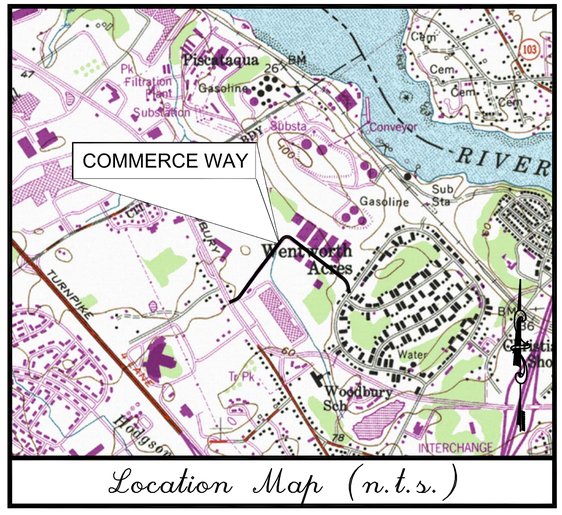
Commerce Way

Portsmouth, New Hampshire

ROADWAY IMPROVEMENT PLANS

FEBRUARY 3, 2010

LAST REVISED: MARCH 5, 2015



Location Map (n.t.s.)

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Prepared for: **The Kane Company, Inc.**
210 Commerce Way, Suite 100
Portsmouth, New Hampshire 03801

Prepared By: **Tighe&Bond**
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE 03801
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Survey Consultant: **Doucet Survey, Inc.**
102 Kent Place
Newmarket, New Hampshire 03857

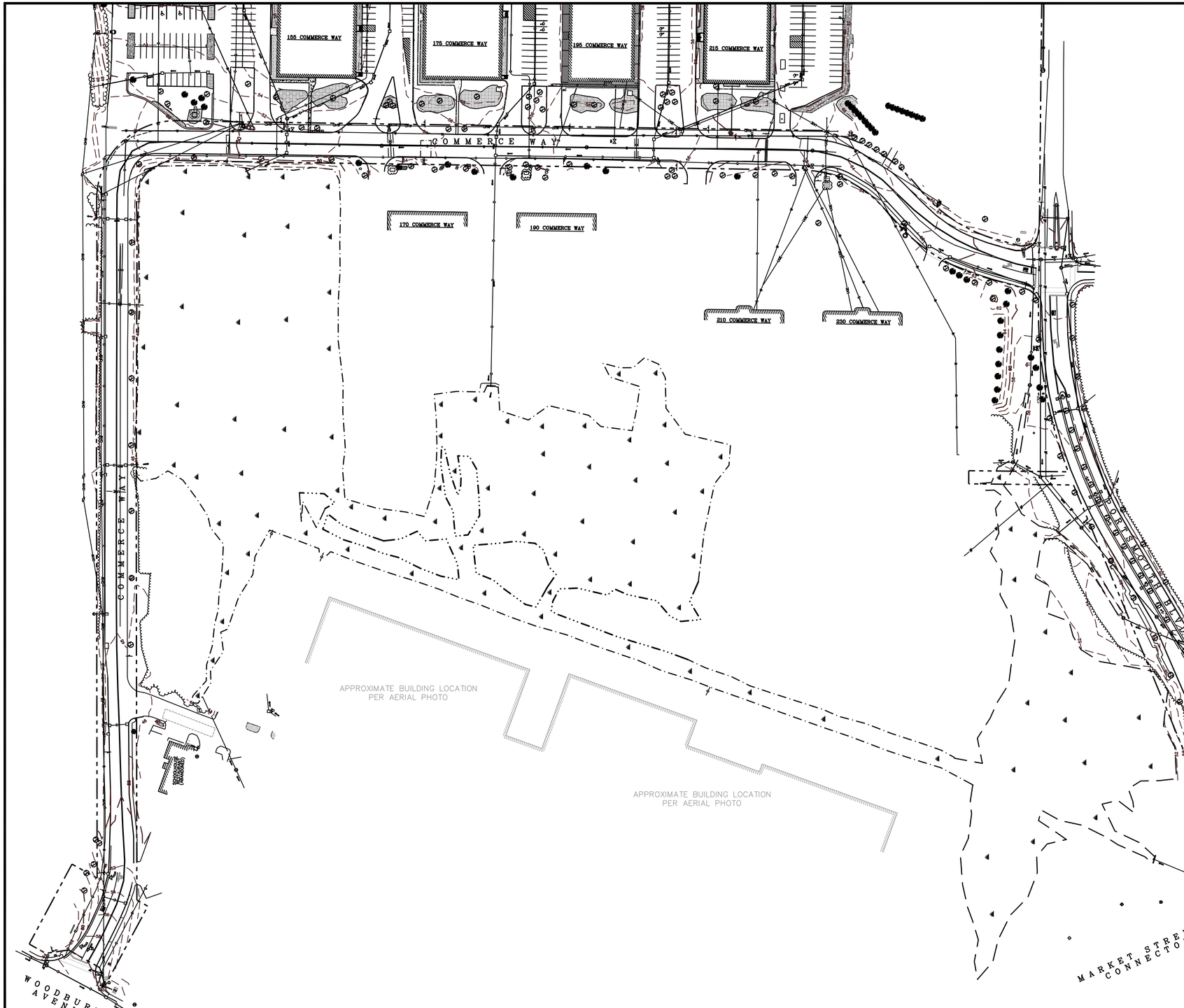
Geotechnical Consultant: **S.W. Cole Engineering, Inc.**
286 Portland Road
Gray, Maine 04039

Landscape Architect: **Woodburn & Company Landscape Architecture, LLC**
103 Kent Place
Newmarket, New Hampshire 03857

NOTES:

1. THE CONTRACTOR SHALL NOT RELY ON SCALED DIMENSIONS AND SHALL CONTACT THE ENGINEER FOR CLARIFICATION IF A REQUIRED DIMENSION IS NOT PROVIDED ON THE PLANS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS AND METHODS, AND FOR SITE CONDITIONS THROUGHOUT CONSTRUCTION. NEITHER THE PLANS NOR THE SEAL OF THE ENGINEER AFFIXED HEREON EXTEND TO OR INCLUDE SYSTEMS REQUIRED FOR THE SAFETY OF THE CONTRACTOR, THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AND IMPLEMENTING SAFETY PROCEDURES AND SYSTEMS AS REQUIRED BY THE UNITED STATES OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AND ANY STATE OR LOCAL SAFETY REGULATIONS.



LEGEND

	UTILITY POLE & GUY WIRE	TYP.	TYPICAL
	UTILITY POLE W/ LIGHT	RET.	RETAINING
	LIGHT POLE (TWO ARMS)	EP	EDGE OF PAVEMENT
	TRAFFIC LIGHT	SWL	SINGLE WHITE LINE
	TRAFFIC LIGHT	SYL	SINGLE YELLOW LINE
	SIGN	DYL	DOUBLE YELLOW LINE
EB	EBOX	DWL	DASHED WHITE LINE
	TRAFFIC CONTROL BOX	CONC.	CONCRETE
	GRANITE BOUND FOUND	EBOX	ELECTRIC BOX
	IRON PIPE/ROD FOUND	TBOX	TRAFFIC SIGNAL BOX
IV	IRRIGATION CONTROL VALVE	SGC	SLOPED GRANITE CURBING
	FIRE HYDRANT	VC	VERTICAL GRANITE CURBING
	GAS GATE VALVE		EDGE OF JURISDICTIONAL WETLAND (SEE NOTE #3)
	WATER GATE VALVE	S	SEWER LINE
	WATER SHUTOFF VALVE	D	DRAIN LINE
	CATCH BASIN	G	GAS LINE (SEE NOTE #7)
	DRAIN MANHOLE	UGE	UNDERGROUND UTILITY LINE (SEE NOTE 4
	ELECTRIC MANHOLE	50	CONTOUR LINE
	TELEPHONE MANHOLE	OHW	OVERHEAD WIRES
	SEWER MANHOLE		TREE LINE
	JURISDICTIONAL WETLAND SYMBOL		APPROX. LOT LINES PER REF. PLAN #3 & SEE NOTE #6
	TREE STUMP		JURISDICTIONAL WETLANDS LOCATED W/ A TRIMBLE MAPPING GRADE GPS UNIT (TYP.) SEE NOTES #2 & #3
	CONIFEROUS TREE		JURISDICTIONAL WETLANDS LOCATED IN APRIL 2005 & FIELD VERIFIED BY BY NHSC, INC. ON 4/07 (TYP.)
	DECIDUOUS TREE		BUILDING STRUCTURE
	CONCRETE		
	CRUSHED GRAVEL		

NOTES:

1. REFERENCE: COMMERCE WAY & A PORTION OF PORTSMOUTH BOULEVARD PORTSMOUTH, N.H.
2. FIELD SURVEY PERFORMED BY DOUCET SURVEY ON 4/07 USING A LEICA TCRA 1105 PLUS TOTAL STATION AND A SOKKIA B20 AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS. FIELD SURVEY ALSO PERFORMED BY DOCUET SURVEY USING A TRIMBLE 5700 & 5800 SURVEY GRADE GPS UNIT WITH A TRIMBLE DATA COLLECTOR & BY DOUCET SURVEY ON 4/07 USING A TRIMBLE PRO XR SUB METER GPS UNIT WITH THE TRIMBLE TSC-1 DATA COLLECTOR. ACCURACY OF WETLANDS LOCATED WITH THE PRO XR IS ±3 FT. UNDER IDEAL CONDITIONS.
3. JURISDICTIONAL WETLANDS DELINEATED BY NHSC INC. DURING APRIL 2007 IN ACCORDANCE WITH 1987 CORPS OF ENGINEERS WETLANDS DELINEATIONS MANUAL, TECHNICAL REPORT Y-87-1.
4. VERTICAL DATUM IS BASED ON NGVD 29.
5. THE INTENT OF THIS PLAN IS TO SHOW THE TOPOGRAPHIC FEATURES AND CONTOURS ALONG COMMERCE WAY & A PORTION OF PORTSMOUTH BOULEVARD.
6. THIS IS NOT A BOUNDARY SURVEY & SHALL NOT BE USED AS SUCH.
7. UTILITY MARKINGS SHOWN HEREON WERE MARKED BY OTHERS. COMPLETENESS AND/OR ACCURACY OF THESE MARKINGS IS UNKNOWN.

REFERENCE PLANS:

1. "EXISTING CONDITIONS PLAN OF TAX MAP 217, LOTS 1, 3, 4 & 5 WOODBURY AVENUE & MARKET STREET EXTENSION PORTSMOUTH, NEW HAMPSHIRE" PREPARED BY DOUCET SURVEY, INC. DATED AUGUST 28, 2002.
2. "WETLANDS PLAN OF TAX MAP R-17, LOT 2-1975 MARKET ST. & SHEARWATER DR. PORTSMOUTH, NEW HAMPSHIRE" PREPARED BY DOUCET SURVEY, INC. DATED APRIL 6, 2005.
3. "SUBDIVISION/CONSOLIDATION PLAN MAP R-16/ LOTS 1, 1-5 & 1-8B MAP R-17/ LOTS 2-1838 THRU 2-1844 MAP R-17/ LOT 2-0300 SHEARWATER DRIVE PORTSMOUTH, NEW HAMPSHIRE" CLD CONSULTING ENGINEERS DATED DEC. 1999 LATEST REVISION DATE AUGUST 7, 2000.
4. "TOPOGRAPHIC PLAN OF COMMERCE WAY AND A PORTION OF PORTSMOUTH BOULEVARD, PORTSMOUTH, NEW HAMPSHIRE" PREPARED BY DOUCET SURVEY, INC. DATED MAY 10, 2007.
5. "EXISTING FEATURES PLAN" FOR 215 & 235 COMMERCE WAY; PREPARED BY AMES MSC ARCHITECTS & ENGINEERS. DATED SEPTEMBER 20, 2004.
6. NORTHEAST UTILITIES RECORD PLANS FOR THE CITY OF PORTSMOUTH; SHEET 0086 (12/5/06), 0087 (4/8/04), 0111 (4/8/04), 0112 (4/8/04).

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)

OVERALL EXISTING CONDITIONS PLAN

No.	Description	Date	Appd
3.	BID DRAWINGS	03/21/14	PMC
2.	PLANNING BOARD SUBMISSION	03/26/12	PMC
1.	PLAN SET FOR CITY COUNCIL	12/19/11	PMC

Revisions

DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
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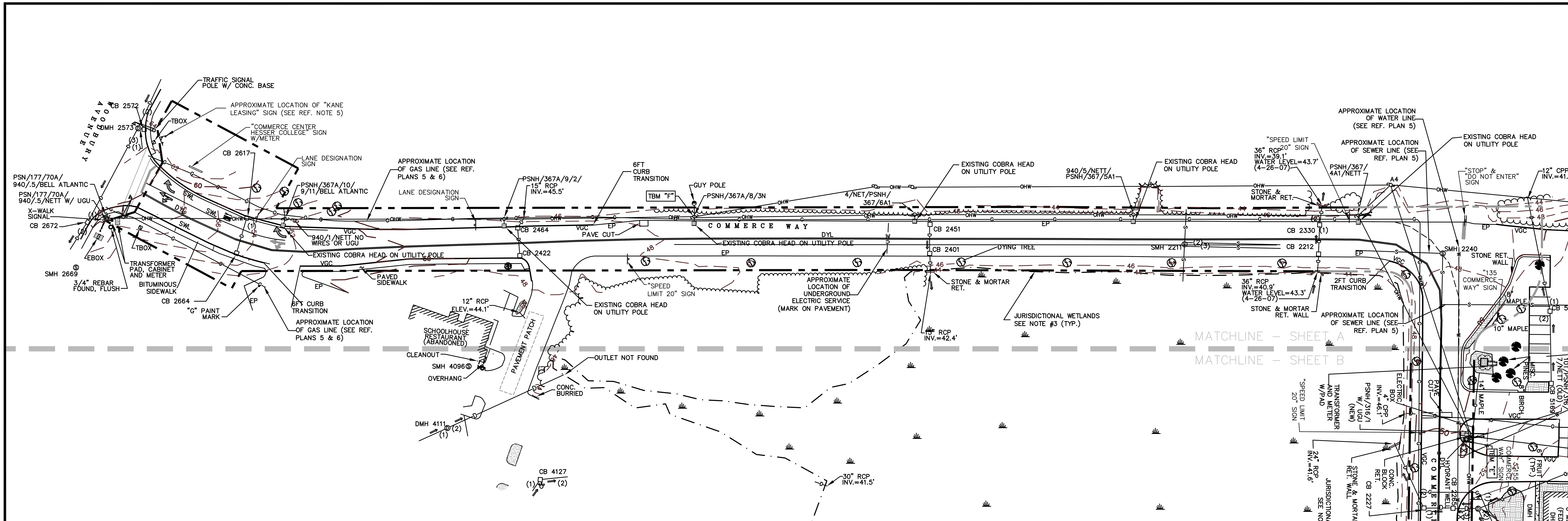
R-1



LEGEND

Symbol	Description
	UTILITY POLE & GUY WIRE
	UTILITY POLE W/ LIGHT
	LIGHT POLE (TWO ARMS)
	TRAFFIC LIGHT
	TRAFFIC LIGHT
	SIGN
	EBOX
	TRAFFIC CONTROL BOX
	GRANITE BOUND FOUND
	IRON PIPE/ROD FOUND
IV	IRRIGATION CONTROL VALVE
	FIRE HYDRANT
GV	GAS GATE VALVE
WV	WATER GATE VALVE
	WATER SHUTOFF VALVE
	CATCH BASIN
	DRAIN MANHOLE
	ELECTRIC MANHOLE
	TELEPHONE MANHOLE
	SEWER MANHOLE
	JURISDICTIONAL WETLAND SYMBOL
	TREE STUMP
	CONIFEROUS TREE
	DECIDUOUS TREE
	CONCRETE
	CRUSHED GRAVEL
	BRICK WALKWAY
	RIP RAP
TYP.	TYPICAL
RET.	RETAINING
EP	EDGE OF PAVEMENT
SWL	SINGLE WHITE LINE
SYL	SINGLE YELLOW LINE
DYL	DOUBLE YELLOW LINE
DWL	DASHED WHITE LINE
CONC.	CONCRETE
EBOX	ELECTRIC BOX
TBOX	TRAFFIC SIGNAL BOX
SGC	SLOPED GRANITE CURBING
VGC	VERTICAL GRANITE CURBING
	EDGE OF JURISDICTIONAL WETLAND (SEE NOTE #3)
S	SEWER LINE
D	DRAIN LINE
G	GAS LINE (SEE NOTE #7)
UGE	UNDERGROUND UTILITY LINE (SEE NOTE #7)
50	CONTOUR LINE
OHW	OVERHEAD WIRES
	TREE LINE
	APPROX. LOT LINES PER REF. PLAN #3 & SEE NOTE #6
	JURISDICTIONAL WETLANDS LOCATED W/ A TRIMBLE MAPPING GRADE GPS UNIT (TYP.) SEE NOTES #2 & #3
	JURISDICTIONAL WETLANDS LOCATED IN APRIL 2005 & FIELD VERIFIED BY BY NHSC, INC. ON 4/07 (TYP.)
	BUILDING STRUCTURE

TBM TABLE

TBM "A"
CHISELED "X" IN WESTERLY SIDE OF CONC. BASE FOR LIGHT POLE
ELEV.=61.96'

TBM "B"
LEFT FACING BOLT OVER MAIN OUTLET OF HYDRANT
ELEV.=59.22'

TBM "C"
CHISELED "X" IN RIGHT FACING BOLT OVER MAIN OUTLET OF HYDRANT
ELEV.=66.48'

TBM "D"
LEFT FACING BOLT OVER MAIN OUTLET OF HYDRANT
ELEV.=57.94

TBM "E"
LEFT FACING BOLT OVER MAIN OUTLET OF HYDRANT
ELEV.=51.92'

TBM "F"
MAG NAIL SET UP 12" IN POLE PSNH/367A/8 UP 12"
ELEV.=48.52'

NOTES:

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3. JURISDICTIONAL WETLANDS DELINEATED BY NHSC INC. DURING APRIL 2007 IN ACCORDANCE WITH 1987 CORPS OF ENGINEERS WETLANDS DELINEATIONS MANUAL, TECHNICAL REPORT Y-87-1.
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6. NORTHEAST UTILITIES RECORD PLANS FOR THE CITY OF PORTSMOUTH; SHEET 0086 (12/5/06), 0087 (4/8/04), 0111 (4/8/04), 0112 (4/8/04).

DRAINAGE STRUCTURE TABLE

CB #1095
RIM ELEV.=60.1'
(1) 12" R.C.P.=56.3'

CB #1131
RIM ELEV.=59.5'
(1) 18" R.C.P.=56.0'
(2) 18" R.C.P.=56.1'

CB #1136
RIM ELEV.=58.9'
(1) 18" R.C.P.=55.2'
(2) 12" R.C.P.=55.1'
(3) 18" R.C.P.=54.4'

CB #1271
RIM ELEV.=57.6'
(1) 18" R.C.P.=53.4'
(2) 18" R.C.P.=53.4'

CB #1350
RIM ELEV.=55.2'
(1) 6" C.P.P.=52.6'
(2) 18" R.C.P.=51.7'
(3) 18" R.C.P.=51.6'

CB #1355
RIM ELEV.=56.4'
(1) 12" R.C.P.=52.5'
(2) 12" R.C.P.=52.6'
(3) 8" P.V.C.=52.7'
(4) 18" R.C.P.=52.2'

CB #1375
RIM ELEV.=56.2'
(1) 12" R.C.P.=52.9'

CB #1376
RIM ELEV.=55.3'
(1) 18" R.C.P.=51.2'
(2) 18" R.C.P.=51.3'

CB #1534
RIM ELEV.=58.4'
(1) 12" R.C.P.=54.7'
(2) 12" R.C.P.=54.6'

CB #1549
RIM ELEV.=60.0"
(1) 12" R.C.P.=56.5'
(2) 12" R.C.P.=56.0'

CB #1555
RIM ELEV.=59.0'
(1) 12" R.C.P.=55.9'
(2) 12" R.C.P.=55.9'

CB #1619
RIM ELEV.=59.1'
(1) 12" R.C.P.=56.9'

CB #1626
RIM ELEV.=60.0'
(1) 12" R.C.P.=56.7'

CB #1629
RIM ELEV.=58.4'
(1) 12" R.C.P.=56.1'
(2) 12" R.C.P.=56.0'
(3) 12" R.C.P.=55.9'

CB #1651
RIM ELEV.=60.3'
(1) 12" R.C.P.=57.7'
(2) 12" R.C.P.=57.7'

CB #1766
RIM ELEV.=57.0'
(1) 18" C.M.P.=51.3'
(2) 18" R.C.P.=51.8'
(3) 24" R.C.P.=51.1'

CB #1767
RIM ELEV.=56.8'
(1) 18" C.M.P.=52.2'
(2) 18" C.M.P.=52.6'
(3) 18" R.C.P.=52.1'

CB #1830
RIM ELEV.=60.9'
(1) 12" R.C.P.=58.0'

CB #1999
RIM ELEV.=54.2'
(1) 24" R.C.P.=50.2'
(2) 24" R.C.P.=50.2'

CB #2035
RIM ELEV.=54.9'
(1) 24" R.C.P.=49.0'
(2) 24" R.C.P.=49.1'

CB #2041
RIM ELEV.=54.9'
(1) 24" R.C.P.=48.7'
(2) 24" R.C.P.=48.7'
(3) 36" R.C.P.=48.7'

CB #2061
RIM ELEV.=52.5'
(1) 18" R.C.P.=47.3'
(2) 24" R.C.P.=47.2'

CB #2212
RIM ELEV.=46.6'
(1) 36" R.C.P.=40.8'
(2) 36" R.C.P.=40.8'

CB #2227
RIM ELEV.=50.8'
(1) 24" R.C.P.=45.2'
(2) 24" R.C.P.=45.4'

CB #2240
RIM ELEV.=47.8'
CAN NOT OPEN

CB #2265
RIM ELEV.=50.8'
(1) 18" R.C.P.=46.3'
(2) 18" R.C.P.=46.3'

CB #2330
RIM ELEV.=46.5'
(1) 36" R.C.P.=39.7'
(2) 36" R.C.P.=39.5'

CB #2401
RIM ELEV.=46.6'
(1) 12" R.C.P.=42.7'
(2) 12" R.C.P.=42.7'

CB #2422
RIM ELEV.=49.1'
(1) 15" R.C.P.=46.0'

CB #2451
RIM ELEV.=46.6'
(1) 12" R.C.P.=42.8'

CB #2464
RIM ELEV.=48.7'
(1) 15" R.C.P.=45.9'
(2) 15" R.C.P.=45.9'

CB 2572
RIM=63.4'
15" RCP=59.6'
(TO DMH 2573)

CB #2617
RIM ELEV.=54.4'
(1) 15" R.C.P.=51.1'
(FILLED W/ DIRT)

CB #2664
RIM ELEV.=54.3'
(1) 15" R.C.P.=51.0'
(HALF FILLED W/ DIRT)
NOT OUTLET FOUND

CB 2672
RIM=59.4'
(1) 15" RCP=51.4'
(2) 15" RCP=51.2'
PIPE PARTIALLY FILLED

CB #4127
RIM ELEV.=46.7'
(1) 36" RCP=41.1'
(2) 36" RCP=41.0'

CB #4191
RIM ELEV.=58.8'
(1) 18" CMP=55.5'
(2) 18" CMP=55.6'

CB #4224
RIM ELEV.=58.9'
(1) 18" CMP=55.7'
(2) 18" CMP=55.8'

CB #4389
RIM ELEV.=54.8'
(1) 18" CMP=52.2'
(2) 12" RCP=52.4'

CB #4402
RIM ELEV.=54.9'
(1) 12" RCP=52.1'
(2) 12" RCP=52.2'

CB #4596
RIM ELEV.=54.4'
(1) 24" RCP=50.7'
(2) 24" RCP=50.5'
(3) 4" CPP=51.8'

CB #4646
RIM ELEV.=54.8'
(1) 24" RCP=50.8'
(2) 12" CPP=51.8'
(3) 8" PVC=51.7'
(4) 4" CPP

CB #4840
RIM ELEV.=52.6'
(1) 18" RCP=48.3'
(2) 18" RCP=48.5'

CB #4930
RIM ELEV.=53.0'
(1) 18" RCP=49.9'
(2) 18" RCP=50.1'

CB #5069
RIM ELEV.=55.4'
(1) 18" RCP=49.9'
(2) 18" RCP=49.9'
(3) 4" PVC=54.1'

CB #5164
RIM ELEV.=52.9'
(1) 12" CPP=46.8'
(2) 12" CPP=46.9'

CB #5169
RIM ELEV.=53.1'
12" CPP=46.7'

CB #5187
RIM ELEV.=56.3'
(1) 18" RCP=51.6'
(2) 18" RCP=51.8'

CB #5932
RIM ELEV.=61.1'
(1) 12" R.C.P.=54.3'
(2) 12" R.C.P.=54.3'

CB #5933
RIM ELEV.=60.6'
(1) 12" R.C.P.=55.6'

CB #6076
RIM ELEV.=60.2'
(1) 15" R.C.P.=52.1'
(2) 15" R.C.P.=(UNOBTAINABLE)
(3) 30" R.C.P.=50.9'
(4) 30" R.C.P.=51.0'

CB #6151
RIM ELEV.=59.2'
(1) 15" R.C.P.=51.3'
(2) 15" R.C.P.=51.2'

CB #6206
RIM ELEV.=59.6'
(1) INV. (30" RCP)=51.3'
(2) INV. (15" RCP)=OFFSET
(3) INV. (30" RCP)=51.2'

DMH #1264
RIM ELEV.=55.9'
(1) 18" R.C.P.=52.8'
(2) 18" R.C.P.=52.6'

DMH #1397
RIM ELEV.=57.2'
(1) 12" R.C.P.=54.3'
(2) 12" R.C.P.=54.4'

DMH #1592
RIM ELEV.=59.1'
(1) 12" R.C.P.=55.8'
(2) 12" R.C.P.=55.8'
(3) 12" R.C.P.=55.8'

DMH #2262
RIM ELEV.=51.9'
(1) 18" R.C.P.=46.7'(FULL OF DEBRIS)
(2) 24" R.C.P.=46.6'
(3) 18" R.C.P.=46.5'

DMH 2573
RIM=63.4'
(1) 15" RCP=59.4'
(2) 15" RCP=55.4'
(3) 15" RCP=55.2'

DMH #4111
RIM ELEV.=47.4'
(1) 30" RCP=42.1'
(2) 30" RCP=42.0'

DMH #5931
RIM ELEV.=61.2'
(1) 12" R.C.P.=55.3'
(2) 15" R.C.P.=52.7'

SEWER STRUCTURE TABLE

SMH #1016
RIM ELEV.=61.2'
(1) 12" P.V.C.=54.5' DROP INLET
(2) 12" P.V.C.=49.2'

SMH #1085
RIM ELEV.=60.7'
(1) 10" D.I.=49.8'
(2) 10" D.I.=49.8'
(3) 10" D.I.=49.7'

SMH #1094
RIM ELEV.=61.1'
(1) 10" D.I.=53.2'
(2) 10" P.V.C.=48.7'
10" R.C.P.=47.2' CENTER CHANNEL

SMH #1272
RIM ELEV.=57.4'
(1) 8" PIPE=46.3'
(2) 8" PIPE=45.3'

SMH #1432
RIM ELEV.=54.9'
(1) 8" P.V.C.=45.6'
(2) 10" D.I.=44.4'
(3) 10" D.I.=44.3'

SMH #1437
RIM ELEV.=54.3'
(1) 10" D.I.=44.0'
(2) 10" D.I.=44.3'
(3) 10" D.I.=44.0'
(4) 10" D.I.=43.9'

SMH #G
RIM ELEV.=54.3'
(1) 10" D.I.=43.7'
(2) 10" D.I.=43.7'

SMH #1544
RIM ELEV.=59.2'
(1) 6" CLAY =54.3'
(2) 6" CLAY =54.0'
(3) 10" CLAY =54.0'

SMH #1593
RIM ELEV.=59.0'
(1) 6" PIPE=53.5'
10" CLAY =53.3' CENTER CHANNEL

SMH #1798
RIM ELEV.=62.7'
(1) 10" D.I.=52.7' DRY, NO FLOW
(2) 10" D.I.=52.9'

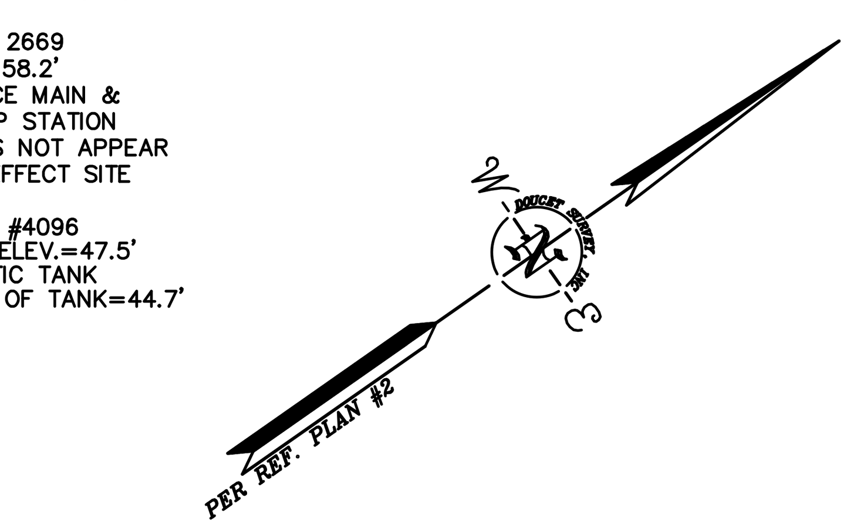
SMH #2034
RIM ELEV.=56.4'
(1) 8" P.V.C.=47.5' CENTER CHANNEL

SMH #2051
RIM ELEV.=52.9'
(1) 8" P.V.C.=42.8' CENTER CHANNEL

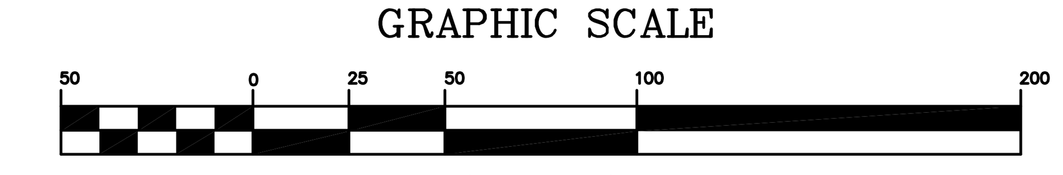
SMH #2211
RIM ELEV.=47.5'
(1) 8" P.V.C.=33.1' CENTER CHANNEL
(2) 8" P.V.C.=37.7'
(3) 8" P.V.C.=34.7'

SMH 2669
RIM=58.2'
FORCE MAIN &
PUMP STATION
DOES NOT APPEAR
TO EFFECT SITE

SMH #4096
RIM ELEV.=47.5'
SEPTIC TANK
TOP OF TANK=44.7'



GRAPHIC SCALE



No.	Description	Appd	Date
3.	BID DRAWINGS	PMC	03/21/14
2.	PLANNING BOARD SUBMISSION	PMC	03/26/12
1.	PLAN SET FOR CITY COUNCIL	PMC	12/19/11

Revisions

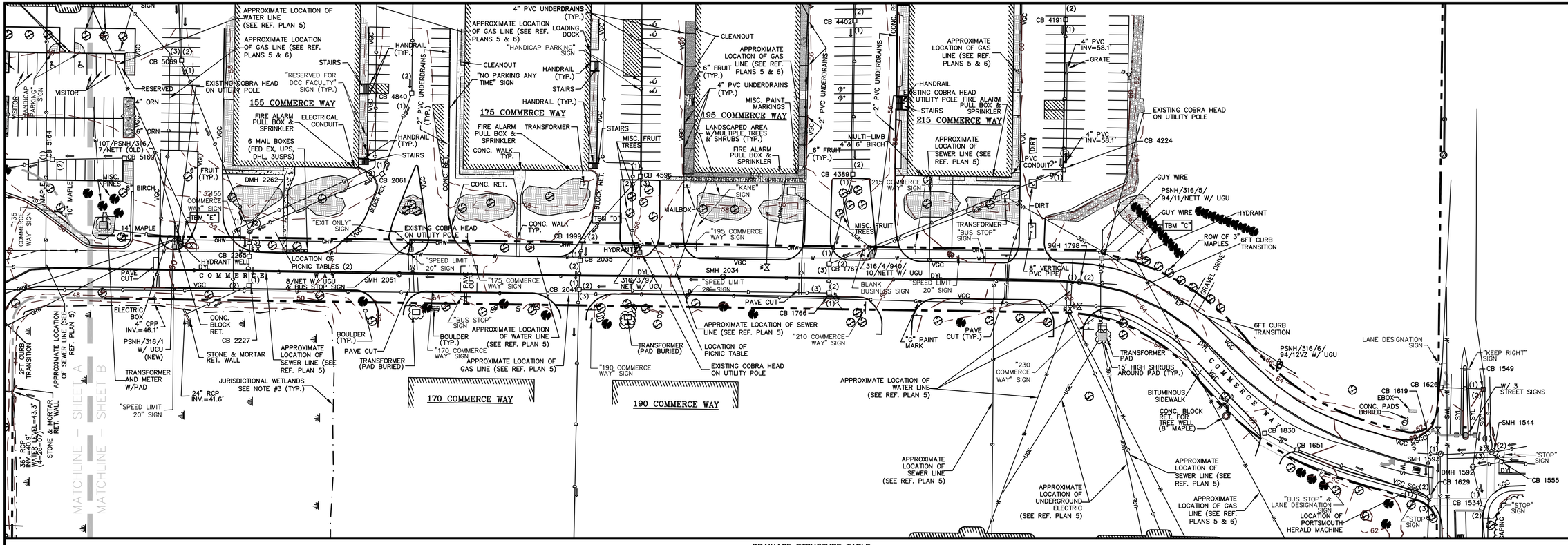
DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

EXISTING CONDITIONS PLAN

R-1A



LEGEND

- UTILITY POLE & GUY WIRE
- UTILITY POLE W/ LIGHT
- LIGHT POLE (TWO ARMS)
- TRAFFIC LIGHT
- TRAFFIC LIGHT
- SIGN
- EBOX
- TRAFFIC CONTROL BOX
- GRANITE BOUND FOUND
- IRON PIPE/ROD FOUND
- IRRIGATION CONTROL VALVE
- FIRE HYDRANT
- GAS GATE VALVE
- WATER GATE VALVE
- WATER SHUTOFF VALVE
- CATCH BASIN
- DRAIN MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- SEWER MANHOLE
- JURISDICTIONAL WETLAND SYMBOL
- TREE STUMP
- CONIFEROUS TREE
- DECIDUOUS TREE
- CONCRETE
- CRUSHED GRAVEL
- BRICK WALKWAY
- RIP RAP
- TYP. TYPICAL
- RET. RETAINING
- EP EDGE OF PAVEMENT
- SWL SINGLE WHITE LINE
- SYL SINGLE YELLOW LINE
- DYL DOUBLE YELLOW LINE
- DWL DASHED WHITE LINE
- CONC. CONCRETE
- EBOX ELECTRIC BOX
- TBOX TRAFFIC SIGNAL BOX
- SGC SLOPED GRANITE CURBING
- VGC VERTICAL GRANITE CURBING
- EDGE OF JURISDICTIONAL WETLAND (SEE NOTE #3)
- S SEWER LINE
- D DRAIN LINE
- G GAS LINE (SEE NOTE #7)
- UGE UNDERGROUND UTILITY LINE (SEE NOTE #7)
- 50 CONTOUR LINE
- OHW OVERHEAD WIRES
- TREE LINE
- APPROX. LOT LINES PER REF. PLAN #3 & SEE NOTE #6
- JURISDICTIONAL WETLANDS LOCATED W/ A TRIMBLE MAPPING GRADE GPS UNIT (TYP.) SEE NOTES #2 & #3
- JURISDICTIONAL WETLANDS LOCATED IN APRIL 2005 & FIELD VERIFIED BY BY NHSC, INC. ON 4/07 (TYP.)
- BUILDING STRUCTURE

TBM TABLE

TBM "A"
CHISELED "X" IN WESTERLY SIDE OF CONC. BASE FOR LIGHT POLE
ELEV.=61.96'

TBM "B"
LEFT FACING BOLT OVER MAIN OUTLET OF HYDRANT
ELEV.=59.22'

TBM "C"
CHISELED "X" IN RIGHT FACING BOLT OVER MAIN OUTLET OF HYDRANT
ELEV.=66.48'

TBM "D"
LEFT FACING BOLT OVER MAIN OUTLET OF HYDRANT
ELEV.=57.94

TBM "E"
LEFT FACING BOLT OVER MAIN OUTLET OF HYDRANT
ELEV.=51.92'

TBM "F"
MAG NAIL SET UP 12" IN POLE PSNH/367A/8 UP 12"
ELEV.=48.52'

DRAINAGE STRUCTURE TABLE

CB #1095
RIM ELEV.=60.1'
(1) 12" R.C.P.=56.3'

CB #1131
RIM ELEV.=59.5'
(1) 18" R.C.P.=56.0'
(2) 18" R.C.P.=56.1'

CB #1136
RIM ELEV.=58.9'
(1) 18" R.C.P.=55.2'
(2) 12" R.C.P.=55.1'
(3) 18" R.C.P.=54.4'

CB #1271
RIM ELEV.=57.6'
(1) 18" R.C.P.=53.4'
(2) 18" R.C.P.=53.4'

CB #1350
RIM ELEV.=55.2'
(1) 6" C.P.P.=52.6'
(2) 18" R.C.P.=51.7'
(3) 18" R.C.P.=51.6'

CB #1355
RIM ELEV.=56.4'
(1) 12" R.C.P.=52.5'
(2) 12" R.C.P.=52.6'
(3) 8" P.V.C.=52.7'
(4) 18" R.C.P.=52.2'

CB #1375
RIM ELEV.=56.2'
(1) 12" R.C.P.=52.9'

CB #1376
RIM ELEV.=55.3'
(1) 18" R.C.P.=51.2'
(2) 18" R.C.P.=51.3'

CB #1534
RIM ELEV.=58.4'
(1) 12" R.C.P.=54.7'
(2) 12" R.C.P.=54.6'

CB #1549
RIM ELEV.=60.0"
(1) 12" R.C.P.=56.5'
(2) 12" R.C.P.=56.0'

CB #1555
RIM ELEV.=59.0'
(1) 12" R.C.P.=55.9'
(2) 12" R.C.P.=55.9'

CB #1619
RIM ELEV.=59.1'
(1) 12" R.C.P.=56.9'

CB #1626
RIM ELEV.=60.0'
(1) 12" R.C.P.=56.7'

CB #1629
RIM ELEV.=58.4'
(1) 12" R.C.P.=56.1'
(2) 12" R.C.P.=56.0'
(3) 12" R.C.P.=55.9'

CB #1651
RIM ELEV.=60.3'
(1) 12" R.C.P.=57.7'
(2) 12" R.C.P.=57.7'

CB #1766
RIM ELEV.=57.0'
(1) 18" C.M.P.=51.3'
(2) 18" R.C.P.=51.8'
(3) 24" R.C.P.=51.1'

CB #1767
RIM ELEV.=56.8'
(1) 18" C.M.P.=52.2'
(2) 18" C.M.P.=52.6'
(3) 18" R.C.P.=52.1'

CB #1830
RIM ELEV.=60.9'
(1) 12" R.C.P.=58.0'

CB #1999
RIM ELEV.=54.2'
(1) 24" R.C.P.=50.2'
(2) 24" R.C.P.=50.2'

CB #2035
RIM ELEV.=54.9'
(1) 24" R.C.P.=49.0'
(2) 24" R.C.P.=49.1'

CB #2041
RIM ELEV.=54.9'
(1) 24" R.C.P.=48.7'
(2) 24" R.C.P.=48.7'
(3) 36" R.C.P.=48.7'

CB #2061
RIM ELEV.=52.5'
(1) 18" R.C.P.=47.3'
(2) 24" R.C.P.=47.2'

CB #2212
RIM ELEV.=46.6'
(1) 36" R.C.P.=40.8'
(2) 36" R.C.P.=40.8'

CB #2227
RIM ELEV.=50.8'
(1) 24" R.C.P.=45.2'
(2) 24" R.C.P.=45.4'

CB #2240
RIM ELEV.=47.8'
CAN NOT OPEN

CB #2265
RIM ELEV.=50.8'
(1) 18" R.C.P.=46.3'
(2) 18" R.C.P.=46.3'

CB #2330
RIM ELEV.=46.5'
(1) 36" R.C.P.=39.7'
(2) 36" R.C.P.=39.5'

CB #2401
RIM ELEV.=46.6'
(1) 12" R.C.P.=42.7'
(2) 12" R.C.P.=42.7'

CB #2422
RIM ELEV.=49.1'
(1) 15" R.C.P.=46.0'

CB #2451
RIM ELEV.=46.6'
(1) 12" R.C.P.=42.8'

CB #2464
RIM ELEV.=48.7'
(1) 15" R.C.P.=45.9'
(2) 15" R.C.P.=45.9'

CB 2572
RIM=63.4'
15" RCP=59.6'
(TO DMH 2573)

CB #2617
RIM ELEV.=54.4'
(1) 15" R.C.P.=51.1'
(FILLED W/ DIRT)

CB #2664
RIM ELEV.=54.3'
(1) 15" R.C.P.=51.0'
(HALF FILLED W/ DIRT)
NOT OUTLET FOUND

CB 2672
RIM=59.4'
(1) 15" RCP=51.4'
(2) 15" RCP=51.2'
PIPE PARTIALLY FILLED

CB #4127
RIM ELEV.=46.7'
(1) 36" RCP=41.1'
(2) 36" RCP=41.0'

CB #4191
RIM ELEV.=58.8'
(1) 18" CMP=55.5'
(2) 18" CMP=55.6'

CB #4224
RIM ELEV.=58.9'
(1) 18" CMP=55.7'
(2) 18" CMP=55.8'

CB #4389
RIM ELEV.=54.8'
(1) 18" CMP=52.2'
(2) 12" RCP=52.4'

CB #4402
RIM ELEV.=54.9'
(1) 12" RCP=52.1'
(2) 12" RCP=52.2'

CB #4596
RIM ELEV.=54.4'
(1) 24" RCP=50.7'
(2) 24" RCP=50.5'
(3) 4" CPP=51.8'

CB #4646
RIM ELEV.=54.8'
(1) 24" RCP=50.8'
(2) 12" CPP=51.8'
(3) 8" PVC=51.7'
(4) 4" CPP

CB #4840
RIM ELEV.=52.6'
(1) 18" RCP=48.3'
(2) 18" RCP=48.5'

CB #4930
RIM ELEV.=53.0'
(1) 18" RCP=49.9'
(2) 18" RCP=50.1'

CB #5069
RIM ELEV.=55.4'
(1) 18" RCP=49.9'
(2) 18" RCP=49.9'
(3) 4" PVC=54.1'

CB #5164
RIM ELEV.=52.9'
(1) 12" CPP=46.8'
(2) 12" CPP=46.9'

CB #5169
RIM ELEV.=53.1'
12" CPP=46.7'

CB #5187
RIM ELEV.=56.3'
(1) 18" RCP=51.6'
(2) 18" RCP=51.8'

CB #5932
RIM ELEV.=61.1'
(1) 12" R.C.P.=54.3'
(2) 12" R.C.P.=54.3'

CB #5933
RIM ELEV.=60.6'
(1) 12" R.C.P.=55.6'

CB #6076
RIM ELEV.=60.2'
(1) 15" R.C.P.=52.1'
(2) 15" R.C.P.=(UNOBTAINABLE)
(3) 30" R.C.P.=50.9'
(4) 30" R.C.P.=51.0'

CB #6151
RIM ELEV.=59.2'
(1) 15" R.C.P.=51.3'
(2) 15" R.C.P.=51.2'

CB #6206
RIM ELEV.=59.6'
(1) INV. (30" RCP)=51.3'
(2) INV. (15" RCP)=OFFSET
(3) INV. (30" RCP)=51.2'

DMH #1264
RIM ELEV.=55.9'
(1) 18" R.C.P.=52.8'
(2) 18" R.C.P.=52.6'

DMH #1397
RIM ELEV.=57.2'
(1) 12" R.C.P.=54.3'
(2) 12" R.C.P.=54.4'

DMH #1592
RIM ELEV.=59.1'
(1) 12" R.C.P.=55.8'
(2) 12" R.C.P.=55.8'
(3) 12" R.C.P.=55.8'

DMH #2262
RIM ELEV.=51.9'
(1) 18" R.C.P.=46.7'(FULL OF DEBRIS)
(2) 24" R.C.P.=46.6'
(3) 18" R.C.P.=46.5'

DMH 2573
RIM=63.4'
(1) 15" RCP=59.4'
(2) 15" RCP=55.4'
(3) 15" RCP=55.2'

DMH #4111
RIM ELEV.=47.4'
(1) 30" RCP=42.1'
(2) 30" RCP=42.0'

DMH #5931
RIM ELEV.=61.2'
(1) 12" R.C.P.=55.3'
(2) 15" R.C.P.=52.7'

SEWER STRUCTURE TABLE

SMH #1016
RIM ELEV.=61.2'
(1) 12" P.V.C.=54.5' DROP INLET
(2) 12" P.V.C.=49.2'

SMH #1085
RIM ELEV.=60.7'
(1) 10" D.I.=49.8'
(2) 10" D.I.=49.8'
(3) 10" D.I.=49.7'

SMH #1094
RIM ELEV.=61.1'
(1) 10" D.I.=53.2'
(2) 10" P.V.C.=48.7'
10" R.C.P.=47.2' CENTER CHANNEL

SMH #1272
RIM ELEV.=57.4'
(1) 8" PIPE=46.3'
(2) 8" PIPE=45.3'

SMH #1432
RIM ELEV.=54.9'
(1) 8" P.V.C.=45.6'
(2) 10" D.I.=44.4'
(3) 10" D.I.=44.3'

SMH #1437
RIM ELEV.=54.3'
(1) 10" D.I.=44.0'
(2) 10" D.I.=44.3'
(3) 10" D.I.=44.0'
(4) 10" D.I.=43.9'

SMH #G
RIM ELEV.=54.3'
(1) 10" D.I.=43.7'
(2) 10" D.I.=43.7'

SMH #1544
RIM ELEV.=59.2'
(1) 6" CLAY =54.3'
(2) 6" CLAY =54.0'
(3) 10" CLAY =54.0'

SMH #1593
RIM ELEV.=59.0'
(1) 6" PIPE=53.5'
10" CLAY =53.3' CENTER CHANNEL

SMH #1798
RIM ELEV.=62.7'
(1) 10" D.I.=52.7' DRY, NO FLOW
(2) 10" D.I.=52.9'

SMH #2034
RIM ELEV.=56.4'
(1) 8" P.V.C.=47.5' CENTER CHANNEL

SMH #2051
RIM ELEV.=52.9'
(1) 8" P.V.C.=42.8' CENTER CHANNEL

SMH #2211
RIM ELEV.=47.5'
(1) 8" P.V.C.=33.1' CENTER CHANNEL
(2) 8" P.V.C.=37.7'
(3) 8" P.V.C.=34.7'

SMH 2669
RIM=58.2'
FORCE MAIN & PUMP STATION DOES NOT APPEAR TO EFFECT SITE

SMH #4096
RIM ELEV.=47.5'
SEPTIC TANK
TOP OF TANK=44.7'

NOTES:

1. REFERENCE: COMMERCE WAY & A PORTION OF PORTSMOUTH BOULEVARD PORTSMOUTH, N.H.
2. FIELD SURVEY PERFORMED BY DOUCET SURVEY ON 4/07 USING A LEICA TCRA 1105 PLUS TOTAL STATION AND A SOKKIA B20 AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS. FIELD SURVEY ALSO PERFORMED BY DOUCET SURVEY USING A TRIMBLE 5700 & 5800 SURVEY GRADE GPS UNIT WITH A TRIMBLE DATA COLLECTOR & BY DOUCET SURVEY ON 4/07 USING A TRIMBLE PRO XR SUB METER GPS UNIT WITH THE TRIMBLE TSC-1 DATA COLLECTOR. ACCURACY OF WETLANDS LOCATED WITH THE PRO XR IS ±3 FT. UNDER IDEAL CONDITIONS. ADDITIONAL FIELD SURVEY BY DOUCET SURVEY ON 5/08 USING A GEODIMETER 600 PRO TOTAL STATION AND A TDS RANGER DATA COLLECTOR.
3. JURISDICTIONAL WETLANDS DELINEATED BY NHSC INC. DURING APRIL 2007 IN ACCORDANCE WITH 1987 CORPS OF ENGINEERS WETLANDS DELINEATIONS MANUAL, TECHNICAL REPORT Y-87-1.
4. VERTICAL DATUM IS BASED ON NGVD 29.
5. THE INTENT OF THIS PLAN IS TO SHOW THE TOPOGRAPHIC FEATURES AND CONTOURS ALONG COMMERCE WAY & A PORTION OF PORTSMOUTH BOULEVARD.
6. THIS IS NOT A BOUNDARY SURVEY & SHALL NOT BE USED AS SUCH.
7. UTILITY MARKINGS SHOWN HEREON WERE MARKED BY OTHERS. COMPLETENESS AND/OR ACCURACY OF THESE MARKINGS IS UNKNOWN.

REFERENCE PLANS:

1. "EXISTING CONDITIONS PLAN OF TAX MAP 217, LOTS 1, 3, 4 & 5 WOODBURY AVENUE & MARKET STREET EXTENSION PORTSMOUTH, NEW HAMPSHIRE" PREPARED BY DOUCET SURVEY, INC. DATED AUGUST 28, 2002.
2. "WETLANDS PLAN OF TAX MAP R-17, LOT 2-1975 MARKET ST. & SHEARWATER DR. PORTSMOUTH, NEW HAMPSHIRE" PREPARED BY DOUCET SURVEY, INC. DATED APRIL 6, 2005.
3. "SUBDIVISION/CONSOLIDATION PLAN MAP R-16/ LOTS 1, 1-5 & 1-8B MAP R-17/ LOTS 2-1838 THRU 2-1844 MAP R-17/ LOT 2-0300 SHEARWATER DRIVE PORTSMOUTH, NEW HAMPSHIRE" CLD CONSULTING ENGINEERS DATED DEC. 1999 LATEST REVISION DATE AUGUST 7, 2000.
4. "TOPOGRAPHIC PLAN OF COMMERCE WAY AND A PORTION OF PORTSMOUTH BOULEVARD, PORTSMOUTH, NEW HAMPSHIRE" PREPARED BY DOUCET SURVEY, INC. DATED MAY 10, 2007.
5. "EXISTING FEATURES PLAN" FOR 215 & 235 COMMERCE WAY; PREPARED BY AMES MSC ARCHITECTS & ENGINEERS. DATED SEPTEMBER 20, 2004.
6. NORTHEAST UTILITIES RECORD PLANS FOR THE CITY OF PORTSMOUTH; SHEET 0086 (12/5/06), 0087 (4/8/04), 0111 (4/8/04), 0112 (4/8/04).

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)

No.	Description	Appd	Date
1.	PLAN SET FOR CITY COUNCIL	PMC	12/19/11
2.	PLANNING BOARD SUBMISSION	PMC	03/26/12
3.	BID DRAWINGS	PMC	03/21/14

Revisions

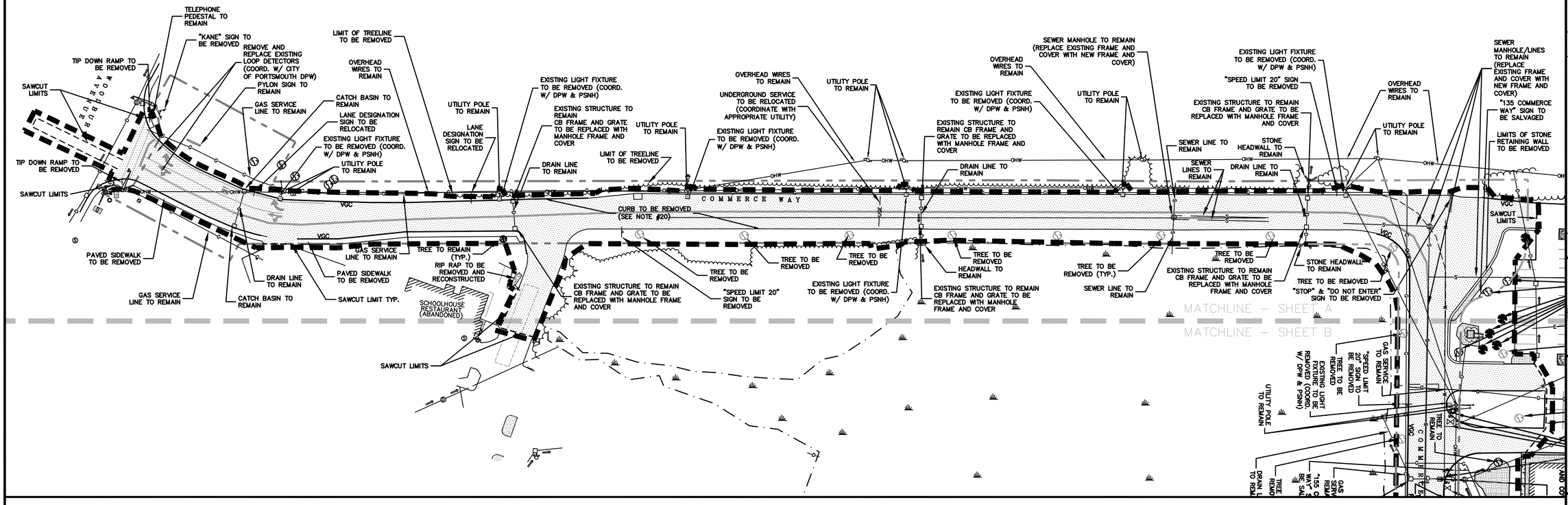
DATE: FEBRUARY 3, 2010
SCALE: 1" = 40'
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS COMMERCE WAY PORTSMOUTH, NH

EXISTING CONDITIONS PLAN

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

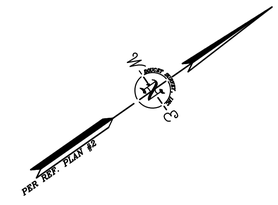
R-1B



DEMOLITION NOTES:

1. THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
2. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF–SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES.
3. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
4. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
5. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES. CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.
6. SAWCUT AND REMOVE PAVEMENT ONE FOOT OFF PROPOSED EDGE OF PAVEMENT OR EXISTING CURB LINE IN ALL AREAS WHERE PAVEMENT TO BE REMOVED ABUTS EXISTING PAVEMENT OR CONCRETE TO REMAIN.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
8. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ADDITIONAL PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF–SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.
10. UTILITIES SHALL BE TERMINATED AT THE MAIN LINE PER UTILITY COMPANY STANDARDS. THE CONTRACTOR SHALL REMOVE ALL ABANDONED UTILITIES LOCATED WITHIN THE LIMITS OF WORK. CONTRACTOR SHALL VERIFY ORIGIN OF ALL DRAINS AND UTILITIES PRIOR TO REMOVAL/TERMINATION TO DETERMINE IF DRAINS OR UTILITY IS ACTIVE AND SERVICES ANY ON OR OFF–SITE STRUCTURE TO REMAIN. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY SUCH UTILITY FOUND AND SHALL MAINTAIN THESE UTILITIES UNTIL PERMANENT SOLUTION IS IN PLACE.
11. PAVEMENT RECLAMATION LIMITS ARE SHOWN FOR CONTRACTOR'S CONVENIENCE. ADDITIONAL PAVEMENT RECLAMATION MAY BE REQUIRED DEPENDING ON THE CONTRACTOR'S OPERATION. CONTRACTOR TO VERIFY FULL LIMITS OF PAVEMENT RECLAMATION PRIOR TO BID.
12. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES, CONCRETE PADS, UTILITIES AND PAVEMENT WITHIN THE WORK LIMITS SHOWN UNLESS SPECIFICALLY IDENTIFIED TO REMAIN ON DEMOLITION OR LANDSCAPE PLANS. ITEMS TO BE REMOVED INCLUDE BUT ARE NOT LIMITED TO: CONCRETE, PAVEMENT, LIGHTING, MANHOLES, CATCH BASINS, UNDER GROUND PIPING, POLES, SIGNS, RAMPS, TREES AND LANDSCAPING.
13. COORDINATE ALL WORK WITHIN THE PUBLIC RIGHT OF WAYS WITH THE CITY OF PORTSMOUTH.
14. REMOVE TREES AND BRUSH AS REQUIRED FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS WITHIN LIMITS OF WORK AND DISPOSE OF OFF SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.
15. CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT DEMOLITION AND CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED BY BY THE CONTRACTOR, HE SHALL EMPLOY A LICENSED SURVEYOR TO REPLACE IT.
16. PROVIDE INLET PROTECTION BARRIERS AT ALL CATCH BASINS WITHIN CONSTRUCTION LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT. INLET PROTECTION BARRIERS SHALL BE "HIGH FLOW SILT SACK" BY ACF ENVIRONMENTAL OR APPROVED EQUAL. INSPECT BARRIERS WEEKLY AND AFTER EACH RAIN OF 0.25 INCHES OR GREATER. CONTRACTOR SHALL COMPLETE A MAINTENANCE INSPECTION REPORT AFTER EACH INSPECTION. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR MORE OFTEN IF THE FABRIC BECOMES CLOGGED.
17. THE CONTRACTOR SHALL PHASE DEMOLITION AND CONSTRUCTION AS REQUIRED TO PROVIDE CONTINUOUS SERVICE TO EXISTING BUSINESSES AND HOMES THROUGHOUT THE CONSTRUCTION PERIOD. EXISTING BUSINESS AND HOME SERVICES INCLUDE, BUT ARE NOT LIMITED TO ELECTRICAL, COMMUNICATION, FIRE PROTECTION, DOMESTIC WATER AND SEWER SERVICES. TEMPORARY SERVICES, IF REQUIRED, SHALL COMPLY WITH ALL FEDERAL, STATE, LOCAL AND UTILITY COMPANY STANDARDS. CONTRACTOR SHALL PROVIDE DETAILED CONSTRUCTION SCHEDULE TO OWNER PRIOR TO ANY DEMOLITION/CONSTRUCTION ACTIVITIES.
18. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING OR DEMOLITION ACTIVITIES.
19. SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL UTILITIES TO BE REMOVED AND PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.
20. EXISTING GRANITE CURB IS TO BE STOCKPILED AND INSPECTED BY THE CITY OF PORTSMOUTH DPW FOR PIECES THAT ARE ACCEPTABLE FOR RE–USE.

COORDINATE WITH THE LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION TO CONFIRM EXACTLY WHICH TREES AND SHRUBS SHALL BE REMOVED, REMAIN, OR BE TRANSPLANTED WITHIN THE LIMITS OF WORK SHOWN.



LEGEND

- PROPERTY LINE
- LIMIT OF DEMOLITION
- SAWCUT LIMIT
- LIMIT OF PAVEMENT SECTION TO BE RECLAIMED
- TREE TO REMAIN
- TREE TO BE REMOVED

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

DEMOLITION PLAN

No.	Description	Date
	Revisions	
6.	BID DRAWINGS	PMC 03/21/14
5.	REVISE PER DPW DIRECTOR COMMENTS	PMC 07/26/12
4.	PLANNING BOARD SUBMISSION	PMC 03/26/12
3.	COORD. W/ LANDSCAPE ARCHITECT DWGS	PMC 02/27/12
2.	PLAN SET FOR CITY COUNCIL	PMC 12/19/11
	REVISED DRIVEWAY ENTRANCES & UTILITIES	PMC 11/14/11

DATE: FEBRUARY 3, 2010
SCALE: ____
DESIGNED BY: ____ PMC
DRAWN BY: ____ KAM
APPROVED BY: ____ PMC
PROJECT NO: 2189B
FILE NO: 2189B–SITE–ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
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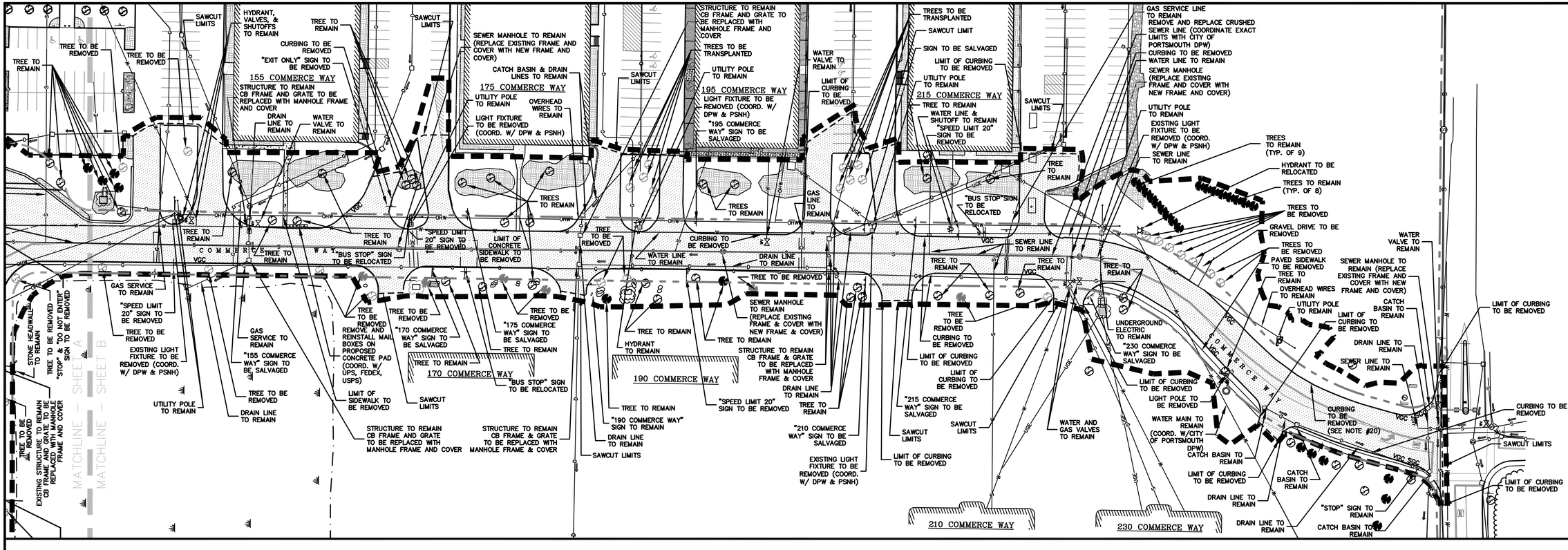

DEMOLITION NOTES:

1. THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.
2. ALL MATERIALS SCHEDULED TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS, ORDINANCES AND CODES.
3. COORDINATE REMOVAL, RELOCATION, DISPOSAL OR SALVAGE OF UTILITIES WITH THE OWNER AND APPROPRIATE UTILITY COMPANY.
4. ANY EXISTING WORK OR PROPERTY DAMAGED OR DISRUPTED BY CONSTRUCTION/ DEMOLITION ACTIVITIES SHALL BE REPLACED OR REPAIRED TO MATCH ORIGINAL EXISTING CONDITIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
5. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES. CALL DIG SAFE AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITIES.
6. SAWCUT AND REMOVE PAVEMENT ONE FOOT OFF PROPOSED EDGE OF PAVEMENT OR EXISTING CURB LINE IN ALL AREAS WHERE PAVEMENT TO BE REMOVED ABUTS EXISTING PAVEMENT OR CONCRETE TO REMAIN.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL OF THE PERMIT APPROVALS.
8. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ADDITIONAL PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK AND ARRANGE FOR AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND OFF-SITE DISPOSAL OF MATERIALS REQUIRED TO COMPLETE THE WORK, EXCEPT FOR WORK NOTED TO BE COMPLETED BY OTHERS.
10. UTILITIES SHALL BE TERMINATED AT THE MAIN LINE PER UTILITY COMPANY STANDARDS. THE CONTRACTOR SHALL REMOVE ALL ABANDONED UTILITIES LOCATED WITHIN THE LIMITS OF WORK. CONTRACTOR SHALL VERIFY ORIGIN OF ALL DRAINS AND UTILITIES PRIOR TO REMOVAL/TERMINATION TO DETERMINE IF DRAINS OR UTILITY IS ACTIVE AND SERVICES ANY ON OR OFF-SITE STRUCTURE TO REMAIN. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY SUCH UTILITY FOUND AND SHALL MAINTAIN THESE UTILITIES UNTIL PERMANENT SOLUTION IS IN PLACE.
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LEGEND

- PROPERTY LINE
- LIMIT OF DEMOLITION
- SAWCUT LIMIT
- LIMIT OF PAVEMENT SECTION TO BE RECLAIMED
- TREE TO REMAIN
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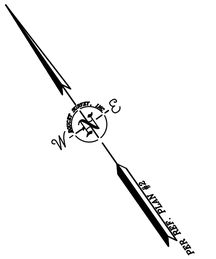

GRAPHIC SCALE

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(IN FEET)

DEMOLITION PLAN

No.	Description	Date
	Revisions	
6.	BID DRAWINGS	PMC 03/21/14
5.	REVISE PER DPW DIRECTOR COMMENTS	PMC 07/26/12
4.	PLANNING BOARD SUBMISSION	PMC 03/26/12
3.	COORD. W/ LANDSCAPE ARCHITECT DWGS	PMC 02/27/12
2.	PLAN SET FOR CITY COUNCIL	PMC 12/19/11
	REVISED DRIVEWAY ENTRANCES & UTILITIES	PMC 11/14/11

DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
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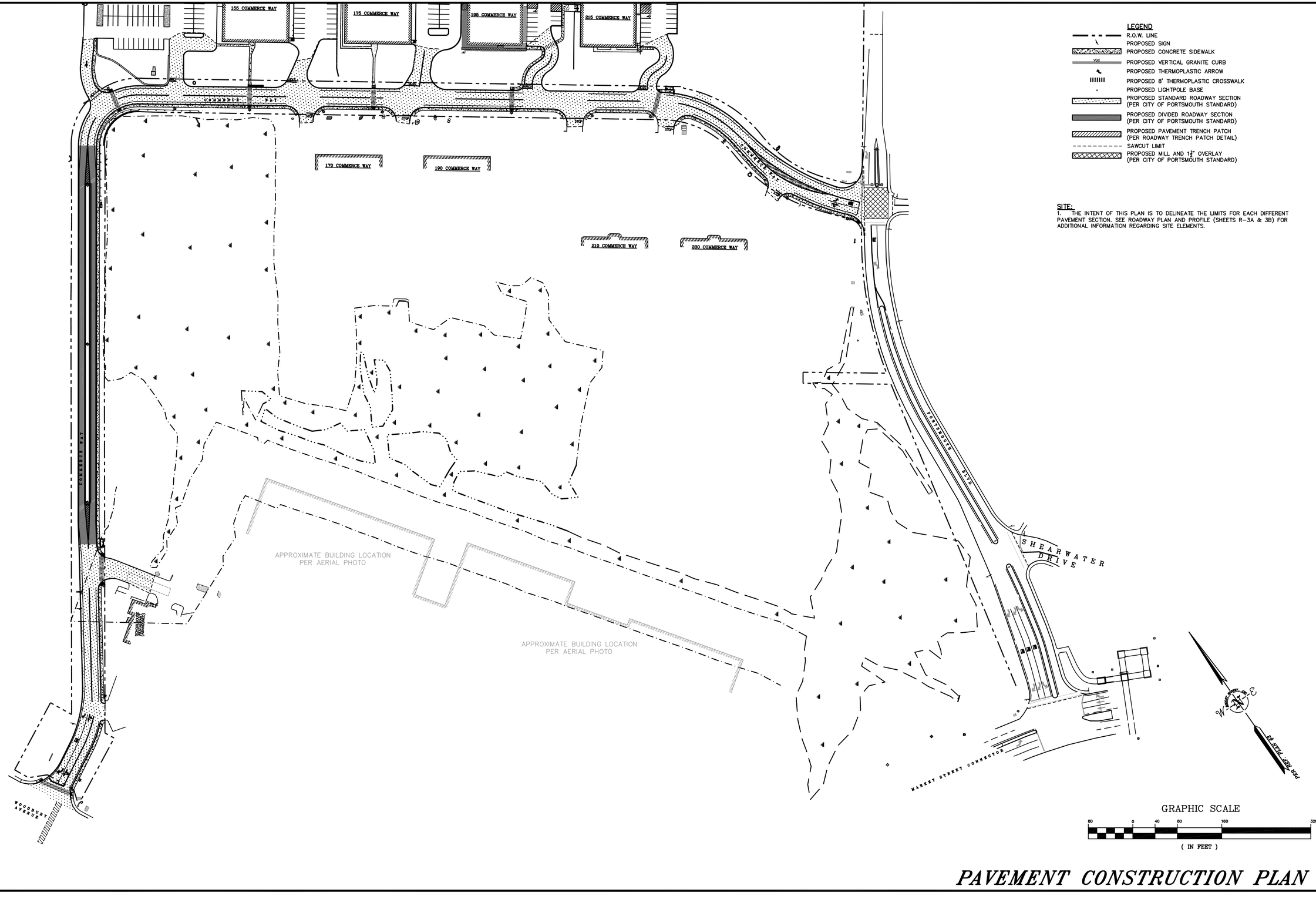
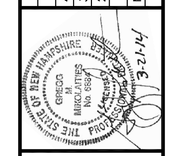


PAVEMENT CONSTRUCTION PLAN

No.	Description	Appd	Date
4.	BID DRAWINGS	PMC	03/21/14
3.	PLANNING BOARD SUBMISSION	PMC	03/26/12
2.	PLAN SET FOR CITY COUNCIL	PMC	12/19/11
	REVISED DRIVEWAY ENTRANCES & UTILITIES	PMC	11/14/11
	Revisions		



DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 21898
FILE NO: 21898-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

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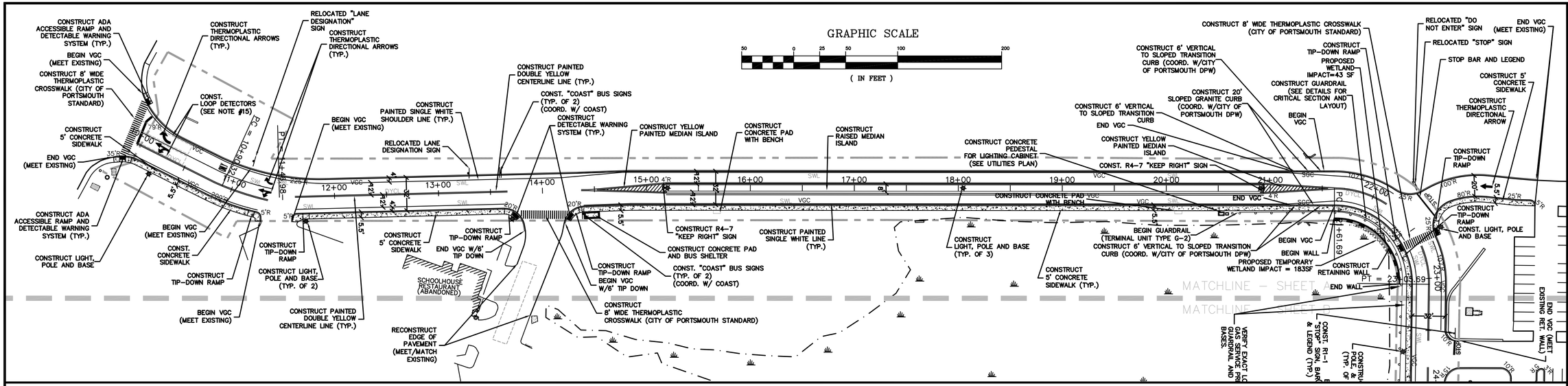
R-3

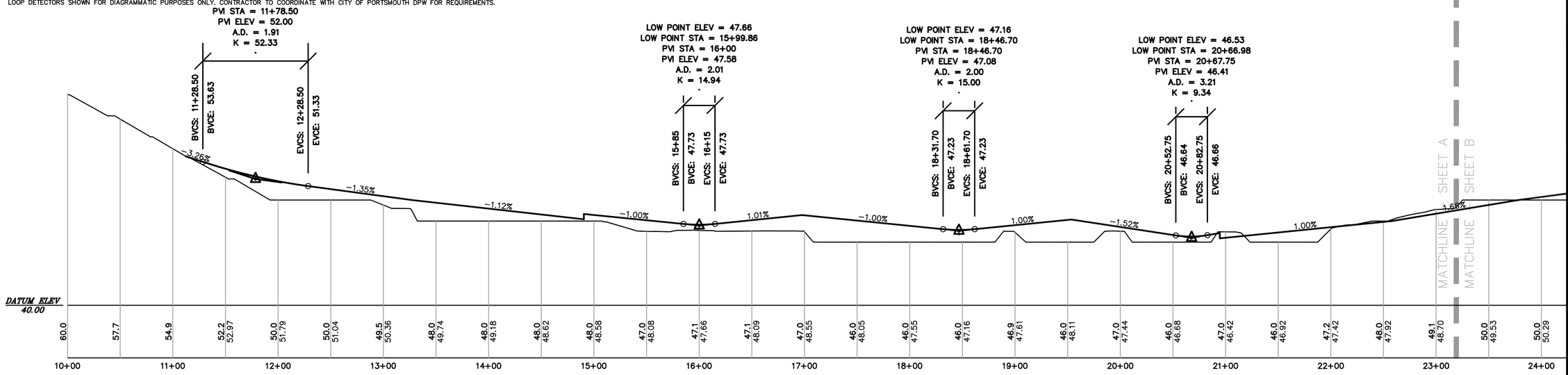


SITE NOTES:

1. PAVEMENT MARKINGS AS SHOWN, INCLUDING STOP BARS, CROSS WALKS, ARROWS, AND LEGENDS SHALL BE THERMOPLASTIC MATERIAL. THERMOPLASTIC STRIPING SHALL MEET THE REQUIREMENTS OF AASHTO M249. CENTERLINES AND PAINTED ISLANDS SHALL BE CONSTRUCTED USING YELLOW TRAFFIC PAINT. SHOULDER AND LANE LINES SHALL BE CONSTRUCTED USING WHITE TRAFFIC PAINT. TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF AASHTO M248 TYPE "F".
2. ALL PAVEMENT MARKINGS AND SIGNS TO CONFORM TO "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS, LATEST EDITIONS.
3. SEE DETAILS SIGN LEGEND AND SIGN POSTS.
4. CENTERLINES SHALL BE FOUR (4) INCH WIDE PAINTED YELLOW LINES. STOP BARS SHALL BE EIGHTEEN (18) INCH WIDE THERMOPLASTIC WHITE LINES.
5. PAINTED ISLANDS SHALL BE FOUR (4) INCH WIDE DIAGONAL LINES AT 3'-0" O.C. BORDERED BY FOUR (4) INCH WIDE LINES.
6. THE CONTRACTOR SHALL EMPLOY A NEW HAMPSHIRE LICENSED ENGINEER/SURVEYOR TO DETERMINE ALL LINES AND GRADES.
7. CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAWCUT LINE WITH RS-1 EMULSION IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
8. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND/OR TOWN CODES & SPECIFICATIONS.
9. CONTRACTOR TO SUBMIT AS-BUILT PLANS ON REPRODUCIBLE MYLARS AND IN DIGITAL FORMAT (.DWG FILE) ON DISK TO THE OWNER, ENGINEER, AND CITY OF PORTSMOUTH UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A LAND SURVEYOR OR PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE.
10. ALL WORK SHALL CONFORM TO THE CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS.
11. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
12. EXISTING GRANITE CURB IS TO BE STOCKPILED AND INSPECTED BY THE CITY OF PORTSMOUTH FOR PIECES THAT ARE ACCEPTABLE FOR RE-USE.
13. ROADWAY LIGHT POLE, BASE, AND FIXTURE SHALL MATCH EXISTING ON PORTSMOUTH BOULEVARD. TRANSFORMER, METER & ELECTRIC SERVICE REQUIREMENTS FOR ROADWAY LIGHTING SHALL BE COORDINATED WITH THE CITY OF PORTSMOUTH AND PSNH.
14. LOCATION OF SALVAGED BUSINESS SIGNS SHALL BE COORDINATED WITH THE OWNER AND LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.
15. LOOP DETECTORS SHOWN FOR DIAGRAMMATIC PURPOSES ONLY. CONTRACTOR TO COORDINATE WITH CITY OF PORTSMOUTH DPW FOR REQUIREMENTS.

LEGEND:

- PROPOSED CITY R.O.W. LINE
- PROPOSED SIGN
- PROPOSED CONCRETE SIDEWALK
- VGC — PROPOSED VERTICAL GRANITE CURB
- SGC — PROPOSED SLOPED GRANITE CURB
- PROPOSED GUARDRAIL
- PROPOSED THERMOPLASTIC ARROW
- PROPOSED THERMOPLASTIC ONLY LEGEND
- PROPOSED 8' THERMOPLASTIC CROSSWALK
- PROPOSED LIGHT, POLE & BASE
- PROPOSED WETLAND IMPACT=43 SF
- PROPOSED TEMPORARY WETLAND IMPACT=183 SF
- DYCL — PROPOSED DOUBLE YELLOW CENTERLINE
- SWL — PROPOSED PAINTED SINGLE WHITE LINE
- PROPOSED ADA DETECTABLE WARNING
- 10'R — PROPOSED CURB RADII



ROADWAY PLAN & PROFILE

No.	Revisions	Date
5.	BID DRAWINGS	PMC 03/21/14
4.	REVISE PER DPW DIRECTOR COMMENTS	PMC 07/26/12
3.	PLANNING BOARD SUBMISSION	PMC 03/26/12
2.	PLAN SET FOR CITY COUNCIL	PMC 12/19/11
1.	REVISED DRIVEWAY ENTRANCES & UTILITIES	PMC 11/14/11

DATE: FEBRUARY 3, 2010
SCALE:
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-SITE-ROAD.dwg

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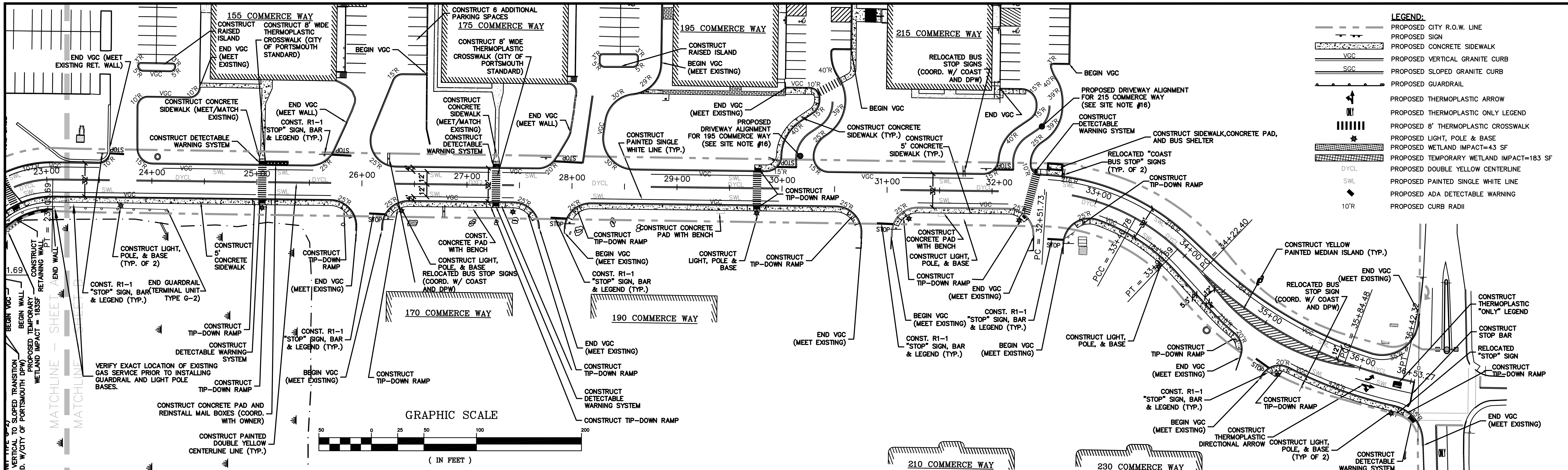

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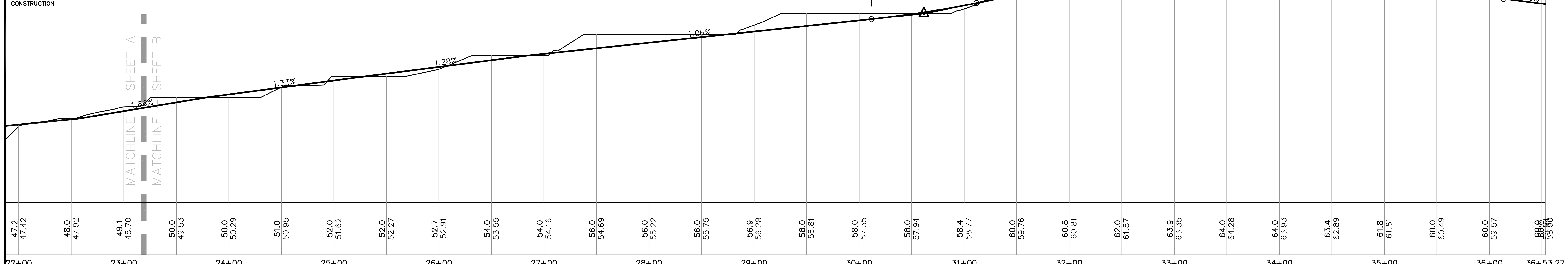
15. LOOP DETECTORS SHOWN FOR DIAGRAMMATIC PURPOSES ONLY. CONTRACTOR TO COORDINATE WITH CITY OF PORTSMOUTH DPW FOR REQUIREMENTS.
16. PROPOSED DRIVEWAY ALIGNMENT FOR 215 AND 195 COMMERCE WAY MAY BE SUBJECT TO FURTHER REVISION. CONTRACTOR SHALL COORDINATE WITH ENGINEER PRIOR TO CONSTRUCTION



No.	Description	Appd	Date
6.	REVISED BID DRAWINGS	PMC	03/5/15
5.	BID DRAWINGS	PMC	03/21/14
4.	REVISE PER DPW DIRECTOR COMMENTS	PMC	07/26/12
3.	PLANNING BOARD SUBMISSION	PMC	03/26/12
2.	PLAN SET FOR CITY COUNCIL	PMC	12/19/11
	REVISED DRIVEWAY ENTRANCES & UTILITIES	PMC	11/14/11

Revisions

THE STATE OF NEW HAMPSHIRE GREGG M. MIKOLAITIES No. 6884 LICENSED PROFESSIONAL ENGINEER

DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS COMMERCE WAY PORTSMOUTH, NH

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Consulting Engineers
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03801 (603) 433-8818
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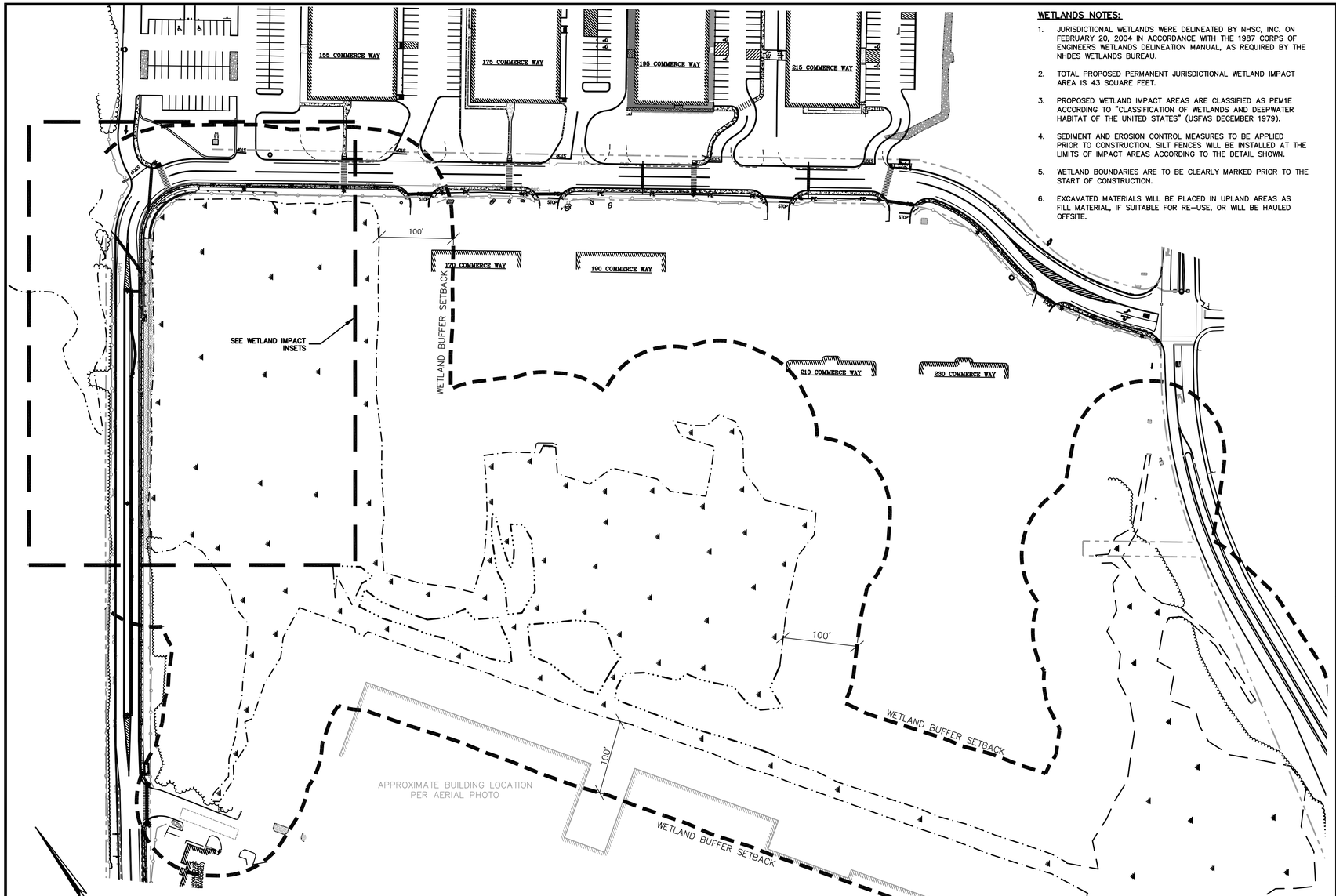
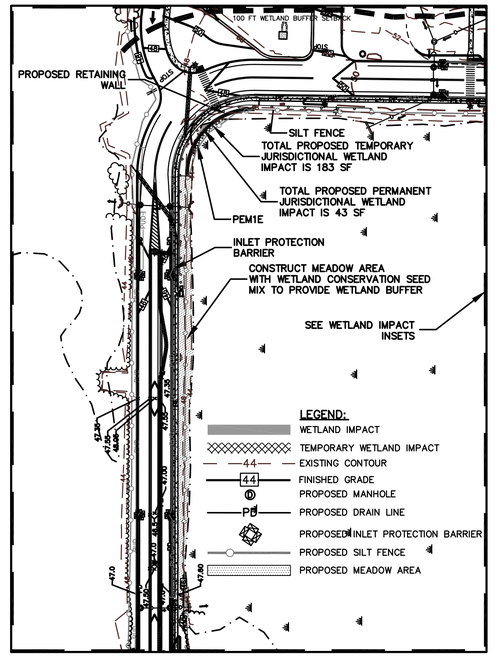
ROADWAY PLAN & PROFILE

R-3B

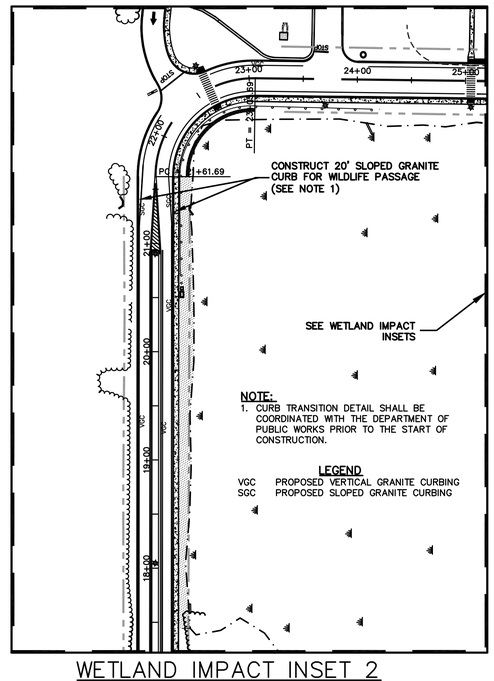


WETLANDS NOTES:

1. JURISDICTIONAL WETLANDS WERE DELINEATED BY NHSC, INC. ON FEBRUARY 20, 2004 IN ACCORDANCE WITH THE 1987 CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, AS REQUIRED BY THE NHDES WETLANDS BUREAU.
2. TOTAL PROPOSED PERMANENT JURISDICTIONAL WETLAND IMPACT AREA IS 43 SQUARE FEET.
3. PROPOSED WETLAND IMPACT AREAS ARE CLASSIFIED AS PEM1E ACCORDING TO "CLASSIFICATION OF WETLANDS AND DEEPWATER HABITAT OF THE UNITED STATES" (USFWS DECEMBER 1979).
4. SEDIMENT AND EROSION CONTROL MEASURES TO BE APPLIED PRIOR TO CONSTRUCTION. SILT FENCES WILL BE INSTALLED AT THE LIMITS OF IMPACT AREAS ACCORDING TO THE DETAIL SHOWN.
5. WETLAND BOUNDARIES ARE TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION.
6. EXCAVATED MATERIALS WILL BE PLACED IN UPLAND AREAS AS FILL MATERIAL, IF SUITABLE FOR RE-USE, OR WILL BE HAULED OFFSITE.



WETLAND IMPACT INSET 1
SCALE=1:70



WETLAND IMPACT INSET 2
SCALE=1:70

ROADWAY CONSTRUCTION SEQUENCE FOR INVASIVE SPECIES CONTROL:

1. INSTALL ALL TEMPORARY EROSION CONTROL MEASURES.
2. ALL WETLAND EXCAVATION ACTIVITIES WILL BE PERFORMED FROM THE EXISTING ROADWAY. NO EQUIPMENT WILL ENTER THE WETLAND AREA. THIS PREVENTS SEEDS AND FRAGMENTS FROM BEING TRUCKED OFF SITE.
3. CUT VEGETATION FROM IMPACT AREA AND PLACE IN BAGS FOR DISPOSAL OR INCINERATION TO PREVENT DISPERSAL.
4. HAUL EXCAVATED MATERIALS TO AN APPROVED LOCATION FOR DISPOSAL AND/OR INCINERATION.
5. INSTALL REQUIRED BACKFILL PER ENGINEERED DESIGN AND SUBSEQUENT INSTALLATION OF FOOTINGS FOR RETAINING WALL.
6. COMMENCE WITH ROADWAY DEMOLITION OPERATIONS AND SUBSEQUENT UTILITY CONDUIT AND DUCT INSTALLATION, AND DRAINAGE INSTALLATION.
7. CONSTRUCT BASE AND SUBBASE OF ROADWAY AND SIDEWALKS.
8. CONSTRUCT PAVEMENT AND LANDSCAPING AND LANDSCAPE ISLANDS ON COMMERCE WAY.
9. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND SITE IS STABILIZED, REMOVE EROSION CONTROL MEASURES AND SEDIMENT THAT HAS BEEN TRAPPED BY THE DEVICES.
10. BACKFILL TEMPORARY WETLAND IMPACT AREAS TO 6 INCHES BELOW FINAL GRADE.
11. INSTALL SIX INCHES OF FRESH SCREENED LOAM AND APPLY WETLAND SEED MIX* OR EQUIVALENT TO RESTORE AND STABILIZE TEMPORARY WETLAND IMPACT AREAS.

* SPECIES: MUD PLANTAIN (ALISMA PLANTAGO-AQUATICA), SWAMP MILKWEED (ASCLEPIAS INCARNATA), NEW YORK ASTER (ASTER NOVI-BELGII), NODDING BUR MARIGOLD (BIDENS CERNUA), BRISTLY/COSMOS SEDGE (CAREX COSMOSA), FRINGED SEDGE (NODDING) (CAREX CRINITA), HOP SEDGE (CAREX LUPULINA), LURID SEDGE (SHALLOW) (CAREX LURIDA), BLUNT BROOM SEDGE (CAREX SCOPARIA), FOX SEDGE (CAREX VULPINOIDEA), SPOTTED JOE PYE WEED (EUPATORIUM MACULATUM), BONESET (EUPATORIUM PERFOLIATUM), RATTLESNAKE GRASS (GLYCERIA CANADENSIS), FOWL MANNAGRASS (GLYCERIA STRIATA), SOFT RUSH (JUNCUS EFFUSUS), SQUARE STEMMED MONKEY FLOWER (MIMULUS RINGENS) SENSITIVE FERN (ONOCLEA SENSIBILIS), GREEN BULRUSH (SCIRPUS ATROVIRENS), WOOL GRASS (SCIRPUS CYPERNUS), SOFT-STEM BULRUSH (SHOENOPLECTUS TABERNAEMONTANI) (EX- S. VALIDUS), BLUE VERVAIN (VERBENA HASTATA).

PLANT MATERIALS MAY BE PURCHASED THROUGH NEW ENGLAND WETLAND PLANTS, INC., 820 WEST STREET, AMHERST, MA 01002 (PHONE: 413-548-8000, FAX: 413-549-4000) OR THROUGH STRATHAM CIRCLE NURSERY, 4 COLLEGE RD., STRATHAM, NH 03885 (PHONE: 603-778-3711)

WETLAND BUFFER ENHANCEMENT:
INCREASE IN PERVIOUS AREA 5,996 SF

WETLANDS CLASSIFICATIONS:
P PALUSTRINE
EM EMERGENT
1 BROAD-LEAVED DECIDUOUS
E SEASONALLY FLOODED OR SATURATED

NHDES WETLAND PERMIT:
APPROVAL 8-12-2008
PERMIT #2008-01287*
*EXTENSION REQUEST SUBMITTED AND APPROVED BY NHDES
PERMIT VALID THROUGH 8-12-2018

GRAPHIC SCALE
80 0 40 80 160 320
(IN FEET)

LEGEND
- R.O.W. LINE
- PROPOSED SIGN
- PROPOSED CONCRETE SIDEWALK
- VGC PROPOSED VERTICAL GRANITE CURB
- PROPOSED THERMOPLASTIC ARROW
- PROPOSED 8' THERMOPLASTIC CROSSWALK
- PROPOSED LIGHTPOLE BASE
- 100 FT WETLAND BUFFER SETBACK

No.	Description	Appd	Date
3.	BID DRAWINGS	PMC	03/21/14
2.	ADDED MEADOW AREA	PMC	04/19/12
1.	PLANNING BOARD SUBMISSION	PMC	03/26/12
	Revisions		

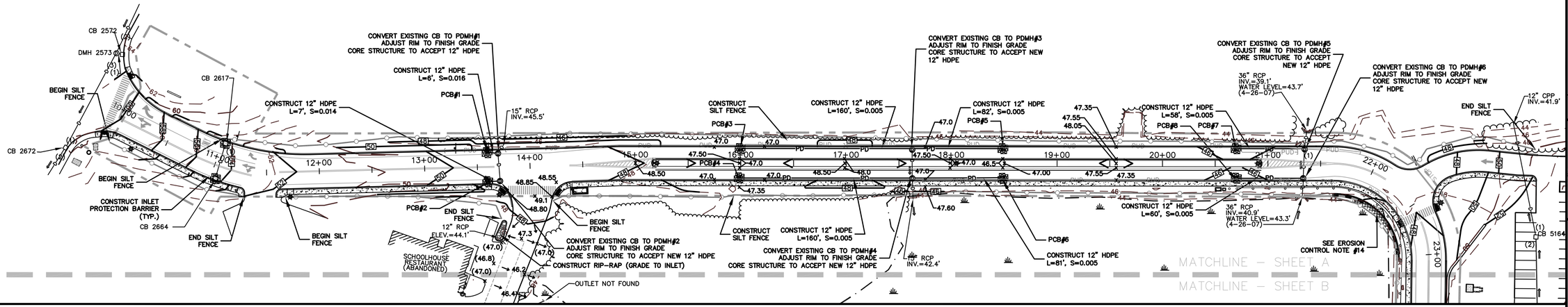
DATE: DECEMBER 19, 2011
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2199B
FILE NO: 2199B-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

WETLAND IMPACT PLAN

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

R-3C



GRADING AND DRAINAGE NOTES:

1. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.

2. COMPACTION REQUIREMENTS:

LOCATION	MINIMUM COMPACTION*
BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREAS	90%

* ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.

3. ADJUST ALL MANHOLES, CATCHBASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.

4. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE DRIVEWAY ENTRANCES AND EXITS AND ALONG NEW CURBED AREAS.

5. ALL STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR APPROVED EQUAL).

6. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS CONSTRUCTION SPECIFICATIONS, LATEST REVISIONS.

7. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.

8. ALL PROPOSED CATCHBASINS SHALL BE EQUIPPED WITH OIL/GAS SEPARATOR HOODS AND 4' SUMPS.

9. THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL DRAINAGE STRUCTURES FREE OF SEDIMENT AND DEBRIS IMMEDIATELY UPON THE COMPLETION OF CONSTRUCTION.

10. THE CONTRACTOR SHALL COMPLY WITH THE CITY OF PORTSMOUTH APPROVED CONSTRUCTION MANAGEMENT PLAN.

11. SEE UTILITIES PLANS FOR ALL SITE UTILITY INFORMATION.

12. SEE EXISTING CONDITIONS PLAN FOR BENCH MARK INFORMATION.

13. PROJECT SURVEYOR SHALL PROVIDE PERMANENT PROJECT BENCHMARKS.

14. LIMITS AND GRADING FOR LANDSCAPE BERMS ALONG ROADWAY SHALL BE COORDINATED WITH LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.

EROSION CONTROL NOTES:

1. INSTALL EROSION CONTROL BARRIERS AS SHOWN AS FIRST ORDER OF WORK.

2. SEE GENERAL EROSION CONTROL NOTES AND DETAILS SHEET.

3. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED.

4. INSTALL STABILIZED CONSTRUCTION ENTRANCES AT LOCATIONS SHOWN ON PLAN.

5. LOCATIONS OF STABILIZED CONSTRUCTION ENTRANCES SHALL BE COORDINATED WITH THE CITY OF PORTSMOUTH IN ACCORDANCE WITH THE PHASING OF THE CONSTRUCTION.

6. INSPECT EROSION CONTROL MEASURES AFTER EACH RAIN OF 0.25 INCHES OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.

7. CONSTRUCT EXCELSIOR MAT ON ALL SLOPES STEEPER THAN 3:1.

8. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL MEASURES SHALL INCLUDE, BUT NOT LIMITED TO, SPRINKLING WATER ON UNSTABLE SOILS SUBJECT TO ARID CONDITIONS.

9. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.

10. ALL CATCHBASIN SUMPS AND PIPING SHALL BE THOROUGHLY CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS AFTER THE PROJECT HAS BEEN PAVED.

11. TEMPORARY SOIL STOCKPILE SHALL BE SURROUNDED BY SILT FENCE AND SHALL BE STABILIZED BY TEMPORARY EROSION CONTROL SEEDING. STOCKPILE AREAS TO BE LOCATED AS FAR AS POSSIBLE FROM THE DELINEATED EDGE OF WETLAND.

12. SAFETY FENCING SHALL BE PROVIDED AROUND STOCKPILES OVER 10 FT.

13. CONCRETE TRUCKS WILL BE REQUIRED TO WASH OUT (IF NECESSARY) SHOOTS ONLY WITHIN AREAS WHERE CONCRETE HAS BEEN PLACED. NO OTHER WASH OUT WILL BE ALLOWED.

14. SEE CONSTRUCTION SEQUENCE IN EROSION CONTROL NOTES AND DETAILS, SHEET R-7 FOR SPECIAL PROVISIONS FOR WETLAND IMPACTS.

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- x 88.9 PROPOSED SPOT GRADE
- x (88.9) EXISTING SPOT GRADE
- EXISTING CATCH BASIN
- EXISTING STORM DRAIN
- PROPOSED CATCH BASIN
- EXISTING DRAIN MANHOLE
- PD PROPOSED STORM DRAIN
- PUD PROPOSED UNDERDRAIN
- PROPOSED INLET PROTECTION BARRIER
- STORM DRAIN FLOW DIRECTIONAL ARROW
- SILT FENCE

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

PROPOSED DRAINAGE STRUCTURE TABLE

PCB#1
RIM=49.3
INV.IN=46.2
INV.OUT=46.1

PCB#2
RIM=49.3
INV.OUT=46.2

PCB#3
RIM=46.75
INVS.IN=43.8
INV.OUT=43.7

PCB#4
RIM=46.75
INV.OUT=43.6

PCB#5
RIM=46.25
INV.IN=43.4
INV.OUT=43.3

PCB#6
RIM=46.25
INV.IN=43.3
INV.OUT=43.2

PCB#7
RIM=45.65
INV.IN=40.2(12")
INV.IN=41.35(4")
INV.OUT=40.1

PCB#8
RIM=45.7
INV.IN=41.3
INV.OUT=41.2

PCB#9
RIM=51.05
INV.IN=46.6
INV.OUT=46.5

PCB#10
RIM=51.05
INV.IN=45.7
INV.OUT=45.6

PCB#11
RIM=54.45
INV.IN=49.5
INV.OUT=49.4

PCB#12
RIM=54.40
INV.IN=49.1
INV.OUT=49.0

PCB#13
RIM=57.60
INV.OUT=52.3

PCB#14
RIM=57.55
INV.IN=52.1
INV.OUT=52.0

~~CB #2464~~ PDMH#1
~~RIM ELEV.=48.7'~~ RIM=49.15
(1) 15" R.C.P.=45.9'
(2) 15" R.C.P.=45.9'
INV.IN=46.0

~~CB #2422~~ PDMH#2
~~RIM ELEV.=49.1'~~ RIM=49.15
(1) 15" R.C.P.=46.0'
INV.IN=46.1

~~CB #2451~~ PDMH#3
~~RIM ELEV.=46.6'~~ RIM=47.15
(1) 12" R.C.P.=42.8'
INV.IN=42.9

~~CB #2401~~ PDMH#4
~~RIM ELEV.=46.6'~~ RIM=47.15
(1) 12" R.C.P.=42.7'
(2) 12" R.C.P.=42.7'
INV.IN=42.8

~~CB #2330~~ PDMH#5
~~RIM ELEV.=46.5'~~ RIM=46.3
(1) 36" R.C.P.=39.7'
(2) 36" R.C.P.=39.5'
INV.IN=39.8(12")
INV.IN=42.30(4")

~~CB #2212~~ PDMH#6
~~RIM ELEV.=46.6'~~ RIM=46.4
(1) 36" R.C.P.=40.8'
(2) 36" R.C.P.=40.8'
INV.IN=40.9(12")
INV.IN=42.50(4")

~~CB #2205~~ PDMH#7
~~RIM ELEV.=50.6'~~ RIM=50.95
(1) 18" R.C.P.=46.3'
(2) 18" R.C.P.=46.3'
INV.IN=46.4

~~CB #2227~~ PDMH#8
~~RIM ELEV.=50.8'~~ RIM=50.95
(1) 24" R.C.P.=45.2'
(2) 24" R.C.P.=45.4'
INV.IN=45.5

~~CB #2035~~ PDMH#9
~~RIM ELEV.=54.9'~~ RIM=54.95
(1) 24" R.C.P.=49.0'
(2) 24" R.C.P.=49.1'
INVS.IN=49.2

~~CB #2041~~ PDMH#10
~~RIM ELEV.=54.9'~~ RIM=54.85
(1) 24" R.C.P.=48.7'
(2) 24" R.C.P.=48.7'
(3) 36" R.C.P.=48.7'
INV.IN=48.8

~~CB #1787~~ PDMH#11
~~RIM ELEV.=56.8'~~ RIM=57.40
(1) 18" C.M.P.=52.2'
(2) 18" C.M.P.=52.6'
(3) 18" R.C.P.=52.1'
INV.IN=52.7

~~CB #1706~~ PDMH#12
~~RIM ELEV.=57.9'~~ RIM=57.3
(1) 18" C.M.P.=51.3'
(2) 18" R.C.P.=51.8'
(3) 24" R.C.P.=51.1'
INV.IN=51.9

DRAINAGE STRUCTURE TABLE

CB #1350
RIM ELEV.=55.2'
(1) 6" C.P.P.=52.6'
(2) 18" R.C.P.=51.7'
(3) 18" R.C.P.=51.6'

CB #1355
RIM ELEV.=56.4'
(1) 12" R.C.P.=52.5'
(2) 12" R.C.P.=52.6'
(3) 8" P.V.C.=52.7'
(4) 18" R.C.P.=52.2'

CB #1375
RIM ELEV.=56.2'
(1) 12" R.C.P.=52.9'

CB #1376
RIM ELEV.=55.3'
(1) 18" R.C.P.=51.2'
(2) 18" R.C.P.=51.3'

CB #1534
RIM ELEV.=58.4'
(1) 12" R.C.P.=54.7'
(2) 12" R.C.P.=54.6'

CB #1549
RIM ELEV.=60.0"
(1) 12" R.C.P.=56.5'
(2) 12" R.C.P.=56.0'

CB #1555
RIM ELEV.=59.0'
(1) 12" R.C.P.=55.9'
(2) 12" R.C.P.=55.9'

CB #1619
RIM ELEV.=59.1'
(1) 12" R.C.P.=56.9'

CB #1626
RIM ELEV.=60.0'
(1) 12" R.C.P.=56.7'

CB #1095
RIM ELEV.=60.1'
(1) 12" R.C.P.=56.3'

CB #1131
RIM ELEV.=59.5'
(1) 18" R.C.P.=56.0'
(2) 18" R.C.P.=56.1'

CB #1136
RIM ELEV.=58.9'
(1) 18" R.C.P.=55.2'
(2) 12" R.C.P.=55.1'
(3) 18" R.C.P.=54.4'

CB #1271
RIM ELEV.=57.6'
(1) 18" R.C.P.=53.4'
(2) 18" R.C.P.=53.4'

CB #1629
RIM ELEV.=58.4'
(1) 12" R.C.P.=56.1'
(2) 12" R.C.P.=56.0'
(3) 12" R.C.P.=55.9'

CB #1651
~~RIM ELEV.=60.3'~~ RIM=60.25
(1) 12" R.C.P.=57.7'
(2) 12" R.C.P.=57.7'

CB #1830
~~RIM ELEV.=60.9'~~ RIM=61.3
(1) 12" R.C.P.=58.0'

CB #1999
RIM ELEV.=54.2'
(1) 24" R.C.P.=50.2'
(2) 24" R.C.P.=50.2'

CB #2061
RIM ELEV.=52.5'
(1) 18" R.C.P.=47.3'
(2) 24" R.C.P.=47.2'

CB #2240
RIM ELEV.=47.8'
CAN NOT OPEN

CB 2572
RIM=63.4'
15" RCP=59.6'
(TO DMH 2573)

CB #2617
RIM ELEV.=54.4'
(1) 15" R.C.P.=51.1'
(FILLED W/ DIRT)

CB #2664
RIM ELEV.=54.3'
(1) 15" R.C.P.=51.0'
(HALF FILLED W/ DIRT)
NOT OUTLET FOUND

CB 2672
PIPE PARTIALLY FILLED
RIM=59.4'
(1) 15" RCP=51.4'
(2) 15" RCP=51.2'

CB #4127
RIM ELEV.=46.7'
(1) 36" RCP=41.1'
(2) 36" RCP=41.0'

CB #4191
RIM ELEV.=58.8'
(1) 18" CMP=55.5'
(2) 18" CMP=55.6'

CB #4224
RIM ELEV.=58.9'
(1) 18" CMP=55.7'
(2) 18" CMP=55.8'

CB #4389
RIM ELEV.=54.8'
(1) 18" CMP=52.2'
(2) 12" RCP=52.4'

CB #4402
RIM ELEV.=54.9'
(1) 12" RCP=52.1'
(2) 12" RCP=52.2'

CB #4596
RIM ELEV.=54.4'
(1) 24" RCP=50.7'
(2) 24" RCP=50.5'
(3) 4" CPP=51.8'

CB #4646
RIM ELEV.=54.8'
(1) 24" RCP=50.8'
(2) 12" CPP=51.8'
(3) 8" PVC=51.7'
(4) 4" CPP

CB #4840
RIM ELEV.=52.6'
(1) 18" RCP=48.3'
(2) 18" RCP=48.5'

CB #4930
RIM ELEV.=53.0'
(1) 18" RCP=49.9'
(2) 18" RCP=50.1'

CB #5069
RIM ELEV.=55.4'
(1) 18" RCP=49.9'
(2) 18" RCP=49.9'
(3) 4" PVC=54.1'

CB #5164
RIM ELEV.=52.9'
(1) 12" CPP=46.8'
(2) 12" CPP=46.9'

CB #5169
RIM ELEV.=53.1'
12" CPP=46.7'

CB #5187
RIM ELEV.=56.3'
(1) 18" RCP=51.6'
(2) 18" RCP=51.8'

CB #5932
RIM ELEV.=61.1'
(1) 12" R.C.P.=54.3'
(2) 12" R.C.P.=54.3'

CB #5933
RIM ELEV.=60.6'
(1) 12" R.C.P.=55.6'

CB #6076
RIM ELEV.=60.2'
(1) 15" R.C.P.=52.1'
(2) 15" R.C.P.= (UNOBTAINABLE)
(3) 30" R.C.P.=50.9'
(4) 30" R.C.P.=51.0'

CB #6151
RIM ELEV.=59.2'
(1) 15" R.C.P.=51.3'
(2) 15" R.C.P.=51.2'

CB #6206
RIM ELEV.=59.6'
(1) INV. (30" RCP)=51.3'
(2) INV. (15" RCP)=OFFSET
(3) INV. (30" RCP)=51.2'

DMH #1264
RIM ELEV.=55.9'
(1) 18" R.C.P.=52.8'
(2) 18" R.C.P.=52.6'

DMH #1397
RIM ELEV.=57.2'
(1) 12" R.C.P.=54.3'
(2) 12" R.C.P.=54.4'

DMH #1592
RIM ELEV.=59.1'
(1) 12" R.C.P.=55.8'
(2) 12" R.C.P.=55.8'
(3) 12" R.C.P.=55.8'

DMH #2262
RIM ELEV.=51.9'
(1) 18" R.C.P.=46.7'(FULL OF DEBRIS)
(2) 24" R.C.P.=46.6'
(3) 18" R.C.P.=46.5'

DMH 2573
RIM=63.4'
(1) 15" RCP=59.4'
(2) 15" RCP=55.4'
(3) 15" RCP=55.2'

DMH #4111
RIM ELEV.=47.4'
(1) 30" RCP=42.1'
(2) 30" RCP=42.0'

DMH #5931
RIM ELEV.=61.2'
(1) 12" R.C.P.=55.3'
(2) 15" R.C.P.=52.7'

GRADING, DRAINAGE & EROSION CONTROL PLAN

No.	Description	Date	Appd
4.	BID DRAWINGS	03/21/14	PMC
3.	PLANNING BOARD SUBMISSION	03/26/12	PMC
2.	PLAN SET FOR CITY COUNCIL	12/19/11	PMC
1.	REVISED DRIVEWAY ENTRANCES & UTILITIES	11/14/11	PMC

Revisions

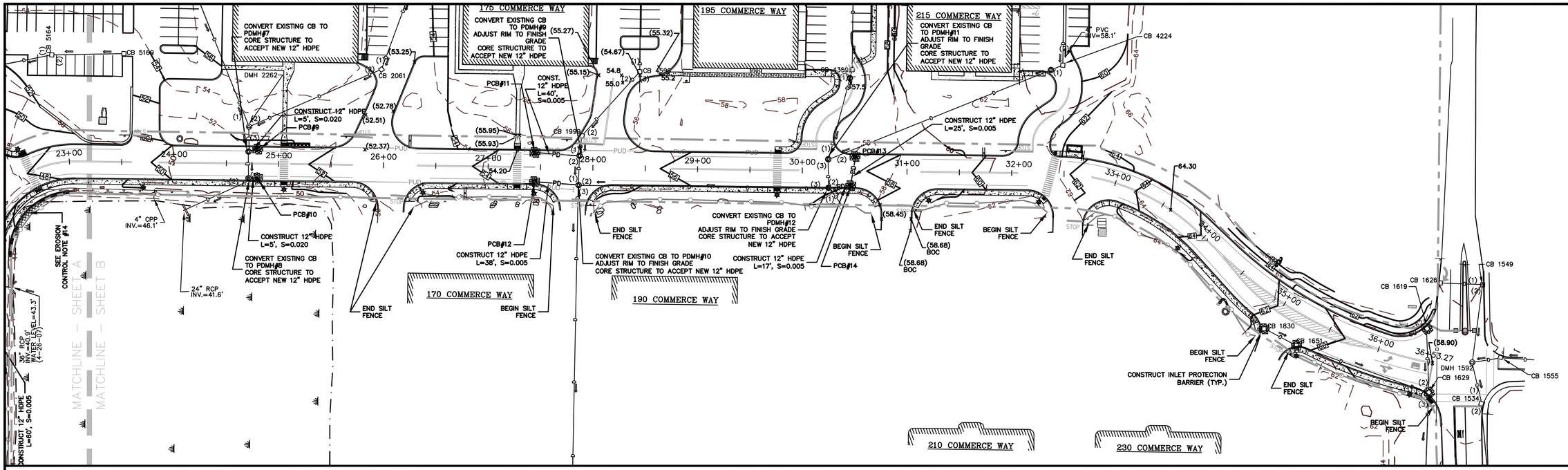
THE STATE OF NEW HAMPSHIRE GREGOR M. MACLATCHY No. 9867 PROFESSIONAL ENGINEER 3-2-14

DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO.: 2189B
FILE NO.: 2189B-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

R-4A



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TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREAS	90%

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3. ADJUST ALL MANHOLES, CATCHBASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.

4. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE DRIVEWAY ENTRANCES AND EXITS AND ALONG NEW CURBED AREAS.

5. ALL STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR APPROVED EQUAL).

6. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS CONSTRUCTION SPECIFICATIONS, LATEST REVISIONS.

7. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.

8. ALL PROPOSED CATCHBASINS SHALL BE EQUIPPED WITH OIL/GAS SEPARATOR HOODS AND 4' SUMPS.

9. THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL DRAINAGE STRUCTURES FREE OF SEDIMENT AND DEBRIS IMMEDIATELY UPON THE COMPLETION OF CONSTRUCTION.

10. THE CONTRACTOR SHALL COMPLY WITH THE CITY OF PORTSMOUTH APPROVED CONSTRUCTION MANAGEMENT PLAN.

11. SEE UTILITIES PLANS FOR ALL SITE UTILITY INFORMATION.

12. SEE EXISTING CONDITIONS PLAN FOR BENCH MARK INFORMATION.

13. PROJECT SURVEYOR SHALL PROVIDE PERMANENT PROJECT BENCHMARKS.

14. LIMITS AND GRADING FOR LANDSCAPE BERMS ALONG ROADWAY SHALL BE COORDINATED WITH LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.

EROSION CONTROL NOTES:

1. INSTALL EROSION CONTROL BARRIERS AS SHOWN AS FIRST ORDER OF WORK.

2. SEE GENERAL EROSION CONTROL NOTES AND DETAILS SHEET.

3. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED.

4. INSTALL STABILIZED CONSTRUCTION ENTRANCES AT LOCATIONS SHOWN ON PLAN.

5. LOCATIONS OF STABILIZED CONSTRUCTION ENTRANCES SHALL BE COORDINATED WITH THE CITY OF PORTSMOUTH IN ACCORDANCE WITH THE PHASING OF THE CONSTRUCTION.

6. INSPECT EROSION CONTROL MEASURES AFTER EACH RAIN OF 0.25 INCHES OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.

7. CONSTRUCT EXCELSIOR MAT ON ALL SLOPES STEEPER THAN 3:1.

8. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL MEASURES SHALL INCLUDE, BUT NOT LIMITED TO, SPRINKLING WATER ON UNSTABLE SOILS SUBJECT TO ARID CONDITIONS.

9. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.

10. ALL CATCHBASIN SUMPS AND PIPING SHALL BE THOROUGHLY CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS AFTER THE PROJECT HAS BEEN PAVED.

11. TEMPORARY SOIL STOCKPILE SHALL BE SURROUNDED BY SILT FENCE AND SHALL BE STABILIZED BY TEMPORARY EROSION CONTROL SEEDING. STOCKPILE AREAS TO BE LOCATED AS FAR AS POSSIBLE FROM THE DELINEATED EDGE OF WETLAND.

12. SAFETY FENCING SHALL BE PROVIDED AROUND STOCKPILES OVER 10 FT.

13. CONCRETE TRUCKS WILL BE REQUIRED TO WASH OUT (IF NECESSARY) SHOOTS ONLY WITHIN AREAS WHERE CONCRETE HAS BEEN PLACED. NO OTHER WASH OUT WILL BE ALLOWED.

14. SEE CONSTRUCTION SEQUENCE IN EROSION CONTROL NOTES AND DETAILS, SHEET R-7 FOR SPECIAL PROVISIONS FOR WETLAND IMPACTS.

LEGEND

- 36 — EXISTING CONTOUR
- 36 — PROPOSED CONTOUR
- × 88.9 — PROPOSED SPOT GRADE
- × (88.9) — EXISTING SPOT GRADE
- EXISTING CATCH BASIN
- —D— EXISTING STORM DRAIN
- PROPOSED CATCH BASIN
- EXISTING DRAIN MANHOLE
- —PD— PROPOSED STORM DRAIN
- —PUD— PROPOSED UNDERDRAIN
- PROPOSED INLET PROTECTION BARRIER
- STORM DRAIN FLOW DIRECTIONAL ARROW
- —o— SILT FENCE

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

PROPOSED DRAINAGE STRUCTURE TABLE

PCB#1
RIM=49.3
INV.IN=46.2
INV.OUT=46.1

PCB#2
RIM=49.3
INV.OUT=46.2

PCB#3
RIM=46.75
INVS.IN=43.8
INV.OUT=43.7

PCB#4
RIM=46.75
INV.OUT=43.6

PCB#5
RIM=46.25
INV.IN=43.4
INV.OUT=43.3

PCB#6
RIM=46.25
INV.IN=43.3
INV.OUT=43.2

PCB#7
RIM=45.65
INV.IN=40.2(12")
INV.IN=41.35(4")
INV.OUT=40.1

PCB#8
RIM=45.7
INV.IN=41.3
INV.OUT=41.2

PCB#9
RIM=51.05
INV.IN=46.6
INV.OUT=46.5

PCB#10
RIM=51.05
INV.IN=45.7
INV.OUT=45.6

PCB#11
RIM=54.45
INV.IN=49.5
INV.OUT=49.4

PCB#12
RIM=54.40
INV.IN=49.1
INV.OUT=49.0

PCB#13
RIM=57.60
INV.OUT=52.3

PCB#14
RIM=57.55
INV.IN=52.1
INV.OUT=52.0

DRAINAGE STRUCTURE TABLE

~~CB #2464~~ PDMH#1
~~RIM ELEV.=48.7'~~ **RIM=49.15**
(1) 15" R.C.P.=45.9'
(2) 15" R.C.P.=45.9'
INV.IN=46.0

~~CB #2422~~ PDMH#2
~~RIM ELEV.=49.1'~~ **RIM=49.15**
(1) 15" R.C.P.=46.0'
INV.IN=46.1

~~CB #2451~~ PDMH#3
~~RIM ELEV.=46.6'~~ **RIM=47.15**
(1) 12" R.C.P.=42.8'
INV.IN=42.9

~~CB #2401~~ PDMH#4
~~RIM ELEV.=46.6'~~ **RIM=47.15**
(1) 12" R.C.P.=42.7'
(2) 12" R.C.P.=42.7'
INV.IN=42.8

~~CB #2330~~ PDMH#5
~~RIM ELEV.=46.5'~~ **RIM=46.3**
(1) 36" R.C.P.=39.7'
(2) 36" R.C.P.=39.5'
INV.IN=39.8(12")
INV.IN=42.30(4")

~~CB #2212~~ PDMH#6
~~RIM ELEV.=46.6'~~ **RIM=46.4**
(1) 36" R.C.P.=40.8'
(2) 36" R.C.P.=40.8'
INV.IN=40.9(12")
INV.IN=42.50(4")

~~CB #2265~~ PDMH#7
~~RIM ELEV.=50.8'~~ **RIM=50.95**
(1) 18" R.C.P.=46.3'
(2) 18" R.C.P.=46.3'
INV.IN=46.4

~~CB #2227~~ PDMH#8
~~RIM ELEV.=50.8'~~ **RIM=50.95**
(1) 24" R.C.P.=45.2'
(2) 24" R.C.P.=45.4'
INV.IN=45.5

~~CB #2035~~ PDMH#9
~~RIM ELEV.=54.9'~~ **RIM=54.95**
(1) 24" R.C.P.=49.0'
(2) 24" R.C.P.=49.1'
INVS.IN=49.2

~~CB #2041~~ PDMH#10
~~RIM ELEV.=54.9'~~ **RIM=54.85**
(1) 24" R.C.P.=48.7'
(2) 24" R.C.P.=48.7'
(3) 36" R.C.P.=48.7'
INV.IN=48.8

~~CB #1707~~ PDMH#11
~~RIM ELEV.=56.9'~~ **RIM=57.40**
(1) 18" C.M.P.=52.2'
(2) 18" C.M.P.=52.6'
(3) 18" R.C.P.=52.1'
INV.IN=52.7

~~CB #1766~~ PDMH#12
~~RIM ELEV.=57.0'~~ **RIM=57.3**
(1) 18" C.M.P.=51.3'
(2) 18" R.C.P.=51.8'
(3) 24" R.C.P.=51.1'
INV.IN=51.9

CB #1095
RIM ELEV.=60.1'
(1) 12" R.C.P.=56.3'

CB #1131
RIM ELEV.=59.5'
(1) 18" R.C.P.=56.0'
(2) 18" R.C.P.=56.1'

CB #1136
RIM ELEV.=58.9'
(1) 18" R.C.P.=55.2'
(2) 12" R.C.P.=55.1'
(3) 18" R.C.P.=54.4'

CB #1271
RIM ELEV.=57.6'
(1) 18" R.C.P.=53.4'
(2) 18" R.C.P.=53.4'

CB #1350
RIM ELEV.=55.2'
(1) 6" C.P.P.=52.6'
(2) 18" R.C.P.=51.7'
(3) 18" R.C.P.=51.6'

CB #1355
RIM ELEV.=56.4'
(1) 12" R.C.P.=52.5'
(2) 12" R.C.P.=52.6'
(3) 8" P.V.C.=52.7'
(4) 18" R.C.P.=52.2'

CB #1375
RIM ELEV.=56.2'
(1) 12" R.C.P.=52.9'

CB #1376
RIM ELEV.=55.3'
(1) 18" R.C.P.=51.2'
(2) 18" R.C.P.=51.3'

CB #1534
RIM ELEV.=58.4'
(1) 12" R.C.P.=54.7'
(2) 12" R.C.P.=54.6'

CB #1549
RIM ELEV.=60.0"
(1) 12" R.C.P.=56.5'
(2) 12" R.C.P.=56.0'

CB #1555
RIM ELEV.=59.0'
(1) 12" R.C.P.=55.9'
(2) 12" R.C.P.=55.9'

CB #1619
RIM ELEV.=59.1'
(1) 12" R.C.P.=56.9'

CB #1626
RIM ELEV.=60.0'
(1) 12" R.C.P.=56.7'

CB #1629
RIM ELEV.=58.4'
(1) 12" R.C.P.=56.1'
(2) 12" R.C.P.=56.0'
(3) 12" R.C.P.=55.9'

CB #1651
~~RIM ELEV.=60.3'~~ **RIM=60.25**
(1) 12" R.C.P.=57.7'
(2) 12" R.C.P.=57.7'

CB #1830
~~RIM ELEV.=60.9'~~ **RIM=61.3**
(1) 12" R.C.P.=58.0'

CB #1999
RIM ELEV.=54.2'
(1) 24" R.C.P.=50.2'
(2) 24" R.C.P.=50.2'

CB #2061
RIM ELEV.=52.5'
(1) 18" R.C.P.=47.3'
(2) 24" R.C.P.=47.2'

CB #2240
RIM ELEV.=47.8'
CAN NOT OPEN

CB 2572
RIM=63.4'
15" RCP=59.6'
(TO DMH 2573)

CB #2617
RIM ELEV.=54.4'
(1) 15" R.C.P.=51.1'
(FILLED W/ DIRT)

CB #2664
RIM ELEV.=54.3'
(1) 15" R.C.P.=51.0'
(HALF FILLED W/ DIRT)
NOT OUTLET FOUND

CB 2672
PIPE PARTIALLY FILLED
RIM=59.4'
(1) 15" RCP=51.4'
(2) 15" RCP=51.2'

CB #4127
RIM ELEV.=46.7'
(1) 36" RCP=41.1'
(2) 36" RCP=41.0'

CB #4191
RIM ELEV.=58.8'
(1) 18" CMP=55.5'
(2) 18" CMP=55.6'

CB #4224
RIM ELEV.=58.9'
(1) 18" CMP=55.7'
(2) 18" CMP=55.8'

CB #4389
RIM ELEV.=54.8'
(1) 18" CMP=52.2'
(2) 12" RCP=52.4'

CB #4402
RIM ELEV.=54.9'
(1) 12" RCP=52.1'
(2) 12" RCP=52.2'

CB #4596
RIM ELEV.=54.4'
(1) 24" RCP=50.7'
(2) 24" RCP=50.5'
(3) 4" CPP=51.8'

CB #4646
RIM ELEV.=54.8'
(1) 24" RCP=50.8'
(2) 12" CPP=51.8'
(3) 8" PVC=51.7'
(4) 4" CPP

CB #4840
RIM ELEV.=52.6'
(1) 18" RCP=48.3'
(2) 18" RCP=48.5'

CB #4930
RIM ELEV.=53.0'
(1) 18" RCP=49.9'
(2) 18" RCP=50.1'

CB #5069
RIM ELEV.=55.4'
(1) 18" RCP=49.9'
(2) 18" RCP=49.9'
(3) 4" PVC=54.1'

CB #5164
RIM ELEV.=52.9'
(1) 12" CPP=46.8'
(2) 12" CPP=46.9'

CB #5169
RIM ELEV.=53.1'
12" CPP=46.7'

CB #5187
RIM ELEV.=56.3'
(1) 18" RCP=51.6'
(2) 18" RCP=51.8'

CB #5932
RIM ELEV.=61.1'
(1) 12" R.C.P.=54.3'
(2) 12" R.C.P.=54.3'

CB #5933
RIM ELEV.=60.6'
(1) 12" R.C.P.=55.6'

CB #6076
RIM ELEV.=60.2'
(1) 15" R.C.P.=52.1'
(2) 15" R.C.P.= (UNOBTAINABLE)
(3) 30" R.C.P.=50.9'
(4) 30" R.C.P.=51.0'

CB #6151
RIM ELEV.=59.2'
(1) 15" R.C.P.=51.3'
(2) 15" R.C.P.=51.2'

CB #6206
RIM ELEV.=59.6'
(1) INV. (30" RCP)=51.3'
(2) INV. (15" RCP)=OFFSET
(3) INV. (30" RCP)=51.2'

DMH #1264
RIM ELEV.=55.9'
(1) 18" R.C.P.=52.8'
(2) 18" R.C.P.=52.6'

DMH #1397
RIM ELEV.=57.2'
(1) 12" R.C.P.=54.3'
(2) 12" R.C.P.=54.4'

DMH #1592
RIM ELEV.=59.1'
(1) 12" R.C.P.=55.8'
(2) 12" R.C.P.=55.8'
(3) 12" R.C.P.=55.8'

DMH #2262
RIM ELEV.=51.9'
(1) 18" R.C.P.=46.7'(FULL OF DEBRIS)
(2) 24" R.C.P.=46.6'
(3) 18" R.C.P.=46.5'

DMH 2573
RIM=63.4'
(1) 15" RCP=59.4'
(2) 15" RCP=55.4'
(3) 15" RCP=55.2'

DMH #4111
RIM ELEV.=47.4'
(1) 30" RCP=42.1'
(2) 30" RCP=42.0'

DMH #5931
RIM ELEV.=61.2'
(1) 12" R.C.P.=55.3'
(2) 15" R.C.P.=52.7'

No.	Description	Appd	Date
	Revisions		
1.	REVISED DRIVEWAY ENTRANCES & UTILITIES	PMC	11/14/11
2.	PLAN SET FOR CITY COUNCIL	PMC	12/19/11
3.	PLANNING BOARD SUBMISSION	PMC	03/26/12
4.	BID DRAWINGS	PMC	03/21/14

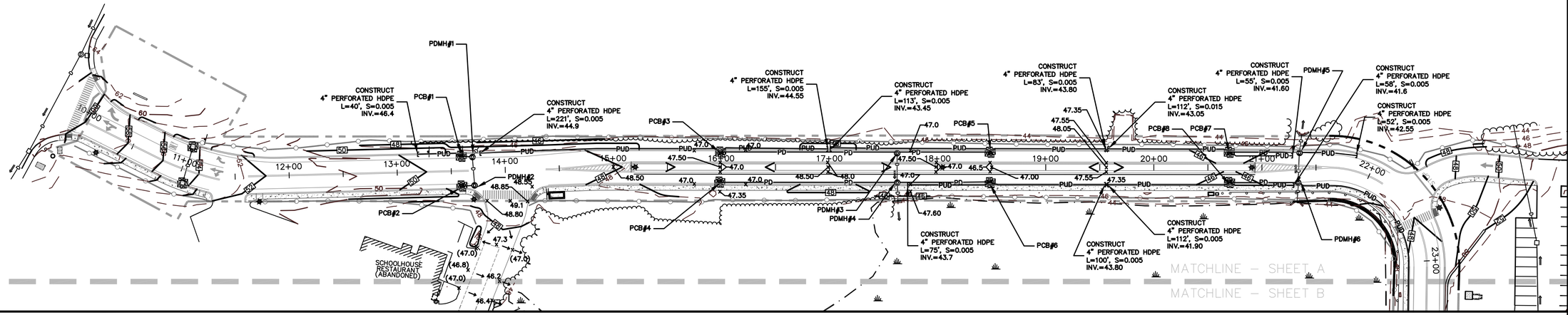
DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS COMMERCE WAY PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

GRADING, DRAINAGE & EROSION CONTROL PLAN

R-4B



No.	Description	Appd	Date
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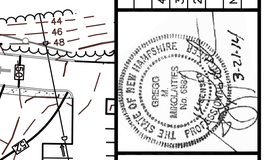


DATE: FEBRUARY 3, 2010
SCALE: 1" = 50'
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-SITE-ROAD.dwg

GRADING AND DRAINAGE NOTES:

1. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.

2. COMPACTION REQUIREMENTS:

LOCATION	MINIMUM COMPACTION*
BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREAS	90%

* ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.

3. ADJUST ALL MANHOLES, CATCHBASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.

4. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE DRIVEWAY ENTRANCES AND EXITS AND ALONG NEW CURBED AREAS.

5. ALL STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR APPROVED EQUAL).

6. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS CONSTRUCTION SPECIFICATIONS, LATEST REVISIONS.

7. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.

8. ALL PROPOSED CATCHBASINS SHALL BE EQUIPPED WITH OIL/GAS SEPARATOR HOODS AND 4' SUMPS.

9. THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL DRAINAGE STRUCTURES FREE OF SEDIMENT AND DEBRIS IMMEDIATELY UPON THE COMPLETION OF CONSTRUCTION.

10. THE CONTRACTOR SHALL COMPLY WITH THE CITY OF PORTSMOUTH APPROVED CONSTRUCTION MANAGEMENT PLAN.

11. SEE UTILITIES PLANS FOR ALL SITE UTILITY INFORMATION.

12. SEE EXISTING CONDITIONS PLAN FOR BENCH MARK INFORMATION.

13. PROJECT SURVEYOR SHALL PROVIDE PERMANENT PROJECT BENCHMARKS.

14. LIMITS AND GRADING FOR LANDSCAPE BERMS ALONG ROADWAY SHALL BE COORDINATED WITH LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.

EROSION CONTROL NOTES:

1. INSTALL EROSION CONTROL BARRIERS AS SHOWN AS FIRST ORDER OF WORK.

2. SEE GENERAL EROSION CONTROL NOTES AND DETAILS SHEET.

3. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED.

4. INSTALL STABILIZED CONSTRUCTION ENTRANCES AT LOCATIONS SHOWN ON PLAN.

5. LOCATIONS OF STABILIZED CONSTRUCTION ENTRANCES SHALL BE COORDINATED WITH THE CITY OF PORTSMOUTH IN ACCORDANCE WITH THE PHASING OF THE CONSTRUCTION.

6. INSPECT EROSION CONTROL MEASURES AFTER EACH RAIN OF 0.25 INCHES OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.

7. CONSTRUCT EXCELSIOR MAT ON ALL SLOPES STEEPER THAN 3:1.

8. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL MEASURES SHALL INCLUDE, BUT NOT LIMITED TO, SPRINKLING WATER ON UNSTABLE SOILS SUBJECT TO ARID CONDITIONS.

9. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.

10. ALL CATCHBASIN SUMPS AND PIPING SHALL BE THOROUGHLY CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS AFTER THE PROJECT HAS BEEN PAVED.

11. TEMPORARY SOIL STOCKPILE SHALL BE SURROUNDED BY SILT FENCE AND SHALL BE STABILIZED BY TEMPORARY EROSION CONTROL SEEDING. STOCKPILE AREAS TO BE LOCATED AS FAR AS POSSIBLE FROM THE DELINEATED EDGE OF WETLAND.

12. SAFETY FENCING SHALL BE PROVIDED AROUND STOCKPILES OVER 10 FT.

13. CONCRETE TRUCKS WILL BE REQUIRED TO WASH OUT (IF NECESSARY) SHOOTS ONLY WITHIN AREAS WHERE CONCRETE HAS BEEN PLACED. NO OTHER WASH OUT WILL BE ALLOWED.

14. SEE CONSTRUCTION SEQUENCE IN EROSION CONTROL NOTES AND DETAILS, SHEET R-7 FOR SPECIAL PROVISIONS FOR WETLAND IMPACTS.

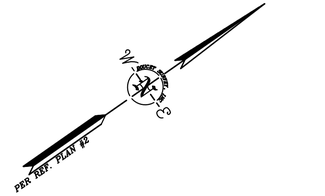
LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT GRADE
- EXISTING SPOT GRADE
- EXISTING CATCH BASIN
- EXISTING STORM DRAIN
- PROPOSED CATCH BASIN
- EXISTING DRAIN MANHOLE
- PROPOSED STORM DRAIN
- PROPOSED UNDERDRAIN
- PROPOSED INLET PROTECTION BARRIER
- STORM DRAIN FLOW DIRECTIONAL ARROW
- SILT FENCE

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)



PROPOSED DRAINAGE STRUCTURE TABLE

PCB#1 RIM=49.3 INV.IN=46.2 INV.OUT=46.1	PCB#8 RIM=45.7 INV.IN=41.3 INV.OUT=41.2
PCB#2 RIM=49.3 INV.OUT=46.2	PCB#9 RIM=51.05 INV.IN=46.6 INV.OUT=46.5
PCB#3 RIM=46.75 INVS.IN=43.8 INV.OUT=43.7	PCB#10 RIM=51.05 INV.IN=45.7 INV.OUT=45.6
PCB#4 RIM=46.75 INV.OUT=43.6	PCB#11 RIM=54.45 INV.IN=49.5 INV.OUT=49.4
PCB#5 RIM=46.25 INV.IN=43.4 INV.OUT=43.3	PCB#12 RIM=54.40 INV.IN=49.1 INV.OUT=49.0
PCB#6 RIM=46.25 INV.IN=43.3 INV.OUT=43.2	PCB#13 RIM=57.60 INV.OUT=52.3
PCB#7 RIM=45.65 INV.IN=40.2(12") INV.IN=41.35(4") INV.OUT=40.1	PCB#14 RIM=57.55 INV.IN=52.1 INV.OUT=52.0

~~CB #2464~~ PDMH#1
~~RIM ELEV.=49.7'~~ RIM=49.15
(1) 15" R.C.P.=45.9'
(2) 15" R.C.P.=45.9'
INV.IN=46.0

~~CB #2422~~ PDMH#2
~~RIM ELEV.=49.1'~~ RIM=49.15
(1) 15" R.C.P.=46.0'
INV.IN=46.1

~~CB #2451~~ PDMH#3
~~RIM ELEV.=48.6'~~ RIM=47.15
(1) 12" R.C.P.=42.8'
INV.IN=42.9

~~CB #2461~~ PDMH#4
~~RIM ELEV.=48.6'~~ RIM=47.15
(1) 12" R.C.P.=42.7'
(2) 12" R.C.P.=42.7'
INV.IN=42.8

~~CB #2330~~ PDMH#5
~~RIM ELEV.=46.5'~~ RIM=46.3
(1) 36" R.C.P.=39.7'
(2) 36" R.C.P.=39.5'
INV.IN=39.8(12")
INV.IN=42.30(4")

~~CB #2212~~ PDMH#6
~~RIM ELEV.=49.8'~~ RIM=46.4
(1) 36" R.C.P.=40.8'
(2) 36" R.C.P.=40.8'
INV.IN=40.9(12")
INV.IN=42.50(4")

~~CB #2265~~ PDMH#7
~~RIM ELEV.=50.8'~~ RIM=50.95
(1) 18" R.C.P.=46.3'
(2) 18" R.C.P.=46.3'
INV.IN=46.4

~~CB #2227~~ PDMH#8
~~RIM ELEV.=50.8'~~ RIM=50.95
(1) 24" R.C.P.=45.2'
(2) 24" R.C.P.=45.4'
INV.IN=45.5

~~CB #2035~~ PDMH#9
~~RIM ELEV.=54.9'~~ RIM=54.95
(1) 24" R.C.P.=49.0'
(2) 24" R.C.P.=49.1'
INVS.IN=49.2

~~CB #2041~~ PDMH#10
~~RIM ELEV.=54.9'~~ RIM=54.85
(1) 24" R.C.P.=48.7'
(2) 24" R.C.P.=48.7'
(3) 36" R.C.P.=48.7'
INV.IN=48.8

~~CB #1707~~ PDMH#11
~~RIM ELEV.=56.9'~~ RIM=57.40
(1) 18" C.M.P.=52.2'
(2) 18" C.M.P.=52.6'
(3) 18" R.C.P.=52.1'
INV.IN=52.7

~~CB #1706~~ PDMH#12
~~RIM ELEV.=57.9'~~ RIM=57.3
(1) 18" C.M.P.=51.3'
(2) 18" R.C.P.=51.8'
(3) 24" R.C.P.=51.1'
INV.IN=51.9

CB #1095
RIM ELEV.=60.1'
(1) 12" R.C.P.=56.3'

CB #1131
RIM ELEV.=59.5'
(1) 18" R.C.P.=56.0'
(2) 18" R.C.P.=56.1'

CB #1136
RIM ELEV.=58.9'
(1) 18" R.C.P.=55.2'
(2) 12" R.C.P.=55.1'
(3) 18" R.C.P.=54.4'

CB #1271
RIM ELEV.=57.6'
(1) 18" R.C.P.=53.4'
(2) 18" R.C.P.=53.4'

DRAINAGE STRUCTURE TABLE

CB #1350
RIM ELEV.=55.2'
(1) 6" C.P.P.=52.6'
(2) 18" R.C.P.=51.7'
(3) 18" R.C.P.=51.6'

CB #1355
RIM ELEV.=56.4'
(1) 12" R.C.P.=52.5'
(2) 12" R.C.P.=52.6'
(3) 8" P.V.C.=52.7'
(4) 18" R.C.P.=52.2'

CB #1375
RIM ELEV.=56.2'
(1) 12" R.C.P.=52.9'

CB #1376
RIM ELEV.=55.3'
(1) 18" R.C.P.=51.2'
(2) 18" R.C.P.=51.3'

CB #1534
RIM ELEV.=58.4'
(1) 12" R.C.P.=54.7'
(2) 12" R.C.P.=54.6'

CB #1549
RIM ELEV.=60.0"
(1) 12" R.C.P.=56.5'
(2) 12" R.C.P.=56.0'

CB #1555
RIM ELEV.=59.0'
(1) 12" R.C.P.=55.9'
(2) 12" R.C.P.=55.9'

CB #1619
RIM ELEV.=59.1'
(1) 12" R.C.P.=56.9'

CB #1626
RIM ELEV.=60.0'
(1) 12" R.C.P.=56.7'

CB #1629
RIM ELEV.=58.4'
(1) 12" R.C.P.=56.1'
(2) 12" R.C.P.=56.0'
(3) 12" R.C.P.=55.9'

CB #1651
~~RIM ELEV.=60.3'~~ RIM=60.25
(1) 12" R.C.P.=57.7'
(2) 12" R.C.P.=57.7'

CB #1830
~~RIM ELEV.=60.9'~~ RIM=61.3
(1) 12" R.C.P.=58.0'

CB #1999
RIM ELEV.=54.2'
(1) 24" R.C.P.=50.2'
(2) 24" R.C.P.=50.2'

CB #2061
RIM ELEV.=52.5'
(1) 18" R.C.P.=47.3'
(2) 24" R.C.P.=47.2'

CB #2240
RIM ELEV.=47.8'
CAN NOT OPEN

CB 2572
RIM=63.4'
15" RCP=59.6'
(TO DMH 2573)

CB #2617
RIM ELEV.=54.4'
(1) 15" R.C.P.=51.1'
(FILLED W/ DIRT)

CB #2664
RIM ELEV.=54.3'
(1) 15" R.C.P.=51.0'
(HALF FILLED W/ DIRT)
NOT OUTLET FOUND

CB 2672
PIPE PARTIALLY FILLED
RIM=59.4'
(1) 15" RCP=51.4'
(2) 15" RCP=51.2'

CB #4127
RIM ELEV.=46.7'
(1) 36" RCP=41.1'
(2) 36" RCP=41.0'

CB #4191
RIM ELEV.=58.8'
(1) 18" CMP=55.5'
(2) 18" CMP=55.6'

CB #4224
RIM ELEV.=58.9'
(1) 18" CMP=55.7'
(2) 18" CMP=55.8'

CB #4389
RIM ELEV.=54.8'
(1) 18" CMP=52.2'
(2) 12" RCP=52.4'

CB #4402
RIM ELEV.=54.9'
(1) 12" RCP=52.1'
(2) 12" RCP=52.2'

CB #4596
RIM ELEV.=54.4'
(1) 24" RCP=50.7'
(2) 24" RCP=50.5'
(3) 4" CPP=51.8'

CB #4646
RIM ELEV.=54.8'
(1) 24" RCP=50.8'
(2) 12" CPP=51.8'
(3) 8" PVC=51.7'
(4) 4" CPP

CB #4840
RIM ELEV.=52.6'
(1) 18" RCP=48.3'
(2) 18" RCP=48.5'

CB #4930
RIM ELEV.=53.0'
(1) 18" RCP=49.9'
(2) 18" RCP=50.1'

CB #5069
RIM ELEV.=55.4'
(1) 18" RCP=49.9'
(2) 18" RCP=49.9'
(3) 4" PVC=54.1'

CB #5164
RIM ELEV.=52.9'
(1) 12" CPP=46.8'
(2) 12" CPP=46.9'

CB #5169
RIM ELEV.=53.1'
12" CPP=46.7'

CB #5187
RIM ELEV.=56.3'
(1) 18" RCP=51.6'
(2) 18" RCP=51.8'

CB #5932
RIM ELEV.=61.1'
(1) 12" R.C.P.=54.3'
(2) 12" R.C.P.=54.3'

CB #5933
RIM ELEV.=60.6'
(1) 12" R.C.P.=55.6'

CB #6076
RIM ELEV.=60.2'
(1) 15" R.C.P.=52.1'
(2) 15" R.C.P.= (UNOBTAINABLE)
(3) 30" R.C.P.=50.9'
(4) 30" R.C.P.=51.0'

CB #6151
RIM ELEV.=59.2'
(1) 15" R.C.P.=51.3'
(2) 15" R.C.P.=51.2'

CB #6206
RIM ELEV.=59.6'
(1) INV. (30" RCP)=51.3'
(2) INV. (15" RCP)=OFFSET
(3) INV. (30" RCP)=51.2'

DMH #1264
RIM ELEV.=55.9'
(1) 18" R.C.P.=52.8'
(2) 18" R.C.P.=52.6'

DMH #1397
RIM ELEV.=57.2'
(1) 12" R.C.P.=54.3'
(2) 12" R.C.P.=54.4'

DMH #1592
RIM ELEV.=59.1'
(1) 12" R.C.P.=55.8'
(2) 12" R.C.P.=55.8'
(3) 12" R.C.P.=55.8'

DMH #2262
RIM ELEV.=51.9'
(1) 18" R.C.P.=46.7'(FULL OF DEBRIS)
(2) 24" R.C.P.=46.6'
(3) 18" R.C.P.=46.5'

DMH 2573
RIM=63.4'
(1) 15" RCP=59.4'
(2) 15" RCP=55.4'
(3) 15" RCP=55.2'

DMH #4111
RIM ELEV.=47.4'
(1) 30" RCP=42.1'
(2) 30" RCP=42.0'

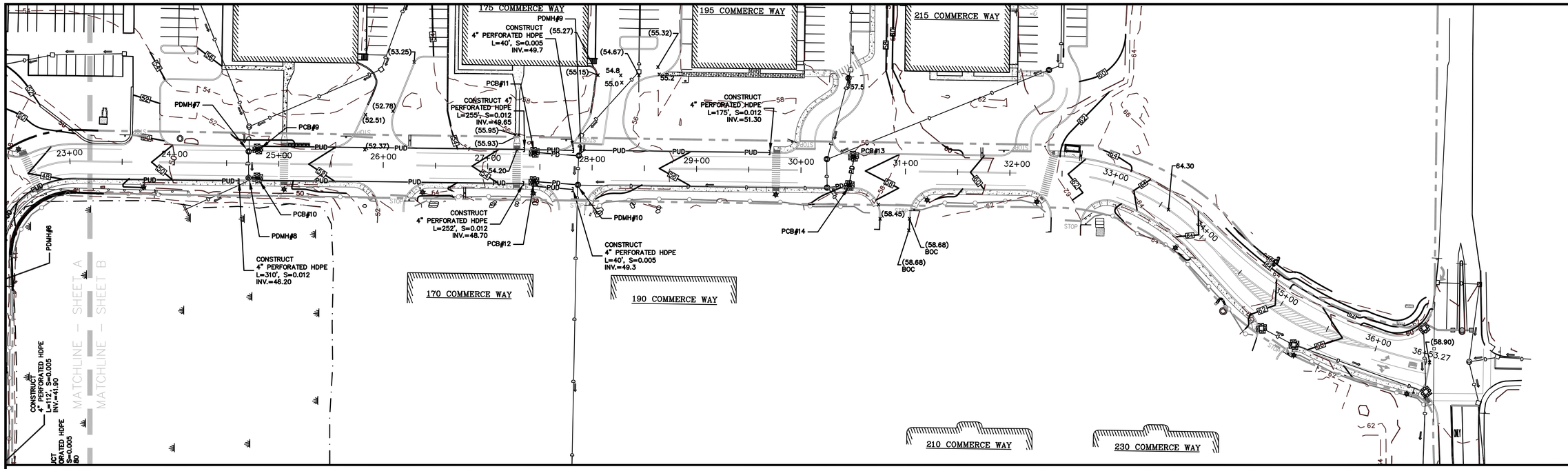
DMH #5931
RIM ELEV.=61.2'
(1) 12" R.C.P.=55.3'
(2) 15" R.C.P.=52.7'

PROPOSED UNDERDRAIN PLAN

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

R-4C



GRADING AND DRAINAGE NOTES:

1. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED FERTILIZER AND MULCH.

2. COMPACTION REQUIREMENTS:

LOCATION	MINIMUM COMPACTION*
BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREAS	90%

* ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM-2922.

3. ADJUST ALL MANHOLES, CATCHBASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.

4. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE DRIVEWAY ENTRANCES AND EXITS AND ALONG NEW CURBED AREAS.

5. ALL STORM DRAINAGE PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HANCOR HI-Q, ADS N-12 OR APPROVED EQUAL).

6. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM WITH APPLICABLE FEDERAL, STATE AND CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS CONSTRUCTION SPECIFICATIONS, LATEST REVISIONS.

7. ALL STORM DRAIN CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.

8. ALL PROPOSED CATCHBASINS SHALL BE EQUIPPED WITH OIL/GAS SEPARATOR HOODS AND 4' SUMPS.

9. THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL DRAINAGE STRUCTURES FREE OF SEDIMENT AND DEBRIS IMMEDIATELY UPON THE COMPLETION OF CONSTRUCTION.

10. THE CONTRACTOR SHALL COMPLY WITH THE CITY OF PORTSMOUTH APPROVED CONSTRUCTION MANAGEMENT PLAN.

11. SEE UTILITIES PLANS FOR ALL SITE UTILITY INFORMATION.

12. SEE EXISTING CONDITIONS PLAN FOR BENCH MARK INFORMATION.

13. PROJECT SURVEYOR SHALL PROVIDE PERMANENT PROJECT BENCHMARKS.

14. LIMITS AND GRADING FOR LANDSCAPE BERMS ALONG ROADWAY SHALL BE COORDINATED WITH LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.

EROSION CONTROL NOTES:

1. INSTALL EROSION CONTROL BARRIERS AS SHOWN AS FIRST ORDER OF WORK.

2. SEE GENERAL EROSION CONTROL NOTES AND DETAILS SHEET.

3. PROVIDE INLET PROTECTION BARRIERS AROUND ALL EXISTING AND PROPOSED STORM DRAINAGE INLETS WITHIN THE WORK LIMITS AND MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED.

4. INSTALL STABILIZED CONSTRUCTION ENTRANCES AT LOCATIONS SHOWN ON PLAN.

5. LOCATIONS OF STABILIZED CONSTRUCTION ENTRANCES SHALL BE COORDINATED WITH THE CITY OF PORTSMOUTH IN ACCORDANCE WITH THE PHASING OF THE CONSTRUCTION.

6. INSPECT EROSION CONTROL MEASURES AFTER EACH RAIN OF 0.25 INCHES OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE STRUCTURE HEIGHT.

7. CONSTRUCT EXCELSIOR MAT ON ALL SLOPES STEEPER THAN 3:1.

8. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL MEASURES SHALL INCLUDE, BUT NOT LIMITED TO, SPRINKLING WATER ON UNSTABLE SOILS SUBJECT TO ARID CONDITIONS.

9. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.

10. ALL CATCHBASIN SUMPS AND PIPING SHALL BE THOROUGHLY CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS AFTER THE PROJECT HAS BEEN PAVED.

11. TEMPORARY SOIL STOCKPILE SHALL BE SURROUNDED BY SILT FENCE AND SHALL BE STABILIZED BY TEMPORARY EROSION CONTROL SEEDING. STOCKPILE AREAS TO BE LOCATED AS FAR AS POSSIBLE FROM THE DELINEATED EDGE OF WETLAND.

12. SAFETY FENCING SHALL BE PROVIDED AROUND STOCKPILES OVER 10 FT.

13. CONCRETE TRUCKS WILL BE REQUIRED TO WASH OUT (IF NECESSARY) SHOOTS ONLY WITHIN AREAS WHERE CONCRETE HAS BEEN PLACED. NO OTHER WASH OUT WILL BE ALLOWED.

14. SEE CONSTRUCTION SEQUENCE IN EROSION CONTROL NOTES AND DETAILS, SHEET R-7 FOR SPECIAL PROVISIONS FOR WETLAND IMPACTS.

LEGEND

—36—	EXISTING CONTOUR
36	PROPOSED CONTOUR
x 88.9	PROPOSED SPOT GRADE
x (88.9)	EXISTING SPOT GRADE
□	EXISTING CATCH BASIN
—D—	EXISTING STORM DRAIN
■	PROPOSED CATCH BASIN
◎	EXISTING DRAIN MANHOLE
—PD—	PROPOSED STORM DRAIN
—PUD—	PROPOSED UNDERDRAIN
	PROPOSED INLET PROTECTION BARRIER
⇐	STORM DRAIN FLOW DIRECTIONAL ARROW
—o—	SILT FENCE

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

PROPOSED DRAINAGE STRUCTURE TABLE

PCB#1
RIM=49.3
INV.IN=46.2
INV.OUT=46.1

PCB#2
RIM=49.3
INV.OUT=46.2

PCB#3
RIM=46.75
INVS.IN=43.8
INV.OUT=43.7

PCB#4
RIM=46.75
INV.OUT=43.6

PCB#5
RIM=46.25
INV.IN=43.4
INV.OUT=43.3

PCB#6
RIM=46.25
INV.IN=43.3
INV.OUT=43.2

PCB#7
RIM=45.65
INV.IN=40.2(12")
INV.IN=41.35(4")
INV.OUT=40.1

PCB#8
RIM=45.7
INV.IN=41.3
INV.OUT=41.2

PCB#9
RIM=51.05
INV.IN=46.6
INV.OUT=46.5

PCB#10
RIM=51.05
INV.IN=45.7
INV.OUT=45.6

PCB#11
RIM=54.45
INV.IN=49.5
INV.OUT=49.4

PCB#12
RIM=54.40
INV.IN=49.1
INV.OUT=49.0

PCB#13
RIM=57.60
INV.OUT=52.3

PCB#14
RIM=57.55
INV.IN=52.1
INV.OUT=52.0

DRAINAGE STRUCTURE TABLE

~~CB #2464~~ PDMH#1
~~RIM ELEV.=48.7'~~ **RIM=49.15**
(1) 15" R.C.P.=45.9'
(2) 15" R.C.P.=45.9'
INV.IN=46.0

~~CB #2422~~ PDMH#2
~~RIM ELEV.=49.1'~~ **RIM=49.15**
(1) 15" R.C.P.=46.0'
INV.IN=46.1

~~CB #2451~~ PDMH#3
~~RIM ELEV.=46.6'~~ **RIM=47.15**
(1) 12" R.C.P.=42.8'
INV.IN=42.9

~~CB #2401~~ PDMH#4
~~RIM ELEV.=46.6'~~ **RIM=47.15**
(1) 12" R.C.P.=42.7'
(2) 12" R.C.P.=42.7'
INV.IN=42.8

~~CB #2330~~ PDMH#5
~~RIM ELEV.=46.5'~~ **RIM=46.3**
(1) 36" R.C.P.=39.7'
(2) 36" R.C.P.=39.5'
INV.IN=39.8(12")
INV.IN=42.30(4")

~~CB #2212~~ PDMH#6
~~RIM ELEV.=46.8'~~ **RIM=46.4**
(1) 36" R.C.P.=40.8'
(2) 36" R.C.P.=40.8'
INV.IN=40.9(12")
INV.IN=42.50(4")

~~CB #2265~~ PDMH#7
~~RIM ELEV.=50.8'~~ **RIM=50.95**
(1) 18" R.C.P.=46.3'
(2) 18" R.C.P.=46.3'
INV.IN=46.4

~~CB #2227~~ PDMH#8
~~RIM ELEV.=50.8'~~ **RIM=50.95**
(1) 24" R.C.P.=45.2'
(2) 24" R.C.P.=45.4'
INV.IN=45.5

~~CB #2035~~ PDMH#9
~~RIM ELEV.=54.9'~~ **RIM=54.95**
(1) 24" R.C.P.=49.0'
(2) 24" R.C.P.=49.1'
INVS.IN=49.2

~~CB #2041~~ PDMH#10
~~RIM ELEV.=54.9'~~ **RIM=54.85**
(1) 24" R.C.P.=48.7'
(2) 24" R.C.P.=48.7'
(3) 36" R.C.P.=48.7'
INV.IN=48.8

~~CB #1767~~ PDMH#11
~~RIM ELEV.=56.9'~~ **RIM=57.40**
(1) 18" C.M.P.=52.2'
(2) 18" C.M.P.=52.6'
(3) 18" R.C.P.=52.1'
INV.IN=52.7

~~CB #1768~~ PDMH#12
~~RIM ELEV.=57.0'~~ **RIM=57.3**
(1) 18" C.M.P.=51.3'
(2) 18" R.C.P.=51.8'
(3) 24" R.C.P.=51.1'
INV.IN=51.9

CB #1095
RIM ELEV.=60.1'
(1) 12" R.C.P.=56.3'

CB #1131
RIM ELEV.=59.5'
(1) 18" R.C.P.=56.0'
(2) 18" R.C.P.=56.1'

CB #1136
RIM ELEV.=58.9'
(1) 18" R.C.P.=55.2'
(2) 12" R.C.P.=55.1'
(3) 18" R.C.P.=54.4'

CB #1271
RIM ELEV.=57.6'
(1) 18" R.C.P.=53.4'
(2) 18" R.C.P.=53.4'

CB #1350
RIM ELEV.=55.2'
(1) 6" C.P.P.=52.6'
(2) 18" R.C.P.=51.7'
(3) 18" R.C.P.=51.6'

CB #1355
RIM ELEV.=56.4'
(1) 12" R.C.P.=52.5'
(2) 12" R.C.P.=52.6'
(3) 8" P.V.C.=52.7'
(4) 18" R.C.P.=52.2'

CB #1375
RIM ELEV.=56.2'
(1) 12" R.C.P.=52.9'

CB #1376
RIM ELEV.=55.3'
(1) 18" R.C.P.=51.2'
(2) 18" R.C.P.=51.3'

CB #1534
RIM ELEV.=58.4'
(1) 12" R.C.P.=54.7'
(2) 12" R.C.P.=54.6'

CB #1549
RIM ELEV.=60.0''
(1) 12" R.C.P.=56.5'
(2) 12" R.C.P.=56.0'

CB #1555
RIM ELEV.=59.0'
(1) 12" R.C.P.=55.9'
(2) 12" R.C.P.=55.9'

CB #1619
RIM ELEV.=59.1'
(1) 12" R.C.P.=56.9'

CB #1626
RIM ELEV.=60.0'
(1) 12" R.C.P.=56.7'

CB #1629
RIM ELEV.=58.4'
(1) 12" R.C.P.=56.1'
(2) 12" R.C.P.=56.0'
(3) 12" R.C.P.=55.9'

CB #1651
~~RIM ELEV.=60.3'~~ **RIM=60.25**
(1) 12" R.C.P.=57.7'
(2) 12" R.C.P.=57.7'

CB #1830
~~RIM ELEV.=60.9'~~ **RIM=61.3**
(1) 12" R.C.P.=58.0'

CB #1999
RIM ELEV.=54.2'
(1) 24" R.C.P.=50.2'
(2) 24" R.C.P.=50.2'

CB #2061
RIM ELEV.=52.5'
(1) 18" R.C.P.=47.3'
(2) 24" R.C.P.=47.2'

CB #2240
RIM ELEV.=47.8'
CAN NOT OPEN

CB 2572
RIM=63.4'
15" RCP=59.6'
(TO DMH 2573)

CB #2617
RIM ELEV.=54.4'
(1) 15" R.C.P.=51.1'
(FILLED W/ DIRT)

CB #2664
RIM ELEV.=54.3'
(1) 15" R.C.P.=51.0'
(HALF FILLED W/ DIRT)
NOT OUTLET FOUND

CB 2672
PIPE PARTIALLY FILLED
RIM=59.4'
(1) 15" RCP=51.4'
(2) 15" RCP=51.2'

CB #4127
RIM ELEV.=46.7'
(1) 36" RCP=41.1'
(2) 36" RCP=41.0'

CB #4191
RIM ELEV.=58.8'
(1) 18" CMP=55.5'
(2) 18" CMP=55.6'

CB #4224
RIM ELEV.=58.9'
(1) 18" CMP=55.7'
(2) 18" CMP=55.8'

CB #4389
RIM ELEV.=54.8'
(1) 18" CMP=52.2'
(2) 12" RCP=52.4'

CB #4402
RIM ELEV.=54.9'
(1) 12" RCP=52.1'
(2) 12" RCP=52.2'

CB #4596
RIM ELEV.=54.4'
(1) 24" RCP=50.7'
(2) 24" RCP=50.5'
(3) 4" CPP=51.8'

CB #4646
RIM ELEV.=54.8'
(1) 24" RCP=50.8'
(2) 12" CPP=51.8'
(3) 8" PVC=51.7'
(4) 4" CPP

CB #4840
RIM ELEV.=52.6'
(1) 18" RCP=48.3'
(2) 18" RCP=48.5'

CB #4930
RIM ELEV.=53.0'
(1) 18" RCP=49.9'
(2) 18" RCP=50.1'

CB #5069
RIM ELEV.=55.4'
(1) 18" RCP=49.9'
(2) 18" RCP=49.9'
(3) 4" PVC=54.1'

CB #5164
RIM ELEV.=52.9'
(1) 12" CPP=46.8'
(2) 12" CPP=46.9'

CB #5169
RIM ELEV.=53.1'
12" CPP=46.7'

CB #5187
RIM ELEV.=56.3'
(1) 18" RCP=51.6'
(2) 18" RCP=51.8'

CB #5932
RIM ELEV.=61.1'
(1) 12" R.C.P.=54.3'
(2) 12" R.C.P.=54.3'

CB #5933
RIM ELEV.=60.6'
(1) 12" R.C.P.=55.6'

CB #6076
RIM ELEV.=60.2'
(1) 15" R.C.P.=52.1'
(2) 15" R.C.P.= (UNOBTAINABLE)
(3) 30" R.C.P.=50.9'
(4) 30" R.C.P.=51.0'

CB #6151
RIM ELEV.=59.2'
(1) 15" R.C.P.=51.3'
(2) 15" R.C.P.=51.2'

CB #6206
RIM ELEV.=59.6'
(1) INV. (30" RCP)=51.3'
(2) INV. (15" RCP)=OFFSET
(3) INV. (30" RCP)=51.2'

DMH #1264
RIM ELEV.=55.9'
(1) 18" R.C.P.=52.8'
(2) 18" R.C.P.=52.6'

DMH #1397
RIM ELEV.=57.2'
(1) 12" R.C.P.=54.3'
(2) 12" R.C.P.=54.4'

DMH #1592
RIM ELEV.=59.1'
(1) 12" R.C.P.=55.8'
(2) 12" R.C.P.=55.8'
(3) 12" R.C.P.=55.8'

DMH #2262
RIM ELEV.=51.9'
(1) 18" R.C.P.=46.7'(FULL OF DEBRIS)
(2) 24" R.C.P.=46.6'
(3) 18" R.C.P.=46.5'

DMH 2573
RIM=63.4'
(1) 15" RCP=59.4'
(2) 15" RCP=55.4'
(3) 15" RCP=55.2'

DMH #4111
RIM ELEV.=47.4'
(1) 30" RCP=42.1'
(2) 30" RCP=42.0'

DMH #5931
RIM ELEV.=61.2'
(1) 12" R.C.P.=55.3'
(2) 15" R.C.P.=52.7'

PROPOSED UNDERDRAIN PLAN

No.	Description	Appd	Date
	Revisions		
1.	REVISED DRIVEWAY ENTRANCES & UTILITIES	PMC	11/14/11
2.	PLAN SET FOR CITY COUNCIL	PMC	12/19/11
3.	PLANNING BOARD SUBMISSION	PMC	03/26/12
4.	BID DRAWINGS	PMC	03/21/14

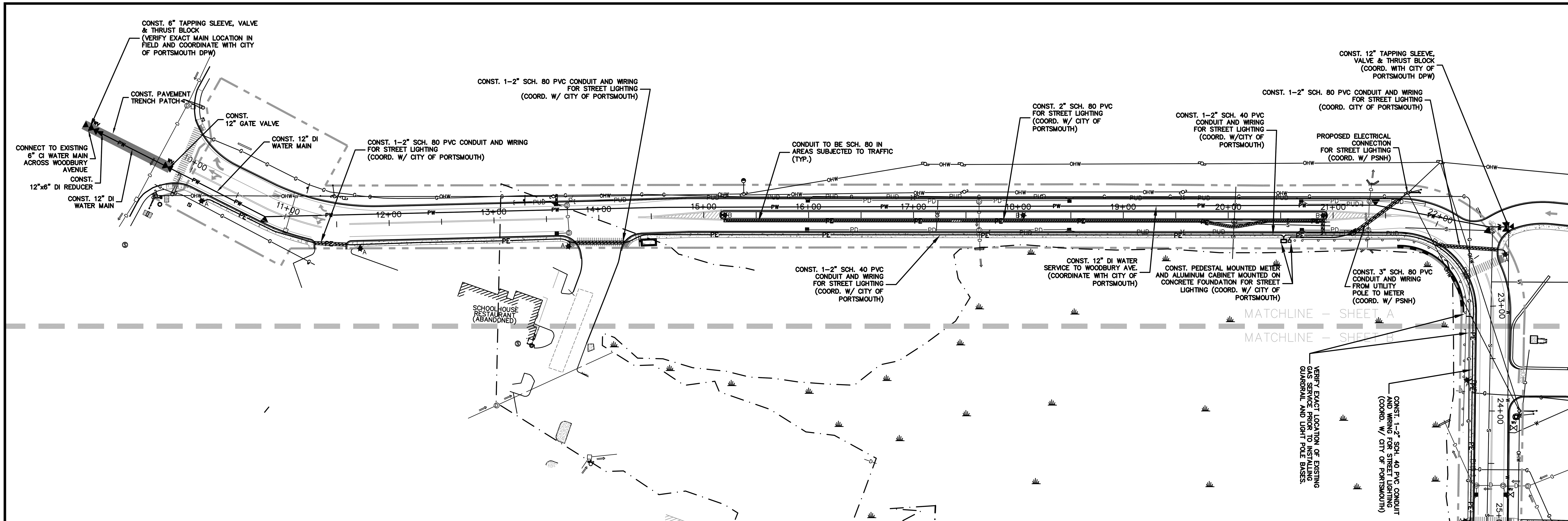
STATE OF NEW HAMPSHIRE GREGG M. MIKOLAITIS No. 9647 REGISTERED PROFESSIONAL ENGINEER 3-21-14

DATE: FEBRUARY 3, 2010
SCALE: 1" = 40'
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS COMMERCE WAY PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

R-4D



UTILITY NOTES:

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES, AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE OWNER.

2. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
   ELECTRIC LIGHTING – PUBLIC SERVICE OF NEW HAMPSHIRE
   WATER/SEWER – CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS

3. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION.

4. SEE GRADING, DRAINAGE & EROSION CONTROL PLAN FOR PROPOSED GRADING AND EROSION CONTROL MEASURES.

5. ALL WORK WITHIN TOWN ROWS SHALL BE COORDINATED WITH CITY OF PORTSMOUTH DEPARTMENT OF PUBLIC WORKS.

6. CONTRACTOR SHALL PHASE WORK IN ORDER TO MAINTAIN CONTINUOUS SERVICE TO EXISTING BUSINESSES. CONTRACTOR SHALL COORDINATE TEMPORARY SERVICES TO ABUTTERS WITH THE UTILITY COMPANY AND AFFECTED BUSINESS.

7. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.

8. THE EXACT LOCATION OF NEW UTILITY SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANIES.

9. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE.

10. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLES.

11. THE CONTRACTOR SHALL OBTAIN, PAY FOR, AND COMPLY WITH ALL REQUIRED PERMITS, ARRANGE FOR ALL INSPECTIONS, AND SUBMIT COPIES OF ACCEPTANCE CERTIFICATES TO THE OWNER PRIOR TO THE COMPLETION OF THIS PROJECT.

12. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.

13. THE CONTRACTOR SHALL CONTACT "DIG-SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL HAVE THE "DIG-SAFE" NUMBER ON SITE AT ALL TIMES.

14. CONTRACTOR TO SUBMIT AS-BUILT PLANS ON REPRODUCIBLE MYLARS AND IN DIGITAL FORMAT (.DWG FILES) TO THE OWNER AND ENGINEER UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER.

15. SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.

16. EXISTING DRAIN AND SEWER LINES SHALL BE VIDEO TAPED BY THE CITY OF PORTSMOUTH PRIOR TO PLACING BINDER COURSE. THE CITY OF PORTSMOUTH SHALL DETERMINE BASED ON VIDEO TAPED EVIDENCE IF IMPROVEMENTS TO EXISTING SEWER AND DRAIN LINES ARE REQUIRED DUE TO BLOCKAGE, DETERIORATION, ETC.

17. ALL EXISTING SEWER FRAMES AND COVERS SHALL BE REPLACED.

18. ALL WATER MAIN SHUT OFF VALVES SHALL BE INSPECTED AND SHALL WORK WITH TIES TO ALL VALVES.

19. ALL HYDRANTS TO BE INSPECTED AND MUST MEET ALL CITY SPECIFICATIONS.

20. ALL HYDRANTS ARE TO BE PAINTED TO CITY COLOR SPECIFICATIONS.

21. EXISTING WATER MAIN CROSSING 230 COMMERCE WAY TO BE CUT AND CAPPED AT THE CONNECTION IN PORTSMOUTH BOULEVARD. CONTRACTOR TO COORDINATE WITH CITY OF PORTSMOUTH DPW FOR EXACT LOCATION.

LEGEND:

Symbol	Description
—— UGE ——	EXISTING UNDERGROUND ELECTRIC & COMMUNICATION
—— W ——	EXISTING WATER MAIN
—— S ——	EXISTING SANITARY SEWER
—— D ——	EXISTING STORM DRAIN
—— G ——	EXISTING GAS SERVICE
—— PD ——	PROPOSED STORM DRAIN
—— PE ——	PROPOSED UNDERGROUND ELECTRIC
—— PE&C ——	PROPOSED UNDERGROUND ELECTRIC & COMMUNICATION
—— PC ——	PROPOSED UNDERGROUND COMMUNICATION
□	EXISTING CATCHBASIN
■	PROPOSED CATCHBASIN
◎	PROPOSED DRAIN MANHOLE
Ⓢ	EXISTING SEWER MANHOLE
◉	EXISTING ELECTRIC MANHOLE
	TRAFFIC SIGNAL
	EXISTING HYDRANT
◀	PROPOSED THRUST BLOCK
▨	PVC CONDUIT TO BE SCH. 80 IN VEHICULAR TRAVELWAYS
A✱	PROPOSED LIGHT POLE (SINGLE LUMINAIRE)
B✱	PROPOSED LIGHT POLE (DOUBLE LUMINAIRE)

SEWER STRUCTURE TABLE

SMH #1016
RIM ELEV.=61.2'
(1) 12" P.V.C.=54.5' DROP INLET
(2) 12" P.V.C.=49.2'

SMH #1085
RIM ELEV.=60.7'
(1) 10" D.I.=49.8'
(2) 10" D.I.=49.8'
(3) 10" D.I.=49.7'

SMH #1094
RIM ELEV.=61.1'
(1) 10" D.I.=53.2'
(2) 10" P.V.C.=48.7'
10" R.C.P.=47.2' CENTER CHANNEL

SMH #1272
RIM ELEV.=57.4'
(1) 8" PIPE=46.3'
(2) 8" PIPE=45.3'

SMH #1432
RIM ELEV.=54.9'
(1) 8" P.V.C.=45.6'
(2) 10" D.I.=44.4'
(3) 10" D.I.=44.3'

SMH #1437
RIM ELEV.=54.3'
(1) 10" D.I.=44.0'
(2) 10" D.I.=44.3'
(3) 10" D.I.=44.0'
(4) 10" D.I.=43.9'

SMH #G
RIM ELEV.=54.3'
(1) 10" D.I.=43.7'
(2) 10" D.I.=43.7'

SMH #1544
RIM ELEV.=59.2'
(1) 6" CLAY =54.3'
(2) 6" CLAY =54.0'
(3) 10" CLAY =54.0'

SMH #1593
RIM ELEV.=59.0'
(1) 6" PIPE=53.5'
10" CLAY =53.3' CENTER CHANNEL

SMH #1798
RIM ELEV.=62.7'
(1) 10" D.I.=52.7' DRY, NO FLOW
(2) 10" D.I.=52.9'

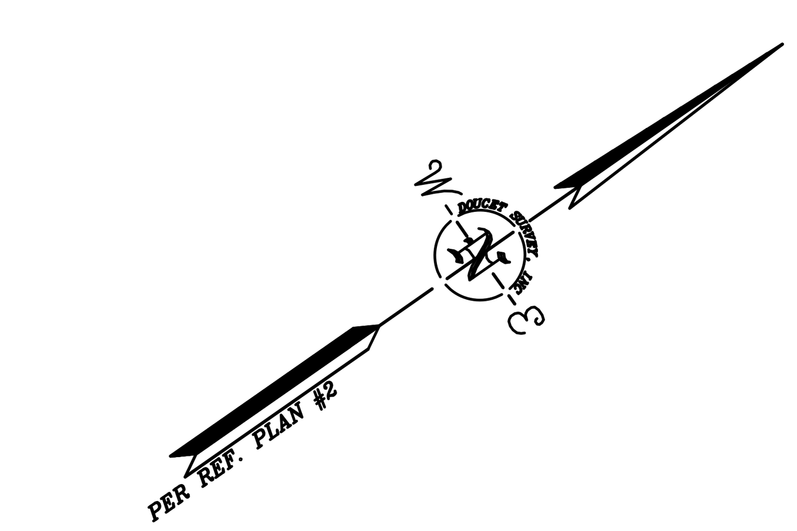
SMH #2034
RIM ELEV.=56.4'
(1) 8" P.V.C.=47.5' CENTER CHANNEL

SMH #2051
RIM ELEV.=52.9'
(1) 8" P.V.C.=42.8' CENTER CHANNEL

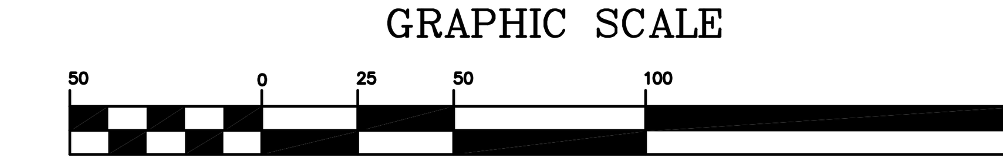
SMH #2211
RIM ELEV.=47.5'
(1) 8" P.V.C.=33.1' CENTER CHANNEL
(2) 8" P.V.C.=37.7'
(3) 8" P.V.C.=34.7'

SMH #2669
RIM=58.2'
FORCE MAIN &
PUMP STATION
DOES NOT APPEAR
TO EFFECT SITE

SMH #4096
RIM ELEV.=47.5'
SEPTIC TANK
TOP OF TANK=44.7'



GRAPHIC SCALE



(IN FEET)

No.	Description	Appd	Date
4.	BID DRAWINGS	PMC	03/21/14
3.	PLANNING BOARD SUBMISSION	PMC	03/26/12
2.	PLAN SET FOR CITY COUNCIL	PMC	12/19/11
	REVISED DRIVEWAY ENTRANCES & UTILITIES	PMC	11/14/11

Revisions

DATE: FEBRUARY 3, 2010
SCALE:
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
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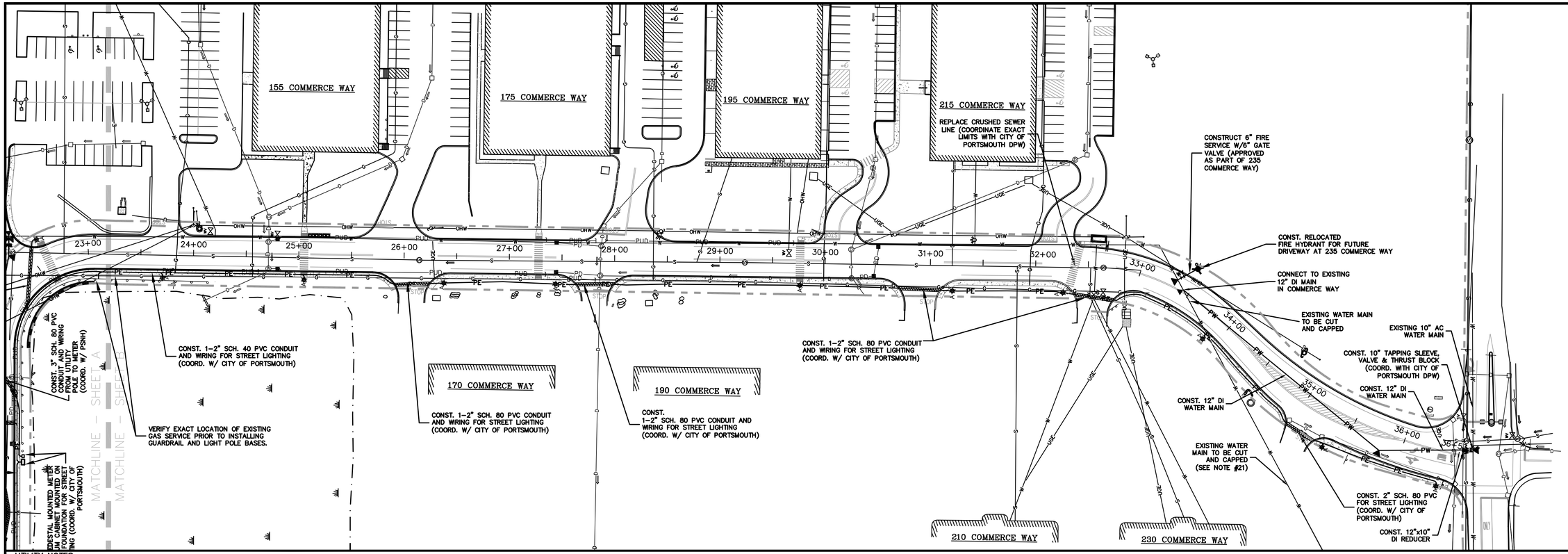
UTILITIES PLAN

R-5A



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LEGEND:

- UGE — EXISTING UNDERGROUND ELECTRIC & COMMUNICATION
- W — EXISTING WATER MAIN
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- G — EXISTING GAS SERVICE
- PD — PROPOSED STORM DRAIN
- PE — PROPOSED UNDERGROUND ELECTRIC
- PE&C — PROPOSED UNDERGROUND ELECTRIC & COMMUNICATION
- PC — PROPOSED UNDERGROUND COMMUNICATION
- EXISTING CATCHBASIN
- PROPOSED CATCHBASIN
- PROPOSED DRAIN MANHOLE
- EXISTING SEWER MANHOLE
- EXISTING ELECTRIC MANHOLE
- TRAFFIC SIGNAL
- EXISTING HYDRANT
- PROPOSED THRUST BLOCK
- PVC CONDUIT TO BE SCH. 80 IN VEHICULAR TRAVELWAYS
- A — PROPOSED LIGHT POLE (SINGLE LUMINAIRE)
- B — PROPOSED LIGHT POLE (DOUBLE LUMINAIRE)

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(1) 12" P.V.C.=54.5' DROP INLET
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(1) 10" D.I.=49.8'
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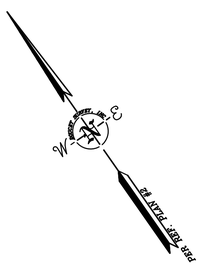

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

UTILITIES PLAN

No.	Description	Date
	Revisions	
1.	REVISED DRIVEWAY ENTRANCES & UTILITIES	PMC 11/14/11
2.	PLAN SET FOR CITY COUNCIL	PMC 12/19/11
3.	PLANNING BOARD SUBMISSION	PMC 03/26/12
4.	REVISE PER DPW DIRECTOR COMMENTS	PMC 07/26/12
5.	REMOVAL OF PORTSMOUTH BLVD SCOPE	PMC 12/20/13
6.	BID DRAWINGS	PMC 03/21/14

DATE: FEBRUARY 3, 2010
SCALE: ____
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-STE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
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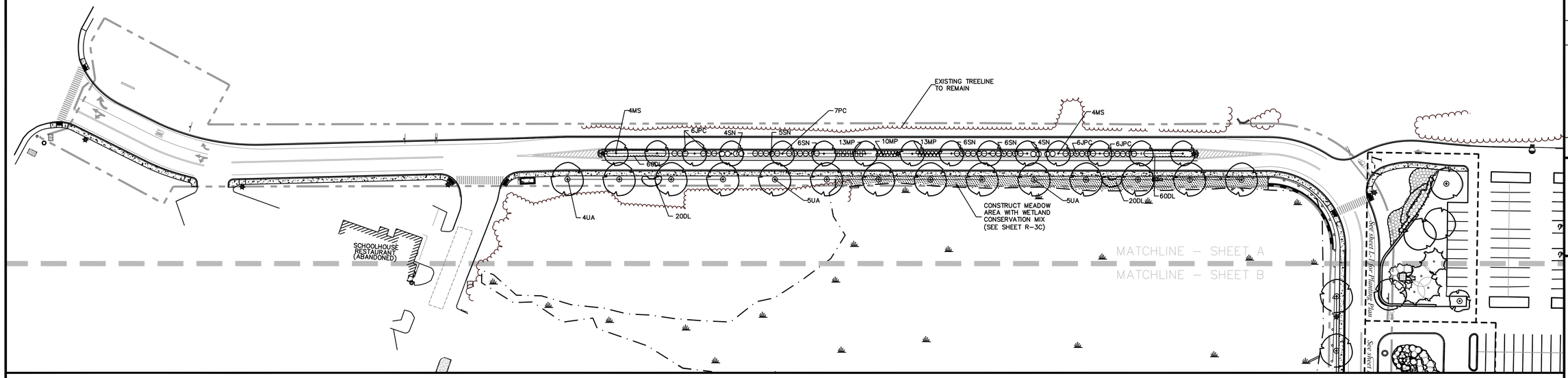
R–5B



STREET PLANTING SCHEDULE:

STREET TREES

CODE	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
UA	14	ULMUS AMERICANA 'PRINCETON'	PRINCETON AMERICAN ELM	2 ½ – 3" CALIPER	B & B
PA	5	PLATANUS ACERIFOLIA	LONDON PLANETREE	2 ½ – 3" CALIPER	B & B
PC	7	PYRUS CALLERYANA 'CHANTICLEER'	CHANTICLEER FLOWERING PEAR	2 ½ – 3" CALIPER	B & B
MS	8	MALUS 'SPRING SNOW'	SPRING SNOW CRABAPPLE	2 ½ – 3" CALIPER	B & B

SHRUBS:

CODE	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
SN	31	SPIREA NIPPONICA 'SNOWMOUND'	SNOWMOUND SPIREA	2– 2 ½' HT	CONTAINER
JPC	18	JUNIPERUS CHINENSIS PFITZERIANA 'COMPACTA'	COMPACTA PFITZER JUNIPER	#3	CONTAINER

GROUNDCOVERS & PERENNIALS:

CODE	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
MP	36	MISCANTHUS VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	#2	CONTAINER
DL	160	HEMEROCALLIS 'BIG TIME HAPPY'	BIG TIME HAPPY DAYLILY	#2	CONTAINER

LANDSCAPE NOTES

1. Design is based on drawings by Tighe & Bond and may require adjustment due to actual field conditions.
2. The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
3. Erosion Control shall be in place prior to construction.
4. Erosion Control to consist of Hay Bales and Erosion Control Fabric shall be staked in place between the work and Water bodies, Wetlands and/or drainage ways prior to any construction.
5. It is the contractor's responsibility to verify drawings provided are to the correct scale prior to any bid, estimate or installation. A graphic scale bar has been provided on each sheet for this purpose. If it is determined that the scale of the drawing is incorrect, the landscape architect will provide a set of drawings at the correct scale, at the request of the contractor.
6. The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
7. Trees to Remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Snow fence shall be located at the drip line at a minimum and shall include any and all surface roots. Do not fill or mulch on the trunk flare. Do not disturb roots. In order to protect the integrity of the roots, branches, trunk and bark of the tree(s) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s). Do not store any refuse or construction materials or portalets within the tree protection area.
8. Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
9. The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call DIGSAFE at 1-888-344-7233.
10. The Contractor shall procure any required permits prior to construction.
11. Prior to any landscape construction activities Contractor shall test all existing loam and loam from off-site intended to be used for lawns and plant beds using a thorough sampling throughout the supply. Soil testing shall indicate levels of pH, nitrates, macro and micro nutrients, texture, soluble salts, and organic matter. Contractor shall provide Landscape Architect with test results and recommendations from the testing facility along with soil amendment plans as necessary for the proposed plantings to thrive. All loam to be used on site shall be amended as approved by the Landscape Architect prior to placement.
12. Contractor shall notify landscape architect or owner's representative immediately if at any point during demolition or construction a site condition is discovered which may negatively impact the completed project. This includes, but is not limited to, unforeseen drainage problems, unknown subsurface conditions, and discrepancies between the plan and the site. If a contractor is aware of a potential issue, and does not bring it to the attention of the landscape architect or owner's representative immediately, they may be responsible for the labor and materials associated with correcting the problem.
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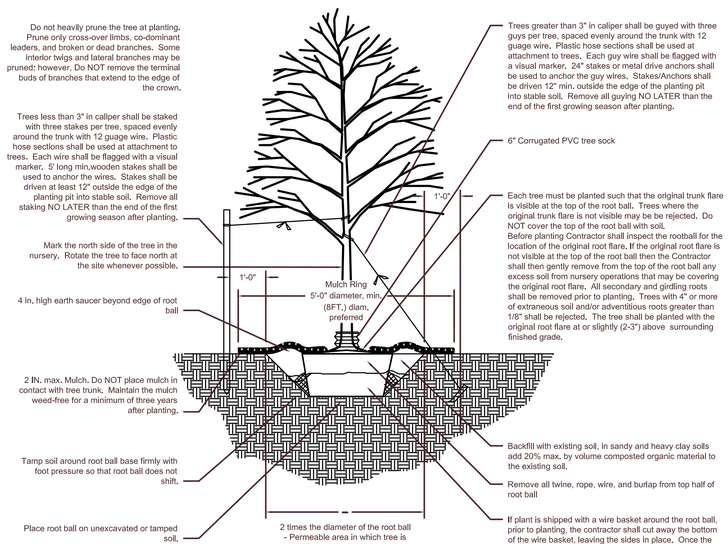
14. A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.
15. All plants shall be legibly tagged with proper botanical name.
16. The Contractor shall guarantee all plants for not less than one year from time of acceptance.
17. Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not affect the right of inspection and rejection during or after the progress of the work. The Owner reserves the right to inspect and/or select all trees at the place of growth and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
18. No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
19. All landscaping shall be provided with either of the following
    a. An underground sprinkling system
    b. An outside hose attachment within 150 feet
20. If an automatic irrigation system is installed, all irrigation valve boxes shall be located within planting bed areas.
21. All disturbed areas will be dressed with 6" of topsoil and planted as noted on the plans or seeded except plant beds. New plant beds shall be prepared to a depth of 12" with 75% loam and 25% compost. Existing plant beds shall be amended with 3" of compost tilled in, to the extent possible without disturbing existing tree roots.
22. Trees, ground cover, and shrub beds shall be mulched to a depth of 2" with one-year-old, well-composted, shredded native bark not longer than 4" in length and ½" in width, free of woodchips and sawdust. Mulch for ferns and herbaceous perennials shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 5' diameter min. saucer. Color of mulch shall be black.
23. In no case shall mulch touch the stem of a plant nor shall mulch ever be more than 3" thick total (including previously applied mulch) over the root ball of any plant.
24. Secondary lateral branches of deciduous trees overhanging vehicular and pedestrian travel ways shall be pruned up to a height of 6' to allow clear and safe passage of vehicles and pedestrians under tree canopy.
25. Landscape Architect is not responsible for the means and methods of the contractor.
26. **MAINTENANCE:** Begin maintenance immediately after planting. Provide complete maintenance and service as required to promote and maintain healthy growth, including, without limitation, watering, fertilizing, pruning, trimming, cultivating, weeding, leaf removal, treating for insects and disease, resetting plants to proper grade and upright position, and other maintenance work, for thirty days after the date of final acceptance.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

SEE SHEETS L-1 TO L-10 PREPARED BY WOODBURN & COMPANY FOR DETAILED LANDSCAPING ALONG THE FRONTAGE OF THE COMMERCE PARK BUILDINGS



Tree Planting Detail, Typ.

LEGEND:

- R.O.W. LINE
- PROPOSED SIGN
- PROPOSED CONCRETE SIDEWALK
- PROPOSED MEADOW AREA
- PROPOSED CURB
- PROPOSED GUARDRAIL
- PROPOSED ARROW
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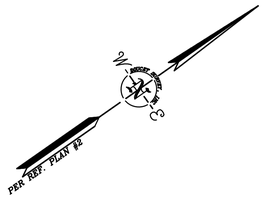

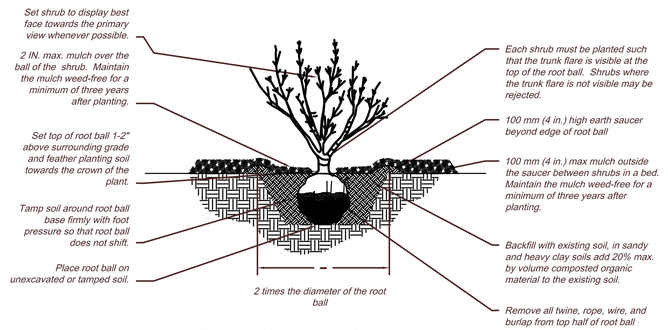

Shrub Planting Detail, Typ.

FINAL PLANT LOCATIONS SHALL BE STAKED FOR APPROVAL BY CIVIL ENGINEER PRIOR TO DIGGING FOR PLACEMENT.

MASTER ROADWAY LANDSCAPE PLAN

No.	Description	Appd	Date
1.	COORD. W/ L.A. DWGS	GMM	02/27/12
2.	PB SUBMISSION	PMC	03/26/12
3.	ADDED MEADOW AREA	PMC	04/19/12
4.	BID DRAWINGS	PMC	03/21/14

Revisions

DATE: DECEMBER 19, 2011
SCALE:
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 21898
FILE NO: 21898-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS COMMERCE WAY PORTSMOUTH, NH

WOODBURN & COMPANY
Landscape Architecture, LLC
103 Kent Place
Newmarket, NH 03857
Tel 603.659.5949
Fax: 603.659.5939

Tighe&Bond
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177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
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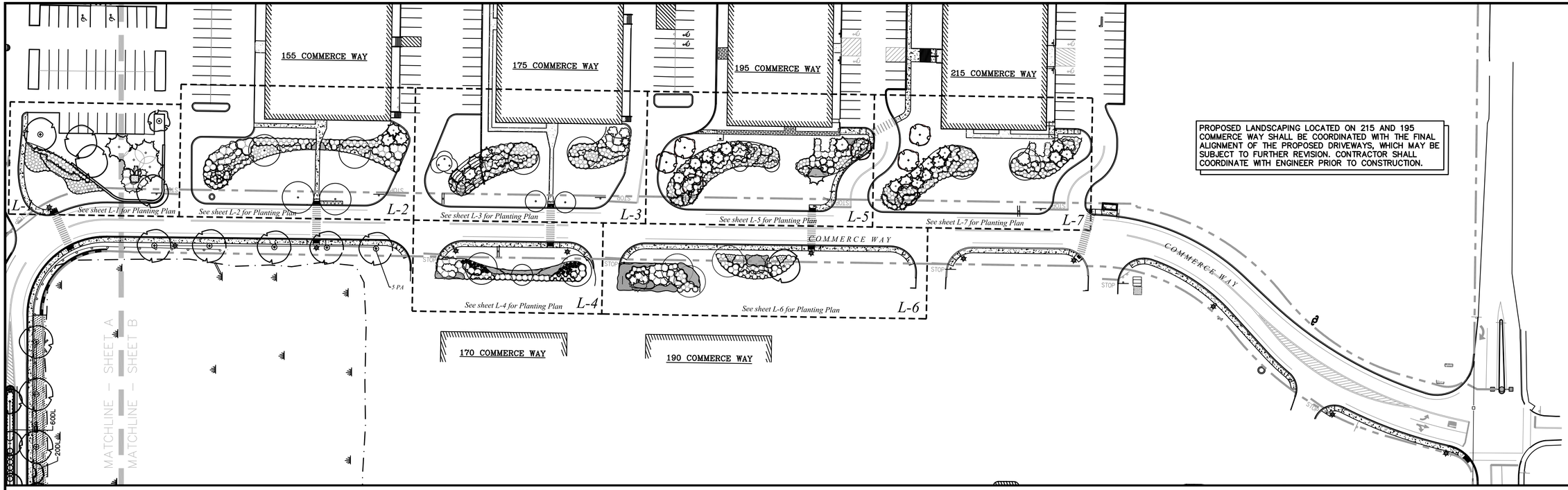

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SEE SHEETS L-1 TO L-10 PREPARED BY WOODBURN & COMPANY FOR DETAILED LANDSCAPING ALONG THE FRONTAGE FOR THE COMMERCE PARK BUILDINGS

LANDSCAPE NOTES

1. Design is based on drawings by Tighe & Bond and may require adjustment due to actual field conditions.
2. The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
3. Erosion Control shall be in place prior to construction.
4. Erosion Control to consist of Hay Bales and Erosion Control Fabric shall be staked in place between the work and Water bodies, Wetlands and/or drainage ways prior to any construction.
5. It is the contractor's responsibility to verify drawings provided are to the correct scale prior to any bid, estimate or installation. A graphic scale bar has been provided on each sheet for this purpose. If it is determined that the scale of the drawing is incorrect, the landscape architect will provide a set of drawings at the correct scale, at the request of the contractor.
6. The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
7. Trees to Remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Snow fence shall be located at the drip line at a minimum and shall include any and all surface roots. Do not fill or mulch on the trunk flare. Do not disturb roots. In order to protect the integrity of the roots, branches, trunk and bark of the tree(s) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s). Do not store any refuse or construction materials or portalets within the tree protection area.
8. Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
9. The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call DIGSAFE at 1-888-344-7233.
10. The Contractor shall procure any required permits prior to construction.
11. Prior to any landscape construction activities Contractor shall test all existing loam and loam from off-site intended to be used for lawns and plant beds using a thorough sampling throughout the supply. Soil testing shall indicate levels of pH, nitrates, macro and micro nutrients, texture, soluble salts, and organic matter. Contractor shall provide Landscape Architect with test results and recommendations from the testing facility along with soil amendment plans as necessary for the proposed plantings to thrive. All loam to be used on site shall be amended as approved by the Landscape Architect prior to placement.
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STREET PLANTING SCHEDULE:

STREET TREES

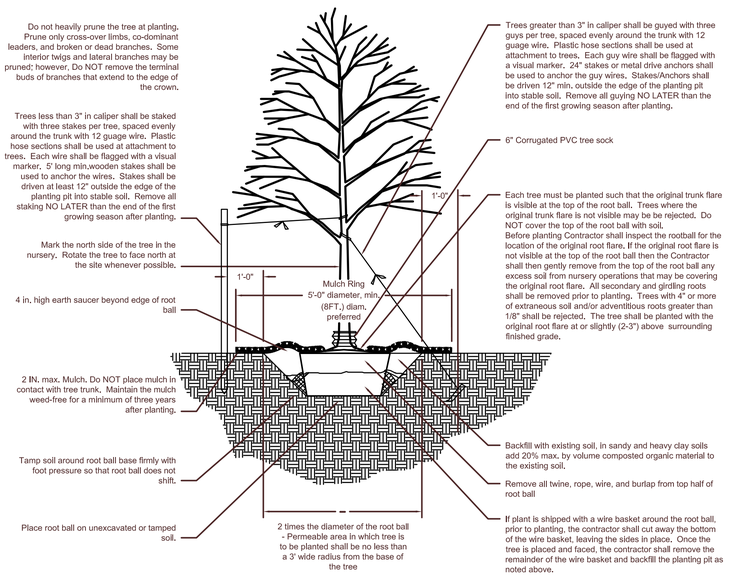
CODE	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
UA	14	ULMUS AMERICANA 'PRINCETON'	PRINCETON AMERICAN ELM	2 ½ – 3" CALIPER	B & B
PA	5	PLATANUS ACERIFOLIA	LONDON PLANETREE	2 ½ – 3" CALIPER	B & B
PC	7	PYRUS CALLERYANA 'CHANTICLEER'	CHANTICLEER FLOWERING PEAR	2 ½ – 3" CALIPER	B & B
MS	8	MALUS 'SPRING SNOW'	SPRING SNOW CRABAPPLE	2 ½ – 3" CALIPER	B & B

SHRUBS:

CODE	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
SN	31	SPIREA NIPPONICA 'SNOWMOUND'	SNOWMOUND SPIREA	2– 2 ½' HT	CONTAINER
JPC	18	JUNIPERUS CHINENSIS PFITZERIANA 'COMPACTA'	COMPACTA PFITZER JUNIPER	#3	CONTAINER

GROUNDCOVERS & PERENNIALS:

CODE	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
MP	36	MISCANTHUS VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	#2	CONTAINER
DL	160	HEMEROCALLIS 'BIG TIME HAPPY'	BIG TIME HAPPY DAYLILY	#2	CONTAINER



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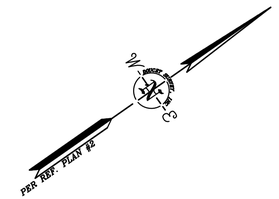

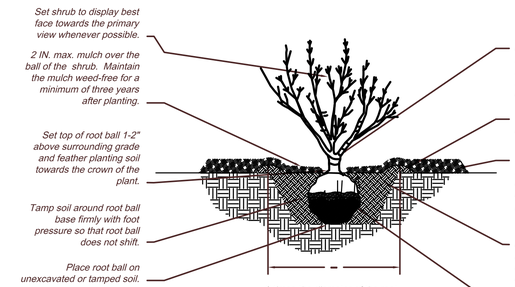

Shrub Planting Detail, Typ.

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MASTER ROADWAY LANDSCAPE PLAN

No.	Description	Appd	Date
	Revisions		
4.	REVISED BID DRAWINGS	PMC	03/5/15
3.	BID DRAWINGS	PMC	03/21/14
2.	PB SUBMISSION	PMC	03/26/12
1.	COORD. W/ L.A. DWGS	GMM	02/27/12

DATE: DECEMBER 19, 2011
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 21898
FILE NO: 21898-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS COMMERCE WAY PORTSMOUTH, NH

WOODBURN & COMPANY
Landscape Architecture, LLC
103 Kent Place
Newmarket, NH 03857
Tel 603.659.5949
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Tighe&Bond
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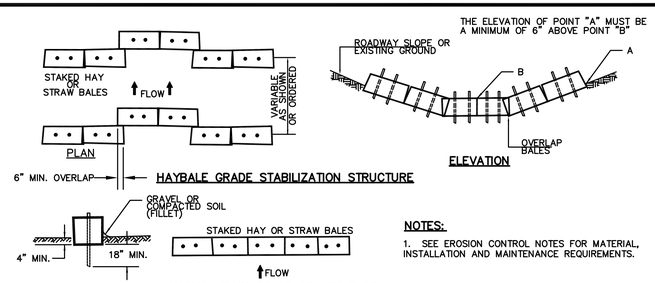
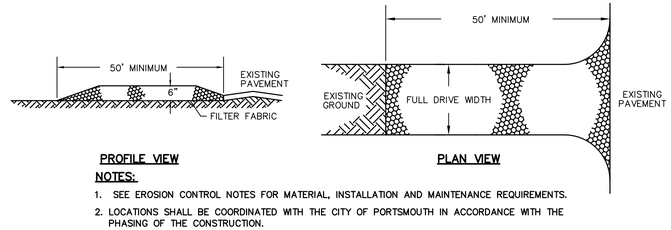




PROJECT NAME AND LOCATION

ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NEW HAMPSHIRE

LATITUDE: 43° 05' 30" N
LONGITUDE: 70° 47' 15" W

DESCRIPTION

THE PROJECT CONSISTS OF THE RECONSTRUCTION OF COMMERCE WAY AND ASSOCIATED IMPROVEMENTS INCLUDING DRAINAGE SYSTEMS, UNDERGROUND UTILITIES AND LANDSCAPING.

SOIL CHARACTERISTICS

THE EXISTING ROADWAY'S UNDERLYING SOILS ARE CLASSIFIED AS CHATFIELD–HOLLIS–CANTON 3–8% SLOPES, VERY STONY; OSSIPEE MUCKY PEAT; UDORTHENTS, SMOOTHED; AND URBAN LAND.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY 3.6± ACRES.

CONSTRUCTION SEQUENCE

1. INSTALL ALL TEMPORARY EROSION CONTROL MEASURES.
2. ALL WETLAND EXCAVATION ACTIVITIES WILL BE PERFORMED FROM THE EXISTING ROADWAY. NO EQUIPMENT WILL ENTER THE WETLAND AREA. THIS PREVENTS SEEDS AND FRAGMENTS FROM BEING TRUCKED OFF SITE.
3. CUT VEGETATION FROM IMPACT AREA AND PLACE IN BAGS FOR DISPOSAL OR INCINERATION TO PREVENT DISPERSAL.
4. HAUL EXCAVATED MATERIALS TO AN APPROVED LOCATION FOR DISPOSAL AND/OR INCINERATION.
5. INSTALL REQUIRED BACKFILL PER ENGINEERED DESIGN AND SUBSEQUENT INSTALLATION OF FOOTINGS FOR RETAINING WALL.
6. COMMENCE WITH ROADWAY DEMOLITION OPERATIONS AND SUBSEQUENT UTILITY CONDUIT AND DUCT INSTALLATION, AND DRAINAGE INSTALLATION.
7. CONSTRUCT BASE AND SUBBASE OF ROADWAY AND SIDEWALKS.
8. CONSTRUCT PAVEMENT AND LANDSCAPING AND LANDSCAPE ISLANDS ON COMMERCE WAY.
9. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND SITE IS STABILIZED, REMOVE EROSION CONTROL MEASURES AND SEDIMENT THAT HAS BEEN TRAPPED BY THE DEVICES.
10. BACKFILL TEMPORARY WETLAND IMPACT AREAS TO 6 INCHES BELOW FINAL GRADE.
11. INSTALL SIX INCHES OF FRESH SCREENED LOAM AND APPLY WETLAND SEED MIX* OR EQUIVALENT TO RESTORE AND STABILIZE TEMPORARY WETLAND IMPACT AREAS.

NAME OF RECEIVING WATERS

THE SITE STORMWATER RUNOFF WILL BE COLLECTED IN A CLOSED DRAINAGE SYSTEM AND ULTIMATELY DISCHARGED TO THE PISCATAQUA RIVER.

EROSION AND SEDIMENT CONTROLS AND STABILIZATION PRACTICES

STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES AND DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY WILL NOT OCCUR FOR MORE THAN TWENTY ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.

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

A. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABILISHED;
C. A MINIMUM OF 3" OF NON–EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR
D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH HAYBALE BARRIERS AND SILT FENCES. ALL STORM DRAIN INLETS SHALL BE PROVIDED WITH STORM DRAIN INLET PROTECTION. ALL CATCHBASINS WILL BE COVERED WITH A GEOTEXTILE FABRIC PRIOR TO THE BASE PAVEMENT COURSE BEING PLACED. STONE RIPRAP SHALL BE PROVIDED AT THE OUTLETS OF DRAINAGE PIPES WHERE EROSIVE VELOCITIES ARE ENCOUNTERED.

ALL ROADWAYS AND PARKING LOTS ARE TO BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. ALL CUT AND FILL SLOPES ARE TO BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. WINTER STABLIZATION MEASURES ARE REQUIRED DURING THE WINTER SEASON.

OFF SITE VEHICLE TRACKING

LOCATIONS OF STABILIZED CONSTRUCTION ENTRANCES SHALL BE COORDINATED WITH THE CITY OF PORTSMOUTH IN ACCORDANCE WITH THE PHASING OF THE CONSTRUCTION.

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES OF EROSION AND SEDIMENT CONTROLS

A. GENERAL

THESE ARE THE GENERAL INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE USED TO IMPLEMENT THE PLAN.

- ALL CONTROL MEASURES WILL BE INSPECTED AT LEAST ONCE EACH WEEK AND FOLLOWING ANY STORM EVENT OF 0.5 INCHES OR GREATER.
- ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
- BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE OR HAYBALE BARRIERS WHEN IT HAS REACHED ONE THIRD THE HEIGHT OF THE FENCE OR BALE.
- ALL DIVERSION DIKES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.
- TEMPORARY SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND UNHEALTHY GROWTH.
- A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION.
- THE CONTRACTOR'S SITE SUPERINTENDENT WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.

B. FILTERS

1. STRAW/HAY BALES
   A. SHEET FLOW APPLICATIONS
      1. BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE ON THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.
      2. ALL BALES SHALL BE EITHER WIRE–BOUND OR STRING–TIED. BALES SHALL BE INSTALLED SO THAT BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES TO PREVENT DETERIORATION OF THE BINDINGS.
      3. THE BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH OF FOUR (4) INCHES. AFTER THE BALES ARE STAKED AND CHINKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE BARRIER. BACKFILL SOIL SHALL CONFORM TO THE GROUND LEVEL ON THE DOWNHILL SIDE AND SHALL BE BUILT UP TO FOUR (4) INCHES AGAINST THE UPHILL SIDE OF THE BARRIER. IDEALLY, BALES SHOULD BE PLACED TEN (10) FEET AWAY FROM THE TOE OF SLOPE.
      4. EACH BALE SHALL BE SECURELY ANCHORED BY AT LEAST TWO (2) STAKES OR REBARS DRIVEN THROUGH THE BALE. THE FIRST SAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. STAKES OR RE–BARS SHALL BE DRIVEN DEEP ENOUGH INTO THE GROUND TO SECURELY ANCHOR THE BALES.
      5. THE GAPS BETWEEN BALES SHALL BE CHINKED (FILLED BY WEDGING) WITH STRAW/HAY TO PREVENT WATER FROM ESCAPING BETWEEN THE BALES.
2. SILT FENCE
   A. SYNTHETIC FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPYLENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE FOLLOWING REQUIREMENTS:

PHYSICAL PROPERTY	TEST	REQUIREMENTS
FILTERING EFFICIENCY	VTM–51	75% MINIMUM
TENSILE STRENGTH AT 20% MAXIMUM ELONGATION*	VTM–52	EXTRA STRENGTH 50 LB/LIN IN (MIN) STANDARD STRENGTH 30 LB/LIN IN (MIN)
FLOW RATE	VTM–51	0.3 GAL/SF/MIN (MIN)

* REQUIREMENTS REDUCED BY 50 PERCENT AFTER SIX (6) MONTHS OF INSTALLATION.

SYNTHETIC FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF SIX (6) MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 DEGREES F TO 120 DEGREES F.

   B. THE HEIGHT OF A SILT FENCE SHALL NOT EXCEED THIRTY–SIX (36) INCHES.
   C. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT SUPPORT POST, WITH A MINIMUM SIX (6) INCH OVERLAP, AND SECURELY SEALED.
   D. POSTS SHALL BE SPACED A MAXIMUM OF TEN (10) FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 16 INCHES).
   E. A TRENCH SHALL BE EXCAVATED APPROXIMATELY SIX (6) INCHES WIDE AND SIX (6) INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
   F. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST ONE (1) INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND NO MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACES.
   G. THE "STANDARD STRENGTH" FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND EIGHT (8) INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
   H. WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISIONS OF ITEM (G) APPLYING.
   I. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
   J. SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREAS HAS BEEN PERMANENTLY STABILIZED.
3. SEQUENCE OF INSTALLATION
   SEDIMENT BARRIERS SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM.
4. MAINTENANCE
   A. STORM DRAIN INLET PROTECTION AND SILT FENCE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THEY SHALL BE REPAIRED IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.
   B. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
   C. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE THIRD (1/3) THE HEIGHT OF THE BARRIER.
   D. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

C. MULCHING

1. TIMING
   IN ORDER FOR MULCH TO BE EFFECTIVE, IT MUST BE IN PLACE PRIOR TO MAJOR STORM EVENTS. THERE ARE TWO (2) TYPES OF STANDARDS WHICH SHALL BE USED TO ASSURE THIS.
   A. 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 PREDICTIONS, USUALLY BY CONTACTING THE NATIONAL WEATHER SERVICE IN CONCORD, TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.
   B. REQUIRED MULCHING WITHIN A SPECIFIED TIME PERIOD.
      THE TIME PERIOD CAN RANGE FROM 14 TO 21 DAYS OF INACTIVITY ON A AREA, THE LENGTH OF TIME VARYING WITH SITE CONDITIONS. PROFESSIONAL JUDGMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOIL ERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE TIME RESTRICTION.
2. GUIDELINES FOR WINTER MULCH APPLICATION.
   WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON) IT SHALL BE AT A RATE OF 6,000 POUNDS OF HAY OR STRAW PER ACRE. A TACKIFIER MAY BE ADDED TO THE MULCH.
3. MAINTENANCE
   ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED.

D. VEGETATIVE PRACTICE

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

AFTER ROUGH GRADING OF THE SUBGRADE HAS BEEN COMPLETED AND APPROVED, THE SUB GRADE SURFACE SHALL BE SCARIFIED TO A DEPTH OF FOUR INCHES. THEN FURNISH AND INSTALL A LAYER OF LOAM PROVIDING A ROLLED FOUR INCH THICKNESS. ANY DEPRESSIONS WHICH MAY OCCUR DURING ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM, REGRADED AND REROLLED UNTIL THE SURFACE IS TRUE TO THE FINISHED LINES AND GRADES. ALL LOAM NECESSARY TO COMPLETE THE WORK UNDER THIS SECTION SHALL BE SUPPLIED BY THE SITE SUBCONTRACTOR.

ALL LARGE STIFF CLODS, LUMPS, BRUSH, ROOTS, DEBRIS, GLASS, STUMPS, LITTER AND OTHER FOREIGN MATERIAL AS WELL AS STONES OVER ONE INCH IN DIAMETER SHALL BE REMOVED FROM THE LOAM AND DISPOSED OF OFF SITE, AND THE LOAM SHALL BE RAKED SMOOTH AND EVEN.

THE LOAM SHALL BE PREPARED TO RECEIVE SEED BY REMOVING STONES, FOREIGN OBJECTS AND GRADING TO ELIMINATE WATER POCKETS AND IRREGULARITIES PRIOR TO PLACING SEED. FINISH GRADING SHALL RESULT IN STRAIGHT UNIFORM GRADES AND SMOOTH, EVEN SURFACES WITHOUT IRREGULARITIES TO LOW POINTS.

SHAPE THE AREAS TO THE LINES AND GRADES REQUIRED. THE SITE SUBCONTRACTOR'S ATTENTION IS DIRECTED TO THE SCHEDULING OF LOAMING AND SEEDING OF GRADED AREAS TO PERMIT SUFFICIENT TIME FOR THE STABILIZATION OF THESE AREAS. IT SHALL BE THE SITE SUBCONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE AREAS DURING THE CONSTRUCTION PERIOD AND REGRADE, LOAM AND RESEED ANY DAMAGED AREAS.

ALL AREAS DISTURBED BY CONSTRUCTION WITHIN THE PROPERTY LINES AND NOT COVERED BY STRUCTURES, PAVEMENT, OR MULCH SHALL BE LOAMED AND SEEDED.

LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 2 TONS PER ACRE IN ORDER TO PROVIDE A PH VALUE OF 5.5 TO 6.5.

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.

SOIL CONDITIONERS AND FERTILIZER SHALL BE APPLIED AT THE RECOMMENDED RATES AND SHALL BE THOROUGHLY WORKED INTO THE LOAM. LOAM SHALL BE RAKED UNTIL THE SURFACE IS FINELY PULVERIZED, SMOOTH AND EVEN, AND THEN COMPACTED TO AN EVEN SURFACE CONFORMING TO THE REQUIRED LINES AND GRADES WITH APPROVED ROLLERS WEIGHING BETWEEN 4 1/2 POUNDS AND 5 1/2 POUNDS PER INCH OF WIDTH.

SEED SHALL BE SOWN AT THE RATE SHOWN BELOW. SOWING SHALL BE DONE ON A CALM, DRY DAY, PREFERABLY BY MACHINE, BUT IF BY HAND, ONLY BY EXPERIENCED WORKMEN. 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 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. MULCH THAT BLOWS OR WASHES AWAY SHALL BE REPLACED IMMEDIATELY AND ANCHORED 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 WITH GRASS SHALL BE RESEEDED, AND ALL NOXIOUS WEEDS REMOVED.

THE SITE SUBCONTRACTOR SHALL PROTECT AND MAINTAIN THE SEEDED AREAS UNTIL ACCEPTED, INCLUDING CUTTING, AS SPECIFIED HEREIN AFTER UNDER MAINTENANCE AND PROTECTION.

UNLESS OTHERWISE APPROVED, SEEDING SHALL BE DONE DURING THE APPROXIMATE PERIODS OF EARLY SPRING TO SEPTEMBER 30, WHEN SOIL CONDITIONS AND WEATHER ARE SUITABLE FOR FOR SUCH WORK.

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

SEEDING RATE	
CREEPING RED FESCUE	20 LBS/ACRE
TALL FESCUE	20 LBS/ACRE
REDTOP	2 LBS/ACRE

IN NO CASE SHALL THE WEED CONTENT EXCEED 1 PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH STATE AND FEDERAL SEED LAWS.

FOR TEMPORARY PLANTINGS AFTER SEPTEMBER TO EARLY SPRING AND FOR TEMPORARY PROTECTION OF DISTURBED AREAS:

- FOLLOW ABOVE SLOPE, LOAM DEPTH AND GRADING REQUIREMENTS.
- FERTILIZER SHALL BE SPREAD AND WORKED INTO THE SURFACE AT A RATE OF 300 POUNDS PER ACRE.
- MULCHING AND SEEDING SHALL BE APPLIED AT THE FOLLOWING RATES:

WINTER RYE (FALL SEEDING)	2.5 LBS/1,000 S.F.
OATS (SPRING SEEDING)	2 LBS./1,000S.F.
MULCH	1.5 TONS/ACRE

E. STORM DRAIN INLET PROTECTION

1. SILT SACK SPECIFICATIONS
   A. SACK SHALL BE INSTALLED WITHIN CATCHBASIN, MAKING SURE EMPTY STRAPS ARE LAID FLAT OUTSIDE THE BASIN.
   B. SACK SHALL FIT TIGHTLY WITHIN THE BASIN TO PREVENT SEDIMENT FROM GOING THROUGH ANY GAPS.
   C. ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAINSTORM AND REPAIRS MADE AS NECESSARY.
   D. SEDIMENT SHOULD BE REMOVED FROM THE DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE–THIRD THE DEPTH OF THE TRAP.
   E. SILT SACK SHALL BE REMOVED UPON THE COMPLETION OF PROJECT.

F. STABILIZED CONSTRUCTION ENTRANCE

1. SPECIFICATIONS
   A. AGGREGATE SIZE: USE TWO (2) INCHES STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
   B. AGGREGATE THICKNESS: NOT LESS THAN SIX (6) INCHES.
   C. WIDTH: TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS.
   D. LENGTH: AS REQUIRED, BUT NOT LESS THAN FIFTY (50) FEET.
   E. GEOTEXTILE: TO BE PLACED OVER THE ENTIRE AREA TO BE COVERED WITH AGGREGATE. PIPING OF SURFACE WATER UNDER ENTRANCE SHALL BE PROVIDED AS REQUIRED.

G. WINTER STABILIZATION NOTES

A. PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85 % 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.

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

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

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES THE SILT FENCES SHALL BE INSTALLED PRIOR TO COMMENCING ANY CLEARING OR GRADING OF THE SITE. STRUCTURAL CONTROLS SHALL BE INSTALLED CONCURRENTLY WITH THE APPLICABLE ACTIVITY. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN TWENTY ONE (21) DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN FOURTEEN (14) DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, SILT FENCES AND HAYBALE BARRIERS AND ANY EARTH/DIKES WILL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.

WASTE DISPOSAL

A. WASTE MATERIALS

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN A DUMPSTER. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ON SITE. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.

B. HAZARDOUS WASTE

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.

C. SANITARY WASTE

ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

SPILL PREVENTION

A. MATERIAL MANAGEMENT PRACTICES

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:

GOOD HOUSEKEEPING:

THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ON SITE DURING THE CONSTRUCTION PROJECT:

- AN EFFORT WILL BE MADE TO STORE ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB.
- ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
- MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
- THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
- SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
- WHENEVER POSSIBLE ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.

HAZARDOUS PRODUCTS:

THE FOLLOWING PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:

- PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
- ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.
- SURPLUS PRODUCT THAT MUST BE DISPOSED OF WILL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.

B. PRODUCT SPECIFICATION PRACTICES

THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:

PETROLEUM PRODUCTS:
ALL ON SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS:
FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS. ONCE APPLIED FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS:
ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS:
CONCRETE TRUCKS WILL DISCHARGE AND WASH OUT SURPLUS CONCRETE OR DRUM WASH WATER IN A CONTAINED AREA ON SITE.

C. SPILL CONTROL PRACTICES

IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

- MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
- THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM RECURRING AND HOW TO CLEANUP THE SPILL IF IT RECURS. A DESCRIPTION OF THE SPILL, ITS CAUSE, AND THE CLEANUP MEASURES WILL BE INCLUDED.
- THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY–TO–DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.

DUST CONTROL

A. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD. DUST CONTROL METHODS SHALL INCLUDE, BUT NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING. DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS.

NOTES:
1. SEE EROSION CONTROL NOTES FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS.

HAYBALE DETAILS
NOT TO SCALE

NOTES:
1. SEE EROSION CONTROL NOTES FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS.
2. LOCATIONS SHALL BE COORDINATED WITH THE CITY OF PORTSMOUTH IN ACCORDANCE WITH THE PHASING OF THE CONSTRUCTION.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

NOTES:
1. SEE EROSION CONTROL NOTES FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS.

SILT FENCE
NOT TO SCALE

NOTES:
1. SEE EROSION CONTROL NOTES FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS.

SILT SACK
NOT TO SCALE

EROSION CONTROL NOTES AND DETAILS

No.	Description	Appd	Date
3.	BID DRAWINGS	PMC	03/21/14
2.	PLANNING BOARD SUBMISSION	PMC	03/26/12
1.	PLAN SET FOR CITY COUNCIL	PMC	12/19/11

Revisions

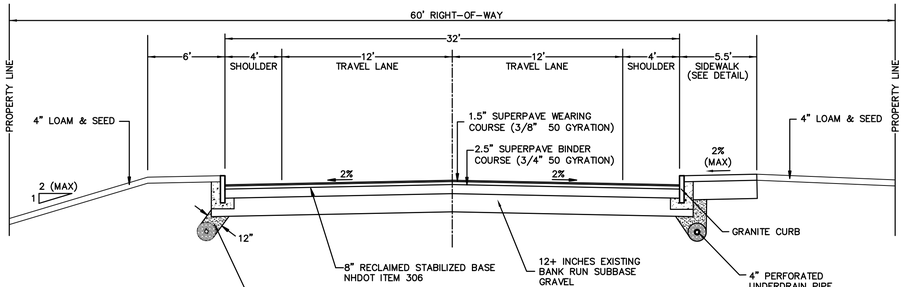
GREGG M. MIKOLAITES No. 6684
3-21-14

DATE: FEBRUARY 3, 2010
SCALE: AS SHOWN
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B–DETAILS.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

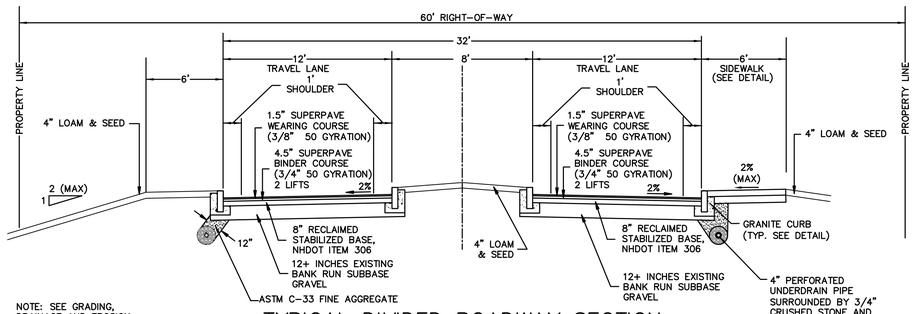
Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

R-7



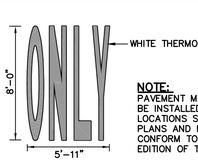
NOTE: SEE PROPOSED UNDERDRAIN PLAN FOR LIMITS OF PERFORATED UNDERDRAIN.

TYPICAL STANDARD ROADWAY SECTION
(CITY OF PORTSMOUTH STANDARD)
NOT TO SCALE



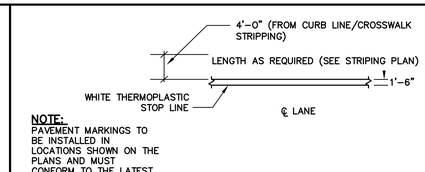
NOTE: SEE GRADING, DRAINAGE AND EROSION SHEET FOR LIMITS OF PERFORATED UNDERDRAIN.

TYPICAL DIVIDED ROADWAY SECTION
(CITY OF PORTSMOUTH STANDARD)
NOT TO SCALE



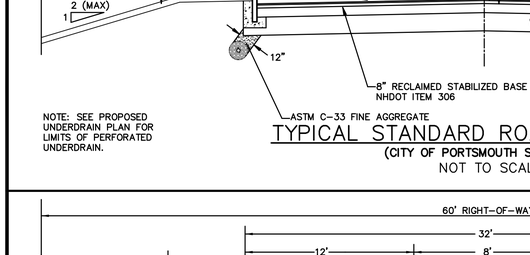
NOTE:
PAVEMENT MARKINGS TO BE INSTALLED IN LOCATIONS SHOWN ON THE PLANS AND MUST CONFORM TO THE LATEST EDITION OF THE MUTCD.

ONLY LEGEND
NOT TO SCALE



NOTE:
PAVEMENT MARKINGS TO BE INSTALLED IN LOCATIONS SHOWN ON THE PLANS AND MUST CONFORM TO THE LATEST EDITION OF THE MUTCD.

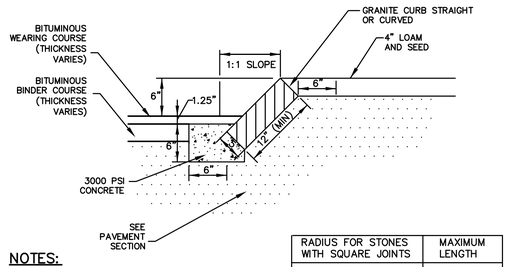
STOP BAR
NOT TO SCALE



RADIUS	MAX. LENGTH
<20'	USE CURVED CURB
21'	3'
22'-28'	4'
29'-35'	5'
36'-42'	6'
43'-49'	7'
50'-56'	8'
57'-60'	9'
OVER 60'	10'

NOTES:
1. SEE SITE PLAN FOR LIMITS OF CURBING.
2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. MINIMUM LENGTH OF CURB STONES = 3'
4. MAXIMUM LENGTH OF CURB STONES = 10'
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES (SEE CHART)
6. ALL RADII 20 FEET AND SMALLER TO BE CONSTRUCTED USING CURVED SECTIONS.
7. VERTICAL GRANITE JOINTS SHOULD BE MORTARED.
8. FINAL VERTICAL GRANITE CURB DESIGN SHALL BE COORDINATED WITH CITY OF PORTSMOUTH DPW PRIOR TO CONSTRUCTION.

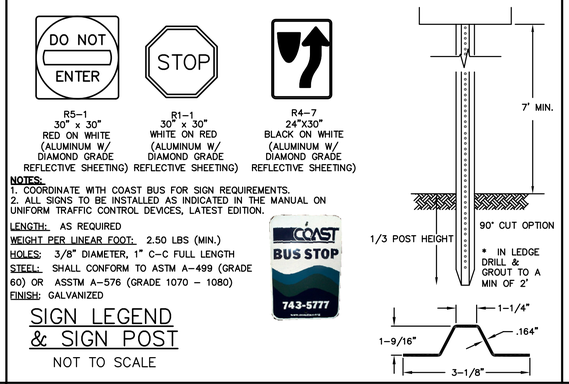
VERTICAL GRANITE CURB
NOT TO SCALE



RADIUS FOR STONES WITH SQUARE JOINTS	MAXIMUM LENGTH
16'-28'	1'-6"
29'-41'	2'
42'-55'	3'
56'-68'	4'
69'-82'	5'
83'-96'	6'
97'-110'	7'
OVER 110'	8'

NOTES:
1. SEE SITE PLAN FOR LIMITS OF CURBING.
2. ADJOINING STONES OF STRAIGHT CURB LAID ON CURVES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. MINIMUM LENGTH OF STRAIGHT CURB STONES = 18"
4. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 8'
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES – SEE CHART 6. JOINTS BETWEEN STONES SHALL BE MORTARED.
7. FINAL SLOPED GRANITE CURB DESIGN SHALL BE COORDINATED WITH CITY OF PORTSMOUTH DPW PRIOR TO CONSTRUCTION.

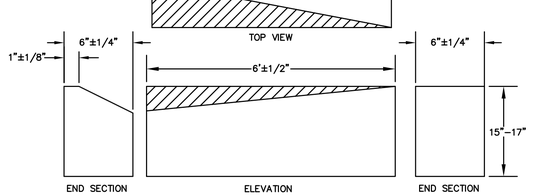
SLOPED GRANITE CURB
NOT TO SCALE



NOTES:
1. COORDINATE WITH COAST BUS FOR SIGN REQUIREMENTS.
2. ALL SIGNS TO BE INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

LENGTH: AS REQUIRED
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN.)
HOLES: 3/8" DIAMETER, 1" C-C FULL LENGTH
STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASSTM A-576 (GRADE 1070 – 1080)
FINISH: GALVANIZED

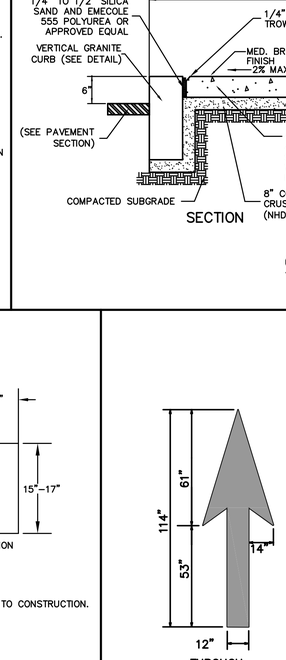
SIGN LEGEND & SIGN POST
NOT TO SCALE

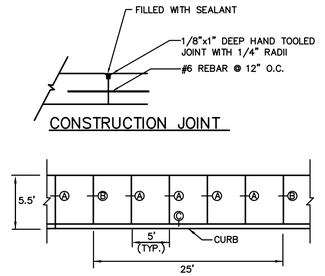


(VERTICAL GRANITE CURB TO SLOPED GRANITE CURB)

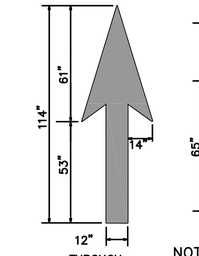
NOTE:
FINAL CURB TRANSITION DESIGN SHALL BE COORDINATED WITH CITY OF PORTSMOUTH DPW PRIOR TO CONSTRUCTION.

CURB TRANSITION
NOT TO SCALE

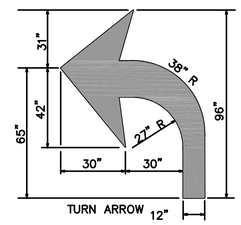




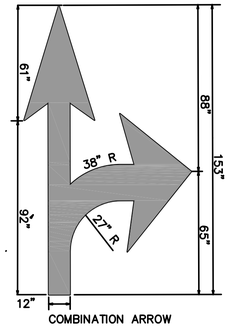
CONCRETE SIDEWALK
NOT TO SCALE



THROUGH (STRAIGHT) ARROW



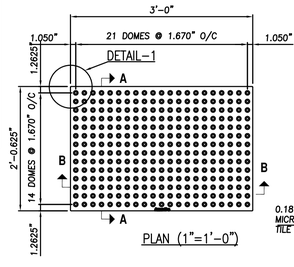
TURN ARROW

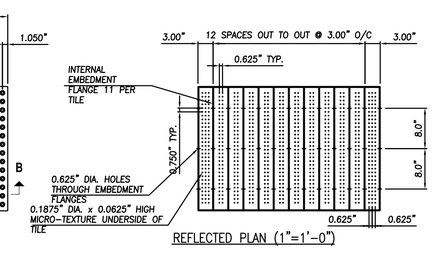


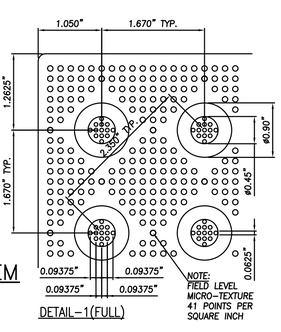
COMBINATION ARROW

NOTES:
ALL FLOW ARROWS TO BE SOLID WHITE THERMOPLASTIC STRIPING AS PER DIMENSIONS ABOVE. ALL MARKINGS MUST CONFORM TO THE LATEST EDITION OF THE MUTCD.

TRAFFIC ARROWS
NOT TO SCALE

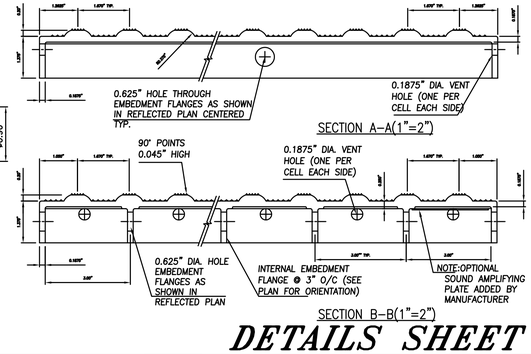






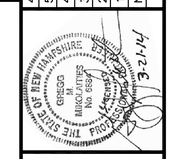
NOTE:
1. DETECTABLE WARNING SYSTEM SHALL BE (24"x36") ARMOR TILE (NO EQUAL), COLOR SHALL BE RED. COORDINATE WITH CITY OF PORTSMOUTH DPW.
2. DETECTABLE WARNING SHOULD MEET ALL ADA REQUIREMENTS.
3. CONSTRUCT DETECTABLE WARNING SYSTEMS IN LOCATIONS SHOWN ON ROADWAY PLANS, SHEET R-3A THRU R-3B.

DETECTABLE WARNING SYSTEM
NOT TO SCALE



No.	Description	Date
4.	BID DRAWINGS	PMC 03/21/14
5.	REMOVAL OF PORTSMOUTH BLVD SCOPE	PMC 12/20/13
4.	REVISE PER DPW DIRECTOR COMMENTS	PMC 07/26/12
3.	PLANNING BOARD SUBMISSION	PMC 03/26/12
2.	PLAN SET FOR CITY COUNCIL	PMC 12/19/11
1.	UPDATED DRIVEWAY ENTRANCES & UTILITIES	PMC 11/14/11

Revisions



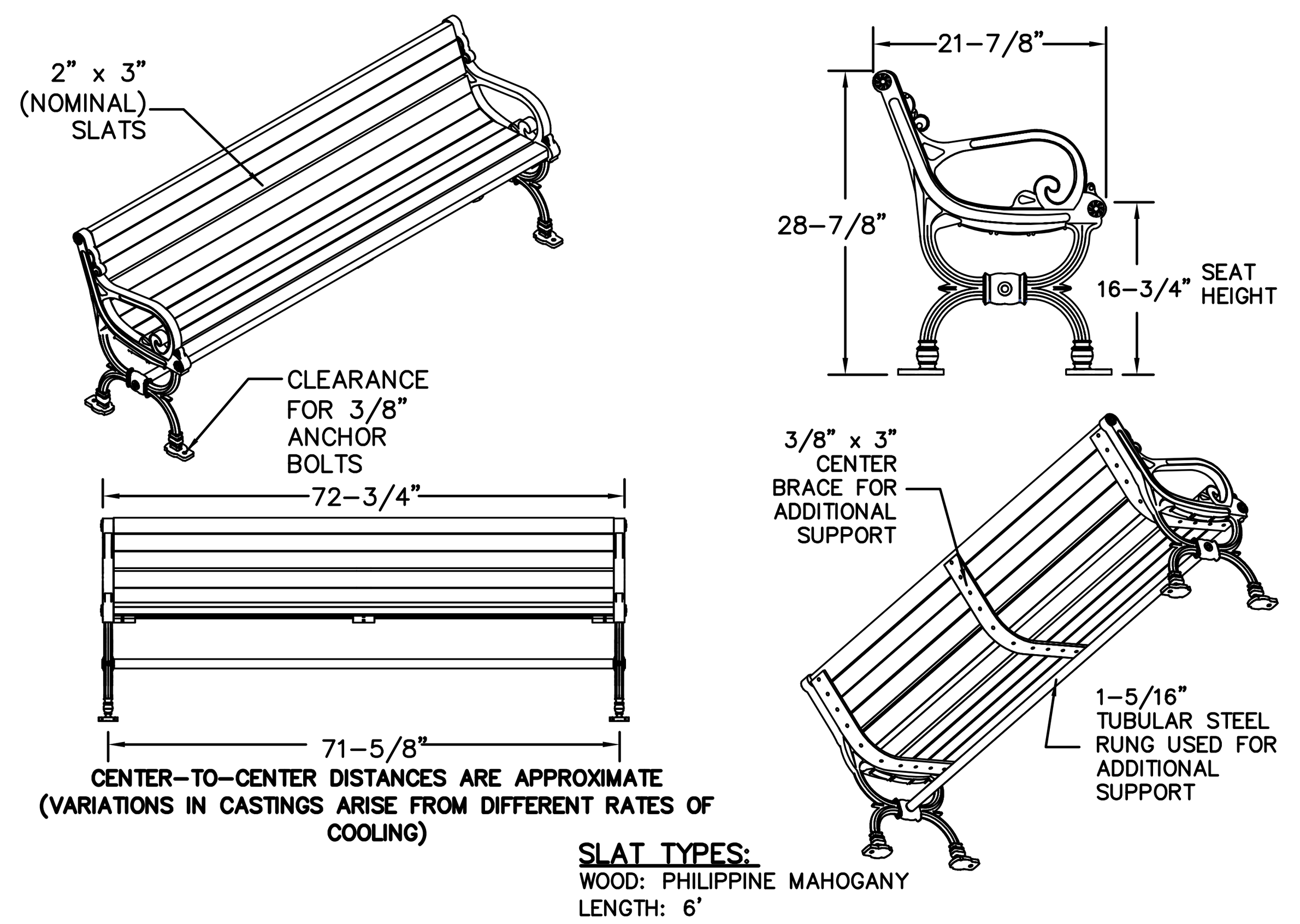
DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-DETAILS.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

DETAILS SHEET

R-8



NOTES:

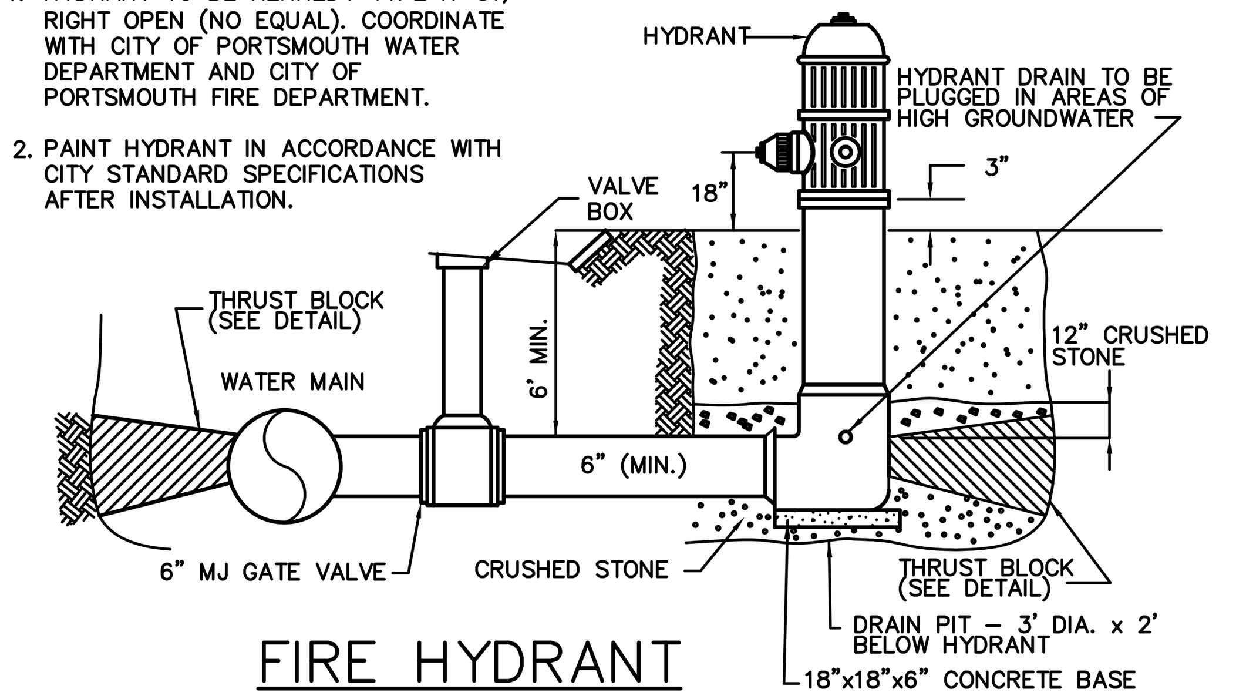
1. VICTOR STANLEY CLASSIC COLLECTION MODEL C-10 OR APPROVED EQUAL.
2. ALL FABRICATED METAL COMPONENTS ARE STEEL SHOTBLASTED, ETCHED, PHOSPHATIZED, PREHEATED, AND ELECTROSTATICALLY POWDER-COATED WITH T.G.I.C. POLYESTER POWDER COATINGS. PRODUCTS ARE FULLY CLEANED AND PRETREATED, PREHEATED AND COATED WHILE HOT TO FILL CREVICES AND BUILD COATING FILM. COATED PARTS ARE THEN FULLY CURED TO COATING MANUFACTURER'S SPECIFICATIONS. THE THICKNESS OF THE RESULTING FINISH COAT AVERAGES 8-10 MILS (200-250 MICRONS).
3. IT IS NOT RECOMMENDED TO LOCATE ANCHOR BOLTS UNTIL BENCH IS IN PLACE. PRODUCT MUST BE PERMANENTLY AFFIXED TO THE GROUND. CONSULT YOUR LOCAL CODES FOR REGULATIONS.
4. FOR HIGH SALT ABUSIVE CLIMATES, HOT DIP GALVANIZING BEFORE POWDER COATING IS AVAILABLE. SEE WRITTEN SPECIFICATION FOR DETAILS.
5. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE. CONTACT MANUFACTURER FOR DETAILS.

BENCH DETAIL

NOT TO SCALE

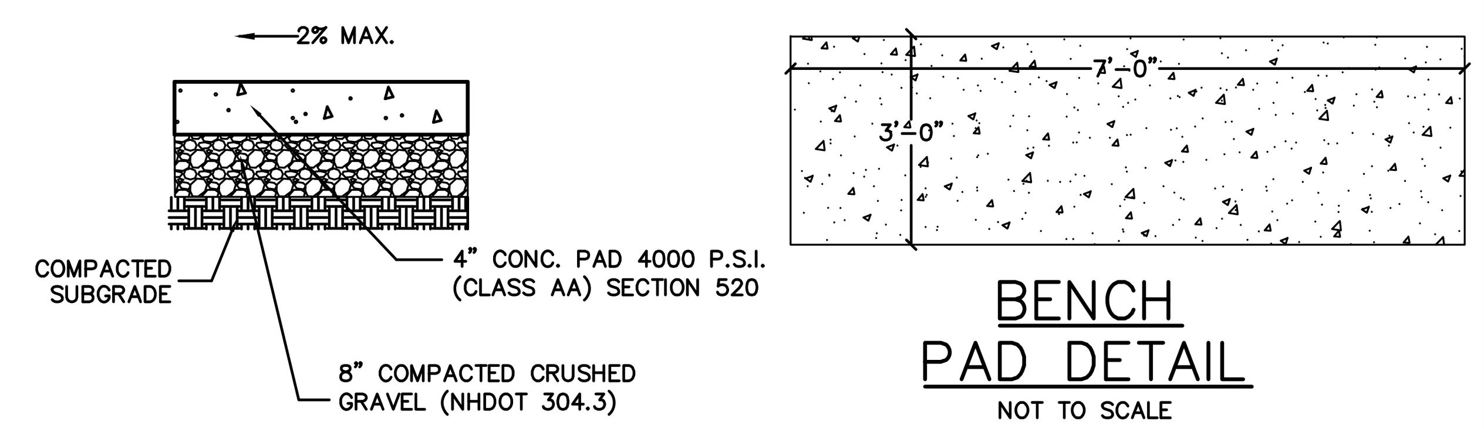
NOTE:

1. HYDRANT TO BE KENNEDY TYPE K-81, RIGHT OPEN (NO EQUAL). COORDINATE WITH CITY OF PORTSMOUTH WATER DEPARTMENT AND CITY OF PORTSMOUTH FIRE DEPARTMENT.
2. PAINT HYDRANT IN ACCORDANCE WITH CITY STANDARD SPECIFICATIONS AFTER INSTALLATION.



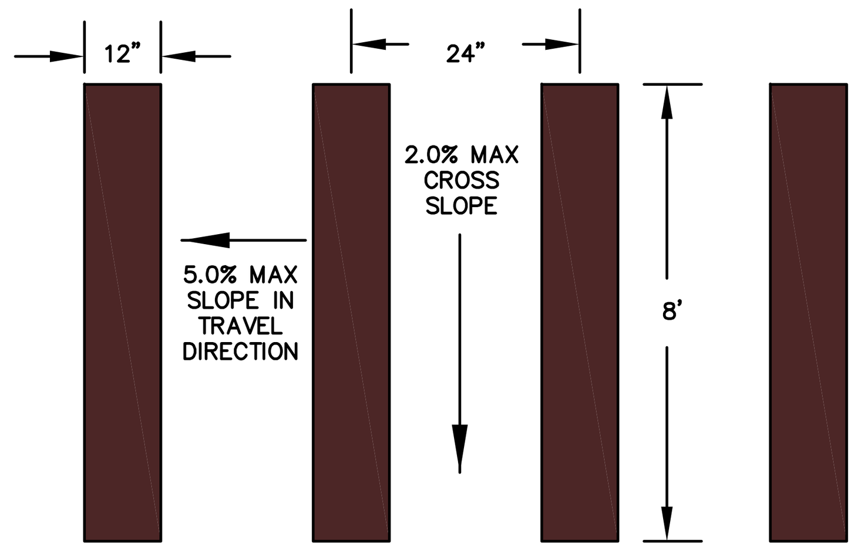
FIRE HYDRANT

NOT TO SCALE



BENCH PAD DETAIL

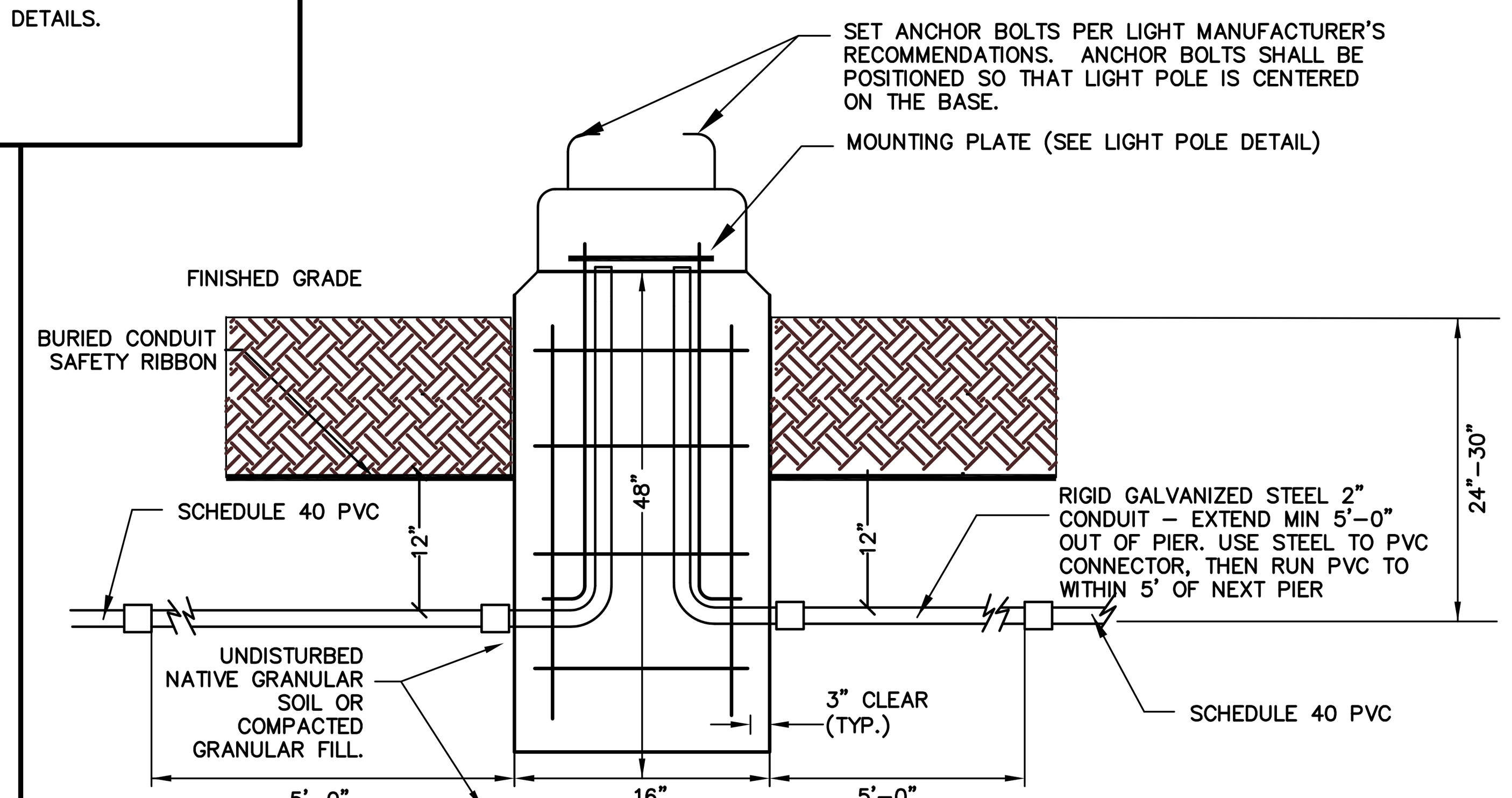
NOT TO SCALE



NOTE:
STRIPING SHALL BE CONSTRUCTED USING WHITE THERMO PLASTIC, REFLECTERIZED PAVMENT MARKING MATERIAL MEETING THE REQUIREMENTS OF ASTM D 4505

CROSSWALK STRIPING

NOT TO SCALE

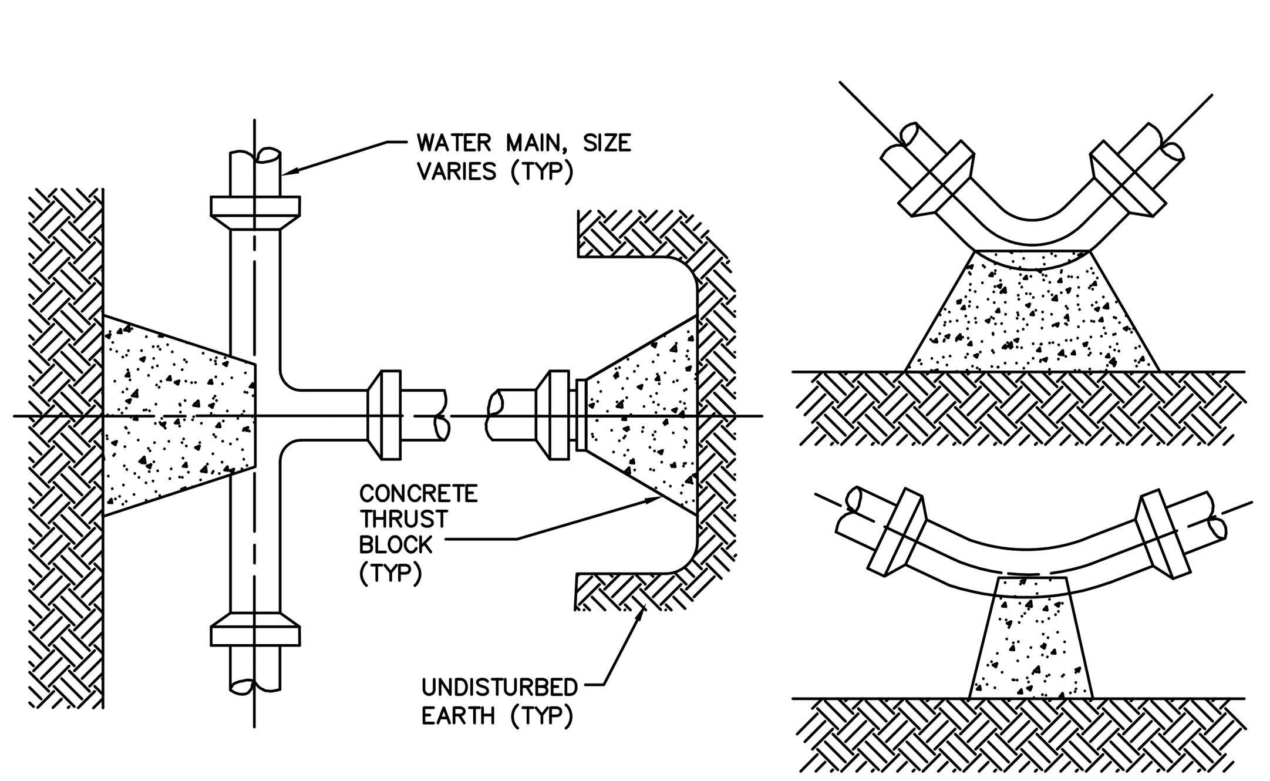


LIGHT POLE BASE AND CONDUIT DETAIL

NOT TO SCALE

NOTES:

1. MANUFACTURER TO PROVIDE LIGHT POLE BASE SIZE AND ANCHOR PLATE BOLT PATTERN.
2. REFER TO ELECTRICAL PLANS FOR WIRING DETAILS.
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL, TO INCLUDE PERFORMANCE SPECIFICATIONS, CALCULATIONS AND NH LICENSED STRUCTURAL ENGINEER'S STAMP FOR LIGHT POLE FOUNDATION.
4. LIGHT POLE BASE AND FIXTURE SHALL BE APPROVED BY THE CITY OF PORTSMOUTH DPW PRIOR TO ORDERING.



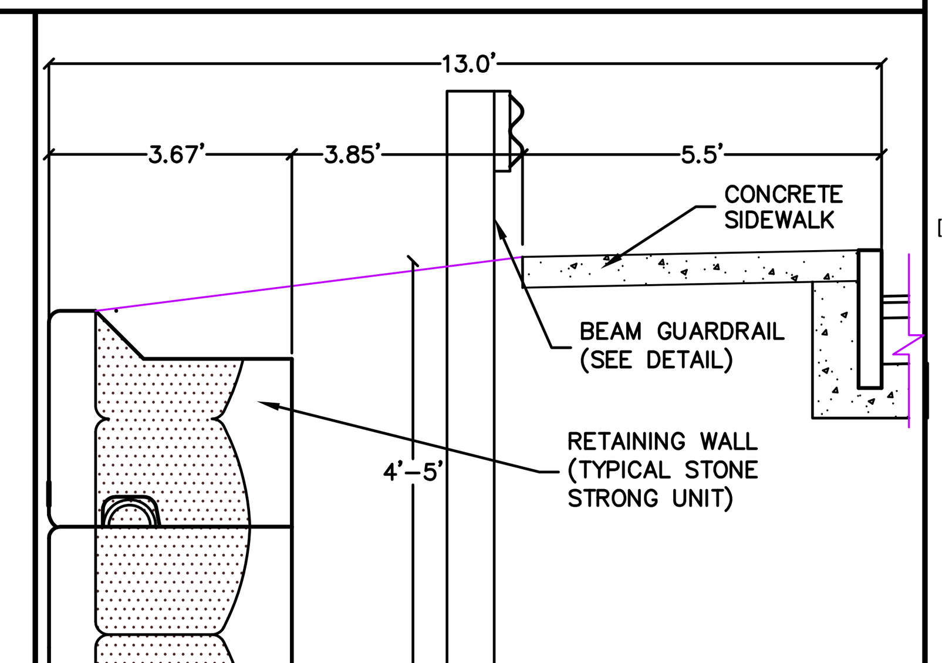
TEST PRESSURE = 200psi	SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL					
	REACTION TYPE	PIPE SIZE				
		4"	6"	8"	10"	12"
	A 90°	0.89	2.19	3.82	11.14	17.24
	B 180°	0.65	1.55	2.78	8.38	12.00
	C 45°	0.48	1.19	2.12	6.02	9.32
	D 22-1/2°	0.25	0.60	1.06	3.08	4.74
	E 11-1/4°	0.13	0.30	0.54	1.54	2.38

NOTES:

1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL, WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. PLACE BOARD IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCKS.
4. WHERE M.J. PIPE IS USED, M.J. PLUG WITH RETAINER GLAND MAY BE SUBSTITUTED FOR END BLOCKINGS.
5. INSTALLATION AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE WITH CITY OF PORTSMOUTH WATER DEPARTMENT STANDARDS.

THRUST BLOCKING DETAIL

NOT TO SCALE



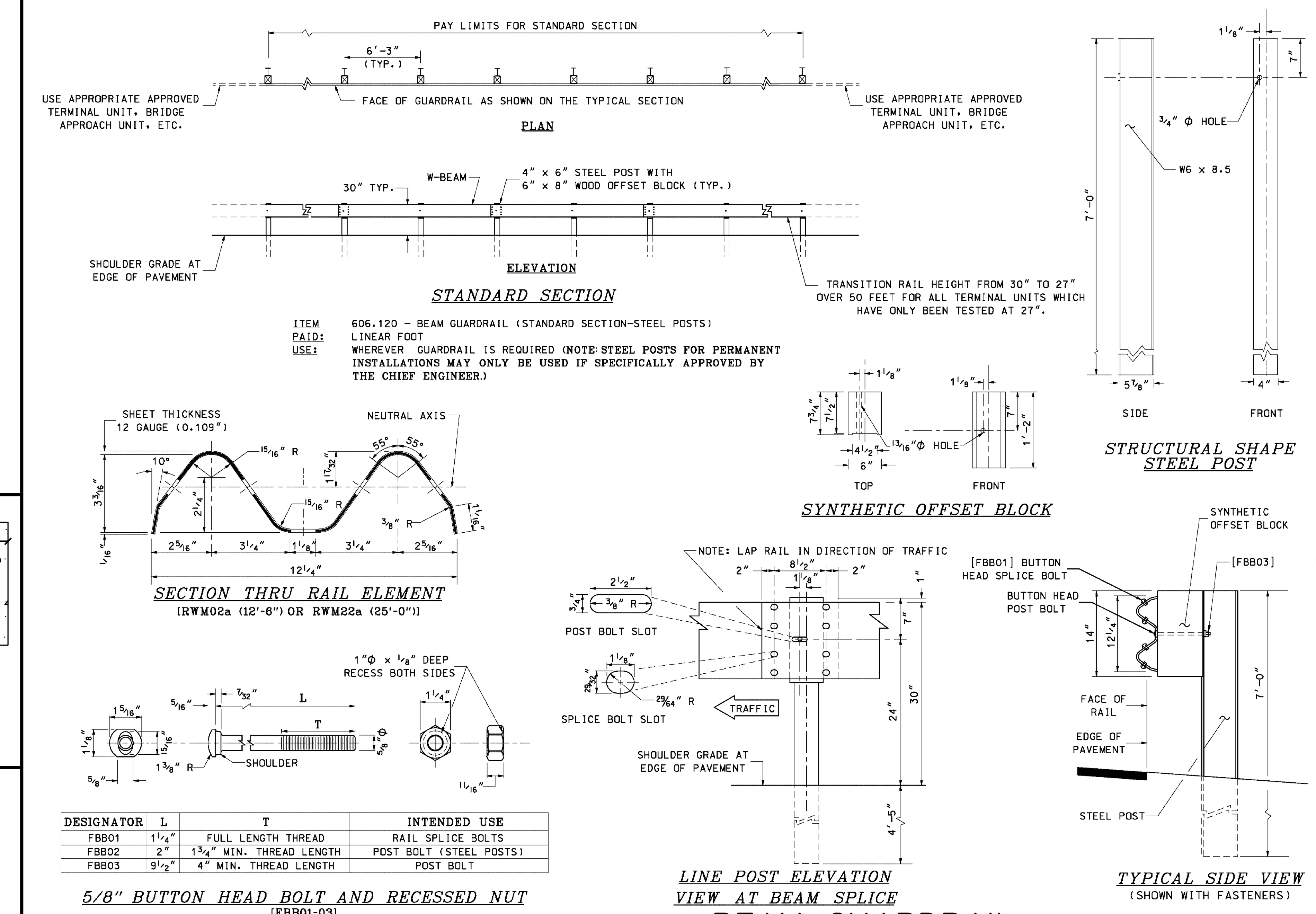
NOTES:

1. EXACT ALIGNMENT OF GUARDRAIL SHALL BE DETERMINED AFTER LOCATING EXISTING UTILITIES.

CRITICAL SECTION

GUARDRAIL LOCATION

NOT TO SCALE



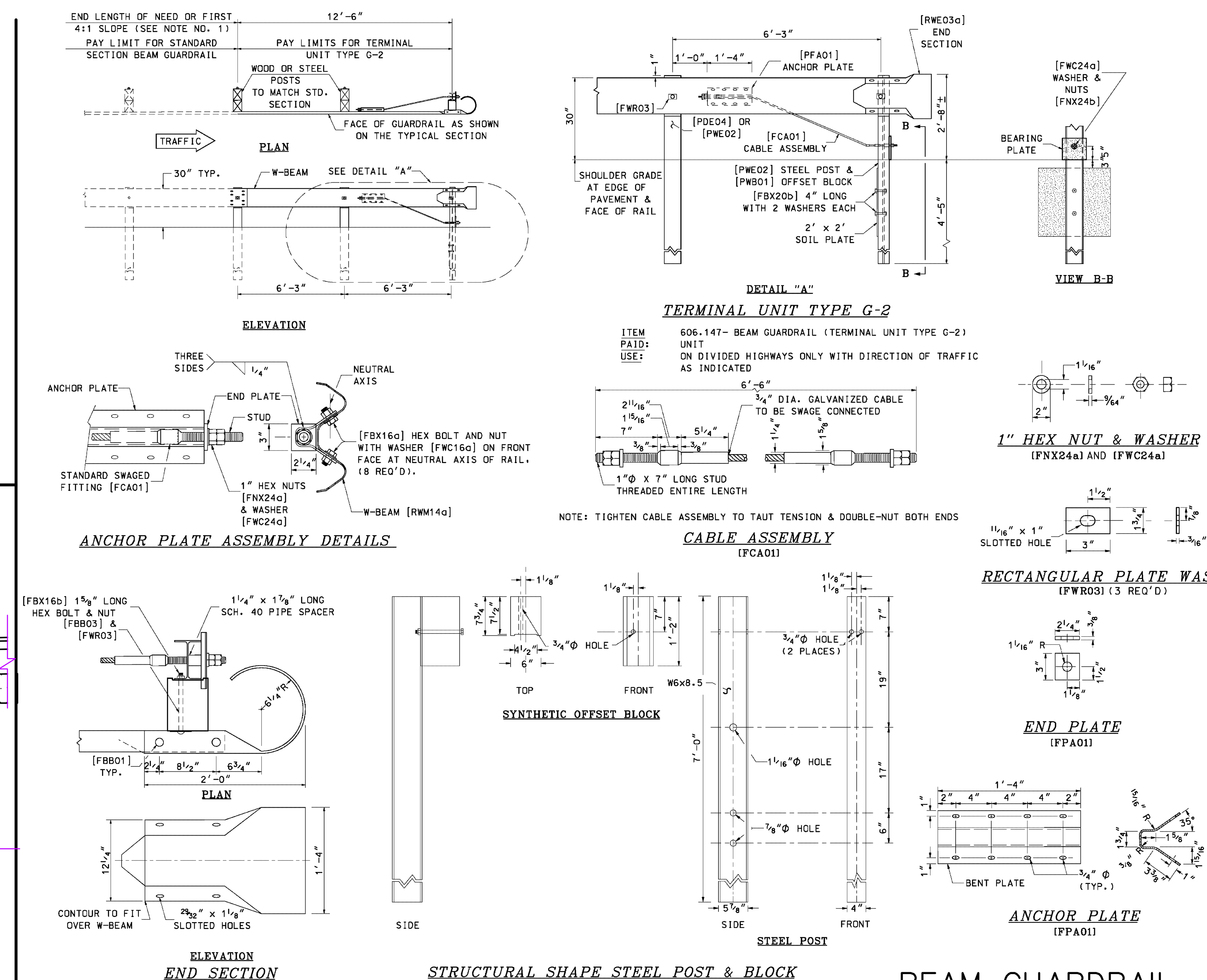
DESIGNATOR	L	T	INTENDED USE
FBB01	1¼"	FULL LENGTH THREAD	RAIL SPLICE BOLTS
FBB02	2"	1¾" MIN. THREAD LENGTH	POST BOLT (STEEL POSTS)
FBB03	9½"	4" MIN. THREAD LENGTH	POST BOLT

GENERAL NOTES

1. LENGTH OF NEED IS THE TOTAL LENGTH OF A LONGITUDINAL BARRIER NEEDED TO SHIELD AN AREA OF CONCERN. TO DETERMINE THE LENGTH OF NEED, REFER TO THE *"ROADSIDE DESIGN GUIDE"* - LATEST ADOPTED VERSION.
2. DESIGNATIONS PROVIDED IN BRACKETS [ ] REFERENCE STANDARD ELEMENTS DETAILED IN *"A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE"*, LATEST ADOPTED VERSION, AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
3. THE RECTANGULAR PLATE WASHER [FWR03] IS USED ONLY FOR 37'-6" OF STANDARD SECTION UPSTREAM OF A TERMINAL UNIT TYPE G-2 (SEE STANDARD NO. GR-10).
4. USE 12'-6" LENGTH RAIL ELEMENT IN CURVES OF LESS THAN 300' RAIL RADIUS.
5. WHEN GUARDRAIL IS INSTALLED BEHIND CURB, EITHER 6'-0" BEHIND SLOPE CURB ON A CURBED RAMP OR AT THE BACK OF SIDEWALK WITH BARRIER CURB, THE RAIL HEIGHT SHALL BE SET FROM THE GRADE AT THE FACE OF RAIL.
6. POSTS SHORTER THAN THE 7'-0" INDICATED ON THE DETAIL, BUT NOT LESS THAN 6'-0", MAY ONLY BE USED WHEN
   A) THE SLOPE BEHIND THE GUARDRAIL IS NO STEEPER THAN 4:1
   B) WHERE THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK OF THE SLOPE IS A MINIMUM OF 2'-0"
   C) AND THEN ONLY AS APPROVED OR SPECIFICALLY SHOWN ON THE PLANS.
7. TO INSTALL THE 7'-0" POSTS IN ROCK FILL AREAS AND IN AREAS OF OTHER DIFFICULT SITE CONDITIONS, METHODS SUCH AS AUGURING, EXCAVATING, AND OTHER MORE UNUSUAL METHODS MAY BE REQUIRED FOR INSTALLING POSTS. THOSE CONDITIONS AND THE REQUIREMENT FOR UNUSUAL METHODS OF POST INSTALLATION ARE NOT CONSIDERED JUSTIFICATION FOR REDUCING THE EMBEDMENT DEPTH OF THE POSTS AND WILL NOT BE APPROVED AS SUCH.
8. THE FHWA ADMINISTRATION HAS APPROVED THE USE OF OFFSET BLOCKS WITH DIMENSIONS THAT VARY MORE THAN WOULD BE CONSIDERED WITHIN THE NORMAL CONTEXT OF NOMINAL DIMENSIONS. IN ORDER TO PROPOSE THE USE OF ANY OFFSET BLOCKS THAT HAVE OTHER THAN THE NOMINAL DIMENSIONS SHOWN ON THE DETAILS, THE FOLLOWING CRITERION APPLIES:
   A) THE OFFSET BLOCKS BE SHOWN TO BE APPROVED BY THE FHWA ADMINISTRATION AS MEETING THE TL-3 CRITERIA AS DESCRIBED IN THE NCHRP 350 TESTING,
   B) THE FACE OF RAIL MUST REMAIN AT THE EDGE OF PAVEMENT OR AT THE INDICATED OFFSET, PER THE DESIGN PLANS, AND
   C) THERE MUST NOT BE A DECREASE IN THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK IN THE SLOPE AS SHOWN ON THE DESIGN PLANS. AN INCREASE IN THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK IN THE SLOPE IS ACCEPTABLE.
   D) ALL OTHER REQUIREMENTS OF THE PERTINENT SPECIFICATIONS AND DETAILS REMAIN IN FORCE.

BEAM GUARDRAIL STANDARD SECTION-STEEL POST

NOT TO SCALE



GENERAL NOTES

1. THE LENGTH OF NEED IS THE TOTAL LENGTH OF A LONGITUDINAL BARRIER NEEDED TO SHIELD AN AREA OF CONCERN. TO DETERMINE THE LENGTH OF NEED, REFER TO *THE ROADSIDE DESIGN GUIDE* - AASHTO, LATEST ADOPTED VERSION, THE G-2 UNIT SHALL TERMINATE IN A 4:1 OR FLATTER SLOPE.
2. DESIGNATIONS PROVIDED IN BRACKETS [ ] REFERENCE STANDARD ELEMENTS DETAILED IN *A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE*, LATEST ADOPTED VERSION, AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
3. ALL DIMENSIONS SUBJECT TO MANUFACTURER'S TOLERANCES.
4. STANDARDS NO. GR-1 (OR GR-2), SHALL BE USED IN CONJUNCTION WITH THIS STANDARD. SEE THESE STANDARDS FOR ADDITIONAL DETAILS OF COMMON HARDWARE.
5. TIGHTEN CABLE ASSEMBLY TO TAUT TENSION AND DOUBLE-NUT BOTH ENDS.
6. DIMENSIONS OF PLASTIC AND SYNTHETIC BLOCKOUTS ARE AS SHOWN ON MANUFACTURER'S DRAWINGS.

BEAM GUARDRAIL TERMINAL END UNIT TYPE G-2

NOT TO SCALE

DETAILS SHEET

No.	Description	Appd	Date
5.	BID DRAWINGS	PMC	03/21/14
4.	REMOVAL OF PORTSMOUTH BLVD SCOPE	PMC	12/20/13
3.	PLANNING BOARD SUBMISSION	PMC	03/26/12
2.	PLAN SET FOR CITY COUNCIL	PMC	12/19/11
1.	UPDATED DRIVEWAY ENTRANCES & UTILITIES	PMC	11/14/11

Revisions

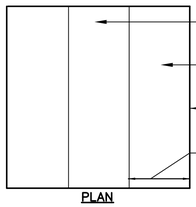
THE STATE OF NEW HAMPSHIRE GREGG M. MIKOLAITIES No. 6684 LICENSED PROFESSIONAL ENGINEER 3-21-14

DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-DETAILS.dwg

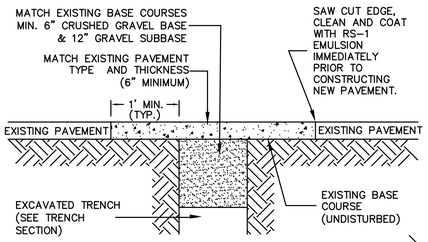
PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

R-9



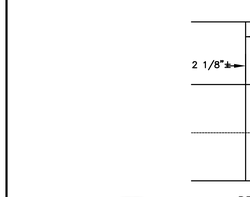
PLAN



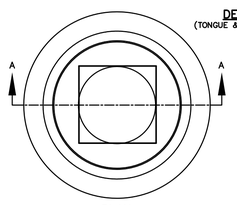
SECTION

NOTE:
COORDINATE AND OBTAIN APPROVAL FOR ALL TRENCHING AND PATCHING WITHIN CITY RIGHT OF WAY WITH CITY OF PORTSMOUTH DPW PRIOR TO COMMENCING WORK.

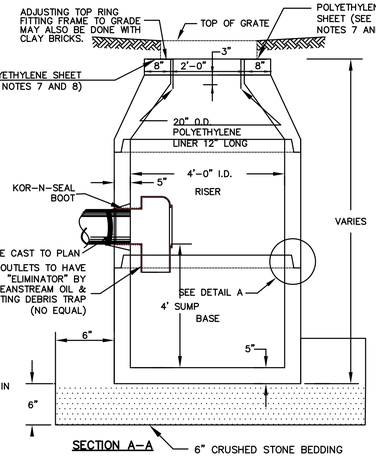
ROADWAY TRENCH PATCH
NOT TO SCALE



DETAIL A
(TONGUE & GROOVE JOINT)



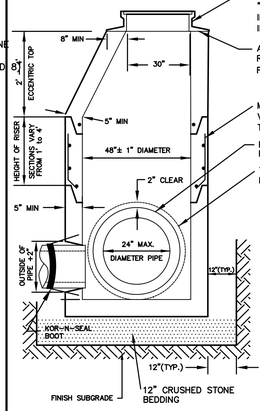
PLAN



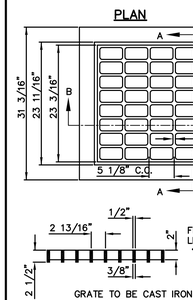
SECTION A–A

(4' DIA) CATCHBASIN
NOT TO SCALE

NOTES:
1. ALL SECTIONS SHALL BE CONCRETE CLASS AA(4000 psi).
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 AND GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER LINEAR FT.
4. RISERS OF 1', 2', 3' & 4' CAN BE USED TO REACH DESIRED DEPTH.
5. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
6. THE TONGUE AND GROOVE JOINT SHALL BE SEALED WITH ONE STRIP OF BUTYL RUBBER SEALANT.
7. POLYETHYLENE LINER (ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. LINER SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
8. 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 3–FLANGE FRAME AND CURB).

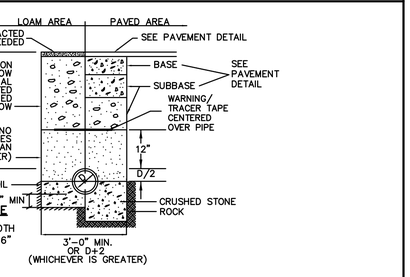


DRAIN MANHOLE
NOT TO SCALE



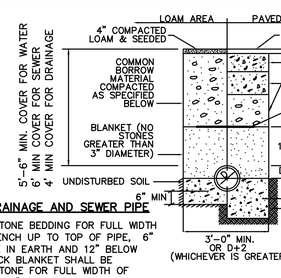
NOTE:
1. FRAME AND GRATE TO BE MANUFACTURED IN THE USA

CATCH BASIN FRAME & GRATE
NOT TO SCALE



NOTE: SEE PROPOSED UNDERDRAIN PLAN FOR LIMITS OF PERFORATED UNDERDRAIN.

UNDERDRAIN TRENCH
NOT TO SCALE

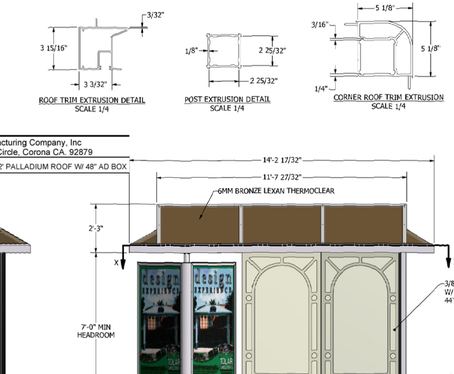


STORM DRAINAGE AND SEWER PIPE
CRUSHED STONE BEDDING FOR FULL WIDTH OF THE TRENCH UP TO TOP OF PIPE, 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK BLANKET SHALL BE CRUSHED STONE FOR FULL WIDTH OF TRENCH UP 12" ABOVE TOP OF PIPE.

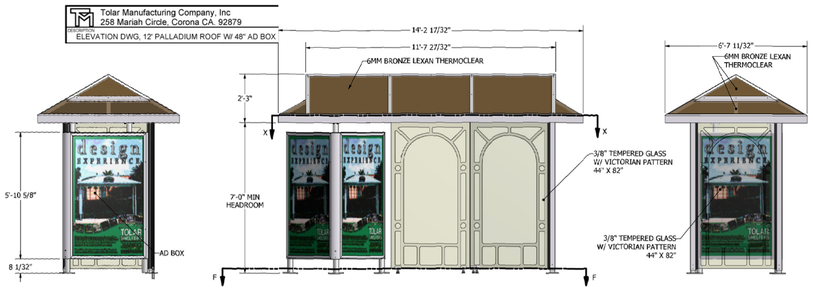
WATER
SAND BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH UP TO SPRINGLINE OF PIPE FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK. WATER MAIN INSTALLATION AND DIMENSIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE PORTSMOUTH PUBLIC WORKS DEPARTMENT STANDARDS.

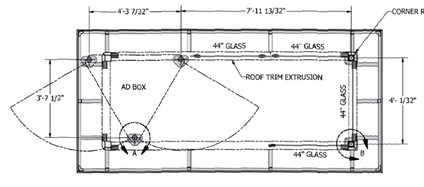
UTILITY TRENCH
NOT TO SCALE

GENERAL NOTES:
1. ALL STRUCTURAL STEEL, UNLESS OTHERWISE NOTED, SHALL BE ASTM A-36, MINIMUM YIELD STRENGTH 36,000 PSI.
2. ALL BOLTS, UNLESS OTHERWISE NOTED, SHALL BE ASTM A325 (GRADE 5) OR BETTER
3. ALL STRUCTURAL STEEL, UNLESS OTHERWISE NOTED, SHALL BE OF ALLOY 6063-T5
4. ALL HOLES SHALL BE DRILLED OR PUNCHED
5. STEEL, WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STANDARD D1.1-98. ELECTRODES SHALL CONFORM TO AWS A5.1.
6. ALUMINUM WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STANDARD D1.2-97. ELECTRODES SHALL CONFORM TO AWS/SFA 5.10.
7. ALL WELDING TO BE DONE AT TOLAR MANUFACTURING CO., INC. FACILITY.



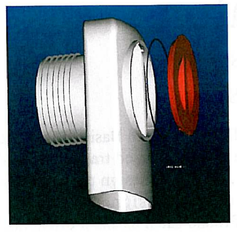
Tolar Manufacturing Company, Inc
258 Mariah Circle, Corona CA. 92879
ELEVATION DWG, 12' PALLADIUM ROOF W/ 48" AD BOX





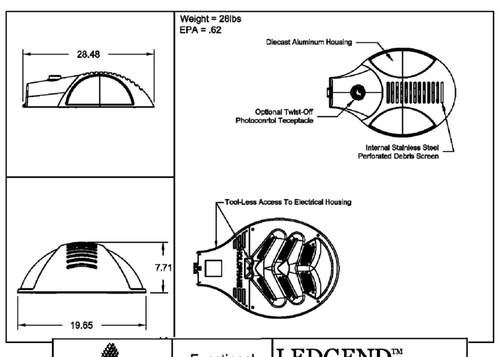
NOTE:
1. BUS SHELTER SHALL BE BY TOLAR MANUFACTURING COMPANY. SUBMIT SHOP DRAWINGS TO CITY AND COAST BUS FOR APPROVAL PRIOR TO ORDERING OR INSTALLING.

TYPICAL COAST BUS SHELTER
NOT TO SCALE



NOTES:
1. ALL CATCH BASIN OUTLETS TO HAVE "ELIMINATOR" OIL AND FLOATING DEBRIS TRAP MANUFACTURED BY KLEANSTREAM (NO EQUAL)

"ELIMINATOR" OIL & FLOATING DEBRIS TRAP
NOT TO SCALE



TYPICAL ROADWAY LIGHT
NOT TO SCALE

FEATURES & SPECIFICATIONS

CONSTRUCTION - Poles shall be fabricated to meet AASHTO 2009 requirements. Welds conform to applicable AWS structural welding code. Pole shaft is one piece, 6063 aluminum alloy, heat treated to a T6 temper. Pole base shall be 356 or A356 aluminum alloy, heat treated to a T6 temper after welding. Hand hole is 2" x 4" minimum, cover and fasteners are included. Nut covers shall be provided as standard. Finish shall match pole. Non-structural fasteners shall be stainless steel.

FINISH – Anodize Black

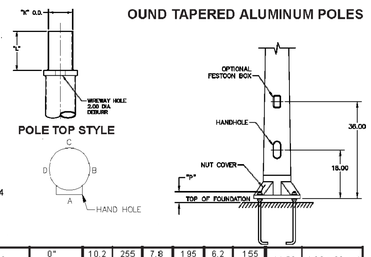
GROUNDING – Grounding provision shall be immediately accessible through hand hole, 3/8-16 threads.

ANCHOR BOLTS – Steel anchor bolts shall be per AASHTO M314 or ASTM F 1554 - Grade 55, hot dip galvanize. Nuts and washers shall be per AASHTO M314-90 or ASTM F 1554 – hot dip galvanized.

HOLOPHANE
RTA.PMD (HL-2076) 5/29/13

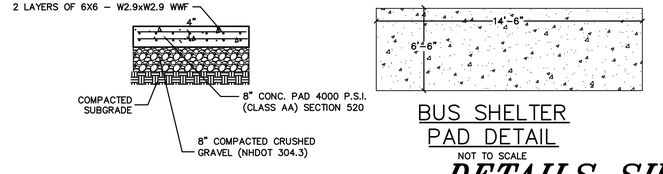
Catalog Number
Order Number | Type

RTA/AORTA
OUND TAPERED ALUMINUM POLES



5	RTA3080E	30	8.0 x 4.5 x .156	0"	10.2	255	7.8	195	6.2	155	11.50	1.00 x 36 + 4
				30"	9.4	235	7.3	182	5.8	145		
5	RTA3080G	30	8.0 x 4.5 x .188	0"	13.1	327	10.3	257	8.3	207	11.50	1.00 x 36 + 4
				30"	12.2	305	9.5	237	7.7	192		

TYPICAL ROADWAY LIGHT POLE
NOT TO SCALE



BUS SHELTER PAD DETAIL
NOT TO SCALE

DETAILS SHEET

No.	Description	Date
5.	BID DRAWINGS	03/21/14
4.	REMOVAL OF PORTSMOUTH BLVD SCOPE	12/20/13
3.	PLANNING BOARD SUBMISSION	03/26/12
2.	PLAN SET FOR CITY COUNCIL	12/19/11
1.	UPDATED DRIVEWAY ENTRANCES & UTILITIES	11/14/11

Revisions

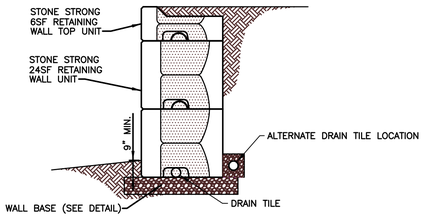
PMC

DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B–DETAILS.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

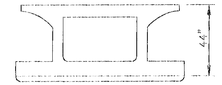
R–10



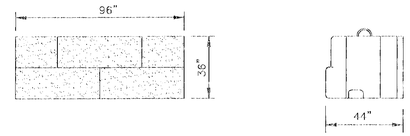
TYPICAL STONE STRONG
SEGMENTAL GRAVITY RETAINING WALL
NOT TO SCALE

GENERAL NOTES:

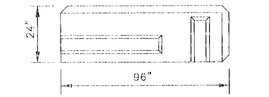
1. STRIP ALL VEGETATION, ORGANIC SOILS AND UNSUITABLE FILL SOILS FROM THE WALL ALIGNMENT AREA.
2. BENCH CUT ALL EXCAVATED SLOPES.
3. DO NOT OVER EXCAVATE UNLESS DIRECTED TO DO SO BY THE OWNER'S SITE REPRESENTATIVE IN ORDER TO REMOVE UNSUITABLE SOIL.
4. THE OWNER'S SITE REPRESENTATIVE SHALL VERIFY FOUNDATION SOILS AS BEING COMPETENT PER THE DESIGN STANDARDS AND PARAMETERS.
5. LEVELING PAD SHALL CONSIST OF COMPACTED, 3/4" CRUSHED GRAVEL, 9" THICK AND 62" WIDE (MIN.). A SMOOTHING SURFACE LAVER OF 3/8" CRUSHED STONE MAY BE UTILIZED.
6. MINIMUM EMBEDMENT OF WALL BELOW FINISH GRADE SHALL BE INDICATED ON THE WALL FACE DRAWING.
7. FOLLOW APPLICABLE PROVISIONS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WRITTEN SPECIFICATIONS, ESPECIALLY WITH REGARDS TO LEVELING OF BLOCKS AND BASE.
8. DRAINAGE FILL SHALL CONSIST OF 3/4" TO 3/8" SIZE CRUSHED STONE, LESS THAN 5% MINUS #200 SIEVE, PLACED BEHIND THE WALL FOR A DEPTH OF AT LEAST 24"BEHIND THE WALL. A FILTER FABRIC SHALL BE PLACED OVER THE CUT OR FILL FACE BEHIND THE WALL AREA TO PREVENT SOIL MIGRATION INTO DRAINAGE MATERIAL.
9. UNIT FILL, USED TO FILL THE VOIDS BETWEEN AND WITHIN THE BLOCKS, SHALL BE 3/4" TO 3/8" CRUSHED STONE. FILTER FABRIC SHALL BE PLACED OVER THE TOP BLOCK UNIT FILL IN ORDER TO MINIMIZE SOIL MIGRATION INTO THE UNIT FILL.
10. WHERE PERFORATED HDPE DRAINS ARE USED, PROVIDE OUTLETS AT THE ENDS OF THE WALL OR AT A LOW COLLECTION POINT ALONG THE WALL. (ALTERNATE OUTLET METHODS MAY BE APPROVED BY THE DESIGN ENGINEER.)
11. BACKFILL AND COMPACT THE FILL MATERIAL BEHIND THE WALL AS THE WALL IS INSTALLED.
12. COMPACTION TESTS SHALL BE TAKEN AS THE WALL IS INSTALLED. THE MINIMUM NUMBER OF TESTS SHALL BE DETERMINED BT THE OWNER'S SITE REPRESENTATIVE.
13. PLACE A FILTER FABRIC (MIRAFI 140N, OR EQUAL) OVER DRAINAGE MATERIAL TO MINIMIZE SOIL MIGRATION FROM THE SURFACE MATERIAL INTO THE DRAINAGE MATERIAL.
14. COMPACTION SHALL BE TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D1557 (MODIFIED PROCTOR).
15. PROVIDE LATERAL DRAINAGE SWALES TO DIRECT FLOWS AROUND THE ENDS OF THE WALL AND AWAY FROM THE WALL DURING CONSTRUCTION. DO NOT CONSTRUCT A SWALE BEHIND THE WALL AS PART OF THE FINISHED WALL. GRADE ABOVE THE WALL SO THAT WATER FLOWS OVER THE WALL FACE OR TO A POINT AT LEAST AS FAR BEHIND THE WALL AS THE WALL HEIGHT.
16. TURF, OR SOME ACCEPTABLE FORM OF SOIL EROSION PROTECTION, SHOULD BE ESTABLISHED AT THE TOP OF THE WALL (WHERE REQUIRED) BY THE LANSCAPE CONTRACTOR AS SOON AS THE WALL IS COMPLETED.
17. FINAL WALL ALIGNMENT SHALL BE LOCATED IN THE FIELD BY THE OWNER'S SITE REPRESENTATIVE.
18. RECOMMENDED COMPACTION EQUIPMENT WITHIN 15 FEET OF THE BACK OF THE WALL IS AS FOLLOWS:
    - 0–4 FEET: HAND TAMP OR VIBRATORY PLATE COMPACTOR
    - 4–15 FEET: NOTHING LARGER THAN TWO–DRUM, WALK BEHIND VIBRATORY ROLLER (LARGER ROLLERS CAN BE USED STATICALLY, PROVIDED LIFT SIZE DOES NOT COMPROMISE ACHIEVEMENT OF NECESSARY COMPACTION RATES.)



THE BLOCKS SHOWN ARE TYPICAL 24 SQUARE–FOOT (24SF) UNITS. ALSO USED AT THIS SITE ARE THE 6 SF UNITS, WHICH ARE SIMILAR IN DESIGN BUT ARE 18" TALL AND 48" WIDE.

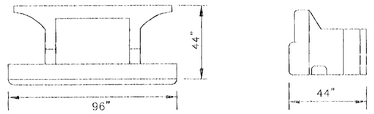


TYPICAL "STONE STRONG" UNIT
UNIT DIMENSIONS
(NOT TO SCALE)



PLAN VIEW – CORNER UNIT
(NOT TO SCALE)

PLAN VIEW – END UNIT
(NOT TO SCALE)



PLAN & SIDE VIEW – TOP UNIT
(NOT TO SCALE)

SELECT FILL/BACKFILL GENERAL REQUIREMENTS:

SIEVE SIZE	% PASSING
3"	100%
1/2"	50–85%
#4	40–75%
#50	8–28%
#200	0–10%

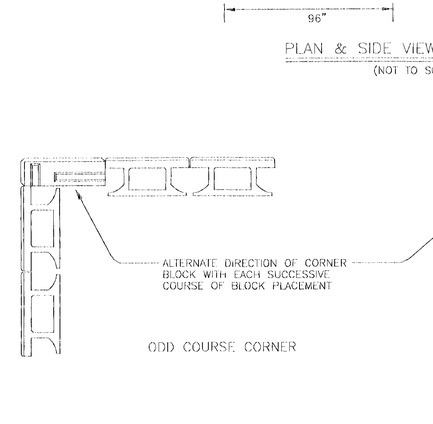
NOTE: THE DESIGN ENGINEER MUST BE MADE AWARE WHENEVER THE PERCENT PASSING THE #200 SIEVE EXCEEDS 10% GROUNDWATER CONTROL METHODS MAY BE REQUIRED.

IMPERVIOUS MATERIAL GENERAL REQUIREMENTS:

SIEVE SIZE	% PASSING
3"	100%
1/2"	80–100%
#40	50–90%
#100	40–80%
#200	30–80%

NOTE: 8" OF TOPSOIL IS AN ACCEPTABLE ALTERNATE FOR IMPERVIOUS FILL ALONG THE TOP OF THE WALL.

COMPACTION NOTE: WHERE THE RETAINING WALL PASSES OVER ANY UTILITY LINES, COMPACTION OF THE SOIL WITHIN THE UTILITY TRENCH IS CRITICAL IN ORDER TO PREVENT SETTLEMENT OF THE WALL. COMPACTION OF ALL FILL MATERIAL IN UTILITY TRENCHED WHICH PASS UNDER THIS RETAINING WALL MUST BE AT LEAST 95% OF THE MAXIMUM DENSITY OF THE FILL MATERIAL.



TYPICAL OUTSIDE CORNER INSTALLATION
NOT TO SCALE

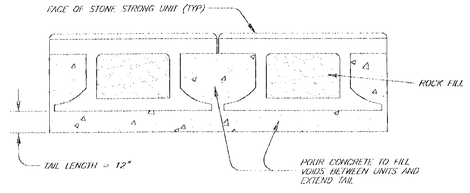
DESIGN ASSUMPTIONS:

SOIL	SOIL UNIT WEIGHT	Φ
SELECT FILL/BACKFILL	125	34
FOUNDATION SOIL	125	32

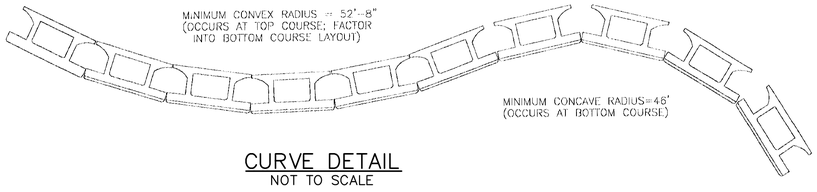
APPLIED SURCHARGE LOADING = 250 PSF
SEISMIC ACCELERATION = 0.15

MINIMUM FACTORS OF SAFETY:

OVERTURNING	1.5
SLIDING	1.5
BEARING CAPACITY	2.0
GLOBAL STABILITY	1.5



CONCRETE TAIL EXTENSION DETAIL
NOT TO SCALE



CURVE DETAIL
NOT TO SCALE

IF CONDITIONS ARE DIFFERENT THAN THOSE STATED IN THESE DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR MUST CONTACT ENGINEER PRIOR TO PROCEEDING WITH THE CONSTRUCTION OF THE WALL.

NOTE:

FINAL STRUCTURAL DESIGN TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL WITH ALL CALCULATIONS AND PLANS. STRUCTURAL DESIGN TO BE COMPLETED AND STAMPED BY A NEW HAMPSHIRE LICENSED STRUCTURAL ENGINEER. DESIGN ENGINEER SHALL INSPECT WALL DURING CONSTRUCTION AND CERTIFY THAT IT HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS SUBMITTED AS PART OF THE BUILDING PERMIT. AN AS–BUILT PLAN SHOWING WALL LOCATION AND DIMENSIONS SHALL BE SUBMITTED TO THE OWNER UPON COMPLETION.

No.	Description	Date
	Revisions	
1.	UPDATED DRIVEWAY ENTRANCES & UTILITIES	11/14/11 PMC
2.	PLAN SET FOR CITY COUNCIL	12/19/11 PMC
3.	PLANNING BOARD SUBMISSION	03/26/12 PMC
4.	BID DRAWINGS	03/21/14 PMC

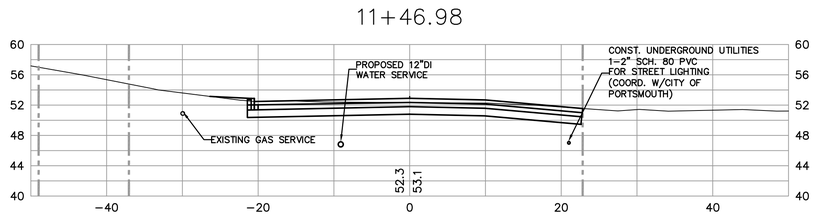
DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B–DETAILS.dwg

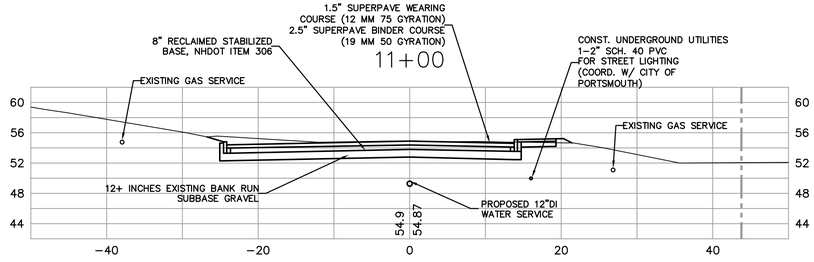
PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

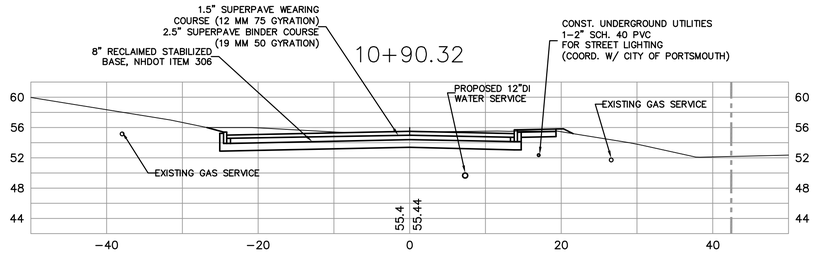
Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

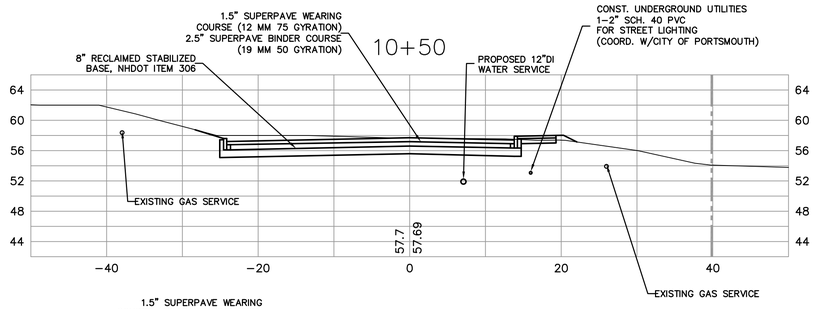
RETAINING WALL NOTES AND DETAILS

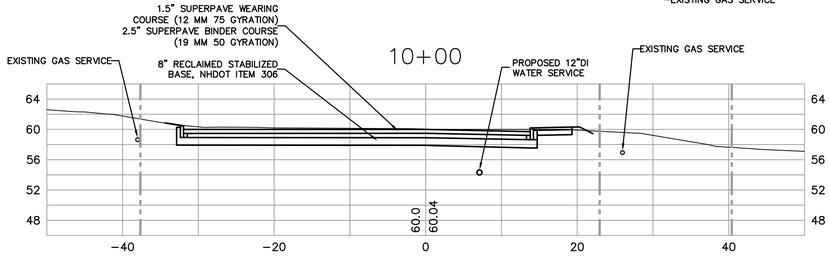
R–11

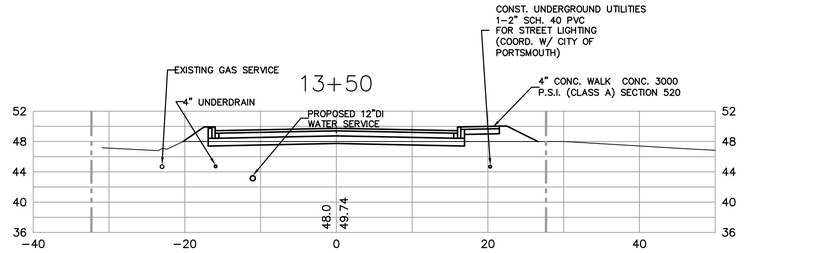


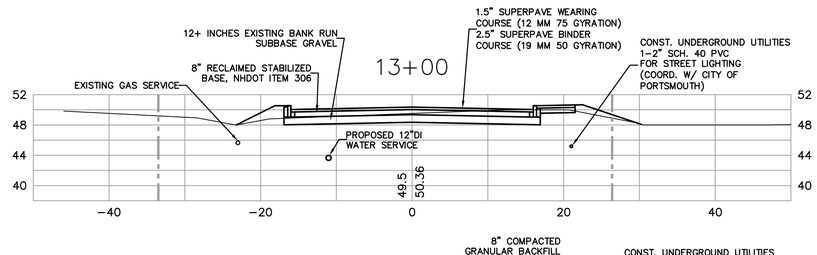


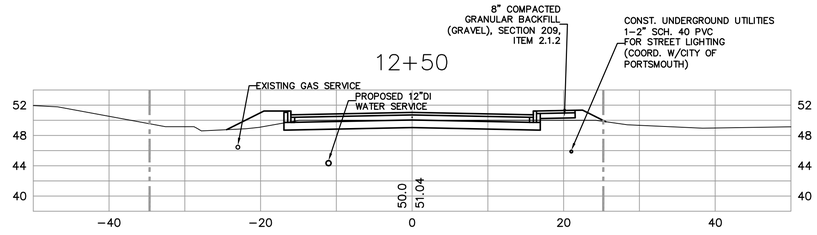


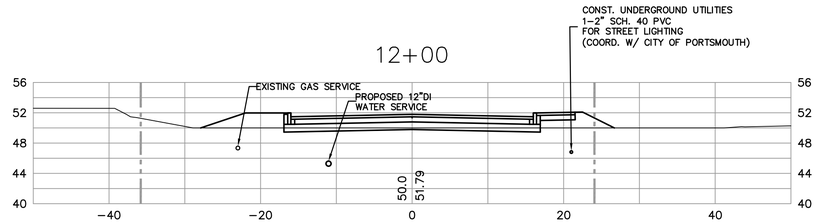


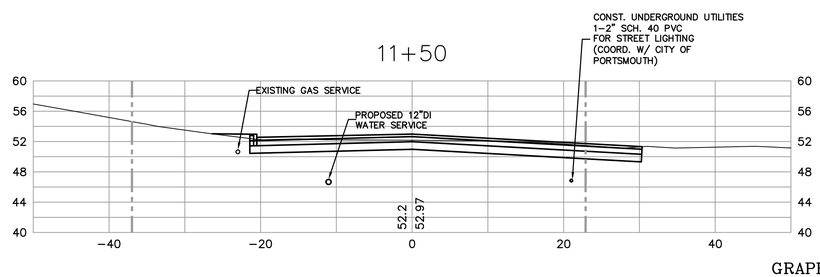












GRAPHIC SCALE

10 0 5 10 20 40

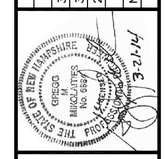
(IN FEET)

NOTE: THE LOCATIONS OF EXSTING AND PROPOSED UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.

COMMERCE WAY CROSS SECTION SHEET

No.	Description	Appd	Date
3.	BID DRAWINGS	PMC	03/21/14
3.	PLANNING BOARD SUBMISSION	PMC	03/26/12
2.	PLAN SET FOR CITY COUNCIL	PMC	12/19/11
	REVISED DRIVEWAY ENTRANCES & UTILITIES	PMC	11/14/11

Revisions



DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2199B
FILE NO: 2199-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
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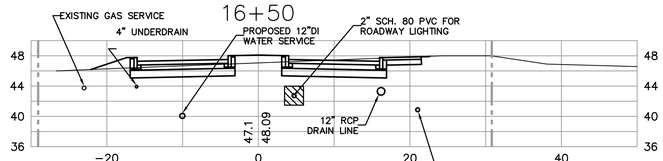
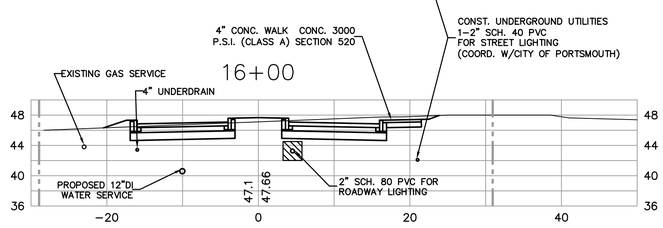
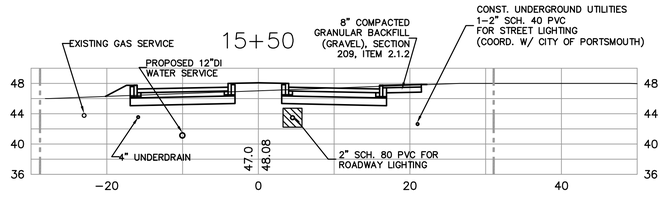
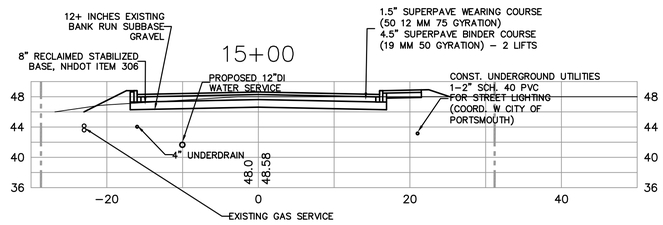
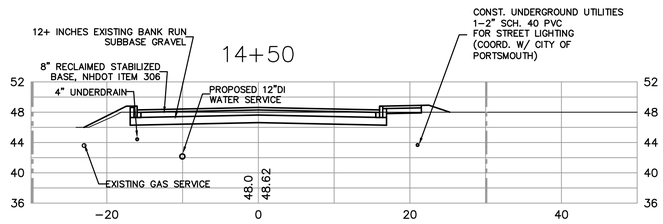
R-12

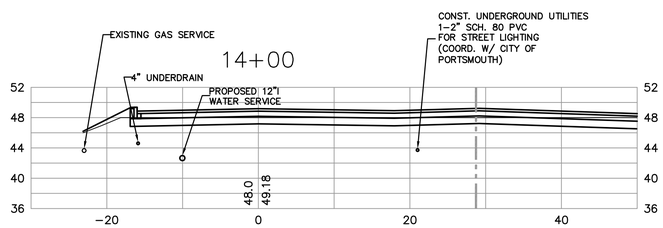


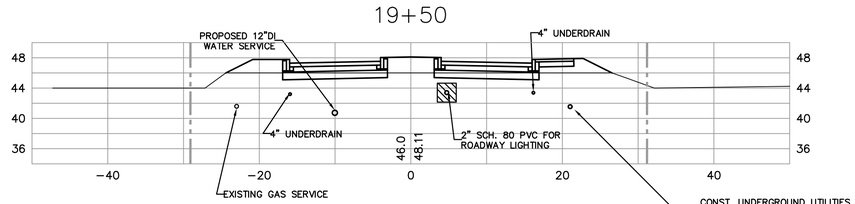


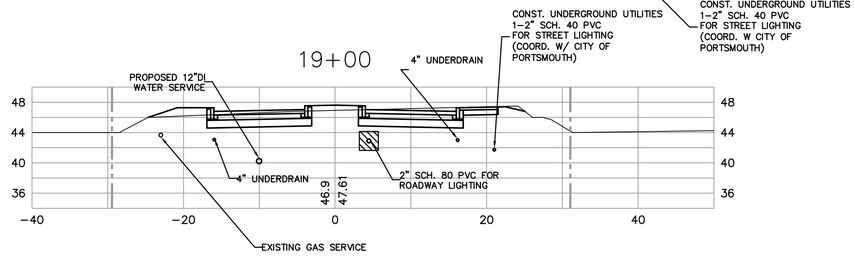


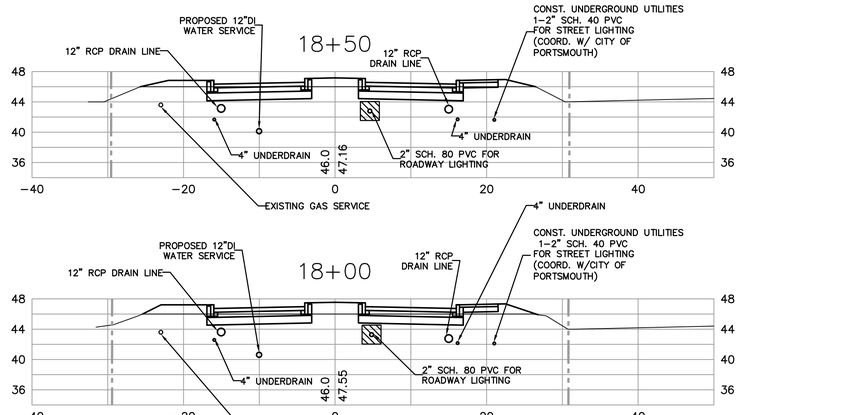


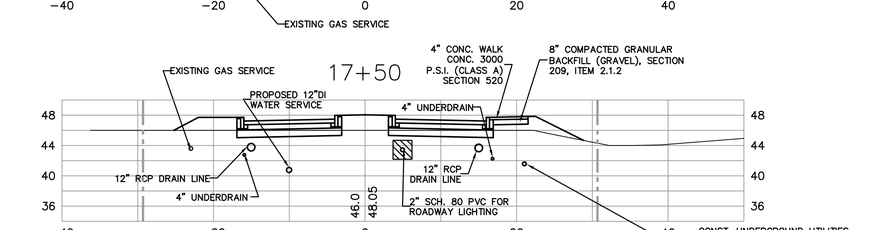


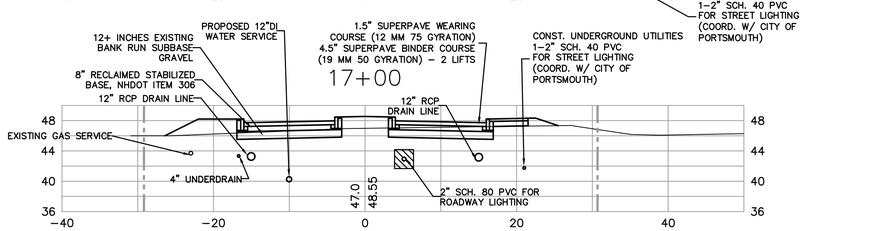












GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)

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COMMERCE WAY CROSS SECTION SHEET

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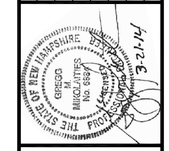
2.	PLAN SET FOR CITY COUNCIL	PMC	12/19/11
1.	REVISED DRIVEWAY ENTRANCES & UTILITIES	PMC	11/14/11



DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
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PROJECT NO: 2199B
FILE NO: 2199B-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

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Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

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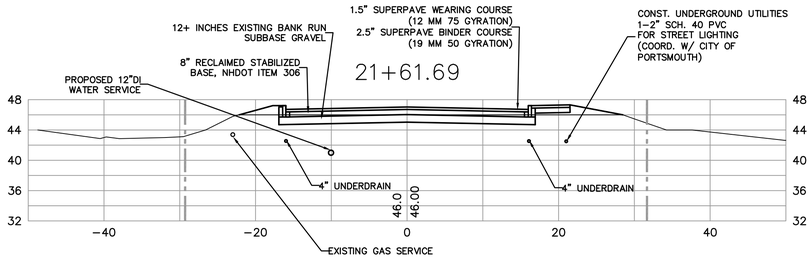

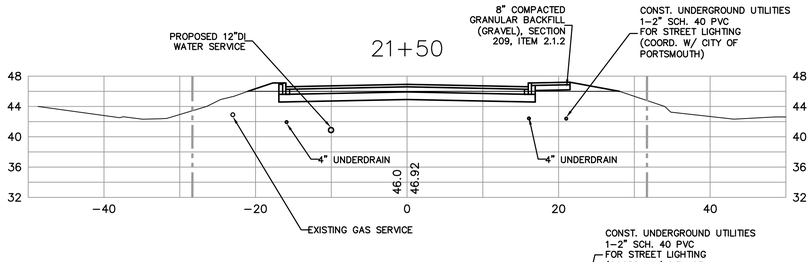

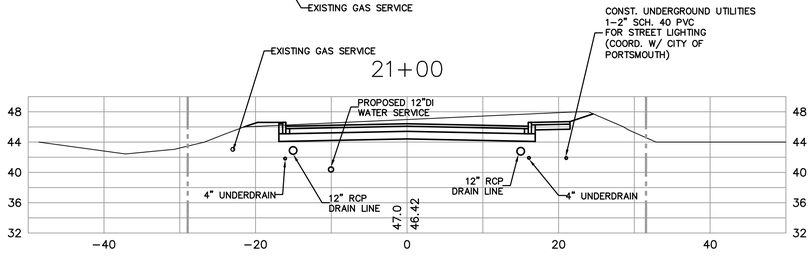

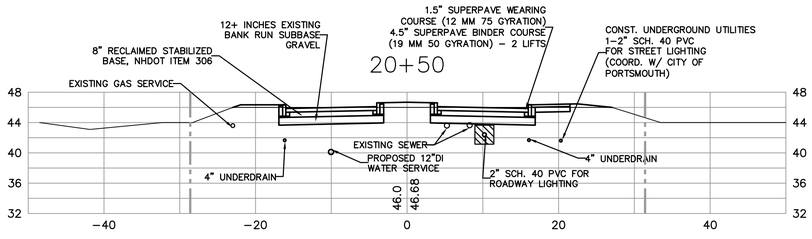

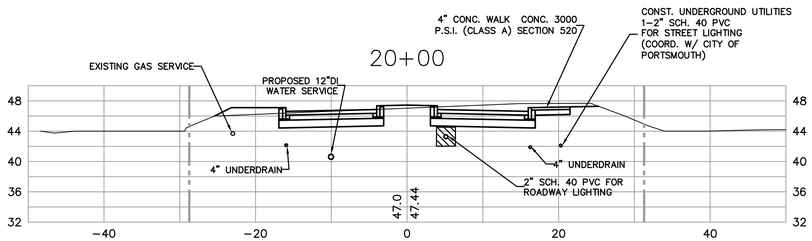

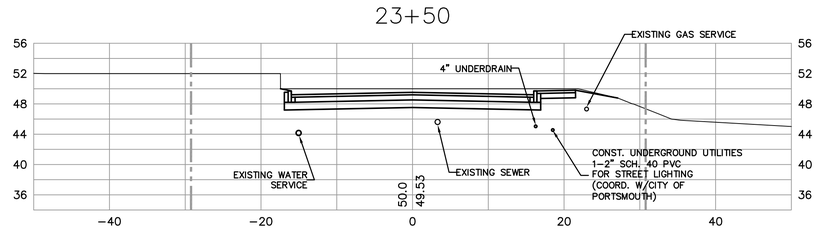

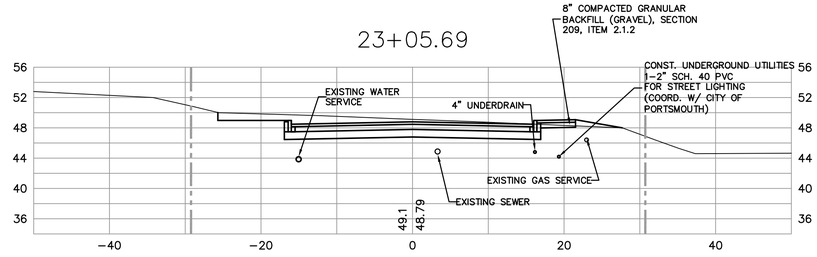

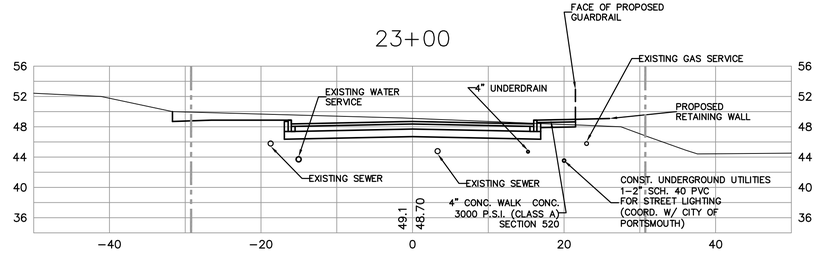

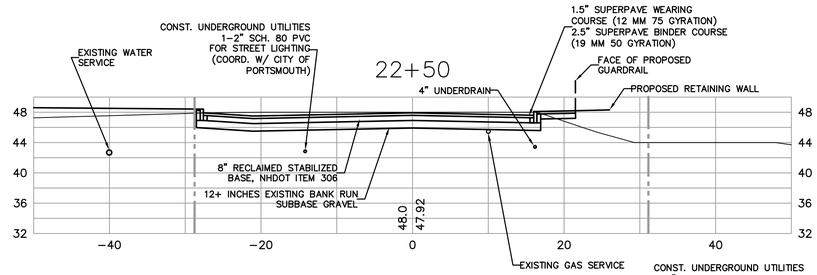

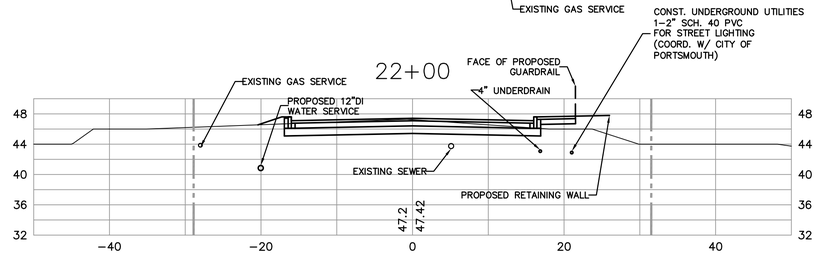

GRAPHIC SCALE

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Revisions

DATE: FEBRUARY 3, 2010
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PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

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Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
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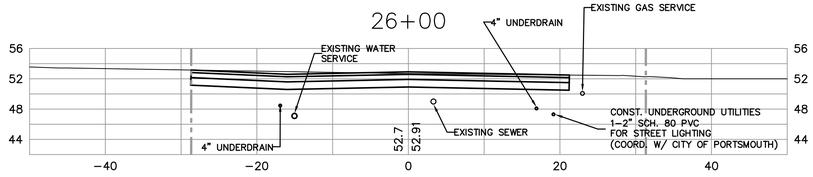

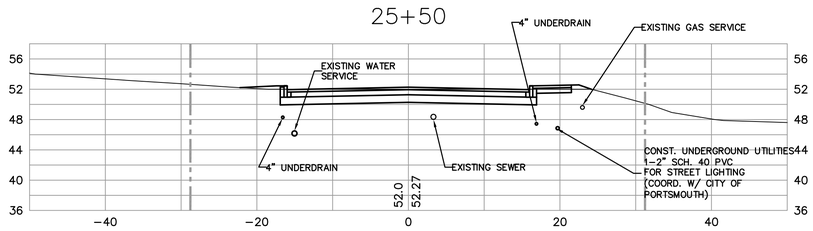

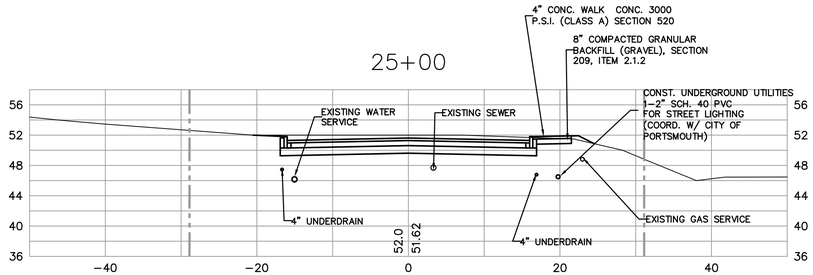

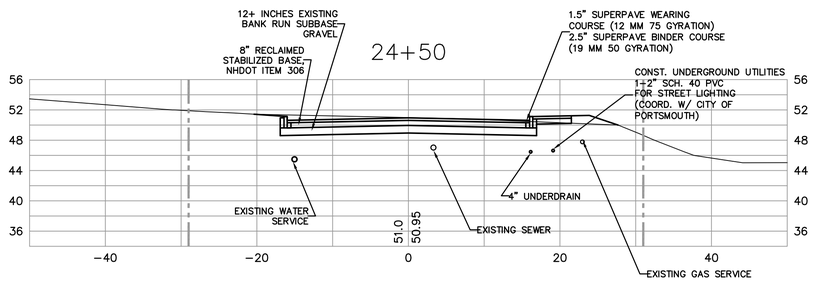

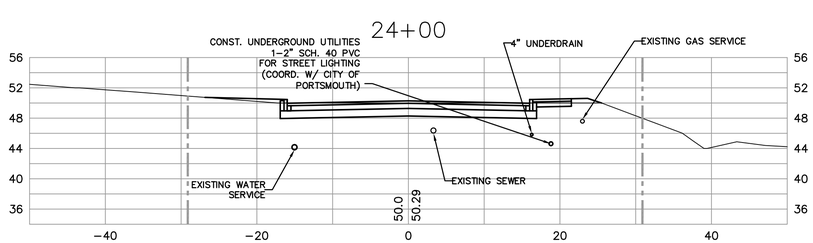

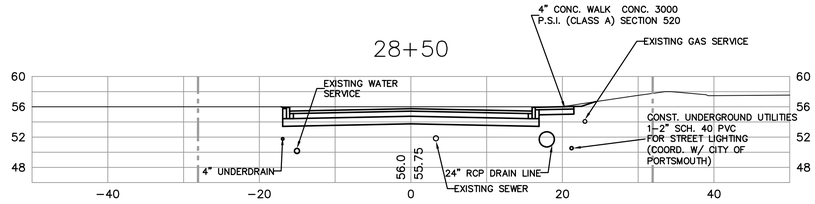

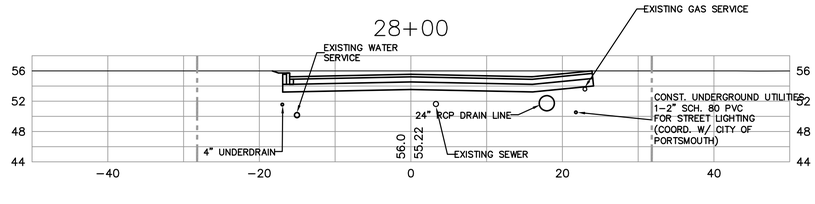

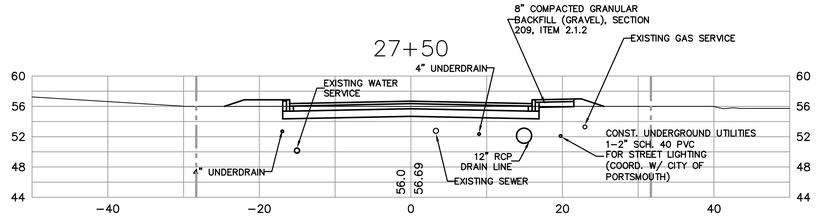

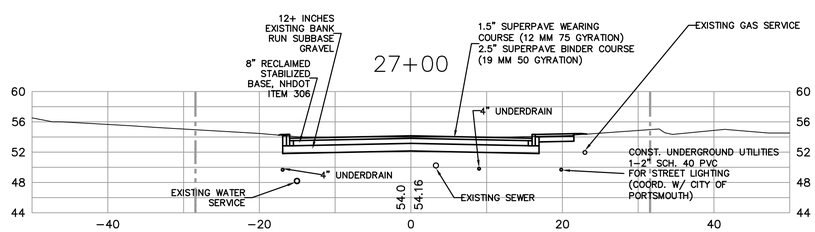

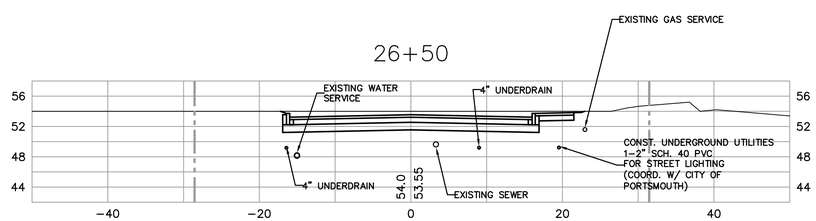

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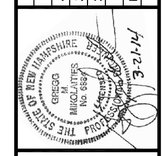

DATE: FEBRUARY 3, 2010
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PROJECT NO: 2199B
FILE NO: 2199-SITE-ROAD.dwg

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COMMERCE WAY
PORTSMOUTH, NH

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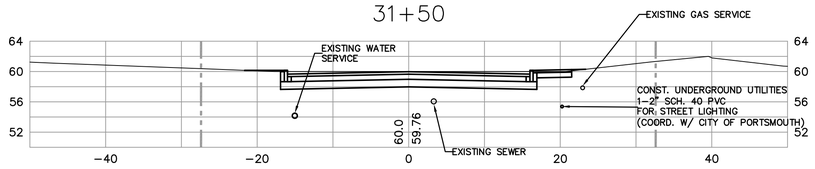

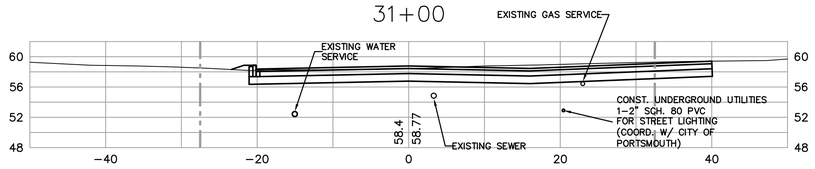

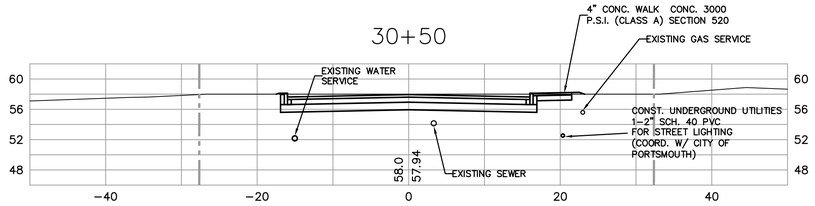

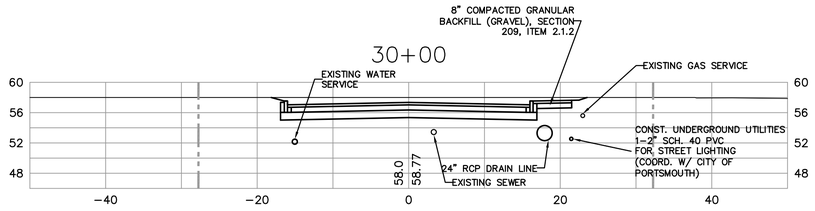

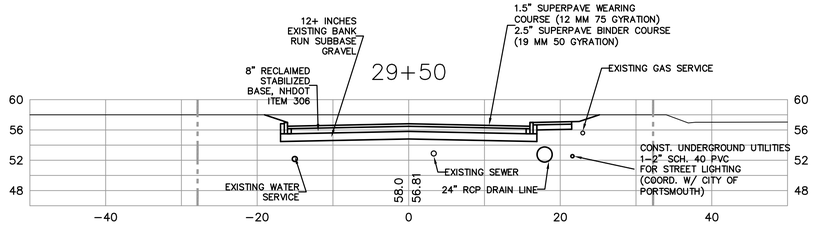

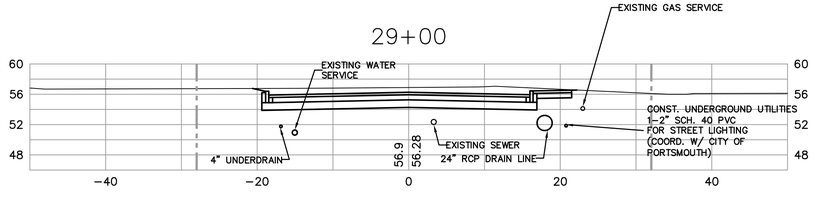

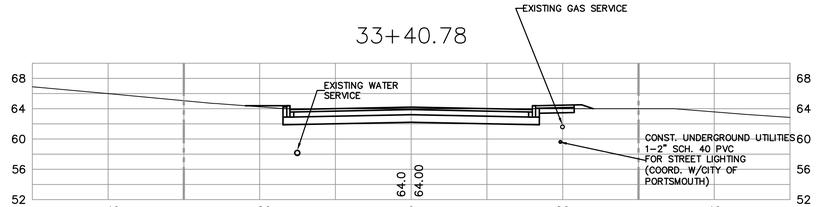

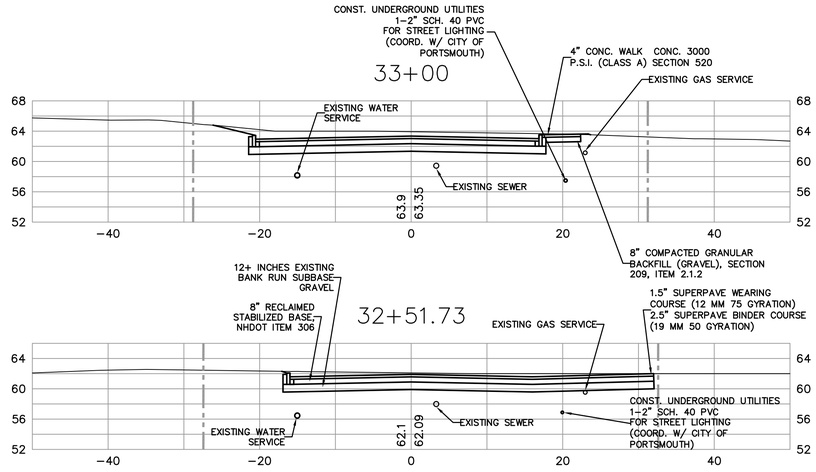

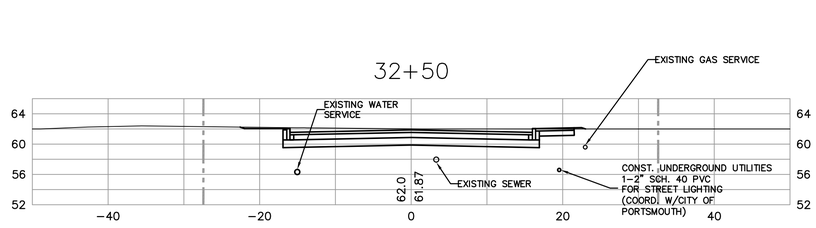

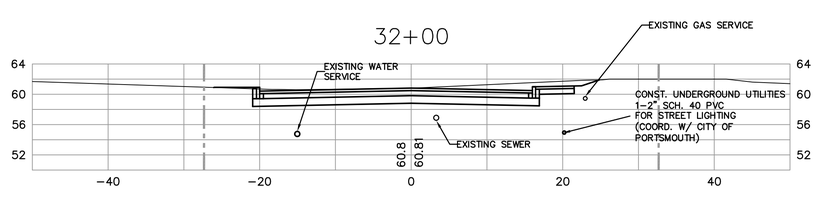

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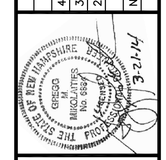

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PROJECT NO: 2199B
FILE NO: 2199-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

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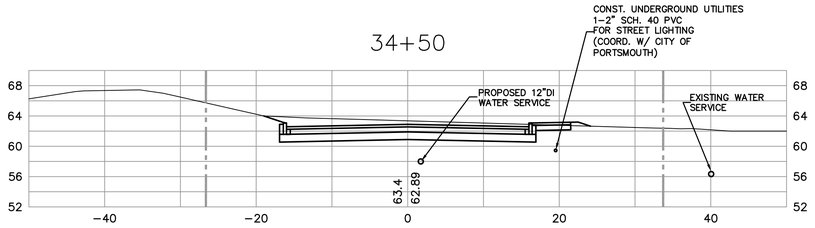
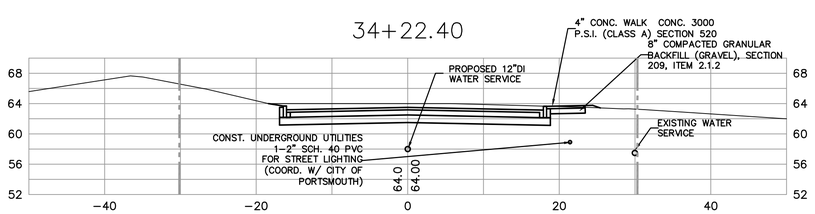
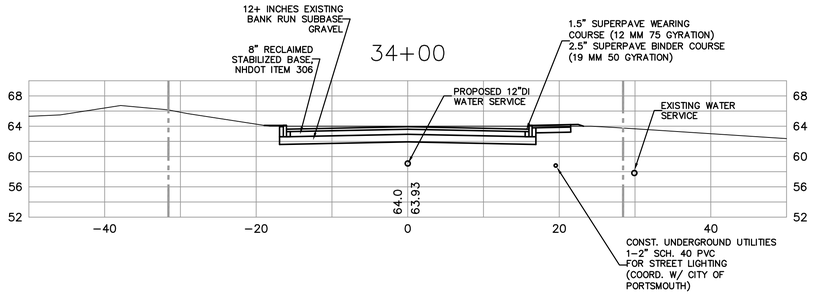
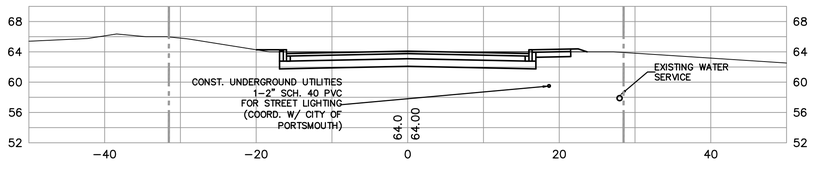
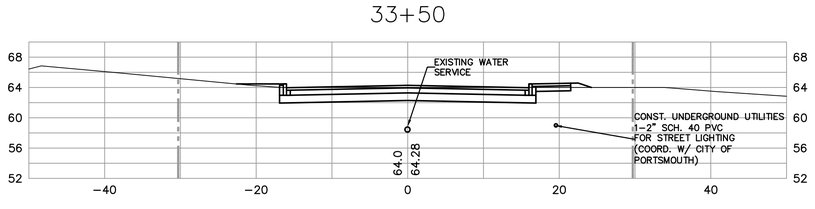
R-16

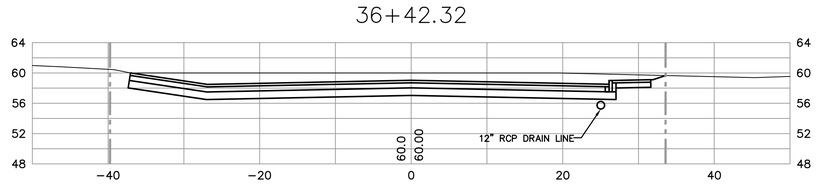


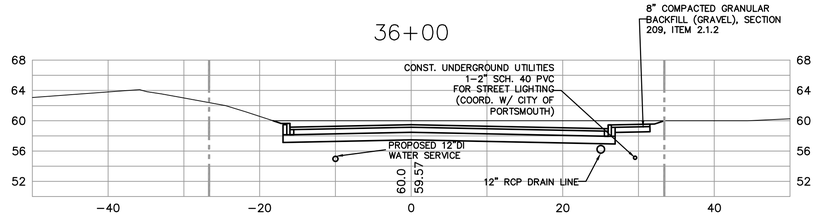


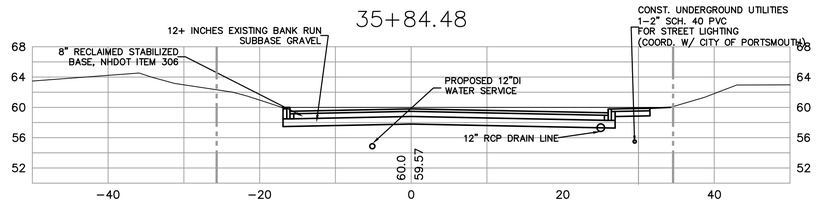


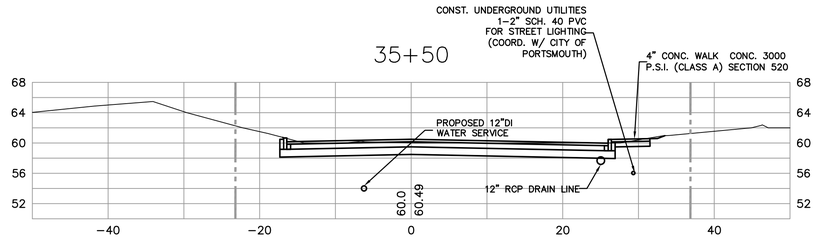


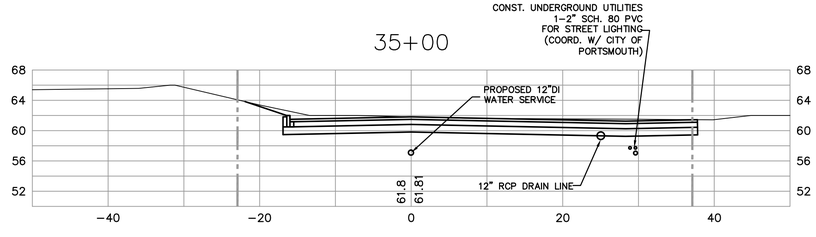












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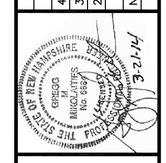

DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 21898
FILE NO: 21898-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

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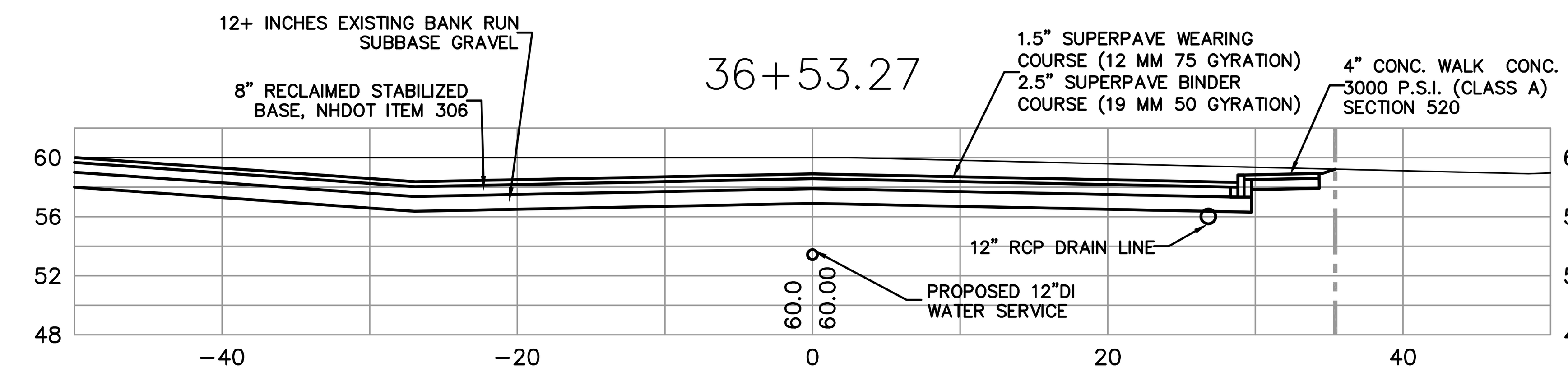
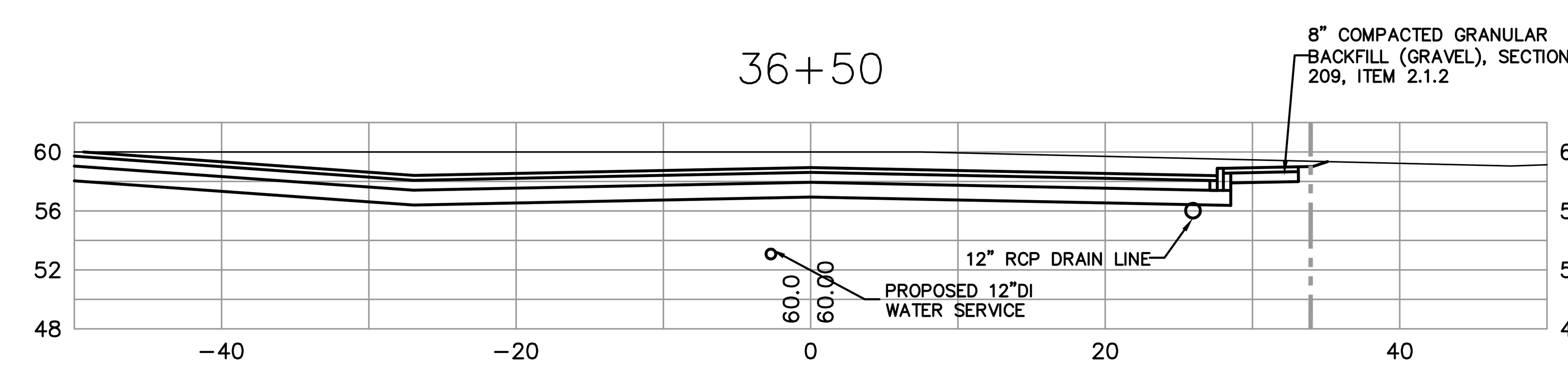
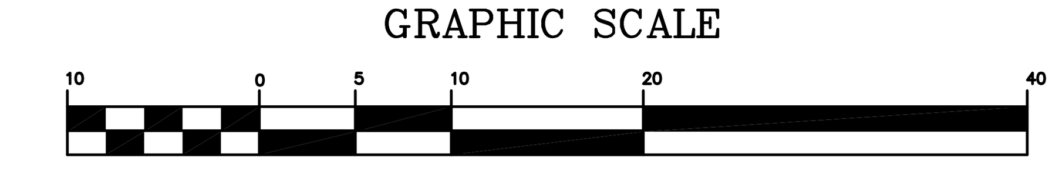




NOTE: THE LOCATIONS OF EXSTING AND PROPOSED UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE OWNER OR THE ENGINEER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES, ANTICIPATE CONFLICTS, REPAIR EXISTING UTILITIES AND RELOCATE EXISTING UTILITIES REQUIRED TO COMPLETE THE WORK.

GRAPHIC SCALE



COMMERCE WAY CROSS SECTION SHEET

No.	Description	Appd	Date
4.	BID DRAWINGS	PMC	03/21/14
3.	PLANNING BOARD SUBMISSION	PMC	03/26/12
2.	PLAN SET FOR CITY COUNCIL	PMC	12/19/11
1.	REVISED DRIVEWAY ENTRANCES & UTILITIES	PMC	11/14/11

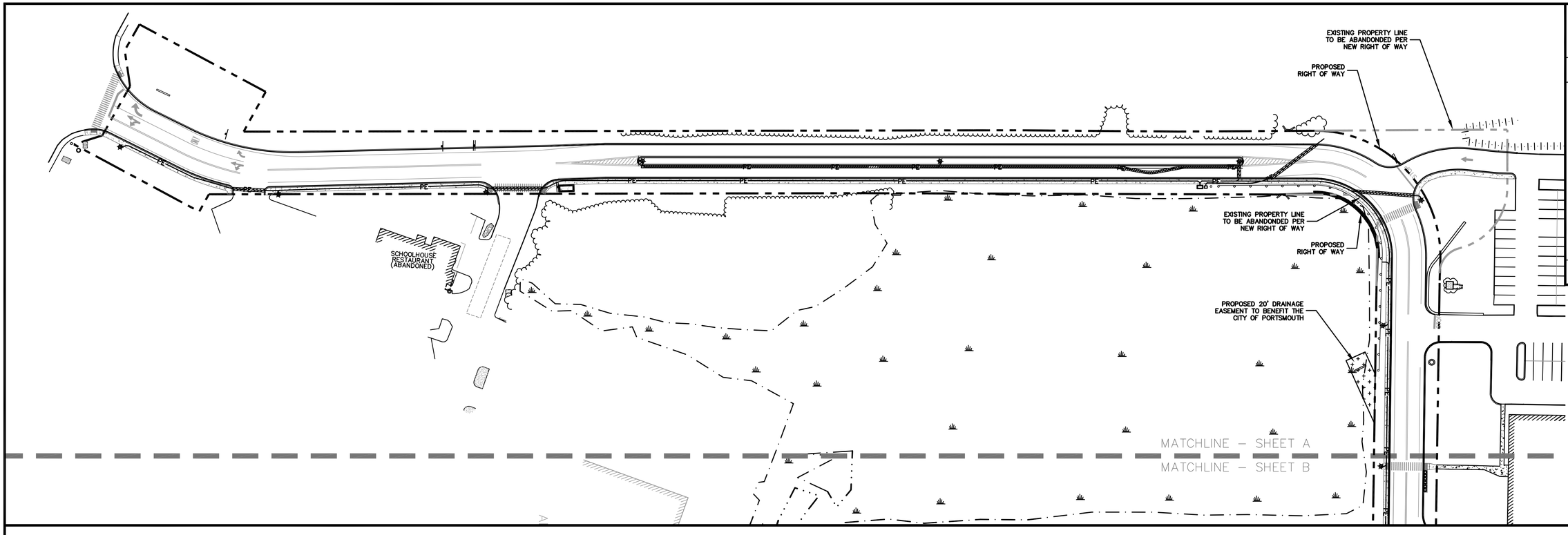
Revisions

DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-SITE-ROAD.dwg

PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
PORTSMOUTH, NH

Tighe&Bond
Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

R–18



No.	Description	Appd	Date
6.	BID DRAWINGS	PMC	03/21/14
5.	REVISE PER DPW DIRECTOR COMMENTS	PMC	08/02/12
4.	PLANNING BOARD SUBMISSION	PMC	03/26/12
3.	PLAN SET FOR CITY COUNCIL	PMC	12/19/11
2.	REVISED DRIVEWAY ENTRANCE & UTILITIES	PMC	11/14/11
1.	REVISED TO INCLUDE EASEMENT FOR CITY	PMC	08/27/08

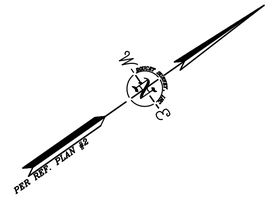
Revisions

DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
DRAWN BY: SLF/KAM
APPROVED BY: PMC
PROJECT NO: 2189B
FILE NO: 2189B-SITE-ROAD.dwg

LEGEND

PROPOSED 20' DRAINAGE EASEMENT TO BENEFIT THE CITY OF PORTSMOUTH

NOTE:
THIS PLAN IS FOR INFORMATIONAL PURPOSES ONLY. R.O.W. LINE AND EASEMENTS SHALL BE COORDINATED WITH COMMERCE WAY, LLC, CITY OF PORTSMOUTH LEGAL DEPARTMENT, AND THE APPROPRIATE UTILITY COMPANY.



GRAPHIC SCALE

50 0 25 50 100 200

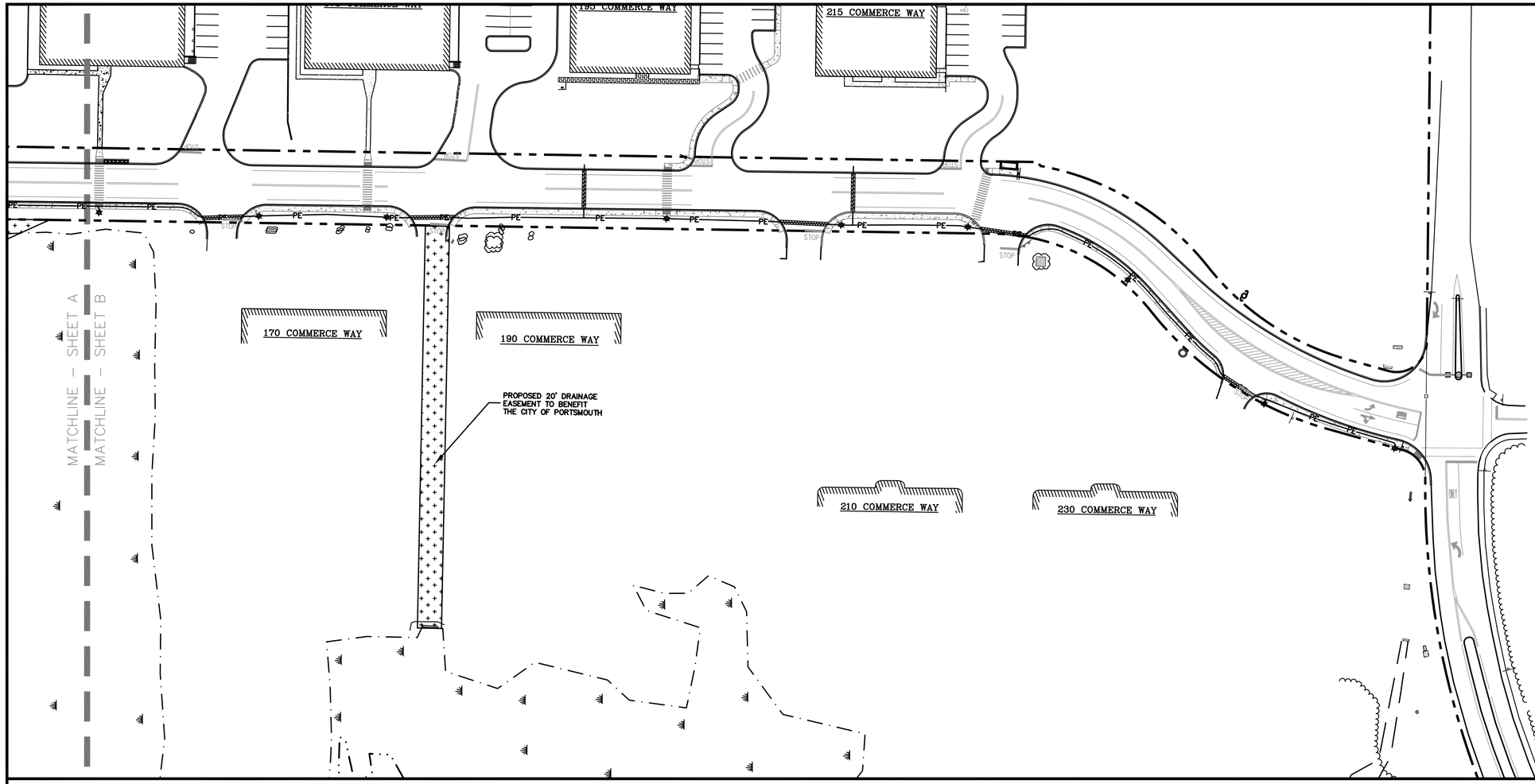
(IN FEET)

PROPOSED ROW AND EASEMENT PLAN

PROPOSED ROADWAY IMPROVEMENTS COMMERCE WAY PORTSMOUTH, NH

Tighe&Bond Consulting Engineers
177 CORPORATE DRIVE
PORTSMOUTH, NEW HAMPSHIRE
03801 (603) 433-8818
info@tighebond.com

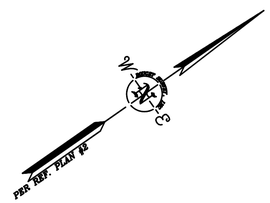
R-19A



LEGEND

- PROPOSED 20' DRAINAGE EASEMENT TO BENEFIT THE CITY OF PORTSMOUTH
- PROPOSED 20' WATER SERVICE EASEMENT TO BENEFIT THE CITY OF PORTSMOUTH
- EXISTING RIGHT OF WAY LINE TO BE ABANDONED
- PROPOSED RIGHT OF WAY LINE

NOTE:
THIS PLAN IS FOR INFORMATIONAL PURPOSES ONLY. R.O.W. LINE AND EASEMENTS SHALL BE COORDINATED WITH COMMERCE WAY, LLC, CITY OF PORTSMOUTH LEGAL DEPARTMENT, AND THE APPROPRIATE UTILITY COMPANY.



GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

PROPOSED ROW AND EASEMENT PLAN

No.	Description	Appd	Date
5.	BID DRAWINGS	PMC	03/21/14
4.	REVISE PER DPW DIRECTOR COMMENTS	PMC	08/02/12
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Revisions

DATE: FEBRUARY 3, 2010
SCALE: SCALE
DESIGNED BY: PMC
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PROPOSED ROADWAY IMPROVEMENTS
COMMERCE WAY
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R-19B

Master Plant List

TREES

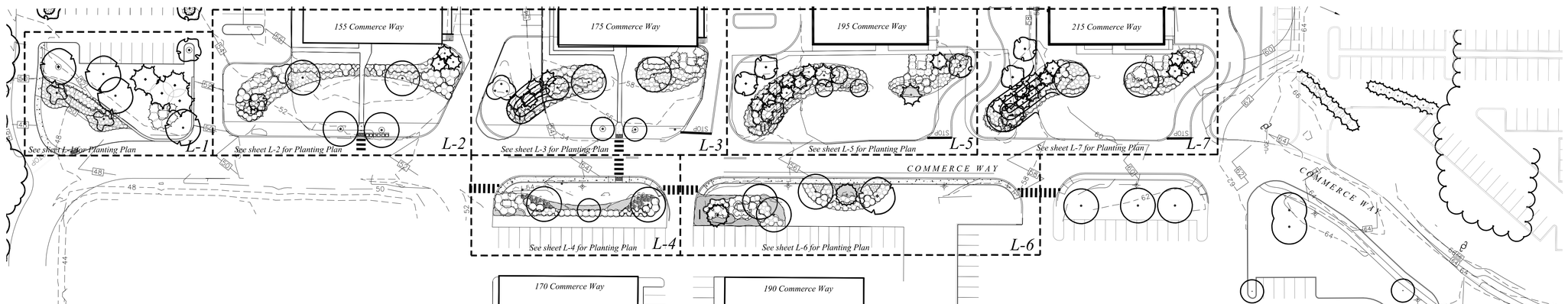
Symbol	Botanical Name	Common Name	Size	Comments	QUANTITY TOTAL	Quantity #135	Quantity #155	Quantity #175	Quantity #170	Quantity #195	Quantity #190	Quantity #215
As	*Acer saccharum 'Green Mountain'*	Green Mountain Sugar Maple	3-3.5" cal	B&B	**1**	1						
Ms	*Malus 'Spring Snow'*	Crabapple	2.5-3" Cal	B&B	**2**	2						
Pa	*Platanus x acerifolia 'Bloodgood'*	Bloodgood London Planetree	2.5-3" Cal	B&B	**1**						1	
Pf	*Pinus flexilis 'Vanderwolf's Pyramid'*	Vanderwolfs Pine	12-14' Ht.	B&B	**4**					2		2
Po1	*Picea orientalis*	Oriental Spruce	12-14' Ht.	B&B	**7**		1	2		1		3
Po2	*Picea orientalis*	Oriental Spruce	14-16' Ht.	B&B	**15**		2	2		5		6
Py	*Pyrus calleryana 'Aristocrat'*	Flowering Pear	2.5-3" cal	B&B	**1**	1						
TPC	Transplanted Crabapple		n/a	to be tagged	**8**		1			4		3

SHRUBS

Symbol	Botanical Name	Common Name	Size	Comments	QUANTITY TOTAL	Quantity #135	Quantity #155	Quantity #175	Quantity #170	Quantity #195	Quantity #190	Quantity #215
Box	*Buxus 'Green Velvet'*	Green Velvet Boxwood	2-2.5' Ht	full	**42**			29				13
Cle	*Clethra alnifolia 'Hummingbird'*	Hummingbird Compact Summersweet	5 gal		**30**					30		
Cor	*Cornus alba 'Ivory Halo'*	Ivory Halo Dogwood	7 gal		**47**		8			14	6	19
Deu	*Deutzia gracilis*	Deutzia	5 gal		**18**							18
DeuN	*Deutzia gracilis 'Nikko'*	Deutzia	5 gal		**21**		6	15				
For	*Forsythia 'Broxensis'*	Dwarf Green Forsythia	3 gal		**52**		7	21				24
Foth	*Fothergilla gardenii*	Dwarf Fothergilla	5 gal		**8**						8	
HyA	*Hydrangea arborescens 'Annabelle'*	Annabelle Hydrangea	7 gal		**25**		10		7	8		
HyQS	*Hydrangea quercifolia 'Sikes Dwarf'*	Sike's Dwarf Hydrangea	5 gal		**101**		39			23	19	20
HyS	*Hydrangea macrophylla 'All Summer Beauty'*	All Summer Beauty Hydrangea	7 gal		**24**			10			14	
Ig	*Ilex glabra 'Shamrock'*	Shamrock Inkberry	5 gal		**63**		29			34		
Iv	*Ilex verticillata 'Red Sprite'*	Red Sprite Winterberry	5 gal		**37**			16		7		14
JunB	*Juniperus squamata 'Blue Star'*	Blue Star Juniper	5 gal		**3**					3		
JunS	*Juniperus chinensis 'Sargenti'*	Sargent Juniper	5 gal		**29**		5	6		8		10
Mic	*Microbiota decussata*	Russian Cypress	3 gal		**11**						11	
RhP	*Rhododendron 'P.J.M.'*	P.J.M. Rhododendron	3-4' Ht		**6**				2	1	3	
RhY	*Rhododendron yakushimanum*	Yakushimanum Rhododendron	5 gal		**9**						9	
Ros	Rose Mix											
	Rosa 'Double Knockout'	Double Knockout Rose	3 gal		**37**	13	12	4		4		4
	Rosa 'Pink Double Knockout'	Pink Double Knockout Rose	3 gal		**38**	14	12	4		4		4
Ru	*Rhus aromatica 'Grow-Low'*	Grow Low Sumac	5 gal		**14**					14		
SpAW	*Spiraea x bumalda 'Anthony Waterer'*	Anthony Waterer Spirea	5 gal		**31**				10			21
SpG	*Spiraea x bumalda 'Goldmound'*	Anthony Waterer Spirea	3 gal		**125**	70	13	22		20		
SyrB	*Syringa 'Bloomerang'*	Bloomerang Lilac	2-3' Ht.		**12**			8		4		
SyrC	*Syringa vulgaris 'Charles Joly'*	Double magenta Lilac	4-5' Ht.	B&B	**6**		6					
ThN	*Thuja occidentalis 'Nigra'*	Dark American Arborvitae	6-7' Ht.		**8**			8				
Tm	*Taxus media 'Tauntonii'*	Taunton Yew	2-3' Ht.		**22**	22						
TPRh	Transplanted Rhododendron		n/a	to be tagged	**25**		5		14	3	3	
Vib	*Viburnum plicatum tomentosum 'Mariesii'*	Marie's Doublefile Viburnum	5-6' Ht.		**3**			2				1

PERENNIALS, GROUNDCOVERS, VINES and ANNUALS

Symbol	Botanical Name	Common Name	Size	Comments	QUANTITY TOTAL	Quantity #135	Quantity #155	Quantity #175	Quantity #170	Quantity #195	Quantity #190	Quantity #215
AnS	*Anemone 'September Charm'*	Windflower	1 gal		**170**				50		120	
Bap	*Baptisia australis*	False Blue Indigo	1 gal		**6**		6					
Cal	*Calamagrostis acutifolia 'Karl Foerster'*	Feather Reed Grass	1 gal		**11**		4			7		
Day	*Hemerocallis 'Big Time Happy'*	Big Time Happy Daylily	1 gal		**24**		6				18	
Hos	Hosta Mix		1 gal									
	Hosta 'Frances Williams'	Frances Williams Hosta	1 gal		**13**				13			
	Hosta 'Guacamole'	Guacamole Hosta	1 gal		**12**				12			
Vm	*Vinca minor 'Bowles'*	Bowles Periwinkle	50/flat		**36**				11	5	20	



Overall Planting View & Drawing Key

Scale: 1" = 50'

0 10 25 50 100

NOTE: *Proposed landscaping located on 215 and 195 Commerce Way shall be coordinated with the final alignment of the proposed driveways, which may be subject to further revision. Contractor shall coordinate with engineer prior to construction.*

WOODBURN & COMPANY
Landscape Architecture, LLC

103 Kent Place
Newmarket, NH 03857
Tel 603.659.5949
Fax: 603.659.5939

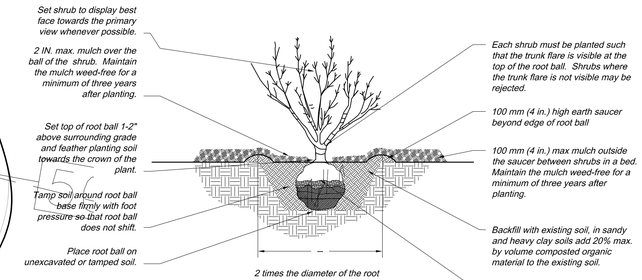
Commerce Way

Site Landscape Key

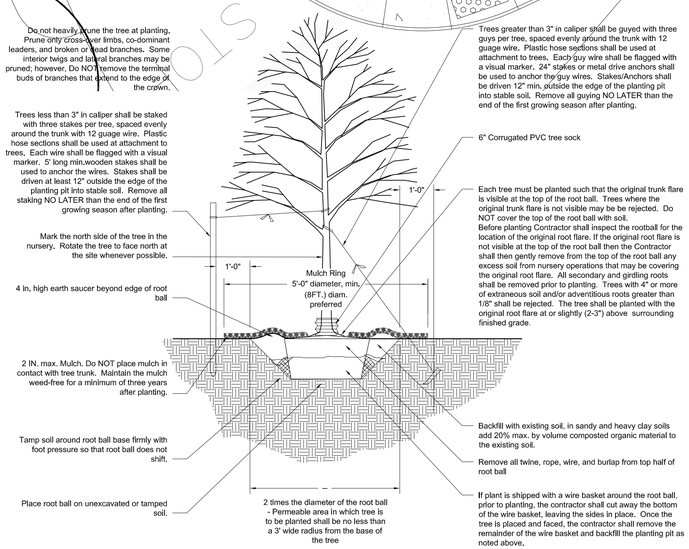
The Kane Company Portsmouth, NH

Drawn By:	*VB*
Checked By:	*RW*
Scale:	*1" = 50' -0"*
Date:	*February 17, 2014*
Revisions:	*March 3, 2015 Issued For Bid*

L-0



Shrub Planting Detail, Typ.



Tree Planting Detail, Typ.

Landscape Notes

1. Design is based on drawings by Tighe & Bond and may require adjustment due to actual field conditions.
2. The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
3. Erosion Control shall be in place prior to construction.
4. Erosion Control to consist of Hay Bales and Erosion Control Fabric shall be staked in place between the work and Water bodies, Wetlands and/or drainage ways prior to any construction.
5. It is the contractor's responsibility to verify drawings provided are to the correct scale prior to any bid, estimate or installation. A graphic scale bar has been provided on each sheet for this purpose. If it is determined that the scale of the drawing is incorrect, the landscape architect will provide a set of drawings at the correct scale, at the request of the contractor.
6. The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
7. Trees to Remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Snow fence shall be located at the drip line at a minimum and shall include any and all surface roots. Do not fill or mulch on the trunk flare. Do not disturb roots. In order to protect the integrity of the roots, branches, trunk and bark of the tree(s) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s). Do not store any refuse or construction materials or portalets within the tree protection area.
8. Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
9. The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call DIGSAFE at 1-888-344-7233.
10. The Contractor shall procure any required permits prior to construction.
11. Prior to any landscape construction activities Contractor shall test all existing loam and loam from off-site intended to be used for lawns and plant beds using a thorough sampling throughout the supply. Soil testing shall indicate levels of pH, nitrates, macro and micro nutrients, texture, soluble salts, and organic matter. Contractor shall provide Landscape Architect with test results and recommendations from the testing facility along with soil amendment plans as necessary for the proposed plantings to thrive. All loam to be used on site shall be amended as approved by the Landscape Architect prior to placement.
12. Contractor shall notify landscape architect or owner's representative immediately if at any point during demolition or construction a site condition is discovered which may negatively impact the completed project. This includes, but is not limited to, unforeseen drainage problems, unknown subsurface conditions, and discrepancies between the plan and the site. If a contractor is aware of a potential issue, and does not bring it to the attention of the landscape architect or owner's representative immediately, they may be responsible for the labor and materials associated with correcting the problem.
13. The Contractor shall furnish and plant all plants shown on the drawings and listed thereon. All plants shall be nursery-grown under climatic conditions similar to those in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the American Standard of Nursery Stock, American Standards Institute, Inc. 230 Southern Building, Washington, D.C. 20006.
14. A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.
15. All plants shall be legibly tagged with proper botanical name.
16. The Contractor shall guarantee all plants for not less than one year from time of acceptance.
17. Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not affect the right of inspection and rejection during or after the progress of the work. The Owner reserves the right to inspect and/or select all trees at the place of growth and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
18. No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
19. All landscaping shall be provided with either of the following
    a. An underground sprinkling system
    b. An outside hose attachment within 150 feet
20. If an automatic irrigation system is installed, all irrigation valve boxes shall be located within planting bed areas.
21. All disturbed areas will be dressed with 6" of topsoil and planted as noted on the plans or seeded except plant beds. New plant beds shall be prepared to a depth of 12" with 75% loam and 25% compost. Existing plant beds shall be amended with 3" of compost tilled in, to the extent possible without disturbing existing tree roots.
22. Trees, ground cover, and shrub beds shall be mulched to a depth of 2" with one-year-old, well-composted, shredded native bark not longer than 4" in length and ½" in width, free of woodchips and sawdust. Mulch for ferns and herbaceous perennials shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 5' diameter min. saucer. Color of mulch shall be black.
23. In no case shall mulch touch the stem of a plant nor shall mulch ever be more than 3" thick total (including previously applied mulch) over the root ball of any plant.
24. Secondary lateral branches of deciduous trees overhanging vehicular and pedestrian travel ways shall be pruned up to a height of 6' to allow clear and safe passage of vehicles and pedestrians under tree canopy.
25. Landscape Architect is not responsible for the means and methods of the contractor.
26. **MAINTENANCE:** Begin maintenance immediately after planting. Provide complete maintenance and service as required to promote and maintain healthy growth, including, without limitation, watering, fertilizing, pruning, trimming, cultivating, weeding, leaf removal, treating for insects and disease, resetting plants to proper grade and upright position, and other maintenance work, for thirty days after the date of final acceptance.

0 2 4 8 16

135 Plant List

TREES

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
As	*Acer saccharum 'Green Mountain'*	Green Mountain Sugar Maple	1	3-3.5" cal	B&B
Ms	*Malus 'Spring Snow'*	Crabapple	2	2.5-3" Cal	B&B
Py	*Pyrus calleryana 'Aristocrat'*	Flowering Pear	1	2.5-3" cal	B&B

SHRUBS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Ros	Rose Mix				
	Rosa 'Double Knockout'	Double Knockout Rose	13	3 gal	
	Rosa 'Pink Double Knockout'	Pink Double Knockout Rose	14	3 gal	
SpG	*Spiraea x bumalda 'Goldmound'*	Anthony Waterer Spirea	70	3 gal	
Tm	*Taxus media 'Tauntonii'*	Taunton Yew	22	2-3' Ht.	

NOTES:

- *All existing trees to remain shall be evaluated by a licensed arborist, prior to any construction, to determine if the tree is in good health. All trees to remain shall be pruned, deep-root fertilized, and have all mulch and soil removed from above the root flare.*
- *Contractor shall remove all existing trees (along with their stumps) that are NOT shown on plans. Project Representative will tag trees to be removed in field, prior to construction.*
- *Contractor shall provide smooth and feathered grading for all proposed plant beds and lawns.*
- *Existing plants to be transplanted shall be flagged in field with numbered tag, prior to bid and construction, by Project Representative.*

WOODBURN &COMPANY
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103 Kent Place
Newmarket, NH 03857
Tel 603.659.5949
Fax: 603.659.5939

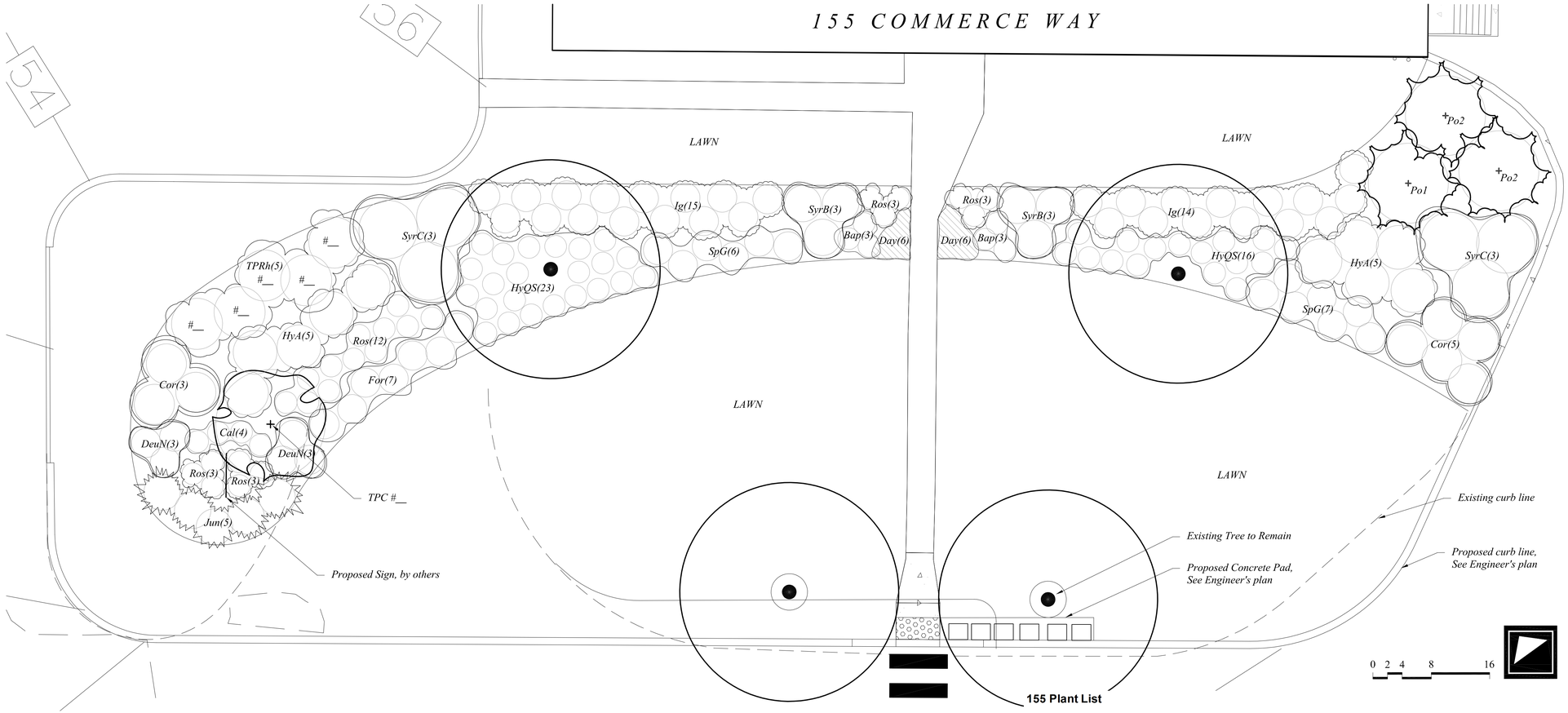
Commerce Way

#135 Landscape Plan

The Kane Company Portsmouth, NH

Drawn By:	*VB*
Checked By:	*RW*
Scale:	*1/8" = 1' - 0"*
Date:	*February 17, 2014*
Revisions:	*March 3, 2015 Issued For Bid*

L-1



155 Plant List

TREES

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Po1	*Picea orientalis*	Oriental Spruce	1	12-14' Ht.	B&B
Po2	*Picea orientalis*	Oriental Spruce	2	14-16' Ht.	B&B
TPC	Transplant Crabapple		1	n/a	to be tagged (see notes)

SHRUBS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Cor	*Cornus alba 'Ivory Halo'*	Ivory Halo Dogwood	8	7 gal	
DeuN	*Deutzia gracilis 'Nikko'*	Deutzia	6	5 gal	
For	*Forsythia 'Broxensis'*	Dwarf Green Forsythia	7	3 gal	
HyA	*Hydrangea arborescens 'Annabelle'*	Annabelle Hydrangea	10	7 gal	
HyQS	*Hydrangea quercifolia 'Sikes Dwarf'*	Sike's Dwarf Hydrangea	39	5 gal	
Ig	*Ilex glabra 'Shamrock'*	Shamrock Inkberry	29	5 gal	
JunS	*Juniperus chinensis 'Sargenti'*	Sargent Juniper	5	5 gal	
Ros	Rose Mix				
	Rosa 'Double Knockout'	Double Knockout Rose	12	3 gal	
	Rosa 'Pink Double Knockout'	Pink Double Knockout Rose	12	3 gal	
SpG	*Spiraea x 'Goldmound'*	Goldmound Spirea	13	3 gal	
SyrB	*Syringa 'Bloomerang'*	Bloomerang Lilac	6	2-3' Ht.	
SyrC	*Syringa vulgaris 'Charles Joly'*	Double magenta Lilac	6	4-5' Ht.	B&B
TPRh	Transplant Rhododendron		5	n/a	to be tagged (see notes)

PERENNIALS, GROUNDCOVERS, VINES and ANNUALS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Bap	*Baptisia australis*	False Blue Indigo	6	1 gal	
Cal	*Calamagrostis acutifolia 'Karl Foerster'*	Feather Reed Grass	4	1 gal	
Day	*Hemerocallis 'Big Time Happy'*	Big Time Happy Daylily	6	1 gal	

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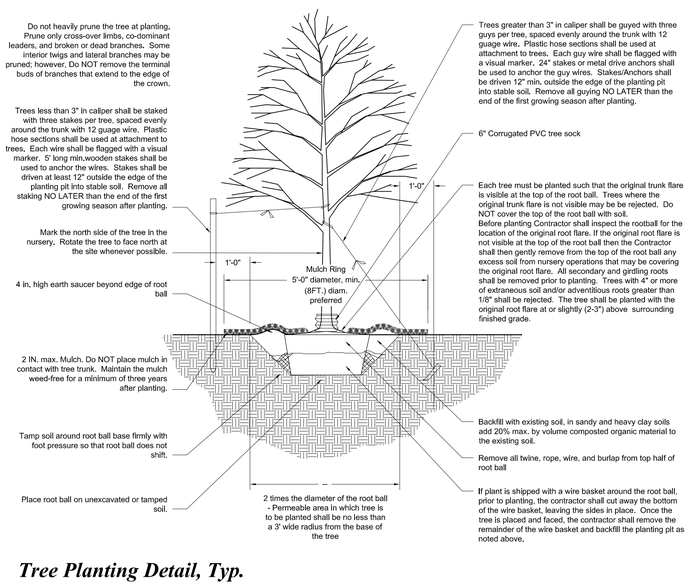

Tree Planting Detail, Typ.

WOODBURN & COMPANY
Landscape Architecture, LLC
103 Kent Place
Newmarket, NH 03857
Tel 603.659.5949
Fax: 603.659.5939

Commerce Way

#155 Landscape Plan

The Kane Company Portsmouth, NH

Drawn By:	VB
Checked By:	RW
Scale:	1/8" = 1' - 0"
Date:	February 17, 2014
Revisions:	March 3, 2015 Issued For Bid

L-2

NOTES:

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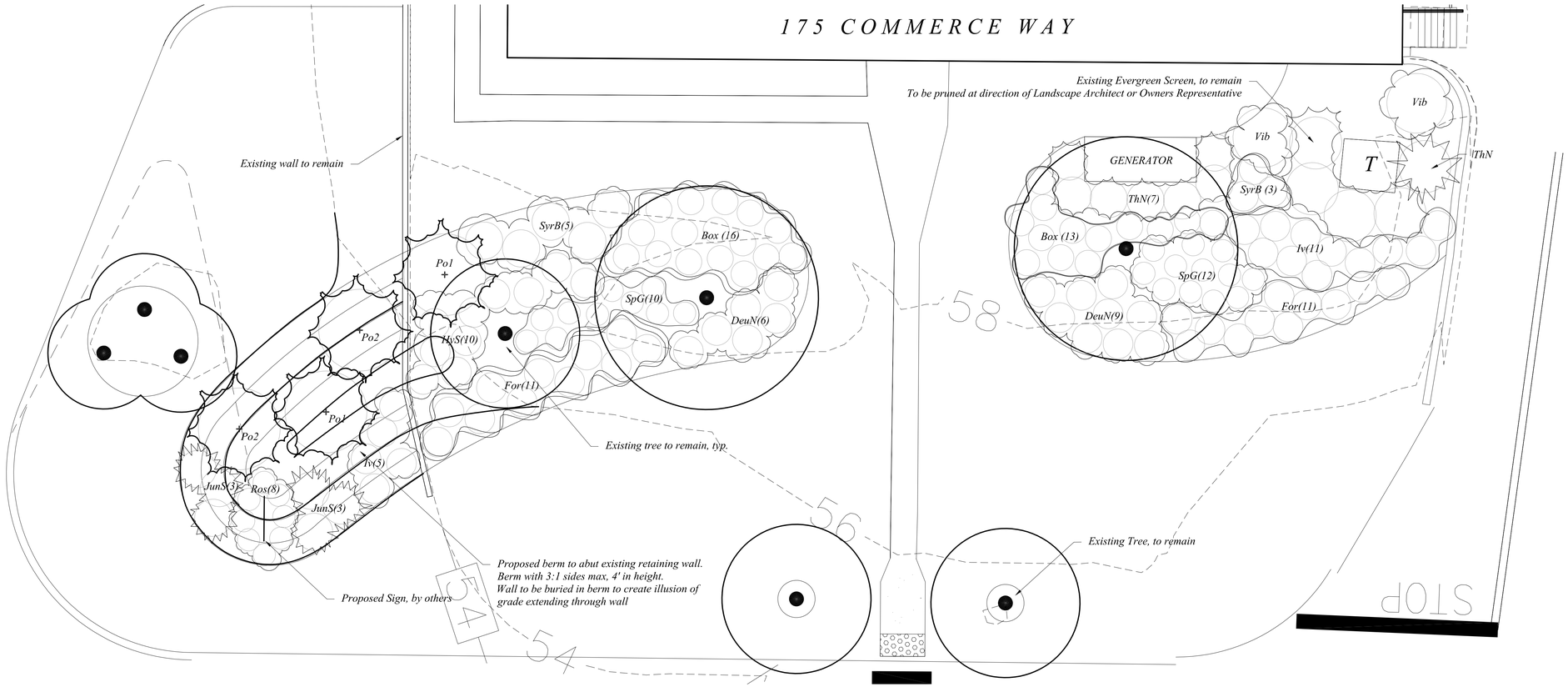

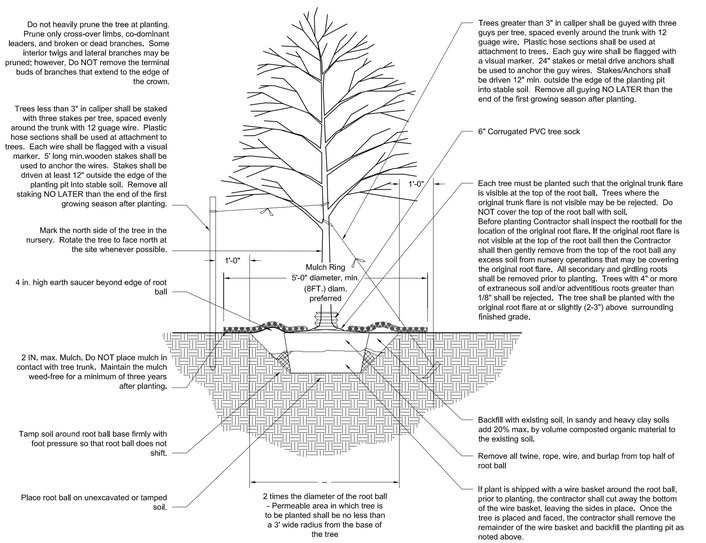

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175 Plant List

TREES

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Po1	*Picea orientalis*	Oriental Spruce	2	12-14' Ht.	B&B
Po2	*Picea orientalis*	Oriental Spruce	2	14-16' Ht.	B&B

SHRUBS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Box	*Buxus 'Green Velvet'*	Green Velvet Boxwood	29	2-2.5' Ht	full
DeuN	*Deutzia gracilis 'Nikko'*	Deutzia	15	5 gal	
For	*Forsythia 'Broxensis'*	Dwarf Green Forsythia	21	3 gal	
HyS	*Hydrangea macrophylla 'All Summer Beauty'*	All Summer Beauty Hydrangea	10	7 gal	
Iv	*Ilex verticillata 'Red Sprite'*	Red Sprite Winterberry	16	5 gal	
JunS	*Juniperus chinensis 'Sargenti'*	Sargent Juniper	6	5 gal	
Ros	Rose Mix				
	Rosa 'Double Knockout'	Double Knockout Rose	4	3 gal	
	Rosa 'Pink Double Knockout'	Pink Double Knockout Rose	4	3 gal	
SpG	*Spiraea x 'Goldmound'*	Goldmound Spirea	22	3 gal	
SyrB	*Syringa 'Bloomerang'*	Bloomerang Lilac	8	2-3' Ht.	
ThN	*Thuja occidentalis 'Nigra'*	Dark American Arborvitae	8	6-7' Ht.	B&B
Vib	*Vibumum plicatum tomentosum 'Mariesii'*	Marie's Doublefile Viburnum	2	5-6' Ht.	B&B

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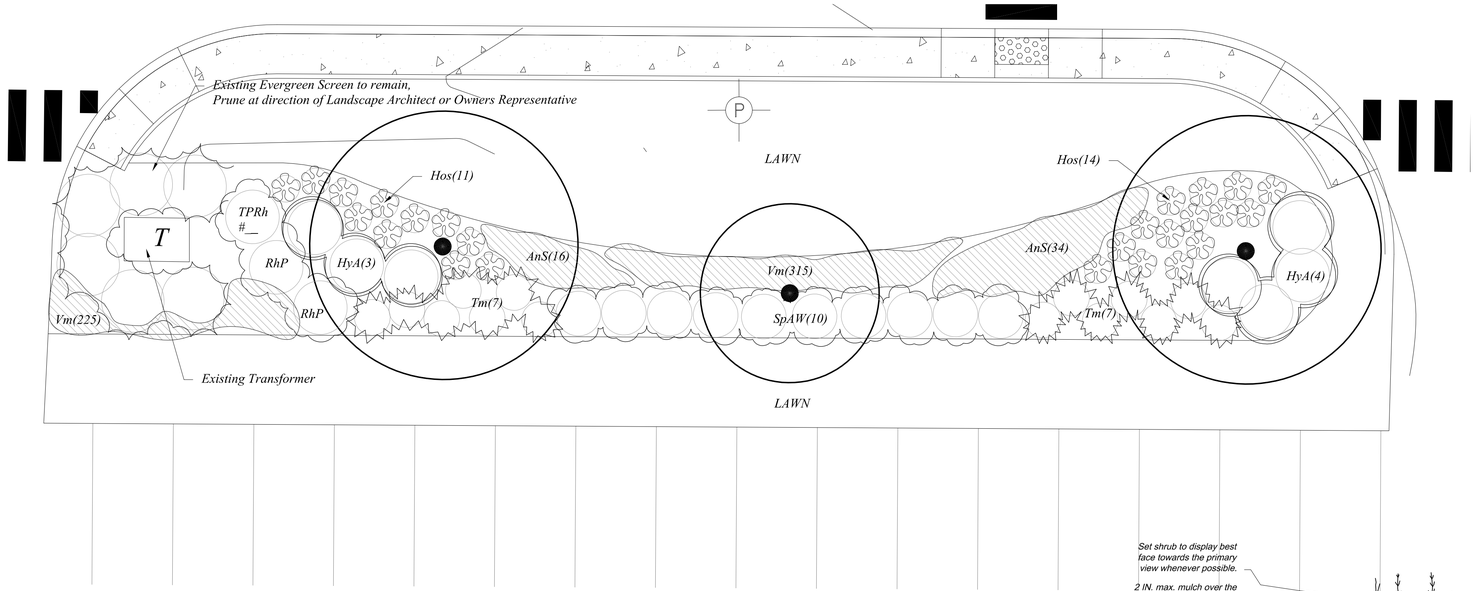
Commerce Way

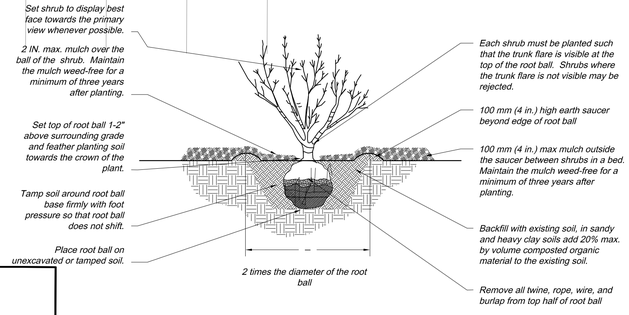
#175 Landscape Plan

The Kane Company Portsmouth, NH

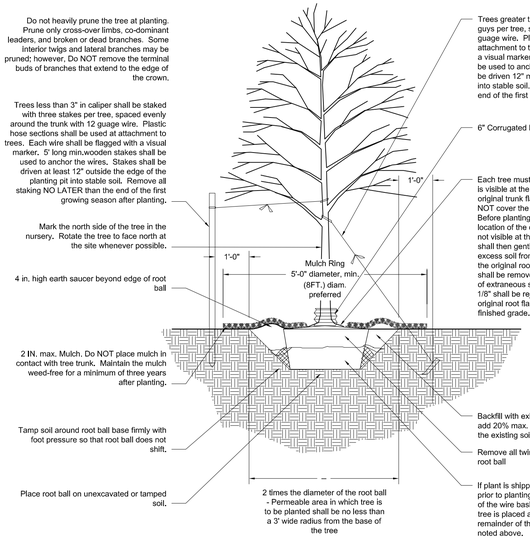
Drawn By: VB
Checked By: RW
Scale: 1/8" = 1' - 0"
Date: February 17, 2014
Revisions: March 3, 2015 Issued For Bid

L-3





Shrub Planting Detail, Typ.



Tree Planting Detail, Typ.

170 COMMERCE WAY

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170 Plant List

SHRUBS

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RhP	*Rhododendron 'P .J.M.'*	P .J.M. Rhododendron	2	3-4' Ht	
SpAW	*Spiraea x bumalda 'Anthony Waterer'*	Anthony Waterer Spirea	10	5 gal	
Tm	*Taxus media 'Tauntonii'*	Taunton Yew	14	2-3' Ht.	
TPRh	Transplant Rhododendron		1	n/a	to be tagged (see notes)

PERENNIALS, GROUNDCOVERS, VINES and ANNUALS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
AnS	*Anemone 'September Charmt'*	Windflower	50	1 gal	
Hos	Hosta Mix				
	Hosta 'Frances Williams'	Frances Williams Hosta	13		
	Hosta 'Guacamole'	Guacamole Hosta	12	1 gal	

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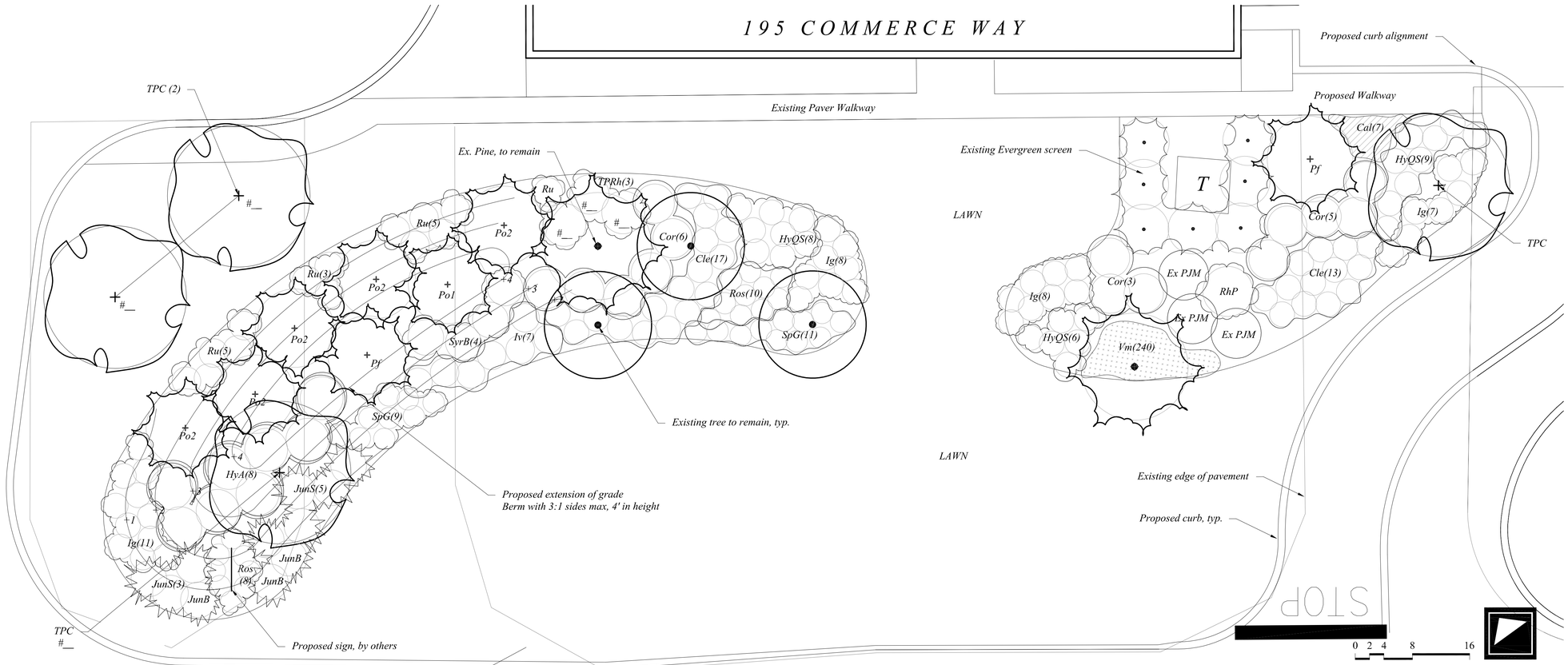
Commerce Way

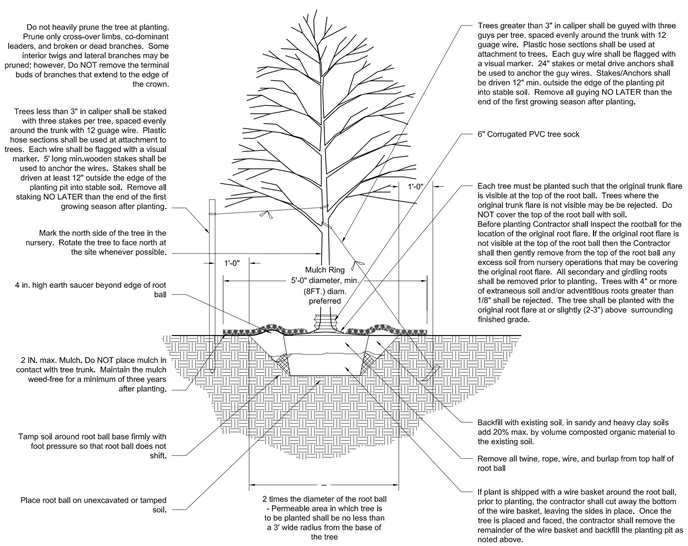
#170 Landscape Plan

The Kane Company Portsmouth, NH

Drawn By:	*VB*
Checked By:	*RW*
Scale:	*1/8" = 1' - 0"*
Date:	*March 26, 2012*
Revisions:	*March 3, 2015 Issued For Bid*

L-4





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26. MAINTENANCE: Begin maintenance immediately after planting. Provide complete maintenance and service as required to promote and maintain healthy growth, including, without limitation, watering, fertilizing, pruning, trimming, cultivating, weeding, leaf removal, treating for insects and disease, resetting plants to proper grade and upright position, and other maintenance work, for thirty days after the date of final acceptance.

195 Plant List

TREES

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Pf	*Pinus flexilis 'Vanderwolf's Pyramid'*	Vanderwolfs Pine	2	12-14' Ht.	B&B
Po1	*Picea orientalis*	Oriental Spruce	1	12-14' Ht.	B&B
Po2	*Picea orientalis*	Oriental Spruce	5	14-16' Ht.	B&B
TPC	Transplanted Crabapple		4	n/a	to be tagged (see notes)

SHRUBS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Cle	*Clethra alnifolia 'Hummingbird'*	Hummingbird Compact Summersweet	30	5 gal	
Cor	*Cornus alba 'Ivory Halo'*	Ivory Halo Dogwood	14	7 gal	
HyA	*Hydrangea arborescens 'Annabelle'*	Annabelle Hydrangea	8	7 gal	
HyQS	*Hydrangea quercifolia 'Sikes Dwarf'*	Sike's Dwarf Hydrangea	23	5 gal	
Ig	*Ilex glabra 'Shamrock'*	Shamrock Inkberry	34	5 gal	
Iv	*Ilex verticillata 'Red Sprite'*	Red Sprite Winterberry	7	5 gal	
JunB	*Juniperus squamata 'Blue Star'*	Blue Star Juniper	3	5 gal	
JunS	*Juniperus chinensis 'Sargenti'*	Sargent Juniper	8	5 gal	
RhP	*Rhododendron 'P.J.M.'*	P.J.M. Rhododendron	1	3-4' Ht.	
Ros	Rose Mix				
	Rosa 'Double Knockout'	Double Knockout Rose	4	3 gal	
	Rosa 'Pink Double Knockout'	Pink Double Knockout Rose	4	3 gal	
Ru	*Rhus aromatica 'Grow-Low'*	Grow Low Sumac	14	5 gal	
SpG	*Spiraea x 'Goldmound'*	Goldmound Spirea	20	3 gal	
SyrB	*Syringa 'Bloomerang'*	Bloomerang Lilac	4	2-3' Ht.	
TPRh	Transplanted Rhododendron		3	n/a	to be tagged (see notes)

PERENNIALS, GROUNDCOVERS, VINES and ANNUALS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Cal	*Calamagrostis acutifolia 'Karl Foerster'*	Feather Reed Grass	7	1 gal	
Vm	*Vinca minor 'Bowles'*	Bowles Periwinkle	5	50/flat	

NOTES:

- *All existing trees to remain shall be evaluated by a licensed arborist, prior to any construction, to determine if the tree is in good health. All trees to remain shall be pruned, deep-root fertilized, and have all mulch and soil removed from above the root flare.*
- *Contractor shall remove all existing trees (along with their stumps) that are NOT shown on plans. Project Representative will tag trees to be removed in field, prior to construction.*
- *Contractor shall provide smooth and feathered grading for all proposed plant beds and lawns.*
- *Existing plants to be transplanted shall be flagged in field with numbered tag, prior to bid and construction, by Project Representative.*

WOODBURN & COMPANY
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103 Kent Place
Newmarket, NH 03857
Tel 603.659.5949
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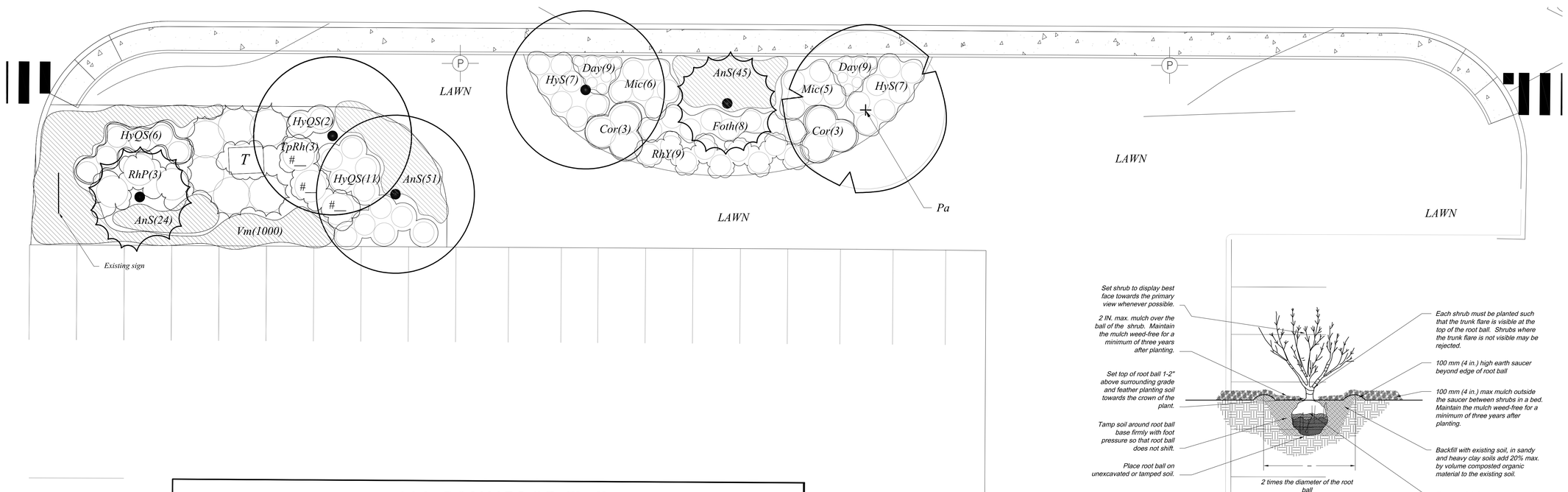
Commerce Way

#195 Landscape Plan

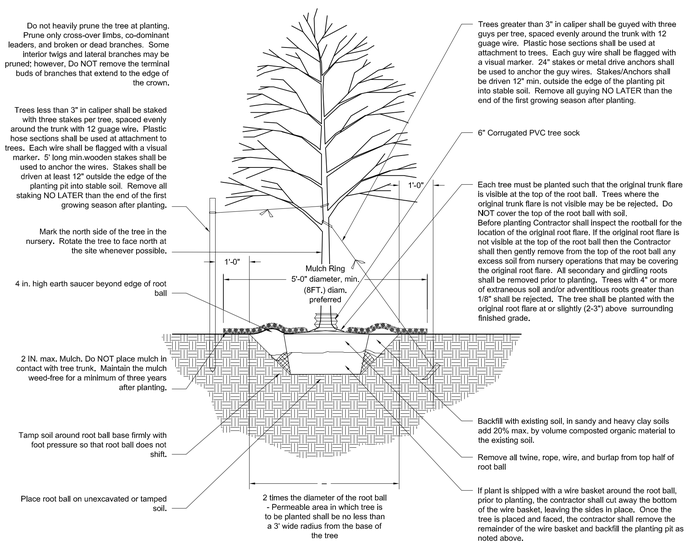
The Kane Company Portsmouth, NH

Drawn By:	*VB*
Checked By:	*RW*
Scale:	*1/8" = 1' - 0"*
Date:	*February 17, 2014*
Revisions:	*March 3, 2015 Issued For Bid*

L-5



190 COMMERCE WAY



Tree Planting Detail, Typ.

Landscape Notes

1. Design is based on drawings by Tighe & Bond and may require adjustment due to actual field conditions.
2. The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
3. Erosion Control shall be in place prior to construction.
4. Erosion Control to consist of Hay Bales and Erosion Control Fabric shall be staked in place between the work and Water bodies, Wetlands and/or drainage ways prior to any construction.
5. It is the contractor's responsibility to verify drawings provided are to the correct scale prior to any bid, estimate or installation. A graphic scale bar has been provided on each sheet for this purpose. If it is determined that the scale of the drawing is incorrect, the landscape architect will provide a set of drawings at the correct scale, at the request of the contractor.
6. The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
7. Trees to Remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Snow fence shall be located at the drip line at a minimum and shall include any and all surface roots. Do not fill or mulch on the trunk flare. Do not disturb roots. In order to protect the integrity of the roots, branches, trunk and bark of the tree(s) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s). Do not store any refuse or construction materials or portalets within the tree protection area.
8. Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
9. The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call DIGSAFE at 1-888-344-7233.
10. The Contractor shall procure any required permits prior to construction.
11. Prior to any landscape construction activities Contractor shall test all existing loam and loam from off-site intended to be used for lawns and plant beds using a thorough sampling throughout the supply. Soil testing shall indicate levels of pH, nitrates, macro and micro nutrients, texture, soluble salts, and organic matter. Contractor shall provide Landscape Architect with test results and recommendations from the testing facility along with soil amendment plans as necessary for the proposed plantings to thrive. All loam to be used on site shall be amended as approved by the Landscape Architect prior to placement.
12. Contractor shall notify landscape architect or owner's representative immediately if at any point during demolition or construction a site condition is discovered which may negatively impact the completed project. This includes, but is not limited to, unforeseen drainage problems, unknown subsurface conditions, and discrepancies between the plan and the site. If a contractor is aware of a potential issue, and does not bring it to the attention of the landscape architect or owner's representative immediately, they may be responsible for the labor and materials associated with correcting the problem.
13. The Contractor shall furnish and plant all plants shown on the drawings and listed thereon. All plants shall be nursery-grown under climatic conditions similar to those in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the American Standard of Nursery Stock, American Standards Institute, Inc. 230 Southern Building, Washington, D.C. 20005.
14. A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.
15. All plants shall be legibly tagged with proper botanical name.
16. The Contractor shall guarantee all plants for not less than one year from time of acceptance.
17. Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not affect right of inspection and rejection during or after the progress of the work. The Owner reserves the right to inspect and/or select all trees at the place of growth and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
18. No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
19. All landscaping shall be provided with either of the following
    a. An underground sprinkling system
    b. An outside hose attachment within 150 feet
20. If an automatic irrigation system is installed, all irrigation valve boxes shall be located within planting bed areas.
21. All disturbed areas will be dressed with 6" of topsoil and planted as noted on the plans or seeded except plant beds. New plant beds shall be prepared to a depth of 12" with 75% loam and 25% compost. Existing plant beds shall be amended with 3" of compost tilled in, to the extent possible without disturbing existing tree roots.
22. Trees, ground cover, and shrub beds shall be mulched to a depth of 2" with one-year-old, well-composted, shredded native bark not longer than 4" in length and ½" in width, free of woodchips and sawdust. Mulch for ferns and herbaceous perennials shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 5' diameter min. saucer. Color of mulch shall be black.
23. In no case shall mulch touch the stem of a plant nor shall mulch ever be more than 3" thick total (including previously applied mulch) over the root ball of any plant.
24. Secondary lateral branches of deciduous trees overhanging vehicular and pedestrian travel ways shall be pruned up to a height of 6' to allow clear and safe passage of vehicles and pedestrians under tree canopy.
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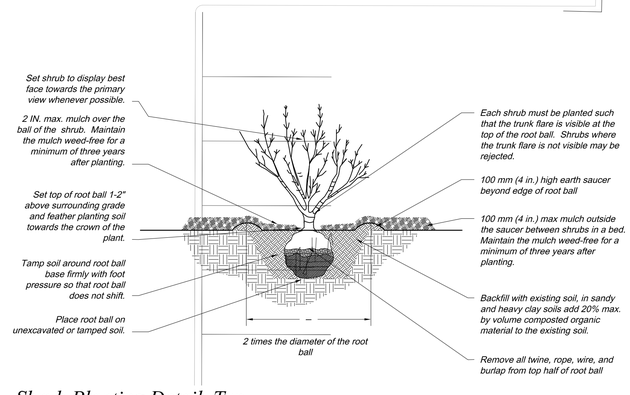

Shrub Planting Detail, Typ.

190 Plant List

TREES

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Pa	*Platanus x acerifolia 'Bloodgood'*	Bloodgood London Planetree	1	2.5-3" Cal	B&B

SHRUBS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Cor	*Cornus alba 'Ivory Halo'*	Ivory Halo Dogwood	6	7 gal	
Foth	*Fothergilla gardenii*	Dwarf Fothergilla	8	5 gal	
HyQS	*Hydrangea quercifolia 'Sikes Dwarf'*	Sike's Dwarf Hydrangea	19	5 gal	
HyS	*Hydrangea macrophylla 'All Summer Beauty'*	All Summer Beauty Hydrangea	14	7 gal	
Mic	*Microbiota decussata*	Russian Cypress	11	3 gal	
RhP	*Rhododendron 'P.J.M.'*	P.J.M. Rhododendron	3	3-4' Hlt	
RhY	*Rhododendron yakushimanum*	Yakushimanum Rhododendron	9	5 gal	
TPRh	Transplanted Rhododendron		3	n/a	to be tagged (see notes)

PERENNIALS, GROUNDCOVERS, VINES and ANNUALS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
AnS	*Anemone 'September Charm'*	Windflower	120	1 gal	
Day	*Hemerocallis 'Big Time Happy'*	Big Time Happy Daylily	18	1 gal	
Vm	*Vinca minor 'Bowles'*	Bowles Periwinkle	20	50/flats	

NOTES:

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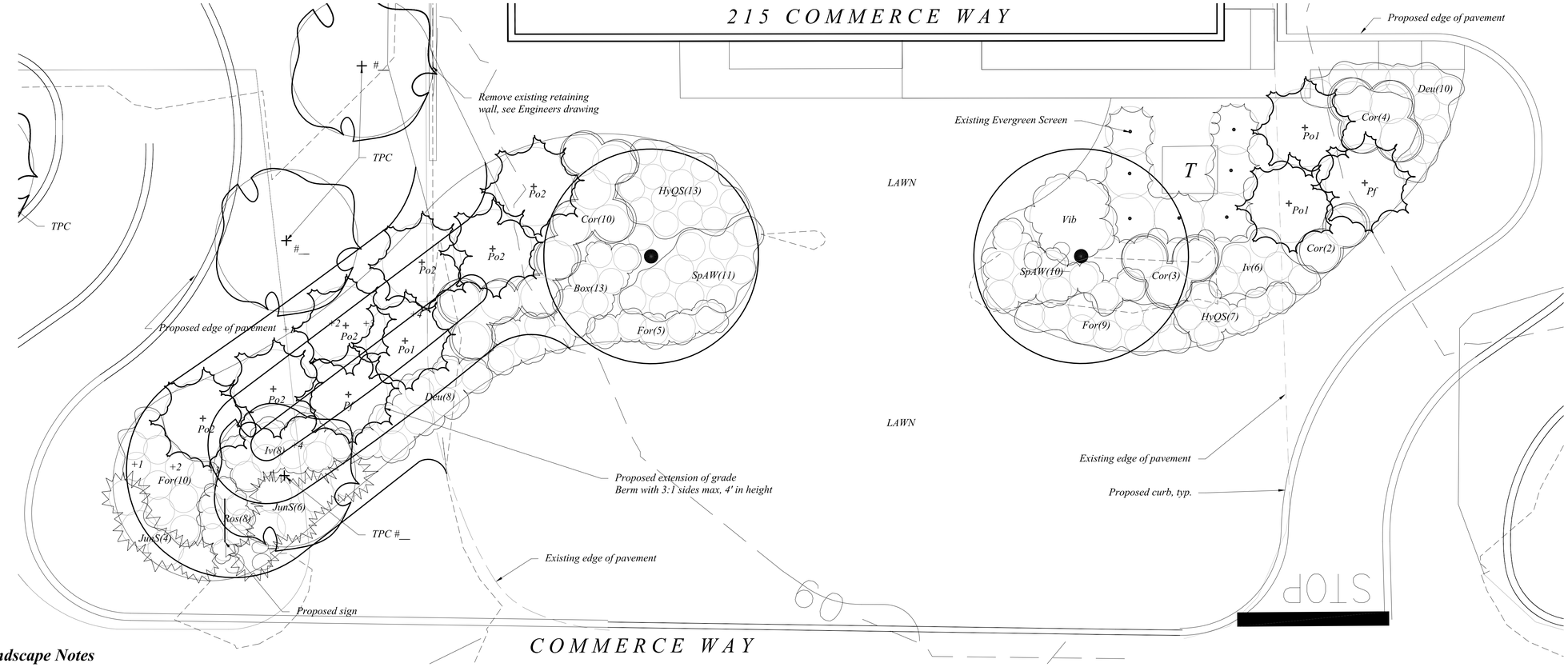
190 Commerce Way

#190 Landscape Plan

The Kane Company Portsmouth, NH

Drawn By:	*VB*
Checked By:	*RW*
Scale:	*1" = 10' - 0"*
Date:	*February 17, 2014*
Revisions:	*March 3, 2015 Issued For Bid*

L-6



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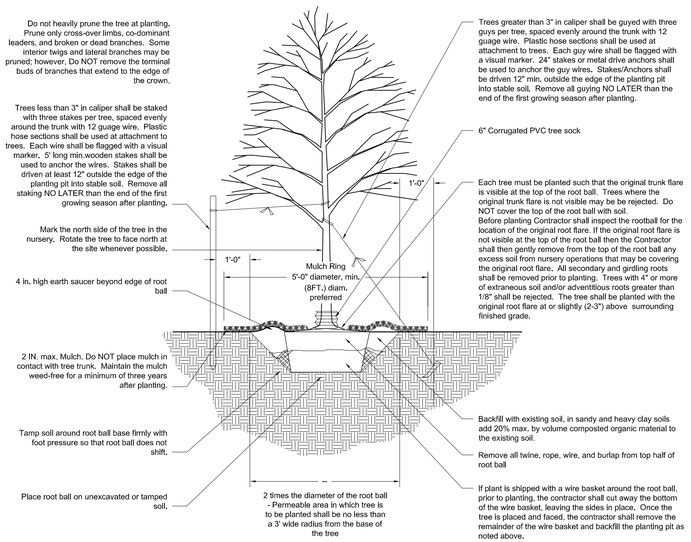

Tree Planting Detail, Typ.

215 Plant List

TREES

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Pf	*Pinus flexilis 'Vanderwolf's Pyramid'*	Vanderwolfs Pine	2	12-14' Ht.	B&B
Po1	*Picea orientalis*	Oriental Spruce	3	12-14' Ht.	B&B
Po2	*Picea orientalis*	Oriental Spruce	6	14-16' Ht.	B&B
TPC	Transplanted Crabapple		3	n/a	to be tagged (see notes)

SHRUBS

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
Box	*Buxus 'Green Velvet'*	Green Velvet Boxwood	13	2-2.5' Ht	full
Cor	*Cornus alba 'Ivory Halo'*	Ivory Halo Dogwood	19	7 gal	
Deu	*Deutzia gracilis*	Deutzia	18	5 gal	
For	*Forsythia 'Broxensis'*	Dwarf Green Forsythia	24	3 gal	
HyQS	*Hydrangea quercifolia 'Sikes Dwarf'*	Sike's Dwarf Hydrangea	20	5 gal	
Iv	*Ilex verticillata 'Red Sprite'*	Red Sprite Winterberry	14	5 gal	
JunS	*Juniperus chinensis 'Sargenti'*	Sargent Juniper	10	5 gal	
Ros	Rose Mix				
	Rosa 'Double Knockout'	Double Knockout Rose	4	3 gal	
	Rosa 'Pink Double Knockout'	Pink Double Knockout Rose	4	3 gal	
SpAW	*Spiraea x bumalda 'Anthony Waterer'*	Anthony Waterer Spirea	21	5 gal	
Vib	*Viburnum plicatum tomentosum 'Mariesii'*	Marie's Doublefile Viburnum	1	5-6' Ht.	B&B

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Commerce Way

#215 Landscape Plan

The Kane Company Portsmouth, NH

Drawn By:	VB
Checked By:	RW
Scale:	1/8" = 1' - 0"
Date:	February 17, 2014
Revisions:	March 3, 2015 Issued For Bid

L-7