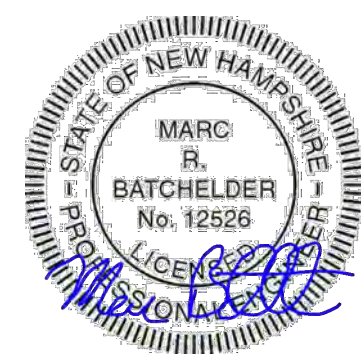


PLEASANT STREET ROADWAY IMPROVEMENTS PROJECT #7207 PORTSMOUTH, NEW HAMPSHIRE

SPRING 2018

PREPARED FOR: DEPARTMENT OF PUBLIC WORKS
CITY OF PORTSMOUTH
680 PEVERLY HILL ROAD
PORTSMOUTH, NH 03801

PREPARED BY: SEAPORT ENGINEERING, LLC
PORTSMOUTH, NH 03801
WWW.SEAPORTENG.COM
603-498-8449



SURVEY BY: MSC A DIVISION OF TFMORAN, INC.
170 COMMERCE WAY, SUITE 102
PORTSMOUTH, NH 03801

GEOTECHNICAL BY: JOHN TURNER CONSULTING
19 DOVER STREET
DOVER, NH 03820



PROJECT LIMITS



INDEX	SHEET NO.	LATEST REV.
GENERAL NOTES	G-1	
PAY ITEM and SPECIFICATION LIST	G-2	
ROADWAY LAYOUT PLANS	C-1	
UTILITIES PLAN and PROFILE	C-2	
DETAILED GRADING PLAN	C-3	
SUGGESTED TEMPORARY WATER LAYOUT	C-4	
ADD/ALT DELINEATION PLAN and SUGGESTED PHASING	C-5	
CULVERT CROSSING PLAN & DETAILS	C-6	
PAVEMENT PLAN	C-7	
EROSION AND SEDIMENT CONTROL PLAN and DETAILS	C-8	
DETAILS SHEETS	C-9 TO C-12	

ISSUED FOR BID

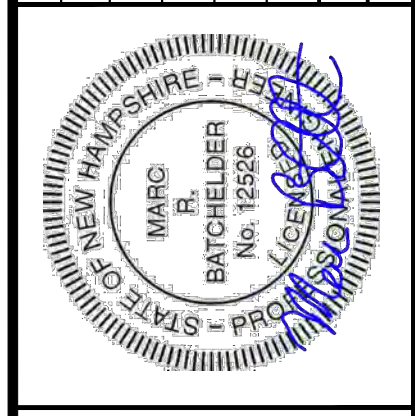
2/26/2018

BID TAB QUANTITIES and SPECIFICATION DESIGNATION:

Pay Item No.	Description	Units	Base Bid	Alt/Add A	Alt/Add B	Alt/Add C	Alt/Add D	Alt/Add E	Specification
201.1	Tree Clearing & Relocation, Grubbing	LS	1	0	1	0	1	0	NHDOT
202.21	Removal of Existing Sidewalks	SY	2400	50	140	0	0	0	NHDOT
202.22	Removal of Existing Driveways and Aprons	SY	400	0	135	65	25	20	NHDOT
202.3	Fill and Abandon Pipe or Structure	CY	200	0	0	0	0	0	NHDOT
202.4	Removal of Existing Pipe (as Directed by Engineer)	LF	250	125	0	0	0	0	NHDOT
202.5	Removal of CB, Drop Inlets, and Manholes	EA	20	0	1	0	1	0	NHDOT
202.6	Core Existing Bridge Abutment	EA	0	2	0	0	0	0	Detail
203.1	Common Excavation	CY	1200	100	100	30	10	10	NHDOT
203.6	Embankment in Place	CY	600	10	40	30	10	10	NHDOT
206.19	Common Structure Excavation - Exploratory	HR	40	8	16	16	12	16	A-NHDOT
206.2	Rock Structure Excavation	CY	685	0	205	135	50	375	A-NHDOT
211.1	Vibration Monitoring Analysis	LS	1	0	1	1	1	1	A-NHDOT
211.11	vibration Monitoring Services	HR	240	0	120	80	40	160	A-NHDOT
214	Fine Grade (Roadway Base)	SY	8000	0	850	450	480	425	NHDOT
214	Fine Grade (Driveways and Sidewalk Base)	SY	2900	50	235	25	25	20	NHDOT
304.3	Crushed Gravel in Place (Roadway Base)	CY	100	0	0	0	0	0	A-NHDOT
304.3	Crushed Gravel in Place (Driveway and Sidewalk Base)	CY	650	20	50	0	10	0	A-NHDOT
304.7	Crushed Gravel in Place (ADA Path - Base)	CY	65	0	0	0	0	0	A-NHDOT
304.8	Crushed Gravel in Place (ADA Path - Tread)	CY	35	0	0	0	0	0	A-NHDOT
306.112a	12" Reclaimed Stabilized Base	SY	5500	0	800	450	430	425	A-NHDOT
306.112b	12" Reclaimed Stabilized Base (Blend in Stone)	SY	5500	0	850	450	430	425	A-NHDOT
306.212	Rehandle Reclaimed Based Material	CY	1550	0	50	50	50	50	A-NHDOT
306.36	1.5" Crushed Stone (Mixed w/ Reclaimer)	TN	1000	0	120	60	60	50	A-NHDOT
403.11A	Machine Method, Binder (2.5" or 3.5")	TN	1000	0	130	65	75	65	A-NHDOT
403.11B	Machine Method, Wearing (1.5")	TN	700	75	165	105	45	40	A-NHDOT
403.12	Hand Method	TN	400	25	50	25	15	15	A-NHDOT
403.99	Temporary Bituminous Pavement (Shut-Down)	TN	200	0	0	0	0	0	A-NHDOT
417.A	Cold Plane Bituminous Surface (5")	SY	5500	0	0	0	0	0	NHDOT
417.B	Cold Plane Bituminous Surface (1.5")	SY	3000	900	1000	675	0	0	NHDOT
520	Class B Curb Backfill	CY	75	3	10	3.5	9	0	NHDOT
585.3	Stone Fill, Class C in Place	CY	0	0	18	5	5	0	NHDOT
603.82212	12" Dia. HDPE Drain Pipe	LF	1300	0	35	20	65	0	A-NHDOT
603.82215	15" Dia. HDPE Drain Pipe	LF	370	0	0	0	0	0	A-NHDOT
604.0007	Poly Liner for CB	EA	14	0	1	1	1	0	A-NHDOT
604.0008	Eliminator Oil/Water Separator	EA	14	0	1	1	1	1	A-NHDOT
604.0009	Connect to Existing Structure (Core & Boot)	EA	1	0	0	0	0	0	A-NHDOT
604.12	New Catchbasin	EA	14	0	1	1	1	0	A-NHDOT
604.32	New Drain Manhole	EA	14	0	0	0	0	0	A-NHDOT
604.5	Adjust Existing Structures (Sewer, Drain, Elec, Tele)	EA	10	0	0	0	0	0	A-NHDOT
604.62	Provide and Install DMH Frame & Cover	EA	15	0	0	0	0	0	A-NHDOT
604.72	Provide and Install CB Frame & Grate	EA	14	0	2	2	2	0	A-NHDOT
604.8A	New PreCast Concrete Dry Well (1000 gallon)	EA	0	0	0	1	1	0	A-NHDOT
604.8B	New PreCast Concrete Dry Well (1500 gallon)	EA	0	0	1	0	0	0	A-NHDOT
607.9	Remove & Reset Existing Fence	LF	100	0	0	0	40	0	NHDOT
608.24	4" Concrete Sidewalk & Pads	SF	50	0	0	0	135	0	A-NHDOT
608.26	6" Concrete Sidewalk (ADA Ramps)	SF	1350	0	30	0	0	0	A-NHDOT
608.54	ADA Detectable Warning Tile, Cast Iron	SF	450	0	0	0	0	0	A-NHDOT
608.5A	New Brick Sidewalk	SF	22000	450	1350	0	0	0	A-NHDOT
608.5B	Reset Existing 'Durham' Paver Sidewalk	SF	475	0	0	0	0	0	A-NHDOT
608.5C	Reset Existing Brick or Cobble Sidewalk / Driveway Apron	SF	0	0	0	0	320	0	A-NHDOT
608.6A	New Granite Steps	EA	3	0	1	0	0	0	A-NHDOT
608.6B	Reset Granite Steps	EA	0	0	2	0	0	0	A-NHDOT
608.7A	New Granite Slabs	SF	0	0	20	0	0	0	A-NHDOT
608.7B	Reset Granite Slabs	SF	0	0	85	0	0	0	A-NHDOT
609.16	New 6" Straight Vertical Granite Curb	LF	100	20	280	130	375	0	A-NHDOT
609.18	New 7" Straight Vertical Granite Curb	LF	300	0	20	0	0	0	A-NHDOT
609.26	New 6" Curved Vertical Granite Curb	LF	50	0	0	0	0	0	A-NHDOT
609.28	New 7" Curved Vertical Granite Curb	LF	120	0	10	0	0	0	A-NHDOT
609.56	Reset Existing 6" Granite Curb	LF	150	100	0	0	0	0	A-NHDOT
609.58	Reset Existing 7" Granite Curb	LF	3600	0	160	0	0	0	A-NHDOT

Pay Item No.	Description	Units	Base Bid	Alt/Add A	Alt/Add B	Alt/Add C	Alt/Add D	Alt/Add E	Specification
611	Tie Into Existing Water Main	EA	16	2	0	0	0	0	Supplemental Spec
611.01	Temporary Water Main and Services	LS	1	1	1	1	1	1	Supplemental Spec
611.02	Provide & Install Pipe Supports	EA	0	2	0	0	0	0	Detail
611.05206	6" Cement Lined Ductile Iron Pipe (incl. fittings)(pipe supplied by City)	LF	90	0	210	0	0	320	Supplemental Spec
611.05208	8" Cement Lined Ductile Iron Pipe (incl. fittings)	LF	165	0	280	260	235	0	Supplemental Spec
611.05212	12" Cement Lined Ductile Iron Pipe (incl. fittings)	LF	1900	160	0	0	0	0	Supplemental Spec
611.05212	12" Insulated Cement Lined Ductile Iron Pipe (incl. fittings)	LF	0	30	0	0	0	0	Supplemental Spec
611.5001	1" Copper Corporation and Curb Stop	EA	16	0	6	4	8	4	Supplemental Spec
611.5002	2" Copper Corporation and Curb Stop	EA	10	0	1	0	0	0	Supplemental Spec
611.5011	1" Copper Water Service	LF	250	0	40	20	130	35	Supplemental Spec
611.5012	2" Copper Water Service	LF	200	0	15	0	0	10	Supplemental Spec
611.7106	6" Gate Valve Assembly	EA	5	0	0	0	0	0	Supplemental Spec
611.7108	8" Gate Valve Assembly	EA	4	0	0	0	0	0	Supplemental Spec
611.7108	8" Gate Valve & Tapping Sleeve Assembly	EA	0	0	0	0	0	1	Supplemental Spec
611.7112	12" Gate Valve Assembly	EA	6	2	0	0	0	0	Supplemental Spec
611.81	New Hydrant Assembly Complete (Incl. tee & valve & 6" lateral pipe)	EA	3	0	0	1	1	0	Supplemental Spec
611.83	Remove Existing Hydrant and Valve Assembly Complete	EA	4	0	0	0	0	0	Supplemental Spec
611.84	Install Existing Hydrant and Valve Assembly Complete	EA	1	0	0	0	0	0	Supplemental Spec
611.85	New 2" Dia. Flushing Hydrant Assembly Complete (Incl. Corp & Curb Stop)	EA	0	0	2	0	0	1	Supplemental Spec
611.9	Replace Existing Gate Valves	EA	2	0	0	0	0	0	Supplemental Spec
611.90001	Adjust Water Gate Valve	EA	15	2	0	4	0	0	Supplemental Spec
612.01	8" PVC Sewer Pipe (SDR35)	LF	255	0	695	320	285	195	Supplemental Spec
612.02	6" PVC Sewer Service Pipe (SDR35)	LF	0	0	140	65	100	25	Supplemental Spec
612.03	6" PVC Sewer Service Cleanout	EA	0	0	7	4	8	4	Supplemental Spec
613.01	New Sewer Manhole	EA	1	0	5	3	2	3	Supplemental Spec
613.02	Connect to Existing Sewer Structure	EA	1	0	1	1	1	0	Supplemental Spec
613.03	Drop Connection	EA	0	0	0	0	0	1	Supplemental Spec
613.04	Allowance to Purchase SMH Frame & Cover from City	U	1	0	1	1	1	1	Supplemental Spec
613.05	Install SMH Frame & Cover	EA	14	0	5	3	2	3	Supplemental Spec
615	Bollard	EA	8	0	4	2	2	2	A-NHDOT
615.0071	New Steel Sign Post	EA	16	0	0	0	0	0	A-NHDOT
615.02	New Traffic Sign	SF	125	0	0	0	0	0	A-NHDOT
615.024	Relocate Traffic Sign on New Post	EA	8	0	2	0	0	0	A-NHDOT
618.6	Uniformed Officers	U	1	0	0	0	0	0	A-NHDOT
618.7	Flaggers	U	1	1	1	1	1	1	A-NHDOT
619.1	Maintenance of Traffic	U	1	1	1	1	1	1	A-NHDOT
619.11	Calcium Chloride for Dust Control	LB	1000	0	200	150	250	100	A-NHDOT
619.253	Portable Message Boards	WK	22	0	0	0	0	0	A-NHDOT
628.2	Sawcut	LF	1000	100	185	220	120	150	NHDOT
632.0104	4" Paint Striping (Chlorinated Rubber Paint)(incl. Temporary)	LF	8700	580	0	0	0	0	A-NHDOT
632.3112	12" Thermoplastic Crosswalk & Stop Bars	LF	2040	14	66	0	0	6	A-NHDOT
640	Reconstruct Existing Landscaping	LS	0	0	0	0	1	0	A-NHDOT
645	Catch Basin Silt Sack	EA	15	3	1	1	1	0	A-NHDOT
645.631	Silt Fence or Silt Log	LF	200	175	325	125	100	0	A-NHDOT
645.7	SWPPP	LS	1	0	0	0	0	0	A-NHDOT
645.71	SWPPP Inspections	HR	50	0	0	0	0	0	A-NHDOT
646.51	Turf Establishment w/ Mulch and Tackifier	SY	350	75	750	200	125	30	A-NHDOT
692	Mobilization	U	1	1	1	1	1	1	NHDOT
1010.2	Asphalt Cement Adjustment	U	1	1	1	1	1	1	NHDOT

NO.	DESCRIPTION	DATE
0	ISSUED FOR BID	2/26/18



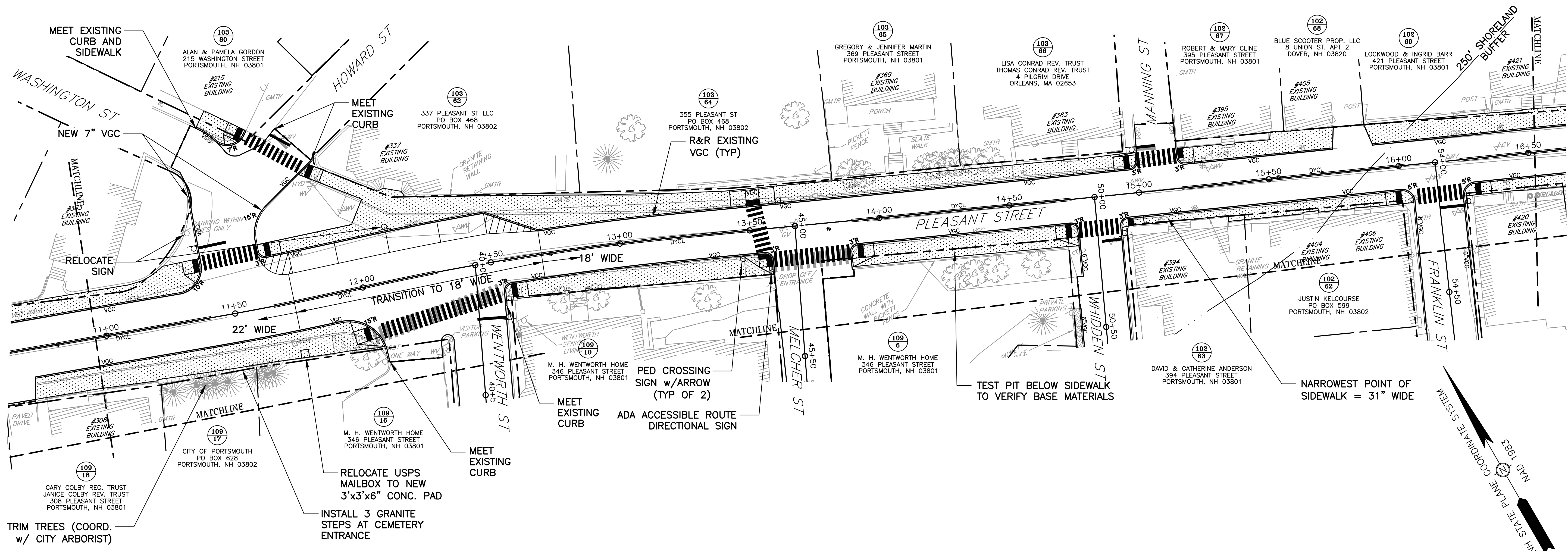
DATE: JANUARY 19, 2017
 SCALE: NONE
 PROJECT NO.: Cop-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD

FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

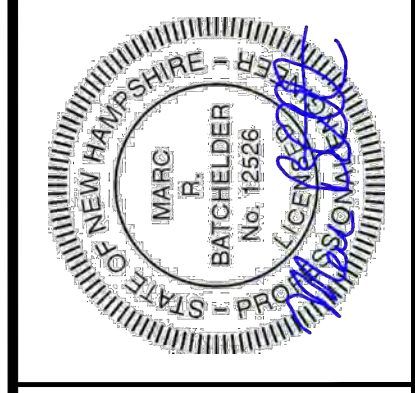
TITLE: BID QUANTITIES and
 SPECIFICATION DESIGNATION

NOTES:
1. SEE SHEET C-1A NOTES.

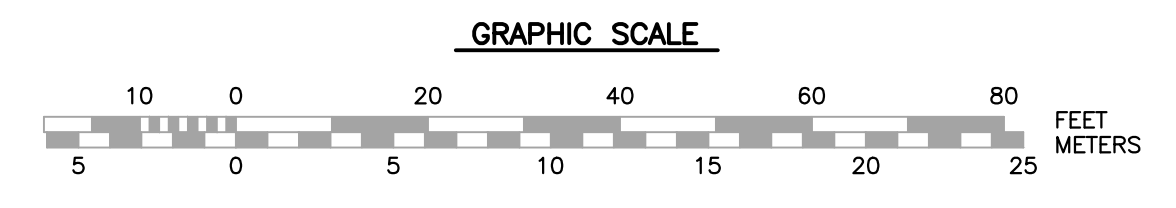
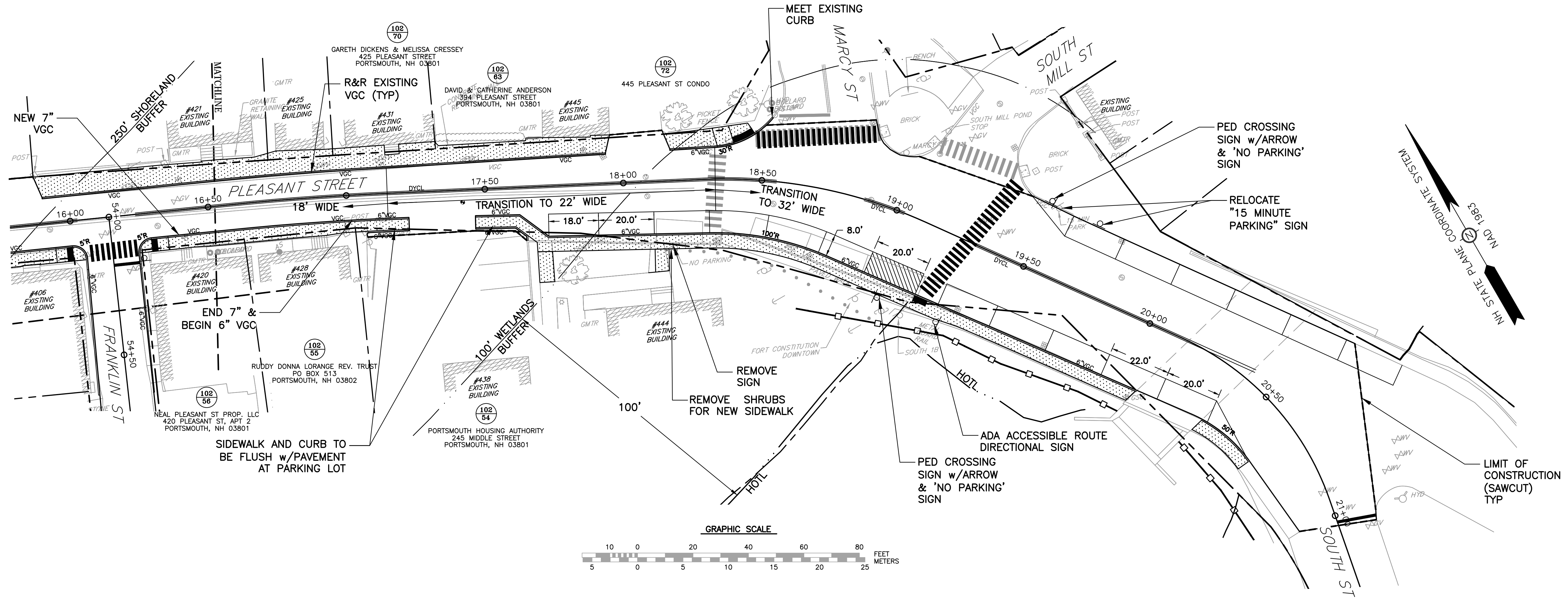


TRIM TREES (COORD. w/ CITY ARBORIST)

NO.	DESCRIPTION	REVISIONS	APP'D	DATE
0	ISSUED FOR BID		MRB	2/26/18



DATE: JANUARY 19, 2017
SCALE: 1:20
PROJECT NO.: C-01-006
MARC R. BATCHELDER, PE
ENGINEER OF RECORD



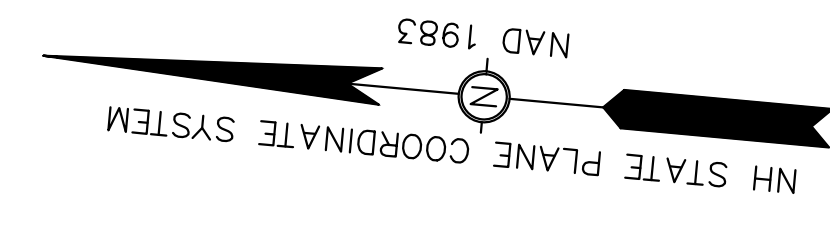
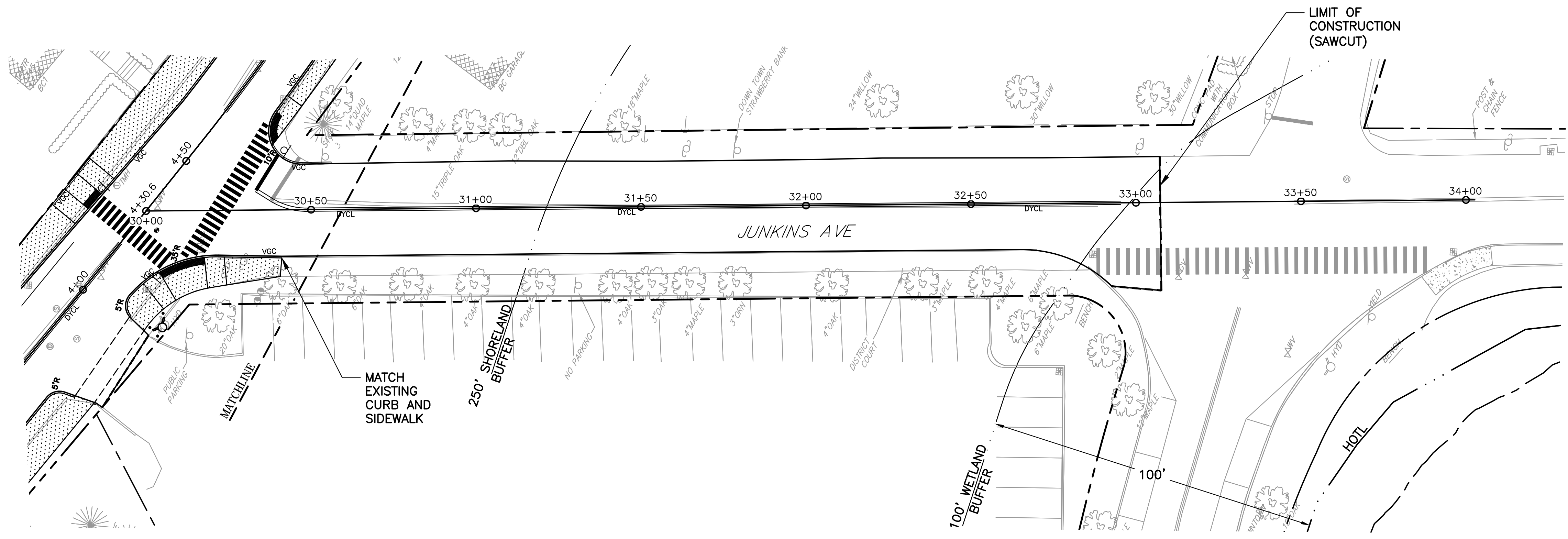
FOR: Pleasant Street
Utility & Roadway
Improvements
Portsmouth, NH

Seaport
Engineering, LLC
PORTSMOUTH, NH
(603) 498-8449
www.seaporteng.com

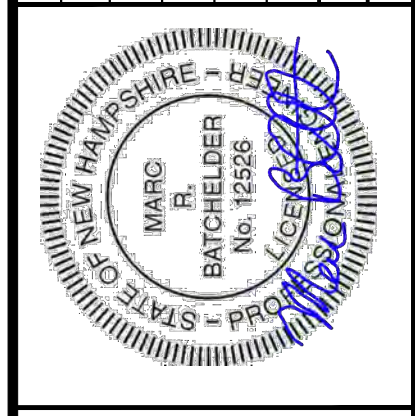
TITLE: ROADWAY LAYOUT PLAN
PLEASANT STREET
STA 11+00 TO STA 21+00

C-1B

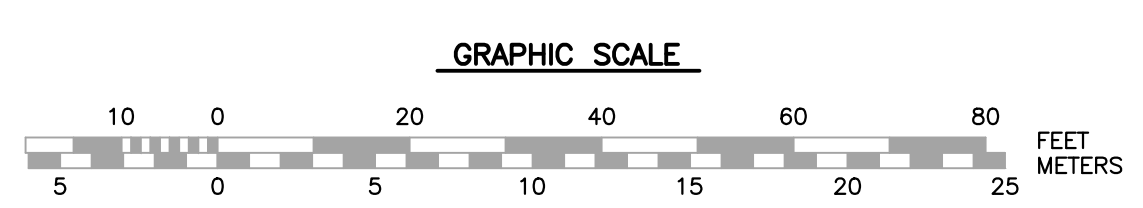
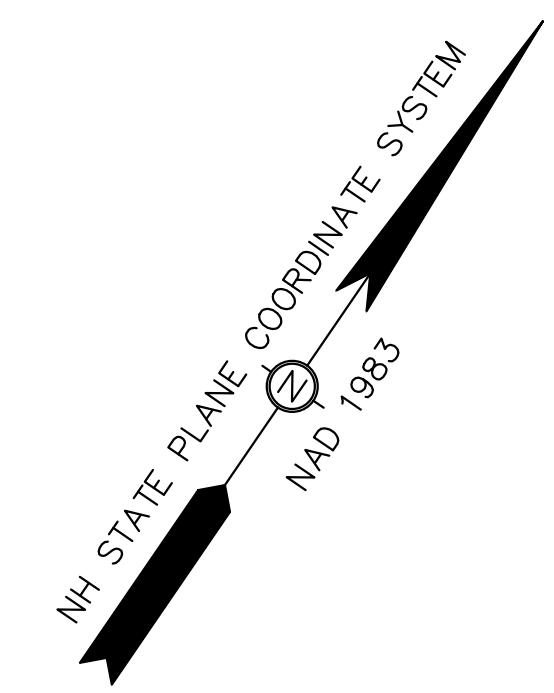
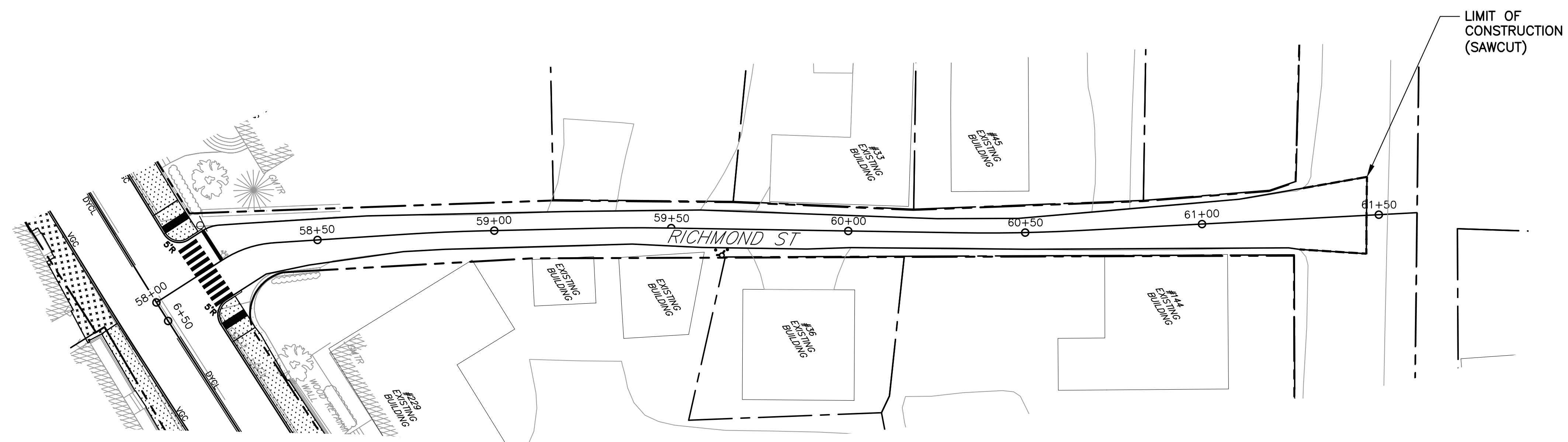
NOTES:
1. SEE SHEET C-1A NOTES.



NO.	DESCRIPTION	REVISIONS	DATE
0	ISSUED FOR BID		2/26/18



DATE: JANUARY 19, 2017
SCALE: 1:20
PROJECT NO.: COP-006
MARC R. BATCHELDER, PE
ENGINEER OF RECORD

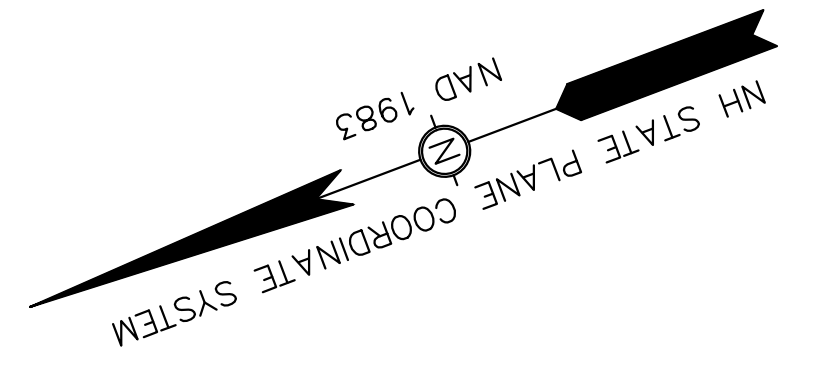
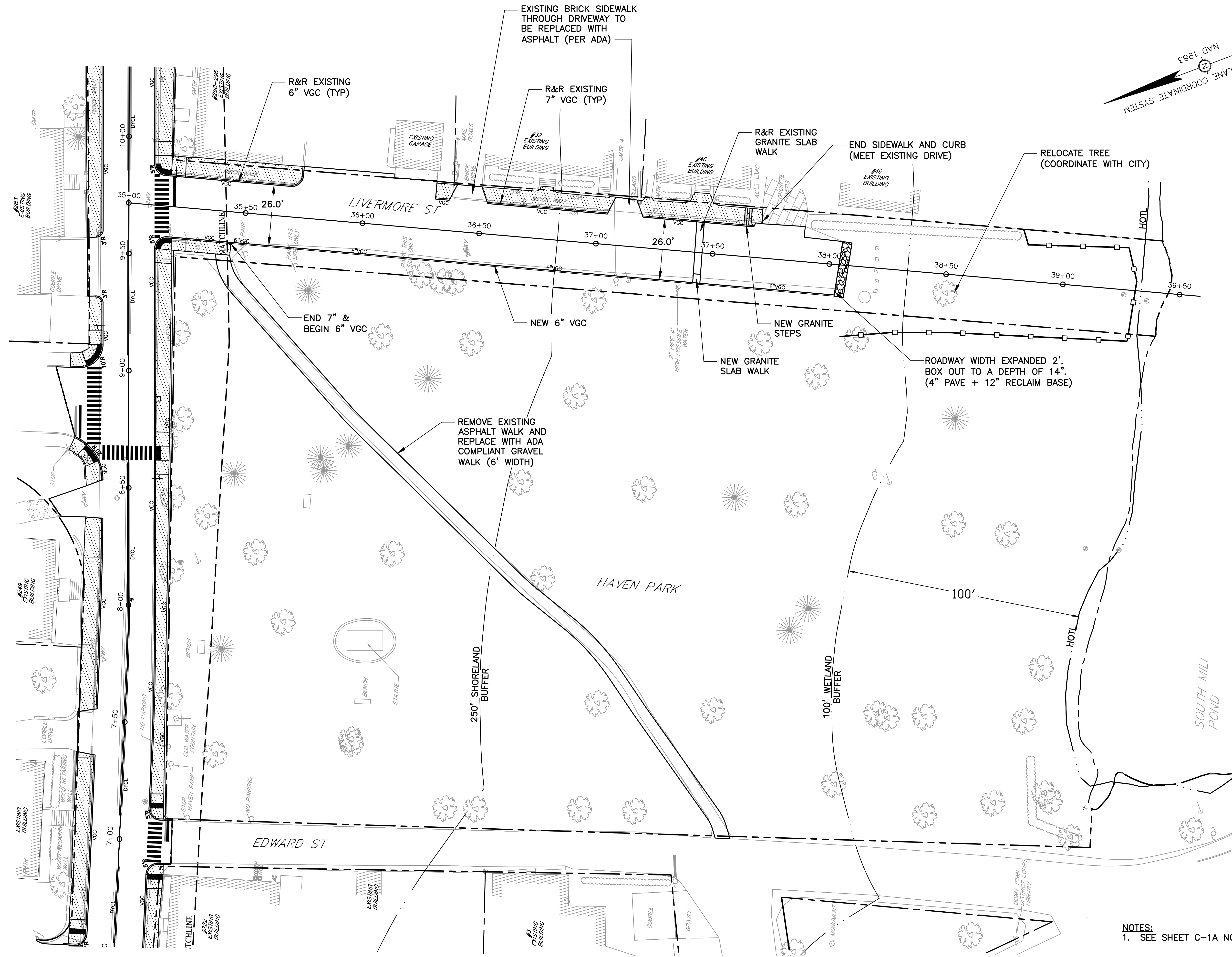


FOR:
Pleasant Street
Utility & Roadway
Improvements
Portsmouth, NH

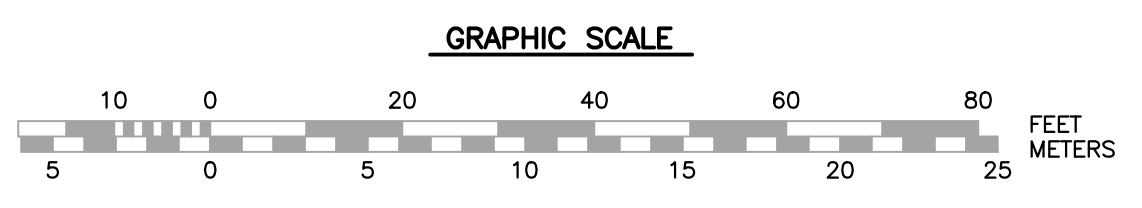
Seaport
Engineering, LLC
PORTSMOUTH, NH
(603) 498-8449
www.seaporteng.com

TITLE:
ROADWAY LAYOUT PLAN
JUNKINS AVENUE and
RICHMOND STREET

C-1C

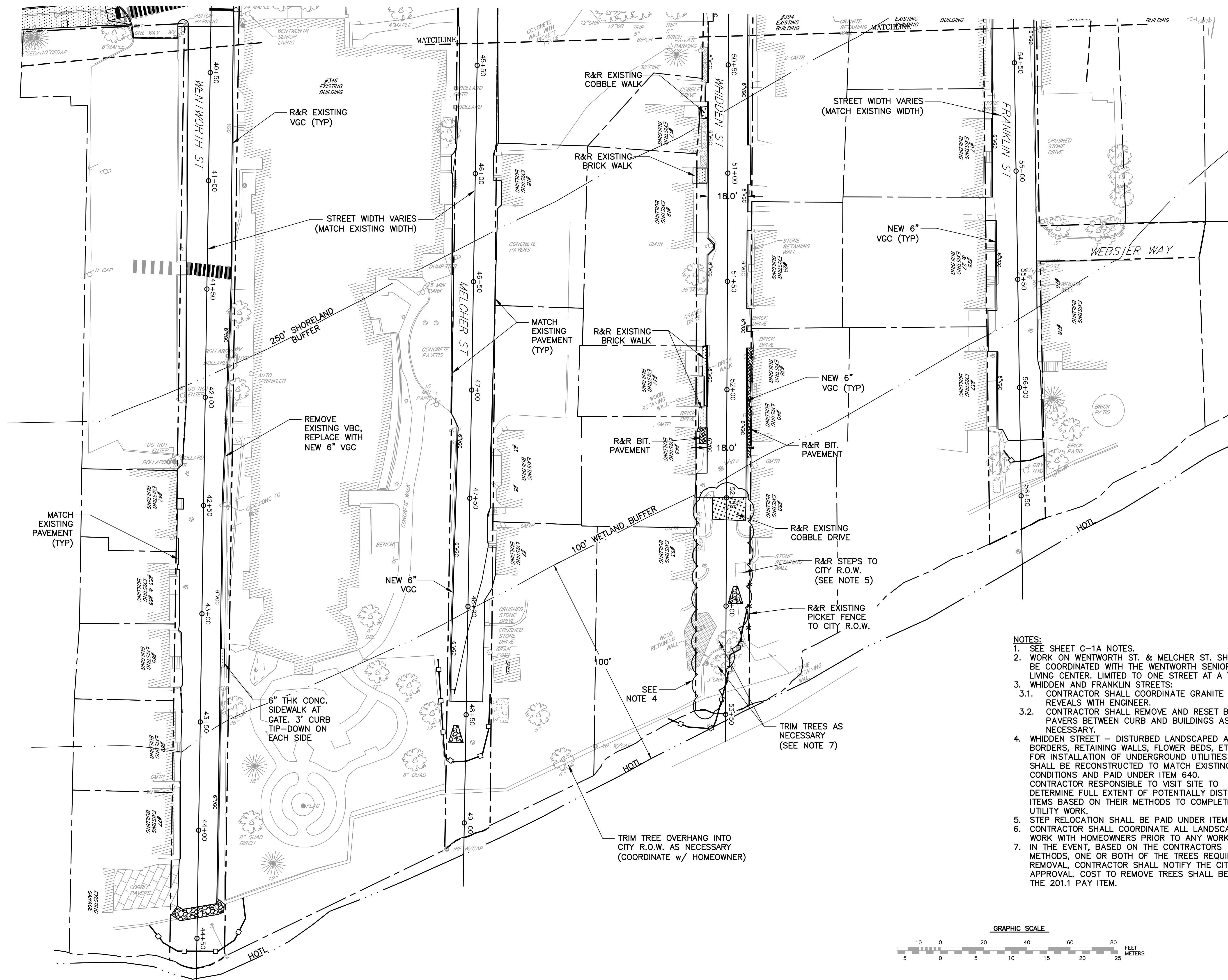


NOTES:
1. SEE SHEET C-1A NOTES.

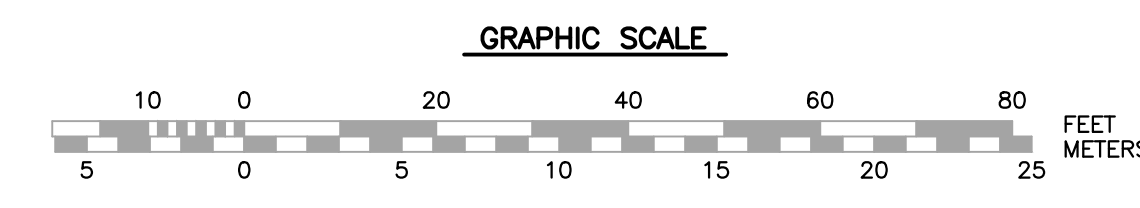


TITLE: ROADWAY LAYOUT PLAN EDWARD STREET, HAVEN PARK, and LIVERMORE STREET	FOR: Pleasant Street Utility & Roadway Improvements Portsmouth, NH	Seaport Engineering, LLC PORTSMOUTH, NH (603) 498-8449 www.seaporteng.com	DATE: JANUARY 19, 2017 SCALE: 1:20 PROJECT NO.: Cop-006		REVISIONS NO. DESCRIPTION
			DATE: JANUARY 19, 2017 SCALE: 1:20 PROJECT NO.: Cop-006 MARC R. BATCHELDER, PE ENGINEER OF RECORD		
C-1D			0 ISSUED FOR BID MRB 2/26/18 APPD DATE		

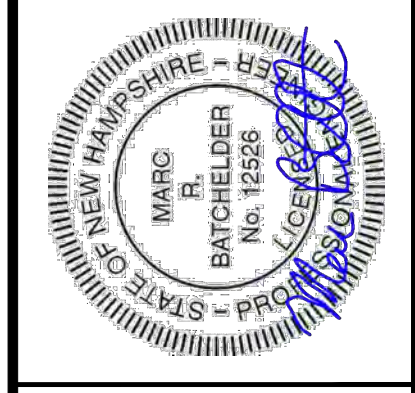
NH STATE PLANE COORDINATE SYSTEM
MAD 1983



- NOTES:**
- SEE SHEET C-1A NOTES.
 - WORK ON WENTWORTH ST. & MELCHER ST. SHALL BE COORDINATED WITH THE WENTWORTH SENIOR LIVING CENTER. LIMITED TO ONE STREET AT A TIME.
 - WHIDDEN AND FRANKLIN STREETS:
 - CONTRACTOR SHALL COORDINATE GRANITE CURB REVEALS WITH ENGINEER.
 - CONTRACTOR SHALL REMOVE AND RESET BRICK PAVERS BETWEEN CURB AND BUILDINGS AS NECESSARY.
 - WHIDDEN STREET - DISTURBED LANDSCAPED AREAS, BORDERS, RETAINING WALLS, FLOWER BEDS, ETC. FOR INSTALLATION OF UNDERGROUND UTILITIES SHALL BE RECONSTRUCTED TO MATCH EXISTING CONDITIONS AND PAID UNDER ITEM 640. CONTRACTOR RESPONSIBLE TO VISIT SITE TO DETERMINE FULL EXTENT OF POTENTIALLY DISTURBED ITEMS BASED ON THEIR METHODS TO COMPLETE THE UTILITY WORK.
 - STEP RELOCATION SHALL BE PAID UNDER ITEM 640.
 - CONTRACTOR SHALL COORDINATE ALL LANDSCAPING WORK WITH HOMEOWNERS PRIOR TO ANY WORK.
 - IN THE EVENT, BASED ON THE CONTRACTORS METHODS, ONE OR BOTH OF THE TREES REQUIRE REMOVAL, CONTRACTOR SHALL NOTIFY THE CITY FOR APPROVAL. COST TO REMOVE TREES SHALL BE IN THE 201.1 PAY ITEM.



NO.	DESCRIPTION	APPD	DATE
0	ISSUED FOR BID	MRB	2/26/18



DATE: JANUARY 19, 2017
 SCALE: 1:20
 PROJECT NO.: COP-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD

FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

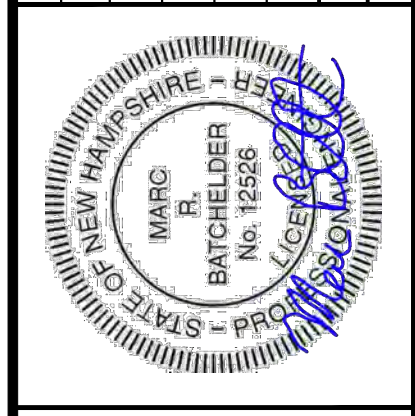
Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE: ROADWAY LAYOUT PLAN
 WENTWORTH ST., MELCHER ST.,
 WHIDDEN ST. & FRANKLIN ST.

WATER AND SEWER SERVICE LATERAL SCHEDULE:

Sheet No.	Street Name	House No.	6" PVC Sewer Pipe (LF)	Sewer Connection w/Cleanout (EA)	1" Cu Water Service (LF)	2" Cu Water Service (LF)	1" Water Connection w/Curb Stop (EA)	2" Water Connection w/Curb Stop (EA)	Notes
C-2A	Pleasant	118	-	-	11	-	1	-	
C-2A	Pleasant	134	-	-	-	17	-	1	
C-2A	Pleasant	143	-	-	31	-	1	-	
C-2A	Pleasant	179	-	-	28	-	1	-	
C-2B	Pleasant	212	-	-	10	-	1	-	
C-2B	Pleasant	213	-	-	27	-	1	-	Verify location in field
C-2B	Pleasant	222	-	-	-	-	-	-	Water Service on Edward St.
C-2B	Pleasant	229	-	-	-	23	-	1	4 Unit Condominium
C-2B	Pleasant	249	-	-	23	-	1	-	
C-2B	Pleasant	283	-	-	-	-	-	-	Water Service on Gate St.
C-2B	Pleasant	290-296	-	-	-	10	-	1	6 Unit Condominium
C-2C	Pleasant	303	-	-	-	-	-	-	Water Service on Washington St.
C-2C	Pleasant	308	-	-	14	-	1	-	
C-2C	Pleasant	337	-	-	8	-	1	-	
C-2C	Pleasant	346	-	-	-	60	-	2	Verify location in field
C-2C	Pleasant	369	-	-	7	-	1	-	
C-2C	Pleasant	383	-	-	-	5	-	1	6 Unit Apartments
C-2C	Pleasant	395	-	-	8	-	1	-	
C-2C	Pleasant	394	-	-	18	-	1	-	
C-2C	Pleasant	404-406	-	-	-	16	-	1	4 Unit Apartments
C-2C	Pleasant	405	-	-	8	-	1	-	
C-2C	Pleasant	420	-	-	-	16	-	1	4 Unit Apartments
C-2C	Pleasant	421	-	-	8	-	1	-	
C-2D	Pleasant	425	-	-	10	-	1	-	
C-2D	Pleasant	428	-	-	-	16	-	1	3 Unit Condominium
C-2D	Pleasant	431	-	-	8	-	1	-	
C-2D	Pleasant	438	-	-	-	-	-	-	Uses service from 444 (VIF)
C-2D	Pleasant	444	-	-	-	28	-	1	4 Unit Apartments
C-2D	Pleasant	445	-	-	10	-	1	-	2 Unit Condominium
C-2F	Livermore	32	25	1	-	10	-	1	4 Unit Condominium
C-2F	Livermore	46	25	1	12	-	1	-	
C-2G	Wentworth	47	17	1	3	-	1	-	
C-2G	Wentworth	53-55	17	1	3	-	1	-	Two Family
C-2G	Wentworth	65	17	1	3	-	1	-	
C-2G	Wentworth	69	17	1	3	-	1	-	
C-2G	Wentworth	77	17	1	3	-	1	-	Verify location in field
C-2H	Melcher	18	14	1	3	-	1	-	
C-2H	Melcher	3	16	1	3	-	1	-	
C-2H	Melcher	5	16	1	6	-	1	-	
C-2H	Melcher	7	16	1	3	-	1	-	Two Family
C-2J	Whidden	17	7	1	15	-	1	-	
C-2J	Whidden	19	8	1	20	-	1	-	
C-2J	Whidden	28	16	1	3	-	1	-	
C-2J	Whidden	37	8	1	15	-	1	-	
C-2J	Whidden	38-40	17	1	3	-	1	-	Two Family
C-2J	Whidden	43	10	1	16	-	1	-	
C-2J	Whidden	50	17	1	8	-	1	-	
C-2J	Whidden	53	10	-	40	-	1	-	
C-2K	Franklin	17	-	-	-	-	1	-	
C-2K	Franklin	25-27	-	-	-	-	2	-	Two Family
C-2K	Franklin	26-28	-	-	-	-	-	-	Two Family
C-2K	Franklin	37	-	-	-	-	-	-	
C-2K	Richmond	21	6	-	13	-	1	-	
C-2K	Richmond	33	6	1	8	-	1	-	Two Family, Verify Location in Field
C-2K	Richmond	36	6	1	7	-	1	-	Sewer runs to Pleasant St. - Stub new sewer
C-2K	Richmond	45	6	1	3	-	1	-	
C-2K	Washington	144	-	-	-	-	-	-	Office Building. Verify utilities off Washington St.

NO.	DESCRIPTION	DATE
0	ISSUED FOR BID	2/26/18

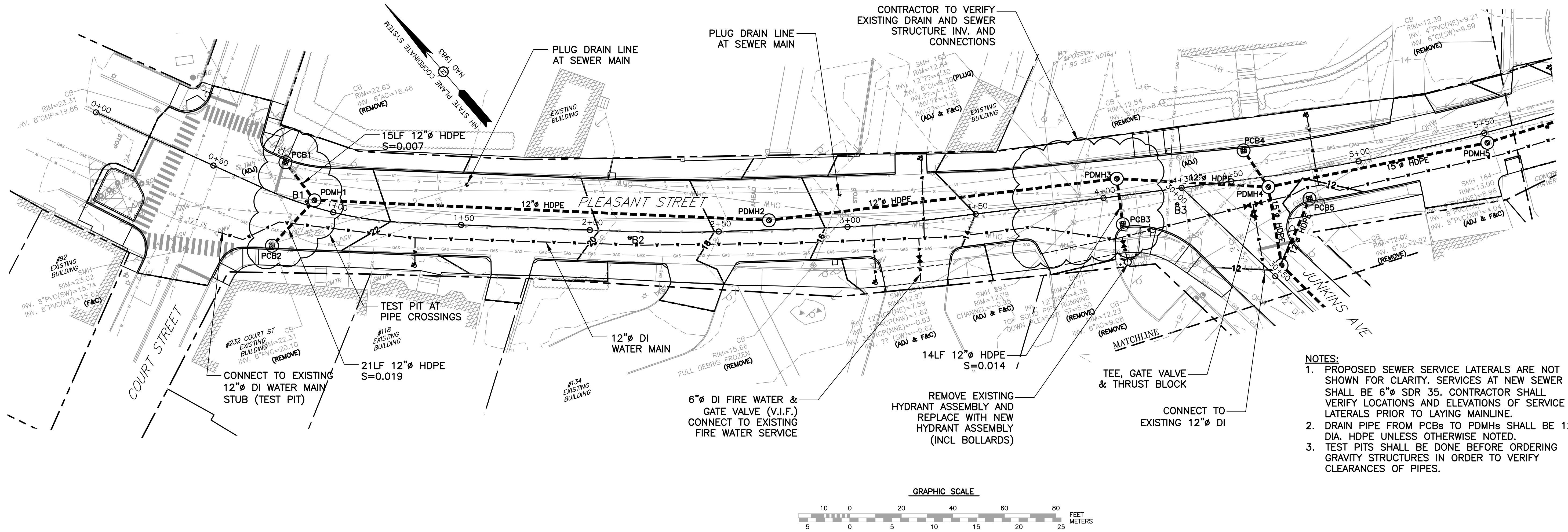


DATE: JANUARY 19, 2017
 SCALE: 1:20
 PROJECT NO.: CoP-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD

FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

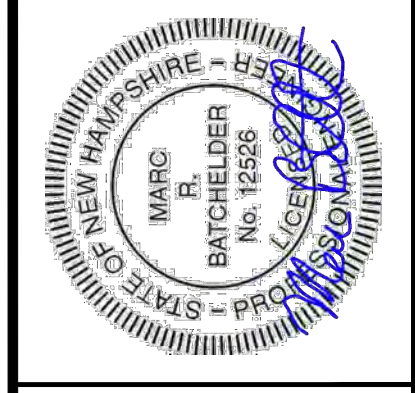
Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE: UTILITY SCHEDULES

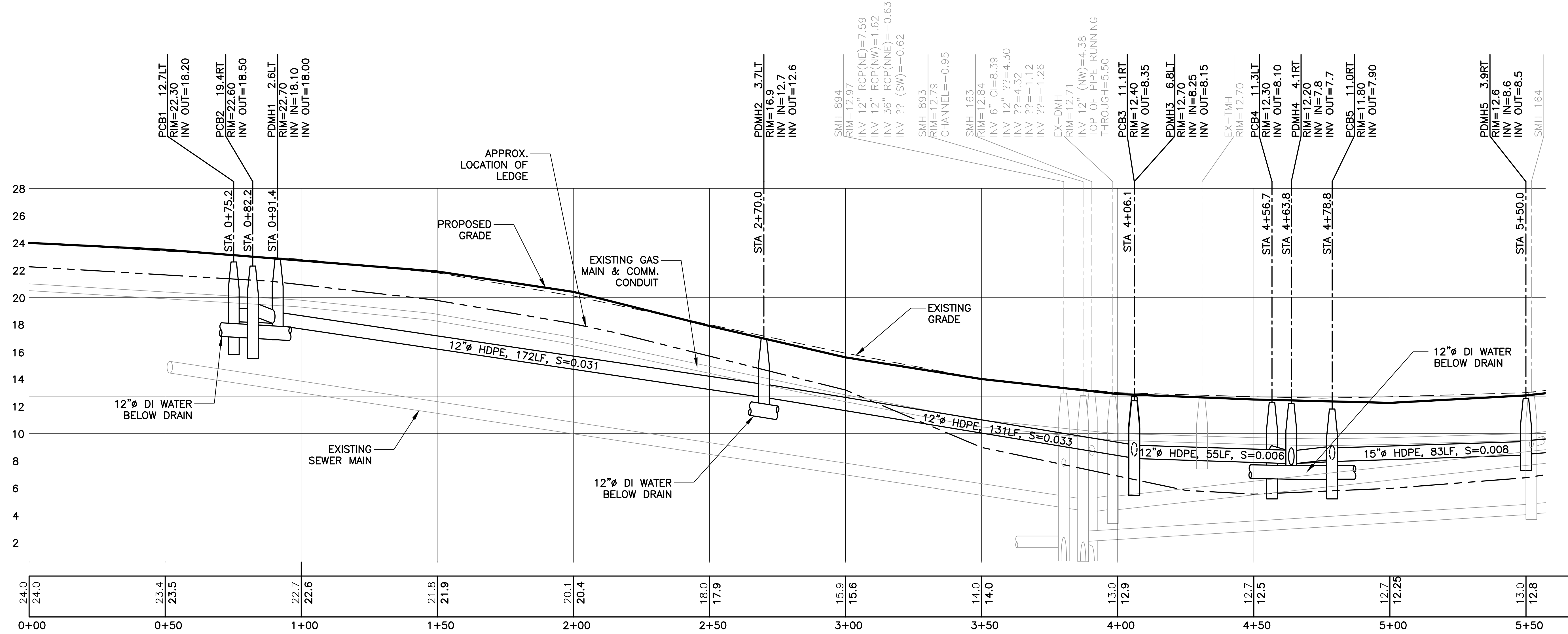


- NOTES:**
1. PROPOSED SEWER SERVICE LATERALS ARE NOT SHOWN FOR CLARITY. SERVICES AT NEW SEWER SHALL BE 6" SDR 35. CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF SERVICE LATERALS PRIOR TO LAYING MAINLINE.
 2. DRAIN PIPE FROM PCBs TO PDMHs SHALL BE 12" DIA. HDPE UNLESS OTHERWISE NOTED.
 3. TEST PITS SHALL BE DONE BEFORE ORDERING GRAVITY STRUCTURES IN ORDER TO VERIFY CLEARANCES OF PIPES.

NO.	DESCRIPTION	APPD	DATE
0	ISSUED FOR BID	MRB	2/26/18



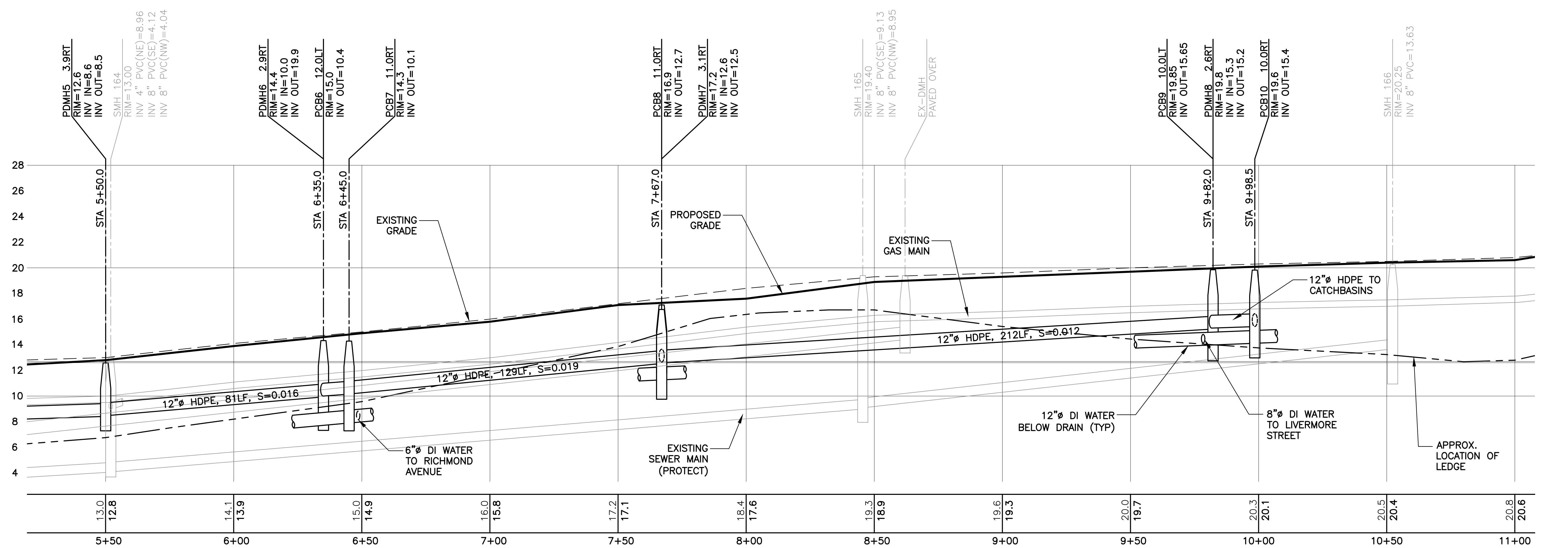
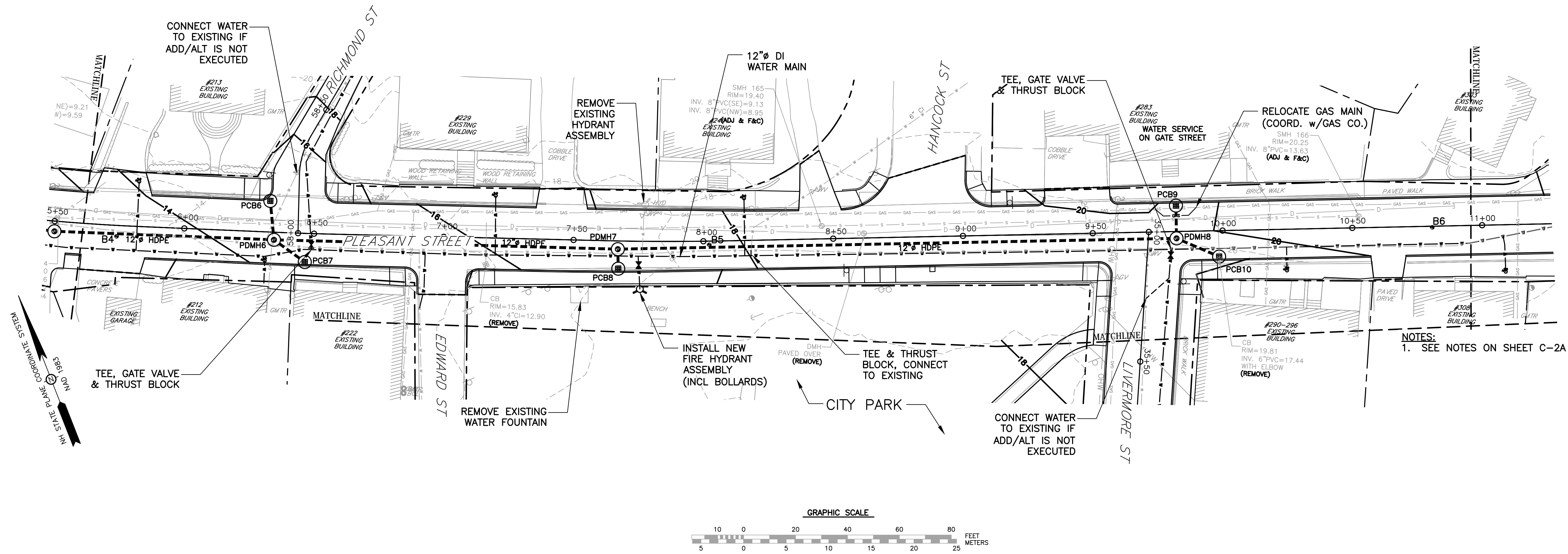
DATE: JANUARY 19, 2017
 SCALE: 1:20
 PROJECT NO.: Cop-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD



FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE: UTILITY and GRADING PLAN
 PLEASANT STREET
 STA. 0+00 TO STA. 5+50



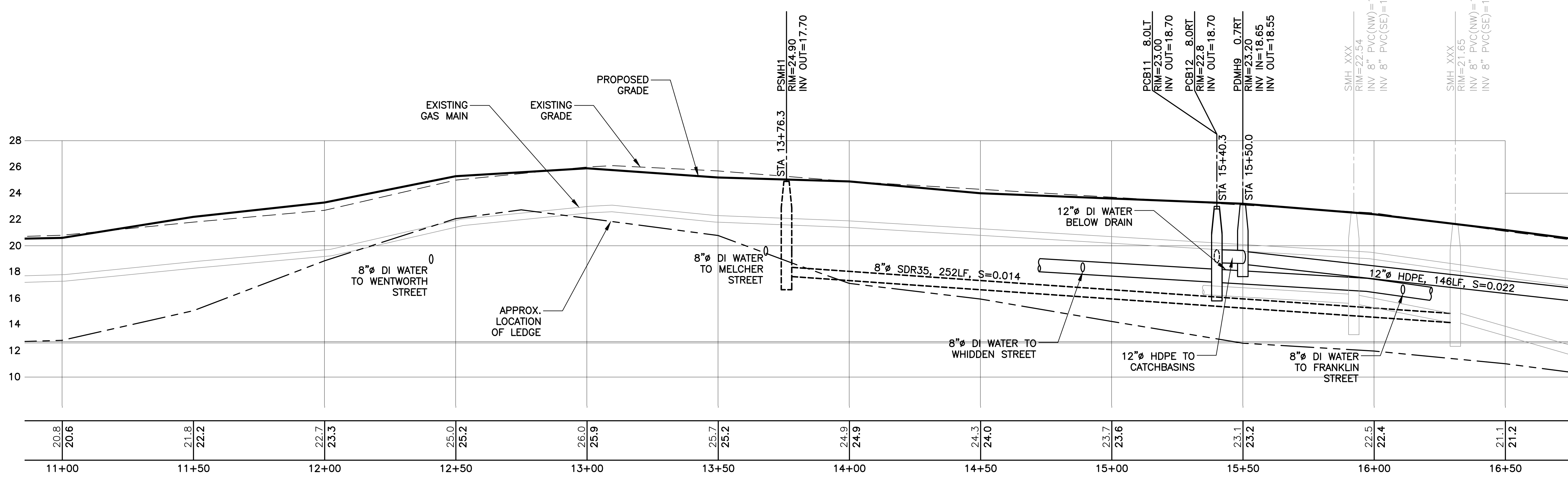
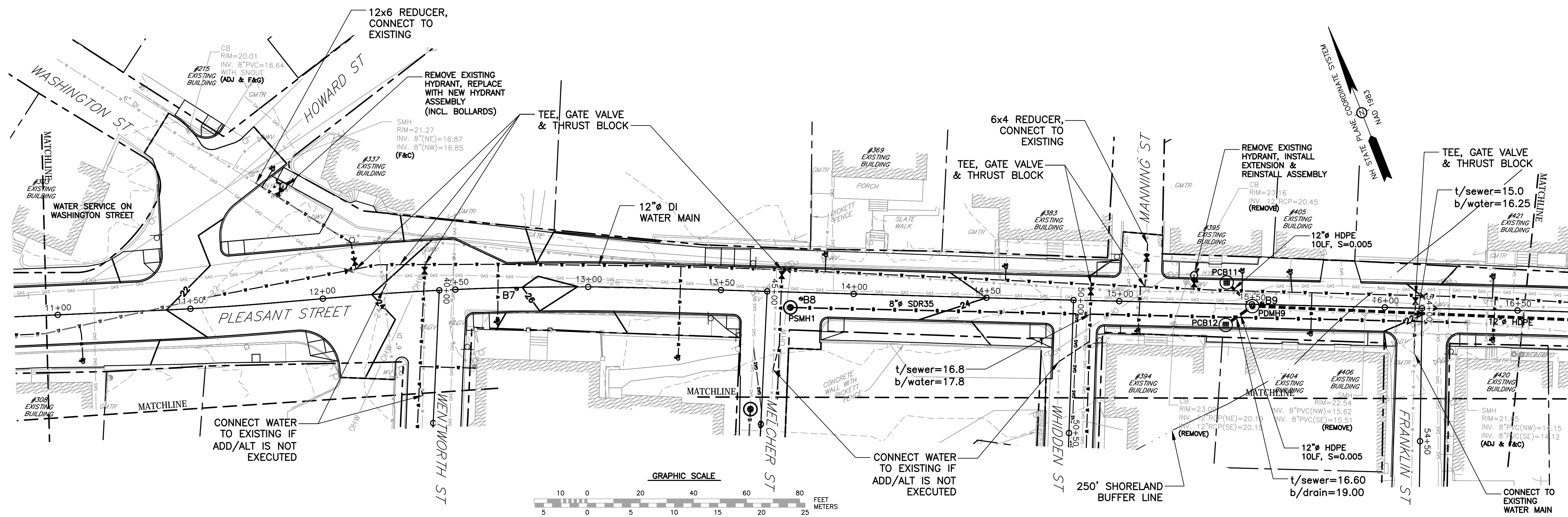
REVISIONS		DATE
0	ISSUED FOR BID	2/26/18
		MRB
		APPD

DESCRIPTION		DATE
		2/26/18
		MRB
		APPD

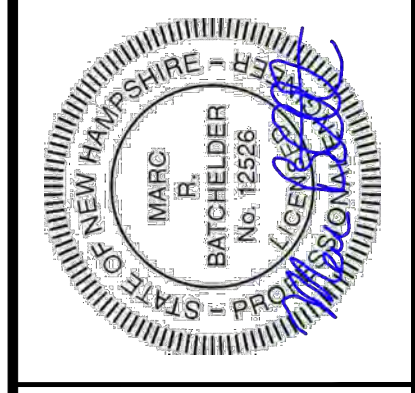
DATE: JANUARY 19, 2017
 SCALE: 1:20
 PROJECT NO.: Cop-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD

TITLE:	UTILITY and GRADING PLAN PLEASANT STREET STA. 5+50 TO STA. 11+00
FOR:	Pleasant Street Utility & Roadway Improvements Portsmouth, NH
	Seaport Engineering, LLC PORTSMOUTH, NH (603) 498-8449 www.seaporteng.com

NOTES:
1. SEE NOTES ON SHEET C-2A.



NO.	DESCRIPTION	DATE
0	ISSUED FOR BID	2/26/18

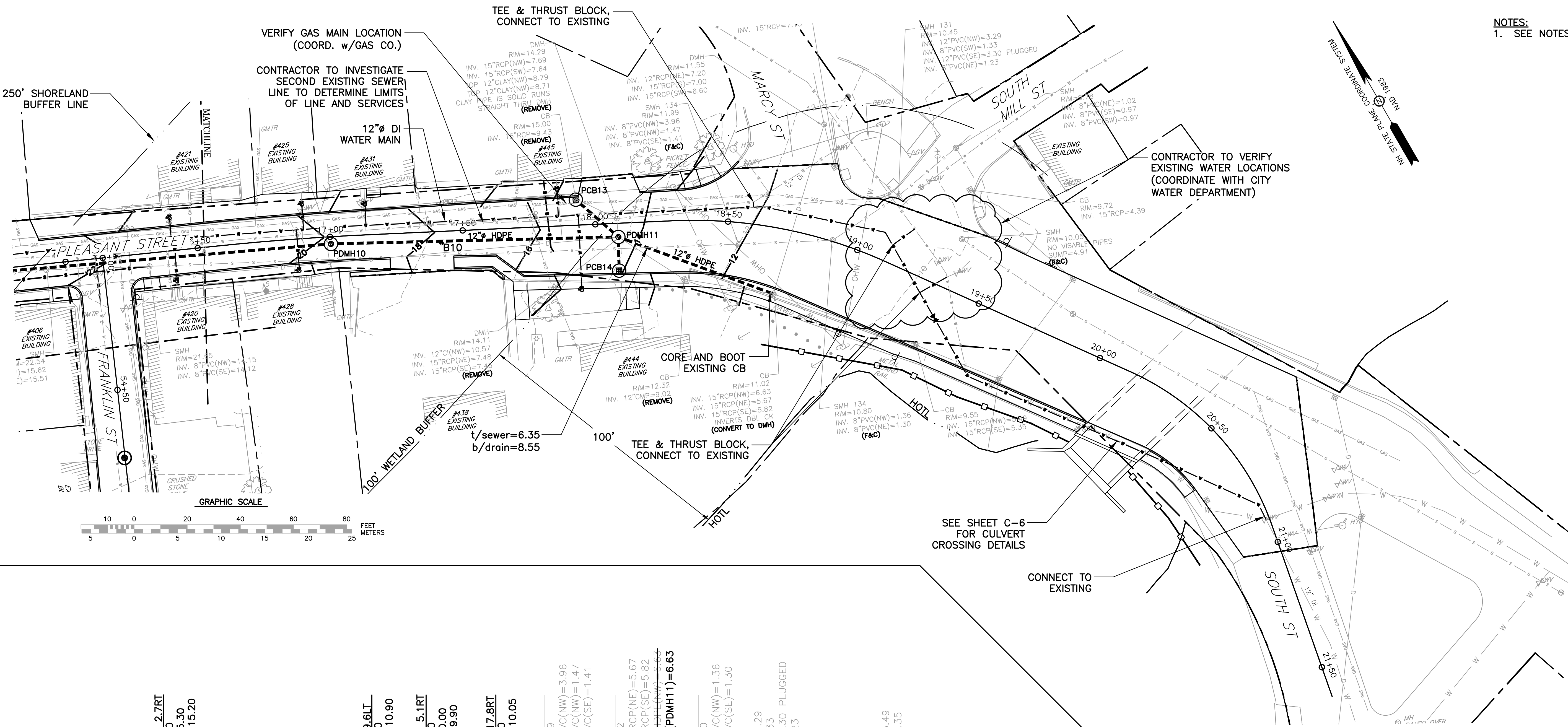


DATE: JANUARY 19, 2017
SCALE: 1:20
PROJECT NO.: C-0P-006
MARC R. BATCHELDER, PE
ENGINEER OF RECORD

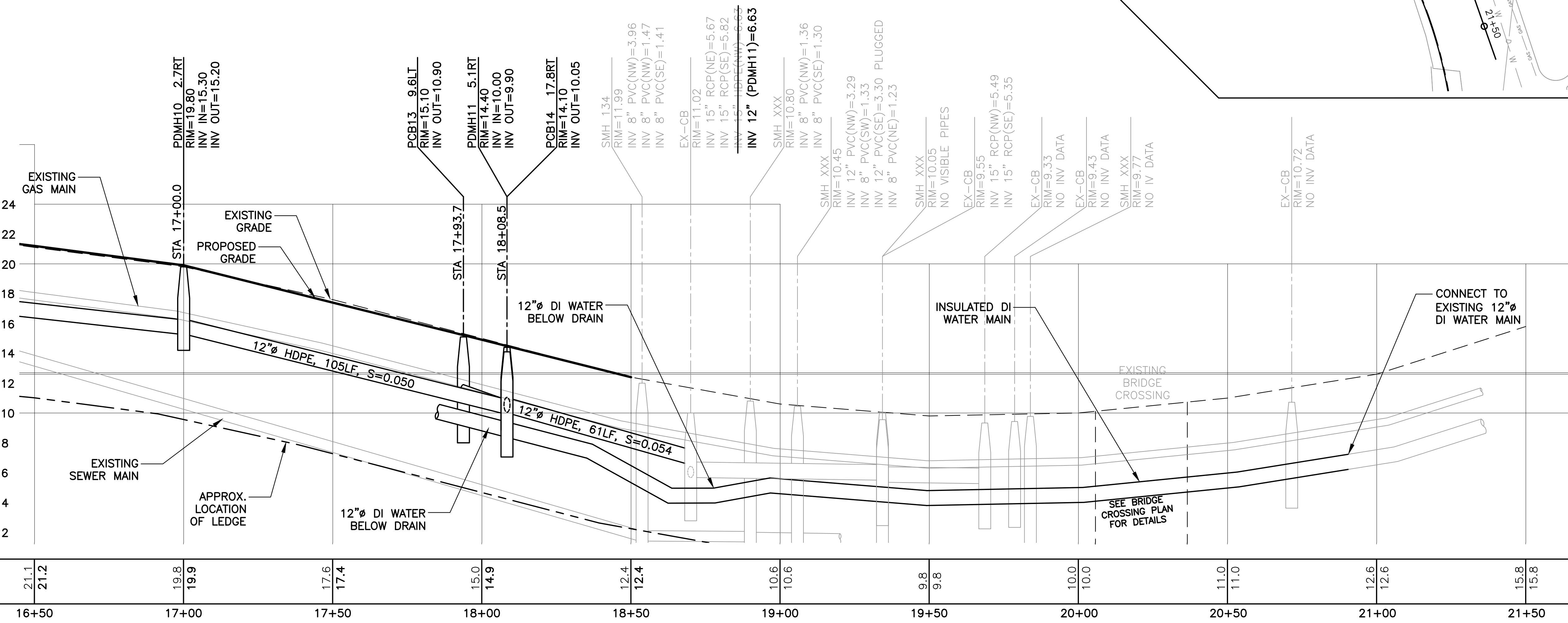
FOR:
Pleasant Street
Utility & Roadway
Improvements
Portsmouth, NH

Seaport
Engineering, LLC
PORTSMOUTH, NH
(603) 498-8449
www.seaporteng.com

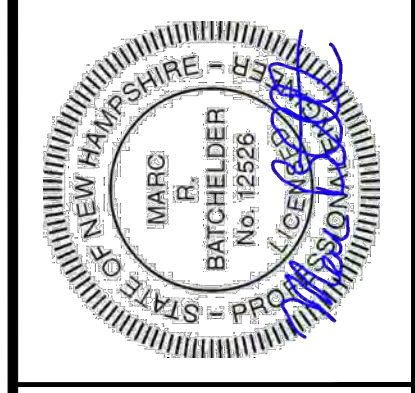
TITLE:
UTILITY and GRADING PLAN
PLEASANT STREET
STA. 11+00 TO STA. 16+50



NOTES:
1. SEE NOTES ON SHEET C-2A.



NO.	ISSUED FOR	DESCRIPTION	REVISIONS	DATE
0	ISSUED FOR BID			2/26/18



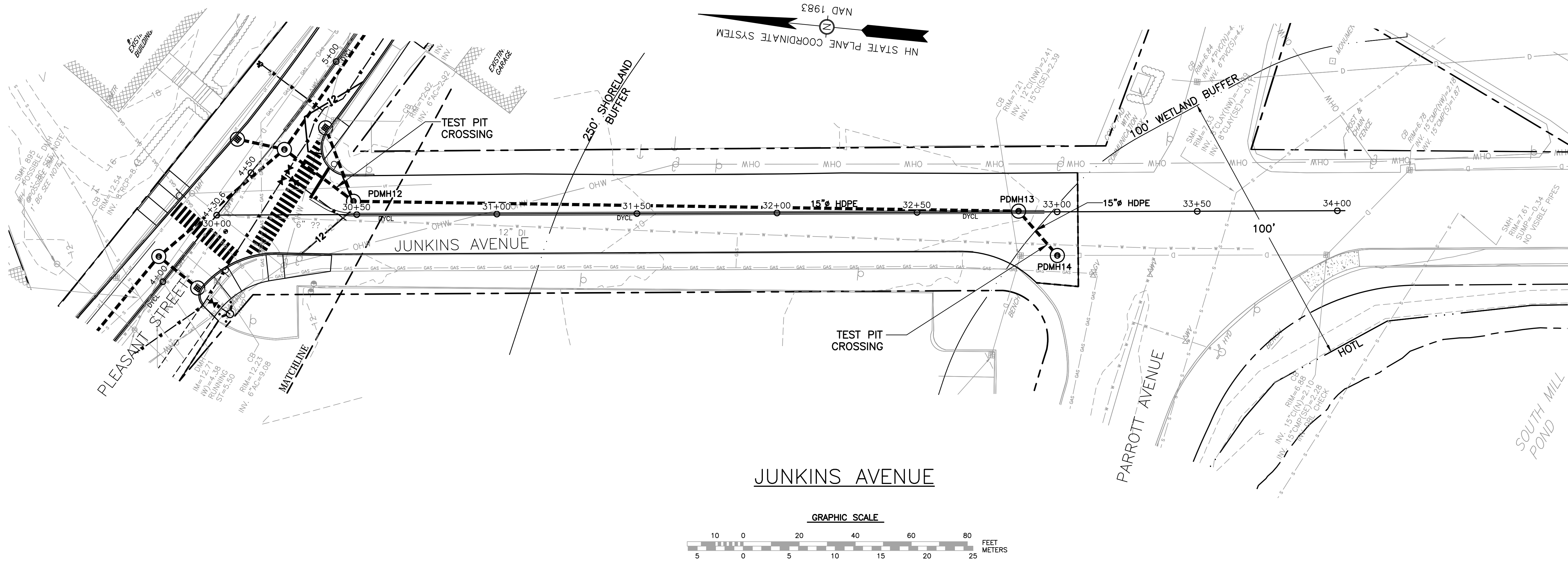
DATE: JANUARY 19, 2017
SCALE: 1:20
PROJECT NO.: Cop-006
MARC R. BATCHELDER, PE
ENGINEER OF RECORD

FOR: Pleasant Street
Utility & Roadway
Improvements
Portsmouth, NH

Seaport
Engineering, LLC
PORTSMOUTH, NH
(603) 498-8449
www.seaporteng.com

TITLE: UTILITY and GRADING PLAN
PLEASANT STREET
STA. 16+50 TO STA. 21+00

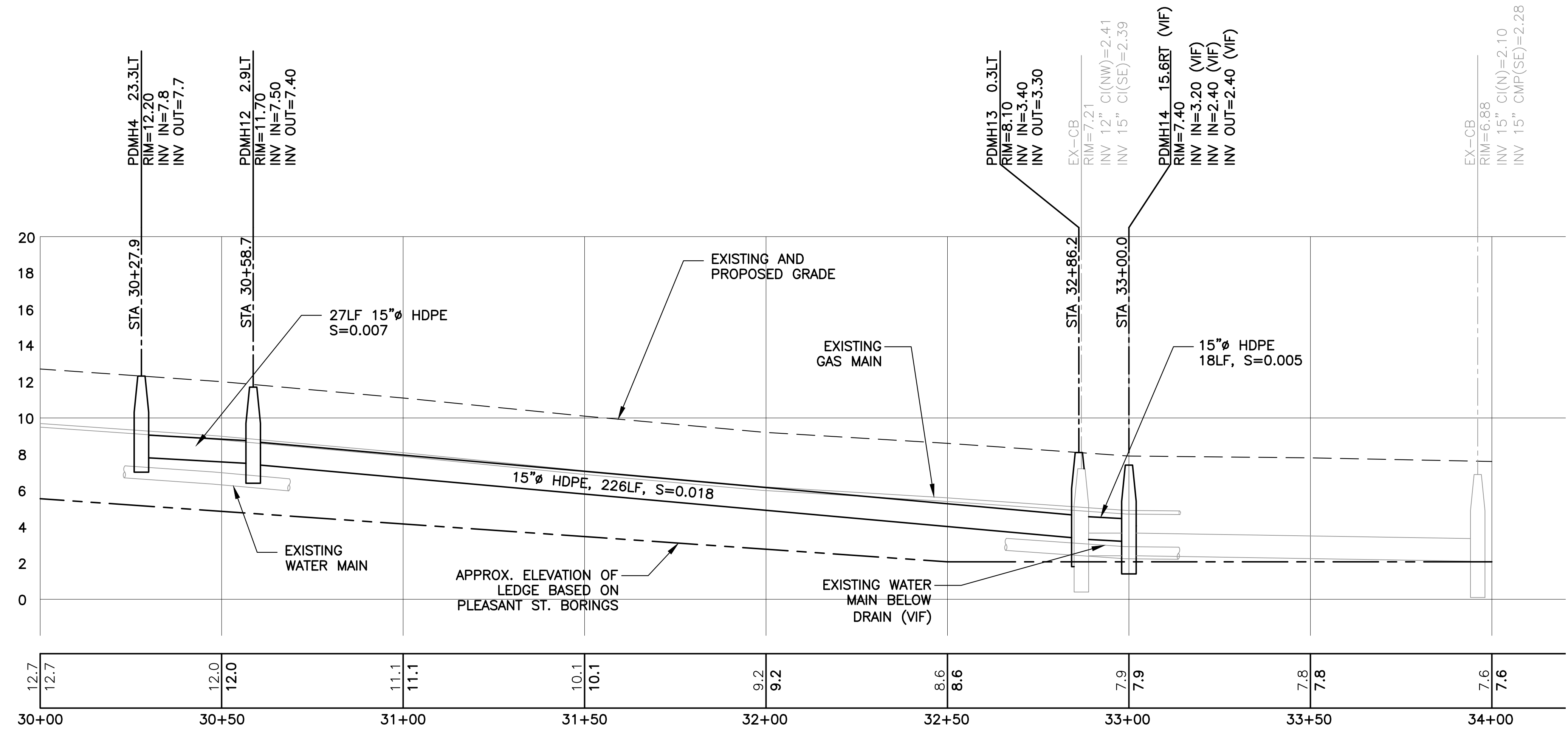
C-2D



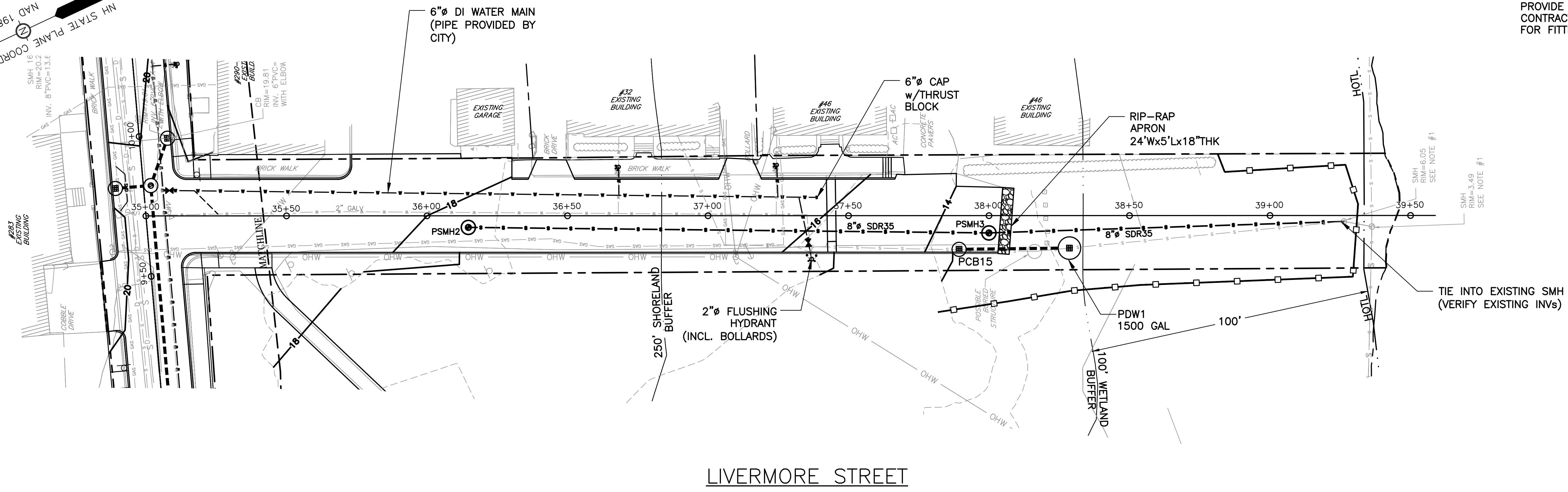
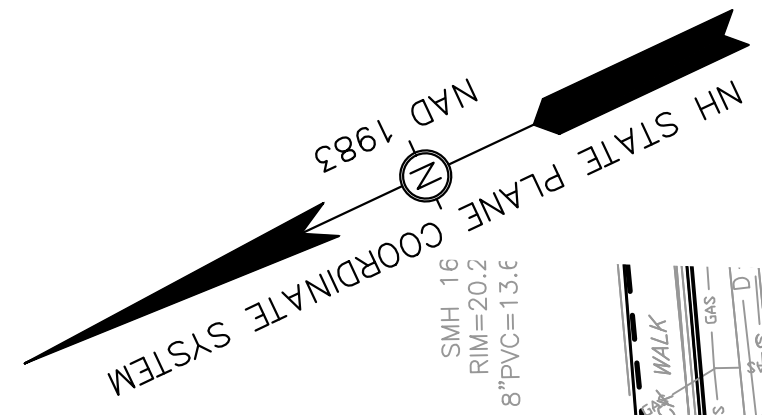
- NOTES:**
- SEE NOTES ON SHEET C-2A.
 - CONNECTIONS & ADDITIONAL PIPE REQUIRED TO INSTALL PDMH14 IS INCIDENTAL TO THE PDMH PAY ITEM.

REVISIONS		DATE
0	ISSUED FOR BID	2/26/18

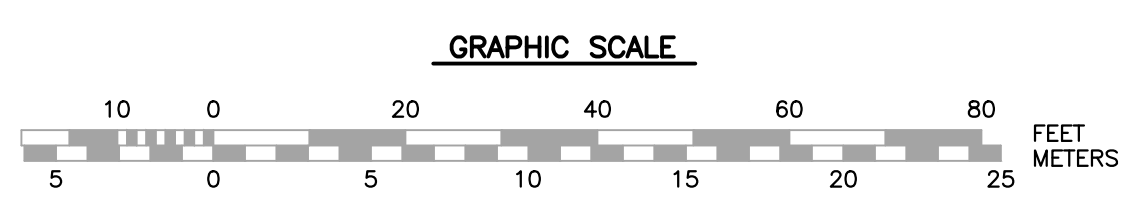
DATE: JANUARY 19, 2017	SCALE: 1:20	PROJECT NO.: CoP-006	MARC R. BATCHELDER, PE
			ENGINEER OF RECORD



TITLE:	UTILITY and GRADING PLAN JUNKINS AVENUE
FOR:	Pleasant Street Utility & Roadway Improvements Portsmouth, NH
Seaport Engineering, LLC PORTSMOUTH, NH (603) 498-8449 www.seaporteng.com	
C-2E	

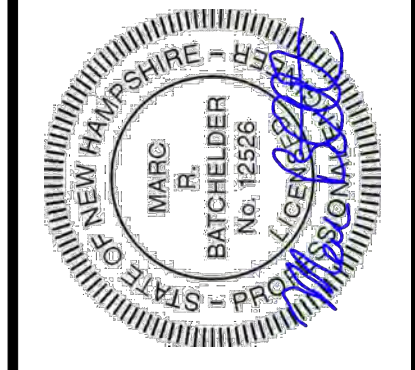


LIVERMORE STREET

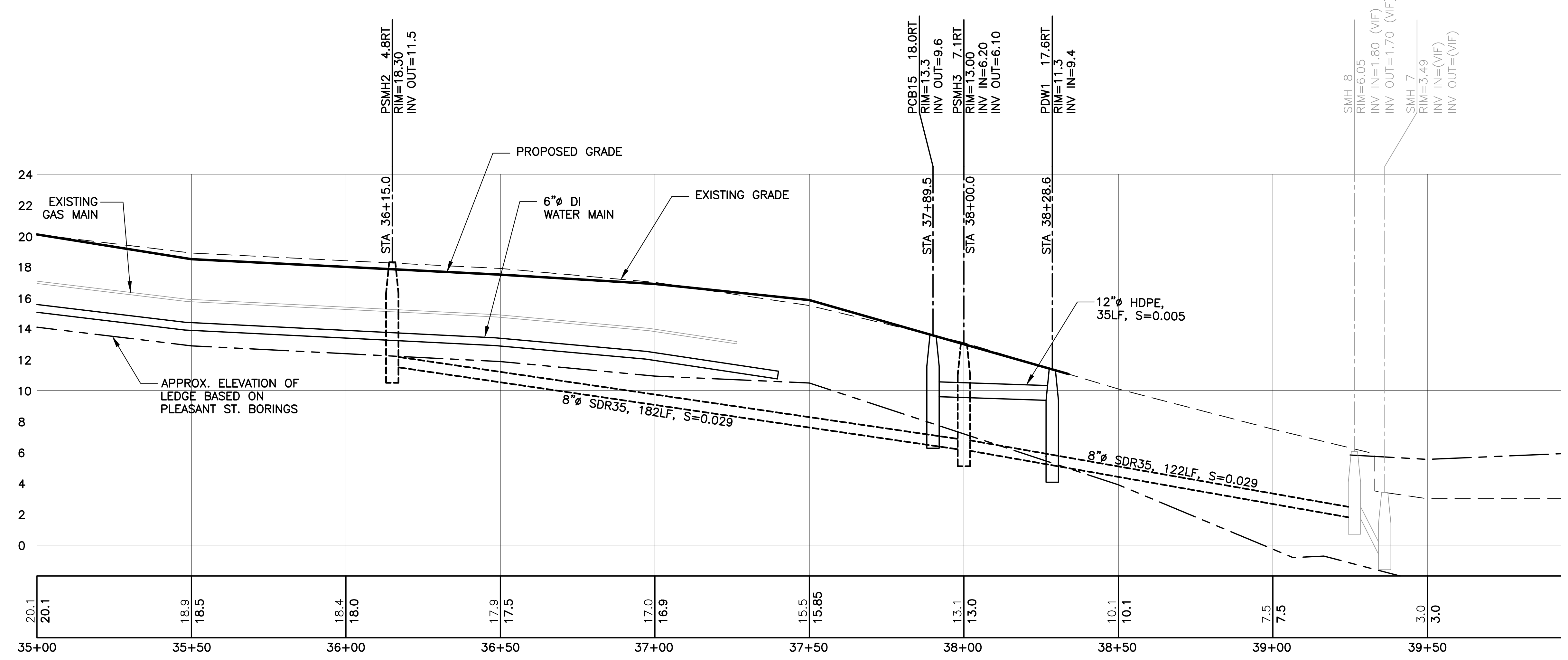


- NOTES:
 1. SEE NOTES ON SHEET C-2A.
 2. CITY OF PORTSMOUTH TO PROVIDE 6" DI PIPE. CONTRACTOR RESPONSIBLE FOR FITTINGS.

NO.	DESCRIPTION	APPD	DATE
0	ISSUED FOR BID	MRB	2/26/18



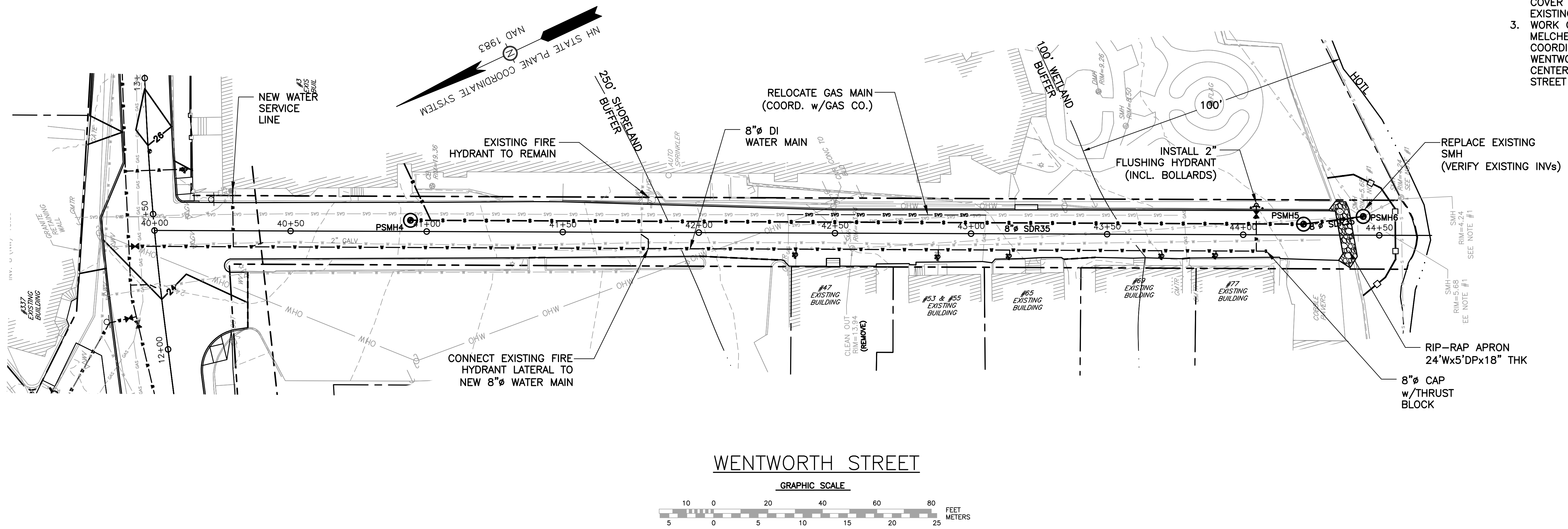
DATE: JANUARY 19, 2017
 SCALE: 1:20
 PROJECT NO.: CoP-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD



FOR:
 Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

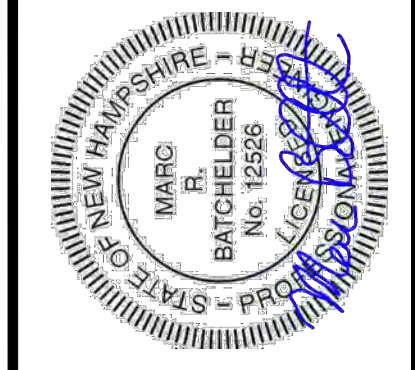
Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE:
 UTILITY and GRADING PLAN
 LIVERMORE STREET

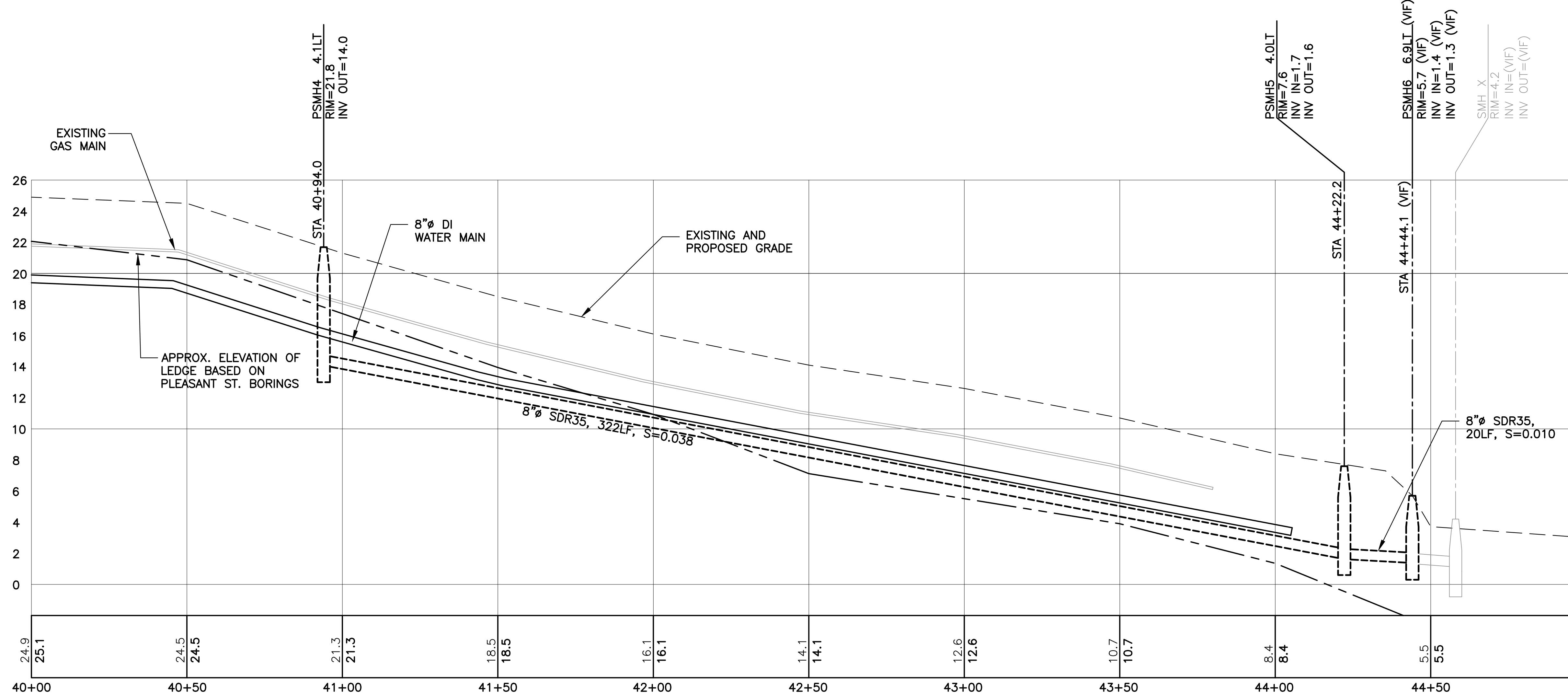


- NOTES:**
1. SEE NOTES ON SHEET C-2A.
 2. PSMH6 SHALL HAVE A SEALED AND WATER TIGHT FRAME AND COVER TO MATCH SIZE OF EXISTING.
 3. WORK ON WENTWORTH ST. & MELCHER ST. SHALL BE COORDINATED WITH THE WENTWORTH SENIOR LIVING CENTER. LIMITED TO ONE STREET AT A TIME.

NO.	DESCRIPTION	REVISIONS	DATE
0	ISSUED FOR BID	MRB	2/26/18



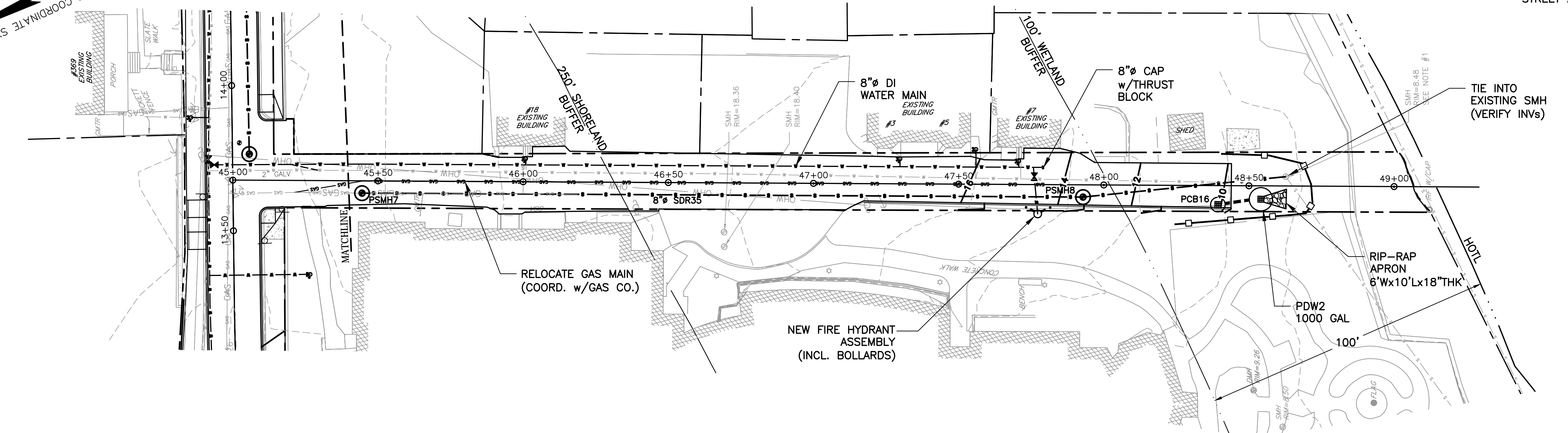
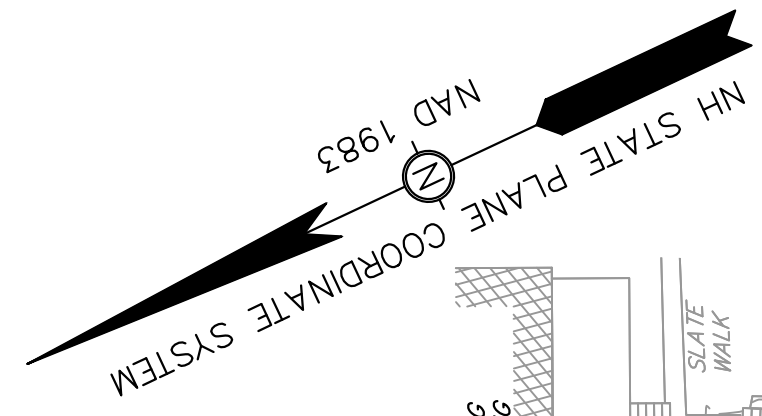
DATE: JANUARY 19, 2017
 SCALE: 1:20
 PROJECT NO.: CoP-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD



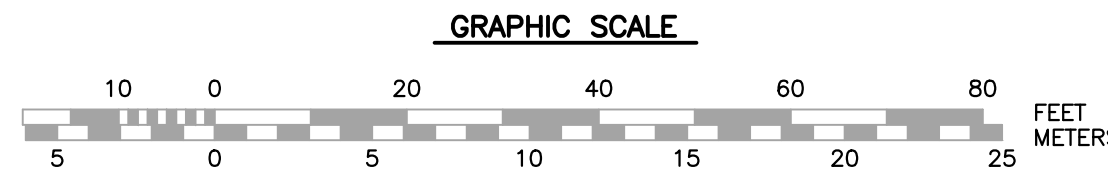
FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE: UTILITY and GRADING PLAN
 WENTWORTH STREET

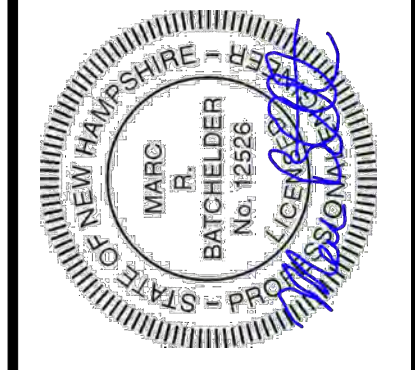


MELCHER STREET

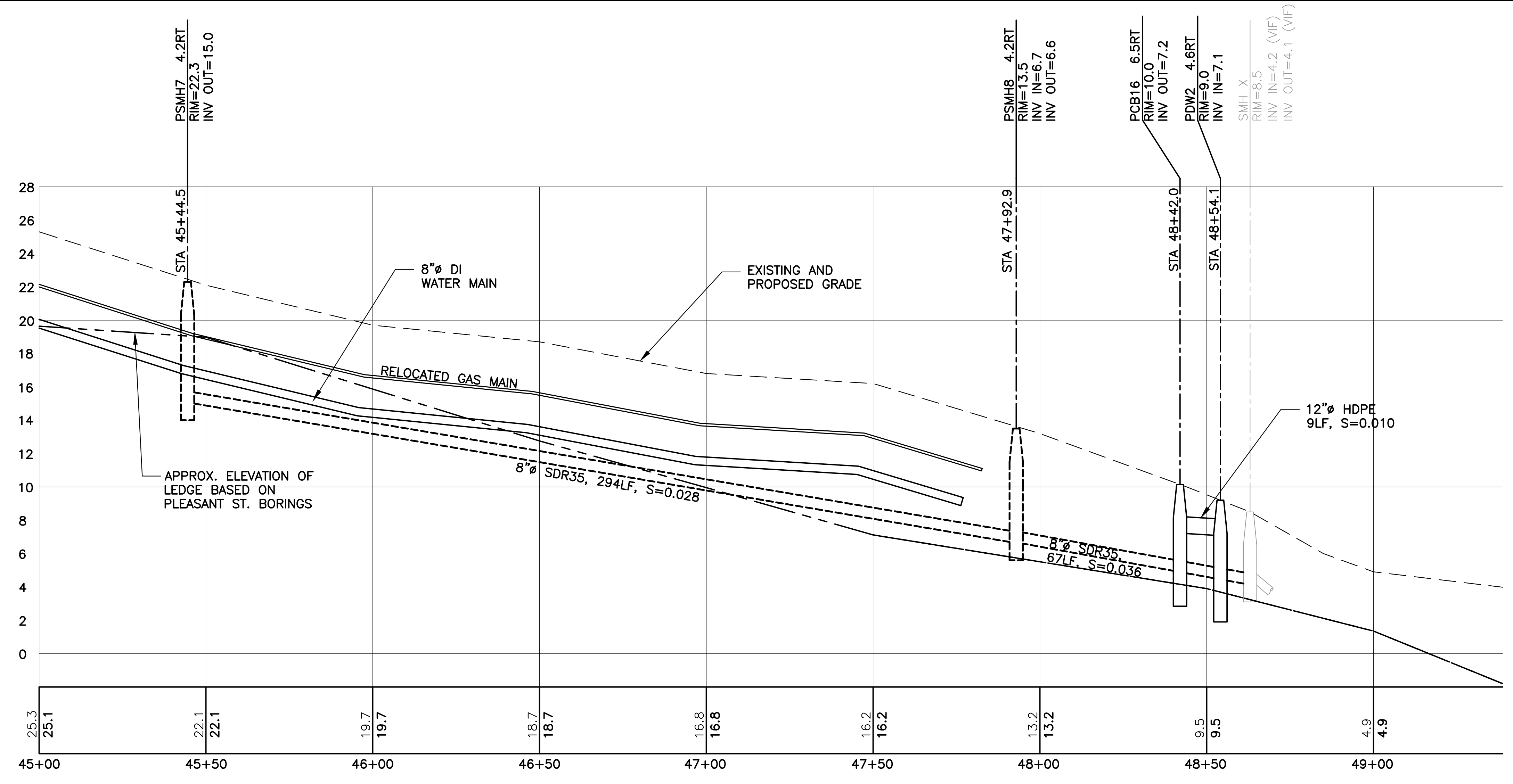


- NOTES:
 1. SEE NOTES ON SHEET C-2A.
 2. WORK ON WENTWORTH ST. & MELCHER ST. SHALL BE COORDINATED WITH THE WENTWORTH SENIOR LIVING CENTER. LIMITED TO ONE STREET AT A TIME.

NO.	DESCRIPTION	APPD	DATE
0	ISSUED FOR BID	MRB	2/26/18



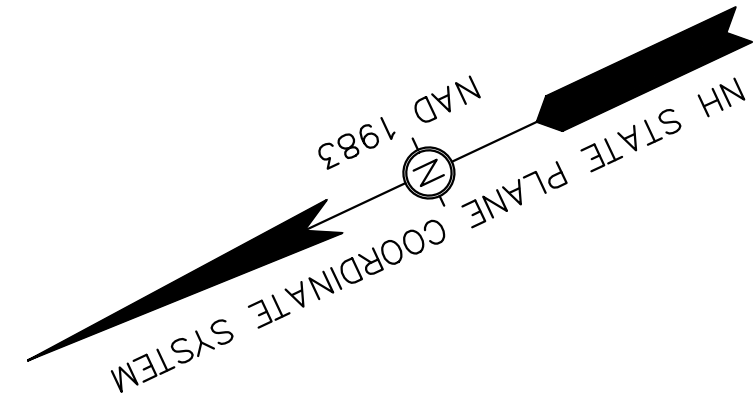
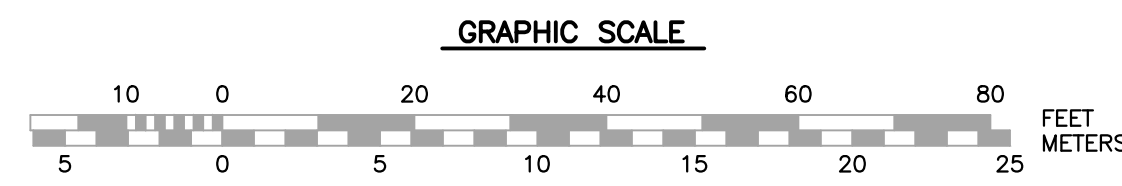
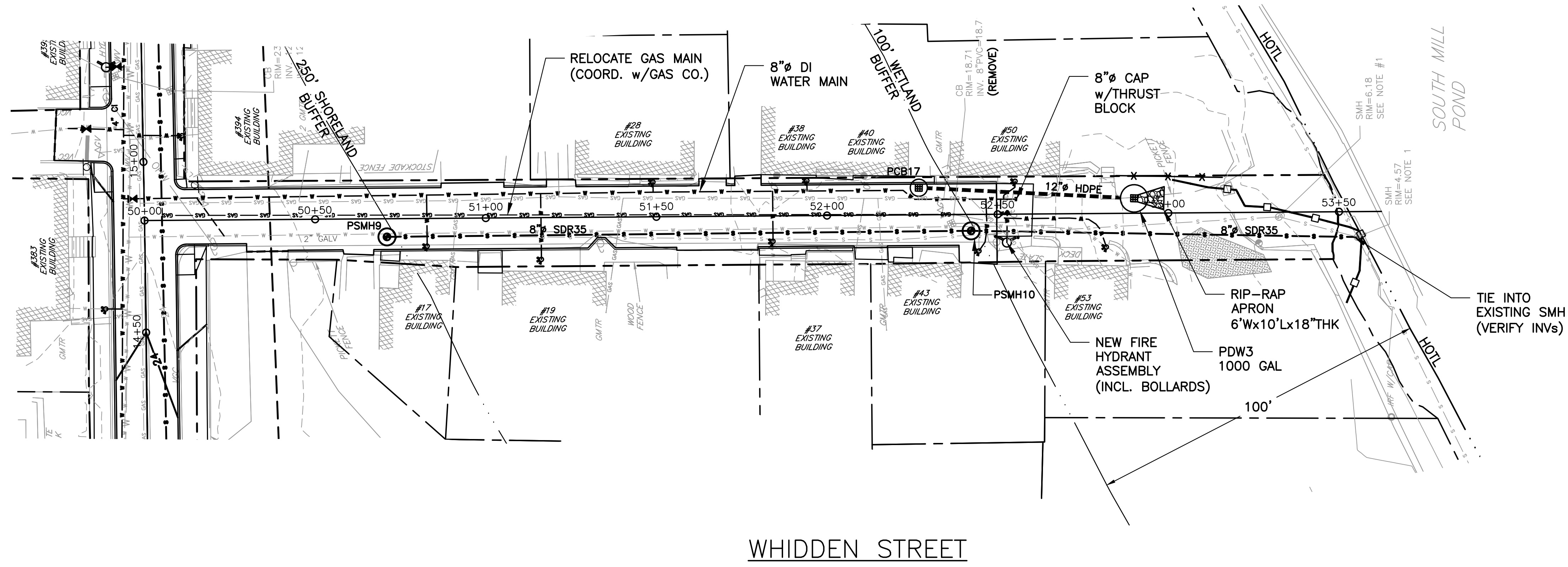
DATE: JANUARY 19, 2017
 SCALE: 1:20
 PROJECT NO.: CoP-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD



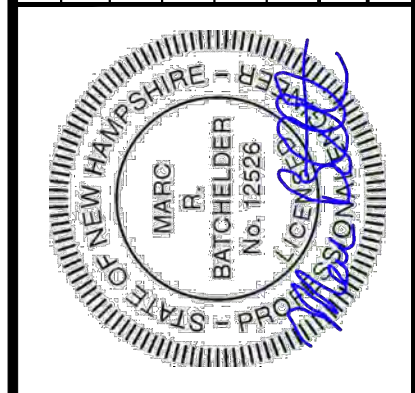
FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

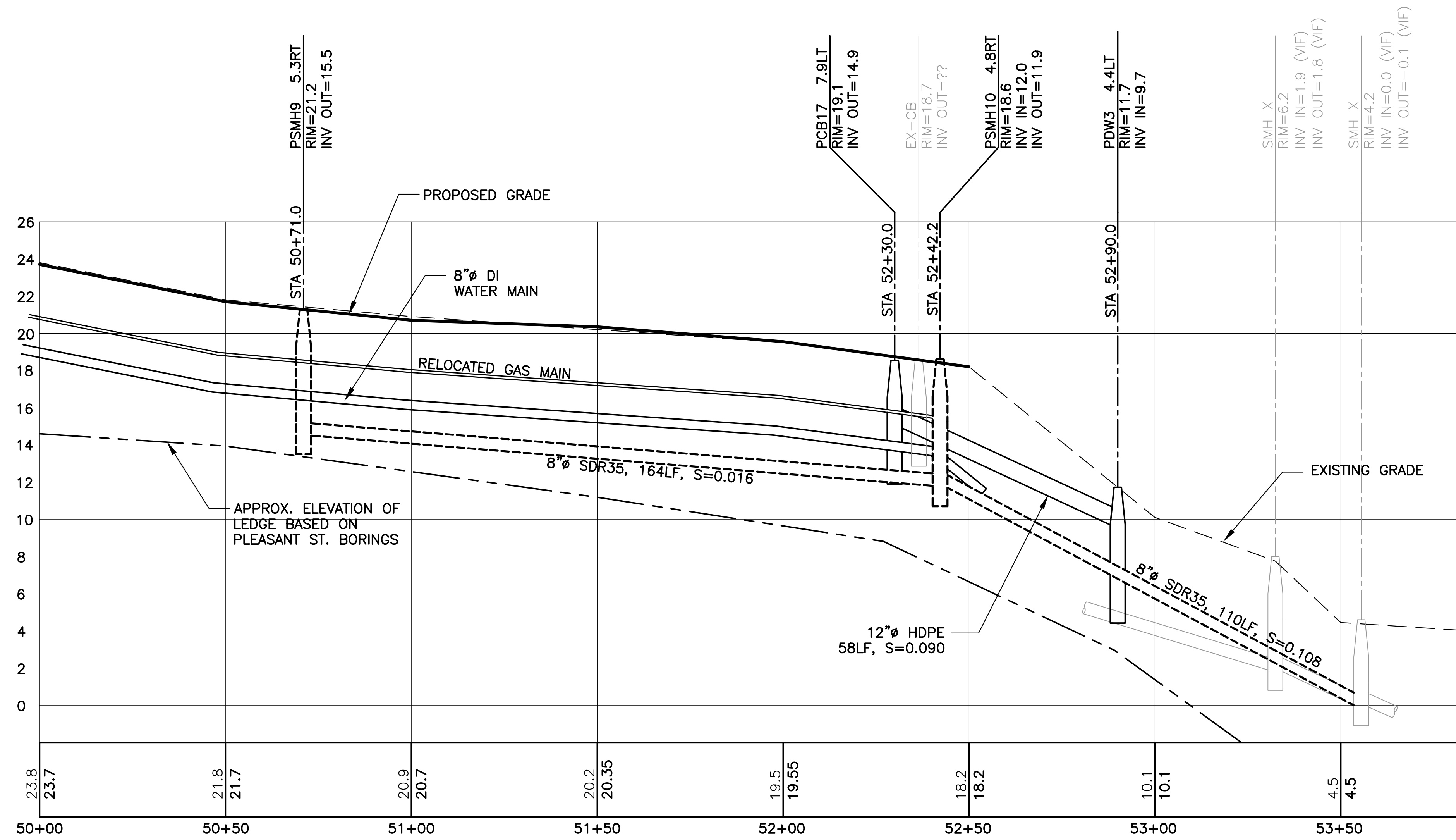
TITLE: UTILITY and GRADING PLAN
 MELCHER STREET



NO.	DESCRIPTION	APPD	DATE
0	ISSUED FOR BID	MRB	2/26/18



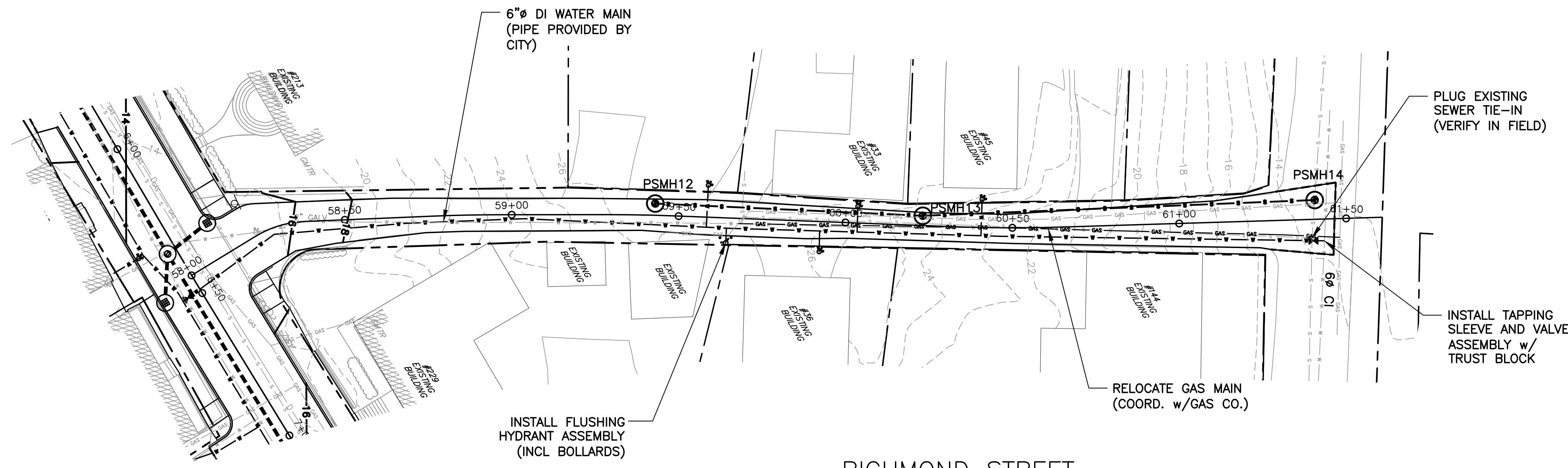
DATE: JANUARY 19, 2017
 SCALE: 1:20
 PROJECT NO.: CoP-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD



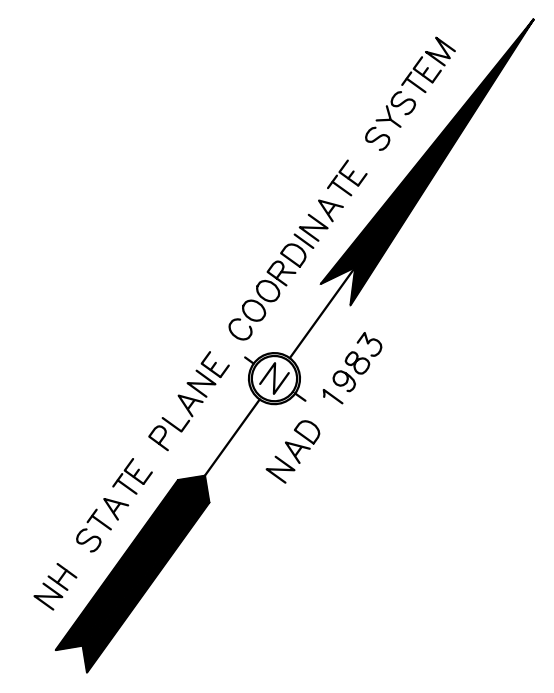
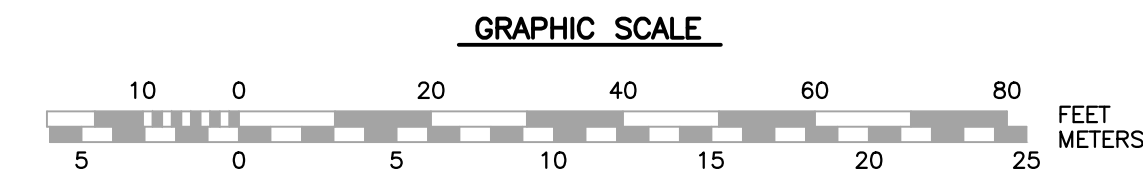
FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE: UTILITY and GRADING PLAN
 WHIDDEN STREET

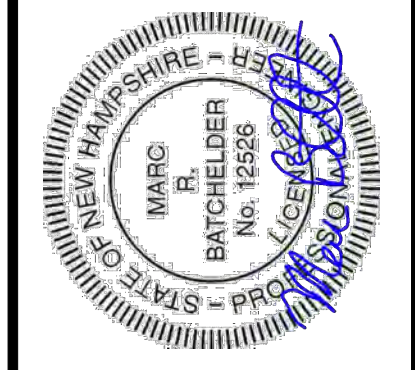


RICHMOND STREET

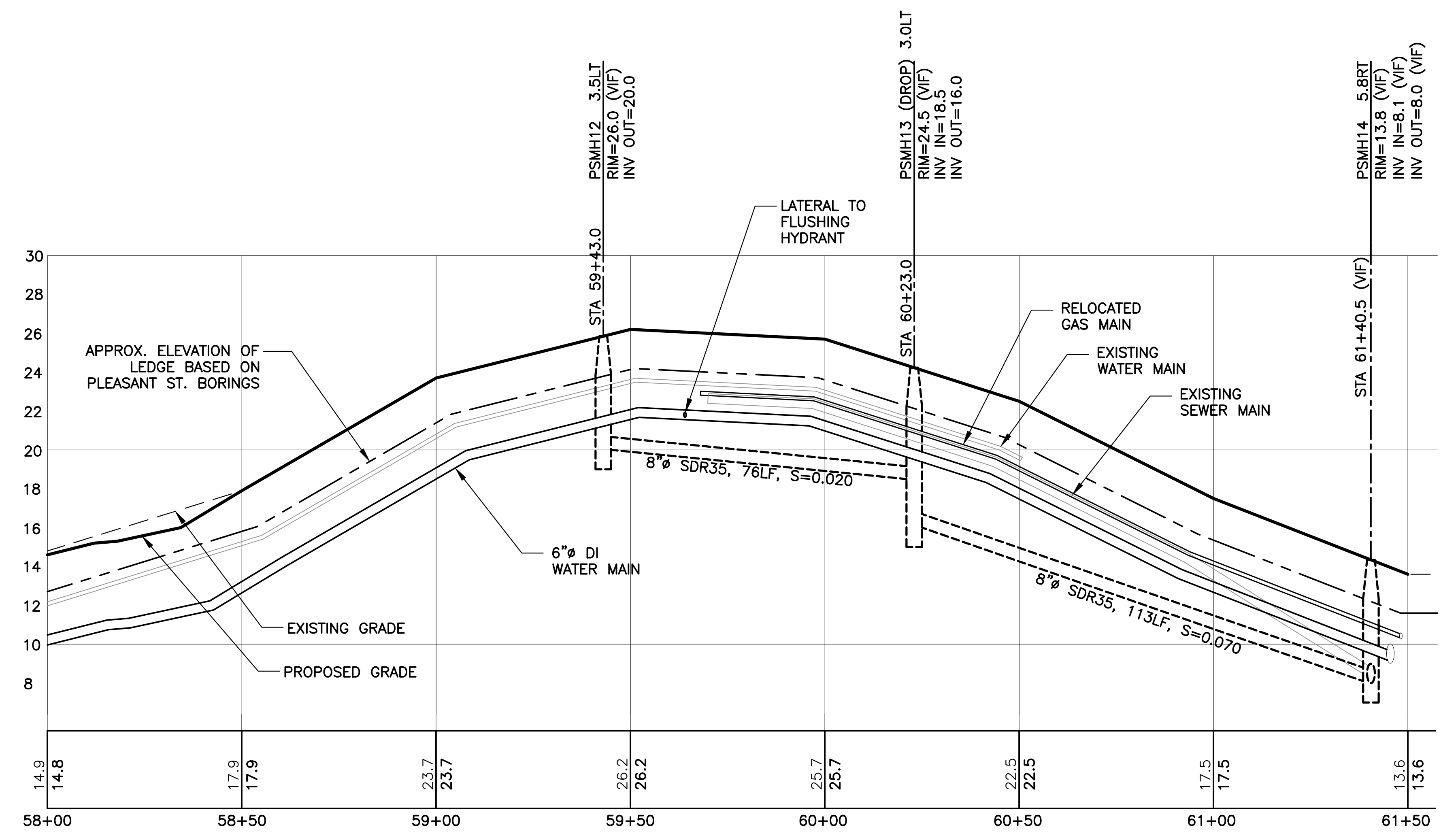


- NOTES:
1. SEE SHEET C-2A NOTES.
 2. CITY OF PORTSMOUTH TO PROVIDE 6"Ø DI PIPE. CONTRACTOR RESPONSIBLE FOR ALL OTHER ITEMS.

NO.	DESCRIPTION	REVISIONS	APPD	DATE
0	ISSUED FOR BID		MRB	2/26/18



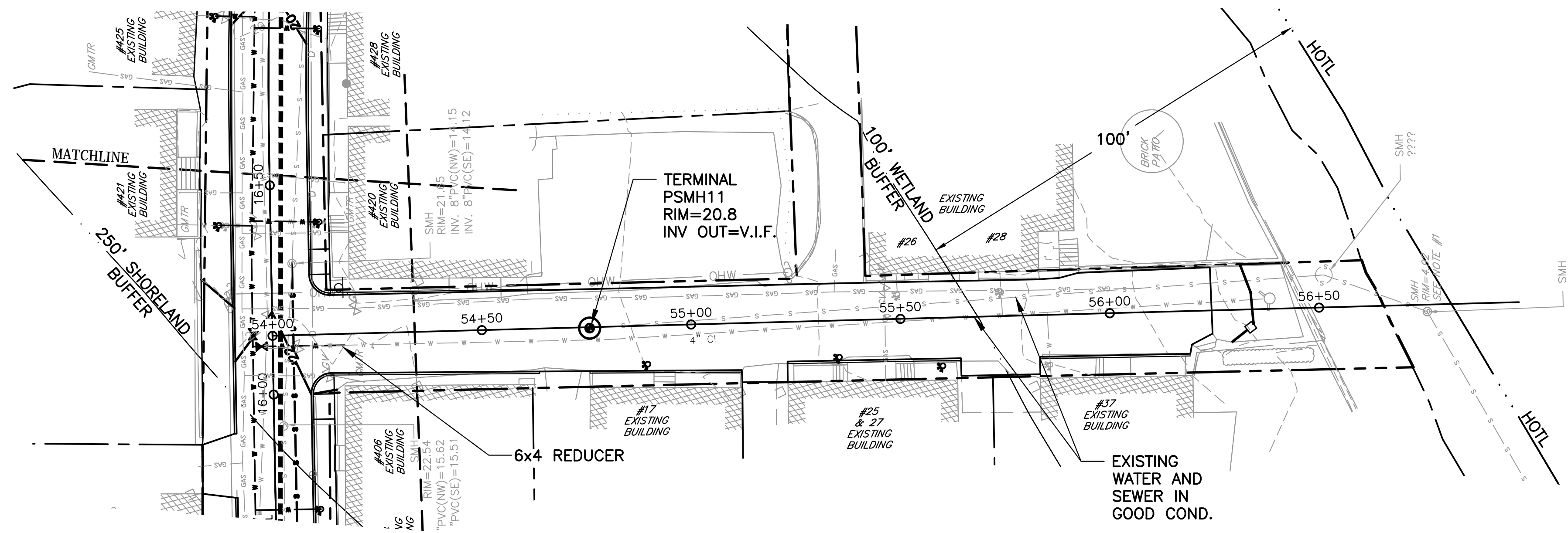
DATE: JANUARY 19, 2017
 SCALE: 1:20
 PROJECT NO.: CoP-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD



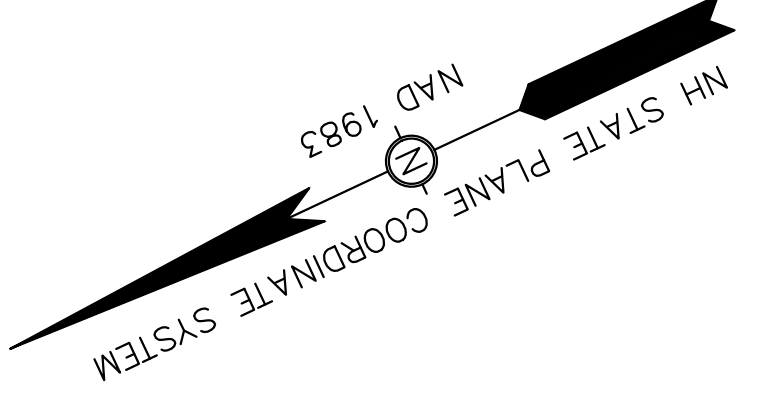
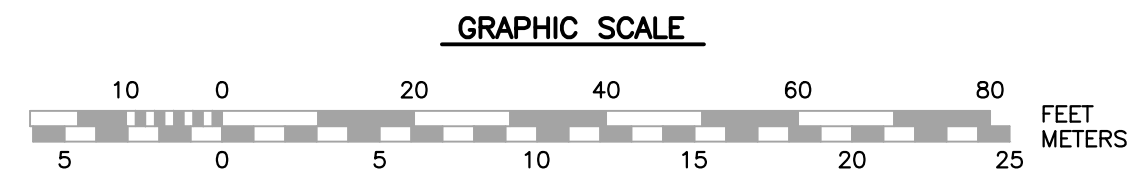
FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE: UTILITY and GRADING PLAN
 RICHMOND STREET

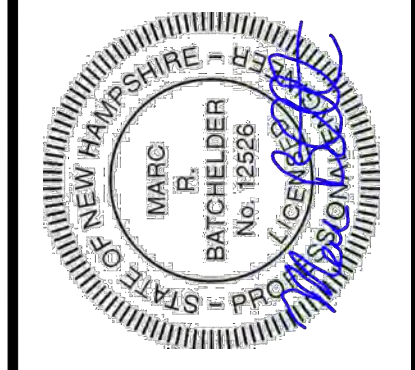


FRANKLIN STREET



- NOTES:**
- SEE SHEET C-2A NOTES.
 - CITY OF PORTSMOUTH TO PROVIDE 6"Ø DI PIPE. CONTRACTOR RESPONSIBLE FOR ALL OTHER ITEMS.

NO.	DESCRIPTION	APPD	DATE
0	ISSUED FOR BID	MRB	2/26/18



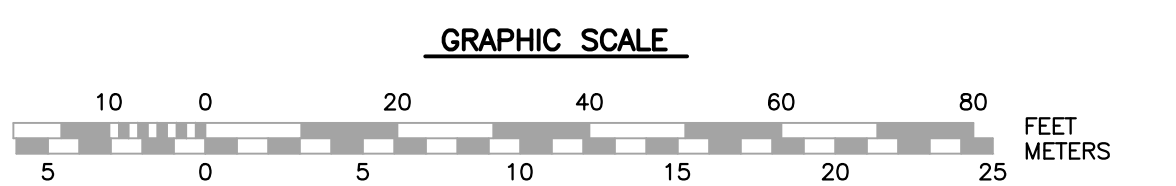
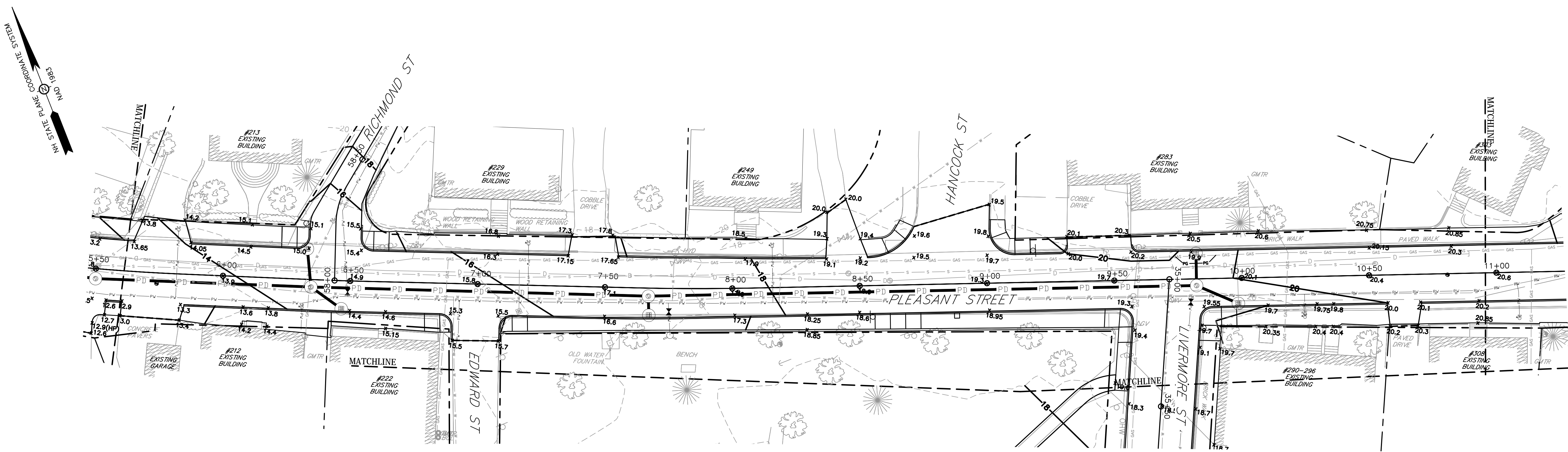
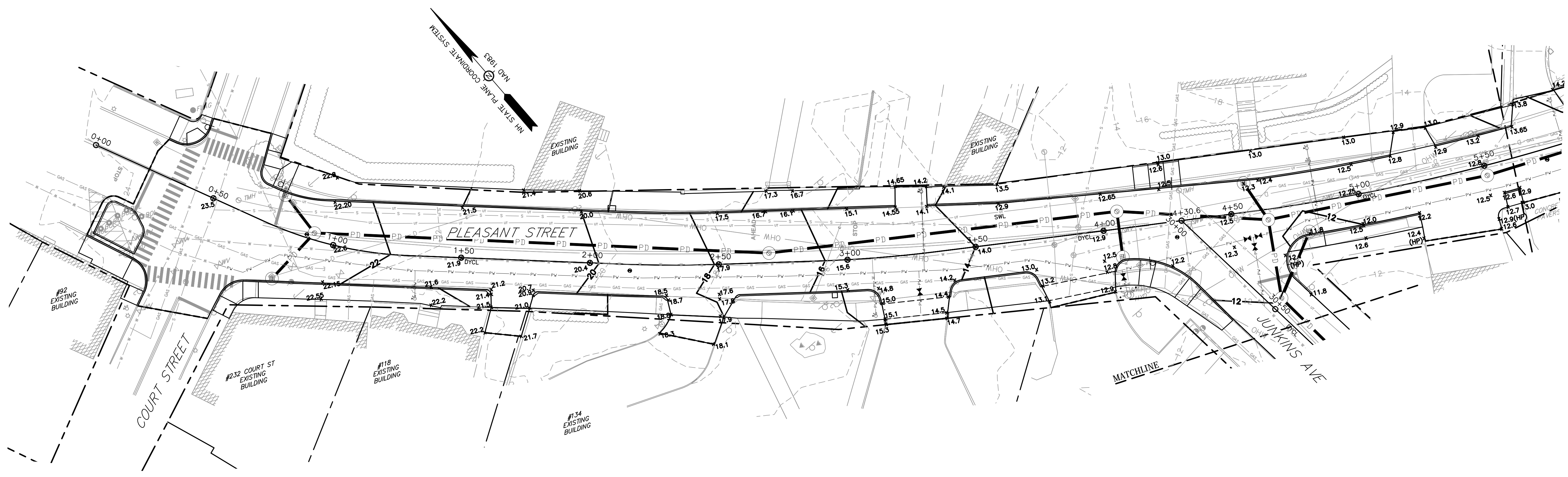
DATE: JANUARY 19, 2017
 SCALE: 1:20
 PROJECT NO.: CoP-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD

FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

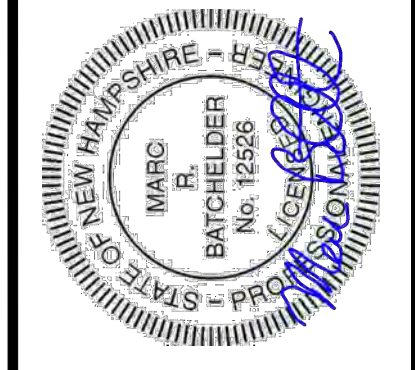
Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE: UTILITY and GRADING PLAN
 FRANKLIN STREET

C-2L



NO.	DESCRIPTION	REVISIONS
0	ISSUED FOR BID	



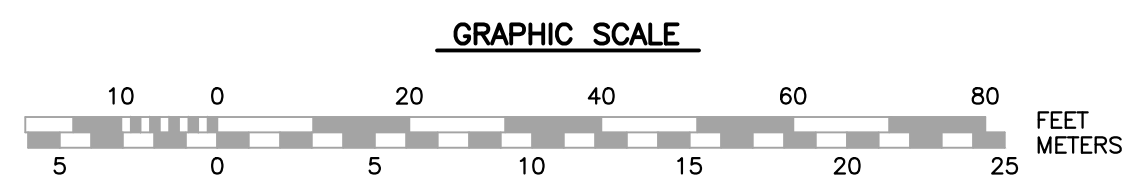
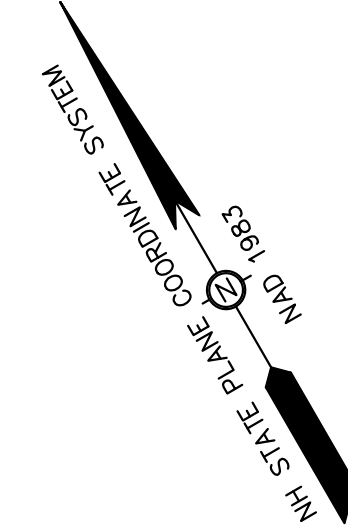
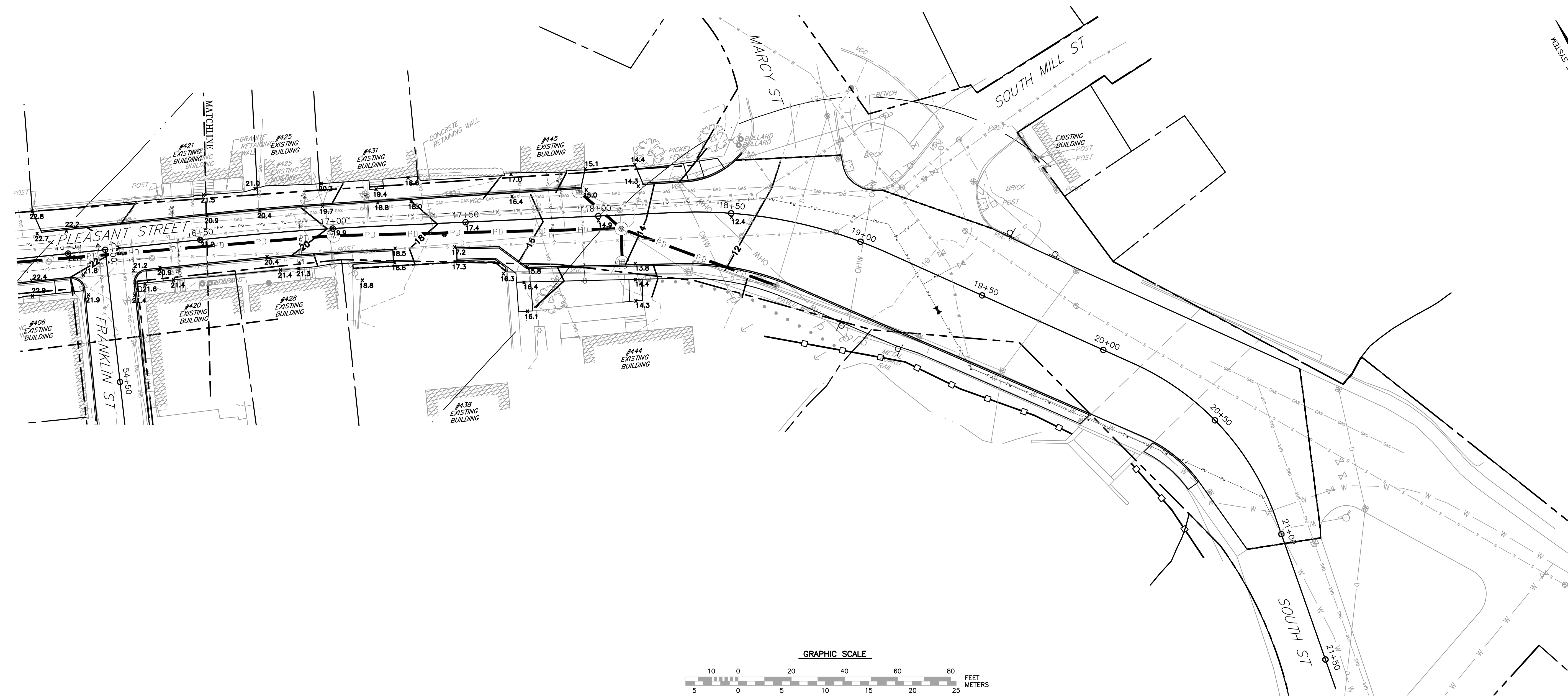
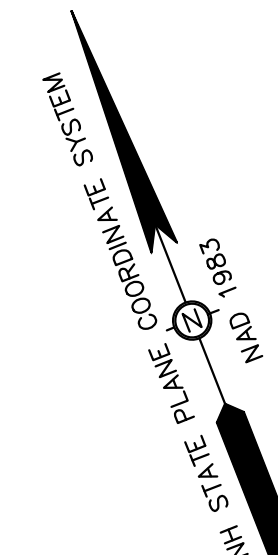
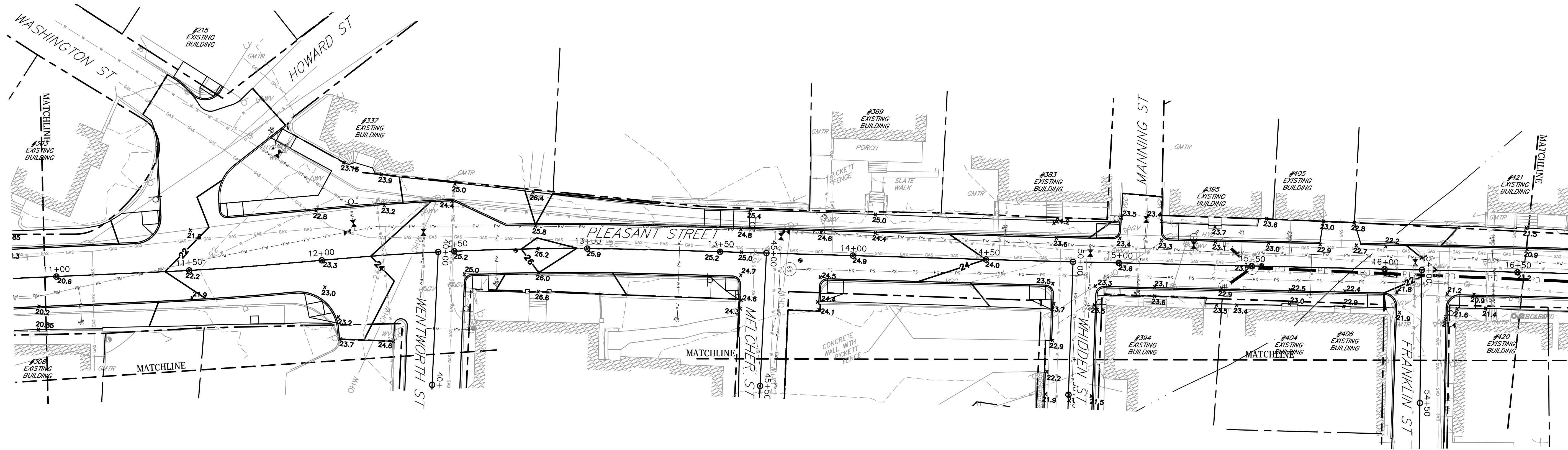
DATE: JANUARY 19, 2017
 SCALE: 1:20
 PROJECT NO.: CoP-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD

FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

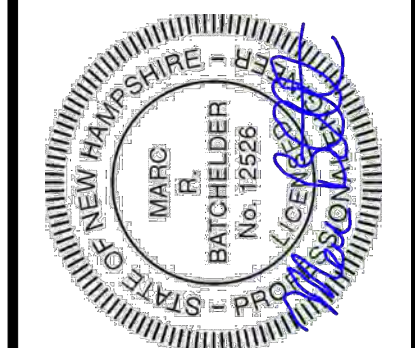
Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE: DETAILED GRADING PLAN
 PLEASANT STREET
 STA. 0+00 TO STA. 11+00

C-3A



REVISIONS	
NO.	DESCRIPTION
0	ISSUED FOR BID
MRB	2/26/18
APPD	DATE



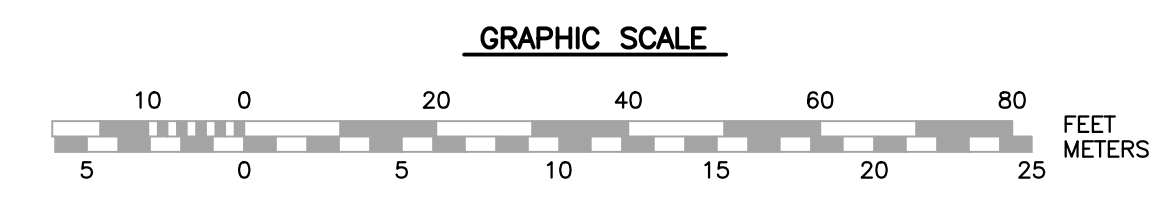
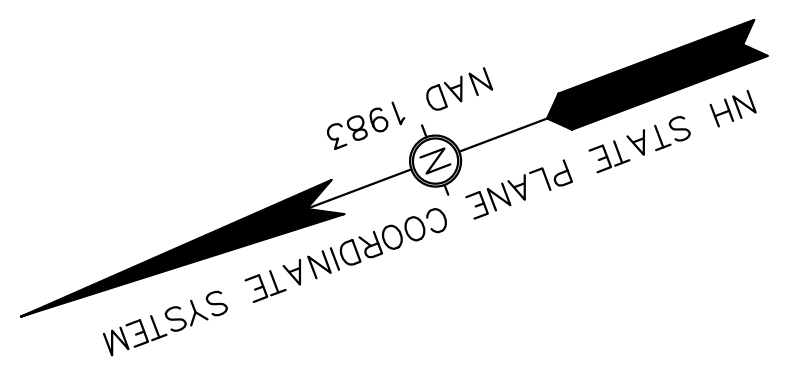
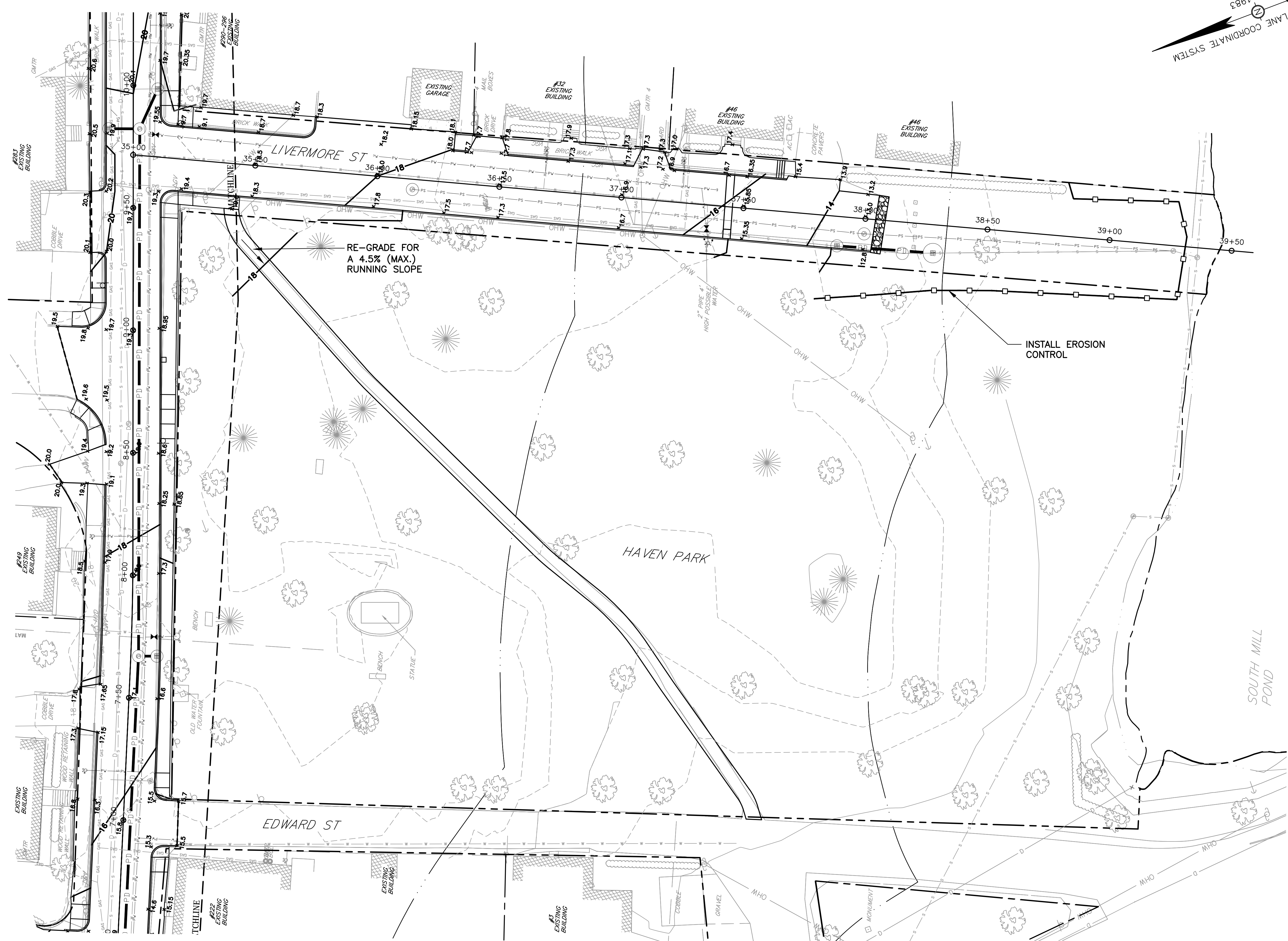
DATE: JANUARY 19, 2017
 SCALE: 1:20
 PROJECT NO.: Cop-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD

FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

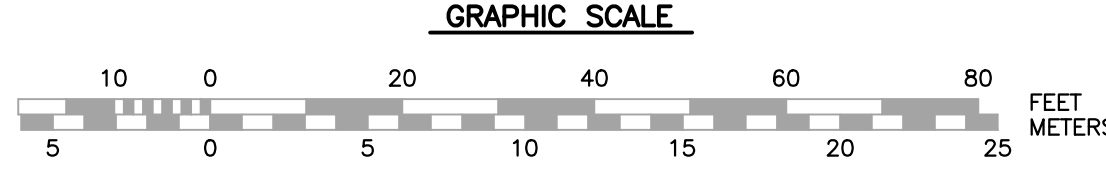
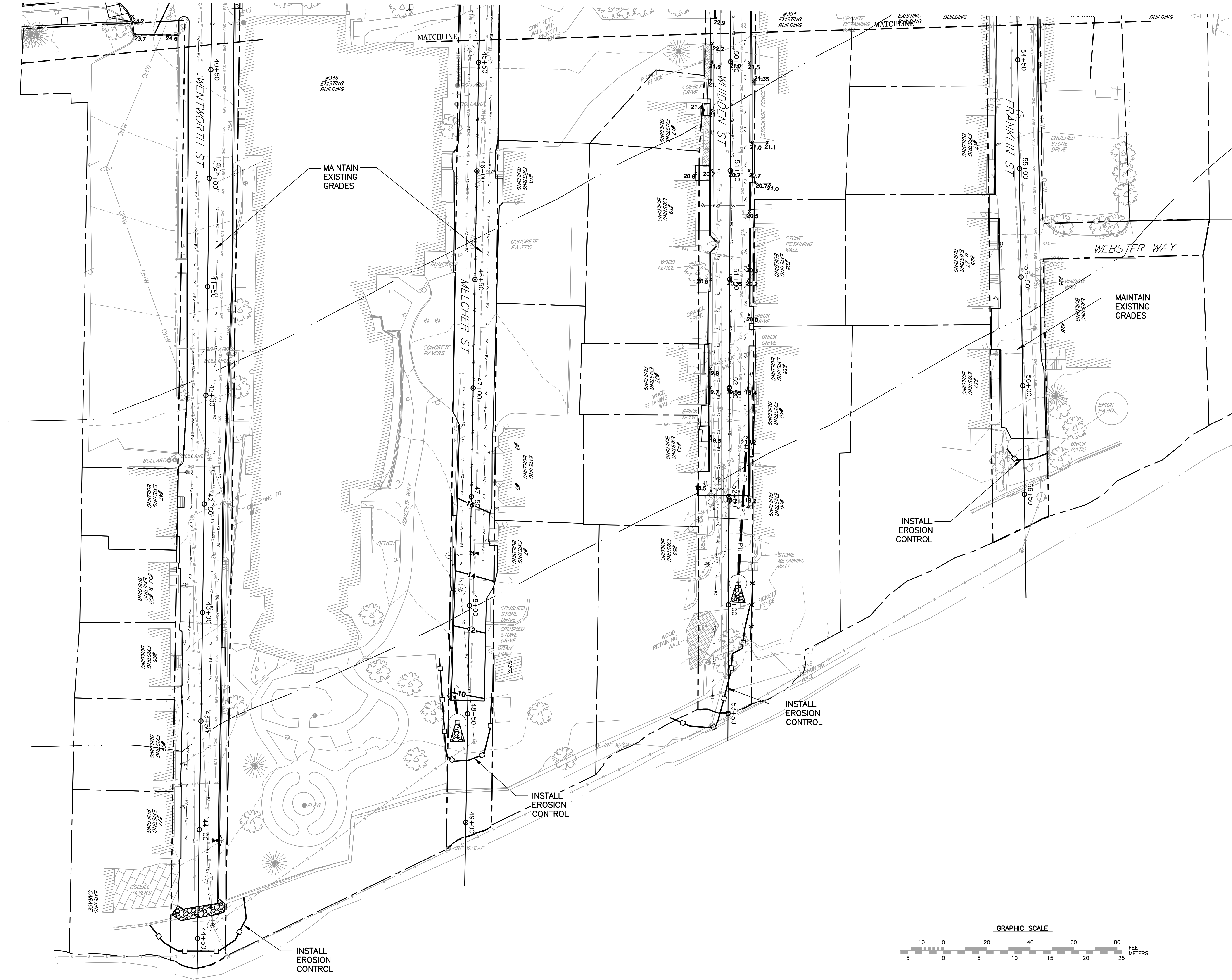
TITLE: DETAILED GRADING PLAN
 PLEASANT STREET
 STA. 11+00 TO STA. 16+50

C-3B

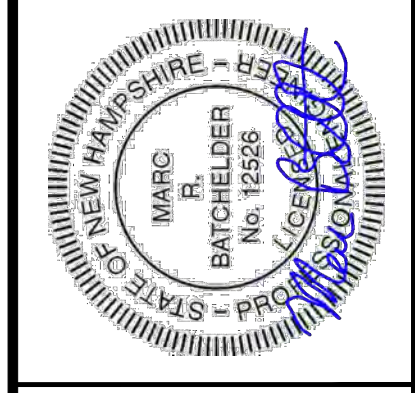


TITLE: DETAILED GRADING PLAN EDWARD STREET, HAVEN PARK, and LIVERMORE STREET	FOR: Pleasant Street Utility & Roadway Improvements Portsmouth, NH	DATE: JANUARY 19, 2017 SCALE: 1:20 PROJECT NO.: CoP-006 MARC R. BATCHELDER, PE ENGINEER OF RECORD		NO. 0	ISSUED FOR BID	DESCRIPTION	REVISIONS	APPD MRB	DATE 2/26/18

NH STATE PLANE COORDINATE SYSTEM
 NAD 1983



NO.	DESCRIPTION	APPD	DATE
0	ISSUED FOR BID	MRB	2/26/18



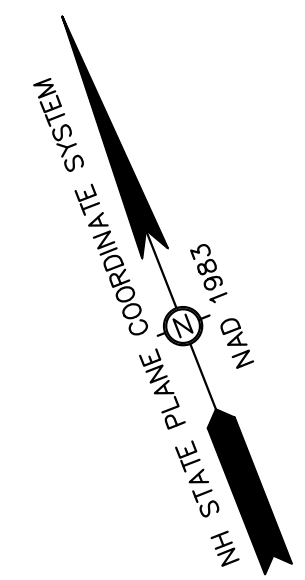
DATE: JANUARY 19, 2017
 SCALE: 1:20
 PROJECT NO.: Cop-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD

FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE: DETAILED GRADING PLAN
 WENTWORTH ST., MELCHER ST.,
 WHIDDEN ST. & FRANKLIN ST.

C-3D



LEGEND

- W — W — EXISTING WATER MAIN
- W — W — PROPOSED TEMPORARY WATER MAIN
- W — W — PROPOSED PERMANENT WATER MAIN

NOTES:

1. THIS PLAN IS PROVIDED AS A SUGGESTED SEQUENCING AND LAYOUT OF TEMPORARY WATER. THE CONTRACTOR SHALL PROVIDE A PLAN TO THE CITY FOR APPROVAL PRIOR TO COMMENCING WORK.
2. CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES TO ALL BUILDINGS AND FIRE HYDRANTS.
3. CONTRACTOR TO COORDINATE WATER SHUT-DOWNS WITH RESIDENCE AND BUILDING OWNERS.

PHASE 4
RICHMOND ST
2" DIA.

TIE-IN
LOCATION

PHASE 1
EDWARDS ST TO
WENTWORTH ST
8" DIA.

TIE-IN
LOCATION

PHASE 5
WENTWORTH ST
6" DIA.

PHASE 6
MELCHER ST
2" DIA.

PHASE 2
WASHINGTON ST
TO MARCY ST
8" DIA.

TIE-IN
LOCATION

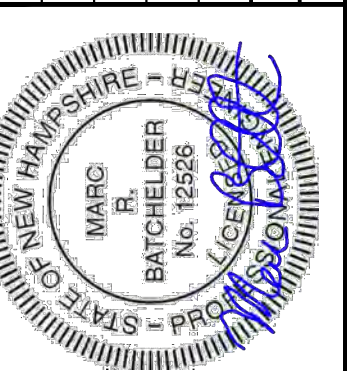
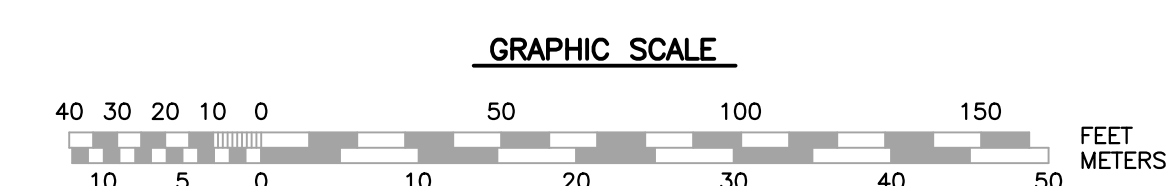
PHASE 7
WHIDDEN ST
2" DIA.

PHASE 2
WASHINGTON ST
TO MARCY ST
8" DIA.

TIE-IN
LOCATION

PHASE 3
BRIDGE CROSSING
12" DIA.

SOUTH MILL
POND



DATE: JANUARY 19, 2017
SCALE: 1:40
PROJECT NO.: C-04-006
MARC R. BATCHELDER, PE
ENGINEER OF RECORD

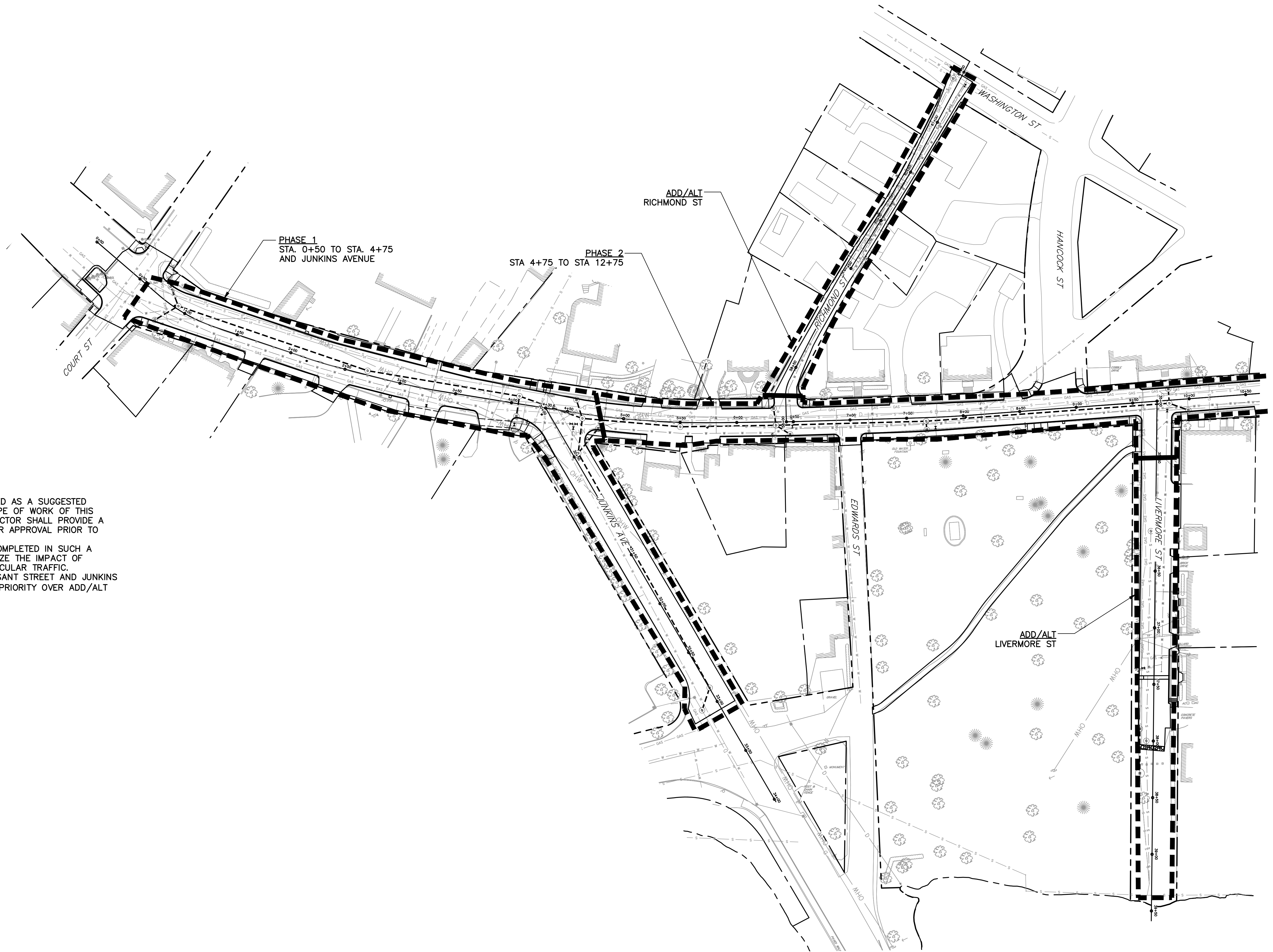
FOR:
Pleasant Street
Utility & Roadway
Improvements
Portsmouth, NH

Seaport
Engineering, LLC
PORTSMOUTH, NH
(603) 498-8449
www.seaporteng.com

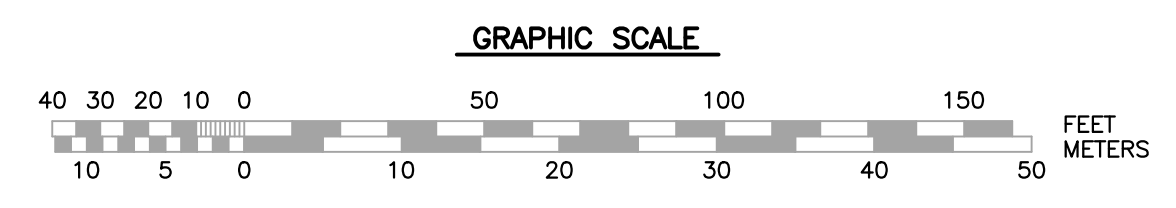
TITLE:
SUGGESTED TEMPORARY WATER
LAYOUT

NO.	DESCRIPTION	APP'D	DATE
0	ISSUED FOR BID	MRB	2/26/18

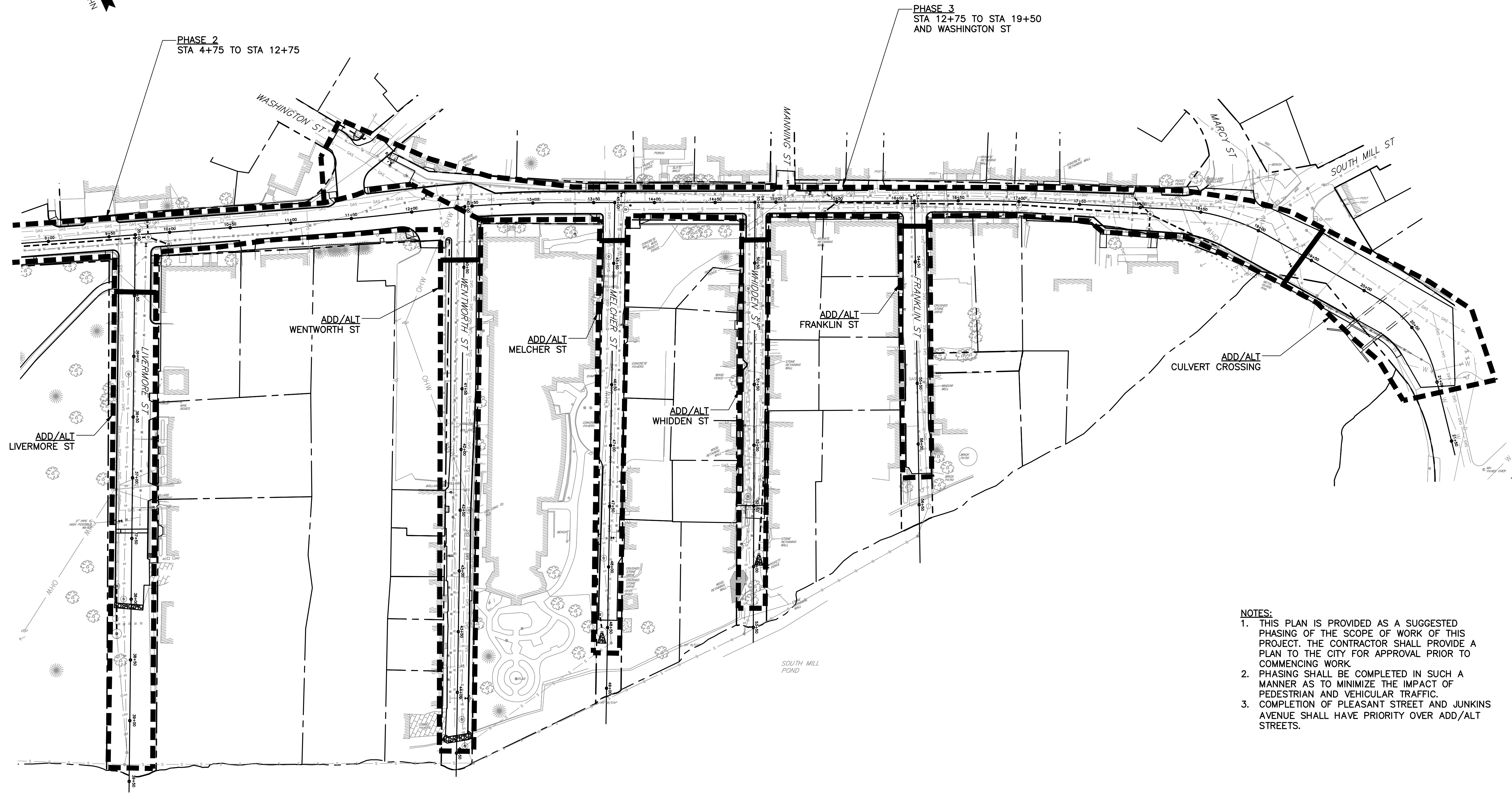
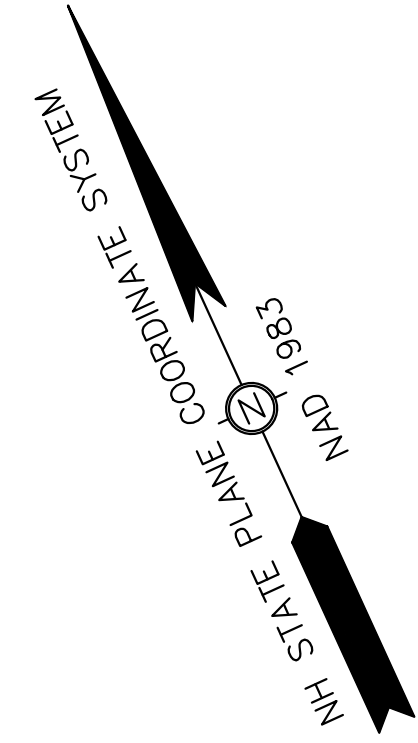
NH STATE PLANE COORDINATE SYSTEM
 NAD 1983



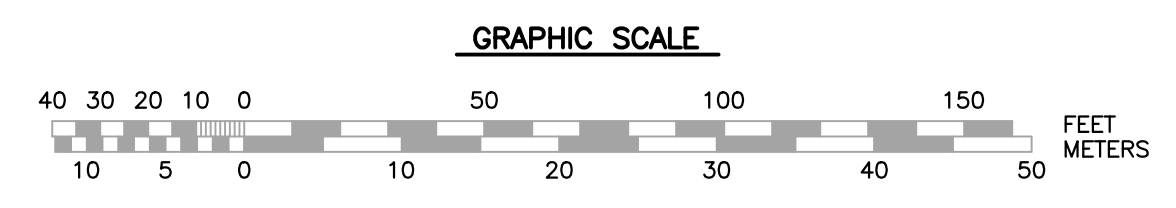
- NOTES:**
1. THIS PLAN IS PROVIDED AS A SUGGESTED PHASING OF THE SCOPE OF WORK OF THIS PROJECT. THE CONTRACTOR SHALL PROVIDE A PLAN TO THE CITY FOR APPROVAL PRIOR TO COMMENCING WORK.
 2. PHASING SHALL BE COMPLETED IN SUCH A MANNER AS TO MINIMIZE THE IMPACT OF PEDESTRIAN AND VEHICULAR TRAFFIC.
 3. COMPLETION OF PLEASANT STREET AND JUNKINS AVENUE SHALL HAVE PRIORITY OVER ADD/ALT STREETS.



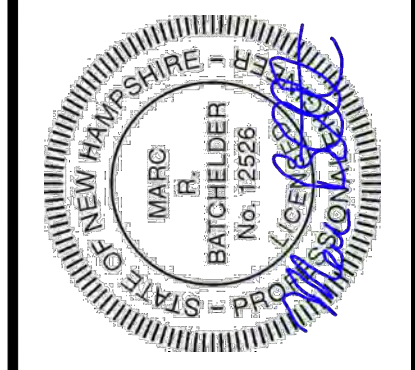
TITLE: ADD/ALT DELINEATION PLAN and SUGGESTED PHASING	FOR: Pleasant Street Utility & Roadway Improvements Portsmouth, NH	DATE: JANUARY 19, 2017 SCALE: 1:40 PROJECT NO.: Cop-006 MARC R. BATCHELDER, PE ENGINEER OF RECORD		NO.	DESCRIPTION	REVISIONS
				0	ISSUED FOR BID	MRB



- NOTES:**
1. THIS PLAN IS PROVIDED AS A SUGGESTED PHASING OF THE SCOPE OF WORK OF THIS PROJECT. THE CONTRACTOR SHALL PROVIDE A PLAN TO THE CITY FOR APPROVAL PRIOR TO COMMENCING WORK.
 2. PHASING SHALL BE COMPLETED IN SUCH A MANNER AS TO MINIMIZE THE IMPACT OF PEDESTRIAN AND VEHICULAR TRAFFIC.
 3. COMPLETION OF PLEASANT STREET AND JUNKINS AVENUE SHALL HAVE PRIORITY OVER ADD/ALT STREETS.



NO.	DESCRIPTION	REVISIONS
0	ISSUED FOR BID	MRB 2/26/18



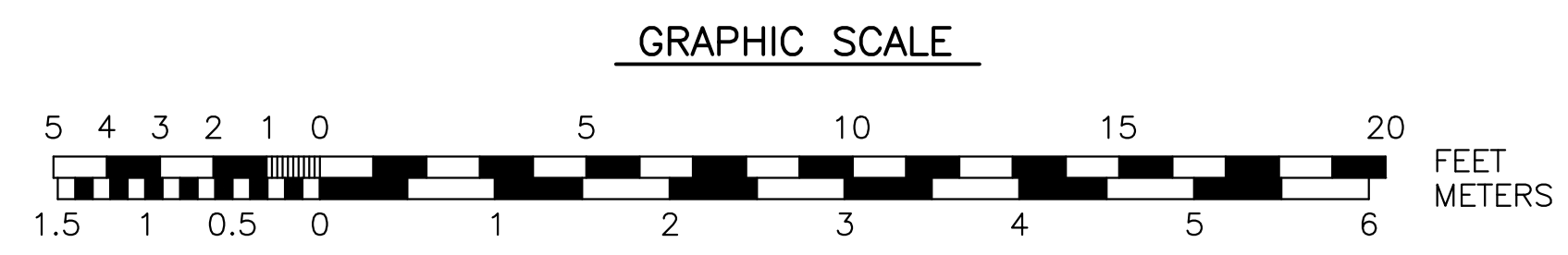
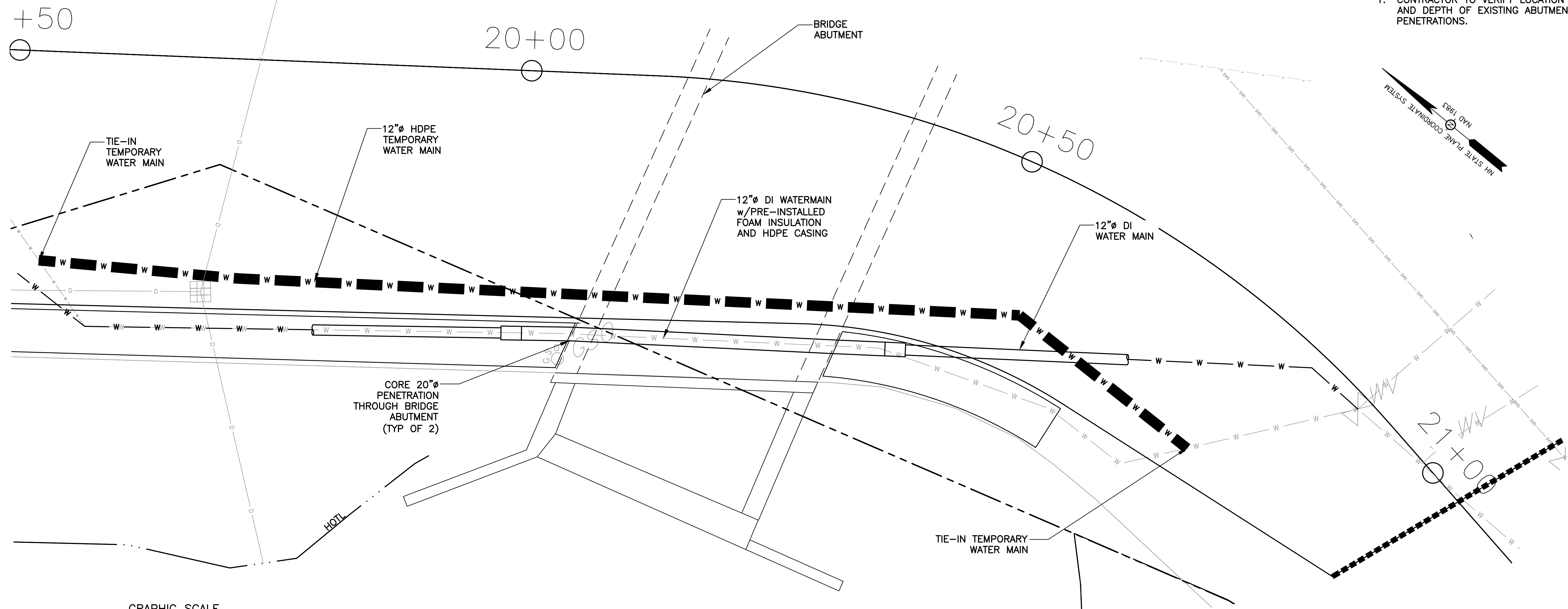
DATE: JANUARY 19, 2017
 SCALE: 1:40
 PROJECT NO.: C-5B-005
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD

FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE: ADD/ALT DELINEATION PLAN and
 SUGGESTED PHASING

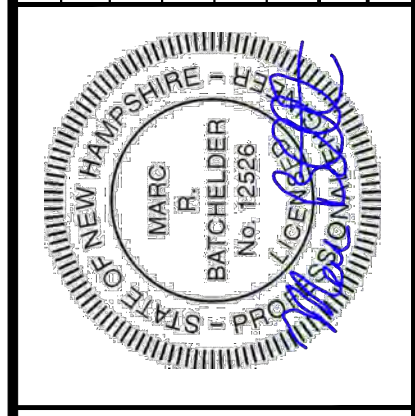
C-5B



CULVERT CROSSING – PLAN VIEW

NOTES:
 1. CONTRACTOR TO VERIFY LOCATION AND DEPTH OF EXISTING ABUTMENT PENETRATIONS.

NO.	DESCRIPTION	REVISIONS	DATE
0	ISSUED FOR BID		2/26/18

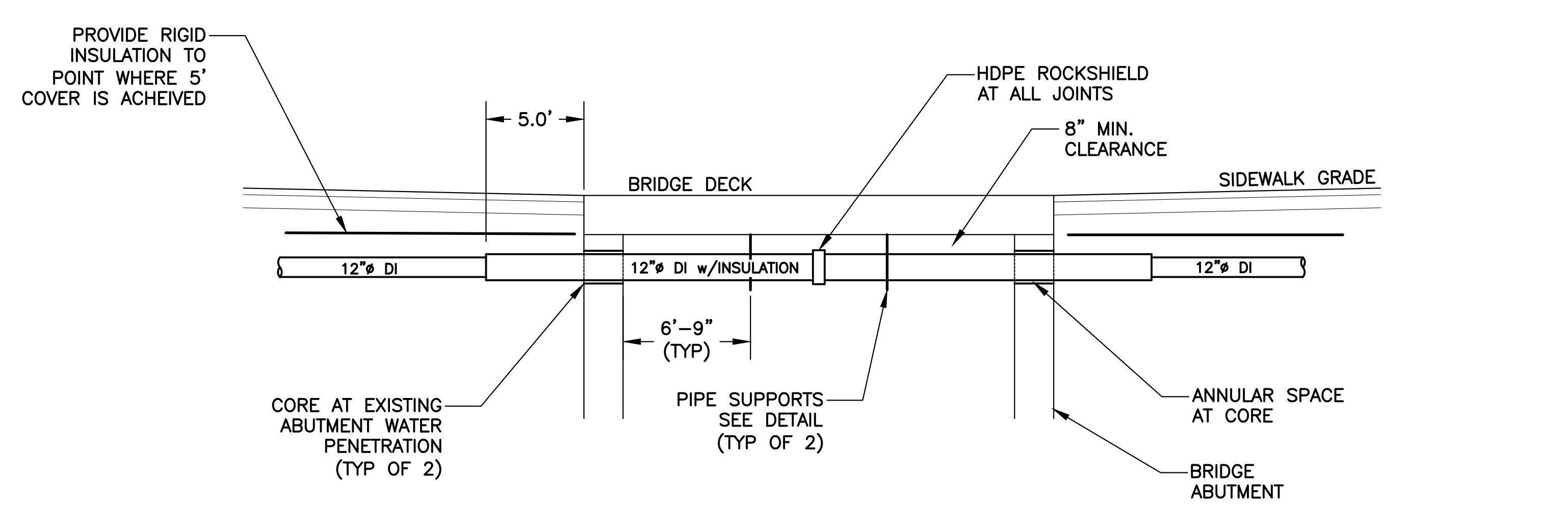


DATE: JANUARY 19, 2017
 SCALE: VARIES
 PROJECT NO.: CoP-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD

FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

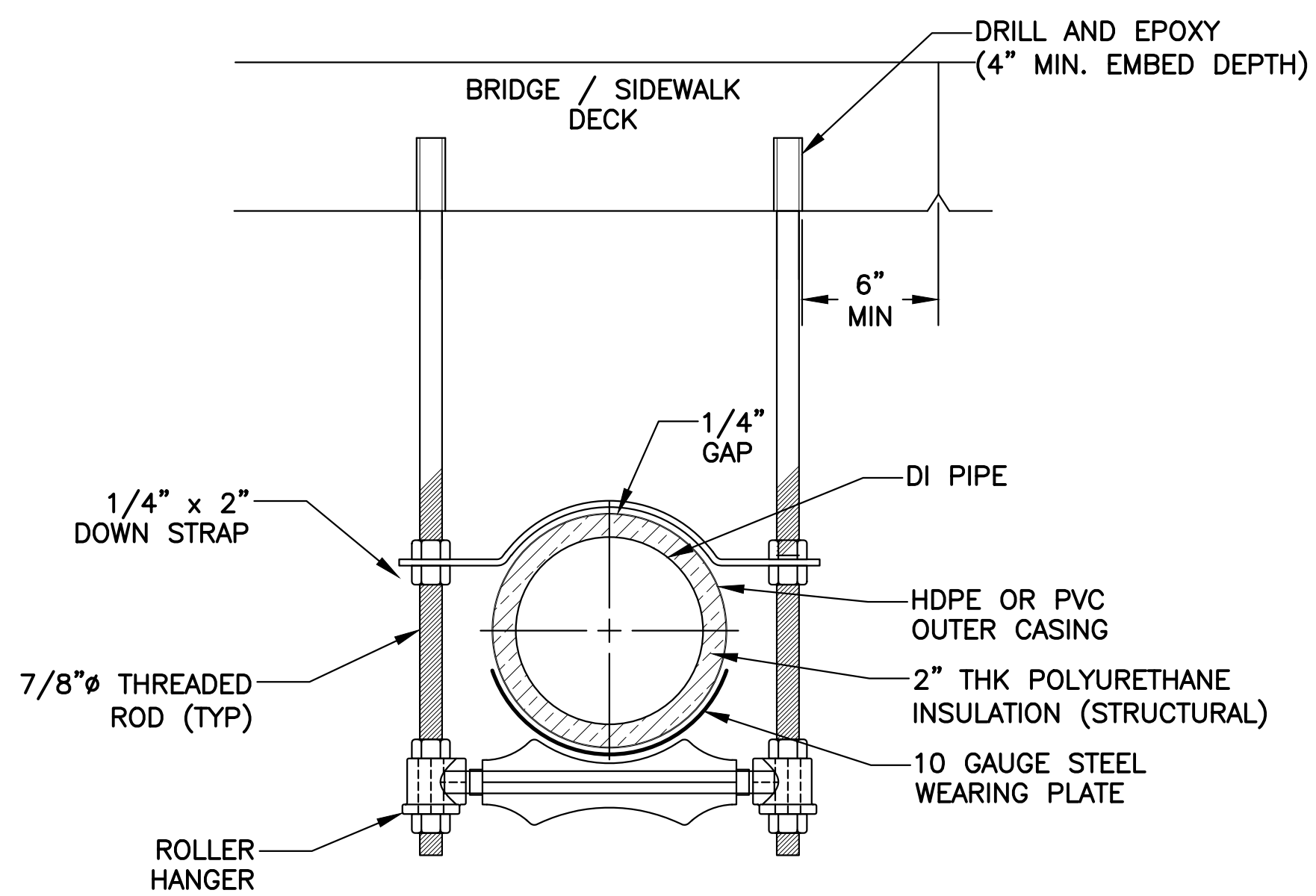
TITLE: CULVERT CROSSING PLAN



NOTES:
 1. FILL ANNULAR SPACE AT ABUTMENT PENETRATION WITH SPRAY FOAM AND SEAL BOTH ENDS WITH SIKAFLEX CAULKING OR APPROVED EQUAL.
 2. INSULATED PIPE SHALL BE PRE-INSALTED w/ 2" THK POLYURETHANE AND HDPE CASING. URECON, TRICON, OR APPROVED EQUAL.

CULVERT CROSSING – ELEVATION VIEW

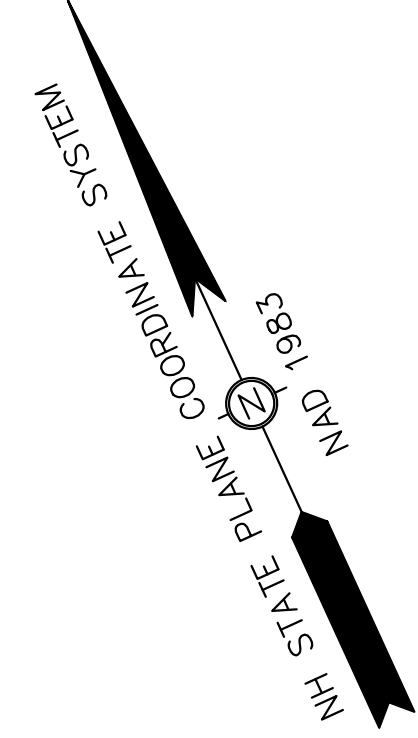
SCALE: 1"=5'



NOTES:
 1. PIPE SUPPORT MATERIAL SHALL BE GR 304 STAINLESS STEEL UNLESS OTHERWISE NOTED.
 2. ANCHORS INTO UNDERSIDE OF BRIDGE DECK SHALL BE PLACED WITH HILTI HY-200 OR APPROVED EQUAL. INSTALL PER MANUFACTURERS REQUIREMENTS. ENGINEER TO APPROVE LOCATIONS PRIOR TO DRILLING.
 3. PIPE SUPPORT SHALL BE LB&A OR APPROVED EQUAL.
 4. WEARING PLATE SHALL BE 12" IN LENGTH, EXTENDING 6" ON EITHER SIDE OF ROLLER.

PIPE SUPPORT DETAIL

SCALE: N.T.S.



REMOVE ALL PAVEMENT FOR NEW LANDSCAPED ISLAND

COURT ST INTERSECTION
1.5" MILL

RICHMOND ST
12" RECLAIM
(REHANDLE TOP 4")

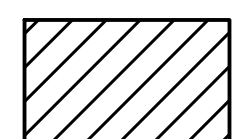
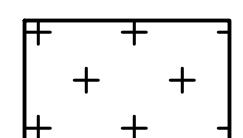
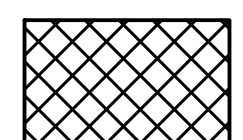
PLEASANT ST
5" MILL &
12" RECLAIM (REHANDLE)
4" EXCAVATE TO SUBBASE

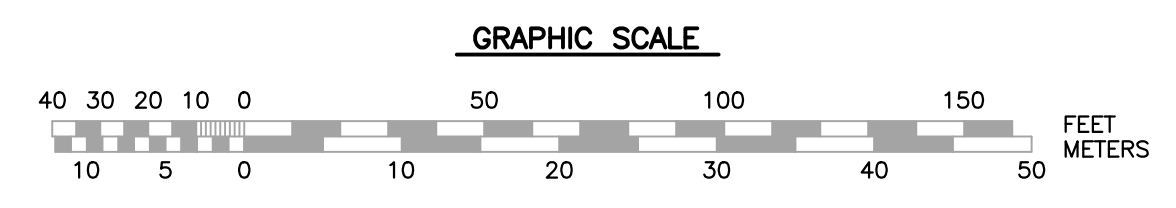
JUNKINS AVE
1.5" MILL

LIVERMORE ST
12" RECLAIM
(REHANDLE TOP 4")

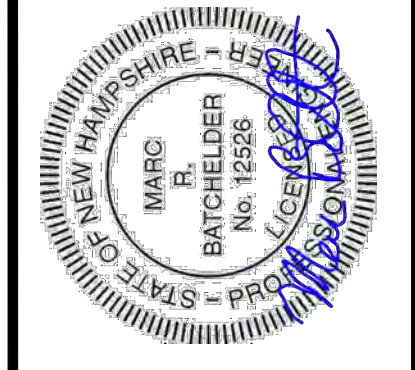
- NOTES:**
1. REFER TO JTC GEOTECHNICAL REPORT FOR EXISTING PAVEMENT THICKNESS.
 2. PLEASANT STREET – REMOVE TOP 5" OF EXISTING PAVEMENT (MILL), RECLAIM NEXT 12" AND STOCKPILE (REHANDLE), EXCAVATE ADDITIONAL SUBBASE TO 21" BELOW FINISHED GRADE.
 3. REHANDLE RECLAIM SHALL INCLUDE THE REMOVAL OF THE MATERIAL AFTER RECLAIM, STOCKPILED (IF NECESSARY), PLACE AS BASE MATERIAL AND COMPACT AS DIRECTED BY THE ENGINEER.

LEGEND

	RECLAIM
	MILL
	MILL AND RECLAIM



NO.	DESCRIPTION	REVISIONS	DATE
0	ISSUED FOR BID	MRB	2/26/18



DATE: JANUARY 19, 2017
 SCALE: 1:40
 PROJECT NO.: CoP-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD

FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

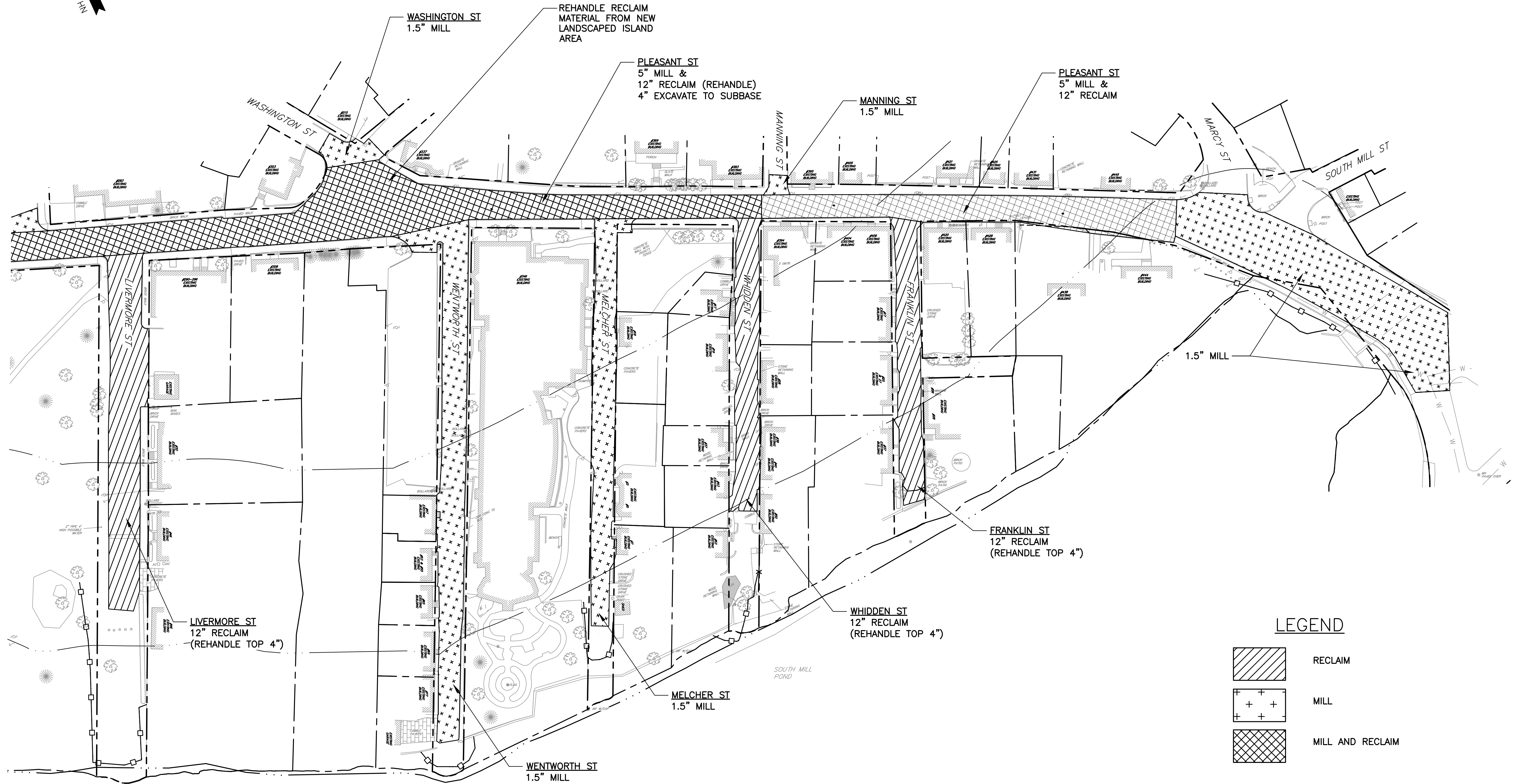
Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE: PAVEMENT PLAN
 REMOVAL

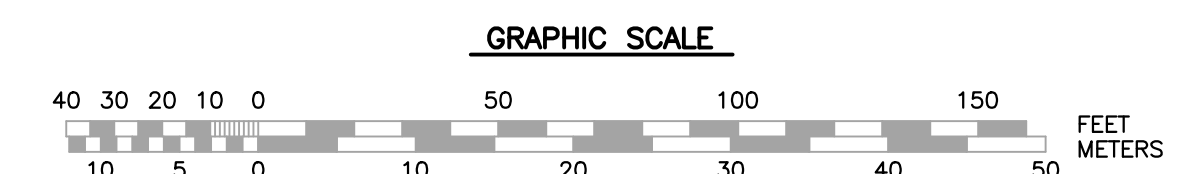
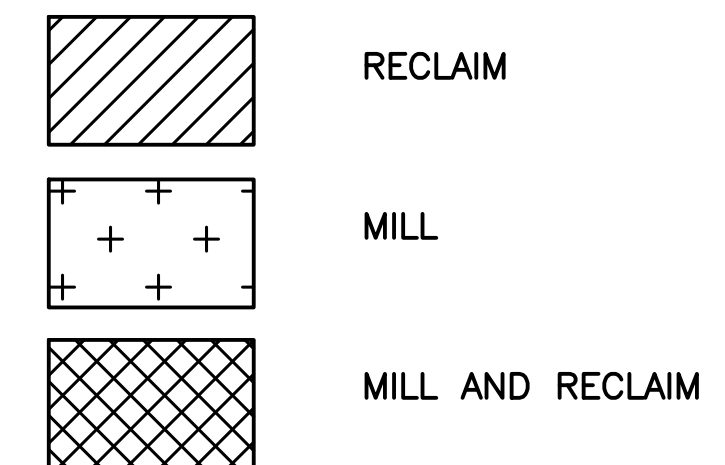
C-7A

NOTES:
1. SEE SHEET C-7A NOTES.

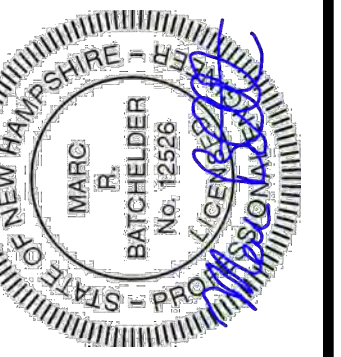
NH STATE PLANE COORDINATE SYSTEM
NAD 1983



LEGEND



NO.	DESCRIPTION	REVISIONS	DATE
0	ISSUED FOR BID	MRB	2/26/18

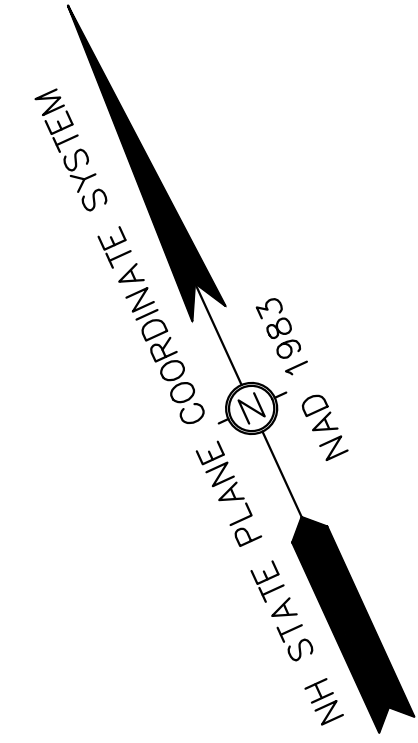


DATE: JANUARY 19, 2017
SCALE: 1:40
PROJECT NO.: Cop-006
MARC R. BATCHELDER, PE
ENGINEER OF RECORD

FOR:
Pleasant Street
Utility & Roadway
Improvements
Portsmouth, NH

Seaport
Engineering, LLC
PORTSMOUTH, NH
(603) 498-8449
www.seaporteng.com

TITLE:
PAVEMENT PLAN
REMOVAL



NO PAVEMENT
(LANDSCAPED ISLAND)

COURT ST

COURT ST INTERSECTION
1.5" OVERLAY

PLEASANT ST
5" PAVEMENT
16" RECLAIM (REHANDLE)

RICHMOND ST
4" PAVEMENT
8" RECLAIM

WASHINGTON ST

HANCOCK ST

RICHMOND ST

JUNKINS AVE
1.5" OVERLAY

EDWARDS ST

LIVERMORE ST
4" PAVEMENT
8" RECLAIM

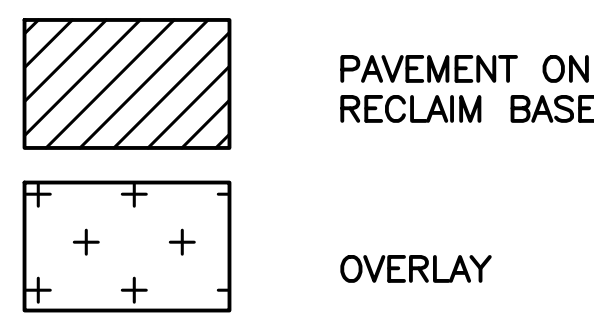
LIVERMORE ST

BOX OUT SECTION
(WIDTH VARIES)
4" PAVEMENT
12" RECLAIM

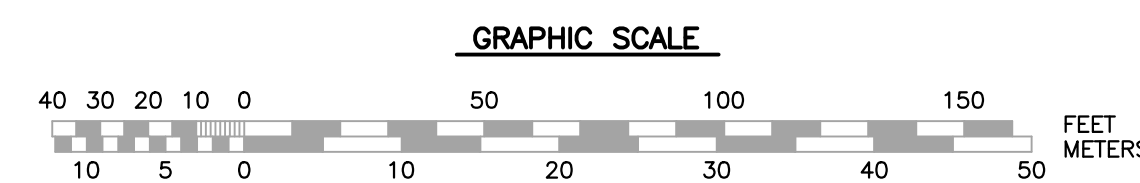
SOUTH MILL POND

SOUTH MILL POND

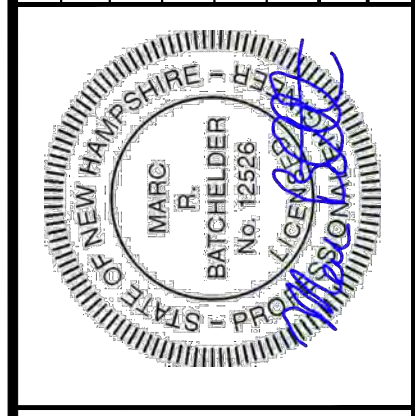
LEGEND



- NOTES:**
1. REFER TO JTC GEOTECHNICAL REPORT.
 2. RECLAIM MATERIAL TO BE TESTED TO DETERMINE IF ADDITIONAL 1-1/2" CRUSHED STONE WILL BE ADDED (AT THE DISCRETION OF THE ENGINEER). IN THE EVENT ADDITIONAL STONE IS REQUIRED, CONTRACTOR SHALL SPREAD STONE TO THE REQUIRED THICKNESS AND RECLAIM MATERIAL A SECOND TIME TO MIX ADDED STONE TO A DEPTH OF 8".
 3. IN THE EVENT RECLAIM MATERIAL IS DEEMED NOT ACCEPTABLE, OR QUANTITY IS EXCEEDED, NHDOT 304.3 CRUSHED GRAVEL SHALL BE USED.



REVISIONS	
NO.	DESCRIPTION
0	ISSUED FOR BID
MRB	2/26/18
APPD	DATE



DATE: JANUARY 19, 2017
 SCALE: 1:40
 PROJECT NO.: Cop-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD

FOR: Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

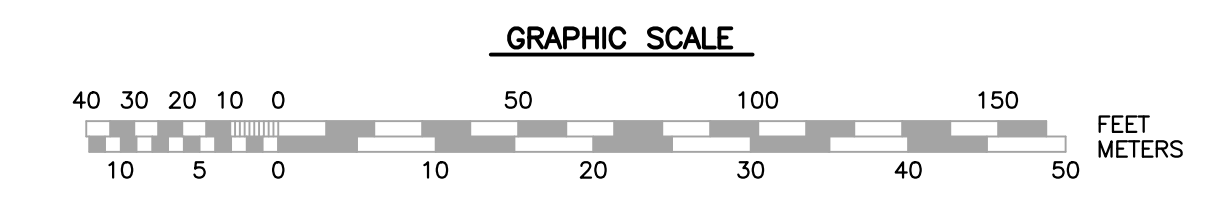
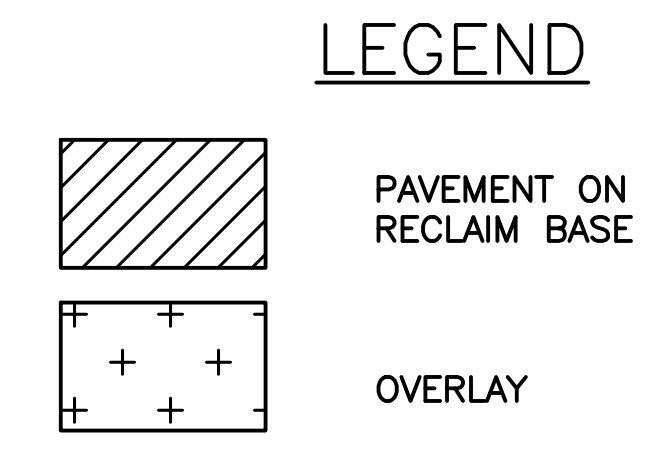
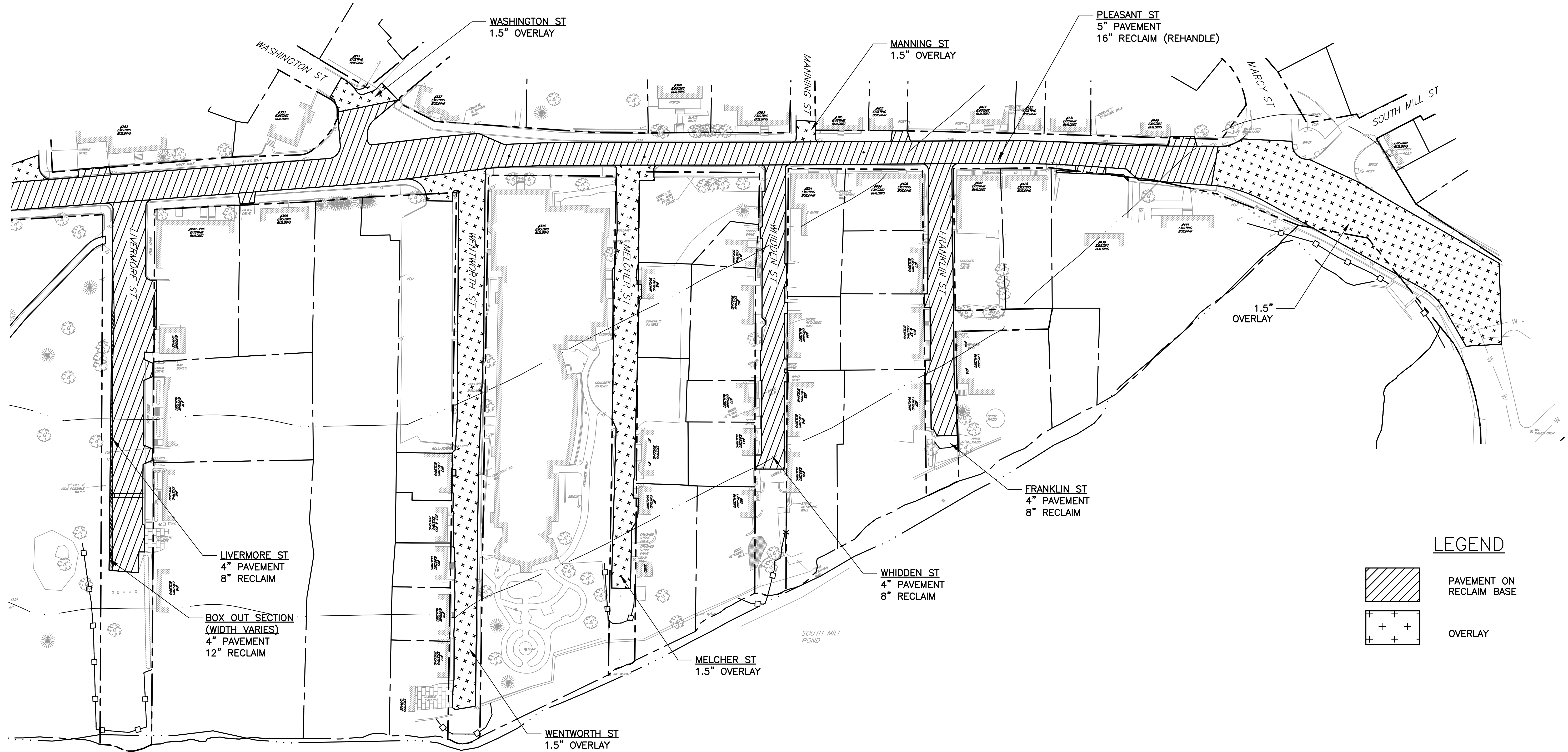
Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE: PAVEMENT PLAN
 BASE MATERIALS & NEW
 PAVEMENT

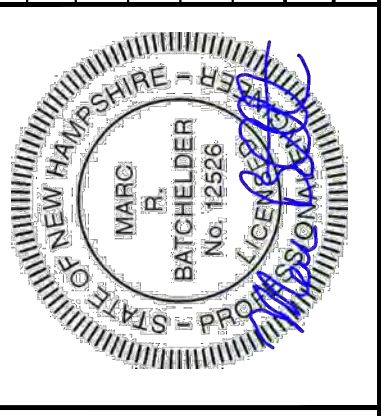
C-7C

NH STATE PLANE COORDINATE SYSTEM
 NAD 1983

NOTES:
 1. SEE SHEET C-7C NOTES.



NO.	DESCRIPTION	REVISIONS	DATE
0	ISSUED FOR BID		2/26/18



DATE: JANUARY 19, 2017
 SCALE: 1:40
 PROJECT NO.: Cop-006
 MARC R. BATCHELDER, PE
 ENGINEER OF RECORD

FOR:
 Pleasant Street
 Utility & Roadway
 Improvements
 Portsmouth, NH

Seaport
 Engineering, LLC
 PORTSMOUTH, NH
 (603) 498-8449
 www.seaporteng.com

TITLE:
 PAVEMENT PLAN
 BASE MATERIALS & NEW
 PAVEMENT

C-7D

PROJECT NAME AND LOCATION:

PLEASANT STREET ROADWAY IMPROVEMENTS
PORTSMOUTH, NEW HAMPSHIRE

DESCRIPTION:

THE PROJECT CONSISTS OF INSTALLATION OF NEW WATER MAIN FROM COURT STREET TO SOUTH STREET AND CORRESPONDING SIDE STREETS. REPLACEMENT OF DRAINAGE SYSTEM AND PORTIONS OF SEWER SYSTEM. RECLAIM THE EXISTING ASPHALT PAVEMENT SURFACE, RE-GRADE THE BASE MATERIALS AND RESURFACE ROADWAY. INCLUDES RECONSTRUCTION OF EXISTING CURBING AND SIDEWALKS.

CONSTRUCTION SEQUENCE:

1. INSTALL ALL EROSION CONTROL MEASURES.
2. INSTALLATION OF SEWER, WATER AND DRAINAGE SYSTEMS.
3. RECLAIM EXISTING ASPHALT PAVEMENT.
4. GRADE AND COMPACT BASE MATERIALS.
5. PLACE BASE COURSE OF ROADWAY PAVEMENT.
6. RESET CURBING AND CONSTRUCT NEW SIDEWALKS.
7. FINISH GRADE BEHIND SIDEWALKS.
8. PLACE SEED AND MULCH ON LOAMED AREAS.
9. PLACE WEARING COURSE OF PAVEMENT.
10. INSTALL ALL ROADWAY STRIPING AND SIGNS.
11. WHEN CONSTRUCTION ACTIVITY IS COMPLETE AND SITE IS STABILIZED, REMOVE EROSION CONTROL MEASURES.

EROSION AND SEDIMENT CONTROLS AND STABILIZATION PRACTICES:

THE EROSION CONTROL PROCEDURES SHALL CONFORM TO SECTION 645 OF THE "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION" OF THE NHDOT, AND "STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE".

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.

AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:

- BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
- A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
- A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
- EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

DUST CONTROL: IF TEMPORARY STABILIZATION PRACTICES, SUCH AS TEMPORARY VEGETATION AND MULCHING, DO NOT ADEQUATELY REDUCE DUST GENERATION, APPLICATION OF WATER OR CALCIUM CHLORIDE SHALL BE APPLIED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

ALL EROSION CONTROLS SHALL BE INSPECTED WEEKLY DURING THE LIFE OF THE PROJECT AND AFTER EACH STORM OF 0.5" OR GREATER. ALL DAMAGED SILT FENCES SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED IN A SECURED LOCATION.

AVOID THE USE OF FUTURE OPEN SPACES (LOAM AND SEED AREAS) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ACCESS DRIVES AND PARKING AREAS.

TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS. CONSTRUCT SILT FENCE AROUND TOPSOIL STOCKPILE.

ALL FILLS SHALL BE PLACED AND COMPACTED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.

DISTURBED AREAS SHALL BE SEEDED WITHIN 72 HOURS FOLLOWING FINISHED GRADING.

AT NO TIME SHALL ANY DISTURBED AREA REMAIN UNSTABILIZED FOR LONGER THAN 72 HOURS. ALL AREAS WHERE CONSTRUCTION IS NOT COMPLETE WITHIN THIRTY DAYS OF THE INITIAL DISTURBANCE SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION.

INSTALLATION PROCEDURES OF EROSION AND SEDIMENT CONTROLS:

A. VEGETATIVE PRACTICE

FOR PERMANENT MEASURES AND PLANTINGS FROM EARLY SPRING TO SEPTEMBER 30:

LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE.

FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 500 POUNDS PER ACRE OF 10-20-20 FERTILIZER.

SEED SHALL BE SOWN AT THE RATES SHOWN IN THE TABLE BELOW. 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. HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AT A RATE OF 1.5 TO 2 TONS PER ACRE, AND SHALL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE EROSION AND SEDIMENT CONTROL HANDBOOK.

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 SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.

A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE:

GENERAL COVER	SEEDING RATE
CREeping RED FESCUE	100 LBS/ACRE
KENTUCKY BLUEGRASS	100 LBS/ACRE
SLOPE SEED (USED ON ALL SLOPES GREATER THAN OR EQUAL TO 3:1)	
CREeping RED FESCUE	20 LBS/ACRE
TALL FESCUE	20 LBS/ACRE
BIRDSFOOT TREFLOIL	2 LBS/ACRE

IN NO CASE SHALL THE WEED CONTENT EXCEED ONE PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PROTECTION OF DISTURBED AREAS: MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:

PERENNIAL RYE:	0.7 LBS/1,000 S.F.
MULCH:	1.5 TONS/ACRE

B. MULCHING

IN ORDER TO BE EFFECTIVE, MULCHING MUST BE IN PLACE PRIOR TO MAJOR STORM EVENTS. THERE ARE TWO TYPES OF STANDARDS: APPLY MULCH PRIOR TO ANY STORM EVENT: THIS IS APPLICABLE WHEN WORKING WITHIN 100 FEET OF WETLANDS. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER FORECASTS FOR ADEQUATE WARNING TO SIGNIFICANT STORMS. REQUIRED MULCHING WITHIN SPECIFIED TIME PERIOD: THE TIME PERIOD CAN RANGE FROM 14 TO 21 DAYS OF INACTIVITY IN AN AREA, THE LENGTH OF TIME VARYING WITH SITE CONDITIONS. JUDGEMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS AND THE POTENTIAL FOR IMPACT ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE TIME RESTRICTION. WHEN MULCH IS TO BE APPLIED TO PROVIDE PROTECTION OVER WINTER MONTHS, IT SHALL BE AT A RATE OF 6,000 POUNDS OF HAY OR STRAW PER ACRE. A TACKIFIER SHALL BE ADDED TO THE MULCH.

C. WINTER NOTES

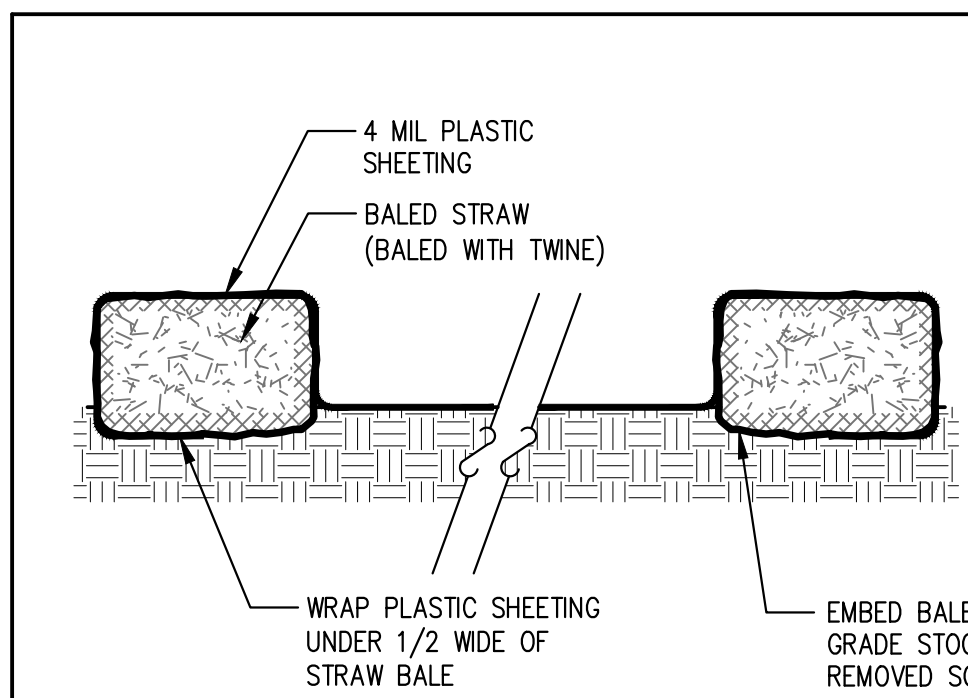
ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED 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 ADVANCE OF THAW OR SPRING MELT EVENTS.

ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

MAINTENANCE AND PROTECTION:

1. THE CONTRACTOR SHALL MAINTAIN ALL LOAM & SEED AREAS UNTIL FINAL ACCEPTANCE AT THE COMPLETION OF THE CONTRACT. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, REMOVAL OF STONES AND OTHER FOREIGN OBJECTS OVER 1/2 INCHES IN DIAMETER WHICH MAY APPEAR AND THE FIRST TWO (2) CUTTINGS OF GRASS NO CLOSER THEN TEN (10) DAYS APART. THE FIRST CUTTING SHALL BE ACCOMPLISHED WHEN THE GRASS IS FROM 2 1/2 TO 3 INCHES HIGH. ALL BARE AND DEAD SPOTS WHICH BECOME APPARENT SHALL BE PROPERLY PREPARED, LIMED AND FERTILIZED, AND RESEEDED BY THE CONTRACTOR AT HIS EXPENSE AS MANY TIMES AS NECESSARY TO SECURE GOOD GROWTH. THE ENTIRE AREA SHALL BE MAINTAINED, WATERED AND CUT UNTIL ACCEPTANCE OF THE LAWN BY THE OWNER'S REPRESENTATIVE.
2. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO PROTECT THE GRASS WHILE IT IS DEVELOPING.
3. TO BE ACCEPTABLE, SEEDED AREAS SHALL CONSIST OF A UNIFORM STAND OF AT LEAST 90 PERCENT ESTABLISHED PERMANENT GRASS SPECIES, WITH UNIFORM COUNT OF AT LEAST 100 PLANTS PER SQUARE FOOT.
4. SEEDED AREAS WILL BE FERTILIZED AND RESEEDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT.
5. THE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATION IS ESTABLISHED.
6. THE SILT FENCE BARRIER SHALL BE CHECKED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
7. SILT FENCING SHALL BE REMOVED ONCE VEGETATION IS ESTABLISHED, AND DISTURBED AREAS RESULTING FROM SILT FENCE REMOVAL SHALL BE PERMANENTLY SEEDED.

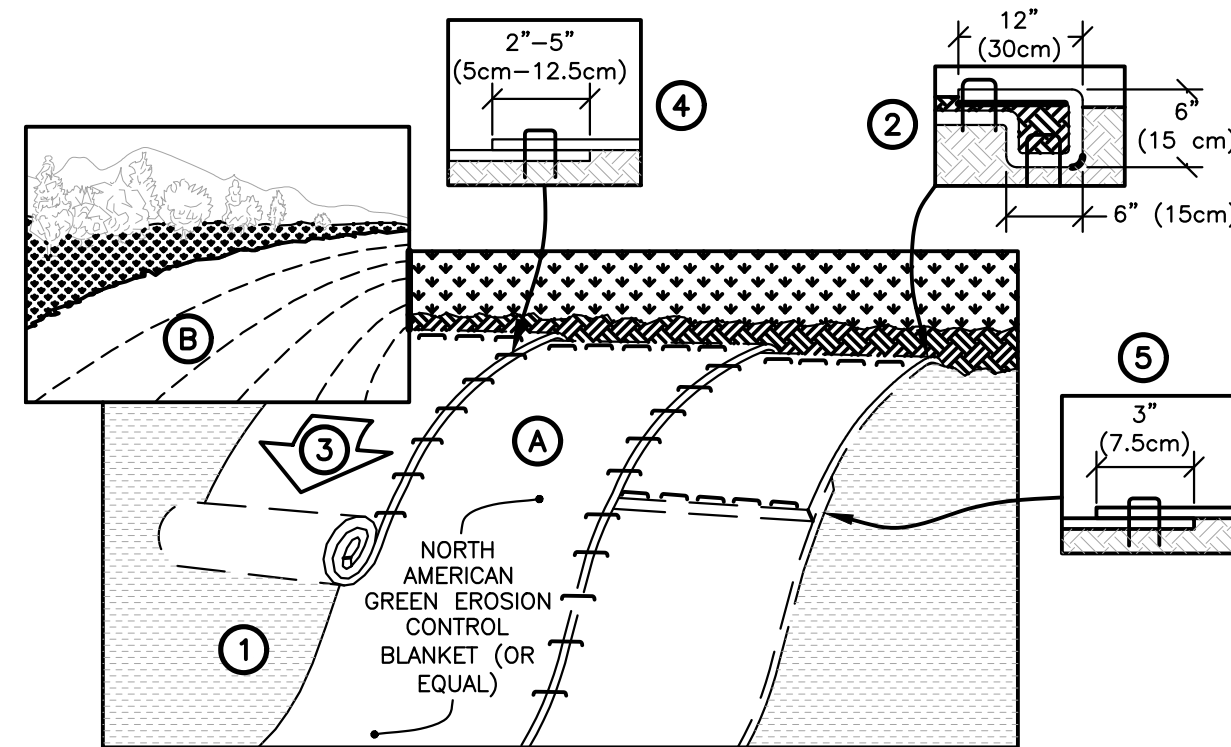


NOTES:

1. CONTRACTOR MUST PROVIDE A CONCRETE CLEAN-OUT STATION. NO TRUCK CLEAN-OUT WILL BE ALLOWED WITHOUT CONTAINMENT.
2. PLASTIC WRAP SHALL BE FREE OF TEARS OR HOLES.
3. AFTER BASIN IS USED, WASHWATER FROM WASHOUT BASIN SHALL BE ALLOWED TO EVAPORATE OR BE VACUUMED OUT.
4. REMOVE REMAINING HARDENED SOLIDS.
5. REPLACE PLASTIC SHEETING AND TRAWBALES AS REQUIRED.

CONCRETE CLEAN-OUT

SCALE: N.T.S.



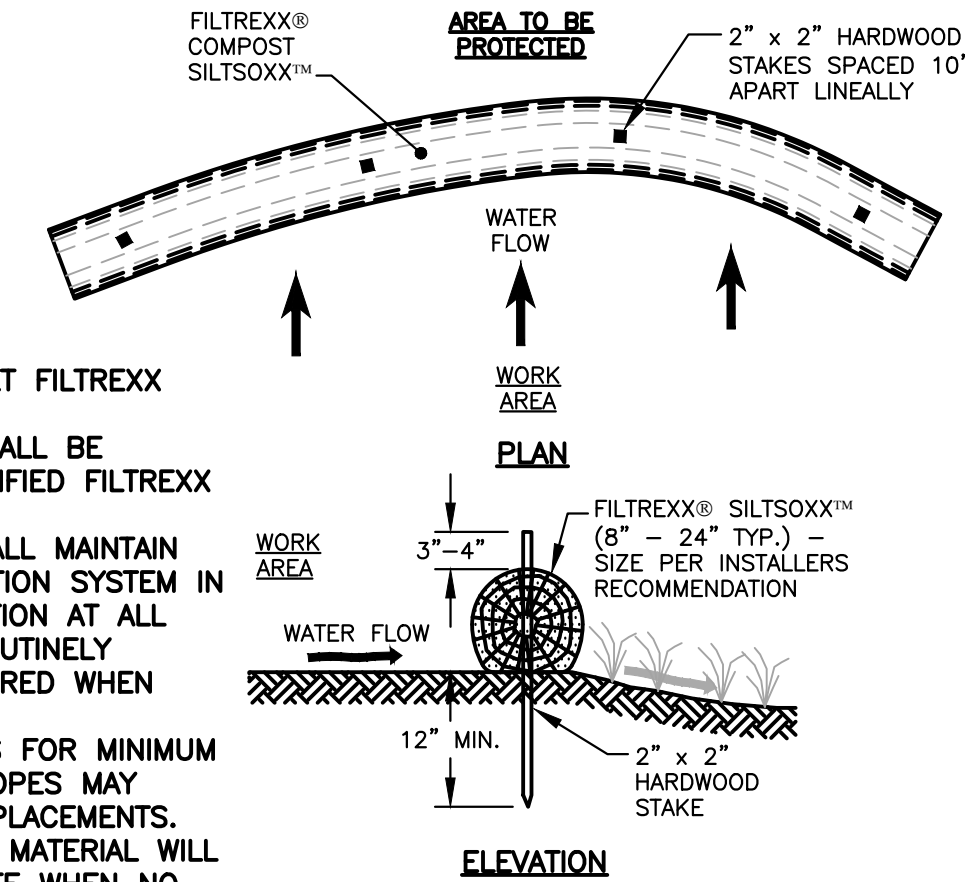
NOTES:

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 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 RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECP'S.
3. ROLL THE RECP'S (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON RECP'S TYPE.
5. CONSECUTIVE RECP'S SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP'S WIDTH.

NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTH GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.

SLOPE STABILIZATION BLANKET

SCALE: N.T.S.

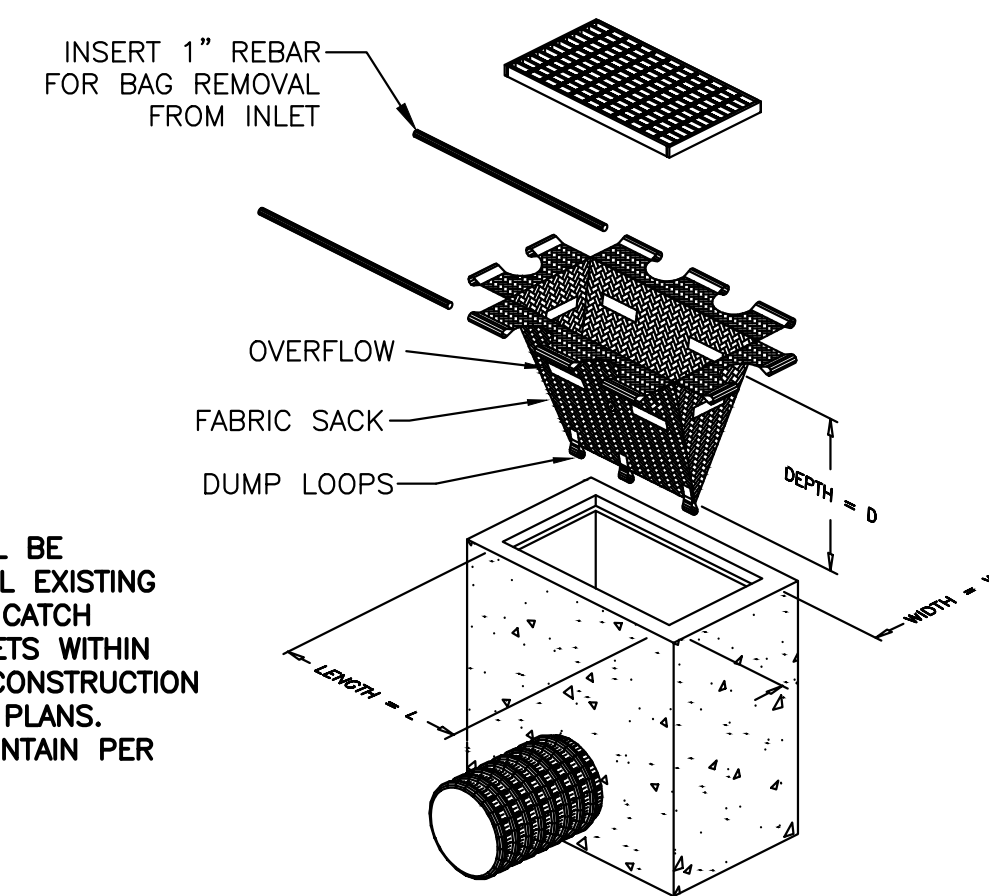


SEDIMENTATION LOG

SCALE: N.T.S.

NOTES:

1. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
2. FILTREXX SYSTEM SHALL BE INSTALLED BY A CERTIFIED FILTREXX INSTALLER.
3. THE CONTRACTOR SHALL MAINTAIN THE COMPOST FILTRATION SYSTEM IN A FUNCTIONAL CONDITION AT ALL TIMES. IT WILL BE ROUTINELY INSPECTED AND REPAIRED WHEN REQUIRED.
4. SILT SOCKS DEPICTED IS FOR MINIMUM SLOPES, GREATER SLOPES MAY REQUIRE ADDITIONAL PLACEMENTS.
5. THE COMPOST FILTER MATERIAL WILL BE DISPersed ON SITE WHEN NO LONGER REQUIRED, AS DETERMINED BY THE ENGINEER.

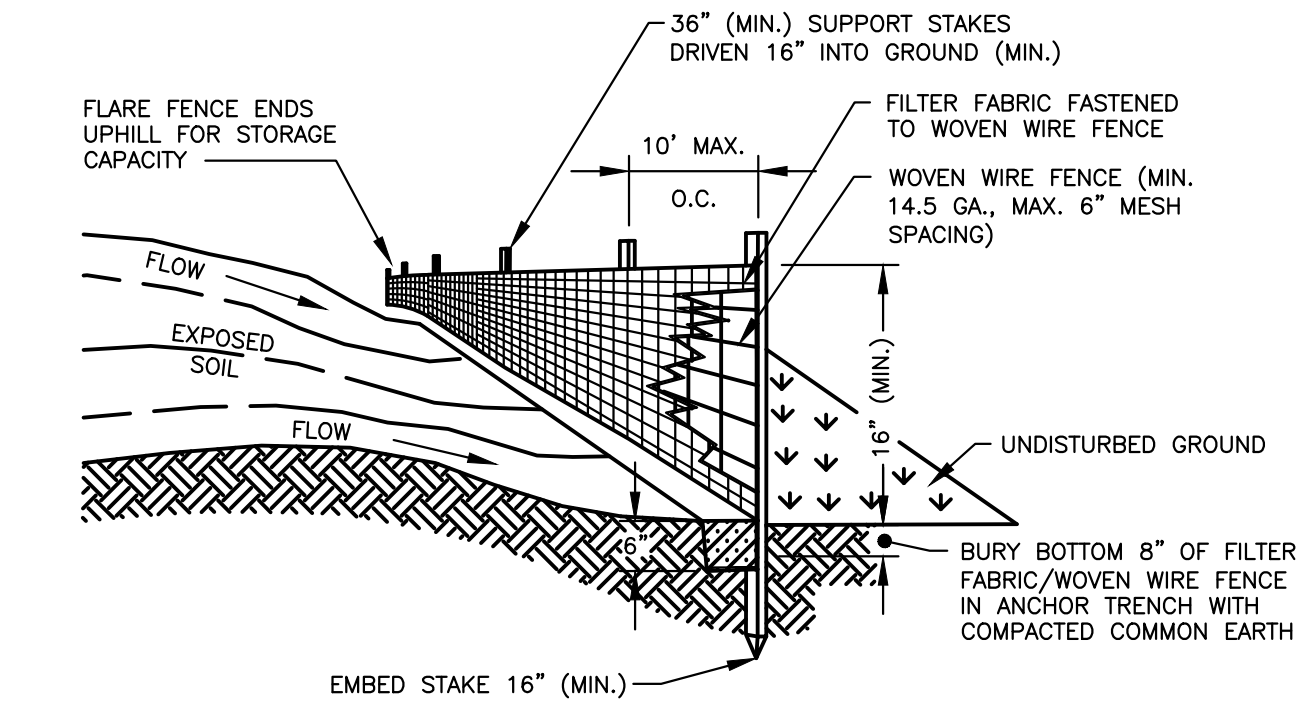


NOTES:

1. SILT SACK SHALL BE INSTALLED AT ALL EXISTING AND PROPOSED CATCH BASINS AND INLETS WITHIN THE LIMITS OF CONSTRUCTION SHOWN ON THE PLANS.
2. INSTALL AND MAINTAIN PER MANUFACTURERS REQUIREMENTS.

DRAINAGE INLET PROTECTION

SCALE: N.T.S.



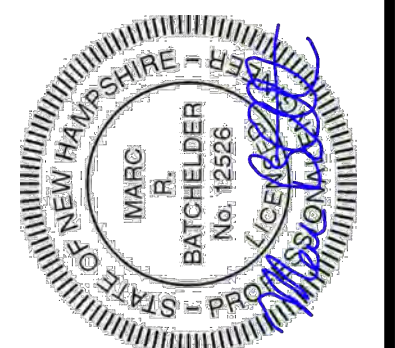
NOTES:

1. THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES, AS IN THE NEW HAMPSHIRE STORMWATER MANAGEMENT AND EROSION CONTROL HANDBOOK BEST MANAGEMENT PRACTICE FOR SILT FENCE.
2. THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 6 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
3. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES.
4. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MID-SECTION, AND BOTTOM.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 12 INCHES, FOLDED, AND STAPLED.
6. FENCE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND DRIVEN A MINIMUM OF 16 INCHES INTO THE GROUND. WOOD POSTS SHALL BE OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES.
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED TO PREVENT BULGES IN THE SILT FENCE DUE TO DEPOSITION OF SEDIMENT.
8. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.
9. IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.
10. SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
11. SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY, AND VEGETATED.

SILT FENCE

SCALE: N.T.S.

NO.	ISSUED FOR BID	APPD	DATE
0			2/26/18

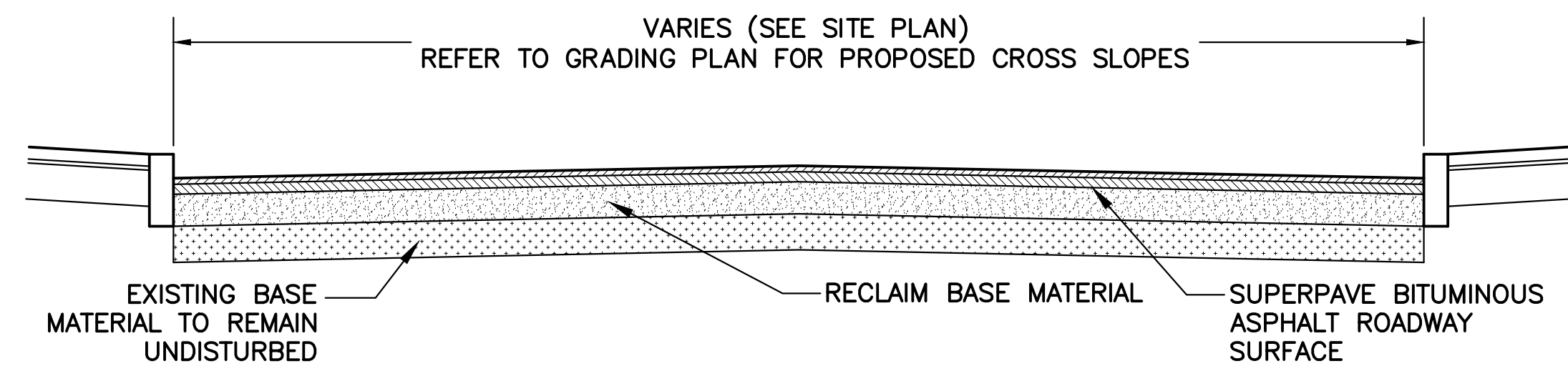


DATE: JANUARY 19, 2017
SCALE: VARIES
PROJECT NO.: Cop-006
MARC R. BATCHELDER, PE
ENGINEER OF RECORD

FOR: Pleasant Street
Utility & Roadway
Improvements
Portsmouth, NH

Seaport
Engineering, LLC
PORTSMOUTH, NH
(603) 498-8449
www.seaporteng.com

TITLE: EROSION CONTROL NOTES
AND DETAILS

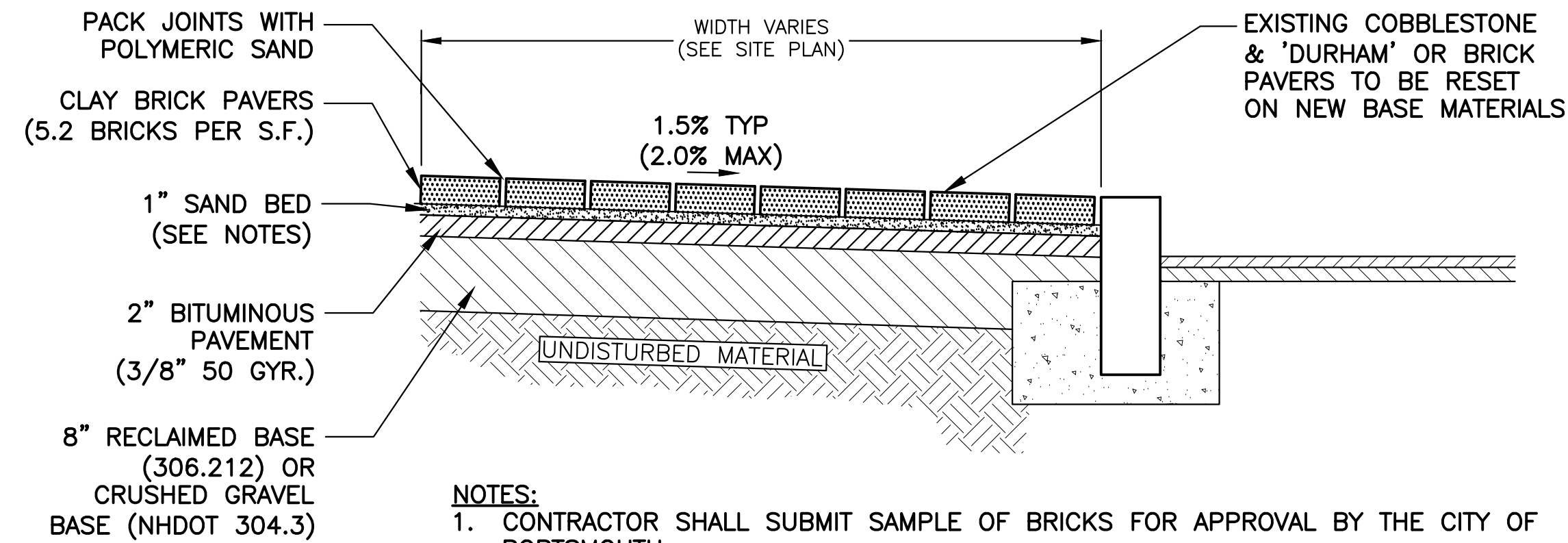


- NOTES:
1. PLEASANT STREET SHALL BE MILLED 5" PRIOR TO RECLAIMING OPERATIONS.
 2. RECLAIMED STABILIZED BASE SHALL COMPLY WITH NHDOT ITEM 306.
 3. RECLAIM MATERIAL TO BE TESTED TO DETERMINE IF ADDITIONAL 1.5" STONE WILL BE ADDED. IN THE EVENT ADDITIONAL CRUSHED STONE IS REQUIRED, CONTRACTOR SHALL SPREAD STONE TO THE REQUIRED THICKNESS AND RECLAIM MATERIAL A SECOND TIME TO MIX ADDED STONE TO A DEPTH OF 8".

RECLAIM BASE MATERIAL:
PLEASANT ST. - 16" THK (REHANDLE)
ALL OTHER - 8" THK

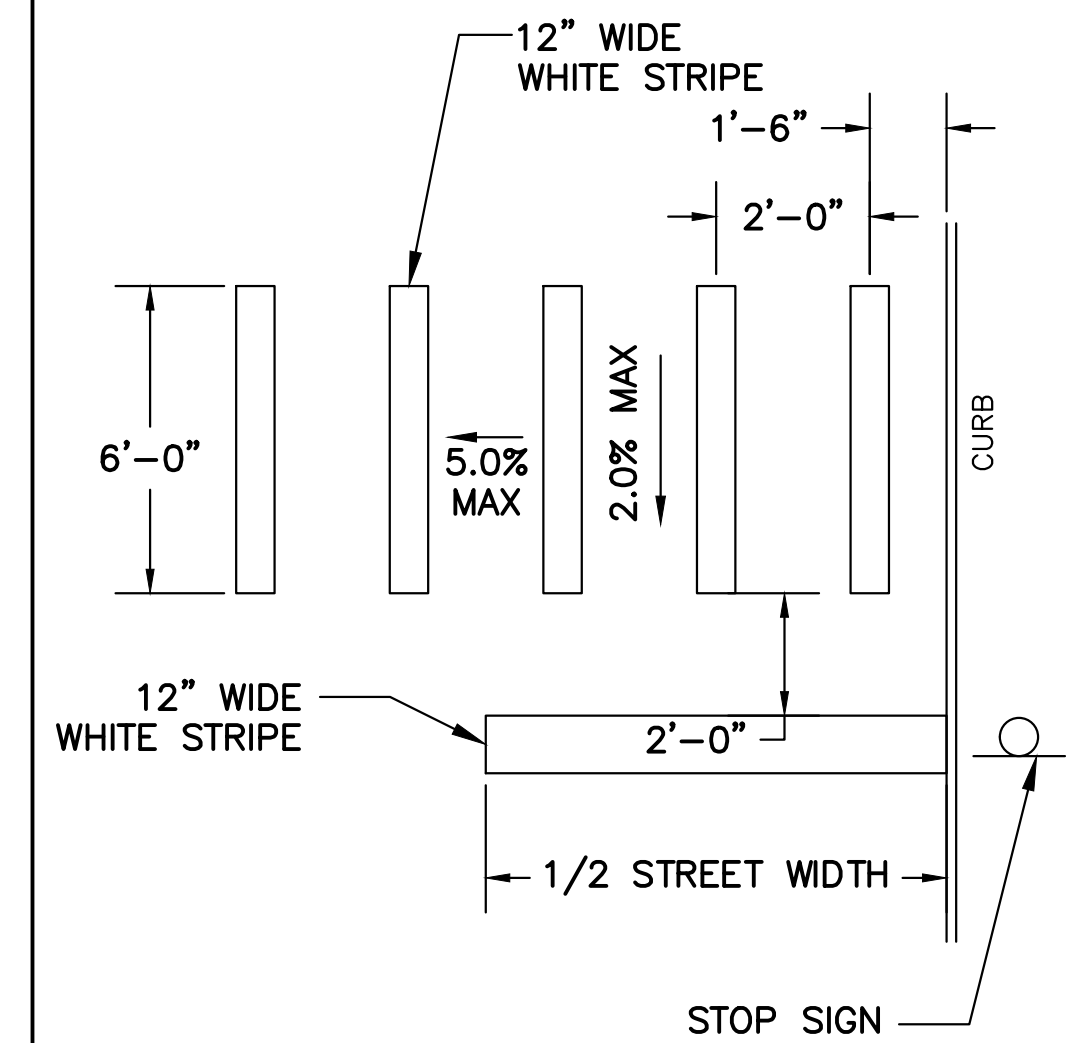
PAVEMENT THICKNESS:
PLEASANT ST. PAVEMENT:
1.5" WEARING (3/8" 50 GYRATION)
3.5" BINDER (3/4" 50 GYRATION)
ALL OTHER STREETS PAVEMENT:
1.5" WEARING (3/8" 50 GYRATION)
2.5" BINDER (3/4" 50 GYRATION)

TYPICAL ROADWAY SECTION
SCALE: N.T.S



- NOTES:
1. CONTRACTOR SHALL SUBMIT SAMPLE OF BRICKS FOR APPROVAL BY THE CITY OF PORTSMOUTH.
 2. IN AREAS WHERE BRICK DOES NOT ABUT CURBING, EDGING SHALL BE INSTALLED TO HOLD BRICKS IN PLACE.
 3. SAND BEDDING: 3 PARTS SAND MIX AND 1 PART PORTLAND CEMENT.
 4. BRICKS SHALL BE CLASS SX, TYPE 1, APPLICATION PX. BRICKS SHALL NOT BE NO.1, WIRE CUT FOR PAVING w/COMPRESSIVE STRENGTH OF 6,000psi (MIN.). BRICKS SHALL NOT BE CORED OR HAVE FROGS AND SHALL BE STANDARD SIZE (2.25"x3.625"x7.625").
 5. AREAS IDENTIFIED WITH 'DURHAM' PAVERS SHALL REMAIN IN PLACE. CONTRACTOR TO RESET ONLY IF NECESSARY. COORDINATE WITH CITY OF PORTSMOUTH ENGINEER.
 6. BASE MATERIAL SHALL BE REHANDLED RECLAIMED BASE MATERIAL. IN THE EVENT THE RECLAIMED MATERIAL IS UNSUITABLE, OR QUANTITIES HAVE BEEN DEPLETED, 304.3 CRUSHED GRAVEL BASE SHALL BE USED.
 7. BITUMINOUS PAVEMENT BASE SHALL NOT BE USED FOR RESETTING EXISTING PRIVATE WALKWAYS TO HOUSE / BUILDING ENTRANCES.

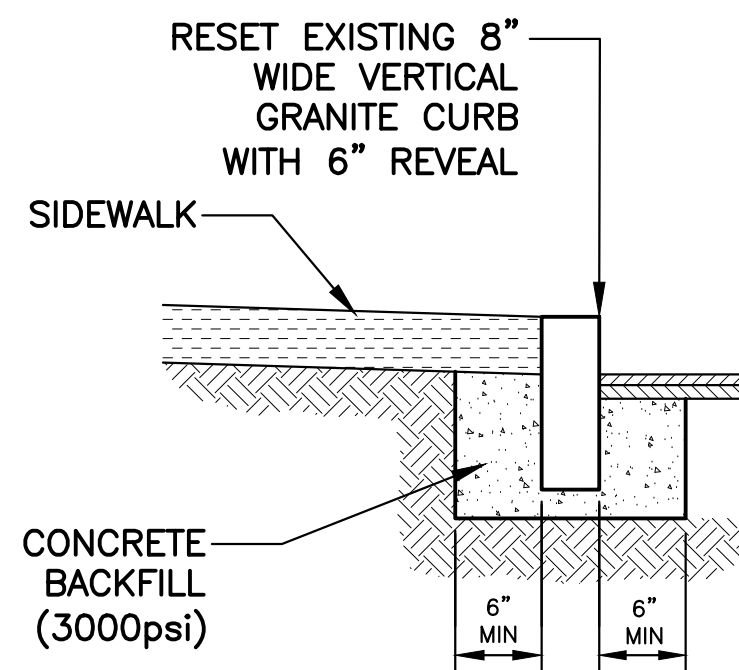
NEW BRICK SIDEWALK
COBBLESTONE & PAVER RESET
SCALE: N.T.S



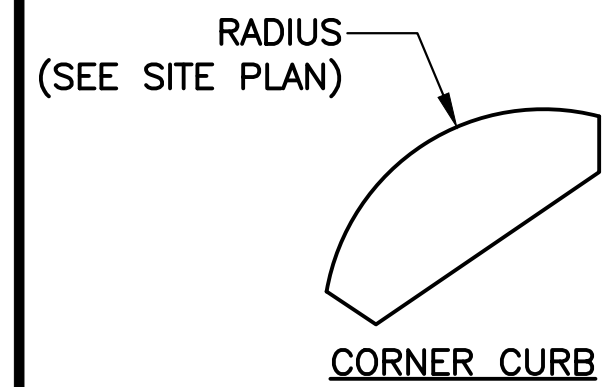
- NOTES:
1. STRIPING SHALL BE THERMO PLASTIC RETROREFLECTIVE PAVEMENT MARKING PER ASTM D 4505.

STOP BAR, CROSSWALK
AND STOP SIGN
SCALE: N.T.S

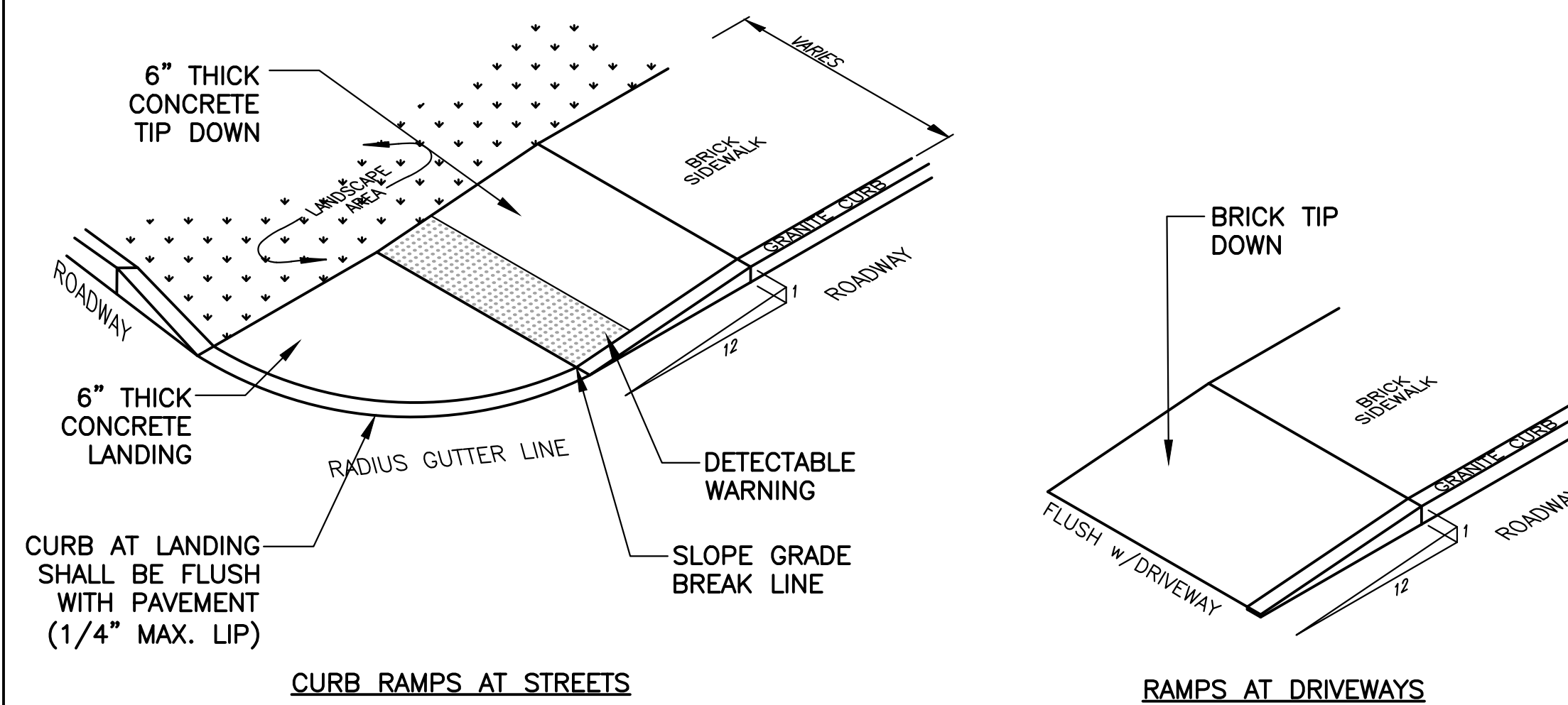
RADIUS	MAX. LENGTH
<20'	USE CURVED CURB
21'-25'	3'
26'-30'	4'
31'-35'	5'
36'-40'	6'
41'-50'	7'
51'-56'	8'
56'-60'	9'
OVER 60'	10'



- NOTES:
1. CURB TO BE SET TO LINE AND GRADE SPECIFIED.
 2. ALL RADII 20 FEET AND SMALLER SHALL USE CURVED SECTIONS.
 3. CURB AT FLUSH SECTION OF SIDEWALK SHALL BE SET TO 1.5% (2.0% MAX.) SLOPE. CURB AT RAMPS SHALL BE SET TO 8.0% (8.3% MAX.). IT IS THE CURB CONTRACTORS RESPONSIBILITY TO VERIFY SLOPES WITH A SMART LEVEL.
 4. VERTICAL GRANITE JOINTS SHALL BE MORTARED.
 5. SEE CHART FOR MAX / MIN STONE LENGTHS.
 6. RESET EXISTING CURB. ANY MISSING OR DAMAGED CURB SHALL BE REPLACED WITH MATCHING CURB SIZE.
 7. NO CURB LESS THAN 3' IN LENGTH WILL BE ALLOWED.
 8. CURB MATERIAL SHALL BE FROM THE SAME LOT OF GRANITE. VARIANCES IN COLOR AND TYPE WILL NOT BE ACCEPTED.

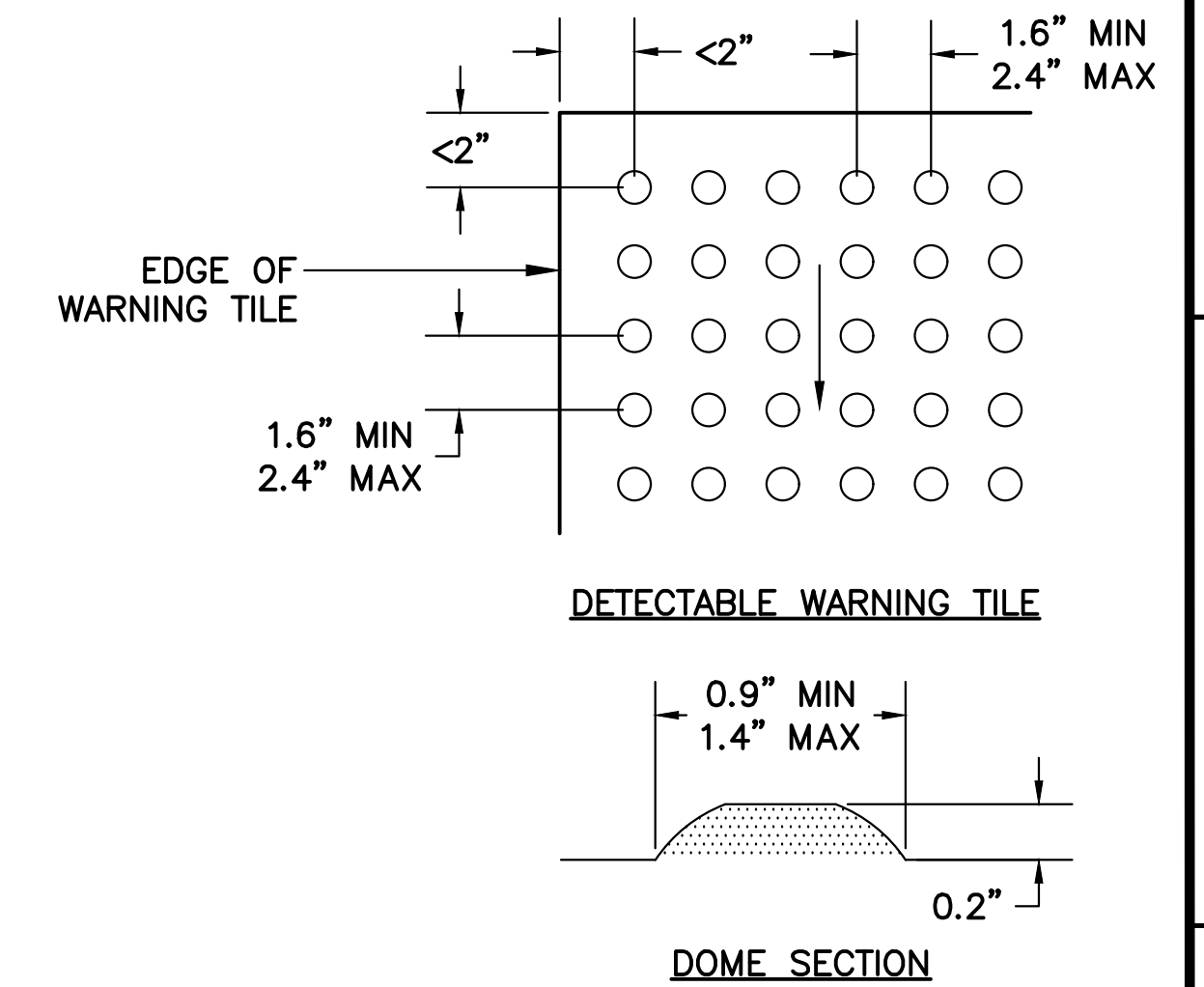


VERTICAL GRANITE CURB
SCALE: N.T.S



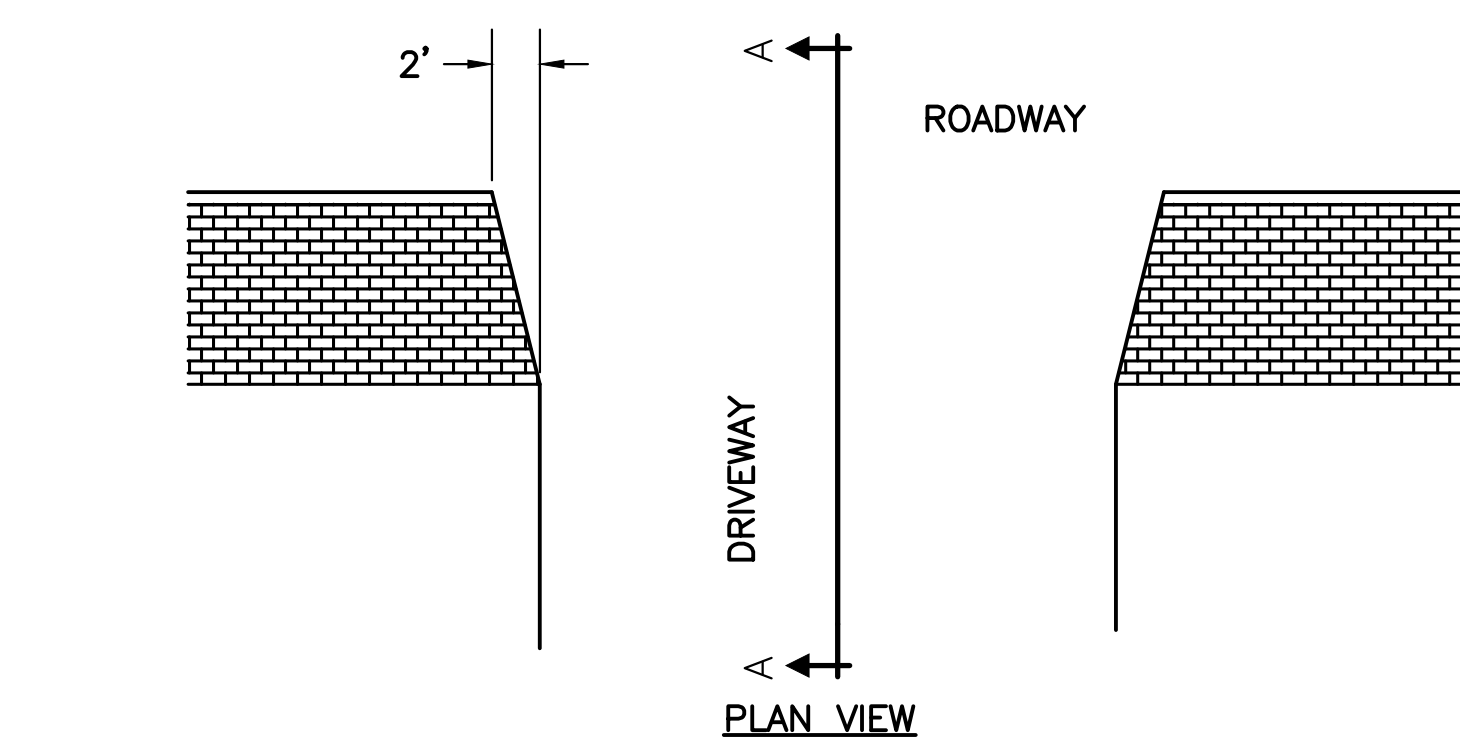
CURB RAMPS AT STREETS

RAMPS AT DRIVEWAYS

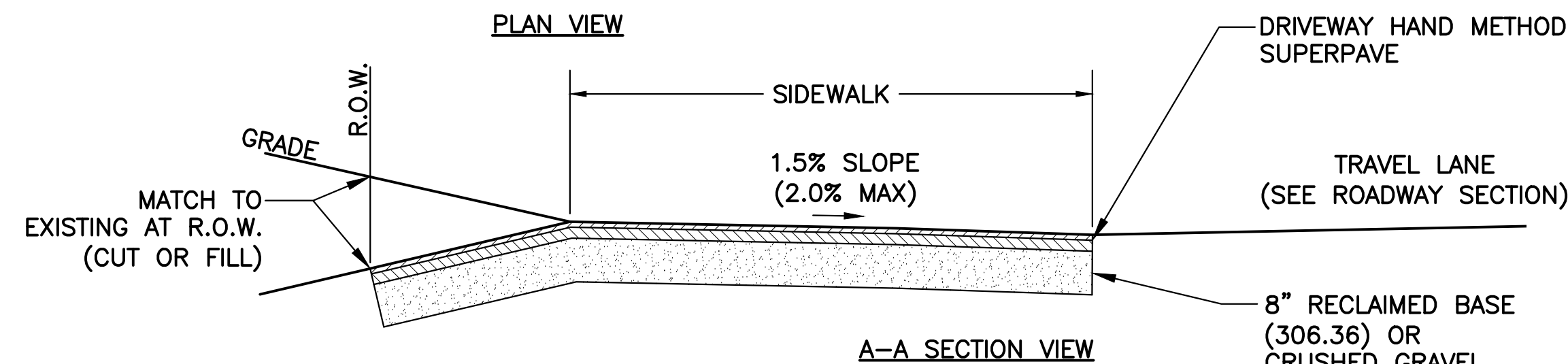


DETECTABLE WARNING TILE

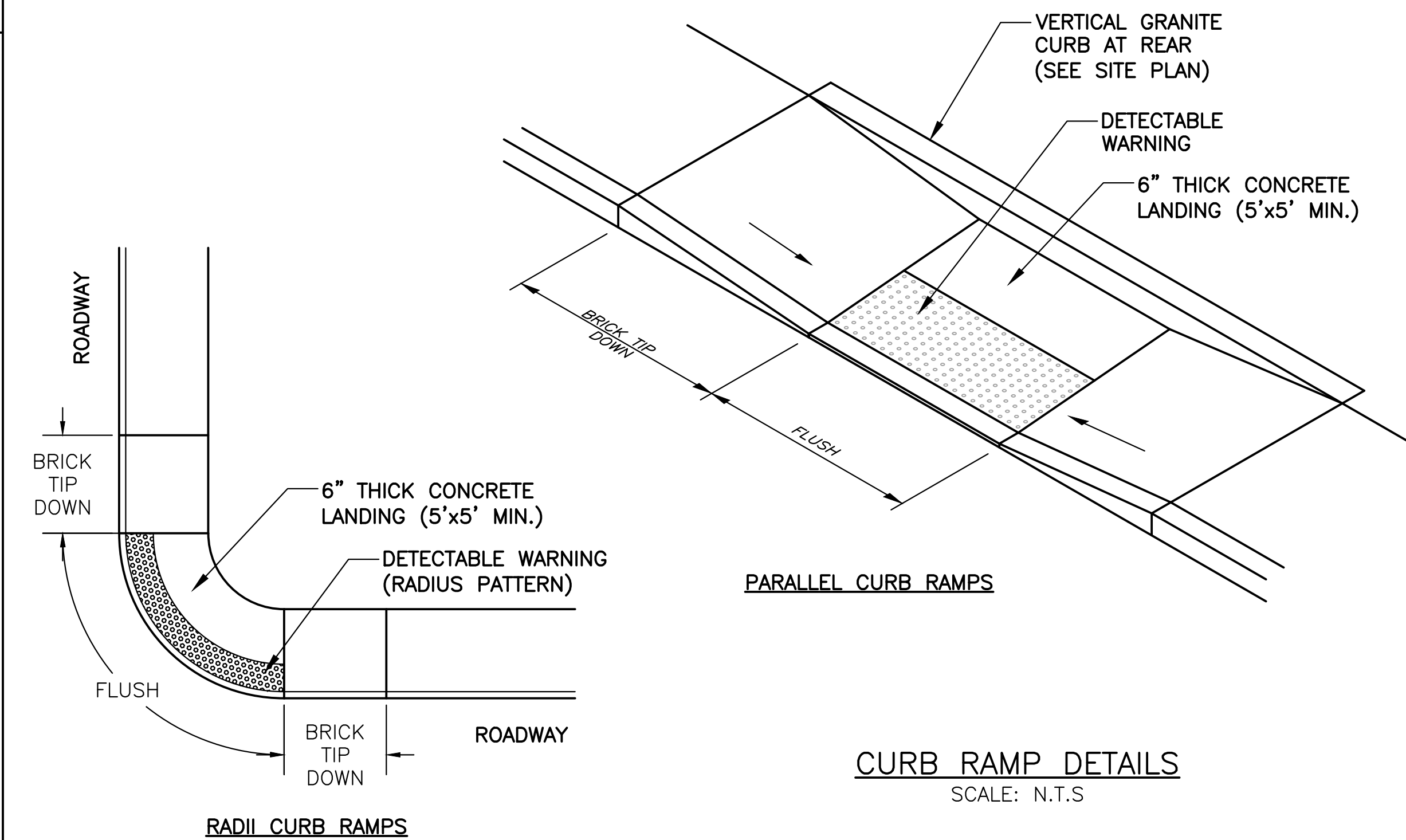
DOME SECTION



- NOTES:
1. DRIVEWAY PAVEMENT SHALL BE:
1.5" WEARING (3/8" 50 GYRATION)
1.5" BINDER (1/2" 50 GYRATION)
 2. ENGINEER TO DETERMINE IF EXISTING BASE MATERIALS ARE ACCEPTABLE.
 3. RECLAIMED BASE MATERIAL SHALL BE USED UNLESS DIRECTED BY THE ENGINEER, OR IF QUANTITIES HAVE BEEN DEPLETED.



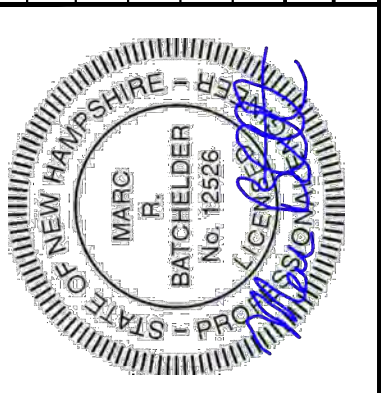
TYPICAL DRIVEWAY SECTION
SCALE: N.T.S



CURB RAMP DETAILS
SCALE: N.T.S

- NOTES:
1. ALL CURB RAMPS AND SIDEWALKS SHALL COMPLY WITH ADA (AMERICANS WITH DISABILITIES ACT).
 2. TIP DOWNS SHALL HAVE A RUNNING SLOPE OF 7.5% (8.3% MAX.) AND CROSS SLOPE OF 1.5% (2.0% MAX.).
 3. THERE SHALL BE NO CHANGE IN ELEVATION (LIP) OR GAPS IN THE SIDEWALK RAMPS GREATER THAN 1/4".
 4. LANDINGS AND AREAS OF CHANGE IN DIRECTION SHALL HAVE A SLOPE OF 1.5% (2.0%) IN ALL DIRECTIONS.
 5. DETECTABLE WARNINGS SHALL INSTALLED SO THAT PATTERN IS IN LINE WITH DIRECTION OF TRAVEL TO THE EXTENT POSSIBLE.
 6. DETECTABLE WARNING TILES SHALL BE PLACED SO THAT THE EDGE CLOSEST TO THE CURB IS BETWEEN 6"-8" FROM CURB LINE. DETECTABLE WARNING TILE SHALL SPAN THE FULL WIDTH OF THE RAMP AND A MINIMUM OF 24" DEEP.
 7. DETECTABLE WARNING TILE SHALL BE CAST IRON, NEENAH FOUNDRY OR APPROVED EQUAL. RADIUS ADA CURB RAMPS SHALL HAVE DETECTABLE WARNING TILES IN A RADIUS PATTERN USING TUFTILE OR APPROVED EQUAL.
 8. CONCRETE AT DETECTABLE WARNING RAMPS SHALL BE FIBER REINFORCED WITH A MEDIUM BROOM FINISH.
 9. BASE MATERIAL FOR CONCRETE SECTIONS SHALL BE EITHER 8" THK RECLAIM BASE (306.36), OR 8" THK CRUSHED GRAVEL BASE (NHDOT 304.3).

NO.	ISSUED FOR	DATE
0	MRB	2/26/18

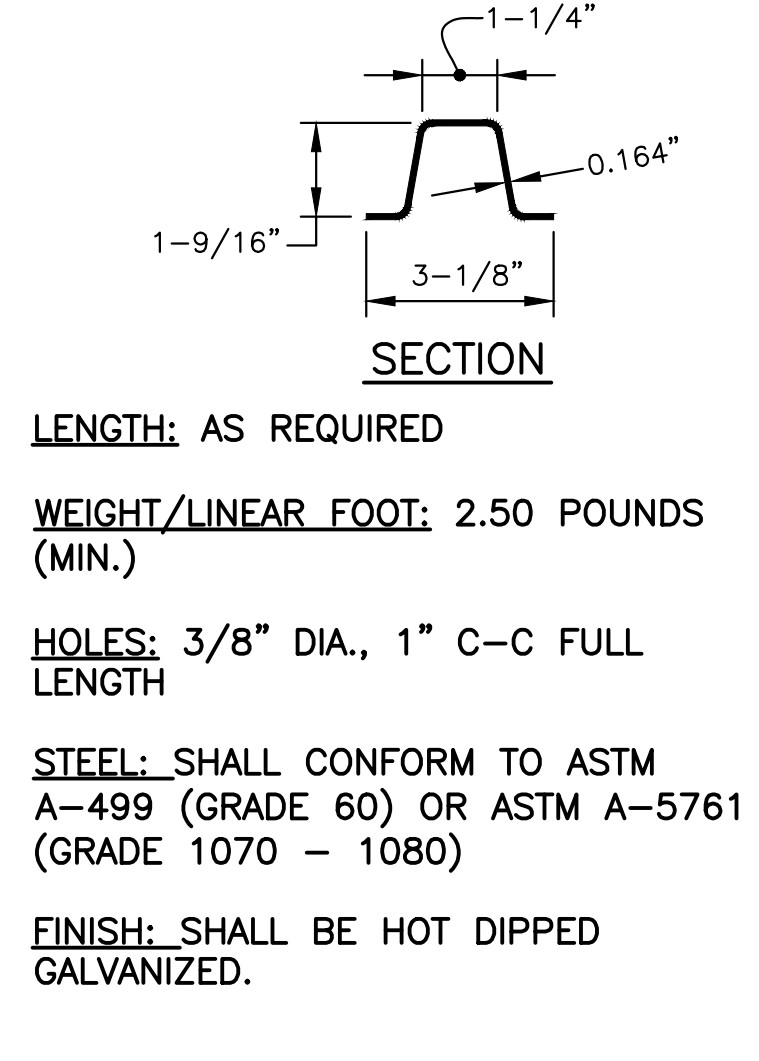
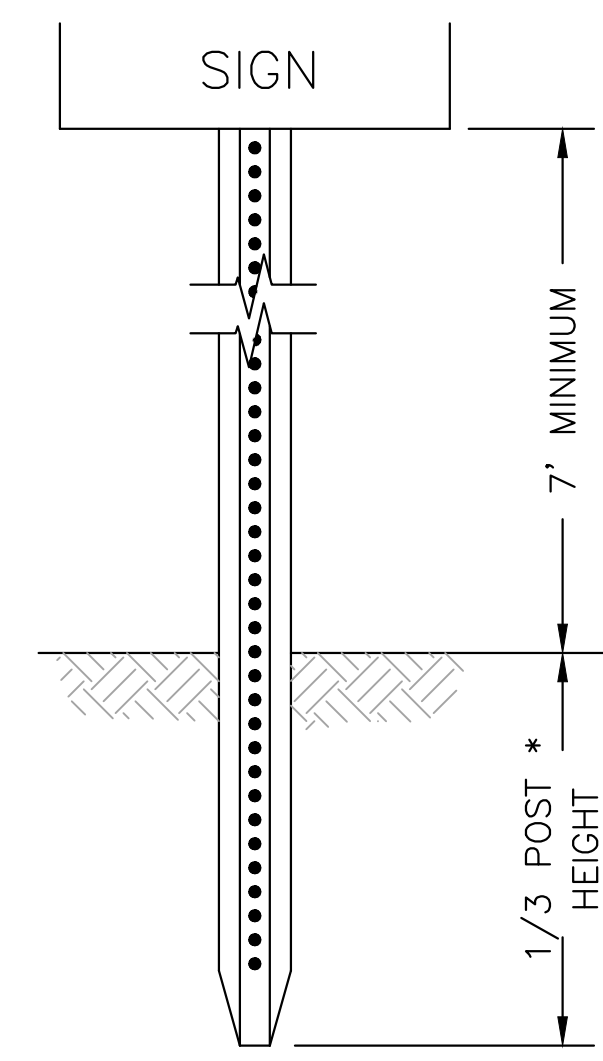


DATE: JANUARY 19, 2017
SCALE: VARIES
PROJECT NO.: Cop-006
MARC R. BATCHELDER, PE
ENGINEER OF RECORD

Pleasant Street
Utility & Roadway
Improvements
Portsmouth, NH

Seaport
Engineering, LLC
PORTSMOUTH, NH
(603) 498-8449
www.seaporteng.com

DETAILS SHEET
ROADWAY



STOP
R1-1
30x30
QTY:7
(5.25sf)

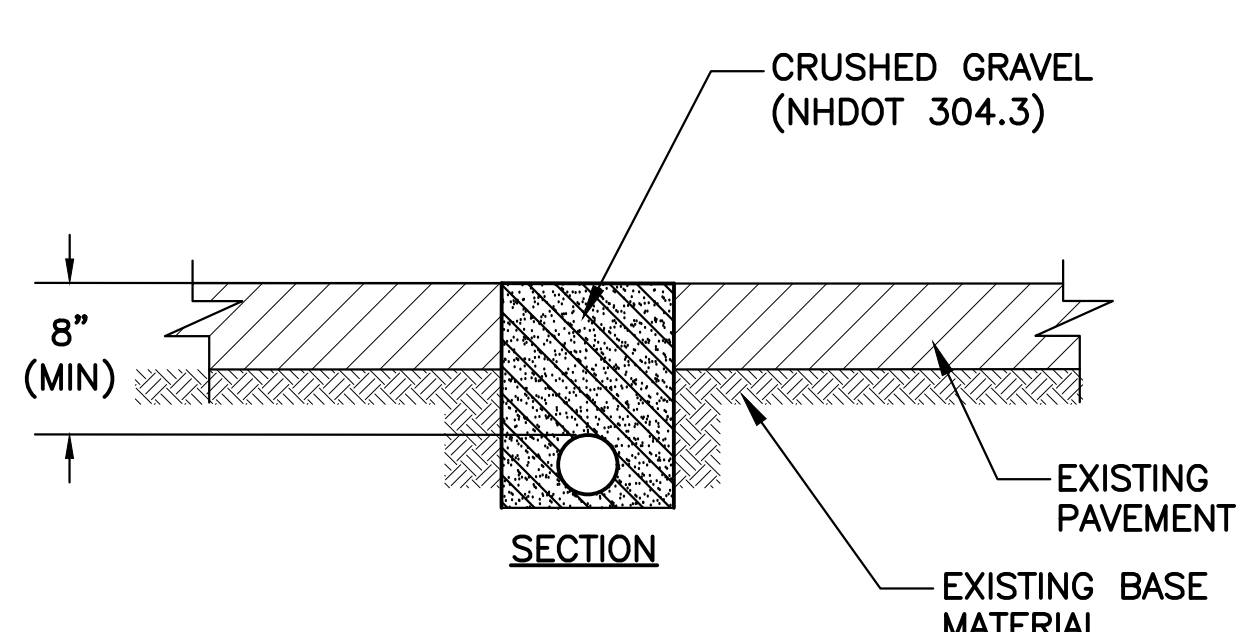
NO PARKING
R8-3
18x24
RED ON WHITE
QTY:2
(3.0sf)

PED CROSSING
W11-2 (30x30) &
W16-7P (24x12)
BLACK ON YELLOW
QTY:8
(8.25sf)

ACCESSIBLE ROUTE
18x24
WHITE ON BLUE
QTY:3
(3.0sf)

- NOTES:**
- POSTS MAY BE SET OR DRIVEN.
 - WHEN POSTS ARE SET, HOLES SHALL BE DUG TO THE PROPER DEPTH; AFTER INSERTING POSTS, THE HOLES SHALL BE BACK FILLED WITH SUITABLE MATERIAL IN LAYERS NOT TO EXCEED 6" IN DEPTH AND THOROUGHLY COMPACTED, CARE BEING TAKEN TO PRESERVE THE ALIGNMENT OF THE POST.
 - WHEN POSTS ARE DRIVEN, A SUITABLE DRIVING CAP SHALL BE USED AND AFTER DRIVING THE TOP OF THE POST SHALL HAVE SUBSTANTIALLY THE SAME CROSS-SECTIONAL DIMENSION AS THE BODY OF THE POST; BATTERED HEADS WILL NOT BE ACCEPTED.
 - POSTS SHALL NOT BE DRIVEN WITH THE SIGN ATTACHED TO THE POST.
 - WHEN SIGN IS IN PLACE, NO PART OF THE POST SHALL EXTEND ABOVE THE SIGN.

SIGNS AND POST
SCALE: N.T.S



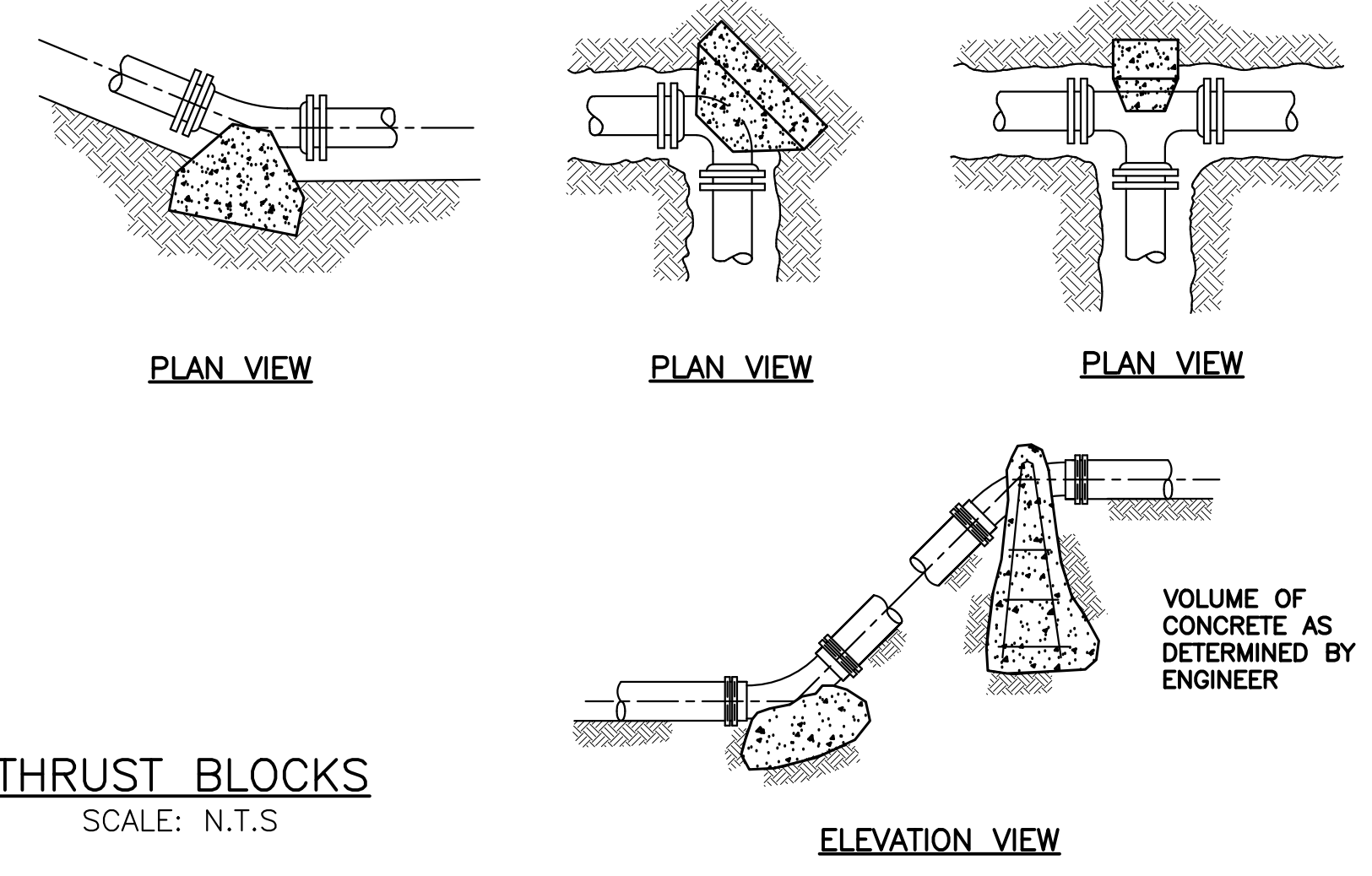
- NOTES:**
- CONTRACTOR SHALL PLACE TEMPORARY WATER IN TRENCH AT ALL ROADWAY AND DRIVEWAY CROSSINGS. COST OF TRENCH IS INCIDENTAL TO THE TEMPORARY WATER PAY ITEM.

TEMPORARY WATER PIPE TRENCH
SCALE: N.T.S

SQUARE FEET OF CONCRETE THRUST BLOCKING ON UNDISTURBED SOIL
UP TO 150 P.S.I. WORKING PRESSURE

PIPE SIZE	TEE OR TAP SLEEVE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
4"	2.0	1.0	1.3	0.7	0.5
6"	2.0	2.0	1.5	0.8	0.6
8"	3.6	3.8	2.0	1.0	0.7
10"	5.6	5.6	3.3	1.5	1.0
12"	8.0	8.0	4.3	2.3	1.5

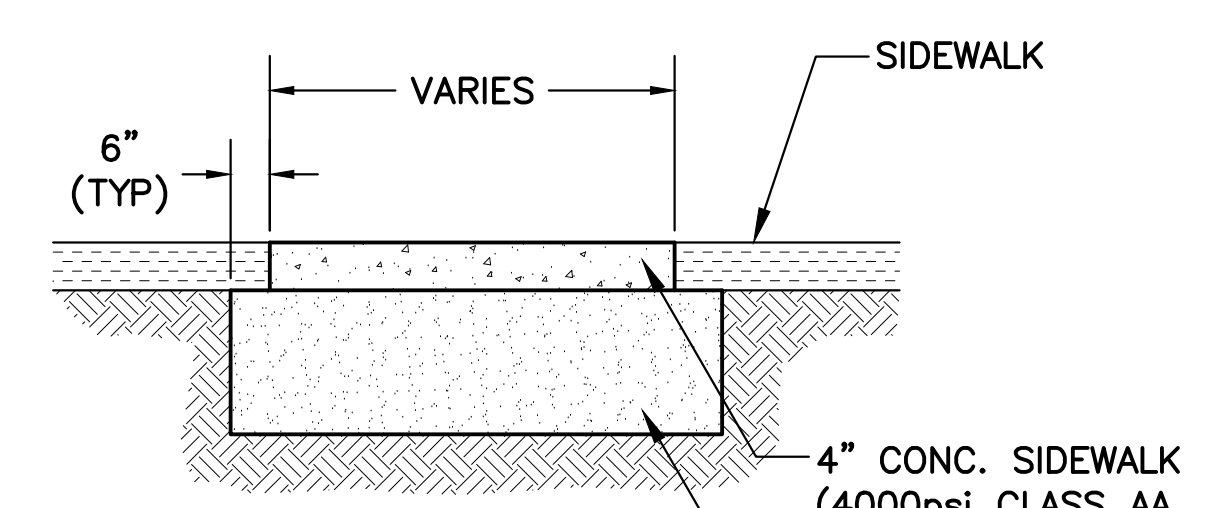
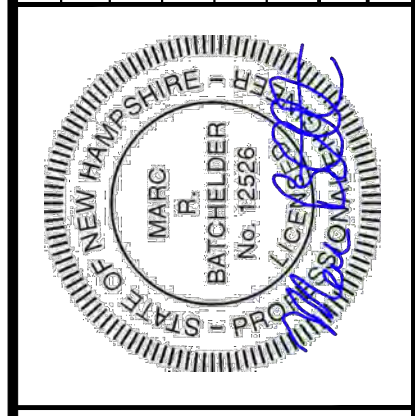
FOR 3" AND SMALLER PIPES



THRUST BLOCKS
SCALE: N.T.S

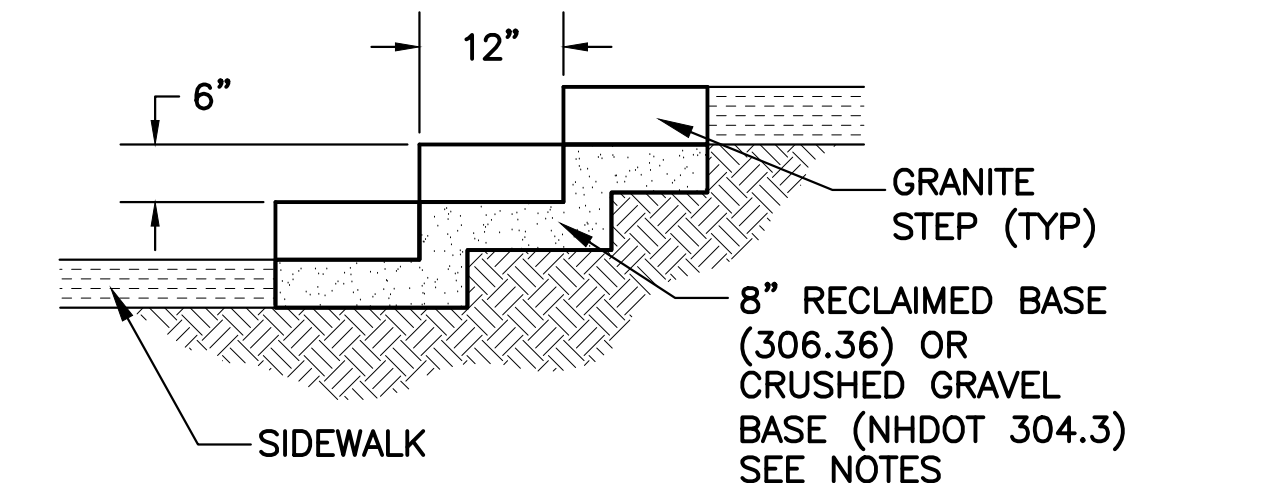
- NOTES:**
- POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL.
 - JOINTS SHALL NOT BE COVERED WITH CONCRETE.
 - THRUST BLOCK SHALL EXTEND FULL LENGTH OF FITTING.
 - PLACE MARINE GRADE PLYWOOD BOARD IN FRONT OF ALL PLUGS AND CAPS BEFORE POURING CONCRETE.
 - WHERE M.J. PIPE IS USED, M.J. PLUG WITH RETAINER GLAND MAY BE SUBSTITUTED FOR END BLOCKS WITH APPROVAL FROM ENGINEER.

NO.	ISSUED FOR	DESCRIPTION	REVISIONS	DATE
0	ISSUED FOR BID			2/26/18



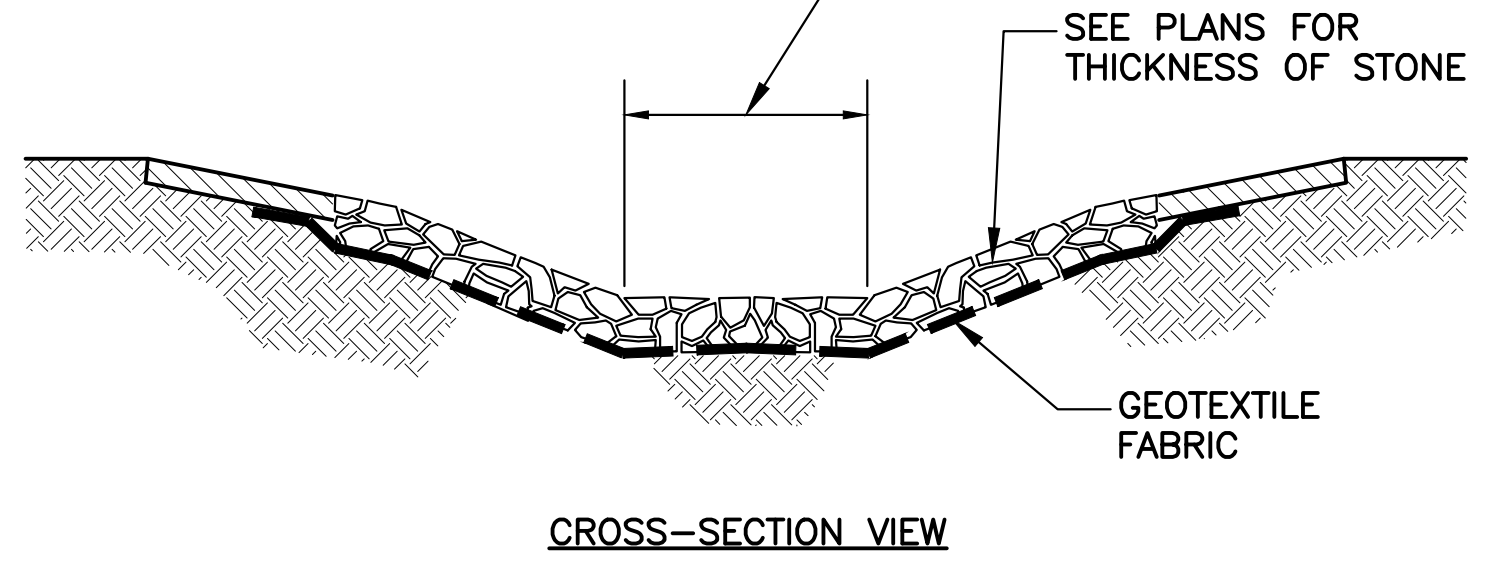
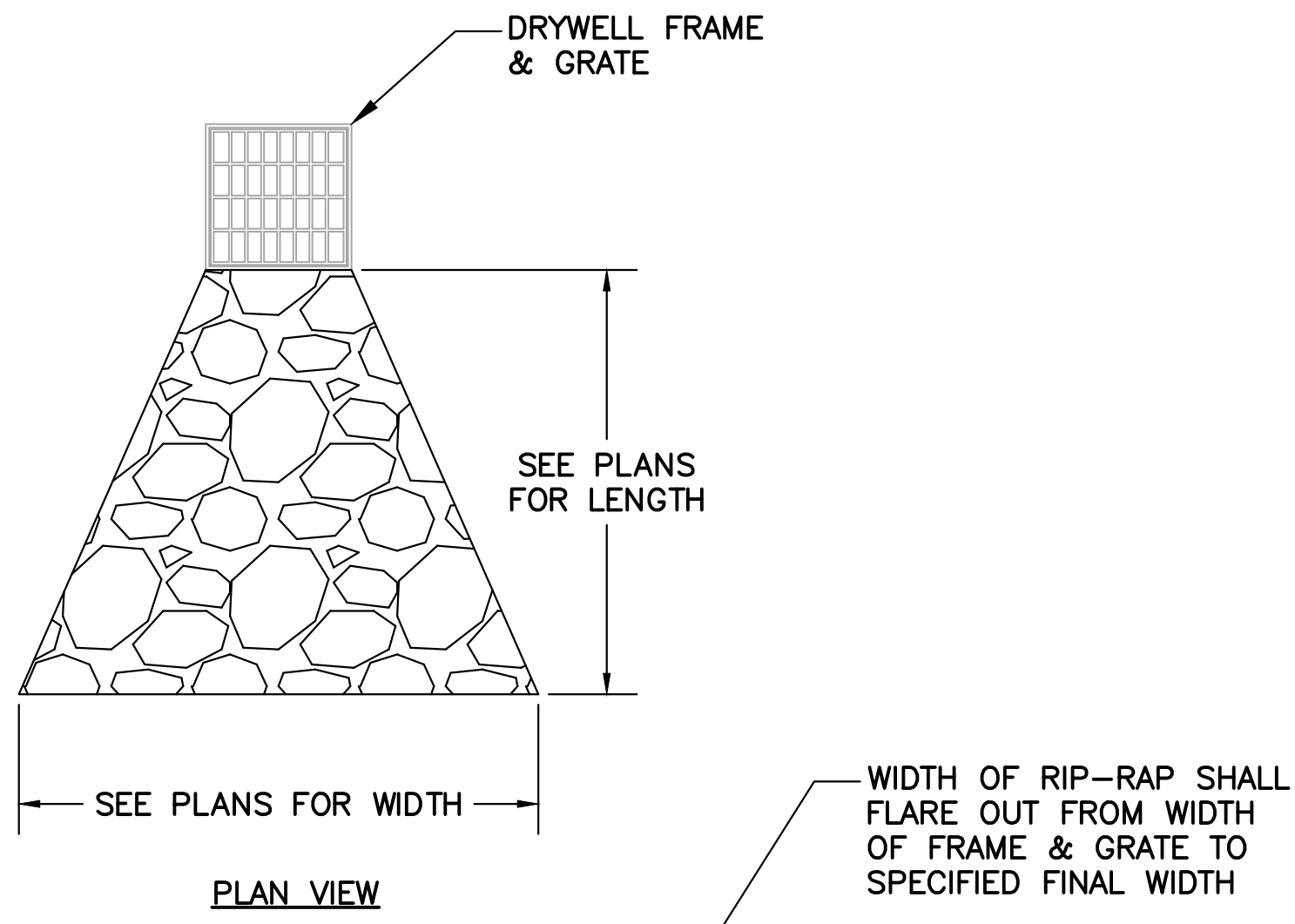
- NOTES:**
- MEDIUM BROOM FINISH.
 - THERE SHALL BE NO CHANGE IN ELEVATION (LIP) OR GAPS IN THE SIDEWALK GREATER THAN 1/4".
 - RECLAIMED BASE MATERIAL SHALL BE USED UNLESS DIRECTED BY THE ENGINEER, OR IF QUANTITIES HAVE BEEN DEPLETED.
 - CONTRACTOR TO PROVIDE & INSTALL ANY ANCHOR BOLTS REQUIRED (INCIDENTAL).

CONCRETE PADS
SCALE: N.T.S



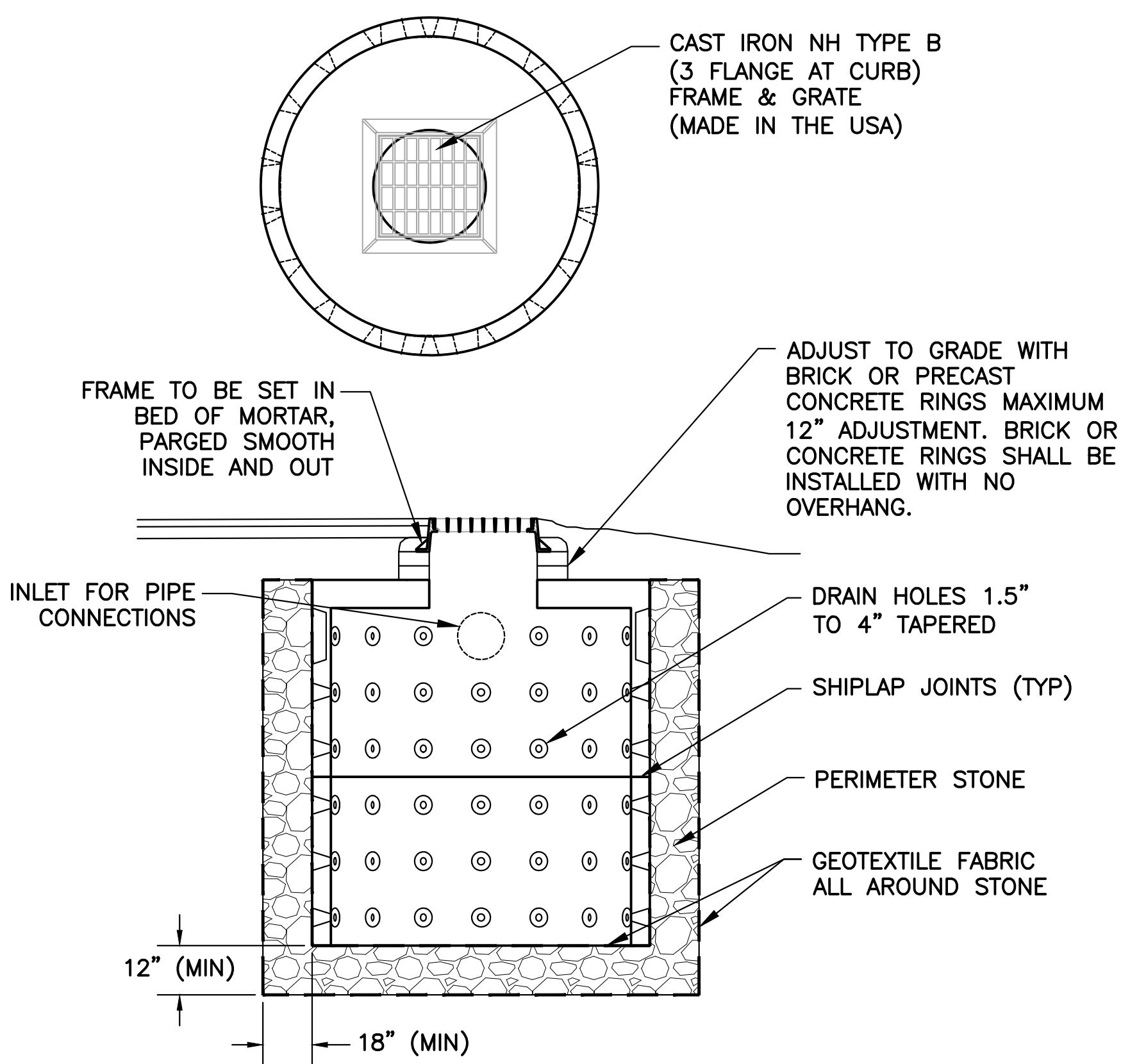
- NOTES:**
- GRANITE STEPS SHALL BE EITHER RESETTING OF EXISTING OR NEW STEPS MANUFACTURED BY SWENSON GRANITE WORKS, OR APPROVED EQUAL.
 - STEPS SHALL BE INSTALLED FLUSH TO ADJACENT SIDEWALKS.
 - STEPS SHALL BE PITCHED 1.0% TOWARDS THE FRONT OF EACH STEP FOR DRAINAGE. CROSS SLOPE OF STEPS SHALL BE FLAT (1.0% MAX) OR MATCH SIDEWALK CROSS SLOPE. CONTRACTOR IS RESPONSIBILITY TO VERIFY SLOPES WITH A SMART LEVEL.
 - BASE MATERIALS SHALL BE COMPACTED TO 95% PROCTOR.
 - CONTRACTOR TO VERIFY WIDTH OF STEPS.
 - NEW GRANITE SHALL BE FROM THE SAME LOT OF GRANITE. VARIANCES IN COLOR AND TYPE WILL NOT BE ACCEPTED.
 - RECLAIMED BASE MATERIAL SHALL BE USED UNLESS DIRECTED BY THE ENGINEER, OR IF QUANTITIES HAVE BEEN DEPLETED.

GRANITE STEPS
SCALE: N.T.S



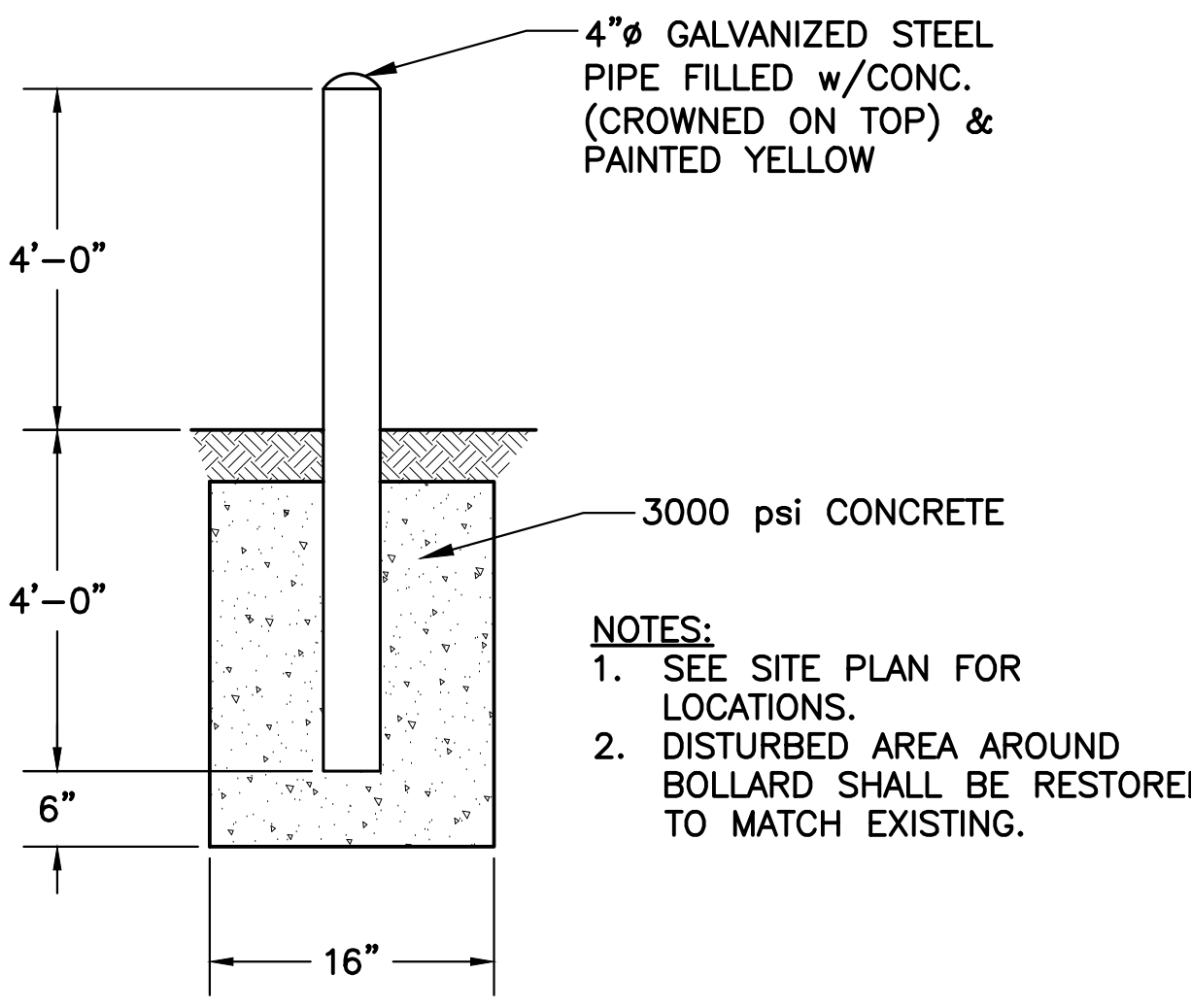
- NOTES:**
- GEOTEXTILE FABRIC SHALL BE ADS 601 OR APPROVED EQUAL. SEAMS IN FABRIC SHALL BE OVERLAPPED A MINIMUM OF 12".
 - RIP-RAP STONE SHALL BE 6"-MINUS, WELL-GRADED MIX OF ANGULAR OR SUBANGULAR STONES. FLAT STONES WILL NOT BE ALLOWED.
 - GEOTEXTILE FABRIC SHALL BE PROTECTED FROM PUNCTURES OR TEARING DURING PLACEMENT OF RIP-RAP ROCK BY PLACING A CUSHION OF SAND OR FINE GRAVEL OVER THE FABRIC.
 - TEARS OR PUNCTURES SHALL BE REPAIRED PRIOR TO CONTINUING WITH INSTALLATION OF ROCK.
 - SEE UTILITY PLANS FOR LOCATIONS OF RIP-RAP APRONS.

RIP-RAP APRON
SCALE: N.T.S



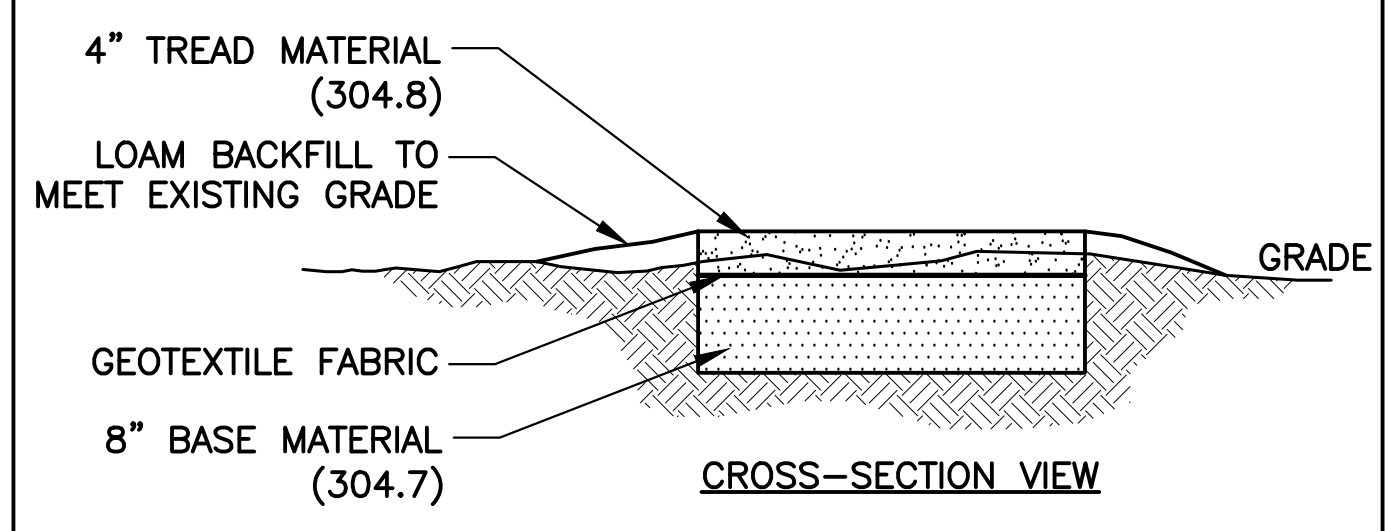
- NOTES:**
- CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
 - DESIGNED FOR H-20 LOAD RATING.
 - PERIMETER STONE SHALL BE 1-1/2" WASHED CRUSHED STONE.
 - GEOTEXTILE FABRIC SHALL BE ADS 601 OR APPROVED EQUAL. SEAMS IN FABRIC SHALL BE OVERLAPPED A MINIMUM OF 12".
 - CONTRACTOR SHALL PROVIDE SUBMITTALS FOR LOW-PROFILE 1000 & 1500 GALLON DRY WELL STRUCTURES FOR APPROVAL.

DRY WELL
SCALE: N.T.S



- NOTES:**
- SEE SITE PLAN FOR LOCATIONS.
 - DISTURBED AREA AROUND BOLLARD SHALL BE RESTORED TO MATCH EXISTING.

BOLLARD
SCALE: N.T.S



- NOTES:**
- TOP OF TREAD MATERIAL SHALL BE 2" ABOVE EXISTING GRADE TO
 - BASE AGGREGATES SHALL BE COMPACTED TO 95% PRIOR TO PLACEMENT OF GEOTEXTILE FABRIC. TREAD AGGREGATES SHALL BE COMPACTED TO 95%.
 - PATH AND SHOULDERS SHALL BE ADA COMPLIANT WITH A FIRM AND STABLE WALKING SURFACE.

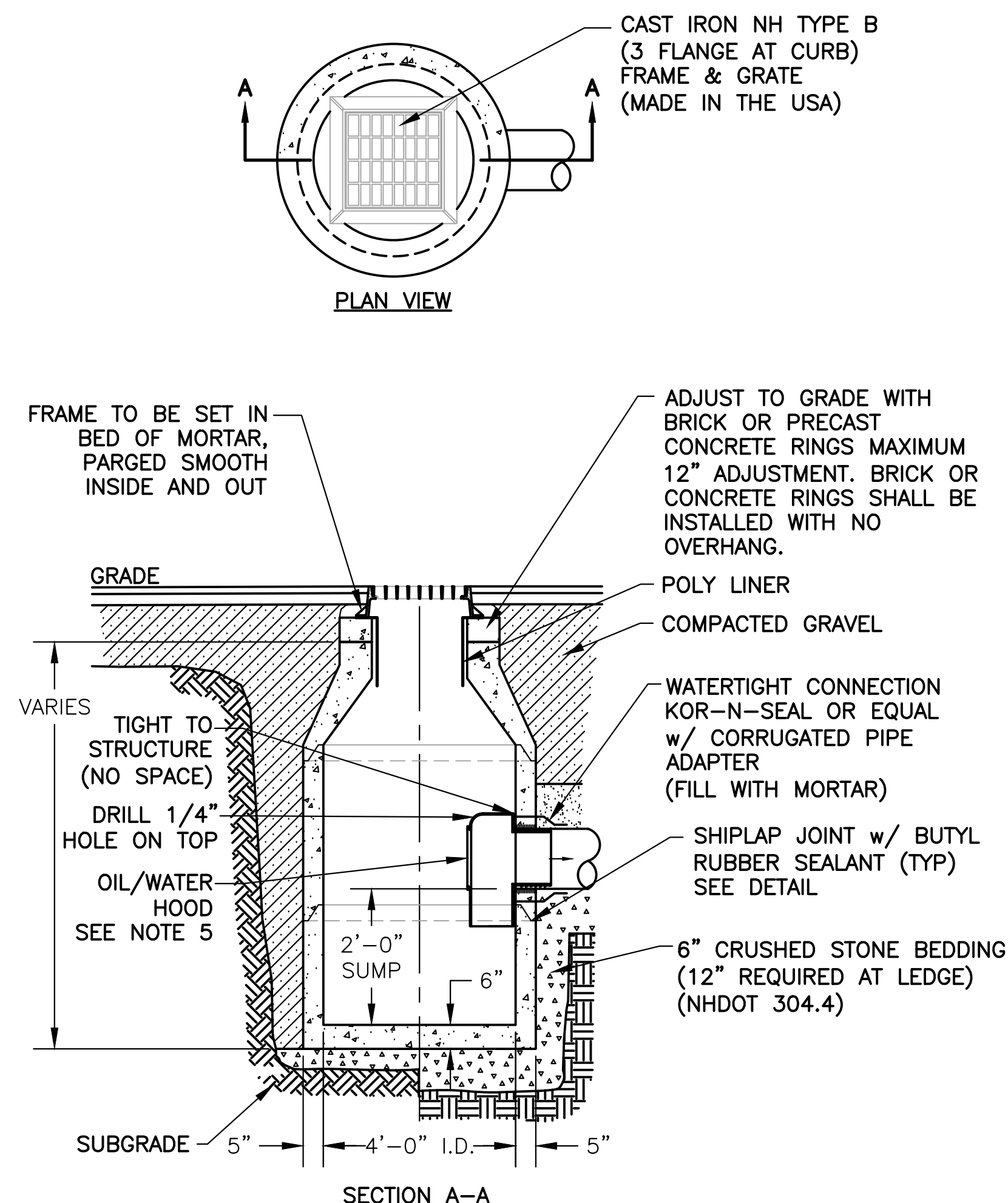
ADA COMPLIANT GRAVEL PATH
SCALE: N.T.S

DATE: JANUARY 19, 2017
SCALE: VARIES
PROJECT NO.: Cop-006
MARC R. BATCHELDER, PE
ENGINEER OF RECORD

FOR: Pleasant Street
Utility & Roadway
Improvements
Portsmouth, NH

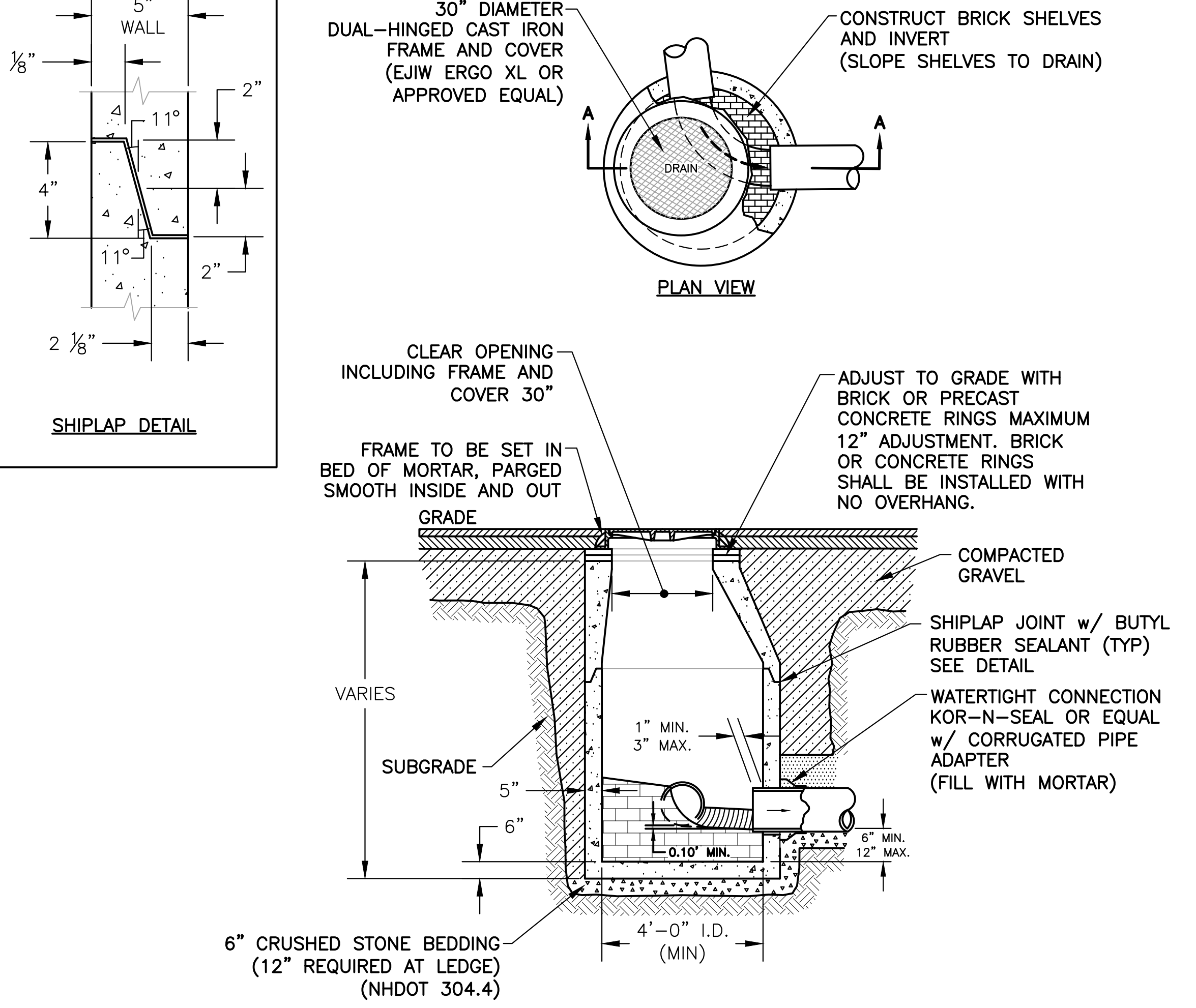
Seaport Engineering, LLC
PORTSMOUTH, NH
(603) 498-8449
www.seaporteng.com

TITLE: DETAILS SHEET
ROADWAY



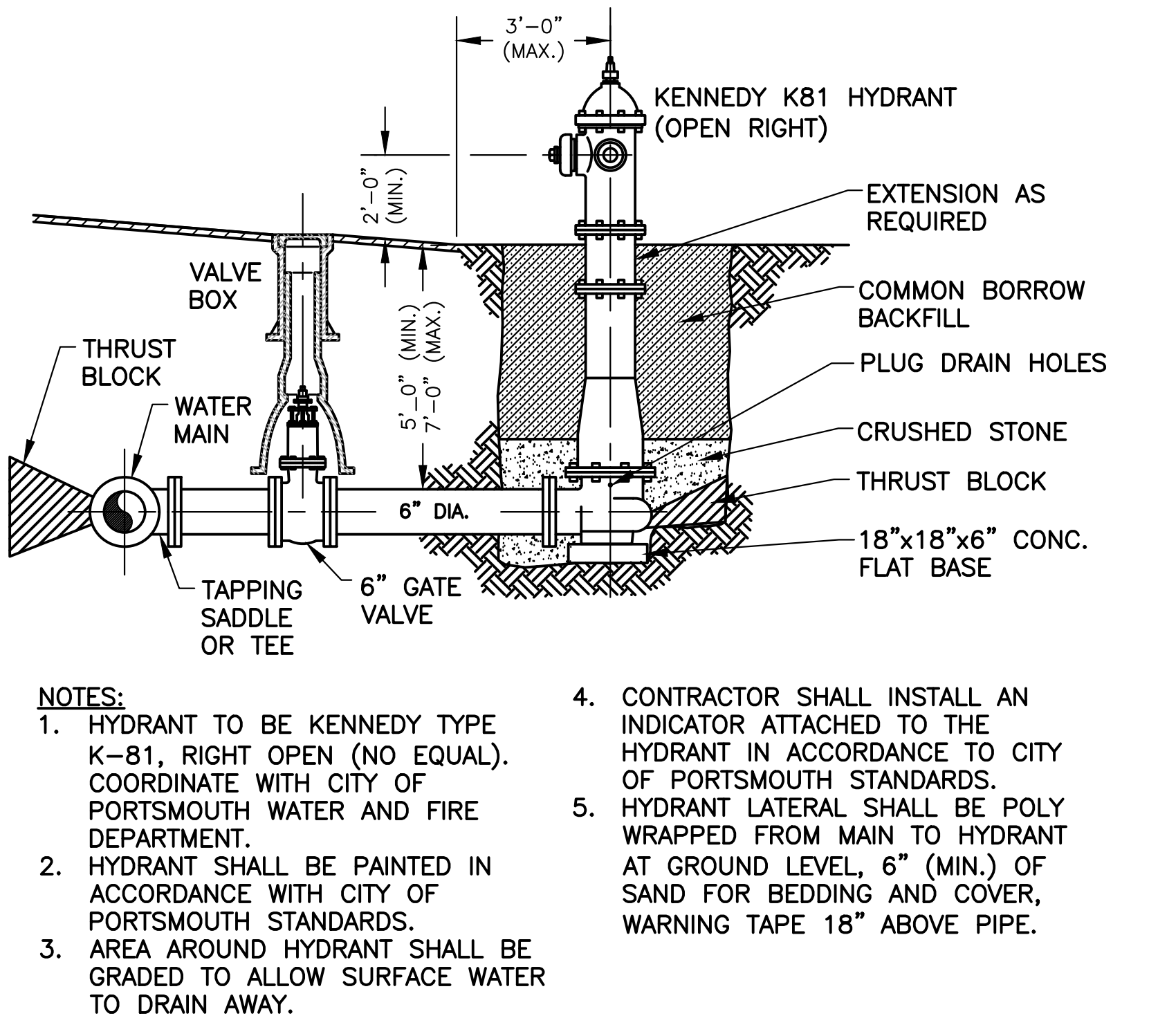
- NOTES:**
1. CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
 2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS & SHALL BE PLACED IN THE CENTER THIRD OF WALL.
 3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
 4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
 5. ALL CATCHBASINS OUTLETS SHALL HAVE 'ELIMINATOR' OIL AND FLOATING DEBRIS TRAP BY KLEANSTREAM (NO EQUAL). FOR EXIT ONLY CBs, NOT FOR PASS THROUGH CBs.

CATCH BASIN
SCALE: N.T.S



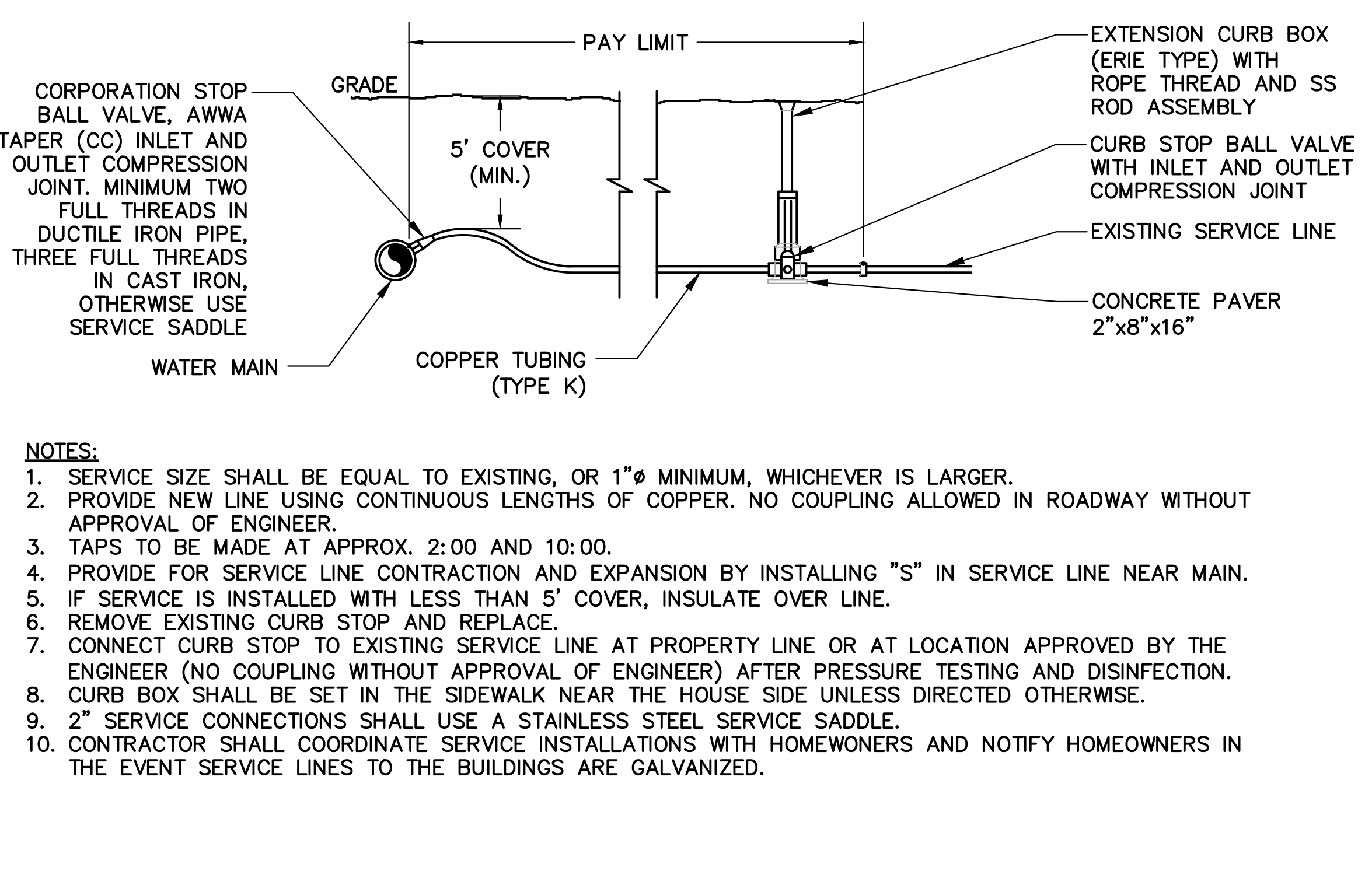
- NOTES:**
1. CONCRETE SHALL BE 4,000 P.S.I. AFTER 28 DAYS.
 2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
 3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT..
 4. EACH CASTING TO HAVE LIFTING HOLES CAST IN.
 5. LADDER RUNGS SHALL BE OMITTED.

DRAIN MANHOLE
SCALE: N.T.S



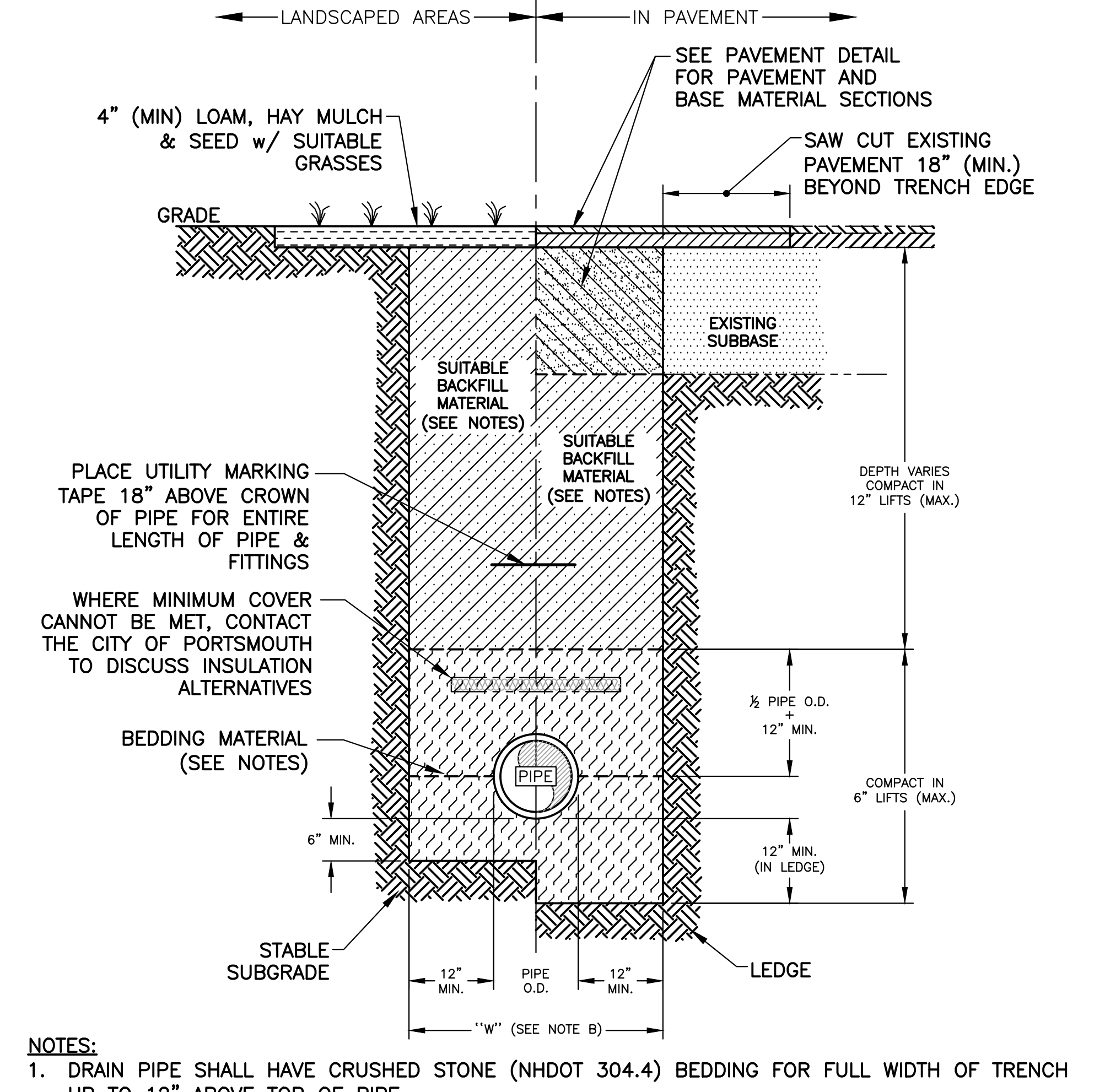
- NOTES:**
1. HYDRANT TO BE KENNEDY TYPE K-81, RIGHT OPEN (NO EQUAL). COORDINATE WITH CITY OF PORTSMOUTH WATER AND FIRE DEPARTMENT.
 2. HYDRANT SHALL BE PAINTED IN ACCORDANCE WITH CITY OF PORTSMOUTH STANDARDS.
 3. AREA AROUND HYDRANT SHALL BE GRADED TO ALLOW SURFACE WATER TO DRAIN AWAY.
 4. CONTRACTOR SHALL INSTALL AN INDICATOR ATTACHED TO THE HYDRANT IN ACCORDANCE TO CITY OF PORTSMOUTH STANDARDS.
 5. HYDRANT LATERAL SHALL BE POLY WRAPPED FROM MAIN TO HYDRANT AT GROUND LEVEL, 6" (MIN.) OF SAND FOR BEDDING AND COVER, WARNING TAPE 18" ABOVE PIPE.

FIRE HYDRANT
SCALE: N.T.S



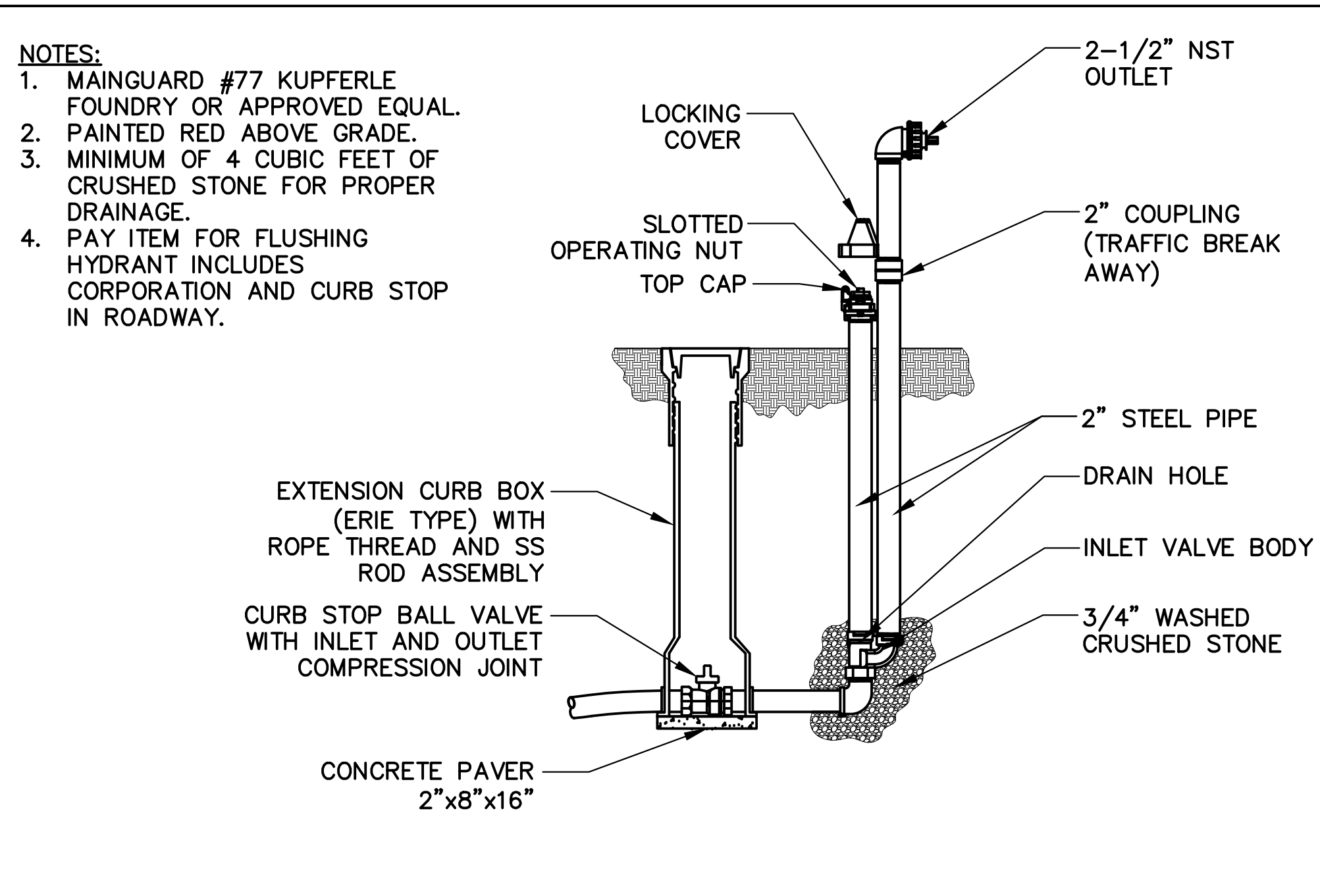
- NOTES:**
1. SERVICE SIZE SHALL BE EQUAL TO EXISTING, OR 1" MINIMUM, WHICHEVER IS LARGER.
 2. PROVIDE NEW LINE USING CONTINUOUS LENGTHS OF COPPER. NO COUPLING ALLOWED IN ROADWAY WITHOUT APPROVAL OF ENGINEER.
 3. TAPS TO BE MADE AT APPROX. 2:00 AND 10:00.
 4. PROVIDE FOR SERVICE LINE CONTRACTION AND EXPANSION BY INSTALLING "S" IN SERVICE LINE NEAR MAIN.
 5. IF SERVICE IS INSTALLED WITH LESS THAN 5' COVER, INSULATE OVER LINE.
 6. REMOVE EXISTING CURB STOP AND REPLACE.
 7. CONNECT CURB STOP TO EXISTING SERVICE LINE AT PROPERTY LINE OR AT LOCATION APPROVED BY THE ENGINEER (NO COUPLING WITHOUT APPROVAL OF ENGINEER) AFTER PRESSURE TESTING AND DISINFECTION.
 8. CURB BOX SHALL BE SET IN THE SIDEWALK NEAR THE HOUSE SIDE UNLESS DIRECTED OTHERWISE.
 9. 2" SERVICE CONNECTIONS SHALL USE A STAINLESS STEEL SERVICE SADDLE.
 10. CONTRACTOR SHALL COORDINATE SERVICE INSTALLATIONS WITH HOMEOWNERS AND NOTIFY HOMEOWNERS IN THE EVENT SERVICE LINES TO THE BUILDINGS ARE GALVANIZED.

WATER SERVICE CONNECTION DETAIL
SCALE: N.T.S



- NOTES:**
1. DRAIN PIPE SHALL HAVE CRUSHED STONE (NHDOT 304.4) BEDDING FOR FULL WIDTH OF TRENCH UP TO 12" ABOVE TOP OF PIPE.
 2. SEWER AND WATER PIPE SHALL HAVE SAND (NHDOT 304.1) BEDDING FOR FULL WIDTH OF TRENCH UP TO 12" ABOVE TOP OF PIPE.
 3. BEDDING MATERIAL FOR ALL PIPE IS SUBSIDIARY TO THE PIPE PAY ITEM.
 4. SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIALS DEEMED TO BE UNACCEPTABLE BY THE ENGINEER.
 5. DEPTH OF COVER SHALL BE:
WATER - 5' MIN. & 7' MAX. (<5' REQ. RIGID INS.)
SEWER - AS INDICATED ON PLANS (<6' REQ. RIGID INS.)
DRAIN - AS INDICATED ON PLANS (<3' REQ. RIGID INS.)
 6. WATER MAIN SHALL BE POLY WRAPPED AND HAVE THREE BRASS WEDGES AT ALL NON MECHANICAL CONNECTIONS.

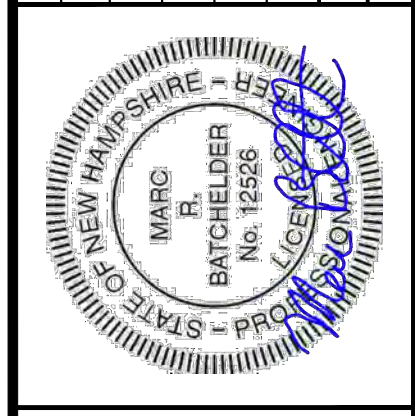
UTILITY TRENCH
SCALE: N.T.S



- NOTES:**
1. MAINGUARD #77 KUPFERLE FOUNDRY OR APPROVED EQUAL.
 2. PAINTED RED ABOVE GRADE.
 3. MINIMUM OF 4 CUBIC FEET OF CRUSHED STONE FOR PROPER DRAINAGE.
 4. PAY ITEM FOR FLUSHING HYDRANT INCLUDES CORPORATION AND CURB STOP IN ROADWAY.

FLUSHING / BLOW-OFF HYDRANT DETAIL
SCALE: N.T.S

NO.	ISSUED FOR	DESCRIPTION	DATE
0	MRB	ISSUED FOR BID	2/26/18

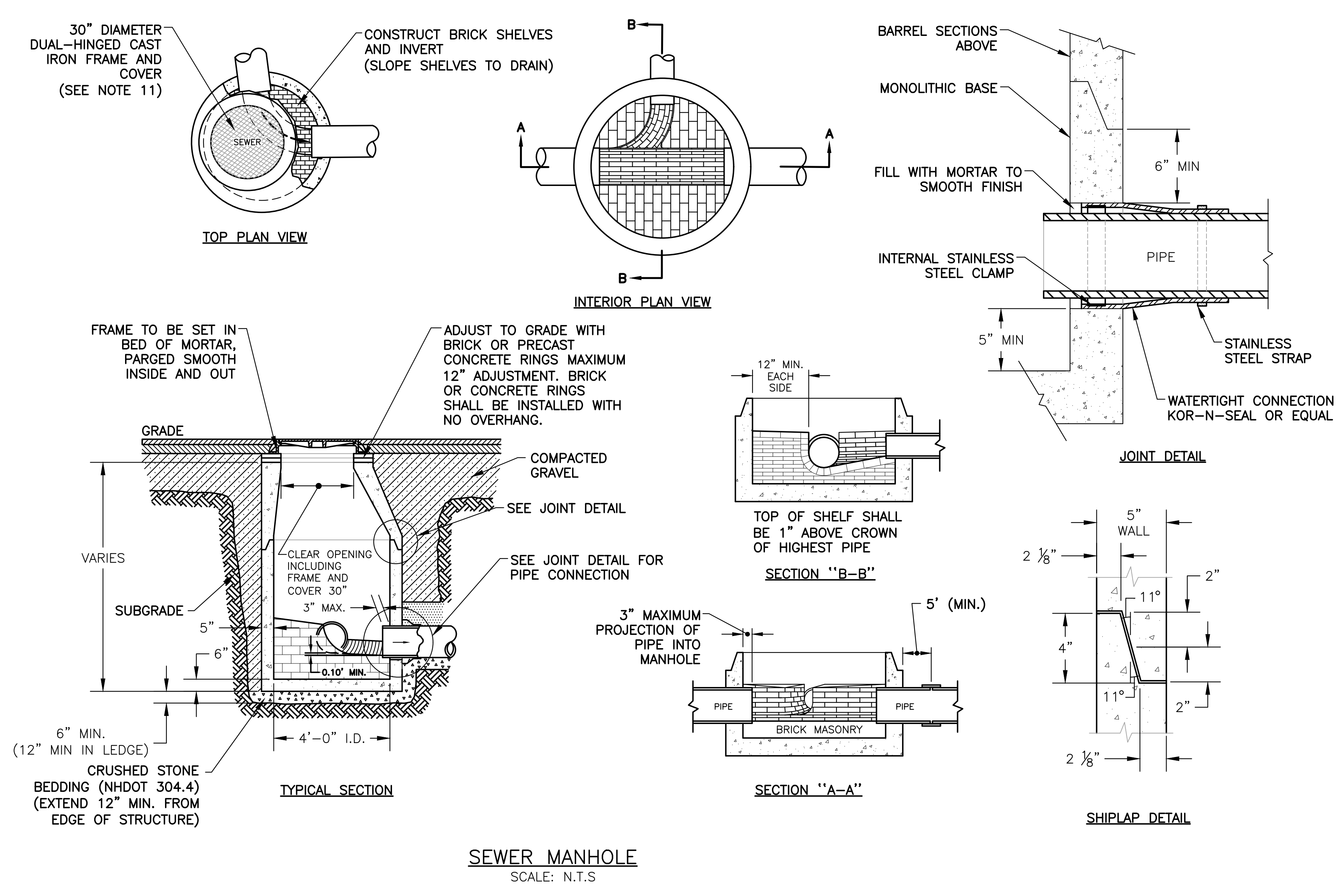


DATE: JANUARY 19, 2017
SCALE: VARIES
PROJECT NO.: Cop-006
MARCO R. BATCHELDER, PE
ENGINEER OF RECORD

FOR: Pleasant Street
Utility & Roadway
Improvements
Portsmouth, NH

Seaport Engineering, LLC
PORTSMOUTH, NH
(603) 498-8449
www.seaporteng.com

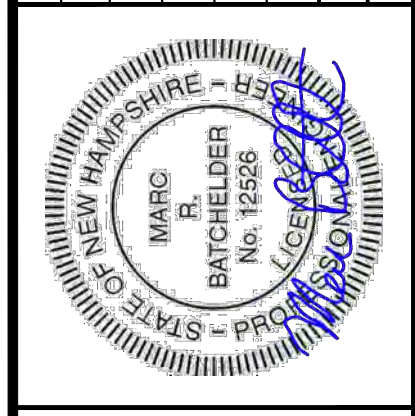
DETAILS SHEET
UTILITY



SEWER MANHOLE
SCALE: N.T.S

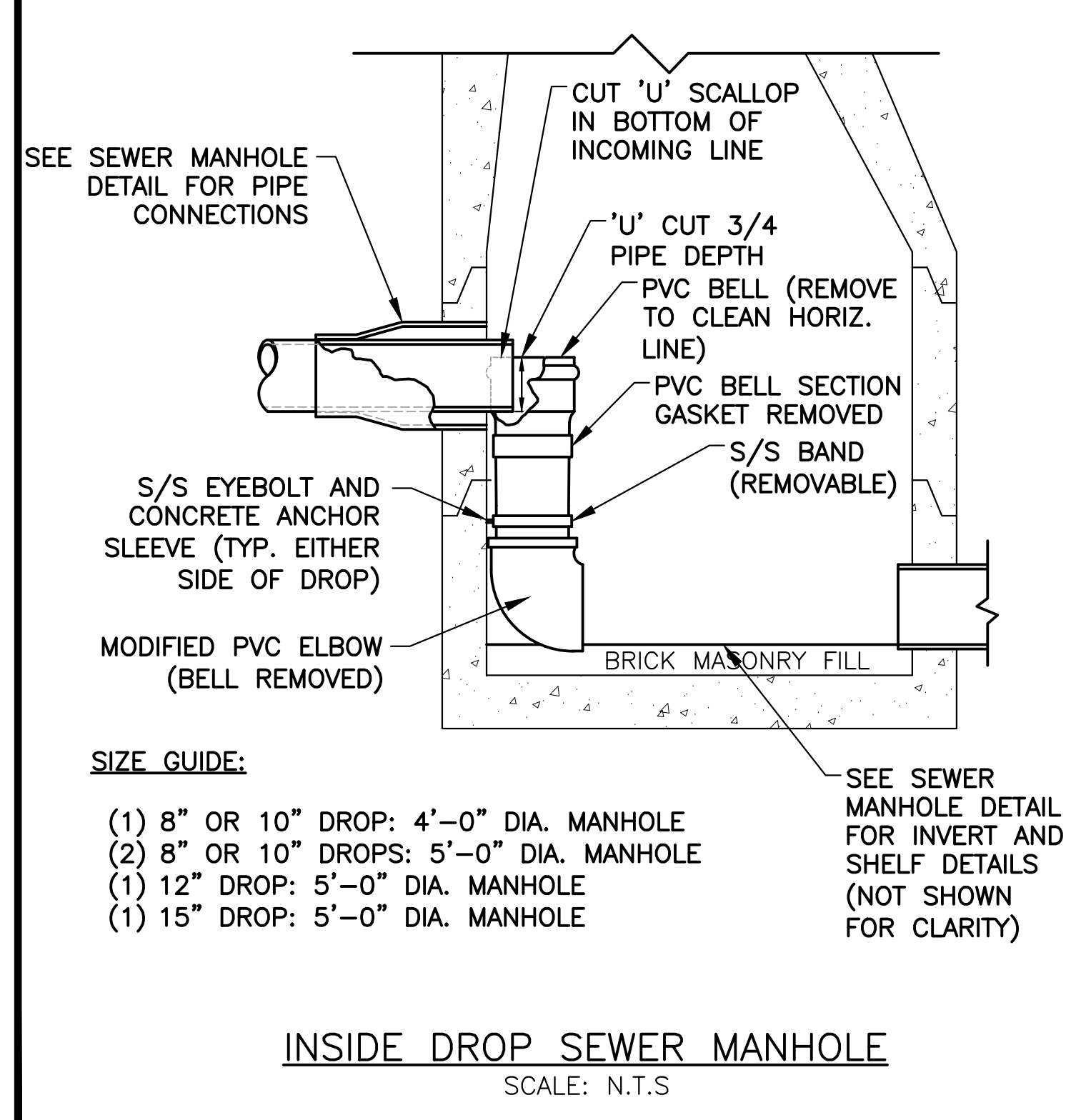
- MANHOLE NOTES:**
- IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH, AND LEAKPROOF QUALITIES CONSIDERED NECESSARY BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES) FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT. IN ANY APPROVED MANHOLE, THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND LOADS OF 8 TONS (H-20 LOADING) WITHOUT FAILURE, AND TO PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
 - BARRELS AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE (4,000psi AT 28-DAY).
 - CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER LINEAR FT. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
 - THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
 - BITUMINOUS WATERPROOF COATING SHALL BE APPLIED TO ENTIRE EXTERIOR OF MANHOLE.
 - HORIZONTAL JOINTS SHALL BE SEALED FOR WATER TIGHTNESS USING A DOUBLE ROW OF ELASTOMERIC (KENT SEAL OF EQUAL) OR MASTIC SEALANT.
 - EACH CASTING TO HAVE LIFTING HOLES CAST IN. LIFTING HOLES SHALL BE PATCHED PRIOR TO BACKFILL.
 - PRECAST CONCRETE BARREL SECTIONS, CONES, AND BASES SHALL CONFORM TO ASTM C478.
 - LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS. INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST.
 - INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO AN ELEVATION OF 1" ABOVE THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
 - FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE PURCHASED THROUGH THE CITY OF PORTSMOUTH PUBLIC WORKS.
 - BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33. STONE SIZE NO. 67.
100% PASSING 1 INCH SCREEN
0-10% PASSING #4 SIEVE
90-100% PASSING 3/4 INCH SCREEN
0- 5% PASSING #8 SIEVE
20- 55% PASSING 3/8 INCH SCREEN
WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, SCREENED GRAVEL OR CRUSHED STONE 1-1/2 INCH TO 1/2 INCH SHALL BE USED.
 - SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER HAVING AN ECCENTRIC ENTRANCE AND CAPABLE OF SUPPORTING H-20 LOADS MAY BE USED.
 - FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES:
RCP AND CI PIPE - ALL SIZES - 48"
AC AND VC PIPE - UP THROUGH 12" DIA. - 18"
AC AND VC PIPE - LARGER THAN 12" DIA. - 36"
DI PIPE - NONE REQUIRED
PVC (ASTM 3034) - UP THROUGH 15" DIA. - NONE REQUIRED
PVC (ASTM F679) - LARGER THAN 15" DIA. - 48"/60"
PVC (ASTM F789) - ALL SIZES - 48"/60"
ABS (ASTM D2680) - ALL SIZES - SAME AS VC ABOVE.
 - MANHOLE CASTINGS SHALL COMPLY WITH ASTM A48.
 - BRICK MASONRY SHALL COMPLY WITH ASTM C32.
 - MORTAR SHALL CONFORM WITH REQUIREMENTS SPECIFIED IN NH DES ENV-WQ 704.13(C).
 - SPECIFICATIONS: ADDITIONAL CONSTRUCTION SPECIFICATIONS ARE INCLUDED IN THE PROJECT MANUAL. THESE STANDARD MANHOLE DRAWINGS ARE NOT COMPLETE WITHOUT THESE SPECIFICATIONS.
 - CITY OF PORTSMOUTH - STEPS SHALL NOT BE PROVIDED.
 - CITY OF PORTSMOUTH - SMH COVERS SHALL HAVE THE CITY LOGO AND BE PURCHASED THROUGH THE CITY AT COST. COSTS ASSOCIATED WITH FRAME AND COVER IS CONSIDERED SUBSIDIARY TO THE MANHOLE PAY ITEM.
 - SHALL COMPLY WITH CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS STANDARDS.

NO.	DESCRIPTION	REVISIONS	DATE
0	ISSUED FOR BID		2/26/18

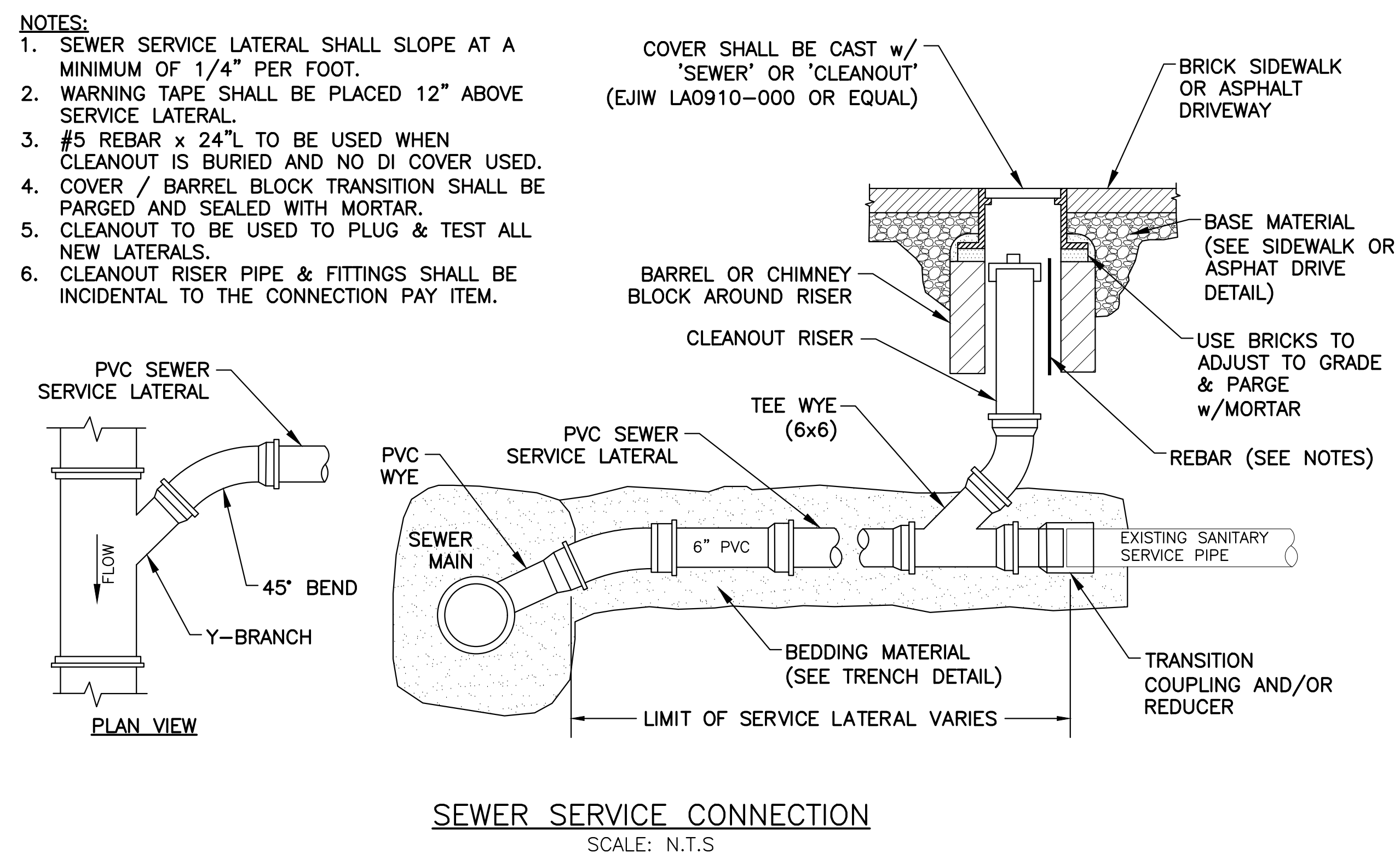


DATE: JANUARY 19, 2017
SCALE: VARIES
PROJECT NO.: Cop-006
MARC R. BATCHELDER, PE
ENGINEER OF RECORD

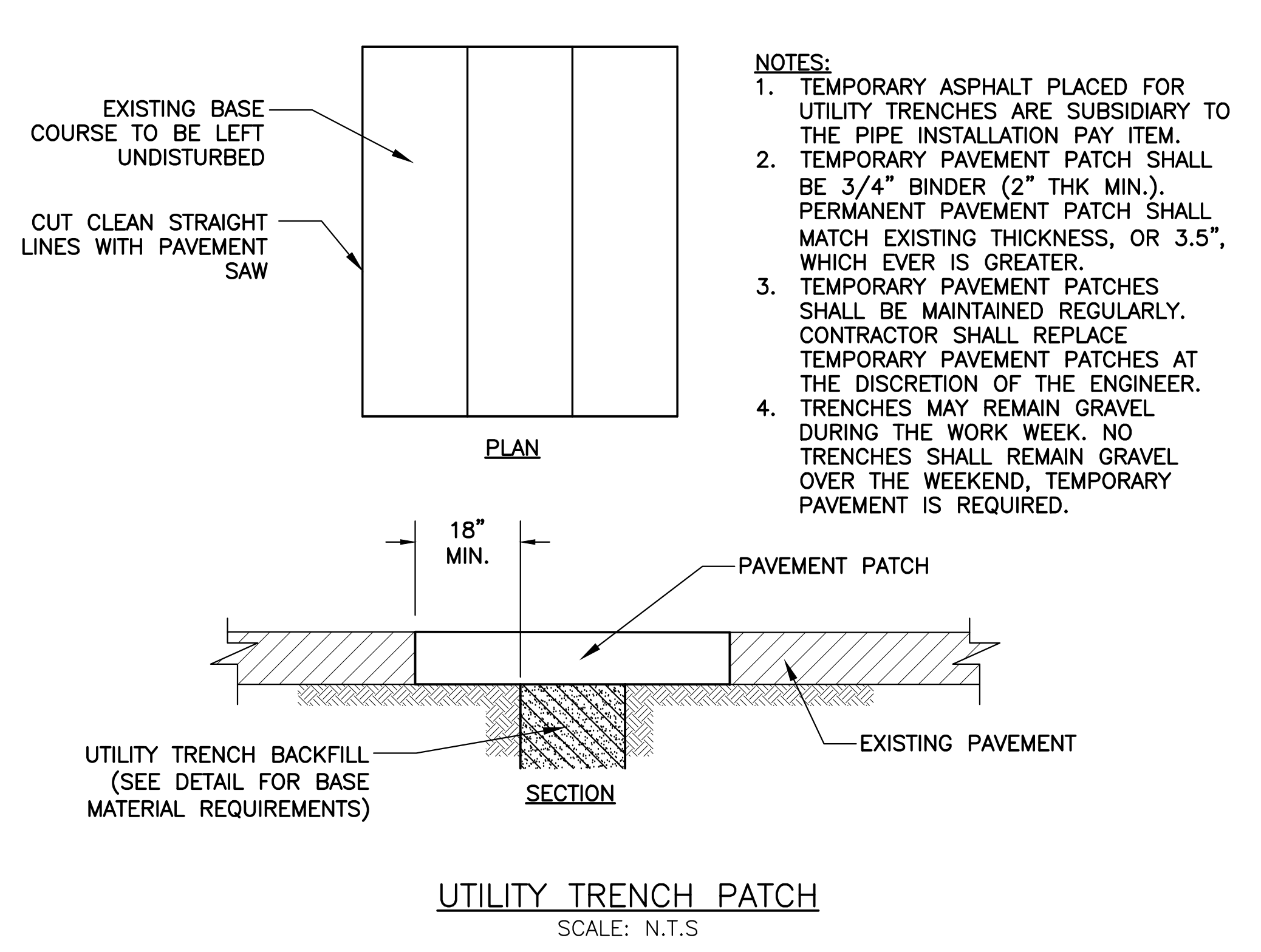
FOR: Pleasant Street
Utility & Roadway
Improvements
Portsmouth, NH



INSIDE DROP SEWER MANHOLE
SCALE: N.T.S



SEWER SERVICE CONNECTION
SCALE: N.T.S



UTILITY TRENCH PATCH
SCALE: N.T.S

- NOTES:**
- SEWER SERVICE LATERAL SHALL SLOPE AT A MINIMUM OF 1/4" PER FOOT.
 - WARNING TAPE SHALL BE PLACED 12" ABOVE SERVICE LATERAL.
 - #5 REBAR x 24"L TO BE USED WHEN CLEANOUT IS BURIED AND NO DI COVER USED.
 - COVER / BARREL BLOCK TRANSITION SHALL BE PARGED AND SEALED WITH MORTAR.
 - CLEANOUT TO BE USED TO PLUG & TEST ALL NEW LATERALS.
 - CLEANOUT RISER PIPE & FITTINGS SHALL BE INCIDENTAL TO THE CONNECTION PAY ITEM.

- NOTES:**
- TEMPORARY ASPHALT PLACED FOR UTILITY TRENCHES ARE SUBSIDIARY TO THE PIPE INSTALLATION PAY ITEM.
 - TEMPORARY PAVEMENT PATCH SHALL BE 3/4" BINDER (2" THK MIN.). PERMANENT PAVEMENT PATCH SHALL MATCH EXISTING THICKNESS, OR 3.5", WHICH EVER IS GREATER.
 - TEMPORARY PAVEMENT PATCHES SHALL BE MAINTAINED REGULARLY. CONTRACTOR SHALL REPLACE TEMPORARY PAVEMENT PATCHES AT THE DISCRETION OF THE ENGINEER.
 - TRENCHES MAY REMAIN GRAVEL DURING THE WORK WEEK. NO TRENCHES SHALL REMAIN GRAVEL OVER THE WEEKEND. TEMPORARY PAVEMENT IS REQUIRED.

Seaport Engineering, LLC
PORTSMOUTH, NH
(603) 498-8449
www.seaporteng.com

DETAILS SHEET
SEWER
C-12