

MCDONOUGH STREET AREA RECONSTRUCTION



PHASE III(B)

**DEPARTMENT OF
PUBLIC WORKS
CITY OF PORTSMOUTH, NH**

SPRING 2016



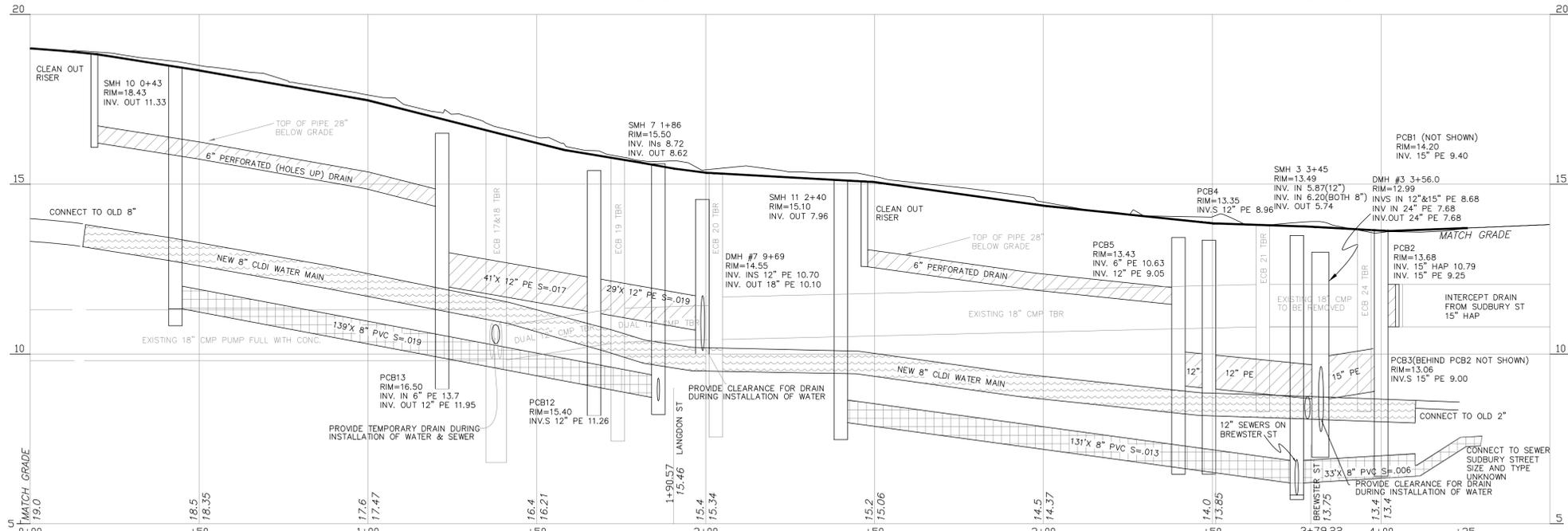
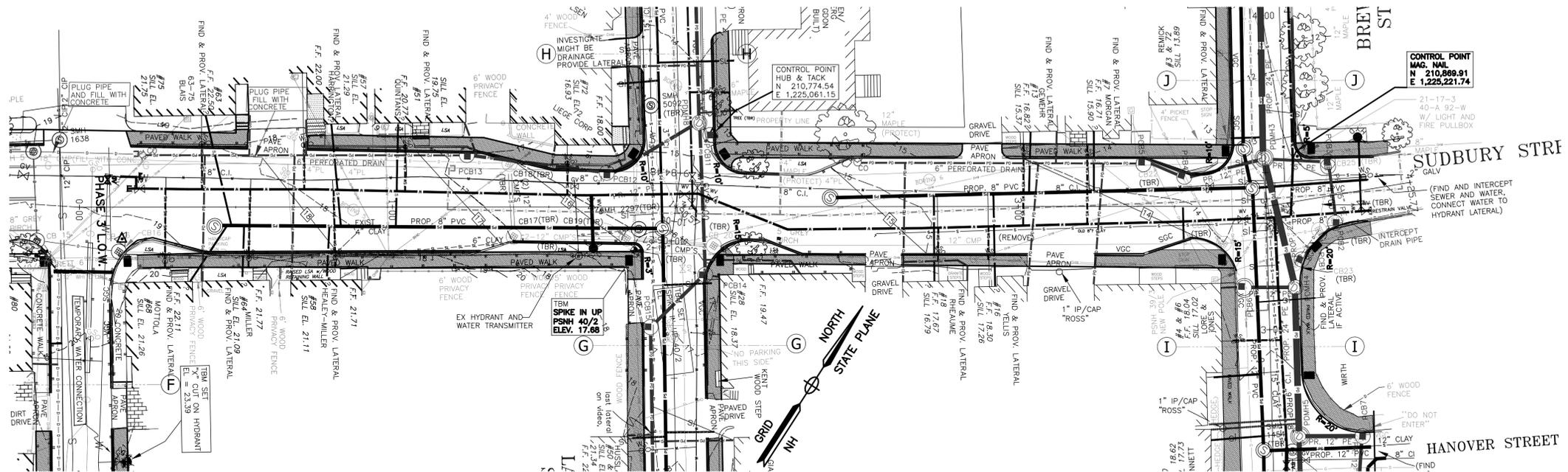
PHASE 3 AREA

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McDONOUGH STREET

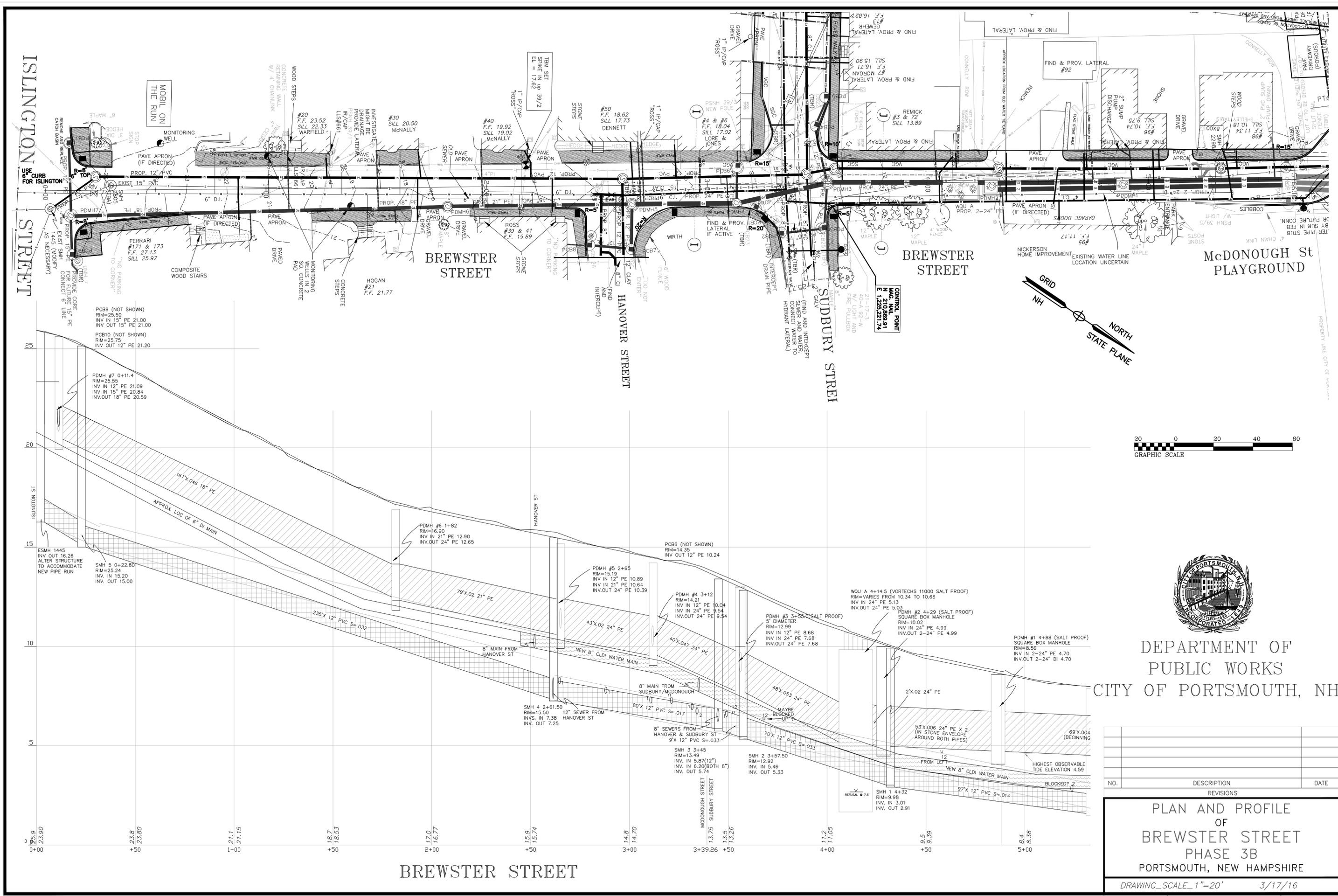
LEGEND:

	BRICK	AB	ALARM BELL
	MATCHLINE	AC	ASBESTOS CEMENT
	PLASTIC FENCE	AS	AUTO SPRINKLER
	WOODEN FENCE	CI	CAST IRON
	CHAIN LINK FENCE	CMP	CORRUGATED METAL PIPE
	WIRE FENCE	COP	COPPER PIPE
	FORCE MAIN	DI	DUCTILE IRON
	SEWER LINE	DYL	DOUBLE YELLOW LINE
	GAS LINE	EL	ELEVATION
	STORM DRAIN	FF	FINISHED FLOOR
	WATER LINE	INV.	INVERT
	UNDERGROUND ELECTRIC	LSA	LANDSCAPED AREA
	UNDERGROUND UTILITY	PVC	POLYVINYL CHLORIDE
	OVERHEAD ELECTRIC/WIRES	RCP	REINFORCED CONCRETE PIPE
	PROPOSED DRAIN LINE	RD	ROOF DRAIN
	PROPOSED SEWER LINE	SWL	SINGLE WHITE LINE
	PROPOSED WATER LINE	TBM	TEMPORARY BENCHMARK
	CONTOUR	TYP.	TYPICAL
	EDGE OF PAVEMENT (EP)	VC	VITRIFIED CLAY PIPE
	WOODS / TREE LINE	SGC	SLOPED GRANITE CURB
	UTILITY POLE (w/GUY)	VCC	VERTICAL GRANITE CURB
	UTILITY POLE		
	WATER SHUTOFF/CURB STOP		
	GAS SHUTOFF		
	GATE VALVE		
	HYDRANT		
	SIGN		
	MONITORING WELL		
	BOLLARD		
	EXISTING CATCH BASIN		
	PROPOSED CATCH BASIN		
	TELEPHONE MANHOLE		
	SEWER MANHOLE		
	DRAIN MANHOLE		
	MANHOLE (UNIDENTIFIED)		



DEPARTMENT OF
PUBLIC WORKS
CITY OF PORTSMOUTH, NH

NO.	DESCRIPTION	DATE
REVISIONS		
STREET PLAN OF MCDONOUGH STREET PHASE 3B PORTSMOUTH, NEW HAMPSHIRE		
DRAWING_SCALE_1"=20'		3/17/16



DEPARTMENT OF
PUBLIC WORKS
CITY OF PORTSMOUTH, NH

NO.	DESCRIPTION	DATE
REVISIONS		

PLAN AND PROFILE
OF
BREWSTER STREET
PHASE 3B
PORTSMOUTH, NEW HAMPSHIRE

DRAWING_SCALE_1"=20' 3/17/16

EX CATCH BASIN TABLE EX DRAIN MANHOLE TABLE PR SEWER MANHOLE TABLE PR DRAIN MANHOLE TABLE PR CATCH BASIN TABLE

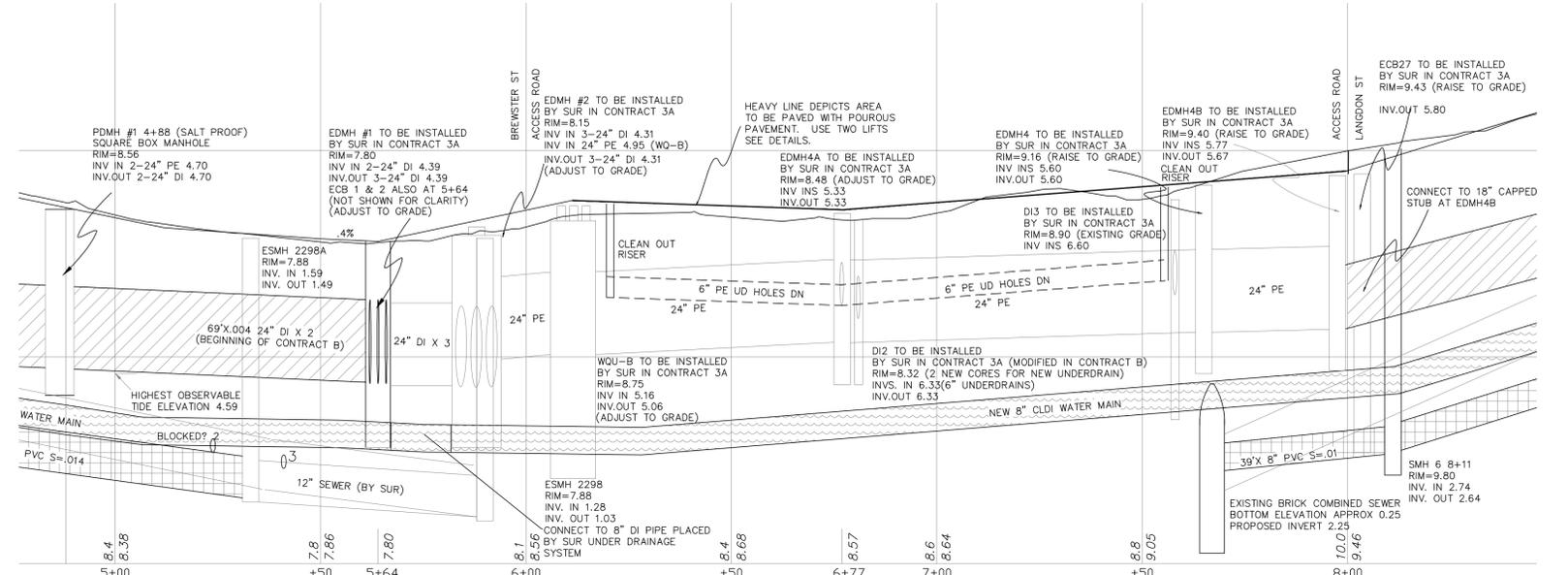
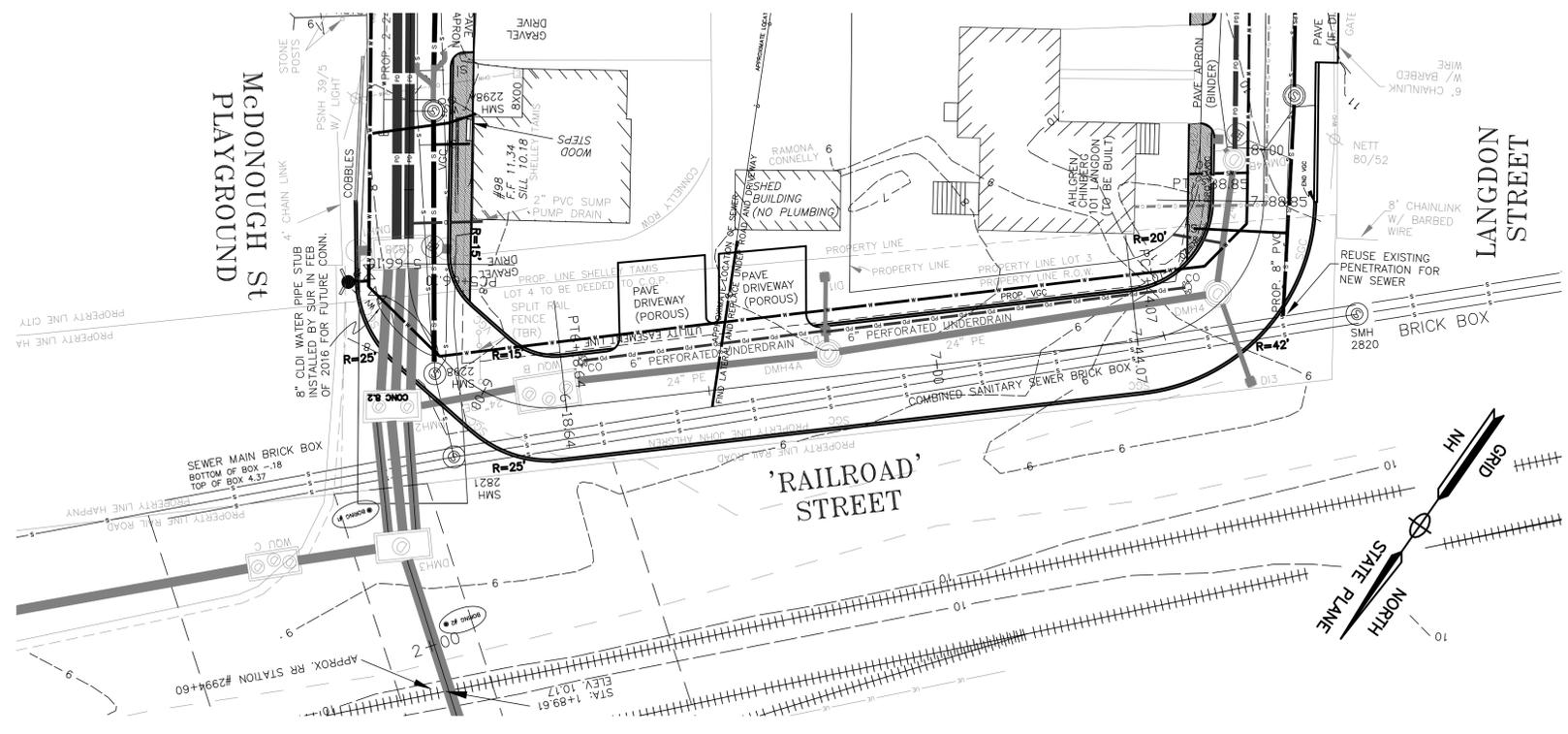
<p>CB 15 RIM 19.11 INV. IN 16.71 (E) (6" CMP) INV. IN 12.66 (NE) (12" PVC) INV. OUT 10.21 (N) (12" CMP)</p> <p>CB 16 RIM 19.14 INV. OUT 16.71 (W)(12" CMP)</p> <p>CB 17 RIM 16.95 INV. IN 10.36 (E) (2)(12" CMP) INV. OUT 9.85 (N) (2)(12" CMP)</p> <p>CB 18 RIM 16.29 INV. IN (S) 9.84 (2)(12" CMP) INV. OUT 9.78 (W)(18" CMP)</p> <p>CB 19 RIM 15.94 INV. IN (E) 10.39 (2)(12" CMP) INV. OUT (W) 10.34 (2)(12" CMP)</p> <p>CB 20 RIM 15.58 INV. IN (E) 10.46 (15" CMP) INV. OUT (W) 10.43 (2)(12" CMP)</p> <p>CB 21 RIM 14.02 INV. IN (NE) 10.93 15" AH INV. IN (NW) 10.91 12" CMP INV. OUT (SW) 10.84 15" AH</p> <p>CB 22 RIM 13.42 INV. OUT (SE) 11.02 12" CMP</p> <p>CB 23 RIM 14.18 INV. IN (NW) 11.13 12" AH</p> <p>CB 24 RIM 13.67 INV. IN (SW) 10.81 15" AH INV. IN (NW) 10.86 15" AH INV. OUT (NE) 10.85 15" AH</p> <p>CB 25 RIM 13.06 INV. OUT (SE) 10.76 15" AH</p> <p>CB 26 RIM 15.51 INV. OUT (W) 12.60 6" CIP</p> <p>CB 27 RIM 9.40 INV. 5.67 6" VC SUMP 2.81</p> <p>CB 28 RIM 7.54 INV. IN (NW) 5.03 10" PVC</p> <p>CB 29 RIM 25.77 INV. IN (SW) 22.17 6" CIP INV. OUT (SE) 21.77 6" CIP</p>	<p>DMH 5 RIM 18.76 INV. IN (E) 9.87 (18" CMP) INV. IN (S) 10.0± INV. OUT (W) 9.86 (24" CMP)</p> <p>DMH 6 RIM 10.87 RECESSED TOP OF WATER 1.78 NOTE: DMH HAS SMH COVER</p> <p>DMH 7 RIM 25.76 INV. OUT (W) 22.01 (6" CIP) INV. IN (S) 22.36 (4" PVC)</p> <p>DMH 8 RIM 10.76 INV. OUT 1.67</p> <p>OUTFALL AT POND 48" RCP TOP 4.73 INV. OUT 0.53</p>	<p>SMH 1 4+32 (BREWSTER) RIM=9.98 INV. IN 3.01 INV. OUT 2.91 SMH 2 3+57.50 (BREWSTER) RIM=12.92 INV. IN 5.46 INV. OUT 5.33 SMH 3 3+45 (BREWSTER) RIM=13.49 INV. IN 5.87(12") INV. IN 6.20(BOTH 8") INV. OUT 5.74 SMH 4 2+61.50 (BREWSTER) RIM=15.50 INVS. IN 7.38 INV. OUT 7.25 SMH 5 0+22.80 (BREWSTER) RIM=25.24 INV. IN 15.20 INV. OUT 15.00 SMH 6 8+11 (LANGDON) RIM=9.80 INV. IN 2.74 INV. OUT 2.64 SMH 7 10+03 (LANGDON) RIM=15.50 INV. IN 8.72 INV. IN 8.62 SMH 8 12+31 (LANGDON) RIM=21.50 INV. IN 15.40 INV. IN 15.30 SMH 9 12+97 (LANGDON) RIM=25.80 INV. OUT 18.72 SMH 10 0+43 (McDONOUGH) RIM=18.45 INV. OUT 11.33 SMH 11 2+40 (McDONOUGH) RIM=15.10 INV. OUT 7.96</p>	<p>PDMH #1 4+88 (SALT PROOF INTERIOR) 6'x6' ID CONCRETE SQUARE MANHOLE RIM=8.56 INV. IN 2-24" PE 4.70 INV. OUT 2-24" DI 4.70 PDMH #2 4+29 (SALT PROOF INTERIOR) 6'x6' ID CONCRETE SQUARE MANHOLE RIM=10.02 INV. IN 24" PE 4.99 INV. OUT 2-24" PE 4.99 WQU A 4+14.5 (VORTECHS 11000 SALT PROOF) RIM-VARIES FROM 10.34 TO 10.66 INV. IN 24" PE 5.13 INV. OUT 24" PE 5.03 PDMH #3 3+55.0 (5' DIAM.) RIM=12.99 INV. IN 12" PE 8.68 INV. IN 24" PE 7.68 INV. OUT 12" PE 7.68 PDMH #4 3+12 RIM=14.21 INV. IN 12" PE 10.04 INV. IN 24" PE 9.54 INV. OUT 24" PE 9.54 PDMH #5 2+65 RIM=15.19 INV. IN 12" PE 10.89 INV. IN 21" PE 10.64 INV. OUT 24" PE 10.39 PDMH #6 1+82 RIM=16.90 INV. IN 21" PE 12.90 INV. OUT 24" PE 12.65 PDMH #7 0+11.4 RIM=25.55± (ADJUST AS NECESSARY) INVS. IN 12" PE 21.09 INV. OUT 18" PE 20.59 PDMH #8 9+69 RIM=14.47 INV. IN 5" PE 10.70 INV. OUT 18" PE 10.10</p>	<p>PCB1 RIM=14.20 INV. 15" PE 9.40 PCB2 RIM=13.68 INV. 15" HAP 10.79 INV. 15" PE 9.25 PCB3 RIM=13.06 INV. 15" PE 9.00 PCB4 RIM=13.35 INV. 12" PE 8.96 PCB5 RIM=13.43 INV. 6" PE 10.63 INV. 12" PE 9.05 PCB6 RIM=14.35 INV. OUT 12" PE 10.24 PCB7 RIM=15.70 (ADJUST TO EX. GRADES) INV. OUT 12" PE 11.00 PCB8 RIM=15.70 (ADJUST TO EX. GRADES) INV. OUT 12" PE 11.10 PCB9 RIM=25.50 INV. IN 15" PE 21.00 INV. OUT 15" PE 21.00 PCB10 RIM=25.75 INV. IN 12" PE 21.09 INV. OUT 12" PE 21.20 PCB11 9+72 RIM=14.54 INV. OUT 12" PE 10.80 PCB12 RIM=15.40 INVS. 12" PE 11.26 PCB13 RIM=16.50 INV. IN 6" PE 13.7 INV. OUT 12" PE 11.95 PCB14 10+17 (3' SUMP) RIM=15.92 INV. IN 12" PE 11.69 INV. OUT 12" PE 11.69 PCB15 10+33 RIM=16.46 INV. IN 12" PE 11.98 INV. OUT 12" PE 11.98 CB 16 12+20 RIM=20.70 INV. IN 6" PE 16.96 INVS. 12" PE 16.46 CB 17 12+20 RIM=20.70 INV. OUT 12" PE 16.66</p>
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ELECTRIC MANHOLE TABLE

<p>EMH 1 RIM 9.48 TOP OF 5" STEEL 5.96 BOTTOM OF BOX 5.48</p>

EX SEWER MANHOLE TABLE

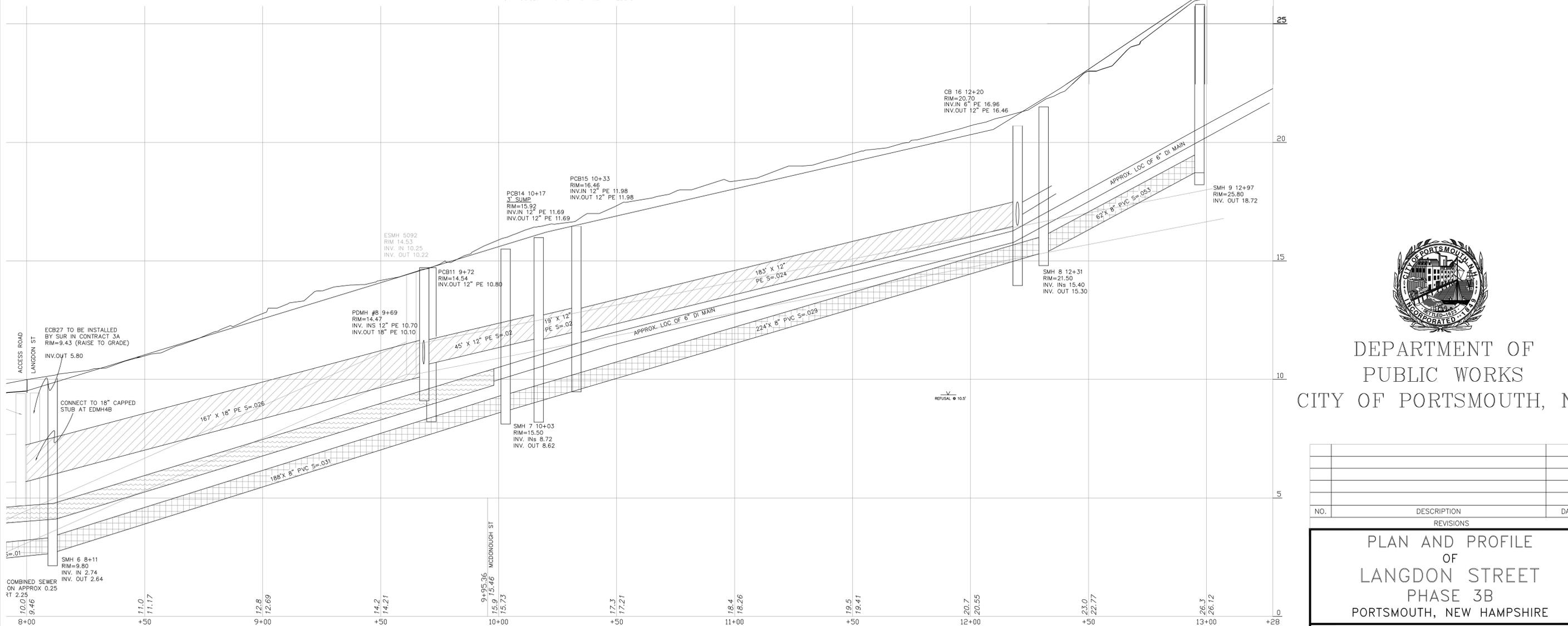
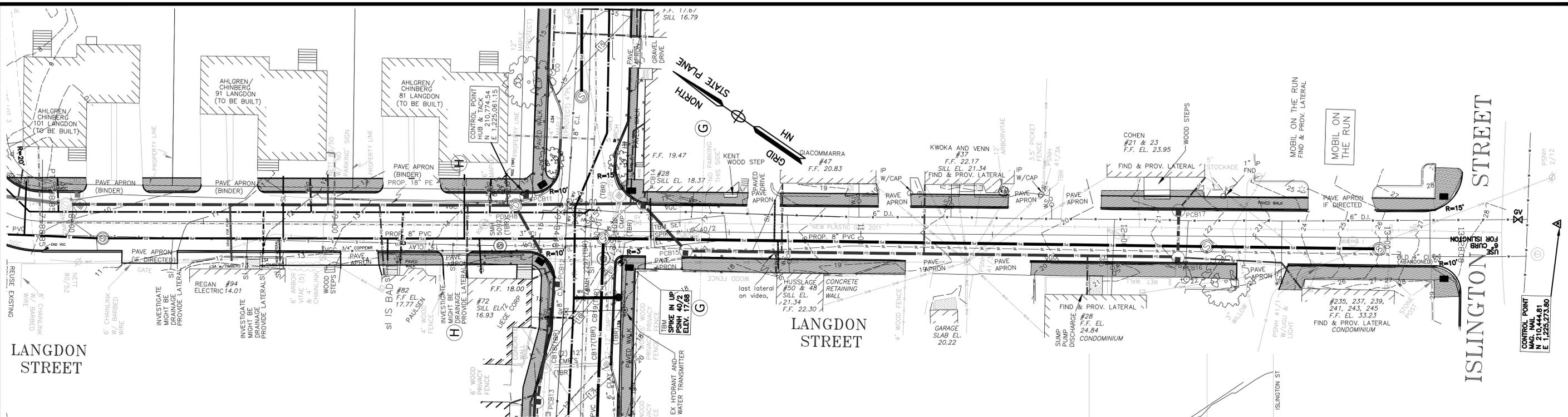
<p>SMH #1638 RIM 18.54' (S) 12" C.I. 12.93' (N) 12" C.I. 12.74'</p> <p>SMH #2297 RIM 15.92' (W) 6" PVC 12.19' (N) 6" PVC 12.14'</p> <p>SMH #5092 RIM 14.53' (N) 12" C.I. 10.25' (S) 10" C.I. 10.22'</p> <p>SMH #2820 RIM 9.40' BOTTOM OF BOX 0.30' TOP OF BOX 4.40'</p> <p>SMH #2821 RIM 8.42' BOTTOM OF BOX -0.18' TOP OF BOX 4.37'</p> <p>SMH #2298 RIM 7.88 (NW) 15" PVC 1.28 (NE) 12" PVC 1.18 (S) 10" PVC 4.42' (SE) 15" PVC 1.03' (SW) 12" PVC 1.39'</p> <p>SMH #1454 RIM 15.75' (SW) 10" VC 7.45' (SE) 15" PVC 9.49' (NE) 10" VC 7.45'</p> <p>SMH #2805 RIM 24.89 (NW) 15" PVC 15.10' (SW) 6" PVC 16.07' (SE) 15" PVC 15.27' (S) 12" PVC 18.45'</p> <p>SMH #1445 RIM 25.89' (NW) 12" PVC 16.26' (NE) 8" VC 16.35'</p> <p>SMH #1639 RIM 21.94 INV. IN 16.13 (6" PVC) INV. OUT 16.03 (6" CLAY)</p>



DEPARTMENT OF
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CITY OF PORTSMOUTH, NH

NO.	DESCRIPTION	DATE

STREET PLAN
OF
RAILROAD STREET AREA
PHASE 3B
PORTSMOUTH, NEW HAMPSHIRE
DRAWING_SCALE_1"=20' 3/17/16



DEPARTMENT OF
PUBLIC WORKS
CITY OF PORTSMOUTH, NH

NO.	DESCRIPTION	DATE
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PLAN AND PROFILE
OF
LANGDON STREET
PHASE 3B
PORTSMOUTH, NEW HAMPSHIRE

DRAWING_SCALE_1"=20' 3/17/16

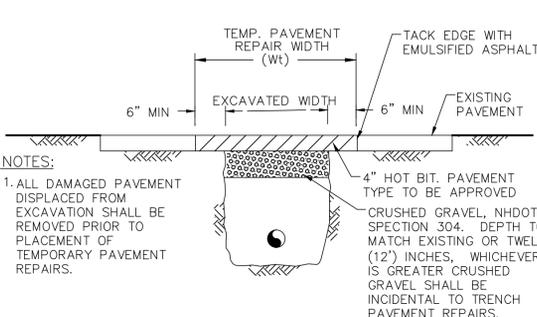
STANDARD MANHOLE NOTES:

- 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.
- 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 OF HEAVY DUTY DESIGN US MADE AND PROVIDE A 30-INCH CLEAR OPENING. LETTER "S" OR WORD "SEWER", IN 3-INCH LETTERS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
- 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.

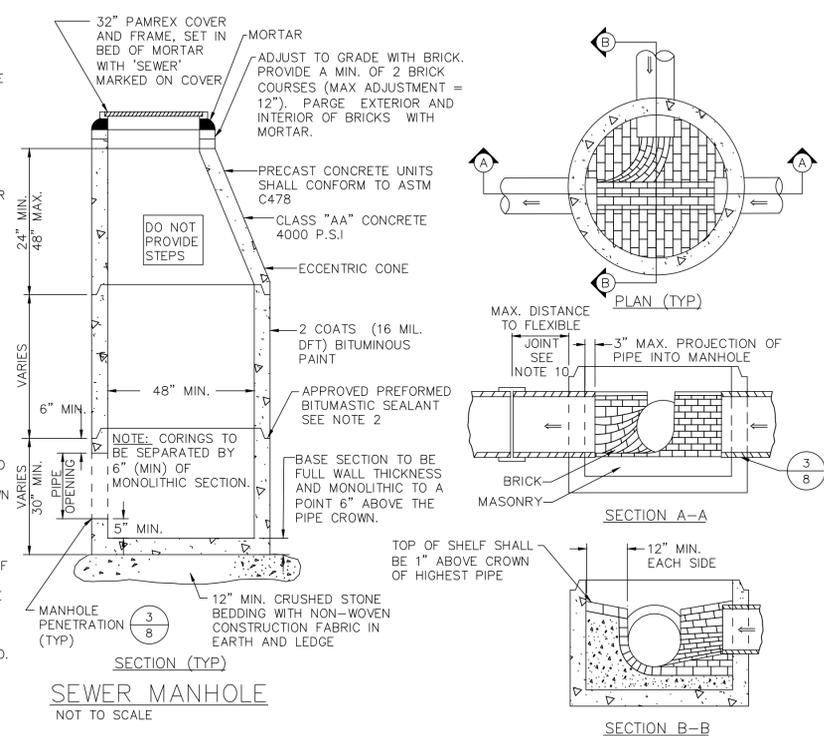
10. **SPECIFICATIONS:** ADDITIONAL CONSTRUCTION SPECIFICATIONS ARE INCLUDED IN THE PROJECT MANUAL. THESE STANDARD MANHOLE DRAWINGS ARE NOT COMPLETE WITHOUT THESE SPECIFICATIONS.



TEMPORARY TRENCH PAVEMENT REPAIR
NOT TO SCALE

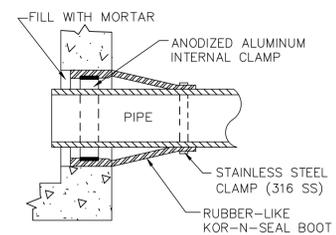
PIPE I.D.	Wt (INCHES)	Wp (INCHES)
1-21 INCHES	72	108
24-30 INCHES	84	120
> 30 INCHES	96	132

NOTE:
THE DIMENSIONS SHOWN SHALL BE CONSIDERED MINIMUM PAVEMENT PAYMENT WIDTHS FOR 0-10" DEEP CONSTRUCTION. Wt AND Wp SHALL BE INCREASED BY 4"-0" FOR TRENCHES 10' TO 15' AND BY 8"-0" FOR TRENCHES 15' TO 20' IN DEPTH.

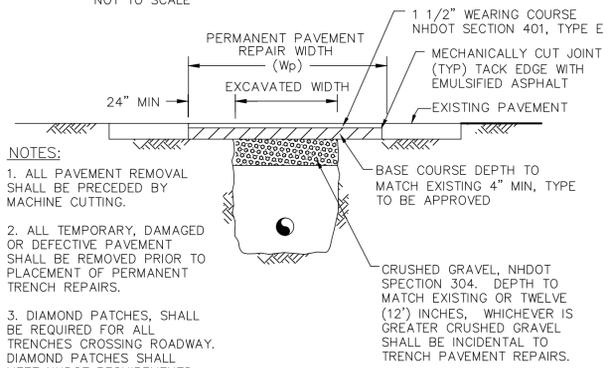


JOINTING AND SEALING NOTES

- PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL, WILL DEPEND UPON AN ELASTOMERIC SEALANT FOR WATERTIGHTNESS.
- FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY. APPROVED BITUMASTIC SEALANTS: RAM-NEK, E Z, KENT SEAL NO.2
- ALL GASKETS, SEALANTS, MORTAR, ETC., SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.



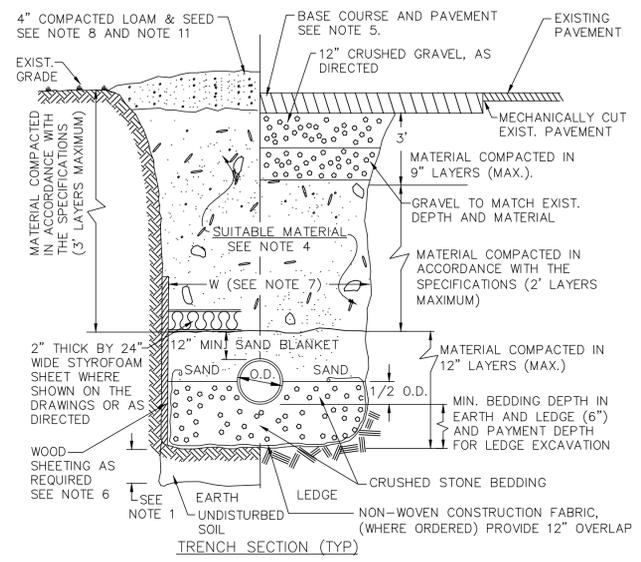
MANHOLE PENETRATIONS
NOT TO SCALE



PERMANENT TRENCH PAVEMENT REPAIR
NOT TO SCALE

GRAVITY SEWER TRENCH NOTES:

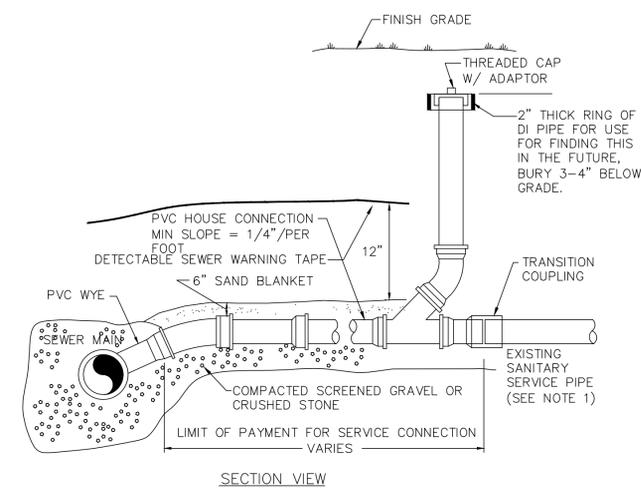
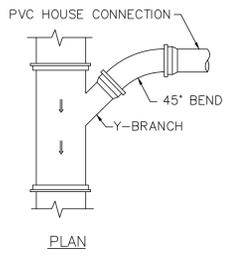
- ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE:** BACKFILL AS STATED IN THE TECHNICAL SPECIFICATIONS OR AS SHOWN ON THE DRAWINGS.
- BEDDING:** SEE NOTE 7 OF STANDARD MANHOLE NOTES. WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, GRADED SCREENED GRAVEL OR CRUSHED STONE 1/2 INCH TO 1-1/2 INCH SHALL BE USED.
- SAND BLANKET:** CLEAN SAND FREE FROM ORGANIC MATTER, SO GRADED THAT 90-100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% WILL PASS A #200 SIEVE, NO STONE LARGER THAN 2" SHOULD BE IN CONTACT WITH THE PIPE.
- SUITABLE MATERIAL:** IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION; AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. 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 AND PROVIDED THAT EASY ACCESS TO THE SEWER, FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WILL BE PRESERVED.
- BASE COURSE AND PAVEMENT** SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES - DIVISIONS 300 AND 400 RESPECTIVELY AND LOCAL REGULATION.
- WOOD 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 1 FOOT ABOVE THE TOP OF 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.
- W = MAXIMUM ALLOWABLE TRENCH PAYMENT WIDTH** FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES IN NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE OUTSIDE DIAMETER (O.D.) ALSO, W SHALL BE THE PAYMENT WIDTH.
- CROSS COUNTRY CONSTRUCTION:** BACKFILL OR FILL SHALL BE MOUND TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- CONCRETE FOR ENCASEMENT** SHALL CONFORM TO THE REQUIREMENTS OF SECTION 520, (NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION).
- CONCRETE FULL ENCASEMENT:** IF FULL ENCASEMENT IS UTILIZED, DEPTH OF CONCRETE BELOW PIPE SHALL BE 1/4 I.D. (4" MINIMUM). BLOCK SUPPORT SHALL BE SOLID CONCRETE BLOCKS.
- GRAVEL DRIVEWAY AND SHOULDER RESTORATION:** CRUSHED GRAVEL IN DRIVEWAYS AND ROAD SHOULDERS SHALL MATCH EXISTING WITH A MINIMUM OF 12". GRAVEL REPLACEMENT SHALL BE SUBSIDIARY TO SEWER CONSTRUCTION AND WILL NOT BE MEASURED FOR PAYMENT.



TRENCH DETAIL- GRAVITY SEWER
NOT TO SCALE

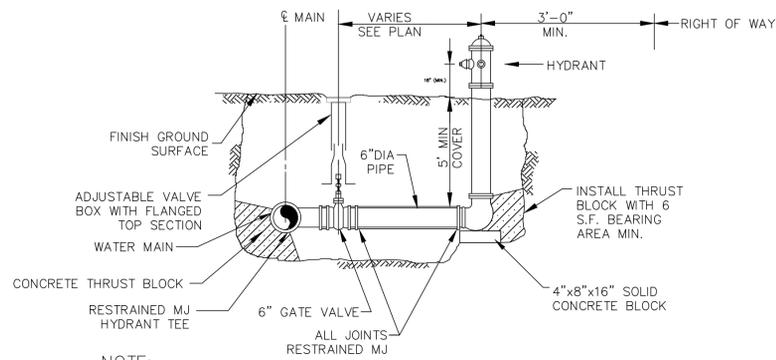
NOTES:

- ALL SEWER SERVICE EXTENSIONS SHALL BE 6", CONTRACTOR SHALL VERIFY EXISTING SEWER SERVICE LOCATION AND ELEVATION BY EXCAVATION OF TEST PITS OR OTHER MEANS PRIOR TO THE CONSTRUCTION OF SEWER MAIN.
- SERVICE CONNECTION SHALL BE INSTALLED BELOW WATER MAIN WHERE POSSIBLE.
- VARIOUS SIZE TRANSITION COUPLINGS SHALL BE STORED ON SITE FOR CONNECTION TO EXISTING SERVICES.
- CLEANOUTS SHALL BE INSTALLED AT EACH LIVE SEWER SERVICE CONNECTION, AS SHOWN ON THIS PLAN. REBAR SHALL BE PLACED AT SIDE OF CLEANOUT.
- CLEANOUT SHALL BE USED TO PLUG AND TEST ALL NEW LATERALS WITH MINIMAL INTERRUPTION TO OPERATION OF HOMEOWNER SANITARY SYSTEM. CLEANOUTS SHALL BE INCIDENTAL TO SERVICE CONNECTIONS AND SHALL NOT BE CONSIDERED FOR PAYMENT.



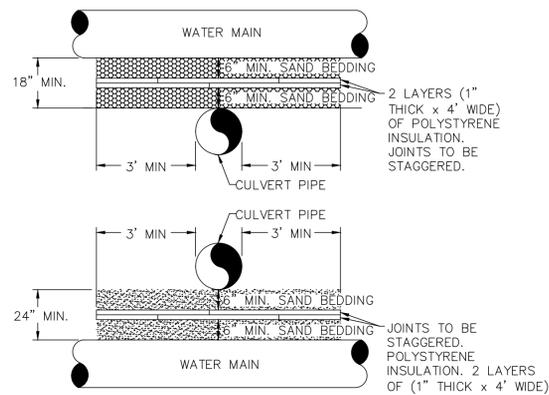
DEPARTMENT OF
PUBLIC WORKS
CITY OF PORTSMOUTH

NO.	DESCRIPTION	DATE
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SEWER DETAILS		
OF		
McDONOUGH STREET AREA		
PHASE 1		
PORTSMOUTH, NEW HAMPSHIRE		
DRAWING_SCALE_NONE		3/17/16



- NOTE:**
- HYDRANTS SHALL BE DELIVERED FROM FACTORY W/O DRAIN HOLES.
 - HYDRANT ASSEMBLY INCLUDES MJ HYDRANT TEE.
 - HYDRANT SHALL BE KENNEDY K-81A GUARDIAN, PER CITY OF PORTSMOUTH STANDARDS.
 - LOCATE HYDRANTS A MINIMUM OF 18" BEHIND CURBING UNLESS OTHERWISE DIRECTED. REVIEW HYDRANT LOCATIONS WITH PROJECT REPRESENTATIVE PRIOR TO WATER MAIN INSTALLATIONS.

TYPICAL HYDRANT ASSEMBLY SECTION
NOT TO SCALE

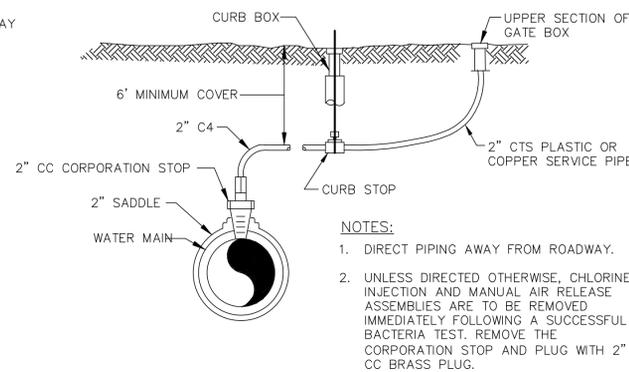


INSULATION TO BE USED WHERE PIPE SEPARATION IS 24" OR LESS.

CULVERT CROSSING DETAIL
NOT TO SCALE

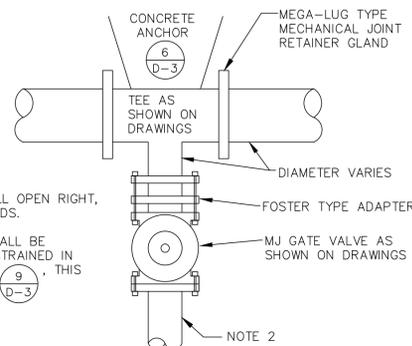
- NOTES:**
- PROVIDE NEW LINE USING CONTINUOUS LENGTHS OF COPPER. NO COUPLING ALLOWED IN ROADWAY WITHOUT APPROVAL OF ENGINEER.
 - TAPS TO BE MADE AT APPROX. 2:00 AND 10:00.
 - PROVIDE FOR SERVICE LINE CONTRACTION AND EXPANSION BY INSTALLING "S" IN SERVICE LINE NEAR MAIN.
 - IF SERVICE IS INSTALLED WITH LESS THAN 5' COVER, INSULATE OVER LINE.
 - REMOVE EXISTING CURB STOP AND REPLACE.
 - 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 DISINFECTING.
 - CURB BOX SHALL BE SET IN THE SIDEWALK NEAR THE HOUSE SIDE UNLESS DIRECTED OTHERWISE.
 - 2" SERVICE CONNECTIONS SHALL USE A STAINLESS STEEL SERVICE SADDLE.

TYPICAL SERVICE CONNECTION
NOT TO SCALE



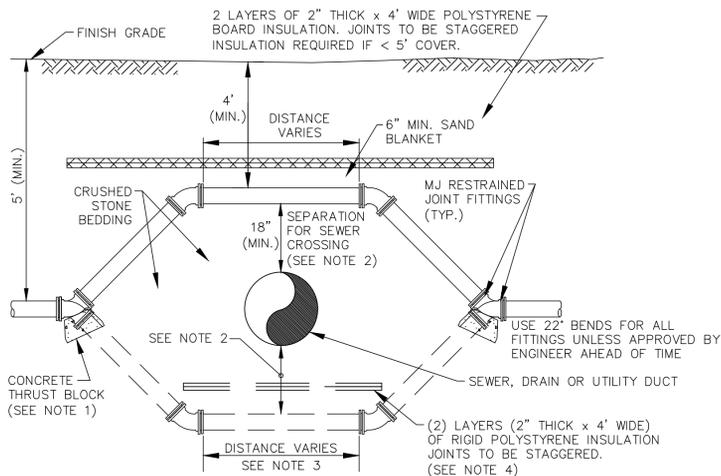
- NOTES:**
- DIRECT PIPING AWAY FROM ROADWAY.
 - UNLESS DIRECTED OTHERWISE, CHLORINE INJECTION AND MANUAL AIR RELEASE ASSEMBLIES ARE TO BE REMOVED IMMEDIATELY FOLLOWING A SUCCESSFUL BACTERIA TEST. REMOVE THE CORPORATION STOP AND PLUG WITH 2" CC BRASS PLUG.

TEMPORARY BLOW-OFF TAP ASSEMBLY
NOT TO SCALE



- NOTE:**
- GATE VALVES SHALL OPEN RIGHT, PER CITY STANDARDS.
 - BRANCH PIPING SHALL BE MECHANICALLY RESTRAINED IN ACCORDANCE WITH THIS SHEET

TEE & GATE VALVE ASSEMBLY DETAIL (TYP.)
NOT TO SCALE

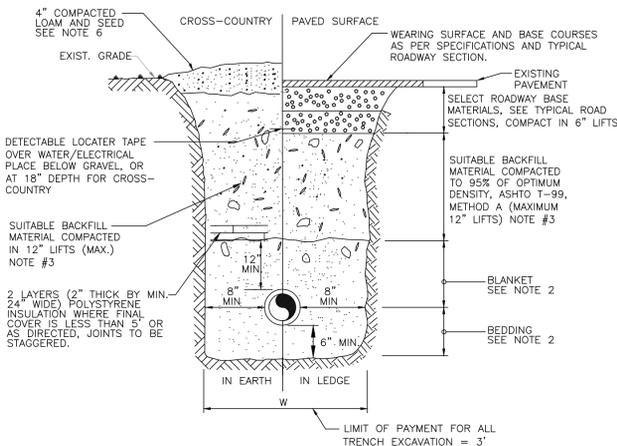


- NOTE:**
- INSTALL (4) FOUR 22" MJ BENDS WITH RESTRAINED JOINT FITTINGS.
 - VERTICAL SEPARATION DEPTH BETWEEN WATER AND SEWER SHALL BE AT LEAST 18", WITH WATER ABOVE SEWER, PER NHDES ENV-Wq 704.12. VERTICAL SEPARATION OF LESS THAN 18" ALLOWED ONLY WITH WAIVER FROM NHDES. PROVIDE 12" SEPARATION FOR DRAIN OR OTHER UTILITY CROSSINGS.
 - CENTER CROSSING PIPE BETWEEN BELLS. SEWER PIPE JOINT SHALL BE A MINIMUM OF 6 FT. HORIZONTALLY FROM THE WATER MAIN.
 - PROVIDE INSULATION IF DRAIN CROSSES OVER WATER MAIN.

WATER MAIN CONFLICT - CROSSING DETAIL
NOT TO SCALE

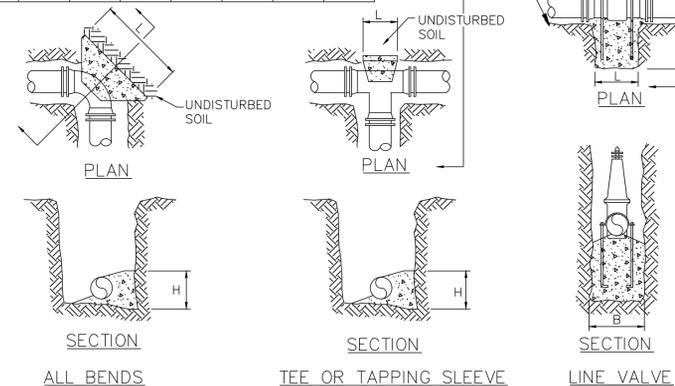
STANDARD TRENCH NOTES

- ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE; BACKFILL AS STATED IN THE TECHNICAL SPECIFICATIONS OR AS SHOWN ON THE DRAWINGS.
- BEDDING AND BLANKET: CLEAN SAND FREE FROM ORGANIC MATTER (SECTION 02228). BLANKET MAY BE OMITTED FOR DUCTILE IRON AND REINFORCED CONCRETE PIPE, PROVIDED HOWEVER, THAT NO STONE LARGER THAN 2" IS IN CONTACT WITH THE PIPE.
- BACKFILL MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS; PIECES OF PAVEMENT; ORGANIC MATTER; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ALL ROCKS OVER 6 INCHES IN LARGEST DIMENSION; AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.
- 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 ENGINEER IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE PIPE LINE, FOR MAINTENANCE AND POSSIBLY RECONSTRUCTION, WILL BE PRESERVED.
- MINIMUM COVER: NOT LESS THAN 5 FEET, 7 MAX. EXCEPT TO AVOID SUBSURFACE STRUCTURES.
- CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUND TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- DRIVEWAYS: CRUSHED GRAVEL IN DRIVEWAYS SHALL MATCH EXISTING WITH A MINIMUM OF 6". EXISTING GRAVEL SHALL BE REMOVED AND REPLACED AND SHALL NOT BE MEASURED FOR PAYMENT.



TYPICAL TRENCH DETAIL
NOT TO SCALE

PIPE SIZE INCHES	MINIMUM CONCRETE ANCHOR DIMENSIONS							
	BENDS, TEES AND LINE VALVES AT 250 PSI							
	TEE OR PLUG FT.		ALL BENDS FT.		ALL LINE VALVES FT.		PIPE SIZE INCHES	
6	1.5	3.0	2.0	3.5	1.5	3.0	2.5	6
8	2.0	4.0	2.5	5.0	2.0	4.0	3.0	8
10	2.5	5.0	3.0	6.0	3.0	4.0	3.0	10
12	3.0	6.0	3.0	8.0	3.0	5.0	4.0	12
16	3.0	6.5	3.0	10.0	3.0	4.5	4.0	16



CONCRETE ANCHORS
NOT TO SCALE

Nominal Pipe Diameter	Bend Angle			
	90°	45°	22.5°	11.25°
4"	6'	3'	2'	1'
6"	9'	4'	2'	2'
8"	11'	5'	3'	2'
10"	13'	6'	3'	2'
12"	16'	7'	3'	2'
16"	20'	9'	4'	2'

Nom. Diameter of Large Pipe	Nominal Diameter of Small Pipe (Note 4)				
	4"	6"	8"	10"	12"
8"	17'	10'	-	-	-
10"	23'	17'	10'	-	-
12"	29'	24'	18'	10'	-
16"	39'	36'	31'	28'	18'

Nom. Pipe Diameter	RESTRAINED LENGTH (ft)	
	4"	13"
6"	18"	
8"	23"	
10"	28"	
12"	33"	
16"	43"	

Nominal Pipe	TEES:			
	8"	10"	12"	16"
8"	6'	-	-	-
10"	8'	11'	-	-
12"	1'	7'	16'	-
16"	1'	1'	9'	25'

- NOTES:**
- ALL FITTINGS SHALL HAVE MECHANICAL RETAINING GLANDS AT ALL ENDS AND A MINIMUM OF ONE JOINT SHALL BE RESTRAINED BEYOND EACH SIDE OF FITTING.
 - PIPE EXTENDING FROM ALL FITTINGS SHALL BE MECHANICALLY RESTRAINED TO THE MINIMUM LENGTHS SHOWN.
 - ALL MINIMUM LENGTHS SHOWN ABOVE WERE CALCULATED USING THE EBAA IRON RESTRAINT LENGTH CALCULATOR VERSION 6.3 USING THE FOLLOWING ASSUMPTIONS: DUCTILE IRON PIPE, TYPE 4 TRENCH, 5 FOOT DEPTH OF BURY, A TEST PRESSURE OF 150 PSI AND SOILS CONSISTING OF WELL GRADED SANDS AND GRAVELLY SANDS WITH LITTLE OR NO FINES.
 - ENGINEER RESERVES THE RIGHT TO MODIFY RESTRAINT LENGTHS REQUIRED BASED ON VARYING TRENCH CONDITIONS, DEPTH OF BURY OR PIPE MATERIALS.
 - FOR REDUCERS, RESTRAINT LENGTH SHOWN IS FOR THE LARGER PIPE.
 - MECHANICALLY RESTRAIN ONE JOINT ON EITHER SIDE OF THE NOMINAL PIPE OF TEE AT A MINIMUM DISTANCE OF 5'.
 - ALL BENDS SHOULD BE 22" UNLESS ALLOWED BY THE ENGINEER.

MECHANICAL JOINT RESTRAINT
NOT TO SCALE



DEPARTMENT OF
PUBLIC WORKS
CITY OF PORTSMOUTH

NO.	DESCRIPTION	DATE
REVISIONS		
WATER DETAILS		
OF		
McDONOUGH STREET AREA		
PHASE 3B		
PORTSMOUTH, NEW HAMPSHIRE		
DRAWING_SCALE_NONE		3/17/16

STANDARD CB & MANHOLE NOTES:

1. BARRELS AND TOP SECTIONS SHALL BE PRECAST REINFORCED CONCRETE.
2. PRECAST CONCRETE BARREL SECTIONS, CONES, AND BASES SHALL CONFORM TO ASTM C478.
3. 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 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 PIPES. SHELVES SHALL BE CONSTRUCTED TO AN ELEVATION OF 1/2 THE PIPE DIA. AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL.
4. FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. LETTER "D" OR WORD "DRAIN", IN 3-INCH LETTERS SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
5. BEDDING: SCREENED GRAVEL AND/OR CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C53. STONE SIZE NO. 67.
 - 100% PASSING 1 INCH SIEVE
 - 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.

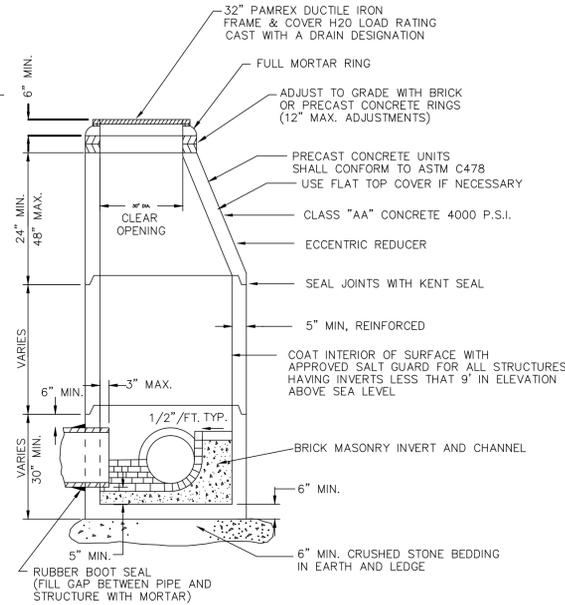
6. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE IS LESS THAN 5 FEET, A REINFORCED CONCRETE SLAB COVER HAVING AN ECCENTRIC ENTRANCE AND CAPABLE OF SUPPORTING H-20 LOADS MAY BE USED.

TRENCH NOTES - STORM DRAIN

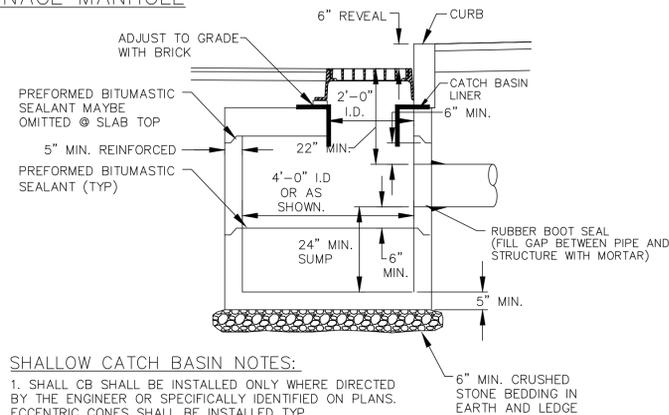
1. BEDDING: BEDDING FOR PIPES SHALL CONSIST OF PREPARING THE BOTTOM OF THE TRENCH TO SUPPORT THE ENTIRE LENGTH OF THE PIPE AT A UNIFORM SLOPE AND ALIGNMENT. CRUSHED STONE SHALL BE USED TO BED THE PIPE TO THE ELEVATION SHOWN ON THE DRAWINGS. NORMAL PIPE BEDDING IS CRUSHED STONE TO THE HAUNCH OF THE PIPE AND SAND BEDDING 6" ABOVE THE CROWN. IF THE TOP OF THE PIPE IS LESS THAN 30" FROM FINISH GRADE, BED PIPE COMPLETELY IN STONE UP TO 6" ABOVE PIPE CROWN. UNDERDRAIN TO HAVE 4" MIN' OF STONE OVER PIPE OR AS NECESSARY TO BE IN CONTACT WITH GRAVEL LAYER OF SELECTS ABOVE.

2. COMPACTION: ALL BACKFILL SHALL BE COMPACTED AT OR NEAR OPTIMUM MOISTURE CONTENT BY PNEUMATIC TAMPERS, VIBRATORY COMPACTORS OR OTHER APPROVED MEANS. BACKFILL BENEATH PAVED SURFACES SHALL BE COCOMPACTED TO NOT LESS THAN 95 PERCENT OF AASHTO T99, METHOD C.
3. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS; PIECES OF PAVEMENT; ORGANIC MATTER; TOP SOIL; ALL WET OR SOFT MUCK, PEAT, OR CLAY; ALL EXCAVATED LEDGE MATERIAL; ROCKS OVER 6 INCHES IN LARGEST DIMENSION; FROZEN EARTH AND ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.

4. BASE COURSE AND PAVEMENT: SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES - DIVISIONS 300 AND 400 RESPECTIVELY.
5. DRAINAGE PIPE: PIPE MATERIALS SHALL BE POLYETHYLENE (SEE SPECIFICATIONS)
6. W=MAXIMUM ALLOWABLE TRENCH WIDTH: W SHALL BE THE MAXIMUM PAYMENT WIDTH FOR ROCK EXCAVATION (TRENCH) AND FOR ORDERED EXCAVATION BELOW GRADE.



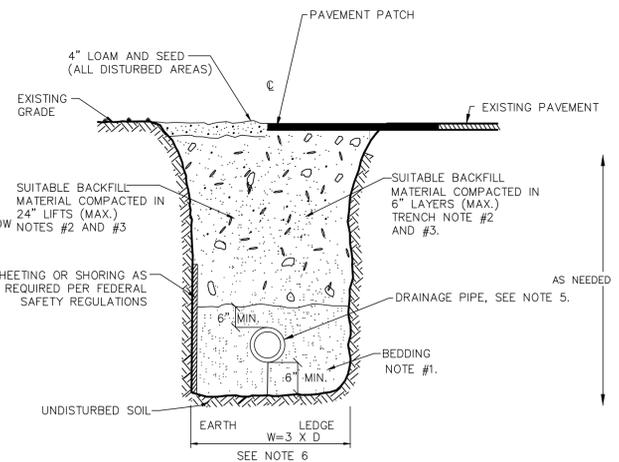
TYPICAL DRAINAGE MANHOLE
NOT TO SCALE



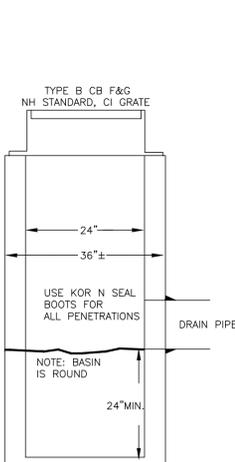
SHALLOW CATCH BASIN NOTES:

1. SHALL CB SHALL BE INSTALLED ONLY WHERE DIRECTED BY THE ENGINEER OR SPECIFICALLY IDENTIFIED ON PLANS. ECCENTRIC CONES SHALL BE INSTALLED TYP.
2. ENTIRE STRUCTURE SHALL BE CAPABLE OF WITHSTANDING AN H-20 LOAD. DETAILS OF REINFORCEMENT TO BE FURNISHED BY MANUFACTURER
3. A REINFORCED CONCRETE SLAB COVER HAVING A CONCENTRIC OPENING AND CAPABLE OF HANDLING H-20 LOADS MAY BE USED.
4. SLAB TOP SHALL HAVE 24" ROUND OPENING.

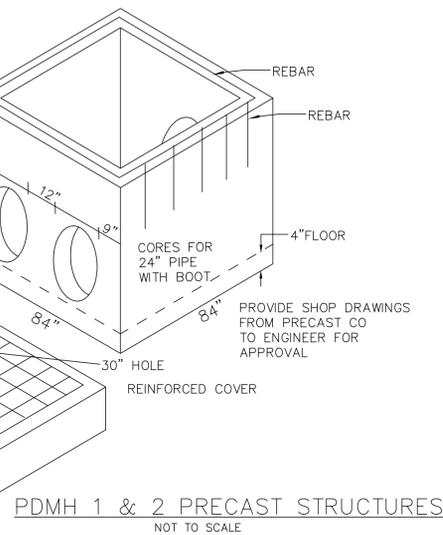
SHALLOW CATCH BASIN DETAIL
NOT TO SCALE



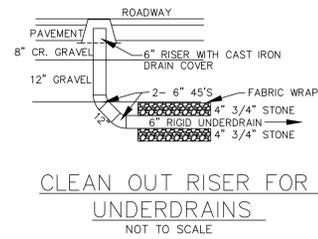
TRENCH DETAIL - STORM DRAIN
NOT TO SCALE



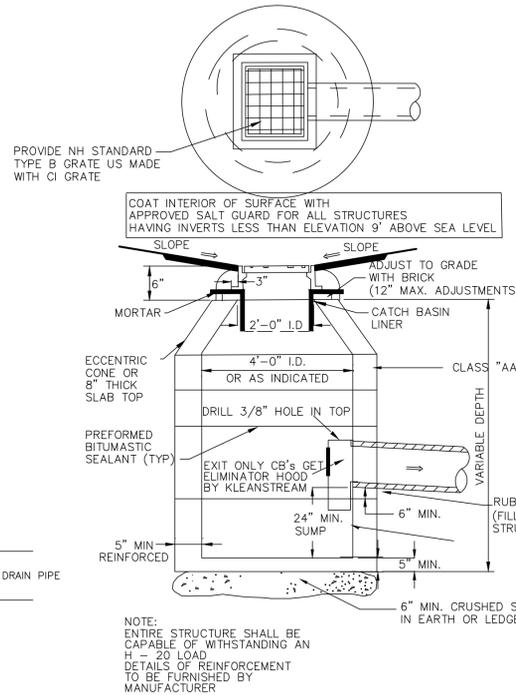
DI CATCH BASIN
NOT TO SCALE



PDMH 1 & 2 PRECAST STRUCTURES
NOT TO SCALE

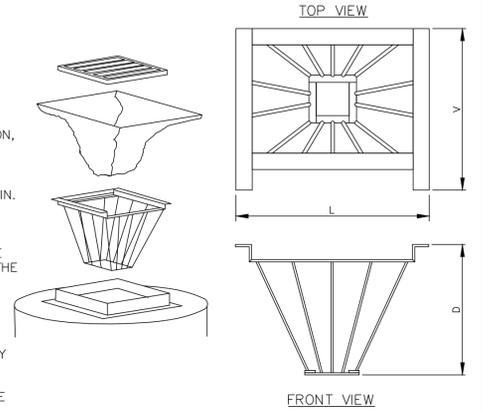


CLEAN OUT RISER FOR UNDERDRAINS
NOT TO SCALE

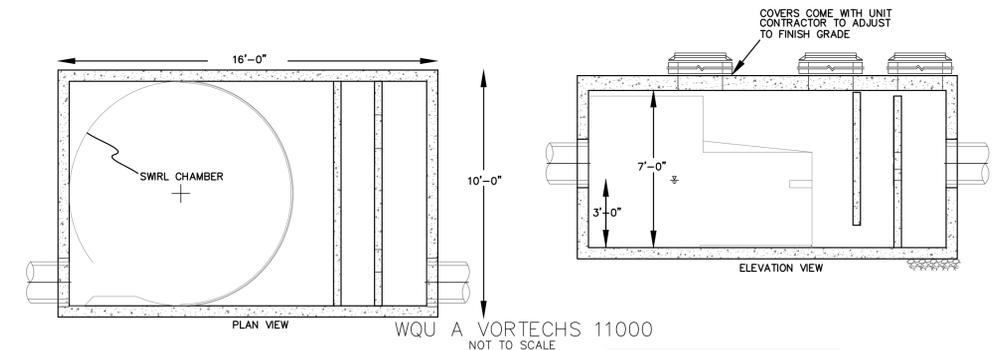


CATCH BASIN
NOT TO SCALE

- NOTES:**
1. METAL-ERA INLET BASKET AVAILABLE FROM METAL-ERA, INC. N4 W22450 BLUEMOUND ROAD WAUKESHA, WI 53186 1-800-558-2162
 2. INSTALL APPROPRIATE METAL BASKET.
 3. A. GEOTEXTILE FABRIC SHALL BE POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE, OR POLYOLYDENE CHLORIDE MEETING THE FOLLOWING:
 - a. GRAB STRENGTH: 45# MIN. IN ANY PRINCIPAL DIRECTION (ASTM D1682)
 - b. MULLEN BURST STRENGTH: 60 PSI MIN. (ASTM D771)
 - c. FABRIC SHALL HAVE AN OPENING NO GREATER THAN A #20 SIEVE AND A MIN. PERMEABILITY OF 120 GPM/SQ. FT.
 4. FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND EXTEND AT LEAST 6 INCHES PAST THE FRAME. GRATE INLET SHALL BE PLACED OVER THE BASKET/FRAME AND WILL ANCHOR THE FABRIC.
 5. INSPECT BASKET DAILY OR MORE FREQUENTLY DURING STORM EVENTS.
 6. SEDIMENT SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE FREQUENTLY TO PREVENT CLOGGING.
 7. USE OF METAL-ERA INLET BASKET DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF MAINTAINING OTHER EROSION CONTROL MEASURES AS MAY BE REQUIRED OR FROM STABILIZING DISTURBED AREAS AS SOON AS PRACTICAL.
 8. REMOVE FABRIC & BASKET ONCE ALL DISTURBED AREAS ARE STABILIZED & VEGETATIVE GROWTH OR PERMANENT EROSION CONTROL MEASURES ARE ESTABLISHED.



TEMPORARY CATCH BASIN INLET FILTER
NOT TO SCALE



- GENERAL NOTES:**
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
 2. DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
 3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
 4. VORTECHS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
 5. STRUCTURE SHALL MEET AASHTO H20 AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
 6. INLET PIPE(S) MUST BE PERPENDICULAR TO THE VAULT AND AT THE CORNER TO INTRODUCE THE FLOW TANGENTIALLY TO THE SWIRL CHAMBER. DUAL INLETS NOT TO HAVE OPPOSING TANGENTIAL FLOW DIRECTIONS.
 7. OUTLET PIPE(S) MUST BE DOWN STREAM OF THE FLOW CONTROL BAFFLE AND MAY BE LOCATED ON THE SIDE OR END OF THE VAULT. THE FLOW CONTROL WALL MAY BE TURNED TO ACCOMMODATE OUTLET PIPE KNOCKOUTS ON THE SIDE OF THE VAULT.
- INSTALLATION NOTES:**
- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
 - B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE VORTENTRY HS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
 - C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
 - D. CONTRACTOR TO PROVIDE, INSTALL AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
 - E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

SITE SPECIFIC DATA REQUIREMENTS			
STRUCTURE ID	WQU A		
WATER QUALITY FLOW RATE (CFS)	15.2 CFS		
PEAK FLOW RATE (CFS)	30 CFS		
RETURN PERIOD OF PEAK FLOW (YRS)	2 YR		
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1		PE	24"
INLET PIPE 2	5.13	PE	24"
OUTLET PIPE	5.08	PE	24"
RIM ELEVATION	10.34		
ANTI-FLOTATION BALLAST	WIDTH	HEIGHT	
NOTES/SPECIAL REQUIREMENTS:			
STRUCTURE NEEDS TO BE SALT GUARDED SUBJECT TO OCCASIONAL TIDAL INFLUX * PER ENGINEER OF RECORD			

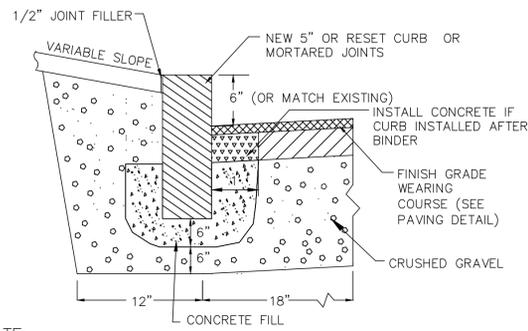


DEPARTMENT OF PUBLIC WORKS
CITY OF PORTSMOUTH

REVISIONS		
NO.	DESCRIPTION	DATE

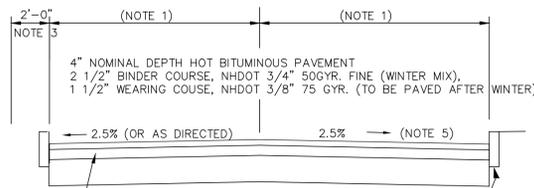
DRAINAGE DETAILS OF McDONOUGH STREET AREA PHASE 3B
PORTSMOUTH, NEW HAMPSHIRE

DRAWING_SCALE_NONE 3/17/16



NOTE:
 1. DAMAGED OR IMPACTED CURB IS TO BE REPLACED AT THE CONTRACTORS OWN EXPENSIVE, UNLESS OTHERWISE NOTED ON PLAN.
 2. CLASS B CONCRETE FILL SHALL BE PLACED IN VOIDS IN FRONT, BEHIND, AND BELOW CURBING PRIOR TO INSTALLATION OF GRAVEL BACKING AND FINISH GRADE WEARING COURSE PAVEMENT.

VERTICAL CURB - RESET OR NEW
 NOT TO SCALE

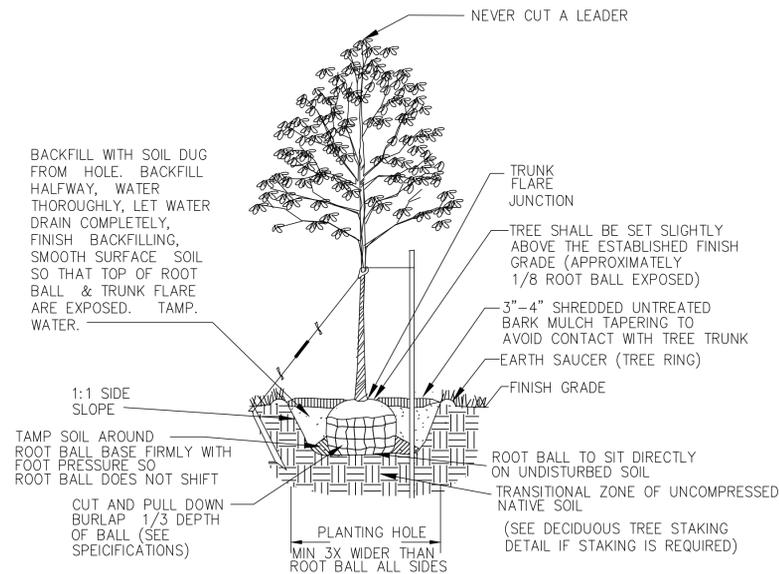


FULL WIDTH BOX OUT.
 8" DEPTH OF 304.3 CRUSHED GRAVEL
 12" OF 304.2 BANK RUN GRAVEL
 INTENT OF ROAD GRADES SHOWN IS TO KEEP EXISTING SIDEWALK ELEVATIONS CONSTANT AND ADJUST ROAD GRADES DOWN IN ORDER TO PROVIDE 6" REVEAL OR AS DIRECTED. ROAD IS SUPER-ELEVATED IN SOME SECTIONS AND CROWNED NORMALLY IN OTHERS. SEE PLAN VIEW AND EXISTING CONDITIONS.

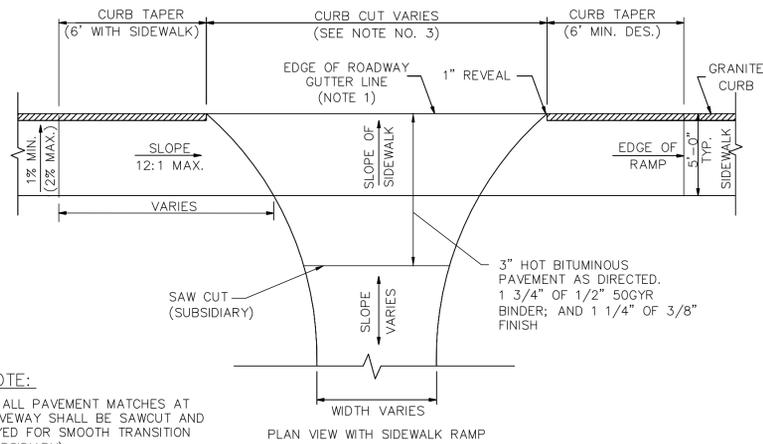
NOTES

1. RECONSTRUCT ROADWAY IN ACCORDANCE TO PLAN UNLESS DIRECTED OTHERWISE.
2. EXISTING DRIVEWAYS ARE TO BE SAWCUT PRIOR TO PAVING. MATCH EXISTING DRIVEWAY ELEVATIONS UNLESS OTHERWISE DIRECTED, SUBSIDIARY.
3. PROVIDE 2 FOOT WIDE GRAVELED SHOULDER WHERE CURBING IS NOT PRESENT, SUBSIDIARY.
4. LOAM, SEED & MULCH ROADSIDE SLOPES, SUBSIDIARY.
5. UNIFORMLY GRADE ROADWAY PRIOR AND PROVIDE A POSITIVE GRADIENT TO THE EXISTING DRAINAGE STRUCTURES, MIN. CROSS SLOPE=2%, MIN. GUTTER SLOPE=0.5%. THIS ROAD MAY BE SUPER-ELEVATED, SEE PLAN FOR CONTOURS AND PROFILE FOR CL GRADE.

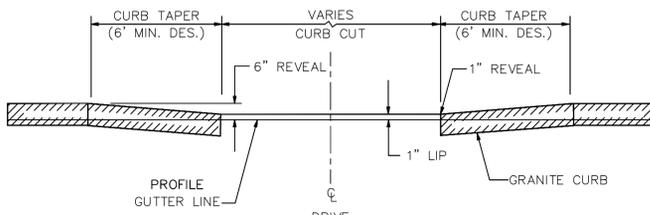
PAVEMENT RECONSTRUCTION & FULL WIDTH PAVING DETAIL
 NOT TO SCALE



DECIDUOUS TREE PLANTING DETAIL
 N.T.S.



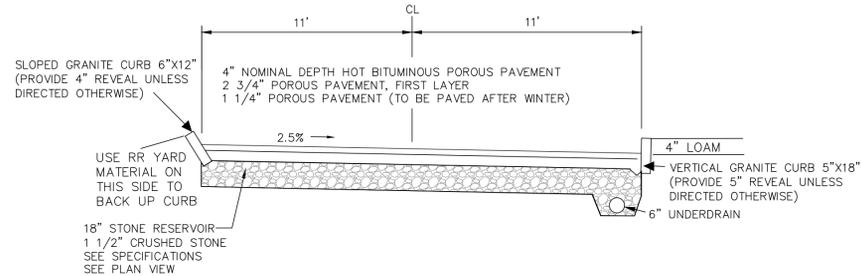
NOTE:
 1.) ALL PAVEMENT MATCHES AT DRIVEWAY SHALL BE SAWCUT AND KEVED FOR SMOOTH TRANSITION (SUBSIDIARY)



DRIVEWAY APRON/CURB CUT
 NOT TO SCALE

DRIVEWAY NOTES

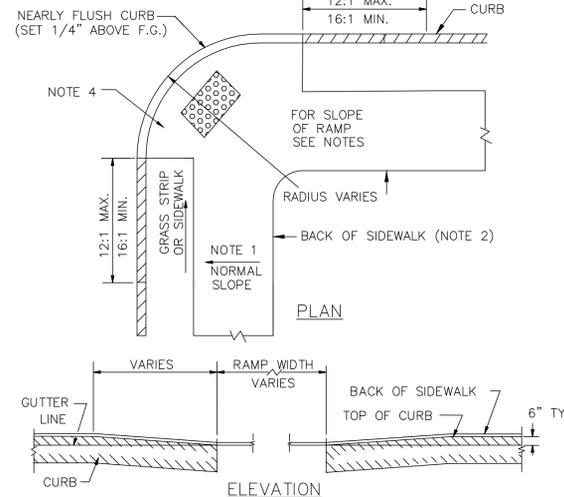
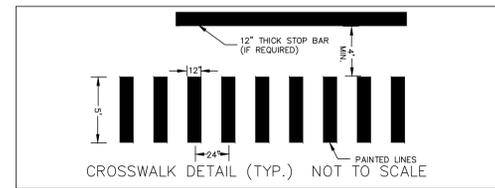
1. PAVEMENT & GRAVEL DEPTHS FOR RESIDENTIAL DRIVES SHALL BE 8" CRUSHED GRAVEL WITH 3.0" H.B.P. (HAND METHOD) IN TWO LIFTS 2" OF BINDER AND 1" OF TOP.
2. CURBING CAN BE FLARED TO FIT DRIVE RADII IF APPROPRIATE OR ENDED AS DETAILED ABOVE.
3. DRIVEWAY CURB CUTS SHALL MATCH EXISTING APRON WIDTHS UNLESS OTHERWISE DIRECTED.
4. FOR UNPAVED DRIVES, THE PAVED APRON NORMALLY ENDS AT THE RADIUS TANGENT POINT OR BACK OF SIDEWALK, WHICHEVER IS GREATER.



RAILROAD STREET POROUS PAVEMENT X-SECTION
 NOT TO SCALE



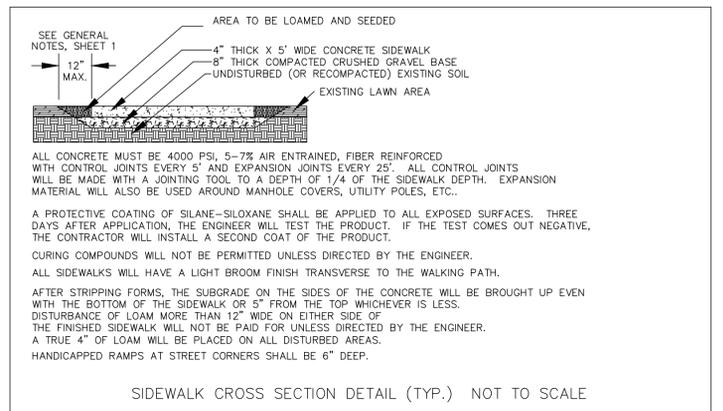
DEPARTMENT OF
 PUBLIC WORKS
 CITY OF PORTSMOUTH



GENERAL NOTES

1. THE MAXIMUM RUNNING SLOPE OF ANY SIDEWALK CURB RAMP IS 12:1, THE MAXIMUM CROSS-SLOPE IS 2%.
2. TRANSITIONS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. REFER TO CROSS SECTION PLANS (TO BE PROVIDED) FOR ROADWAY SHOULDER SLOPES ADJOINING SIDEWALK.
3. THE BOTTOM OF THE SIDEWALK CURB RAMP OR LANDING, EXCLUSIVE OF THE FLARED SIDES, SHALL BE WHOLLY CONTAINED WITHIN THE LIMITS SHOWN ON THE DRAWINGS.
4. CORNER RAMPS ARE TO BE CONSTRUCTED WITH REINFORCED CONCRETE 6" DEPTH. TRUNCATED DOME PANEL SHALL BE 2'X3' ARMORTILE BRAND (no equal allowed). COLOR TO BE BRICK RED.

CORNER SIDEWALK RAMP
 NOT TO SCALE



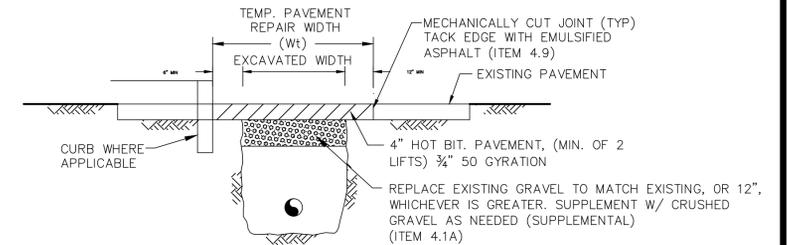
ALL CONCRETE MUST BE 4000 PSI, 5-7% AIR ENTRAINED, FIBER REINFORCED WITH CONTROL JOINTS EVERY 5' AND EXPANSION JOINTS EVERY 25'. ALL CONTROL JOINTS WILL BE MADE WITH A JOINTING TOOL TO A DEPTH OF 1/4 OF THE SIDEWALK DEPTH. EXPANSION MATERIAL WILL ALSO BE USED AROUND MANHOLE COVERS, UTILITY POLES, ETC.
 A PROTECTIVE COATING OF SILANE-SILOXANE SHALL BE APPLIED TO ALL EXPOSED SURFACES. THREE DAYS AFTER APPLICATION, THE ENGINEER WILL TEST THE PRODUCT. IF THE TEST COMES OUT NEGATIVE, THE CONTRACTOR WILL INSTALL A SECOND COAT OF THE PRODUCT.
 CURING COMPOUNDS WILL NOT BE PERMITTED UNLESS DIRECTED BY THE ENGINEER.
 ALL SIDEWALKS WILL HAVE A LIGHT BROOM FINISH TRANSVERSE TO THE WALKING PATH.
 AFTER STRIPPING FORMS, THE SUBGRADE ON THE SIDES OF THE CONCRETE WILL BE BROUGHT UP EVEN WITH THE BOTTOM OF THE SIDEWALK OR 5" FROM THE TOP WHICHEVER IS LESS.
 DISTURBANCE OF LOAM MORE THAN 12" WIDE ON EITHER SIDE OF THE FINISHED SIDEWALK WILL NOT BE PAID FOR UNLESS DIRECTED BY THE ENGINEER.
 A TRUE 4" OF LOAM WILL BE PLACED ON ALL DISTURBED AREAS.
 HANDICAPPED RAMPS AT STREET CORNERS SHALL BE 6" DEEP.

SIDEWALK CROSS SECTION DETAIL (TYP.) NOT TO SCALE

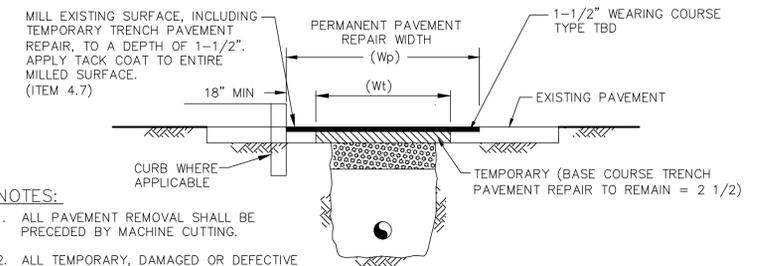
MINIMUM TRENCH PAVEMENT WIDTHS

PIPE I.D.	Wt (INCHES)	Wp (INCHES)
1-21 INCHES	84	108
24-30 INCHES	96	120
> 30 INCHES	108	132

NOTE:
 THE DIMENSIONS SHOWN SHALL BE CONSIDERED MAXIMUM PAVEMENT PAYMENT WIDTHS FOR 0-10' DEEP CONSTRUCTION. Wt AND Wp SHALL BE INCREASED BY 4'-0" FOR TRENCHES 10' TO 15' AND BY 8'-0" FOR TRENCHES 15' TO 20' IN DEPTH.

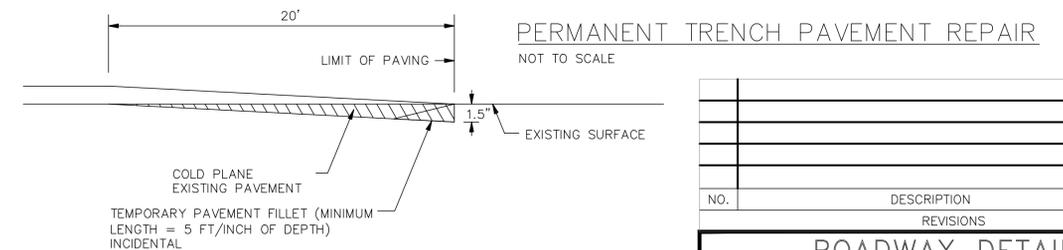


TEMPORARY TRENCH PAVEMENT REPAIR
 NOT TO SCALE



NOTES:

1. ALL PAVEMENT REMOVAL SHALL BE PRECEDED BY MACHINE CUTTING.
2. ALL TEMPORARY, DAMAGED OR DEFECTIVE PAVEMENT SHALL BE REMOVED PRIOR TO PLACEMENT OF PERMANENT TRENCH REPAIRS.
3. SEE TABLE IN "TEMPORARY TRENCH PAVEMENT REPAIRS" FOR MINIMUM TRENCH WIDTHS.



NOTE:
 THE LENGTH OF THE TAPER MAY BE ADJUSTED AS ORDERED TO PROVIDE FOR VARYING FIELD CONDITIONS OR CHANGES IN SINGLE COURSE DEPTH.

OVERLAY PAVEMENT MATCH
 NOT TO SCALE

NO.	DESCRIPTION	DATE
REVISIONS		
ROADWAY DETAILS		
OF		
McDONOUGH STREET AREA		
PHASE 3B		
PORTSMOUTH, NEW HAMPSHIRE		
DRAWING_SCALE_NONE		3/17/16

