RICHARDSON DRIVE
REDEVELOPMENT PROJECT
DOVER, NEW HAMPSHIRE
SITE PLANS
NOVEMBER 2, 2016

LIST OF DRAWINGS		
SHEET NO.	TITLE	LAST REVISED
	COVER SHEET	11/02/16
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2 OF 8	TOPOGRAPHIC PLAN OF RICHARDSON DRIVE & OLD STAGE ROAD	8/24/15
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4 OF 8	TOPOGRAPHIC PLAN OF RICHARDSON DRIVE & OLD STAGE ROAD	8/24/15
5 OF 8	TOPOGRAPHIC PLAN OF RICHARDSON DRIVE & OLD STAGE ROAD	8/24/15
6 OF 8	TOPOGRAPHIC PLAN OF RICHARDSON DRIVE & OLD STAGE ROAD	8/24/15
7 OF 8	TOPOGRAPHIC PLAN OF RICHARDSON DRIVE & OLD STAGE ROAD	8/24/15
8 OF 8	TOPOGRAPHIC PLAN OF RICHARDSON DRIVE & OLD STAGE ROAD	8/24/15
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R-2	EROSION CONTROL NOTES AND DETAILS SHEET	11/02/16
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R-4	EXISTING CONDITIONS / DEMOLITION PLAN	11/02/16
R-5	EXISTING CONDITIONS / DEMOLITION PLAN	11/02/16
R-6	EXISTING CONDITIONS / DEMOLITION PLAN	11/02/16
R-7	EXISTING CONDITIONS / DEMOLITION PLAN	11/02/16
R-8	EXISTING CONDITIONS / DEMOLITION PLAN	11/02/16
R-9	EXISTING CONDITIONS / DEMOLITION PLAN	11/02/16
R-10	EXISTING CONDITIONS / DEMOLITION PLAN	11/02/16
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R-13	SITE LAYOUT PLAN	11/02/16
R-14	SITE LAYOUT PLAN	11/02/16
R-15	SITE LAYOUT PLAN	11/02/16
R-16	SITE LAYOUT PLAN	11/02/16
R-17	SITE LAYOUT PLAN	11/02/16
R-18	SITE LAYOUT PLAN	11/02/16
R-19	OVERALL GRADING & DRAINAGE PLAN	11/02/16
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R-21	PLAN & PROFILE: GRADING & DRAINAGE PLAN	11/02/16
R-22	PLAN & PROFILE: GRADING & DRAINAGE PLAN	11/02/16
R-23	PLAN & PROFILE: GRADING & DRAINAGE PLAN	11/02/16
R-24	PLAN & PROFILE: GRADING & DRAINAGE PLAN	11/02/16
R-25	PLAN & PROFILE: GRADING & DRAINAGE PLAN	11/02/16
R-26	PLAN & PROFILE: GRADING & DRAINAGE PLAN	11/02/16
R-27	PLAN & PROFILE: GRADING & DRAINAGE PLAN	11/02/16
R-28	PLAN & PROFILE: GRADING & DRAINAGE PLAN	11/02/16
R-29	OVERALL UTILITIES PLAN	11/02/16
R-30	PLAN & PROFILE: UTILITIES PLAN	11/02/16
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R-32	PLAN & PROFILE: UTILITIES PLAN	11/02/16
R-33	PLAN & PROFILE: UTILITIES PLAN	11/02/16
R-34	PLAN & PROFILE: UTILITIES PLAN	11/02/16
R-35	PLAN & PROFILE: UTILITIES PLAN	11/02/16
R-36	PLAN & PROFILE: UTILITIES PLAN	11/02/16
R-37	PLAN & PROFILE: UTILITIES PLAN	11/02/16
R-38	PLAN & PROFILE: UTILITIES PLAN	11/02/16
R-39	RICHARDSON DRIVE DRIVEWAY CROSS SECTIONS	11/02/16
R-40	RICHARDSON DRIVE DRIVEWAY CROSS SECTIONS	11/02/16
R-41	RICHARDSON DRIVE DRIVEWAY CROSS SECTIONS	11/02/16
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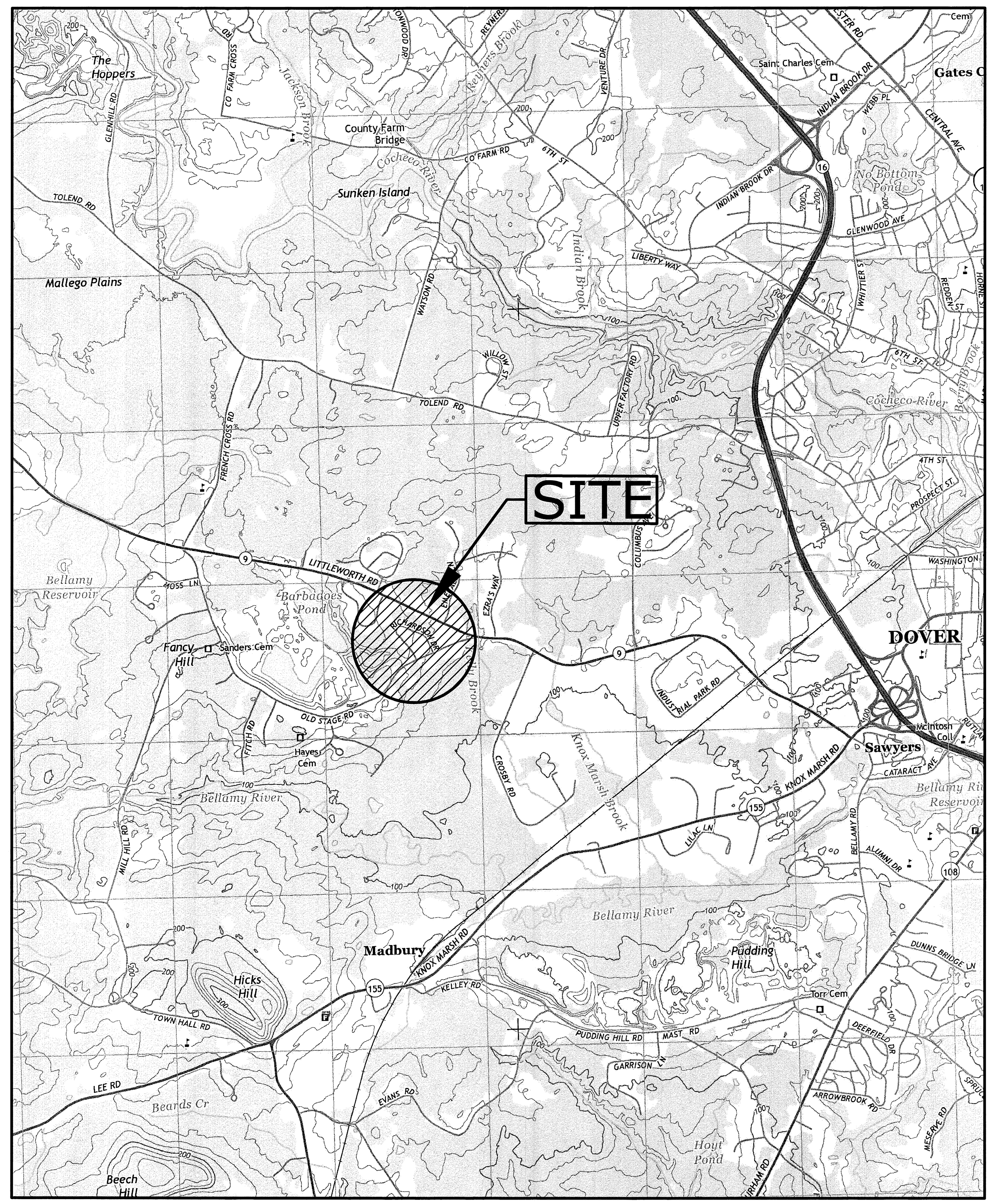
R-43	DETAILS SHEET	11/02/16
R-44	DETAILS SHEET	11/02/16



SCALE: 1"=2,000'

Owner: City of Dover, New Hampshire
271 Mast Road
Dover, New Hampshire 03820
(603) 516-6030

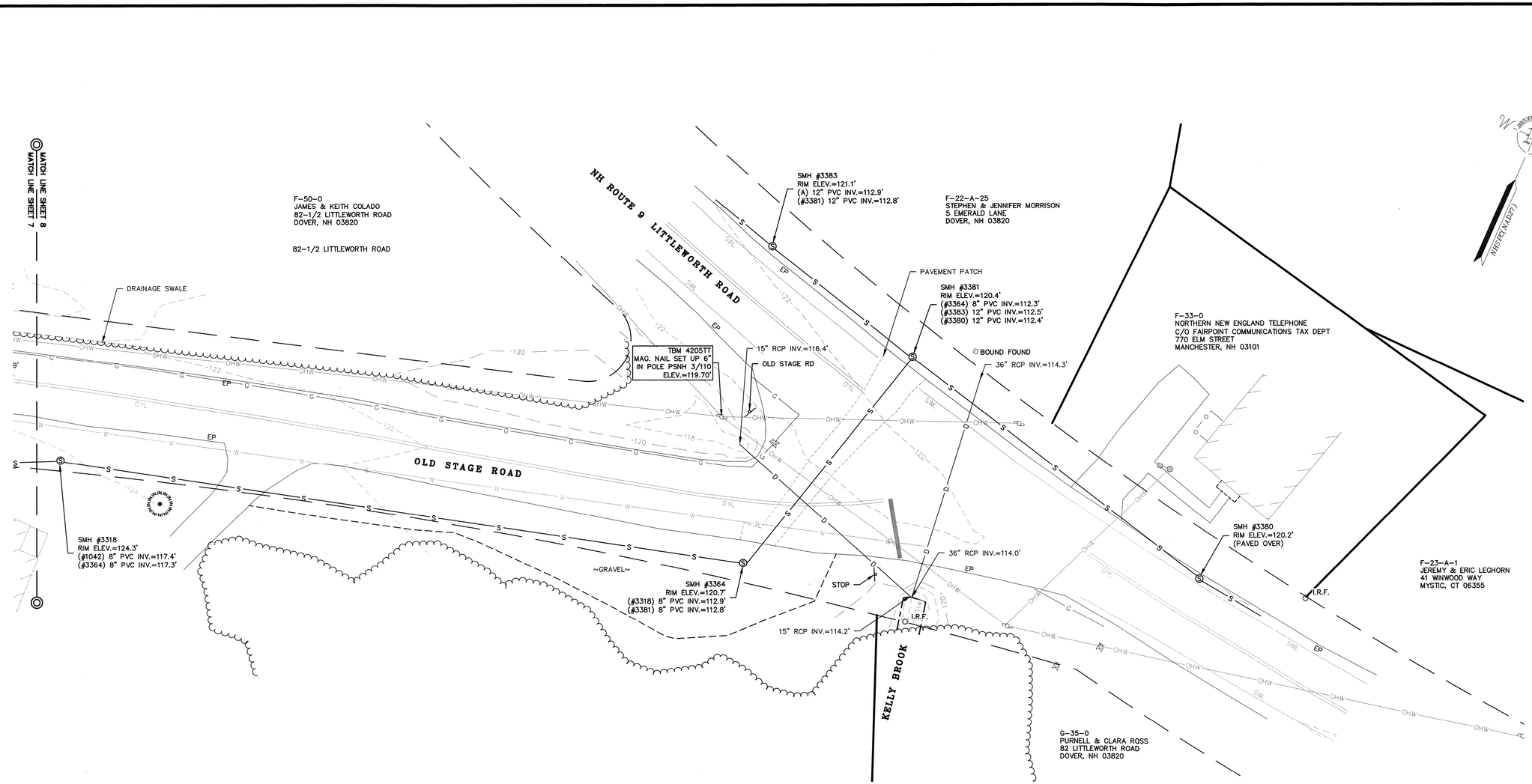
Prepared By: Tighe&Bond
Consulting Engineers
177 Corporate Drive
Portsmouth, NH 03801

STATE OF NEW HAMPSHIRE GREGG M. MIKOLAITIES No. 6884 LICENSED PROFESSIONAL ENGINEER 11/2/16

STATE OF NEW HAMPSHIRE KENNETH A. MAVROGEORGE No. 13326 LICENSED PROFESSIONAL ENGINEER 11/2/16

SRF Project No.:
CS-330200-10

City of Dover, NH
Bid No.: B17021



LEGEND

CITY GIS LINE	WATER SHUTOFF VALVE
RIGHT OF WAY LINE	VP VENT PIPE
EASEMENT LINE	PAD MOUNTED TRANSFORMER
STONE WALL	ELECTRIC BOX
STOCKADE FENCE	UTILITY BOX
PICKET FENCE	CATCH BASIN
WIRE FENCE	DRAIN MANHOLE
CHAIN LINK FENCE	SEWER MANHOLE
OVERHEAD WIRES	TREE STUMP
SEWER LINE	CONIFEROUS TREE
DRAIN LINE	DECIDUOUS TREE
GAS LINE	CONIFEROUS SHRUB
WATER LINE	DECIDUOUS BUSH
WATER LINE BASED CITY GIS	CONCRETE
UNDERGROUND ELECTRIC LINE	LANDSCAPED AREA
MAJOR CONTOUR LINE	
MINOR CONTOUR LINE	
TREE LINE	
SHRUB LINE	
UTILITY POLE	BND. FND. BOUND FOUND
UTILITY POLE & GUY WIRE	I.R.F. IRON ROD FOUND
UTILITY POLE W/ LIGHT	I.P.F. IRON PIPE FOUND
LIGHT POLE	S.S.F. STEEL STAKE FOUND
SIGN	FF FINISHED FLOOR
BOUND FOUND	EP EDGE OF PAVEMENT
IRON PIPE/ROD FOUND	VCC VERTICAL CONCRETE CURB
FIRE HYDRANT	DYL DOUBLE YELLOW LINE
WATER GATE VALVE	

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

NO.	DATE	DESCRIPTION	BY
1	01/12/16	ADDITIONAL OLD STAGE ROAD TOPOGRAPHY	M.T.L.

NOTE:
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STATE OF NEW HAMPSHIRE — No. 937 JOHN F. KAISER — LICENSED LAND SURVEYOR — SIGNATURE

TOPOGRAPHIC PLAN
FOR
TIGHE & BOND
OF
RICHARDSON DRIVE & OLD STAGE ROAD
DOVER, NEW HAMPSHIRE

DRAWN BY:	M.T.L.	DATE:	AUGUST 24, 2015
CHECKED BY:	J.F.K.	DRAWING NO.:	4205A
JOB NO.:	4205	SHEET	8 OF 8

DOUCET SURVEY INC
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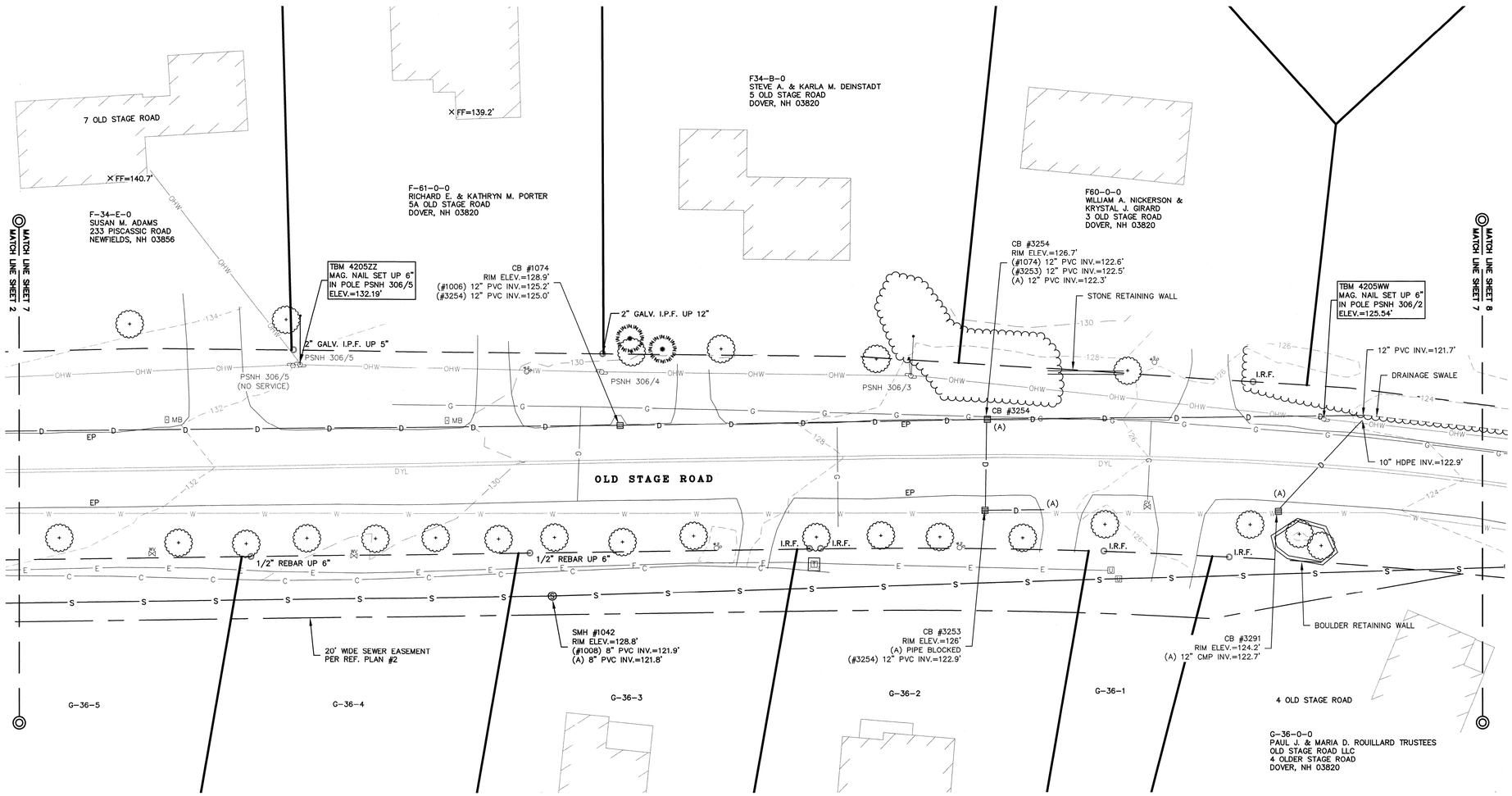
102 Kent Place, Newmarket, NH 03857 (603) 659-6560
10 Storer Street (Riverview Suite) Kennebunk, ME (207) 502-7005
http://www.doucetsurvey.com

FILE NAME: C:\Users\Mike\appdata\local\temp\AcPublish_7432\4205A.dwg LAYOUT NAME: SHEET (8) PLOTTED: Thursday, March 03, 2016 - 2:07pm



LEGEND

CITY GIS LINE	WATER SHUTOFF VALVE
RIGHT OF WAY LINE	VP VENT PIPE
EASEMENT LINE	PAD MOUNTED TRANSFORMER
STONE WALL	ELECTRIC BOX
STOCKADE FENCE	UTILITY BOX
PICKET FENCE	CATCH BASIN
WIRE FENCE	DRAIN MANHOLE
CHAIN LINK FENCE	SEWER MANHOLE
OVERHEAD WIRES	TREE STUMP
SEWER LINE	CONIFEROUS TREE
DRAIN LINE	DECIDUOUS TREE
GAS LINE	CONIFEROUS SHRUB
WATER LINE	DECIDUOUS BUSH
WATER LINE BASED CITY GIS	CONCRETE
UNDERGROUND ELECTRIC LINE	LANDSCAPED AREA
MAJOR CONTOUR LINE	
MINOR CONTOUR LINE	
TREE LINE	
SHRUB LINE	
UTILITY POLE	BND. FND. BOUND FOUND
UTILITY POLE & GUY WIRE	I.R.F. IRON ROD FOUND
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LIGHT POLE	S.S.F. STEEL STAKE FOUND
SIGN	FF FINISHED FLOOR
BOUND FOUND	EP EDGE OF PAVEMENT
IRON PIPE/ROD FOUND	VCC VERTICAL CONCRETE CURB
FIRE HYDRANT	DYL DOUBLE YELLOW LINE
WATER GATE VALVE	

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

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NO.	DATE	DESCRIPTION	BY
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STATE OF NEW HAMPSHIRE
No. 937
JOHN F. KAISER
LICENSED LAND SURVEYOR
SIGNATURE

TOPOGRAPHIC PLAN
FOR
TIGHE & BOND
OF
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DOVER, NEW HAMPSHIRE

DRAWN BY:	M.T.L.	DATE:	AUGUST 24, 2015
CHECKED BY:	J.F.K.	DRAWING NO.:	4205A
JOB NO.:	4205	SHEET	7 OF 8

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LEGEND

- CITY GIS LINE
- RIGHT OF WAY LINE
- EASEMENT LINE
- STONE WALL
- STOCKADE FENCE
- PICKET FENCE
- WIRE FENCE
- CHAIN LINK FENCE
- OHW — OVERHEAD WIRES
- S — SEWER LINE
- D — DRAIN LINE
- G — GAS LINE
- W — WATER LINE
- W — WATER LINE BASED CITY GIS
- E — UNDERGROUND ELECTRIC LINE
- 100 — MAJOR CONTOUR LINE
- 98 — MINOR CONTOUR LINE
- TREE LINE
- SHRUB LINE
- UTILITY POLE
- UTILITY POLE & GUY WIRE
- UTILITY POLE W/ LIGHT
- LIGHT POLE
- SIGN
- BOUND FOUND
- IRON PIPE/ROD FOUND
- FIRE HYDRANT
- WATER GATE VALVE
- WATER SHUTOFF VALVE
- VP — VENT PIPE
- PAD MOUNTED TRANSFORMER
- ELECTRIC BOX
- UTILITY BOX
- CATCH BASIN
- DRAIN MANHOLE
- SEWER MANHOLE
- TREE STUMP
- CONIFEROUS TREE
- DECIDUOUS TREE
- CONIFEROUS SHRUB
- DECIDUOUS BUSH
- CONCRETE
- LANDSCAPED AREA
- BND. FND. — BOUND FOUND
- I.R.F. — IRON ROD FOUND
- I.P.F. — IRON PIPE FOUND
- S.S.F. — STEEL STAKE FOUND
- FF — FINISHED FLOOR
- EP — EDGE OF PAVEMENT
- VCC — VERTICAL CONCRETE CURB
- DYL — DOUBLE YELLOW LINE

BRIGHT SUNSET INC
WRS(PETMADDY)

F-41-0
THOMAS & JENNIFER DOHERTY
25 OLD STAGE ROAD
DOVER, NH 03820

25 OLD STAGE ROAD

F-41-A
LYNN TAPSCOTT &
ROBERT ADAMS
27 OLD STAGE ROAD
DOVER, NH 03820

27 OLD STAGE ROAD

F-42-0-0
CITY OF DOVER
WATER DEPARTMENT
288 CENTRAL AVE.
DOVER, NH 03820

TBM 4205XX
MAG. NAIL SET UP 6"
IN POLE PSNH 306/12
ELEV.=162.83'

1/4" SMOOTH ROD
FLUSH

PSNH 306/12

STONE RETAINING WALL

WIRE FENCE

FF=161.6'

MB

EP

6" DECID.

PSNH 306/11

PSNH 306/11
(NO SERVICE)

END OF PAINT MARKING
FOR WATER LINE

FF=153.7'

POST & RAIL FENCE

POST & RAIL FENCE

STONE RETAINING WALL

1" SMOOTH ROD UP 3"

G-42-0-0
JEFFERY R. CORCORAN
28 OLD STAGE ROAD
DOVER, NH 03820

28 OLD STAGE ROAD

MATCH LINE SHEET 3
MATCH LINE SHEET 6

G-43-0-0
LOUISE VARNEY
30 OLD STAGE ROAD
DOVER, NH 03820

30 OLD STAGE ROAD

OLD STAGE ROAD

~GRAVEL~

CONCRETE BLOCK
RETAINING WALL

1" SMOOTH ROD
DOWN 2"

TBM 4205YY
MAG. NAIL SET UP 6"
IN POLE PSNH 306/14
ELEV.=176.75'

CONCRETE BLOCK
RETAINING WALL

ORNAMENTAL
STONE WALL

GRANITE POST
W/WIRE FENCE

CEMETERY

I.R.F.

G-35-E
RAYMOND & CLAIRE HOWE
32 OLD STAGE ROAD
DOVER, NH 03820

32 OLD STAGE ROAD

G-38-0
ALEXANDER SHERRILL
34 OLD STAGE ROAD
DOVER, NH 03820

34 OLD STAGE ROAD

TOWN BOUND FOUND

NH HIGHWAY
BOUND FOUND

TOWN LINE DOVER
TOWN LINE MADBURY

STATE OF NEW HAMPSHIRE — No. 937 JOHN F. KAISER — LAND SURVEYOR — SIGNATURE

TOPOGRAPHIC PLAN
FOR
TIGHE & BOND
OF
RICHARDSON DRIVE & OLD STAGE ROAD
DOVER, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY
1	01/12/16	ADDITIONAL OLD STAGE ROAD TOPOGRAPHY	M.T.L.

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GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

DRAWN BY:	M.T.L.
DATE:	AUGUST 24, 2015
CHECKED BY:	J.F.K.
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SHEET	6 OF 8

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F-34-W-0
MARIE E. & DONDALD T. MCGLONE
14 RICHARDSON DRIVE
DOVER, NH 03820

MATCH LINE SHEET 5
MATCH LINE SHEET 4

F-53-0-0
MICHAEL S.BENNET &
SUSAN M. FROST
16 RICHARDSON DRIVE
DOVER, NH 03820

F-54-0-0
ROBERT B. & MARY Z. LUDWIG
18 RICHARDSON DRIVE
DOVER, NH 03820

F-57-0-0
EVELYN M. BENHAM
BENHAM FAMILY REV. TRUST
20 RICHARDSON DRIVE
DOVER, NH 03820

F-34-F-0
JODY PRATT
22 RICHARDSON DRIVE
DOVER, NH 03820

DOUCET SURVEY, INC.

NHSPCS(NAD27)

MATCH LINE SHEET 5
MATCH LINE SHEET 2

RICHARDSON DRIVE

FF=175.0'
FF=172.4'
FF=172.4'
FF=166.1'
FF=160.2'

16" MAPLE
20" MAPLE
18" OAK
3/4" I.P.F. DOWN 1"
3/4" I.P.F. DOWN 1"
TBM 4205D
"X" CUT IN FLANGE
BOLT OVER MAIN
ELEV.=172.89'
6" DECID.
1/2" I.P.F. UP 4"
12" DECID.
32" MAPLE
BRICK RETAINING WALL
1-1/4" SMOOTH ROD
UP 12"
14" CEDAR
14" DECID.
4" CONIF.
36"
16" WHITE PINE
6" SPRUCE
14" WHITE PINE
22" WHITE PINE
18" WHITE PINE
GRAVEL DRIVE

PSNH 307/8
1" SMOOTH ROD
DOWN 3"
10" MULTI-L CEDAR
3/4" I.P.F. FLUSH
1/2" I.P.F. FLUSH
PSNH 307/8
PSNH 307/8
1' WIDE CONCRETE
BLOCK WALL
16" DECID.
10" MAPLE
24" MAPLE
10" DECID.
3/4" I.P.F. DOWN 2"
1" I.P.F. UP 4"
1/2" I.P.F. UP 5"
14" SPRUCE
STONE RETAINING WALL
PICKET FENCE
WOOD RETAINING WALL
PICKET FENCE

FF=175.8'
FF=174.6'
FF=170.8'
FF=166.3'
FF=164.3'

F-51-0-0
HURL J. FIELD
27 RICHARDSON DRIVE
DOVER, NH 03820

F-52-0-0
SANDRA J. STURGEON &
JOHN H. STURGEON
25 RICHARDSON DRIVE
DOVER, NH 03820

F-49-0-0
KATIE G. ESKILDSEN &
MICHAEL M. PENA
29 RICHARDSON DRIVE
DOVER, NH 03820

F-56-0-0
CHRISTOPHER J. O'DONNELL
31 RICHARDSON DRIVE
DOVER, NH 03820

F-55-0-0
LEANNE CARR
33 RICHARDSON DRIVE
DOVER, NH 03820

F-34-D-0
SHENANDOAH CROOK &
EDWARD J. CROOK
17 OLD STAGE ROAD
DOVER, NH 03820

LEGEND

CITY GIS LINE	WATER SHUTOFF VALVE
RIGHT OF WAY LINE	VP VENT PIPE
EASEMENT LINE	PAD MOUNTED TRANSFORMER
STONE WALL	ELECTRIC BOX
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UTILITY POLE	FF FINISHED FLOOR
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LIGHT POLE	DYL DOUBLE YELLOW LINE
SIGN	
BOUND FOUND	
IRON PIPE/ROD FOUND	
FIRE HYDRANT	
WATER GATE VALVE	

STATE OF NEW HAMPSHIRE
No. 937
JOHN F. KAISER
SIGNATURE
LICENSED LAND SURVEYOR

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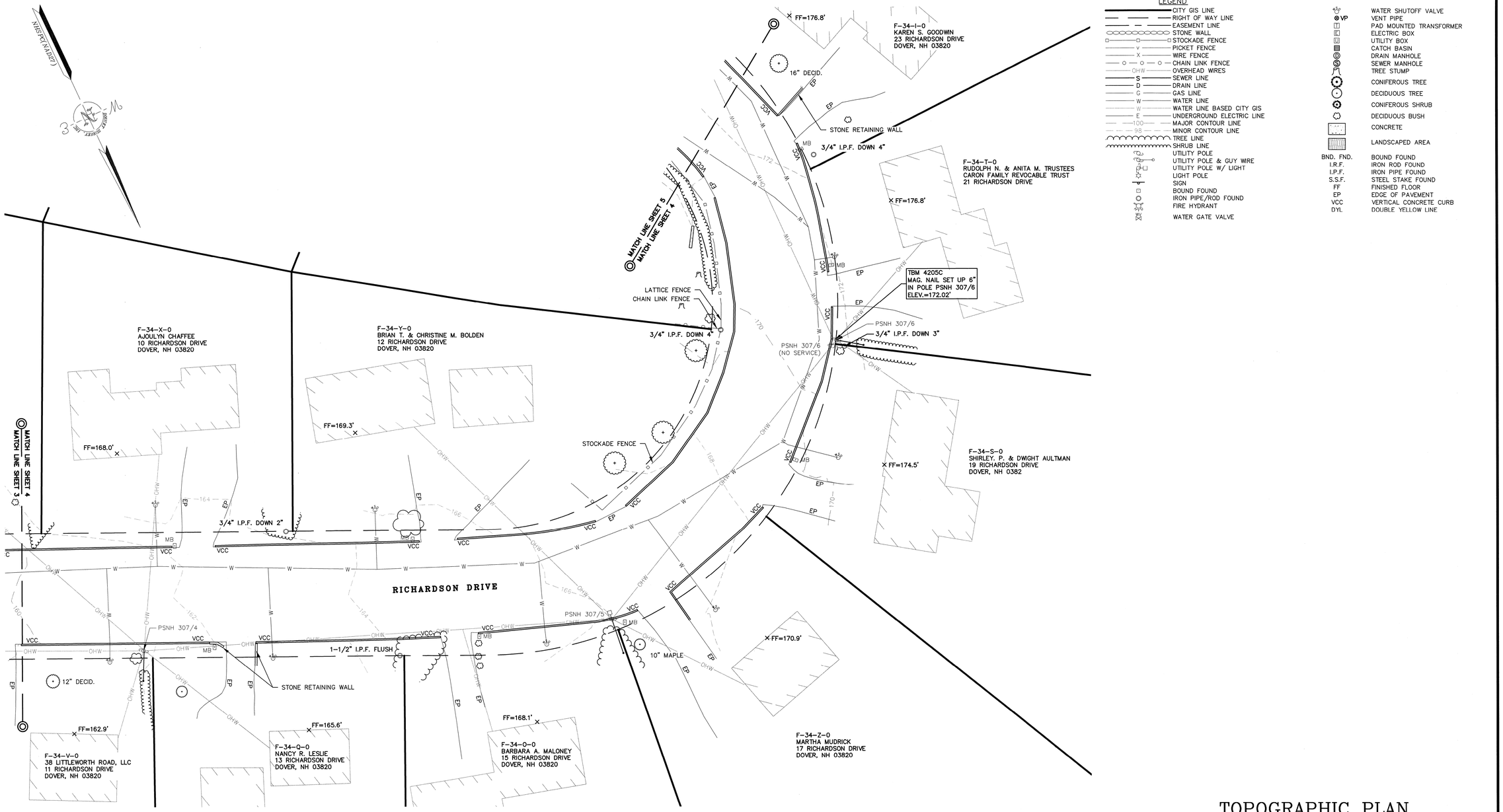

LEGEND

- CITY GIS LINE
- RIGHT OF WAY LINE
- EASEMENT LINE
- STONE WALL
- STOCKADE FENCE
- PICKET FENCE
- WIRE FENCE
- CHAIN LINK FENCE
- OVERHEAD WIRES
- SEWER LINE
- DRAIN LINE
- GAS LINE
- WATER LINE
- WATER LINE BASED CITY GIS
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- MAJOR CONTOUR LINE
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RICHARDSON DRIVE & OLD STAGE ROAD
DOVER, NEW HAMPSHIRE

DRAWN BY:	M.T.L.	DATE:	AUGUST 24, 2015
CHECKED BY:	J.F.K.	DRAWING NO.:	4205A
JOB NO.:	4205	SHEET	4 OF 8

DOUCET SURVEY INC
Serving Your Professional Surveying & Mapping Needs
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10 Storer Street (Riverview Suite) Kennebunk, ME (207) 502-7005
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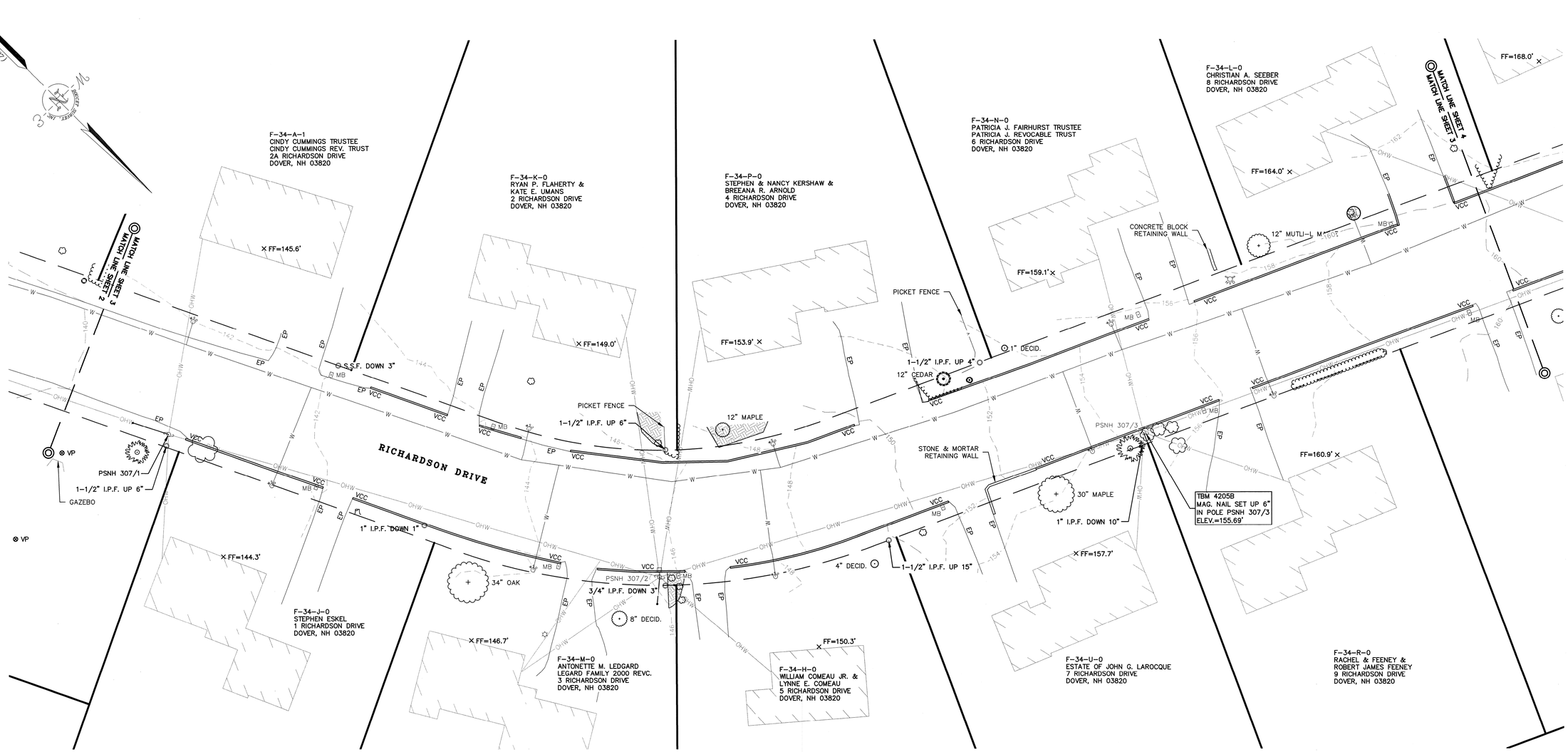
FILE NAME: C:\Users\Mike\ppdata\local\temp\AcPublish_7432\4205A.dwg LAYOUT NAME: SHEET (4) PLOTTED: Thursday, March 03, 2016 - 2:07pm



LEGEND

CITY GIS LINE	WATER SHUTOFF VALVE
RIGHT OF WAY LINE	VP — VENT PIPE
EASEMENT LINE	PAD MOUNTED TRANSFORMER
STONE WALL	ELECTRIC BOX
STOCKADE FENCE	UTILITY BOX
PICKET FENCE	CATCH BASIN
WIRE FENCE	DRAIN MANHOLE
CHAIN LINK FENCE	SEWER MANHOLE
OVERHEAD WIRES	TREE STUMP
SEWER LINE	CONIFEROUS TREE
DRAIN LINE	DECIDUOUS TREE
GAS LINE	CONIFEROUS SHRUB
WATER LINE	DECIDUOUS BUSH
WATER LINE BASED CITY GIS	CONCRETE
UNDERGROUND ELECTRIC LINE	LANDSCAPED AREA
MAJOR CONTOUR LINE	BND. FND. — BOUND FOUND
MINOR CONTOUR LINE	I.R.F. — IRON ROD FOUND
TREE LINE	I.P.F. — IRON PIPE FOUND
SHRUB LINE	S.S.F. — STEEL STAKE FOUND
UTILITY POLE	FF — FINISHED FLOOR
UTILITY POLE & GUY WIRE	EP — EDGE OF PAVEMENT
UTILITY POLE W/ LIGHT	VCC — VERTICAL CONCRETE CURB
LIGHT POLE	DYL — DOUBLE YELLOW LINE
SIGN	
BOUND FOUND	
IRON PIPE/ROD FOUND	
FIRE HYDRANT	
WATER GATE VALVE	

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

NO.	DATE	DESCRIPTION	BY
1	01/12/16	ADDITIONAL OLD STAGE ROAD TOPOGRAPHY	M.T.L.

NOTE:
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STATE OF NEW HAMPSHIRE — No. 937 JOHN F. KAISER — LICENSED LAND SURVEYOR — SIGNATURE

TOPOGRAPHIC PLAN
FOR
TIGHE & BOND
OF
RICHARDSON DRIVE & OLD STAGE ROAD
DOVER, NEW HAMPSHIRE

DRAWN BY:	M.T.L.	DATE:	AUGUST 24, 2015
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MATCH LINE SHEET 5
MATCH LINE SHEET 2

MATCH LINE SHEET 3
MATCH LINE SHEET 2

MATCH LINE SHEET 7
MATCH LINE SHEET 2

MATCH LINE SHEET 3
MATCH LINE SHEET 6

WOOD RETAINING WALL
WOOD RETAINING WALL
17 OLD STAGE ROAD
6" SPRUCE
CONCRETE BLOCK RETAINING WALL
4" MAPLE
6" DECID.
WOOD RETAINING WALL
STONE RETAINING WALL
20" WHITE PINE
24" WHITE PINE
22" WHITE PINE
CONCRETE BLOCK & WOOD RETAINING WALL
RICHARDSON DRIVE
OLD STAGE ROAD
20" WHITE PINE
14" WHITE PINE
16" WHITE PINE
18" WHITE PINE
F34-C-0
ALLYSON K. BOWERS
160 KENSINGTON ROAD
HAMPTON FALLS, NH 03844
15 OLD STAGE ROAD
22" WHITE PINE
22" WHITE PINE
18" WHITE PINE
FF=152.7'
20" WHITE PINE
F-58-0-0
MERIDYTH B. ALIE
13 OLD STAGE ROAD
DOVER, NH 03820
FF=148.2'
F34-0-0-0
JOAN E. & STEPHEN C. RUSSELL
DOVER, NH 03820
FF=146.1'
48" MAPLE
LILAC
STONE RETAINING WALL
3/8" SMOOTH ROD FLUSH
1-1/2" I.P.F. FLUSH
RICHARDSON DRIVE
1-1/2" I.P.F. FLUSH
CB #1025
RIM ELEV.=136.6'
(#1006) 12" PVC INV.=131.6'
10" APPLE
PSNH 306/8
8
(NO SERVICE)
F34-A-0
WILLIAM A. & LISA M. PERKINS
9 OLD STAGE ROAD
DOVER, NH 03820
VP
WESTERLY (RADIO?)
5/8" SMOOTH ROD UP 6"
FF=141.1'
1-1/2" I.P.F. UP 4"
TBM 4205A
MAG. NAIL SET UP 6"
IN POLE PSNH 306/7
ELEV.=136.75'
CB #1006
RIM ELEV.=135.7'
(#1025) 12" PVC INV.=131'
(#1007) NOT VISIBLE
(#1074) 12" PVC INV.=130.7'
GALV. I.P.F. UP 6"
PSNH 306/7
(NO SERVICE)
PSNH 306/6
(NO SERVICE)
PSNH 306/6
CB #1007
RIM ELEV.=135.3'
(#1006) 12" PVC INV.=131.2'
PSNH 306/10
306/10
(NO SERVICE)
10" FRUIT
4" SPRUCE
12" WHITE BIRCH
TBM 4205E
MAG. NAIL SET UP 6"
IN POLE PSNH 306/10
ELEV.=147.13'
FF=150.4'
G-37-0-0
MICHAEL W. BUTLAND &
DANIELLE KAUFMAN
26 OLD STAGE ROAD
DOVER, NH 03820
BUILDING LOCATION PER
CITY OF DOVER GIS (TYP.)
5" X 5" CONC. BND.
FND. (NO D.H.) FLUSH
9/NETT&T
(NO SERVICE)
PSNH 306/9
1/2" REBAR UP 16"
G-35-C-0
GERALD RILEY & JOYCE INA & BREND TIRRELL
GERALD F. RILEY & JOYCE INA REV. TRUST
8 OLD STAGE ROAD
DOVER, NH 03820
FF=143.9'
24 OLD STAGE ROAD
1/2" REBAR UP 16"
ELECTRIC METER
SMH #1652
RIM ELEV.=137.4'
(A) 8" PVC INV.=129.8'
(#1008) 8" PVC INV.=129.7'
PSNH 306/7S
PSNH 306/7A
W/CONDUIT
1/2" REBAR UP 1"
SMH #1008
RIM ELEV.=134.4'
(A) 8" PVC INV.=127.5'
(#1652) 8" PVC INV.=127.5'
(#1042) 8" PVC INV.=127.2'
PAD MOUNTED TRANSFORMER
1/2" REBAR UP 4"
1/2" REBAR UP 6"
20' WIDE SEWER EASEMENT
PER REF. PLAN #2
G-36-0
G-36-8
G-36-7
G-36-6

LEGEND

CITY GIS LINE	WATER SHUTOFF VALVE
RIGHT OF WAY LINE	VP VENT PIPE
EASEMENT LINE	PAD MOUNTED TRANSFORMER
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SHRUB LINE	S.S.F. STEEL STAKE FOUND
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UTILITY POLE W/ LIGHT	VCC VERTICAL CONCRETE CURB
LIGHT POLE	DYL DOUBLE YELLOW LINE
SIGN	
BOUND FOUND	
IRON PIPE/ROD FOUND	
FIRE HYDRANT	
WATER GATE VALVE	

GRAPHIC SCALE

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(IN FEET)

1 inch = 20 ft.

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STATE OF NEW HAMPSHIRE
No. 837
JOHN F. KAISER
LICENSED LAND SURVEYOR
SIGNATURE

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TIGHE & BOND
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DRAWN BY:	M.T.L.	DATE:	AUGUST 24, 2015
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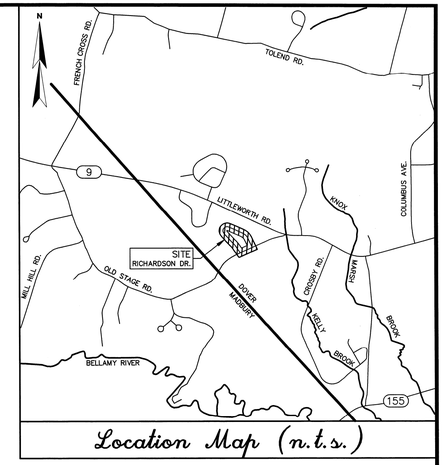

Location Map (n.t.s.)

NOTES:

1. REFERENCE: RICHARDSON DRIVE & PORTION OF OLD STAGE ROAD, DOVER, NEW HAMPSHIRE
2. FIELD SURVEY PERFORMED BY J.P.E. & N.J.M. DURING AUGUST 2015 AND DECEMBER 2015 USING A TRIMBLE S6 TOTAL STATION WITH A TRIMBLE TSC3 DATA COLLECTOR AND A TRIMBLE DINI DIGITAL LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS. ADDITIONAL FIELD SURVEY PERFORMED BY W.J.D. USING A LEICA C10 HDS SCANNER.
3. HORIZONTAL DATUM BASED ON NAD27 DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GNSS VRS NETWORK.
4. VERTICAL DATUM IS BASED ON NGVD29 PER NHDOT DISK 125-0750 WITH A PUBLISHED ELEVATION OF 112.43'.
5. PROPER FIELD PROCEDURES WERE FOLLOWED IN ORDER TO GENERATE CONTOURS AT 2' INTERVALS. ANY MODIFICATION OF THIS INTERVAL WILL DIMINISH THE INTEGRITY OF THE DATA, AND DOUCET SURVEY, INC. WILL NOT BE RESPONSIBLE FOR ANY SUCH ALTERATION PERFORMED BY THE USER.
6. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON OBSERVABLE PHYSICAL EVIDENCE AND PAINT MARKS FOUND ON-SITE.
7. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES/TYPES IS SUBJECT TO NUMEROUS FIELD CONDITIONS, INCLUDING; THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS, MANHOLE CONFIGURATION, ETC.
8. RICHARDSON AVE. RIGHT OF WAY SHOWN HEREON IS BASED ON A 50' WIDE R.O.W. AS CREATED BY REF. PLAN #1. DUE TO SLIGHT MATHEMATICAL DISCREPANCIES ON SAID PLAN, BEST FIT LINES THROUGH FOUND MONUMENTS WERE HELD AND THE GENERAL INTEGRITY OF SAID PLAN WAS USED TO CREATE A 50' WIDE R.O.W. WITH A CLOSED MATHEMATICAL FIGURE. OLD STAGE ROAD R.O.W. IS BASED ON REFERENCE PLANS AND FOUND MONUMENTS.

REFERENCE PLANS:

1. "OLD STAGE ROAD, STAGE COACH PARK, DOVER, NEW HAMPSHIRE, GEORGE RAAB DEVELOPER" BY GERARD CRAWFORD, DATED AUGUST, 1955. S.C.R.D. PLAN 4-4-17.
2. "KELLY BROOK MEADOWS SUBDIVISION DETAIL SUBDIVISION PLAN PREPARED FOR TUCK REALTY CORP. 4 OLD STAGE ROAD, CITY OF DOVER, COUNTY OF STRAFFORD, STATE OF NEW HAMPSHIRE" BY MCENEANEY SURVEY ASSOCIATES, INC. DATED DECEMBER 3, 2013. S.C.R.D. PLAN 107-25.
3. "PLAN OF SUB-DIVISION RAYMOND E. HOWE, DOVER, NEW HAMPSHIRE" BY K.E. MOORE & B.G. STAPLES LAND SURVEYORS, DATED JUNE 1972. S.C.R.D. PLAN 2-20-55.
4. "PLAN OF LAND FOR GORDON MOORE, OLD STAGE ROAD, DOVER, NEW HAMPSHIRE" BY K.E. MOORE & B.G. STAPLES LAND SURVEYORS, DATED MAY 1983. S.C.R.D. PLAN 22-100.
5. "STATE OF NEW HAMPSHIRE PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. 109 - CENTRAL ROAD". DATED 1937, ON FILE IN THE NH DOT WEBSITE GIS PROJECT FINDER AS PROJECT 50899.
6. "PLAN OF ALTERNATIVE DESIGN SUBDIVISION, LITTLEWORTH RD. DOVER, NH FOR EZRA GREEN'S FARM L.L.C." BY NORWAY PLAINS ASSOCIATES, INC. DATED MARCH 2000. S.C.R.D. PLAN 59-51.
7. "PLAN OF LAND FOR RAYMOND AND CLAIRE HOWE, TAX MAP G LOT 53E, 14-1/2 OLD STAGE ROAD, DOVER, NEW HAMPSHIRE" BY KEM LAND SURVEY, INC. DATED OCTOBER 2007. S.C.R.D. PLAN 92-12.

OVERVIEW PLAN
FOR
TIGHE & BOND
OF
RICHARDSON DRIVE & OLD STAGE ROAD
DOVER, NEW HAMPSHIRE

NO.	DATE	DESCRIPTION	BY
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GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR
No. 937
JOHN F. KAISER
SIGNATURE

DRAWN BY: M.T.L.	DATE: AUGUST 24, 2015
CHECKED BY: J.F.K.	DRAWING NO.: 4205A
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PROJECT NAME AND LOCATION

RICHARDSON DRIVE REDEVELOPMENT PROJECT — 43°-11'-20"N
RICHARDSON DRIVE AND OLD STAGE ROAD — 70°-55'-28"W
DOVER, NH 03820

DESCRIPTION

THE PROJECT CONSISTS OF THE RECONSTRUCTION OF RICHARDSON DRIVE INCLUDING THE INSTALLATION OF NEW WATER SERVICES FROM THE WATER MAIN UP TO INDIVIDUAL CURB STOPS, AN EXTENSION TO THE CLOSED DRAINAGE SYSTEM AND AN EXTENSION TO THE SEWER SYSTEM.

OLD STAGE ROAD BETWEEN THE INTERSECTION OF OLD STAGE ROAD AND ROUTE 9 AND THE DOVER/MADBURY LIMITS WILL ALSO BE RECONSTRUCTED IN ORDER TO EXTEND THE EXISTING SEWER AND WATER SYSTEMS. THE WORK IS ANTICIPATED TO START IN THE SPRING OF 2017, AND BE COMPLETED BY THE FALL OF 2017.

DISTURBED AREA

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY ±3.95 ACRES.

SOIL CHARACTERISTICS

BASED ON THE USCS SOIL SURVEY FOR STRAFFORD COUNTY THE SOILS CONSIST OF HINCKLEY LOAMY SAND AND ELMWOOD FINE SANDY LOAM SOILS. THESE SOILS ARE TYPICALLY CLASSIFIED AS WELL DRAINED AND MODERATELY WELL DRAINED SOILS.

NAME OF RECEIVING WATERS

THE STORM WATER RUNOFF WILL BE COLLECTED IN A CLOSED DRAINAGE SYSTEM WITHIN RICHARDSON DRIVE AND OLD STAGE ROAD WHICH ULTIMATELY DISCHARGES TO KELLY BROOK.

SURVEYOR NOTES:

1. REFERENCE: RICHARDSON DRIVE & PORTION OF OLD STAGE ROAD, DOVER, NEW HAMPSHIRE
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8. RICHARDSON DRIVE RIGHT OF WAY SHOWN HEREON IS BASED ON A 50' WIDE R.O.W. AS CREATED BY REF. PLAN #1. DUE TO SLIGHT MATHEMATICAL DISCREPANCIES ON SAID PLAN, BEST FIT LINES THROUGH FOUND MONUMENTS WERE HELD AND THE GENERAL INTEGRITY OF SAID PLAN WAS USED TO CREATE A 50' WIDE R.O.W. WITH A CLOSED MATHEMATICAL FIGURE. OLD STAGE ROAD R.O.W. IS BASED ON REFERENCE PLANS AND FOUND MONUMENTS.

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ENGINEERS REFERENCE PLANS:

1. "TOPOGRAPHIC PLAN FOR TIGHE & BOND OF RICHARDSON DRIVE DOVER, NEW HAMPSHIRE" BY DOUCET SURVEY, INC., DATED AUGUST 24, 2015, LAST REVISED JANUARY 12, 2016.
2. "KELLY BROOK MEADOWS SUBDIVISION 4 OLD STAGE ROAD" AS-BUILT (.DWG) PROVIDED BY THE CITY OF DOVER ON NOVEMBER 30, 2015.

SPECIAL CITY OF DOVER NOTES:

1. WORK TO BE PERFORMED OUTSIDE THE CITY RIGHT OF WAY SHALL BE COORDINATE WITH THE PROPERTY OWNER. THE CITY OF DOVER SHALL PROVIDE TEMPORARY CONSTRUCTION EASEMENTS FOR WORK OUTSIDE THEIR RIGHT OF WAY.
2. CONTRACTOR TO REMOVE ALL EXISTING MAILBOXES WITHIN THE LIMIT OF WORK AND RETURN THEM TO PROPERTY OWNER.
3. CONTRACTOR TO TRIM VEGETATION AND TREE LIMBS WITHIN THE CITY RIGHT OF WAY PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH CITY AND PROPERTY OWNER PRIOR TO COMMENCEMENT OF TRIMMING.
4. ALL PROPOSED WATER SERVICES SHALL BE COVERED IN 2" RIGID FOAM INSULATION.
5. ALL PROPOSED SEWER STUBS SHALL BE CAPPED AT THE LIMIT OF THE CITY RIGHT OF WAY.
6. THE LOCATION OF ALL EXISTING 4" SEWER SERVICE AND STUBS FOR FUTURE CONNECTION IDENTIFIED WITHIN OLD STAGE ROAD ARE APPROXIMATE (SEE ENGINEERS REFERENCE PLAN #2). EXACT LOCATION OF STUBS SHALL BE FIELD VERIFIED. CONTRACTOR TO NOTIFY ENGINEER IF LOCATIONS AND/OR INVERTS IN FIELD DIFFER FROM WHAT IS SHOWN HEREIN.
7. COORDINATE ALL TESTING OF WATER AND SEWER CONSTRUCTION WITH THE CITY OF DOVER.
8. THE EXACT LOCATION OF NEW SEWER SERVICES AND CONNECTIONS SHALL BE COORDINATED WITH THE CITY OF DOVER AND INDIVIDUAL PROPERTY OWNERS.

GENERAL NOTES:

1. THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE AND THE LOCATIONS ARE NOT GUARANTEED BY THE CITY 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. LOCATION OF UNDERGROUND WATER MAIN WITHIN RICHARDSON DRIVE (BETWEEN 6 RICHARDSON DRIVE AND 22 RICHARDSON DRIVE) WAS PROVIDED BY THE CITY OF DOVER ON NOVEMBER 9, 2015. LOCATION OF 1 INCH SERVICE WEST OF BARBADOES POND PROVIDED BY THE CITY OF DOVER ON MARCH 30, 2016. LOCATION OF WATER MAIN WITHIN OLD STAGE ROAD PROVIDED BY CITY OF DOVER MARCH 2016.
3. ALL WORK SHALL CONFORM TO THE CITY OF DOVER DEPARTMENT OF PUBLIC WORKS, STANDARD SPECIFICATIONS.
4. COORDINATE ALL WORK WITHIN RICHARDSON DRIVE AND OLD STAGE ROAD WITH THE CITY OF DOVER.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH THE CONDITIONS OF ALL PERMIT APPROVALS.
6. 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.
7. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISHED GRADE.
8. CONTRACTOR SHALL THOROUGHLY CLEAN ALL CATCH BASINS AND DRAIN LINES, WITHIN THE LIMIT OF WORK, OF SEDIMENT IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
9. SEE ENGINEERS REFERENCE PLAN #1 (INCLUDED IN THIS PLAN SET) FOR BENCHMARK INFORMATION.
10. CONTRACTOR SHALL CONTACT "DIG-SAFE" 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL HAVE THE "DIG-SAFE" NUMBER ON-SITE AT ALL TIMES.
11. THE CONTRACTOR SHALL PHASE DEMOLITION AND CONSTRUCTION AS REQUIRED TO PROVIDE CONTINUOUS SERVICE TO EXISTING HOMES THROUGHOUT THE CONSTRUCTION PERIOD. EXISTING 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.
12. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS THROUGHOUT THE ENTIRE DURATION OF CONSTRUCTION.
13. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
14. CLEAN AND COAT VERTICAL FACE OF EXISTING PAVEMENT AT SAWCUT LINE WITH RS-1 EMULSION IMMEDIATELY PRIOR TO PLACING NEW BITUMINOUS CONCRETE.
15. THE CONTRACTOR SHALL PAY ALL COSTS NECESSARY FOR TEMPORARY PARTITIONING, BARRICADING, FENCING, SECURITY, AND SAFETY DEVICES REQUIRED FOR THE MAINTENANCE OF A CLEAN AND SAFE CONSTRUCTION SITE.
16. CONTRACTOR SHALL PROTECT ALL PROPERTY MONUMENTATION THROUGHOUT CONSTRUCTION OPERATIONS. SHOULD ANY MONUMENTATION BE DISTURBED BY THE CONTRACTOR, THE CONTRACTOR SHALL EMPLOY A LICENSED SURVEYOR TO REPLACE IT.

DEMOLITION NOTES:

1. 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.
2. UTILITIES SHALL BE TERMINATED AT THE MAIN LINE PER UTILITY COMPANY STANDARDS. 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 DRAIN 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 A PERMANENT SOLUTION IS IN PLACE.
3. 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.
4. 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 TO REMAIN.
5. PAVEMENT REMOVAL LIMITS ARE SHOWN FOR CONTRACTOR'S CONVENIENCE. ADDITIONAL PAVEMENT REMOVAL MAY BE REQUIRED DEPENDING ON THE CONTRACTOR'S OPERATION. CONTRACTOR TO VERIFY FULL LIMITS OF PAVEMENT REMOVAL PRIOR TO BID.
6. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING STRUCTURES WITHIN THE WORK LIMITS SHOWN AND CALLED OUT TO BE REMOVED. ITEMS TO BE REMOVED INCLUDE, BUT ARE NOT LIMITED TO: PAVEMENT, PROCESSED ROCK FILL, CATCH BASINS, UNDERGROUND PIPING, SIGNS, TREES, AND SHRUBS. CONTRACTOR SHALL NOTIFY ENGINEER IF THERE ARE EXISTING FEATURES THAT MUST BE REMOVED TO COMPLETE THE WORK BUT ARE NOT CALLED OUT TO BE REMOVED ON THE DEMOLITION PLANS.
7. REMOVE TREES AND BRUSH AS CALLED OUT IN THE PLANS FOR COMPLETION OF WORK. CONTRACTOR SHALL GRUB AND REMOVE ALL STUMPS OF ALL TREES REMOVED WITHIN LIMITS OF WORK AND DISPOSE OF OFF SITE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.
8. SAWCUT AND REMOVE PAVEMENT AND CONSTRUCT PAVEMENT TRENCH PATCH FOR ALL PROPOSED UTILITIES LOCATED IN EXISTING PAVEMENT AREAS TO REMAIN.

PAVEMENT MARKINGS:

1. PLACEMENT AND COLOR OF PAVEMENT MARKINGS WITHIN OLD STAGE ROAD SHALL CONFORM TO THE LATEST EDITION OF MUTCD, SECTION 632 OF NHDOT STANDARD SPECIFICATION BOOK CONTRACT SUPPLEMENTAL SPECIFICATIONS, THE STATE OF NEW HAMPSHIRE PAVEMENT MARKING STANDARD DETAIL SHEETS, AND STANDARD PLAN SHEETS.
2. STRIPE ROADWAY AS SHOWN ON SITE LAYOUT PLAN.
3. CENTERLINES SHALL BE FOUR (4) INCH WIDE YELLOW LINES.

GRADING AND DRAINAGE NOTES:

1. COMPACTION REQUIREMENTS:

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 THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557.

2. CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE AND LAWN AREAS FREE OF LOW SPOTS AND PONDING AREAS.
3. ALL PROPOSED CATCH BASINS SHALL BE EQUIPPED WITH 4' SUMPS.
4. ALL DRAINAGE PIPE WITH LESS THAN 4' OF COVER SHALL BE INSULATED WITH 2 INCH RIGID FOAM INSULATION.

UTILITY NOTES:

1. COORDINATE ALL UTILITY WORK WITH APPROPRIATE UTILITY COMPANY.
   SEWER/WATER: CITY OF DOVER
   ELECTRIC: EVERSOURCE ENERGY (FORMERLY PSNH)
   TELEPHONE/DATA: COMCAST AND/OR FAIRPOINT
   GAS: UNITIL
   DRAINAGE: CITY OF DOVER
2. ALL SEWER PIPE SHALL BE PVC SDR 35 UNLESS OTHERWISE STATED.
3. ALL SEWER PIPE WITH LESS THAN 4' OF COVER IN UNPAVED AREAS AND LESS THAN 6' OF COVER IN PAVED AREAS SHALL BE INSULATED WITH 2 INCH RIGID FOAM INSULATION.
4. A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS.
5. ALL ELECTRICAL MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LATEST EDITION, AND ALL APPLICABLE STATE AND LOCAL CODES.
6. 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.
7. ALL WATER MAIN INSTALLATIONS WITHIN THE CITY OF DOVER RIGHT OF WAYS SHALL BE CLASS 52, CEMENT LINED DUCTILE IRON PIPE POLYWRAPPED UNLESS NOTED OTHERWISE.
8. ALL WATERMAIN INSTALLATIONS SHALL BE PRESSURE TESTED AND CHLORINATED AFTER CONSTRUCTION PRIOR TO ACTIVATING THE SYSTEM. CONTRACTOR SHALL COORDINATE CHLORINATION AND TESTING WITH THE CITY OF DOVER WATER DEPARTMENT.

TEST PIT DATA:

TP-1 (PERFORMED BY TIGHE&BOND ON 10/22/15)

IN PAVEMENT
PAVEMENT THICKNESS = ±6"
PIT BOTTOM = ±5'
MATERIAL = SAND
LEDGE = NONE OBSERVED
WATER = NONE OBSERVED

TP-2 (PERFORMED BY TIGHE&BOND ON 10/22/15)

OFF PAVEMENT
PIT BOTTOM = ±9'
MATERIAL = ±1' TOP SOIL, ±8' SAND
LEDGE = NONE OBSERVED
WATER = NONE OBSERVED

TP-3 (PERFORMED BY TIGHE&BOND ON 10/22/15)

OFF PAVEMENT
PIT BOTTOM = ±9'
MATERIAL = ±1' TOP SOIL, ±8' SAND
LEDGE = NONE OBSERVED
WATER = NONE OBSERVED

TP-4 (PERFORMED BY TIGHE&BOND ON 10/22/15)

IN PAVEMENT
PAVEMENT THICKNESS = ±3"
PIT BOTTOM = ±9'
MATERIAL = SAND
LEDGE = NONE OBSERVED
WATER = NONE OBSERVED

TP-5 (PERFORMED BY TIGHE&BOND ON 10/22/15)

IN PAVEMENT
PAVEMENT THICKNESS = ±4"
PIT BOTTOM = ±9'
MATERIAL = SAND
LEDGE = NONE OBSERVED
WATER = NONE OBSERVED

TP-6 (PERFORMED BY TIGHE&BOND ON 10/22/15)

OFF PAVEMENT
PIT BOTTOM = ±8'
MATERIAL = ±1' TOP SOIL, ±7' SAND
LEDGE = NONE OBSERVED
WATER = NONE OBSERVED

TP-7 (PERFORMED BY TIGHE&BOND ON 4/13/16)

IN PAVEMENT
PAVEMENT THICKNESS = ±4"
PIT BOTTOM = ±4'
MATERIAL = ±6 INCHES OF RECLAIMED PAVEMENT, ±6" OF GRAVEL, ±56" CLAY
LEDGE = NONE OBSERVED
WATER = NONE OBSERVED

TP-8 (PERFORMED BY TIGHE&BOND ON 4/13/16)

IN PAVEMENT
PAVEMENT THICKNESS = ±4"
PIT BOTTOM = ±4'
MATERIAL = ±6 INCHES OF RECLAIMED PAVEMENT, ±4" GRAVEL, ±34" CLAY
LEDGE = NONE OBSERVED
WATER = NONE OBSERVED

TP-9 (PERFORMED BY TIGHE&BOND ON 4/13/16)

IN PAVEMENT
PAVEMENT THICKNESS = ±4"
PIT BOTTOM = ±4'
MATERIAL = ±10 INCHES OF RECLAIMED PAVEMENT, ±34" CLAY
LEDGE = NONE OBSERVED
WATER = NONE OBSERVED

SEQUENCE OF MAJOR ACTIVITIES

1. ESTABLISH HORIZONTAL AND VERTICAL CONTROL (COORDINATE WITH SURVEYOR OF RECORD).
2. INSTALL TRAFFIC CONTROL SIGNS (COORDINATE WITH DOVER DPW).
3. CONSTRUCT TEMPORARY AND PERMANENT SEDIMENT, EROSION AND DETENTION CONTROL FACILITIES.
   A. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH MOVING OPERATIONS THAT WILL INFLUENCE STORMWATER RUNOFF SUCH AS:
      - NEW CONSTRUCTION
      - DEVELOPMENT OF BORROW PIT AREAS
      - DISPOSAL OF SEDIMENT SPOIL, STUMP AND OTHER SOLID WASTE
      - CONTROL OF DUST
      - NEARNESS OF CONSTRUCTION SITE TO RECEIVING WATERS
      - CONSTRUCTION DURING LATE WINTER AND EARLY SPRING
   B. CONSTRUCT TEMPORARY CULVERTS AND DIVERSION CHANNELS AS REQUIRED.
   C. ALL PERMANENT DITCHES AND SWALES TO BE STABILIZED USING THE VEGETATIVE AND NON-STRUCTURAL BMPS PRIOR TO DIRECTING RUNOFF TO THEM.
   D. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT FENCES, SEDIMENT TRAPS, ETC., MULCH AND SEED AS REQUIRED.
   E. INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE PROJECT.
4. CLEAR, GRUB AND DISPOSE OF DEBRIS IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS.
5. INSTALL PROPOSED DRAINAGE AND UTILITIES.
6. RECONSTRUCT EXISTING ROADWAYS.
7. GRADE AND GRAVEL ROADWAYS - ALL ROADS SHALL BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
8. BEGIN PERMANENT AND TEMPORARY SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND MULCHED IMMEDIATELY AFTER THEIR CONSTRUCTION.
9. FINISH PAVING ALL ROADWAYS, INSTALL CURBING, AND INSTALL PAVEMENT MARKINGS (AS REQUIRED).
10. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
11. REMOVE TRAPPED SEDIMENTS AND DEBRIS FROM COLLECTOR DEVICES AS APPROPRIATE AND DISPOSE OF PROPERLY.
12. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.

NOTE: THE CONSTRUCTION SEQUENCE MUST LIMIT THE DURATION AND AREA OF DISTURBANCE TO NO MORE THAN 4.0 ACRES AT ANY ONE TIME.

LEGEND

	CITY GIS LINE
	RIGHT OF WAY LINE
	EASEMENT LINE
	STONE WALL
	STOCKADE FENCE
	PICKET FENCE
	WIRE FENCE
	CHAIN LINK FENCE
OHW	OVERHEAD WIRES
S	SEWER LINE
D	DRAIN LINE
G	GAS LINE
W	WATER LINE
XW	WATER LINE BASED CITY GIS
E	UNDERGROUND ELECTRIC LINE
100	MAJOR CONTOUR LINE
98	MINOR CONTOUR LINE
	TREE LINE
	SHRUB LINE
	UTILITY POLE
	UTILITY POLE & GUY WIRE
	UTILITY POLE W/ LIGHT
	LIGHT POLE
	SIGN
	BOUND FOUND
	IRON PIPE/ROD FOUND
	FIRE HYDRANT
	WATER GATE VALVE
	WATER SHUTOFF VALVE
VP	VENT PIPE
MB	EXISTING MAILBOX
	PAD MOUNTED TRANSFORMER
	ELECTRIC BOX
	UTILITY BOX
	CATCH BASIN
	DRAIN MANHOLE
	SEWER MANHOLE
	TREE STUMP
	CONIFEROUS TREE
	DECIDUOUS TREE
	CONIFEROUS SHRUB
	DECIDUOUS BUSH
	CONCRETE
	LANDSCAPED AREA
BND. FND.	BOUND FOUND
I.R.F.	IRON ROD FOUND
I.P.F.	IRON PIPE FOUND
S.S.F.	STEEL STAKE FOUND
FF	FINISHED FLOOR
EP	EDGE OF PAVEMENT
VCC	VERTICAL CONCRETE CURB
DYL	DOUBLE YELLOW LINE
PD	PROPOSED DRAINAGE
	PROPOSED DRAIN MANHOLE
	PROPOSED CATCH BASIN
	PROPOSED REPLACEMENT CATCH BASIN FRAME & GRATE
PW	PROPOSED WATER
	PROPOSED FIRE HYDRANT
	PROPOSED WATER GATE VALVE
	PROPOSED WATER SHUTOFF VALVE
	PROPOSED MAILBOX
PS	PROPOSED SEWER
	PROPOSED SEWER MANHOLE
158	PROPOSED CONTOUR
TP-1	EXISTING TEST PIT LOCATION
TP-1	PROPOSED TEST PIT LOCATION
275.0	PROPOSED SPOT GRADE
	LIMIT OF WORK
	PROPOSED SILT SOCK
	PROPOSED INLET PROTECTION
	SAWCUT LINE
	LIMIT OF PAVEMENT TO BE REMOVED
	LIMIT OF GRAVEL TO BE REMOVED
TYP.	TYPICAL
4"DSLY	4" DOUBLE SOLID LINE YELLOW
SGC	SLOPED GRANITE CURB
3'R	PROPOSED PAVEMENT RADIUS
	PROPOSED PAVEMENT
	PROPOSED SIGN
OSR	OLD STAGE ROAD
RD	RICHARDSON DRIVE
LR	LITTLEWORTH ROAD

Tighe&Bond
www.tighebond.com

STATE OF NEW HAMPSHIRE — GREGG M. MIKOLAITIES No. 6894 — LICENSED PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE — KENNETH A. MAVROGEORGE No. 13295 — LICENSED PROFESSIONAL ENGINEER

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

NOTES AND LEGEND SHEET

SCALE: AS SHOWN

R-1

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG - CAD\DESIGN\1302491_DESIGN.DWG LAYOUT: R1 NTS
SAVE DATE: 10/24/2016 6:12 PM BY: KAM
PLOT DATE: 11/1/2016 8:14 AM BY: Kenneth A. Mavrogeorge

EROSION CONTROL NOTES:

1. ALL EROSION CONTROL MEASURES AND PRACTICES SHALL CONFORM TO THE "NEW HAMPSHIRE STORMWATER MANUAL VOLUME 3: EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" PREPARED BY THE NHDES.
2. PRIOR TO ANY WORK OR SOIL DISTURBANCE, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EROSION CONTROL MEASURES AS REQUIRED IN THE PROJECT MANUAL.
3. CONTRACTOR SHALL INSTALL TEMPORARY EROSION CONTROL BARRIERS, INCLUDING HAYBALE, SILT FENCES, SILT SACKS AND SILT SOCKS, AS SHOWN IN THESE DRAWINGS AS THE FIRST ORDER OF WORK.
4. SILT SACK INLET PROTECTION SHALL BE INSTALLED IN ALL EXISTING AND PROPOSED CATCH BASIN INLETS WITHIN THE WORK LIMITS. MAINTAIN FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED.
5. PERIMETER CONTROLS INCLUDING SILT FENCES, HAYBALE BARRIERS, AND/OR SILT SOCKS SHALL MAINTAINED FOR THE DURATION OF THE PROJECT UNTIL PAVEMENT HAS BEEN INSTALLED AND NON-PAVED AREAS HAVE BEEN STABILIZED.
6. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION.
7. ALL DISTURBED AREAS NOT OTHERWISE BEING TREATED SHALL RECEIVE 6" LOAM, SEED, AND FERTILIZER.
8. INSPECT ALL INLET PROTECTION AND PERIMETER CONTROLS WEEKLY AND AFTER EACH RAIN STORM OF 0.25 INCH OR GREATER. REPAIR/MODIFY PROTECTION AS NECESSARY TO MAXIMIZE EFFICIENCY OF FILTER. REPLACE ALL FILTERS WHEN SEDIMENT IS 1/3 THE FILTER HEIGHT.
9. CONSTRUCT EROSION CONTROL BLANKETS ON ALL SLOPES STEEPER THAN 3:1.

DUST CONTROL:

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST THROUGHOUT THE CONSTRUCTION PERIOD.
2. DUST CONTROL METHODS SHALL INCLUDE, BUT BE NOT LIMITED TO SPRINKLING WATER ON EXPOSED AREAS, COVERING LOADED DUMP TRUCKS LEAVING THE SITE, AND TEMPORARY MULCHING.
3. DUST CONTROL MEASURES SHALL BE UTILIZED SO AS TO PREVENT THE MIGRATION OF DUST FROM THE SITE TO ABUTTING AREAS INCLUDING BUT NOT LIMITED TO ROUTE 9.

STOCKPILES

1. LOCATE STOCKPILES A MINIMUM OF 50 FEET AWAY FROM CATCH BASINS, SWALES, AND CULVERTS.
2. ALL STOCKPILES SHOULD BE SURROUNDED WITH TEMPORARY EROSION CONTROL MEASURES PRIOR TO THE ONSET OF PRECIPITATION.
3. PERIMETER BARRIERS SHOULD BE MAINTAINED AT ALL TIMES, AND ADJUSTED AS NEEDED TO ACCOMMODATE THE DELIVERY AND REMOVAL OF MATERIALS FROM THE STOCKPILE. THE INTEGRITY OF THE BARRIER SHOULD BE INSPECTED AT THE END OF EACH WORKING DAY.
4. PROTECT ALL STOCKPILES FROM STORMWATER RUN-OFF USING TEMPORARY EROSION CONTROL MEASURES SUCH AS BERMS, SILT SOCK, OR OTHER APPROVED PRACTICE TO PREVENT MIGRATION OF MATERIAL BEYOND THE IMMEDIATE CONFINES OF THE STOCKPILES.

STABILIZATION

1. AN AREA SHALL BE CONSIDERED STABLE WHEN 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 ESTABLISHED.
   - C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED
   - D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
2. WINTER STABILIZATION PRACTICES:
   - A. ALL PROPOSED POST-DEVELOPMENT VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATED GROWTH BY NOVEMBER 15TH, OR WHICH ARE DISTURBED AFTER NOVEMBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 4:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHOR NETTING, ELSEWHERE.
   - B. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITION.
   - C. AFTER NOVEMBER 15TH, INCOMPLETE ROAD SURFACES SHALL BE PROTECTED WITH A MINIMUM OF 3-INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3, OR IF CONSTRUCTION IS TO CONTINUE THROUGH THE WINTER SEASON BE CLEARED OF ANY ACCUMULATED SNOW AFTER EACH STORM EVENT.
3. STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES, AND DISTURBED AREAS, WHERE CONSTRUCTION ACTIVITY SHALL 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. STABILIZATION MEASURES TO BE USED INCLUDE:
   - A. TEMPORARY SEEDING
   - B. MULCHING
4. WHEN CONSTRUCTION ACTIVITY PERMANENTLY OR TEMPORARILY CEASES WITHIN 100 FEET OF KELLY BROOK OR THE DRAINAGE SWALE ALONG OLD STAGE ROAD, THE AREA SHALL BE STABILIZED WITHIN SEVEN (7) DAYS OR PRIOR TO A RAIN EVENT. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN THESE AREAS, SILT FENCES AND HAYBALE BARRIERS AND ANY EARTH/DIKES SHALL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.

CONCRETE WASHOUT AREA:

1. THE FOLLOWING ARE THE ONLY NON-STORMWATER DISCHARGES ALLOWED. ALL OTHER NON-STORMWATER DISCHARGES ARE PROHIBITED ON SITE.
   - A. THE CONCRETE DELIVERY TRUCKS SHOULD BE ENCOURAGED WHERE POSSIBLE, TO USE WASHOUT FACILITIES AT THEIR OWN PLANT OR DISPATCH FACILITY.
   - B. IF IT IS NECESSARY, SITE CONTRACTOR SHALL DESIGNATE SPECIFIC WASHOUT AREAS AND DESIGN FACILITIES TO HANDLE ANTICIPATED WASHOUT WATER.
   - C. CONTRACTOR SHALL LOCATE WASHOUT AREAS AT LEAST 150 FEET AWAY FROM STORM DRAINS, SWALES AND KELLY BROOK.
   - D. INSPECT WASHOUT FACILITIES DAILY TO DETECT LEAKS OR TEARS AND TO IDENTIFY WHEN MATERIALS NEED TO BE REMOVED.

ALLOWABLE NON-STORMWATER DISCHARGES:

1. DISCHARGES FROM FIRE-FIGHTING ACTIVITIES
2. FIRE HYDRANT FLUSHINGS
3. WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED
4. WATER USED TO CONTROL DUST
5. POTABLE WATER INC. UNCONTAMINATED WATER LINE FLUSHINGS
6. PAVEMENT WASH WATERS -NO SPILLS OR DETERGENTS
7. UNCONTAMINATED GROUND WATER OR SPRING WATER
8. UNCONTAMINATED EXCAVATION DEWATERING

WASTE DISPOSAL

1. WASTE MATERIALS
   - A. ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURELY LIDDED RECEPTACLES. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN A DUMPSTER.
   - B. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE.
   - C. ALL PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL BY THE SUPERINTENDENT.
2. HAZARDOUS WASTE
   - A. ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER.
   - B. SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES BY THE SUPERINTENDENT.
3. SANITARY WASTE
   - A. ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

SPILL PREVENTION

A. CONTRACTOR SHALL BE FAMILIAR WITH SPILL PREVENTION MEASURES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES. AT A MINIMUM, CONTRACTOR SHALL FOLLOW THE BEST MANAGEMENT SPILL PREVENTION PRACTICES OUTLINED BELOW.

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

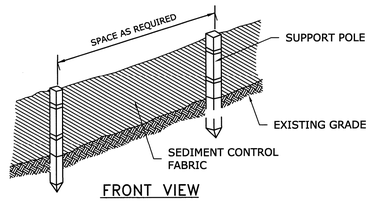
1. GOOD HOUSEKEEPING:
   THE FOLLOWING GOOD HOUSEKEEPING PRACTICES SHALL BE FOLLOWED ON SITE DURING THE CONSTRUCTION PROJECT:
   - A. ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB SHALL BE STORED ON SITE.
   - B. ALL MATERIALS STORED ON SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
   - C. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
   - D. THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
   - E. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
   - F. WHENEVER POSSIBLE ALL OF A PRODUCT SHALL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
2. HAZARDOUS PRODUCTS:
   THE FOLLOWING PRACTICES SHALL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
   - A. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
   - B. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.
   - C. SURPLUS PRODUCT THAT MUST BE DISPOSED OF SHALL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.
3. PRODUCT SPECIFICATION PRACTICES
   THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ON SITE:
   - A. PETROLEUM PRODUCTS:
     1. ALL ON SITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE.
     2. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
   - B. FERTILIZERS:
     1. FERTILIZERS USED SHALL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS.
     2. ONCE APPLIED FERTILIZER SHALL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER.
     3. STORAGE SHALL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
   - C. PAINTS:
     1. ALL CONTAINERS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE.
     2. EXCESS PAINT SHALL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM.
     3. EXCESS PAINT SHALL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.
4. SPILL CONTROL PRACTICES
   IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
   - A. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
   - B. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS SHALL 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.
   - C. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
   - D. THE SPILL AREA SHALL BE KEPT WELL VENTILATED AND PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
   - E. SPILLS OF TOXIC OR HAZARDOUS MATERIAL SHALL BE REPORTED TO THE APPROPRIATE LOCAL, STATE OR FEDERAL AGENCIES AS REQUIRED.
   - F. THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.
5. VEHICLE FUELING AND MAINTENANCE PRACTICE:
   - A. CONTRACTOR SHALL MAKE AN EFFORT TO PERFORM EQUIPTMENT/VEHICAL FUELING AND MAINTENANCE AT AN OFF-SITE FACILITY.
   - B. CONTRACTOR SHALL PROVIDE AN ON-SITE FUELING AND MAINTENANCE AREA THAT IS CLEAN AND DRY.
   - C. IF POSSIBLE THE CONTRACTOR SHALL KEEP AREA COVERED.
   - D. CONTRACTOR SHALL KEEP A SPILL KIT AT THE FUELING AND MAINTENANCE AREA.
   - E. CONTRACTOR SHALL VEHICLES SHALL BE INSPECTED REGULARLY FOR LEAKS AND DAMAGE.
   - F. CONTRACTOR SHALL USE DRIP PANS, DRIP CLOTHS, OR ABSORBENT PADS WHEN REPLACING SPENT FLUID.

EROSION CONTROL OBSERVATIONS AND MAINTENANCE PRACTICES

THIS PROJECT EXCEEDS ONE (1) ACRE OF DISTURBANCE AND THUS REQUIRES A SWPPP. THE SWPPP HAS BEEN PREPARED BY THE ENGINEER. CONTRACTOR SHALL BE FAMILIAR WITH THE SWPPP AND KEEP AND UPDATED COPY OF THE SWPPP ONSITE AT ALL TIMES.

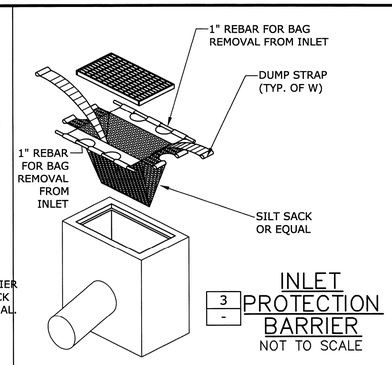
THE FOLLOWING REPRESENTS THE GENERAL OBSERVATION AND REPORTING PRACTICES THAT SHALL BE FOLLOWED AS PART OF THIS PROJECT.

1. OBSERVATIONS OF THE PROJECT FOR COMPLIANCE WITH THE SWPPP SHALL BE MADE BY THE ENGINEER AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF A STORM 0.25 INCHES OR GREATER.
2. AN OBSERVATION REPORT SHALL BE MADE AFTER EACH OBSERVATION AND DISTRIBUTED TO THE ENGINEER, THE OWNER, AND THE CONTRACTOR.
3. A REPRESENTATIVE OF THE SITE CONTRACTOR, SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES.
4. IF A REPAIR IS NECESSARY, IT SHALL BE INITIATED WITHIN 24 HOURS OF REPORT.



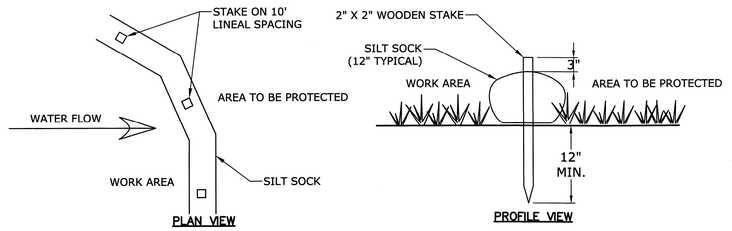
NOTE:
SEE PROJECT MANUAL FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS

1 - SILT FENCE
NOT TO SCALE

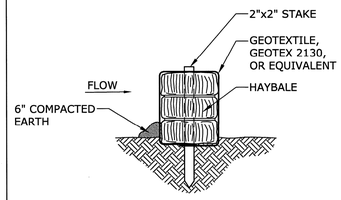


NOTE: INLET PROTECTION BARRIER SHALL BE SILT SACK OR APPROVED EQUAL

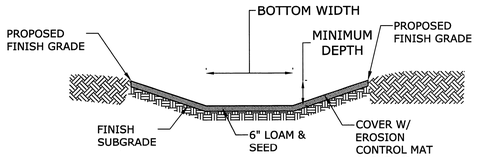
3 - INLET PROTECTION BARRIER
NOT TO SCALE



2 - SILT SOCK
NOT TO SCALE

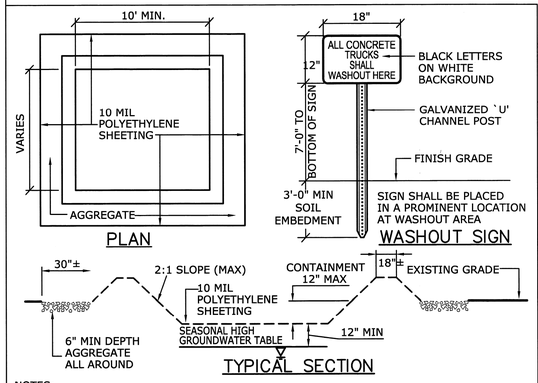


4 - FILTER FABRIC WRAPPED HAYBALE
NOT TO SCALE



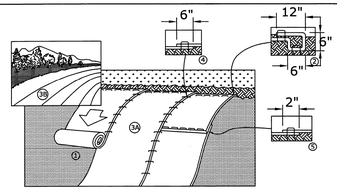
7 - GRASSED SWALE
NOT TO SCALE

NOTES:
1. THE FOUNDATION AREA OF THE WATERWAY SHALL BE CLEARED AND GRUBBED OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL. MATERIALS REMOVED SHALL BE DISPOSED OF SO THEY WILL NOT INTERFERE WITH THE CONSTRUCTION OR PROPER FUNCTIONING OF THE WATERWAY.
2. THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS-SECTION AS REQUIRED TO MEET THE DESIGN CRITERIA. THE WATERWAY SHALL BE FREE OF IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
3. EARTH FILLS REQUIRED TO MEET SUBGRADE REQUIREMENTS BECAUSE OF OVER EXCAVATION OR TOPOGRAPHY SHALL BE COMPACTED TO THE SAME DENSITY AS THE SURROUNDING SOIL TO PREVENT UNEQUAL SETTLEMENT THAT COULD CAUSE DAMAGE TO THE COMPLETED WATERWAY. EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE WATERWAY.
4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER AS TO MINIMIZE EROSION AND AIR AND WATER POLLUTION. ALL APPROPRIATE STATE AND LOCAL LAWS AND REGULATIONS SHALL BE COMPLIED WITH FOR INSTALLATION.
5. VEGETATION SHALL BE ESTABLISHED IN THE SWALE PRIOR TO ALLOWING STORMWATER RUNOFF TO FLOW THROUGH THE SWALE.
6. MAINTENANCE OF THE VEGETATION IN THE GRASSED WATERWAY IS EXTREMELY IMPORTANT IN ORDER TO PREVENT RILLING, EROSION, AND FAILURE OF THE WATERWAY. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION AND TO KEEP THE GRASSES IN A VIGOROUS CONDITION. THE VEGETATION SHOULD NOT BE MOWED TOO CLOSELY SO AS TO REDUCE THE EROSION RESISTANCE IN THE WATERWAY.
7. THE WATERWAY SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE WATERWAY. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND REVEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.
8. PERIODIC APPLICATIONS OF LIME AND FERTILIZER MAY BE NEEDED TO MAINTAIN VIGOROUS GROWTH.



NOTES:
1. CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
3. WASHOUT MUST BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% FULL.
4. WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
6. AT LEAST WEEKLY REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.

5 - CONCRETE WASHOUT AREA
NOT TO SCALE



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE, 36" OVER THE GRADE BREAK, BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UPSLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF TAPLES/STAKES 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES SPACED 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS DOWN THE SLOPE. ALL BLANKETS MUST BE SECURELY FASTENED TO THE SOIL SURFACE BY PLACING STAPLES IN APPROPRIATE LOCATIONS AS SHOWN ON THE STAPLE PATTERN GUIDE.
4. STAPLE LENGTHS SHALL BE A MINIMUM OF 8 INCHES.

6 - EROSION CONTROL BLANKET FOR SLOPE PROTECTION
NO SCALE

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

STATE OF NEW HAMPSHIRE - KENNETH A. MAVROGEORGE No. 13328 - LICENSED PROFESSIONAL ENGINEER

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

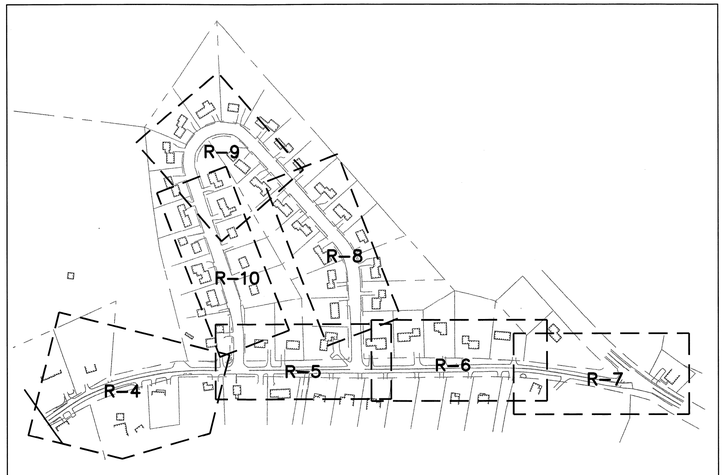
EROSION CONTROL NOTES SHEET

SCALE: AS SHOWN

R-2

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R2 ECNTS
SAVE DATE: 10/24/2016 6:12 PM BY:KAM
PLOT DATE: 11/1/2016 8:16 AM BY: Kenneth A. Mavrogeorge

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION



PLAN SHEET LOCUS MAP
SCALE: 1'=250'

TBM 4205C
MAG. NAIL SET UP 6" IN POLE PSNH 307/6
ELEV.=172.02'

TBM 4205B
MAG. NAIL SET UP 6" IN POLE PSNH 307/3
ELEV.=155.69'

TBM 4205D
"X" CUT IN FLANGE BOLT OVER MAIN
ELEV.=172.89'

TBM 4205XX
MAG. NAIL SET UP 6" IN POLE PSNH 306/12
ELEV.=162.83'

TBM 4205A
MAG. NAIL SET UP 6" IN POLE PSNH 306/7
ELEV.=136.75'

TBM 4205E
MAG. NAIL SET UP 6" IN POLE PSNH 306/10
ELEV.=147.13'

TBM 4205WW
MAG. NAIL SET UP 6" IN POLE PSNH 306/2
ELEV.=125.54'

TBM 4205TT
MAG. NAIL SET UP 6" IN POLE PSNH 3/110
ELEV.=119.70'

TBM 4205YY
MAG. NAIL SET UP 6" IN POLE PSNH 306/14
ELEV.=176.75'

STA. 0+00

OLD STAGE ROAD STA. 6+67
RICHARDSON DRIVE STA. 18+73

OLD STAGE ROAD STA. 10+63
RICHARDSON DRIVE STA. 0+00

STA. 19+53

20' WIDE SEWER EASEMENT PER REF. PLAN #2 ON SHEET R-1

SPECIAL NOTE:
WORK SHALL NOT EXTEND INTO THE NHDOT OR THE TOWN OF MADBURY RIGHT OF WAYS

SCALE IN FEET
0 80' 160'
GRAPHIC SCALE

Tighe&Bond
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STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6584
LICENSED LAND SURVEYOR

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13326
PROFESSIONAL ENGINEER

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
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DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

OVERALL EXISTING CONDITIONS PLAN

SCALE: AS SHOWN

R-3

FILENAME: \\SRV\PROJECTS\D\00249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT: R3 O-EX
SAVE DATE: 11/1/2016 8:57 AM BY: KAM
PLOT DATE: 11/1/2016 8:58 AM BY: Kenneth A. Mavrogeorge

CONSTRUCTION STAGING AREA AVAILABLE AT BARBADOS POND PARKING AREA (COORDINATE WITH CITY OF DOVER AND NH FISH AND GAME)

CONSTRUCT SILT SOCK AROUND OUTSIDE LIMITS OF CONSTRUCTION STAGING AREA

19 OLD STAGE ROAD

STONE RETAINING WALL

WIRE FENCE

MAILBOX TO BE SALVAGED AND REPLACED (COORD. WITH OWNER)

PT: 5+44.10

LIMIT OF SAWCUT (MEET/MATCH EXISTING DRIVEWAY GRADE)

LIMIT OF SAWCUT (MEET/MATCH EXISTING DRIVEWAY GRADE)

TBM 4205XX
MAG. NAIL SET UP 6" IN POLE PSNH 306/12
ELEV.=162.83'

CONSTRUCT SILT SOCK

BEGIN SILT SOCK

PC: 2+28.70

PT: 2+25.64

25 OLD STAGE ROAD

OLD STAGE ROAD

LIMIT OF SAWCUT (MEET/MATCH EXISTING DRIVEWAY GRADE)

EXISTING 1" WATER SERVICE TO BE REMOVED (SEE GENERAL NOTE 2)

POST & RAIL FENCE

POST & RAIL FENCE

LIMIT OF SAWCUT (MEET/MATCH EXISTING DRIVEWAY GRADE)

LIMIT OF SAWCUT (MEET/MATCH EXISTING DRIVEWAY GRADE)

STONE RETAINING WALL

30 OLD STAGE ROAD

28 OLD STAGE ROAD

FF=153.7'

SPECIAL NOTE:
WORK SHALL NOT EXTEND INTO THE NHDOT OR THE TOWN OF MADBURY RIGHT OF WAYS

27 OLD STAGE ROAD

END SILT SOCK

END SILT SOCK

STONE RETAINING WALL

32 OLD STAGE ROAD

MAILBOX TO BE SALVAGED AND REPLACED (COORD. WITH OWNER)

MAILBOX TO BE SALVAGED AND REPLACED (COORD. WITH OWNER)

CONCRETE BLOCK RETAINING WALL

1" SMOOTH ROD DOWN 2"

CEMETERY

GRANITE POST W/WIRE FENCE

LIMIT OF SAWCUT (MEET/MATCH EXISTING DRIVEWAY GRADE)

TBM 4205YY
MAG. NAIL SET UP 6" IN POLE PSNH 306/14
ELEV.=176.75'

CONSTRUCT SILT SOCK

BEGIN SILT SOCK

CONCRETE BLOCK RETAINING WALL

LIMIT OF SAWCUT (MEET/MATCH EXISTING DRIVEWAY GRADE)

MAILBOX TO BE SALVAGED AND REPLACED (COORD. WITH OWNER)

LIMIT OF SAWCUT (MEET/MATCH EXISTING DRIVEWAY GRADE)

ORNAMENTAL STONE WALL

34 OLD STAGE ROAD

LIMIT OF SAWCUT (MEET/MATCH EXISTING GRADE)

NH HIGHWAY BOUND FOUND

DOVER
MADBURY

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

LEGEND

- LIMIT OF WORK
- PROPOSED SILT SOCK
- PROPOSED INLET PROTECTION
- SAWCUT LINE
- LIMIT OF PAVEMENT TO BE REMOVED

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

Tighe&Bond
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GREGG M. MIKOLAITIES No. 6884 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

KENNETH A. MAVROGEORGE No. 13329 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
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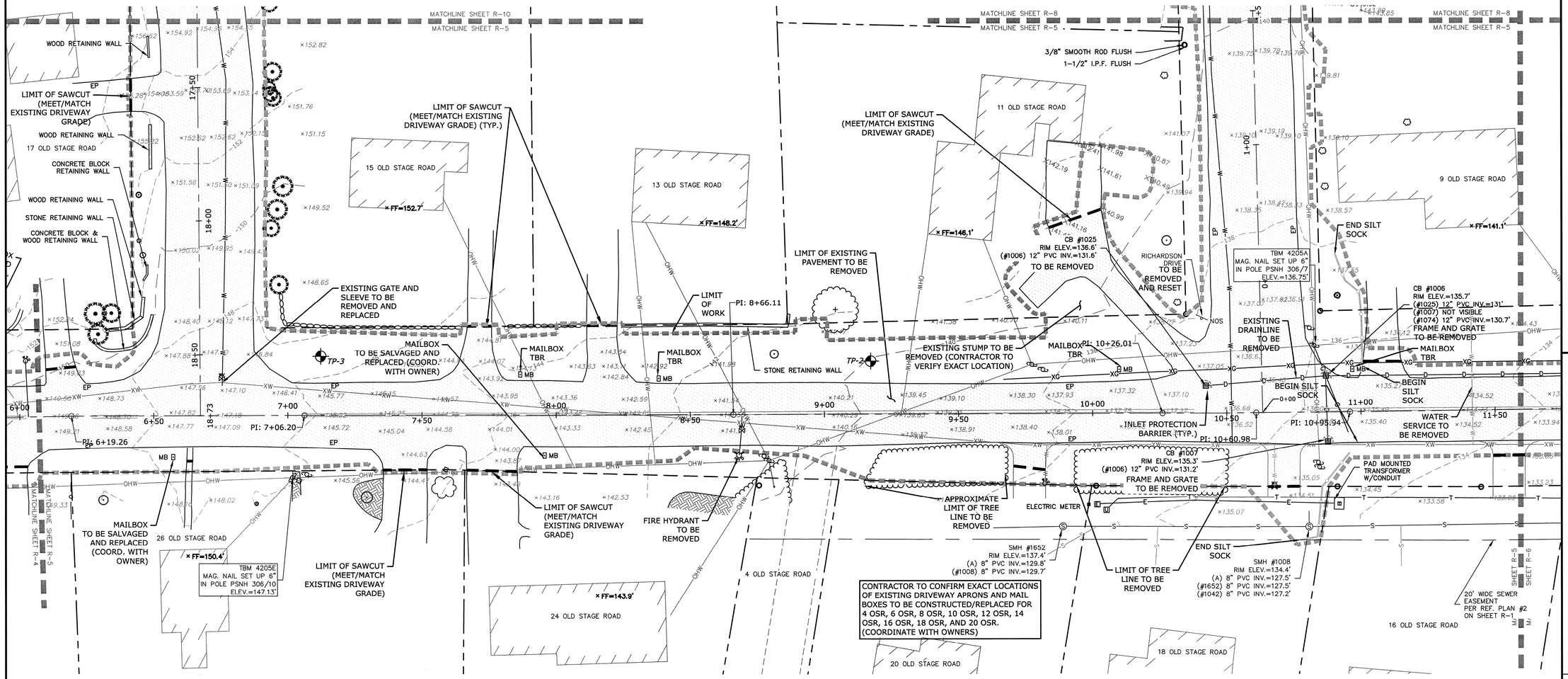
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

EXISTING CONDITIONS/ DEMOLITION PLAN

SCALE: AS SHOWN

R-4

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT: R4 EX
SAVE DATE: 11/1/2016 8:57 AM BY: KAM
PLOT DATE: 11/1/2016 9:01 AM BY: Kenneth A. Mavrogeorge



NOTE: ALL EXISTING WATER SERVICES WITHIN THE LIMITS OF THE PROJECT ARE TO BE REMOVED WITH THE EXCEPTION OF 4, 6, 8, 10, 12, 14, 16, 18, AND 20 OLD STAGE ROAD.

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

LEGEND
- LIMIT OF WORK
- PROPOSED SILT SOCK
- PROPOSED INLET PROTECTION
- SAWCUT LINE
- LIMIT OF PAVEMENT TO BE REMOVED

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

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STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
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11/2/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
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LICENSED PROFESSIONAL ENGINEER
11/2/16

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

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DATE:	11/02/2016
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CHECKED:	KAM/WJD
APPROVED BY:	GMM

EXISTING CONDITIONS/ DEMOLITION PLAN

SCALE: AS SHOWN

R-5

FILENAME: \\SRV\PROJECTS\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R5 EX
SAVE DATE: 11/1/2016 4:30 PM BY:KAM
PLOT DATE: 11/2/2016 3:38 PM BY: Kenneth A. Mavrogeorge

MATCHLINE SHEET R-8
MATCHLINE SHEET R-5

9 OLD STAGE ROAD
× FF=141.1'

7 OLD STAGE ROAD
WATER SERVICE TO BE LOCATED AND REMOVED
× FF=140.7'

5A OLD STAGE ROAD
× FF=139.2'

5 OLD STAGE ROAD

3 OLD STAGE ROAD

MATCHLINE SHEET R-6
MATCHLINE SHEET R-7

LIMIT OF SAWCUT (MEET/MATCH EXISTING DRIVEWAY GRADE) (TYP.)

MAILBOX TO BE REMOVED AND REPLACED (COORD. WITH OWNER)

MAILBOX TO BE REMOVED AND REPLACED (COORD. WITH OWNER)

CB #1006
RIM ELEV.=135.7'
(#1025) 12" PVC INV.=131'
(#1007) NOT VISIBLE
(#1074) 12" PVC INV.=130.7'
FRAME AND GRATE TO BE REMOVED

CB #1074
RIM ELEV.=128.9'
(#1006) 12" PVC INV.=125.2'
(A) 12" PVC INV.=125.0'
FRAME AND GRATE TO BE REMOVED

WATER SERVICE TO BE REMOVED

WATER SERVICE TO BE REMOVED

CB #3254
RIM ELEV.=126.7'
(#1074) 12" PVC INV.=122.6'
(#3253) 12" PVC INV.=122.5'
(A) 12" PVC INV.=122.3'
FRAME AND GRATE TO BE REMOVED

STONE RETAINING WALL

LIMIT OF TREE LINE TO BE REMOVED

TBM 4205WW
MAG. NAIL SET UP 6" IN POLE PSNH 306/2
ELEV.=125.54'

"SPEED LIMIT 30" SIGN TO BE REMOVED AND REPLACED (COORD. WITH DOVER DPW)

12" PVC INV.=121.7'

DRAINAGE SWALE

MAILBOX
TBR

PSNH 306/3

BEGIN SILT SOCK

WATER SERVICE TO BE REMOVED

PC: 14+81.98

10" HDPE INV.=122.9' TO BE REMOVED

DRAIN LINE TO BE REMOVED

OLD STAGE ROAD

TP-7

TP-8

BOULDER RETAINING WALL

CB #3291
RIM ELEV.=124.2'
(A) 12" CMP INV.=122.7'
FRAME AND GRATE TO BE REMOVED

CB #3253
RIM ELEV.=126'
(A) PIPE BLOCKED
(#3254) 12" PVC INV.=122.9'
FRAME AND GRATE TO BE REMOVED

SMH #1042
RIM ELEV.=128.8'
(#1008) 8" PVC INV.=121.9'
(A) 8" PVC INV.=121.8'

20' WIDE SEWER EASEMENT PER REF. PLAN #2 ON SHEET R-1

SHEET R-5
SHEET R-6

16 OLD STAGE ROAD

14 OLD STAGE ROAD

12 OLD STAGE ROAD

10 OLD STAGE ROAD

8 OLD STAGE ROAD

6 OLD STAGE ROAD

4 OLD STAGE ROAD

CONTRACTOR TO CONFIRM EXACT LOCATIONS OF EXISTING DRIVEWAY APRONS AND MAIL BOXES TO BE CONSTRUCTED/REPLACED FOR 4 OSR, 6 OSR, 8 OSR, 10 OSR, 12 OSR, 14 OSR, 16 OSR, 18 OSR, AND 20 OSR. (COORDINATE WITH OWNERS)

NOTE: ALL EXISTING WATER SERVICES WITHIN THE LIMITS OF THE PROJECT ARE TO BE REMOVED WITH THE EXCEPTION OF 4, 6, 8, 10, 12, 14, 16, 18, AND 20 OLD STAGE ROAD.

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

LEGEND
- LIMIT OF WORK
- PROPOSED SILT SOCK
- PROPOSED INLET PROTECTION
- SAWCUT LINE
- LIMIT OF PAVEMENT TO BE REMOVED

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R6 EX
SAVE DATE: 11/1/2016 4:30 PM BY:KAM
PLOT DATE: 11/2/2016 3:36 PM BY: Kenneth A. Mavrogeorge

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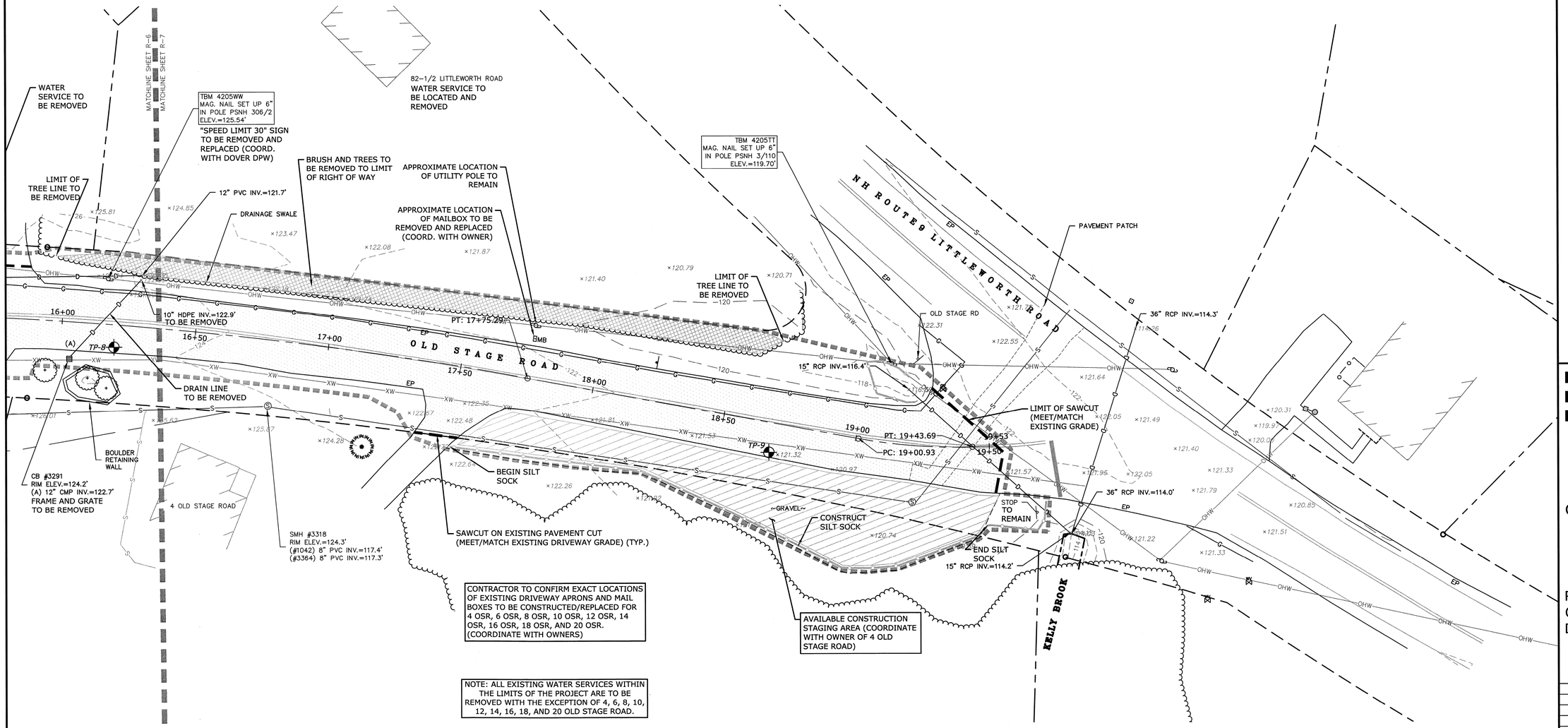
CHECKED:	KAM/WJD
APPROVED BY:	GMM

EXISTING CONDITIONS / DEMOLITION PLAN

SCALE: AS SHOWN

R-6



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STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13328
LICENSED PROFESSIONAL ENGINEER
11/2/16

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

EXISTING CONDITIONS/ DEMOLITION PLAN

SCALE: AS SHOWN

R-7

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT: R7 EX
SAVE DATE: 11/1/2016 4:30 PM BY: KAM
PLOT DATE: 11/2/2016 3:36 PM BY: Kenneth A. Mavrogeorge

Tighe&Bond
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STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6884
LICENSED PROFESSIONAL ENGINEER
11/2/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13329
LICENSED PROFESSIONAL SURVEYOR
11/2/16

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

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EXISTING CONDITIONS/ DEMOLITION PLAN

SCALE: AS SHOWN

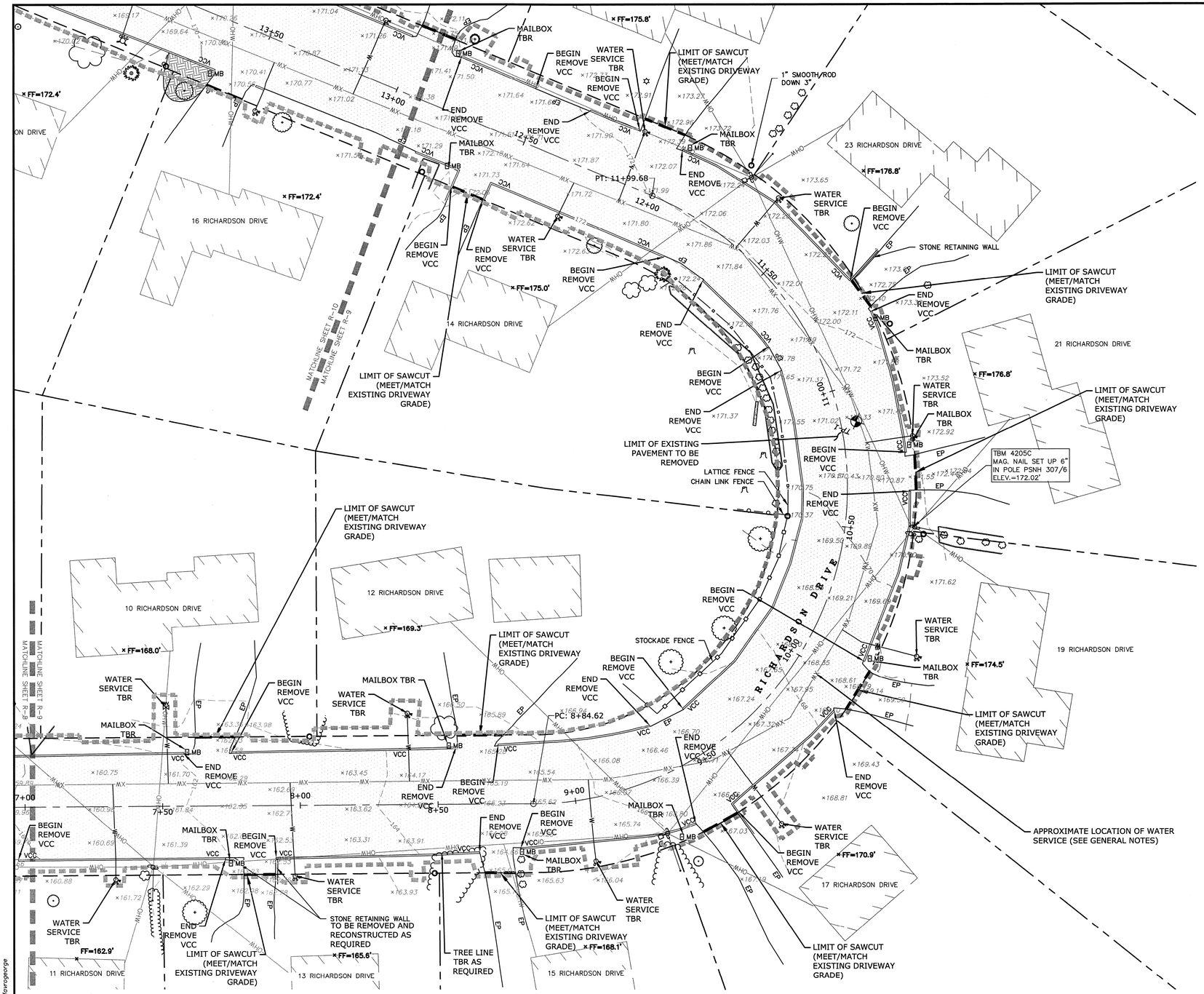
R-8

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

LEGEND
- LIMIT OF WORK
- PROPOSED SILT SOCK
- PROPOSED INLET PROTECTION
- SAWCUT LINE
- LIMIT OF PAVEMENT TO BE REMOVED

TBM 4205B
MAG. NAIL SET UP 6" IN POLE PSNH 307/3
ELEV.=155.69'

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R8 EX
SAVE DATE: 11/1/2016 9:04 AM BY:KAM
PLOT DATE: 11/1/2016 9:14 AM BY: Kenneth A. Mavrogeorge



SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

LEGEND

- LIMIT OF WORK
- PROPOSED SILT SOCK
- PROPOSED INLET PROTECTION
- SAWCUT LINE
- LIMIT OF PAVEMENT TO BE REMOVED

Tighe&Bond
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STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6884
LICENSED PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13326
LICENSED PROFESSIONAL ENGINEER

N

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

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APPROVED BY:	GMM

EXISTING CONDITIONS/ DEMOLITION PLAN

SCALE: AS SHOWN

R-9

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG--CAD\DESIGN\1302491_DESIGN.DWG LAYOUT: R9 EX
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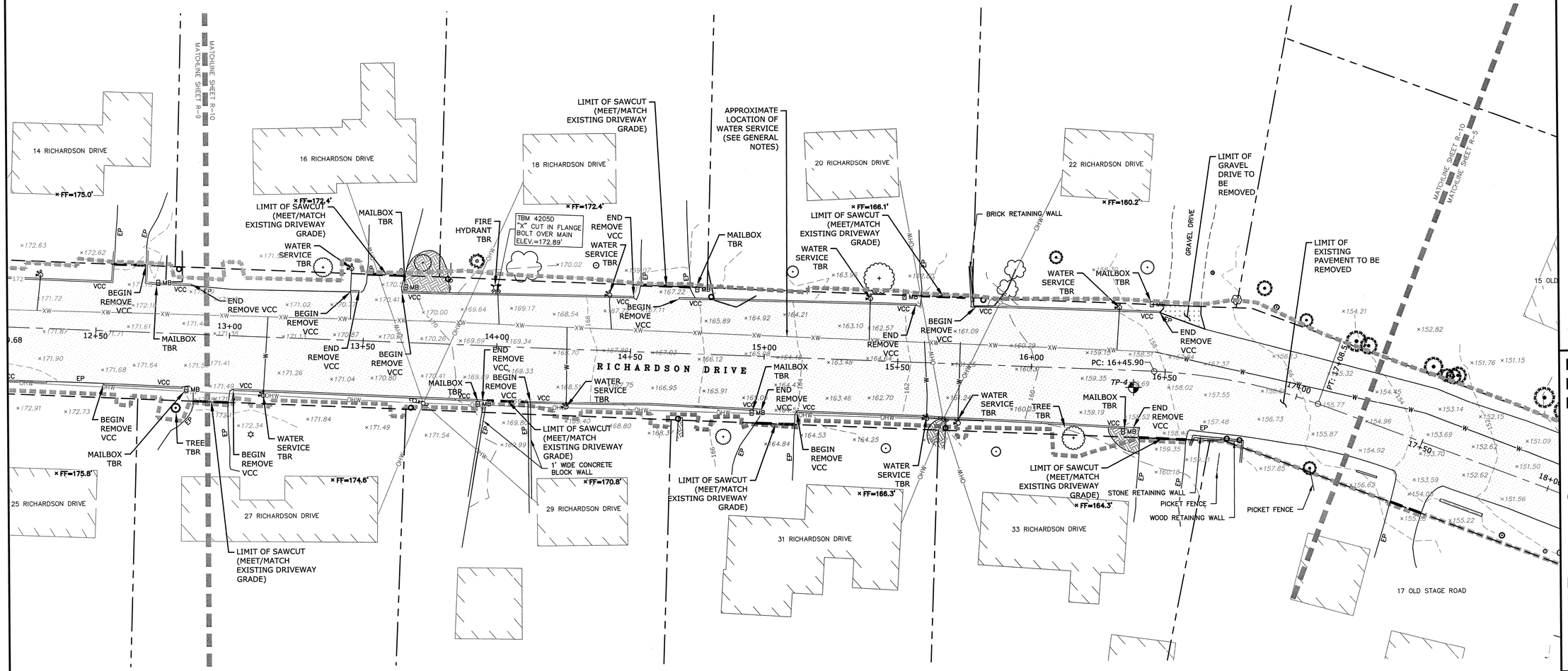

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

LEGEND

- LIMIT OF WORK
- PROPOSED SILT SOCK
- PROPOSED INLET PROTECTION
- SAWCUT LINE
- LIMIT OF PAVEMENT TO BE REMOVED

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

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STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6884
LICENSED PROFESSIONAL ENGINEER
11/2/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13326
LICENSED PROFESSIONAL ENGINEER
11/2/16

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

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APPROVED BY:	GMM

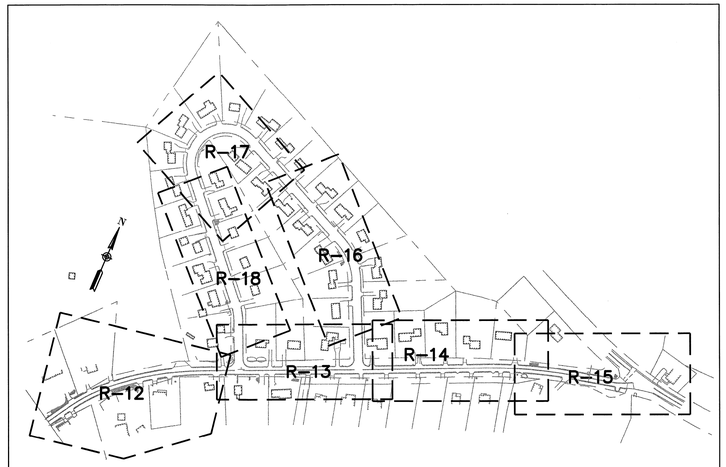
EXISTING CONDITIONS/ DEMOLITION PLAN

SCALE: AS SHOWN

R-10

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R10 EX
SAVE DATE: 11/1/2016 9:04 AM BY:KAM
PLOT DATE: 11/1/2016 9:20 AM BY: Kenneth A. Mavrogeorge

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION



PLAN SHEET LOCUS MAP
SCALE: 1'=250'

19 RICHARDSON DRIVE
17 RICHARDSON DRIVE
15 RICHARDSON DRIVE
21 RICHARDSON DRIVE
13 RICHARDSON DRIVE
23 RICHARDSON DRIVE
11 RICHARDSON DRIVE
12 RICHARDSON DRIVE
RICHARDSON DRIVE
14 RICHARDSON DRIVE
9 RICHARDSON DRIVE
10 RICHARDSON DRIVE
25 RICHARDSON DRIVE
16 RICHARDSON DRIVE
7 RICHARDSON DRIVE
8 RICHARDSON DRIVE
27 RICHARDSON DRIVE
18 RICHARDSON DRIVE
5 RICHARDSON DRIVE
6 RICHARDSON DRIVE
RICHARDSON DRIVE
29 RICHARDSON DRIVE
20 RICHARDSON DRIVE
3 RICHARDSON DRIVE
4 RICHARDSON DRIVE
31 RICHARDSON DRIVE
22 RICHARDSON DRIVE
1 RICHARDSON DRIVE
2 RICHARDSON DRIVE
33 RICHARDSON DRIVE
2A RICHARDSON DRIVE
17 OLD STAGE ROAD
15 OLD STAGE ROAD
11 OLD STAGE ROAD
7 OLD STAGE ROAD
9 OLD STAGE ROAD
5 OLD STAGE ROAD
5A OLD STAGE ROAD
3 OLD STAGE ROAD
82-1/2 LITTLEWORTH ROAD
19 OLD STAGE ROAD
13 OLD STAGE ROAD
27 OLD STAGE ROAD
25 OLD STAGE ROAD
OLD STAGE ROAD
L.O.W.
NH ROUTE 9
LITTLEWORTH ROAD
30 OLD STAGE ROAD
28 OLD STAGE ROAD
20 OLD STAGE ROAD
18 OLD STAGE ROAD
6 OLD STAGE ROAD
26 OLD STAGE ROAD
24 OLD STAGE ROAD
4 OLD STAGE ROAD
12 OLD STAGE ROAD
32 OLD STAGE ROAD
14 OLD STAGE ROAD
8 OLD STAGE ROAD
16 OLD STAGE ROAD
10 OLD STAGE ROAD
4 OLD STAGE ROAD
STA. 0+00
MADBURY
DOVER
L.O.W.
OLD STAGE ROAD STA. 6+67
RICHARDSON DRIVE STA. 18+73
OLD STAGE ROAD STA. 10+63
RICHARDSON DRIVE STA. 0+00
STA. 19+53
ISINGLASS RIVER
34 OLD STAGE ROAD

SPECIAL NOTE:
WORK SHALL NOT EXTEND INTO THE NHDOT OR THE TOWN OF MADBURY RIGHT OF WAYS

Tighe&Bond
www.tighebond.com

STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6884
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STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13326
LICENSED PROFESSIONAL ENGINEER

N

SCALE IN FEET
0 80' 160'
GRAPHIC SCALE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

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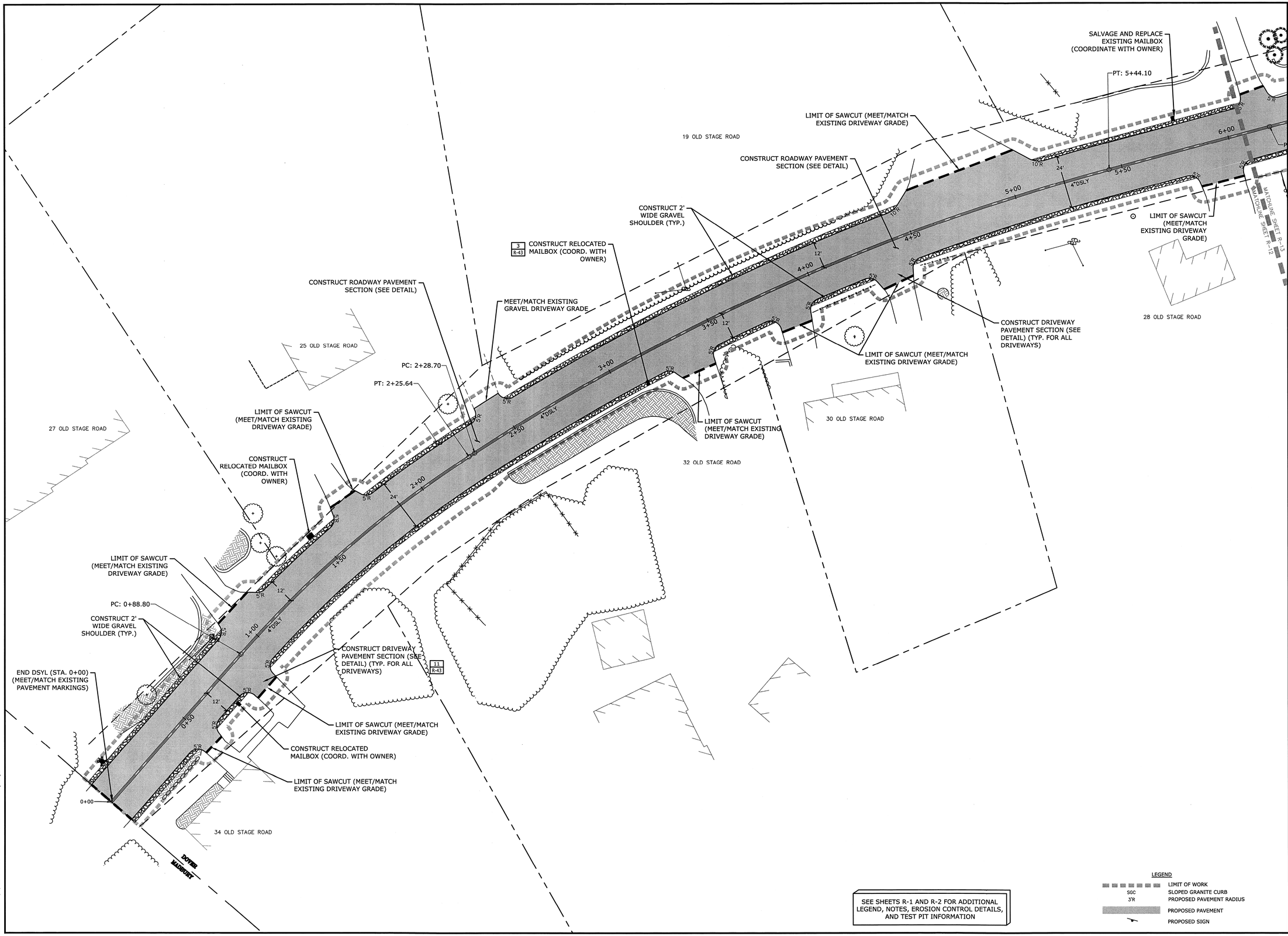
APPROVED BY:	GMM

OVERALL SITE LAYOUT PLAN

SCALE: AS SHOWN

R-11

FILENAME: \\SRV\PROJECTS\D\00249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R11 O-ST
SAVE DATE: 11/1/2016 9:04 AM BY:KAM
PLOT DATE: 11/1/2016 9:23 AM BY: Kenneth A. Mavrogeorge



SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

LEGEND

- LIMIT OF WORK
- SGC SLOPED GRANITE CURB
- 3'R PROPOSED PAVEMENT RADIUS
- PROPOSED PAVEMENT
- PROPOSED SIGN

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STATE OF NEW HAMPSHIRE – GREGG M. MIKOLAITIES No. 6984 LICENSED PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE – KENNETH A. MAVROGEORGE No. 13329 LICENSED PROFESSIONAL ENGINEER

N

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

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FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

SITE LAYOUT PLAN

SCALE: AS SHOWN

R-12

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF – DOVER, NH – ENGINEERING SERVICES\DWG–CAD\DESIGN\1302491_DESIGNLDWG LAYOUT-R12 ST
SAVE DATE: 11/1/2016 9:27 AM BY:KAM
PLOT DATE: 11/1/2016 9:36 AM BY: Kenneth A. Mavrogeorge

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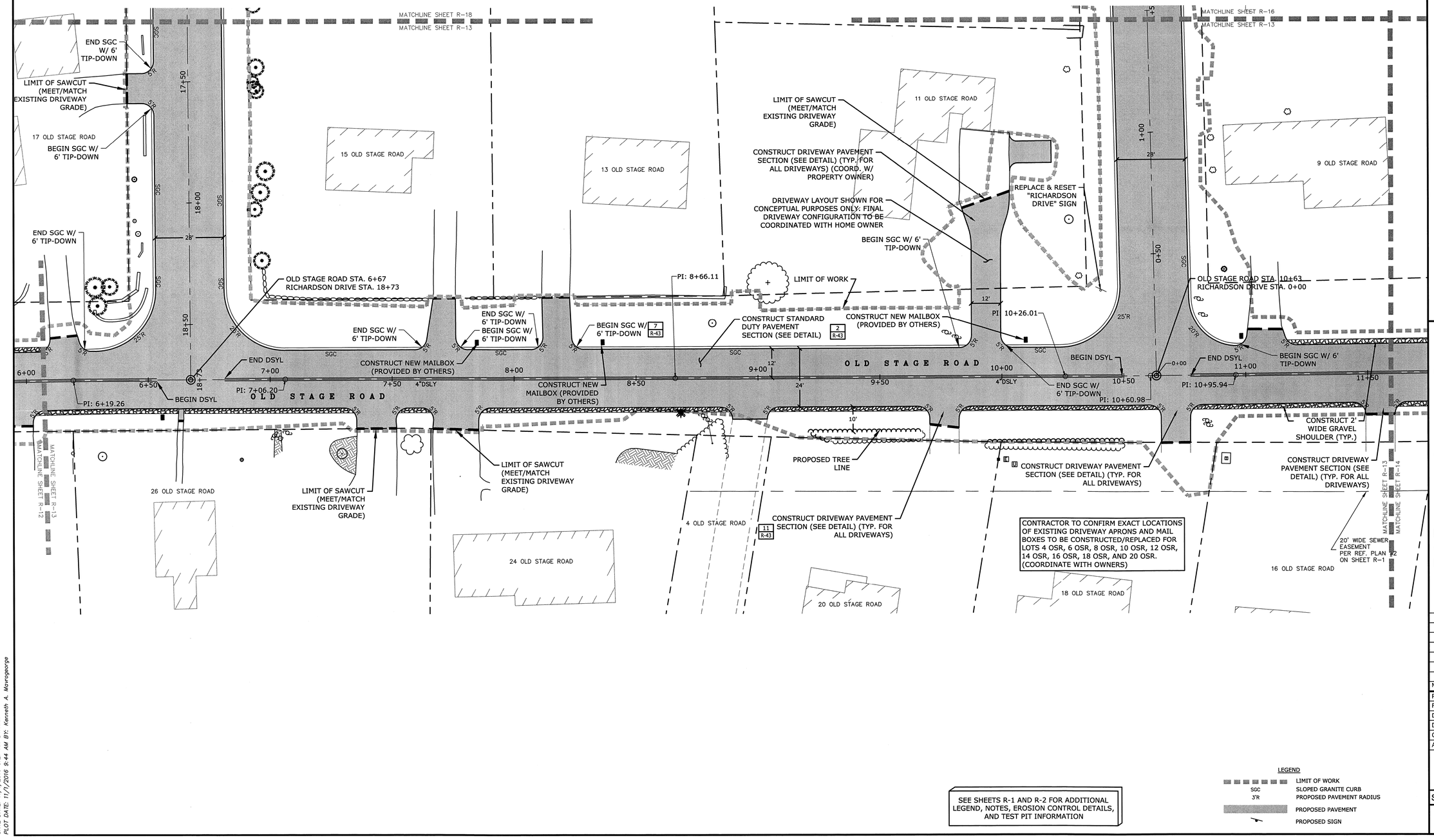

CONTRACTOR TO CONFIRM EXACT LOCATIONS OF EXISTING DRIVEWAY APRONS AND MAIL BOXES TO BE CONSTRUCTED/REPLACED FOR LOTS 4 OSR, 6 OSR, 8 OSR, 10 OSR, 12 OSR, 14 OSR, 16 OSR, 18 OSR, AND 20 OSR. (COORDINATE WITH OWNERS)

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

LEGEND
- LIMIT OF WORK
- SGC — SLOPED GRANITE CURB
- 3'R — PROPOSED PAVEMENT RADIUS
- PROPOSED PAVEMENT
- PROPOSED SIGN

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

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13328
LICENSED PROFESSIONAL ENGINEER

N

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

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FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

SITE LAYOUT PLAN

SCALE: AS SHOWN

R-13

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R13 ST
SAVE DATE: 11/1/2016 9:27 AM BY:KAM
PLOT DATE: 11/1/2016 9:44 AM BY: Kenneth A. Mavrogeorge

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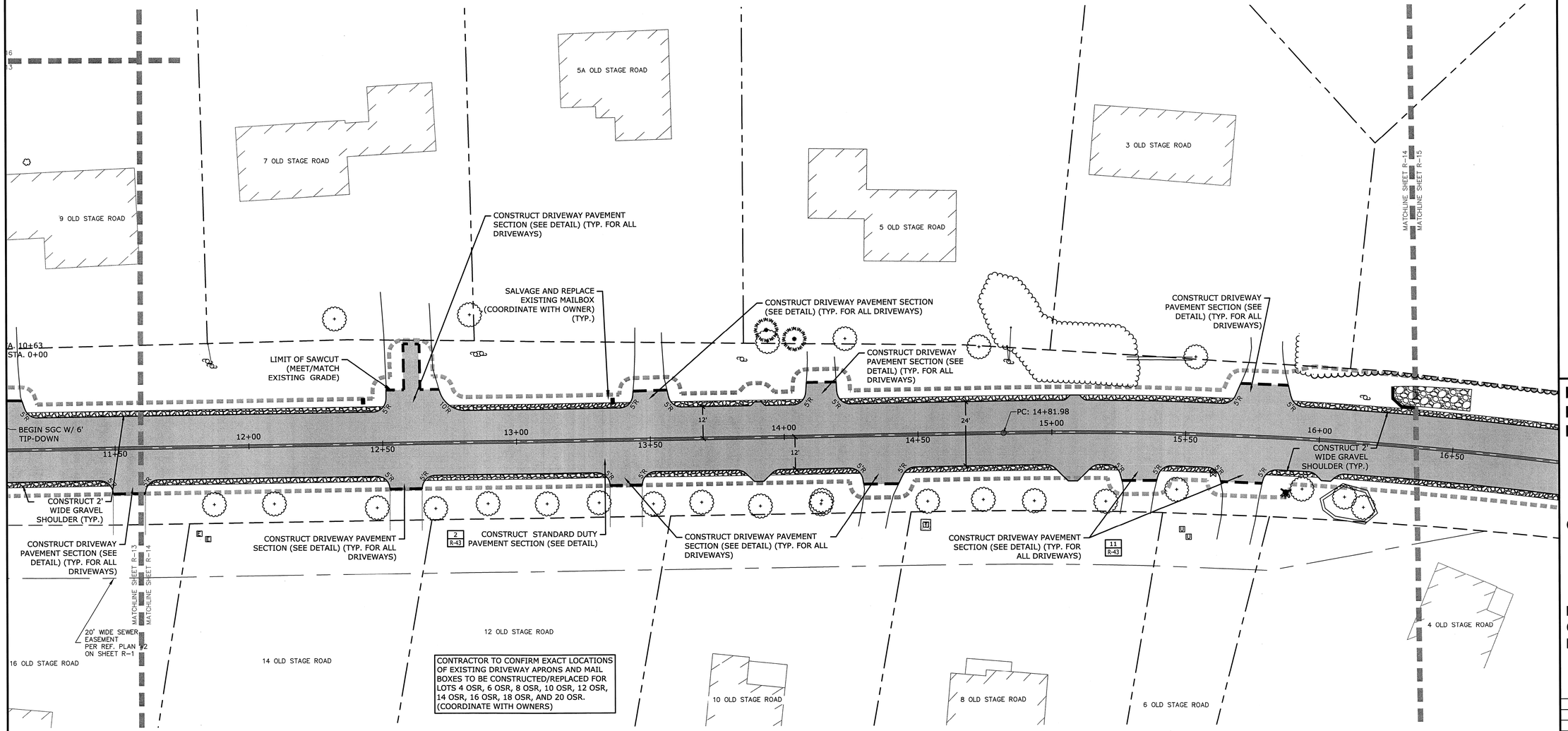

N

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

SITE LAYOUT PLAN

SCALE: AS SHOWN

R-14

FILENAME: \\SRV\PROJECTS\D\00249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R14 ST
SAVE DATE: 11/1/2016 4:30 PM BY: KAM
PLOT DATE: 11/2/2016 3:31 PM BY: Kenneth A. Mavrogeorge

MATCHLINE SHEET R-14
MATCHLINE SHEET R-15

82-1/2 LITTLEWORTH ROAD

11 / R-43 CONSTRUCT DRIVEWAY PAVEMENT SECTION (SEE DETAIL) (TYP. FOR ALL DRIVEWAYS)

CONSTRUCT R2-1 "SPEED LIMIT 30" SIGN (COORD. EXACT LOCATION WITH DPW)

CONSTRUCT 2' WIDE GRAVEL SHOULDER (TYP.)

PT: 17+75.29

OLD STAGE RD

BEGIN DSYL (STA. 19+53) (MEET/MATCH EXISTING PAVEMENT MARKINGS)

PT: 19+43.69

PC: 19+00.93

STOP

16+00 16+50 17+00 17+50 18+00 18+50 19+00 19+50

SSR 10'R 15'R 5'R 12' 24' 12.5'

4 OLD STAGE ROAD

3 / R-43 CONSTRUCT NEW MAILBOX FOR 4 OLD STAGE ROAD (PROVIDED BY OTHERS)

CONTRACTOR TO CONFIRM EXACT LOCATIONS OF EXISTING DRIVEWAY APRONS AND MAIL BOXES TO BE CONSTRUCTED/REPLACED FOR LOTS 4 OSR, 6 OSR, 8 OSR, 10 OSR, 12 OSR, 14 OSR, 16 OSR, 18 OSR, AND 20 OSR. (COORDINATE WITH OWNERS)

KELLY BROOK

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

LEGEND

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- SGC — SLOPED GRANITE CURB
- 3'R — PROPOSED PAVEMENT RADIUS
- PROPOSED PAVEMENT
- PROPOSED SIGN

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R15 ST
SAVE DATE: 11/1/2016 9:45 AM BY:KAM
PLOT DATE: 11/1/2016 9:53 AM BY: Kenneth A. Mavrogeorge

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

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 15328
LICENSED PROFESSIONAL ENGINEER

N

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

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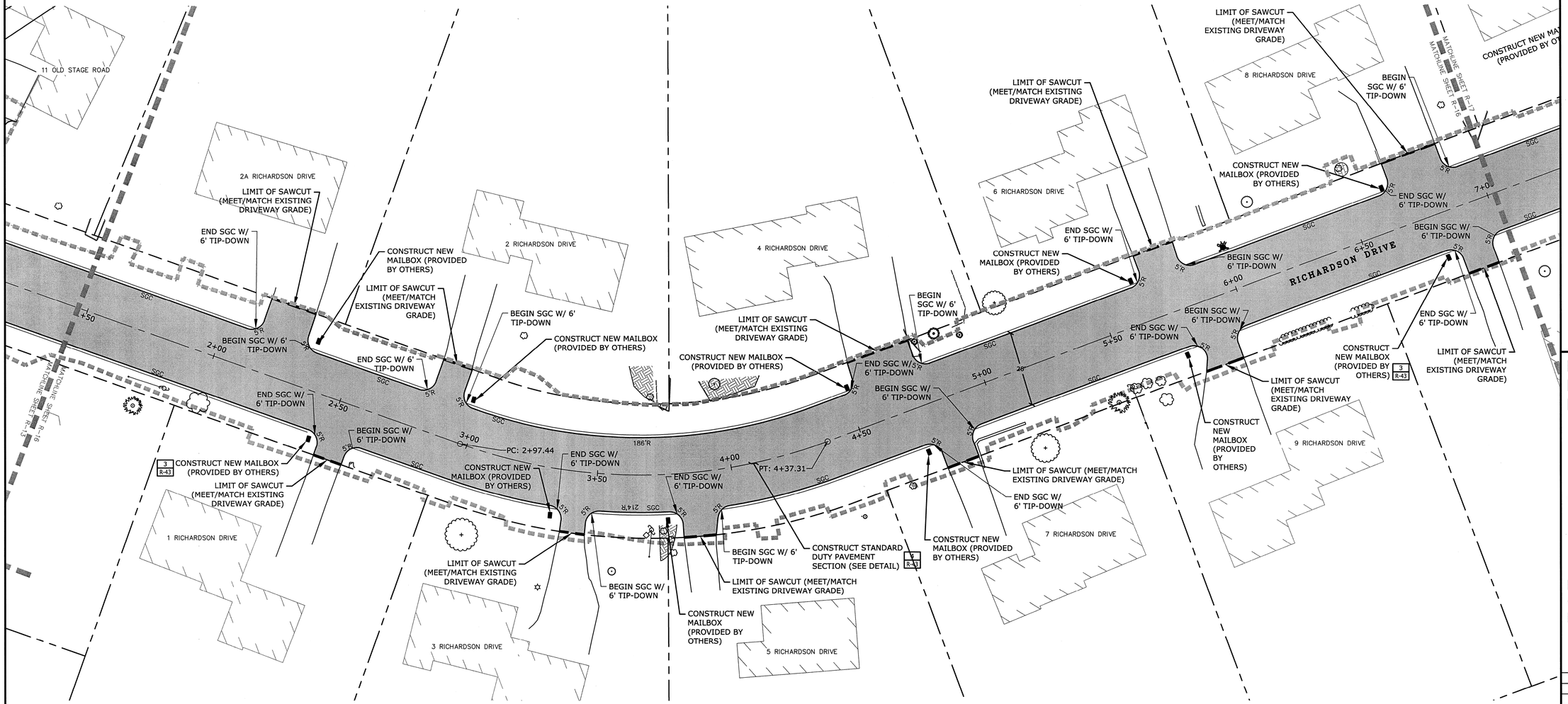
APPROVED BY:	GMM

SITE LAYOUT PLAN

SCALE: AS SHOWN

R-15



SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

LEGEND

- LIMIT OF WORK
- SGC — SLOPED GRANITE CURB
- 3'R — PROPOSED PAVEMENT RADIUS
- PROPOSED PAVEMENT
- PROPOSED SIGN
- OLD STAGE ROAD

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

FILENAME: \\SRV\PROJECTS\D\0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R16 ST
SAVE DATE: 11/1/2016 9:45 AM BY:KAM
PLOT DATE: 11/1/2016 9:56 AM BY: Kenneth A. Mavrogeorge

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STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6884
LICENSED PROFESSIONAL ENGINEER
11/2/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
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11/2/16

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

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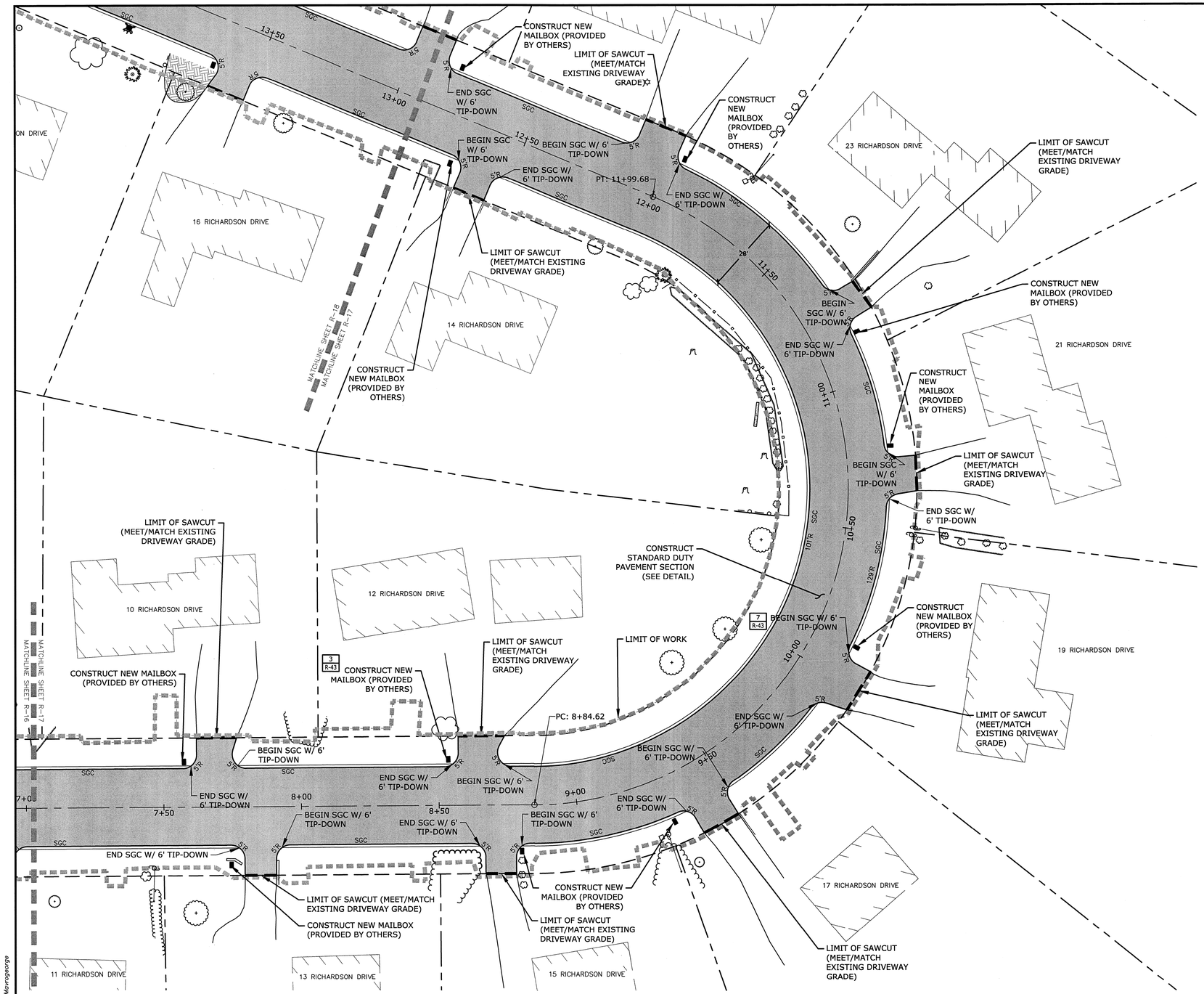
SITE LAYOUT PLAN

SCALE: AS SHOWN

R-16



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LEGEND

- LIMIT OF WORK
- SGC — SLOPED GRANITE CURB
- 3'R — PROPOSED PAVEMENT RADIUS
- PROPOSED PAVEMENT
- PROPOSED SIGN

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

STATE OF NEW HAMPSHIRE — KENNETH A. MAVROGEORGE No. 13329 LICENSED PROFESSIONAL ENGINEER

N

SCALE IN FEET
0 20' 40'
GRAPHIC SCALE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

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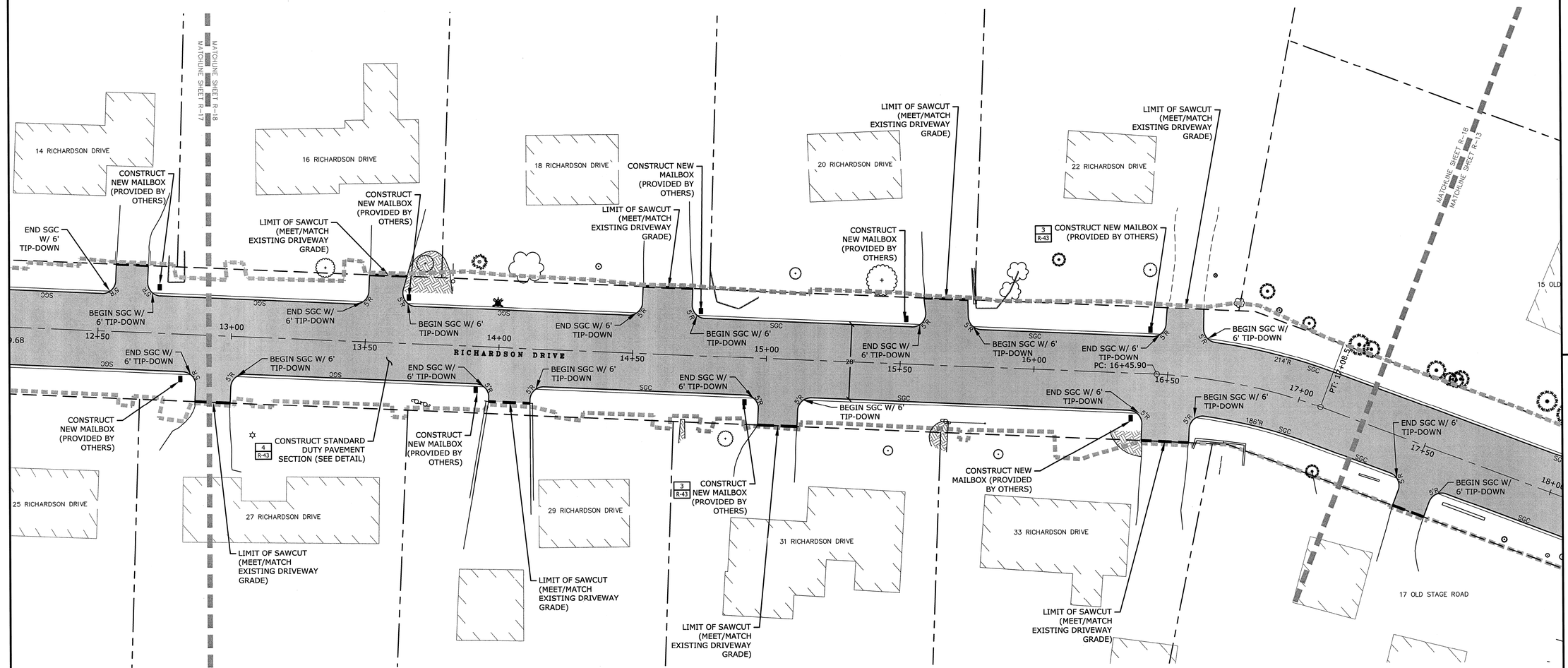
CHECKED:	KAM/WJD
APPROVED BY:	GMM

SITE LAYOUT PLAN

SCALE: AS SHOWN

R-17

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT: R17 ST
SAVE DATE: 11/1/2016 11:47 AM BY: KAM
PLOT DATE: 11/1/2016 12:02 PM BY: Kenneth A. Mavrogeorge



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SAVE DATE: 11/1/2016 11:47 AM BY:KAM
PLOT DATE: 11/1/2016 12:10 PM BY: Kenneth A. Mavrogeorge

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GRAPHIC SCALE

Richardson Drive Redevelopment Project

City of Dover, NH

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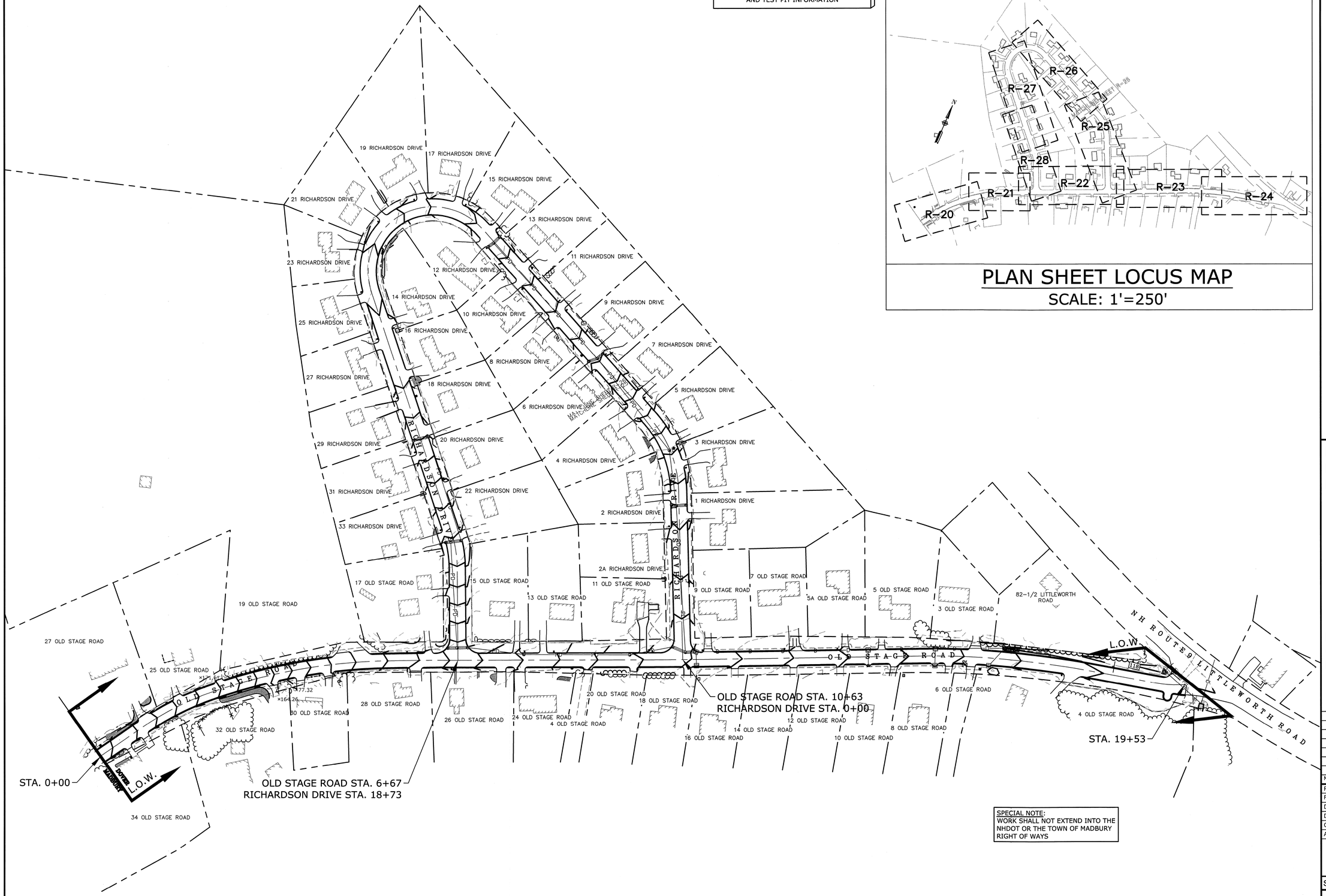
SITE LAYOUT PLAN

SCALE: AS SHOWN

R-18

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION



PLAN SHEET LOCUS MAP
SCALE: 1'=250'

SPECIAL NOTE:
WORK SHALL NOT EXTEND INTO THE NHDOT OR THE TOWN OF MADBURY RIGHT OF WAYS

SCALE IN FEET
0 80' 160'
GRAPHIC SCALE

Tighe&Bond
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GREGG M. MIKOLAITIES No. 6884 LICENSED PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE

KENNETH A. MAVROGEORGE No. 13328 LICENSED PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

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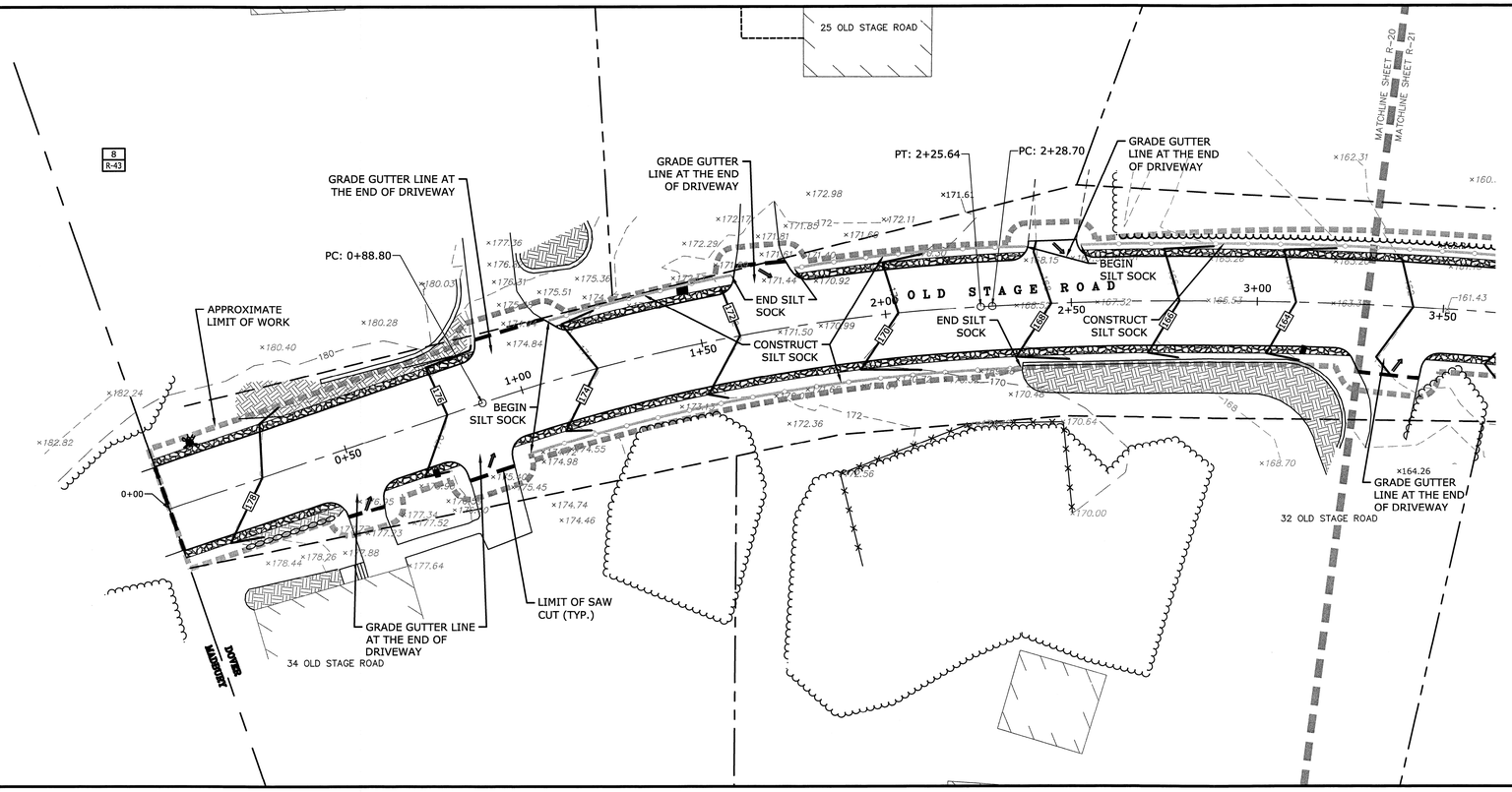
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

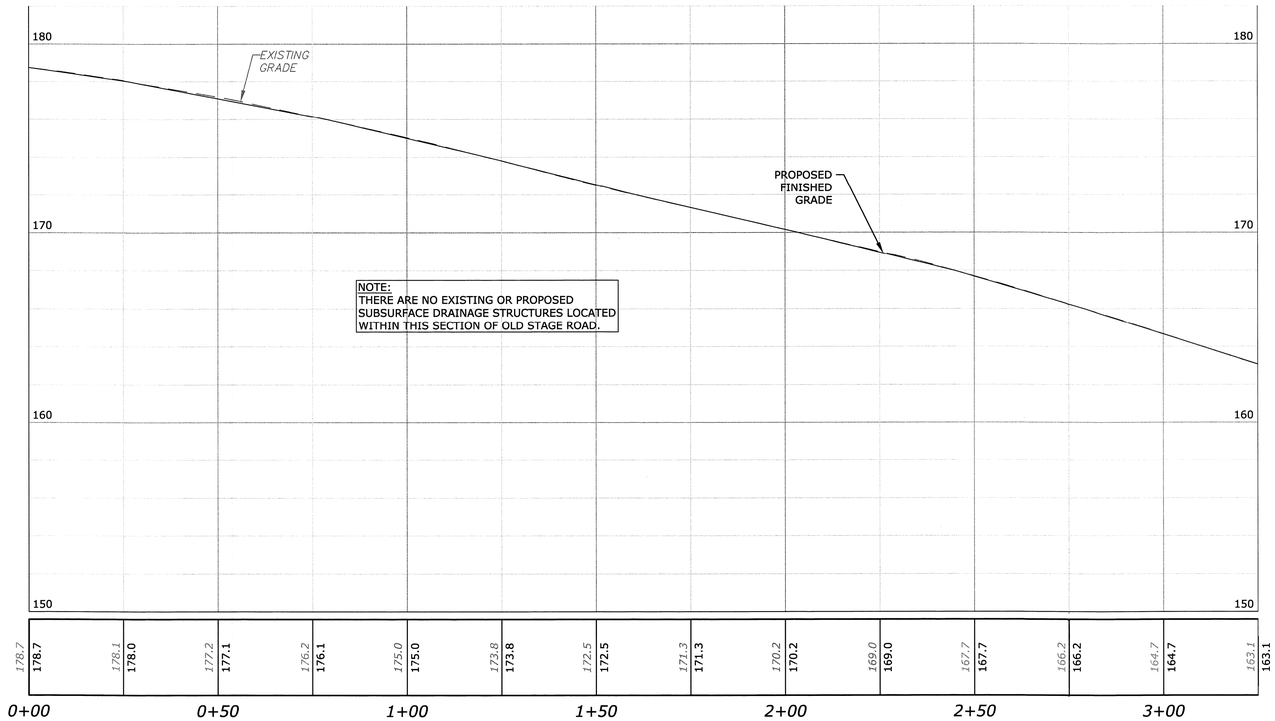
OVERALL GRADING & DRAINAGE PLAN

SCALE: AS SHOWN

R-19

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG--CAD\DESIGN\1302491_DESIGN.DWG LAYOUT: R19 O--GR
SAVE DATE: 11/1/2016 4:30 PM BY: KAM
PLOT DATE: 11/2/2016 3:30 PM BY: Kenneth A. Mavrogeorge





OLD STAGE ROAD

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

Tighe&Bond
www.tighebond.com

STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6884
LICENSED PROFESSIONAL ENGINEER
11/2/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13326
LICENSED PROFESSIONAL ENGINEER

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

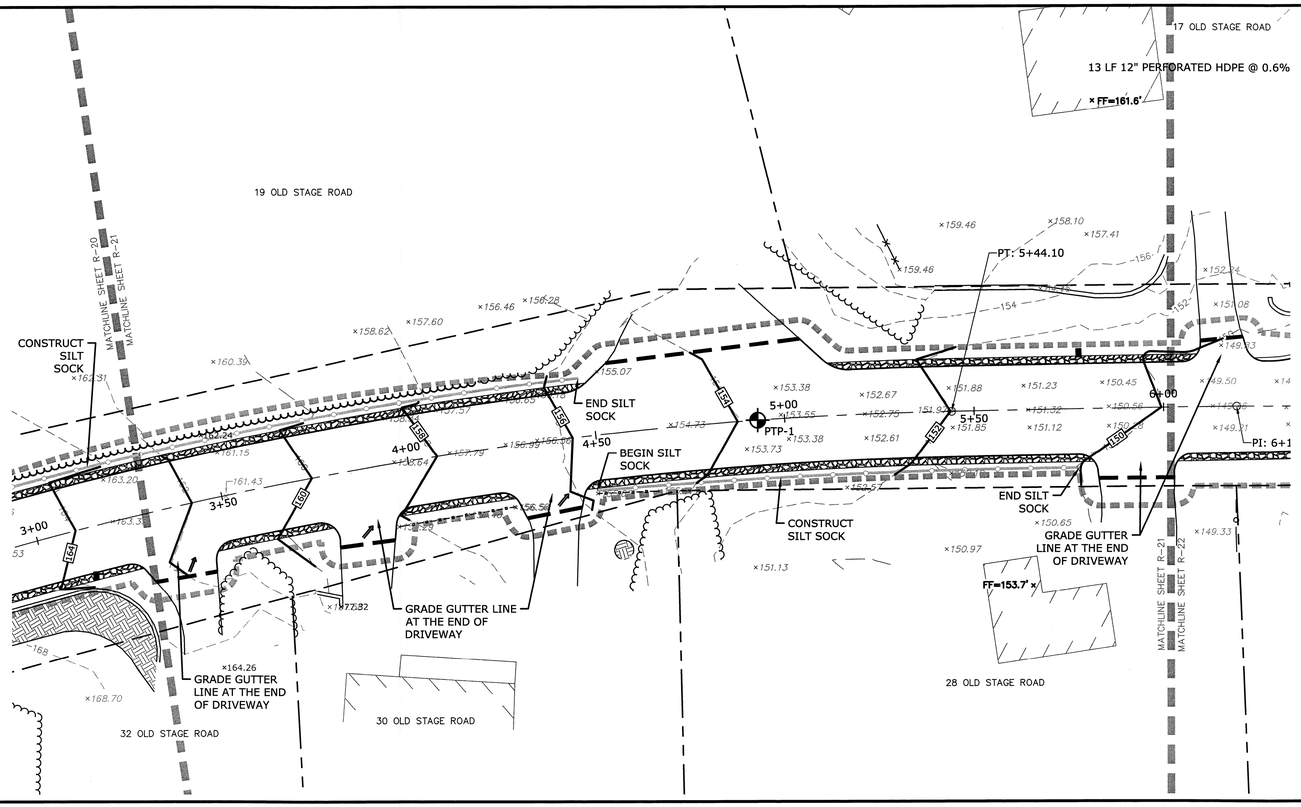
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

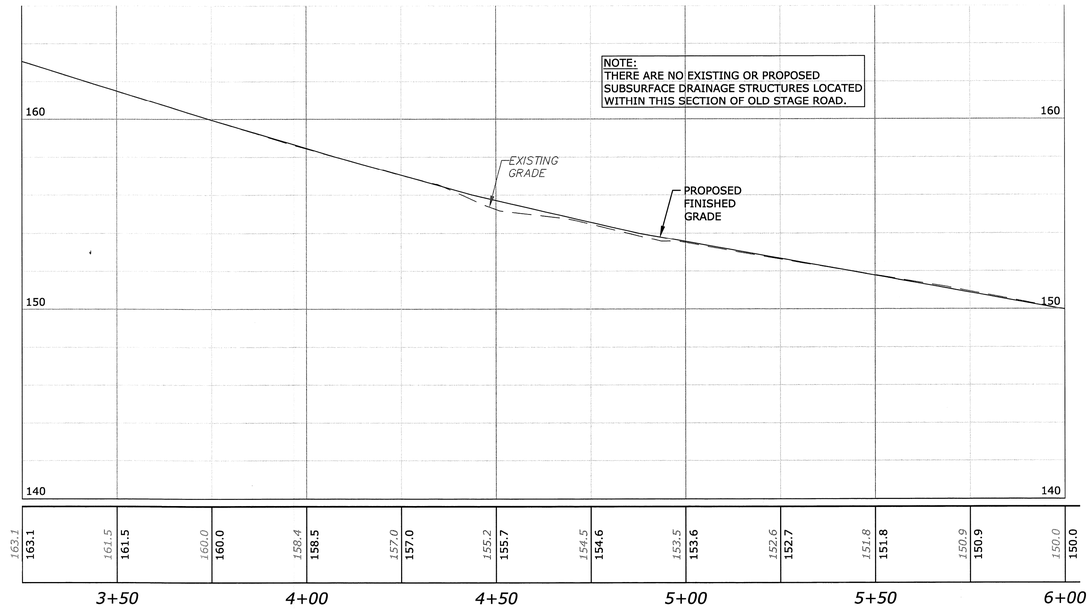
PLAN & PROFILE: GRADING & DRAINAGE

SCALE: AS SHOWN

R-20

FILENAME: \\SRV\PROJECTS\D\00249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R20 GR
SAVE DATE: 11/1/2016 11:47 AM BY:KAM
PLOT DATE: 11/1/2016 12:16 PM BY: Kenneth A. Mavrogeorge





OLD STAGE ROAD

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

Tighe&Bond
www.tighebond.com

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

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13326
LICENSED PROFESSIONAL ENGINEER

N

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

PLAN & PROFILE: GRADING & DRAINAGE

SCALE: AS SHOWN

R-21

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R21 GR
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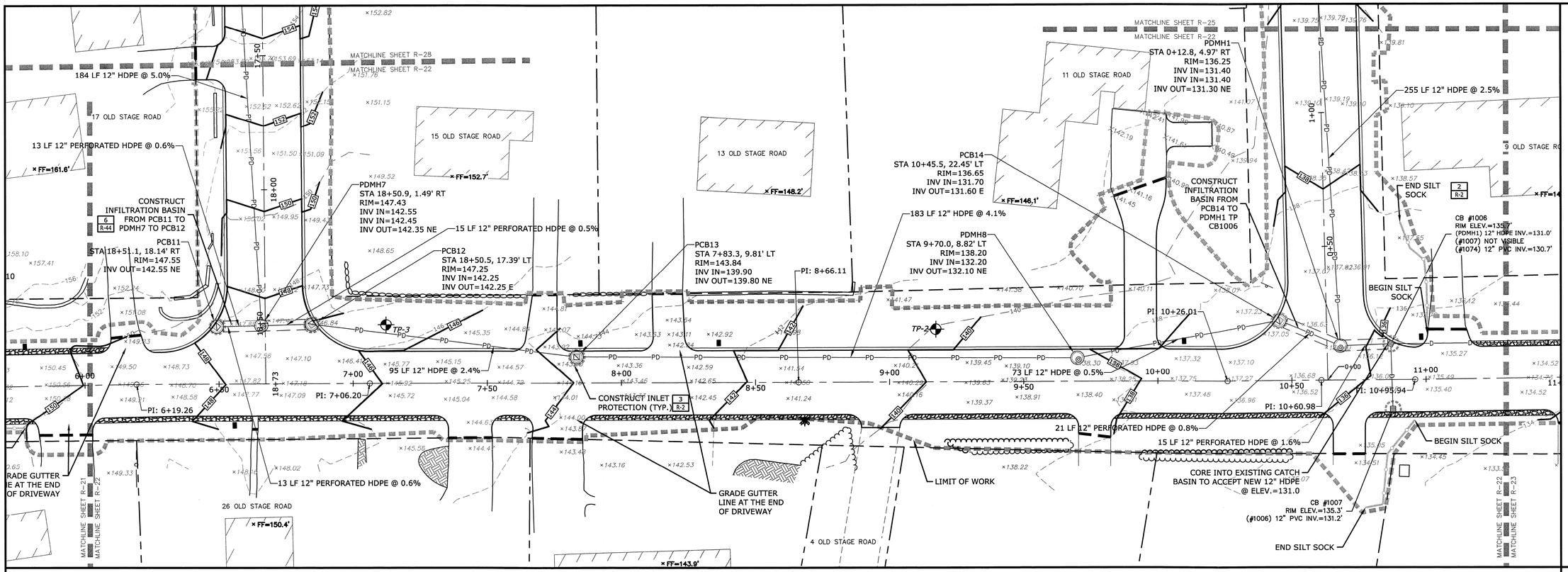
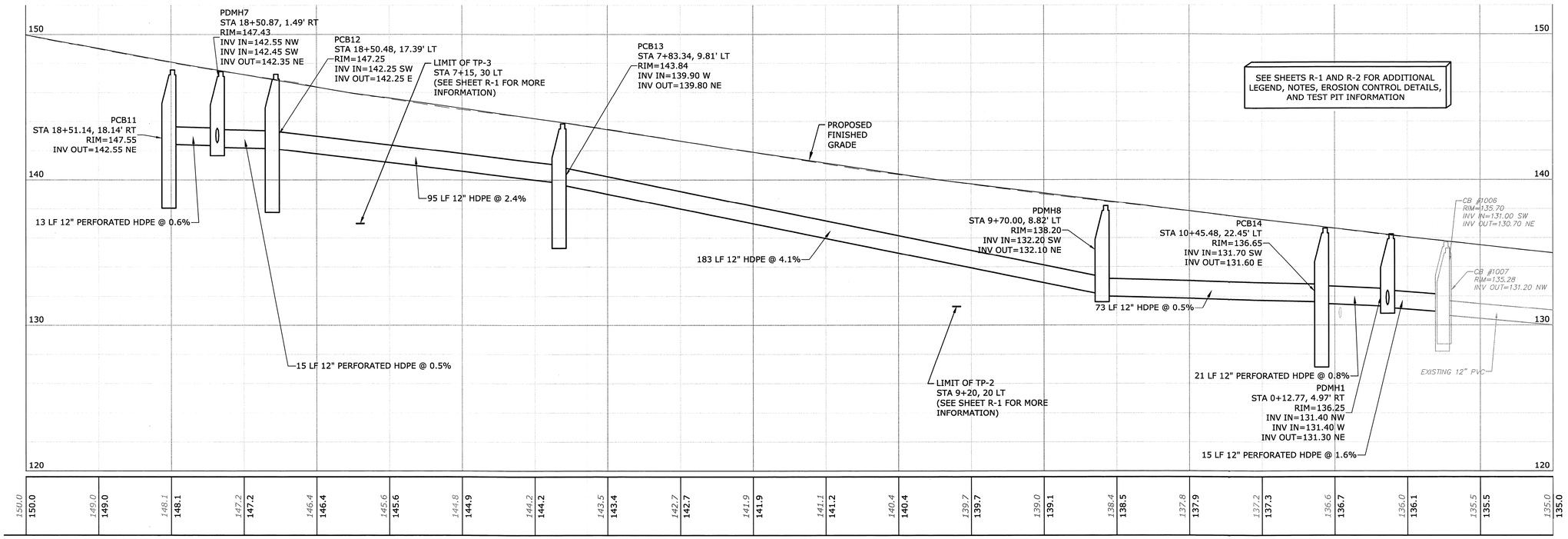
PLOT DATE: 11/1/2016 12:18 PM BY: Kenneth A. Mavrogeorge





Tighe&Bond
www.tighebond.com

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

KENNETH A. MAVROGEORGE No. 13926 — STATE OF NEW HAMPSHIRE — PROFESSIONAL ENGINEER

HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 4'

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

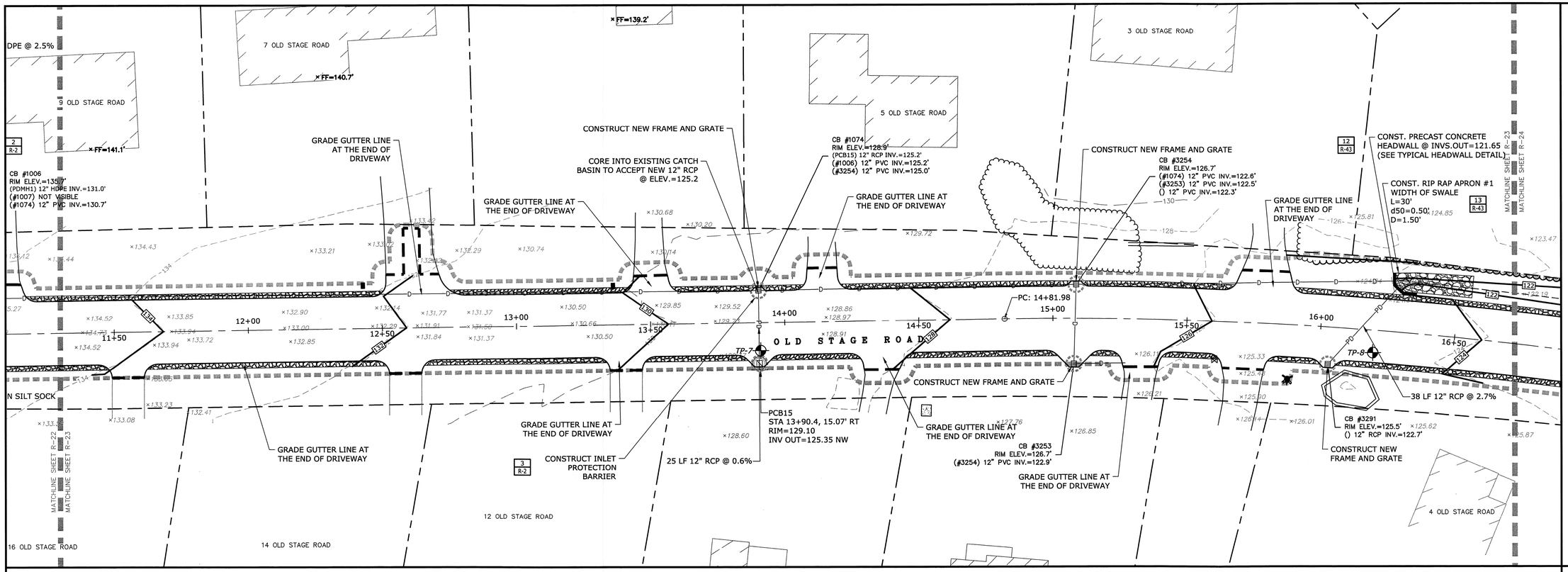
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

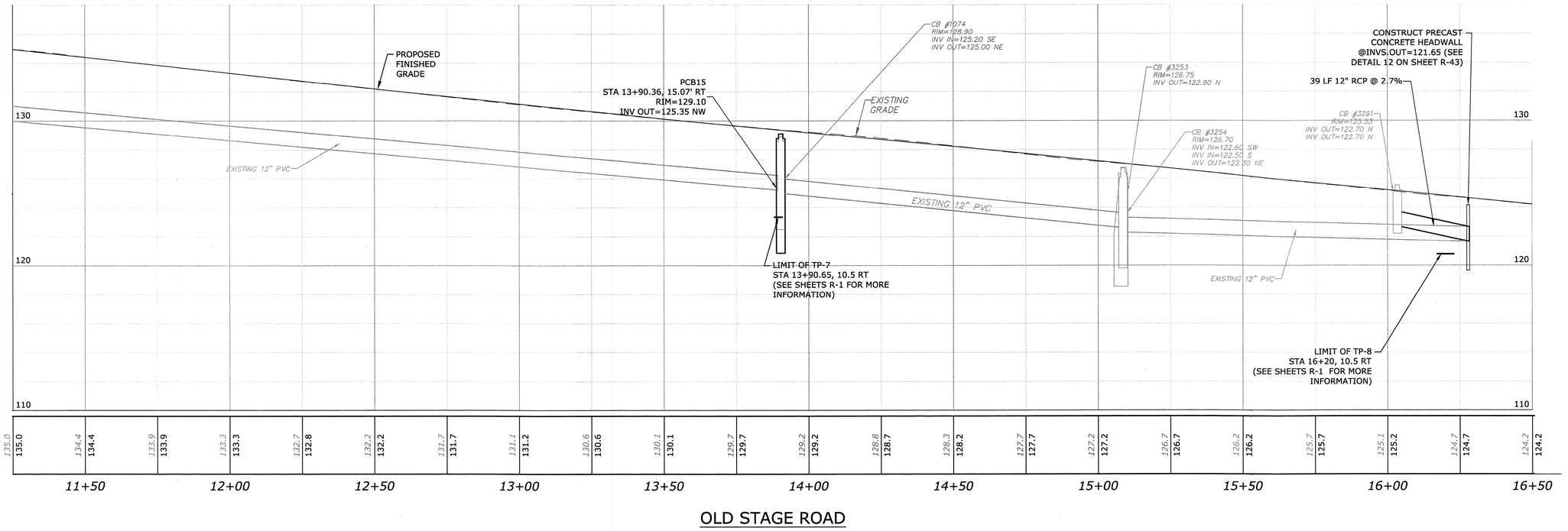
PLAN & PROFILE: GRADING & DRAINAGE

SCALE: AS SHOWN

R-22

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R22 GR
SAVE DATE: 11/1/2016 4:30 PM BY: KAM
PLOT DATE: 11/2/2016 3:28 PM BY: Kenneth A. Mavrogeorge





OLD STAGE ROAD

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

Tighe&Bond
www.tighebond.com

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

STATE OF NEW HAMPSHIRE — KENNETH A. MAVROGEORGE No. 13326 — LICENSED PROFESSIONAL ENGINEER

N

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

PLAN & PROFILE: GRADING & DRAINAGE

SCALE: AS SHOWN

R-23

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R23 GR
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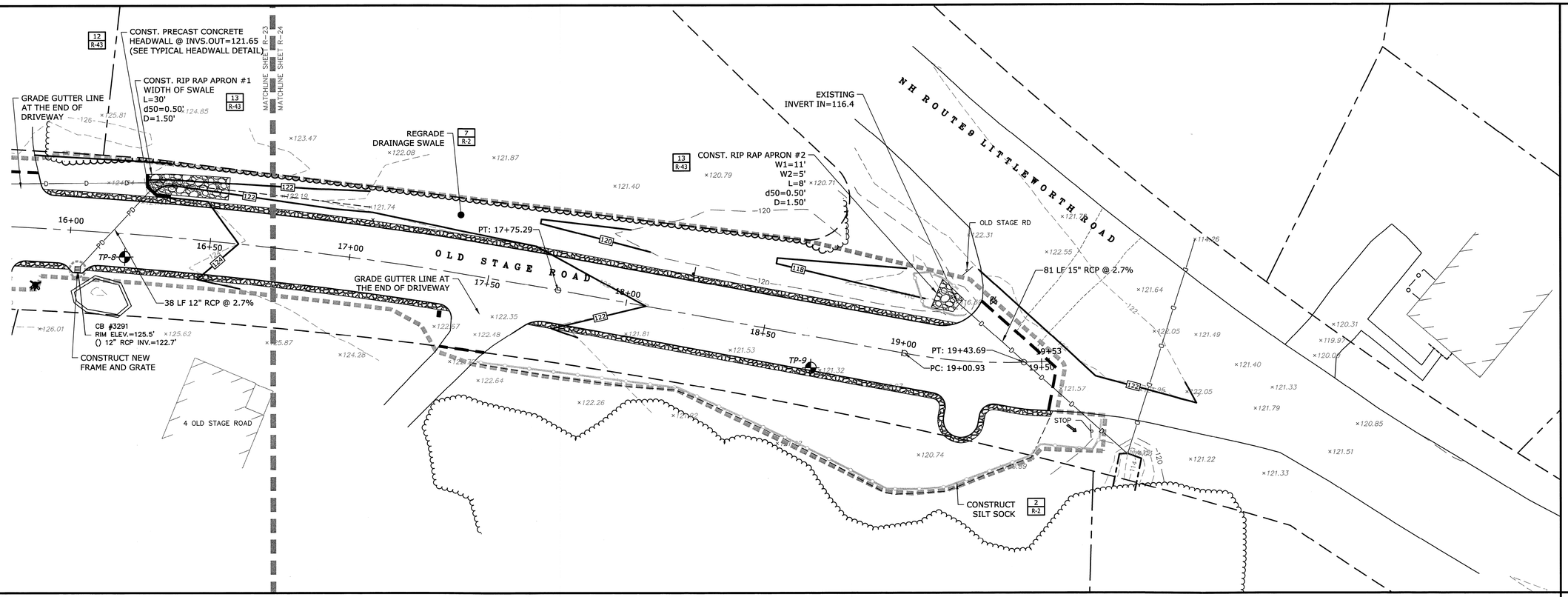
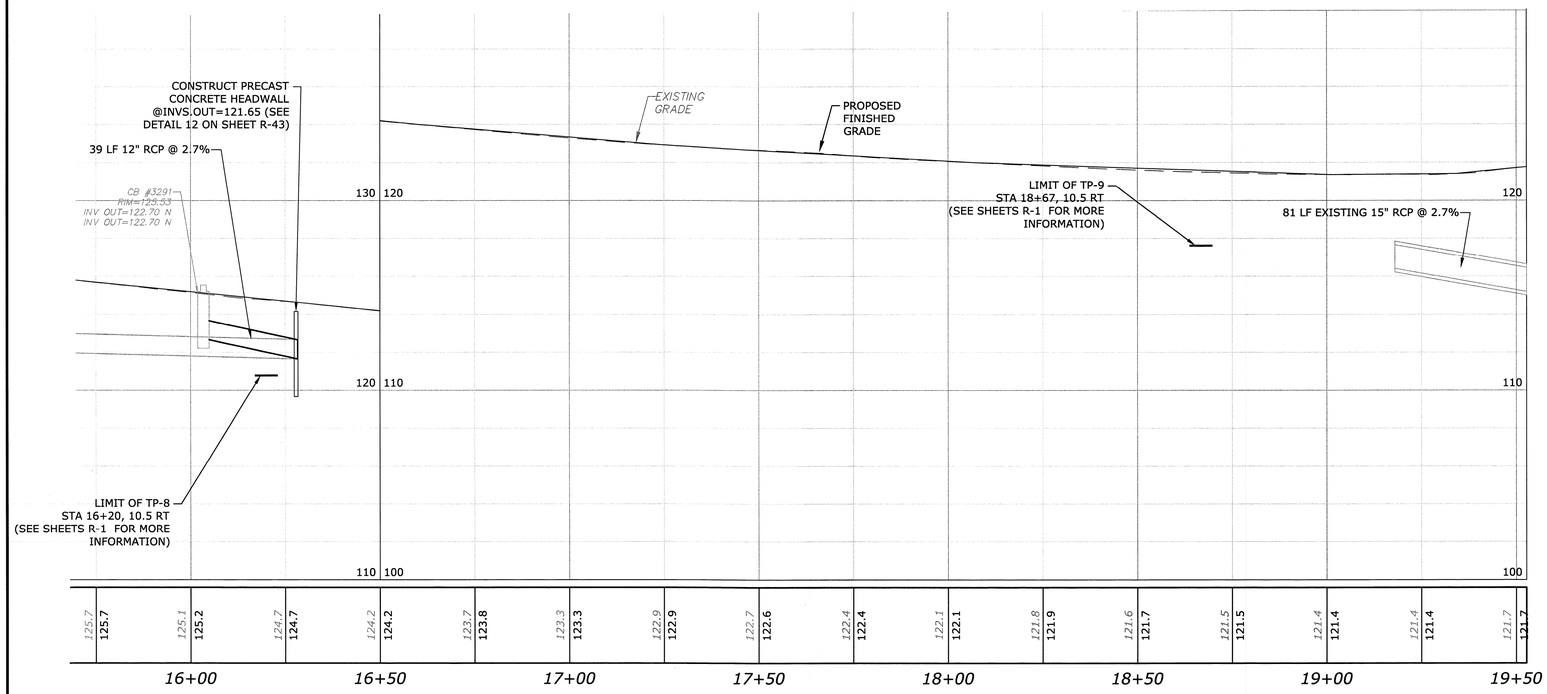
PLOT DATE: 11/2/2016 3:27 PM BY: Kenneth A. Mavrogeorge





OLD STAGE ROAD

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

Tighe&Bond
www.tighebond.com

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

STATE OF NEW HAMPSHIRE — KENNETH A. MAVROGEORGE No. 13328 LICENSED PROFESSIONAL ENGINEER

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

PLAN & PROFILE: GRADING & DRAINAGE

SCALE: AS SHOWN

R-24

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R24 GR
SAVE DATE: 11/16/2016 2:15 PM BY:KAM
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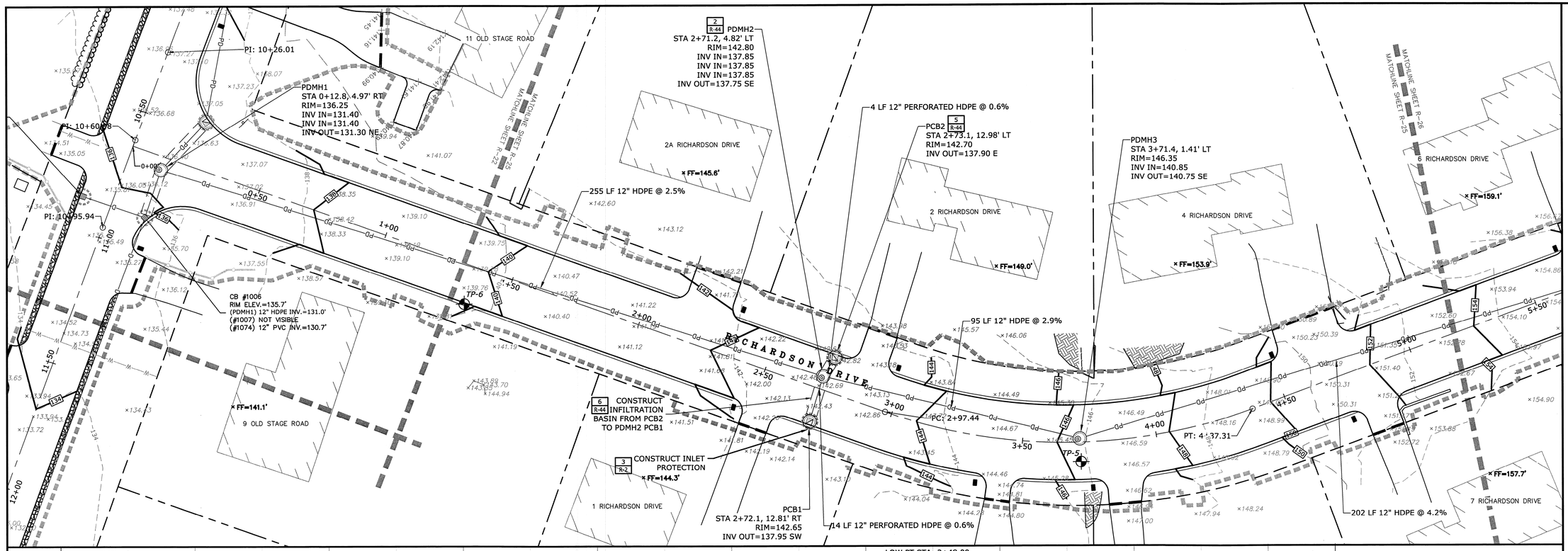

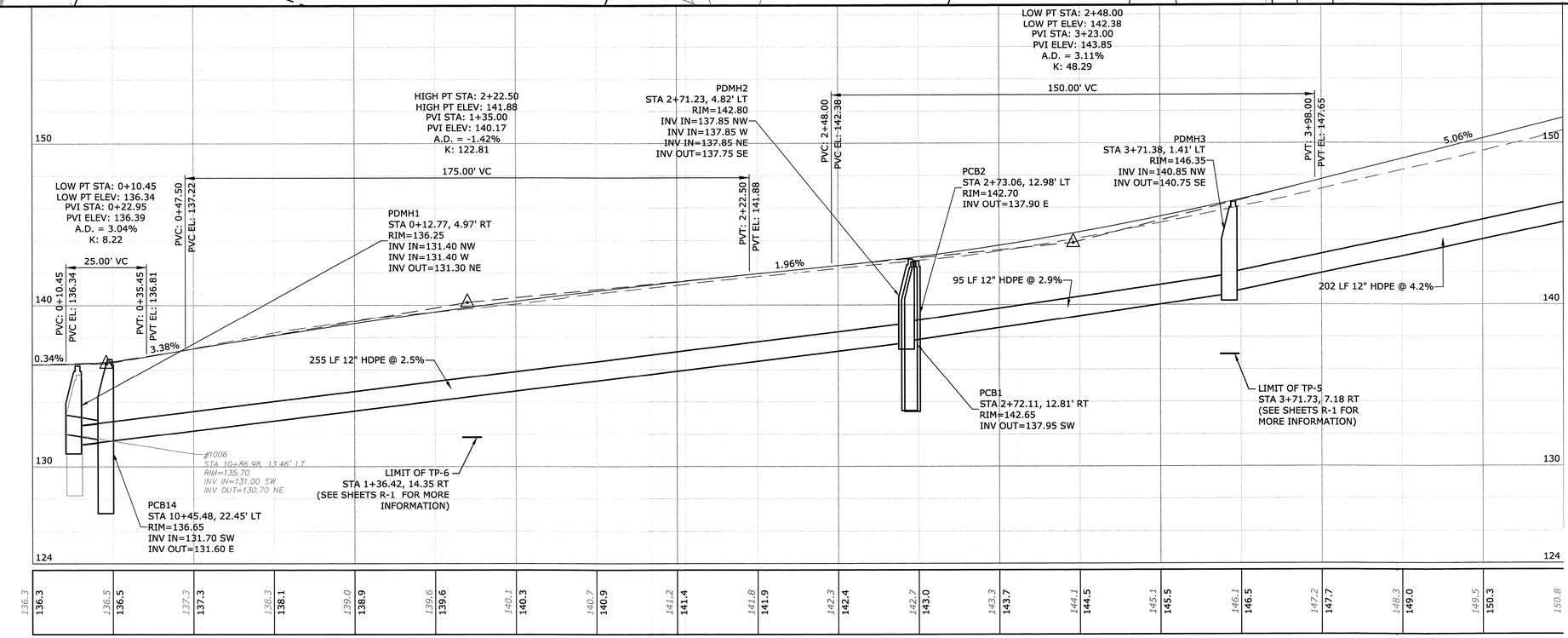

RICHARDSON DRIVE

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

Tighe&Bond
www.tighebond.com

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

KENNETH A. MAVROGEORGE No. 13326 REGISTERED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

PLAN & PROFILE: GRADING & DRAINAGE

SCALE: AS SHOWN

R-25

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGNLDWG LAYOUT:R25 GR
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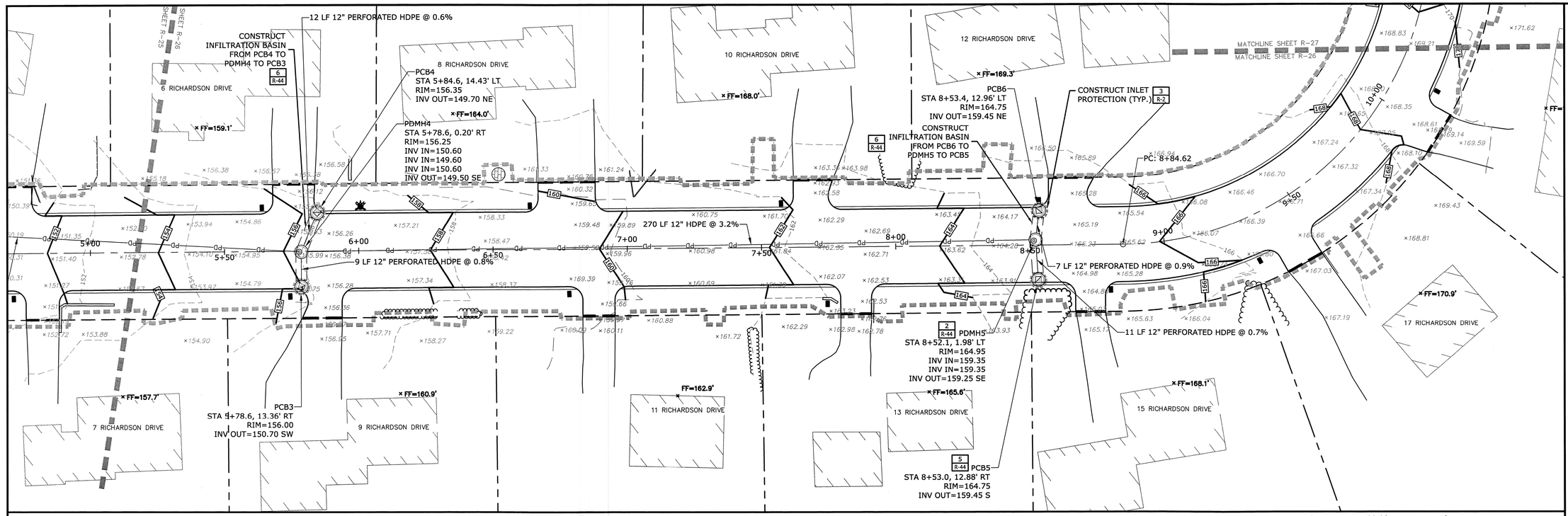
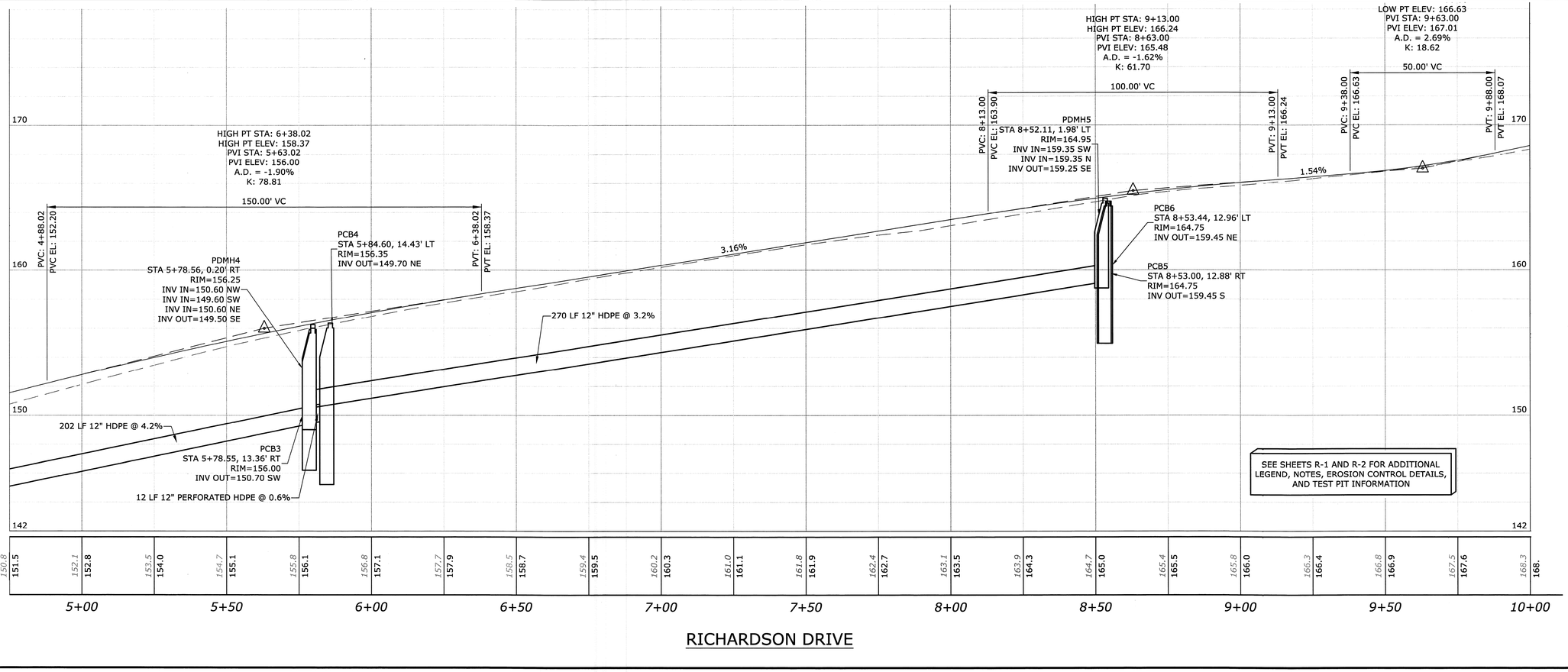
PLOT DATE: 11/16/2016 2:06 PM BY: Kenneth A. Mavrogeorge





RICHARDSON DRIVE

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Tighe&Bond
www.tighebond.com

STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6884
PROFESSIONAL ENGINEER
11/1/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13329
LICENSED PROFESSIONAL ENGINEER
11/1/16

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

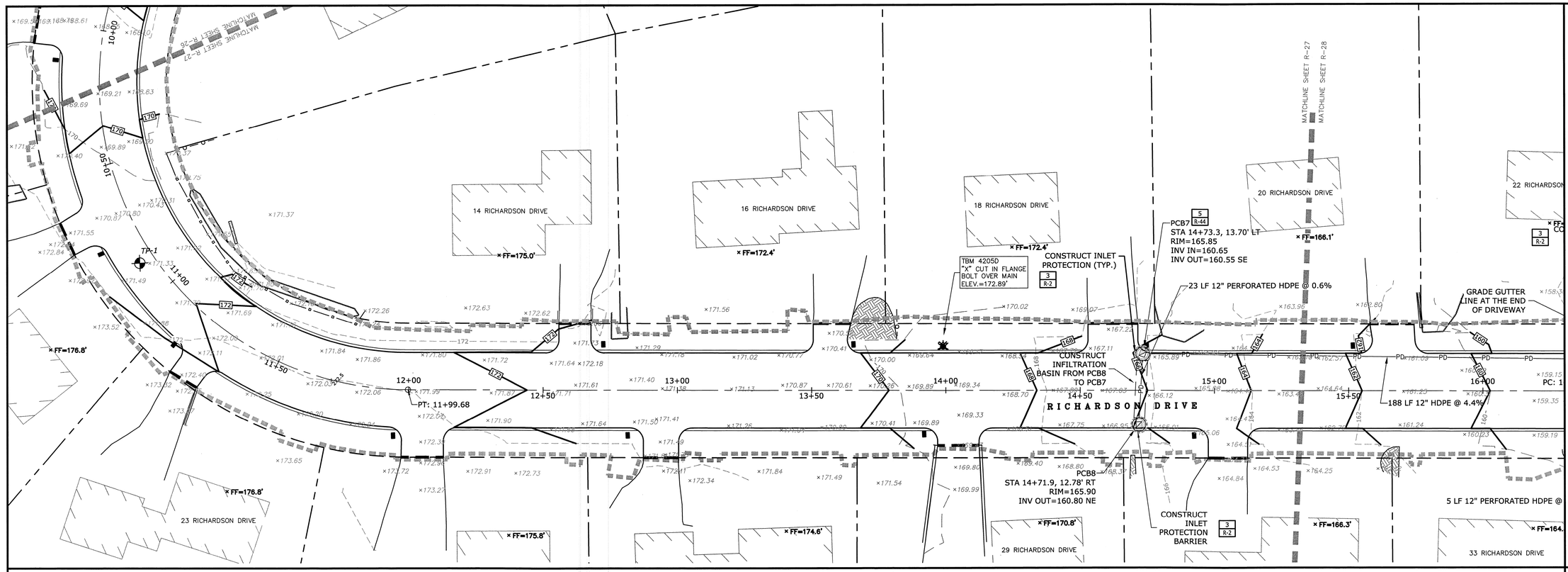
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

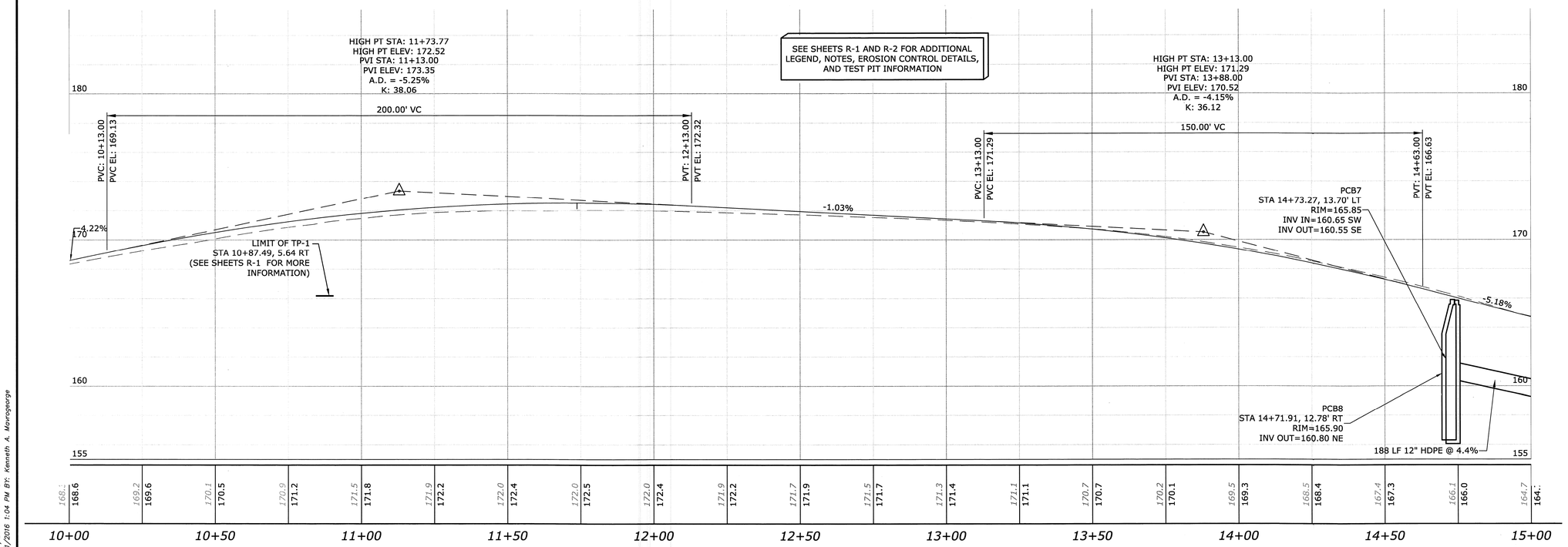
PLAN & PROFILE: GRADING & DRAINAGE

SCALE: AS SHOWN

R-26

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R26 GR
SAVE DATE: 11/1/2016 12:54 PM BY:KAM
PLOT DATE: 11/1/2016 12:59 PM BY: Kenneth A. Mavrogeorge





RICHARDSON DRIVE

Tighe&Bond
www.tighebond.com

GREGG M. MIKOLAITIES No. 6884 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE 11/2/16

KENNETH A. MAVROGEORGE No. 13326 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

PLAN & PROFILE: GRADING & DRAINAGE

SCALE: AS SHOWN

R-27

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R27 GR
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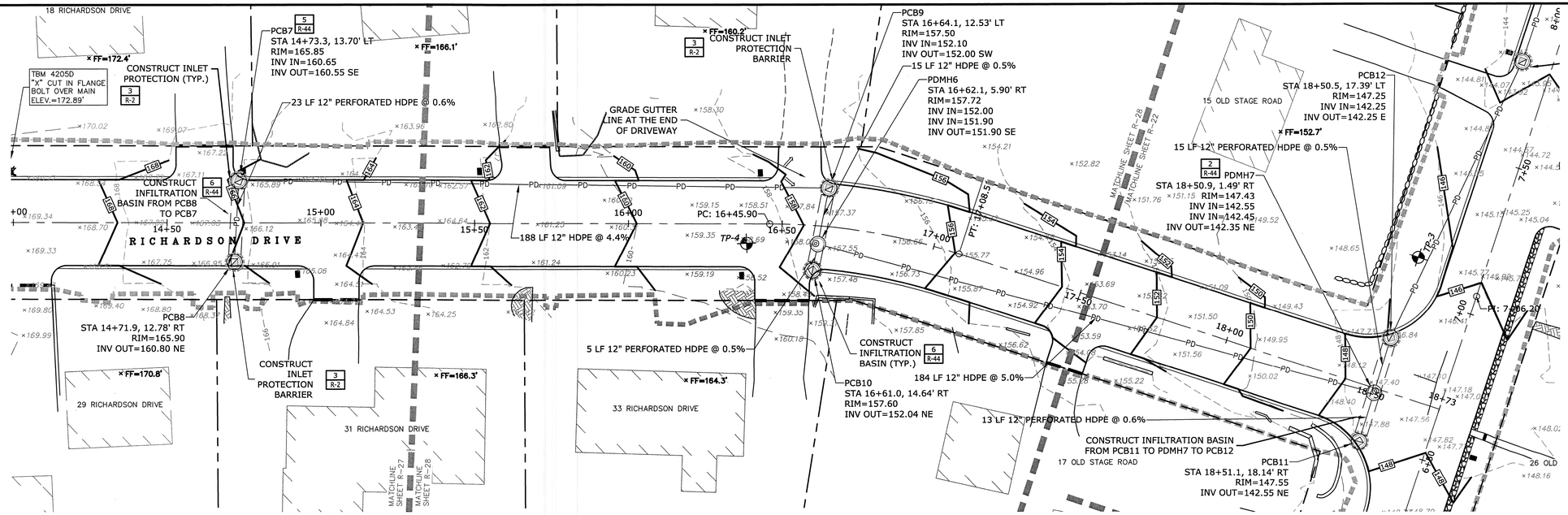
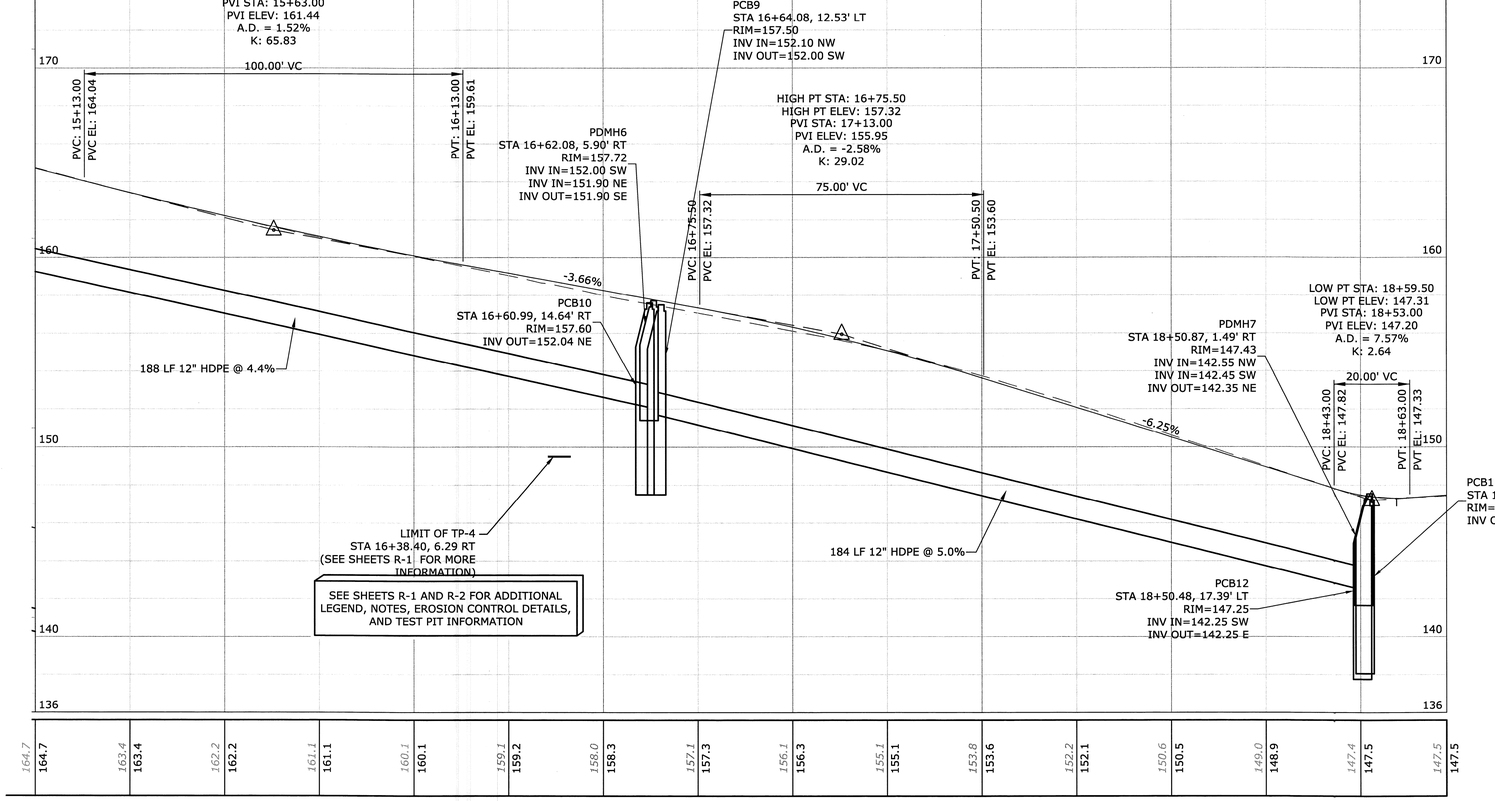
PLOT DATE: 11/1/2016 1:04 PM BY: Kenneth A. Mavrogeorge





RICHARDSON DRIVE

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R28 GR
SAVE DATE: 11/1/2016 1:00 PM BY:KAM
PLOT DATE: 11/1/2016 1:08 PM BY: Kenneth A. Mavrogeorge

Tighe&Bond
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STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6884
LICENSED PROFESSIONAL ENGINEER
11/2/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13326
LICENSED PROFESSIONAL ENGINEER

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

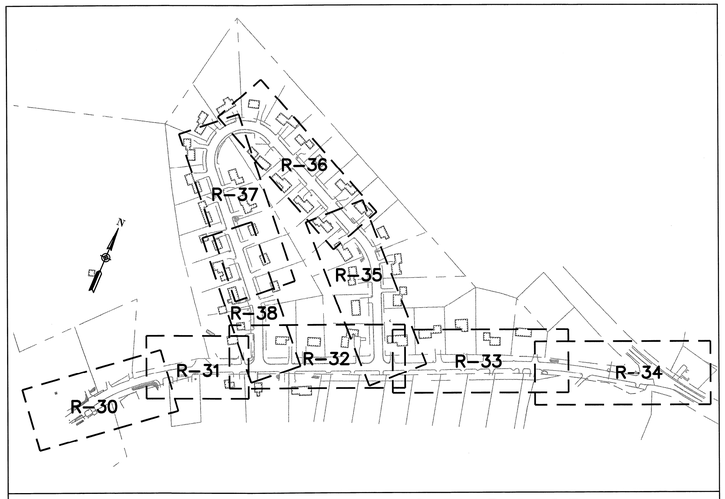
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

PLAN & PROFILE:
GRADING & DRAINAGE

SCALE: AS SHOWN

R-28

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION



PLAN SHEET LOCUS MAP

SCALE: 1'=250'

19 RICHARDSON DRIVE
17 RICHARDSON DRIVE
15 RICHARDSON DRIVE
21 RICHARDSON DRIVE
13 RICHARDSON DRIVE
23 RICHARDSON DRIVE
11 RICHARDSON DRIVE
12 RICHARDSON DRIVE
14 RICHARDSON DRIVE
9 RICHARDSON DRIVE
10 RICHARDSON DRIVE
25 RICHARDSON DRIVE
16 RICHARDSON DRIVE
7 RICHARDSON DRIVE
8 RICHARDSON DRIVE
27 RICHARDSON DRIVE
18 RICHARDSON DRIVE
5 RICHARDSON DRIVE
6 RICHARDSON DRIVE
29 RICHARDSON DRIVE
20 RICHARDSON DRIVE
3 RICHARDSON DRIVE
4 RICHARDSON DRIVE
31 RICHARDSON DRIVE
22 RICHARDSON DRIVE
1 RICHARDSON DRIVE
2 RICHARDSON DRIVE
33 RICHARDSON DRIVE
2A RICHARDSON DRIVE
17 OLD STAGE ROAD
15 OLD STAGE ROAD
11 OLD STAGE ROAD
7 OLD STAGE ROAD
9 OLD STAGE ROAD
5 OLD STAGE ROAD
5A OLD STAGE ROAD
3 OLD STAGE ROAD
82-1/2 LITTLEWORTH ROAD
13 OLD STAGE ROAD
19 OLD STAGE ROAD
27 OLD STAGE ROAD
25 OLD STAGE ROAD
20 OLD STAGE ROAD
18 OLD STAGE ROAD
6 OLD STAGE ROAD
30 OLD STAGE ROAD
28 OLD STAGE ROAD
26 OLD STAGE ROAD
24 OLD STAGE ROAD
4 OLD STAGE ROAD
12 OLD STAGE ROAD
32 OLD STAGE ROAD
14 OLD STAGE ROAD
8 OLD STAGE ROAD
16 OLD STAGE ROAD
10 OLD STAGE ROAD
34 OLD STAGE ROAD
RICHARDSON DRIVE
OLD STAGE ROAD
NH ROUTE 9
LITTLEWORTH ROAD
L.O.W.
L.O.W.
STA. 0+00
OLD STAGE ROAD STA. 6+67
RICHARDSON DRIVE STA. 18+73
OLD STAGE ROAD STA. 10+63
RICHARDSON DRIVE STA. 0+00
STA. 19+53
Kelly Brook
N

SCALE IN FEET
0 80' 160'
GRAPHIC SCALE

SPECIAL NOTE:
WORK SHALL NOT EXTEND INTO THE NHDOT OR THE TOWN OF MADBURY RIGHT OF WAYS

Tighe&Bond
www.tighebond.com

STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIS
No. 6884
LICENSED PROFESSIONAL ENGINEER
11/2/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 11230
PROFESSIONAL ENGINEER

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

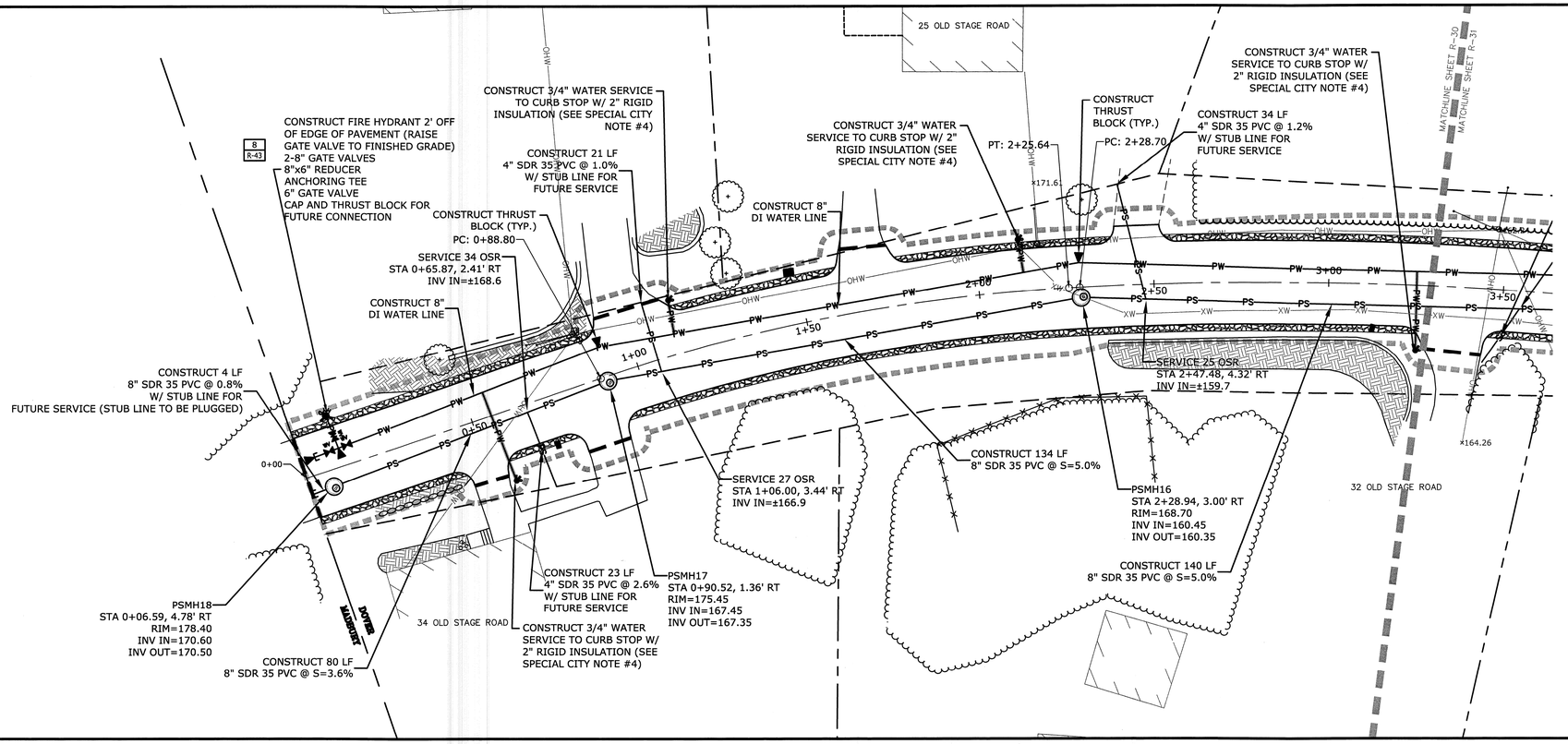
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

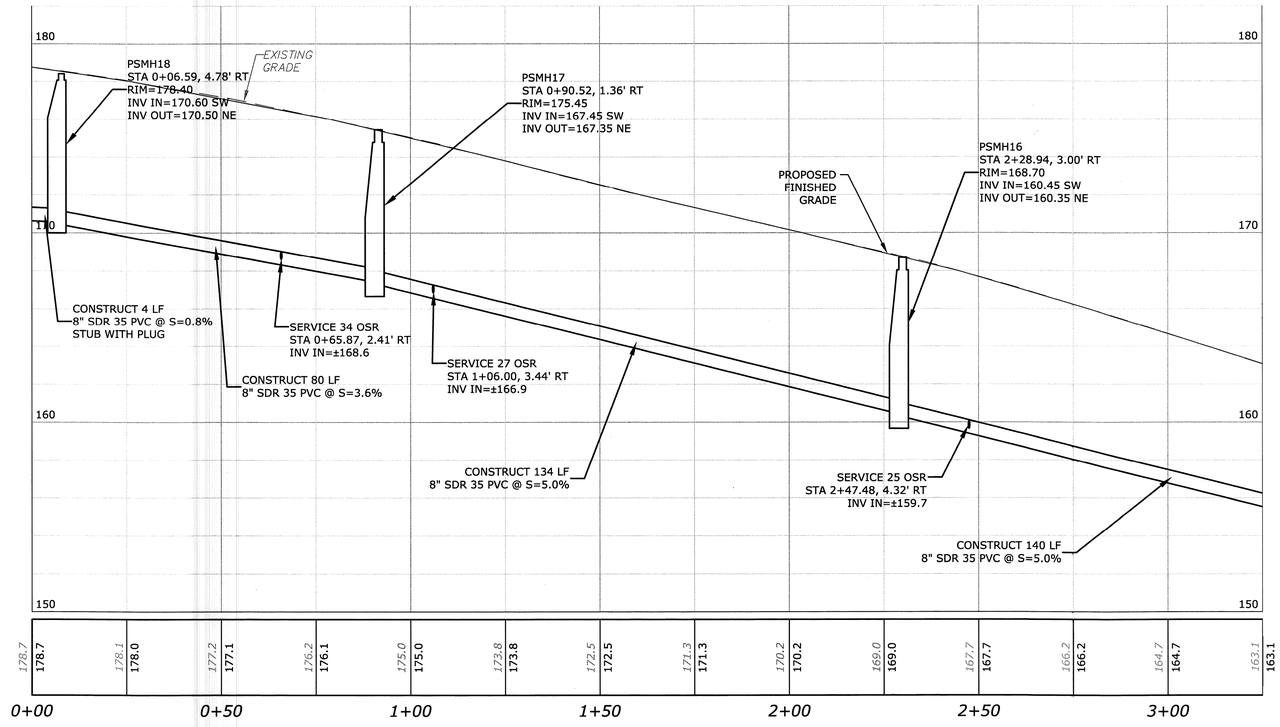
OVERALL UTILITIES PLAN

SCALE: AS SHOWN

R-29

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R-29 O-UT
SAVE DATE: 11/1/2016 4:30 PM BY:KAM
PLOT DATE: 11/2/2016 3:23 PM BY: Kenneth A. Mavrogeorge





OLD STAGE ROAD

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Tighe&Bond
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STATE OF NEW HAMPSHIRE – GREGG M. MIKOLAITIES No. 9884 LICENSED PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE – KENNETH A. MAVROGEORGE No. 13328 LICENSED PROFESSIONAL ENGINEER

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

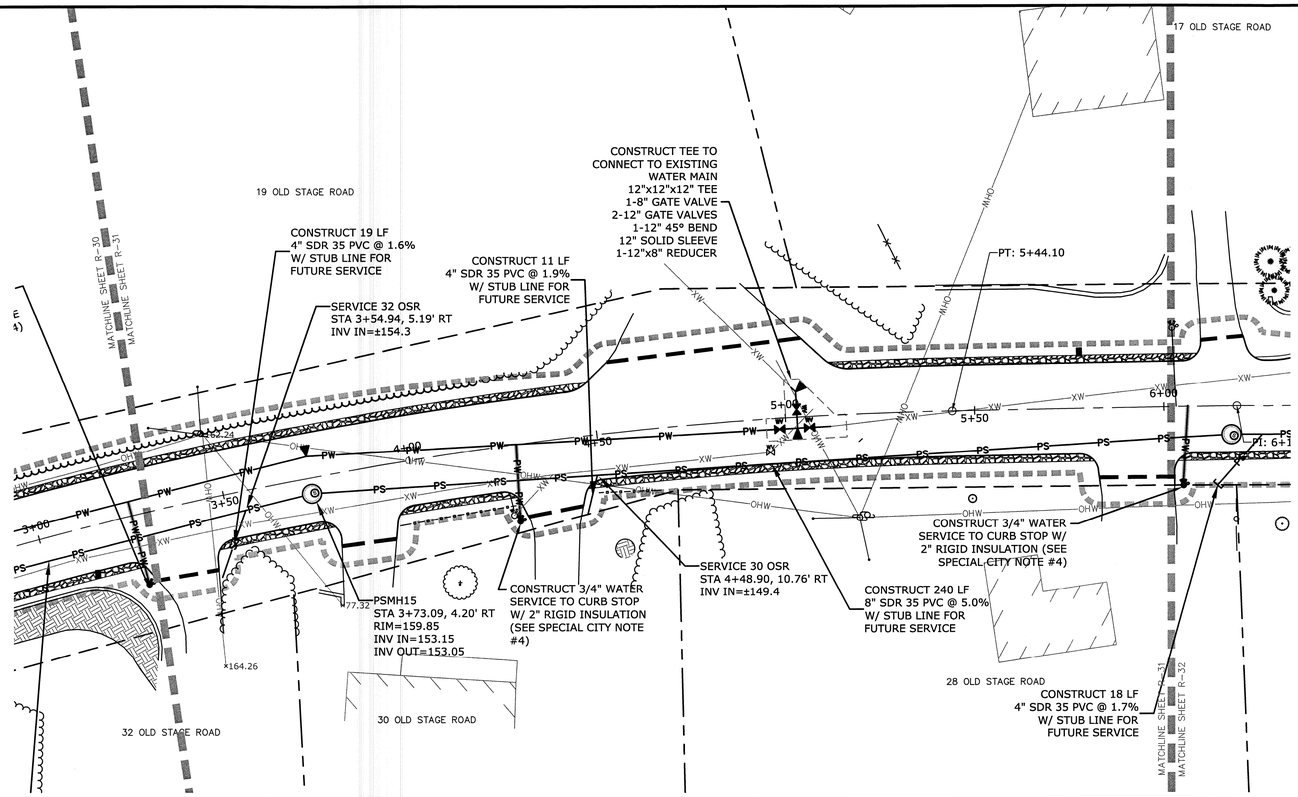
MARK	DATE	DESCRIPTION

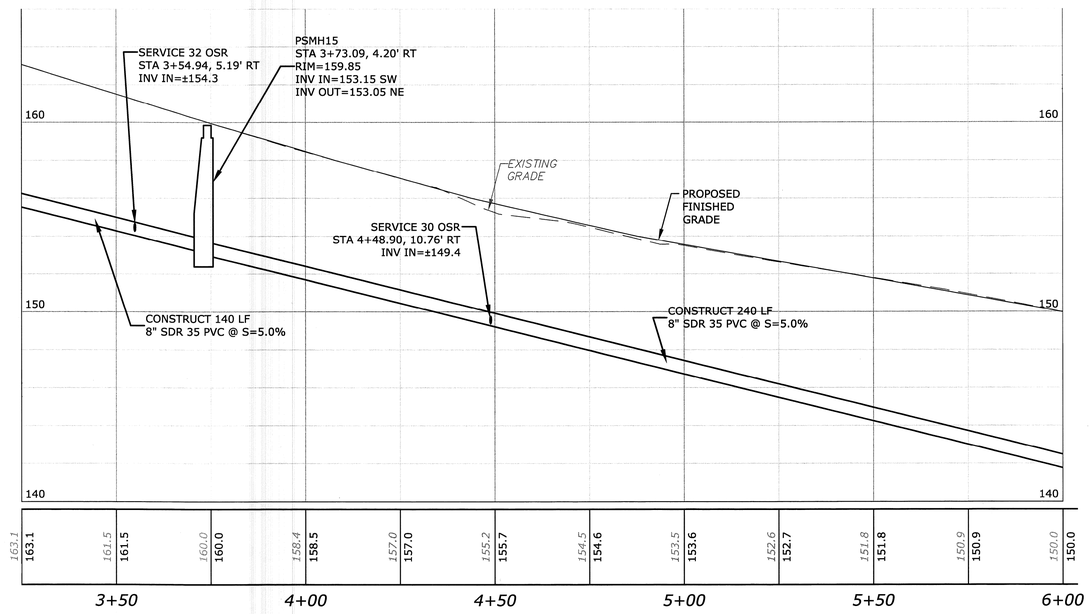
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

PLAN & PROFILE: UTILITIES PLAN

SCALE: AS SHOWN

R-30





OLD STAGE ROAD

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

Tighe&Bond
www.tighebond.com

STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6884
LICENSED PROFESSIONAL ENGINEER
11/2/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13326
LICENSED PROFESSIONAL ENGINEER

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

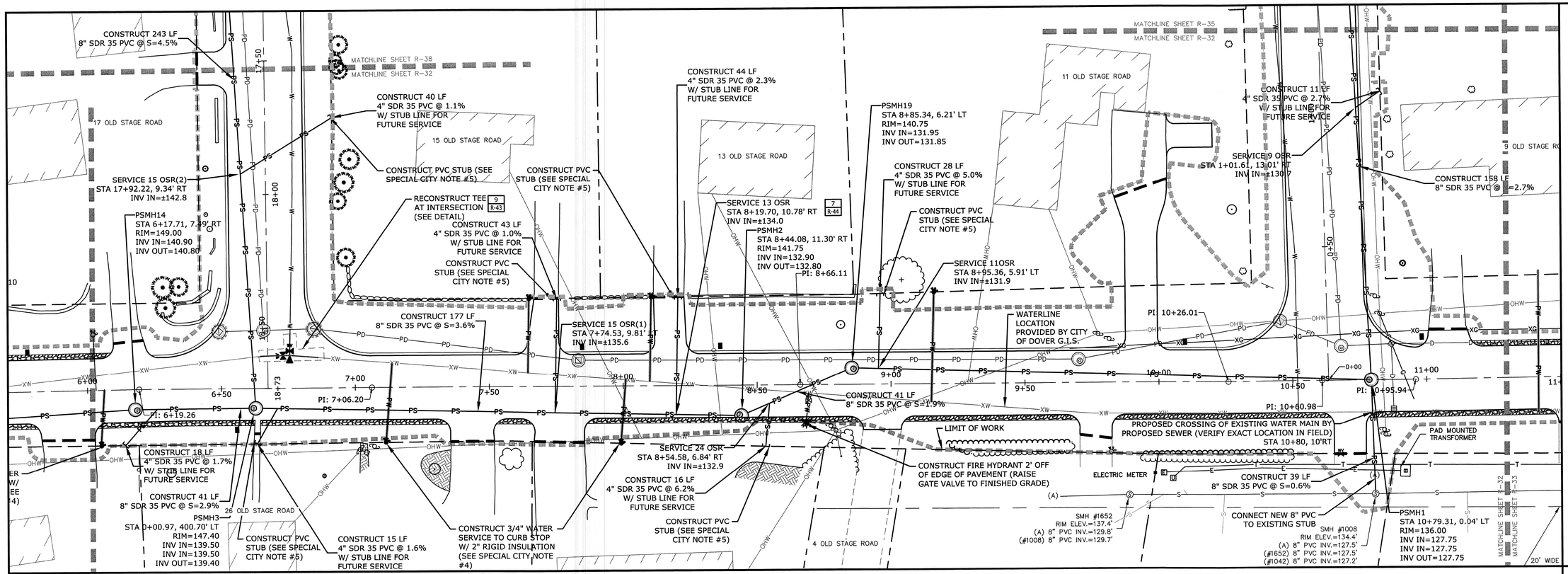
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

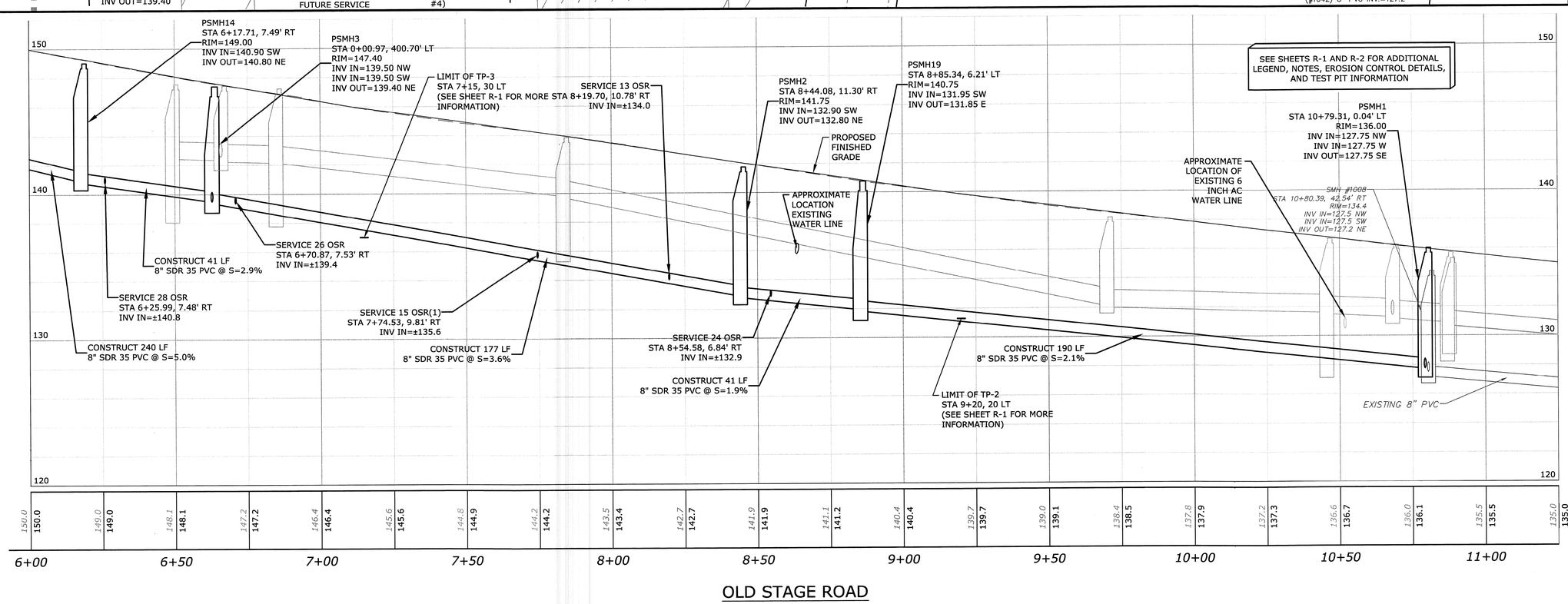
PLAN & PROFILE:
UTILITIES PLAN

SCALE: AS SHOWN

R-31

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R31 UT
SAVE DATE: 11/1/2016 1:20 PM BY:KAM
PLOT DATE: 11/1/2016 1:54 PM BY: Kenneth A. Mavrogeorge





OLD STAGE ROAD

Tighe&Bond
www.tighebond.com

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

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13926
LICENSED PROFESSIONAL ENGINEER

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive &
Old Stage Road,
Dover, NH

MARK	DATE	DESCRIPTION

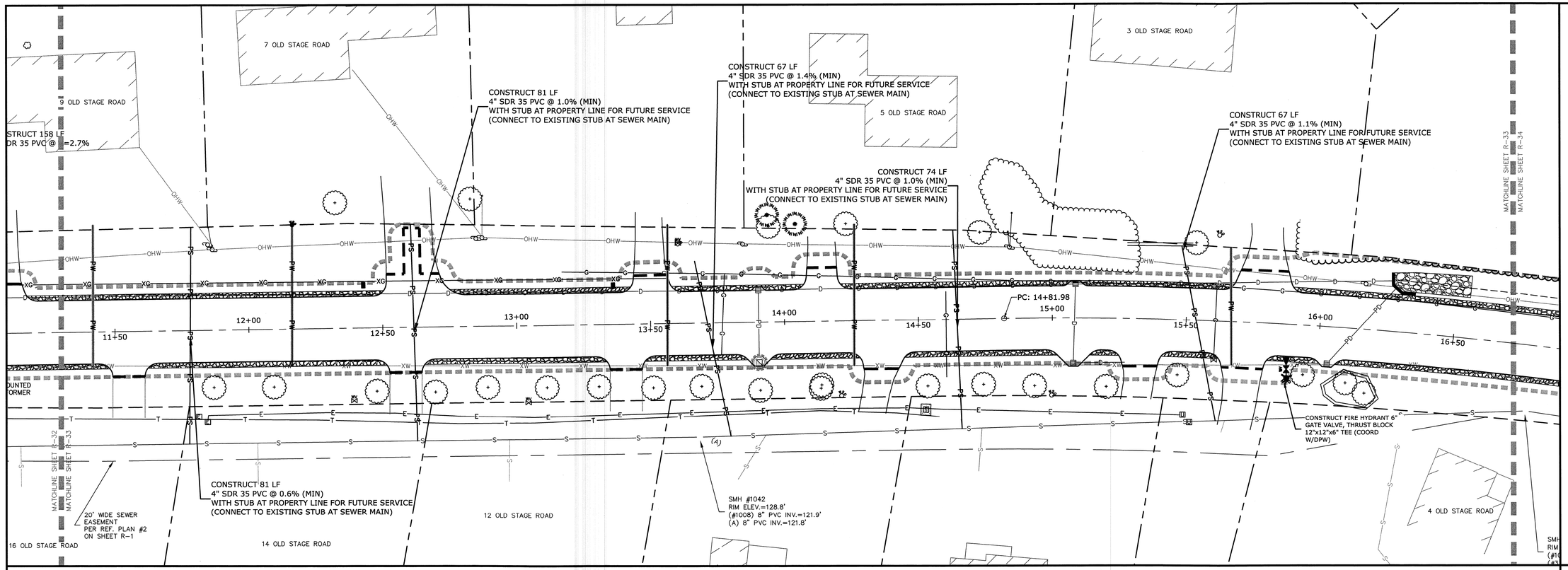
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

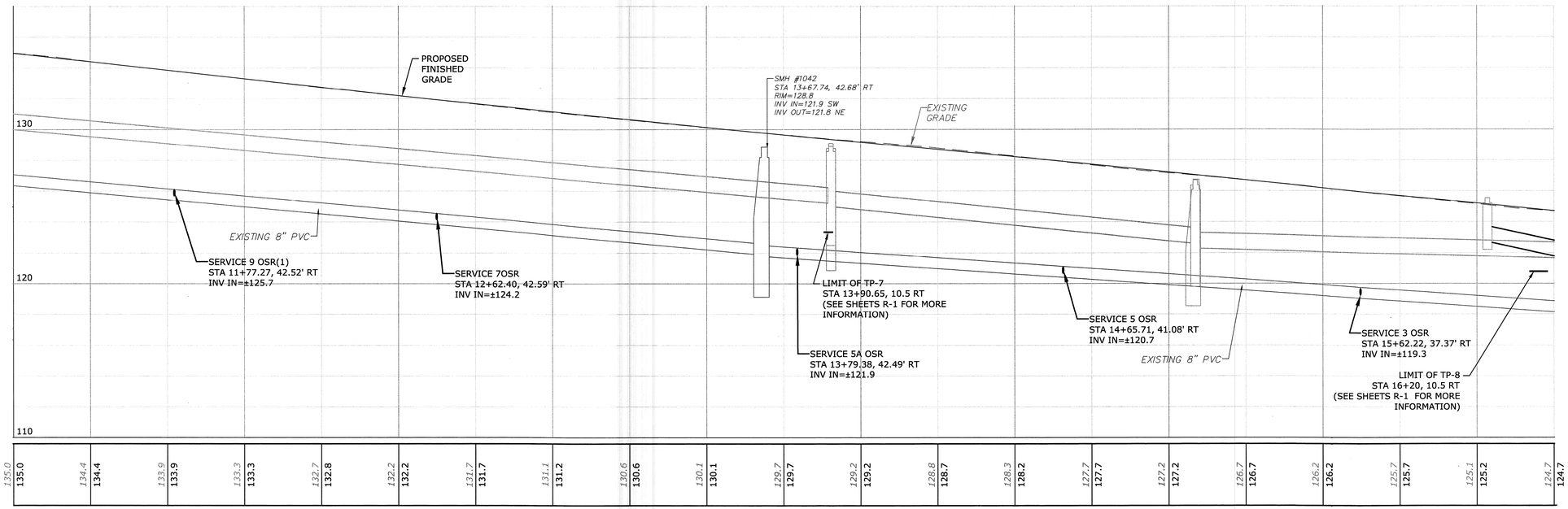
PLAN & PROFILE:
UTILITIES PLAN

SCALE: AS SHOWN

R-32

FILENAME: \\SRV1\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT: R32 UT
SAVE DATE: 11/2/2016 2:44 PM BY: KAM
PLOT DATE: 11/16/2016 2:14 PM BY: Kenneth A. Mavrogeorge





OLD STAGE ROAD

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

Tighe&Bond
www.tighebond.com

STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6984
LICENSED PROFESSIONAL ENGINEER
11/11/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13326
LICENSED PROFESSIONAL ENGINEER

N

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

PLAN & PROFILE: UTILITIES PLAN

SCALE: AS SHOWN

R-33

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R33 UT
SAVE DATE: 11/1/2016 4:30 PM BY: KAM
PLOT DATE: 11/2/2016 3:25 PM BY: Kenneth A. Mavrogeorge

UCT 67 LF
5 PVC @ 1.1% (MIN)
UB AT PROPERTY LINE FOR FUTURE SERVICE
T TO EXISTING STUB AT SEWER MAIN)

MATCHLINE SHEET R-33

MATCHLINE SHEET R-34

CONSTRUCT 53 LF
4" SDR 35 PVC @ 1.0% (MIN)
WITH STUB AT PROPERTY LINE FOR FUTURE SERVICE
(CONNECT TO EXISTING STUB AT SEWER MAIN)

SMH #3383
RIM ELEV.=121.1'
(A) 12" PVC INV.=112.9'
(#3381) 12" PVC INV.=112.8'

SMH #3381
RIM ELEV.=120.4'
(#3364) 8" PVC INV.=112.3'
(#3383) 12" PVC INV.=112.5'
(#3380) 12" PVC INV.=112.4'

OLD STAGE RD

16+00
16+50
17+00
17+50
18+00
18+50
19+00
19+53
19+50

PT: 17+75.29

PT: 19+43.69
PC: 19+00.93

CONSTRUCT FIRE HYDRANT 6" GATE VALVE, THRUST BLOCK 12"x12"x6" TEE (COORD W/DPW)

4 OLD STAGE ROAD

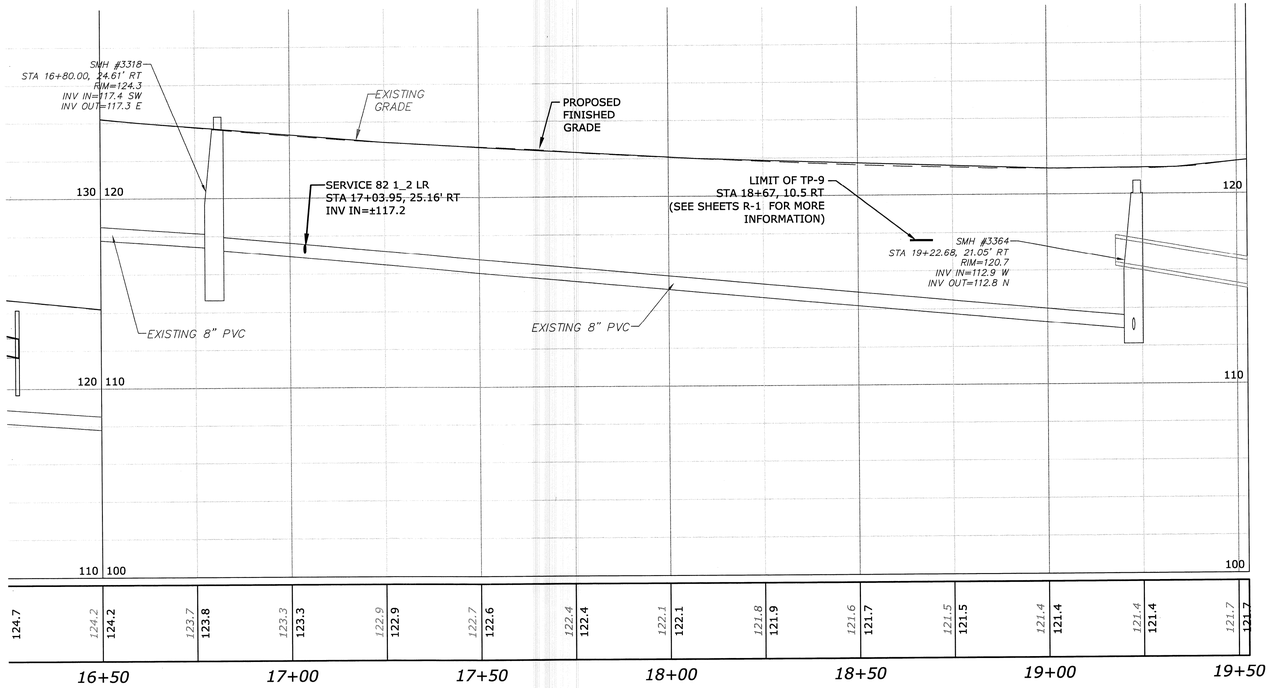
SMH #3318
RIM ELEV.=124.3'
(#1042) 8" PVC INV.=117.4'
(#3364) 8" PVC INV.=117.3'

SMH #3380
RIM ELEV.=120.2'
(PAVED OVER)

STOP

SMH #3364
RIM ELEV.=120.7'
(#3318) 8" PVC INV.=112.9'
(#3381) 8" PVC INV.=112.8'

KELLY BROOK



OLD STAGE ROAD

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Tighe&Bond
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STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6884
LICENSED PROFESSIONAL ENGINEER
11/2/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13326
LICENSED PROFESSIONAL ENGINEER
11/2/16

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

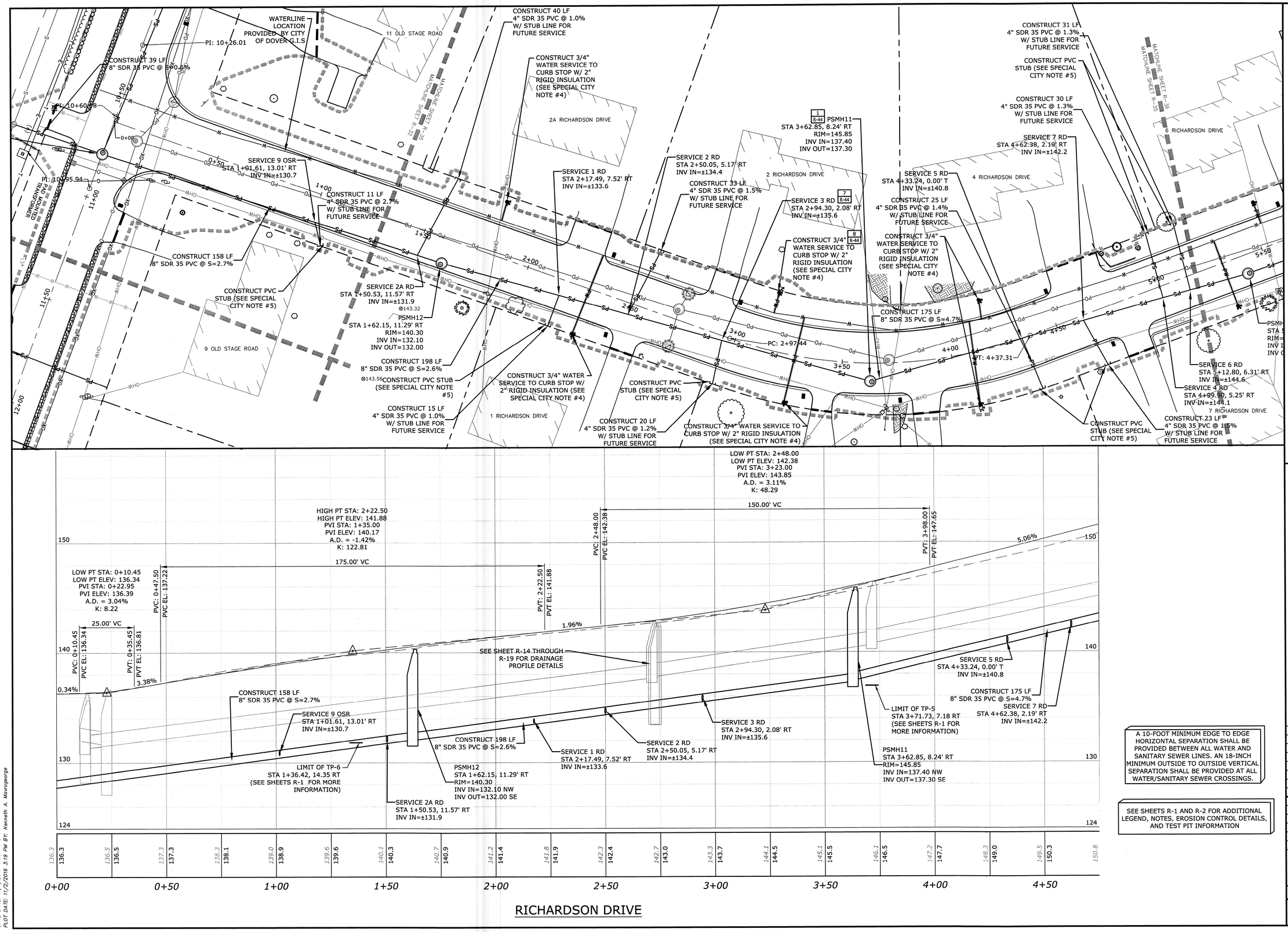
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

PLAN & PROFILE: UTILITIES PLAN

SCALE: AS SHOWN

R-34

FILENAME: \\SRV\PROJECTS\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R34 UT
SAVE DATE: 11/1/2016 4:30 PM BY:KAM
PLOT DATE: 11/2/2016 3:26 PM BY: Kenneth A. Mavrogeorge



RICHARDSON DRIVE

A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS.

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

Tighe&Bond
www.tighebond.com

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

STATE OF NEW HAMPSHIRE – KENNETH A. MAVROGEORGE No. 13328 – LICENSED PROFESSIONAL ENGINEER

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

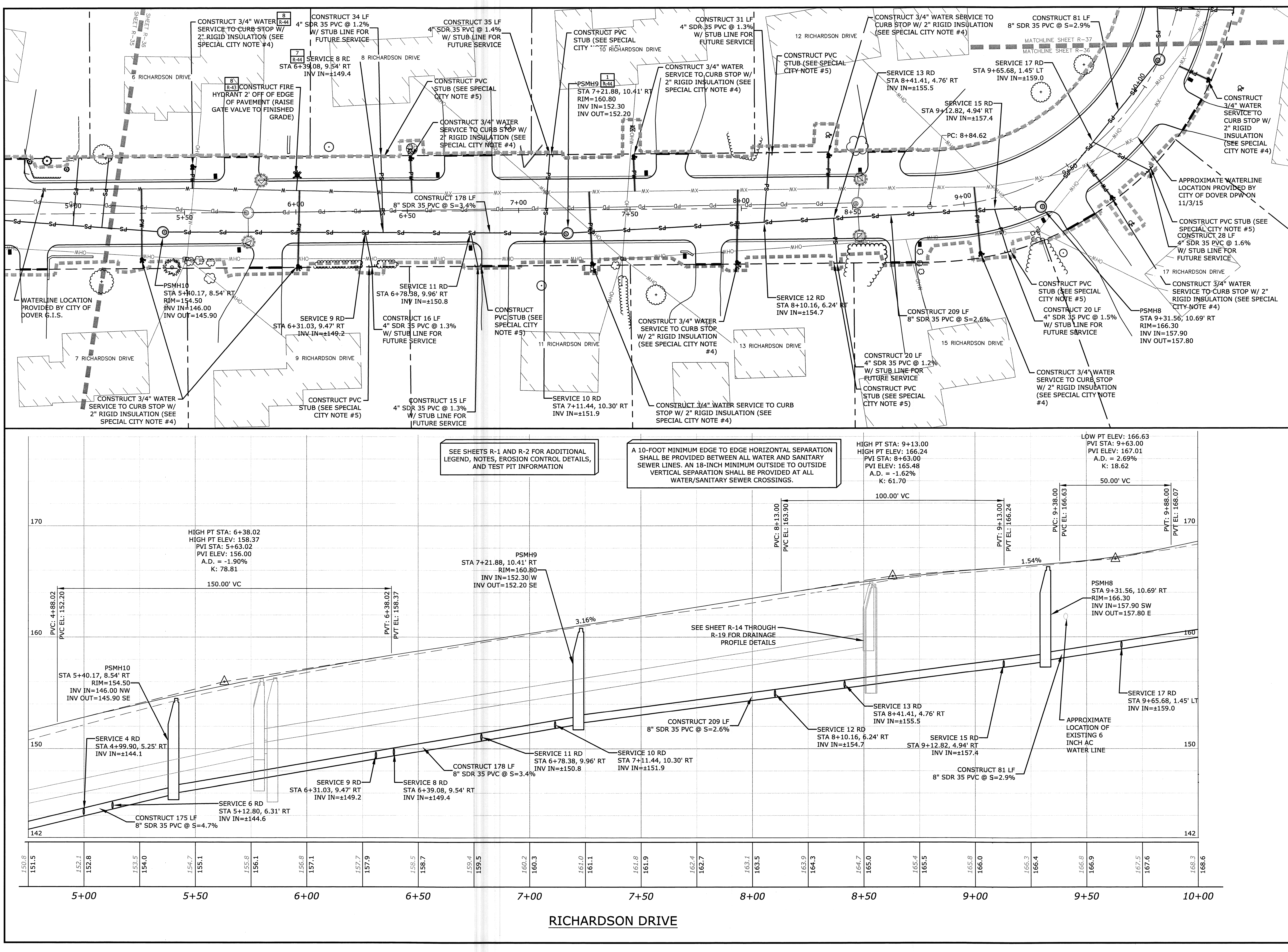
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

PLAN AND PROFILE: UTILITIES PLAN

SCALE: AS SHOWN

R-35

FILENAME: \\SRV\PROJECTS\D\00249 DOVER, CITY OF – DOVER, NH – ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R35 UT
SAVE DATE: 11/1/2016 4:30 PM BY: KAM
PLOT DATE: 11/2/2016 3:19 PM BY: Kenneth A. Mavrogeorge



Tighe&Bond
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STATE OF NEW HAMPSHIRE GREGG M. MIKOLAITIES No. 6884 LICENSED PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE KENNETH A. MAVROGEORGE No. 13326 LICENSED PROFESSIONAL ENGINEER

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

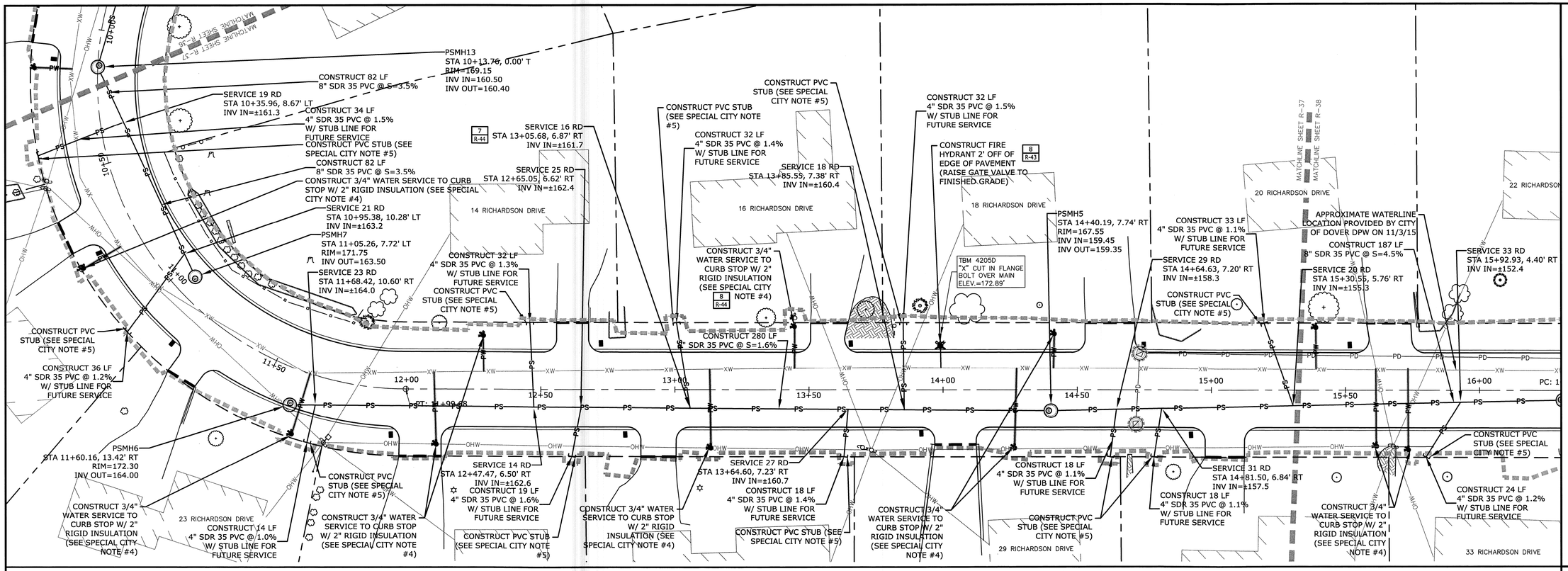
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

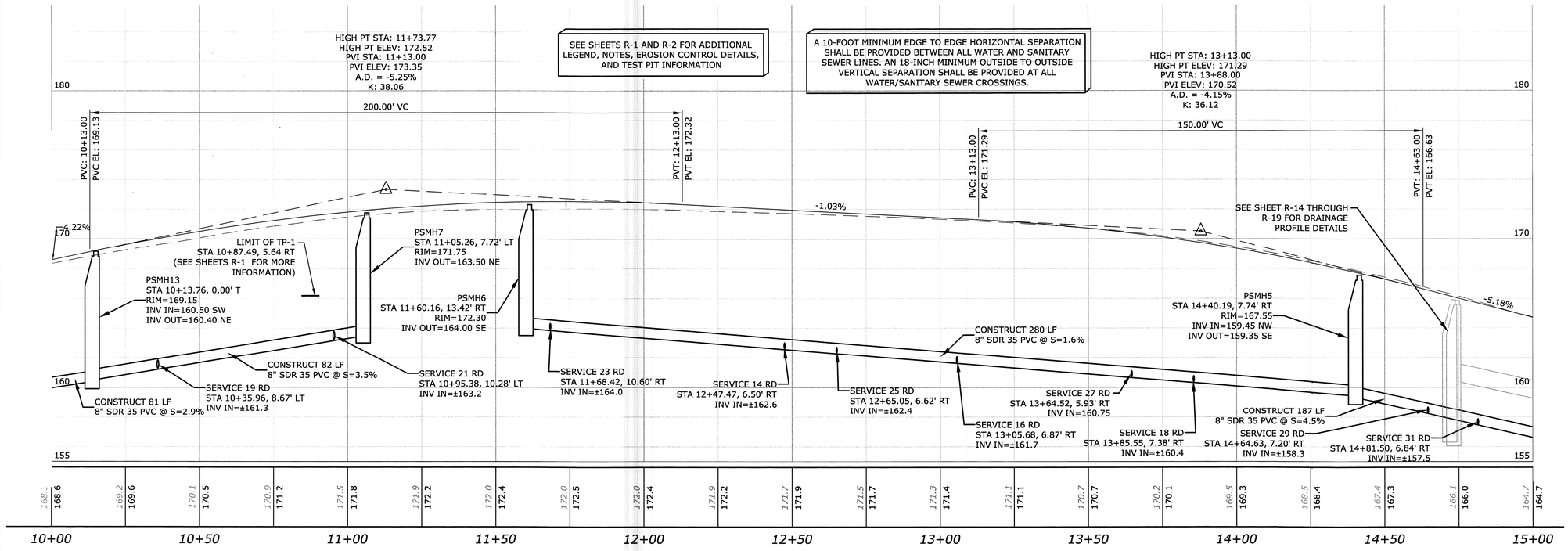
PLAN AND PROFILE: UTILITIES PLAN

SCALE: AS SHOWN

R-36

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R36 UT
SAVE DATE: 11/1/2016 1:20 PM BY:KAM
PLOT DATE: 11/1/2016 2:32 PM BY: Kenneth A. Mavrogeorge





RICHARDSON DRIVE

Tighe&Bond
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STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6884
PROFESSIONAL ENGINEER
LICENSED
11/2/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13328
PROFESSIONAL ENGINEER
11/2/16

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
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DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

PLAN AND PROFILE: UTILITIES PLAN

SCALE: AS SHOWN

R-37

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R37 UT
SAVE DATE: 11/1/2016 1:20 PM BY:KAM
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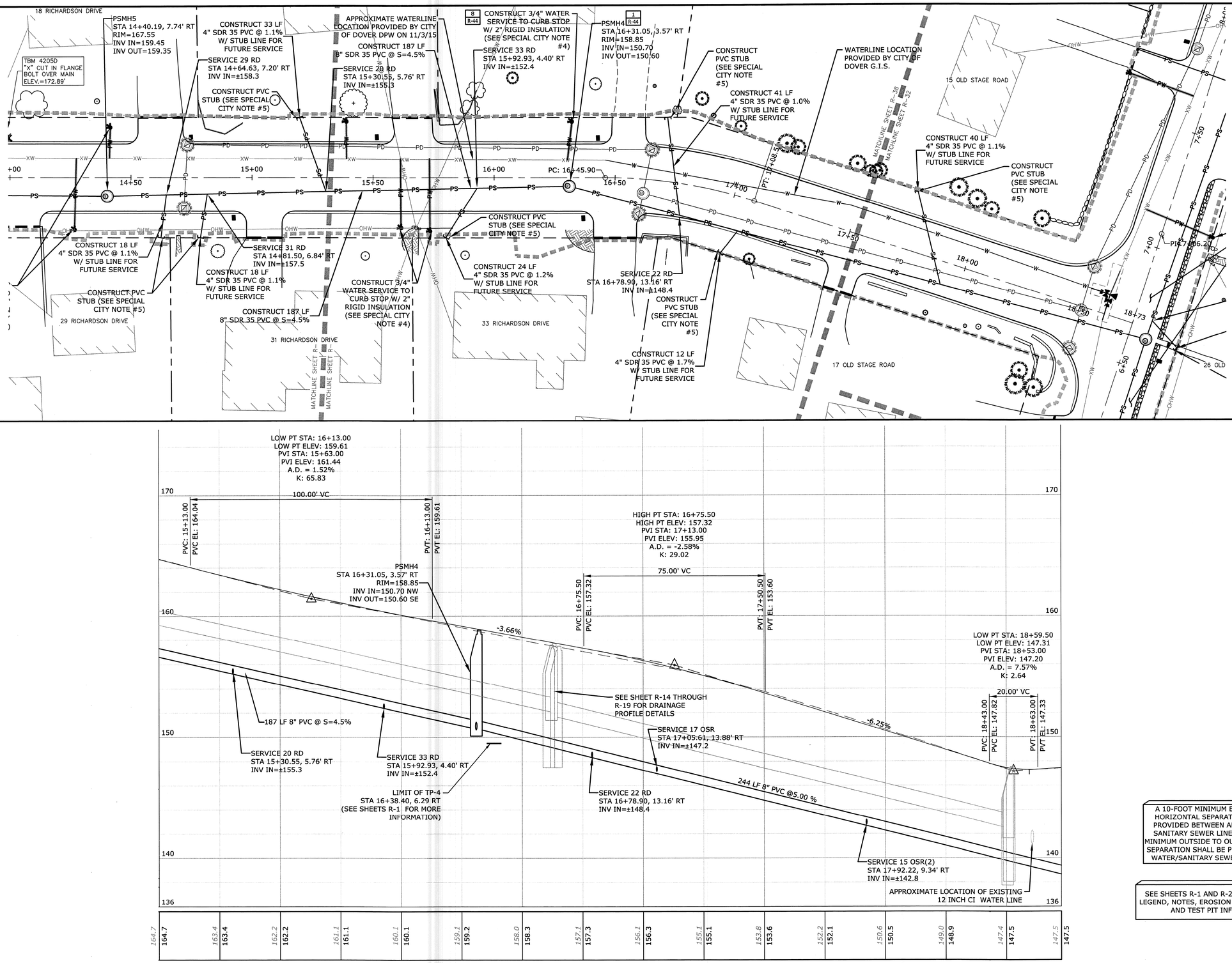


RICHARDSON DRIVE

A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18-INCH MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER/SANITARY SEWER CROSSINGS.

SEE SHEETS R-1 AND R-2 FOR ADDITIONAL LEGEND, NOTES, EROSION CONTROL DETAILS, AND TEST PIT INFORMATION

Tighe&Bond
www.tighebond.com

STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6854
PROFESSIONAL ENGINEER
11/2/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13929
PROFESSIONAL ENGINEER
11/2/16

N

HORIZONTAL SCALE 1" = 20'
0 20' 40'
VERTICAL SCALE 1" = 4'
0 4' 8'

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

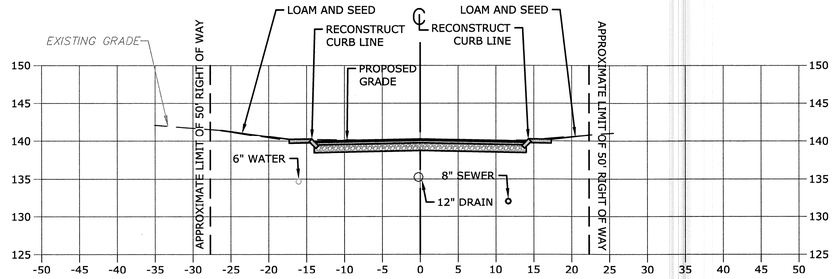
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

PLAN AND PROFILE: UTILITIES PLAN

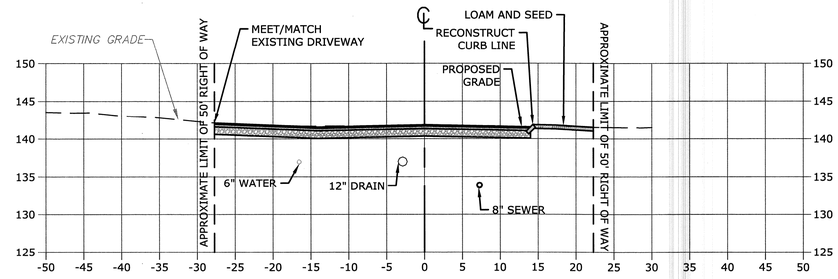
SCALE: AS SHOWN

R-38

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R38 UT
SAVE DATE: 11/1/2016 1:20 PM BY:KAM
PLOT DATE: 11/1/2016 2:39 PM BY: Kenneth A. Mavrogeorge



STATION: 1+50



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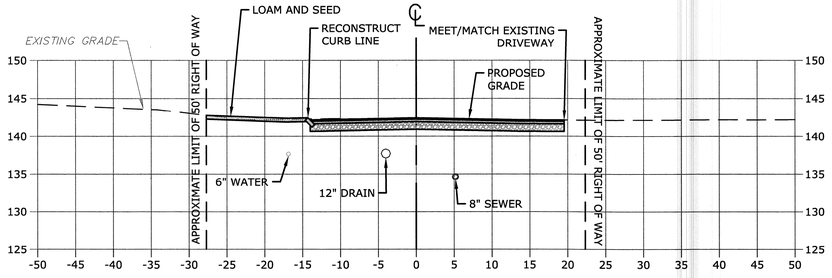
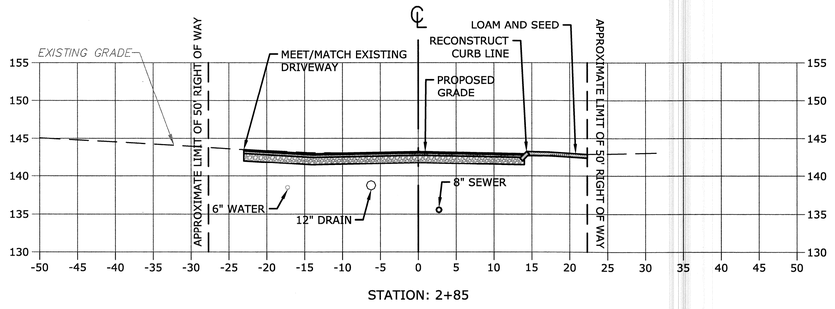


STATION: 2+50



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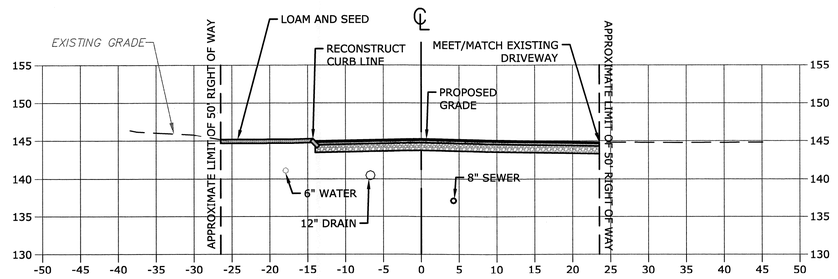
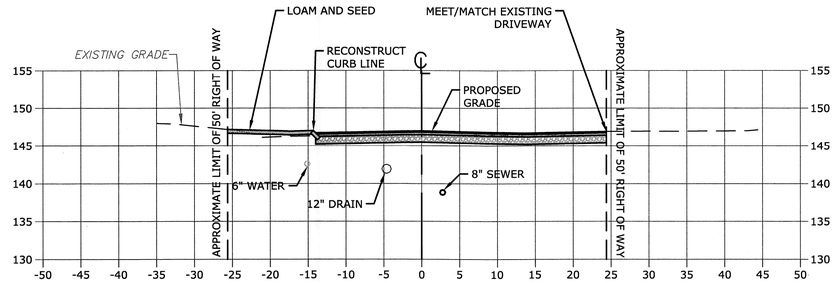
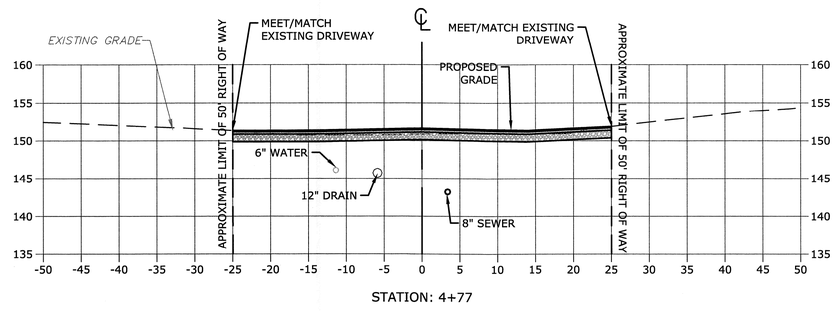


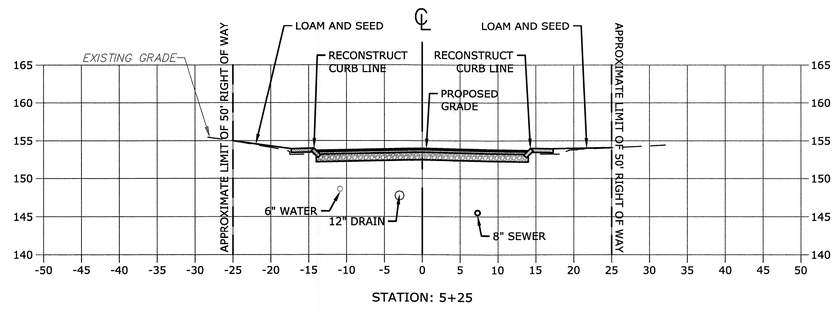
STATION: 3+45



STATION: 3+85



STATION: 4+77



STATION: 5+25

NOTE: SEE SHEETS R-20 THROUGH R-28 AND R-30 THROUGH R-38 FOR ADDITIONAL INFORMATION REGARDING DRAINAGE AND UTILITIES WITHIN RICHARDSON DRIVE

Tighe&Bond
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STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6884
LICENSED PROFESSIONAL ENGINEER
11/2/16

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13329
LICENSED PROFESSIONAL ENGINEER

SCALE IN FEET
0 10' 20'
GRAPHIC SCALE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

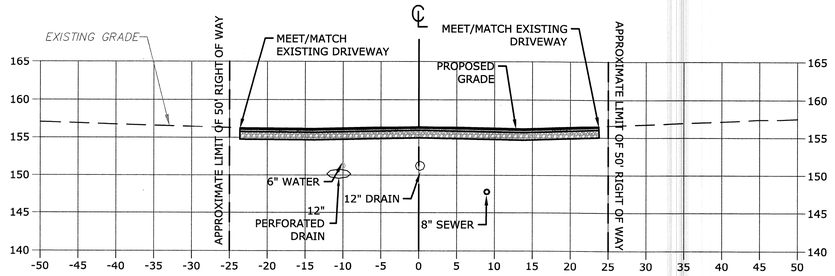
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

RICHARDSON DRIVE
DRIVEWAY CROSS SECTIONS

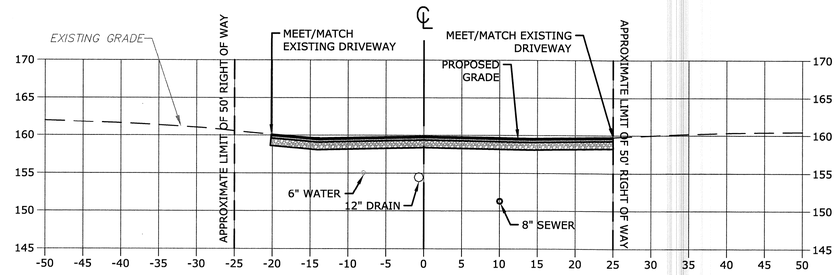
SCALE: AS SHOWN

R-39

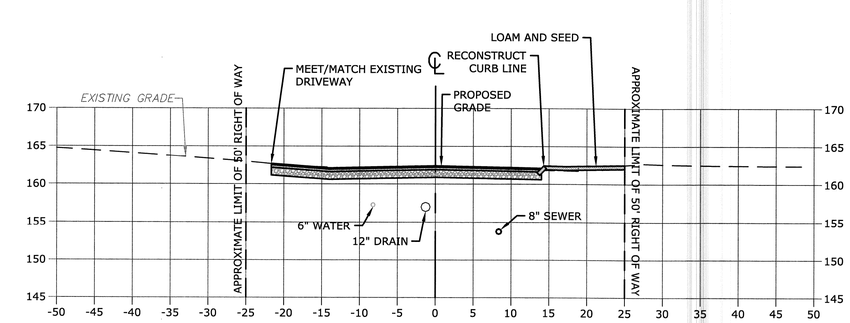
FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R39 CS
SAVE DATE: 11/1/2016 2:40 PM BY:KAM
PLOT DATE: 11/1/2016 2:52 PM BY: Kenneth A. Mavrogeorge



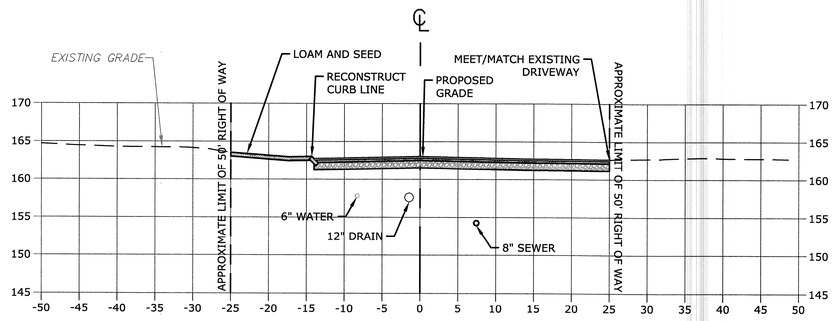
STATION: 5+83



STATION: 6+85

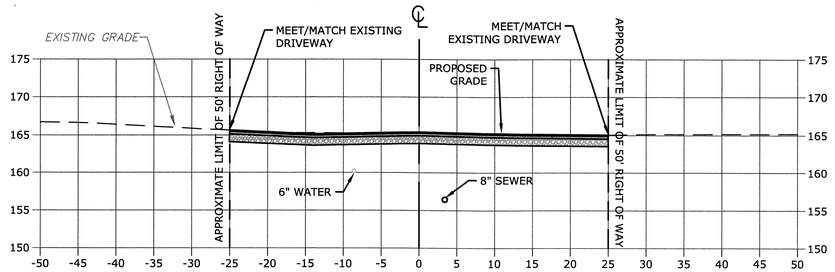


STATION: 7+65

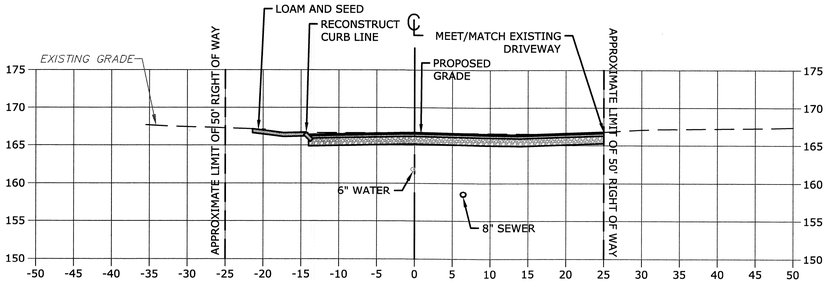


STATION: 7+85

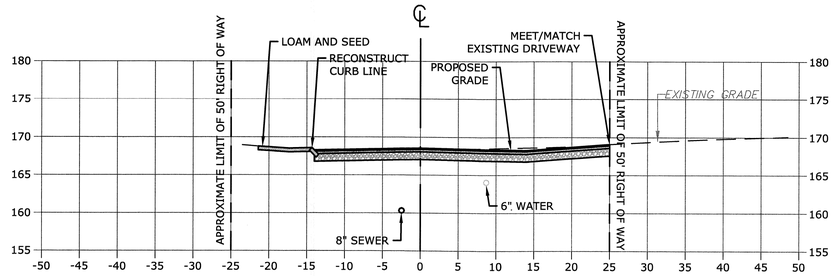
NOTE: SEE SHEETS R-20 THROUGH R-28 AND R-30 THROUGH R-38 FOR ADDITIONAL INFORMATION REGARDING DRAINAGE AND UTILITIES WITHIN RICHARDSON DRIVE



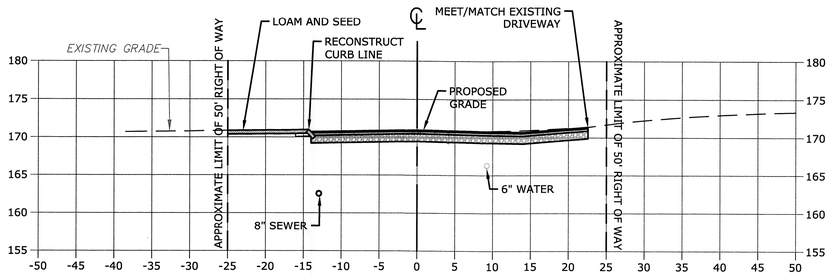
STATION: 8+70



STATION: 9+40



STATION: 10+00



STATION: 10+65

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STATE OF NEW HAMPSHIRE
GREGG M. MIKOLAITIES
No. 6864
LICENSED PROFESSIONAL ENGINEER

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13329
PROFESSIONAL ENGINEER

SCALE IN FEET
0 10' 20'
GRAPHIC SCALE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

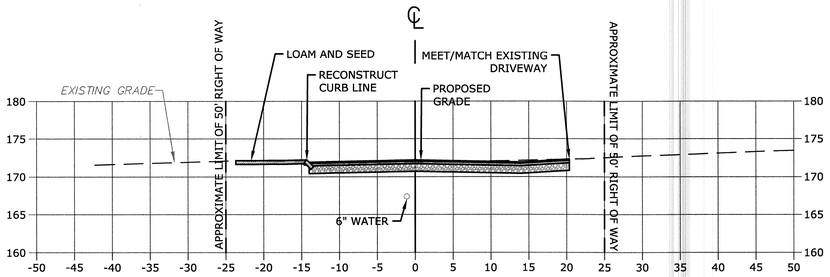
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

RICHARDSON DRIVE DRIVEWAY CROSS SECTIONS

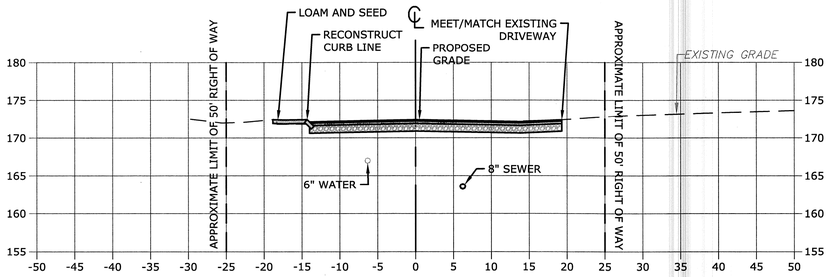
SCALE: AS SHOWN

R-40

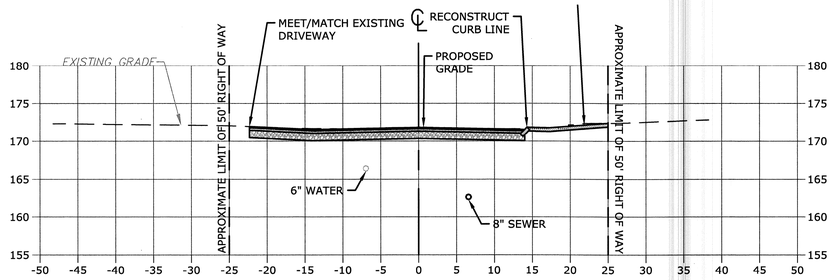
FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT:R40 CS
SAVE DATE: 11/1/2016 2:40 PM BY:KAM
PLOT DATE: 11/1/2016 3:08 PM BY: Kenneth A. Mavrogeorge



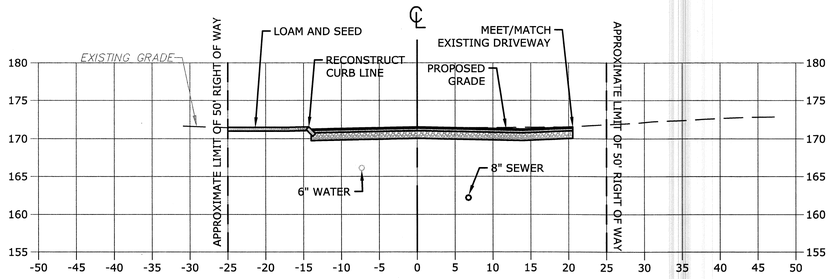
STATION: 11+25



STATION: 12+05

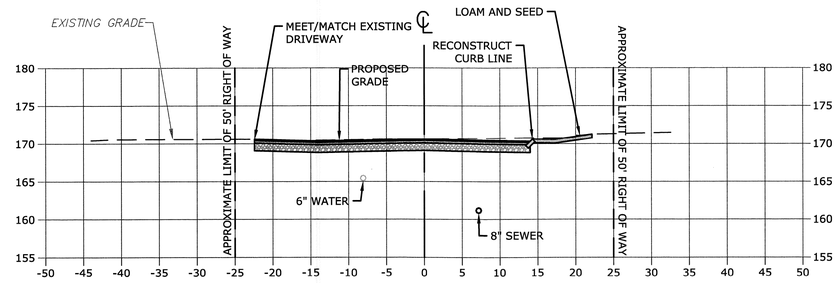


STATION: 12+60



STATION: 12+90

NOTE: SEE SHEETS R-20 THROUGH R-28 AND R-30 THROUGH R-38 FOR ADDITIONAL INFORMATION REGARDING DRAINAGE AND UTILITIES WITHIN RICHARDSON DRIVE



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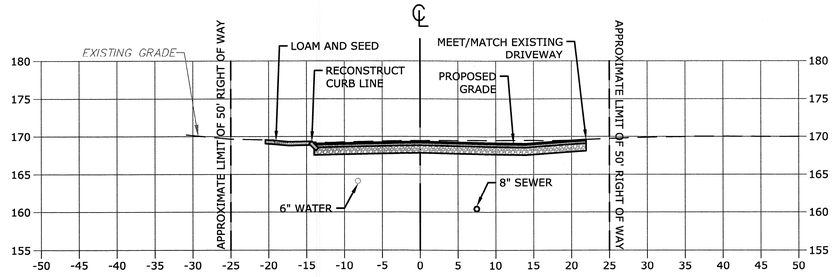

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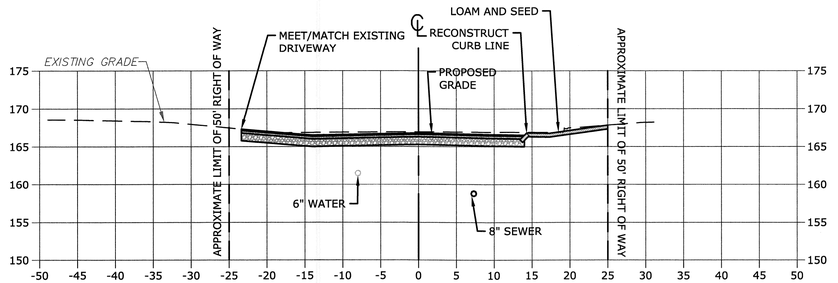

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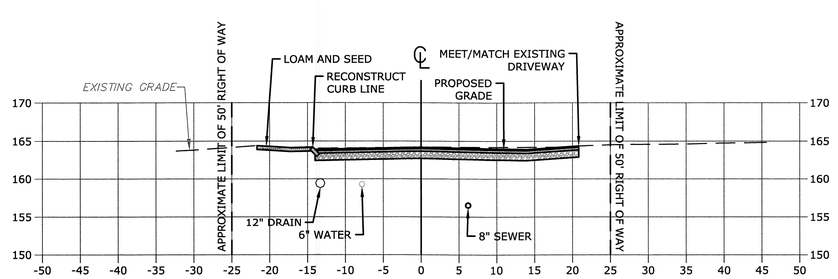

STATION: 15+10

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

STATE OF NEW HAMPSHIRE
KENNETH A. MAVROGEORGE
No. 13326
LICENSED PROFESSIONAL ENGINEER

SCALE IN FEET
0 10' 20'
GRAPHIC SCALE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

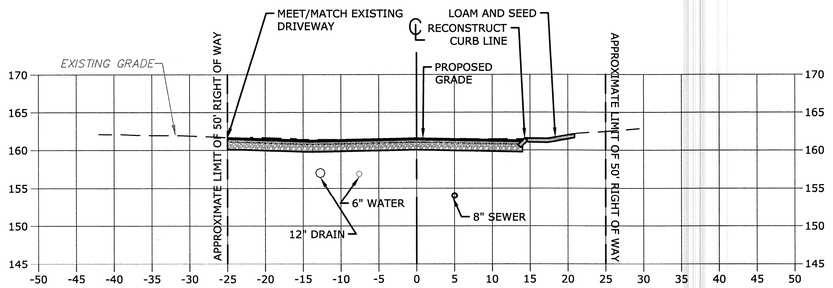
PROJECT NO:	D0249
FILE:	1302491_DESIGN.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

RICHARDSON DRIVE DRIVEWAY CROSS SECTIONS

SCALE: AS SHOWN

R-41

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DESIGN.DWG LAYOUT: R41 CS
SAVE DATE: 11/1/2016 2:40 PM BY: KAM
PLOT DATE: 11/1/2016 3:09 PM BY: Kenneth A. Mavrogeorge



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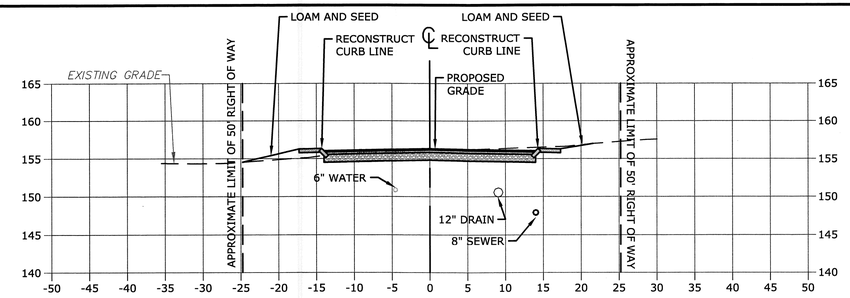

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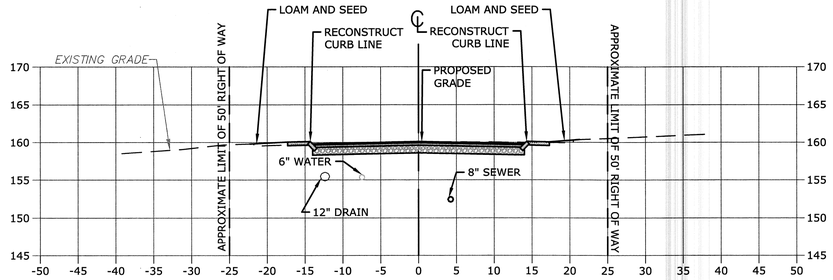

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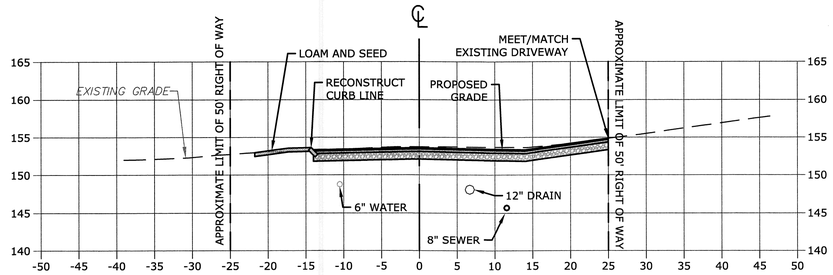

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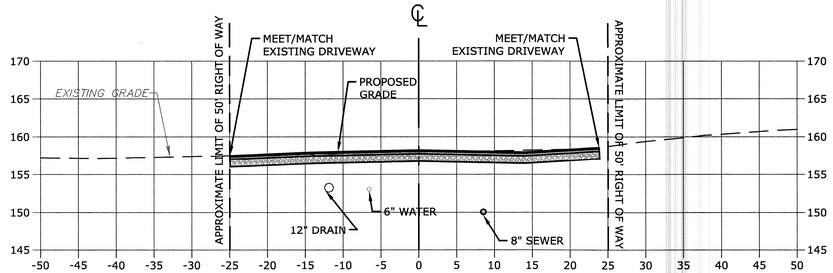
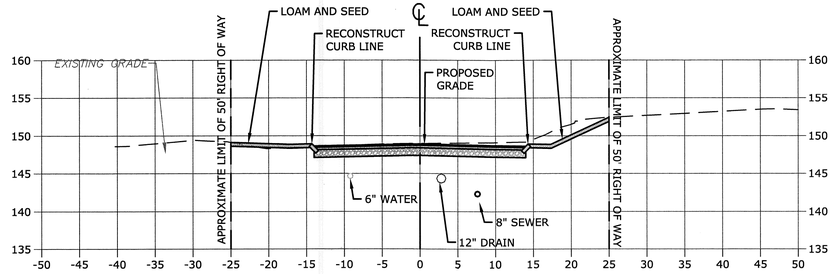


STATION: 16+50



STATION: 18+25

NOTE: SEE SHEETS R-20 THROUGH R-28 AND R-30 THROUGH R-38 FOR ADDITIONAL INFORMATION REGARDING DRAINAGE AND UTILITIES WITHIN RICHARDSON DRIVE

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STATE OF NEW HAMPSHIRE - GREGG M. MIKOLAITIES No. 6884 - LICENSED PROFESSIONAL ENGINEER - 11/2/16

STATE OF NEW HAMPSHIRE - KENNETH A. MAVROGEORGE No. 13568 - PROFESSIONAL ENGINEER - 11/1/16

SCALE IN FEET
0 10' 20'
GRAPHIC SCALE

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

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FILE:	1302491_DESIGN.dwg
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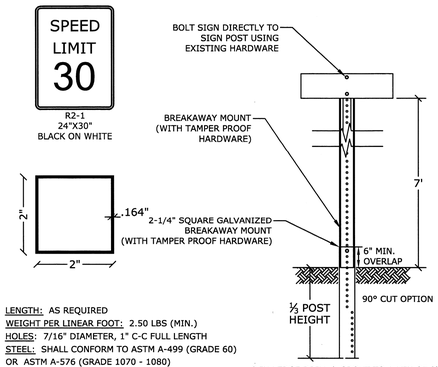
CHECKED:	KAM/WJD
APPROVED BY:	GMM

RICHARDSON DRIVE DRIVEWAY CROSS SECTIONS

SCALE: AS SHOWN

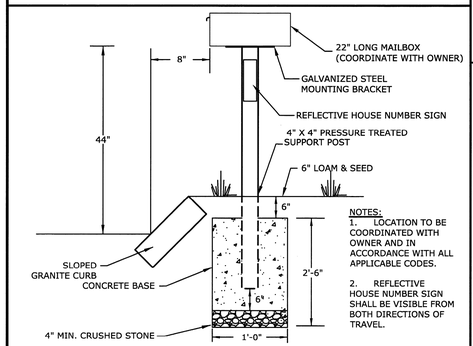
R-42



LENGTH: AS REQUIRED
WEIGHT PER LINEAR FOOT: 2.50 LBS (MIN.)
HOLES: 7/16" DIAMETER, 1" C-C FULL LENGTH
STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070 - 1080)
FINISH: STREET SIGNS - GALVANIZED STEEL
ALL OTHER - SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN BAKED ON OR DRIED, PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

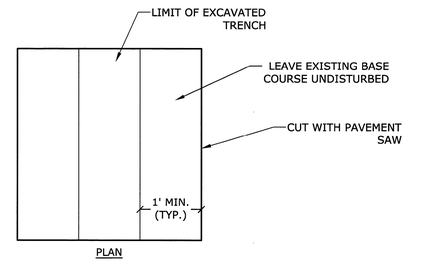
NOTE:
ALL SIGNS TO BE CONSTRUCTED PER THE LATEST EDITION OF THE FHWA STANDARD HIGHWAY SIGNS MANUAL AND INSTALLED AS INDICATED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.

1 - SIGN LEGEND AND SIGN POST
NOT TO SCALE

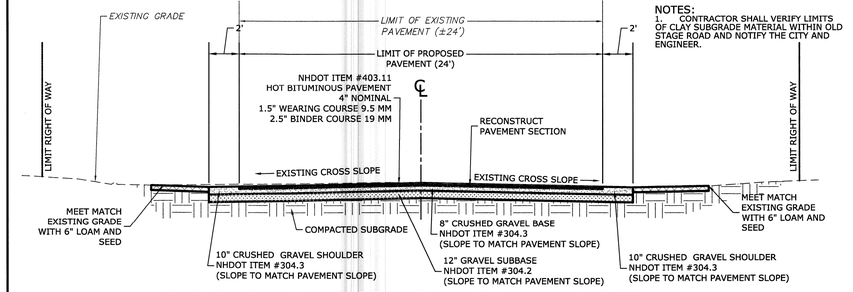


NOTES:
1. LOCATION TO BE COORDINATED WITH OWNER AND IN ACCORDANCE WITH ALL APPLICABLE CODES.
2. REFLECTIVE HOUSE NUMBER SIGN SHALL BE VISIBLE FROM BOTH DIRECTIONS OF TRAVEL.

3 - WOOD POST MOUNTED MAILBOX
NOT TO SCALE

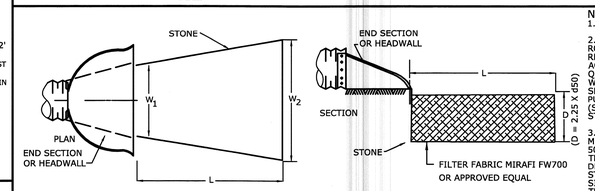


6 - PAVEMENT TRENCH PATCH
NOT TO SCALE



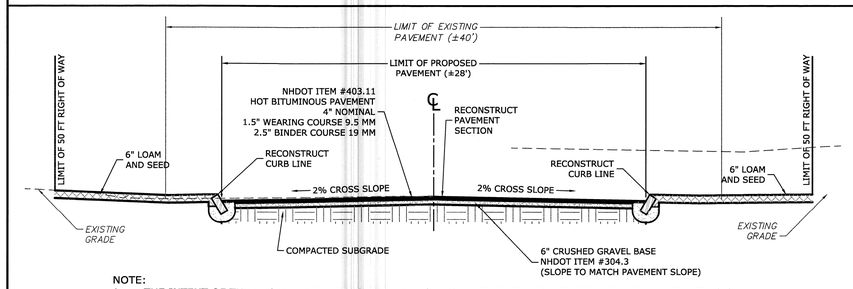
NOTES:
1. CONTRACTOR SHALL VERIFY LIMITS OF CLAY SUBGRADE MATERIAL WITHIN OLD STAGE ROAD AND NOTIFY THE CITY AND ENGINEER.

2 - TYPICAL OLD STAGE ROAD CROSS SECTION
NOT TO SCALE



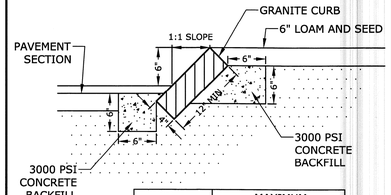
NOTES:
1. STONE SIZE AND MAT DIMENSIONS DETAILED ON PLANS.
2. STONE SHALL CONSIST OF SUB-ANGULAR FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. FLAT OR ROUND ROCKS ARE NOT ACCEPTABLE. THE STONE SHALL BE HARD AND OF SUCH QUALITY THAT IT WILL NOT DISINTEGRATE ON EXPOSURE TO WATER OR WEATHERING, BE CHEMICALLY STABLE AND IT SHALL BE SUITABLE IN ALL OTHER RESPECTS FOR THE PURPOSE INTENDED. THE BULK SPECIFIC GRAVITY (SATURATED SURFACE-DRY BASIS) OF THE INDIVIDUAL STONES SHALL BE AT LEAST 2.5.
3. THE STONE SHALL BE COMPOSED OF A WELL-GRADED MIXTURE DOWN TO THE ONE-INCH SIZE PARTICLE SUCH THAT 50 PERCENT OF THE MIXTURE BY WEIGHT SHALL BE LARGER THAN THE D50 SIZE SPECIFIED. A WELL-GRADED MIXTURE IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF THE LARGER STONE SIZE BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE PROGRESSIVELY SMALLER VOIDS BETWEEN THE STONES. THE DIAMETER OF THE LARGEST STONE SIZE IN SUCH A MIXTURE SHALL BE 1.5 TIMES THE D50 SIZE.

13 - STONE APRON DETAIL
NOT TO SCALE



NOTE:
1. THE INTENT OF THE DESIGN IS TO REMOVE THE EXISTING PAVEMENT AND THE TOP 6 INCHES OF EXISTING SAND BASE MATERIAL PRIOR TO RECONSTRUCTING THE PAVEMENT.
2. CONTRACTOR SHALL VERIFY LIMITS OF SAND BASE MATERIAL AND NOTIFY CITY AND ENGINEER.

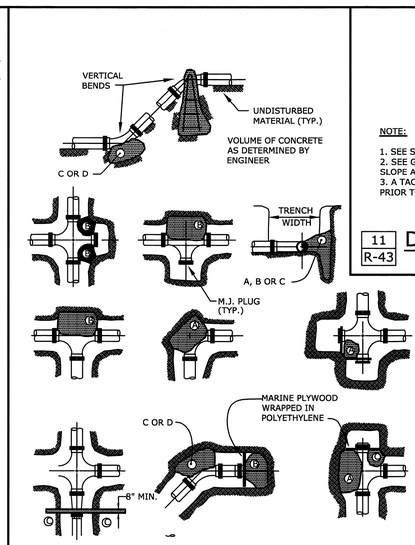
4 - TYPICAL ROADWAY CROSS SECTION WITH CURB
NOT TO SCALE



RADIUS	MAXIMUM LENGTH
<2'	USE CURVED CURB
2'-15'	USE RADIAL JOINTS
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 LAYOUT PLANS 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 INCHES.
4. MAXIMUM LENGTH OF STRAIGHT CURB STONES = 8 FEET.
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES - SEE CHART.
6. JOINTS BETWEEN STONES SHALL BE MORTARED.
7. ALL CURBING SHALL CONFORM TO THE CITY OF DOVER STANDARDS.

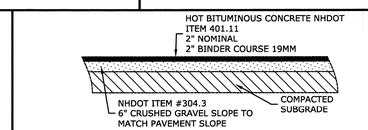
7 - SLOPED GRANITE CURB
NOT TO SCALE



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 PER CITY OF DOVER WATER DEPARTMENT STANDARDS.

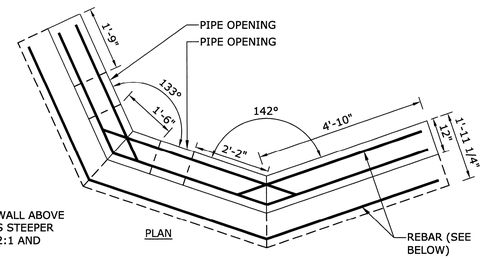
10 - THRUST BLOCKING DETAIL
NOT TO SCALE

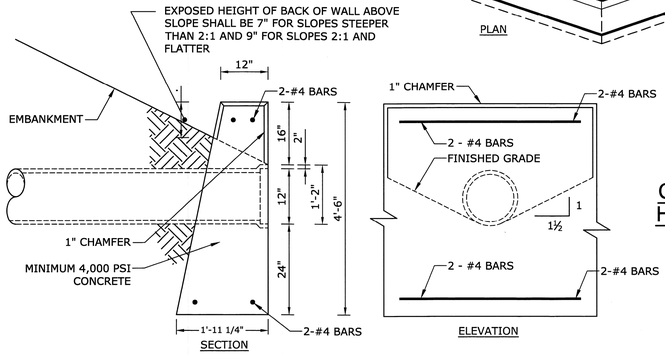


NOTE:
1. SEE SITE PLAN FOR PAVEMENT WIDTH AND LOCATION.
2. SEE GRADING, DRAINAGE AND EROSION CONTROL PLAN FOR PAVEMENT SLOPE AND CROSS-SLOPE.
3. A TACK COAT SHALL BE PLACED ON TOP OF BINDER COURSE PAVEMENT PRIOR TO PLACING WEARING COURSE.

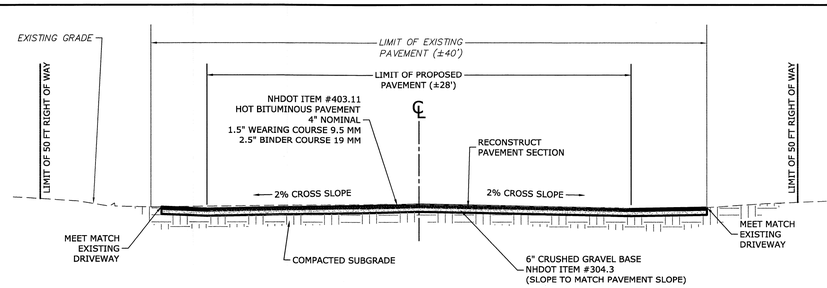
11 - R-43 - DRIVEWAY SECTION DETAIL
NOT TO SCALE

NOTE:
1. REINFORCING SHALL BE PER ASTM A-615, GRADE 60.
2. REINFORCING SHALL HAVE A MINIMUM OF 3 INCHES OF COVER UNLESS INDICATED OTHERWISE.
3. CONTRACTOR SHALL SUBMIT HEADWALL DESIGN PLANS STAMPED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF NEW HAMPSHIRE.





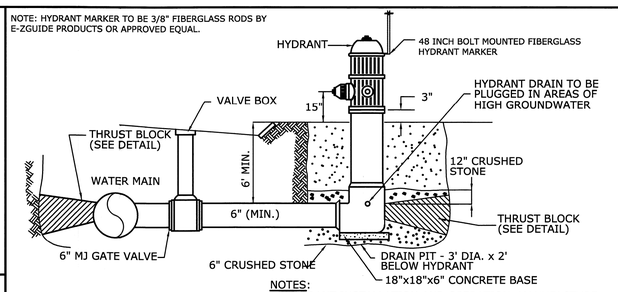
CONCRETE HEADWALL
NOT TO SCALE
12 - R-43



NOTE: THE INTENT OF THE DESIGN IS TO REMOVE THE EXISTING PAVEMENT AND THE TOP 6 INCHES OF EXISTING BASE MATERIAL PRIOR TO RECONSTRUCTING THE PAVEMENT.

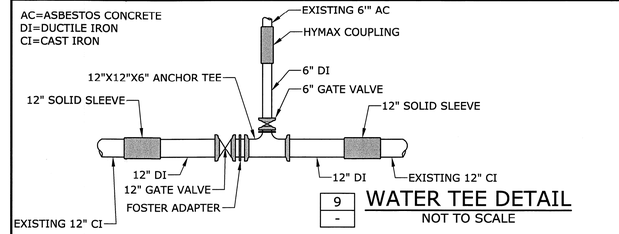
5 - TYPICAL ROADWAY CROSS SECTION (AT DRIVEWAYS)
NOT TO SCALE

NOTE: HYDRANT MARKER TO BE 3/8" FIBERGLASS RODS BY E-ZGUIDE PRODUCTS OR APPROVED EQUAL.



NOTES:
1. HYDRANT INSTALLATION AND OPERATION, MANUFACTURE AND MODEL, AND STANDARD DIMENSIONAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE CITY OF DOVER WATER DEPARTMENT AND THE CITY OF DOVER FIRE DEPARTMENT.

8 - FIRE HYDRANT
NOT TO SCALE



9 - WATER TEE DETAIL
NOT TO SCALE

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DETAILS.DWG LAYOUT:R-43
SAVE DATE: 6/6/2016 11:32 AM BY:KAM
PLOT DATE: 11/1/2016 2:51 PM BY: Kenneth A. Mavrogeorge

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STATE OF NEW HAMPSHIRE - GREGG M. MIKOLAITIES No. 6884 - PROFESSIONAL ENGINEER
STATE OF NEW HAMPSHIRE - KENNETH A. MAVROGEORGE No. 13969 - PROFESSIONAL ENGINEER

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

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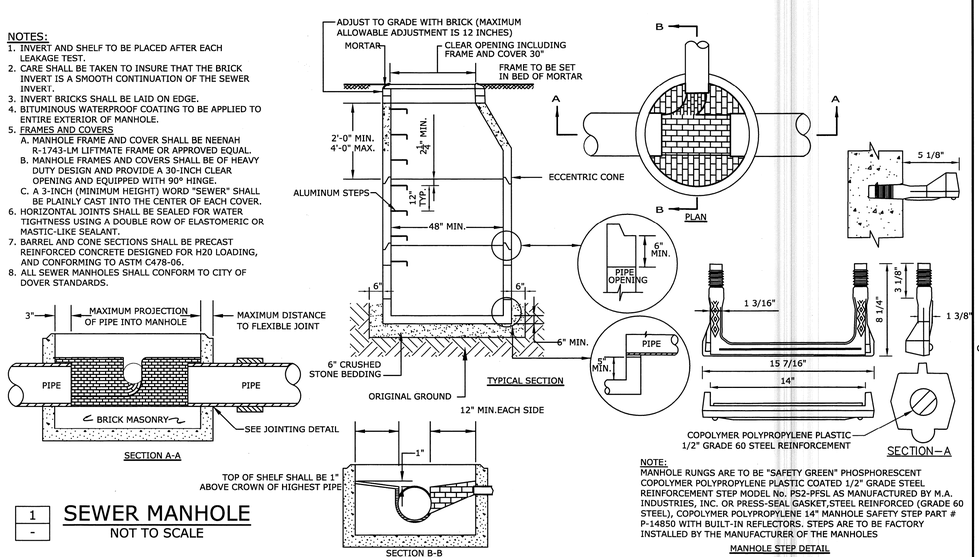
FILE:	1302491_DETAILS.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

DETAILS SHEET

SCALE: AS SHOWN

R-43

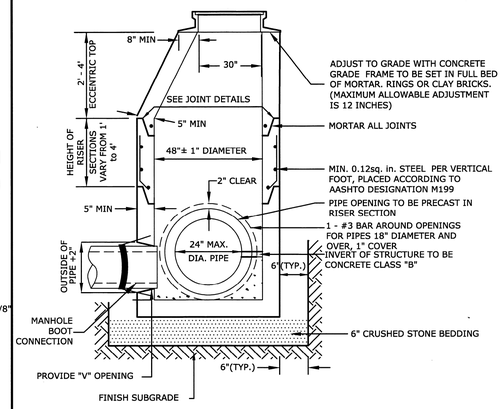
NOTES:
1. INVERT AND SHELF TO BE PLACED AFTER EACH LEAKAGE TEST.
2. CARE SHALL BE TAKEN TO INSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT.
3. INVERT BRICKS SHALL BE LAID ON EDGE.
4. BITUMINOUS WATERPROOF COATING TO BE APPLIED TO ENTIRE EXTERIOR OF MANHOLE.
5. FRAMES AND COVERS
   A. MANHOLE FRAME AND COVER SHALL BE NEENAH R-1743-LM LIFTMATE FRAME OR APPROVED EQUAL.
   B. MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING AND EQUIPPED WITH 90° HINGE.
   C. A 3-INCH (MINIMUM HEIGHT) WORD "SEWER" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH COVER.
6. HORIZONTAL JOINTS SHALL BE SEALED FOR WATER TIGHTNESS USING A DOUBLE ROW OF ELASTOMERIC OR MASTIC-LIKE SEALANT.
7. BARREL AND CONE SECTIONS SHALL BE PRECAST REINFORCED CONCRETE DESIGNED FOR H20 LOADING, AND CONFORMING TO ASTM C478-06.
8. ALL SEWER MANHOLES SHALL CONFORM TO CITY OF DOVER STANDARDS.



NOTE:
MANHOLE RUNGS ARE TO BE "SAFETY GREEN" PHOSPHORESCENT COPOLYMER POLYPROPYLENE PLASTIC COATED 1/2" GRADE STEEL REINFORCEMENT STEP MODEL No. PS2-PFSL AS MANUFACTURED BY M.A. INDUSTRIES, INC. OR PRESS-SEAL GASKET,STEEL REINFORCED (GRADE 60 STEEL), COPOLYMER POLYPROPYLENE 14" MANHOLE SAFETY STEP PART # P-14850 WITH BUILT-IN REFLECTORS. STEPS ARE TO BE FACTORY INSTALLED BY THE MANUFACTURER OF THE MANHOLES

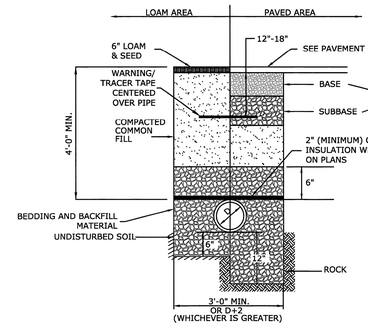
MANHOLE STEP DETAIL

1 / - SEWER MANHOLE
NOT TO SCALE



NOTES:
1. MANHOLE BOOT CONNECTION
   1.A. WATERTIGHT SEAL MADE WITH RUBBER MANHOLE BOOT AS MANUFACTURED BY PRESS SEAL, OR EQUAL.
   1.B. ALTERNATIVELY, WATERTIGHT SEAL MADE BY ALOK, OR EQUAL, IN WHICH CASE MAXIMUM INSERTION ANGLE IS 7 DEGREES.
2. WATERTIGHT SEALS FOR CORRUGATED HDPE PIPE - SHALL BE NPC CORRUGATED PIPE ADAPTER COMPATIBLE WITH KOR-N-SEAL MANHOLE CONNECTOR.
3. ALL SECTIONS SHALL BE 4,000 PSI CONCRETE.
4. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
5. THE TONGUE AND THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO .12 SQUARE INCHES PER LINEAR FOOT.
6. THE STRUCTURES SHALL BE DESIGNED FOR H20 LOADING.
7. CONSTRUCT CRUSHED STONE BEDDING AND BACKFILL UNDER (6" MINIMUM THICKNESS).
8. THE TONGUE AND GROOVE JOINT SHALL BE SEALED WITH ONE STRIP OF BUTYL RUBBER SEALANT.
9. ALL DRAIN MANHOLES SHALL CONFORM TO CITY OF DOVER STANDARDS.

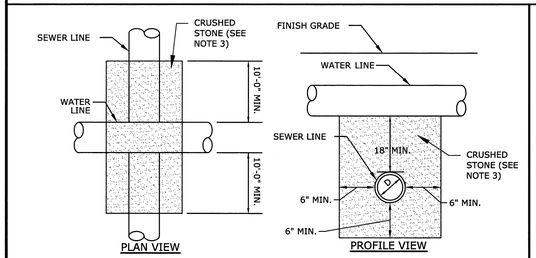
2 / - DRAIN MANHOLE (4' DIA)
NOT TO SCALE



NOTE:
1. CRUSHED STONE BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 6" ABOVE TOP OF PIPE.

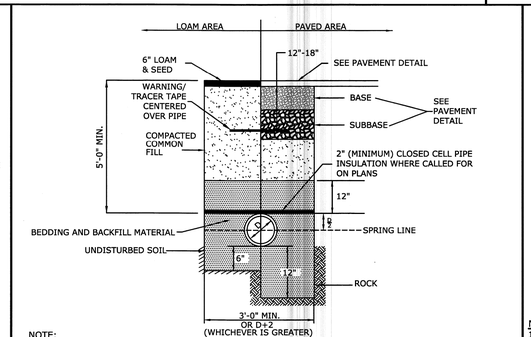
2. ALL UTILITIES SHALL BE INSTALLED PER THE INDIVIDUAL UTILITY COMPANY STANDARDS. COORDINATE ALL INSTALLATIONS WITH INDIVIDUAL UTILITY COMPANIES AND THE CITY OF DOVER.

9 / - STORM DRAIN TRENCH
NOT TO SCALE



NOTES:
1. A 10 FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPERATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES.
2. AN 18" MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER AND SANITARY SEWER CROSSINGS WITH WATER ABOVE SEWER.
3. BEDDING MATERIAL FOR WATER PIPE AT ALL SEWER AND WATER CROSSINGS SHALL BE A MINIMUM OF 18" of CRUSHED STONE.
4. ALL CROSSINGS SHALL CONFORM TO CITY OF DOVER WATER DEPARTMENT STANDARDS AND SPECIFICATIONS.
5. AT CROSSINGS WHERE LESS THAN 10 FEET OF SEPARATION EXISTS BETWEEN SEWER AND WATER, WATER/SEWER FITTINGS/JOINTS SHALL BE LOCTED AS FAR APART AS POSSIBLE FROM THE CROSSING.

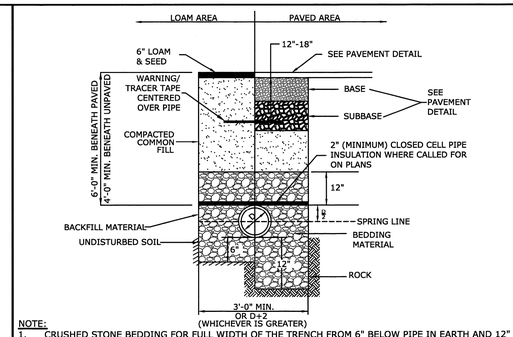
3 / - WATER AND SEWER CROSSING
NOT TO SCALE



NOTE:
1. SAND BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO 12" ABOVE TOP OF PIPE.

2. ALL UTILITIES SHALL BE INSTALLED PER THE INDIVIDUAL UTILITY COMPANY STANDARDS. COORDINATE ALL INSTALLATIONS WITH INDIVIDUAL UTILITY COMPANIES AND THE CITY OF DOVER.

4 / - WATER AND GAS TRENCH
NOT TO SCALE

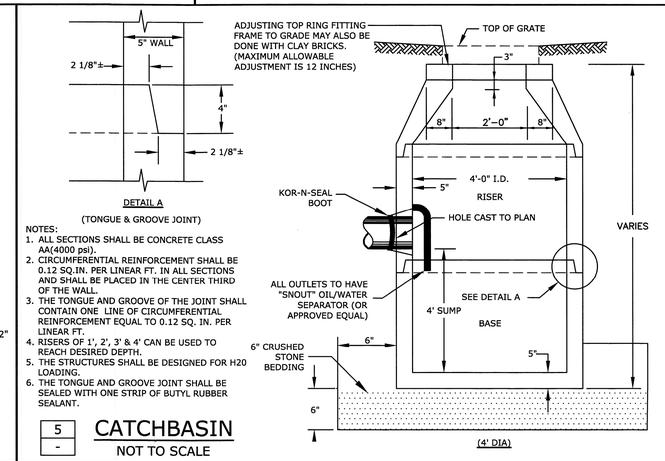


NOTE:
1. CRUSHED STONE BEDDING FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO SPRING LINE.

2. CRUSHED STONE BACKFILL FOR FULL WIDTH OF THE TRENCH FROM SPRING LINE UP TO 12" ABOVE TOP OF PIPE.

3. ALL UTILITIES SHALL BE INSTALLED PER THE INDIVIDUAL UTILITY COMPANY STANDARDS. COORDINATE ALL INSTALLATIONS WITH INDIVIDUAL UTILITY COMPANIES AND THE CITY OF DOVER.

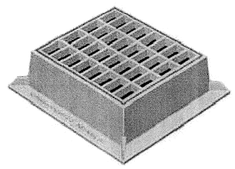
10 / - SEWER TRENCH
NOT TO SCALE



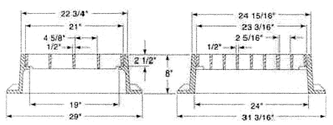
(TONGUE & GROOVE JOINT)

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.

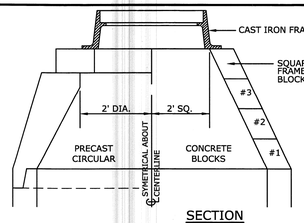
5 / - CATCHBASIN
NOT TO SCALE



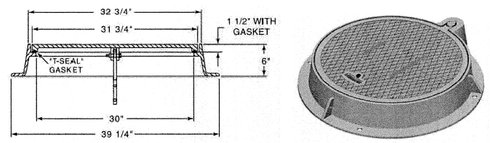
CATCHBASIN FRAME & GRATE
NOT TO SCALE



FRAME AND GRATE SHALL BE NEENAH FOUNDRIES MODEL NUMBER R-3570 OR APROVED EQUAL.

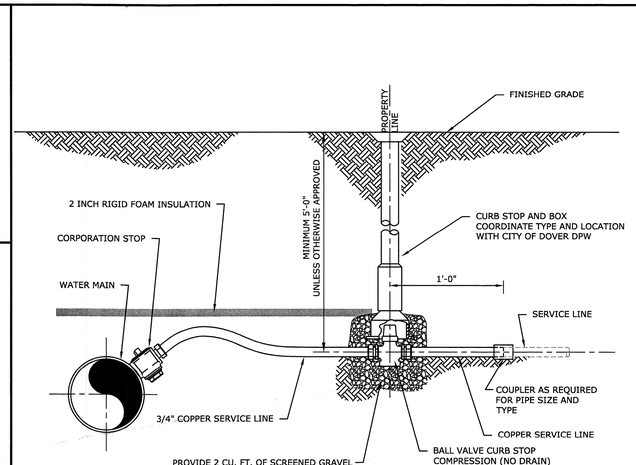


SECTION
GRATE & FRAME DETAIL



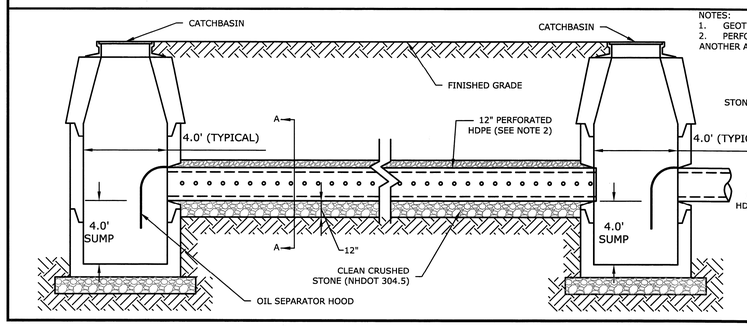
NOTES:
1. FRAME AND COVER SHALL BE NEENAH FOUNDRIES MODEL NUMBER R-1743-LM OR APROVED EQUAL.
2. MANHOLE COVER SHALL HAVE WORD "DRAIN" OR "SEWER" CAST INTO TOP OF SURFACE.

MANHOLE FRAME AND COVER
NOT TO SCALE

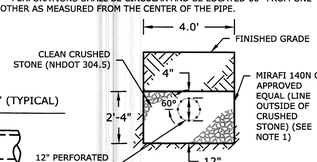


NOTE: ALL WATER SERVICE CONNECTIONS SHALL CONFORM TO CITY OF DOVER STANDARDS.

8 / - WATER SERVICE CONNECTION
NOT TO SCALE

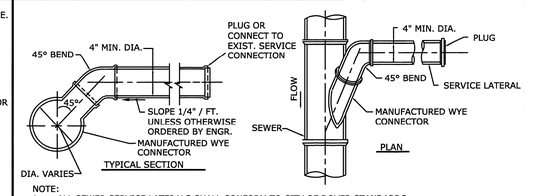


NOTES:
1. GEOTEXTILE FABRIC SHALL OVERLAP BY AT LEAST 2'-0" ABOVE THE PIPE.
2. PERFORATIONS SHALL BE CIRCULAR AND BE LOCATED 60° FROM ONE ANOTHER AS MEASURED FROM THE CENTER OF THE PIPE.



SECTION A–A

6 / - INFILTRATION BASIN DETAIL
NOT TO SCALE



NOTE:
1. ALL SEWER SERVICE LATERALS SHALL CONFORM TO CITY OF DOVER STANDARDS.
2. HOUSE SERVICE LATERAL SHALL HAVE A MINIMUM SLOPE OF ¼" PER FOOT.
3. HOUSE SERVICE LATERAL SHALL HAVE A MINIMUM 6 INCHES OF ¾" CRUSHED STONE BEDDING AND 6 INCH BACKFILL BELOW AND ABOVE THE PIPE RESPECTIVELY.
4. HOUSE SERVICE LATERAL SHALL BE PVC SDR 35.

7 / - STANDARD SERVICE LATERAL CONNECTION
NOT TO SCALE

Tighe&Bond
www.tighebond.com

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

STATE OF NEW HAMPSHIRE — KENNETH A. MAVROGEORGE No. 13326 — LICENSED PROFESSIONAL ENGINEER

Richardson Drive Redevelopment Project

City of Dover, NH

Richardson Drive & Old Stage Road, Dover, NH

MARK	DATE	DESCRIPTION

PROJECT NO:	D0249
FILE:	1302491_DETAILS.dwg
DATE:	11/02/2016
DRAWN BY:	NSC/CML
CHECKED:	KAM/WJD
APPROVED BY:	GMM

DETAILS SHEET

SCALE: AS SHOWN

R-44

FILENAME: \\SRV\PROJECTS\D\D0249 DOVER, CITY OF - DOVER, NH - ENGINEERING SERVICES\DWG-CAD\DESIGN\1302491_DETAILS.DWG LAYOUT:R-44
SAVE DATE: 11/1/2016 5:17 PM BY:KAM
PLOT DATE: 11/2/2016 5:01 PM BY: Kenneth A. Mavrogeorge