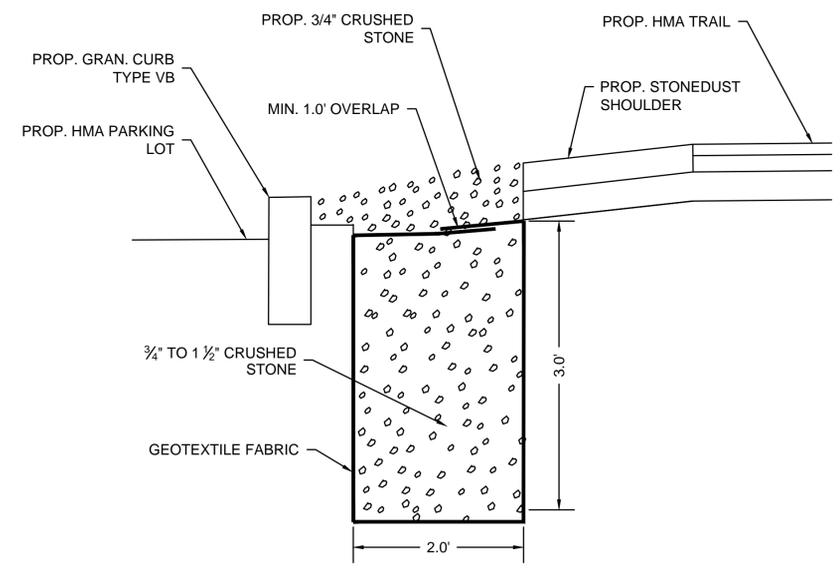
CONSTRUCTION DETAILS



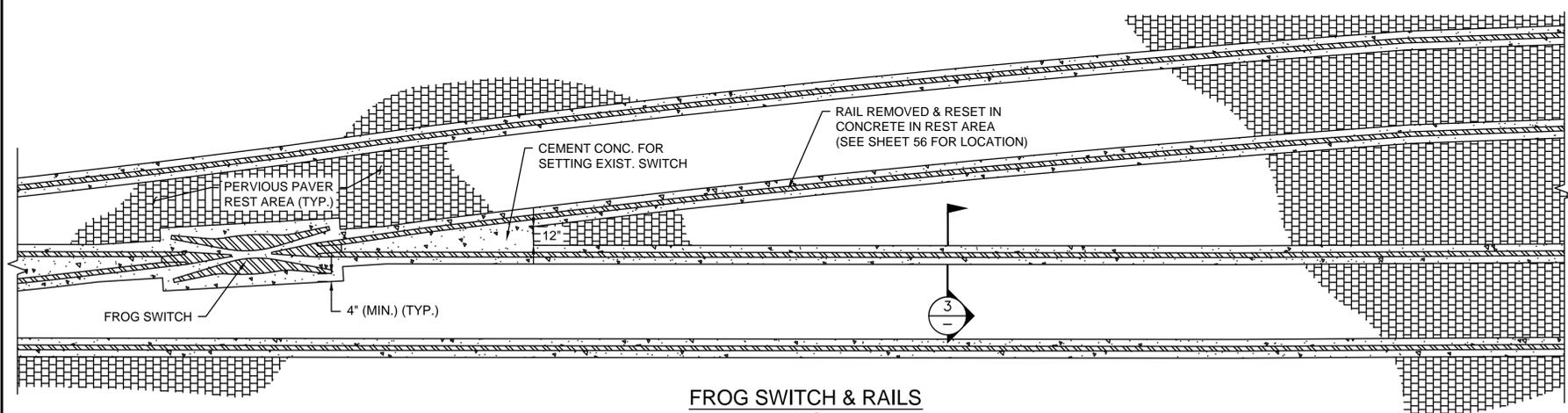
PERVIOUS PAVER TYPICAL SECTION
NOT TO SCALE



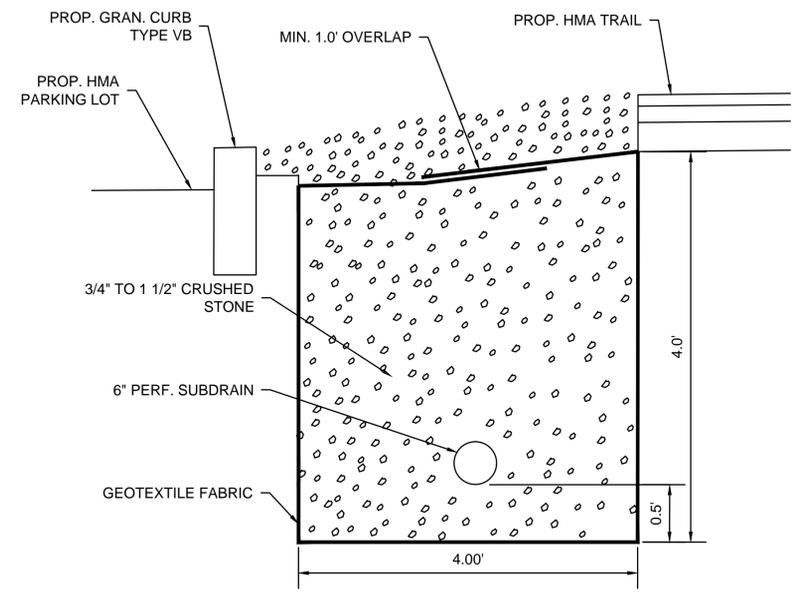
PAVER LAYOUT DETAIL
NOT TO SCALE



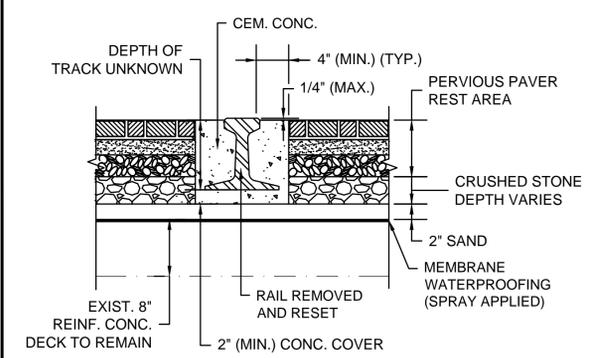
DRAINAGE TRENCH DETAIL (STA. 131+35 - 133+33)
N.T.S.



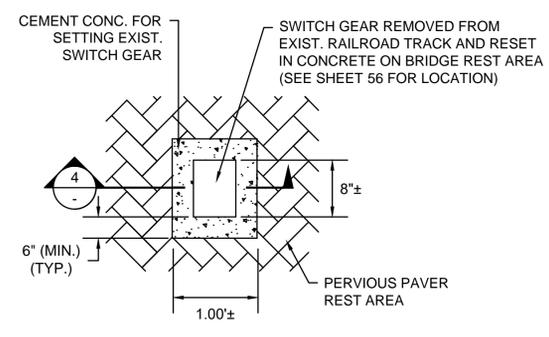
FROG SWITCH & RAILS
N.T.S.



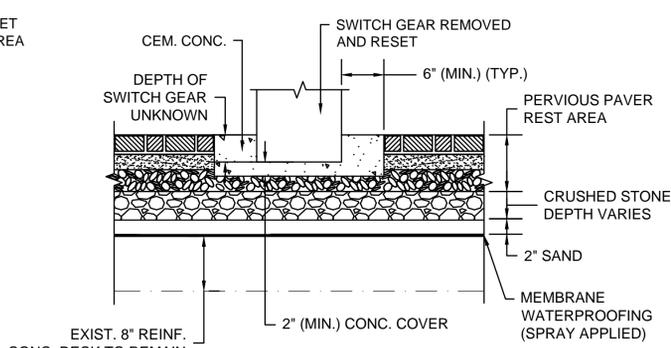
DRAINAGE TRENCH DETAIL (STA. 133+33 - 135+90)
N.T.S.



SECTION 3
N.T.S.



SWITCH GEAR
N.T.S.



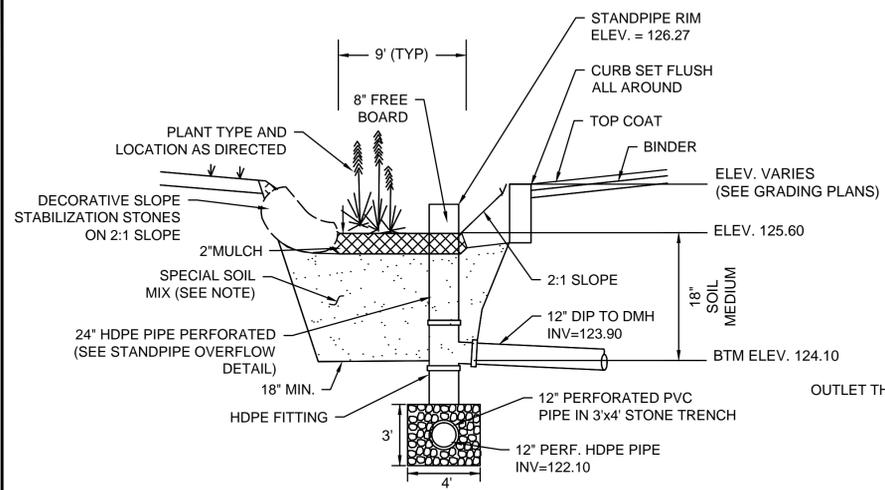
SECTION 4
N.T.S.

- NOTES:
1. DIMENSIONS OF EXISTING RAILS AND SWITCH GEAR ARE TO BE FIELD VERIFIED PRIOR TO PLACEMENT IN CONCRETE.
 2. RAILS AND SWITCH GEAR SHALL BE RESET IN 4000 PSI, 3/4", 610 CEMENT CONCRETE AND ANCHORED AS DIRECTED BY THE ENGINEER.

TRACK SWITCH REMOVE & RESET
N.T.S.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	252	328
PROJECT FILE NO.		605189	

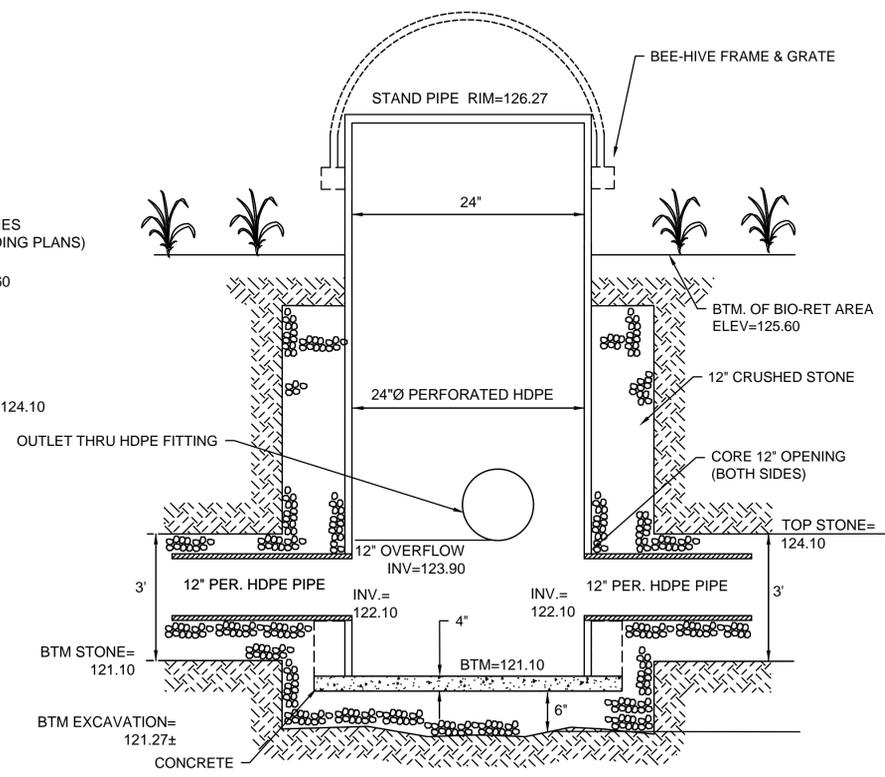
CONSTRUCTION DETAILS



- NOTES:**
1. SNOW SHOULD NEVER BE STORED IN BIO-RETENTION AREAS.
 2. THE SOIL MIX FOR BIO-RETENTION AREAS SHOULD BE A MIX OF SAND, COMPOST, AND SOIL.
 - 40% SAND
 - 20 TO 30% TOPSOIL AND,
 - 30 TO 40% COMPOST
 AND SHOULD CONFORM TO THE SPECIFICATIONS IN THE STORM-WATER HANDBOOK (08) VOL. 2 CH. 2 PAGE 26.

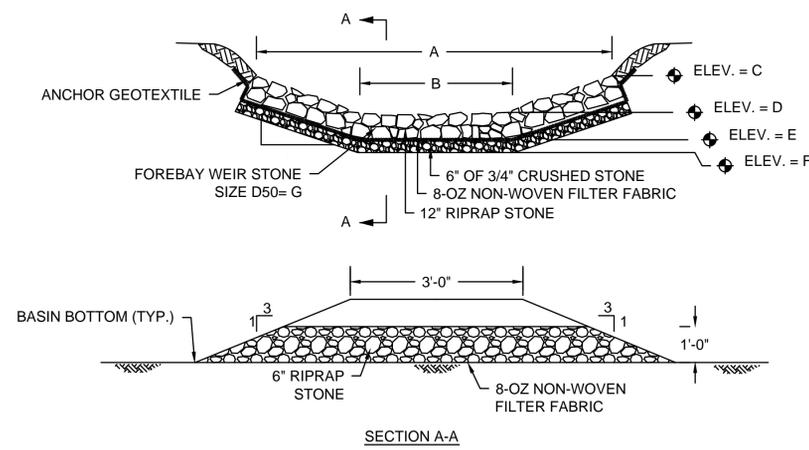
BIO-RETENTION DETAIL
NTS

BIO-RETENTION DESIGN ELEVATIONS					
	WQV	2-YR	10-YR	25-YR	100-YR
BIO-1	126.16	126.36	126.39	126.40	126.42



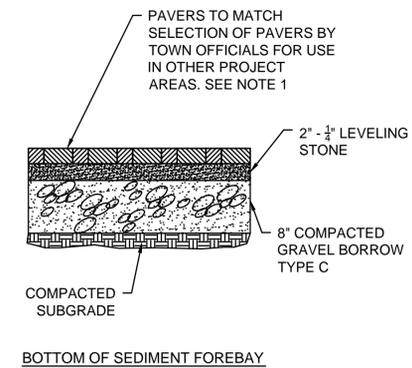
- NOTES:**
NOT SUBJECT TO VEHICLE LOADING.

STANDPIPE OVERFLOW DETAIL
NTS

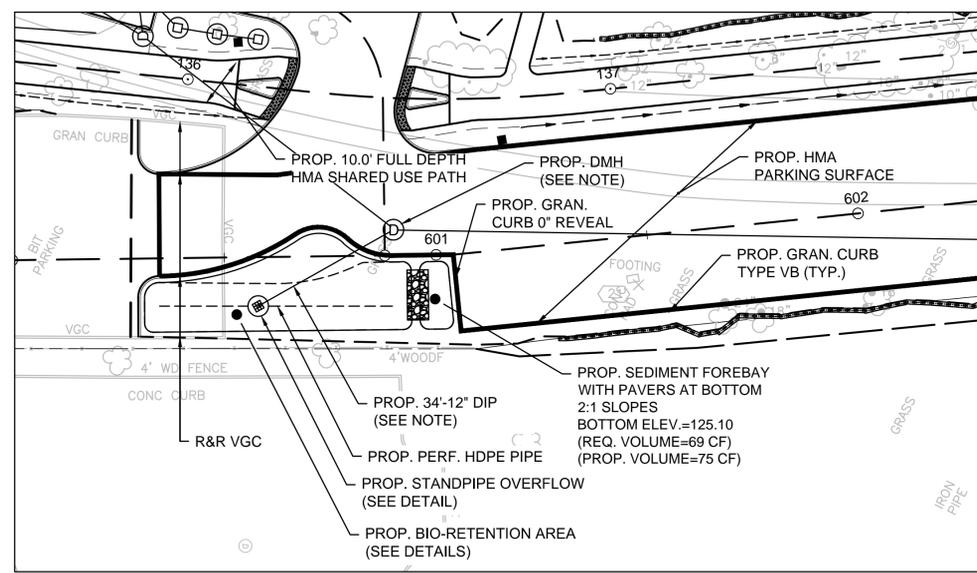


FOREBAY WEIR DESIGN TABLE							
	A	B	C	D	E	F	G
IB-1	12'	6'	126.60	126.10	125.10	124.60	6"

FOREBAY RIPRAP WEIR (TYP.)
NTS

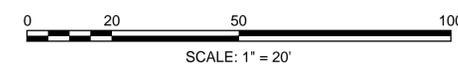


- NOTES:**
1. PAVERS SHALL MATCH THE TYPE SELECTED BY TOWN OFFICIALS FOR USE IN AREAS WHERE PERVIOUS PAVERS ARE PROPOSED. INSTALLATION OF PAVERS IN SEDIMENT FOREBAY IS NOT INTENDED TO BE PERVIOUS. SPACING BETWEEN PAVERS NOT REQUIRED.



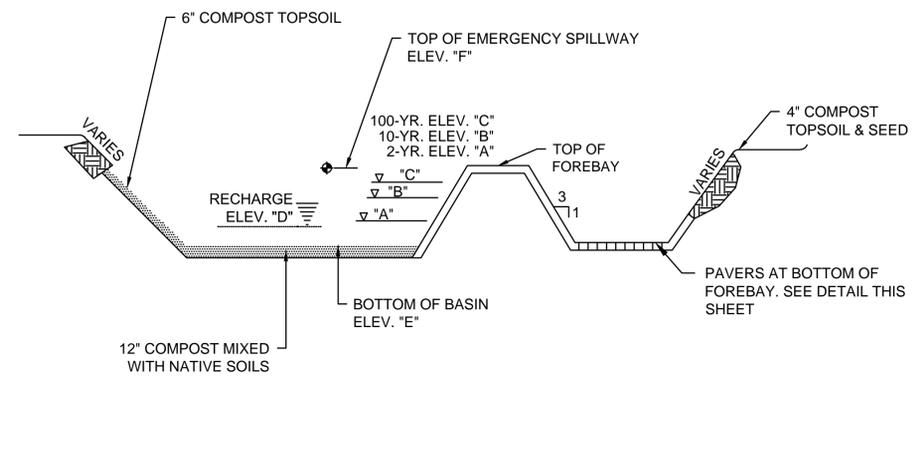
PLAN VIEW
1" = 20'

- NOTE:**
SEE SHEET 75 FOR CLOSED DRAINAGE SYSTEM AND UTILITY INFORMATION
SEE SHEET 240 FOR LANDSCAPE PLANS



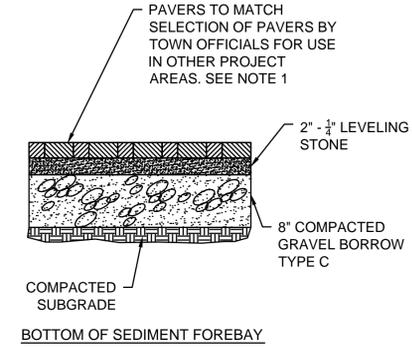
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	253	328
PROJECT FILE NO.		605189	

CONSTRUCTION DETAILS

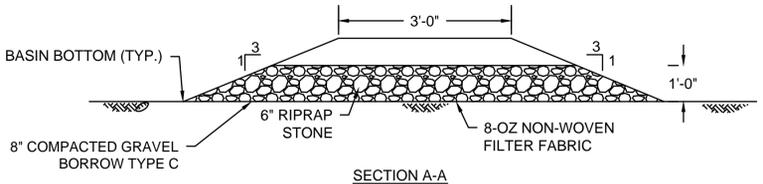
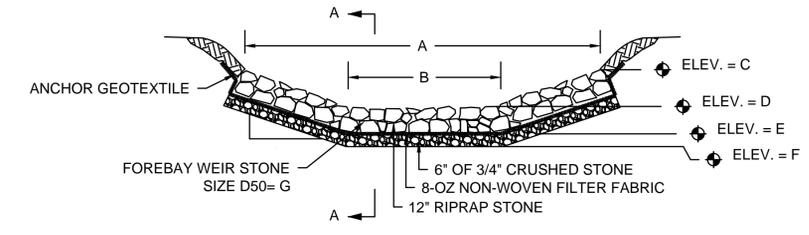


TYPICAL INFILTRATION BASIN CROSS-SECTION
NTS

BASIN DESIGN TABLE						
	A	B	C	D	E	F
INFILTRATION BASIN	134.27	135.20	136.01	134.25	133.60	136.00

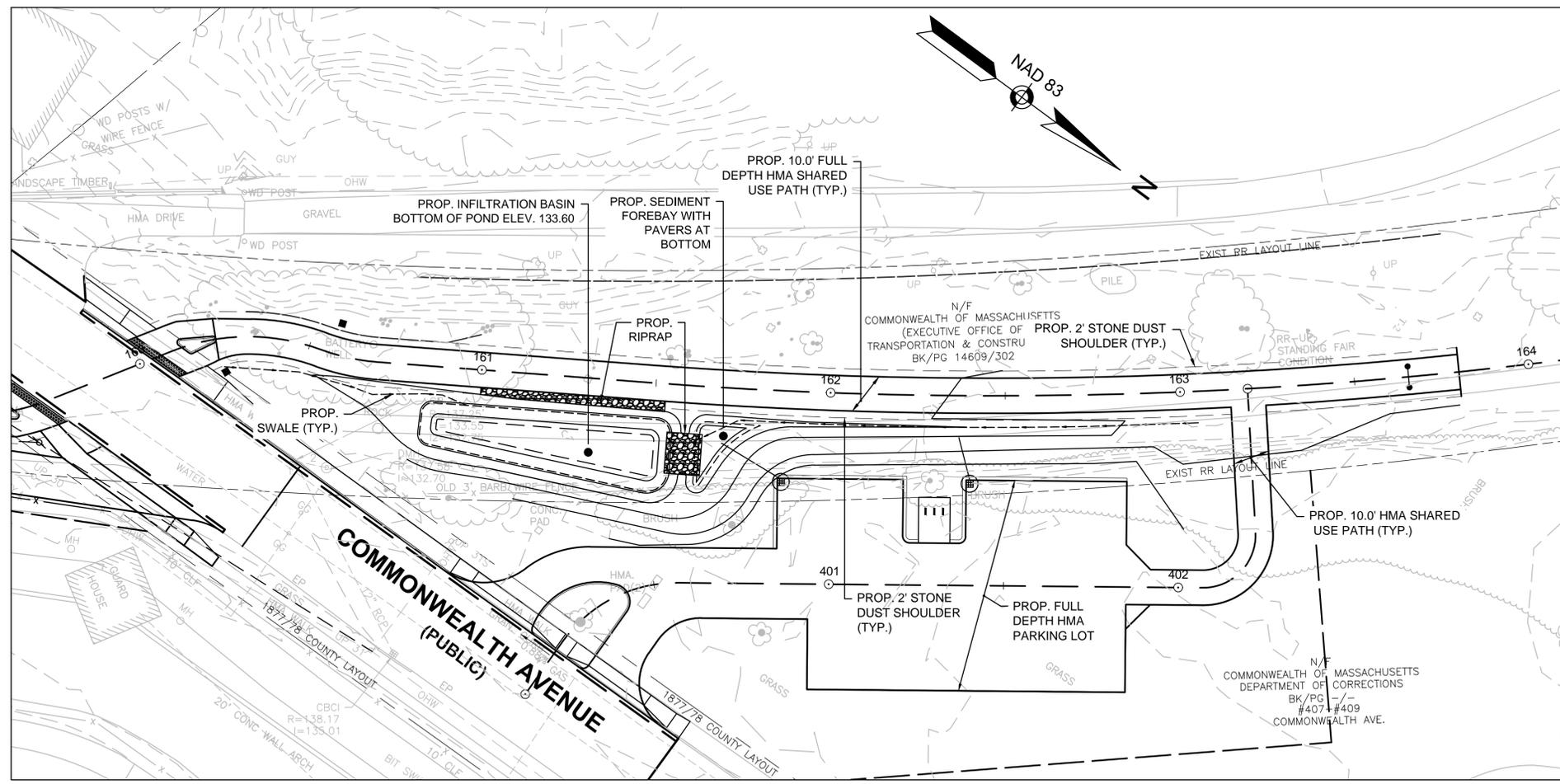


NOTES:
1. PAVERS SHALL MATCH THE TYPE SELECTED BY TOWN OFFICIALS FOR USE IN AREAS WHERE PERVIOUS PAVERS ARE PROPOSED. INSTALLATION OF PAVERS IN SEDIMENT FOREBAY IS NOT INTENDED TO BE PERVIOUS. SPACING BETWEEN PAVERS NOT REQUIRED.

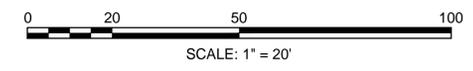


FOREBAY WEIR DESIGN TABLE							
	A	B	C	D	E	F	G
IB-1	12'	6'	136.20	135.70	134.70	134.20	6"

FOREBAY RIPRAP WEIR (TYP.)
NTS

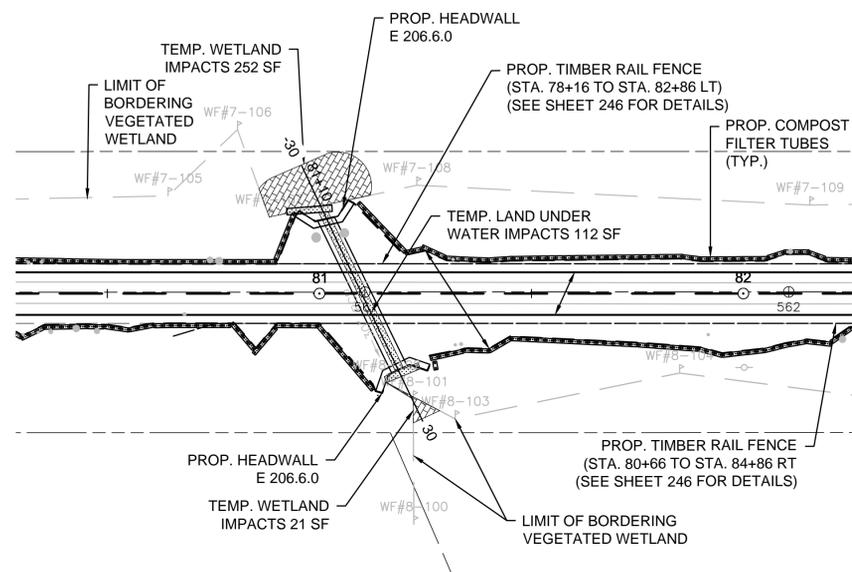


PLAN VIEW
1" = 20'

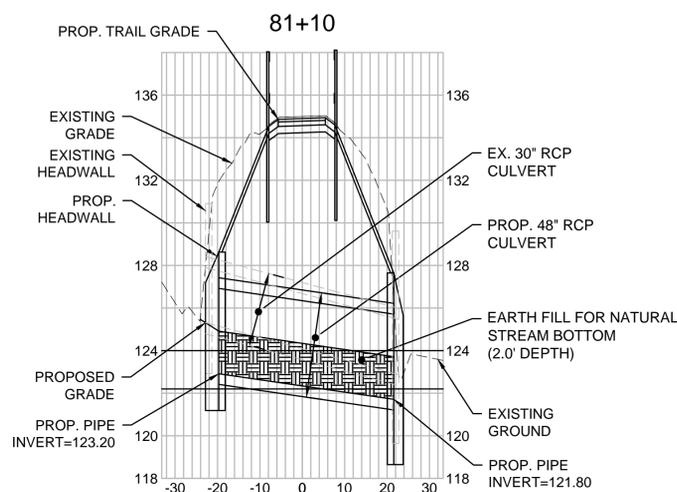


STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	254	328
PROJECT FILE NO.		605189	

CULVERT DETAILS



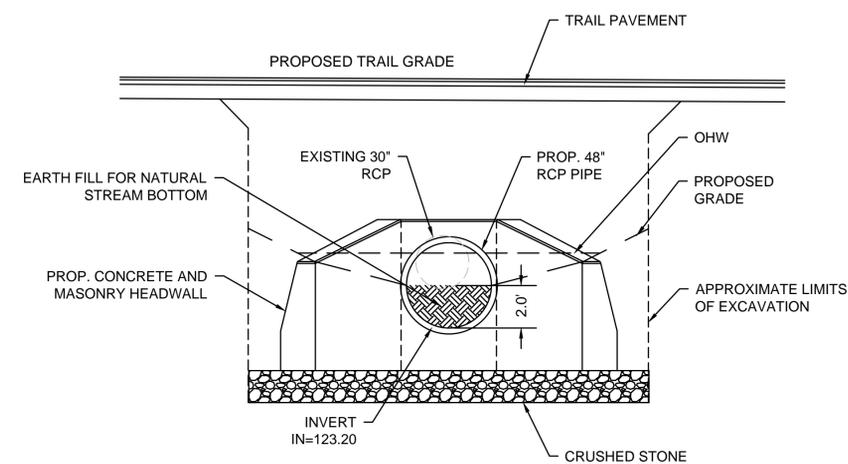
PLAN
SCALE: 1" = 20'



PROFILE
SCALE: 1" = 20' (HORIZONTAL)
1" = 4' (VERTICAL)

CONCRETE CULVERT REPLACEMENT
STA 81+10

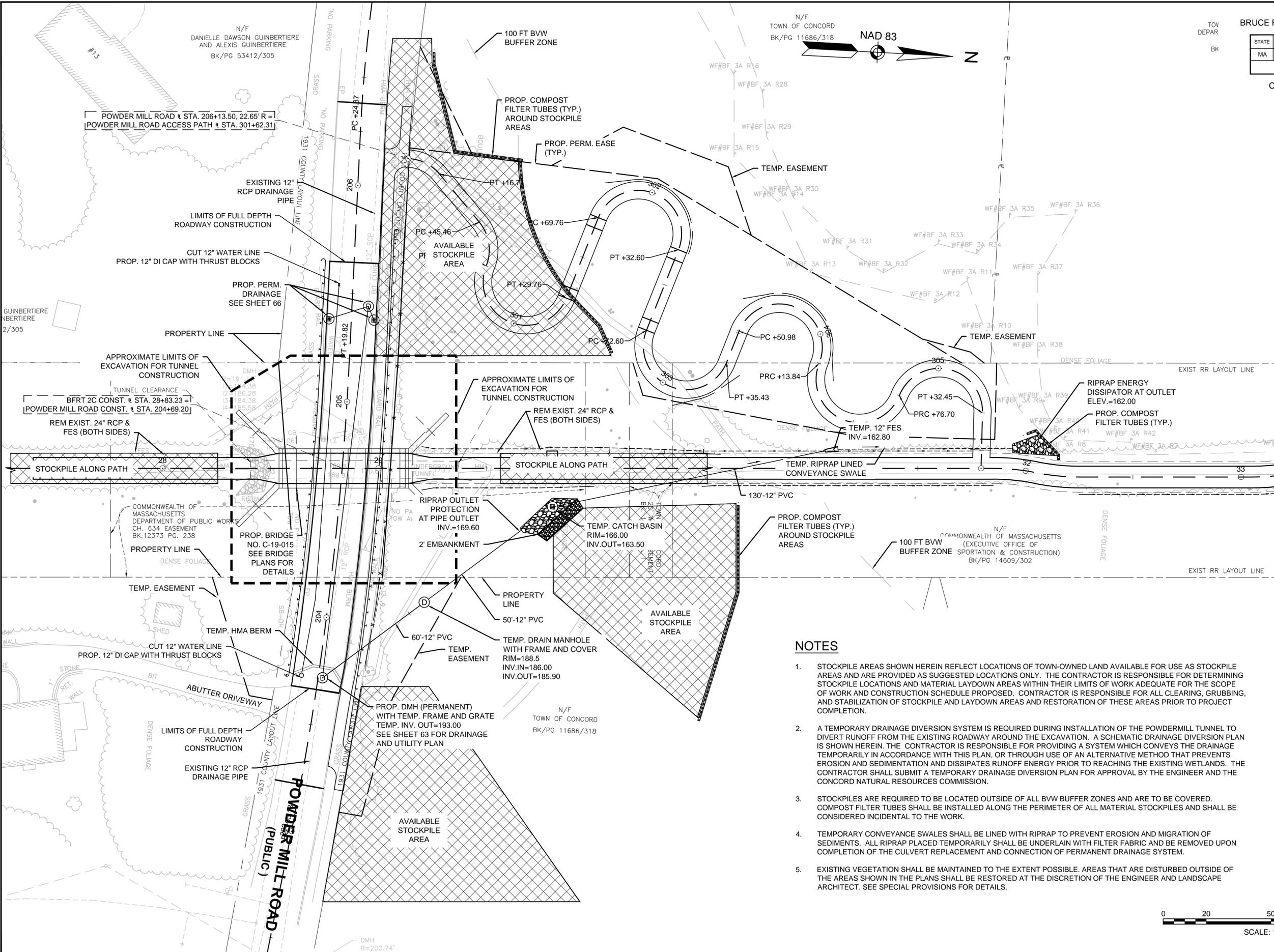
SCALE: AS NOTED



SECTION
SCALE: 1" = 4'

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	----	255	328
PROJECT FILE NO.		605189	

CONSTRUCTION DETAILS
STAGING PLAN



NOTES

1. STOCKPILE AREAS SHOWN HEREIN REFLECT LOCATIONS OF TOWN-OWNED LAND AVAILABLE FOR USE AS STOCKPILE AREAS AND ARE PROVIDED AS SUGGESTED LOCATIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING STOCKPILE LOCATIONS AND MATERIAL LAYDOWN AREAS WITHIN THEIR LIMITS OF WORK ADEQUATE FOR THE SCOPE OF WORK AND CONSTRUCTION SCHEDULE PROPOSED. CONTRACTOR IS RESPONSIBLE FOR ALL CLEARING, GRUBBING, AND STABILIZATION OF STOCKPILE AND LAYDOWN AREAS AND RESTORATION OF THESE AREAS PRIOR TO PROJECT COMPLETION.
2. A TEMPORARY DRAINAGE DIVERSION SYSTEM IS REQUIRED DURING INSTALLATION OF THE POWDERMILL TUNNEL TO DIVERT RUNOFF FROM THE EXISTING ROADWAY AROUND THE EXCAVATION. A SCHEMATIC DRAINAGE DIVERSION PLAN IS SHOWN HEREIN. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A SYSTEM WHICH CONVEYS THE DRAINAGE TEMPORARILY IN ACCORDANCE WITH THIS PLAN, OR THROUGH USE OF AN ALTERNATIVE METHOD THAT PREVENTS EROSION AND SEDIMENTATION AND DISSIPATES RUNOFF ENERGY PRIOR TO REACHING THE EXISTING WETLANDS. THE CONTRACTOR SHALL SUBMIT A TEMPORARY DRAINAGE DIVERSION PLAN FOR APPROVAL BY THE ENGINEER AND THE CONCORD NATURAL RESOURCES COMMISSION.
3. STOCKPILES ARE REQUIRED TO BE LOCATED OUTSIDE OF ALL BVW BUFFER ZONES AND ARE TO BE COVERED. COMPOST FILTER TUBES SHALL BE INSTALLED ALONG THE PERIMETER OF ALL MATERIAL STOCKPILES AND SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
4. TEMPORARY CONVEYANCE SWALES SHALL BE LINED WITH RIPRAP TO PREVENT EROSION AND MIGRATION OF SEDIMENTS. ALL RIPRAP PLACED TEMPORARILY SHALL BE UNDERLAIN WITH FILTER FABRIC AND BE REMOVED UPON COMPLETION OF THE CULVERT REPLACEMENT AND CONNECTION OF PERMANENT DRAINAGE SYSTEM.
5. EXISTING VEGETATION SHALL BE MAINTAINED TO THE EXTENT POSSIBLE. AREAS THAT ARE DISTURBED OUTSIDE OF THE AREAS SHOWN IN THE PLANS SHALL BE RESTORED AT THE DISCRETION OF THE ENGINEER AND LANDSCAPE ARCHITECT. SEE SPECIAL PROVISIONS FOR DETAILS.

