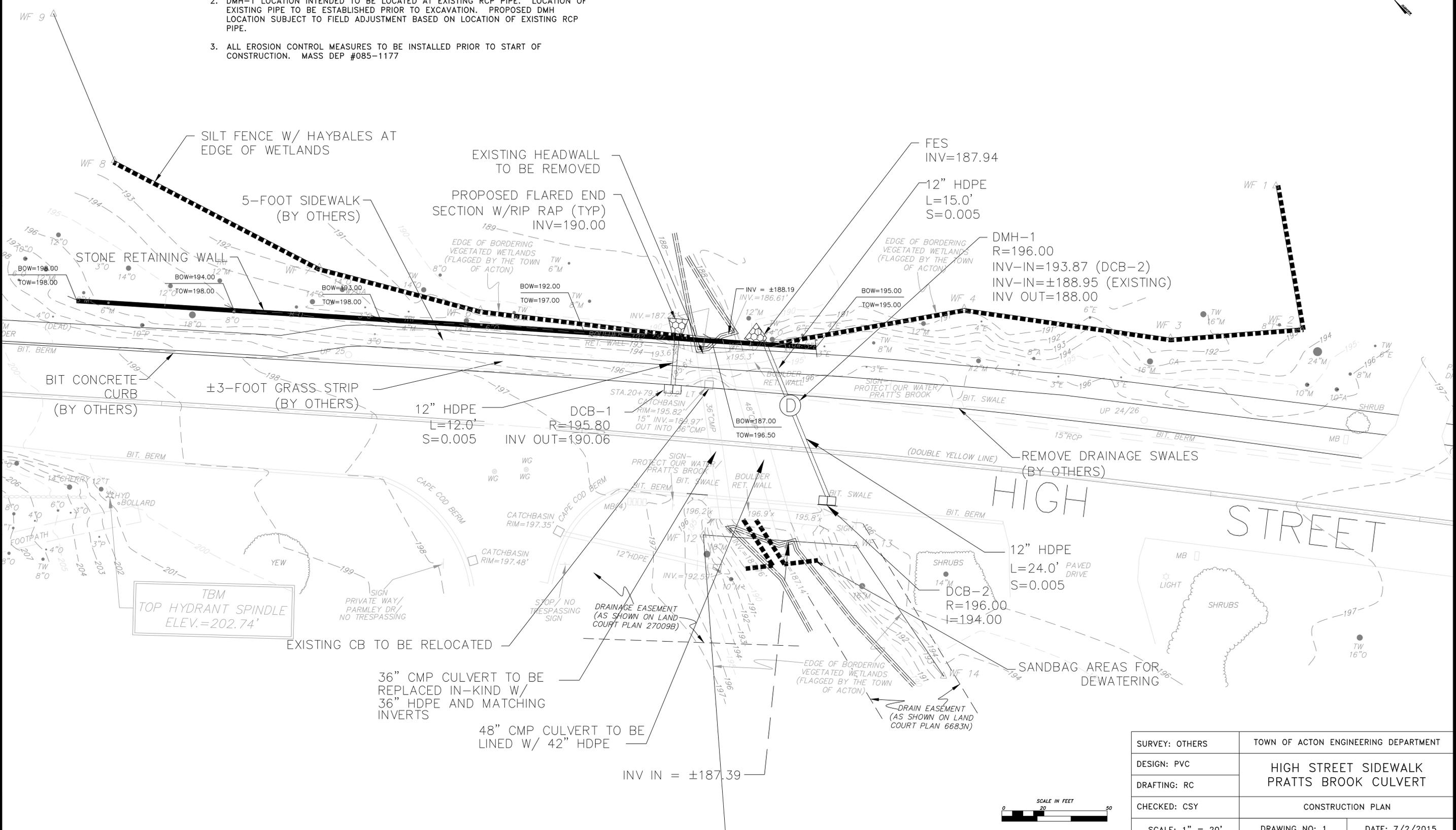


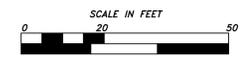
NOTES:

1. ALL PROPOSED CATCH BASINS TO HAVE GUTTER INLETS INSTALLED (SEE DETAIL)
2. DMH-1 LOCATION INTENDED TO BE LOCATED AT EXISTING RCP PIPE. LOCATION OF EXISTING PIPE TO BE ESTABLISHED PRIOR TO EXCAVATION. PROPOSED DMH LOCATION SUBJECT TO FIELD ADJUSTMENT BASED ON LOCATION OF EXISTING RCP PIPE.
3. ALL EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO START OF CONSTRUCTION. MASS DEP #085-1177

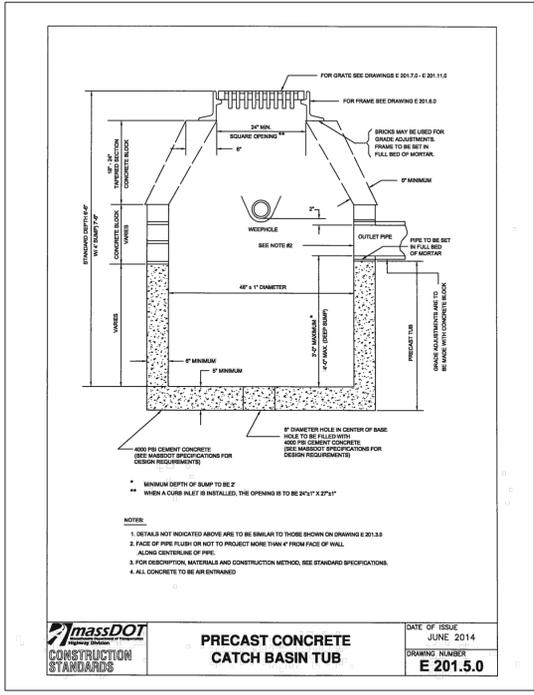


Drawing name: P:\Drawings\High Street Sidewalk - Audubon to Parker - S&K\Audubon to Parker - S&K\Construction Plans\High Street Sidewalk - Pratt's Brook Crossing.dwg  
Jul 16, 2015 - 10:58am

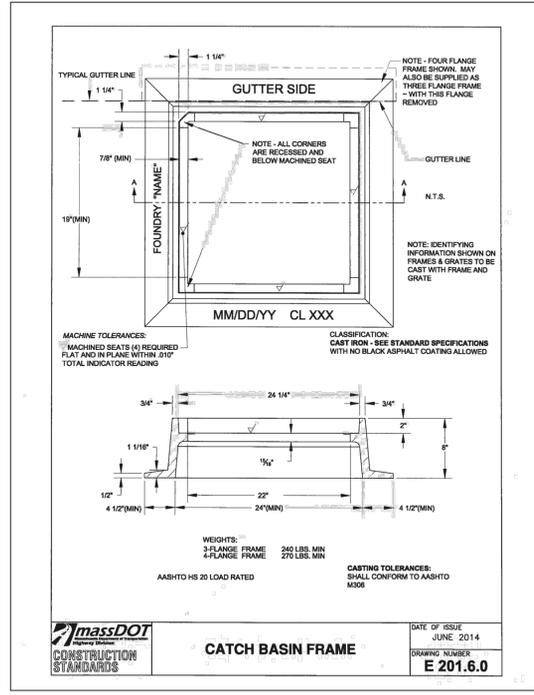
SURVEY: OTHERS	TOWN OF ACTON ENGINEERING DEPARTMENT	
DESIGN: PVC	HIGH STREET SIDEWALK PRATTS BROOK CULVERT	
DRAFTING: RC		
CHECKED: CSY	CONSTRUCTION PLAN	
SCALE: 1" = 20'	DRAWING NO: 1	DATE: 7/2/2015



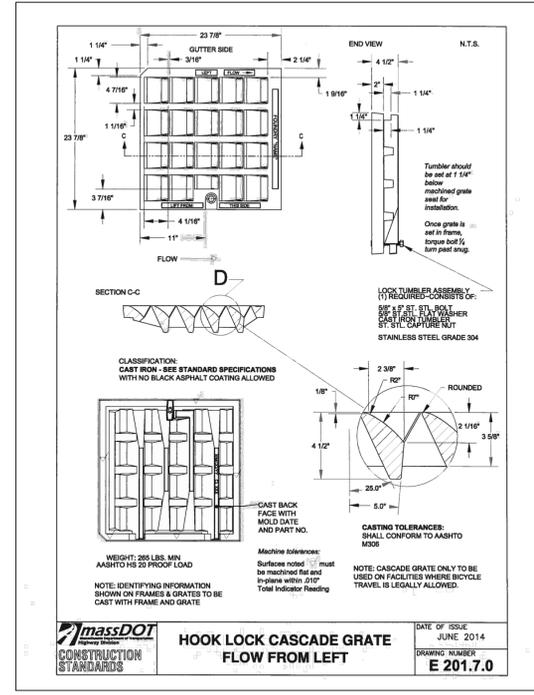
Drawing name: P:\Drawings\High Street Sidewalk - Audubon to Parker - S&M\Audubon to Parker - S&M\Audubon to Parker - S&M\Construction Plans\High Street Sidewalk - Pratts Brook Crossing.dwg  
 Jul 15, 2015 - 15:53pm



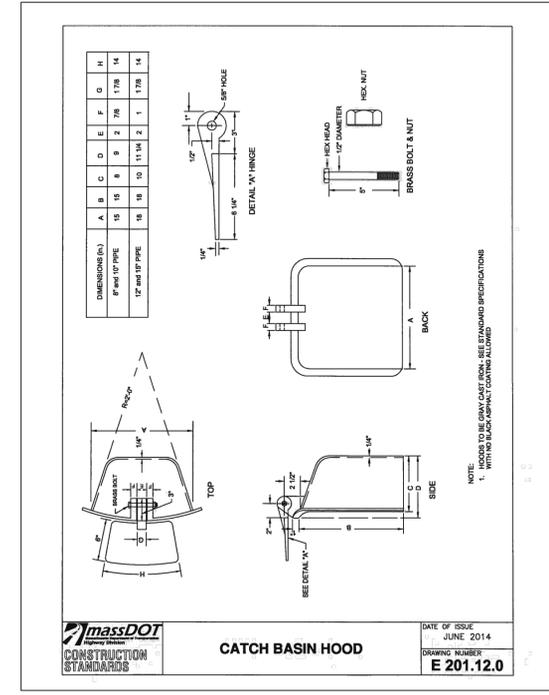
**PRECAST CONCRETE CATCH BASIN TUB**  
 DATE OF ISSUE: JUNE 2014  
 DRAWING NUMBER: E 201.5.0



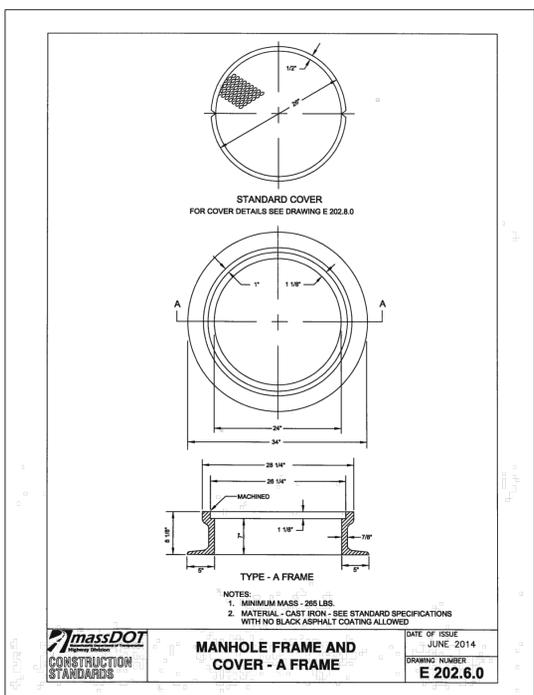
**CATCH BASIN FRAME**  
 DATE OF ISSUE: JUNE 2014  
 DRAWING NUMBER: E 201.6.0



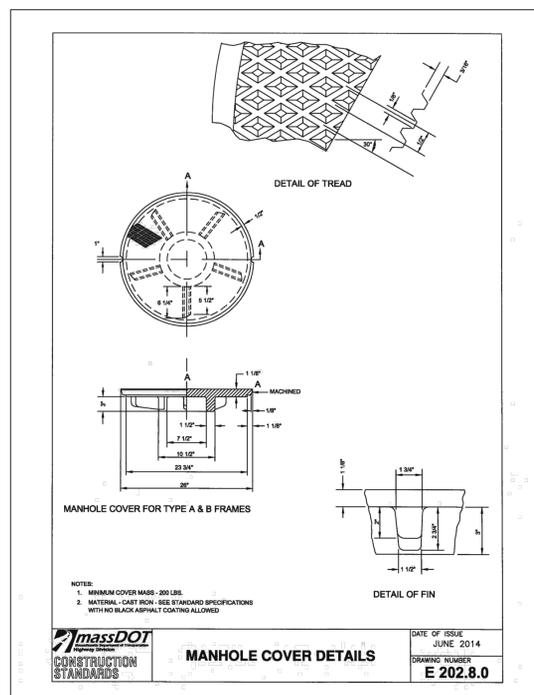
**HOOK LOCK CASCADE GRATE FLOW FROM LEFT**  
 DATE OF ISSUE: JUNE 2014  
 DRAWING NUMBER: E 201.7.0



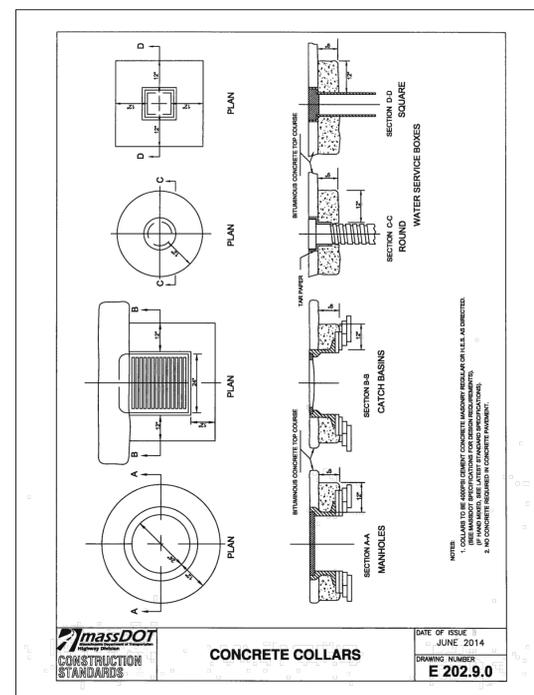
**CATCH BASIN HOOD**  
 DATE OF ISSUE: JUNE 2014  
 DRAWING NUMBER: E 201.12.0



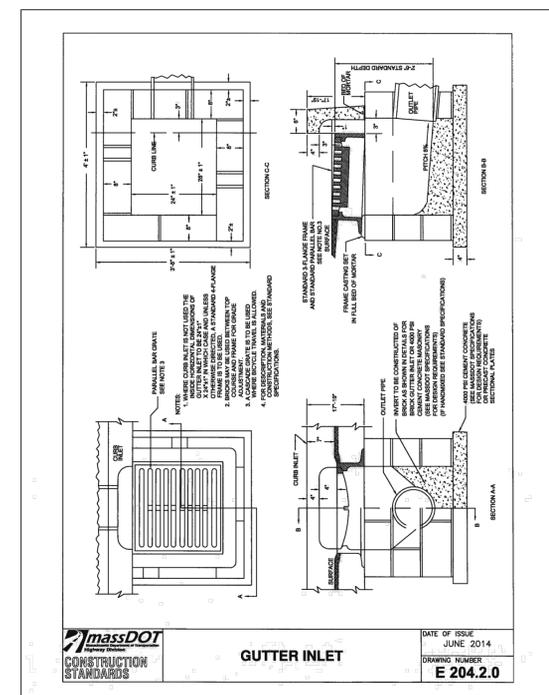
**MANHOLE FRAME AND COVER - A FRAME**  
 DATE OF ISSUE: JUNE 2014  
 DRAWING NUMBER: E 202.6.0



**MANHOLE COVER DETAILS**  
 DATE OF ISSUE: JUNE 2014  
 DRAWING NUMBER: E 202.8.0



**CONCRETE COLLARS**  
 DATE OF ISSUE: JUNE 2014  
 DRAWING NUMBER: E 202.9.0



**GUTTER INLET**  
 DATE OF ISSUE: JUNE 2014  
 DRAWING NUMBER: E 204.2.0

SURVEY: OTHERS	TOWN OF ACTON ENGINEERING DEPARTMENT	
DESIGN: PVC	HIGH STREET SIDEWALK PRATTS BROOK CULVERT	
DRAFTING: PVC		
CHECKED: CSY	CONSTRUCTION DETAILS	
SCALE: N.T.S.	DRAWING NO: 2	DATE: 7/2/2015

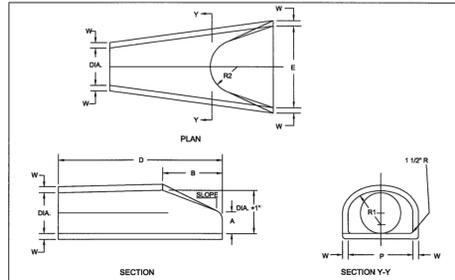
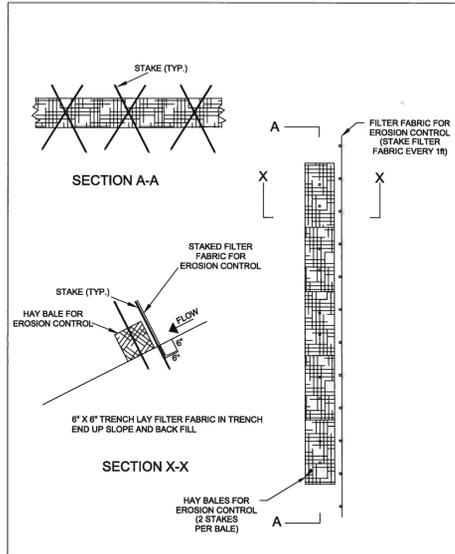


TABLE  
[ALL DIMENSIONS ARE INCHES OR FEET]

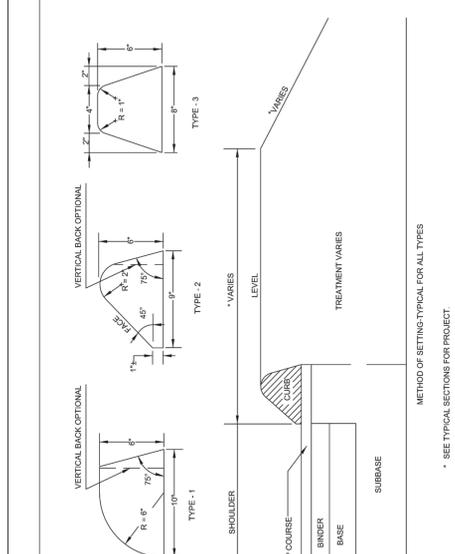
DIAMETER (IN)	W	A	B	D	E	P	DIA. (IN)	R1	R2	SLOPE
12"	21"	4"	2 1/2"	8 1/2"	2 1/2"	2 1/2"	18 1/2"	8"	8"	1V:3H
15"	2 1/4"	8"	2 1/2"	8 1/2"	2 1/2"	2 1/2"	24 3/8"	10"	12 1/2"	1V:3H
18"	2 1/2"	8"	2 1/2"	8 1/2"	2 1/2"	2 1/2"	30 1/2"	12"	15 1/2"	1V:3H
21"	2 3/4"	8"	2 1/2"	8 1/2"	2 1/2"	2 1/2"	36 1/2"	14"	18 1/2"	1V:3H
24"	3"	9 1/2"	2 1/2"	8 1/2"	2 1/2"	2 1/2"	42 1/2"	16"	21 1/2"	1V:3H
27"	3 1/4"	10 1/2"	2 1/2"	8 1/2"	2 1/2"	2 1/2"	48 1/2"	18"	24 1/2"	1V:3H
30"	3 1/2"	11"	2 1/2"	8 1/2"	2 1/2"	2 1/2"	54 1/2"	20"	27 1/2"	1V:3H
36"	4"	12"	2 1/2"	8 1/2"	2 1/2"	2 1/2"	66 1/2"	24"	33 1/2"	1V:3H
42"	4 1/2"	13 1/2"	2 1/2"	8 1/2"	2 1/2"	2 1/2"	78 1/2"	28"	39 1/2"	1V:3H
48"	5"	15"	2 1/2"	8 1/2"	2 1/2"	2 1/2"	90 1/2"	32"	45 1/2"	1V:3H

- NOTES:  
 1. SEE STANDARD SPECIFICATIONS FOR THE TYPE OF PIPE TO BE USED (BELL & SPIGOT OR TONGUE & GROOVE)  
 2. SEE STANDARD SPECIFICATIONS FOR THE TYPE OF PIPE AND PLACING OF STEEL REINFORCEMENT  
 3. THE JOINTS ARE TO BE COMPATIBLE WITH THE MAIN RUN OF PIPE.

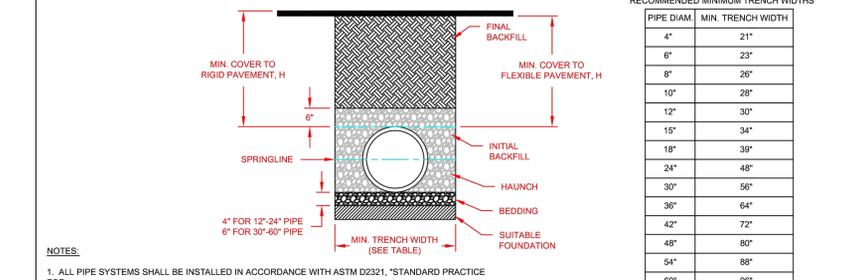
**MASSDOT CONSTRUCTION STANDARDS**  
**REINFORCED CONCRETE PIPE FLARED ENDS**  
 DATE OF ISSUE: JUNE 2014  
 DRAWING NUMBER: **E 206.8.0**



**MASSDOT CONSTRUCTION STANDARDS**  
**HAY BALES AND SILT FENCES FOR EROSION CONTROL**  
 DATE OF ISSUE: JUNE 2014  
 DRAWING NUMBER: **E 210.3.0**



**MASSDOT CONSTRUCTION STANDARDS**  
**HOT MIX ASPHALT CURBS**  
 DATE OF ISSUE: JUNE 2014  
 DRAWING NUMBER: **E 106.2.0**



- NOTES:  
 1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION  
 2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.  
 3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.  
 4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER, UNLESS OTHERWISE NOTED BY THE ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).  
 5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.  
 6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION	
	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

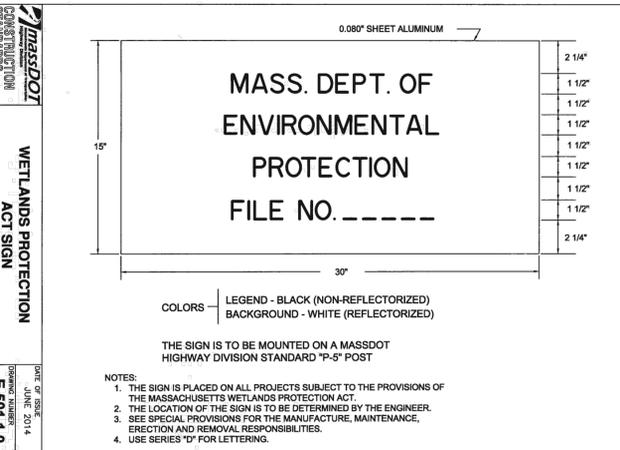
\* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

MINIMUM RECOMMENDED COVER BASED ON RAILWAY LOADING CONDITIONS

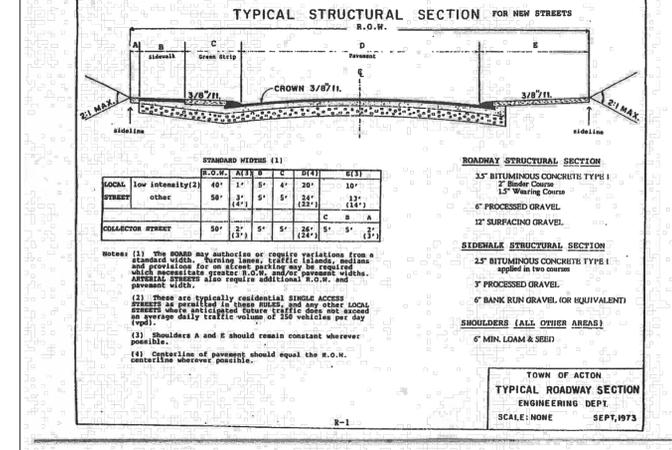
PIPE DIAM.	COOPER	
	UP TO 24"	24"
30" - 36"	36"	36"
42" - 60"	48"	48"

\*\* COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE  
 \*\*\* E-80 COVER REQUIREMENTS, ARE ONLY APPLICABLE TO ASTM F 2306 PIPE.

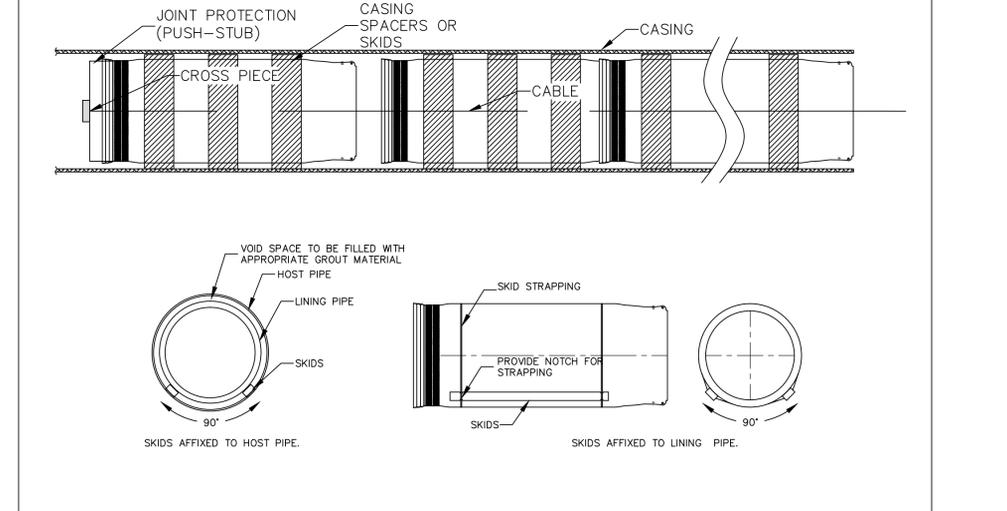
**MASSDOT CONSTRUCTION STANDARDS**  
**TYPICAL TRENCH DETAIL**  
 DATE OF ISSUE: JUNE 2014  
 DRAWING NUMBER: **STD-101**



**MASSDOT CONSTRUCTION STANDARDS**  
**WETLANDS PROTECTION ACT SIGN**  
 DATE OF ISSUE: JUNE 2014  
 DRAWING NUMBER: **E 501.1.0**



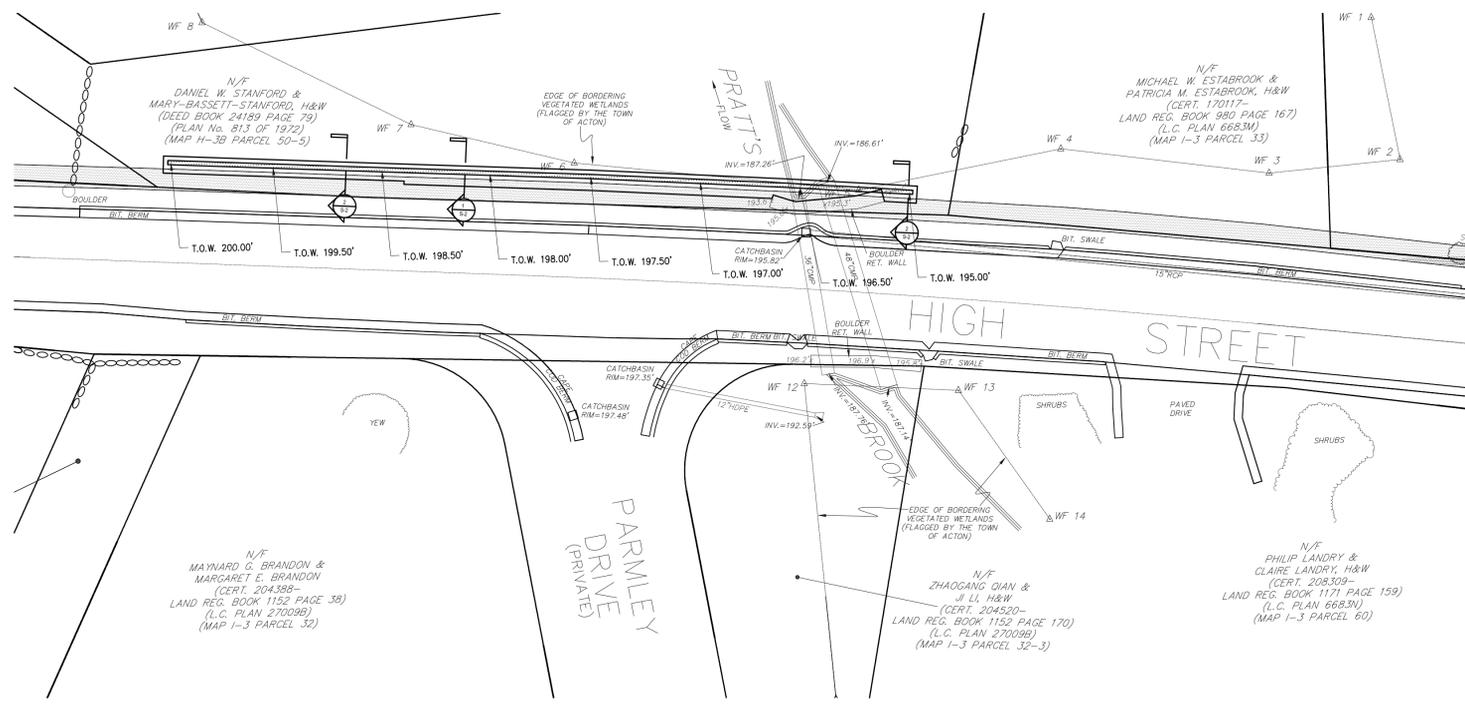
**TOWN OF ACTON ENGINEERING DEPT.**  
**TYPICAL ROADWAY SECTION**  
 SCALE: NONE  
 SEPT, 1973



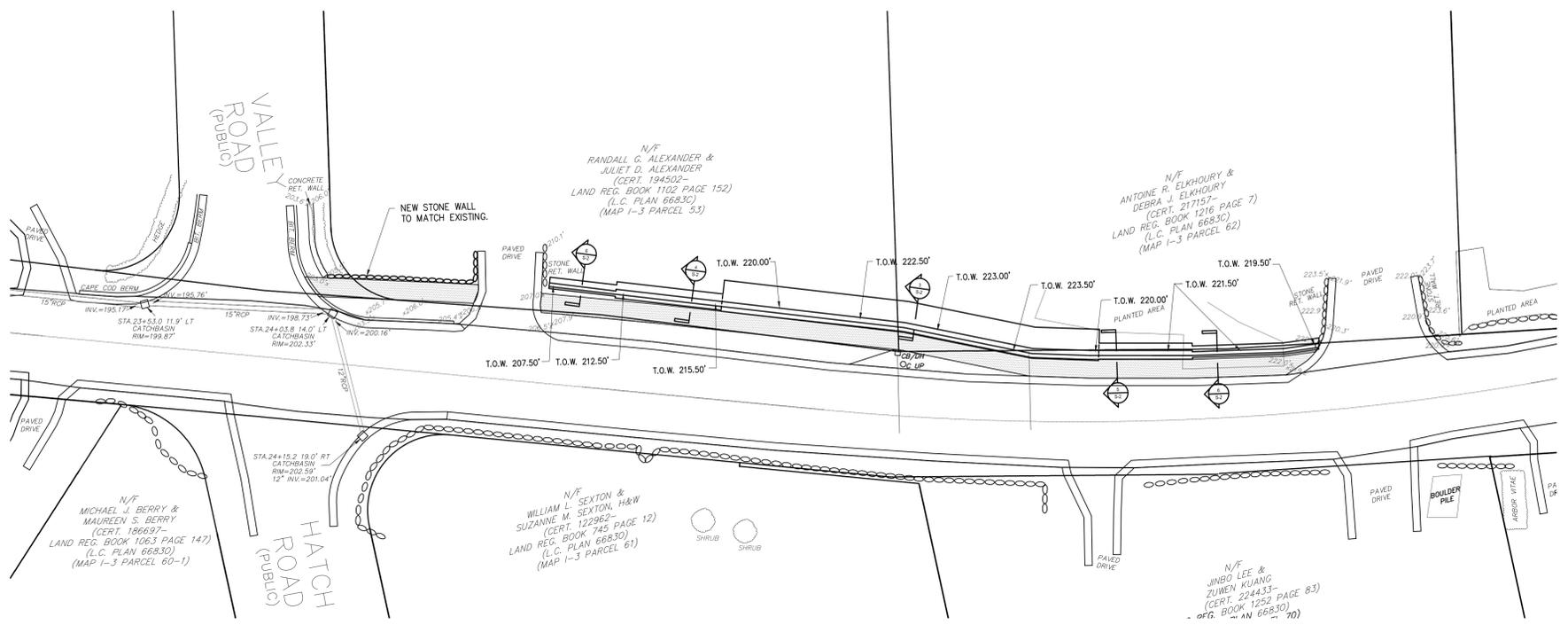
**SLIP LINING DETAIL**  
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SURVEY:	TOWN OF ACTON ENGINEERING DEPARTMENT	
DESIGN: PVC	HIGH STREET SIDEWALK PRATTS BROOK CULVERT	
DRAFTING: PVC		
CHECKED: CSY	CONSTRUCTION DETAILS	
SCALE: N.T.S.	DRAWING NO: 3	DATE: 7/2/2015

Drawing name: P:\Drawings\High Street Sidewalk - Audubon to Parker - S&K\Audubon to Parker - High Street Sidewalk - Pratt's Brook Crossing.dwg  
 Jul 16, 2015 - 14:25pm



**PRATT'S BROOK PLAN**  
SCALE: 1"=20'



**Nos. 128 & 132 PLAN**  
SCALE: 1"=20'

**GENERAL**

- 1) Structural work shall conform to the requirements of "The Commonwealth of Massachusetts State Building Code."
- 2) Verify and coordinate dimensions related to this project.
- 3) Typical details and notes shown on structural drawings shall be applicable to all parts of the structural work except where specifically required otherwise by contract documents.
- 4) Details not specifically shown shall be similar to those shown for the most nearly similar condition as determined by the Designer.

**FOUNDATIONS**

- 1) Foundations for this project consist of spread footings and foundation walls. Allowable bearing pressure is assumed to be 2.0 tons per square foot.
- 2) Excavate as required to install footings and foundation walls as detailed. Existing soil below footings shall be compacted and a 6" layer of compacted structural fill shall be placed under all foundations.

**CONCRETE**

- 1) Concrete work shall conform to "Building Code Requirements for Reinforced Concrete (ACI 318)", and "Specification for Structural Concrete for Buildings (ACI 301)".
- 2) Concrete shall be controlled concrete, proportioned, mixed and placed in the presence of a representative of an approved testing agency.
- 3) Unless noted otherwise all structural concrete shall be normal weight (145 pcf), concrete having the following minimum 28 day compressive strength of:
  - a) Spread footings, and foundation walls.....3000 psi.
- 4) All concrete shall be air-entrained concrete, 6% air-entrainment +/- 1%.
- 5) Construction joints shown on drawings are mandatory. Omissions, additions or changes shall not be made except with the submittal of a written request together with drawings of the proposed joint locations for approval of the Designer.
- 6) Concrete shall be placed without horizontal construction joints except where shown or noted.

**REINFORCEMENT**

- 1) Reinforcement work of detailing, fabrication and erection shall conform to "Building Code Requirements for Reinforced Concrete (ACI 318)", "ACI Detailing Manual (SP-66)", "CRSI Manual of Standard Practice (MSP 1)".
- 2) Steel reinforcement, unless noted otherwise, shall conform to the following:
  - a) Bars.....ASTM A615 grade 60 (yield stress 60,000 psi)
- 3) Minimum concrete protective covering for reinforcement, unless noted otherwise shall be as follows:
  - a) Unformed surfaces cast against and permanently in contact with earth.....3.0"
  - b) Formed surfaces in contact with earth or exposed to weather:
    - i) #5 bars and smaller.....1.5"
- 4) Reinforcement shall be continuous through construction joints.

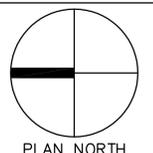
**Dankers Structural Consulting LLC**  
16 Kenney Road  
Medfield, MA 02052  
p (508) 359-4075  
f (508) 242-9644



DRAWN: ID	CHECKED: ID	SCALE: 1"=20'	DATE: 04/23/15
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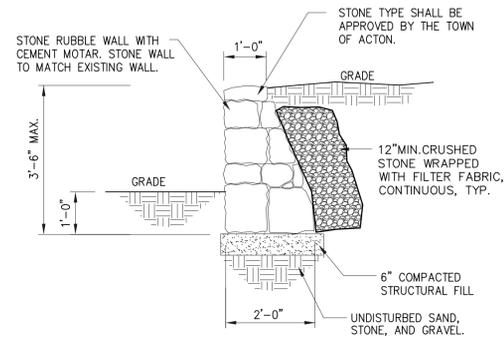
TOWN OF ACTON  
HIGH STREET RETAINING WALLS AT  
PRATT'S BROOK AND NOS. 128 & 132  
ACTON, MA

SITE PLANS AND NOTES

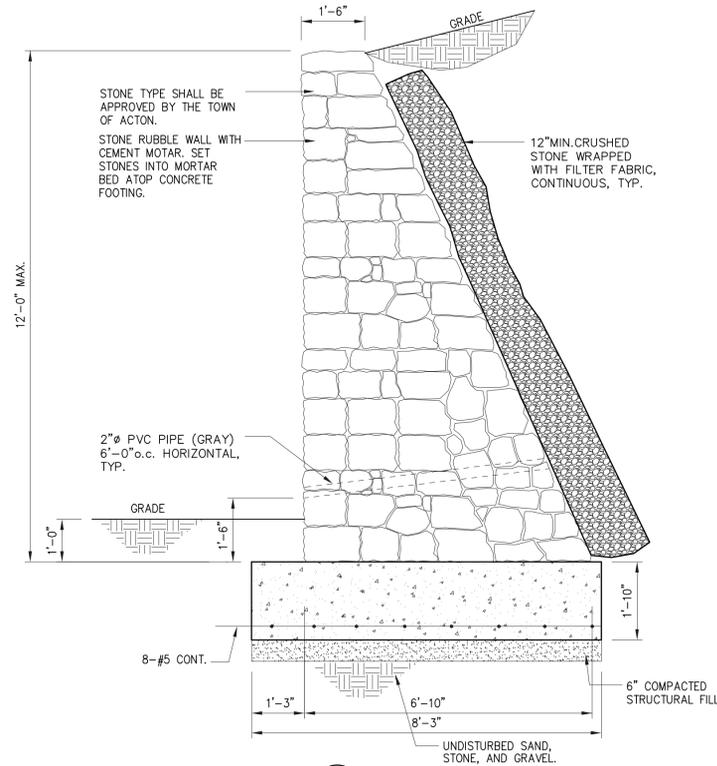


PROJECT NO.  
**13002**

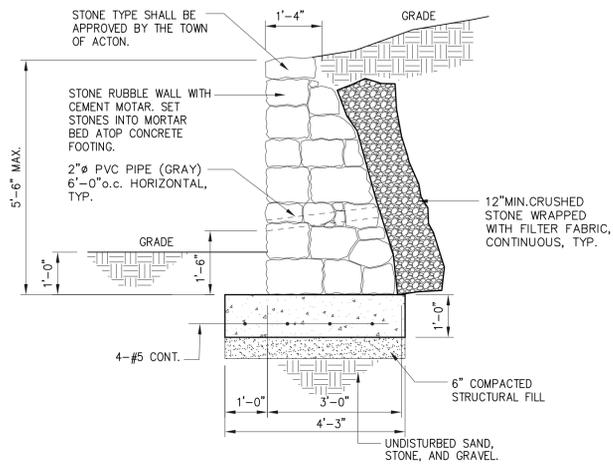
DRAWING  
**S-1**



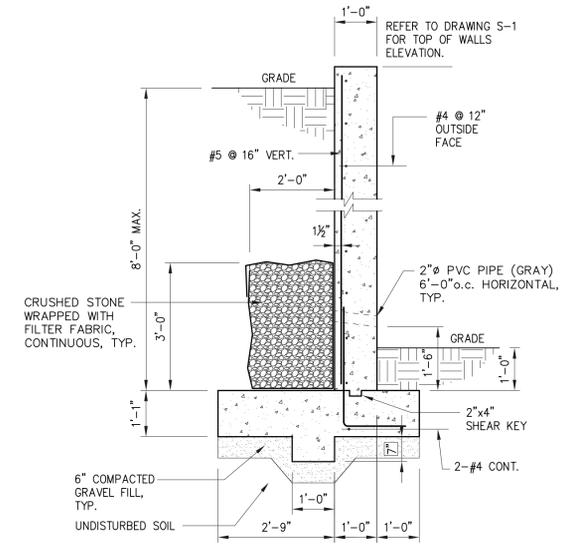
6 SECTION  
S1.0 SCALE: 1/2"=1'-0"



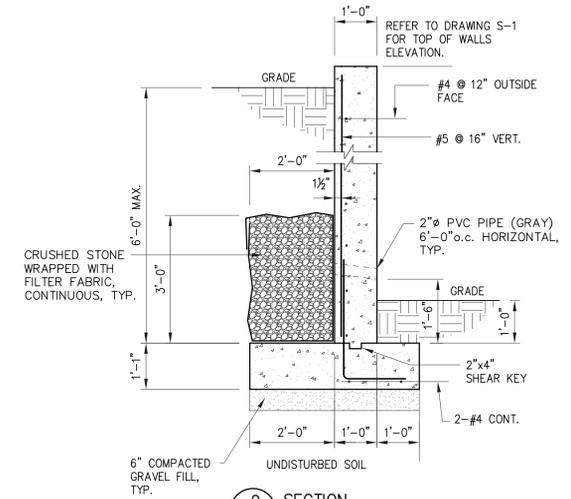
3 SECTION  
S1.0 SCALE: 1/2"=1'-0"



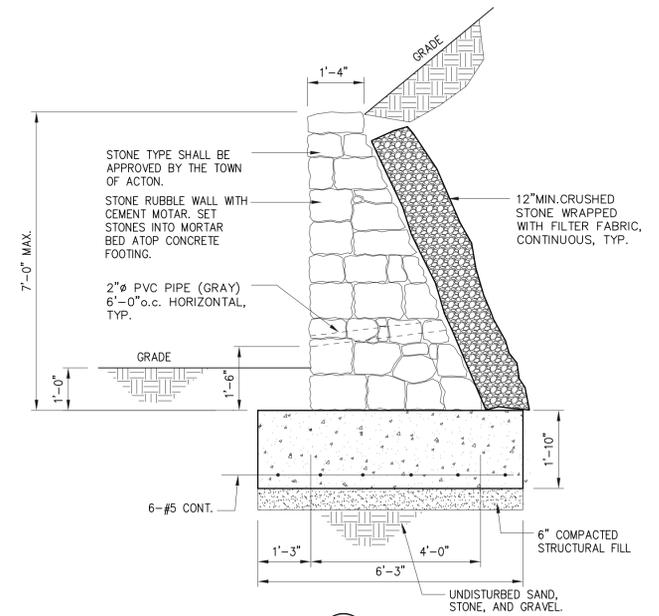
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1 SECTION  
S1.0 SCALE: 1/2"=1'-0"



2 SECTION  
S1.0 SCALE: 1/2"=1'-0"



4 SECTION  
S1.0 SCALE: 1/2"=1'-0"



DRAWN: ID  
CHECKED: ID  
SCALE: 1/2"=1'-0"  
DATE: 04/23/15

TOWN OF ACTON  
HIGH STREET RETAINING WALLS AT  
PRATT'S BROOK AND NOS. 128 & 132  
ACTON, MA

SECTIONS

PLAN NORTH

PROJECT NO.  
13002

DRAWING

S-2