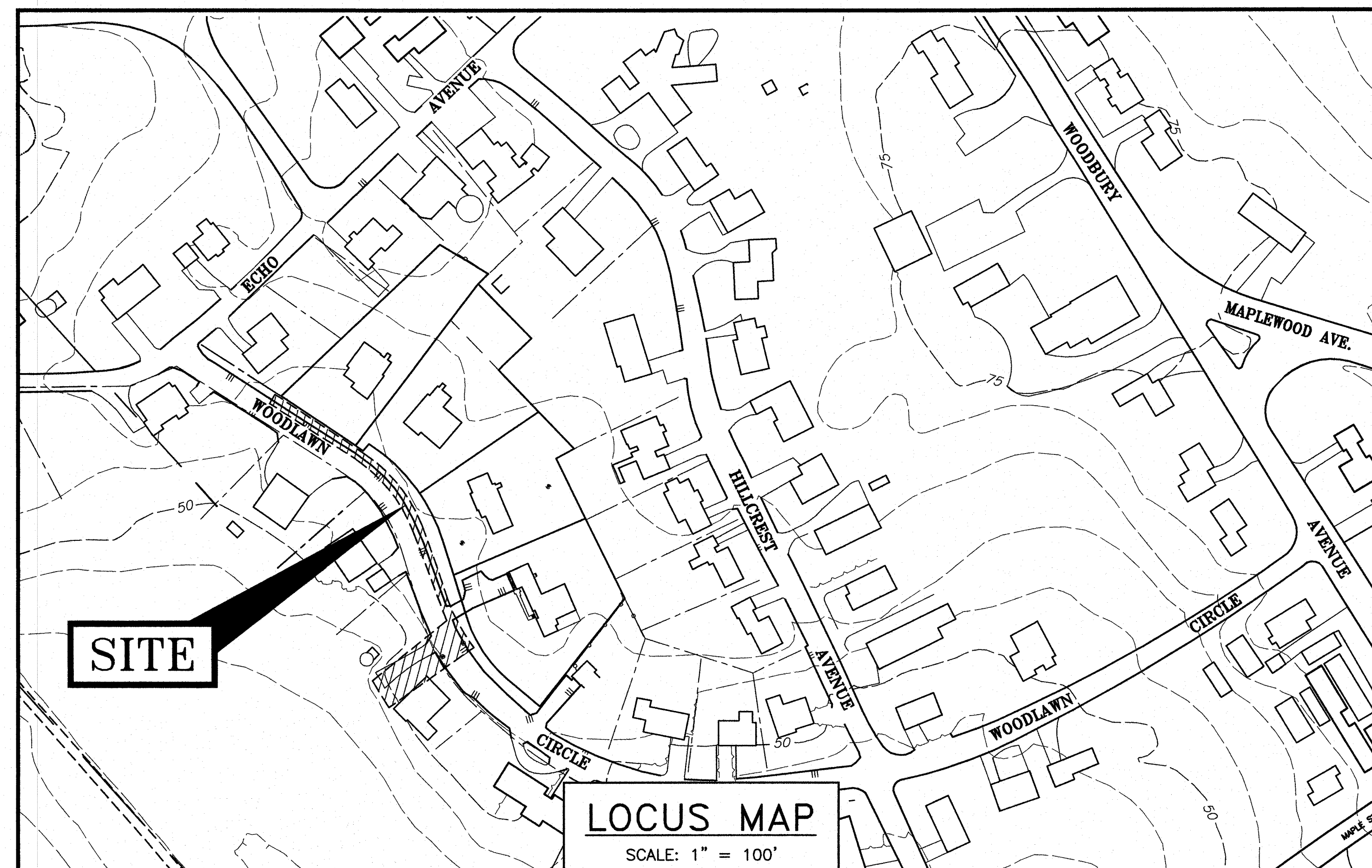
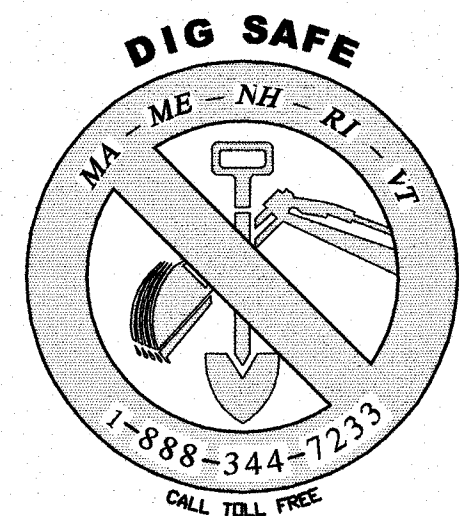


# PROPOSED STORM SEWER IMPROVEMENTS CITY OF PORTSMOUTH WOODLAWN CIRCLE PORTSMOUTH, NEW HAMPSHIRE CONSTRUCTION PLANS

**OWNER:**  
**CITY OF PORTSMOUTH**  
c/o PORTSMOUTH DEPARTMENT OF PUBLIC WORKS  
680 PEVERLY HILL ROAD  
PORTSMOUTH, N.H. 03801

**CIVIL ENGINEER & LAND SURVEYOR:**  
**AMBIT ENGINEERING, INC.**  
200 GRIFFIN ROAD, UNIT 3  
PORTSMOUTH, N.H. 03801-7114  
Tel (603) 430-9282  
Fax (603) 436-2315



## INDEX OF SHEETS

- C1 - EXISTING CONDITIONS PLAN
- C2 - GRADING PLAN
- C3 - ROADWAY RECONSTRUCTION PLAN
- P1 - STORM SEWER PLAN & PROFILE
- P2 - STORM SEWER PLAN & PROFILE
- D1 - EROSION CONTROL NOTES & DETAILS
- D2 - DETAILS

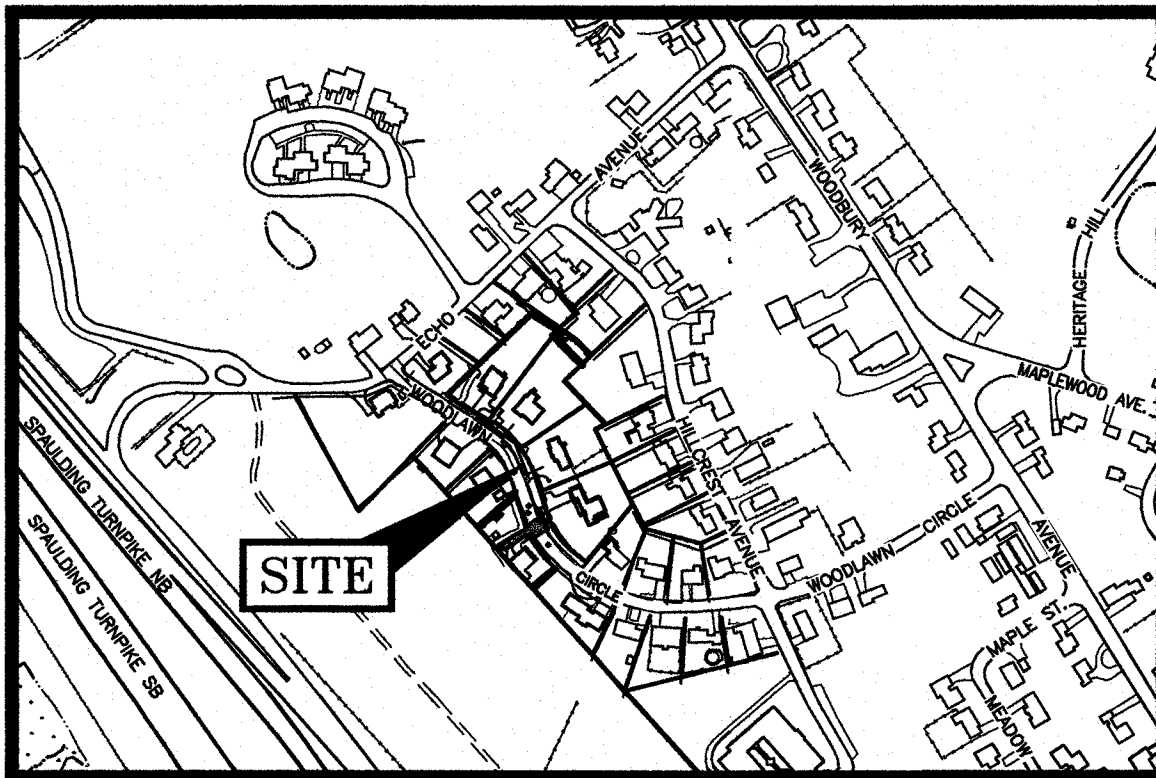
## LEGEND:

N/F	NOW OR FORMERLY		
RP	RECORD OF PROBATE		
RCRD	ROCKINGHAM COUNTY		
	REGISTRY OF DEEDS		
	MAP 11/LOT 21		
⊙ IR FND	IRON ROD FOUND		
⊙ IP FND	IRON PIPE FOUND		
⊙ IR SET	IRON ROD SET		
⊙ DH FND	DRILL HOLE FOUND		
⊙ DH SET	DRILL HOLE SET		
⊠	GRANITE BOUND w/IRON ROD FOUND		
<u>EXISTING</u>		<u>PROPOSED</u>	
FM	FORCE MAIN	FM	FORCE MAIN
S	SEWER PIPE	S	SEWER PIPE
SL	SEWER LATERAL	SL	SEWER LATERAL
G	GAS LINE	G	GAS LINE
D	STORM DRAIN	D	STORM DRAIN
FD	FOUNDATION DRAIN	FD	FOUNDATION DRAIN
W	WATER LINE	W	WATER LINE
WS	WATER SERVICE	WS	WATER SERVICE
UE	UNDERGROUND ELECTRIC SUPPLY	UE	UNDERGROUND ELECTRIC SUPPLY
	UNDERGROUND ELECTRIC SERVICE		UNDERGROUND ELECTRIC SERVICE
OHW	OVERHEAD ELECTRIC/WIRES	OHW	OVERHEAD ELECTRIC/WIRES
	RETAINING WALL		RETAINING WALL
	EDGE OF PAVEMENT (EP)		EDGE OF PAVEMENT (EP)
100	CONTOUR	100	CONTOUR
97x3	SPOT ELEVATION	98x0	SPOT ELEVATION
⊙	UTILITY POLE	⊙	UTILITY POLE
⊙	ELECTRIC METER	⊙	ELECTRIC METER
⊙	TRANSFORMER ON CONCRETE PAD	⊙	TRANSFORMER ON CONCRETE PAD
	WATER SHUT OFF/CURB STOP		WATER SHUT OFF/CURB STOP
C.O.	PIPE CLEANOUT	C.O.	PIPE CLEANOUT
GV	GATE VALVE	GV	GATE VALVE
HYD	HYDRANT	HYD	HYDRANT
CB	CATCH BASIN	CB	CATCH BASIN
SMH	SEWER MANHOLE	SMH	SEWER MANHOLE
DMH	DRAIN MANHOLE	DMH	DRAIN MANHOLE
WMH	WATER METER MANHOLE	WMH	WATER METER MANHOLE
#5	TEST BORING	#5	TEST BORING
TP 1	TEST PIT	TP 1	TEST PIT
LA	LANDSCAPED AREA	LA	LANDSCAPED AREA
CI	CAST IRON PIPE	CI	CAST IRON PIPE
COP	COPPER PIPE	COP	COPPER PIPE
CMP	CORRUGATED METAL PIPE	CMP	CORRUGATED METAL PIPE
DI	DUCTILE IRON PIPE	DI	DUCTILE IRON PIPE
PVC	POLYVINYL CHLORIDE PIPE	PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE	RCP	REINFORCED CONCRETE PIPE
HYD	HYDRANT	HYD	HYDRANT
⊙	CENTERLINE	⊙	CENTERLINE
EP	EDGE OF PAVEMENT	EP	EDGE OF PAVEMENT
EL.	ELEVATION	EL.	ELEVATION
FF	FINISHED FLOOR	FF	FINISHED FLOOR
INV	INVERT	INV	INVERT
TBM	TEMPORARY BENCH MARK	TBM	TEMPORARY BENCH MARK
TYP	TYPICAL	TYP	TYPICAL

**PROPOSED STORM SEWER IMPROVEMENTS  
CITY OF PORTSMOUTH  
WOODLAWN CIRCLE  
PORTSMOUTH, N.H.**



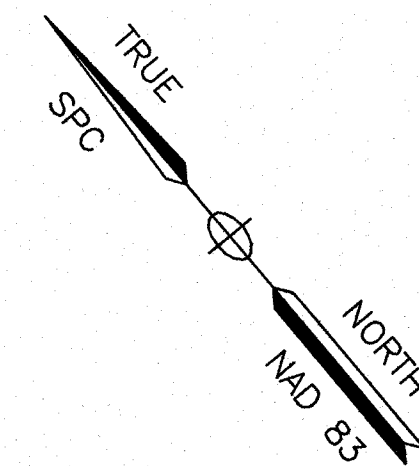
PLAN SET SUBMITTAL DATE: 5 MAY 2016



LOCATION MAP SCALE: 1" = 400'

**PLAN REFERENCES:**

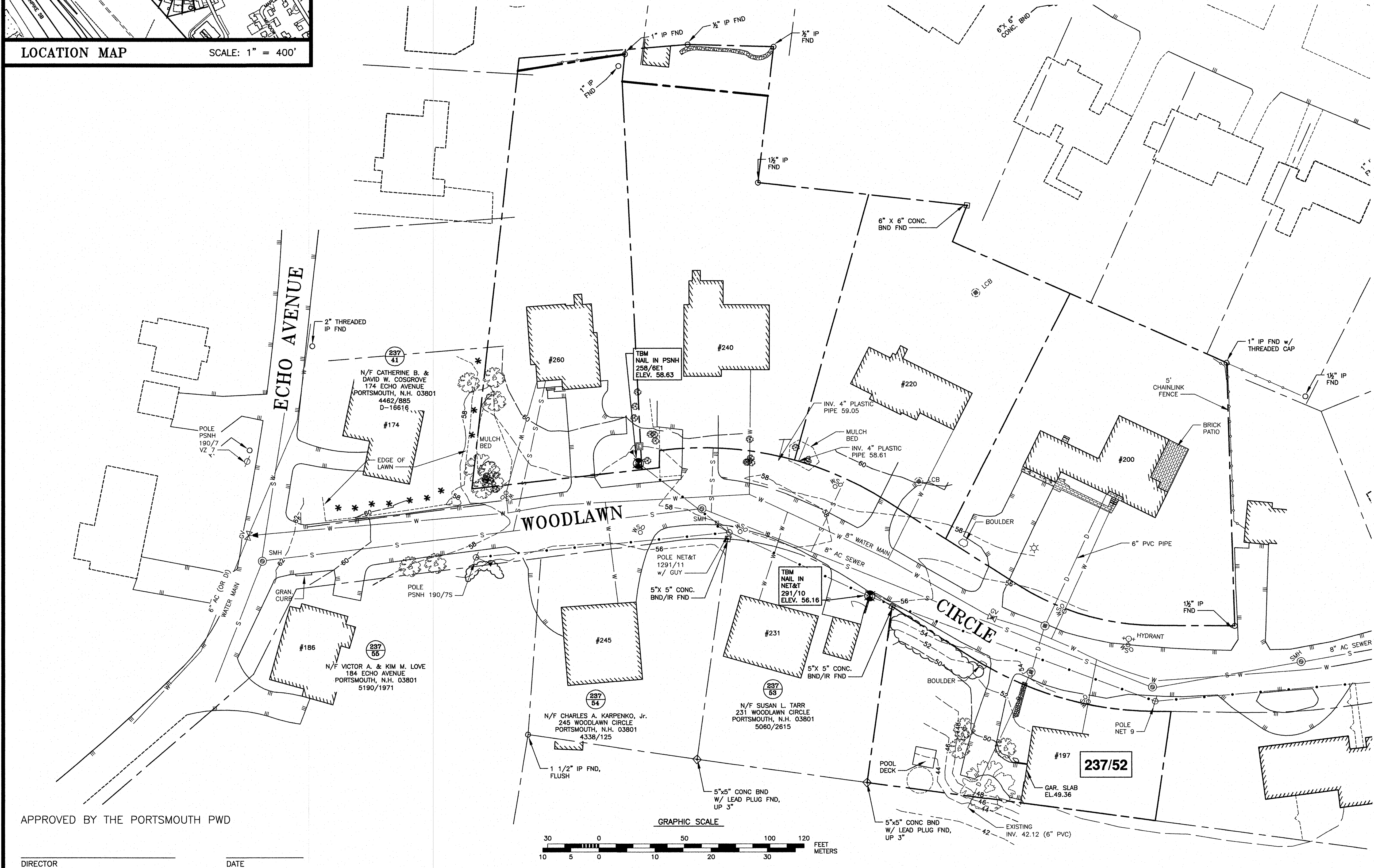
- 1) MAPLEWOOD ACRES, PORTSMOUTH, N.H., SCALE: 1" = 50 FEET, DATED 1941, RCRD PLAN 01463.
- 2) PLAN OF WOODBURY PARK, PORTSMOUTH, N.H., SCALE: 1 IN = 40 FT., DATED DEC. 1953 BY JOHN W. DURGIN, CIVIL ENGINEERS, RCRD PLAN 02157.
- 3) PLAN OF LOTS, PORTSMOUTH, N.H., FOR PAUL C. & ORVILLE C. BADGER, SCALE: 1 IN. = 100 FT., DATED MAY 1954 BY JOHN W. DURGIN, CIVIL ENGINEERS, RCRD PLAN 02160.
- 4) LOT LINE REVISION, HILLCREST DR. & ECHO AVE., BOGAN TO TURNER, PORTSMOUTH, N.H., SCALE: 1 INCH = 15 FEET, DATED NOVEMBER 1977 BY JOHN W. DURGIN, CIVIL ENGINEERS, RCRD PLAN D-8103.
- 5) PLAN OF LAND, PORTSMOUTH, N.H. FOR ELEANOR CULLIFORD, SCALE: 1" = 10', DATED JAN. 7, 1987 BY DURGIN/SCHOFIELD ASSOCIATES, RCRD PLAN D-16616.
- 6) PLAN OF LAND FOR BARBARA B. DRISCOLL, 83 HILLCREST DRIVE, COUNTY OF ROCKINGHAM, PORTSMOUTH, N.H., SCALE: 1" = 10', DATED OCTOBER 15, 2002 BY MILLETTE, SPRAGUE & COLWELL, INC. RCRD PLAN D-30333.



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 Portsmouth, N.H. 03801-7114  
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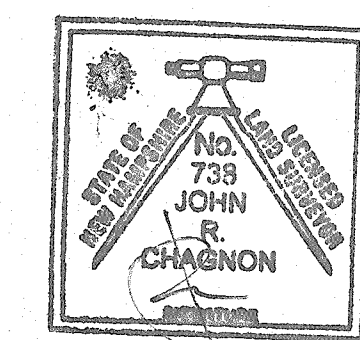
**NOTES:**

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- 3) CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH THE "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION. (NHDES DECEMBER 2008).
- 4) THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS FOR A PORTION OF WOODLAWN CIRCLE FOR PROPOSED DRAINAGE IMPROVEMENTS.



**PROPOSED STORM SEWER IMPROVEMENTS WOODLAWN CIRCLE PORTSMOUTH, N.H.**

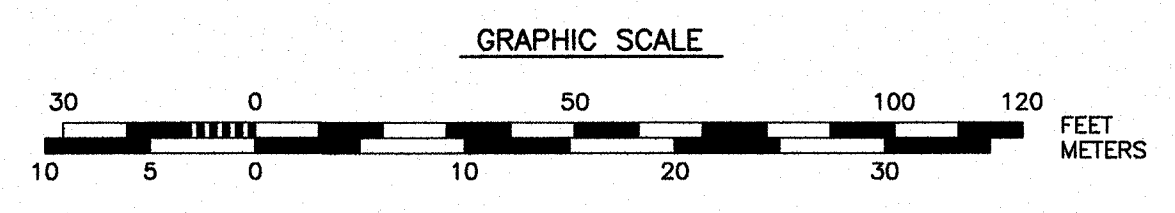
NO.	DESCRIPTION	DATE
2	REVISED PROPERTY LINE INFO	4/26/16
1	REVISED PER DPW COMMENTS	4/4/16
0	ISSUED FOR COMMENT	3/25/16



SCALE: 1"=30' MARCH 2016

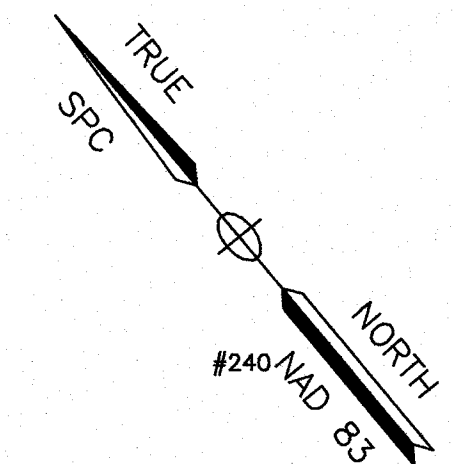
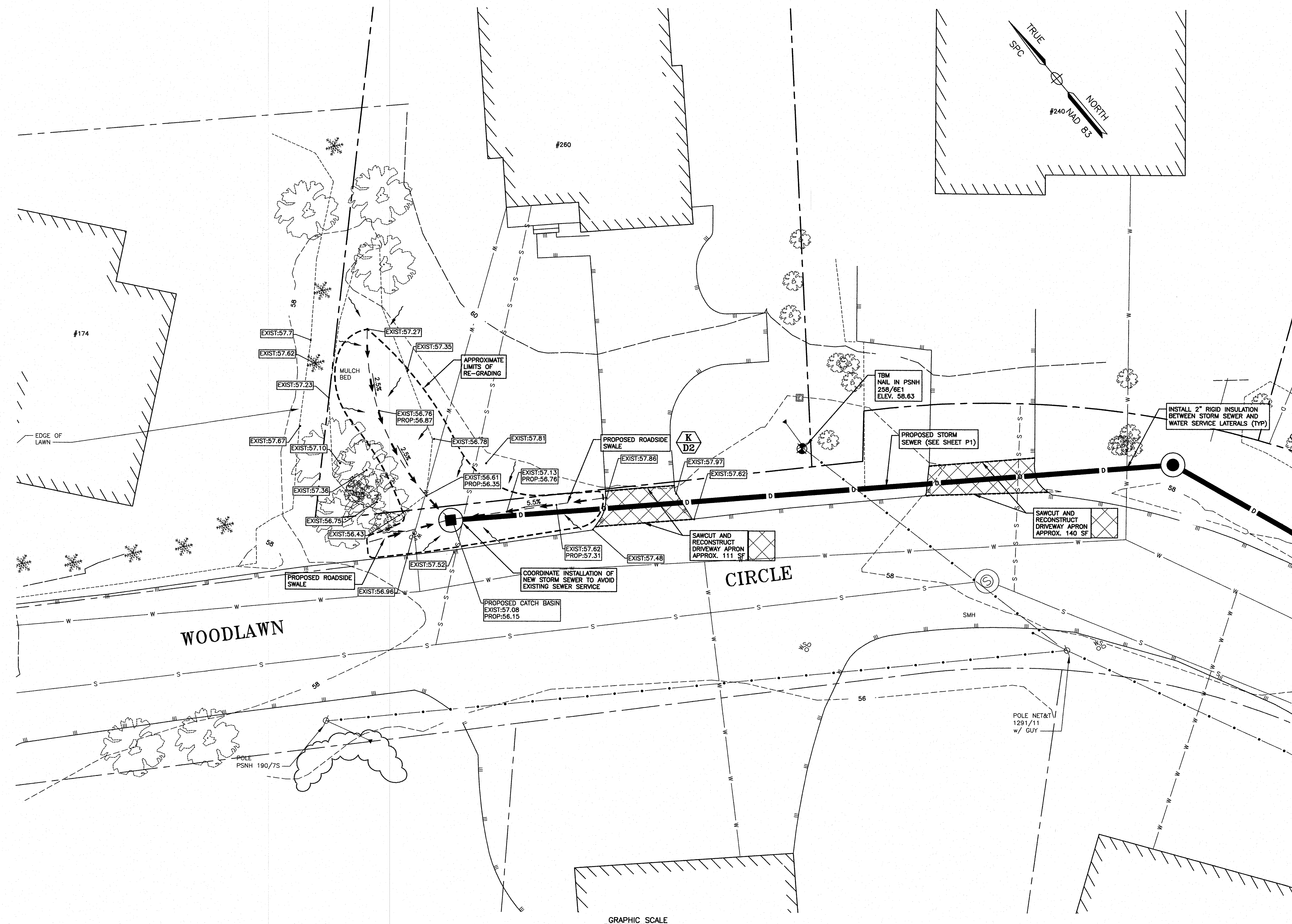
EXISTING CONDITIONS PLAN **C1**

APPROVED BY THE PORTSMOUTH PWD  
 DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_



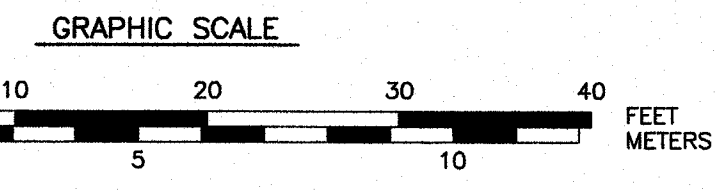
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- NOTES:**
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**CIRCLE**

**WOODLAWN**

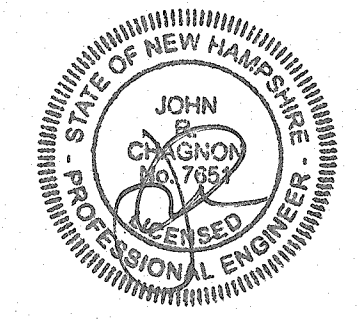


APPROVED BY THE PORTSMOUTH PWD

DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_

**PROPOSED STORM SEWER IMPROVEMENTS WOODLAWN CIRCLE PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
2	REVISED PER DPW COMMENTS	5/5/16
1	REVISED PER DPW COMMENTS	4/4/16
0	ISSUED FOR COMMENT	3/25/16



SCALE: 1"=10' MARCH 2016

**GRADING AND DRAINAGE PLAN** **C2**

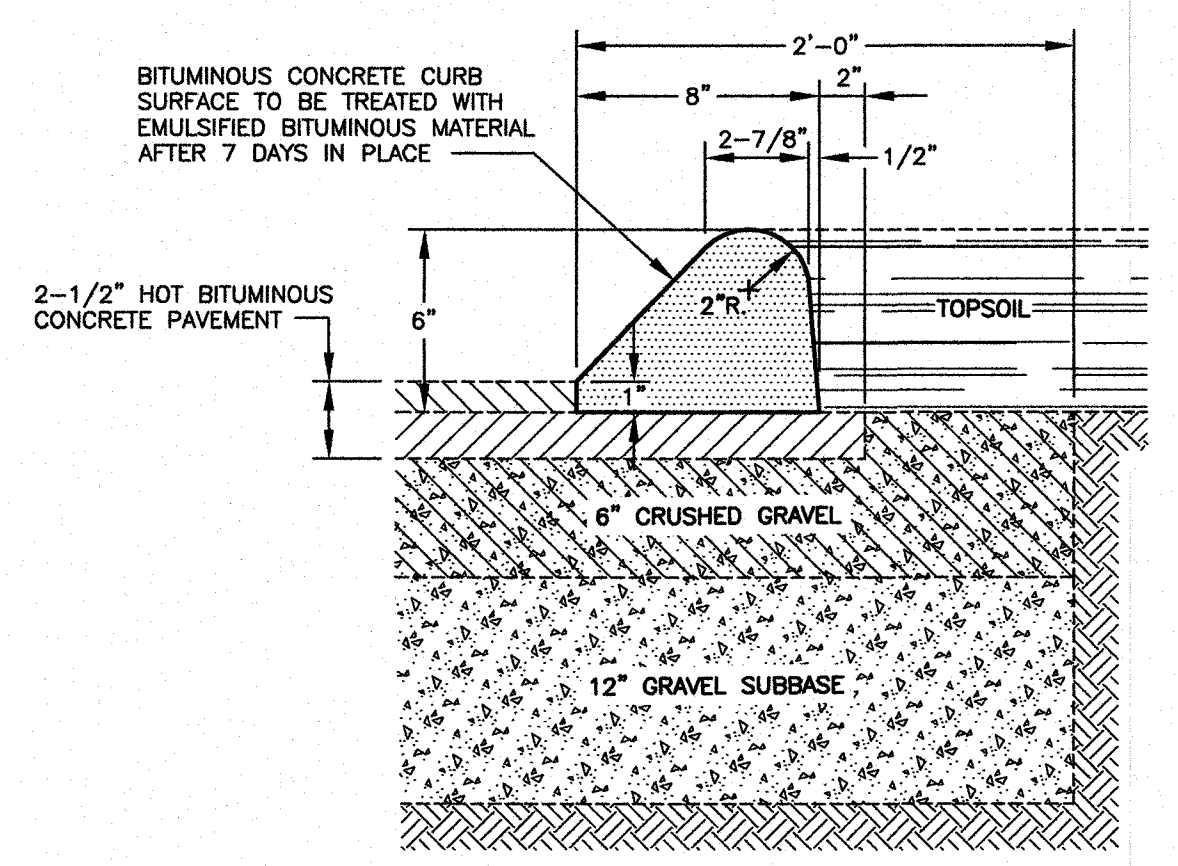
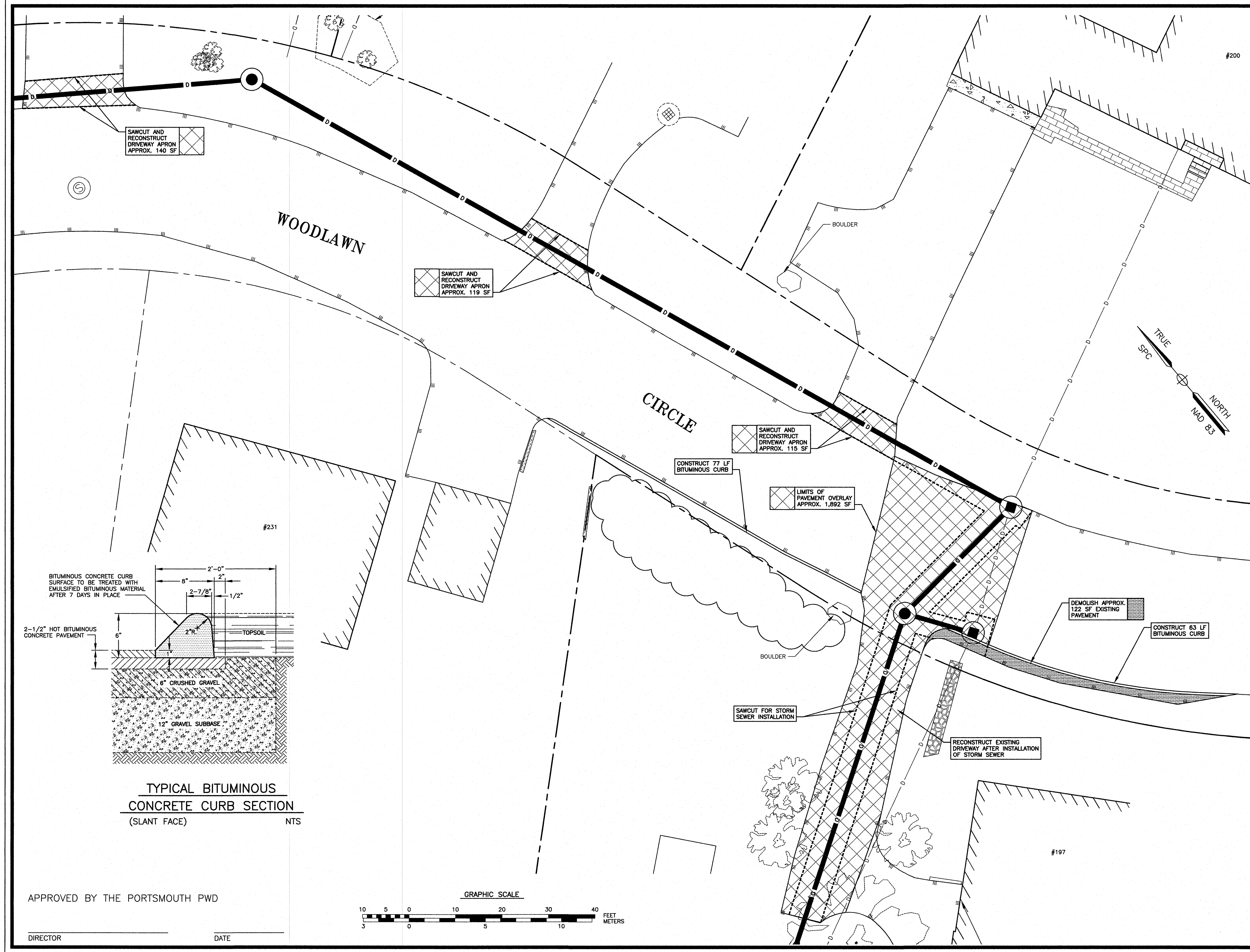
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Portsmouth, N.H. 03801-7114  
Tel (603) 430-9282  
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**NOTES:**

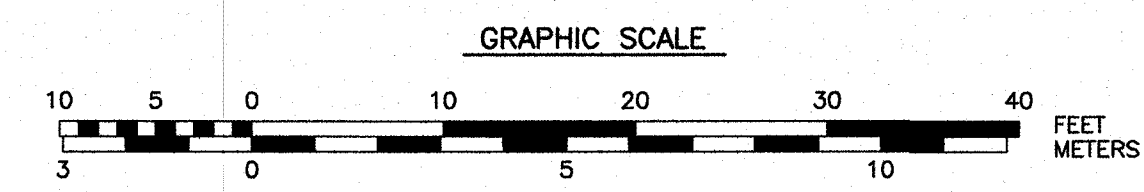
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**TYPICAL BITUMINOUS CONCRETE CURB SECTION (SLANT FACE)**  
NTS

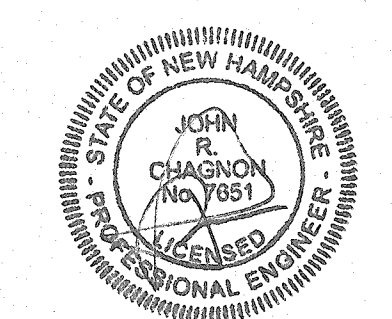
APPROVED BY THE PORTSMOUTH PWD

DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_



**PROPOSED STORM SEWER IMPROVEMENTS WOODLAWN CIRCLE PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
0	ISSUED FOR COMMENT	5/5/16



SCALE: 1"=10' MARCH 2016

**ROADWAY RECONSTRUCTION PLAN** **C3**

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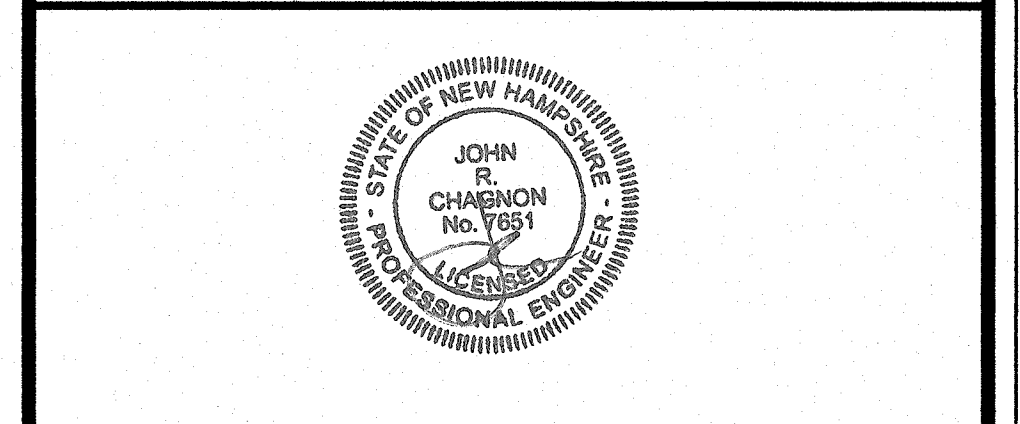
**AMBIT ENGINEERING, INC.**  
Civil Engineers & Land Surveyors  
200 Griffin Road - Unit 3  
Portsmouth, N.H. 03801-7114  
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**NOTES:**

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- 4) DEPTH TO EXISTING UTILITIES IS APPROXIMATE, ELEVATIONS NOT VERIFIED.
- 5) DATUM:  
VERTICAL: NAVD 88  
(PER GPS OBSERVATION, ± 0.10')  
HORIZONTAL: STATE PLANE NAD 83

**PROPOSED STORM SEWER IMPROVEMENTS  
WOODLAWN CIRCLE  
PORTSMOUTH, N.H.**

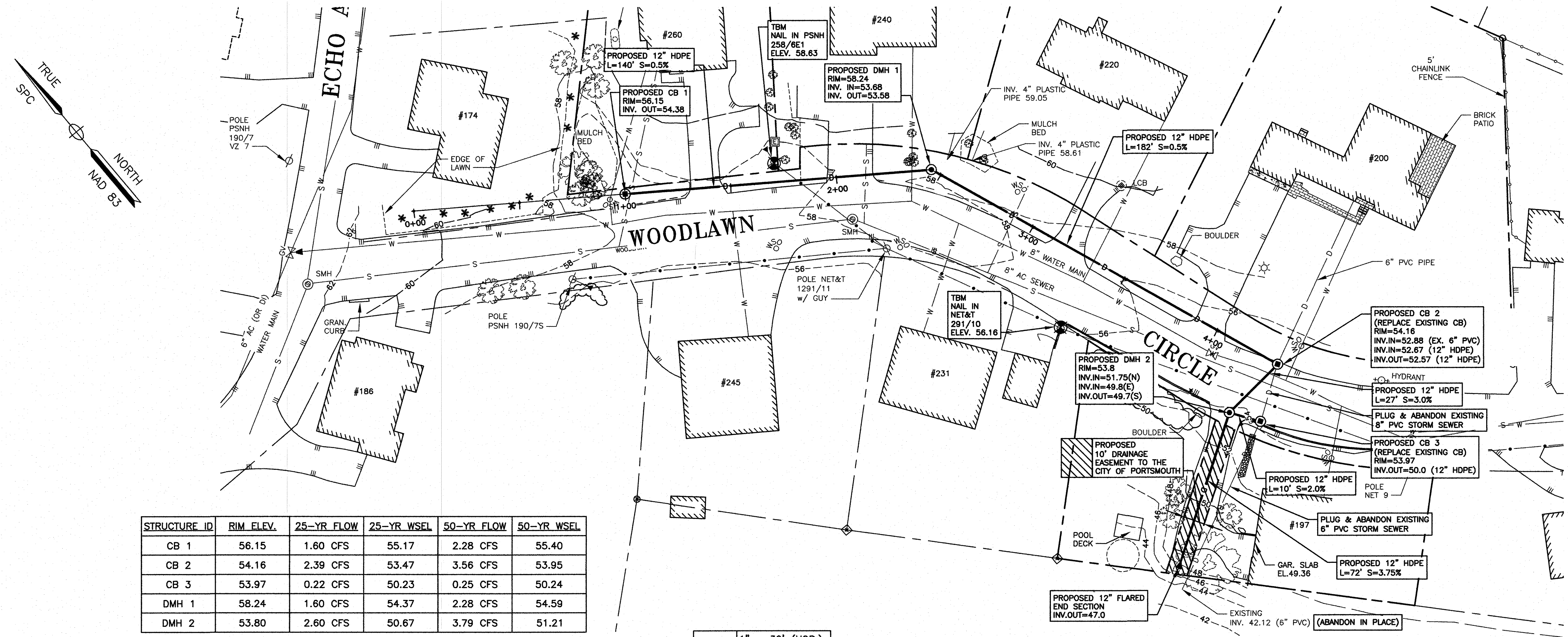
NO.	DESCRIPTION	DATE
3	REVISED PER DPW COMMENTS	5/5/16
2	REVISED PROPERTY LINE INFO	4/26/16
1	REVISED PER DPW COMMENTS	4/4/16
0	ISSUED FOR COMMENT	3/25/16



SCALE: AS NOTED MARCH 2016

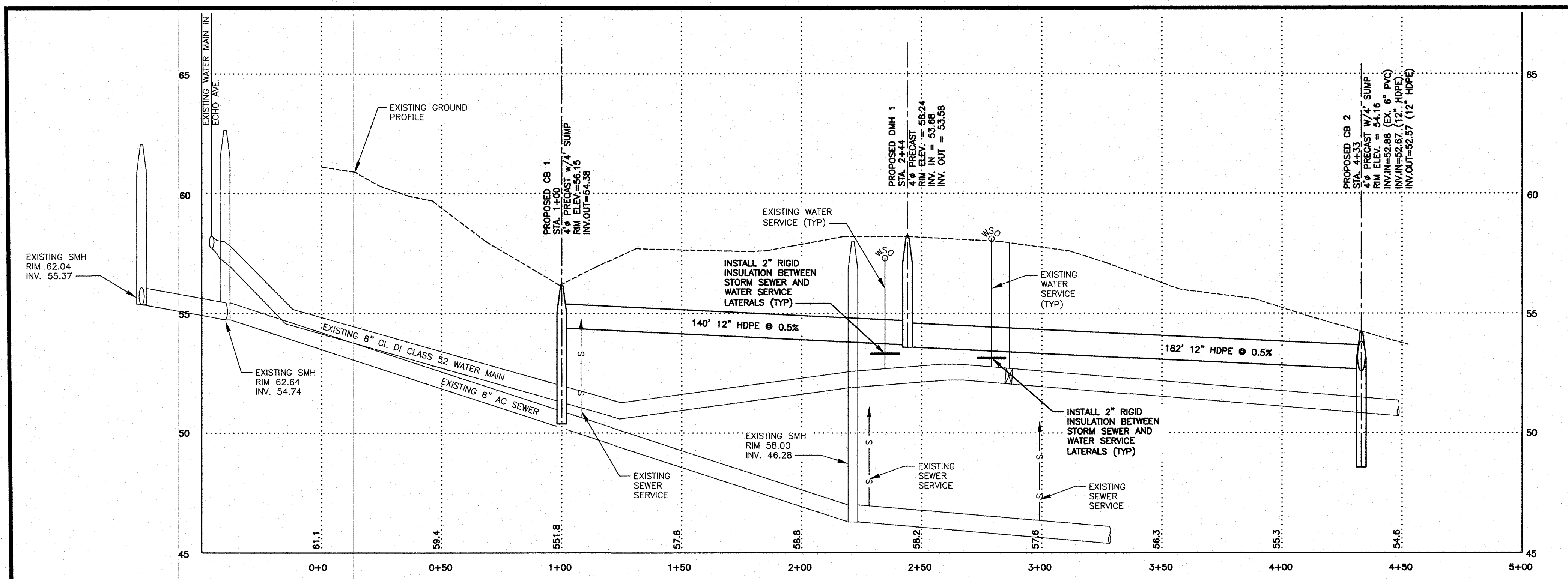
**STORM SEWER  
PLAN & PROFILE**

**P1**



STRUCTURE ID	RIM ELEV.	25-YR FLOW	25-YR WSEL	50-YR FLOW	50-YR WSEL
CB 1	56.15	1.60 CFS	55.17	2.28 CFS	55.40
CB 2	54.16	2.39 CFS	53.47	3.56 CFS	53.95
CB 3	53.97	0.22 CFS	50.23	0.25 CFS	50.24
DMH 1	58.24	1.60 CFS	54.37	2.28 CFS	54.59
DMH 2	53.80	2.60 CFS	50.67	3.79 CFS	51.21

SCALE: 1" = 30' (HOR.)  
1" = 3' (VERT.)



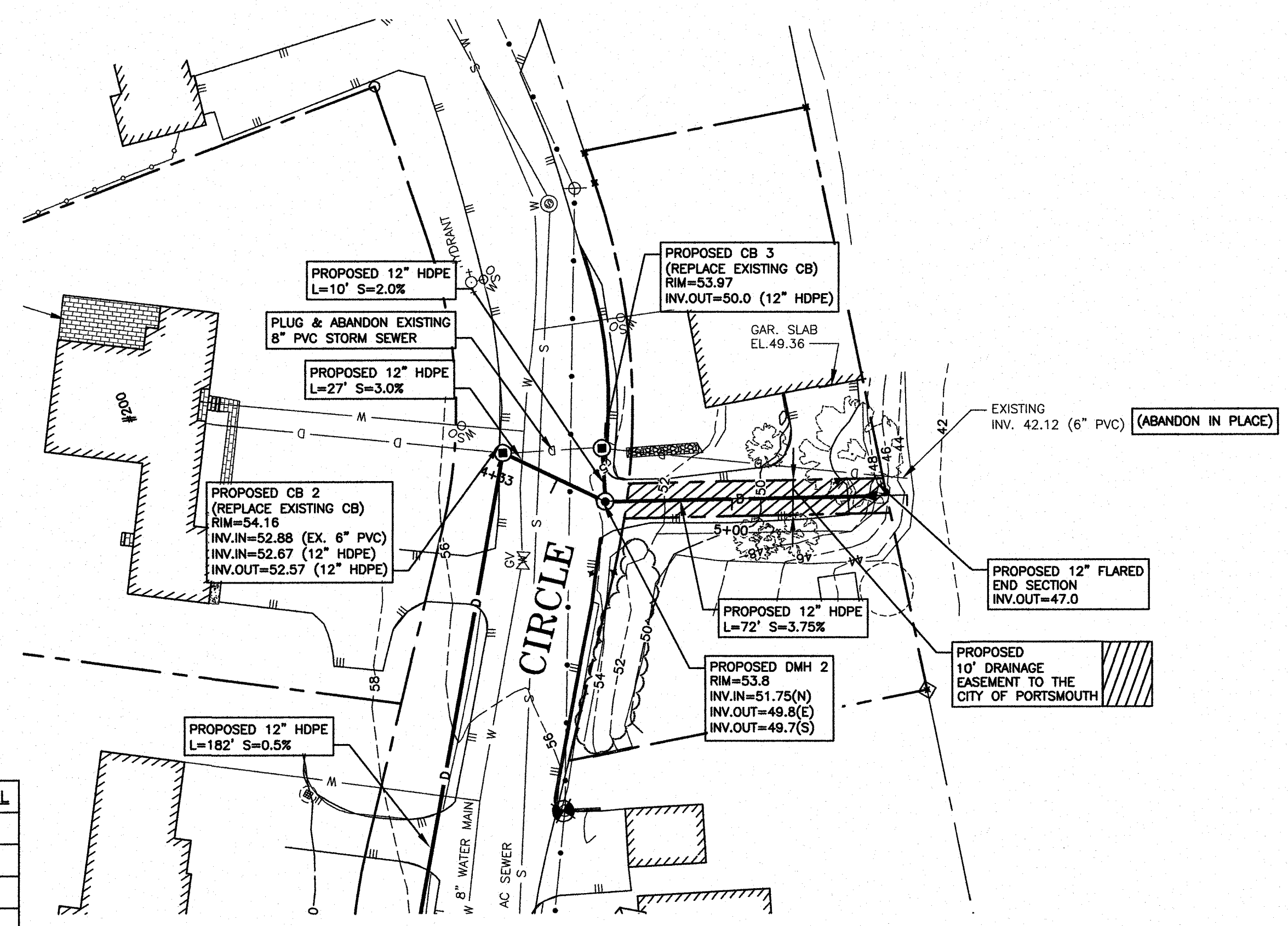
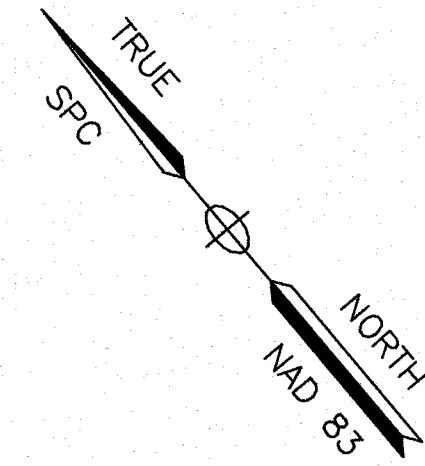
APPROVED BY THE PORTSMOUTH PWD

DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_

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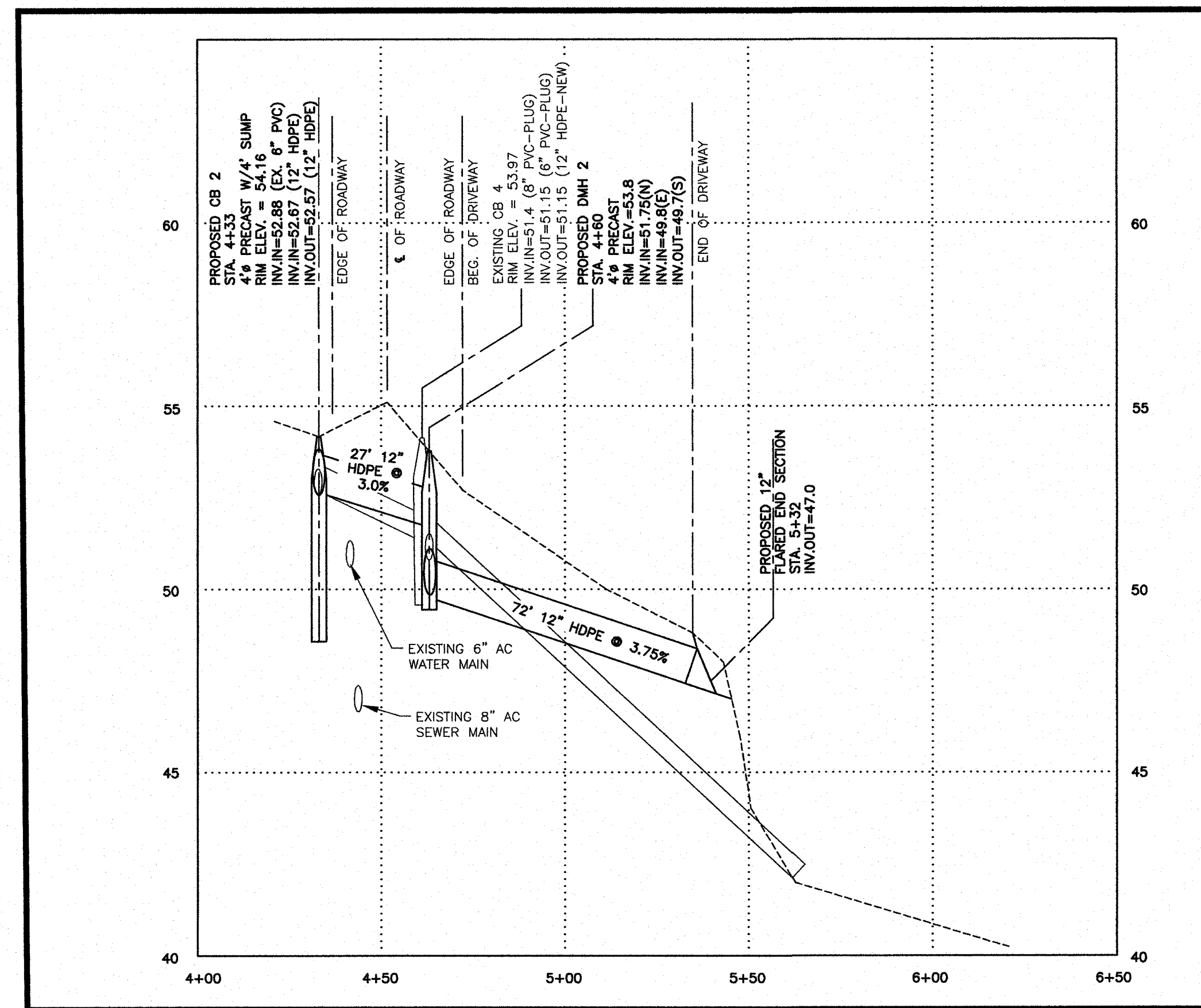
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HORIZONTAL: STATE PLANE NAD 83



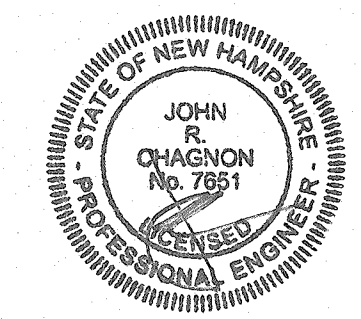
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1" = 3' (VERT.)



**PROPOSED STORM  
SEWER IMPROVEMENTS  
WOODLAWN CIRCLE  
PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
3	REVISED PER DPW COMMENTS	5/5/16
2	REVISED PROPERTY LINE INFO	4/26/16
1	REVISED PER DPW COMMENTS	4/4/16
0	ISSUED FOR COMMENT	3/25/16



SCALE: AS NOTED MARCH 2016

**STORM SEWER  
PLAN & PROFILE**

**P2**

APPROVED BY THE PORTSMOUTH PWD

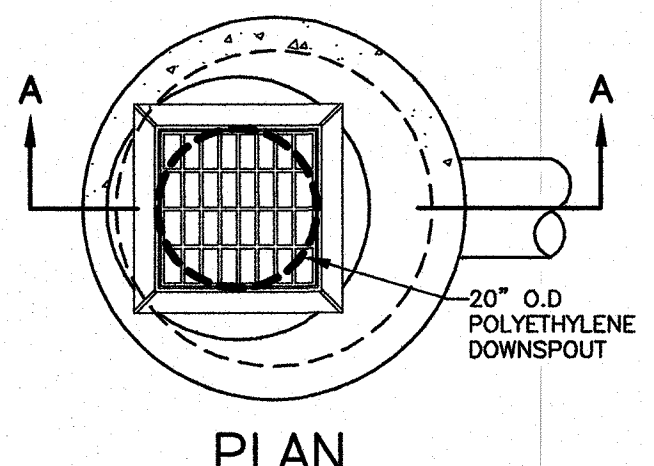
DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_



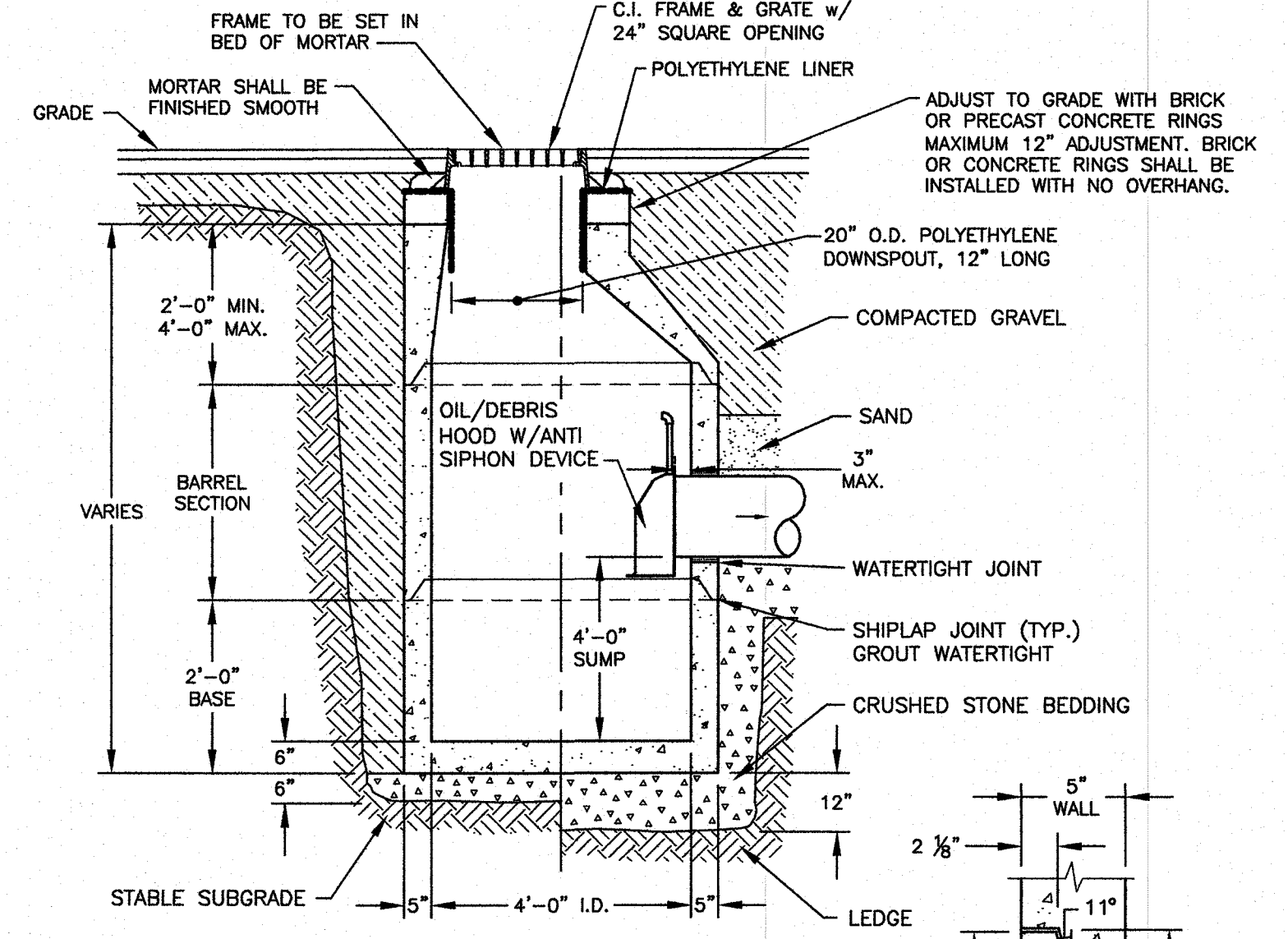


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**PLAN**



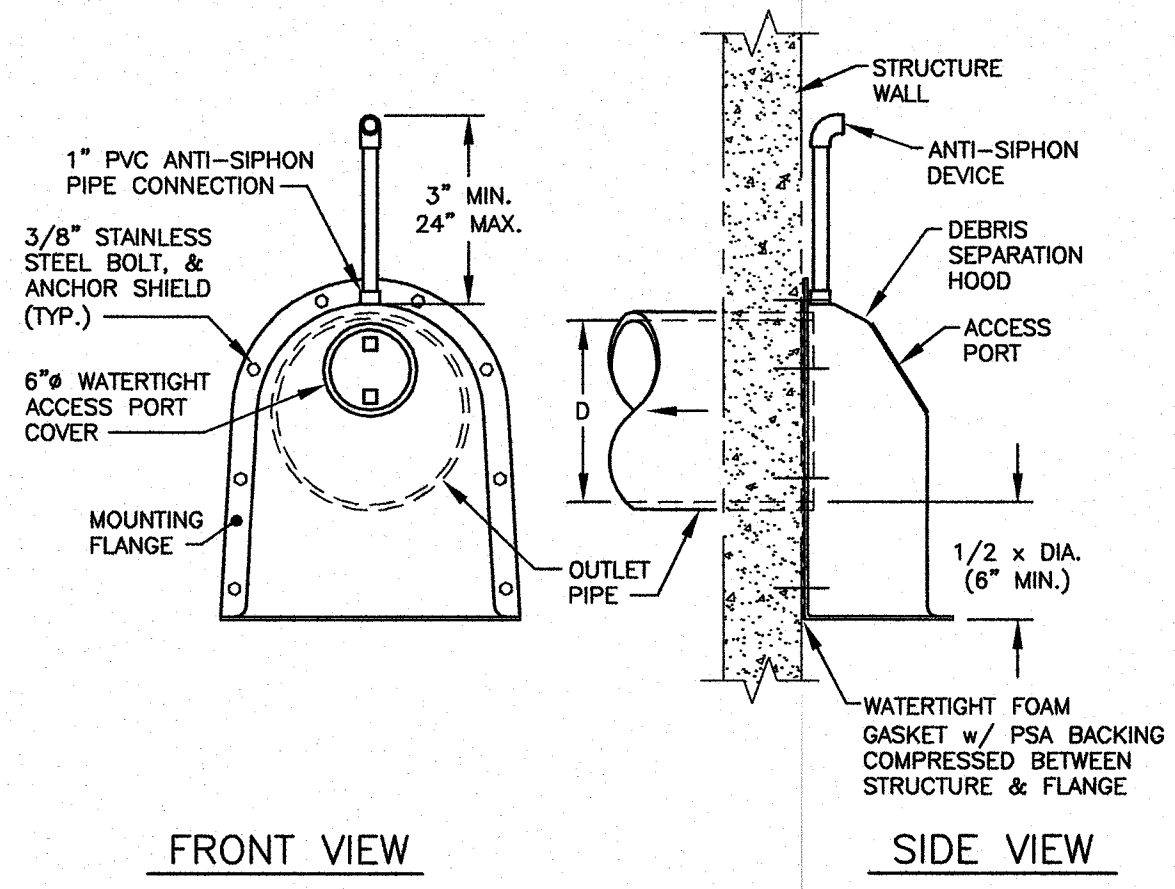
**SECTION A - A**

- 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.

- POLYETHYLENE LINER NOTES:**
1. POLYETHYLENE LINER (ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
  2. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT BETWEEN FRAME AND POLYETHYLENE SHEET.
  3. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH CURB).
  4. THE CENTER OF THE GRATE AND FRAME MAY BE SHIFTED A MAXIMUM OF 6" FROM THE CENTER OF THE DOWN SPOUT IN ANY DIRECTION.

**DETAIL OF SHIPLAP JOINT**

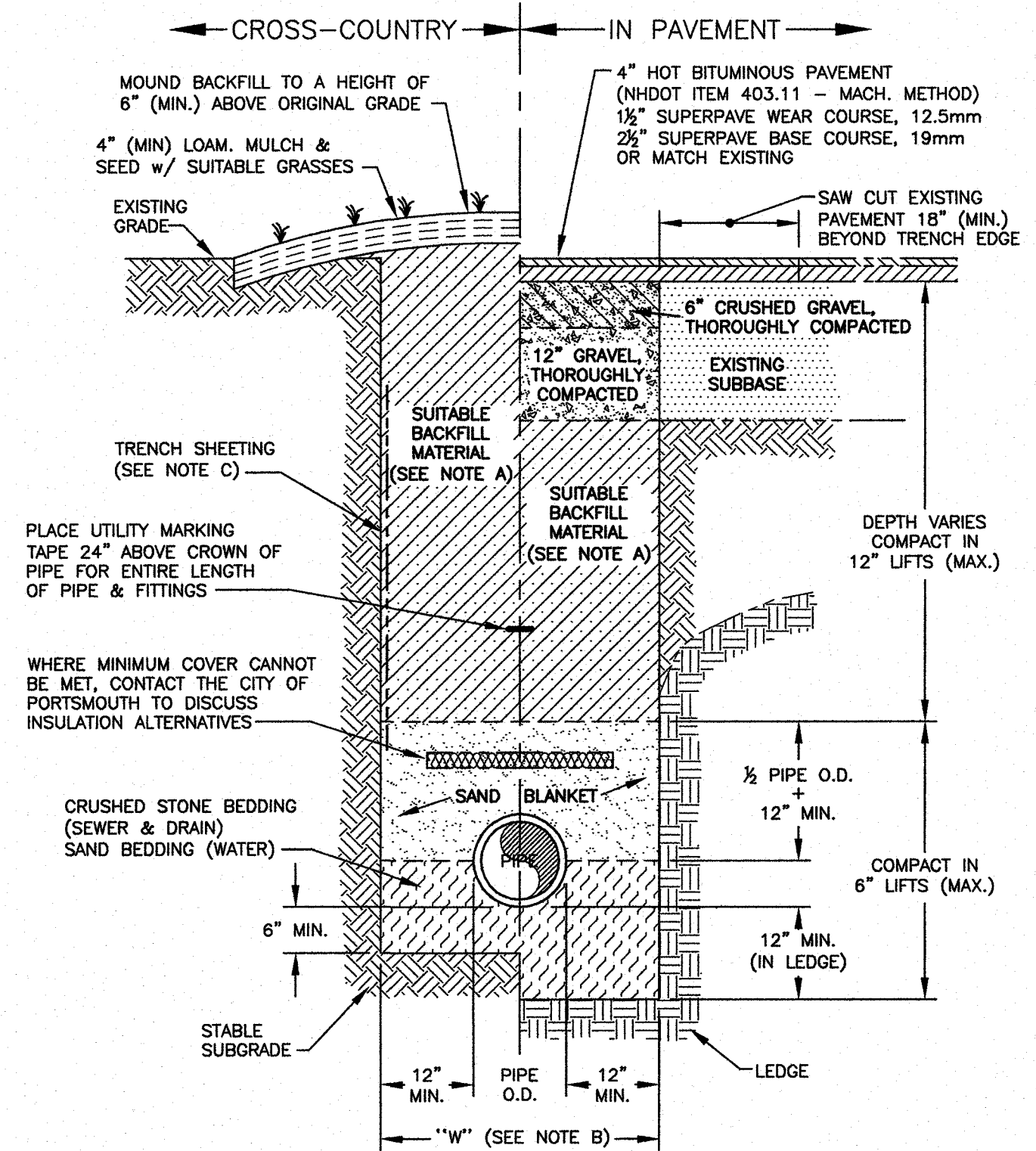
**F** CATCH BASIN W/HOOD  
**P1** NTS



**FRONT VIEW**

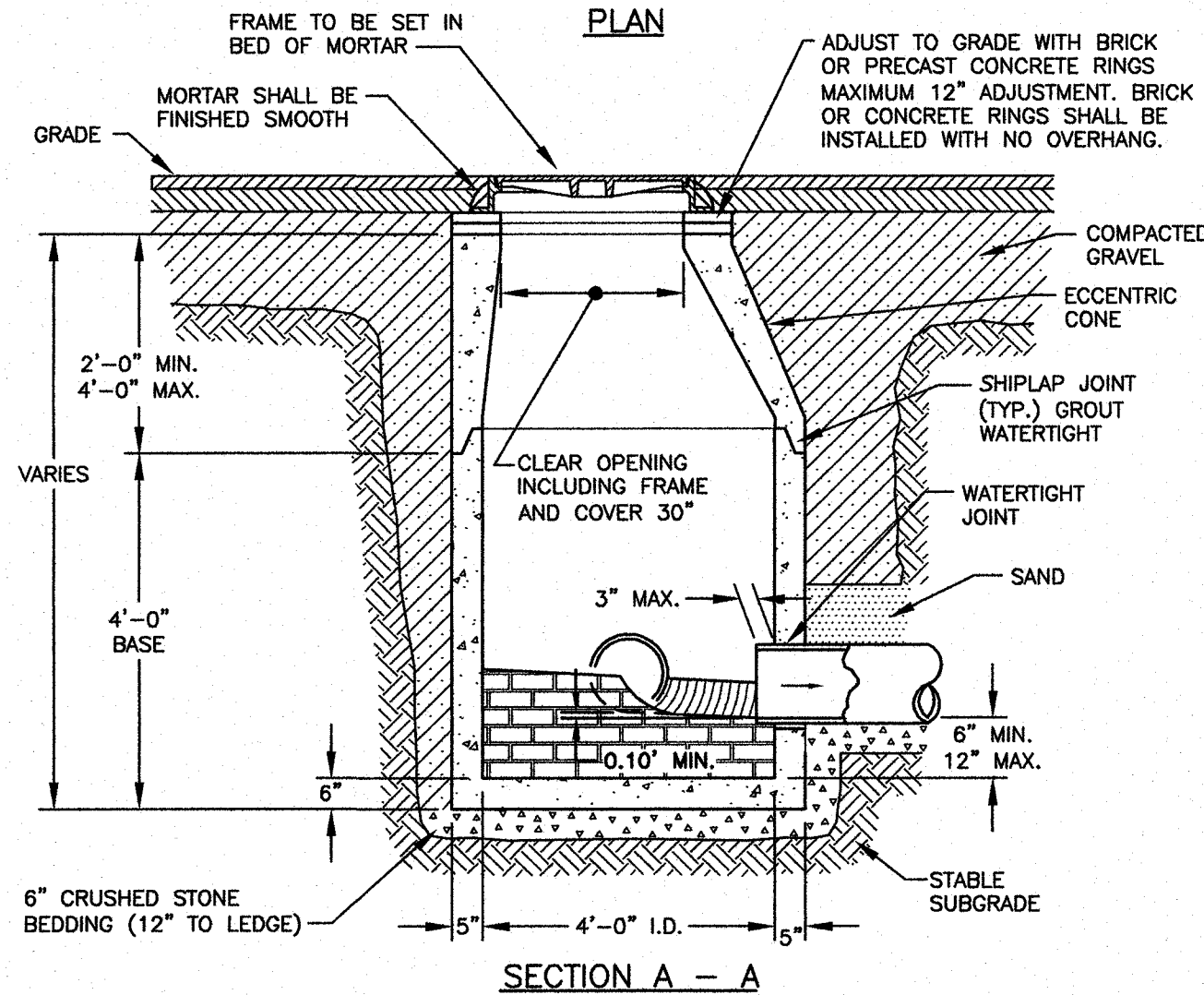
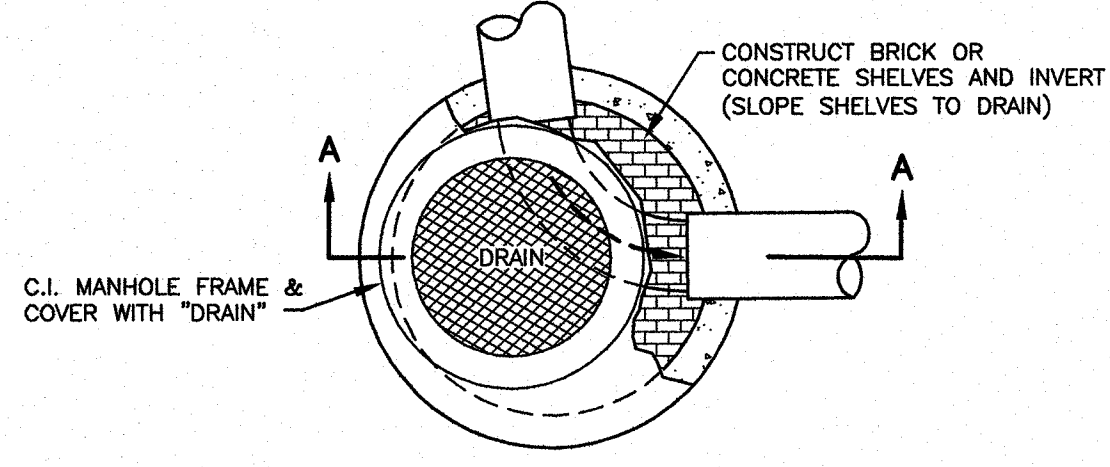
**SIDE VIEW**

**G** CATCH BASIN OUTLET HOOD DETAIL  
**P1** "SNOUT" OR APPROVED EQUAL NTS



**H** TYPICAL PIPE TRENCH  
**P1** NTS

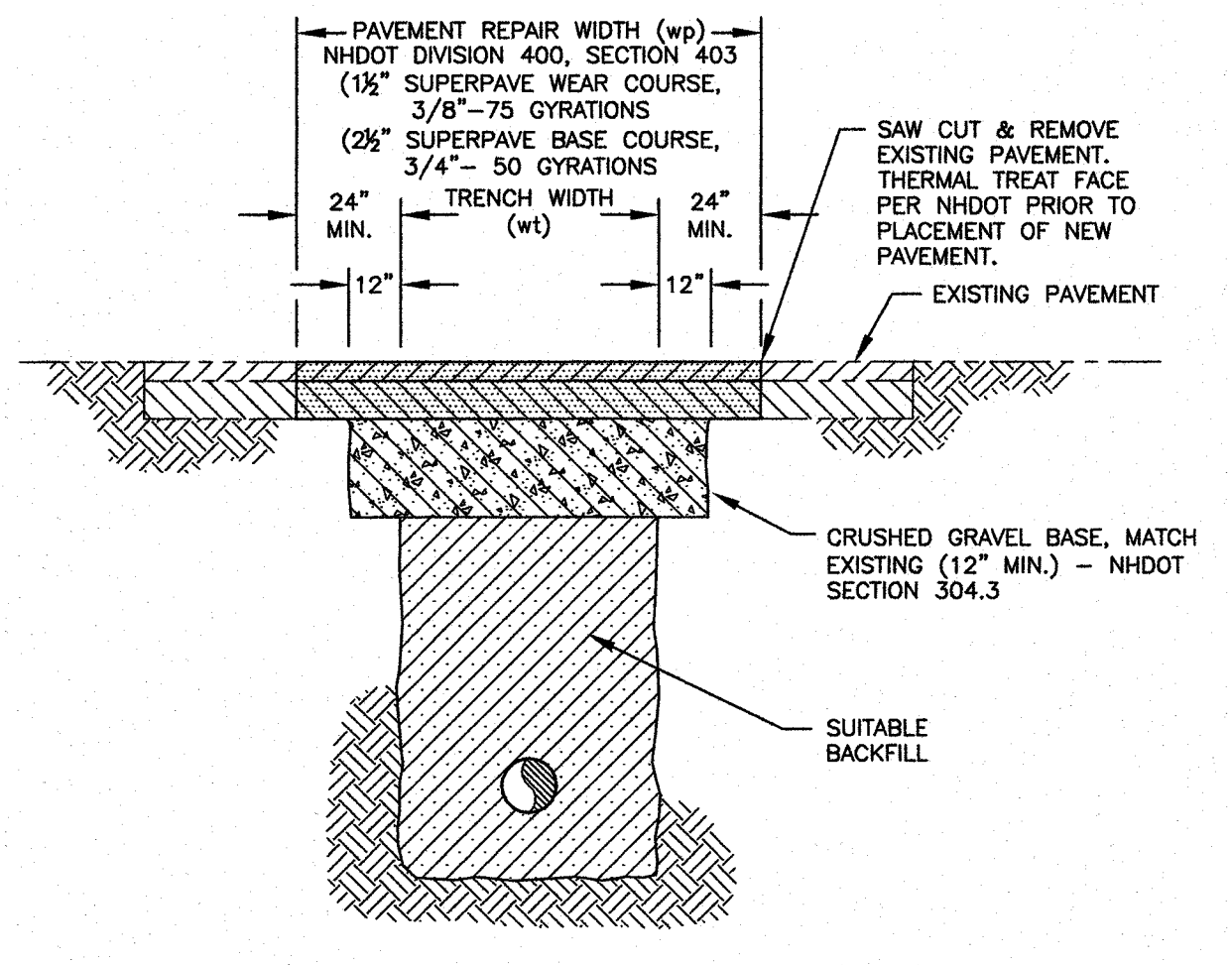
- TRENCH NOTES:**
- A) TRENCH BACKFILL: - IN PAVED AREAS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIALS DEEMED TO BE UNACCEPTABLE BY THE ENGINEER.
- IN CROSS-COUNTRY CONSTRUCTION, SUITABLE MATERIAL SHALL BE AS DESCRIBED ABOVE, EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE.
- B) "W" = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D..
- C) TRENCH SHEETING: IF REQUIRED, WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.
- D) MINIMUM PIPE COVER FOR UTILITY MAINS (UNLESS GOVERNED BY OTHER CODES):  
6" MINIMUM FOR SEWER (IN PAVEMENT)  
4" MINIMUM FOR SEWER (CROSS COUNTRY)  
3" MINIMUM FOR STORMWATER DRAINS  
5" MINIMUM FOR WATER MAINS
- E) ALL PAVEMENT CUTS SHALL BE REPAIRED BY THE INFRARED HEAT METHOD.



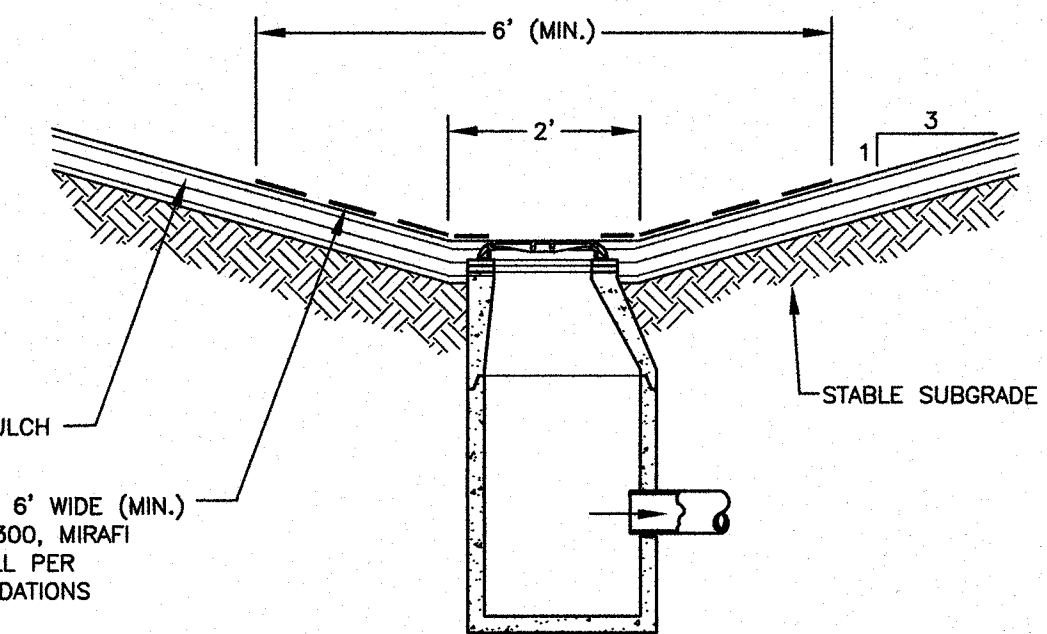
**SECTION A - A**

- 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 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. STRUCTURE TO BE DESIGNED FOR H2O LOADING.

**I** DRAIN MANHOLE DETAIL  
**P1** NTS

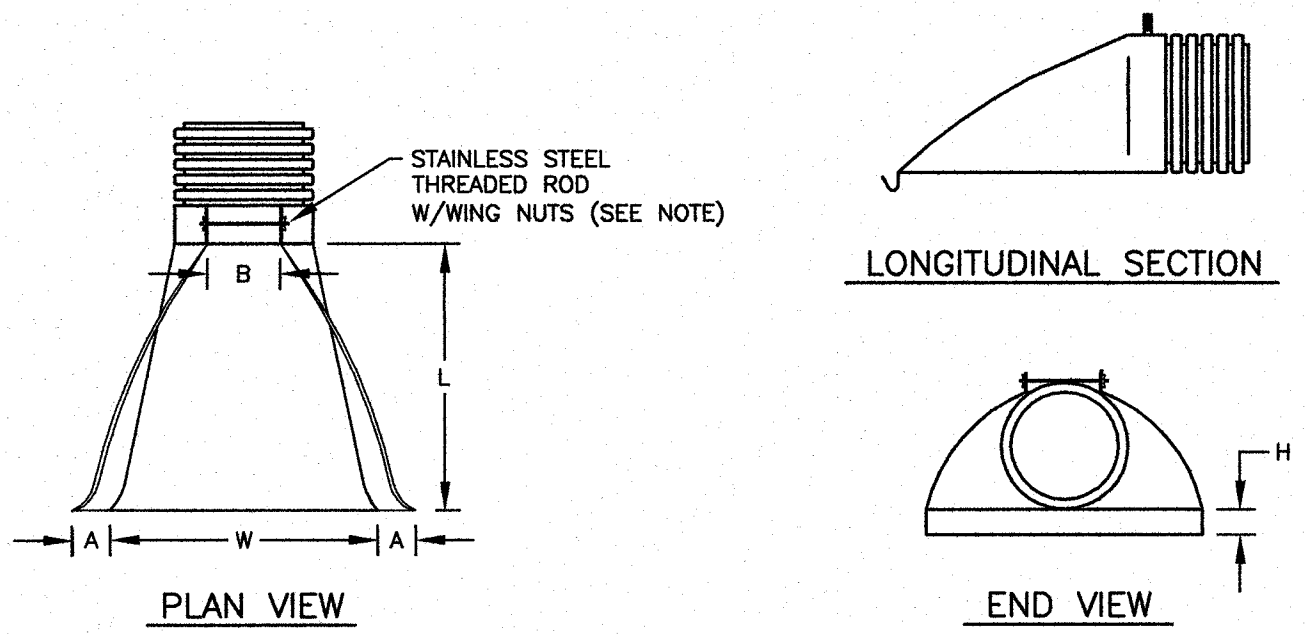


**J** TRENCH - PAVEMENT REPLACEMENT  
**P1** NTS



**CROSS SECTION**

**K** ROADSIDE SWALE  
**C2** NTS



**PLAN VIEW**

**END VIEW**

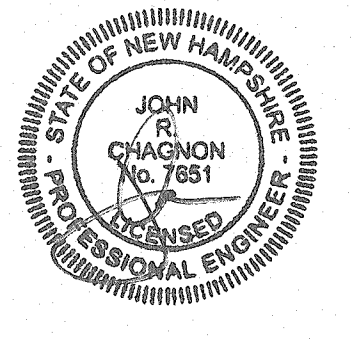
PART NO.	PIPE SIZE	A	B (MAX.)	H	L	W
1210-NP	12" / 300mm	6.5" / 165mm	10" / 254mm	6.5" / 165mm	25" / 635mm	29" / 735mm
1510-NP	15" / 375mm	6.5" / 165mm	10" / 254mm	6.5" / 165mm	25" / 635mm	29" / 735mm
1810-NP	18" / 450mm	7.5" / 190mm	15" / 380mm	6.5" / 165mm	32" / 812mm	35" / 890mm
2410-NP	24" / 600mm	7.5" / 190mm	18" / 450mm	6.5" / 165mm	36" / 900mm	45" / 1140mm
3012-NP	30" / 750mm	10.5" / 266mm	N/A	7.0" / 178mm	53" / 1345mm	68" / 1725mm
3612-NP	36" / 900mm	10.5" / 266mm	N/A	7.0" / 178mm	53" / 1345mm	68" / 1725mm

NOTE: STAINLESS STEEL THREADED ROD W/ WING NUTS PROVIDED FOR END SECTIONS 12"-24", 30" & 36" END SECTIONS TO BE WELDED TO PIPE PER MANUFACTURER'S RECOMMENDATIONS.

**L** ADVANCED DRAINAGE SYSTEM (ADS) FLARED END SECTION  
**P2** NTS

**PROPOSED STORM SEWER IMPROVEMENTS WOODLAWN CIRCLE PORTSMOUTH, N.H.**

NO.	DESCRIPTION	DATE
1	REVISED PER DPW COMMENTS	4/4/16
0	ISSUED FOR COMMENTS	3/25/16



SCALE AS SHOWN MARCH 2016

DETAILS

**D2**