

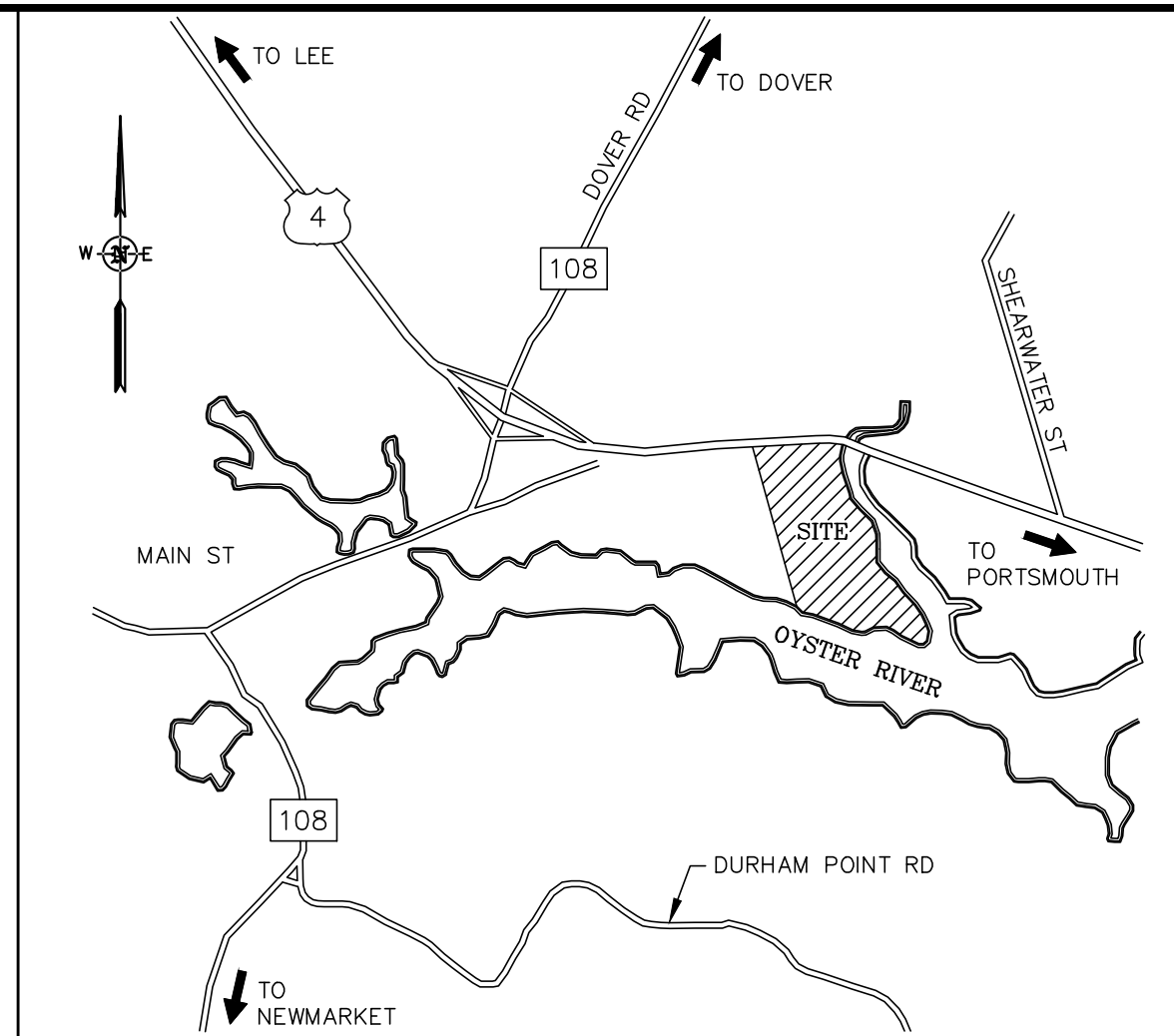
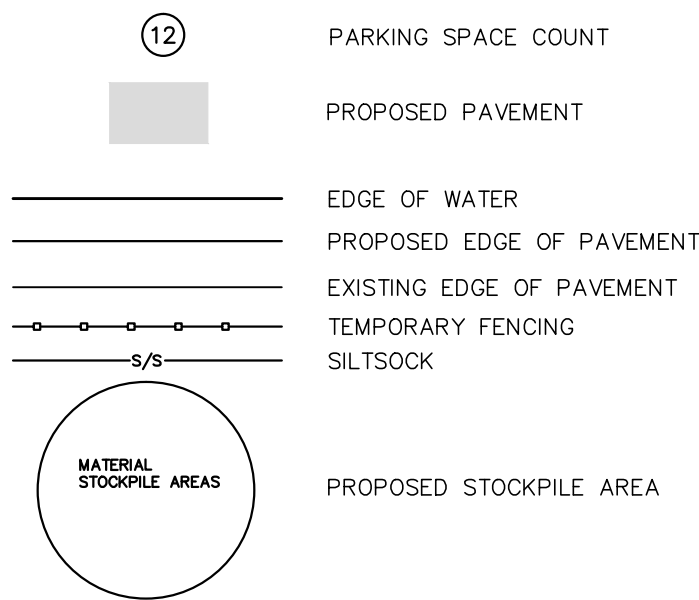
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HARMONY HOMES BY THE BAY ELDERCARE FACILITY

TAX MAP 11, LOTS (27-1) - (27-7)
W. ARTHUR GRANT CIRCLE
DURHAM, NH 03824

SEPTEMBER 2, 2015

LEGEND	
— X — X —	WIRE FENCE
— OHW —	OVERHEAD WIRES
— D —	SEWER LINE
—	DRAIN LINE
—	APPROX. ABUTTERS LOT LINE
—	TREE LINE
—	STONE WALL
—	EDGE OF FRESHWATER WETLAND
—	EDGE OF TIDAL WETLAND
—	APPROX. MEAN HIGH WATER LINE
—	APPROXIMATE FLOOD ZONE LINE
—	100' TIDAL BUFFER
—	125' SHORELAND PROTECTION OVERLAY
—	FLOOD ZONE AE
—	PROPOSED FENCE
—	PROPOSED EVEN CONTOUR
—	PROPOSED ODD CONTOUR
—	PROPOSED WATER LINE
—	PROPOSED UNDERGROUND ELECTRIC
—	PROPOSED SEWER LINE
—	PROPOSED TRANSFORMER
—	PROPOSED BACKUP GENERATOR
—	GRANITE BOUND FOUND
—	DRILL HOLE FOUND
—	IRON PIPE/ROD FOUND
—	5/8" RE-BAR W/ ID CAP TO BE SET
—	FIRE HYDRANT
—	WATER GATE VALVE
—	CATCH BASIN
—	DRAIN MANHOLE
—	DECIDUOUS TREE
—	TYP.
—	EP
—	DYL
—	EDGE OF PAVEMENT
—	DOUBLE YELLOW LINE
—	PROPOSED GRAVEL WETLAND SYSTEM BOUNDARY
—	PROPOSED PATH
—	PROPOSED FUTURE BUILDING 3 LOCATION
—	PROPOSED SINGLE FAMILY/DUPLEX
—	PROPOSED UNDERGROUND PROPANE TANK
—	PROPOSED ACCESSIBLE PARKING
—	PROPOSED CONSERVATION AREA
—	EXISTING PAVEMENT
—	PROPOSED DRAIN LINE
—	PROPOSED RIP RAP APRON
—	PROPOSED HYDRANT
—	PROPOSED DRAIN MANHOLE



Location Map (N.T.S.)



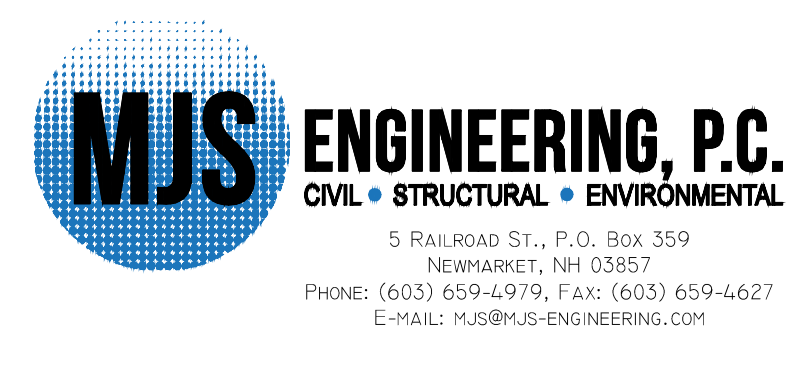
APPLICANT

HARMONY HOMES BY THE BAY, LLC
JOHN RANDOLPH
1 STAGECOACH ROAD
DURHAM, NH 03824

OWNER

GRANT DEVELOPMENT, LLC
3 PENSTOCK WAY
NEWMARKET, NH 03857

CIVIL ENGINEER



SURVEYOR



ARCHITECT

MCHENRY ARCHITECTURE
4 MARKET STREET
PORTSMOUTH, NH 03801

SOIL SCIENTIST

JOSEPH W. NOEL
P.O. BOX 174
S. BERWICK, ME
(207) 384-5587

LANDSCAPE ARCHITECT

TERRA FIRMA LANDSCAPE ARCHITECTURE
163 A COURT STREET
PORTSMOUTH, NH 03801

WETLAND SCIENTIST

GOVE ENVIRONMENTAL SERVICES
8 CONTINENTAL DRIVE, BLDG. 2
EXETER, NH 03833

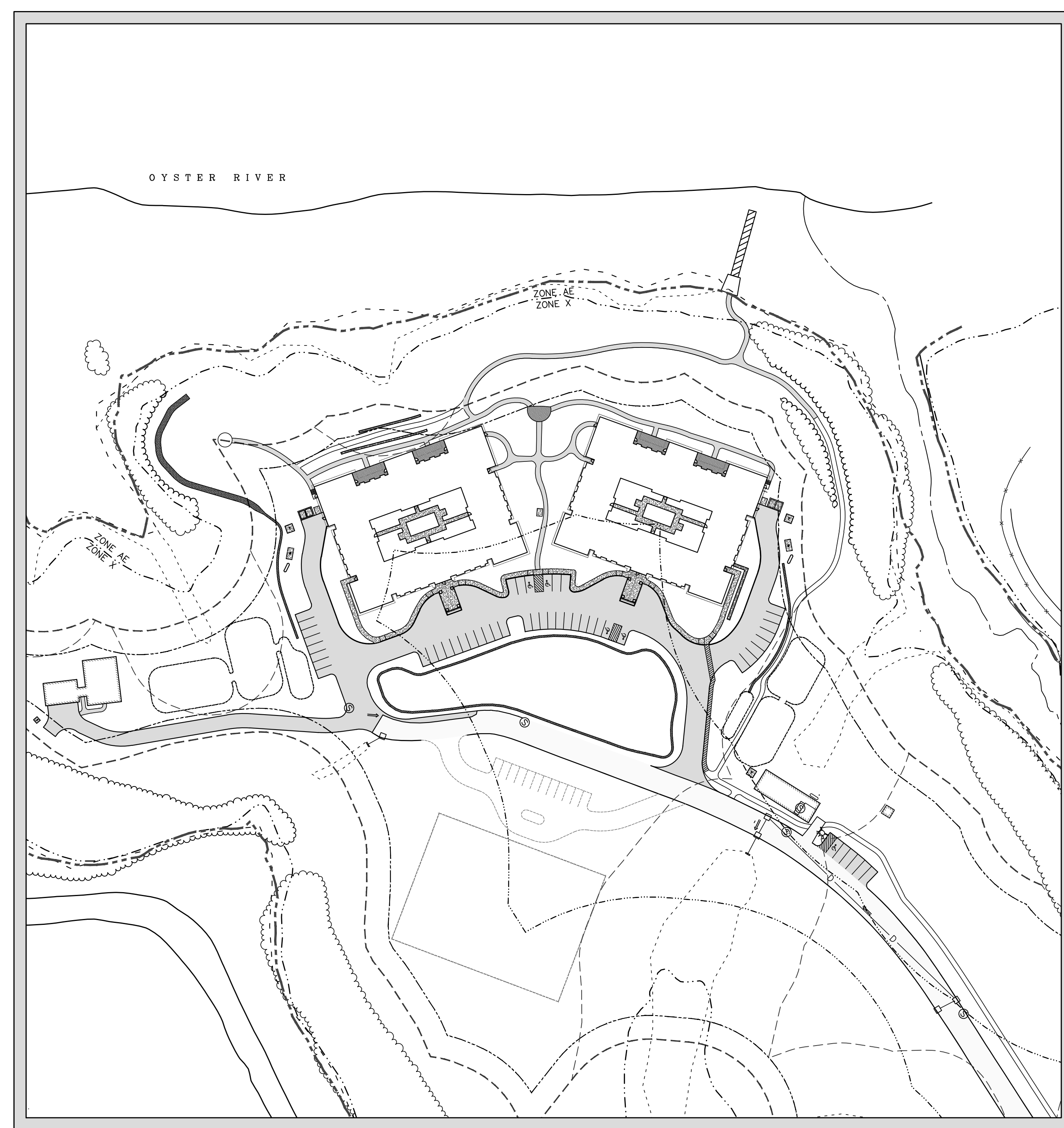


TABLE OF CONTENTS

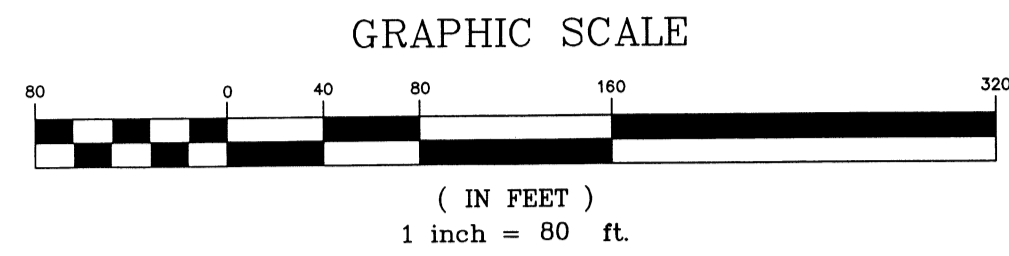
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EXISTING CONDITIONS	EC
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SITE PLAN	C101
SITE GRADING PLANS	C102-C105B
SITE PHASING PLANS	C106-C107
SITE UTILITIES PLAN	C108
SEWER PLAN & PROFILE	C109-C111
SEWER FORCE MAIN REPLACEMENT PLANS	C112-C113
SITE CONSTRUCTION DETAILS	D101-D107
LANDSCAPE PLANS	L101 - L103
LIGHTING PLAN	L1

FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED _____
DATE _____

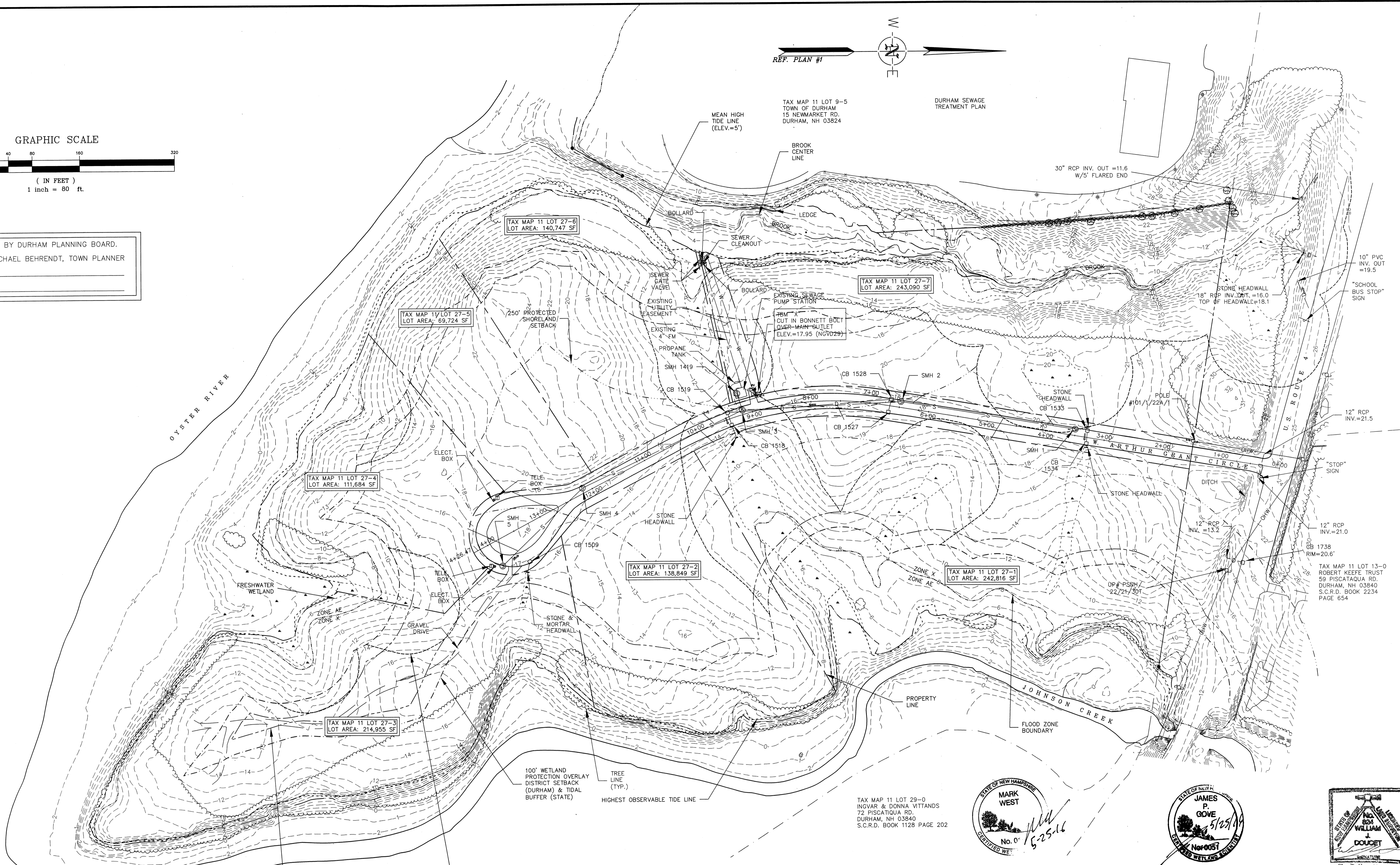
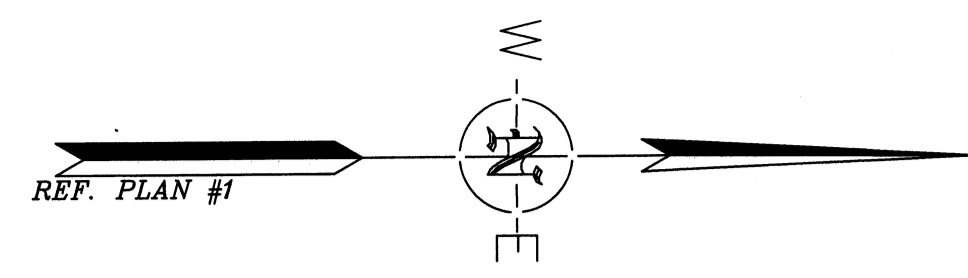
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5.	REVISIONS PER CONDITIONS OF APPROVAL	5/13/16	KD
4.	REVISIONS PER CONDITIONS OF APPROVAL	4/26/16	KD
3.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	KD
2.	REVISED PER TOWN PLANNER COMMENTS 10/16/15	10/28/15	KD
1.	REVISIONS FOR ADDITIONAL SITE DESIGN	9/17/15	KD
0.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	9/2/15	KD

OWNER SIGNATURE BLOCK

PLANNING BOARD APPROVAL BLOCK



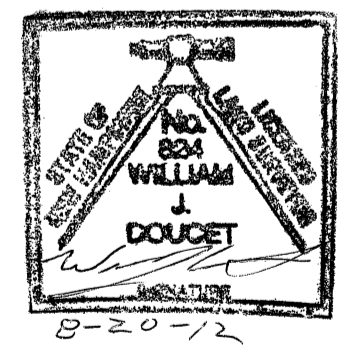
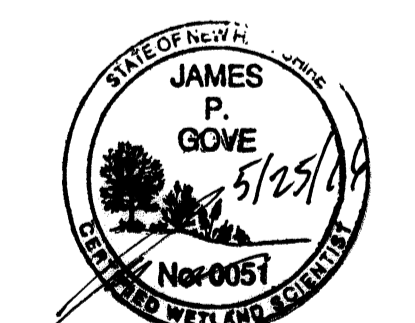
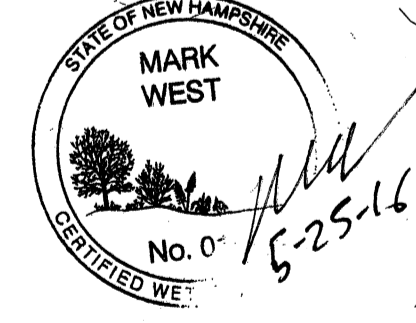
FINAL APPROVAL BY DURHAM PLANNING BOARD.
 CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
 CERTIFIED _____
 DATE _____



- NOTES:
- REFERENCE: TAX MAP 11, LOT (27-1) - (27-7)
 - TOTAL PARCEL AREA= 1,235,700± Sq. Ft. OR 28.4± Ac. (SEE NOTES #10 & #11)
 - OWNER OF RECORD: GRANT DEVELOPMENT, LLC
 8 NEWMARKET ROAD
 DURHAM, NH 03824
 S.C.R.D. BOOK 3384 PAGE 510
 - ZONE: DURHAM BUSINESS PARK (DBP)
 DIMENSIONAL REQUIREMENTS:
 MIN. LOT SIZE=40,000 Sq. Ft.
 MIN. FRONTAGE=150'
 MIN. FRONT SETBACK=30' (MINOR/COLLECTOR STREET)
 50' (ARTERIAL STREET)
 MIN. SIDE/REAR SETBACK=20'
 DURHAM WETLAND CONSERVATION OVERLAY DISTRICT:
 FRESHWATER WETLANDS=75'
 TIDAL WETLANDS=100'
 DURHAM SHORELAND PROTECTION OVERLAY DISTRICT:
 TIDAL WETLANDS=125'
 -PORTIONS OF THE PROPERTY LIE WITHIN THE TOWN OF DURHAM SHORELAND PROTECTION, WETLAND CONSERVATION, AND FLOOD PROTECTION OVERLAY DISTRICTS. SEE THE ZONING ORDINANCE FOR SPECIFIC REGULATIONS.
 -LAND WITHIN 250' OF THE HIGHEST OBSERVABLE TIDE LINE IS SUBJECT TO THE STATE OF NH COMPREHENSIVE SHORELAND PROTECTION ACT.
 - FIELD WORK PERFORMED BY DOUCET SURVEY INC. ON 5/96 & 11/00 USING A SOKKIA SET 4B1 & POWERSET 3000 AND ON 12/07 USING A LEICA TCR TOTAL STATION WITH A RANGER TDS DATA COLLECTOR AND A SOKKIA B20 AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.

- WETLAND DELINEATION OF NON TIDAL WETLANDS PERFORMED BY JIM GOVE OF GOVE ENVIRONMENTAL IN 2012. TIDAL WETLAND DELINEATION PERFORMED BY JAMES LONG OF NHSC, INC. IN 2001 AND CONFIRMED BY MARK WEST OF WEST ENVIRONMENTAL, INC. IN 2011.
- AERIAL TOPOGRAPHY BY EASTERN TOPOGRAPHICS, WOLFBORO, NH.
- VERTICAL DATUM BASED ON NAVD29 PER NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION DISK 133-0340 HAVING A REPORTED ELEVATION OF 32.87'.
- THE PARCEL IS SUBJECT TO THE FOLLOWING:
 A) UTILITY EASEMENT TO NETT & PSMH, SEE S.C.R.D. BOOK 1349 PAGE 118.
 B) SEWER AND DRAINAGE EASEMENTS AS SHOWN ON S.C.R.D. PLAN #28A-89.
 C) TERMS OF AGREEMENT BETWEEN W&O REALTY PARTNERSHIP AND THE TOWN OF DURHAM, SEE S.C.R.D. BOOK 1523 PAGE 443.
 D) COMMISSIONERS RETURN OF HIGHWAY LAYOUT, SEE S.C.R.D. BOOK 796 PAGE 2.
 E) WARRANTY DEED FROM STANLEY F. LANGLEY TO THE STATE OF NEW HAMPSHIRE, SEE S.C.R.D. BOOK 746 PAGE 437.
- THE AREAS SHOWN HEREON ARE CALCULATED TO APPROXIMATE MEAN HIGH WATER (ELEVATION 5').
- THE NON-CONTIGUOUS UPLAND PORTION OF LAND (±235 Sq. Ft.) AT THE WESTERLY SIDE OF THE PARCEL IS NOT INCLUDED IN THE OVERALL AREA CALCULATIONS OF LOT 27-0 AS SHOWN ON THIS PLAN. THIS AREA IS PART OF LOT #6.
- WATER BOUNDARIES ARE DYNAMIC IN NATURE AND ARE SUBJECT TO CHANGE DUE TO NATURAL CAUSES SUCH AS EROSION OR ACCRETION.
- FLOOD ZONE AE (ELEV. 6' PER NAVD88) AND ZONE X PER F.E.M.A. F.I.R.M. #33017C0320E DATED 9/30/15.

- REFERENCE PLANS
- "STATE OF NEW HAMPSHIRE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS PLANS OF PROPOSED FEDERAL AID PRIMARY PROJECT NO. F 012-2(4), NH PROJECT NO. P-3877-B, DURHAM BY-PASS" DATED 5/19/65, S.C.R.D. POCKET 15 FOLDER 3 PLAN 79.
 - "FINAL SUBDIVISION PLAN, JOHNSON CREEK DRIVE, DURHAM, NH" DATED JANUARY 1985, BY G.L. DAVIS & ASSOCIATES, S.C.R.D. PLAN #28A-89.
 - "SEWAGE DISPOSAL PLANT AREA, UNIVERSITY OF NEW HAMPSHIRE, DURHAM, NH" DATED 10/6/64 AND REVISED 12/22/64, NOT RECORDED.
 - "DURHAM BUSINESS PARK WATERLINE EXTENSION, PREPARED FOR PUBLIC WORKS DEPT. TOWN OF DURHAM" BY MAGUIRE GROUP, INC. AND DATED 7/8/97.
 - "DURHAM BUSINESS PARK SUBDIVISION PLAN, PREPARED FOR GRANT DEVELOPMENT, LLC. TAX MAP 11, LOT 27-0 U.S. ROUTE 4 DURHAM, NH" BY DOUCET SURVEY INC., AND DATED AUGUST 15, 2012, S.C.R.D. PLAN # 104-021.



NO.	REVISIONS	DATE	INT.
5.	REVISION FOR ADDITION OF REFERENCE PLAN #5	5/24/16	KD
4.	SUBMISSION FOR SEWER PERMIT	3/23/16	J.G.
3.	SUBMISSION FOR WETLAND PERMIT	2/19/16	MS
2.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	KD
1.	REVISED PER TOWN PLANNER COMMENTS DATED 10/16/15	10/28/15	MS
1.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	9/2/15	J.G.

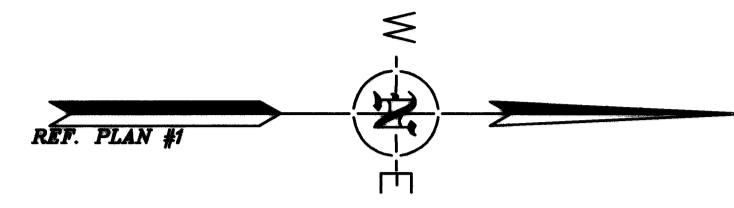
DATE	SCALE	DESIGNED BY	DRAWN BY	APPROVED BY	DWG FILE
9/2/15	1"=80'	MS/JLG	JLG	MJS	15-027 EC.dwg

EXISTING CONDITIONS PLAN prepared for HARMONY HOMES BY THE BAY TAX MAP 11, LOTS (27-1)-(27-7) W. ARTHUR GRANT CIRCLE DURHAM, NH

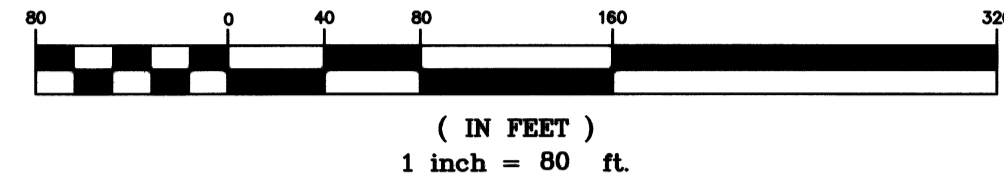
MJS ENGINEERING, P.C.
 CIVIL • STRUCTURAL • ENVIRONMENTAL
 5 Fairwood St., P.O. Box 359
 Newmarket, NH 03857
 Phone: (603) 459-1627
 Email: mjs@nj-engineering.com

JOB: 15-027

EC



GRAPHIC SCALE



SITE DATA BLOCK

PLAN INTENT: DEVELOP THE VACANT PARCEL KNOWN AS THE DURHAM BUSINESS PARK WITH CONSTRUCTION OF AN ELDERCARE FACILITY.

ZONE: DBP - DURHAM BUSINESS PARK

USE: RESIDENTIAL - ELDERCARE / ELDERLY HOUSING

DIMENSIONAL REQUIREMENTS

	REQUIRED
MINIMUM LOT SIZE (SQUARE FEET)	40,000
MINIMUM LOT AREA PER DWELLING UNIT (S.F.)	N/A
MINIMUM FRONTAGE (FEET)	150
MINIMUM LOT SETBACKS	
FRONT (FEET)	30/50
SIDE (FEET)	20
REAR (FEET)	20
MAXIMUM ROAD SETBACK (FEET)	N/A
MAXIMUM HEIGHT (FEET)	40
MAXIMUM HEIGHT W/ P.B. APPROVAL (FEET)	50
IMPERVIOUS SURFACE RATIO	50%

PARKING CALCULATIONS:

175-113:
HOMES FOR AGED, DISABLED, OR HANDICAPPED
1 SPACE PER 5 BEDS + 1 PER EMPLOYEE
= (110)/5 + (20 EMPLOYEES) X 1
TOTAL PARKING SPACES REQ'D = 42
TOTAL PARKING SPACES PROVIDED:
45 FOR PROPOSED DEVELOPMENT
6 FOR PUBLIC USE

DENSITY CALCULATIONS:

TABLE 175-54 TABLE OF DIMENSIONAL REQUIREMENTS:
MINIMUM LOT AREA PER DWELLING UNIT = 35,000 SF
EXISTING LOT AREA = 1,235,700 SF
MAXIMUM NUMBER OF DWELLING UNITS = 35.3

ZONING ORDINANCE SECTION 176-56:
SITUATIONS AFFECTING DIMENSIONS

DENSITY FOR ELDERLY CARE OR ELDERLY HOUSING
DWELLING UNIT FOR ELDERLY OCCUPANCY CONTAINING TWO OR MORE BEDROOMS = 0.5 DWELLING UNIT
EXAMPLE:
DUPLX = 2 UNITS X 0.5 DWELLING UNIT/UNIT = 1 UNIT
ELDERCARE = 4 BEDS / DWELLING UNIT
34 DWELLING UNITS X 4 BEDS/DWELLING UNIT = 136 BEDS

SITE PLAN NOTES:

1. THE GENERAL CONTRACTOR IS RESPONSIBLE TO VERIFY ALL DIMENSIONS, ELEVATIONS AND CONDITIONS AT THE SITE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK. THIS INCLUDES DISCREPANCIES BETWEEN THESE PLANS AND ANY OTHER PLANS OR CONTRACT DOCUMENTS.
2. ALL UTILITY PIPING AND WIRING SHALL BE LOCATED UNDERGROUND.
3. NO CUT TREES, STUMPS, DEBRIS, JUNK, RUBBISH, OR OTHER WASTE MATERIALS SHALL BE BURIED IN THE LAND, OR LEFT OR DEPOSITED ON SITE AT THE TIME THE CERTIFICATE OF OCCUPANCY IS ISSUED, OR AT ANY TIME AFTER THAT.
4. THIS PROJECT WILL DISTURB OVER ONE ACRE OF GROUND COVER AND/OR MEETS OTHER THRESHOLDS RELATED TO PERMIT CRITERIA FOR EPA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) COMPLIANCE. THE SITE CONTRACTOR IS RESPONSIBLE FOR DEVELOPMENT AND IMPLEMENTATION OF A STORM WATER POLLUTION PREVENTION PLAN (SWPPP), SUBMISSION OF A NOTICE OF INTENT (NOI) TO EPA, INSPECTION AND MAINTENANCE OF SEDIMENT CONTROL MEASURES, DOCUMENTATION OF MAINTENANCE ACTIVITIES, AND SUBMISSION A NOTICE OF TERMINATION (NOT) TO EPA. THE SITE CONTRACTOR IS ALSO RESPONSIBLE TO COMPLY WITH ALL OTHER FEDERAL, STATE AND LOCAL STORMWATER OR NPDES REQUIREMENTS.
5. ACCESS INTO THE SITE FOR FIRE APPARATUS SHALL BE MAINTAINED AT ALL TIMES DURING THE CONSTRUCTION PROCESS. PLEASE CONTACT THE FIRE DEPARTMENT AT 868-5531 WITH ANY QUESTIONS ABOUT ACCESS REQUIREMENTS.
6. SNOW SHALL NOT BE PUSHED AGAINST TREES OR SHRUBS IN ANY MANNER THAT COULD DAMAGE THEM.
7. FOR MORE INFORMATION ABOUT THIS SITE PLAN, OR TO SEE THE COMPLETE PLAN SET, CONTACT THE TOWN OF DURHAM PLANNING DEPARTMENT, 8 NEWMARKET ROAD, DURHAM, NH 03824. (603) 868-8064.
8. IT IS THE APPLICANTS, SITE CONTRACTORS, AND BUILDING CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIREMENTS RELATED TO THIS SITE PLAN APPROVAL. PLEASE REVIEW THESE PLANS AND THE PLANNING BOARD NOTICE OF DECISION CAREFULLY. CONTACT THE DURHAM PLANNING DEPARTMENT AT (603) 868-8064 WITH ANY QUESTIONS OR CONCERNS.
9. THE USE OF SODIUM-CHLORIDE BASED MATERIALS FOR WINTER ROAD MAINTENANCE SHALL BE THE MINIMUM NECESSARY FOR ROADWAY SAFETY.

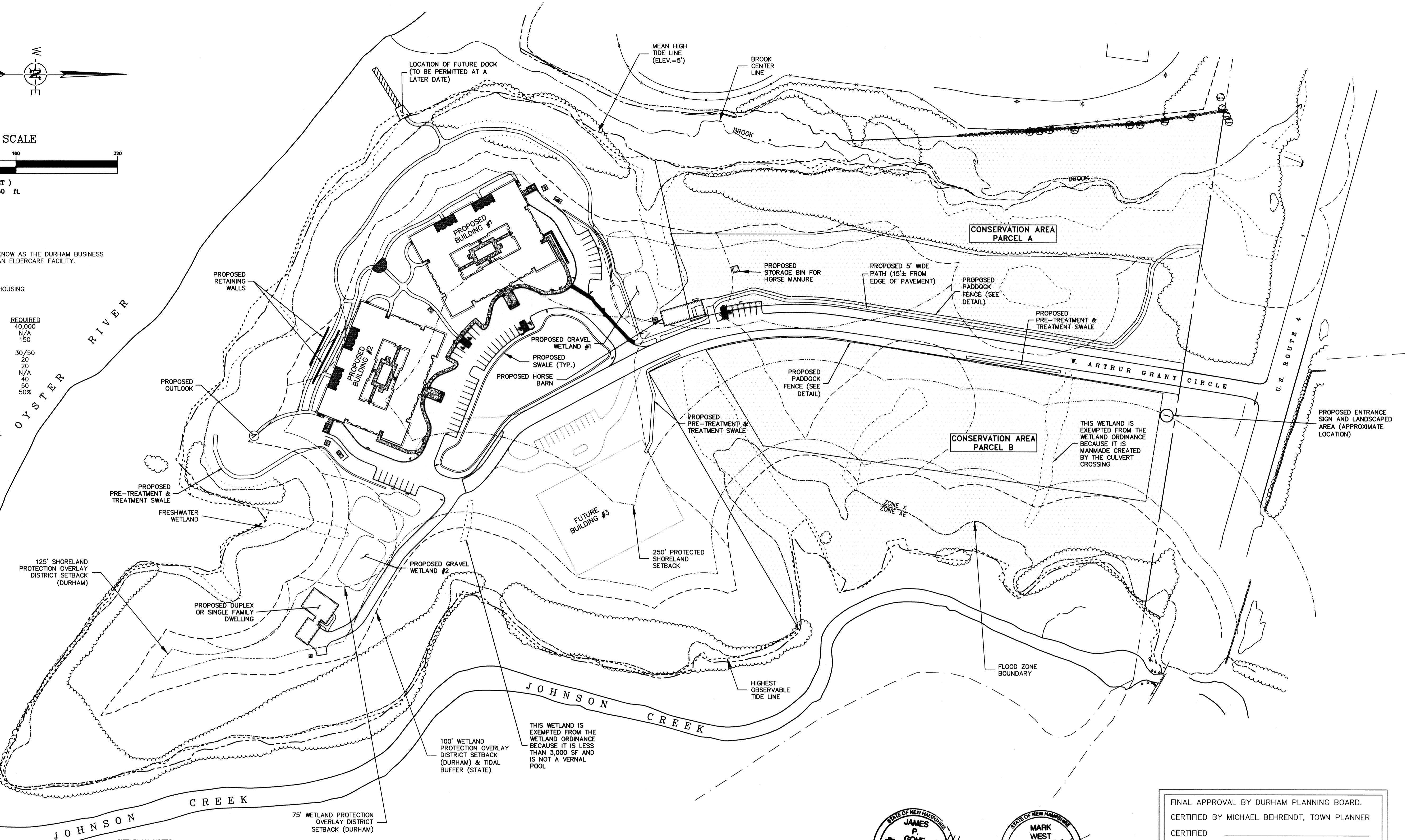
GENERAL NOTES:

1. REFERENCE: TAX MAP 11, LOT (27-1) - (27-7)
2. TOTAL PARCEL AREA: 1,235,700± Sq. Ft. OR 28.4± Ac. (SEE NOTES #10 & #11)
3. OWNER OF RECORD: GRANT DEVELOPMENT, LLC
8 NEWMARKET ROAD
DURHAM, NH 03824
S.C.R.D. BOOK 3384 PAGE 510
4. ZONE: DURHAM BUSINESS PARK (DBP)
DIMENSIONAL REQUIREMENTS:
MIN. LOT SIZE - 40,000 Sq. Ft.
MIN. FRONTAGE - 150'
MIN. FRONT SETBACK - 30' (MINOR/COLLECTOR STREET)
50' (ARTERIAL STREET)
MIN. SIDE/REAR SETBACK - 20'
DURHAM WETLAND CONSERVATION OVERLAY DISTRICT:
FRESHWATER WETLANDS - 75'
TIDAL WETLANDS - 100'
DURHAM SHORELAND PROTECTION OVERLAY DISTRICT:
TIDAL WETLANDS - 125'
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B) SEWER AND DRAINAGE EASEMENTS AS SHOWN ON S.C.R.D. PLAN #28A-89.
C) TERMS OF AGREEMENT BETWEEN W&O REALTY PARTNERSHIP AND THE TOWN OF DURHAM, SEE S.C.R.D. BOOK 1523 PAGE 443.
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E) WARRANTY DEED FROM STANLEY F. LANGLEY TO THE STATE OF NEW HAMPSHIRE, SEE S.C.R.D. BOOK 746 PAGE 437.
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11. THE NON-CONTIGUOUS UPLAND PORTION OF LAND (±235 Sq. Ft.) AT THE WESTERLY SIDE OF THE PARCEL IS NOT INCLUDED IN THE OVERALL AREA CALCULATIONS OF LOT 27-0 AS SHOWN ON THIS PLAN. THIS AREA IS PART OF LOT #6.
12. WATER BOUNDARIES ARE DYNAMIC IN NATURE AND ARE SUBJECT TO CHANGE DUE TO NATURAL CAUSES SUCH AS EROSION OR ACCRETION.
13. FLOOD ZONE AE (ELEV. 6' PER NAVD88) AND ZONE X PER F.E.M.A. F.I.R.M. #3301700320E DATED 9/30/15.
14. THE TOTAL DISTURBED AREA SHOWN ON THE PLANS IS 322,000 SF. THE TOTAL IMPERVIOUS AREA ON THE LOT IS 149,984 SF INCLUDING THE EXISTING ROADWAY. THIS IS EQUAL TO 12.1% IMPERVIOUS SURFACE RATIO.
15. "COAST" BUS STOP LOCATED APPROXIMATELY 1,000 FT TO EAST OF SITE ENTRANCE.
16. ALL AREAS WHICH ARE NOT LAWN OR LANDSCAPED SHALL REMAIN UNDISTURBED AND SHALL BE MOWED ANNUALLY.

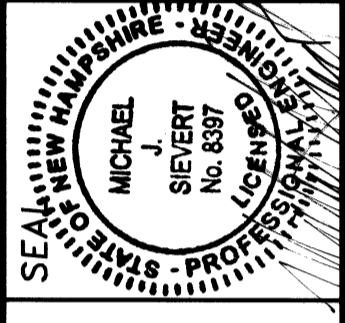
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FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED _____
DATE _____

NO.	REVISIONS	DATE
6.	REVISIONS FOR MYLAR	5/24/16
5.	REVISIONS PER CONDITIONS OF APPROVAL	4/26/16
4.	REVISIONS PER AOT REVIEW LETTER DATED 3/31/16	4/27/16
3.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16
2.	REVISIONS PER TOWN PLANNER COMMENTS DATED 10/16/15	10/28/15
1.	REVISIONS FOR ADDITIONAL SITE DESIGN	9/17/15



DATE: 9/27/15
SCALE: 1" = 80'
DESIGNED BY: MS/JLG
DRAWN BY: JLG
APPROVED BY: MJS
DWG FILE: 15-027_C100.dwg

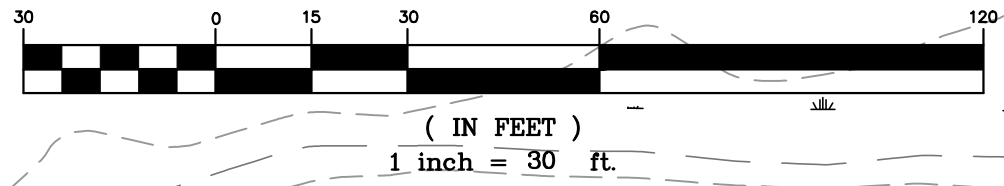
OVERALL SITE PLAN prepared for
HARMONY HOMES BY THE BAY
TAX MAP 11, LOTS (27-1)-(27-7)
W. ARTHUR GRANT CIRCLE DURHAM, NH

JIS ENGINEERING, P.C.
CIVIL • STRUCTURAL • ENVIRONMENTAL
5 Railroad St., P.O. Box 359
Durham, NH 03824
PHONE: (603) 659-4979, FAX: (603) 659-4627
E-MAIL: HJS@JIS-ENGINEERING.COM

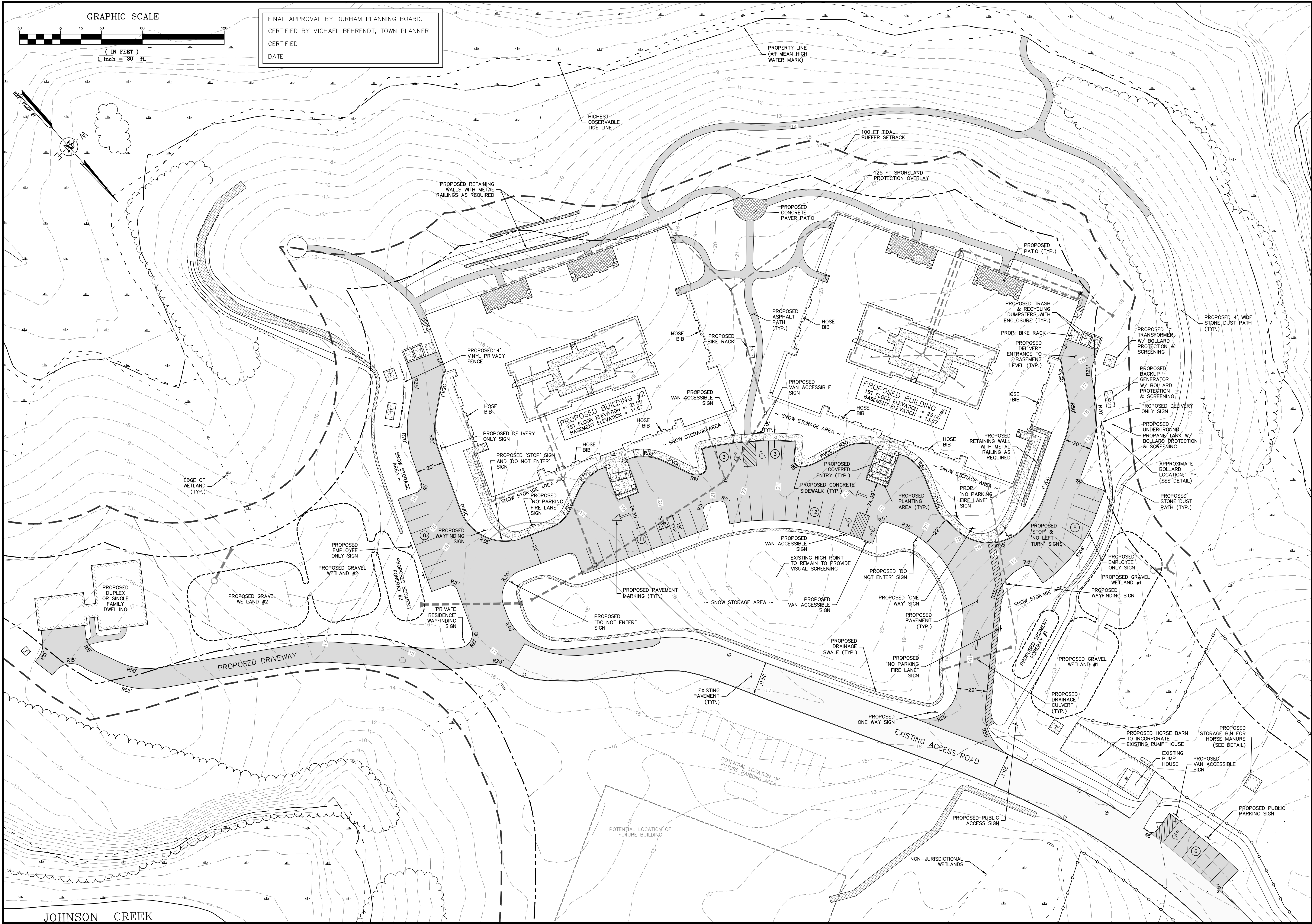
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C100

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Mon, 23 May 2016 - 12:14pm

GRAPHIC SCALE



FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED _____
DATE _____



NO.	REVISIONS	DATE	INT.
6.	REVISION TO ADD "DO NOT ENTER" SIGN	5/23/16	J.C.G.
5.	REVISIONS PER CONDITIONS OF APPROVAL	5/13/16	J.C.G.
4.	REVISIONS PER CONDITIONS OF APPROVAL	4/28/16	J.C.G.
3.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	J.C.G.
2.	REVISIONS PER TOWN PLANNER COMMENTS DATED 10/16/15	10/28/15	J.C.G.
1.	REVISIONS FOR ADDITIONAL SITE DESIGN	9/17/15	J.C.G.

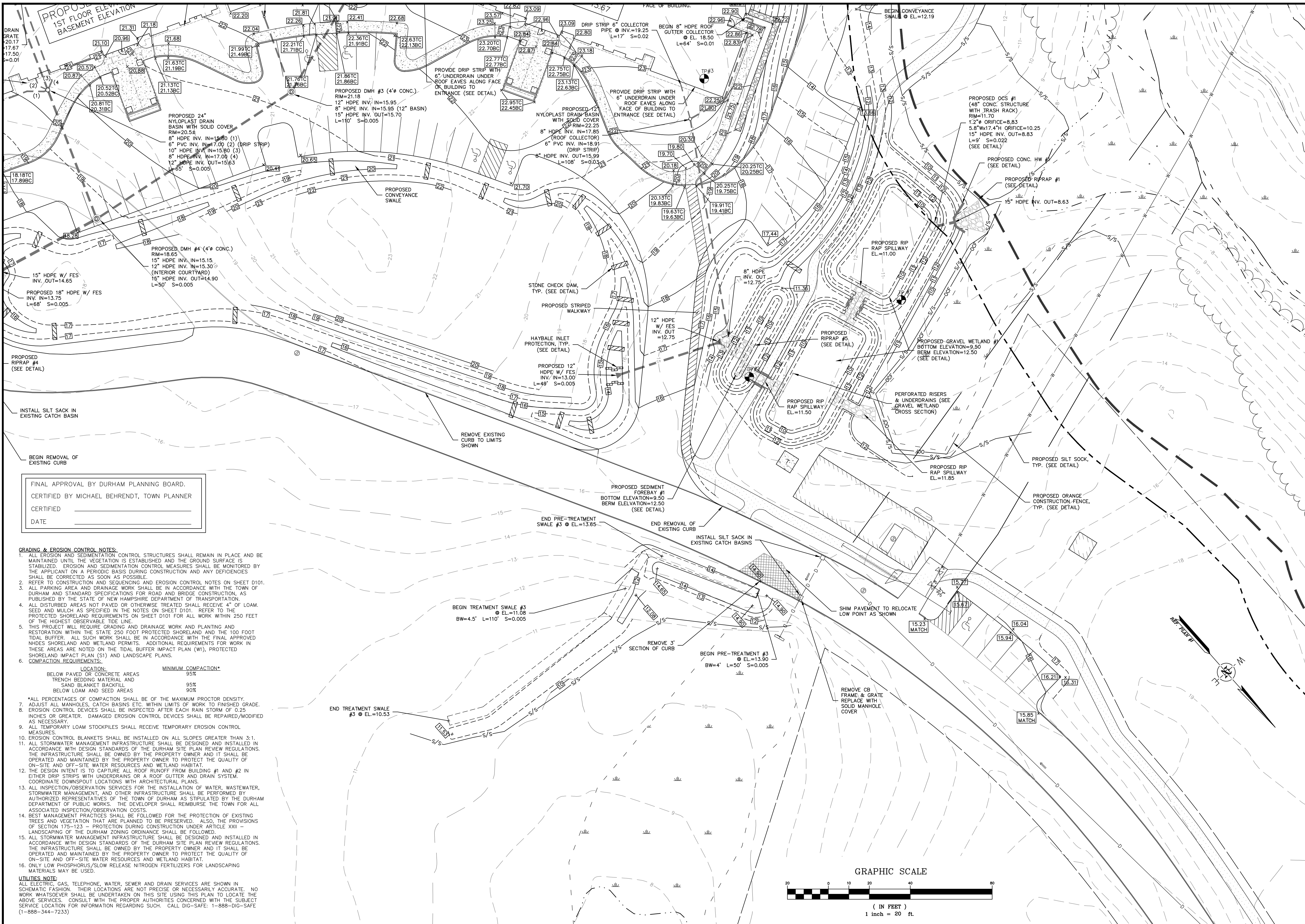
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SCALE: 1"=30'
DESIGNED BY: MJS/JLG
DRAWN BY: JLG
APPROVED BY: MJS
DWG FILE: 15-027-C101.dwg

SITE PLAN
prepared for
HARMONY HOMES BY THE BAY
TAX MAP 11, LOTS (27-1)-(27-7)
W. ARTHUR GRANT CIRCLE DURHAM, NH

MJS ENGINEERING, P.C.
CIVIL • STRUCTURAL • ENVIRONMENTAL
5 HALLIBROOK ST., P.O. BOX 259
DURHAM, NH 03824
PHONE: (603) 659-4979, FAX: (603) 659-4627
E-MAIL: MJS@MJS-ENGINEERING.COM

JOB: 15-027
C101

Drawing Name: P:\15-027\15-027\15-027\15-027.dwg Thu, 28 Apr 2016 3:50pm

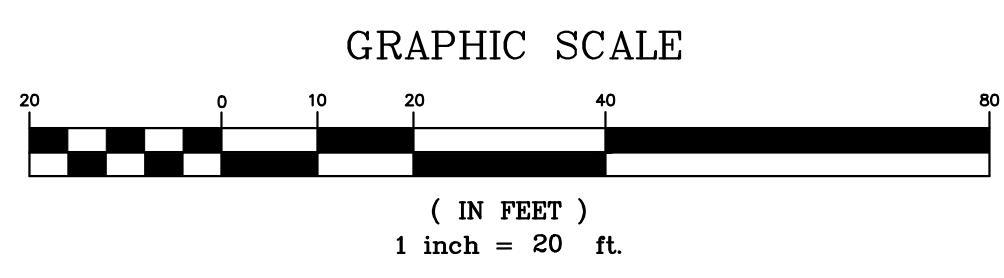


FINAL APPROVAL BY DURHAM PLANNING BOARD.
 CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
 CERTIFIED _____
 DATE _____

- GRADING & EROSION CONTROL NOTES:**
- ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE VEGETATION IS ESTABLISHED AND THE GROUND SURFACE IS STABILIZED. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MONITORED BY THE APPLICANT ON A PERIODIC BASIS DURING CONSTRUCTION AND ANY DEFICIENCIES SHALL BE CORRECTED AS SOON AS POSSIBLE.
 - REFER TO CONSTRUCTION AND SEQUENCING AND EROSION CONTROL NOTES ON SHEET D101.
 - ALL PARKING AREA AND DRAINAGE WORK SHALL BE IN ACCORDANCE WITH THE TOWN OF DURHAM AND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AS PUBLISHED BY THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
 - ALL DISTURBED AREAS NOT PAVED OR OTHERWISE TREATED SHALL RECEIVE 4" OF LOAM, SEED AND MULCH AS SPECIFIED IN THE NOTES ON SHEET D101. REFER TO THE PROTECTED SHORELAND REQUIREMENTS ON SHEET D101 FOR ALL WORK WITHIN 250 FEET OF THE HIGHEST OBSERVABLE TIDE LINE.
 - THIS PROJECT WILL REQUIRE GRADING AND DRAINAGE WORK AND PLANTING AND RESTORATION WITHIN THE STATE 250 FOOT PROTECTED SHORELAND AND THE 100 FOOT TIDAL BUFFER. ALL SUCH WORK SHALL BE IN ACCORDANCE WITH THE FINAL APPROVED NHDES SHORELAND AND WETLAND PERMITS. ADDITIONAL REQUIREMENTS FOR WORK IN THESE AREAS ARE NOTED ON THE TIDAL BUFFER IMPACT PLAN (W1), PROTECTED SHORELAND IMPACT PLAN (S1) AND LANDSCAPE PLANS.
 - COMPACTION REQUIREMENTS:

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

*ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM PROCTOR DENSITY.
 7. ADJUST ALL MANHOLES, CATCH BASINS ETC. WITHIN LIMITS OF WORK TO FINISHED GRADE.
 8. EROSION CONTROL DEVICES SHALL BE INSPECTED AFTER EACH RAIN STORM OF 0.25 INCHES OR GREATER. DAMAGED EROSION CONTROL DEVICES SHALL BE REPAIRED/MODIFIED AS NECESSARY.
 9. ALL TEMPORARY LOAM STOCKPILES SHALL RECEIVE TEMPORARY EROSION CONTROL MEASURES.
 10. EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL SLOPES GREATER THAN 3:1.
 11. ALL STORMWATER MANAGEMENT INFRASTRUCTURE SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH DESIGN STANDARDS OF THE DURHAM SITE PLAN REVIEW REGULATIONS. THE INFRASTRUCTURE SHALL BE OWNED BY THE PROPERTY OWNER AND IT SHALL BE OPERATED AND MAINTAINED BY THE PROPERTY OWNER TO PROTECT THE QUALITY OF ON-SITE AND OFF-SITE WATER RESOURCES AND WETLAND HABITAT.
 12. THE DESIGN INTENT IS TO CAPTURE ALL ROOF RUNOFF FROM BUILDING #1 AND #2 IN EITHER DRIP STRIPS WITH UNDERDRAINS OR A ROOF GUTTER AND DRAIN SYSTEM. COORDINATE DOWNSPOUT LOCATIONS WITH ARCHITECTURAL PLANS.
 13. ALL INSPECTION/OBSERVATION SERVICES FOR THE INSTALLATION OF WATER, WASTEWATER, STORMWATER MANAGEMENT, AND OTHER INFRASTRUCTURE SHALL BE PERFORMED BY AUTHORIZED REPRESENTATIVES OF THE TOWN OF DURHAM AS STIPULATED BY THE DURHAM DEPARTMENT OF PUBLIC WORKS. THE DEVELOPER SHALL REIMBURSE THE TOWN FOR ALL ASSOCIATED INSPECTION/OBSERVATION COSTS.
 14. BEST MANAGEMENT PRACTICES SHALL BE FOLLOWED FOR THE PROTECTION OF EXISTING TREES AND VEGETATION THAT ARE PLANNED TO BE PRESERVED. ALSO, THE PROVISIONS OF SECTION 175-123 - PROTECTION DURING CONSTRUCTION UNDER ARTICLE XXII - LANDSCAPING OF THE DURHAM ZONING ORDINANCE SHALL BE FOLLOWED.
 15. ALL STORMWATER MANAGEMENT INFRASTRUCTURE SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH DESIGN STANDARDS OF THE DURHAM SITE PLAN REVIEW REGULATIONS. THE INFRASTRUCTURE SHALL BE OWNED BY THE PROPERTY OWNER AND IT SHALL BE OPERATED AND MAINTAINED BY THE PROPERTY OWNER TO PROTECT THE QUALITY OF ON-SITE AND OFF-SITE WATER RESOURCES AND WETLAND HABITAT.
 16. ONLY LOW PHOSPHORUS/SLOW RELEASE NITROGEN FERTILIZERS FOR LANDSCAPING MATERIALS MAY BE USED.
- UTILITIES NOTE:**
 ALL ELECTRIC, GAS, TELEPHONE, WATER, SEWER AND DRAIN SERVICES ARE SHOWN IN SCHEMATIC FASHION. THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN ON THIS SITE USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATION FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE: 1-888-DIG-SAFE (1-888-344-7233)



	NO.	REVISONS	DATE	INT.
1.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD		9/17/15	JLG
2.	REVISED PER TOWN PLANNER COMMENTS DATED 10/16/15		10/28/15	JLG
3.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT		2/10/16	JLG
4.	REVISIONS PER ACT REVIEW LETTER DATED 3/31/16		4/27/16	MS
5.	REVISIONS PER CONDITIONS OF APPROVAL		4/28/16	JLG

DATE: 9/2/15
 SCALE: 1"=20'
 DESIGNED BY: MS/JLG
 DRAWN BY: JLG
 APPROVED BY: MJS
 DWG. FILE: 15-027 CIAA.dwg

SITE GRADING PLAN #1

prepared for
HARMONY HOMES BY THE BAY

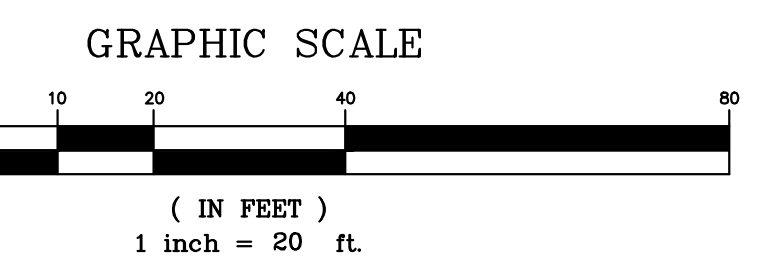
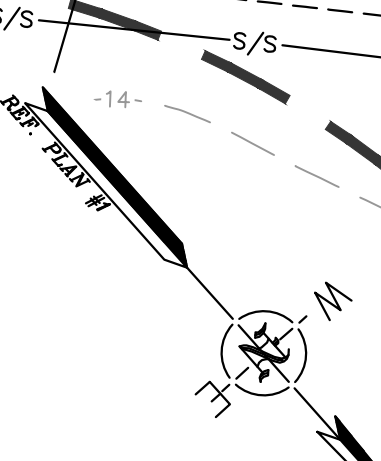
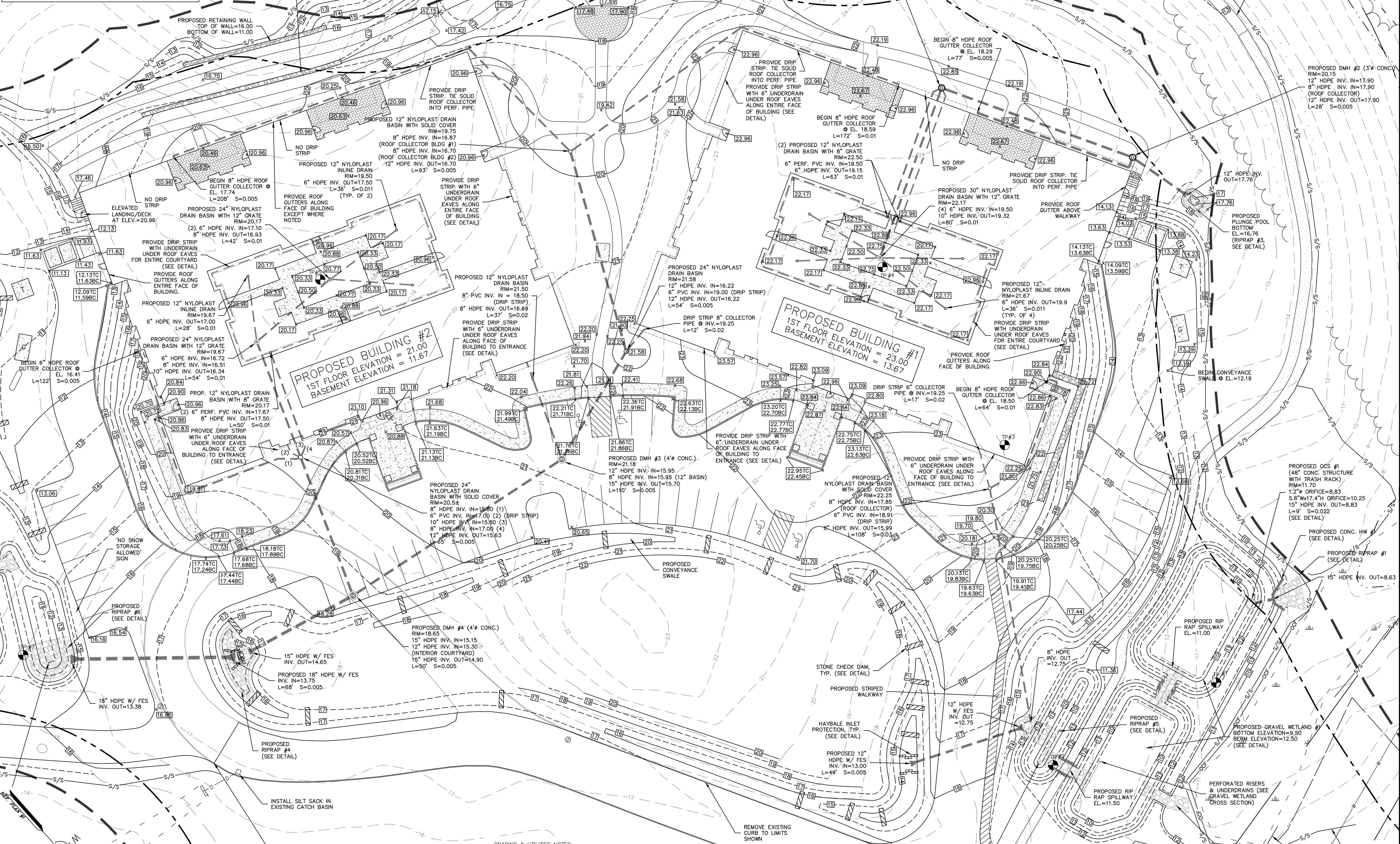
TAX MAP 11, LOTS (27-1)-(27-7)
 W. ARTHUR GRANT CIRCLE DURHAM, NH

JOB: 15-027

C102

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 Thu, 28 Apr 2016 11:55:59am

FINAL APPROVAL BY DURHAM PLANNING BOARD.
 CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
 DATE _____



GRADING & UTILITIES NOTES:
 REFER TO SHEET C102 FOR GRADING NOTES.
 2. ALL ELECTRIC, GAS, TELEPHONE, WATER, SEWER AND DRAIN SERVICES ARE SHOWN IN SCHEMATIC FASHION. THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN ON THIS SITE USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATION FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE: 1-888-DIG-SAFE (1-888-344-7233)

NO.	REVISIONS	DATE	INT.
1.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	9/27/15	J.C.G.
2.	REVISED PER TOWN PLANNER COMMENTS DATED 10/16/15	10/28/15	J.C.G.
3.	REVISIONS PER ADDITIONAL SITE DESIGN	10/28/15	J.C.G.
4.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	J.C.G.
5.	REVISIONS PER CONDITIONS OF APPROVAL	4/26/16	J.C.G.

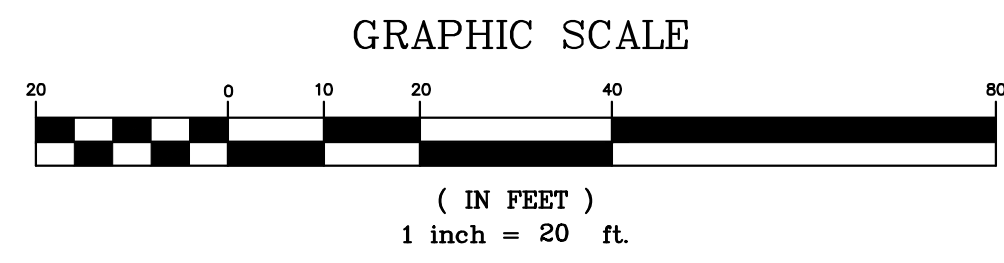
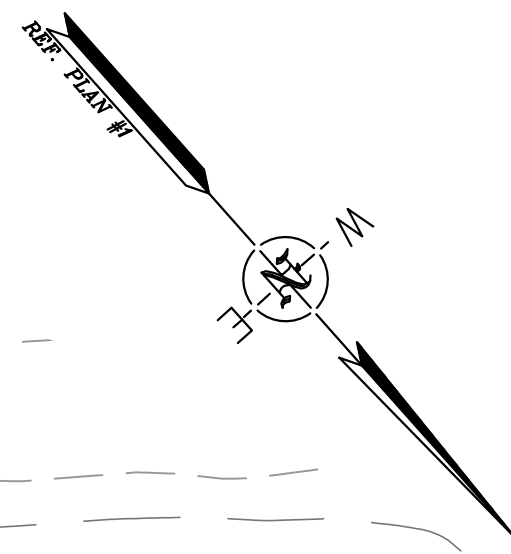
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 DRAWN BY: JLG
 APPROVED BY: MAJ
 DWG FILE: 15-027 C1A4.dwg

SITE GRADING PLAN #2
 prepared for
HARMONY HOMES BY THE BAY
 TAX MAP 11, LOTS (27-1)-(27-7)
 W. ARTHUR GRANT CIRCLE DURHAM, NH

MJS ENGINEERING, P.C.
 CIVIL • STRUCTURAL • ENVIRONMENTAL
 5 HOLLAND ST., P.O. BOX 359
 DURHAM, NH 03824
 PHONE: (603) 659-9799, FAX: (603) 659-4627
 E-MAIL: MJS@MJS-ENGINEERING.COM

JOB: 15-027
C103

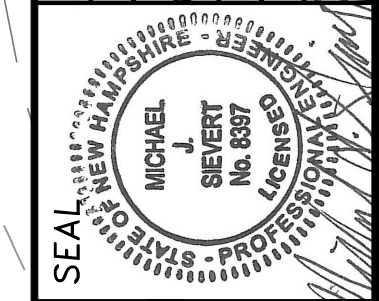
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Thu, 28 Apr 2016 - 4:01pm



GRADING & UTILITIES NOTES:
1. REFER TO SHEET C102 FOR GRADING NOTES.
2. ALL ELECTRIC, GAS, TELEPHONE, WATER, SEWER AND DRAIN SERVICES ARE SHOWN IN SCHEMATIC FASHION. THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN ON THIS SITE USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATION FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE: 1-888-DIG-SAFE (1-888-344-7233)

FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
DATE _____

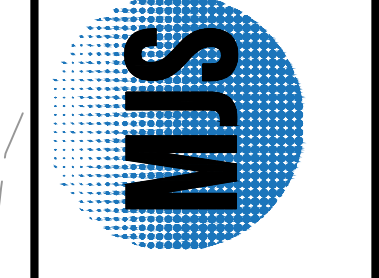
NO.	REVISIONS	DATE	INT.
5.	REVISIONS PER CONDITIONS OF APPROVAL	4/26/16	JLG
4.	REVISIONS PER ACT REVIEW LETTER DATED 3/31/16	4/21/16	MS
3.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	JLG
2.	REVISED PER TOWN PLANNER COMMENTS DATED 10/16/15	10/28/15	JLG
1.	REVISIONS PER ADDITIONAL SITE DESIGN	9/17/15	JLG
0.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	9/2/15	JLG



DATE: 9/2/15
SCALE: 1"=20'
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DRAWN BY: JLG
APPROVED BY: MAJ
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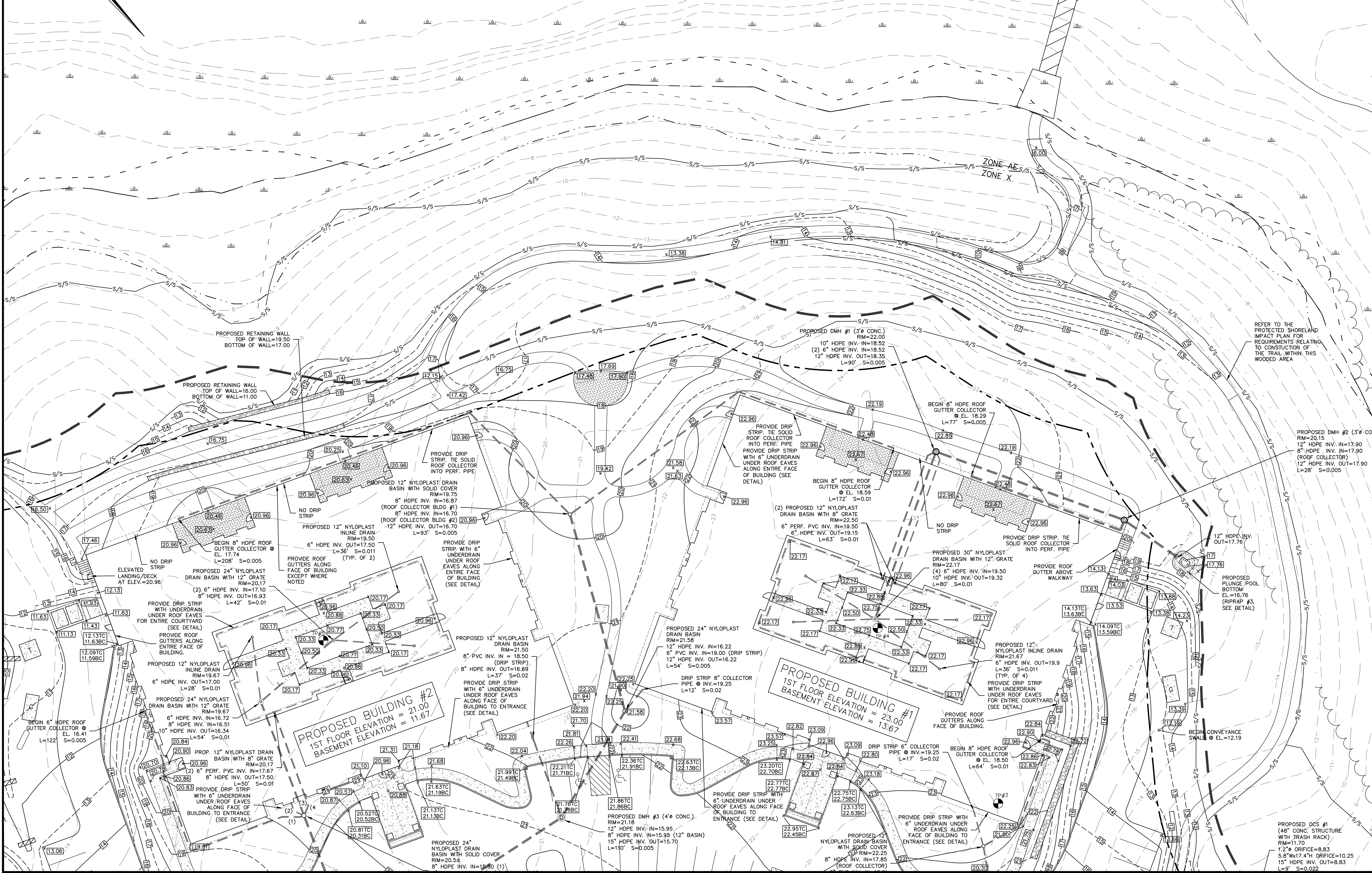
SITE GRADING PLAN #3
prepared for
HARMONY HOMES BY THE BAY
TAX MAP 11, LOTS (27-1)-(27-7)
W. ARTHUR GRANT CIRCLE DURHAM, NH

MJS ENGINEERING, P.C.
CIVIL • STRUCTURAL • ENVIRONMENTAL
5 Hallowood St., P.O. Box 359
Durham, NH 03824
PHONE: (603) 659-4979, FAX: (603) 659-4627
E-MAIL: MJS@MJS-ENGINEERING.COM



JOB: 15-027

C104



LOCATION OF FUTURE DOCK (TO BE PERMITTED AT A LATER DATE)

REFER TO THE PROTECTED SHORELAND IMPACT PLAN FOR REQUIREMENTS RELATING TO CONSTRUCTION OF THE TRAIL WITHIN THIS WOODED AREA

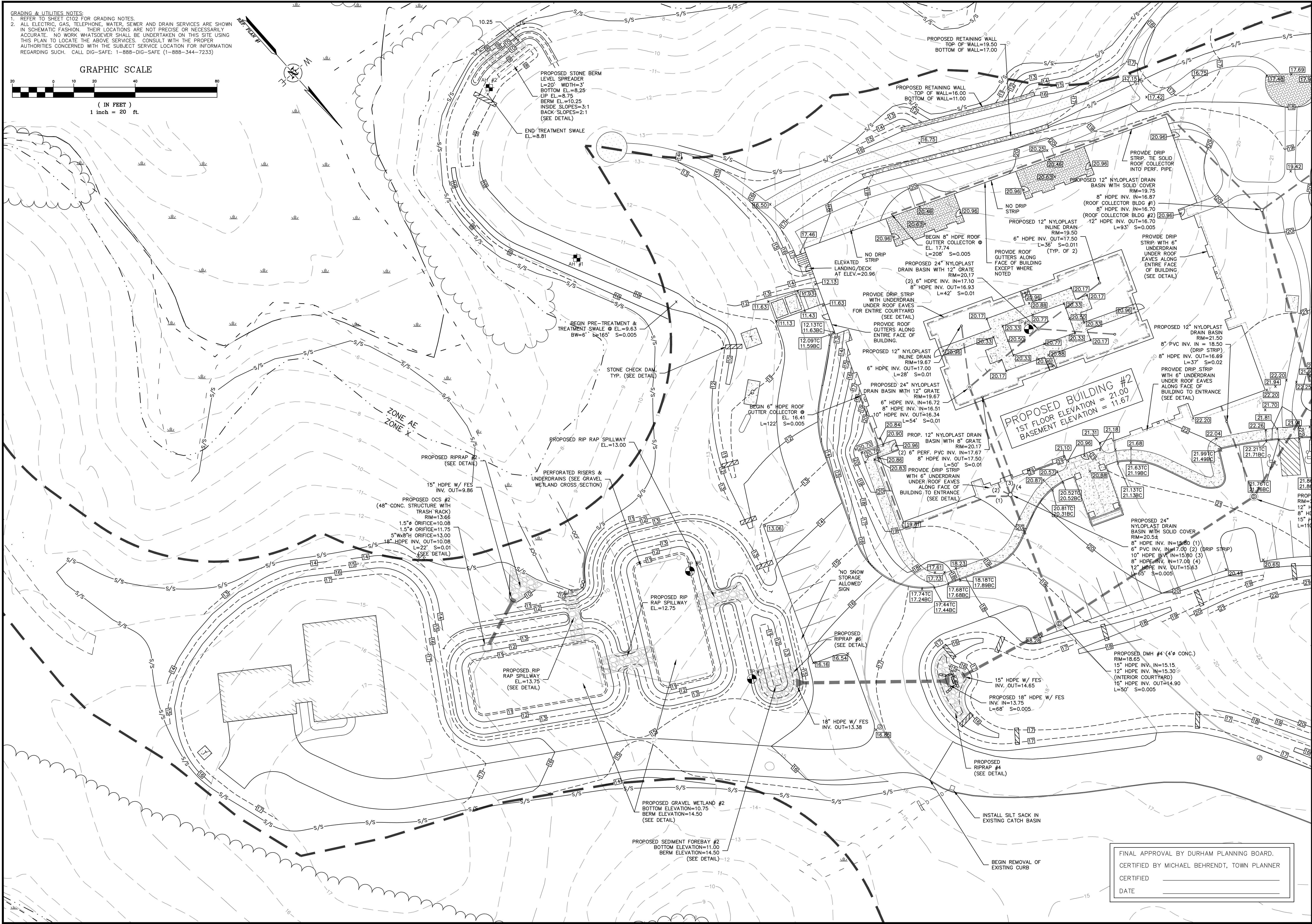
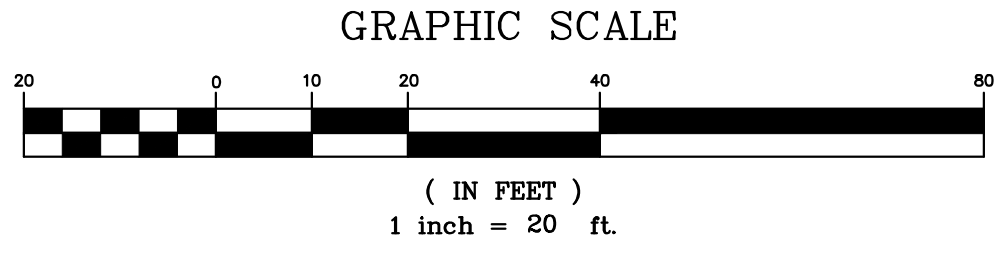
PROPOSED BUILDING #2
1ST FLOOR ELEVATION = 21.00
BASEMENT ELEVATION = 11.67

PROPOSED BUILDING #1
1ST FLOOR ELEVATION = 23.00
BASEMENT ELEVATION = 13.67

PROPOSED OCS #1
(48" CONC. STRUCTURE WITH TRASH RACK)
RIM=11.70
1.2" Ø ORIFICE=8.83
5.8" Wx17.4" H ORIFICE=10.25
15" HDPE INV. OUT=8.83
L=9' S=0.022

Drawing Name: P:\1501\15-027\Internal\Grading Plans\15-027 C105.dwg
Thu, 28 Apr 2016 4:04pm

GRADING & UTILITIES NOTES:
1. REFER TO SHEET C102 FOR GRADING NOTES.
2. ALL ELECTRIC, GAS, TELEPHONE, WATER, SEWER AND DRAIN SERVICES ARE SHOWN IN SCHEMATIC FASHION. THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN ON THIS SITE USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATION FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE: 1-888-DIG-SAFE (1-888-344-7233)



FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED _____
DATE _____

SITE GRADING PLAN #4
prepared for
HARMONY HOMES BY THE BAY
TAX MAP 11, LOTS (27-1)-(27-7)
W. ARTHUR GRANT CIRCLE DURHAM, NH

MJS ENGINEERING, P.C.
CIVIL • STRUCTURAL • ENVIRONMENTAL
5 HOLLISWOOD ST., P.O. BOX 359
DURHAM, NH 03824
PHONE: (603) 659-4979, FAX: (603) 659-4627
E-MAIL: MJS@MJS-ENGINEERING.COM

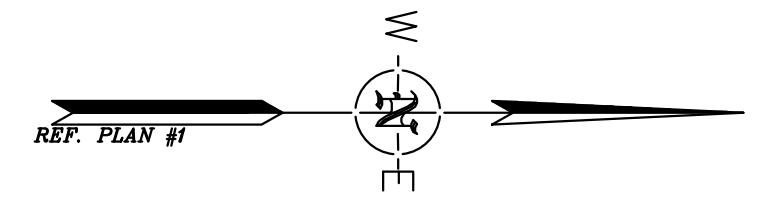
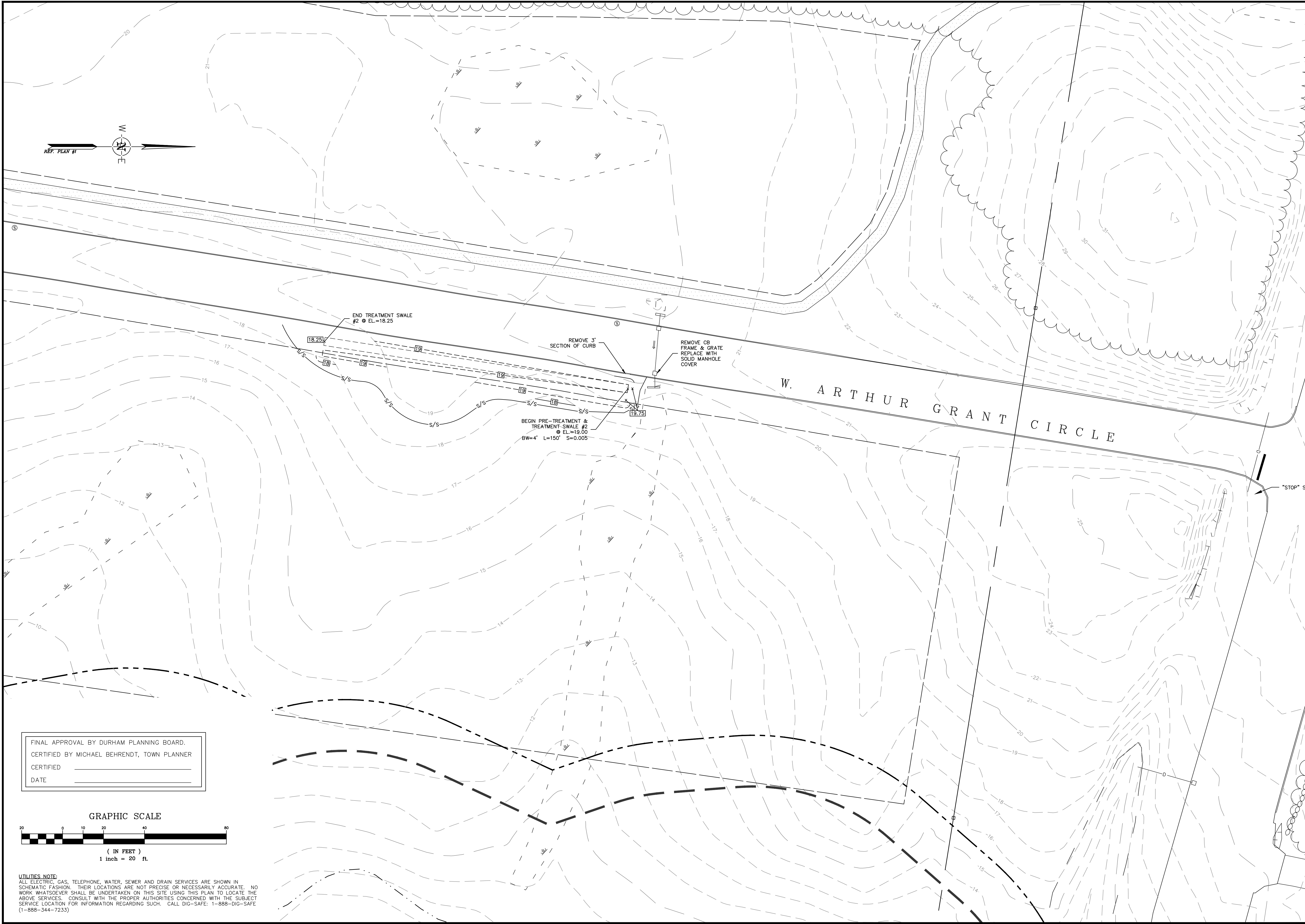
NO.	REVISIONS	DATE	INT.
1	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	9/27/15	JLG
2	REVISIONS PER ADDITIONAL SITE DESIGN	9/17/15	JLG
3	REVISIONS PER TOWN PLANNER COMMENTS DATED 10/16/15	10/28/15	JLG
4	TREATMENT SWALE CHANGES PER AOT PERMIT	3/23/16	JLG
5	REVISIONS PER AOT REVIEW LETTER DATED 3/31/16	4/21/16	MS
6	REVISIONS PER CONDITIONS OF APPROVAL	4/26/16	JLG

DATE: 9/22/15
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DRAWN BY: JLG
APPROVED BY: MJS
DWG FILE: 15-027 C105.dwg

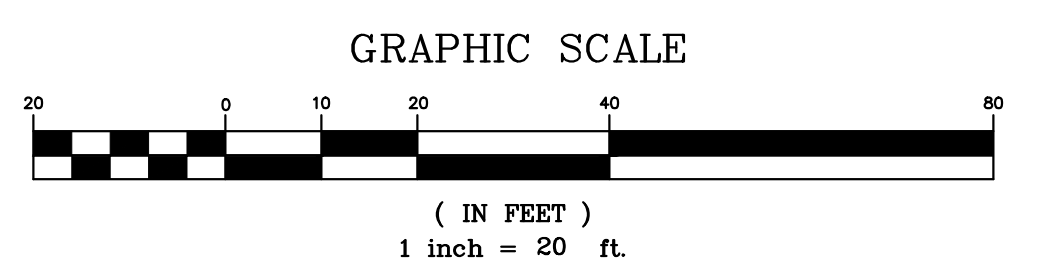
SEAL: MICHAEL BEHRENDT, TOWN PLANNER, No. 6887

JOB: 15-027
C105

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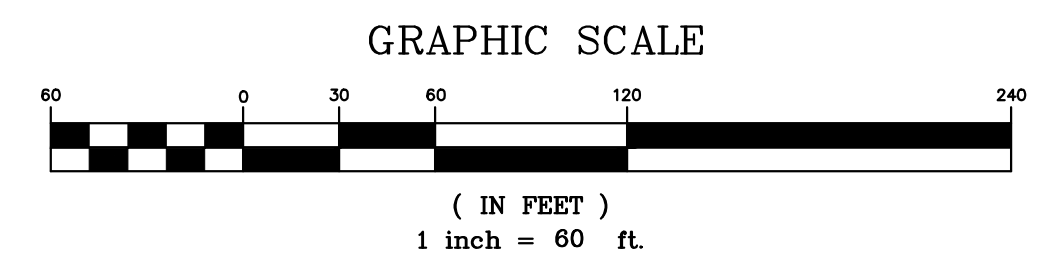
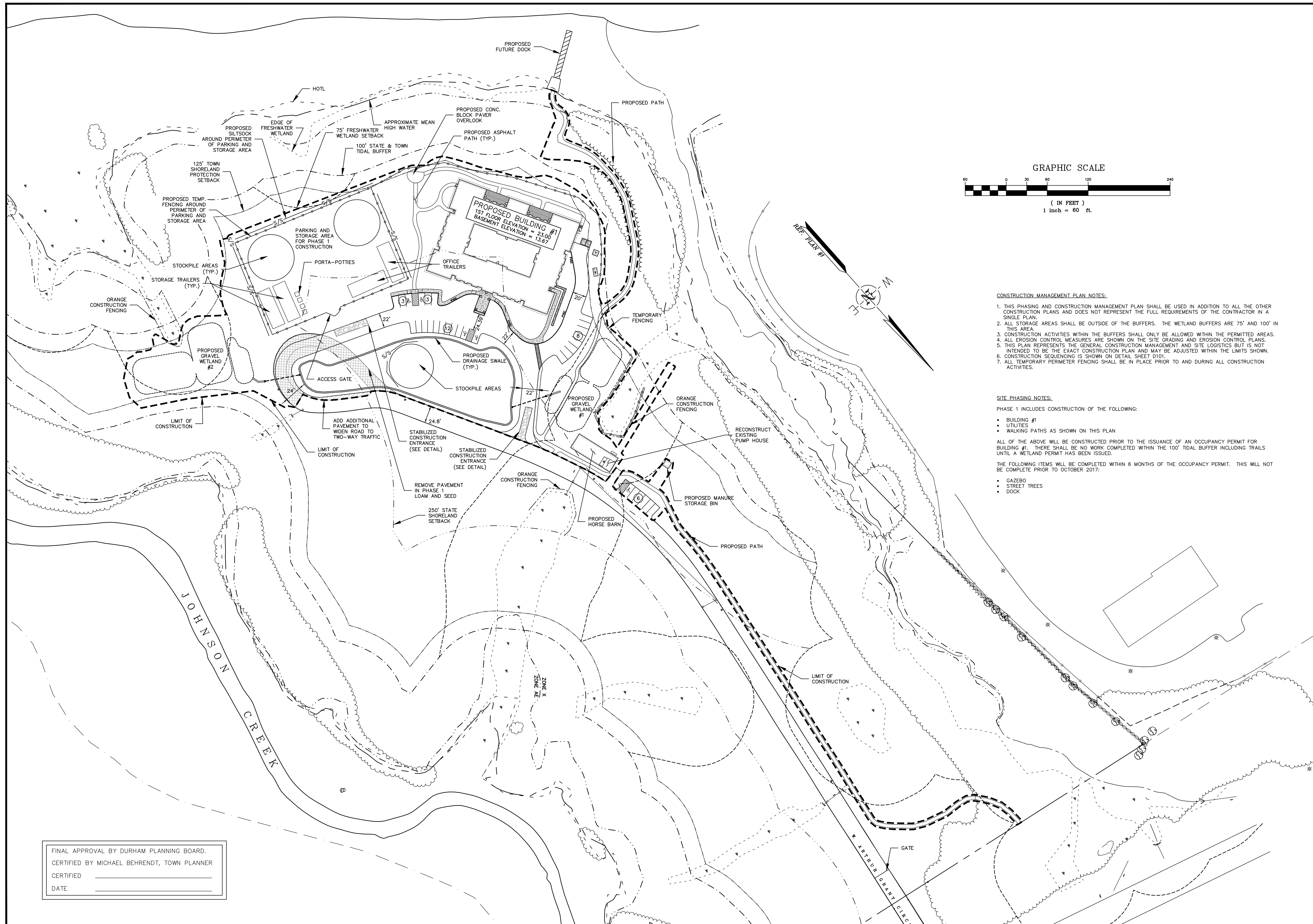


FINAL APPROVAL BY DURHAM PLANNING BOARD.
 CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
 CERTIFIED _____
 DATE _____



UTILITIES NOTE:
 ALL ELECTRIC, GAS, TELEPHONE, WATER, SEWER AND DRAIN SERVICES ARE SHOWN IN SCHEMATIC FASHION. THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN ON THIS SITE USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATION FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE: 1-888-DIG-SAFE (1-888-344-7233)

DATE: 4/19/16	NO.
SCALE: 1"=20'	NO.
DESIGNED BY: MS/JLG	NO.
DRAWN BY: JLG	NO.
APPROVED BY: MJS	NO.
DWG FILE: 15-027_C105B.dwg	NO.
1. REVISIONS PER CONDITIONS OF APPROVAL ADDED TO PLAN SET	
DATE: 4/26/16	DATE: 4/19/16
JLG	MS
REVISIONS	
INT.	
SITE GRADING PLAN #5 prepared for HARMONY HOMES BY THE BAY TAX MAP 11, LOTS (27-1)-(27-7) W. ARTHUR GRANT CIRCLE DURHAM, NH	
JOB: 15-027 C105B	



- CONSTRUCTION MANAGEMENT PLAN NOTES:**
1. THIS PHASING AND CONSTRUCTION MANAGEMENT PLAN SHALL BE USED IN ADDITION TO ALL THE OTHER CONSTRUCTION PLANS AND DOES NOT REPRESENT THE FULL REQUIREMENTS OF THE CONTRACTOR IN A SINGLE PLAN.
 2. ALL STORAGE AREAS SHALL BE OUTSIDE OF THE BUFFERS. THE WETLAND BUFFERS ARE 75' AND 100' IN THIS AREA.
 3. CONSTRUCTION CONTROL MEASURES ARE SHOWN ON THE SITE GRADING AND EROSION CONTROL PLANS.
 4. ALL EROSION CONTROL MEASURES ARE SHOWN ON THE SITE GRADING AND EROSION CONTROL PLANS.
 5. THIS PLAN REPRESENTS THE GENERAL CONSTRUCTION MANAGEMENT AND SITE LOGISTICS BUT IS NOT INTENDED TO BE THE EXACT CONSTRUCTION PLAN AND MAY BE ADJUSTED WITHIN THE LIMITS SHOWN.
 6. CONSTRUCTION SEQUENCING IS SHOWN ON DETAIL SHEET D101.
 7. ALL TEMPORARY PERIMETER FENCING SHALL BE IN PLACE PRIOR TO AND DURING ALL CONSTRUCTION ACTIVITIES.

- SITE PHASING NOTES:**
- PHASE 1 INCLUDES CONSTRUCTION OF THE FOLLOWING:
- BUILDING #1
 - UTILITIES
 - WALKING PATHS AS SHOWN ON THIS PLAN
- ALL OF THE ABOVE WILL BE CONSTRUCTED PRIOR TO THE ISSUANCE OF AN OCCUPANCY PERMIT FOR BUILDING #1. THERE SHALL BE NO WORK COMPLETED WITHIN THE 100' TIDAL BUFFER INCLUDING TRAILS UNTIL A WETLAND PERMIT HAS BEEN ISSUED.
- THE FOLLOWING ITEMS WILL BE COMPLETED WITHIN 6 MONTHS OF THE OCCUPANCY PERMIT. THIS WILL NOT BE COMPLETE PRIOR TO OCTOBER 2017:
- GAZEBO
 - STREET TREES
 - DOCK

FINAL APPROVAL BY DURHAM PLANNING BOARD.
 CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
 CERTIFIED _____
 DATE _____

NO.	REVISIONS	DATE
1.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	9/2/15
2.	REVISIONS FOR ADDITIONAL SITE DESIGN	9/17/15
3.	REVISIONS PER TOWN PLANNER COMMENTS DATED 10/16/15	10/28/15
4.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16
5.	REVISIONS PER CONDITIONS OF APPROVAL	4/26/16

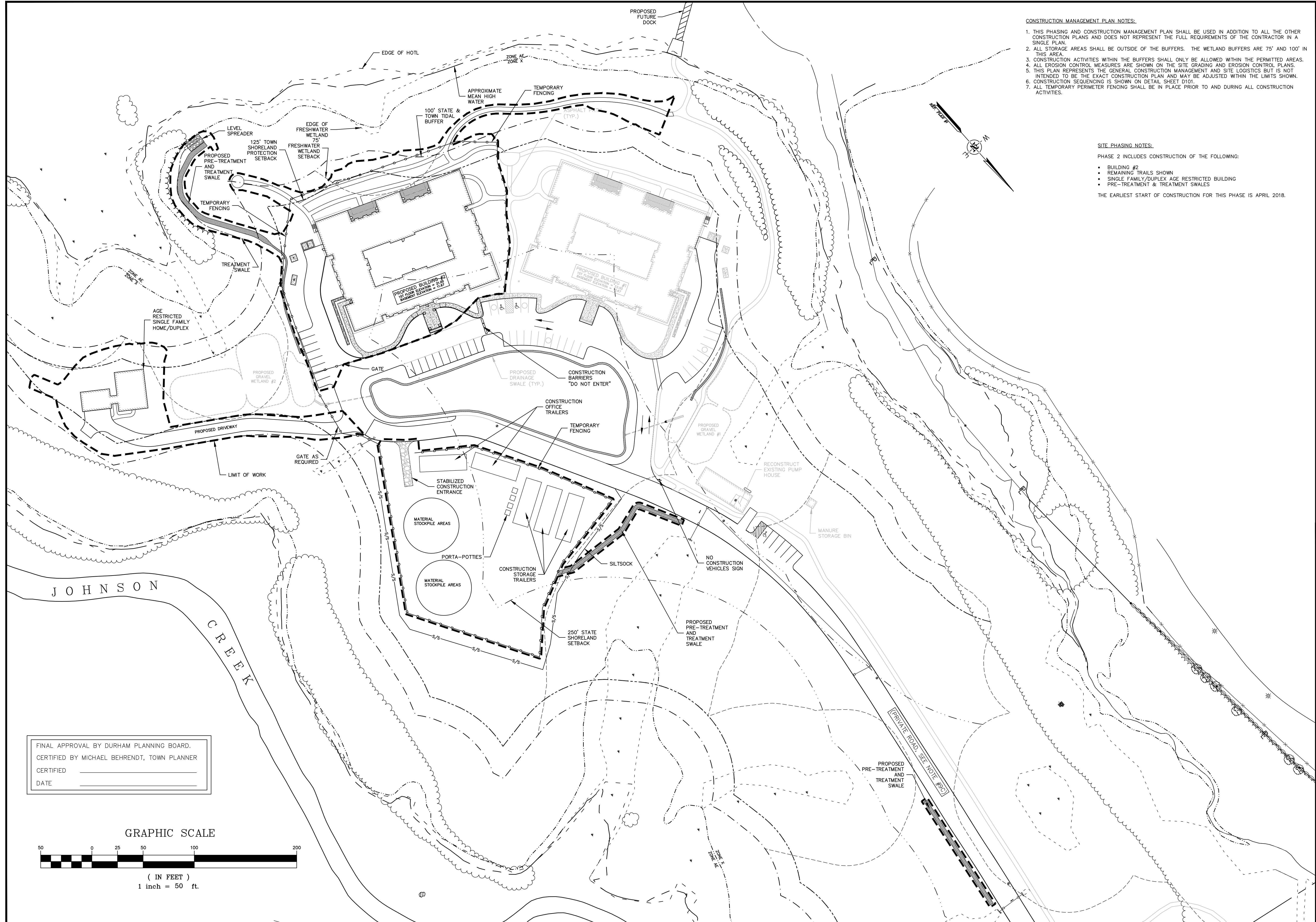
DATE:	9/2/15
SCALE:	1" = 60'
DESIGNED BY:	MS/JLG
DRAWN BY:	JLG
APPROVED BY:	MJS
DWG FILE:	15-027 Phase 1C.dwg

SEAL: MICHAEL BEHRENDT, TOWN PLANNER, No. 6387

SITE PHASING PLAN 1
 prepared for
HARMONY HOMES BY THE BAY
 TAX MAP 11, LOTS (27-1)-(27-7)
 W. ARTHUR GRANT CIRCLE DURHAM, NH

MJS ENGINEERING, P.C.
 CIVIL • STRUCTURAL • ENVIRONMENTAL
 5 HALLSBORO ST., P.O. BOX 259
 HALLSBORO, NH 03043
 PHONE: (603) 659-4979, FAX: (603) 659-4627
 E-MAIL: MJS@MJS-ENGINEERING.COM

JOB: 15-027
C106



- CONSTRUCTION MANAGEMENT PLAN NOTES:**
1. THIS PHASING AND CONSTRUCTION MANAGEMENT PLAN SHALL BE USED IN ADDITION TO ALL THE OTHER CONSTRUCTION PLANS AND DOES NOT REPRESENT THE FULL REQUIREMENTS OF THE CONTRACTOR IN A SINGLE PLAN.
 2. ALL STORAGE AREAS SHALL BE OUTSIDE OF THE BUFFERS. THE WETLAND BUFFERS ARE 75' AND 100' IN THIS AREA.
 3. CONSTRUCTION ACTIVITIES WITHIN THE BUFFERS SHALL ONLY BE ALLOWED WITHIN THE PERMITTED AREAS.
 4. ALL EROSION CONTROL MEASURES ARE SHOWN ON THE SITE GRADING AND EROSION CONTROL PLANS.
 5. THIS PLAN REPRESENTS THE GENERAL CONSTRUCTION MANAGEMENT AND SITE LOGISTICS BUT IS NOT INTENDED TO BE THE EXACT CONSTRUCTION PLAN AND MAY BE ADJUSTED WITHIN THE LIMITS SHOWN.
 6. CONSTRUCTION SEQUENCING IS SHOWN ON DETAIL SHEET D101.
 7. ALL TEMPORARY PERIMETER FENCING SHALL BE IN PLACE PRIOR TO AND DURING ALL CONSTRUCTION ACTIVITIES.

SITE PHASING NOTES:

PHASE 2 INCLUDES CONSTRUCTION OF THE FOLLOWING:

- BUILDING #2
- REMAINING TRAILS SHOWN
- SINGLE FAMILY/DUPLEX AGE RESTRICTED BUILDING
- PRE-TREATMENT & TREATMENT SWALES

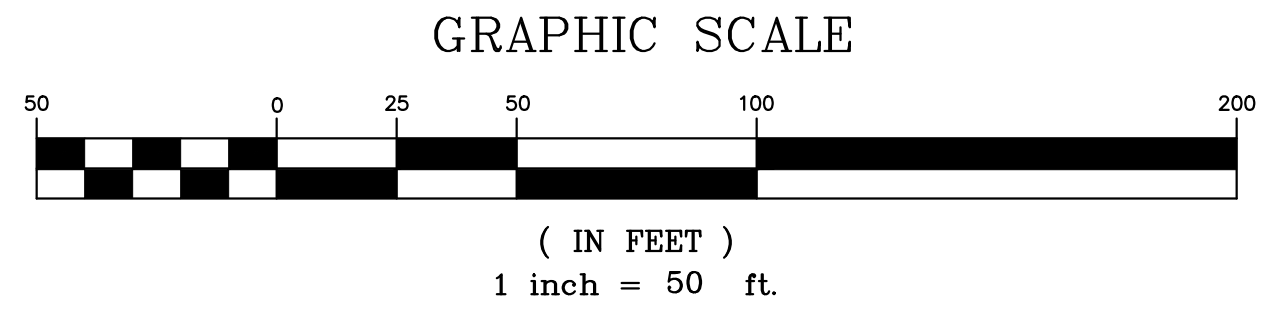
THE EARLIEST START OF CONSTRUCTION FOR THIS PHASE IS APRIL 2018.

NO.	REVISIONS	DATE	INT.
4	REVISIONS PER CONDITIONS OF APPROVAL	4/26/16	KD
3	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	KD
2	REVISIONS PER TOWN PLANNER COMMENTS DATED 10/16/15	10/28/15	KD
1	REVISIONS FOR ADDITIONAL SITE DESIGN	9/17/15	KD
a	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	9/2/15	JLG

SEAL
 MICHAEL BEHRENDT
 TOWN PLANNER
 No. 0387

DATE: 9/2/15
 SCALE: 1"=40'
 DESIGNED BY: MJS/JLG
 DRAWN BY: JLG
 APPROVED BY: MJS
 DWG FILE: 15-027 Phase 2C.dwg

FINAL APPROVAL BY DURHAM PLANNING BOARD.
 CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
 CERTIFIED _____
 DATE _____



MJS ENGINEERING, P.C.
 CIVIL • STRUCTURAL • ENVIRONMENTAL
 5 HALLSBORO ST., P.O. BOX 259
 HALLSBORO, VT 05746
 PHONE: (603) 659-4979, FAX: (603) 659-4627
 E-MAIL: MJS@MJS-ENGINEERING.COM

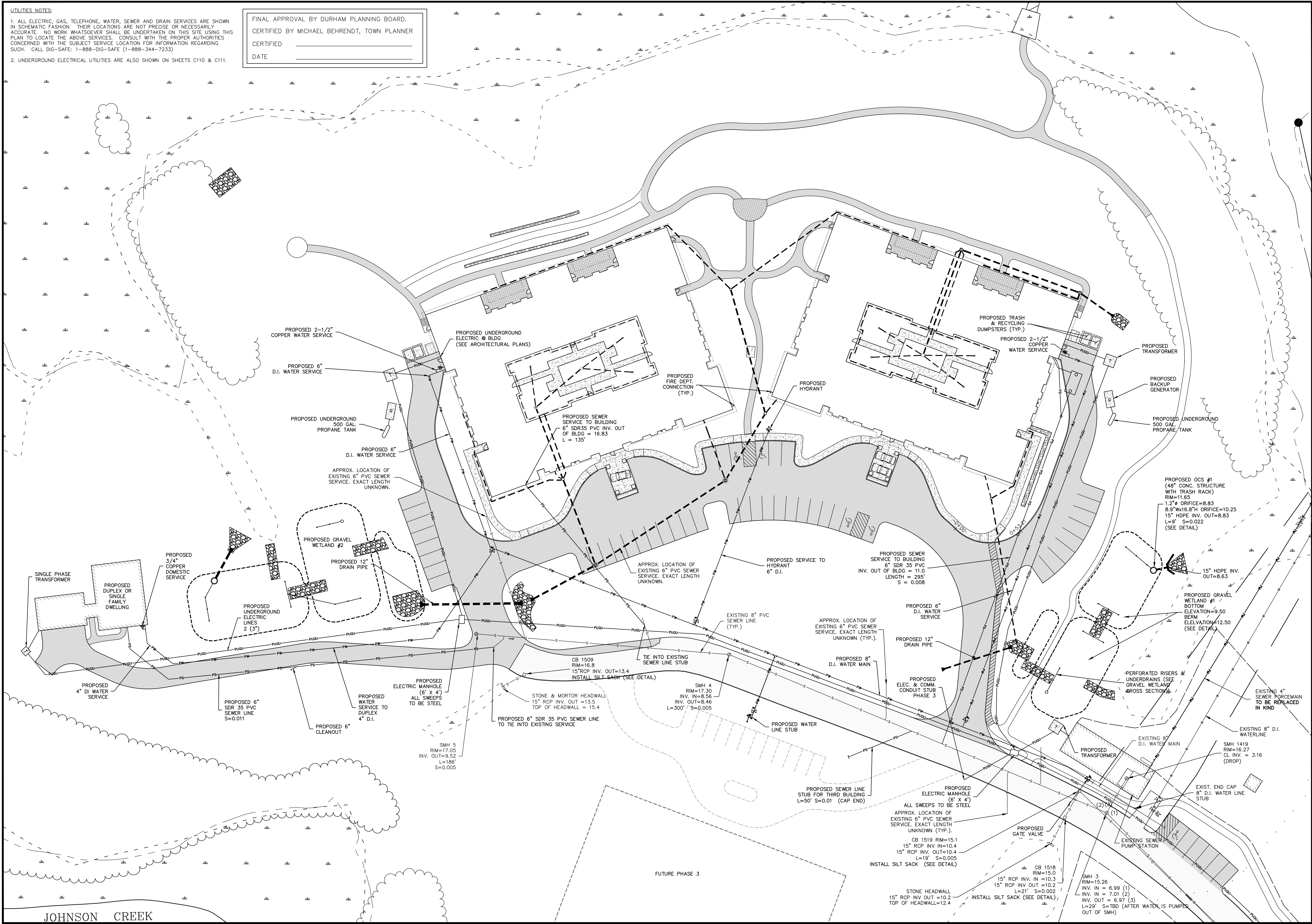
SITE PHASING PLAN 2 prepared for
 HARMONY HOMES BY THE BAY
 TAX MAP 11, LOTS (27-1)-(27-7)
 W. ARTHUR GRANT CIRCLE DURHAM, NH

JOB: 15-027
 C107

UTILITIES NOTES:

1. ALL ELECTRIC, GAS, TELEPHONE, WATER, SEWER AND DRAIN SERVICES ARE SHOWN IN SCHEMATIC FASHION. THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN ON THIS SITE USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATION FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE: 1-888-DIG-SAFE (1-888-344-7233)
2. UNDERGROUND ELECTRICAL UTILITIES ARE ALSO SHOWN ON SHEETS C110 & C111.

FINAL APPROVAL BY DURHAM PLANNING BOARD.
 CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
 CERTIFIED _____
 DATE _____



NO.	REVISIONS	DATE
6.	REVISIONS PER CONDITIONS OF APPROVAL	4/26/16 JLG
5.	REVISIONS PER AOT REVIEW LETTER DATED 3/31/16	4/21/16 MS
4.	SUBMISSION FOR SEWER PERMIT	3/23/16 JLG
3.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16 MS
2.	REVISIONS PER TOWN PLANNER COMMENTS DATED 10/16/15	10/28/15 JLG
1.	REVISIONS PER ADDITIONAL SITE DESIGN	9/17/15 JLG
0.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	9/22/15 JLG

DATE: 9/22/15
 SCALE: 1"=30'
 DESIGNED BY: MS/JLG
 DRAWN BY: JLG
 APPROVED BY: MJS
 DWG FILE: 15-027_C1A.dwg

SITE UTILITIES PLAN
 prepared for
HARMONY HOMES BY THE BAY
 TAX MAP 11, LOTS (27-1)-(27-7)
 W. ARTHUR GRANT CIRCLE DURHAM, NH

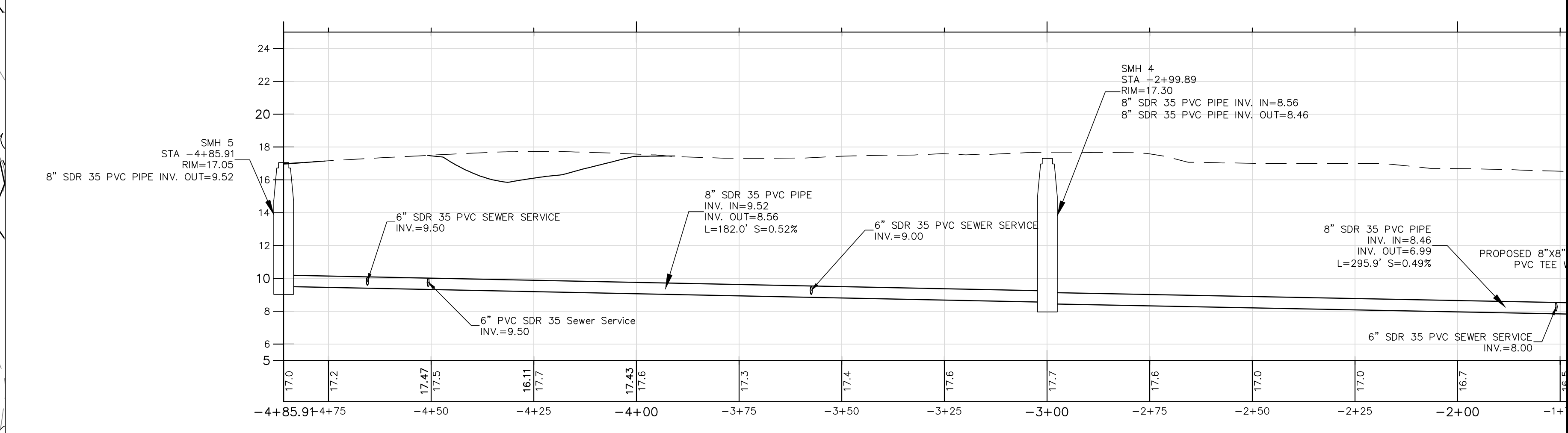
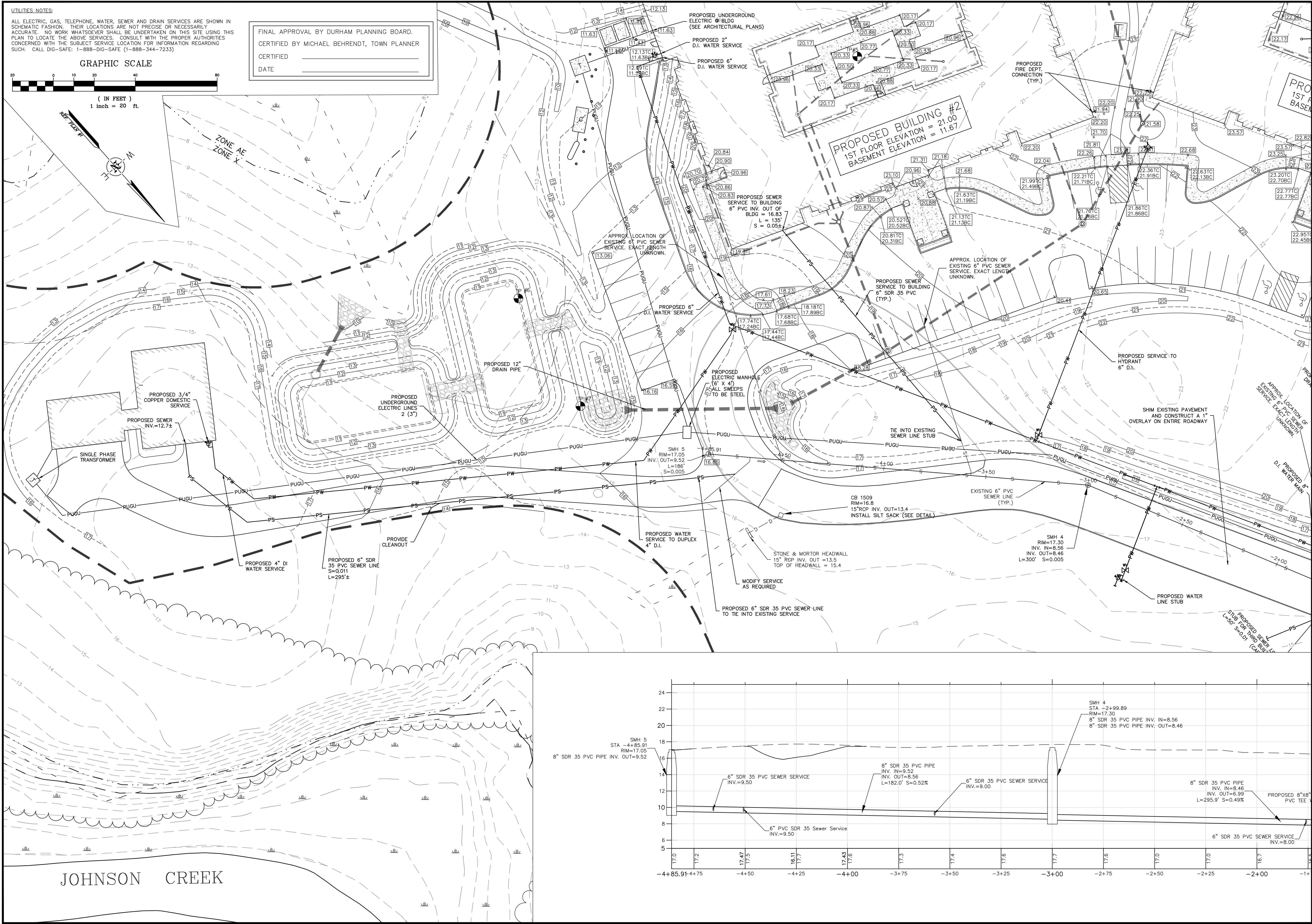
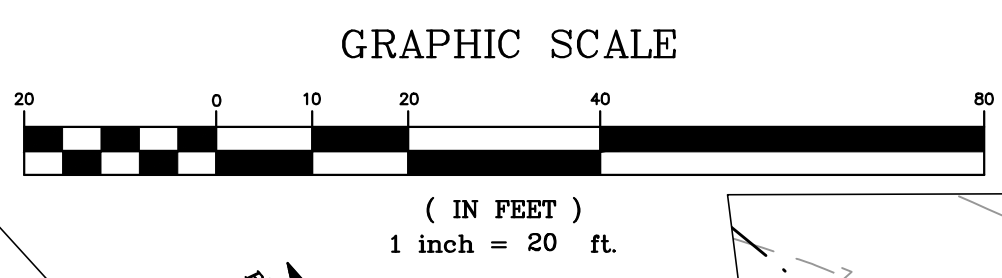
MJS ENGINEERING, P.C.
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 5 BALDWIN ST., P.O. BOX 259
 DURHAM, NH 03824
 PHONE: (603) 659-4979, FAX: (603) 659-4627
 E-MAIL: MJS@MJS-ENGINEERING.COM

JOB: 15-027
C108

Drawing Name: P:\150\15-027\Internal\Drawing Files\15-027_C109.dwg
Mon, 02 May 2016 - 11:30am

UTILITIES NOTES:
ALL ELECTRIC, GAS, TELEPHONE, WATER, SEWER AND DRAIN SERVICES ARE SHOWN IN SCHEMATIC FASHION. THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN ON THIS SITE USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATION FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE: 1-888-DIG-SAFE (1-888-344-7233)

FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED _____
DATE _____



DATE: 2/10/16	DESIGNED BY: MS/JLG	APPROVED BY: MJS	DWG FILE: 15-027_C109.dwg
SCALE: 1"=20'	DRAWN BY: JLG	APPROVED BY: MJS	

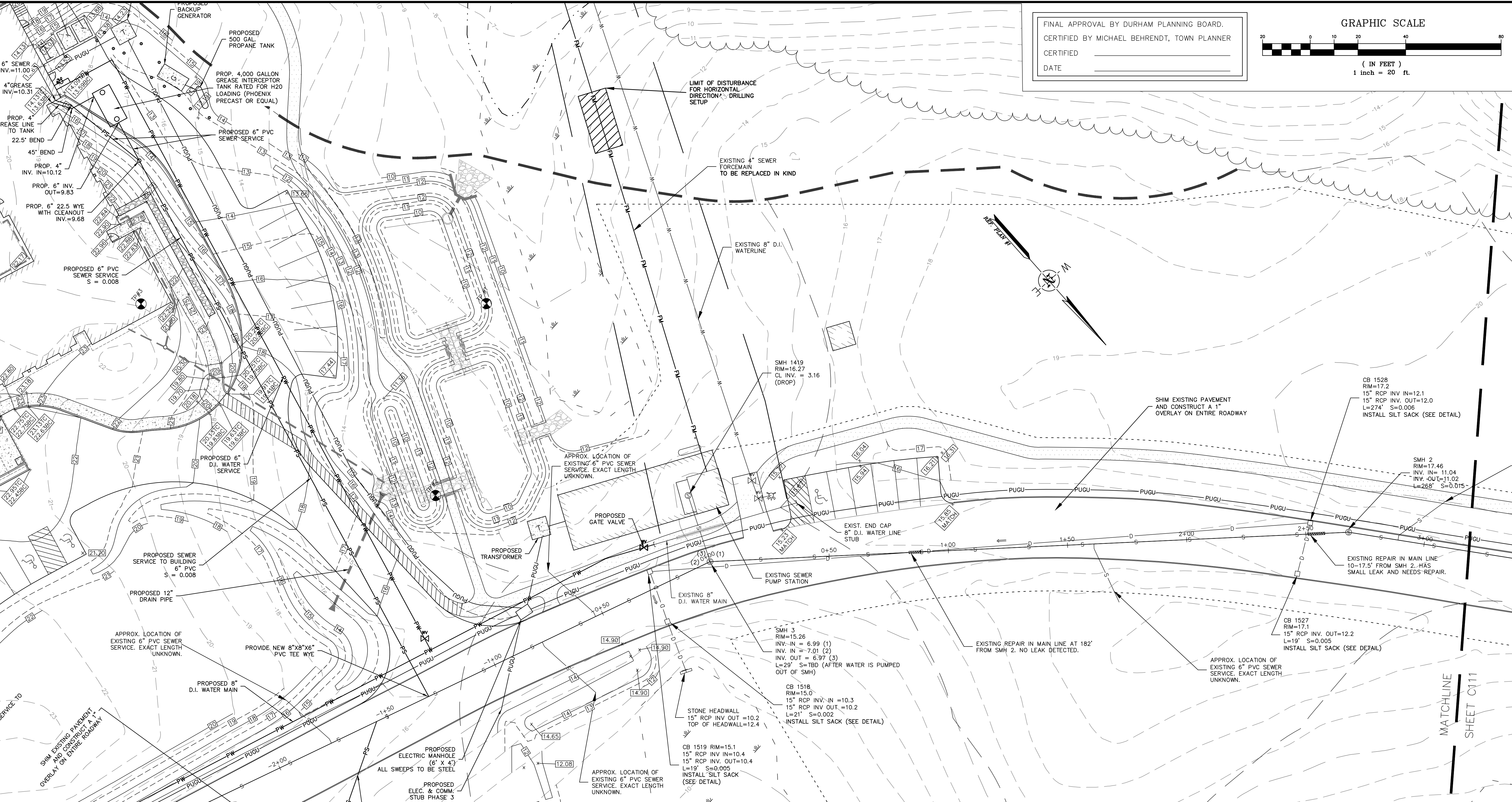
SEWER PLAN & PROFILE #1
prepared for
HARMONY HOMES BY THE BAY
TAX MAP 11, LOTS (27-1)-(27-7)
W. ARTHUR GRANT CIRCLE DURHAM, NH

MJS ENGINEERING, P.C.
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E-MAIL: MJS@MJS-ENGINEERING.COM

NO.	REVISIONS	DATE	INT.
1.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	MS
2.	REVISIONS PER CONDITIONS OF APPROVAL	4/26/16	JLG
3.	SUBMISSION FOR SEWER PERMIT	3/23/16	JLG

JOB: 15-027
C109

Drawing Name: P:\1501015-027\Internal\Drawings\Plan\15-027_C11A.dwg
Thu, 28 Apr 2016 - 4:34pm



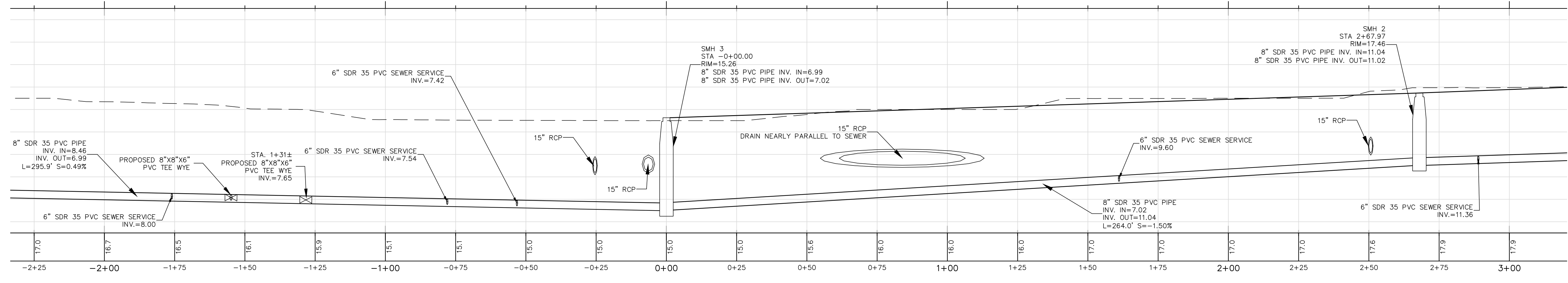
NO.	REVISIONS	DATE	INT.
2.	REVISIONS PER CONDITIONS OF APPROVAL	4/28/16	JLG
1.	SUBMISSION FOR SEWER PERMIT	3/23/16	JLG
1.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	JLG

DATE: 2/10/16
 SCALE: 1"=20'
 DESIGNED BY: MS/JLG
 DRAWN BY: JLG
 APPROVED BY: MAJ
 DWG FILE: 15-027_C11A.dwg

SEAL
 MICHAEL BEHRENDT
 TOWN PLANNER
 No. 6387

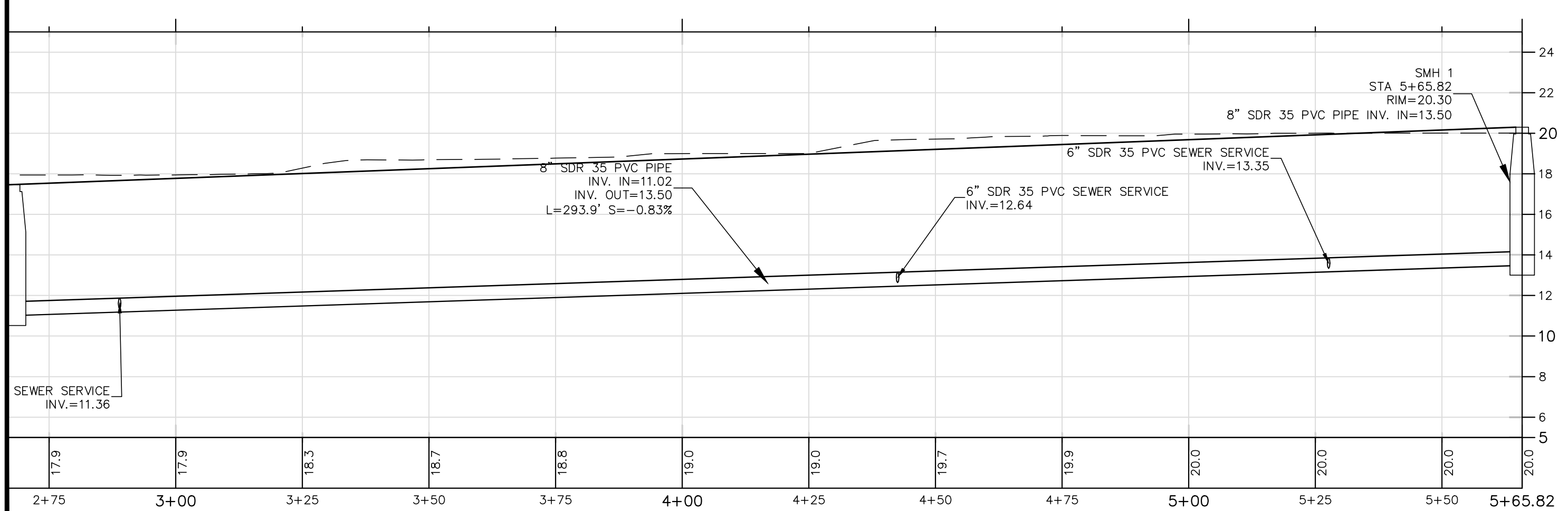
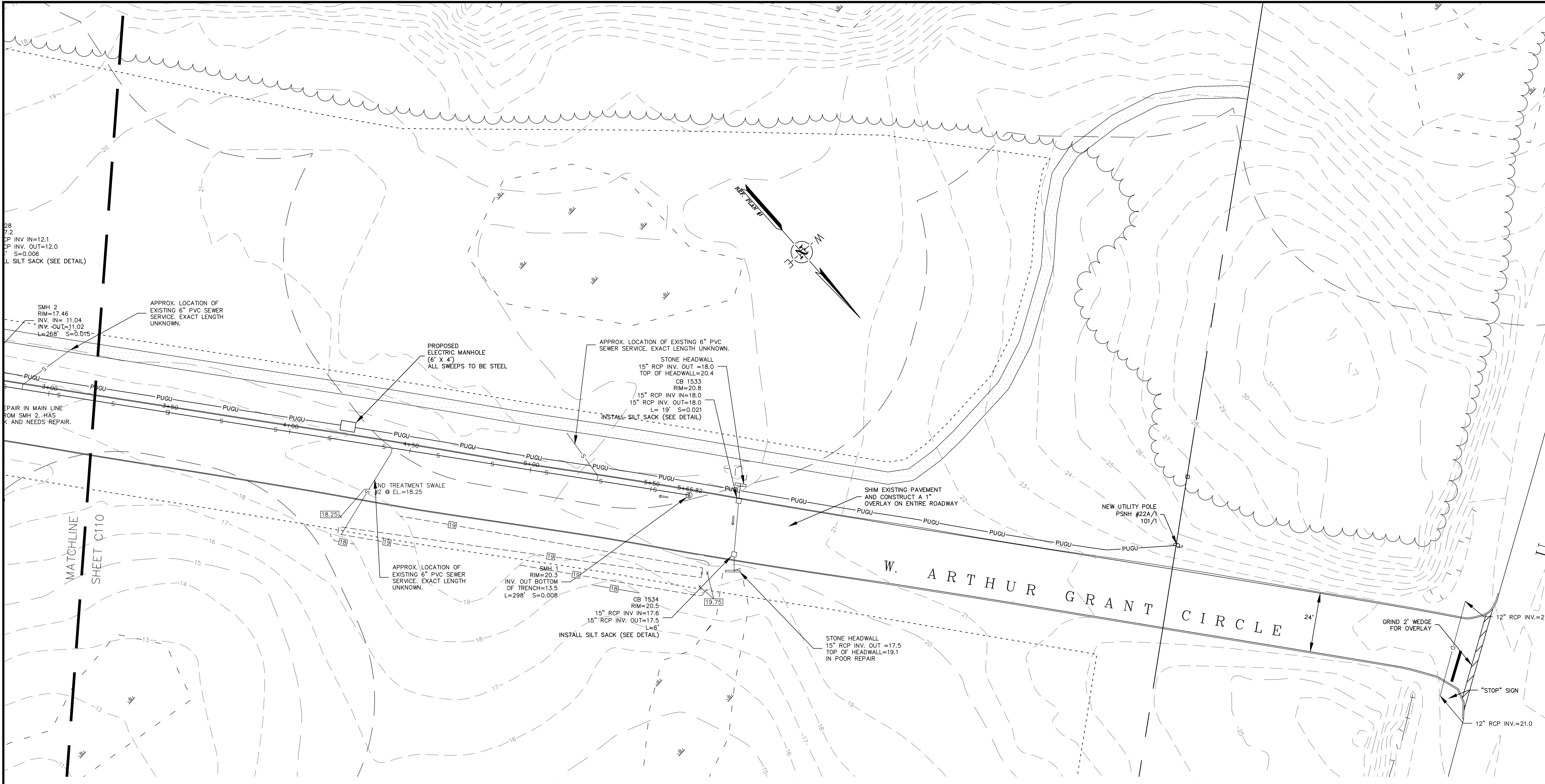
SEWER PLAN & PROFILE #2
 prepared for
HARMONY HOMES BY THE BAY
 TAX MAP 11, LOTS (27-1)-(27-7)
 W. ARTHUR GRANT CIRCLE DURHAM, NH

MJS ENGINEERING, P.C.
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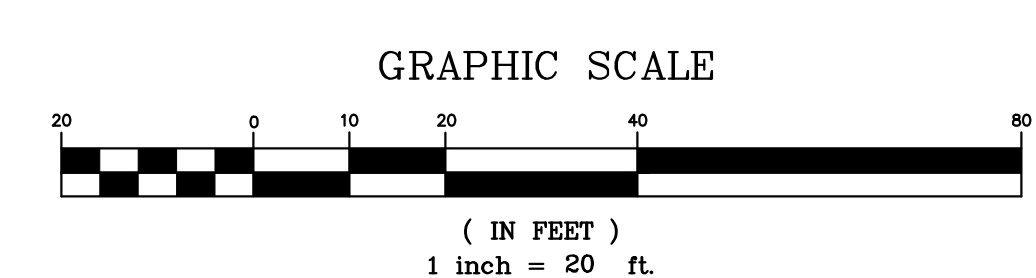
JOB: 15-027
C110

Drawing Name: P:\1502\15-027\Internal\Drawing Files\15-027_C11A.dwg
 Thu, 28 Apr 2016 - 4:33pm



UTILITIES NOTES:
 ALL ELECTRIC, GAS, TELEPHONE, WATER, SEWER AND DRAIN SERVICES ARE SHOWN IN SCHEMATIC FASHION. THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN ON THIS SITE USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATION FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE: 1-888-DIG-SAFE (1-888-344-7233)

FINAL APPROVAL BY DURHAM PLANNING BOARD.
 CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
 CERTIFIED _____
 DATE _____



PROPOSED USE DAILY FLOW CALCULATIONS:

BUILDING	USE	SIZE	STANDARD	DAILY FLOW (GPD)
(2) PROPOSED ELDERCARE FACILITIES	REST HOME	136 RESIDENTS + 20 EMPLOYEES	90 GPD/RESIDENT + 10 GPD/EMPLOYEE	12,440
PROPOSED DUPLEX (TWO 3 BEDROOM UNITS)	DWELLING (PRIVATE RESIDENCE)	6 BEDROOMS	70 GPD/BEDROOM	420
TOTAL				12,860 GPD (4,693,900 GPY)

PROPOSED GREASE INTERCEPTOR CALCULATIONS:

BUILDING	DAILY FLOW (GPD)	KITCHEN WASTE DAILY FLOW (GPD) (SEE NOTE 2)	GREASE INTERCEPTOR TANK SIZE	RESIDENCE TIME (SEE NOTE 3)
PROPOSED ELDERCARE FACILITY #1	6,220	2,177	4,000 GALLONS	44 HOURS
PROPOSED ELDERCARE FACILITY #2	6,220	2,177	4,000 GALLONS	44 HOURS

NOTES:

- ONE 4,000 GALLON GREASE TRAP IS REQUIRED FOR EACH OF THE TWO ELDERCARE FACILITIES.
- KITCHEN WASTE IS ASSUMED TO BE 35% OF TOTAL DAILY FLOW FROM BUILDING.
- RESIDENCE TIME (HOURS) = 24 * TANK SIZE / KITCHEN WASTE DAILY FLOW

NO.	REVISIONS	DATE	INT.
1.	SUBMISSION FOR SEWER PERMIT	3/17/16	JLG
2.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	MS

DATE: 2/10/16
 SCALE: 1"=20'
 DESIGNED BY: MS/JLG
 DRAWN BY: JLG
 APPROVED BY: MJS
 DWG FILE: 15-027_C11A.dwg

SEWER PLAN & PROFILE #3
 prepared for
HARMONY HOMES BY THE BAY
 TAX MAP 11, LOTS (27-1)-(27-7)
 W. ARTHUR GRANT CIRCLE DURHAM, NH

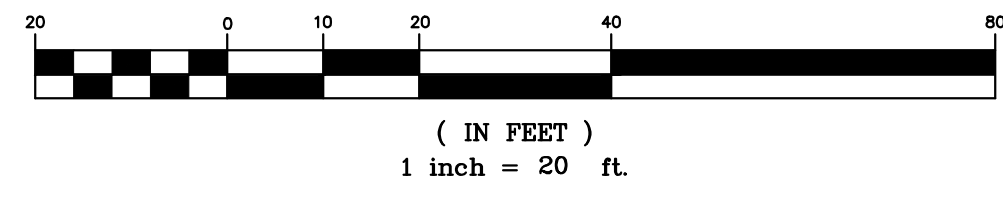
MJS ENGINEERING, P.C.
 CIVIL • STRUCTURAL • ENVIRONMENTAL
 5 Railroad St., P.O. Box 259
 Durham, NH 03824
 PHONE: (603) 659-4979, FAX: (603) 659-4627
 E-MAIL: MJS@MJS-ENGINEERING.COM

JOB: 15-027

C111

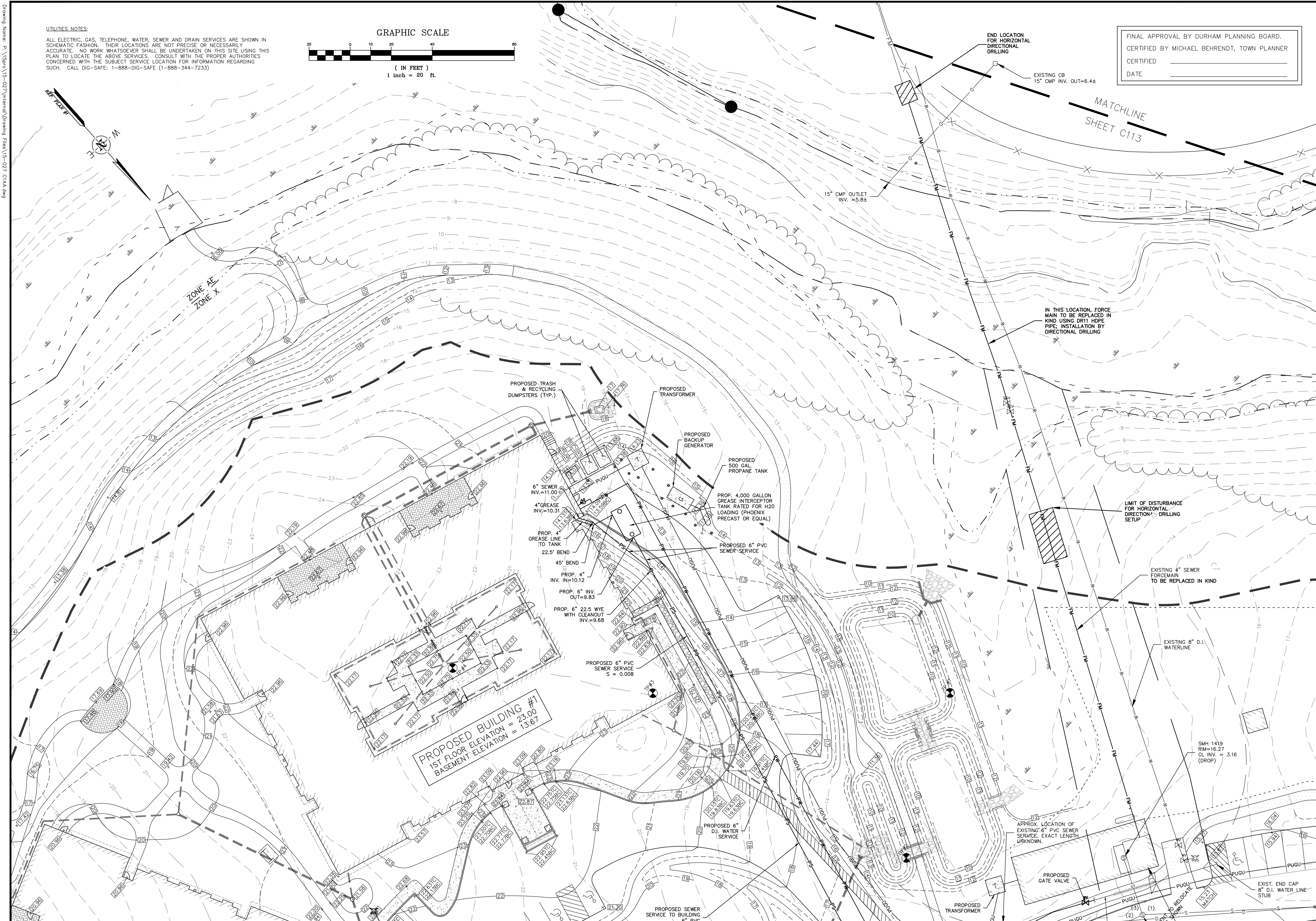
UTILITIES NOTES:
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GRAPHIC SCALE

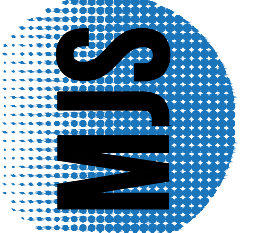


FINAL APPROVAL BY DURHAM PLANNING BOARD.
 CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
 CERTIFIED _____
 DATE _____

PROPOSED BUILDING #1
 1ST FLOOR ELEVATION = 23.00
 BASEMENT ELEVATION = 13.67

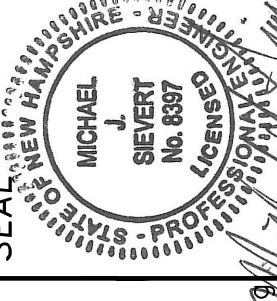


Drawing Name: P:\1502\15-027\Internal\Drawing Files\15-027 C11A.dwg
 Thu, 28 Apr 2016 4:38pm

SEWER FORCE MAIN REPLACEMENT PLAN #1 prepared for HARMONY HOMES BY THE BAY TAX MAP 11, LOTS (27-1)-(27-7) W. ARTHUR GRANT CIRCLE DURHAM, NH		
 MJS ENGINEERING, P.C. CIVIL • STRUCTURAL • ENVIRONMENTAL 5 TOLLWOOD ST., P.O. BOX 259 DURHAM, NH 03824 PHONE: (603) 659-4979, FAX: (603) 659-4627 E-MAIL: MJS@MJS-ENGINEERING.COM		
DATE: 2/10/16	SCALE: 1"=20'	DESIGNED BY: MS/JLG
		DRAWN BY: JLG
		APPROVED BY: MJS
DWG FILE: 15-027 C11A.dwg		NO.
		REVISIONS
	1. SUBMISSION FOR SEWER PERMIT	3/7/16 JLG
	2. SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16 JLG
		DATE INT.

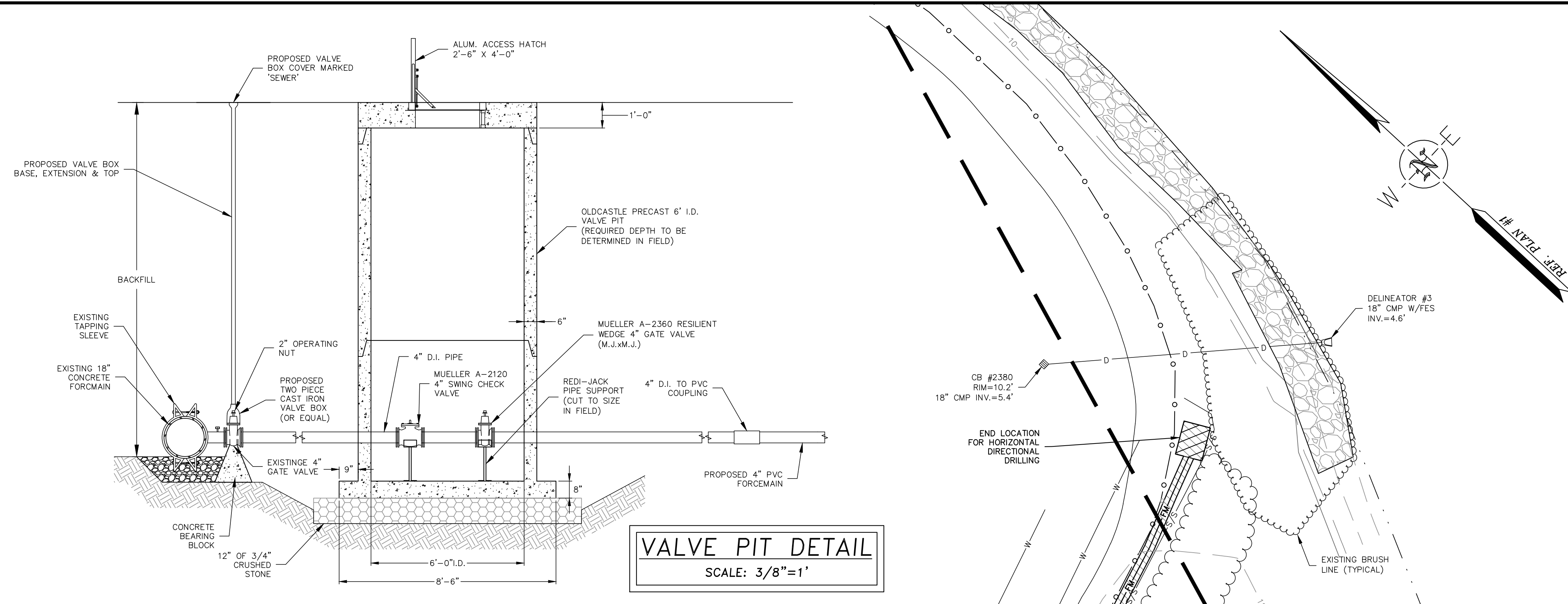
JOB: 15-027

C112



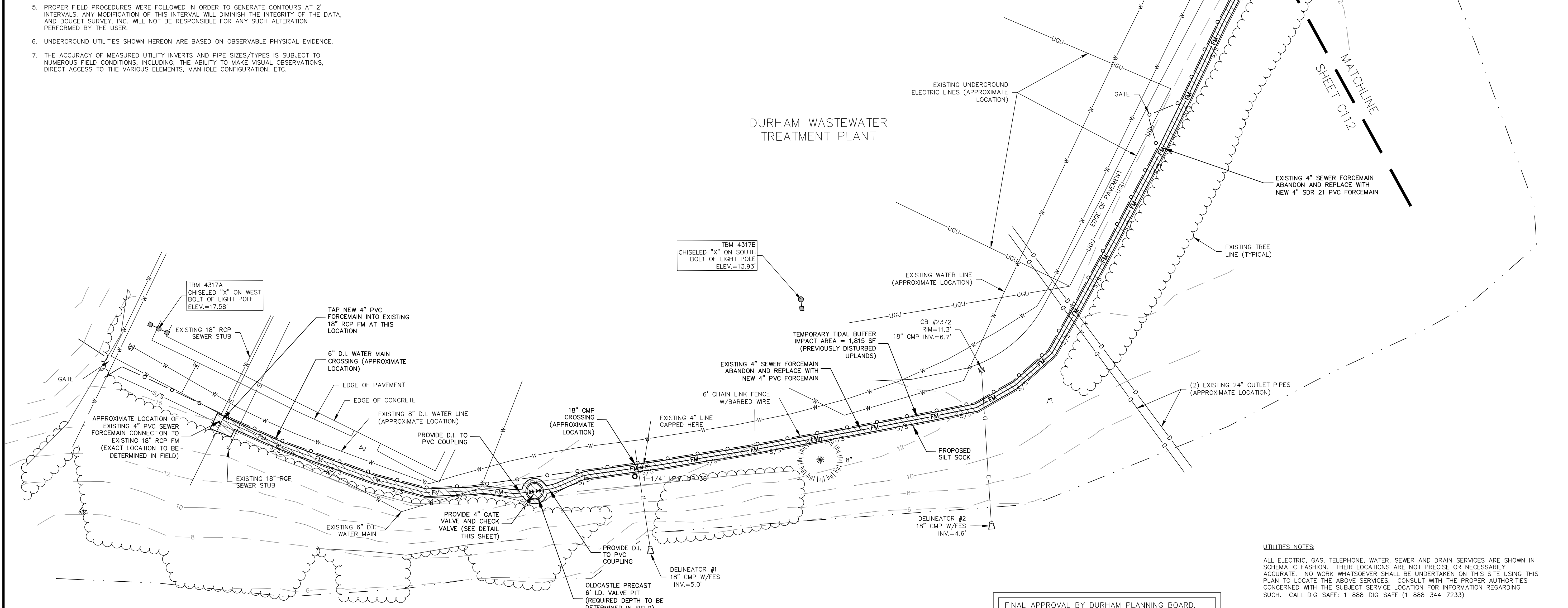
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Mon, 02 May 2016 - 9:44am

- NOTES:**
- PLAN INTENT:** AN EXISTING 4" PVC FORCE MAIN FROM THE DURHAM BUSINESS PARK PARCEL (TAX MAP 11 LOT 27) TIES INTO AN 18" REINFORCED CONCRETE FORCE MAIN LOCATED WITHIN THE DURHAM WASTEWATER TREATMENT PLANT PROPERTY LIMITS. THE FORCEMAIN SHALL BE REPLACED FROM THE PUMP HOUSE TO JUST BEFORE THE 18" RCP SEWER FORCEMAIN. A PORTION OF THE 4" FORCE MAIN IS TO BE REROUTED AS SHOWN ON THIS PLAN.
 - THE REFERENCE PLAN DEPICTS THE PROPOSED INSTALLATION OF AN 8" WATERLINE THAT IS CURRENTLY IN PLACE.
 - ADDITIONAL REFERENCE PLAN:**
A. 'DURHAM BUSINESS PARK WATERLINE EXTENSION' PREPARED FOR TOWN OF DURHAM PUBLIC WORKS DEPARTMENT BY MAGUIRE GROUP INC., DATED JULY 8, 1997.
- SEWER FORCEMAIN & GENERAL SEWER CONSTRUCTION SEQUENCE:**
- ALL SEWER AND WATER UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCING NOTES ON SHEET D101.
 - NOTIFY DIGSAFE AND LOCATE ALL UNDERGROUND UTILITIES IN THE WORK VICINITY. DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE, AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED.
 - ALL WORK WITHIN 100 FOOT TIDAL BUFFER SHALL BE CONFINED TO THE AREA OF DISTURBANCE SHOWN ON THE PLAN. ALL LAND DISTURBANCE SHALL BE CONFINED TO THE LIMIT OF WORK SHOWN ON THE PLAN.
- VALVE PIT NOTES REFERENCING SHEET C116**
- EXISTING 4" PVC FORCE MAIN HAS BEEN CUT AND CAPPED ON BOTH ENDS AS SHOWN ON THE PLAN IN A LOCATION WHERE A BREAK WAS PREVIOUSLY REPAIRED.
 - EXCAVATE NEAR 18" RCP FORCE MAIN TO LOCATE THE CONNECTION WITH THE 4" PVC FORCE MAIN. BASED ON THE ORIGINAL CONSTRUCTION NOTES, THERE WERE (2) LENGTHS OF 4" D.I. PIPE INSTALLED AT THE CONNECTION TO THE 18" RCP FORCE MAIN. ONCE CONNECTION IS LOCATED, CONSULT WITH TOWN AND DESIGN ENGINEER TO DETERMINE IF THE CONNECTION IS ADEQUATE TO REMAIN IN PLACE.
 - THE MINIMUM REQUIREMENTS WILL BE TO REPAIR ANY EXISTING VALVES, PROVIDE ACCESS TO GRADE AND ADD A CHECK VALVE AND GATE VALVE IN A NEW VALVE PIT.
 - OUTSIDE THE VALVE PIT, THE PROPOSED 4" FORCE MAIN SHALL BE ROUTED BACK TOWARD THE LOCATION OF THE EXISTING REPAIR AS SHOWN ON THE PLAN.
- SURVEY NOTES:**
- FIELD SURVEY PERFORMED BY J.M.L. & L.P.S. OF DOUCET SURVEY DURING 2/2016 USING A TRIMBLE 5603 TOTAL STATION, TRIMBLE R8 SURVEY GRADE GPS UNIT, AND A TRIMBLE TSC3 DATA COLLECTOR AND A SOKKIA B21 AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
 - JURISDICTIONAL WETLANDS DELINEATED BY WEST ENVIRONMENTAL, INC DURING FEBRUARY 2016 IN ACCORDANCE WITH 1987 CORPS OF ENGINEERS WETLANDS DELINEATIONS MANUAL, TECHNICAL REPORT Y-87-1.
 - HORIZONTAL DATUM BASED ON PREVIOUS WORK COMPLETED BY THIS FIRM ON THIS SITE.
 - VERTICAL DATUM IS BASED ON NGVD 1929.
 - 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.
 - UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON OBSERVABLE PHYSICAL EVIDENCE.
 - 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.

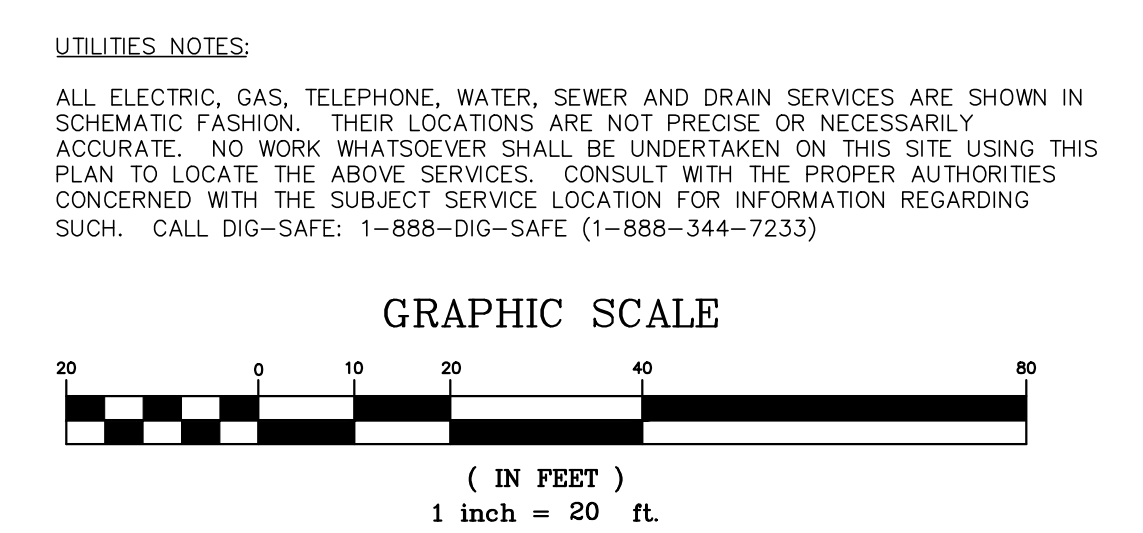


VALVE PIT DETAIL
SCALE: 3/8"=1'

DURHAM WASTEWATER TREATMENT PLANT



FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED _____
DATE _____



NO.	REVISIONS	DATE	INT.
1.	SUBMISSION FOR SEWER PERMIT	3/11/16	JLG
2.	REVISIONS PER CONDITIONS OF APPROVAL	4/26/16	JLG

SEWER FORCE MAIN REPLACEMENT
PLAN #2
prepared for
HARMONY HOMES BY THE BAY
TAX MAP 11, LOTS (27-1)-(27-7)
W. ARTHUR GRANT CIRCLE DURHAM, NH

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JOB: 15-027
C113

CONSTRUCTION SEQUENCING AND EROSION CONTROL NOTES:

- AREA OF DISTURBANCE/STABILIZATION
A. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION...
B. AREAS NOT TO BE PAVED...
C. DISTURBED AREAS SHALL BE TEMPORARILY STABILIZED WITHIN 45 DAYS...

- PROTECTED SHORELAND REQUIREMENTS
A. ALL WORK SHALL CONFORM TO THE COMPREHENSIVE SHORELAND PROTECTION ACT...
B. WITHIN 3 DAYS OF FINAL GRADING OR TEMPORARY SUSPENSION OF WORK...
C. FERTILIZER & LIMESTONE
D. MAINTENANCE

- COLD WEATHER SITE STABILIZATION
A. SHALL BE UTILIZED BETWEEN NOVEMBER 30TH AND MAY 1ST...
B. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH...
C. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE GREATER THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH...
D. INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX...

TEMPORARY VEGETATION (REFER TO PROTECTED SHORELAND REQUIREMENTS FOR WORK WITHIN THE PROTECTED SHORELAND)
Table with columns: SEASON, APPLICATION DATE, MIXTURE TYPE, QUANTITY (lb./Ac.)

- APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER...
3. TEMPORARY SEEDING SHOULD TYPICALLY OCCUR PRIOR TO SEPTEMBER 15TH...
4. AREAS SEEDING BETWEEN MAY 15TH AND AUGUST 15TH SHOULD BE COVERED WITH HAY OR STRAW MULCH...

- M.AINTENANCE
1. TEMPORARY SEEDING SHOULD BE INSPECTED WEEKLY AND AFTER ANY RAINFALL EXCEEDING 1/2 INCH...
2. BASED ON INSPECTION, AREAS SHOULD BE RESEDED TO ACHIEVE FULL STABILIZATION...
3. EROSION CONTROL BLANKETS HAVE BEEN INSTALLED IN ACCORDANCE WITH ENV-WO 1506.03...

- PERMANENT VEGETATION (REFER TO PROTECTED SHORELAND REQUIREMENTS FOR WORK WITHIN THE PROTECTED SHORELAND)
A. SITE PREPARATION
1. REFER TO SITE PREPARATION FOR TEMPORARY SEEDING.
B. SEED BED PREPARATION
1. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL...

- SEED MIXTURE SELECTION BASED ON SOIL TYPE
Table with columns: USE, SEEDING MIXTURE, SOIL DRAINAGE
D. MAINTENANCE
1. PERMANENTLY SEEDED AREAS SHOULD BE INSPECTED MONTHLY...

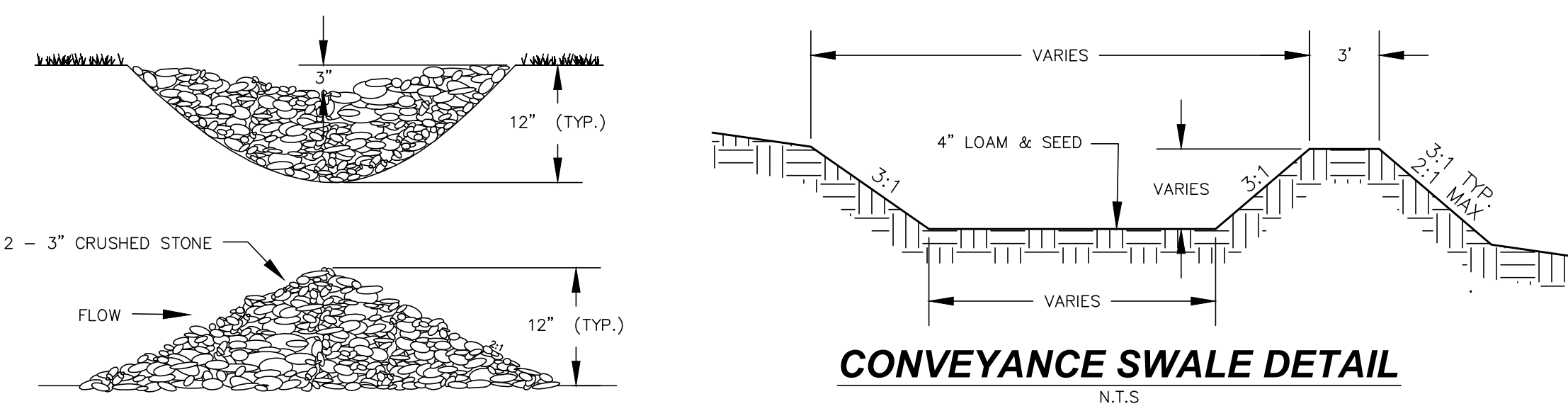
- MULCHING & EROSION CONTROL MATTING
A. GENERAL
1. APPLY PRIOR TO A STORM EVENT...
2. MULCHING WITHIN A SPECIFIED TIME PERIOD FROM ORIGINAL SOIL EXPOSURE...
B. TEMPORARY MULCHING
1. HAY OR STRAW MULCHES
A. ORGANIC MULCHES INCLUDING HAY AND STRAW SHALL BE AIR-DRIED...

SEED MIXTURES FOR PERMANENT VEGETATION
Table with columns: MIXTURE, SPECIES, POUNDS PER ACRE, POUNDS PER 1,000 SF

- ADDITIONAL NOTES:
1. NO FUEL SHALL BE STORED ON SITE DURING CONSTRUCTION...
2. DURING CONSTRUCTION DUST SHALL BE PREVENTED FROM BECOMING A SAFETY OR HEALTH HAZARD...
3. ALL CONSTRUCTION MATERIALS THAT ARE SPILLED OR DEPOSITED ON THE PUBLIC ROADWAYS SHALL BE REMOVED BY THE CONTRACTOR...
4. DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE, AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED...

- SOIL STOCKPILES
A. GENERAL
1. PLACE IN THE LOCATIONS SHOWN ON THE PLAN...
B. PROTECTION OF STOCKPILES
1. PROTECT SOIL AND AGGREGATE STOCKPILES WITH TEMPORARY PERIMETER SEDIMENT BARRIER...
2. COVER ACTIVE STOCKPILES WITH ANCHORED PROTECTIVE COVERING PRIOR TO EXPECTED STORM EVENTS...

- DUST CONTROL
A. DUST SHALL BE CONTROLLED ON SITE DURING CONSTRUCTION BY IMPLEMENTING THE FOLLOWING DUST CONTROL MEASURES:
1. MULCHING AND VEGETATIVE COVER TO REDUCE DUST.
2. MECHANICAL SWEEPERS AND FINE WATER SPRAYS.
3. COVER SURFACES WITH CRUSHED STONE OR COARSE GRAVEL.



- CONSTRUCTION SPECIFICATIONS:
1. STRUCTURES SHALL BE INSTALLED ACCORDING TO THE DIMENSIONS SHOWN ON THE PLANS...
2. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER SO THAT EROSION, AIR AND WATER POLLUTION WILL BE MINIMIZED...
5. STRUCTURES SHALL BE REMOVED FROM THE CHANNEL WHEN THEIR USEFUL LIFE HAS BEEN COMPLETED.

- MAINTENANCE NOTES:
1. TEMPORARY GRADE STABILIZATION STRUCTURES SHOULD BE INSPECTED AFTER EACH STORM AND DAILY DURING PROLONGED STORM EVENTS...
2. PARTICULAR ATTENTION SHOULD BE GIVEN TO END RUN AND EROSION AT THE DOWNSTREAM TOE OF THE STRUCTURE...
3. WHEN REMOVING THE STRUCTURES, THE DISTURBED AREAS SHALL BE BROUGHT UP TO EXISTING CHANNEL GRADE AND THE AREAS PREPARED, SEEDED AND MULCHED...

STONE CHECK DAM N.T.S.

CONSTRUCTION SEQUENCING:

PHASE 1 - CONSTRUCTION OF BUILDING 1 AND ASSOCIATED UTILITIES:
THE ESTIMATED START OF CONSTRUCTION IS APRIL 2016 AND THE ESTIMATED END OF CONSTRUCTION IS APRIL 2017. THE CONSTRUCTION SEQUENCING IS DETAILED BELOW.

- 1. COMPLETE A PRE-CONSTRUCTION MEETING WITH ALL PARTIES PRIOR TO BEGINNING CONSTRUCTION.
2. CONTACT DIG-SAFE PRIOR TO BEGINNING ANY CONSTRUCTION...
3. INSTALL ALL EROSION CONTROL MEASURES AS SHOWN ON THE SITE GRADING PLANS 1-4...
4. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE IN THE LOCATION SHOWN ON THE SITE PHASING AND LOGISTICS PLAN...
5. GRUB SITE FOR THE CONSTRUCTION OF PHASE 1 ONLY...
6. PROVIDE CONSTRUCTION ENTRANCES IN LOCATIONS WHERE TRUCKS ARE ACCESSING THE EXISTING ROAD OR MINIMIZE ACCESS TO ONE LOCATION...
7. SET UP CONSTRUCTION STAGING AND STORAGE AREA AS SHOWN ON THE PHASING AND CONSTRUCTION MANAGEMENT PLANS OR IN ACCORDANCE WITH THE GENERAL CONTRACTORS PLAN FOR CONSTRUCTION BUT MEETING THE INTENT OF THE CONSTRUCTION MANAGEMENT PLAN...

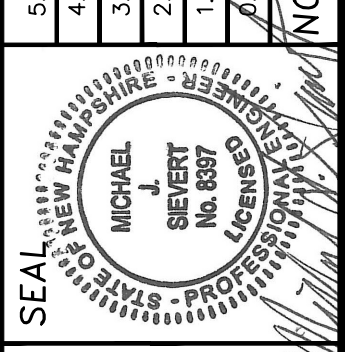
CONSTRUCTION SEQUENCING:

PHASE 2 - CONSTRUCTION OF BUILDING 2, SINGLE-FAMILY/DUPLEX AGE-RESTRICTED BUILDING AND ASSOCIATED UTILITIES:
THE EARLIEST ESTIMATED START OF CONSTRUCTION IS APRIL 2018 AND THE ESTIMATED END OF CONSTRUCTION IS APRIL 2019. THE CONSTRUCTION SEQUENCING IS DETAILED BELOW.

- 1. COMPLETE PRE-CONSTRUCTION MEETING WITH ALL PARTIES PRIOR TO BEGINNING CONSTRUCTION.
2. CONTACT DIG-SAFE PRIOR TO BEGINNING ANY CONSTRUCTION...
3. INSTALL ALL EROSION CONTROL MEASURES AS SHOWN ON THE EROSION CONTROL PLAN...
4. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE IN THE LOCATION SHOWN ON THE SITE CONSTRUCTION PLAN...
5. GRUB SITE FOR THE CONSTRUCTION OF PHASE 2...
6. SET UP CONSTRUCTION STAGING AND STORAGE AREA AS SHOWN ON THE PHASING AND CONSTRUCTION MANAGEMENT PLANS OR IN ACCORDANCE WITH THE GENERAL CONTRACTORS PLAN FOR CONSTRUCTION BUT MEETING THE INTENT OF THE CONSTRUCTION MANAGEMENT PLAN...
7. DURING THE CONSTRUCTION OF PHASE 2 TEMPORARY SWALES AND SEDIMENTATION PONDS SHALL BE CONSTRUCTED AS NEEEDED TO PROTECT THE CONSTRUCTED WETLANDS FROM EXCESSIVE SILTATION...
8. EXCAVATE FOR BUILDING FOUNDATIONS, PREPARE FOOTING SUBGRADE, AND BACKFILL IN ACCORDANCE WITH GEOTECHNICAL OR STRUCTURAL ENGINEERS REQUIREMENTS...

FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED _____
DATE _____

Table with columns: DATE, REVISIONS, NO.
Rows for approval dates: 4/28/16, 4/27/16, 2/10/16, 10/28/15, 9/17/15, 9/2/15



DATE: 9/2/15
SCALE: AS SHOWN
DESIGNED BY: MJS
DRAWN BY: BOB
APPROVED BY: MJS
DWG FILE: 15-027 Details.dwg

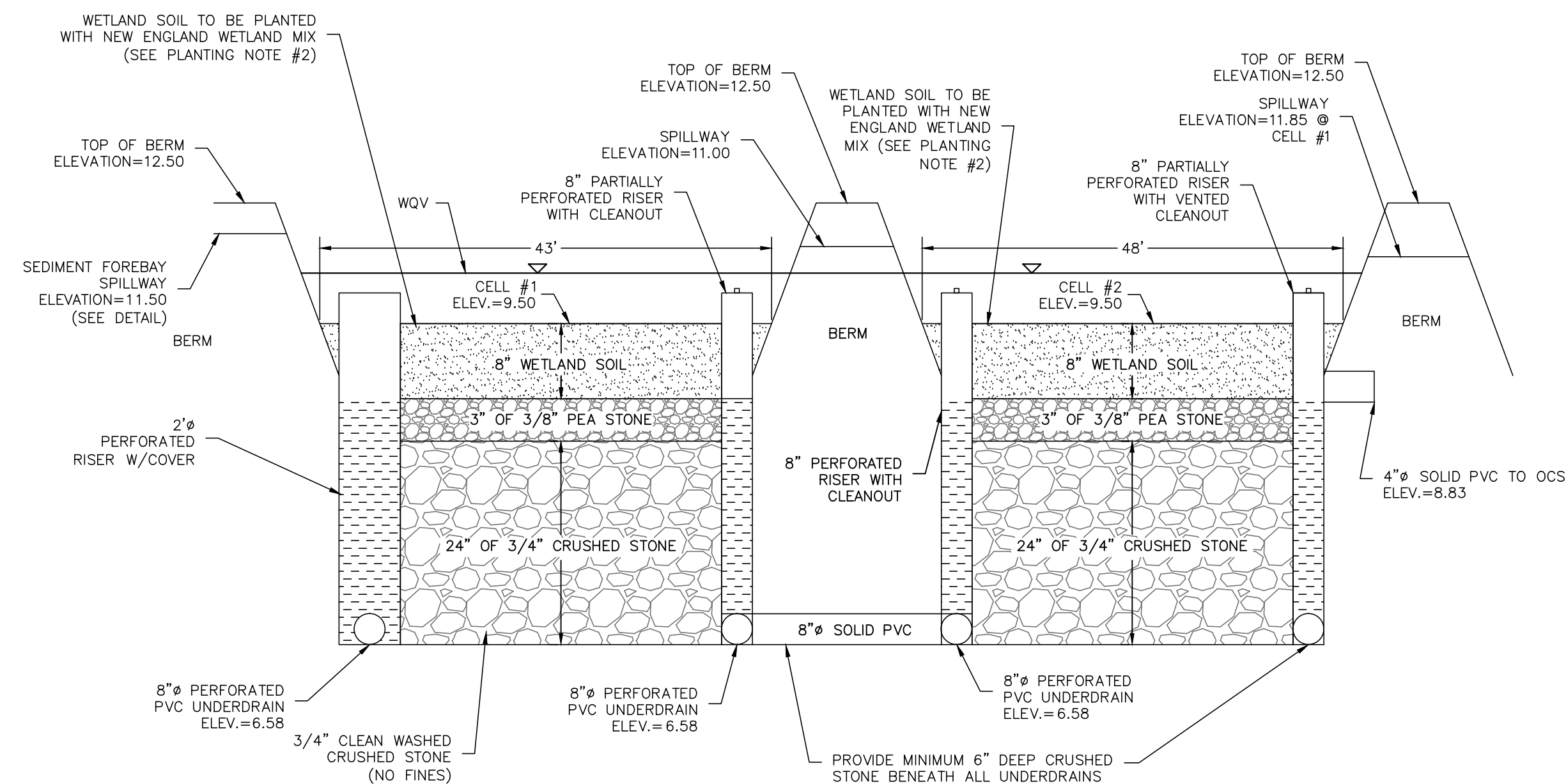
SITE CONSTRUCTION DETAILS prepared for
HARMONY HOMES BY THE BAY
TAX MAP 11, LOTS (27-1)-(27-7)
W. ARTHUR GRANT CIRCLE DURHAM, NH

MJS ENGINEERING P.C.
CIVIL • STRUCTURAL • ENVIRONMENTAL
5 HALLIBROOK ST., P.O. BOX 359
PHONE: (603) 659-4979, FAX: (603) 659-4627
E-MAIL: MJS@MJS-ENGINEERING.COM



JOB: 15-027

D101



GRAVEL WETLAND #1 CROSS SECTION
N.T.S.

GRAVEL WETLAND CONSTRUCTION NOTES:

- DO NOT PLACE GRAVEL WETLANDS INTO SERVICE UNTIL EACH BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
- DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE GRAVEL WETLAND OR DURING ANY STAGE OF CONSTRUCTION.
- CLEAR AND GRUB THE AREA WHERE THE GRAVEL WETLAND IS TO BE LOCATED. STOCKPILE LOAM FOR REUSE LATER.
- THE FOUNDATION AREA SHALL BE SCARIFIED PRIOR TO PLACING FILL. ALL UNSUITABLE MATERIAL UNDER THE BERM SHALL BE REMOVED AND REPLACED WITH SUITABLE FOUNDATION MATERIAL.
- THE BERM SHALL BE CONSTRUCTED BEGINNING FROM THE LOWEST POINT UNIFORMLY ALONG ITS ENTIRE LENGTH. PLACE MATERIALS IN MAXIMUM 12" LOOSE LIFTS COMPACTED TO 95% MAXIMUM MODIFIED PROCTOR DENSITY. EMBANKMENT SOIL SHALL HAVE NO ORGANIC MATTER OR FROZEN MATERIAL AND NO STONES LARGER THAN 2/3 OF THE MAXIMUM LOOSE LIFT THICKNESS. STONES AROUND ANY STRUCTURES AND/OR CONDUITS SHALL NOT EXCEED 3 INCHES. EMBANKMENT FILL MATERIAL SHALL HAVE THE FOLLOWING GRADATION:

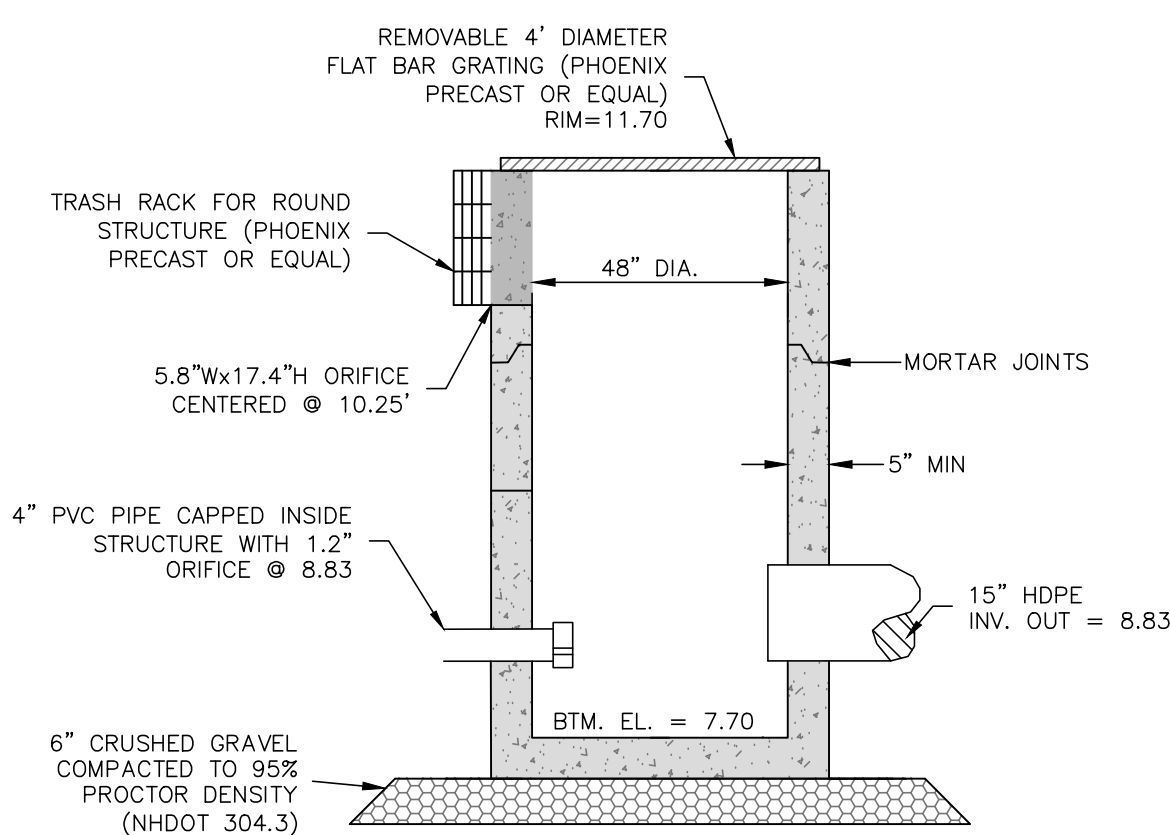
SIEVE SIZE:	% PASSING:
#4	80-90
#40	50-80
#100	30-45
#200	15-30

GRAVEL WETLAND MAINTENANCE:

- SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EVENT EXCEEDING 2.5 INCHES IN A 24 HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS WARRANTED BY SUCH INSPECTION.
- TRASH AND DEBRIS SHOULD BE REMOVED AT EACH INSPECTION.
- AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF GRAVEL WETLAND DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION INCLUDING BUT NOT LIMITED TO REMOVAL AND REPLACEMENT OF WETLAND SOIL AND REPLANTING.
- VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING PRUNING, REMOVAL AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.

PLANTING NOTES:

- WETLAND SOIL MIX FOR GRAVEL WETLAND SHALL BE A SILT LOAM WITH A MINIMUM OF 15-20% ORGANIC CONTENT BY MASS. THE CLAY CONTENT SHALL NOT EXCEED 15% BY VOLUME. THE ORGANIC MATTER SHALL CONSIST OF DECIDUOUS LEAF COMPOST PROPERLY MATURED AND AT LEAST ONE YEAR OLD. THERE SHALL BE NO LEAF MULCH, COMPOSTED MIXED YARD DEBRIS, OR WOOD CHIPS.
- GRAVEL WETLAND BOTTOM TO BE PLANTED WITH NEW ENGLAND WETLAND MIX AVAILABLE FROM:
PIERSON NURSERIES INC.
24 BUZZELL ROAD
BIDDEFORD, ME 04005
(207)-499-4992
- GRAVEL WETLAND SLOPES AND BERM TO BE PLANTED WITH SEED MIX 'C' LISTED ON SHEET D101.



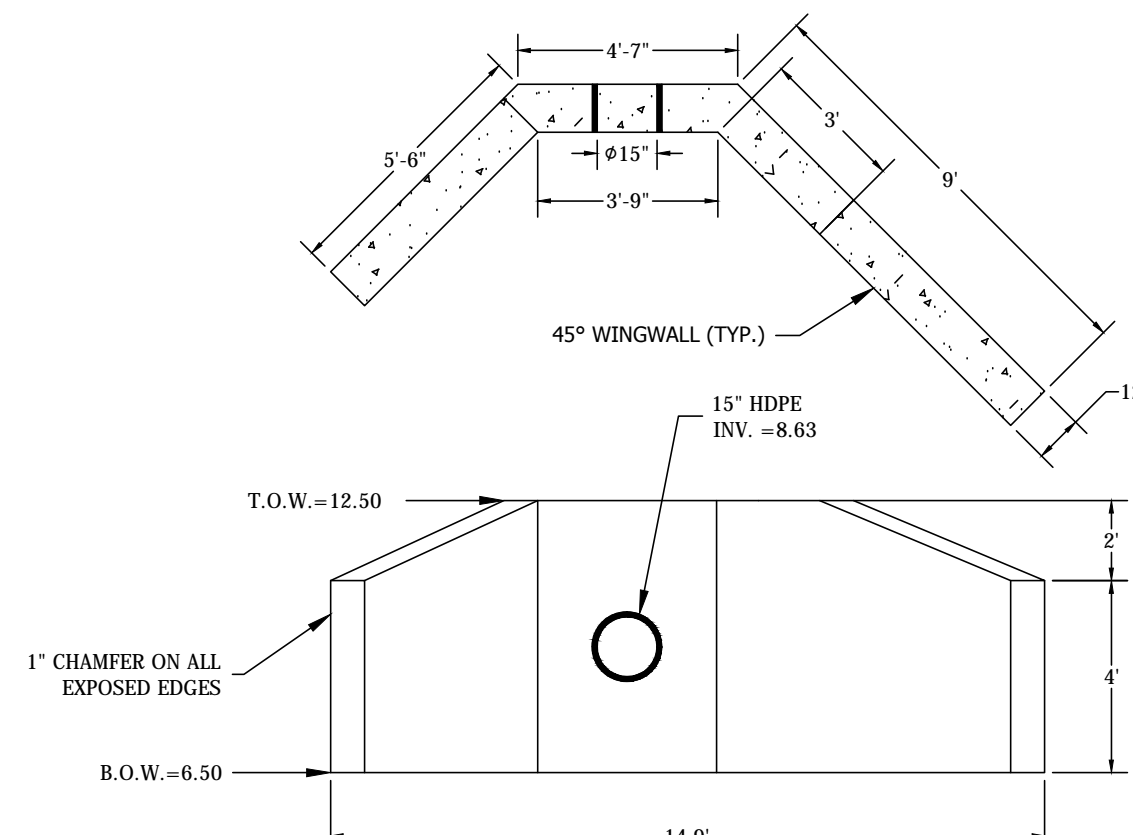
OUTLET CONTROL STRUCTURE #1
N.T.S.

OUTLET CONTROL STRUCTURE NOTES:

- DRAINAGE STRUCTURE MATERIALS SHALL COMPLY WITH NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, DIVISION 600, SECTION 604.
- CONCRETE TO BE 4,000 PSI CONCRETE.
- PIPE OPENINGS SHALL BE FULLY MORTARED ON OUTSIDE PRIOR TO BACK FILLING. INSIDE OF PIPE OPENINGS SHALL BE MORTARED AND ALLOWED TO CURE PER MANUFACTURERS REQUIREMENTS PRIOR TO RECEIVING RUNOFF.
- JOINTS BETWEEN ADJACENT RISERS SHALL BE FULLY SEALED WITH ELASTOMERIC SEALANT PER MANUFACTURERS REQUIREMENTS.
- CONCRETE STRUCTURE AND TRASH RACKS AVAILABLE FROM:
PHOENIX PRECAST
77 REGIONAL DRIVE
CONCORD, NH 03301
(603)225-5169

NOTES:

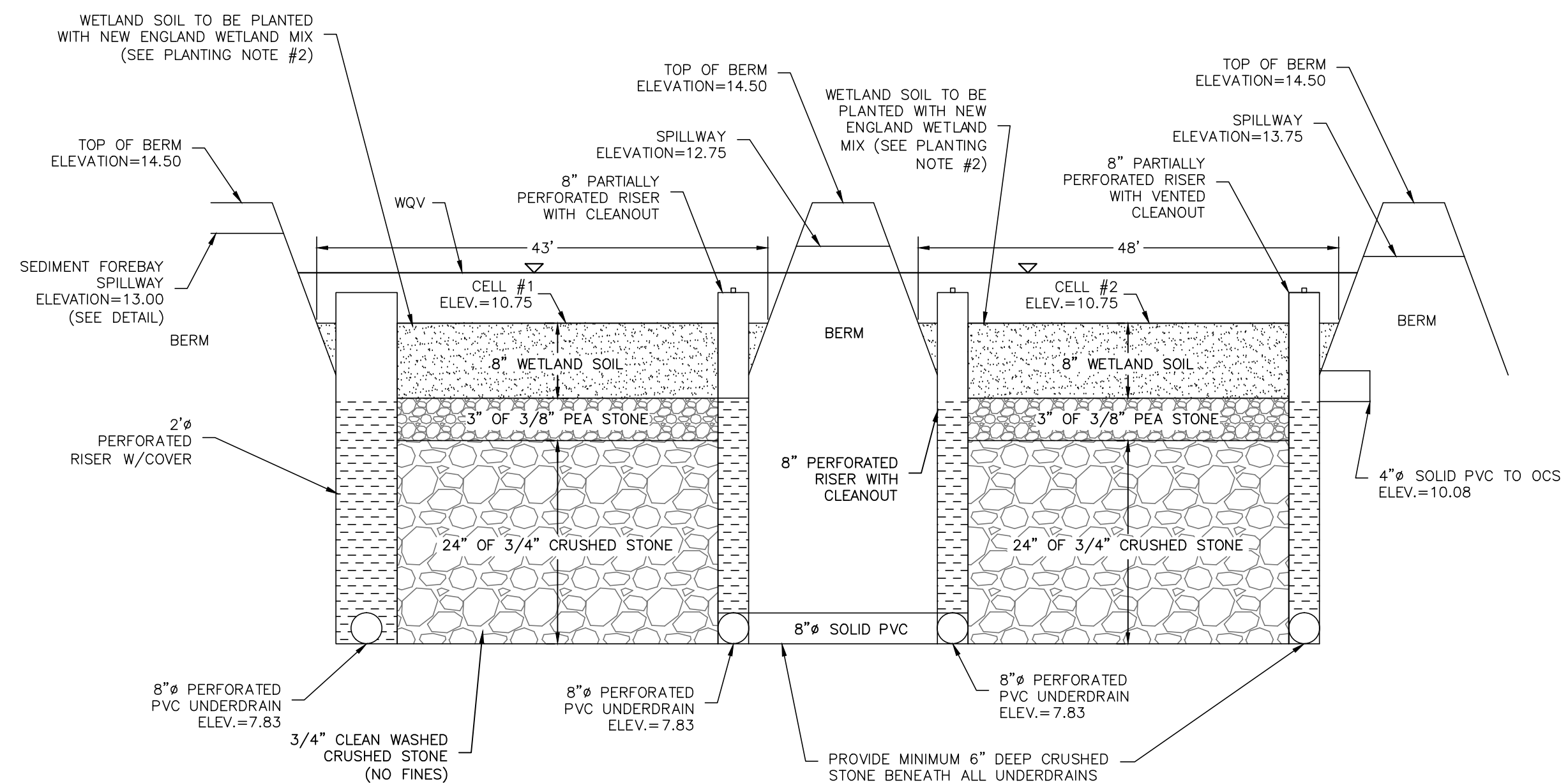
- OUTLET CONTROL STRUCTURE AND TRASH RACKS SHALL BE PHOENIX PRECAST OR EQUAL.



CONCRETE HEADWALL DETAIL
N.T.S.

GENERAL NOTES:

- CONCRETE: $F_c = 5,000$ PSI @ 28 DAYS MINIMUM.
- STEEL REINFORCEMENT CONFORMS TO LATEST ASTM A-615 GRADE 60 REBAR.



GRAVEL WETLAND #2 CROSS SECTION
N.T.S.

GRAVEL WETLAND CONSTRUCTION NOTES:

- DO NOT PLACE GRAVEL WETLANDS INTO SERVICE UNTIL EACH BMP HAS BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
- DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE GRAVEL WETLAND OR DURING ANY STAGE OF CONSTRUCTION.
- CLEAR AND GRUB THE AREA WHERE THE GRAVEL WETLAND IS TO BE LOCATED. STOCKPILE LOAM FOR REUSE LATER.
- THE FOUNDATION AREA SHALL BE SCARIFIED PRIOR TO PLACING FILL. ALL UNSUITABLE MATERIAL UNDER THE BERM SHALL BE REMOVED AND REPLACED WITH SUITABLE FOUNDATION MATERIAL.
- THE BERM SHALL BE CONSTRUCTED BEGINNING FROM THE LOWEST POINT UNIFORMLY ALONG ITS ENTIRE LENGTH. PLACE MATERIALS IN MAXIMUM 12" LOOSE LIFTS COMPACTED TO 95% MAXIMUM MODIFIED PROCTOR DENSITY. EMBANKMENT SOIL SHALL HAVE NO ORGANIC MATTER OR FROZEN MATERIAL AND NO STONES LARGER THAN 2/3 OF THE MAXIMUM LOOSE LIFT THICKNESS. STONES AROUND ANY STRUCTURES AND/OR CONDUITS SHALL NOT EXCEED 3 INCHES. EMBANKMENT FILL MATERIAL SHALL HAVE THE FOLLOWING GRADATION:

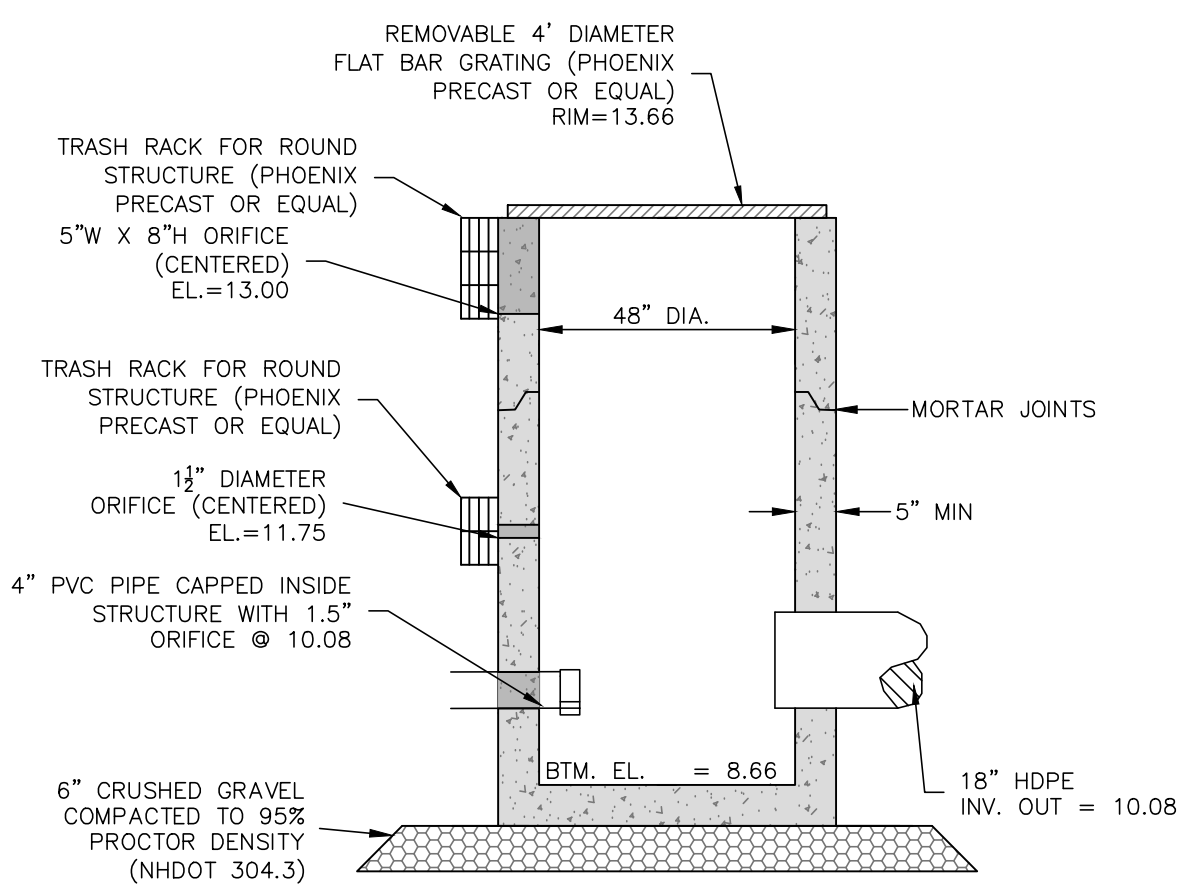
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GRAVEL WETLAND MAINTENANCE:

- SYSTEMS SHOULD BE INSPECTED AT LEAST TWICE ANNUALLY, AND FOLLOWING ANY RAINFALL EVENT EXCEEDING 2.5 INCHES IN A 24 HOUR PERIOD, WITH MAINTENANCE OR REHABILITATION CONDUCTED AS WARRANTED BY SUCH INSPECTION.
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- AT LEAST ONCE ANNUALLY, SYSTEM SHOULD BE INSPECTED FOR DRAWDOWN TIME. IF GRAVEL WETLAND DOES NOT DRAIN WITHIN 72-HOURS FOLLOWING A RAINFALL EVENT, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION OF THE FACILITY TO DETERMINE MEASURES REQUIRED TO RESTORE FILTRATION FUNCTION INCLUDING BUT NOT LIMITED TO REMOVAL AND REPLACEMENT OF WETLAND SOIL AND REPLANTING.
- VEGETATION SHOULD BE INSPECTED AT LEAST ANNUALLY, AND MAINTAINED IN HEALTHY CONDITION, INCLUDING PRUNING, REMOVAL AND REPLACEMENT OF DEAD OR DISEASED VEGETATION, AND REMOVAL OF INVASIVE SPECIES.

PLANTING NOTES:

- WETLAND SOIL MIX FOR GRAVEL WETLAND SHALL BE A SILT LOAM WITH A MINIMUM OF 15-20% ORGANIC CONTENT BY MASS. THE CLAY CONTENT SHALL NOT EXCEED 15% BY VOLUME. THE ORGANIC MATTER SHALL CONSIST OF DECIDUOUS LEAF COMPOST PROPERLY MATURED AND AT LEAST ONE YEAR OLD. THERE SHALL BE NO LEAF MULCH, COMPOSTED MIXED YARD DEBRIS, OR WOOD CHIPS.
- GRAVEL WETLAND BOTTOM TO BE PLANTED WITH NEW ENGLAND WETLAND MIX AVAILABLE FROM:
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24 BUZZELL ROAD
BIDDEFORD, ME 04005
(207)-499-4992
- GRAVEL WETLAND SLOPES AND BERM TO BE PLANTED WITH SEED MIX 'C' LISTED ON SHEET D101.



OUTLET CONTROL STRUCTURE #2
N.T.S.

OUTLET CONTROL STRUCTURE NOTES:

- DRAINAGE STRUCTURE MATERIALS SHALL COMPLY WITH NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, DIVISION 600, SECTION 604.
- CONCRETE TO BE 4,000 PSI CONCRETE.
- PIPE OPENINGS SHALL BE FULLY MORTARED ON OUTSIDE PRIOR TO BACK FILLING. INSIDE OF PIPE OPENINGS SHALL BE MORTARED AND ALLOWED TO CURE PER MANUFACTURERS REQUIREMENTS PRIOR TO RECEIVING RUNOFF.
- JOINTS BETWEEN ADJACENT RISERS SHALL BE FULLY SEALED WITH ELASTOMERIC SEALANT PER MANUFACTURERS REQUIREMENTS.
- CONCRETE STRUCTURE AND TRASH RACKS AVAILABLE FROM:
PHOENIX PRECAST
77 REGIONAL DRIVE
CONCORD, NH 03301
(603)225-5169

NOTES:

- OUTLET CONTROL STRUCTURE AND TRASH RACKS SHALL BE PHOENIX PRECAST OR EQUAL.

NO.	REVISIONS	DATE	INT.
4	REVISIONS PER CONDITIONS OF APPROVAL	4/28/16	JLG
3	REVISIONS PER AOT REVIEW LETTER DATED 3/31/16	4/27/16	MS
2	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	KD
1	REVISIONS FOR ADDITIONAL SITE DESIGN	9/17/15	KD
	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	9/17/15	KD

SEAL: NEW HAMPSHIRE PROFESSIONAL ENGINEER
MICHAEL BEHRENDT
No. 6387
15-027 DetailsC.dwg

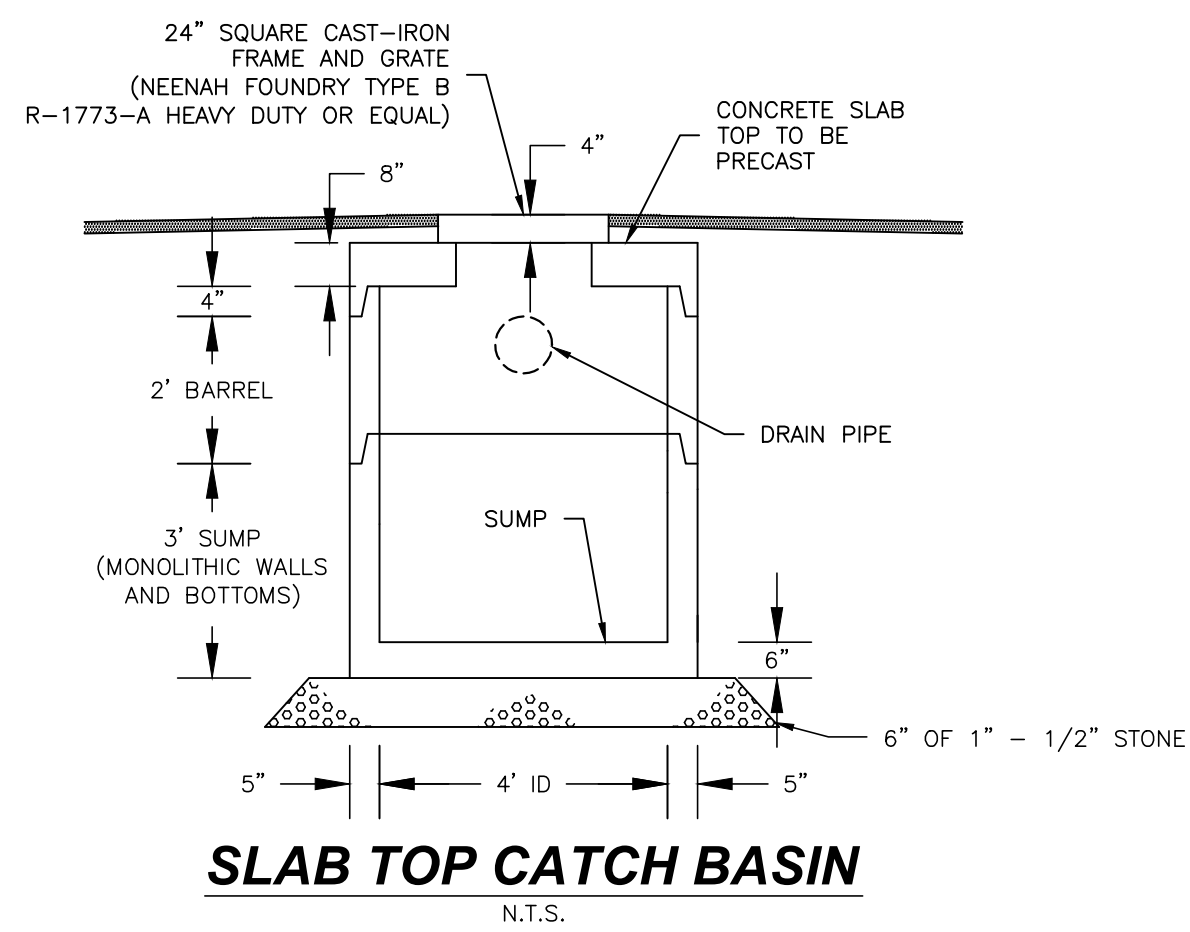
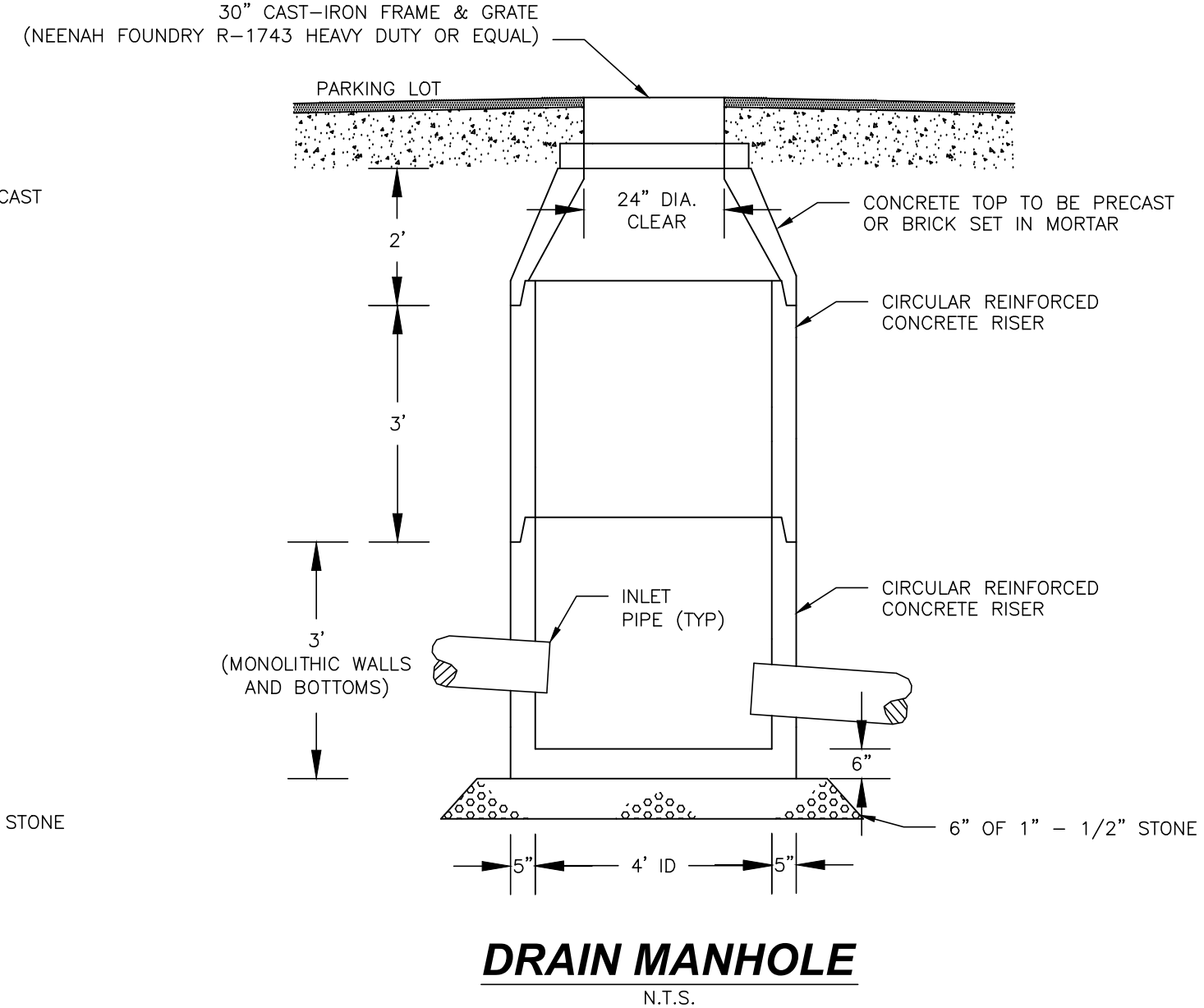
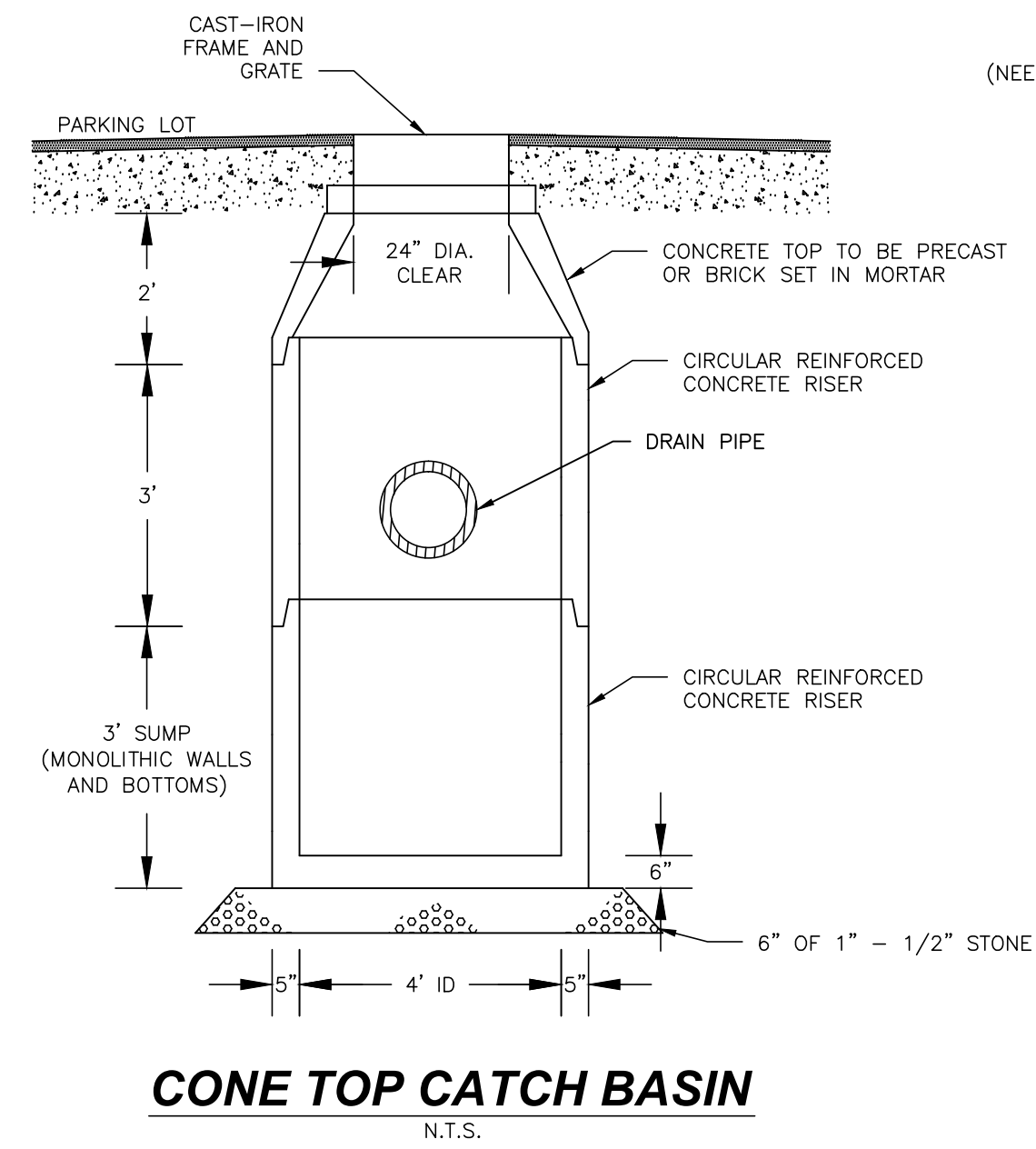
DATE: 9/27/15
SCALE: AS SHOWN
DESIGNED BY: MJS
DRAWN BY: BOB
APPROVED BY: MJS
DWG FILE: 15-027 DetailsC.dwg

SITE CONSTRUCTION DETAILS prepared for
HARMONY HOMES BY THE BAY
TAX MAP 11, LOTS (27-1)-(27-7)
W. ARTHUR GRANT CIRCLE DURHAM, NH

MJS ENGINEERING P.C.
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5 HALL ROAD ST., P.O. BOX 359
CONCORD, NH 03301
PHONE: (603) 659-4979, FAX: (603) 659-4627
E-MAIL: MJS@MJS-ENGINEERING.COM

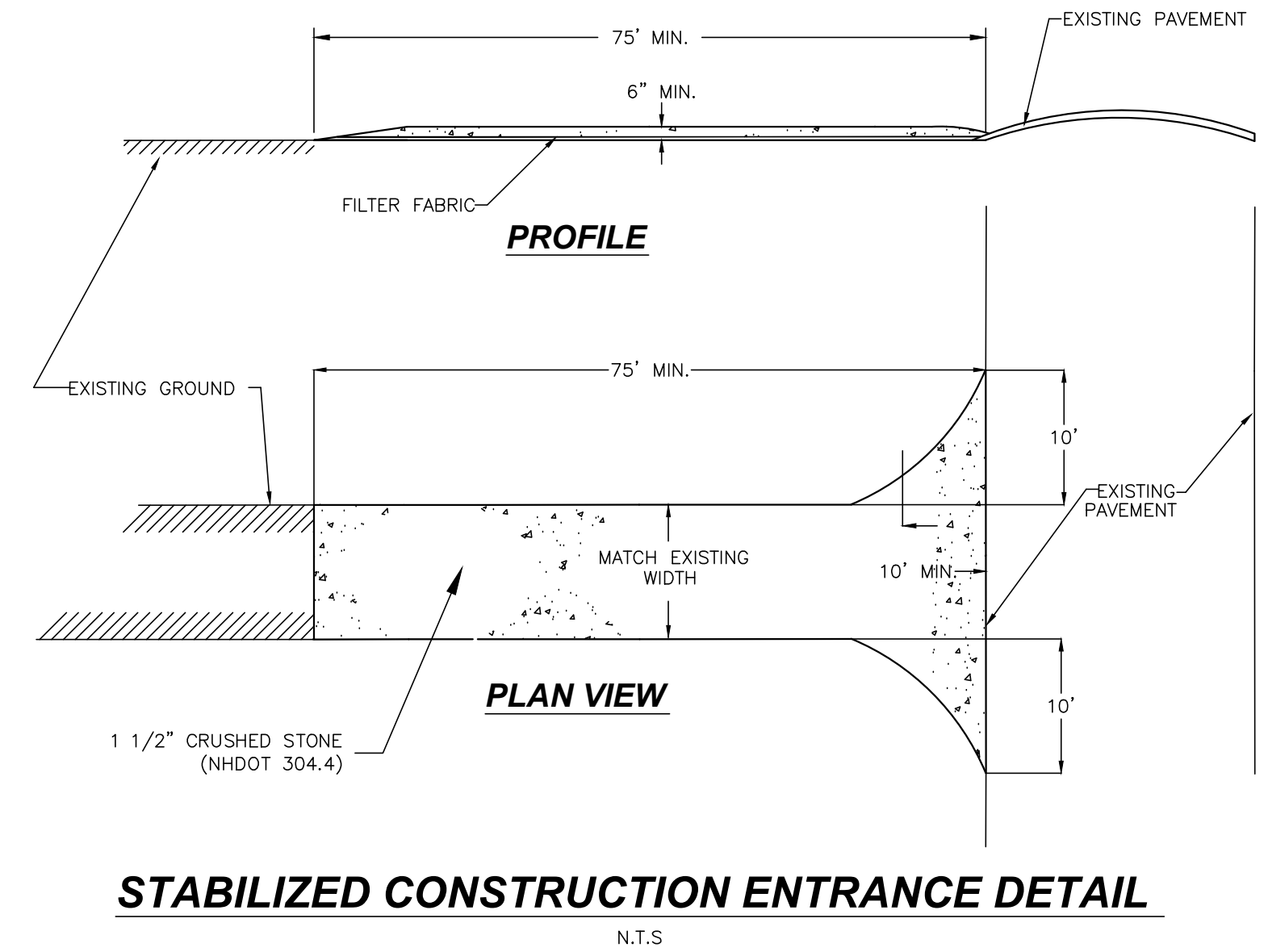
FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED _____
DATE _____

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Thu, 28 Apr 2016 4:48pm



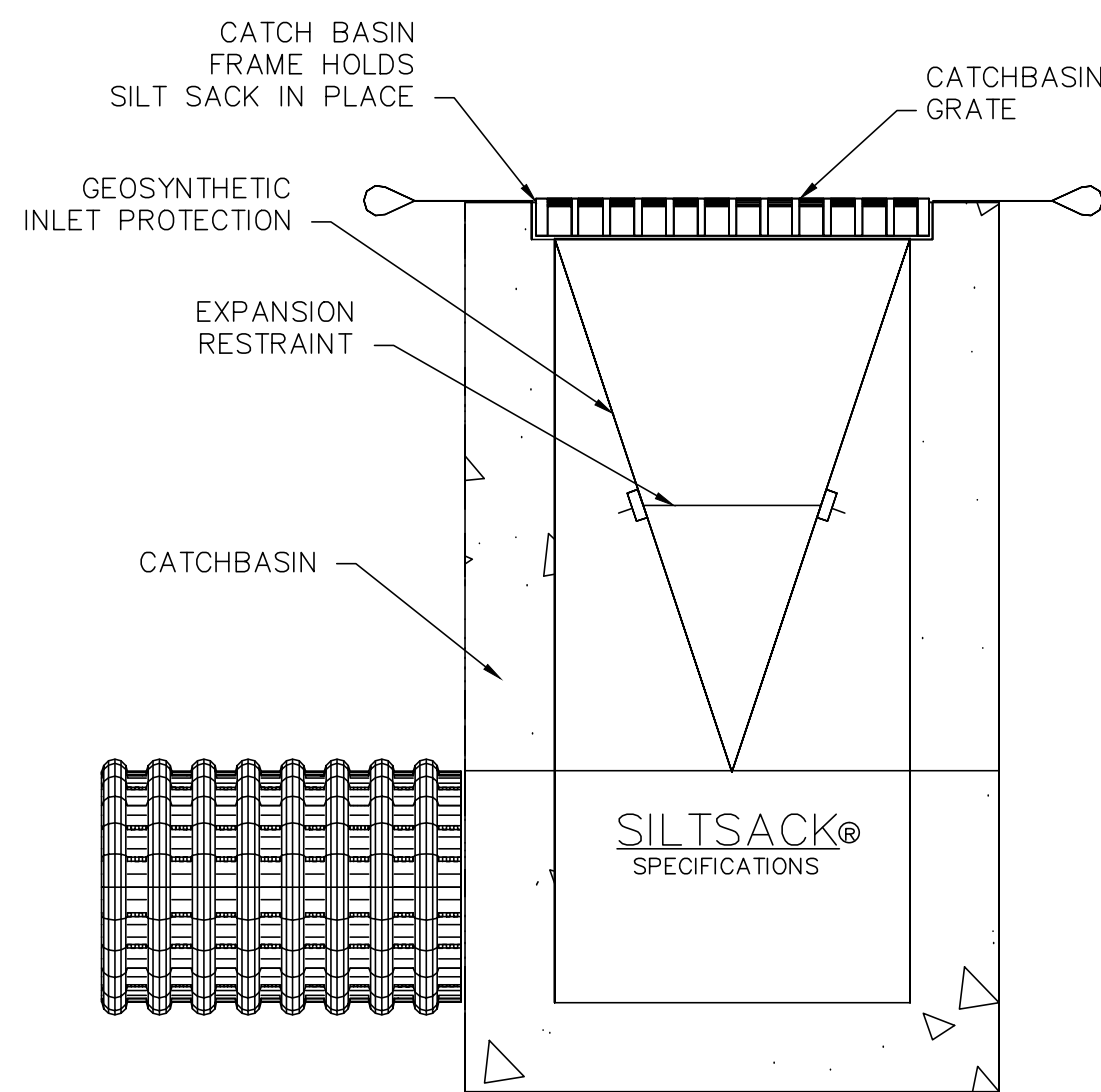
CATCH BASIN & DRAIN MANHOLE NOTES:

1. DRAINAGE STRUCTURE MATERIALS AND INSTALLATION SHALL COMPLY WITH NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, DIVISION 600, SECTION 604.
2. SITE CONTRACTOR SHALL BACK FILL AROUND DRAINAGE STRUCTURES IN 6 TO 8 INCH LIFTS, ATTAINING 95% MAXIMUM PROCTOR DENSITY FOR EACH LIFT.
3. PIPE OPENINGS SHALL BE FULLY MORTARED ON OUTSIDE PRIOR TO BACK FILLING. INSIDE OF PIPE OPENINGS SHALL BE MORTARED AND ALLOWED TO CURE PER MANUFACTURER'S RECOMMENDATIONS PRIOR TO RECEIVING RUNOFF.
4. JOINTS BETWEEN ADJACENT RISERS SHALL BE FULLY SEALED WITH ELASTOMERIC SEALANT PER MANUFACTURER'S REQUIREMENTS.
5. WHEN FRAME/GRATE ARE LOCATED IN PAVED AREA, THEY SHALL BE BROUGHT TO FINISHED GRADE AFTER BINDER COURSE PAVEMENT IS PLACED. THE EXCAVATION REQUIRED AROUND THE GRATE AND FRAME SHALL BE BACKFILLED FLUSH WITH THE TOP OF BINDER COURSE WITH NHDOT CLASS B CONCRETE.
6. FRAME AND GRATE:
CATCHBASIN: NHDOT TYPE B BY NEENAH FOUNDRY R-3570-A (4" FLANGE) HEAVY DUTY OR EQUAL
DRAIN MANHOLES: NEENAH FOUNDRY R-1743, HEAVY DUTY OR EQUAL.



STABILIZED CONSTRUCTION ENTRANCE NOTES:

1. GRADE AND COMPACT ACCESS ROAD ENTRANCE AS NECESSARY. PLACE FILTER FABRIC (MIRAFI OR EQUAL) AND PLACE 6" OF 1"-2" STONE TO MATCH SLOPE OF EXISTING ROAD.
2. PROVIDE NECESSARY SWALES OR DIVERSIONS TO MINIMIZE DIRECT FLOW OF WATER ONTO STONE AREA.
3. CONSTRUCTION ENTRANCE SHALL BE MAINTAINED AS NECESSARY TO REMOVE SILT FROM TIRES PRIOR TO ENTERING PUBLIC ROADS. A SMALL SWALE SHALL BE CONSTRUCTED ON THE DOWN GRADIENT SIDE TO TRAP ANY SILT WASHED FROM THE STONE ENTRANCE.

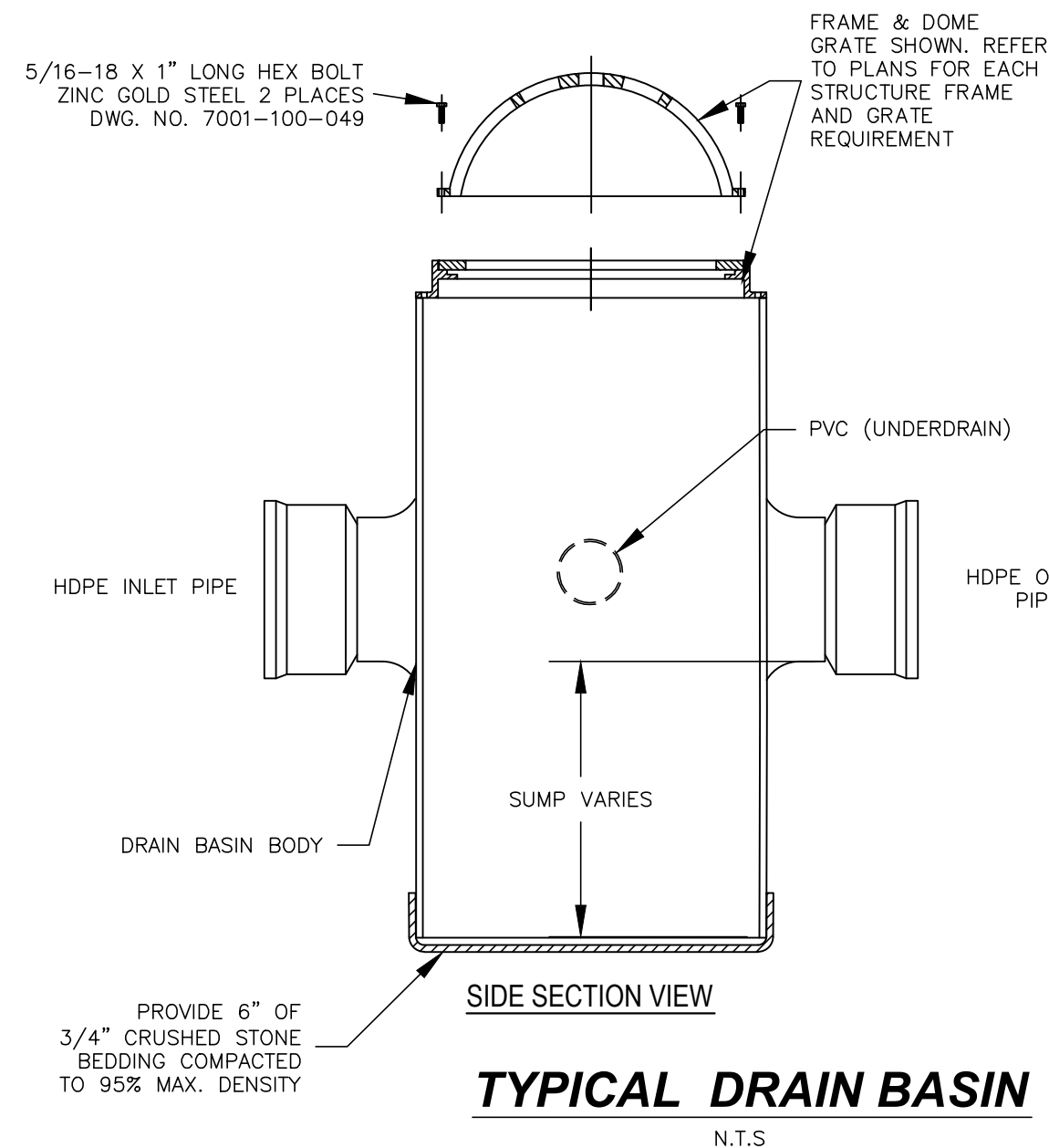


REGULAR FLOW SILTSACK®
(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLER BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

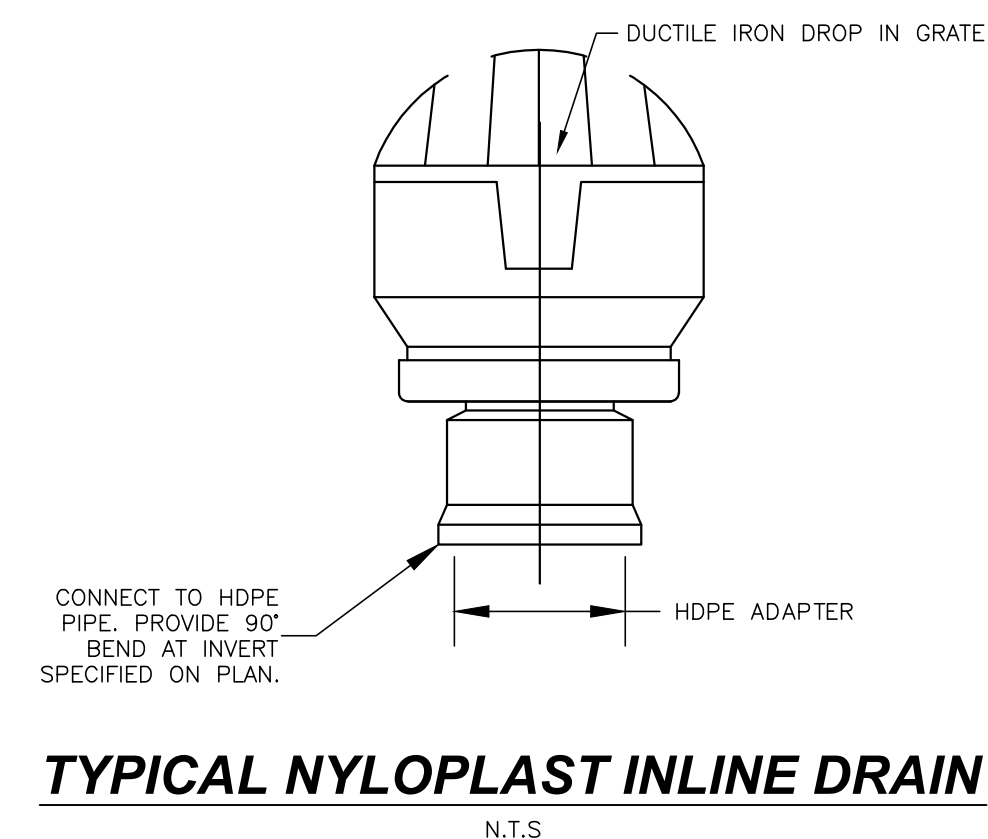
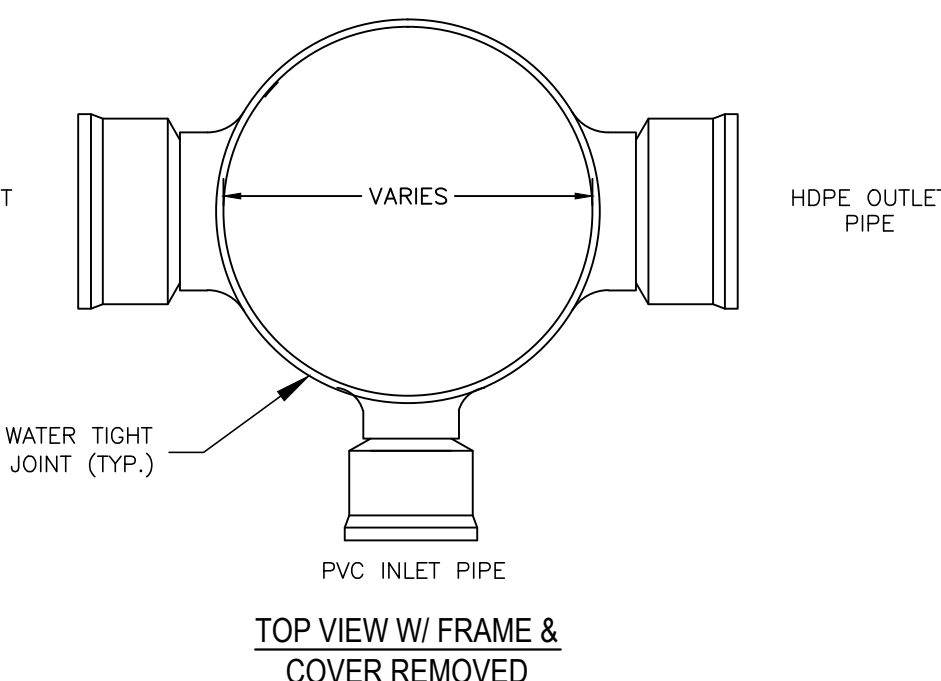
NOTES:

1. GEOSYNTHETIC SEDIMENT FILTER TRAP SHALL BE 'REGULAR FLOW SILTSACK®' OR APPROVED EQUAL. SPECIFICATIONS FOR SILTSACK® ARE DETAILED.
2. FILTER TRAPS SHALL BE INSPECTED AFTER EVERY RAIN EVENT OF 0.25" OR GREATER AND SEDIMENTS SHALL BE REMOVED FROM TRAP WHEN SEDIMENT HAS REACHED TWO THIRDS OF THE DEPTH OF THE TRAP, OR IF PONDING OF WATER AT SURFACE BEGINS TO OCCUR. DO NOT PUNCTURE FILTER TRAP TO MITIGATE PONDING.



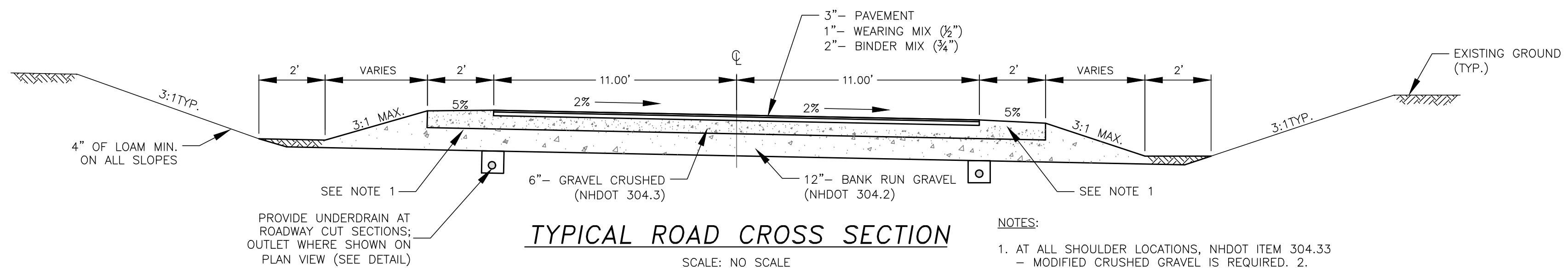
NOTES:

1. REFER TO GRADING PLANS FOR REQUIRED ORIENTATION, SIZES, AND INVERTS.
2. NYLOPLAST DRAIN BASIN SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
3. FOR SALES, CONTACT:
ADS & HANCOCK
GEOFF HUBBARD - (603) 988-7593
68 SOUTH STREET
PORTSMOUTH, NH 03801
4. THE BACKFILL MATERIAL SHALL BE 3/4" CRUSHED STONE COMPACTED TO 95% DRY DENSITY.



NOTES:

1. NYLOPLAST INLINE DRAIN SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
2. FOR SALES, CONTACT:
ADS & HANCOCK
GEOFF HUBBARD - (603) 988-7593
68 SOUTH STREET
PORTSMOUTH, NH 03801



NOTES:

1. AT ALL SHOULDER LOCATIONS, NHDOT ITEM 304.33 - MODIFIED CRUSHED GRAVEL IS REQUIRED.
2. ACCESS DRIVE CROSS SLOPE DIRECTION VARIES. REFER TO GRADING PLAN.
3. ROAD CROSS-SECTION VARIES AT PARKING AND DROP-OFF AREAS. REFER TO SITE PLAN FOR WIDTHS AND GRADES.

NO.	REVISIONS	DATE	INT.
4	REVISIONS PER CONDITIONS OF APPROVAL	4/28/16	ALG
3	REVISIONS PER AOT REVIEW LETTER DATED 3/31/16	4/27/16	MJS
2	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	KD
1	REVISIONS FOR ADDITIONAL SITE DESIGN	9/17/15	KD
	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	9/2/15	KD

SEAL

9/2/15
DATE:
AS SHOWN
SCALE:
DESIGNED BY: MJS
DRAWN BY: BOB
APPROVED BY: MJS
DWG. FILE: 15-027-Detailed.dwg

MICHAEL BEHRENT
TOWN PLANNER
NO. 6887

SITE CONSTRUCTION DETAILS
prepared for
HARMONY HOMES BY THE BAY
TAX MAP 11, LOTS (27-1)-(27-7)
W. ARTHUR GRANT CIRCLE DURHAM, NH

MJS ENGINEERING P.C.
CIVIL • STRUCTURAL • ENVIRONMENTAL

5 HALL ROAD ST., P.O. BOX 359
PORTSMOUTH, NH 03801
PHONE: (603) 659-4979, FAX: (603) 659-4027
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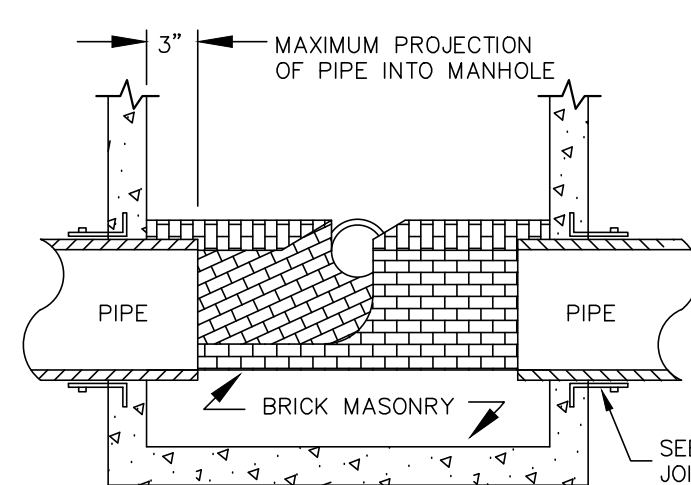
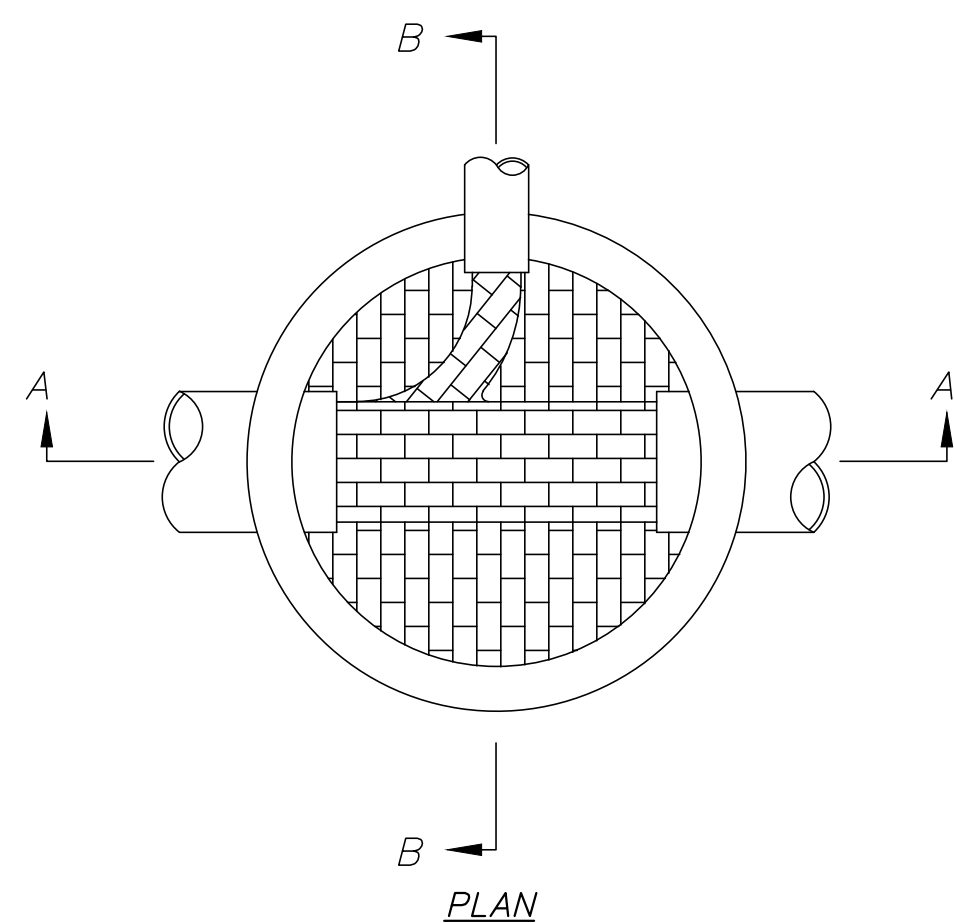
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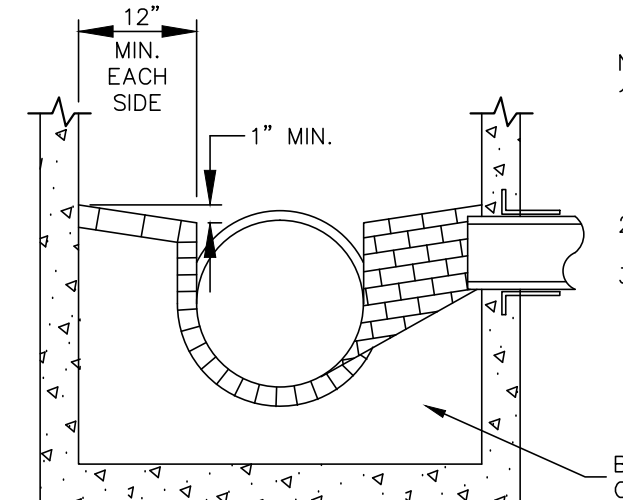
FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENT, TOWN PLANNER
DATE _____

MANHOLE CONSTRUCTION MATERIAL REQUIREMENTS (PER Env-Wq 704.10 NUMERATION)

- (A) ALL COMPONENT PARTS OF MANHOLE STRUCTURES SHALL HAVE THE STRENGTH, LEAK RESISTANCE, AND SPACE NECESSARY FOR THE INTENDED SERVICE.
- (B) MANHOLE STRUCTURES SHALL HAVE A LIFE EXPECTANCY IN EXCESS OF 25 YEARS.
- (C) MANHOLE STRUCTURES SHALL BE DESIGNED TO WITHSTAND H=20 LADING AND SHALL NOT LEAK IN EXCESS OF 1 GPD PER VERTICAL FOOT OF MANHOLE FOR THE LIFE OF THE STRUCTURE.
- (D) BARRELS AND CONE SECTIONS SHALL BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE.
- (E) BASE SECTIONS SHALL BE MONOLITHIC CONSTRUCTION TO A POINT AT LEAST SIX INCHES ABOVE THE CROWN OF THE INCOMING PIPE.
- (F) HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATER TIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT.
- (G) PIPE TO MANHOLE JOINTS SHALL BE AS FOLLOWS:
 - (1) ELASTOMERIC RUBBER SLEEVE WITH WATER TIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES;
 - (2) CAST INTO THE WALL OR SECURED WITH STAINLESS STEEL CLAMPS;
 - (3) ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING; AND
 - (4) NON-SHRINK GROUTED JOINTS WHERE WATERTIGHT BONDING TO THE MANHOLE AND PIPE CAN BE OBTAINED.
- (H) MANHOLE CONE SECTIONS SHALL BE ECCENTRIC IN SHAPE.
- (I) ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OF THE TRADEMARK OF THE MANUFACTURER IMPRESSED OR INDELIBLY MARKED ON THE INSIDE OF THE WALL.
- (J) MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW AT CHANGES IN DIRECTIONS. THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.
- (K) MATERIALS FOR CONSTRUCTION FOR MANHOLES SHALL BE AS FOLLOWS:
 - (1) CONCRETE FOR CAST-IN-PLACE OR COMPLETE MANHOLES SHALL CONFORM TO THE REQUIREMENTS FOR CLASS AA CONCRETE IN THE NH DOT'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION."
 - (2) REINFORCING FOR CAST-IN-PLACE CONCRETE SHALL BE STEEL OR STRUCTURAL FIBERS THAT CONFORM TO THE REQUIREMENTS OF THE NH DOT'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION."
 - (3) PRECAST CONCRETE BARREL SECTIONS, CONES, AND BASES SHALL CONFORM TO ASTM C478-06;
 - (4) THE MANHOLE FRAME AND COVER SHALL PROVIDE A 30-INCH DIAMETER CLEAR OPENING;
 - (5) THE MANHOLE COVER SHALL HAVE THE WORD "SEWER" IN 3-INCH LETTERS CAST INTO THE TOP SURFACE;
 - (6) THE CASTINGS SHALL BE OF EVEN-GRAINED CAST IRON, SMOOTH, AND FREE FROM SCALE, LUMPS, BUSTERS, SAND HOLES AND DEFECTS;
 - (7) CONTACT SURFACES OF COVERS AND FRAMES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION;
 - (8) CASTINGS SHALL BE EQUAL TO CLASS 30, CONFORMING TO ASTM A48/48M-03;
 - (9) BRICK MASONRY FOR SHELF, INVERT AND GRADE ADJUSTMENT SHALL COMPLY WITH ASTM C32-05, CLAY OR SHALE, FOR GRADES SS HARD BRICK;
 - (10) MORTAR SHALL BE COMPOSED OF PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION;
 - (11) PROPORTIONS IN MORTAR OF PARTS BY VOLUME SHALL BE:
 - (a) 4.5 PARTS SAND AND 1.5 PARTS CEMENT; OR
 - (b) 4.5 PARTS SAND, 1.0 PART CEMENT AND 0.5 PART HYDRATED LIME;
 - (12) CEMENT SHALL BE TYPE II PORTLAND CEMENT CONFORMING TO ASTM C150-05;
 - (13) HYDRATED LIME SHALL BE TYPE S CONFORMING TO THE ASTM C207-06 "STANDARD SPECIFICATIONS FOR HYDRATED LIME FOR MASONRY PURPOSES";
 - (14) SAND SHALL CONSIST OF INERT NATURAL SAND CONFORMING TO THE ASTM C33-03 "STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES";
- (L) THE MINIMUM INTERNAL DIAMETER OF MANHOLE SHALL BE 48 INCHES.
- (M) IN THE FLOW CHANNEL A DROP OF AT LEAST 0.1 FEET SHALL BE PROVIDED BETWEEN THE INGOING AND OUTGOING SEWERS ON ALL MANHOLES.



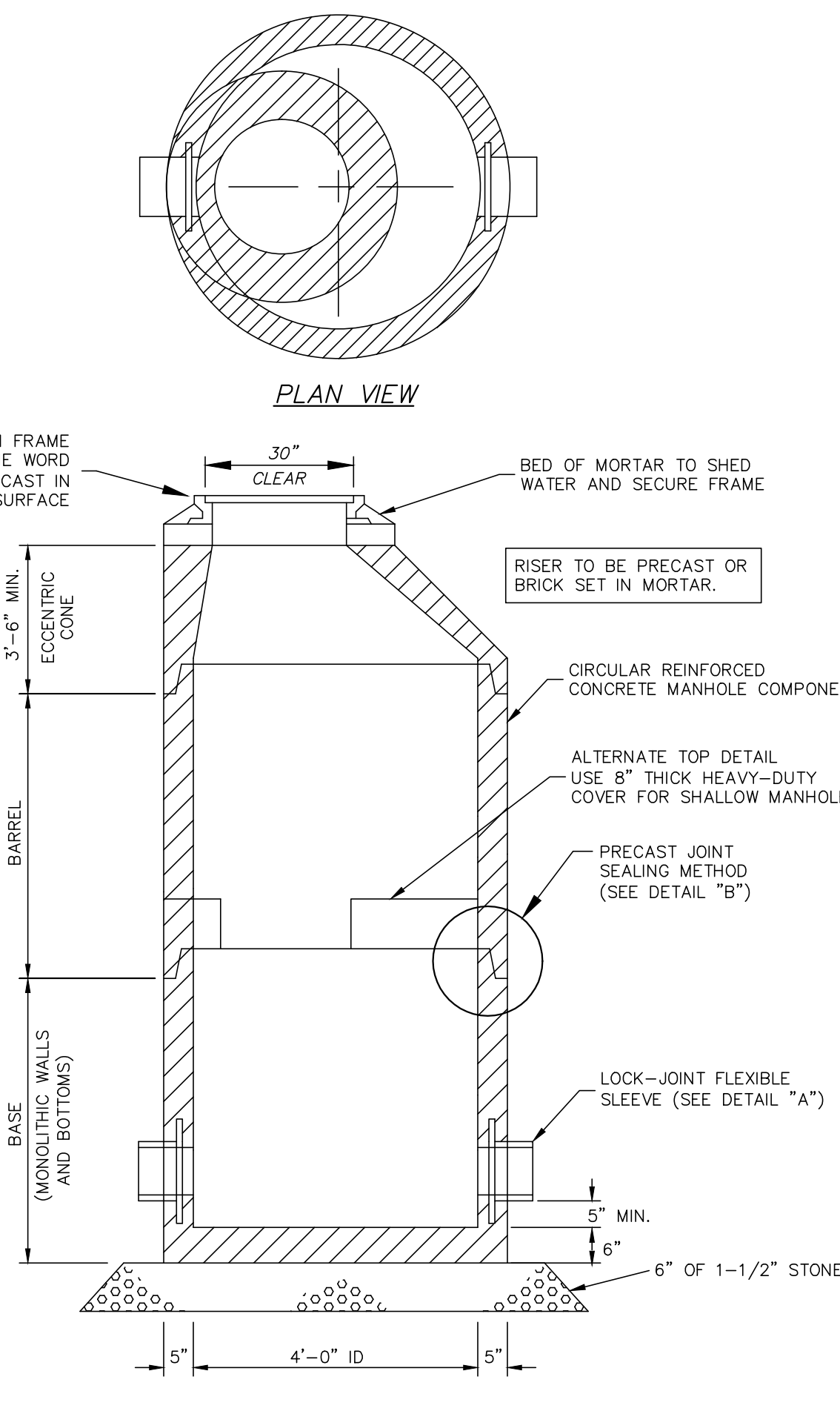
SECTION A-A



SECTION B-B

TYPICAL SEWER MANHOLE INVERT

N.T.S.



SECTION VIEW

STANDARD MANHOLE

N.T.S.

NOTES:

- 1. SMH #1 IS A STANDARD MANHOLE WITH ECCENTRIC CONE TOP. 2. THERE SHALL BE NO STEPS INSTALLED WITHIN THE MANHOLE.

SEWER NOTES:
PER THE REQUIREMENTS OF "STANDARDS OF DESIGN AND CONSTRUCTION FOR SEWERAGE AND WASTEWATER TREATMENT FACILITIES."

GRAVITY SEWER CONSTRUCTION MATERIALS (Env-Wq 704.05)

- (A) PLASTIC GRAVITY SEWER PIPE AND FITTINGS SHALL BE 8 INCH PVC SDR 35 PIPE (EXCEPT SEWER SERVICE SHALL BE 6" SDR 35 PVC) AND SHALL COMPLY WITH ASTM D3034-04.
- (B) PLASTIC SEWER PIPE SHALL HAVE A PIPE STIFFNESS RATING OF AT LEAST 46 PSI AT 5 PERCENT PIPE DIAMETER DEFLECTION, AS MEASURED IN ACCORDANCE WITH ASTM D2412-02 DURING MANUFACTURE.
- (C) JOINT SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D3212-96(a)(2003)e1 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.

GRAVITY SEWER PIPE TESTING REQUIREMENTS (Env-Wq 704.07)

- (A) ALL NEW SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.
- (B) LOW-PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:
 - (1) ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW-PRESSURE AIR"; OR
 - (2) UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW-PRESSURE AIR TESTING OF INSTALLED SEWER PIPE" (1998).
- (C) ALL NEW GRAVITY SEWERS SHALL BE CLEANED AND VISUALLY INSPECTED AND SHALL BE TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.
- (D) ALL PLASTIC SEWER PIPE SHALL BE DEFLECTION TESTED NOT LESS THAN 30 DAYS FOLLOWING INSTALLATION.
- (E) THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 7/8 PERCENT OF AVERAGE INSIDE DIAMETER.

PROTECTION OF WATER SUPPLIES (Env-Wq 704.12)

- (A) SEWERS SHALL BE LOCATED AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN.
- (B) A DEVIATION FROM THE SEPARATION REQUIREMENTS OF (A) ABOVE SHALL BE ALLOWED WHERE NECESSARY TO AVOID CONFLICT WITH SUBSURFACE STRUCTURES, UTILITY CHAMBERS, AND BUILDING FOUNDATIONS, PROVIDED THAT THE SEWER IS CONSTRUCTED IN ACCORDANCE WITH THE FORCE MAIN CONSTRUCTION REQUIREMENTS SPECIFIED IN Env-Wq 704.06.
- (C) WHENEVER SEWERS MUST CROSS WATER MAINS, THE SEWER SHALL BE CONSTRUCTED AS FOLLOWS:
 - (1) VERTICAL SEPARATION OF THE SEWER AND WATER MAIN SHALL BE NOT LESS THAN 18 INCHES, WITH WATER ABOVE SEWER; AND
 - (2) SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM THE WATER MAIN.

FORCE MAIN AND LOW PRESSURE SEWER CONSTRUCTION MATERIALS (PER Env-Wq 704.06 NUMERATION)

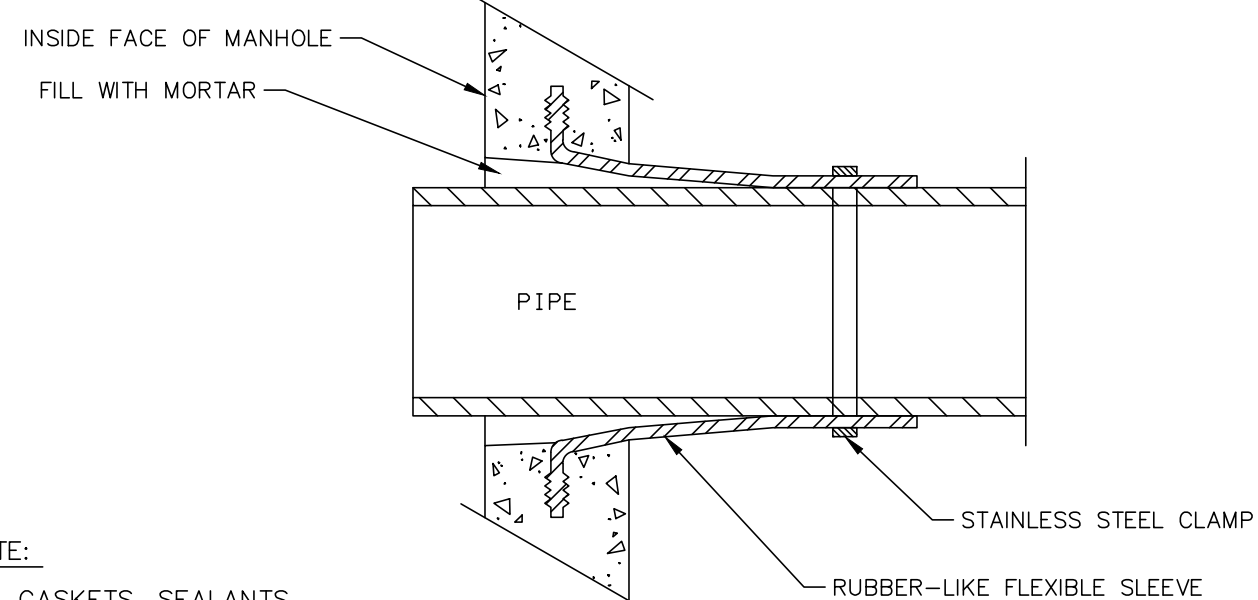
- (A) FORCE MAINS SHALL BE CONSTRUCTED OF SDR 21 PVC MATERIAL.
- (B) FORCE MAINS SHALL BE TREATED AS GRAVITY SEWERS FOR PURPOSES OF FOUNDATION BEDDING AND BACKFILL REQUIREMENTS.
- (C) PVC PIPE USED FOR FORCE MAINS SHALL CONFORM TO ASTM D2241-05 OR ASTM D1785-05.

FORCE MAIN AND LOW PRESSURE SEWER TESTING (PER Env-Wq 704.08 NUMERATION)

- (A) FORCE MAINS SHALL BE TESTED IN ACCORDANCE WITH SECTION 4 OF AWWA C600-05 "INSTALLATION OF CAST IRON WATER MAINS AND THEIR APPURTENANCES", AT A PRESSURE EQUAL TO THE GREATER OF 150 PERCENT OF THE DESIGN OPERATING TOTAL DYNAMIC HEAD OR AT LEAST 100 PSI.

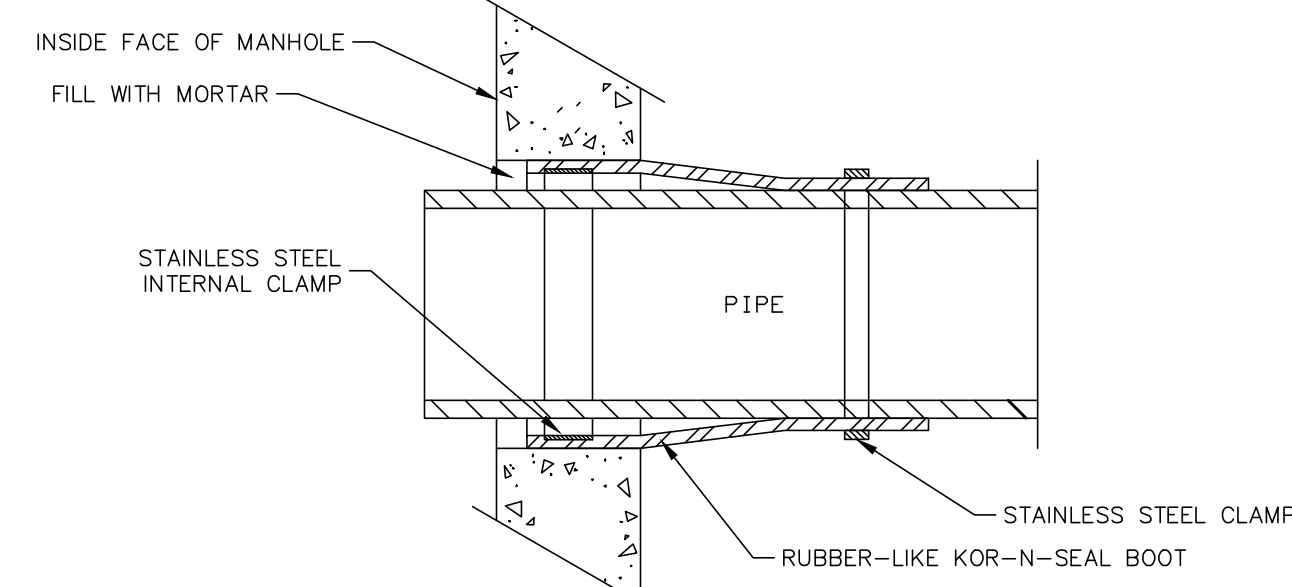
MANHOLE TESTING REQUIREMENTS (Env-Wq 704.10)

- (X) MANHOLES SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST.*
- (Y) THE MANHOLE VACUUM TEST SHALL CONFORM TO THE FOLLOWING:
 - (1) THE INITIAL VACUUM GAUGE TEST PRESSURE SHALL BE 10 INCHES Hg; AND
 - (2) THE MINIMUM ACCEPTABLE TEST HOLD TIME FOR A 1-INCH Hg PRESSURE DROP TO 9 INCHES Hg SHALL BE:
 - (A) NOT LESS THAN 2 MINUTES FOR MANHOLES LESS THAN 10 FEET DEEP;
 - (B) NOT LESS THAN 2.5 MINUTES FOR MANHOLES 10 TO 15 FEET DEEP
- (Z) THE MANHOLE SHALL BE REPAIRED AND RETESTED IF THE TEST HOLD TIMES FAIL TO ACHIEVE THE ACCEPTANCE LIMITS SPECIFIED IN (Y) ABOVE.
- *MANHOLE TESTING MUST BE CONDUCTED PRIOR TO INVERT AND SHELF PLACEMENT.



NOTE:

ALL GASKETS, SEALANTS, MORTAR, ETC. SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS



NOTE:

ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

DETAIL "B" - HORIZONTAL JOINTS

N.T.S.

DETAIL "A" - PIPE TO MANHOLE JOINTS

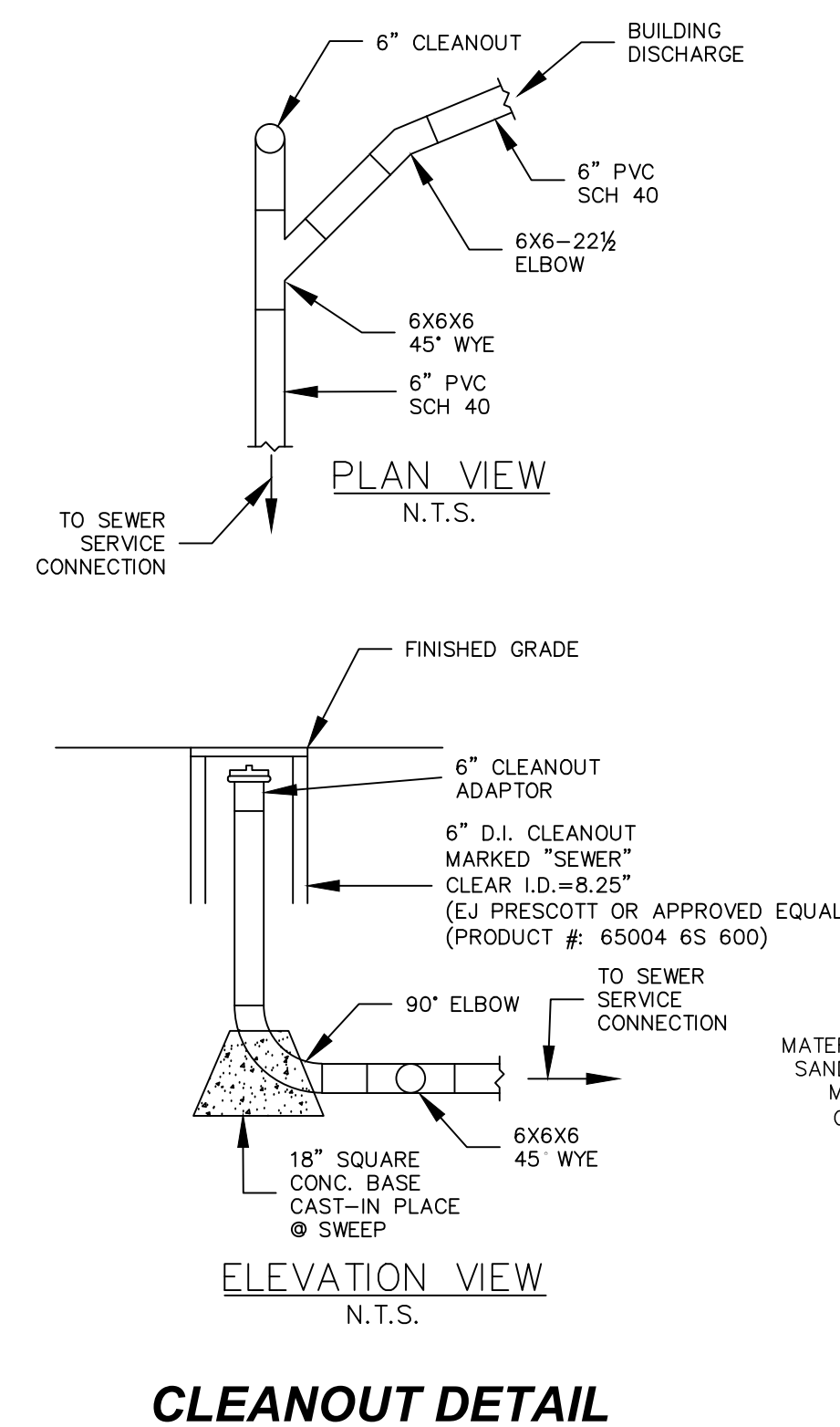
N.T.S.

NOTES:

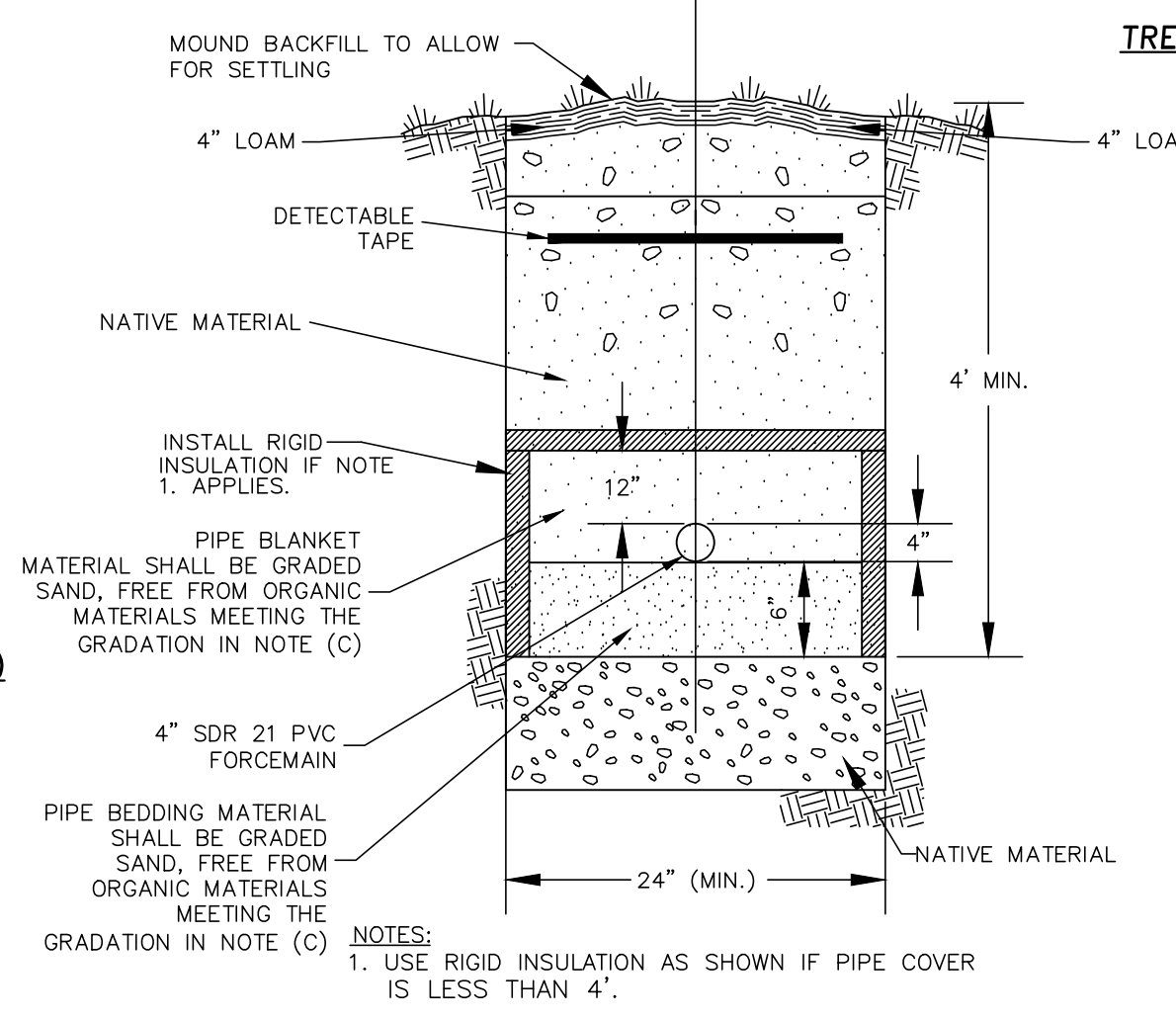
- 1. USE LOCK-JOINT FLEXIBLE MANHOLE SLEEVE FOR FACTORY INSTALLED APPLICATIONS AND KOR-N-SEAL SLEEVE FOR IN FIELD INSTALLATIONS.

WATER/SEWER CROSSING

N.T.S.

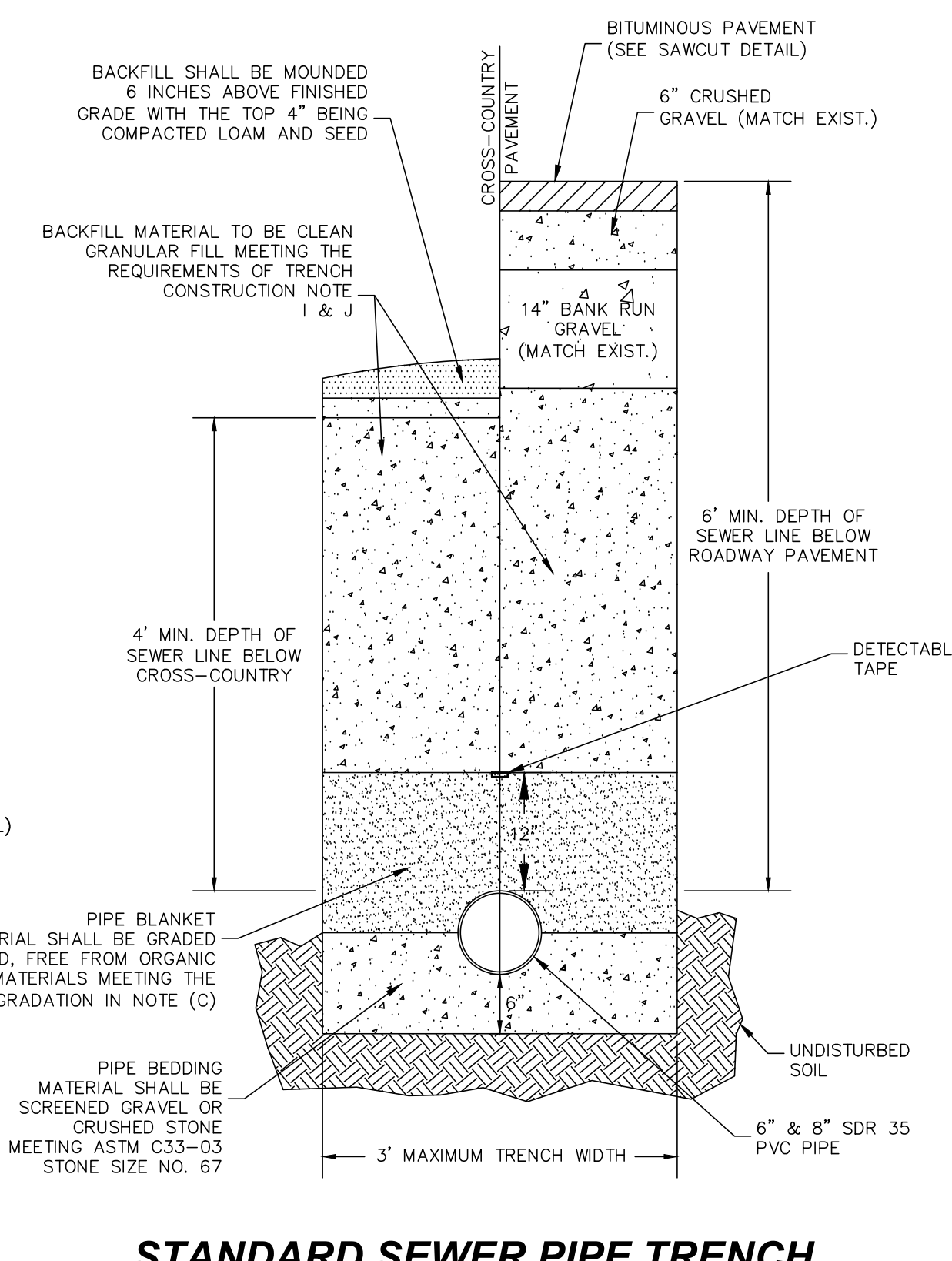


CLEANOUT DETAIL



SEWER FORCEMAIN TRENCH

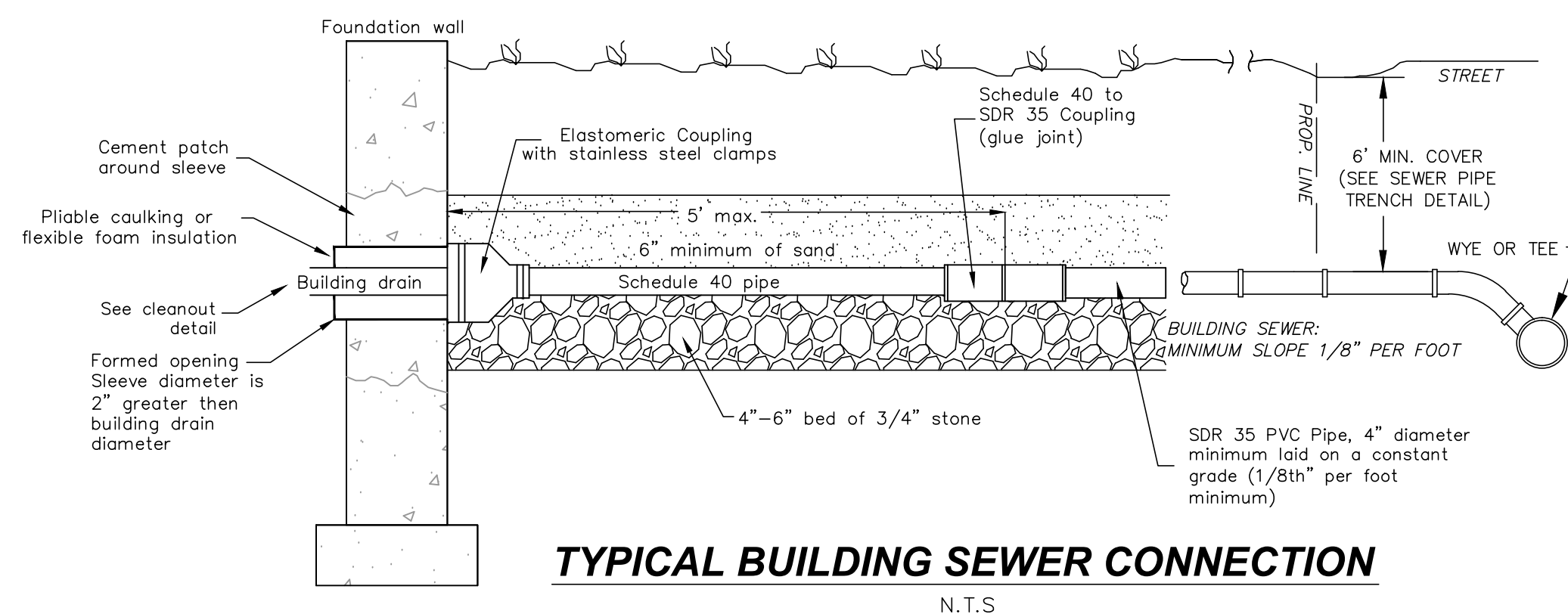
N.T.S.



STANDARD SEWER PIPE TRENCH

TRENCH CONSTRUCTION (PER Env-Wq 704.09 NUMERATION)

- (A) TRENCH DIMENSIONS SHALL BE AS FOLLOWS:
 - (1) FOR SEWER PIPE LESS THAN 18" IN DIAMETER, THE ALLOWABLE TRENCH WIDTH AT A PLANE 12 INCHES ABOVE THE PIPE SHALL BE NO MORE THAN 36".
- (B) PIPE TRENCH BEDDING MATERIAL AND FILL MATERIAL FOR EXCAVATION BELOW GRADE SHALL BE SCREENED GRAVEL OR CRUSHED STONE TO ASTM C33-03 STONE SIZE NO. 67.
- (C) THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND, FREE FROM ORGANIC MATERIALS, GRADED SUCH THAT 100% PASSES THROUGH A 1/2 INCH SIEVE AND A MAXIMUM OF 15% PASSES THROUGH A #200 SEVE.
- (E) PIPE BEDDING MATERIAL SHALL EXTEND FROM A HORIZONTAL PLANE THROUGH THE PIPE AXIS TO 6 INCHES BELOW THE BOTTOM OF THE OUTSIDE SURFACE OF THE PIPE.
- (F) PIPE SAND MATERIAL SHALL COVER THE PIPE A MINIMUM OF 12 INCHES ABOVE THE CROWN OF THE OUTSIDE SURFACE.
- (G) COMPACTION SHALL BE IN 12 INCH LAYERS FOR BEDDING AND BLANKET MATERIALS.
- (H) BACKFILL MATERIALS SHALL BE COMPACTED IN 3-FOOT LAYERS TO THE GROUND SURFACE EXCEPT FOR ROAD CONSTRUCTION (OR OTHER PAVED AREAS) WHERE THE FINAL 3 FEET SHALL BE COMPACTED IN 12-INCH LAYERS TO THE ROAD BASE SURFACE.
- (I) TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING: DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL, AND ALL ROCKS OVER SIX INCHES IN LARGEST DIMENSION, OR ANY MATERIAL WHICH AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.
- (J) TRENCH BACKFILL AT CROSS-COUNTRY LOCATIONS SHALL BE AS DESCRIBED IN (I) ABOVE, EXCEPT THAT TOP SOIL, LOAM, MUCK OR PEAT, MAY BE USED PROVIDED THE COMPLETED CONSTRUCTION WILL BE STABLE, AND PROVIDED THAT ACCESS TO THE TRENCH FOR MAINTENANCE AND RECONSTRUCTION IS PRESERVED.
- (K) BACKFILL SHALL BE MOUNDED 6 INCHES ABOVE ORIGINAL GROUND AT CROSS-COUNTRY LOCATIONS.
- (L) BASE COURSE FOR TRENCH REPAIR SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF THE NH DOT.
- (O) PRECAUTIONS SHALL BE TAKEN TO AVOID GROUNDWATER POOLING AT THE SURFACE BY PROVIDING DRAINAGE TO A SUITABLE OUTLET AT CATCH BASINS OR RUNOFF SWALES.



TYPICAL BUILDING SEWER CONNECTION

N.T.S.

FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
DATE _____

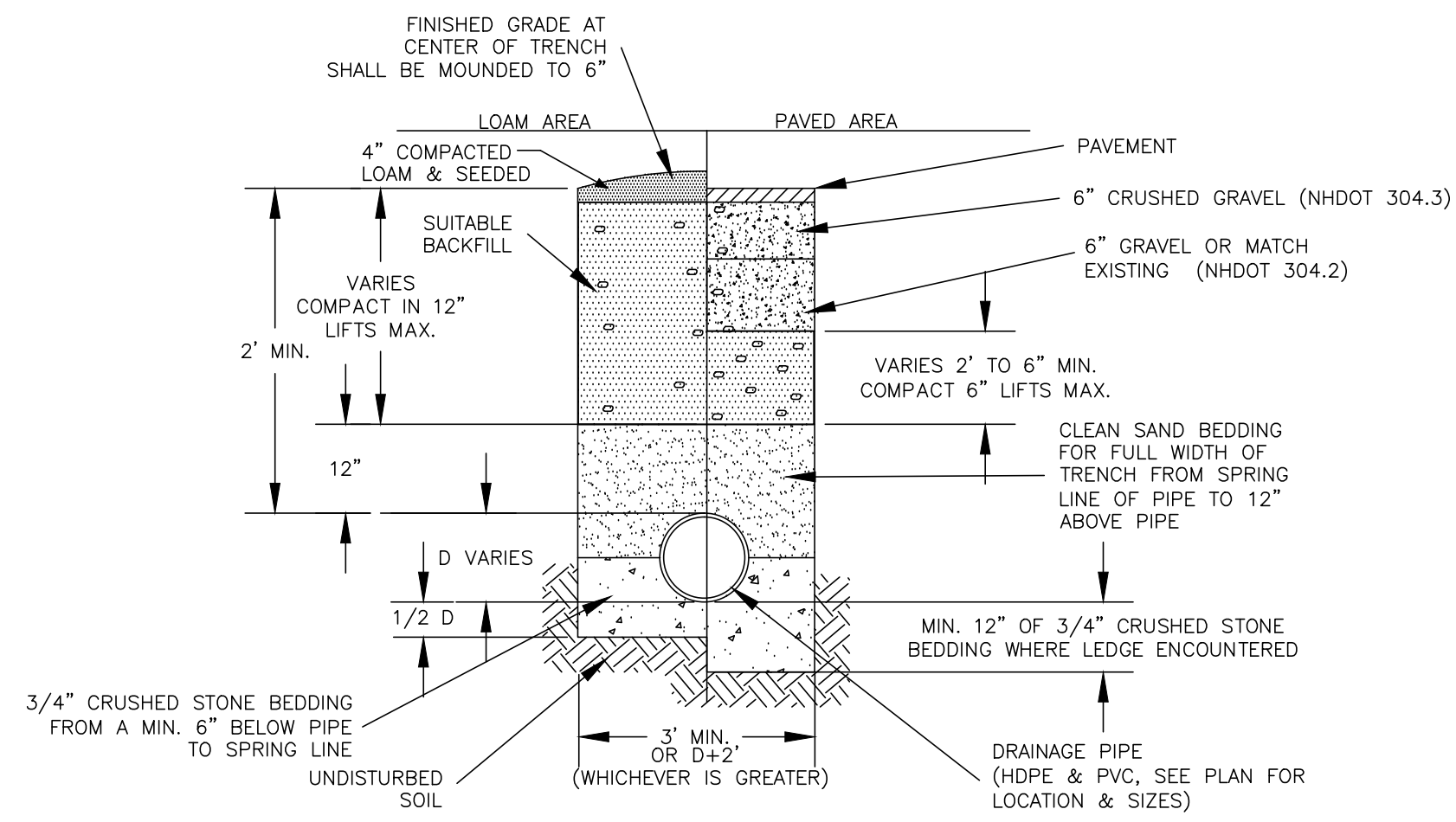
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1.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	9/2/15	KD
2.	REVISIONS FOR ADDITIONAL SITE DESIGN	9/17/15	KD
3.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	JLG
4.	REVISIONS PER CONDITIONS OF APPROVAL	4/28/16	JLG

SITE CONSTRUCTION DETAILS
prepared for
HARMONY HOMES BY THE BAY
TAX MAP 11, LOTS (27-1)-(27-7)
W. ARTHUR GRANT CIRCLE DURHAM, NH

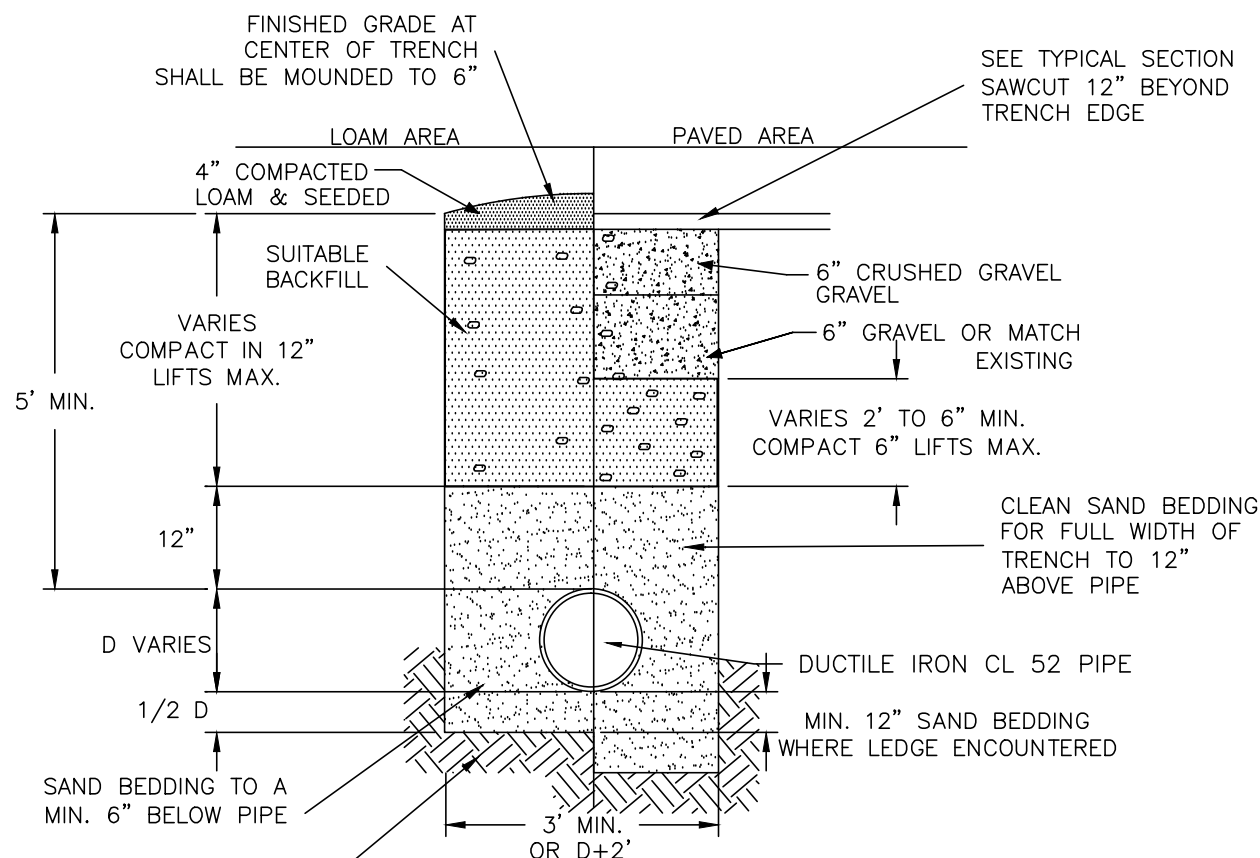
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JOB: 15-027
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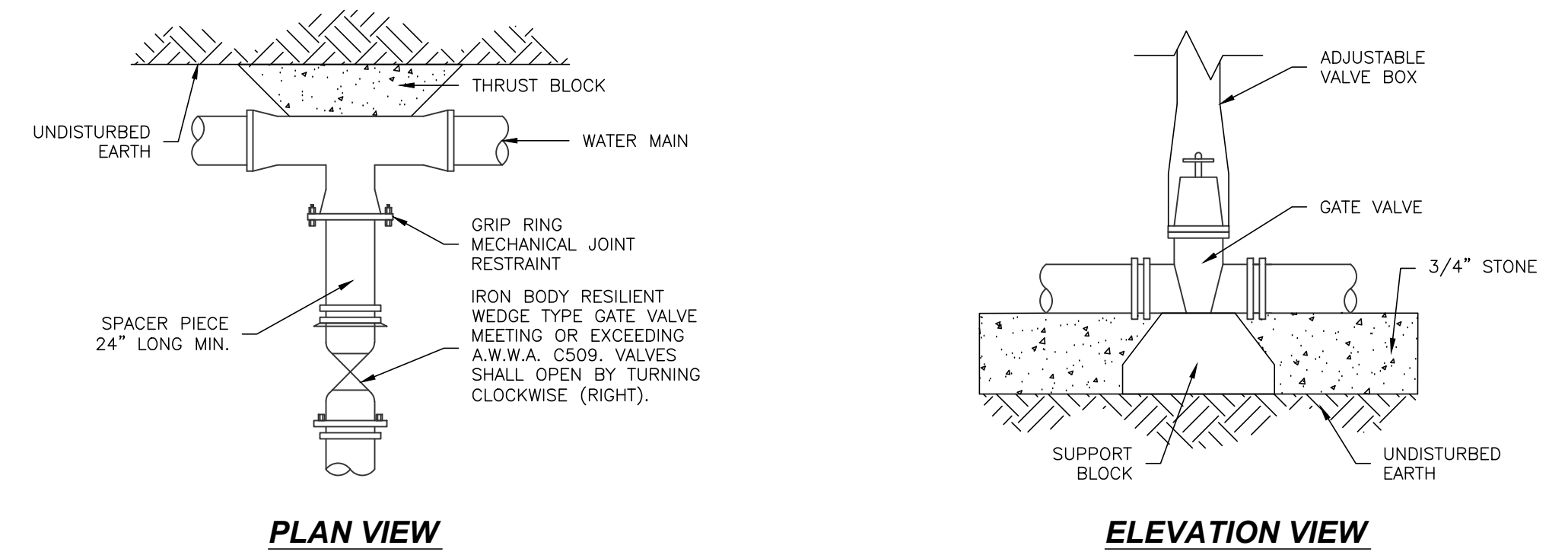
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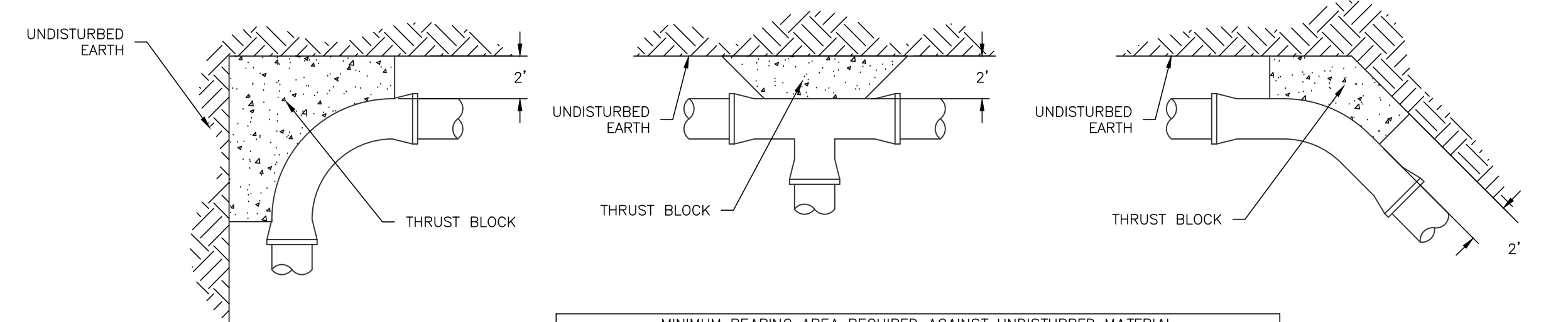
STANDARD DRAINAGE PIPE TRENCH
N.T.S.



STANDARD WATER MAIN TRENCH
N.T.S.



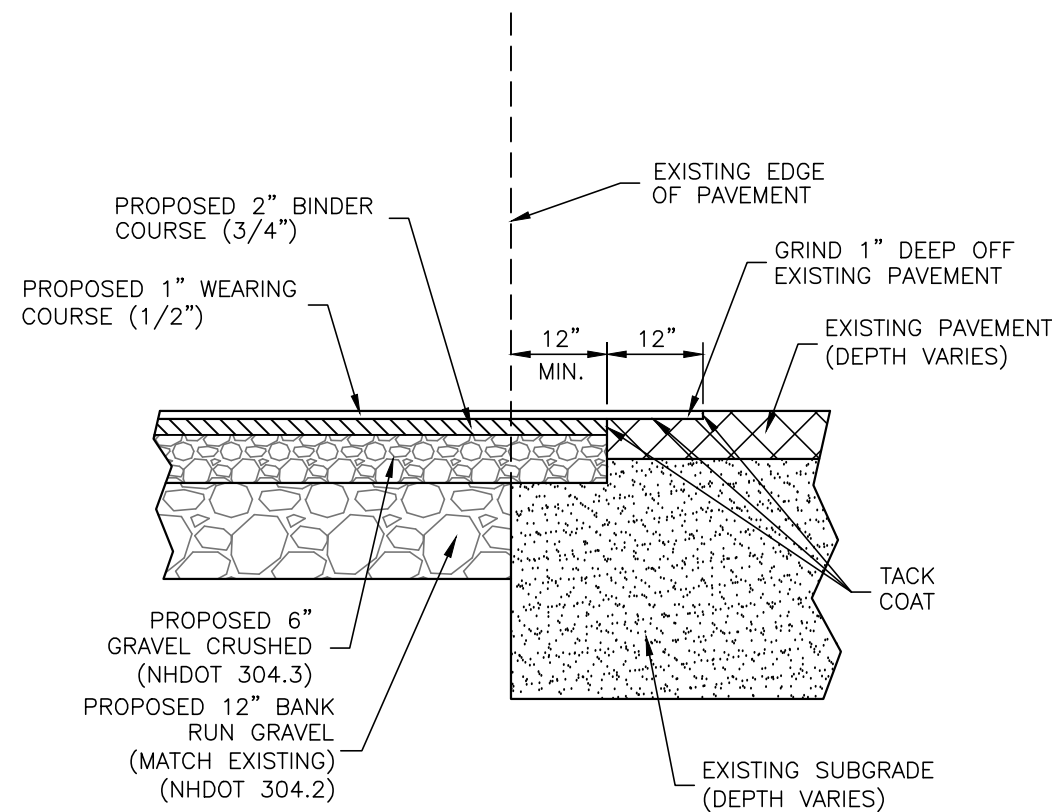
TYPICAL VALVE CONNECTION
N.T.S.



PIPE DIAMETER	MINIMUM BEARING AREA REQUIRED AGAINST UNDISTURBED MATERIAL (SQ. FT.)				
	90° BEND	TEE	PLUG	45° BEND	22.5° BEND OR LESS
4-6"	3	3	3	3	3
8"	6	4	6	4	3
10"	9	6	9	5	3.5
12"	12	9	12	7	4

NOTE: THE SIZE OF THE THRUST BLOCK MAY BE INCREASED BY THE ENGINEER TO MEET SOIL CONDITIONS FOUND DURING THE CONSTRUCTION OF THE PIPING.

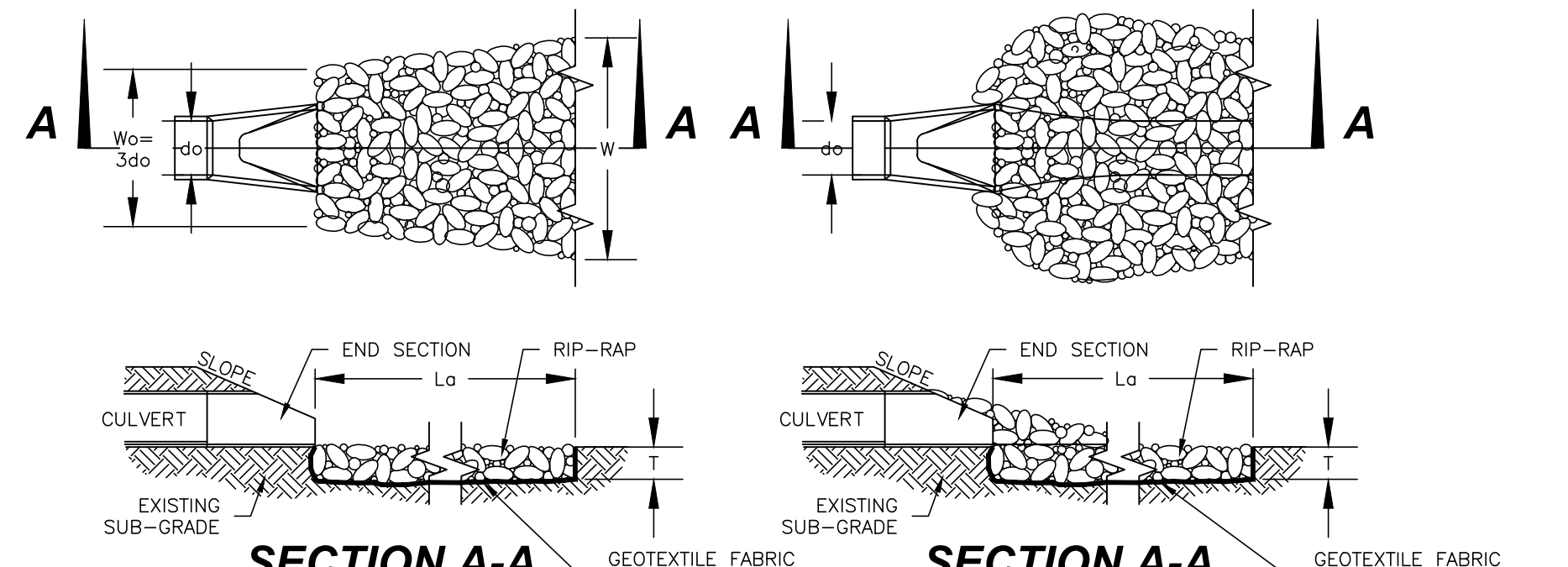
TYPICAL THRUST BLOCK DETAILS



TYPICAL PAVEMENT SAWCUT DETAIL
SCALE: N.T.S.

PAVEMENT SAWCUT NOTES:

- SAWCUT THROUGH DEPTH OF PAVEMENT AT LEAST 1 FT. FROM EDGE OR GREATER IF REQUIRED BY NHDOT.
- INSTALL AND COMPACT CRUSHED GRAVEL TO GRADE.
- PLACE BINDER COURSE.
- GRIND EXISTING PAVEMENT 1 FT. WIDE TO A DEPTH NECESSARY TO PROPERLY MATCH NEW WEARING COURSE PAVEMENT.
- TACK COAT ALL EXISTING PAVEMENT SURFACES WITH EMULSIFIED ASPHALT (MS-1) PRIOR TO PLACING NEW PAVEMENT.



RIP-RAP GRADATION

d50=6"	% OF WEIGHT SMALLER THAN THE GIVEN SIZE		SIZE OF STONE (INCHES)	
	100	9	TO	12
85	7.8	TO	10.8	
50	6	TO	9	
15	1.8	TO	3	

d50=12"	% OF WEIGHT SMALLER THAN THE GIVEN SIZE		SIZE OF STONE (INCHES)	
	100	12	TO	16
85	10.4	TO	14.4	
50	8	TO	12	
15	2.4	TO	4	

CONSTRUCTION SPECIFICATIONS:

- PREPARE THE SUB-GRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIP-RAP TO THE GRADES SHOWN ON THE PLANS.
- MINIMUM 6" SAND/GRAVEL BEDDING OR GEOTEXTILE FABRIC (MIRAFI 140N OR EQUAL) REQUIRED UNDER ALL ROCK RIP-RAP.
- THE ROCK OR GRAVEL USED FOR FILTER OR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
- GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF ROCK RIP-RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO (2) PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
- STONE FOR THE RIP-RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

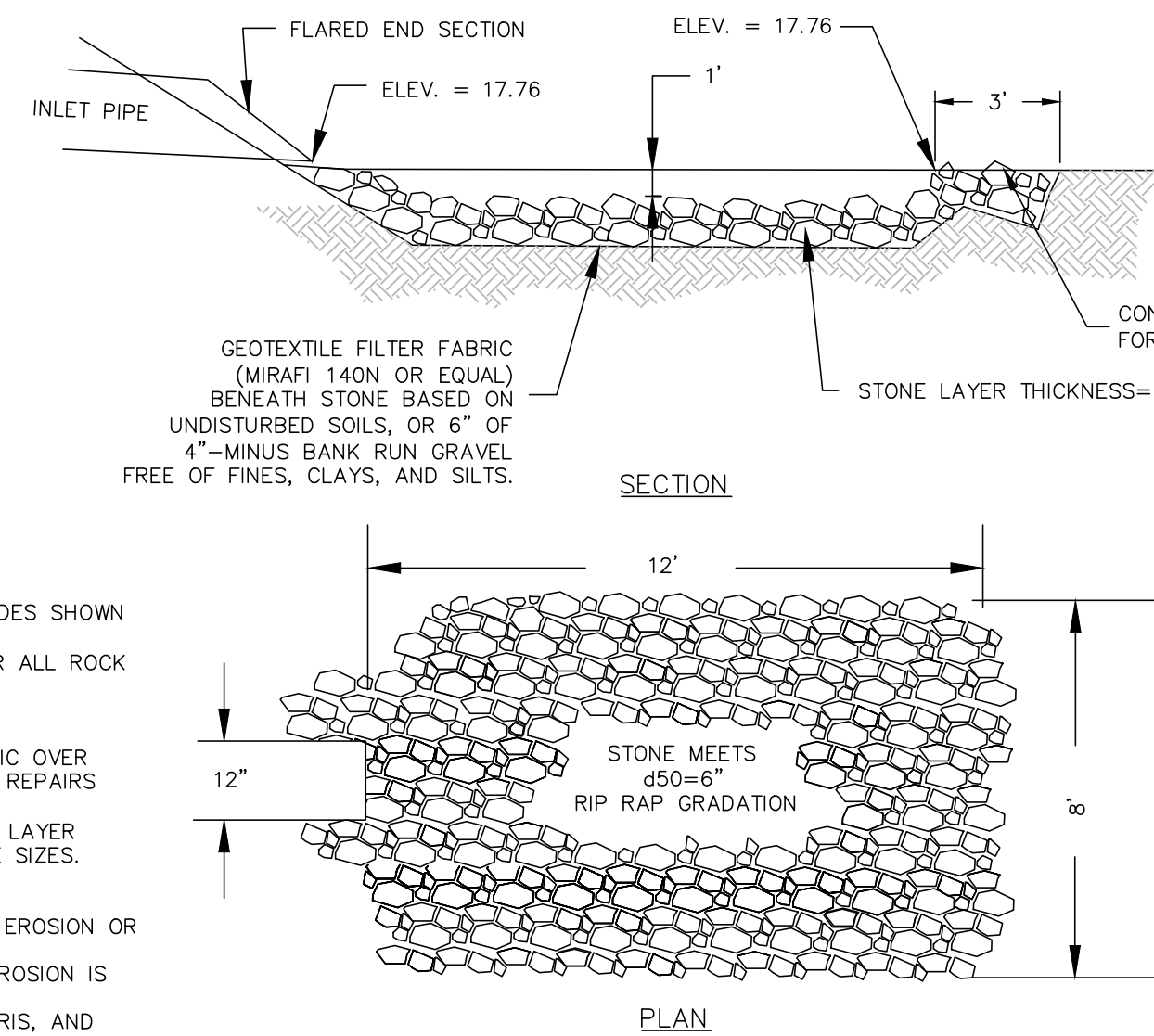
MAINTENANCE NOTES:

- OUTLETS SHALL BE INSPECTED AND CLEANED ANNUALLY AND AFTER ANY MAJOR STORM EVENT. ANY EROSION OR DAMAGE TO THE RIP-RAP SHALL BE REPAIRED IMMEDIATELY.
- THE CHANNEL IMMEDIATELY DOWNSTREAM FROM THE OUTLET SHOULD BE CHECKED TO SEE THAT NO EROSION IS OCCURRING.
- THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

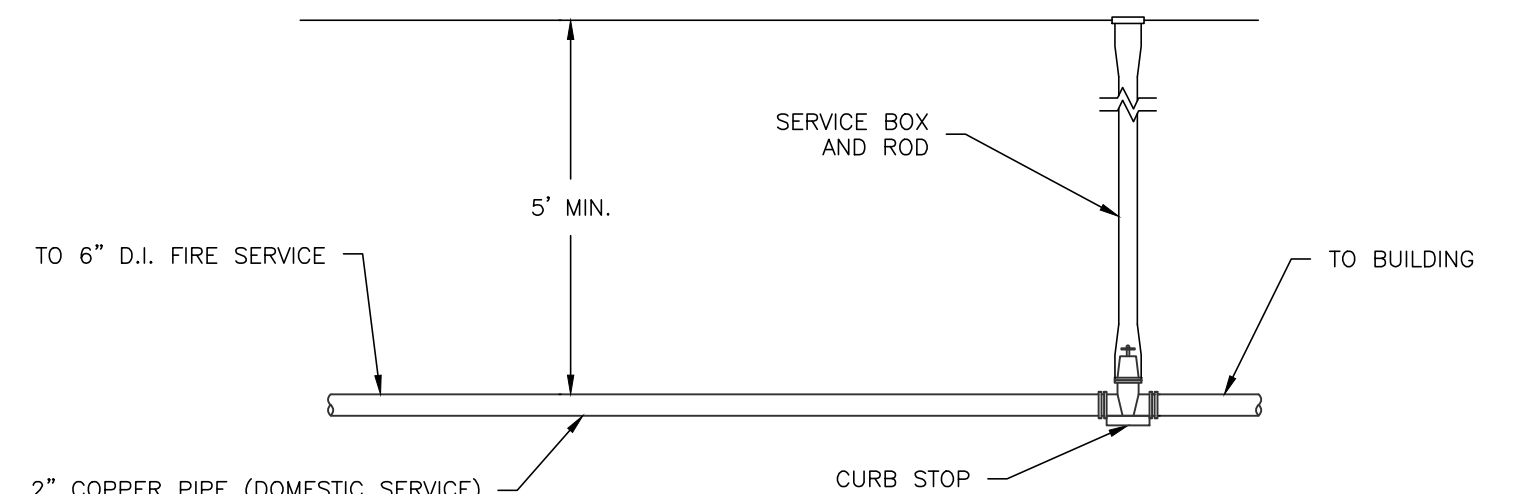
PIPE OUTLET PROTECTION DETAIL
NOT TO SCALE

RIP RAP APRON DIMENSION TABLE

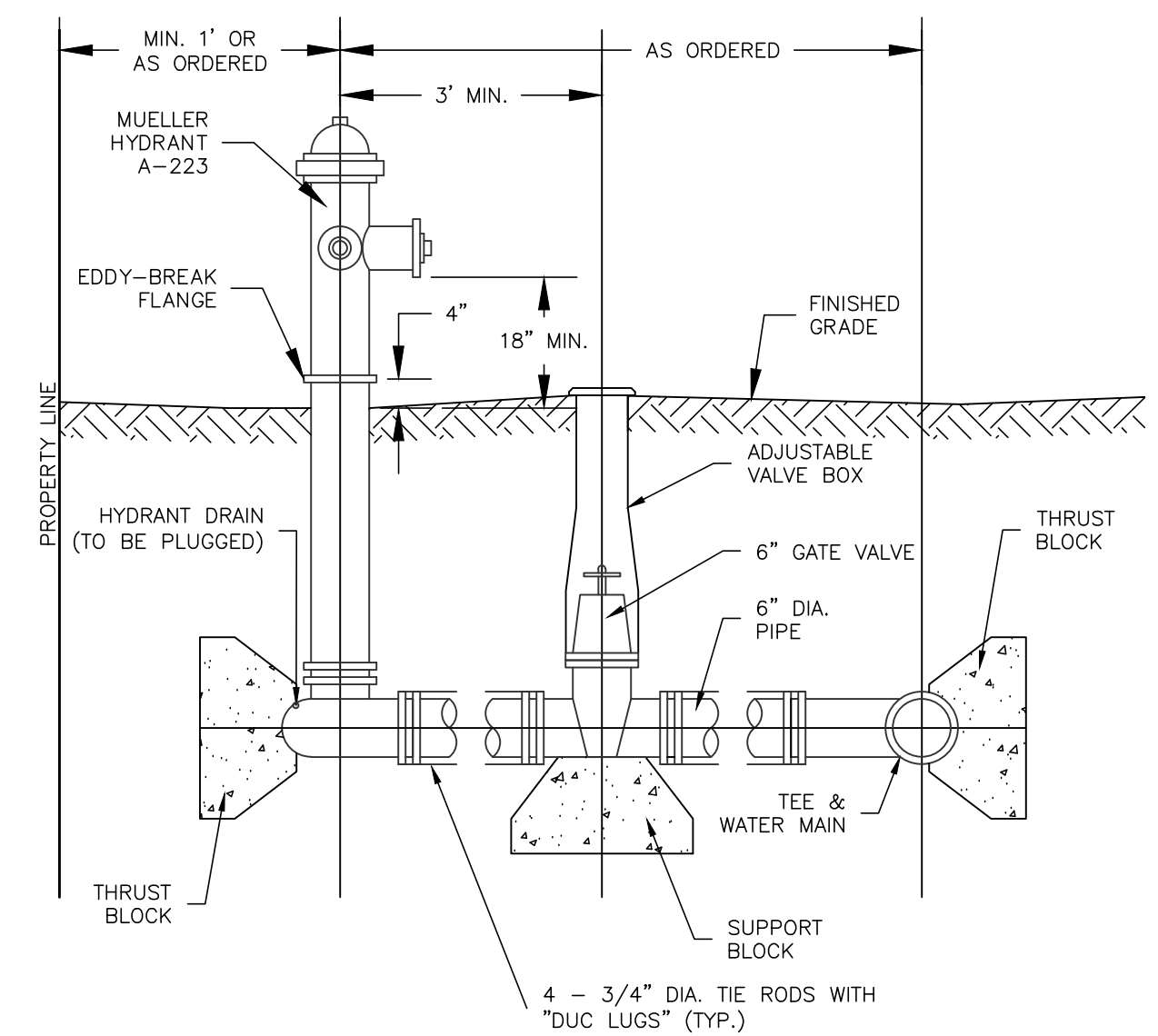
LOCATION	Wo	W	La	T	d50
RIP RAP #1 - CW #1 OUTLET	3.75'	16"	13"	18"	6"
RIP RAP #2 - CW #2 OUTLET	4.5'	18"	13"	18"	6"
RIP RAP #3 - DMH #2 OUTLET	SEE PLUNGE POOL DET.	18"	18"	6"	6"
RIP RAP #4 - DMH #4 OUTLET	VARIABLES SEE PLAN	18"	18"	6"	6"
RIP RAP #5 - 12" CULVERT OUTLET	VARIABLES SEE PLAN	18"	18"	6"	6"
RIP RAP #6 - 18" CULVERT OUTLET	VARIABLES SEE PLAN	24"	18"	8"	8"



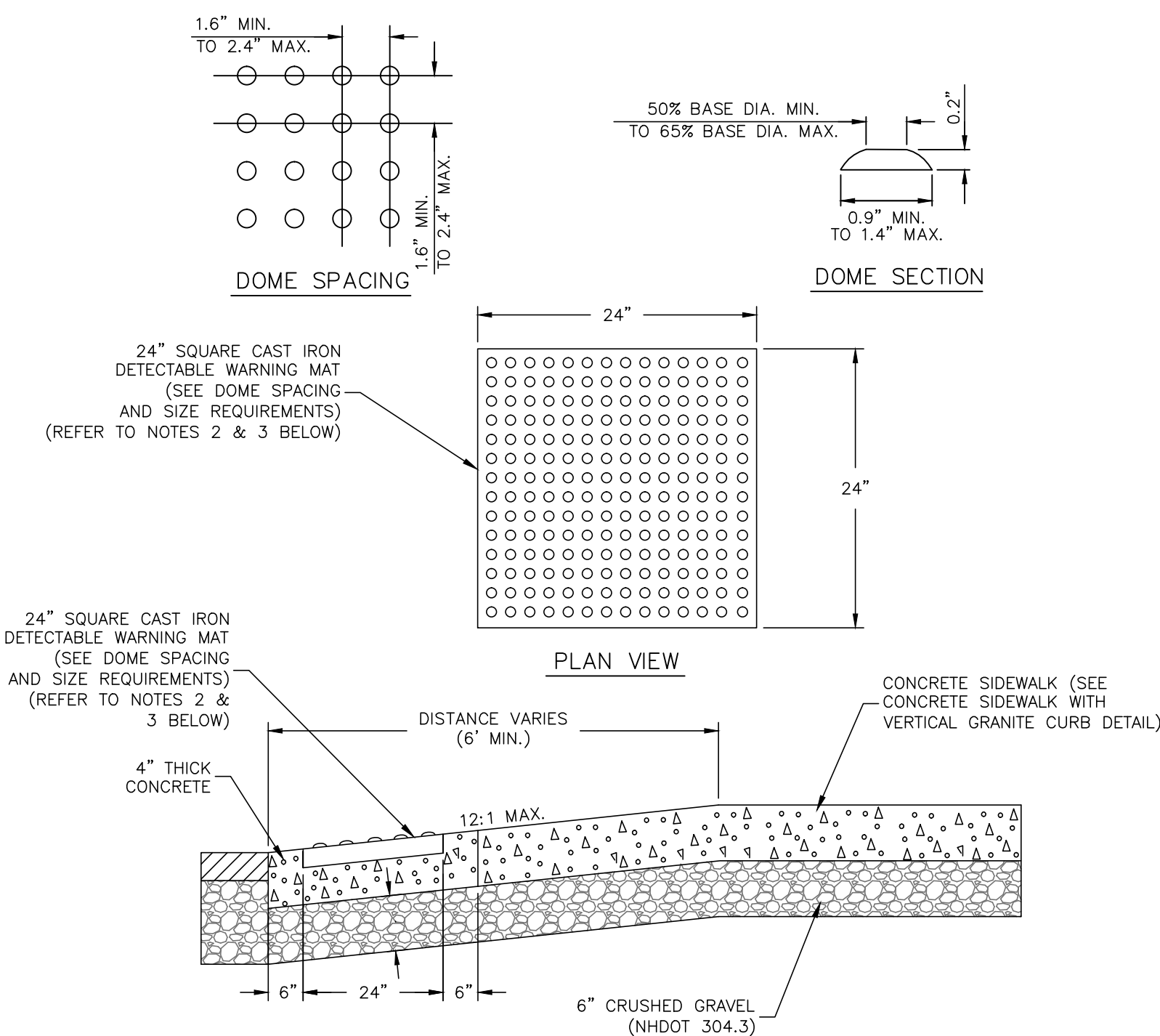
PLUNGE POOL
N.T.S.



TYPICAL WATER SHUTOFF CONNECTION
N.T.S.



FIRE HYDRANT INSTALLATION DETAIL
N.T.S.



DETECTABLE WARNING MAT DETAIL
N.T.S.

NOTES:

- CONCRETE TO BE 4,000 PSF.
- REFER TO MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION OF DETECTABLE WARNING MATS.

FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENT, TOWN PLANNER
CERTIFIED _____
DATE _____

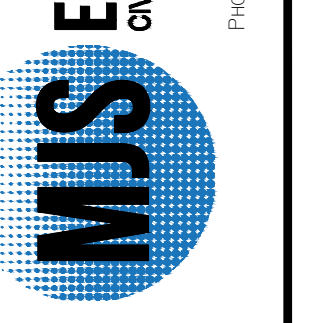
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4.	REVISIONS PER CONDITIONS OF APPROVAL	4/28/16	JLG
3.	REVISIONS PER AOT REVIEW LETTER DATED 3/31/16	4/27/16	MJS
2.	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	KD
1.	REVISIONS FOR ADDITIONAL SITE DESIGN	9/17/15	KD
0.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	9/2/15	KD

DATE: 9/2/15
SCALE: AS SHOWN
DESIGNED BY: MJS
DRAWN BY: BJB
APPROVED BY: MJS
DWG FILE: 15-027-Detailed.dwg

SEAL: MICHAEL BEHRENT, TOWN PLANNER, No. 0387

SITE CONSTRUCTION DETAILS prepared for HARMONY HOMES BY THE BAY TAX MAP 11, LOTS (27-1)-(27-7) W. ARTHUR GRANT CIRCLE DURHAM, NH

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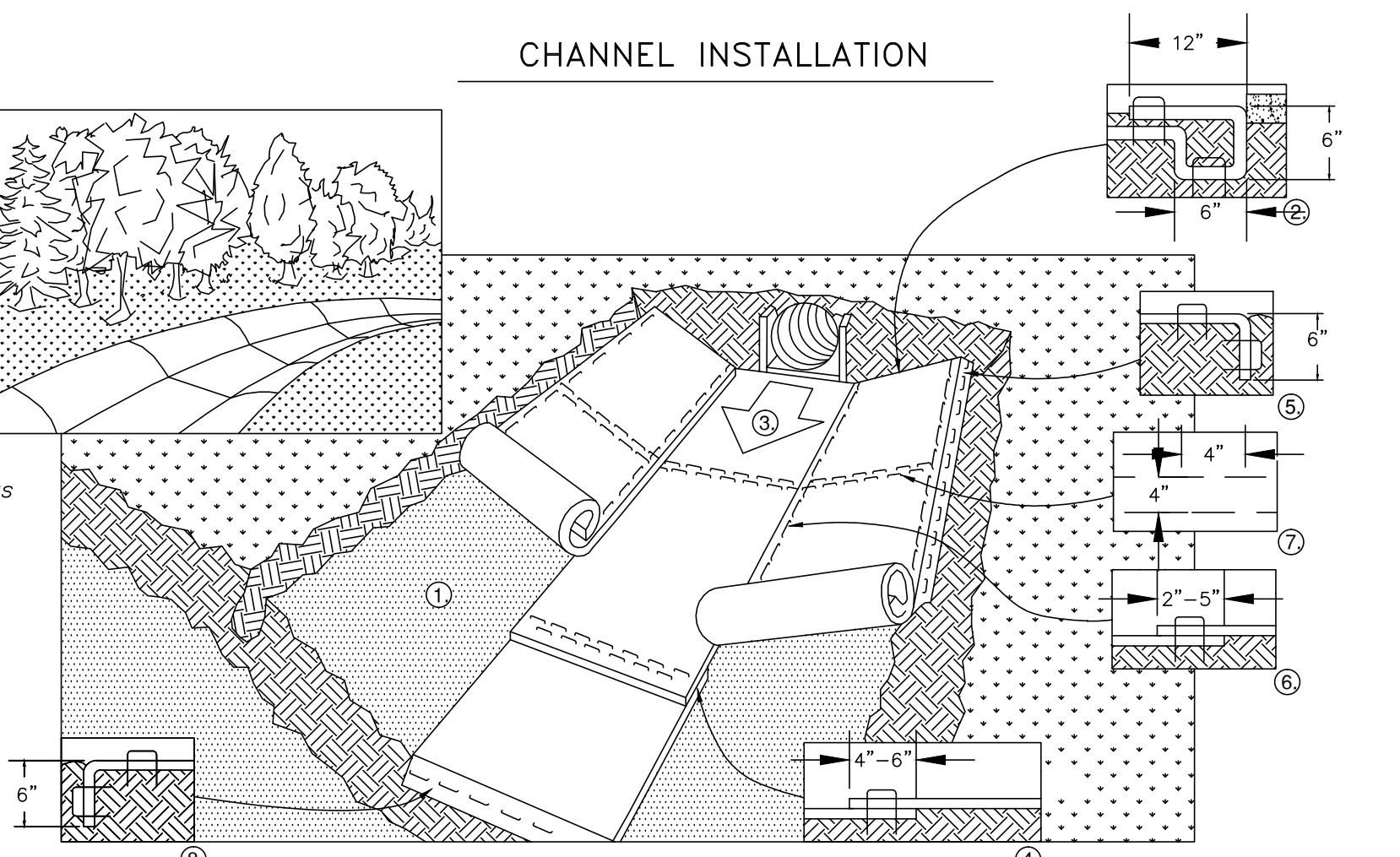


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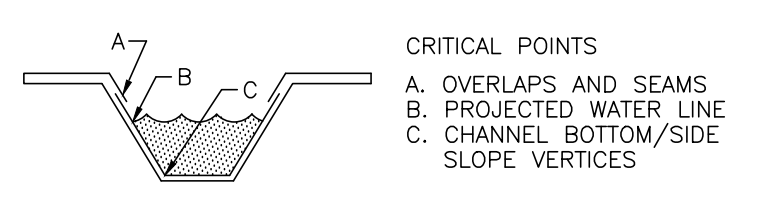
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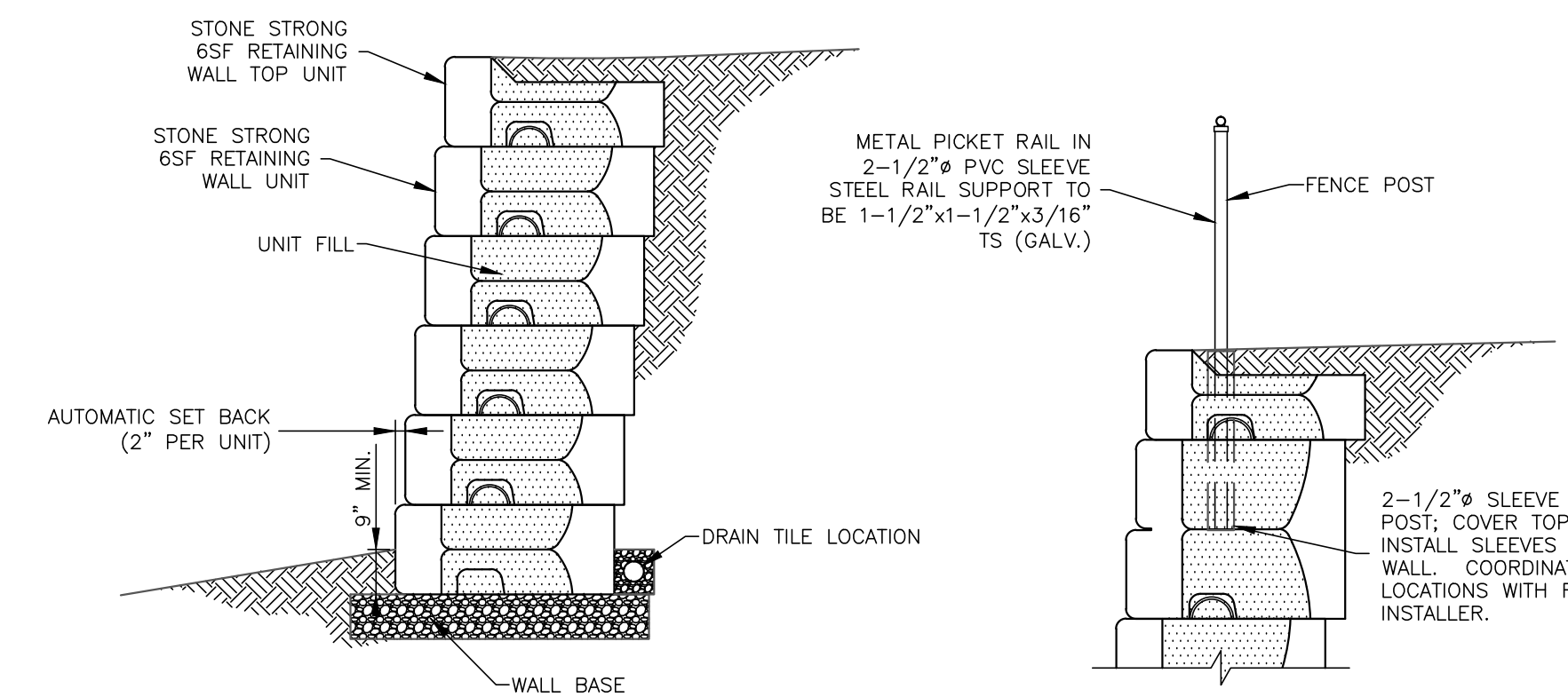


- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
- BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP'S IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) ACROSS THE WIDTH OF THE RECP'S.
- ROLL CENTER RECP'S IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM*, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
- PLACE CONSECUTIVE RECP'S END OVER END (SHINGLE STYLE) WITH A 4" - 6" (10 CM - 15 CM) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER TO SECURE RECP'S.
- FULL LENGTH EDGE OF RECP'S AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
- ADJACENT RECP'S MUST BE OVERLAPPED APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) (DEPENDING ON RECP'S TYPE) AND STAPLED.
- IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9 M - 12 M) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
- THE TERMINAL END OF THE RECP'S MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.



TYPICAL TURF REINFORCEMENT MATTING DETAIL
N.T.S.

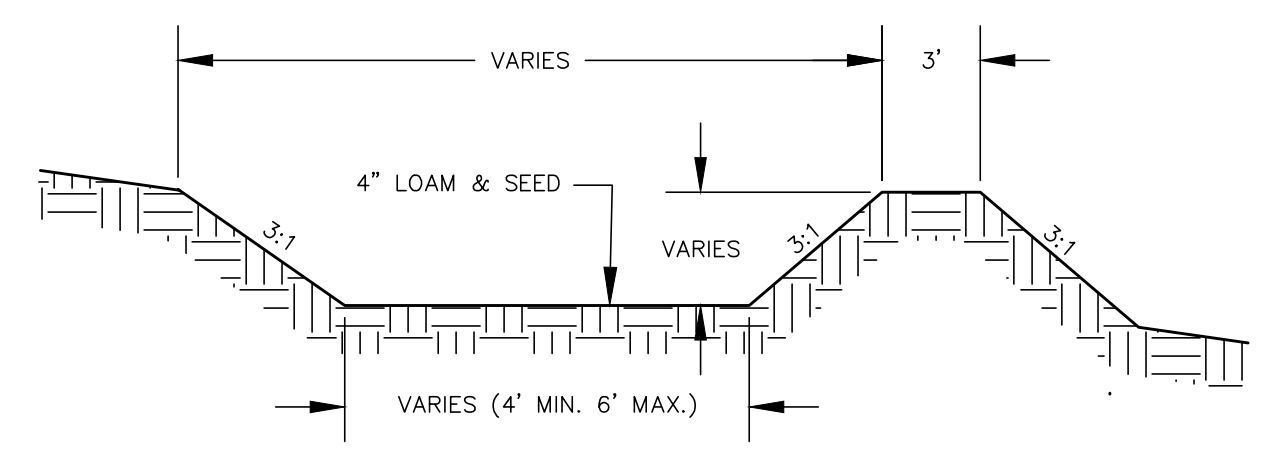
- CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES
- NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE REQUIRED.



GRAVITY RETAINING WALL CROSS SECTION
N.T.S.

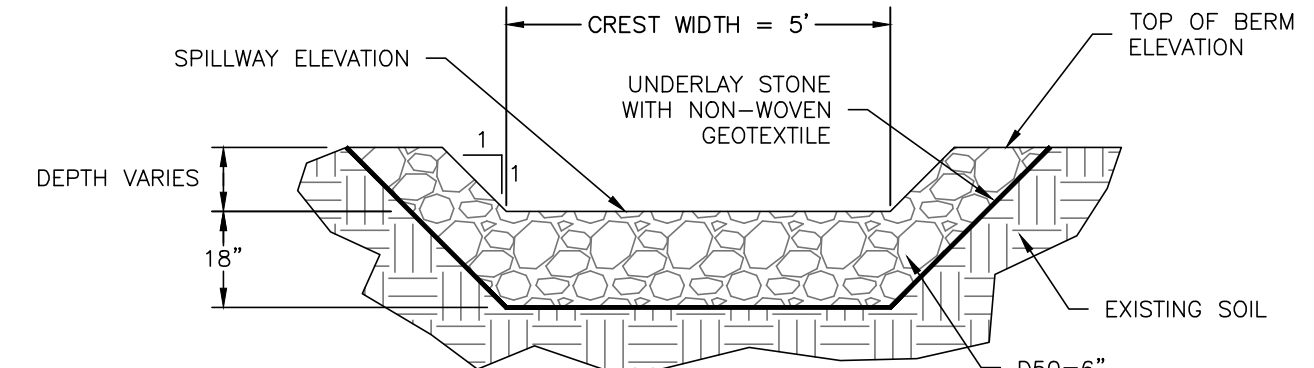
- NOTES:
1. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
2. FINAL RETAINING WALL DESIGN TO BE APPROVED BY DESIGN ENGINEER.
3. WALL TO BE STONESTRONG OR APPROVED EQUAL.

FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED _____
DATE _____



VEGETATED TREATMENT SWALE DETAIL
N.T.S.

- CONSTRUCTION NOTES:
1. REFER TO BERM CONSTRUCTION NOTES IN GRAVEL WETLAND DETAIL FOR BERM CONSTRUCTION REQUIREMENTS.
2. SWALE SHALL HAVE GREATER THAN 85% VEGETATIVE GROWTH PRIOR TO RECEIVING RUNOFF.
- MAINTENANCE NOTES:
1. INSPECT ANNUALLY FOR EROSION, SEDIMENT ACCUMULATION, VEGETATION LOSS, AND PRESENCE OF INVASIVE SPECIES.
2. PERFORM PERIODIC MOWING. DO NOT MOW GRASS SHORTER THAN 4 INCHES.
3. REMOVE DEBRIS AND ACCUMULATED SEDIMENT BASED ON INSPECTION.
4. REPAIR ERODED AREAS, REMOVE INVASIVE SPECIES AND DEAD VEGETATION, AND RESEED WITH APPLICABLE GRASS MIX AS WARRANTED BY INSPECTION.



RIP RAP SPILLWAY TYPICAL CROSS SECTION DETAIL
N.T.S.

- NOTES:
1. RIP RAP SPILLWAYS ARE LOCATED AT SEDIMENT FOREBAY, AND GRAVEL WETLAND OUTLETS.
2. THERE SHALL BE NO WETLAND IMPACTS.

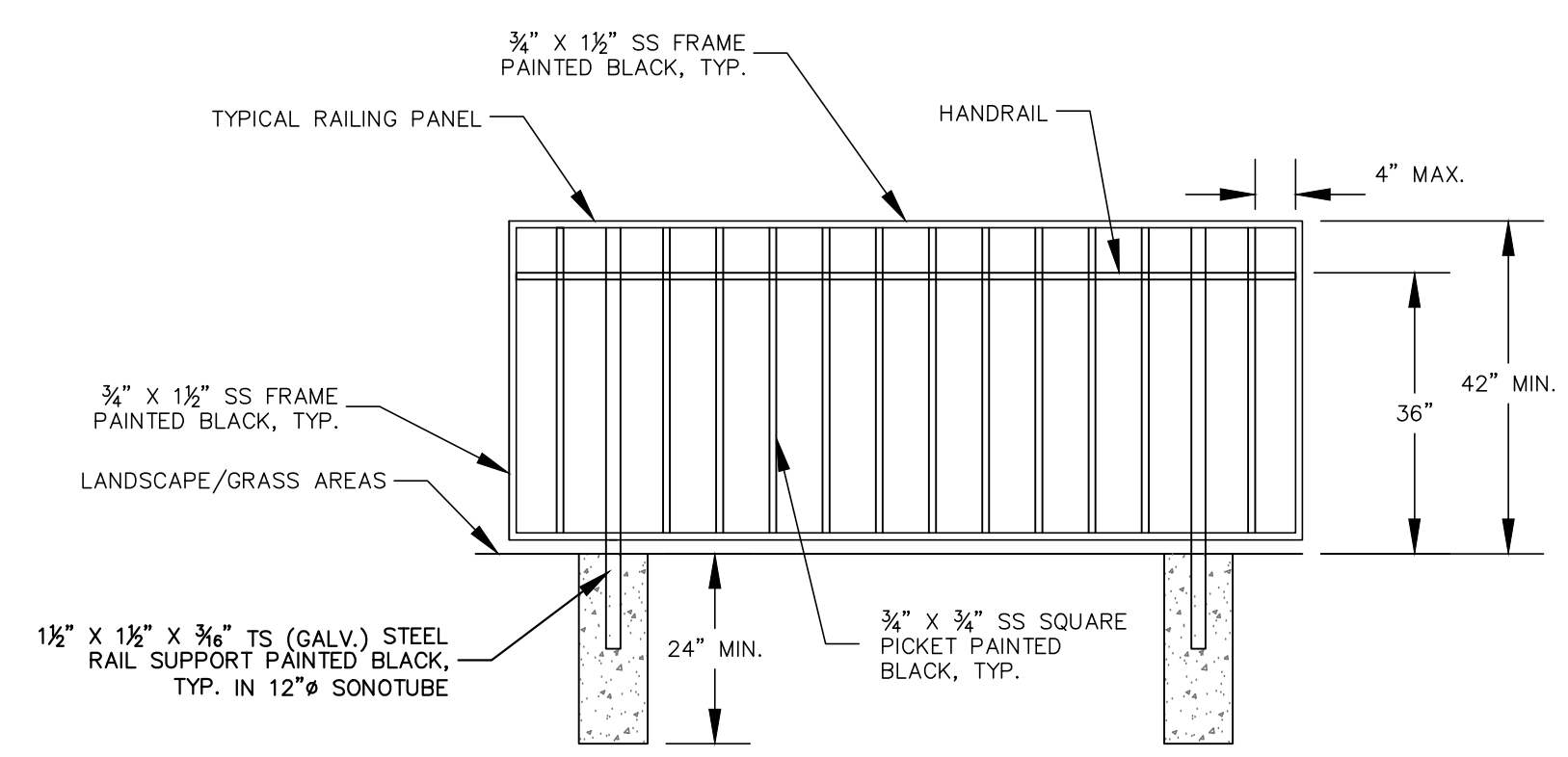
RIP-RAP GRADATION

SIZE OF STONE (INCHES)	% OF WEIGHT SMALLER THAN THE GIVEN SIZE
12	100
10.8	85
9	50
6	15
3	

SPILLWAY DIMENSION TABLE

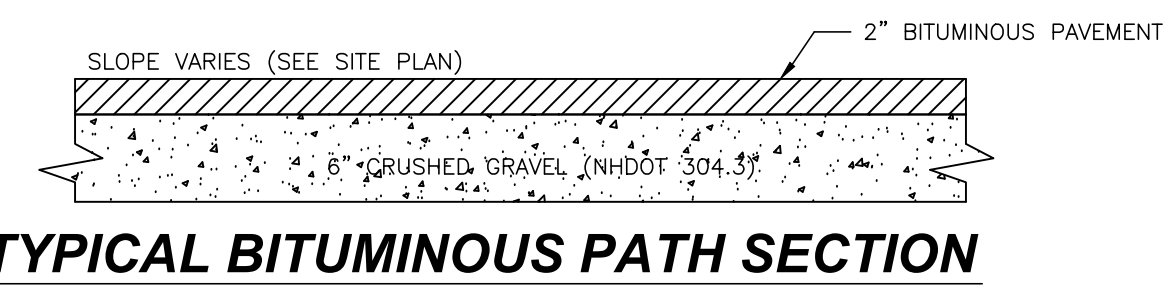
LOCATION	CREST ELEV.	BERM ELEV.	LENGTH*	WIDTH*
SPILLWAY #1 - GW #1 SED. TO CELL #1	11.50	12.50	10'	5'
SPILLWAY #2 - GW #1 CELL #1 TO CELL #2	11.00	12.50	12'	5'
SPILLWAY #3 - GW #1 CELL #1 EMERGENCY OUTLET	11.85	12.50	9'	5'
SPILLWAY #4 - GW #2 SED. TO CELL #1	13.00	14.50	14'	5'
SPILLWAY #2 - GW #2 CELL #1 TO CELL #2	12.75	14.50	14.5'	5'
SPILLWAY #2 - GW #2 CELL #2 EMERGENCY OUTLET	13.75	14.50	5.4'	5'

*REFER TO DETAIL ABOVE FOR LOCATION OF WIDTH AND LENGTH



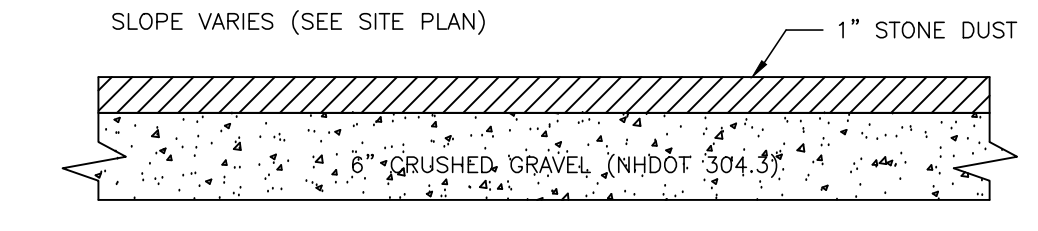
TYPICAL METAL RAIL DETAIL
N.T.S.

- RAILING NOTES:
1. SUBMITTAL OF RAIL STYLE REQUIRED FOR APPROVAL BY LANDSCAPE ARCHITECT.



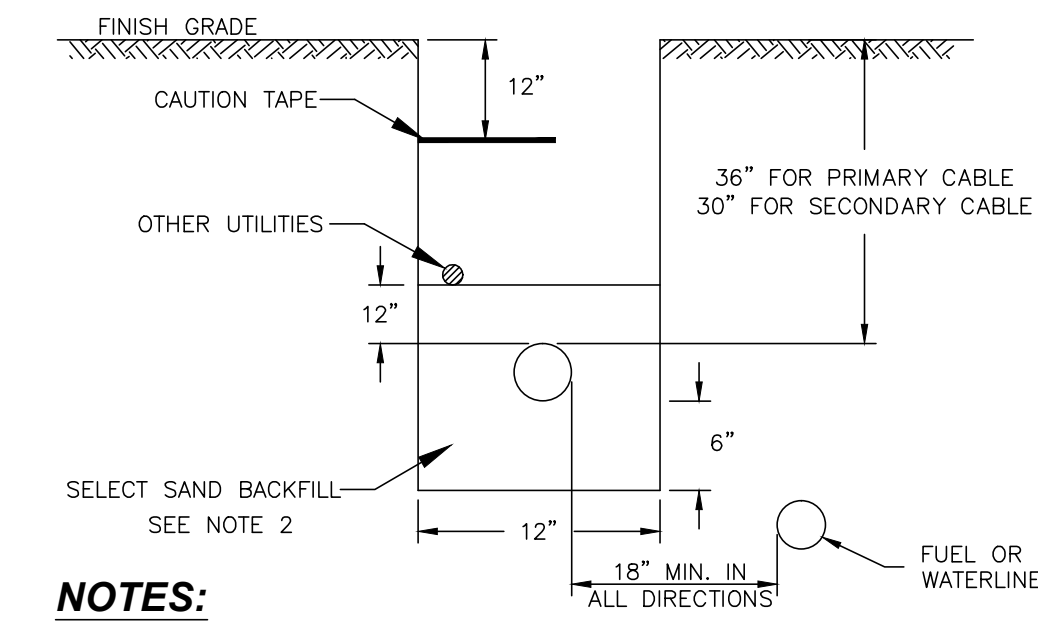
TYPICAL BITUMINOUS PATH SECTION

- NOTES:
1. LOAM SHALL BE REMOVED TO A MINIMUM DEPTH OF 8" PRIOR TO PLACING SELECT MATERIALS.
2. THE WIDTHS OF ALL BITUMINOUS PATHS SHALL BE 5'.



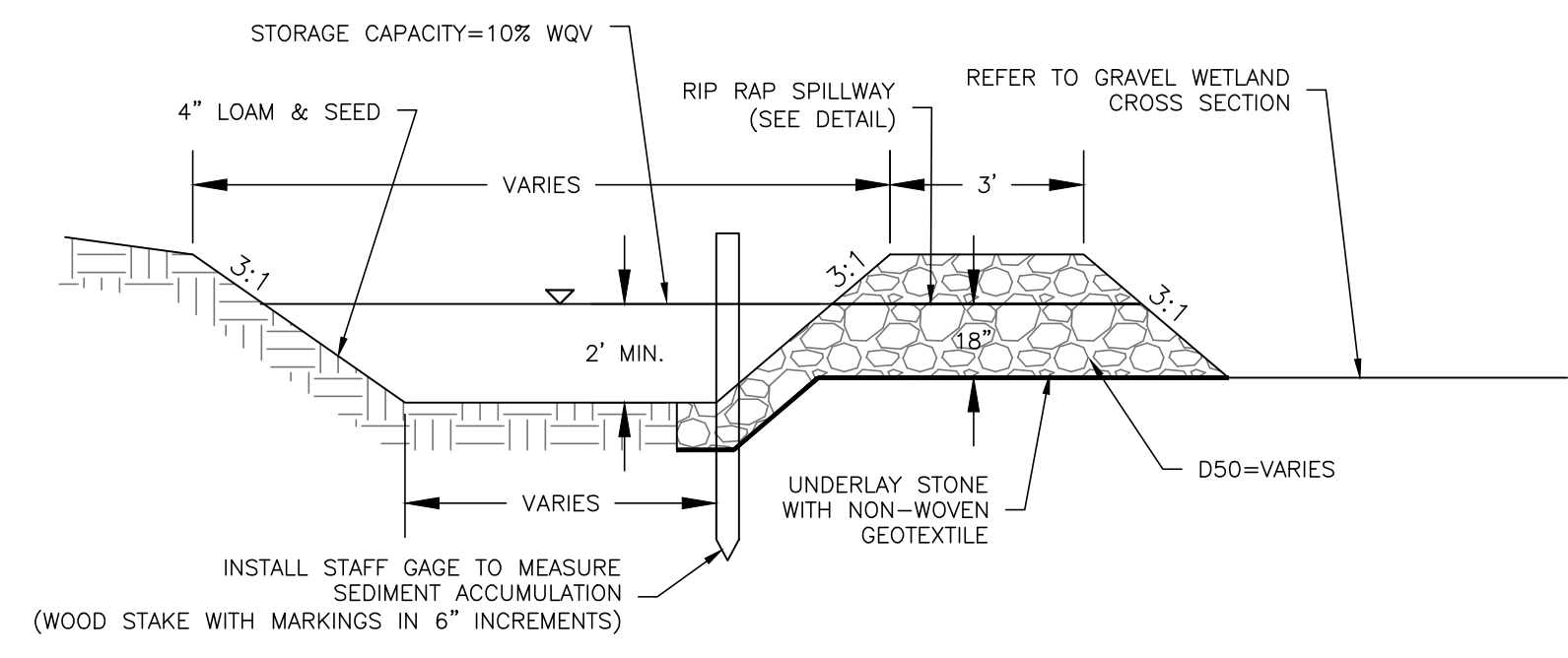
TYPICAL STONE DUST PATH SECTION

- NOTES:
1. LOAM SHALL BE REMOVED TO A MINIMUM DEPTH OF 8" PRIOR TO PLACING SELECT MATERIALS.
2. THE WIDTHS OF ALL STONE DUST PATHS ARE 4'-5'.



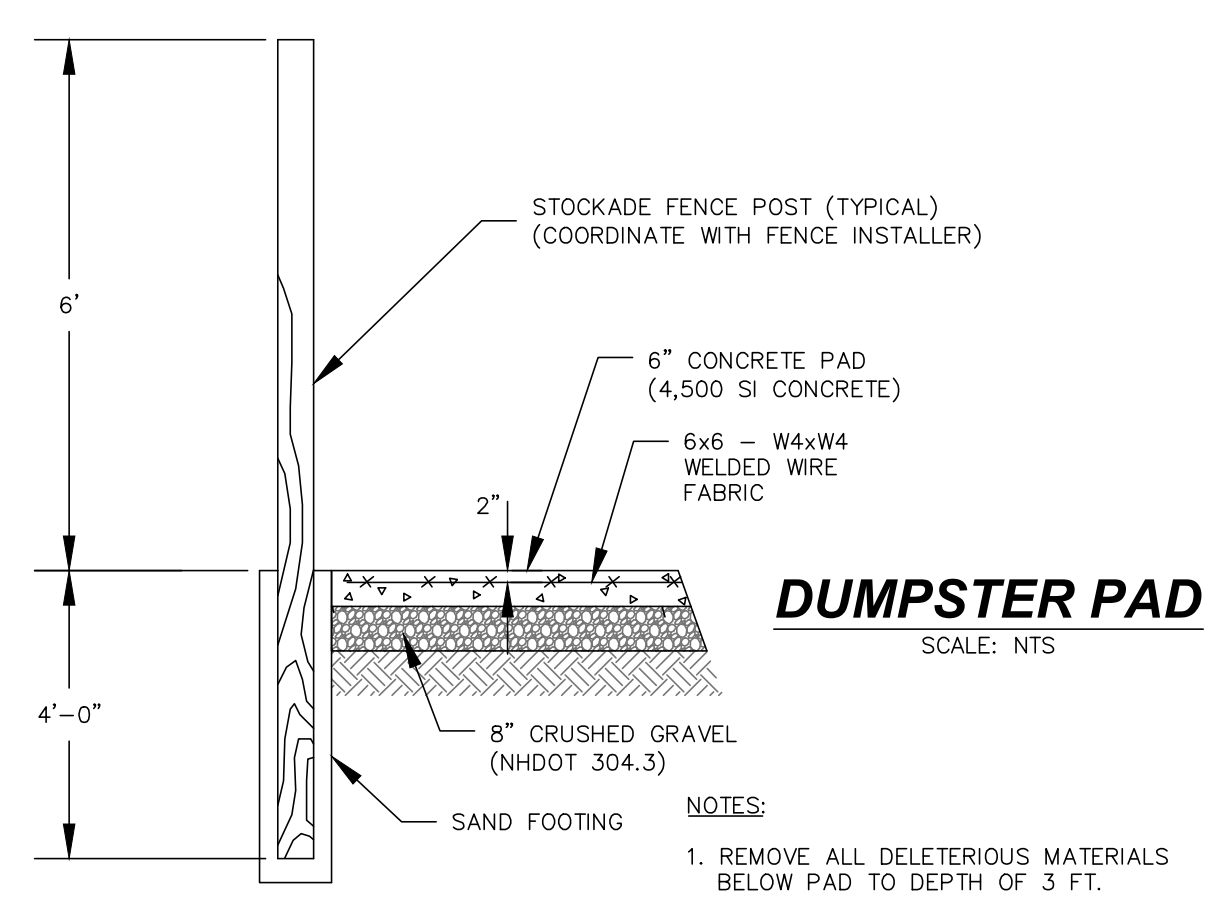
TELEPHONE & ELECTRIC TRENCH
N.T.S.

- NOTES:
1. CONSTRUCTION TO BE IN ACCORDANCE WITH PSNH CONSTRUCTION STANDARDS FOR NEW ELECTRICAL SERVICE WORK BY CONTRACTORS, MOST RECENT EDITION.
2. SELECT SAND BACKFILL SHALL CONSIST OF A FINE GRANULAR MATERIAL OF WHICH 100% SHALL PASS THROUGH A 1/4" SIEVE. EXCEPT NATURALLY OCCURRING SMOOTH ROUND PEBBLES NO GREATER THAN 3/8" IN DIAMETER ARE PERMITTED AS LONG AS THEIR TOTAL VOLUME PER CUBIC FOOT OF SAND DOES NOT EXCEED 1%. THE SAND SHALL BE COMPLETELY FREE OF FROZEN LUMPS, ROCKS, STONES, DEBRIS AND RUBBISH. BACKFILL SHALL BE THOROUGHLY COMPACTED IN 6" LIFTS.
3. CONDUIT SIZES TO BE 5" 3-PHASE PRIMARY AND 4" 3-PHASE SECONDARY. ALL CONDUIT SIZES TO BE VERIFIED BY PSNH.
4. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC CODE, STATE AND LOCAL CODES AND ORDINANCES, AND WHERE APPLICABLE THE NATIONAL ELECTRIC CODE.



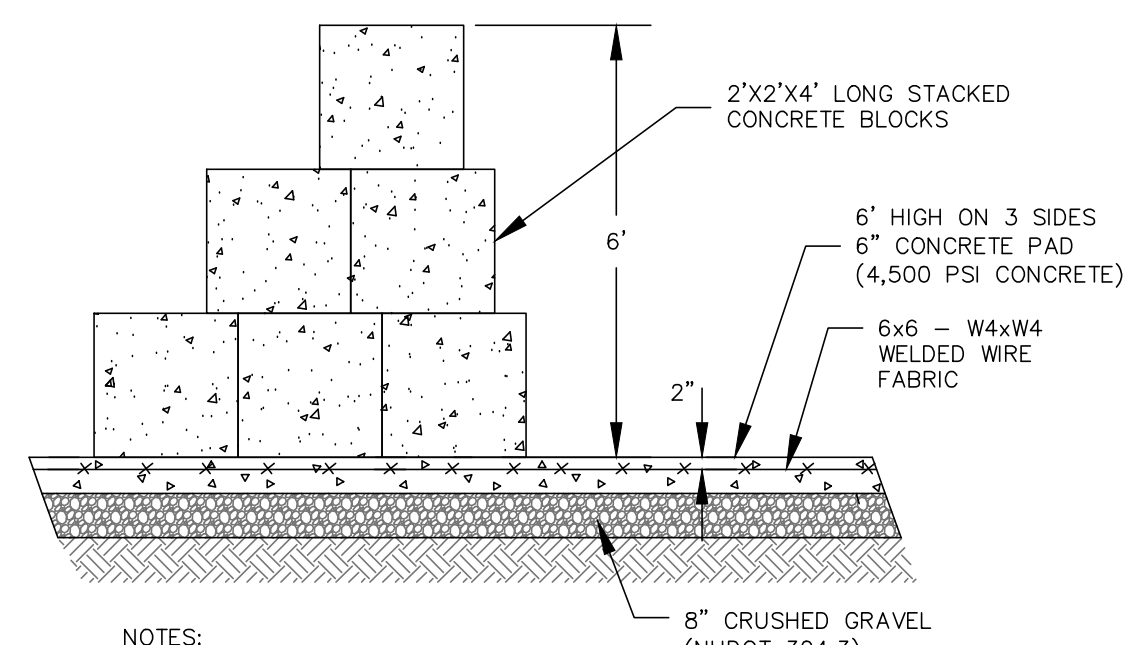
SEDIMENT FOREBAY TYPICAL CROSS SECTION DETAIL
N.T.S.

- NOTES:
1. REFER TO BERM CONSTRUCTION NOTES IN GRAVEL WETLAND DETAIL FOR BERM CONSTRUCTION REQUIREMENTS.
2. REFER TO RIPRAP SPILLWAY CROSS SECTION DETAIL FOR SPILLWAY CONSTRUCTION REQUIREMENTS.
3. UNLESS RIP RAP IS IN PLACE, THE SEDIMENT FOREBAY SHALL BE MOWED WITH THE REST OF THE SITES LAWN AREAS TO PROMOTE HEALTHY GROWTH AND PREVENT THE ENCROACHMENT OF WEEDS AND WOODY VEGETATION.
4. INSTALL STAFF GAGE TO MEASURE SEDIMENT ACCUMULATION. SEDIMENT SHALL BE REMOVED AFTER SEDIMENT ACCUMULATES TO A DEPTH OF 1 FOOT.



DUMPSTER PAD
SCALE: NTS

- NOTES:
1. REMOVE ALL DELETERIOUS MATERIALS BELOW PAD TO DEPTH OF 3 FT.
2. COMPACT SUBGRADE TO 95% MAX. DRY DENSITY.
3. COMPACT GRAVEL TO 95% MAX. DRY DENSITY.



STORAGE BIN FOR HORSE MANURE

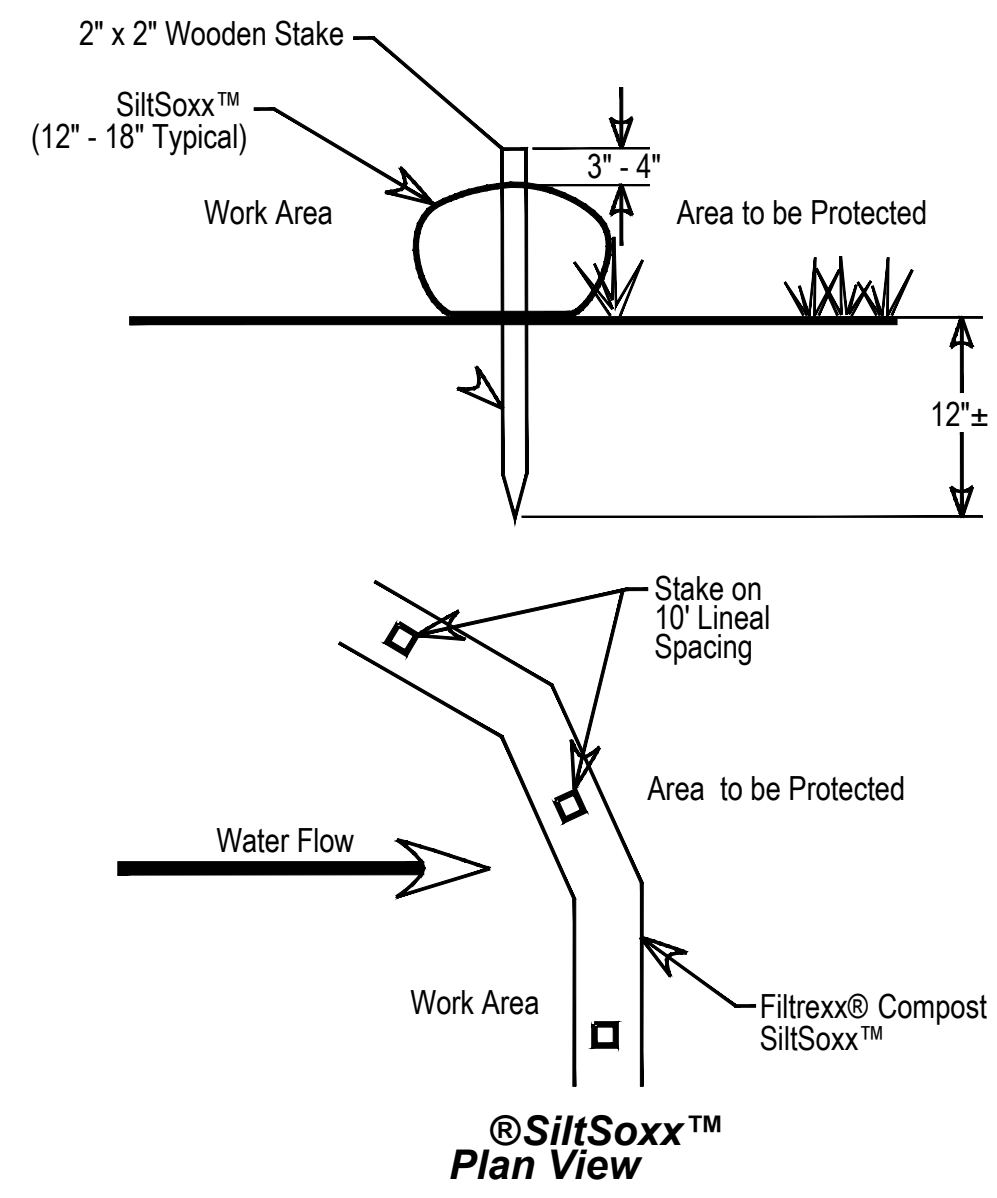
- NOTES:
1. REMOVE ALL DELETERIOUS MATERIALS BELOW PAD TO DEPTH OF 3 FT.
2. COMPACT SUBGRADE TO 95% MAX. DRY DENSITY.
3. COMPACT GRAVEL TO 95% MAX. DRY DENSITY.

NO.	REVISIONS	DATE	INT.
1	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	9/17/15	KD
2	REVISIONS FOR ADDITIONAL SITE DESIGN	10/28/15	KD
3	REVISIONS PER TOWN PLANNER COMMENTS DATED 10/16/15	10/28/15	KD
4	SUBMISSION FOR ALTERATION OF TERRAIN PERMIT	2/10/16	KD
5	REVISIONS PER ACT REVIEW LETTER DATED 3/31/16	4/27/16	JLG

SITE CONSTRUCTION DETAILS prepared for HARMONY HOMES BY THE BAY TAX MAP 11, LOTS (27-1)-(27-7) W. ARTHUR GRANT CIRCLE DURHAM, NH

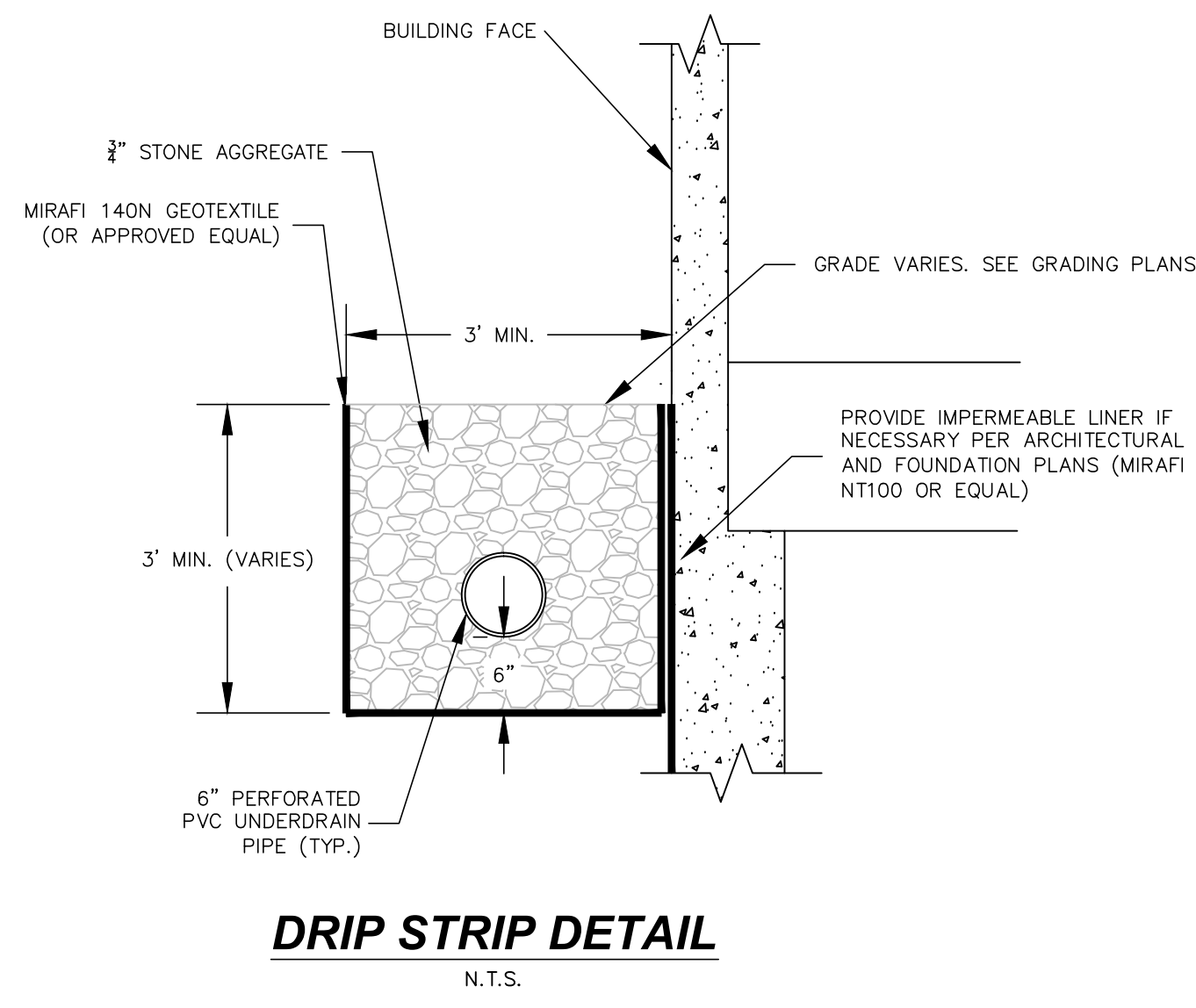
MJS ENGINEERING P.C.
CIVIL & STRUCTURAL ENGINEERING
5 HARBOR RD. ST., P.O. BOX 359
DURHAM, NH 03824
PHONE: (603) 659-4979, FAX: (603) 659-4027
E-MAIL: MJS@MJS-ENGINEERING.COM

MJS ENGINEERING P.C.
JOB: 15-027
D106



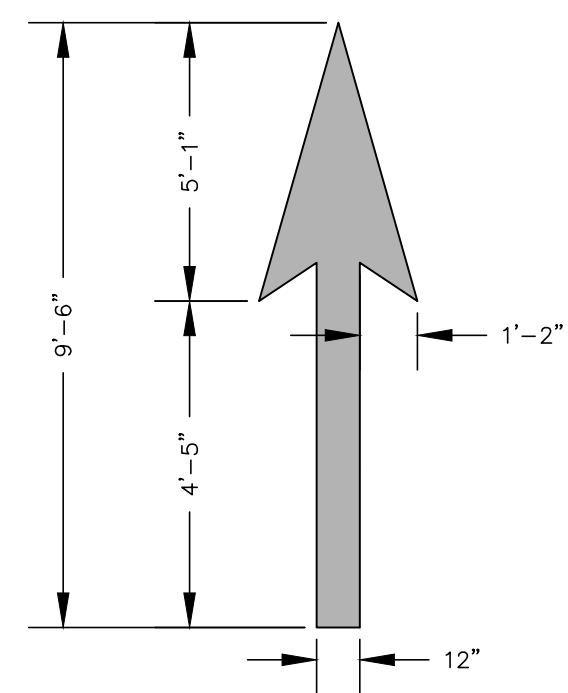
SILTSOXX DETAIL
N.T.S.

- Notes:**
1. All material to meet Filtrax® specifications.
 2. Compost material to be dispersed on site up slope from protected area.



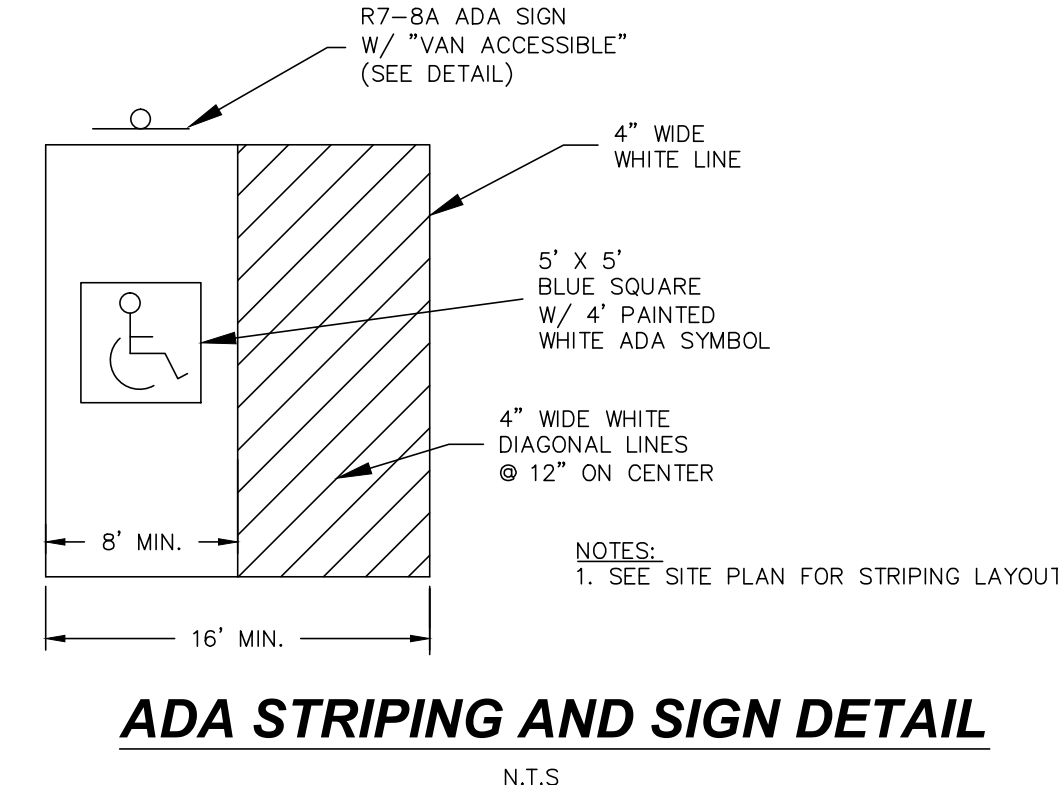
DRIP STRIP DETAIL
N.T.S.

- Notes:**
1. SEE PLANS FOR LOCATION.



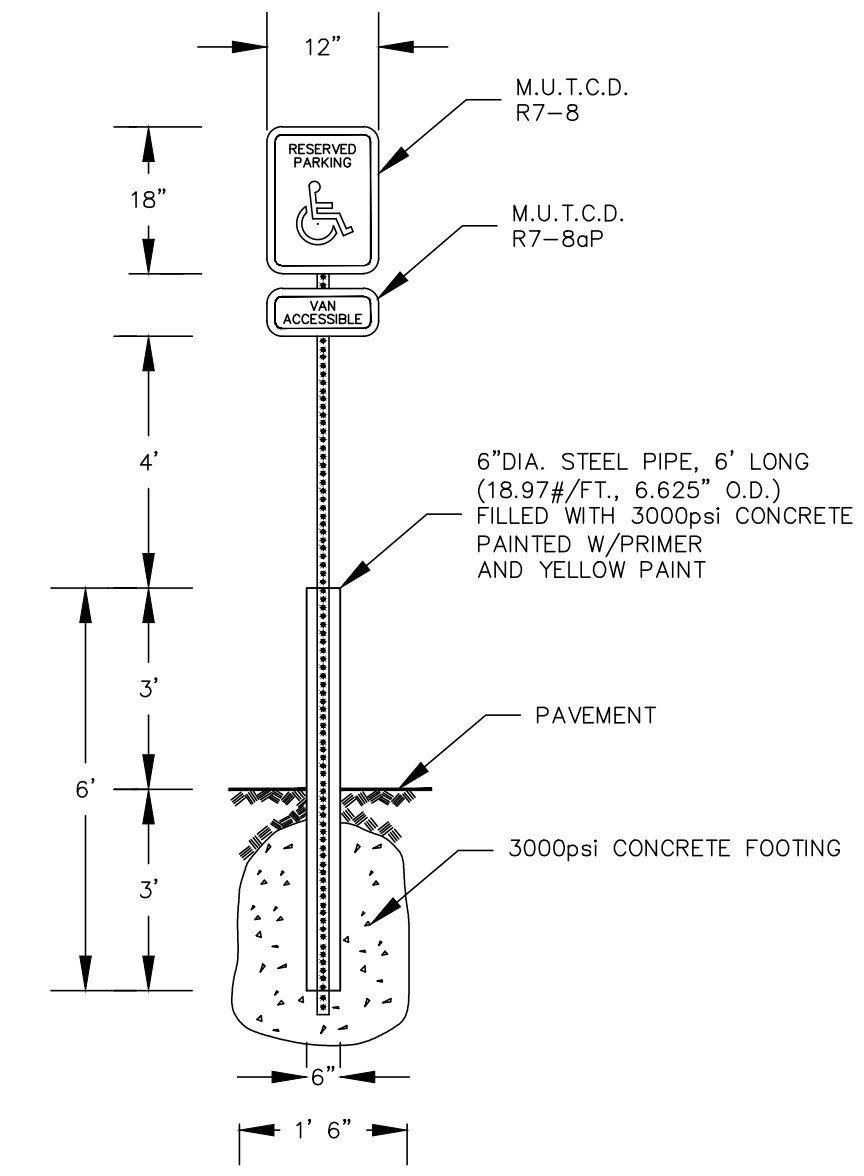
**PAVEMENT MARKINGS:
THROUGH (STRAIGHT ARROW)**
(PAY QUANTITY = 12.5 FT²)

- Notes:**
1. ALL STOP BARS, WORDS, SYMBOLS AND ARROWS SHALL BE THERMOPLASTIC.
 2. ALL STOP BARS, WORDS, SYMBOLS AND ARROWS SHALL BE RETROREFLECTIVE WHITE AND SHALL CONFORM TO THE LATEST VERSION OF THE MUTCD.

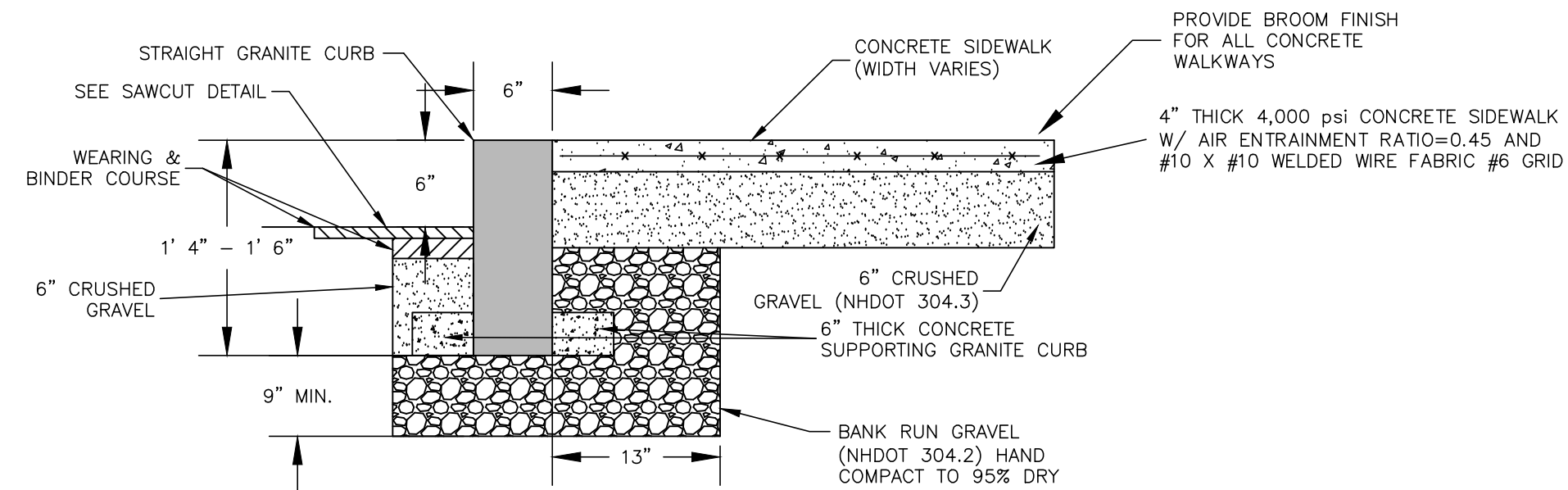


ADA STRIPING AND SIGN DETAIL
N.T.S.

- PAVEMENT MARKINGS:**
1. STRIPE PARKING AREAS AND DRIVES AS SHOWN, INCLUDING PARKING SPACES, HANDICAP SYMBOLS, AND PAINTED ISLANDS. ALL TRAFFIC PAINT SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDT) AND AASHTO M248 TYPE "F". MEDIAN ISLANDS AND CENTERLINES TO BE CONSTRUCTED USING YELLOW TRAFFIC PAINT.
 2. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE LATEST EDITIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE "STANDARD ALPHABETS FOR HIGHWAY SIGN AND PAVEMENT MARKINGS", AND THE AMERICANS WITH DISABILITIES ACT REQUIREMENTS.
 3. PAINTED ISLANDS SHALL BE 4 INCH WIDE DIAGONAL LINES SPACED AT 3 FT. O.C. BORDERED BY 4 INCH WIDE LINES.



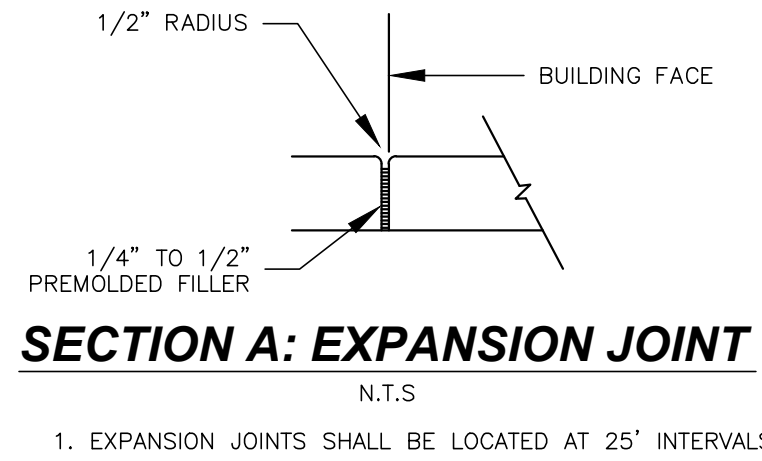
TYPICAL SIGN DETAIL
N.T.S.



TYPICAL SECTION
N.T.S.

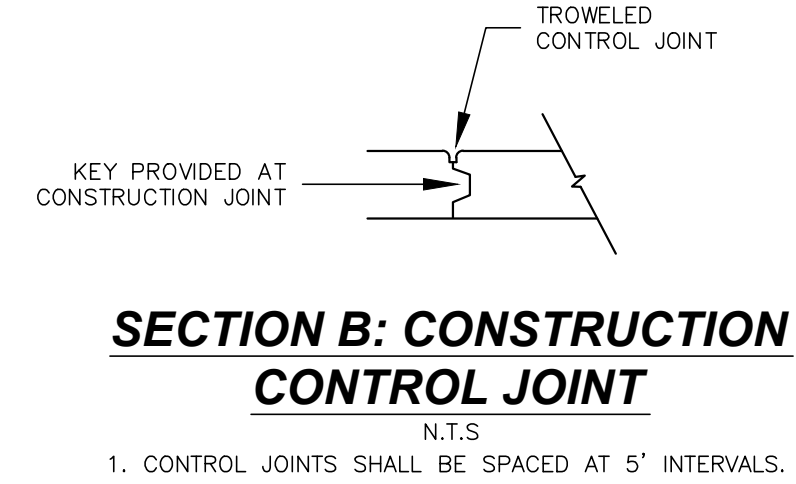
- Notes:**
1. MINIMUM LENGTH OF CURB STONES = 3'
 2. MAXIMUM LENGTH OF CURB STONES = 10'
 3. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.

**CONCRETE SIDEWALK WITH
VERTICAL GRANITE CURB**
N.T.S.



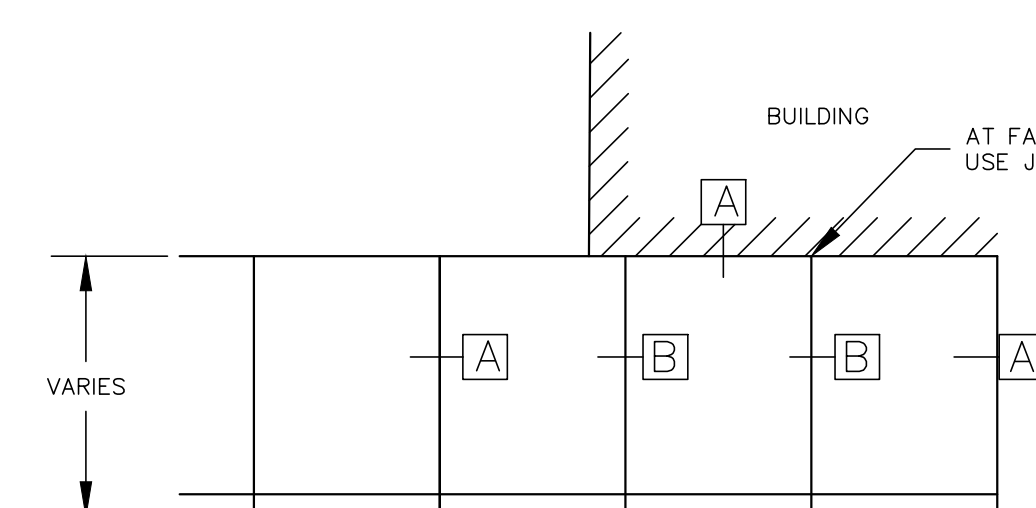
SECTION A: EXPANSION JOINT
N.T.S.

1. EXPANSION JOINTS SHALL BE LOCATED AT 25' INTERVALS.

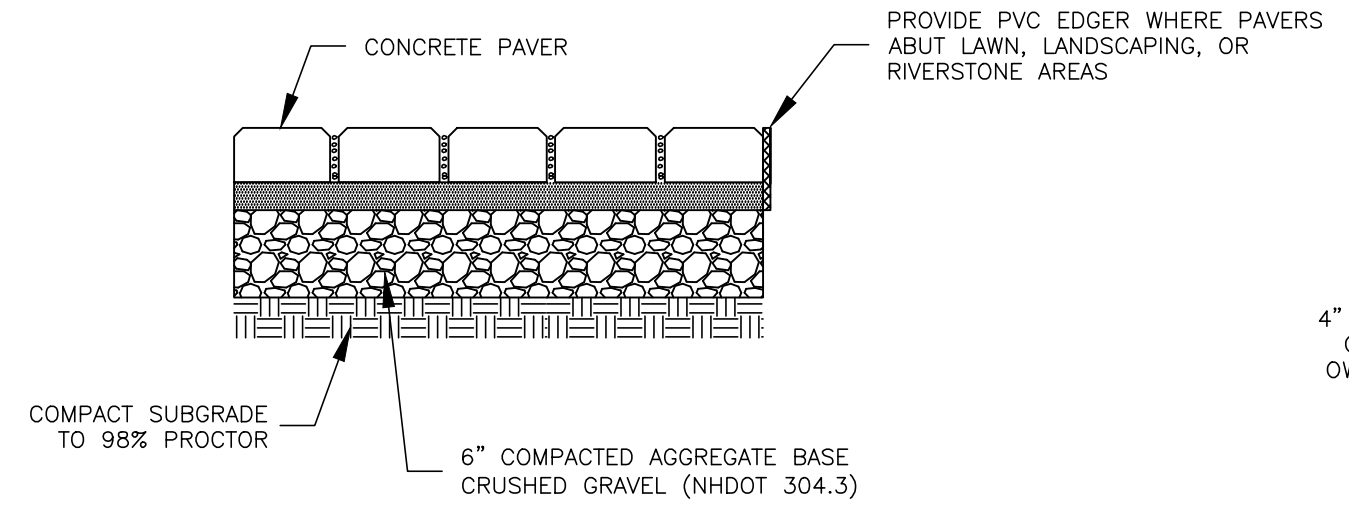


SECTION B: CONSTRUCTION CONTROL JOINT
N.T.S.

1. CONTROL JOINTS SHALL BE SPACED AT 5' INTERVALS.

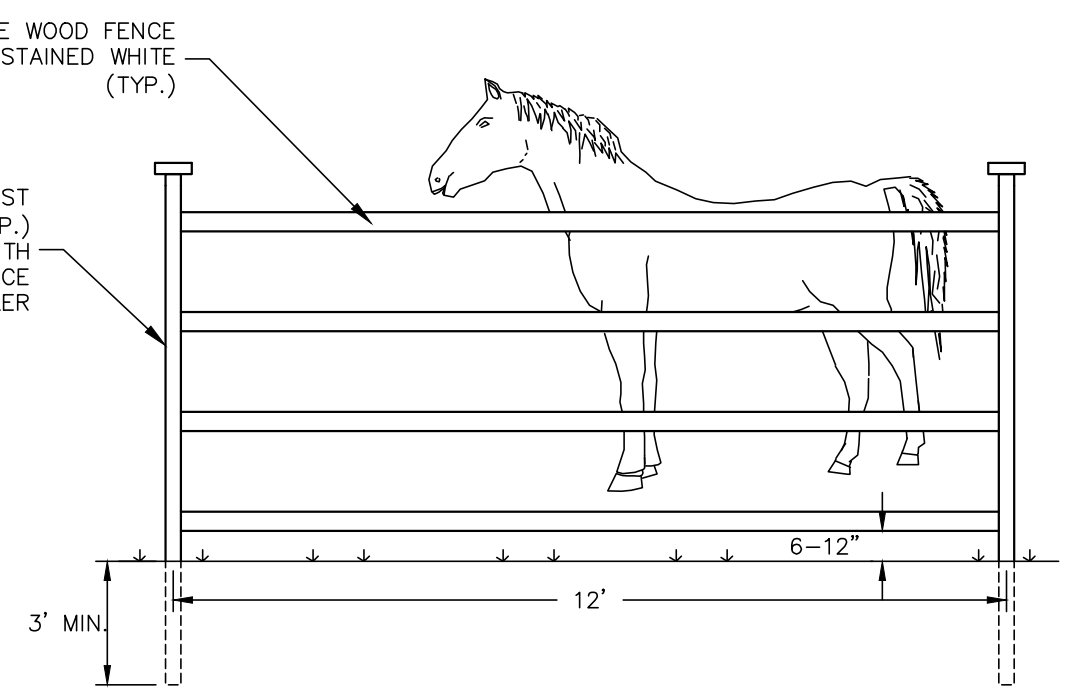


PLAN VIEW
N.T.S.



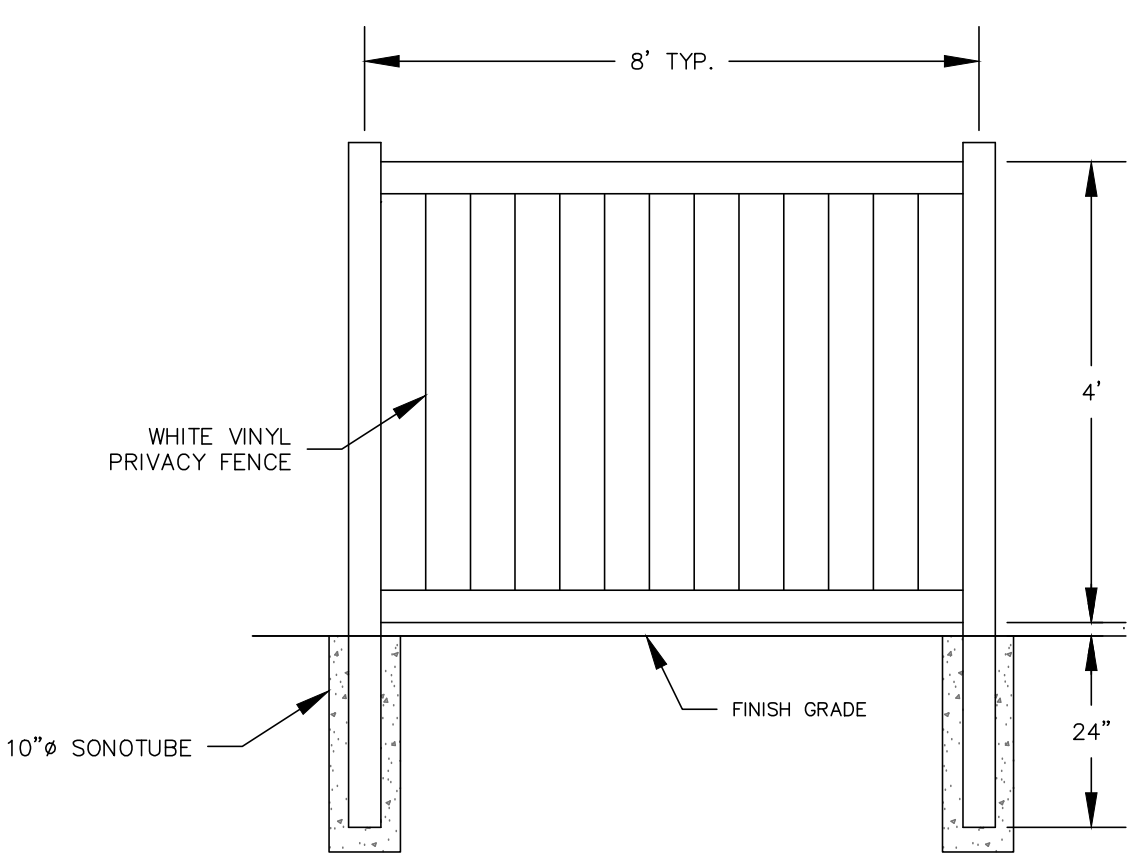
TYPICAL CONCRETE PAVER CROSS SECTION
N.T.S.

- Notes:**
1. INSTALL SELECTED CONCRETE PAVER PER MANUFACTURERS SPECIFICATIONS.
 2. PAVERS TO BE GENEST ACADIA CONCRETE BLOCK (OR EQUAL). ACTUAL PAVER MODEL TO BE SELECTED BY OWNER.
 3. FOR SALES, CONTACT: GENEST SALES REPRESENTATIVE RAY PETRARCA - (207) 324-3250
 4. PAVERS SHALL BE USED IN OVERLOOK AND INTERIOR COURTYARDS.



HORSE PADDOCK FENCE DETAIL
N.T.S.

- Notes:**
1. FENCE SHALL BE PAINTED OR STAINED WHITE.



TYPICAL VINYL PRIVACY FENCE DETAIL

ITEM NO.	SIGN SIZE		TEXT	NO. SIGNS REQ'D
	HEIGHT	WIDTH		
R1-1	30"	30"	STOP	3
R7-8a	18"	12"	RESERVED PARKING	5
R7-8b	6"	12"	VAN ACCESSIBLE	5
R8-31	18"	12"	NO PARKING FIRE LANE	3
R5-1	30"	30"	DO NOT ENTER	3
R6-2R	18"	12"	ONE WAY	1
R6-2L	18"	12"	ONE WAY	1
N/A	18"	12"	NO PARKING DELIVERY ONLY	2
N/A	6"	12"	EMPLOYEE PARKING	2
N/A	18"	12"	HARMONY HOMES BY THE BAY OFFICE DELIVERIES	TBD
R3-2	24"	24"	NO LEFT TURN	1

SIGN SCHEDULE

N.T.S.

- Notes:**
1. ALL SIGNS SHALL BE PER "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION UNLESS OTHERWISE SPECIFIED.
 2. SEE PLANS FOR SIGN LOCATIONS.

FINAL APPROVAL BY DURHAM PLANNING BOARD.
 CERTIFIED BY MICHAEL BEHRENT, TOWN PLANNER
 DATE _____

NO.	REVISIONS	DATE	INT.
5/23/16	NO.		
5/13/16	MS		
4/28/16	J.G		
2/10/16	KD		
10/28/15	KD		
9/17/15	KD		

DATE: 9/2/15
 SCALE: AS SHOWN
 DESIGNED BY: MJS
 DRAWN BY: BOB
 APPROVED BY: MJS
 DWG. FILE: 15-027 Details.dwg

SEAL: MICHAEL BEHRENT, TOWN PLANNER, No. 0387

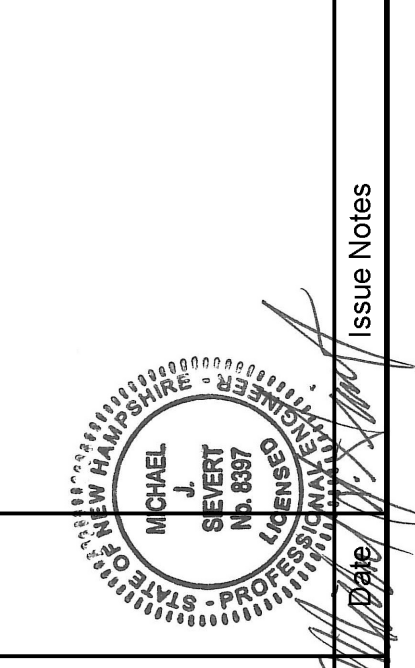
SITE CONSTRUCTION DETAILS
 prepared for
HARMONY HOMES BY THE BAY
 TAX MAP 11, LOTS (27-1)-(27-7)
 W. ARTHUR GRANT CIRCLE DURHAM, NH

MJS ENGINEERING P.C.
 CIVIL • STRUCTURAL • ENVIRONMENTAL
 5 HALL ROAD ST., P.O. BOX 359
 DURHAM, NH 03824
 PHONE: (603) 659-4979, FAX: (603) 659-4627
 E-MAIL: MJS@MJS-ENGINEERING.COM

JOB: 15-027
D107

1. The provision for maintenance of landscaping materials as specified in Section 175-124 Maintenance Requirements of the Article XXII Landscaping in the Durham Zoning Ordinance, shall apply. The property owner shall be responsible for maintenance of the landscaping in perpetuity.
2. Trees shall be planted using commonly accepted best management practices, such as those listed in ANSI A300 Part 6: Tree Maintenance Standard Practices (Transplanting), which is available from the International Society of Landscape Architects.
3. Only low phosphorus/slow release nitrogen fertilizers for landscaping materials may be used.

terra firma
landscape architecture
601 Alington Street, Unit 205 Portsmouth, NH 03801
office: 603.430.8388 | terrence@terrafirmalandscape.com



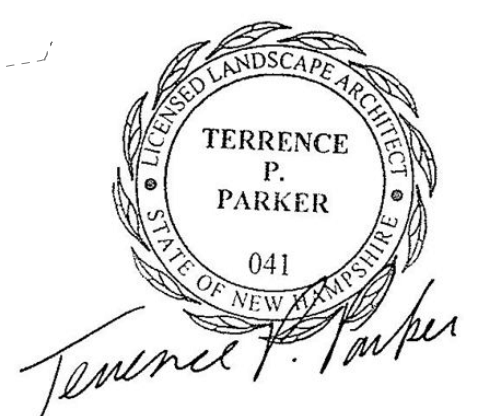
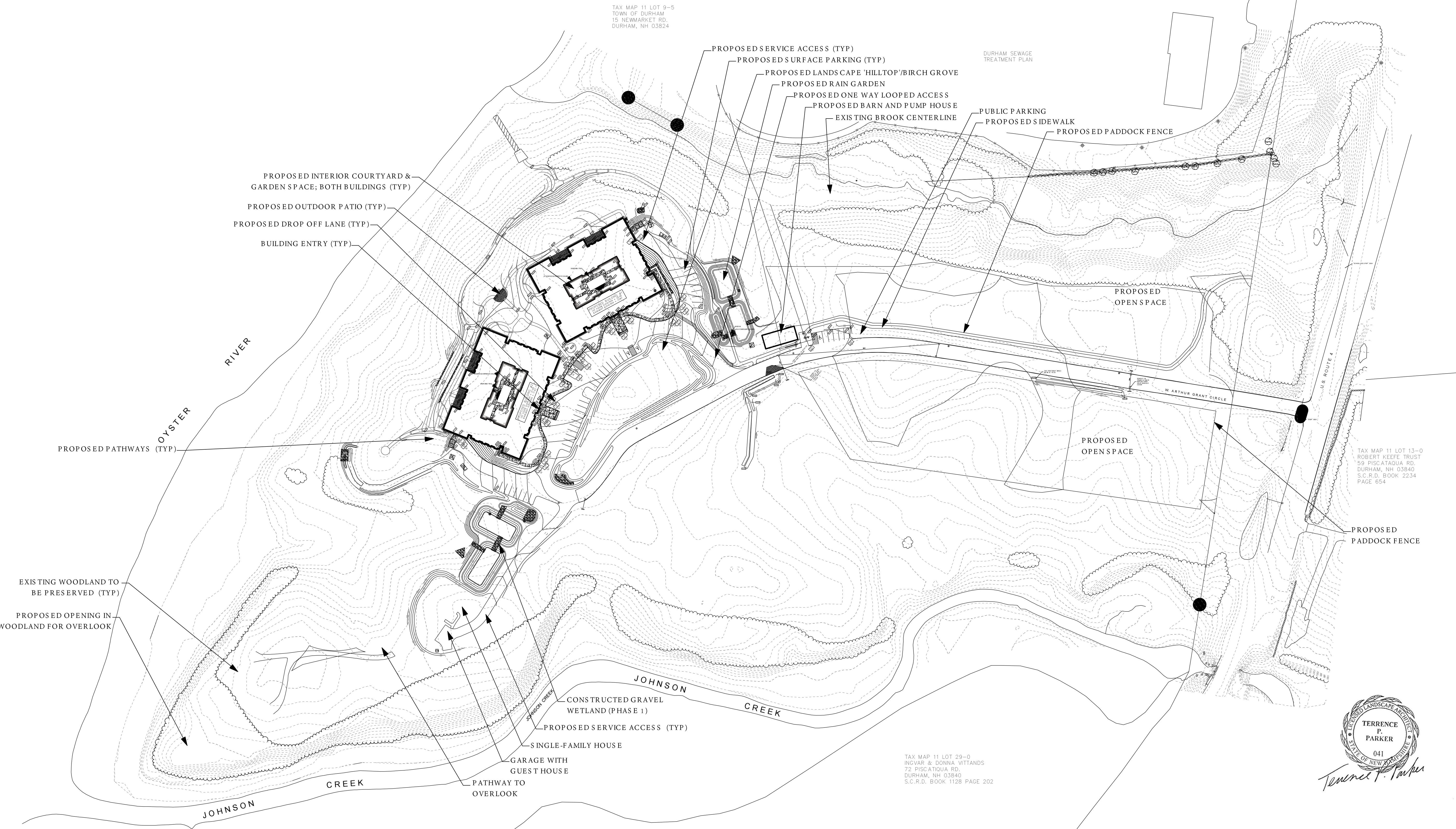
Date	5/14/16
Revision	
Project	HARMONY HOMES
Drawing Code	harmony01615
CAD File Name	harmony01615
Project Name	00.000.00

Designed By	TP
Drawn By	TC
Checked By	TP
Reviewed By	TP
Submitted By	TP
Project Manager	

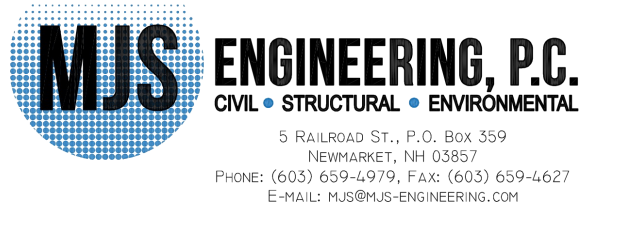
Design Firm	terra firma landscape architecture 163 a Court Street Portsmouth, NH 03801
Consultant	

Project Title	Harmony Homes
Sheet Title	Master Landscape Plan Care Facility Durham, New Hampshire

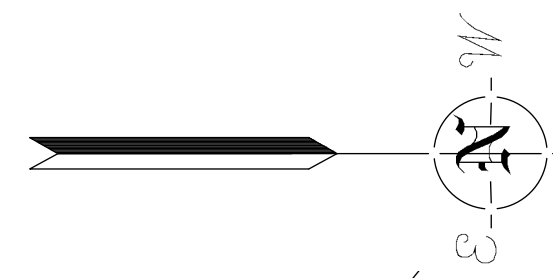
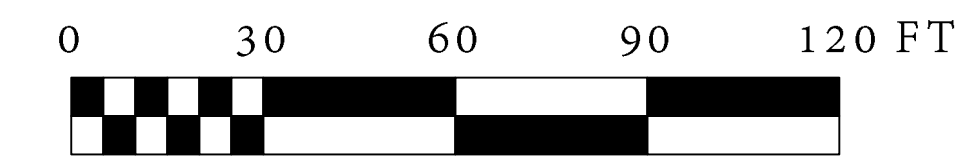
Scale	1"=80'
Sheet No.	L-101 of 3



PREPARED FOR:
JOHN RANDOLPH
H2 - BY THE BAY DURHAM, NH



1. The provision for maintenance of landscaping materials as specified in Section 175-124 Maintenance Requirements of the Article XXII Landscaping in the Durham Zoning Ordinance, shall apply. The property owner shall be responsible for maintenance of the landscaping in perpetuity.
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A

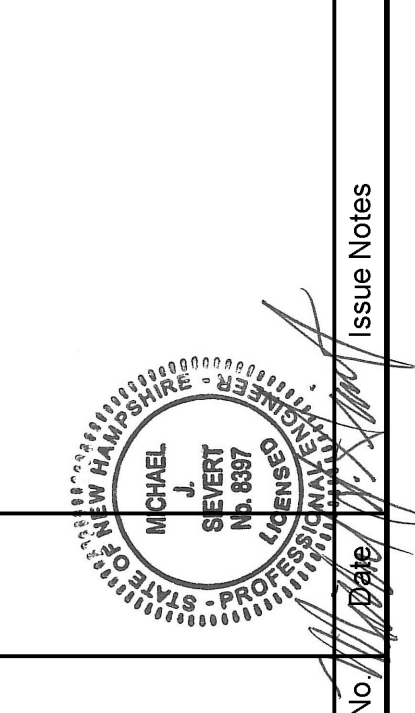
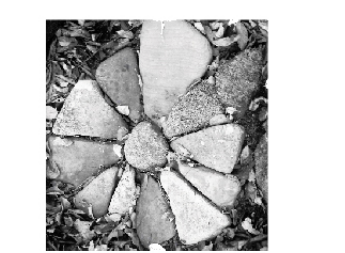
B



Plant List - Trees and Shrubs				
ID	Qty	Latin Name	Common Name	Scheduled Size
AMC	2	Amelanchier canadensis	Shadblow Serviceberry	5-6'
ARK	32	Acer rubrum 'Karpick'	Karpick Red Maple	2.5-3" Cal.
BNH	8	Betula nigra 'Heritage'	Heritage River Birch	8-10'
BP	22	Betula papyrifera	White Birch	8-10'
CR	348	Cornus racemosa	Grey Dogwood	2 Gal.
CSA	46	Cornus sericea 'Allman's Compact'	Allman's Compact Dogwood	1 Gal.
FG	62	Fothergilla gardenii	Dwarf Fothergilla	5 Gal.
HAM	15	Hamamelis inter. 'Arnold Promise'	Arnold Promise Witchhazel	4-5'
IGS	94	Ilex glabra 'Shamrock'	Shamrock Inkberry	
IV	45	Ilex verticillata	Winterberry	3 Gal.
JV	30	Juniperus virginiana	Eastern Red Cedar	5-6'
MAG	5	Magnolia stellata	Star Magnolia	6-7'
PAN	65	Picea abies 'Nidiformis'	Bird's Nest Spruce	2 Gal.
RGL	730	Rhus aromatica 'Grow Low'	Grow Low Sumac	18"+ Ht.
SAW	55	Spiraea x bumalda 'Anthony Waterer'	Anthony Waterer Spirea	
TC	12	Tsuga canadensis	Canadian Hemlock	
VAB	37	Viburnum dilatatum 'Asian Beauty'	Asian Beauty Viburnum	

Plant List - Perennials				
ID	Qty	Latin Name	Common Name	Scheduled Size
ACR	5	Actaea racemosa	Black Cohosh	1 Gal.
AMH	26	Amsonia hubrichtii	Arkansas Blue Star	1 Gal.
AMT	54	Amsonia tabernaemontana	Blue Star Flower	1 Gal.
AST	81	Astilbe 'Fanal', 'Bridal Veil', 'Erika'	False Spirea	2 QT
CWB	82	Chrysanthemum weyrichii 'White Bomb'	White Bomb Mum	2 QT
GMB	27	Geranium macrorrhizum 'Bevan's'	Cranesbill	2 QT
HS	31	Hemerocallis 'Stella de Oro'	Stella de Oro Daylily	2 QT
PEO	3	Paeonia 'Coral Charm', 'Martha Bullock', 'Krinkled White'	Peony	2 Gal.
PVS	549	Panicum virgatum 'Shenandoah'	Shenandoah Switch Grass	2 Gal.
PX	19	Polystichum acrostichoides	Christmas Fern	2 QT
RF	9	Rudbeckia fulgida 'Goldstrum'	Goldstrum Black-Eyed Susan	2 QT
SIC	204	Stephanandra incisa 'Crispa'	Lace Shrub	1 Gal.
XAN	54	Xanthoxiza simplicissima	Yellowroot	2 QT

terra firma
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601 blingua street, unit 205 | portsmouth, nh 03801
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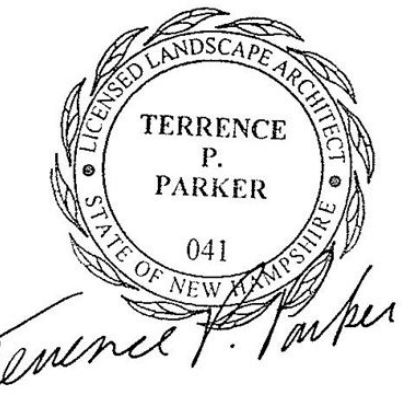
Date	5/19/16
Revision	
Project	HARMONY HOMES
Drawn/Checked	TP
Reviewed By	TP
Started By	TP
Project Manager	TP

Design Firm: terra firma landscape architecture
163 a Court Street
Portsmouth, NH 03801

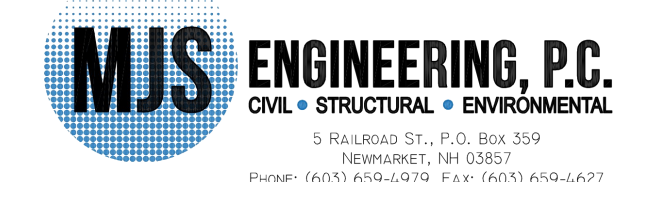
Project Title: Harmony Homes
Sheet Title: Building Planting Plan
Care Facility
Durham, New Hampshire

Scale: 1"=30'-0"

Sheet No: L-102
of
3



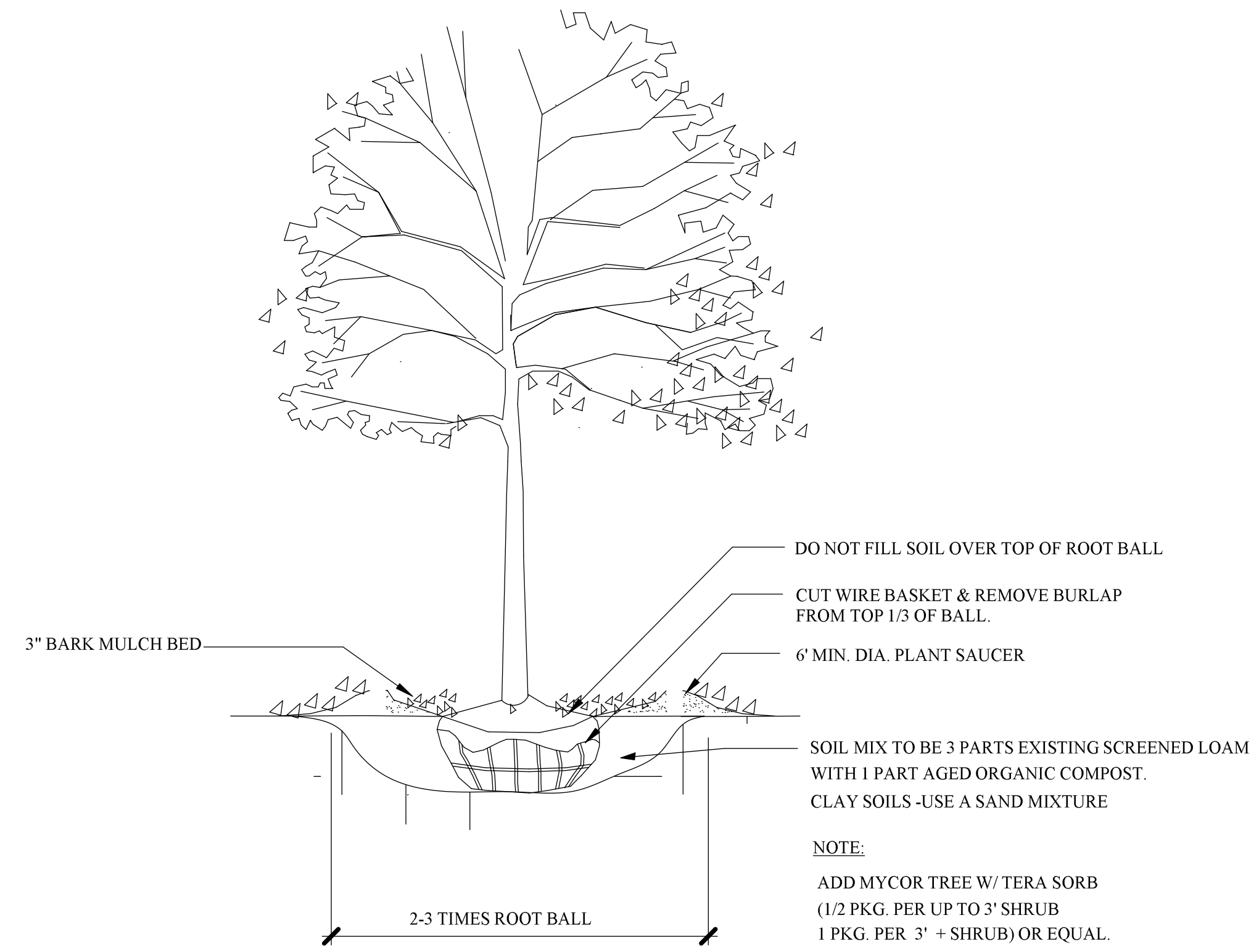
PREPARED FOR:
JOHN RANDOLPH
H2 - BY THE BAY DURHAM, NH



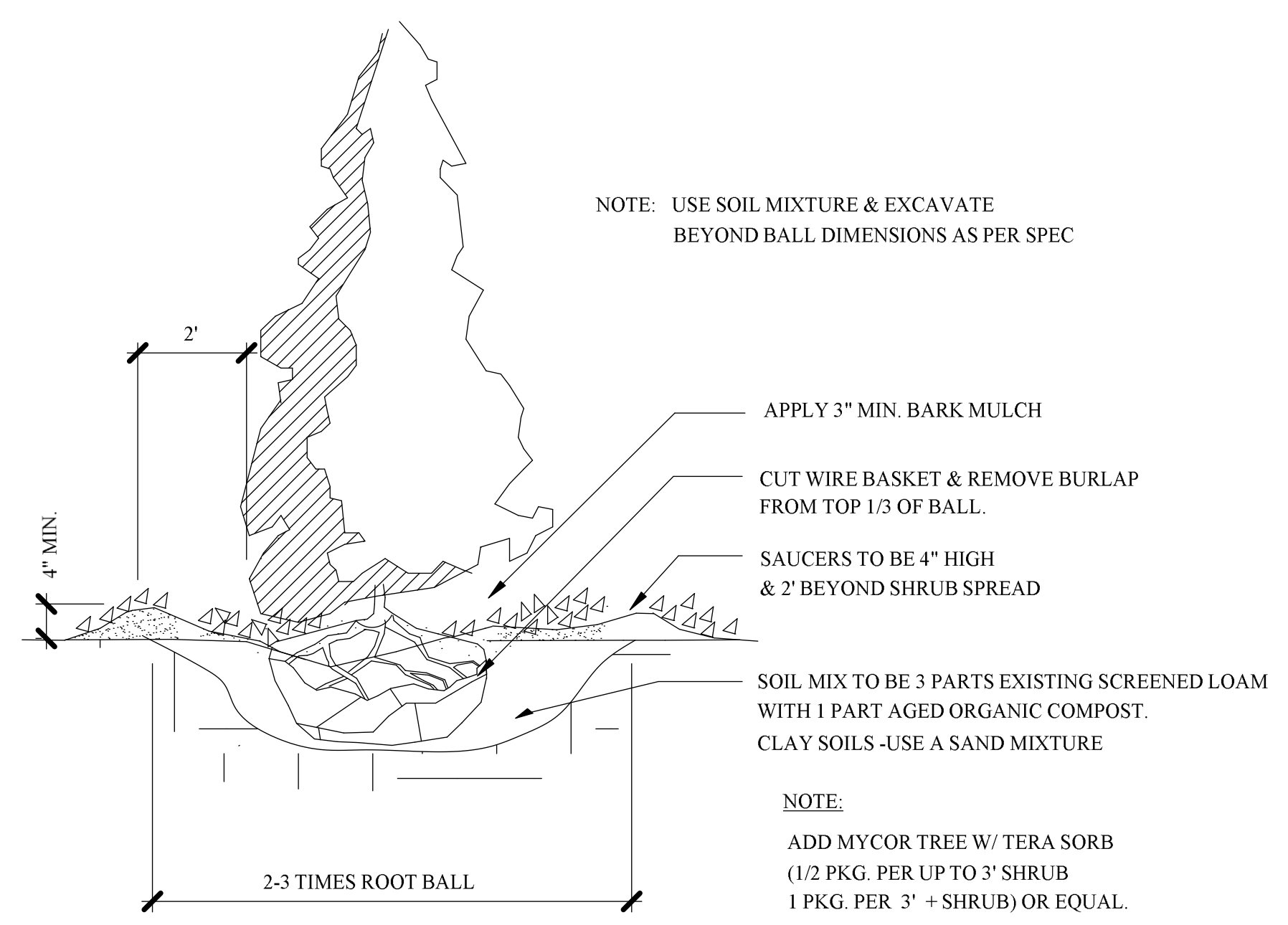
1. The provision for maintenance of landscaping materials as specified in Section 175-124 Maintenance Requirements of the Article XXII Landscaping in the Durham Zoning Ordinance, shall apply. The property owner shall be responsible for maintenance of the landscaping in perpetuity.

2. Trees shall be planted using commonly accepted best management practices, such as those listed in ANSI A300 Part 6: Tree Maintenance Standard Practices (Transplanting), which is available from the International Society of Landscape Architects.

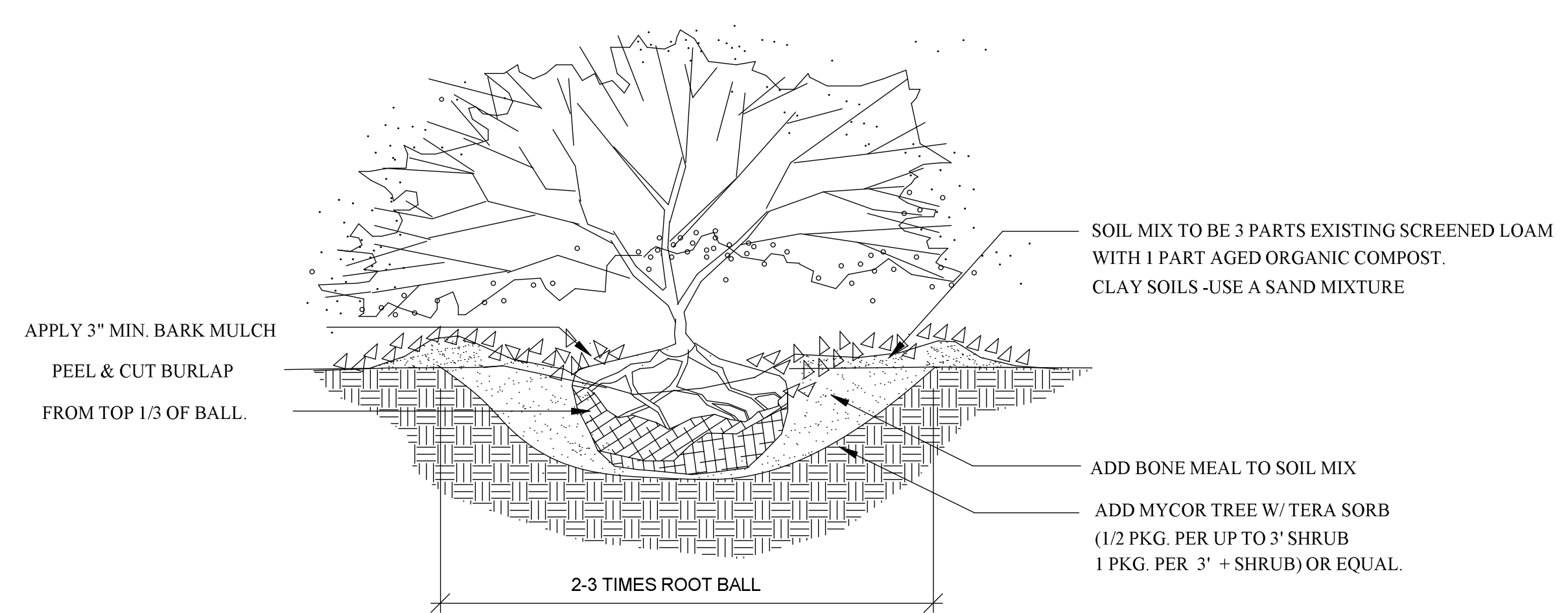
3. Only low phosphorus/slow release nitrogen fertilizers for landscaping materials may be used.



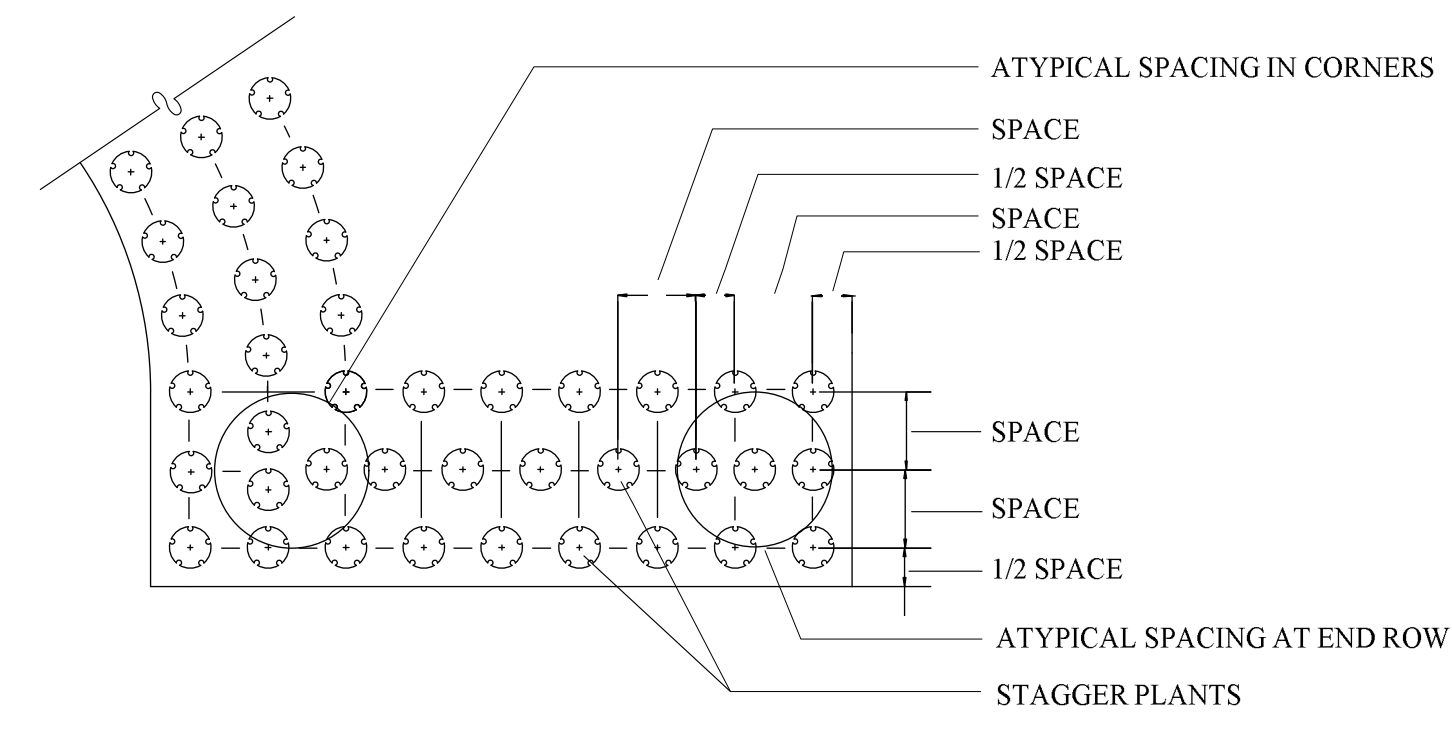
1
L-3
TREE PLANTING - 2"+ CAL.
SCALE: NTS



2
L-3
PYRAMIDAL EVERGREEN TREE PLANTING
SCALE: NTS

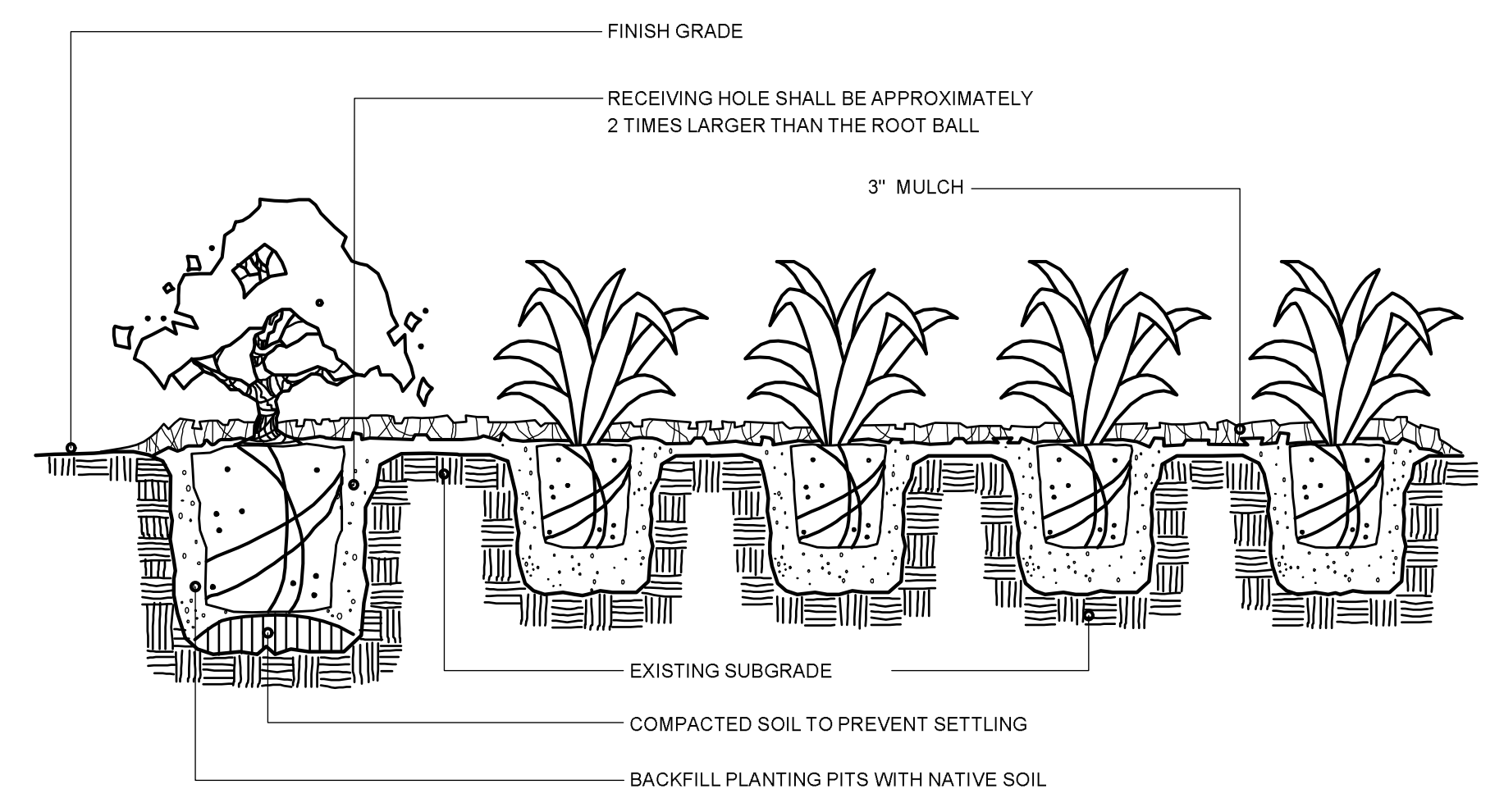


3
L-3
B&B SHRUB PLANTING
SCALE: NTS

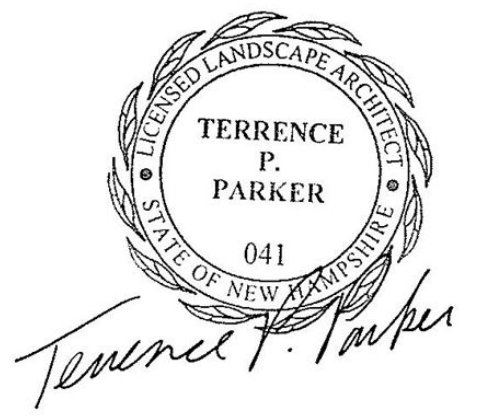


NOTES:
1. PLACE PLANTS IN BED AS SHOWN, SPACING AS SPECIFIED IN PLANT SCHEDULE.
2. GROUND COVER SHALL BE TRIANGULAR SPACED IN ROWS PARALLEL TO STRAIGHT EDGES AND SHALL BE EVENLY SPACED IN ROWS PARALLEL TO CURVE EDGES.

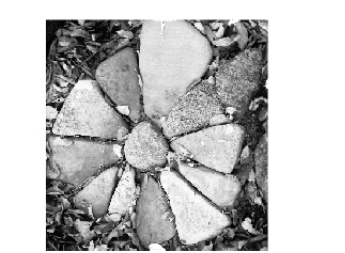
4
L-3
GROUND COVER SPACING DETAIL
SCALE: NTS



5
L-3
SHRUB/GROUND COVER PLANTING DETAIL
SCALE: NTS



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Issue Notes	No	Date

Date	4/29/16
Revision	
Project	HARMONY HOMES
Drawing Code	harmony01615
CAD File Name	harmony01615
Plot Date	00/00/00

Designed By	TP
Drawn By	TC
Checked By	TP
Reviewed By	TP
Submitted By	TP
Project Manager	

Design Firm	terra firma landscape architecture 163 a Court Street Portsmouth, NH 03801
Client	Harmony Homes
Project Title	Landscape Details Care Facility Durham, New Hampshire

PREPARED FOR:
JOHN RANDOLPH
H2 - BY THE BAY DURHAM, NH

