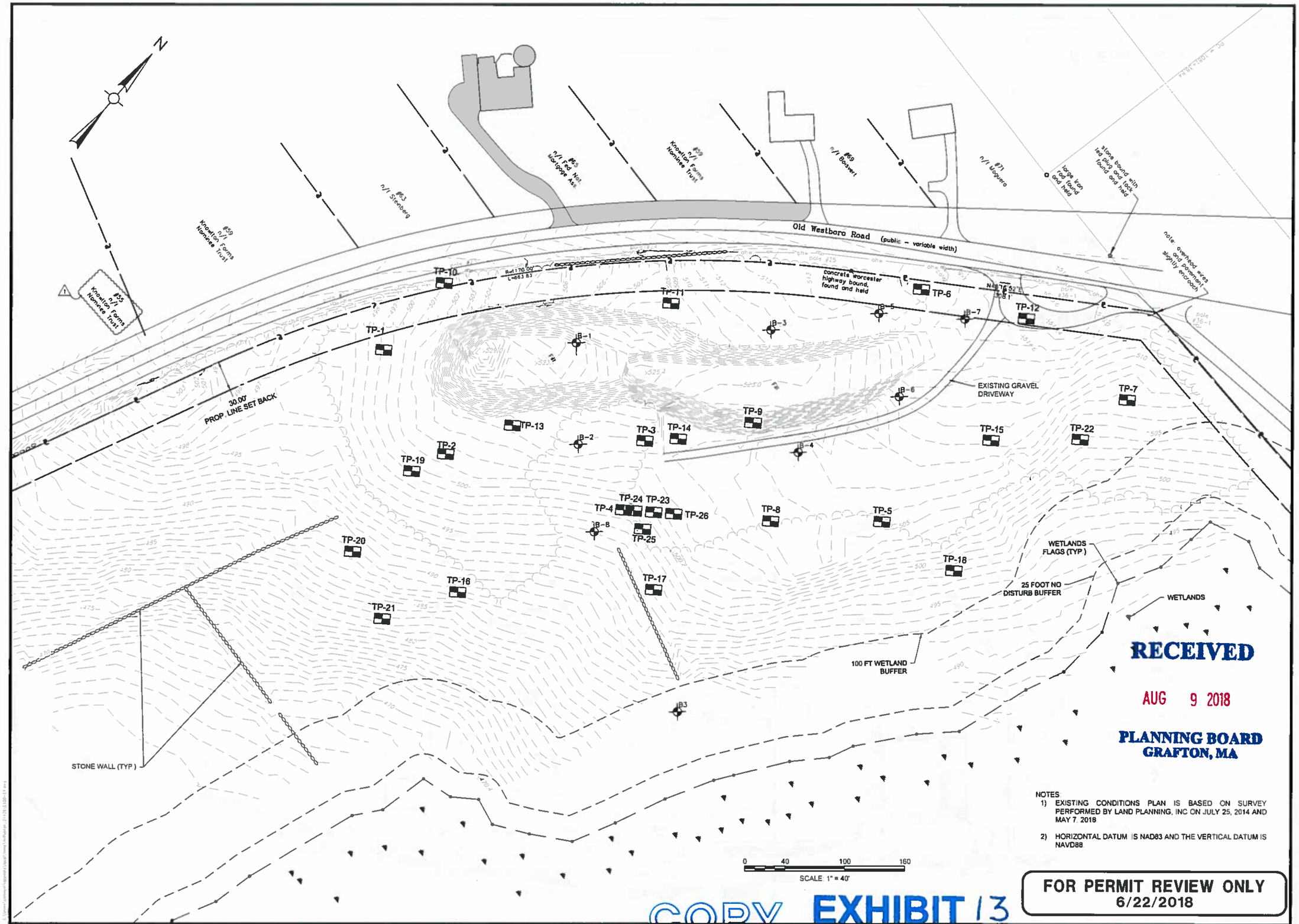

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NOTES:
1) EXISTING CONDITIONS PLAN IS BASED ON SURVEY PERFORMED BY LAND PLANNING, INC ON JULY 25, 2014 AND MAY 7, 2018.
2) HORIZONTAL DATUM IS NAD83 AND THE VERTICAL DATUM IS NAVD88.

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COPY EXHIBIT 13

Project:
TOWN OF GRAFTON
DEPARTMENT OF PUBLIC WORKS
48 OLD WESTBORO ROAD
GRAFTON, MA 01519
OWNER: TOWN OF GRAFTON
ASSESSOR'S MAP 48
LOT 12

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Five Centennial Drive
Peabody, MA 01960
978 532 1900 800 SAMPSON
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Consultants:

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Scale: AS NOTED
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Reviewed By: JIP
Approved By: JRF
W&S Project No: 2180199
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Drawing Title:
EXISTING CONDITIONS PLAN

Sheet Number:
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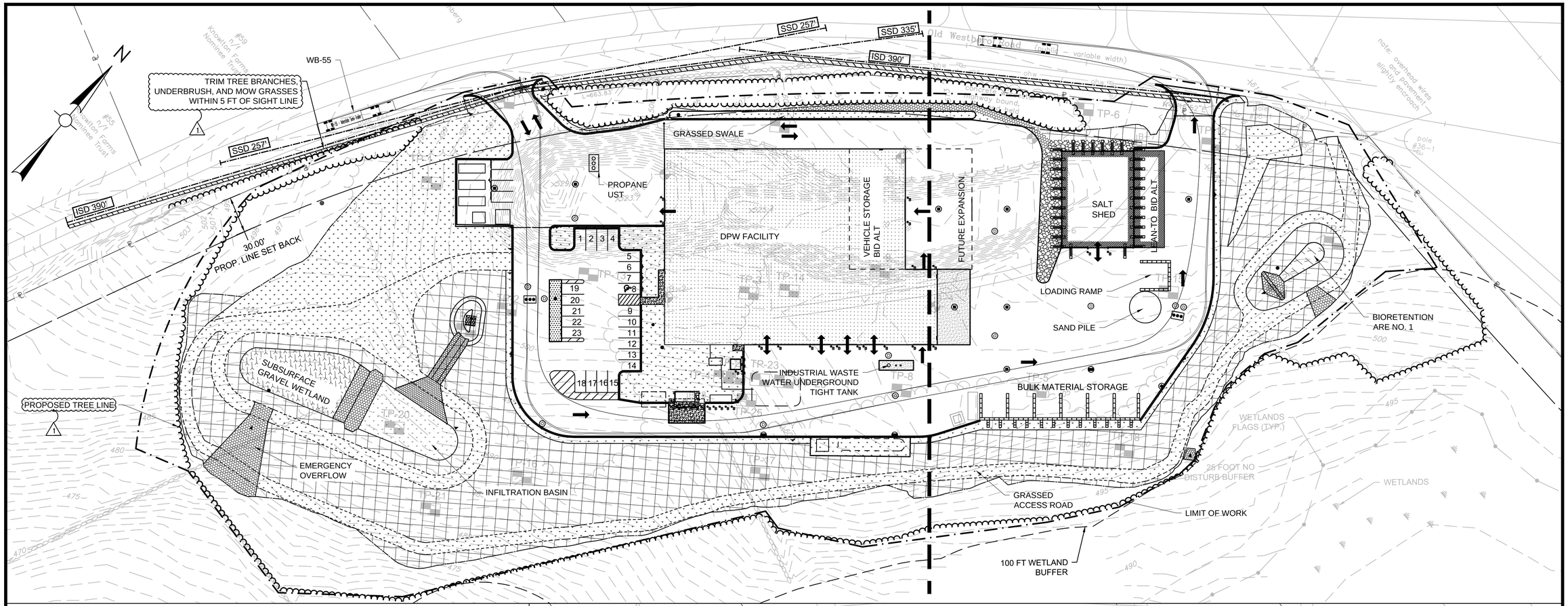
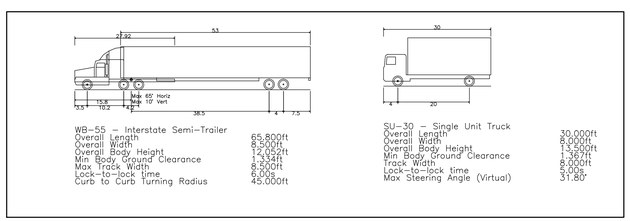
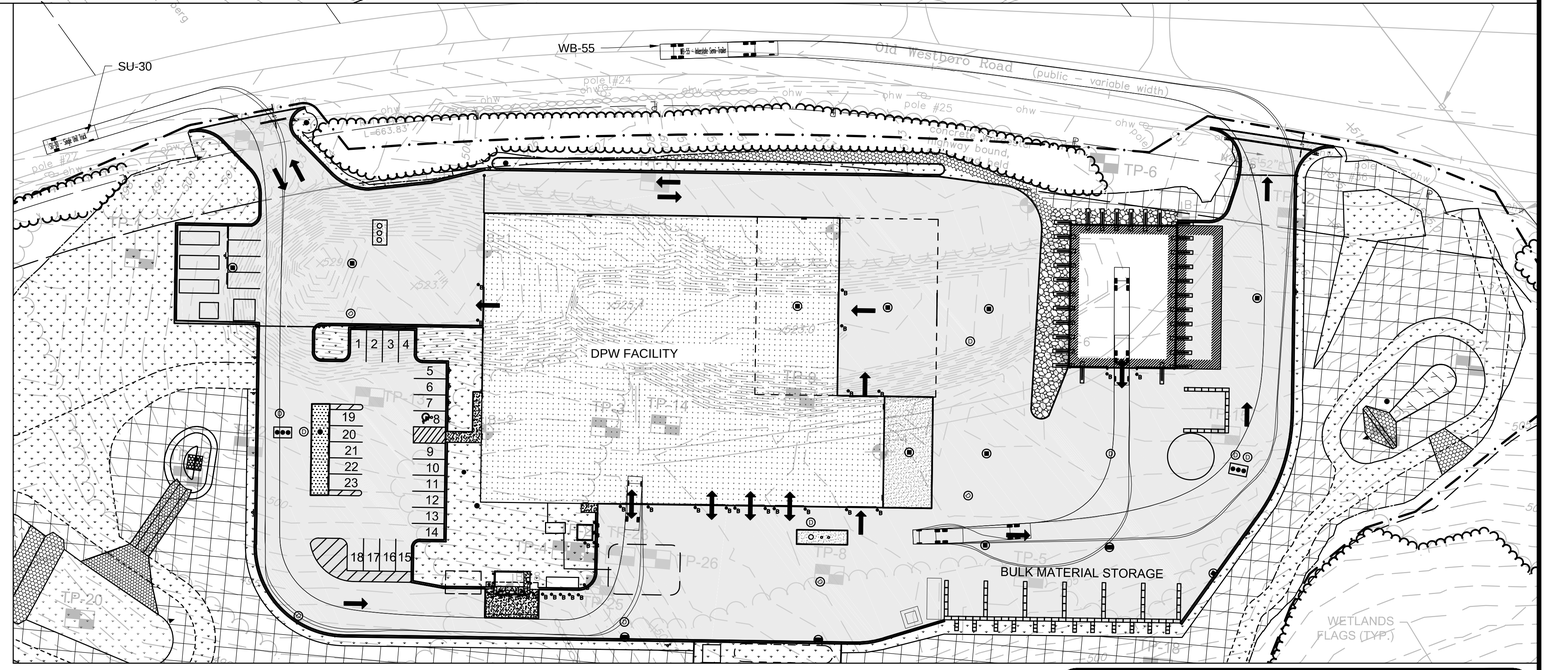




DESIGN SPEED FORWARD = 5 MPH
DESIGN SPEED REVERSE = 2.5 MPH

NOTES:

1. EXISTING SITE CONDITIONS SHOWN ARE FROM GROUND SURVEYS CONDUCTED BY LAND PLANNING INC. ON JULY 25, 2014 AND MAY 7, 2018.
2. HORIZONTAL DATUM IS NAD83, THE VERTICAL DATUM IS NAVD88.
3. PROVIDE 5" HMA PAVING BELOW SALT SHED AND TRAFFIC AREA AS SHOWN ON C3.01 AND C3.02.
4. PROVIDE NEW HOT MIX ASPHALT PAVEMENT BETWEEN ALL PROPOSED CURB LINES & BUILDINGS.
5. G.C. IS REQUIRED TO COORDINATE THE LOCATION OF THE SALT SHED LOADING RAMP WITH OWNER PRIOR TO CONSTRUCTION OF RAMP.
6. CONTRACTOR SHALL PROVIDE TEMPORARY CONSTRUCTION SIGNAGE AS REQUIRED FOR CONTROL OF TRAFFIC AND PEDESTRIANS.
7. ALL BACKFILL MATERIAL BELOW PROPOSED BUILDINGS SHALL CONSIST OF STRUCTURAL AGGREGATE BACKFILL OR PROCESSED GRAVEL PER SPECIFICATION SECTION 31 23 00-EARTHWORK.
8. ALL WORK SHALL BE OUTSIDE OF THE 100 FT WETLAND BUFFER.



0 40 100 160
SCALE: 1" = 40'

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Project:
TOWN OF GRAFTON

DEPARTMENT OF PUBLIC WORKS

48 OLD WESTBORO ROAD
GRAFTON, MA 01519

OWNER: TOWN OF GRAFTON
ASSESSORS MAP: 48
LOT: 12

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Drawing Title:
LAYOUT AND MATERIALS PLAN / TURNING TEMPLATES

Sheet Number:
C3.00

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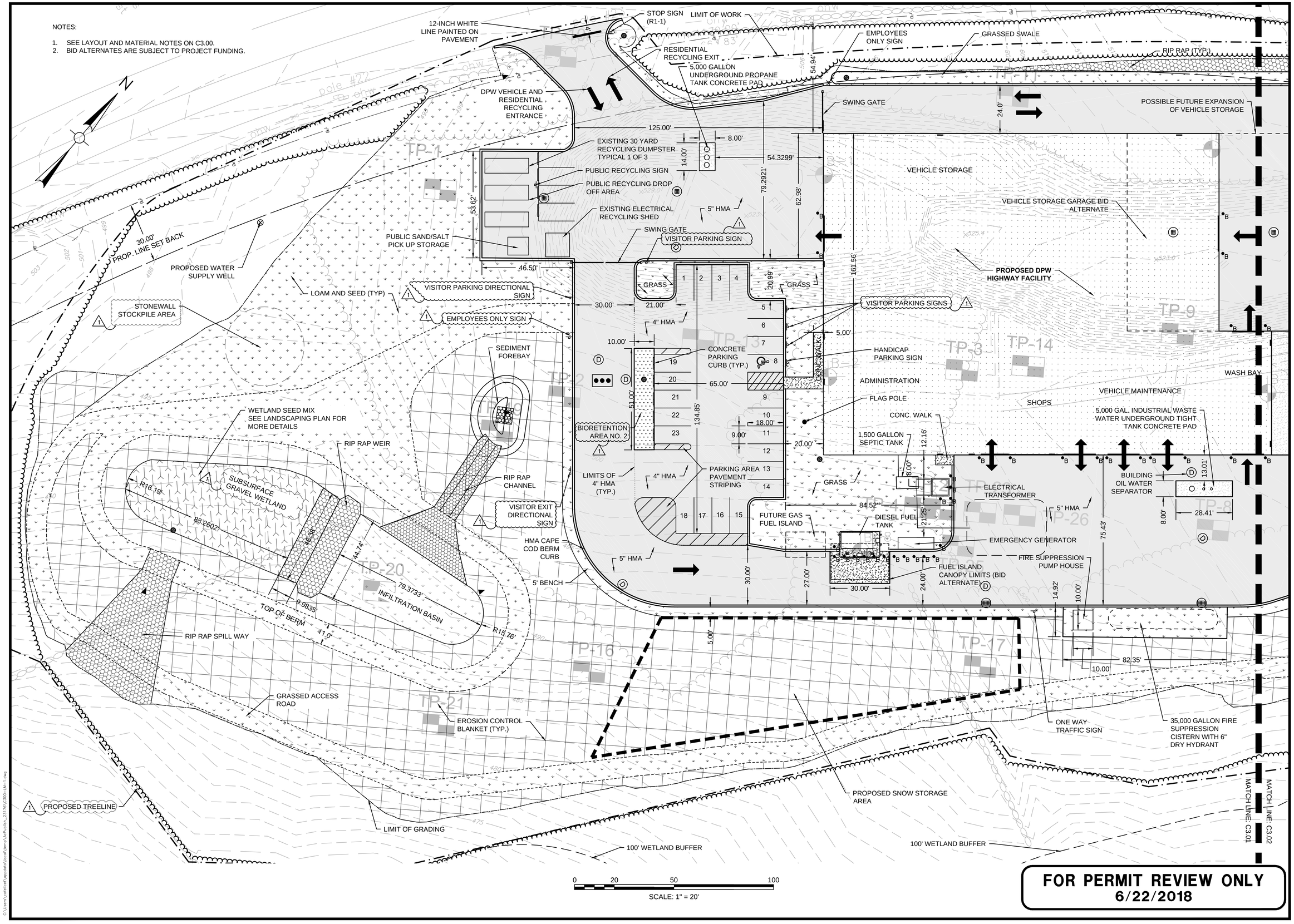
NOTES:

1. SEE LAYOUT AND MATERIAL NOTES ON C3.00.
2. BID ALTERNATES ARE SUBJECT TO PROJECT FUNDING.



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Project:
TOWN OF GRAFTON

DEPARTMENT OF PUBLIC WORKS

48 OLD WESTBORO ROAD
GRAFTON, MA 01519

OWNER: TOWN OF GRAFTON
ASSESSORS MAP: 48
LOT: 12

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Drawing Title:
LAYOUT AND MATERIALS (SOUTH)

Sheet Number:
C3.01

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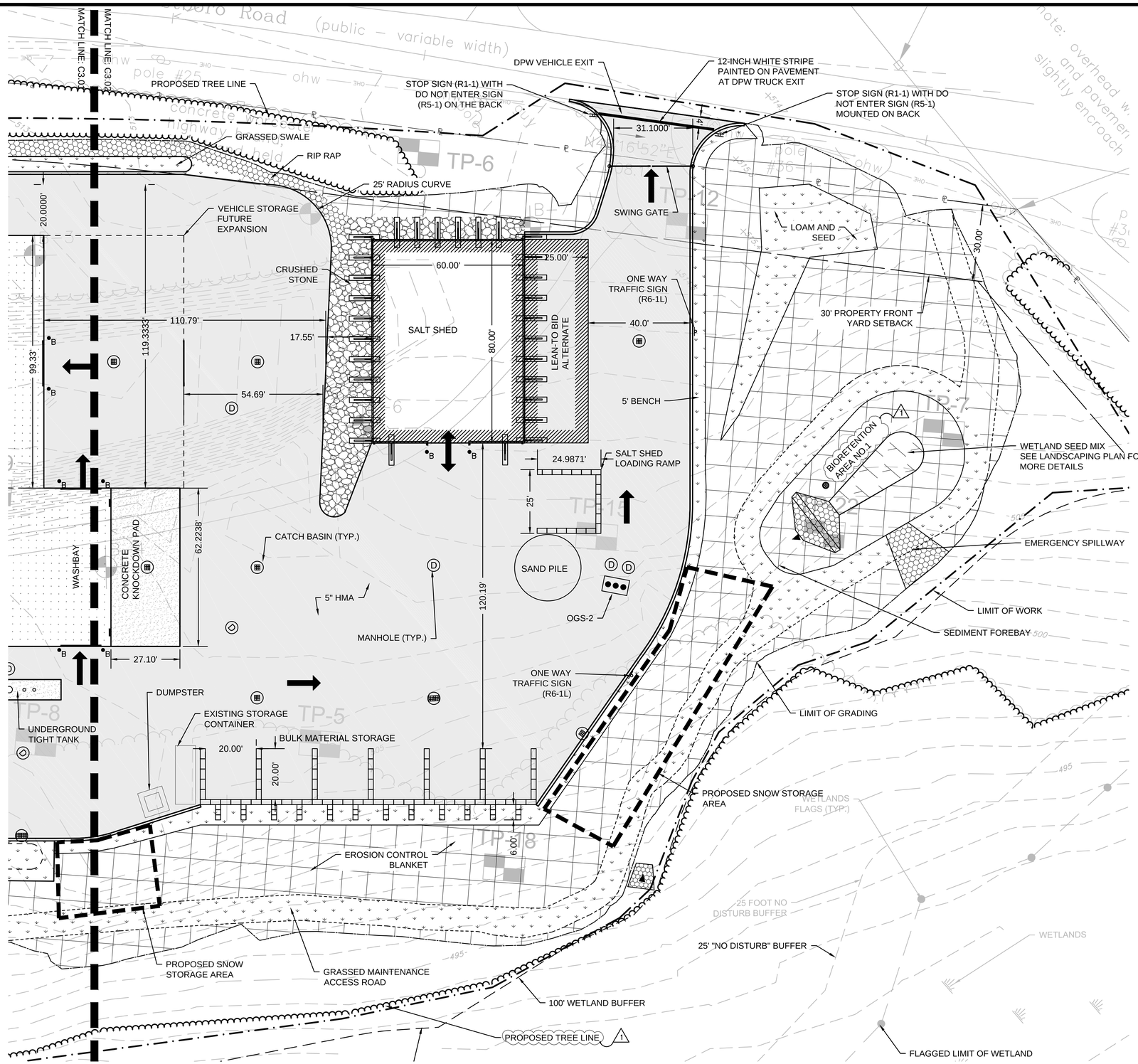

NOTES:

1. FOR LAYOUT AND MATERIAL NOTES, SEE C3.00.
2. BID ALTERNATES ARE SUBJECT TO PROJECT FUNDING.

0 20 50 100

SCALE: 1" = 20'

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Project:
TOWN OF GRAFTON

DEPARTMENT OF PUBLIC WORKS

48 OLD WESTBORO ROAD
GRAFTON, MA 01519

OWNER: TOWN OF GRAFTON
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Drawing Title:
LAYOUT AND MATERIALS (NORTH)

Sheet Number:
C3.02

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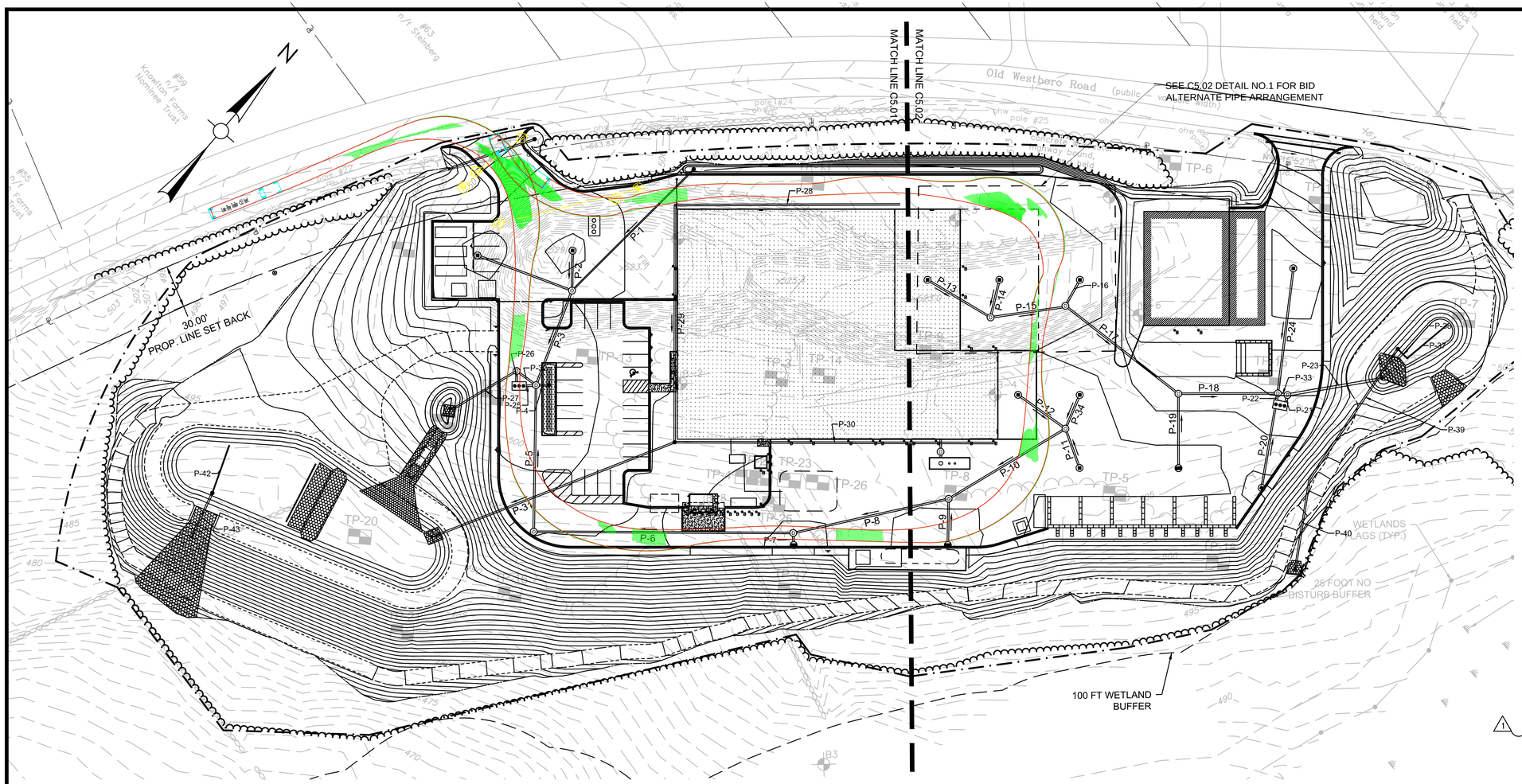
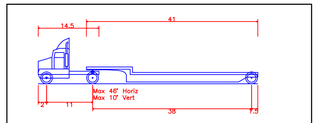


OVER.33' GROUND CLEARANCE

- .16' TO .33' CLEARANCE
- 0 TO .16' CLEARANCE
- 0 TO .16' GROUND PENETRATION
- .16' TO .33' GROUND PENETRATION
- OVER .33' GROUND PENETRATION



Low-Boy Trailer <53 feet	
Overall Length	52.499ft
Overall Width	8.000ft
Overall Body Height	10.925ft
Min Body Ground Clearance	0.417ft
Track Width	8.000ft
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	39.900ft

0 40 100 160

SCALE: 1" = 40'

NOTES:

1. ALL EXISTING EARTHWORK MATERIALS MAY BE INCORPORATED IN THE WORK IF IN ACCORDANCE WITH THE SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE ADDITIONAL BACKFILL MATERIALS AS NEEDED AND AS SPECIFIED IN SECTION 31 23 00 (EARTHWORK). NO ON-SITE BACKFILL MATERIAL MAY BE USED AS PIPE TRENCH BACKFILL OR BELOW THE BUILDING SLAB AND FOUNDATION, UNLESS IT IS SHOWN TO MEET THE REQUIREMENTS OF THE SPECIFICATIONS.
2. UNLESS OTHERWISE NOTED ALL DRAIN PIPES SHALL BE 12" HIGH DENSITY POLYETHYLENE (HDPE).
3. UNLESS OTHERWISE NOTED, ALL DRAIN MANHOLES SHALL BE 4' DIAMETER.
4. ALL RIM ELEVATIONS SHALL BE FLUSH WITH FINISH GRADE.
5. DUMPSTER PAD SHALL SLOPE AT A MINIMUM 2% INTO THE PAVED AREA.
6. ALL CATCH BASINS LOCATED ALONG THE EDGE OF PAVEMENT SHALL BE SET FLUSH AGAINST THE HMA BERM.
7. EROSION CONTROL FABRIC "A" SHALL BE USED FOR ALL SLOPES 3:1 OR STEEPER.
8. PROPOSED UTILITIES ARE SHOWN ON THIS SHEET IN GRAY FOR ILLUSTRATION PURPOSES. SEE SHEET C5.01 FOR PROPOSED UTILITIES.
9. FOR THE ROOF DRAIN LINES RUNNING ADJACENT TO THE DPW FACILITY BUILDING, THE CONTRACTOR SHALL INSTALL CLEAN OUTS AT THE END OF THE PIPE LINE, AT ANY LOCATION WHERE THE PIPE CHANGES DIRECTIONS, AND AT 100 FOOT INTERVALS AS NEEDED. CLEAN OUTS LOCATED IN PAVED AREAS SHALL BE INSTALLED TO PROVIDE H-20 WHEEL LOAD RATING.
10. PIPE LENGTHS PROVIDED IN TABLE IS MEASURING FROM CENTER TO CENTER ON STRUCTURES.

MAIN SITE PIPE TABLE

PIPE	SIZE & TYPE	LENGTH	SLOPE	START INV.	END INV.
P-1	8" HDPE	121	0.004	501.000	500.500
P-2	12" HDPE	28	0.024	501.183	500.500
P-3	12" HDPE	71	0.008	500.250	499.700
P-4	12" HDPE	9	0.022	500.500	500.300
P-4 (14)	12" HDPE	30	0.000	-0.500	-0.500
P-4 (15)	12" HDPE	12	43.399	500.500	-0.500
P-5	12" HDPE	103	0.005	499.800	499.320
P-6	12" HDPE	182	0.005	500.870	499.980
P-7	12" HDPE	9	0.011	502.000	501.910
P-8	12" HDPE	112	0.005	501.530	500.970
P-9	12" HDPE	33	0.005	501.800	501.636
P-10	12" HDPE	96	0.005	502.700	502.200
P-11	12" HDPE	29	0.005	502.960	502.810
P-12	12" HDPE	41	0.005	503.000	502.796
P-13	12" HDPE	52	0.005	503.200	502.940
P-14	12" HDPE	27	0.006	503.150	503.000
P-14 (ALT)	12" HDPE	45	0.010	503.150	502.680
P-15	12" HDPE	52	0.005	502.840	502.580
P-16	12" HDPE	21	0.005	502.690	502.580
P-17	12" HDPE	101	0.005	502.480	501.980
P-18	12" HDPE	70	0.005	501.880	501.530

MAIN SITE PIPE TABLE

PIPE	SIZE & TYPE	LENGTH	SLOPE	START INV.	END INV.
P-19	12" HDPE	52	0.016	502.800	501.980
P-20	12" HDPE	59	0.025	503.160	501.700
P-21	18" HDPE	9	0.003	501.400	501.375
P-22	18" HDPE	8	0.004	501.430	501.400
P-23	18" HDPE	65	0.005	501.330	501.000
P-24	12" HDPE	89	0.028	504.500	502.000
P-25	12" HDPE	12	0.008	499.000	498.900
P-26	12" HDPE	11	0.009	498.800	498.700
P-27	12" HDPE	52	0.012	498.600	498.000
P-28	12" HDPE	158	0.011	504.000	502.250
P-29	12" HDPE	167	0.006	502.000	501.000
P-30	12" HDPE	225	0.013	504.000	501.000
P-31	12" HDPE	181	0.047	500.000	491.500
P-32	12" HDPE	17	0.040	500.320	499.650
P-33	18" HDPE	7	0.089	503.610	503.000
P-34	12" HDPE	26	0.005	502.900	502.770
P-35 (ALT)	12" HDPE	85	0.012	504.000	503.000
P-36 (ALT)	12" HDPE	70	0.006	503.000	502.580
P-44	12" HDPE	61	0.011	500.650	500.000
P-45	12" HDPE	71	0.009	501.150	500.500

NORTH POND PIPE TABLE

PIPE	SIZE & TYPE	LENGTH	SLOPE	START INV.	END INV.
P-37	6" HDPE	37	0.000	497.580	497.580
P-38	6" HDPE	9	0.000	497.580	497.580
P-39	12" HDPE	111	0.005	497.580	497.030
P-40	12" HDPE	62	0.005	497.030	496.720

SOUTH POND PIPE TABLE

PIPE	SIZE & TYPE	LENGTH	SLOPE	START INV.	END INV.
P-41	6" HDPE	45	0.000	488.580	488.580
P-42	6" HDPE	36	0.000	488.580	488.580
P-43	12" HDPE	32	0.018	488.580	488.000

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Project:
TOWN OF GRAFTON

DEPARTMENT OF PUBLIC WORKS

48 OLD WESTBORO ROAD
GRAFTON, MA 01519

OWNER: TOWN OF GRAFTON
ASSESSORS MAP: 48
LOT: 12

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GRADING AND DRAINAGE PLAN

Sheet Number:
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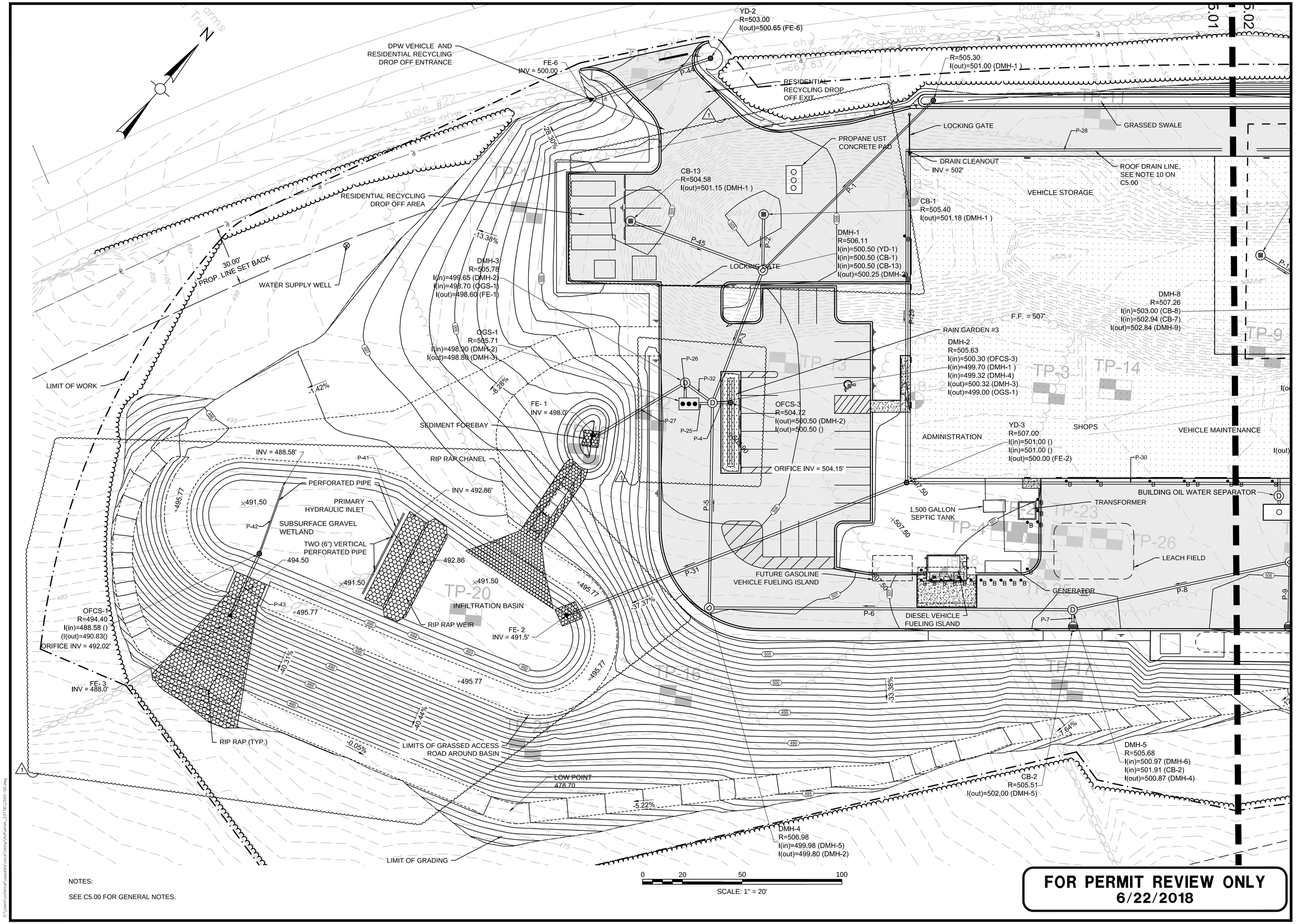

NOTES:

SEE C5.00 FOR GENERAL NOTES.

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Project:

TOWN OF GRAFTON

DEPARTMENT OF PUBLIC WORKS

48 OLD WESTBORO ROAD
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OWNER: TOWN OF GRAFTON
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GRADING AND DRAINAGE PLAN (SOUTH)

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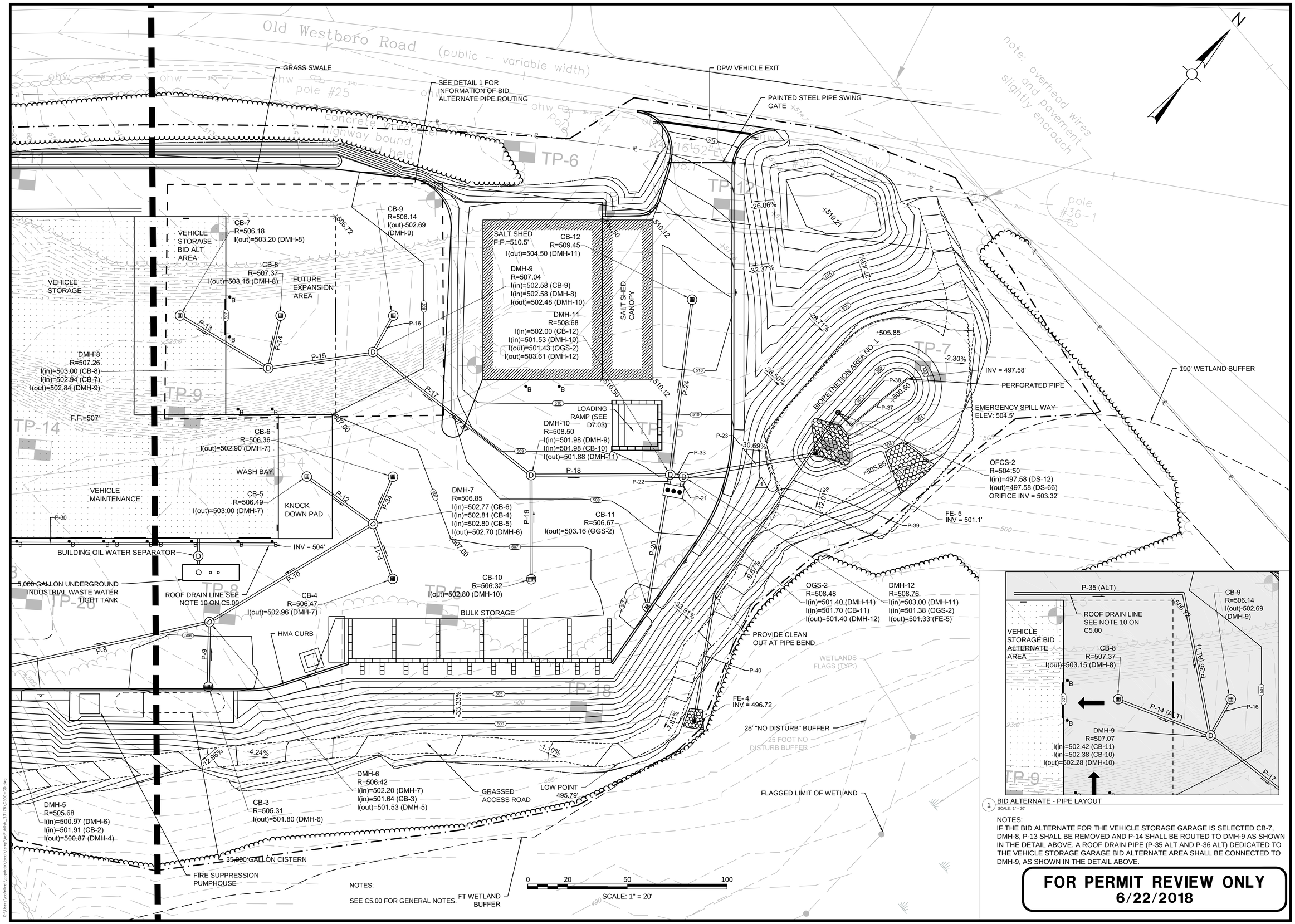

NOTES:

SEE C5.00 FOR GENERAL NOTES.

1 BID ALTERNATE - PIPE LAYOUT
SCALE: 1" = 20'

NOTES:
IF THE BID ALTERNATE FOR THE VEHICLE STORAGE GARAGE IS SELECTED CB-7, DMH-8, P-13 SHALL BE REMOVED AND P-14 SHALL BE ROUTED TO DMH-9 AS SHOWN IN THE DETAIL ABOVE. A ROOF DRAIN PIPE (P-35 ALT AND P-36 ALT) DEDICATED TO THE VEHICLE STORAGE GARAGE BID ALTERNATE AREA SHALL BE CONNECTED TO DMH-9, AS SHOWN IN THE DETAIL ABOVE.

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TOWN OF GRAFTON

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GRADING AND DRAINAGE PLAN (NORTH)

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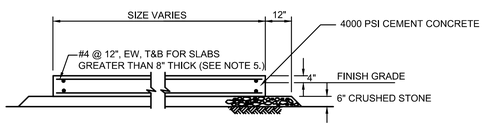


GENERATOR PAD: 19'-0"L x 8'-0"W x 12"H
TRANSFORMER PAD: 8'-0"Lx8'-6"Wx12"H (SEE NOTE 5)

NOTES:

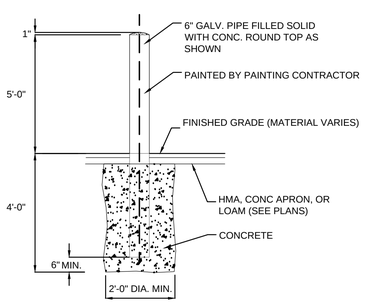
1. GENERAL CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF ALL CONCRETE PADS.
2. SEE LAYOUT AND GRADING PLANS FOR FINISH GRADE
3. COORDINATE WITH ALL CONTRACTORS AND ADJUST PAD LOCATIONS AND DIMENSIONS IN FIELD
4. SLABS 8" OR LESS IN THICKNESS SHALL HAVE ONE LAYER OF REINFORCING PLACED IN THE TOP ONE THIRD OF THE SLAB.
5. CONTRACTOR TO PROVIDE TRANSFORMER FOUNDATION IN CONFORMANCE WITH NATIONAL GRID SPECIFICATIONS

1 CONCRETE PAD
SCALE: N.T.S.

IDENTIFI-CATION NUMBER	TEXT	PANEL SIZE					NUMERALS & LETTERS				COLOR COMB.	NUMBER OF SIGNS REQUIRED	TOTAL AREA SQ. FT.	POST SIZE AND NUMBER REQUIRED
		WIDTH	HEIGHT	CORNER RADII	BORDER WIDTH	MARGIN WIDTH	NUM. IN.	UPPER CASE	LOWER CASE	SERIES				
R1-1	STOP	30"	30"	SEE MUTCD, INCLUDING STANDARD HIGHWAY SIGNS, LATEST EDITION							WHITE ON RED	3	12.50	P5-1 1
R5-1	DO NOT ENTER	36"	36"								WHITE ON RED	2	18.00	P5-1 2
R7-8	RESERVED PARKING	12"	18"								WHITE ON BLUE	1	4.50	P5-1 1
N/A	VISITOR PARKING	12"	18"								BLACK ON WHITE	1	4.50	P5-1 1
R6-1L	ONE WAY	36"	12"								BLACK ON WHITE	3	6.00	P5-1 2
N/A	VISITOR PARKING	12"	18"								BLACK ON WHITE	3	4.50	P5-1 1
N/A	EMPLOYEES ONLY	18"	12"								BLACK ON WHITE	2	4.50	P5-1 2
N/A	PUBLIC RECYCLING DROP OFF	18"	12"								BLACK ON WHITE	1	4.50	P5-1 1
N/A	VISITOR EXIT	12"	18"								BLACK ON WHITE	1	4.50	P5-1 1

1

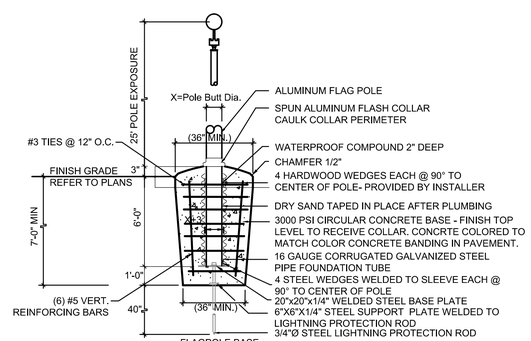
6 TRAFFIC SIGN SUMMARY
SCALE: N.T.S.



NOTES:

1. SEE C3.00 SERIES FOR BOLLARD LOCATIONS.
2. BOLLARD FOUNDATION CONCRETE TO BE 3000 PSI MIN.
3. EXACT LOCATION TO BE DETERMINED IN THE FIELD AND APPROVED BY TOWN BEFORE INSTALLATION.
4. 6" GALVANIZED PIPE PROVIDED BY MISC. METALS CONTRACTOR. INSTALLATION AND CONCRETE BY GENERAL CONTRACTOR.

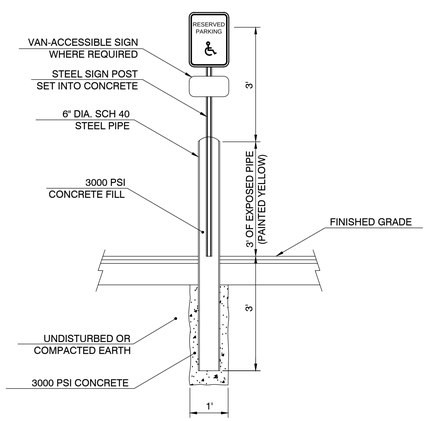
2 STEEL PIPE BOLLARD WITH HDPE SLEEVE
SCALE: N.T.S.



NOTES:

1. FULL EXCAVATION DEPTH EQUALS LENGTH OF FOUNDATION TUBE PLUS. 1'-0".
2. CONFIRM LOCATION OF FLAGPOLE IN FIELD.
3. DETAIL PROVIDED FOR ILLUSTRATION ONLY. CONTRACTOR SHALL SUBMIT ENGINEERED DESIGN TO MEET PROJECT SOIL CONDITIONS.

3 FLAGPOLE DETAIL
SCALE: N.T.S.



NOTE:

1. LOCATE CENTER OF 6" STEEL PIPE 1' FROM EDGE OF PARKING.
2. ALL SIGNS TO BE CENTERED ON PARKING SPACE.

4 ACCESSIBLE SIGN AND POST DETAIL
SCALE: N.T.S.

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Project:
TOWN OF GRAFTON

DEPARTMENT OF PUBLIC WORKS

48 OLD WESTBORO ROAD
GRAFTON, MA 01519

OWNER: TOWN OF GRAFTON
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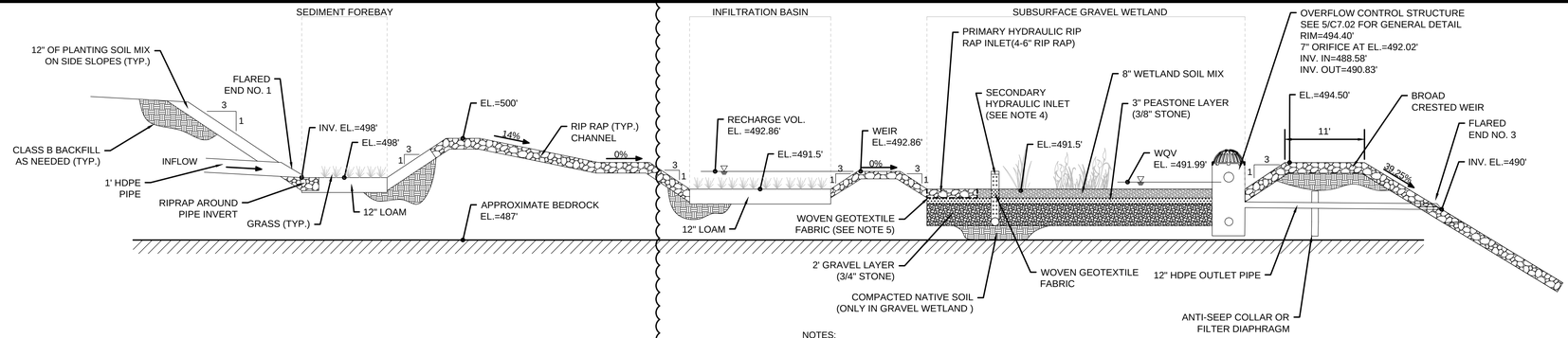
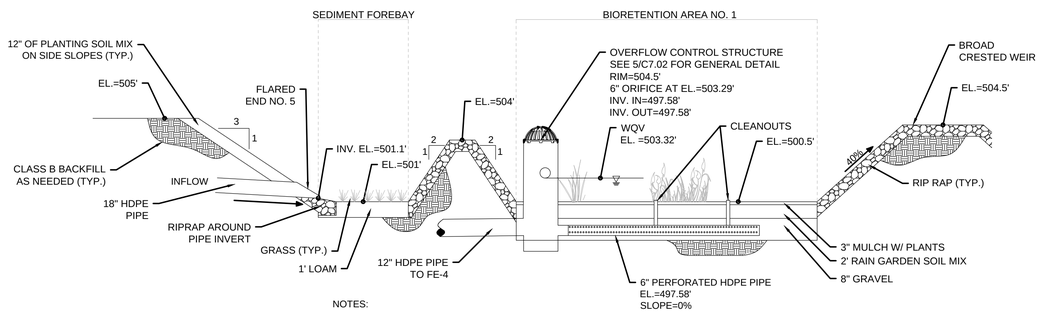


NOTES:

1. CROSS SECTION IS SCHEMATIC ONLY AND IS MEANT TO DISPLAY THE PATH OF TRAVEL FOR WATER.
2. SEE LANDSCAPE PLAN FOR PLANTING REQUIREMENTS.
3. RIM ELEVATION AROUND INFILTRATION BASIN AND RAIN GARDEN IS 495.67'.
4. SECONDARY HYDRAULIC INLET SHALL BE A 6-INCH PERFORATED HDPE PIPE. THE PORTION OF THE PIPE LOCATED IN THE WETLAND SOIL MIX LAYER SHALL BE WRAPPED WITH WOVEN GEOTEXTILE FABRIC TO PREVENT SOIL FROM ENTERING THE PIPE.
5. THE PRIMARY HYDRAULIC INLET SHALL HAVE WOVEN GEOTEXTILE FABRIC PLACED BETWEEN THE RIP RAP AND PEA STONE LAYER.
6. INFILTRATION BASIN AND RAIN GARDEN WATER ELEVATIONS ARE AS FOLLOWS:
   - 100 YR STORM=494.75'
   - 25 YR STORM=494.36'
   - 10 YR STORM=493.79'
   - 2 YR STORM=49.02'

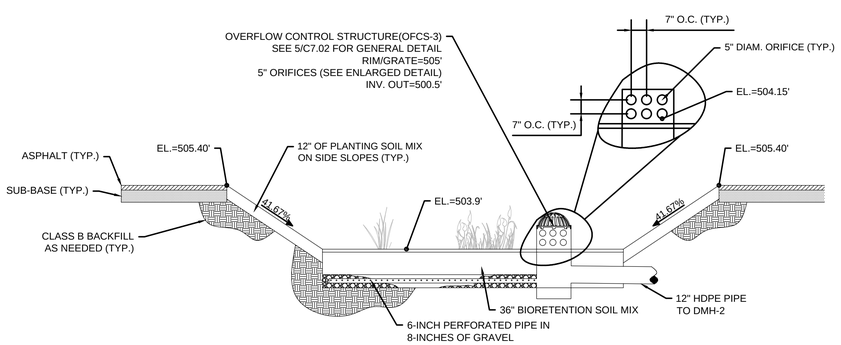
1 INFILTRATION BASIN AND SUBSURFACE GRAVEL WETLAND SCHEMATIC SECTION
SCALE: N.T.S.



NOTES:

1. CROSS SECTION IS SCHEMATIC ONLY AND IS MEANT TO DISPLAY THE PATH OF TRAVEL FOR WATER.
2. SEE LANDSCAPE PLAN FOR PLANTING REQUIREMENTS.
3. RIM ELEVATION AROUND INFILTRATION BASIN AND RAIN GARDEN IS 505'.
4. RAIN GARDEN WATER ELEVATIONS ARE AS FOLLOWS:
   - 100 YR STORM=504.85'
   - 25 YR STORM=504.75'
   - 10 YR STORM=504.64'
   - 2 YR STORM=504.04'

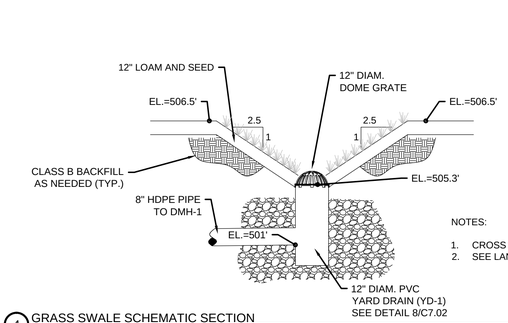
2 BIORETENTION AREA NO. 1 SCHEMATIC SECTION
SCALE: N.T.S.



NOTES:

1. CROSS SECTION IS SCHEMATIC ONLY AND IS MEANT TO.
2. SEE LANDSCAPE PLAN FOR PLANTING REQUIREMENTS.
3. RIM ELEVATION AROUND INFILTRATION BASIN AND RAIN GARDEN IS 505.40'.
4. RAIN GARDEN WATER ELEVATIONS ARE AS FOLLOWS:
   - 100 YR STORM=505.13'
   - 25 YR STORM=505.03'
   - 10 YR STORM=504.91'
   - 2 YR STORM=504.65'

3 BIOTENTION AREA NO. 2 SCHEMATIC SECTION
SCALE: N.T.S.



NOTES:

1. CROSS SECTION IS SCHEMATIC ONLY.
2. SEE LANDSCAPE PLAN FOR PLANTING REQUIREMENTS.

4 GRASS SWALE SCHEMATIC SECTION
SCALE: N.T.S.

FOR PERMIT REVIEW ONLY
6/22/2018

Project:
TOWN OF GRAFTON

DEPARTMENT OF PUBLIC WORKS

48 OLD WESTBORO ROAD
GRAFTON, MA 01519

OWNER: TOWN OF GRAFTON
ASSESSORS MAP: 48
LOT: 12

Weston & Sampson

Weston & Sampson Engineers, Inc.
Five Centennial Drive,
Peabody, MA 01960
978.532.1900 800.SAMPSON
www.westonandsampson.com

Consultants:

Revisions:

No.	Date	Description
1	8/8/18	REVISION

Seal:

Issued For:
PERMITTING

Scale:	AS NOTED
Date:	JUNE 22, 2018
Drawn By:	TJC
Reviewed By:	JIP
Approved By:	JRF
W&S Project No:	2180199
W&S File No:	-

Drawing Title:
DETAILS VI

Sheet Number:
C7.06

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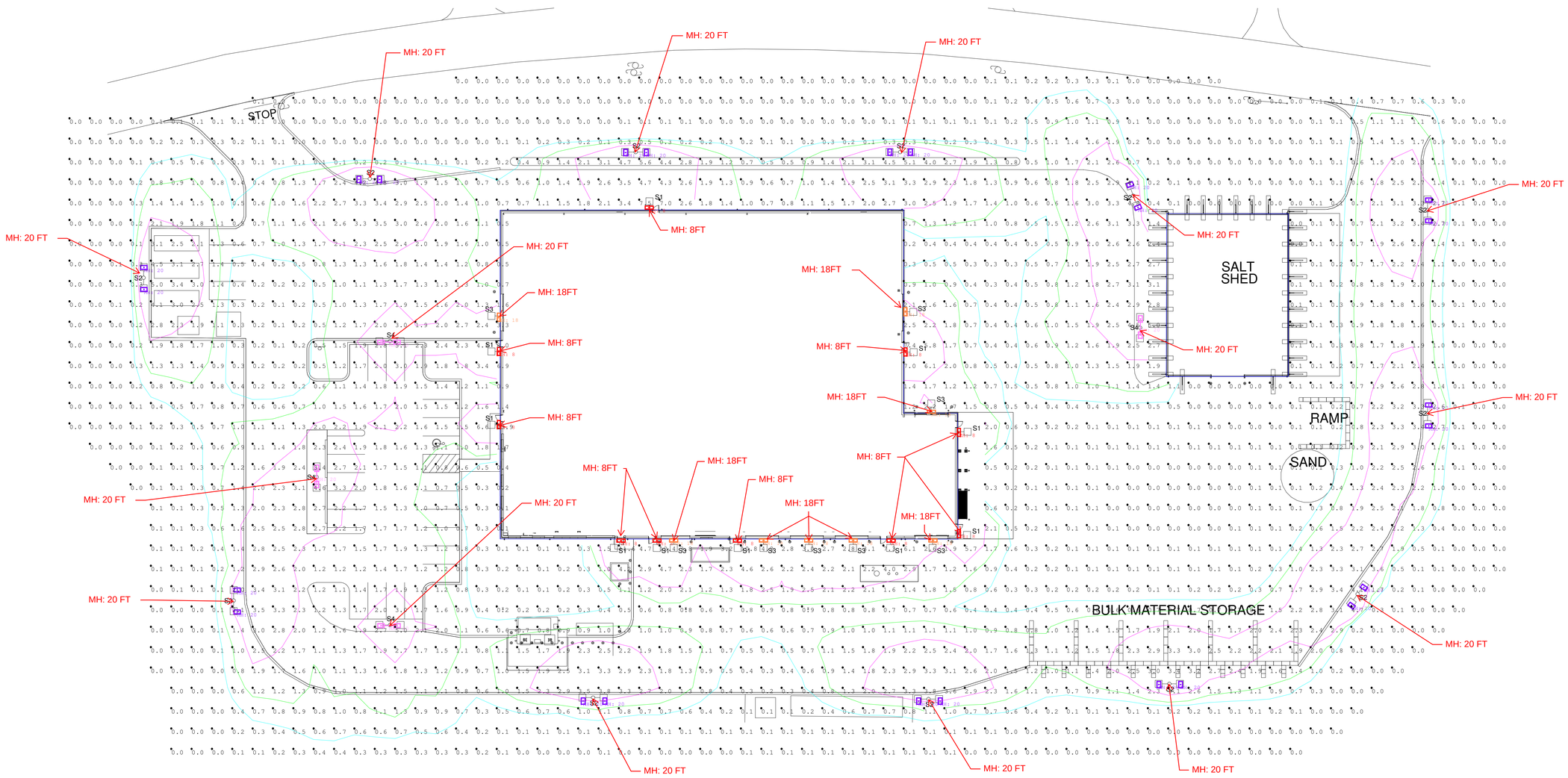

Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Lumens	LLF	Description
	24	S2-HSS	SINGLE	N.A.	0.900	GLEON-AF-01-LED-E1-SL3-HSS
	4	S4	BACK-BACK	N.A.	0.900	GLEON-AF-01-LED-E1-SL3
	8	S3	SINGLE	N.A.	0.900	LDWP-GL-3B-ED
	10	S1	SINGLE	N.A.	0.900	LDWP-GL-3B-ED

Calculation Summary						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
Site_Planar	Fc	0.99	13.9	0.0	N.A.	N.A.

SITE LIGHTING PLAN
E-1.01

REFLEXLIGHTING
7 Tide St., Boston, MA 02210

#	Date	Comments
1	8/8	REVISION NO.1

Revisions

Drawn By: D.EDGE
Checked By:
Date: 5.23.18
Specifier:
Scale: NTS

Grafton DPW
Grafton, MA

N.E. EROSION CONTROL RESTORATION MIX (DRY SITES) FOR BIORETENTION AREA NO.2

30.00' PROP. LINE SET BACK

100 FT WETLAND BUFFER

25 FOOT NO DISTURB BUFFER

WETLANDS FLAGS (TYP.)

WETLANDS

Old Westboro Road

PLANTING LEGEND

SHADE TREE

EVERGREEN TREE

SHRUBS

SEED MIX (SEE PLANT SCHEDULE)

0 40 100 160

SCALE: 1" = 40'

PLANT SCHEDULE

ABRV.	QTY	COMMON NAME	BOTANICAL NAME	SIZE	NOTES
DECIDUOUS TREES					
BN	2	RIVER BIRCH	BETULA NIGRA	2.5' CAL.B&B	
AR	5	RED MAPLE	ACER SACCHARUM 'FALL FIESTA'	2.5' CAL.B&B	
EVERGREEN TREES					
JV	16	RED CEDAR	JUNIPERUS VIRGINIANA	6'-8' HT. B&B	
PS	14	EASTERN WHITE PINE	PINUS STROBIS	6'-8' HT. B&B	
SHRUBS					
TJ	13	EMERALD GREEN ARBORVITAE	THUJA OCCIDENTALIS 'SMARAGD'	5'-6' HT. B&B	
TP	13	TAXUS x MEDIA 'DARK GREEN'	DARK GREEN PYRAMIDAL YEW	5'-6' HT. B&B	

SEED MIX 1

	119,000sf	LOAM & SEED MIX
	9,000sf	N.E. EROSION CONTROL/ RESTORATION MIX (FOR DRY SITES)
	8,000sf	N.E. WETMIX (WETLAND SEED MIX)

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6/22/2018

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Drawing Title:
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Sheet Number:
L1.00

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