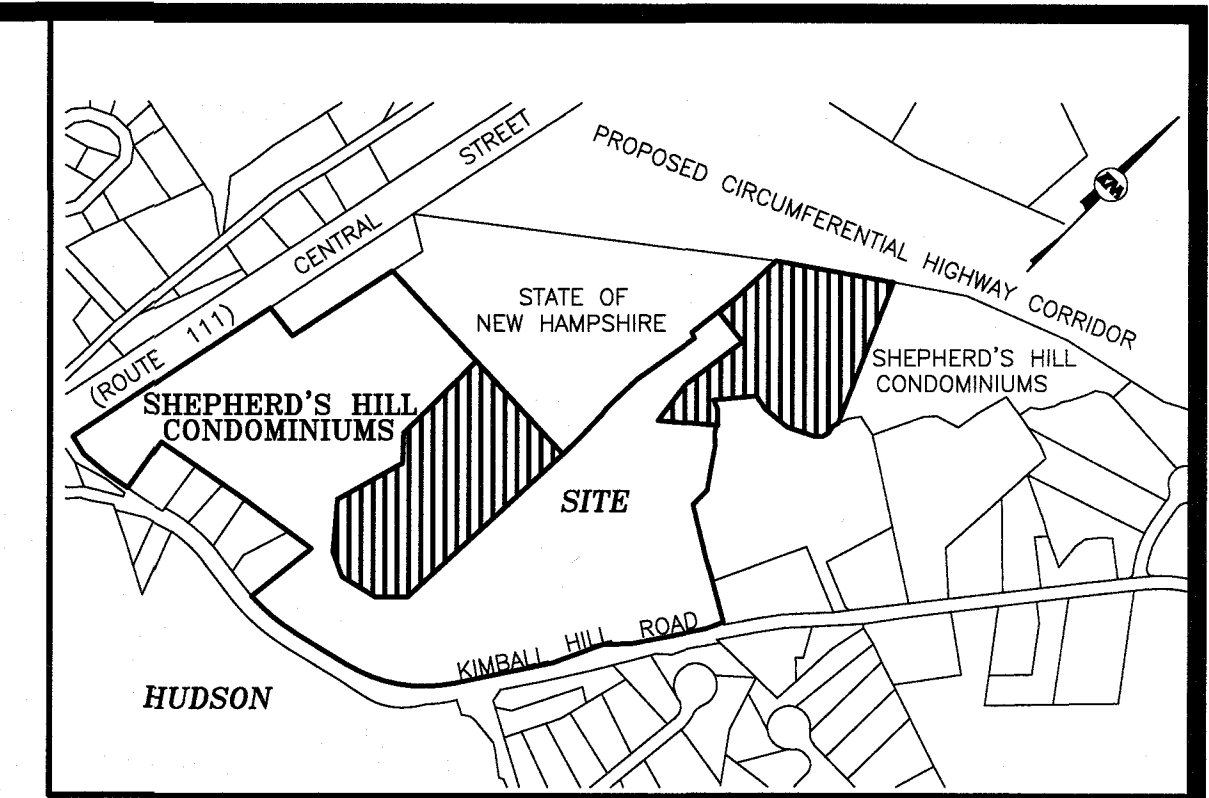


VICINITY PLAN
NOT TO SCALE



VICINITY MAP

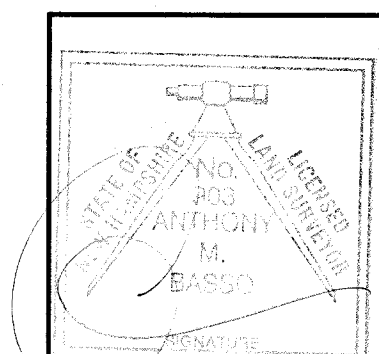
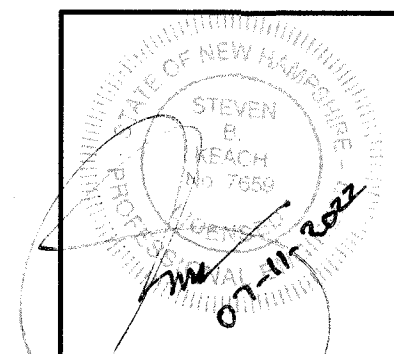
RESIDENTIAL SITE PLAN SHEPHERDS HILL

MAP 177; LOT 5 SHADOWBROOK DRIVE HUDSON, NEW HAMPSHIRE

APPLICANT:
SHEPHERD'S HILL DEVELOPMENT, LLC
253 MAIN STREET
NASHUA, NH 03060

OWNER:
SHEPHERDS HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTHERN PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

PREPARED BY:
KEACH-NORDSTROM ASSOCIATES, INC.
10 COMMERCE PARK NORTH, SUITE 3B
BEDFORD, NEW HAMPSHIRE 03110
(603) 627-2881



KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

MAY 2, 2022

LAST REVISED: JULY 7, 2022

PROJECT NO. 17-0824-1

SHEET TITLE

SHEET No.

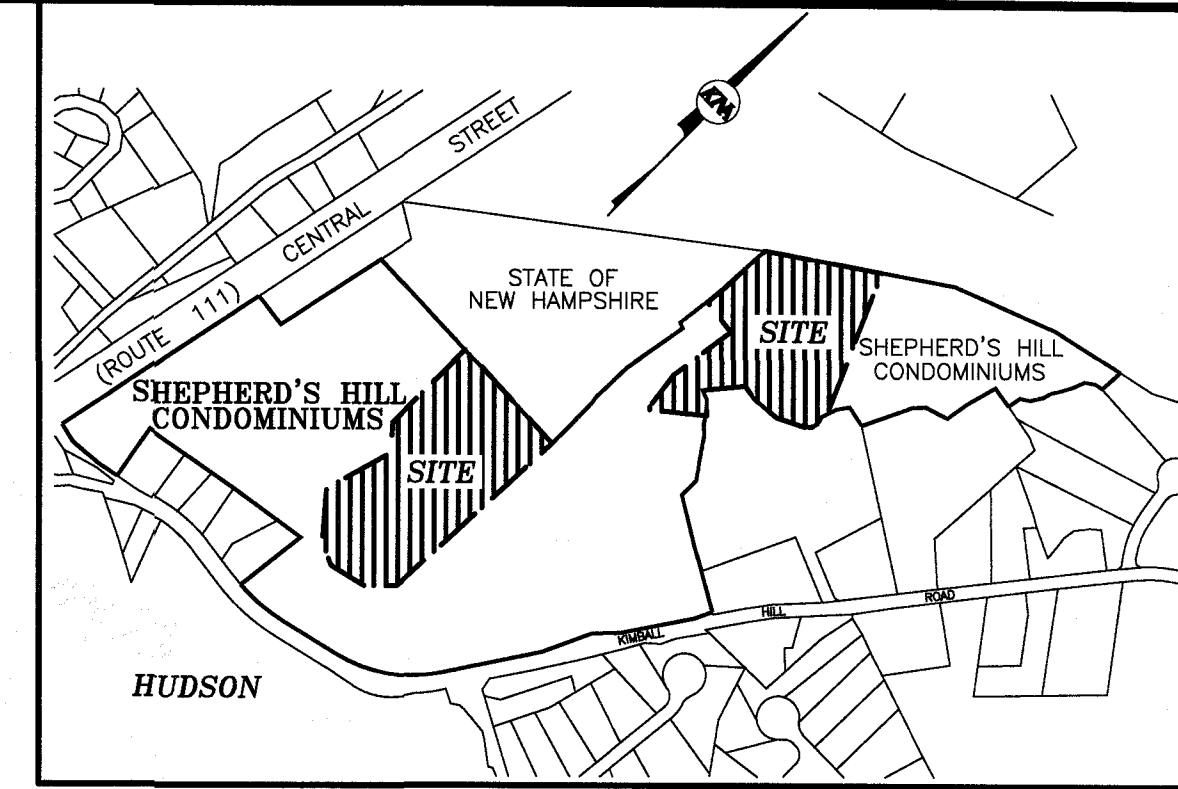
MASTER SITE PLAN	1-3
EXISTING CONDITIONS PLAN	4-7
REMOVALS/DEMOLITION PLAN	8-11
RESIDENTIAL SITE LAYOUT PLAN	12-15
GRADING AND DRAINAGE PLAN	16-19
UTILITY PLAN	20-23
EROSION CONTROL PLAN	24-27
LANDSCAPE PLAN	28-31
LIGHTING PLAN	32-35
ROADWAY PROFILES	36-39
SEWER PLAN & PROFILE	40
CONSTRUCTION DETAILS	41-51

LEGEND

- ABUTTER LINE
- PHASE LINE
- BOUNDARY LINE
- WETLAND
- EDGE OF PAVEMENT
- ZONE LINE
- EXISTING BUILDING LINE

REFERENCE PLAN

1. SHEPHERD'S HILL CONDOMINIUM, SITE AND FLOOR PLANS FOR LAND UNITS #1, #2 & #3. REMAINING CONVERTIBLE LAND IN ACCORDANCE WITH THE 24TH DECLARATION OF THE SHEPHERD'S HILL CONDOMINIUM. HCRD PLAN #37633.



VICINITY MAP
NOT TO SCALE

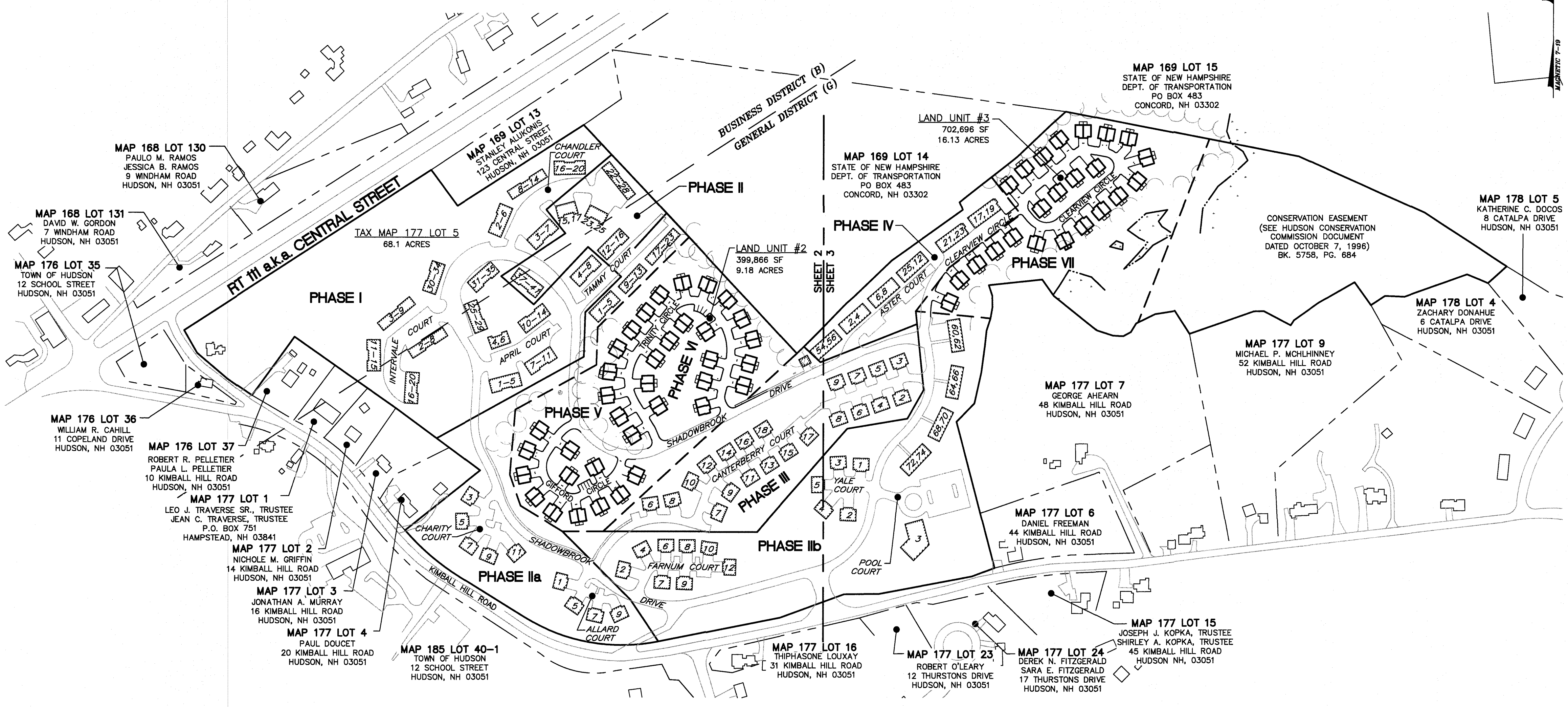
PHASING NOTES:

1. PHASES I-IV HAVE ALREADY BEEN COMPLETED.
2. CONSTRUCTION SHALL BE COMPLETED IN THE FOLLOWING THREE PHASES:
 PHASE V - 24 UNITS PHASE VI - 48 UNITS PHASE VII - 46 UNITS
3. ALL PHASES MUST BE BELOW 5 ACRES AND STABILIZED BEFORE ADVANCING TO THE SUBSEQUENT PHASE.

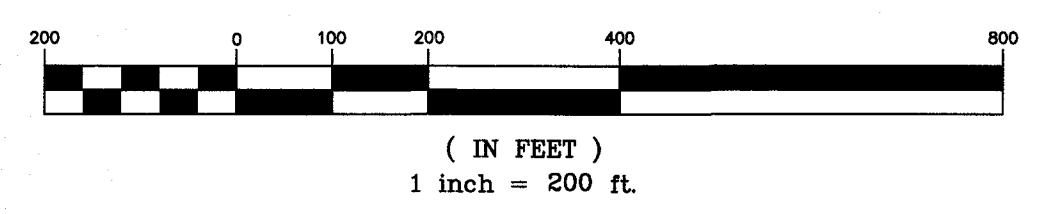
NOTES:

1. THE PURPOSE OF THIS PLAN IS TO SHOW THE DEVELOPMENT OF THE REMAINING 118 UNITS IN THE SHEPHERD'S HILL CONDOMINIUM ON ASSESSORS MAP 177 LOT 5, SPECIFICALLY IN LAND UNITS 2 & 3 AS SHOWN HEREON AND NO OTHER REASON.
2. AREA OF PARCEL = 68.1 ACRES.
3. OWNERS OF RECORD:
 SHEPHERD'S HILL HOME OWNERS ASSOCIATION
 C/O GREAT NORTHERN PROPERTY MANAGEMENT
 3 HOLLAND WAY, SUITE 201
 EXETER, NH 03833
 DECLARATION OF CONDOMINIUM: HCRD BK. 6846 PG. 0065
 24TH AMENDMENT BK. 8530 PG. 1901
 SETTLEMENT AGREEMENT: HCRD BK. 8835 PG. 2477
 COURT ORDER: HCRD BK. 8837 PG. 2078
4. THE SUBJECT PARCEL LIES WITHIN THE GENERAL (G) & BUSINESS (B) ZONING DISTRICT. MINIMUM BUILDING SETBACK REQUIREMENTS:

LOT AREA	GENERAL: 43,560 S.F.	BUSINESS: 53,560 S.F.
LOT FRONTAGE	150'	150'
FRONT YARD	50 FT	50 FT
SIDE YARD	15 FT	15 FT
REAR YARD	15 FT	15 FT
5. BOUNDARY INFORMATION IS BASED ON REFERENCE PLAN.
6. NORTH ORIENTATION IS MAGNETIC. HORIZONTAL DATUM IS ASSUMED. VERTICAL DATUM IS NAVD88.
7. EXISTING CONDITIONS FOR LAND UNITS 2 & 3 ARE BASED ON AN ACTUAL FIELD SURVEY MADE BY THIS OFFICE IN SEPTEMBER OF 2017.
8. EXAMINATION OF THE FLOOD INSURANCE RATE MAP (FIRM) FOR THE TOWN OF HUDSON NEW HAMPSHIRE, HILLSBOROUGH COUNTY, MAP NUMBER 33011C0518D, PANEL NUMBER 518 OF 701, EFFECTIVE DATE: SEPTEMBER 25, 2009, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.
9. BENCHMARKS SET AS NOTED, BASED ON NAVD88.
10. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. KEACH-NORDSTROM ASSOCIATES, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE, THE OWNER OR CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
11. WETLANDS WERE DELINEATED BY JOSHUA BRIEN, C.W.S.#256 OF KEACH-NORDSTROM ASSOCIATES, INC. IN OCTOBER OF 2020.
12. EASEMENTS, RIGHTS AND RESTRICTIONS SHOWN OR IDENTIFIED HEREON ARE THOSE THAT WERE FOUND DURING RESEARCH CONDUCTED AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS. ADDITIONAL EASEMENTS, RIGHTS AND RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF THE PREMISES MAY DETERMINE.
13. A VARIANCE WAS PREVIOUSLY GRANTED BY THE HUDSON ZBA ON JULY 11, 1985 TO ALLOW THE CONSTRUCTION OF A MULTIFAMILY RESIDENTIAL USE CONTAINING NO MORE THAN 400 DWELLING UNITS.
14. THE APPLICANT IS REQUIRED TO COORDINATE A PRE-CONSTRUCTION MEETING WITH THE TOWN ENGINEER PRIOR TO START OF CONSTRUCTION.
15. OPEN SPACE:
 -EXISTING OPEN SPACE = 80% (2,361,210 SF)
 -PROPOSED OPEN SPACE = 73% (2,141,668 SF)
16. REQUIRED PERMITS:
 -ALTERATION OF TERRAIN
 -SEWER CONNECTION PERMIT



GRAPHIC SCALE



NPDES NOTE

THIS PROJECT DISTURBS IN EXCESS OF 1-ACRE OF LAND. THEREFORE IT WILL BE REQUIRED TO OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE AS ISSUED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THE OWNER/DEVELOPER AND "OPERATOR" (GENERAL CONTRACTOR) SHALL EACH BE REQUIRED TO PREPARE AND SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA PRIOR TO THE START OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR THE PREPARATION AND IMPLEMENTATION OF A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MEETING THE REQUIREMENTS OF THE CURRENT CONSTRUCTION GENERAL PERMIT.

UTILITY NOTE

THE UNDERGROUND UTILITIES DEPICTED HEREON HAVE BEEN DRAWN FROM FIELD SURVEY INFORMATION AND OR PLOTTED FROM EXISTING DRAWINGS. KEACH-NORDSTROM ASSOCIATES, INC. MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES DEPICTED COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHER, KEACH-NORDSTROM ASSOCIATES, INC. DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. KEACH-NORDSTROM ASSOCIATES, INC. HAS NOT PHYSICALLY LOCATED THE UNDERGROUND PORTIONS OF THE UTILITIES.

**MASTER SITE PLAN
SHEPHERD'S HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY**

OWNER OF RECORD:
SHEPHERD'S HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

APPLICANT:
SHEPHERD'S HILL, LLC
253 MAIN STREET
NASHUA, NH 03060

KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL.

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____

SIGNATURE DATE: _____

SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

OWNER OF MAP 177 LOT 5

SIGNATURE: _____

DATE: _____

JOSHUA BRIEN, CERTIFIED WETLAND SCIENTIST #256 OF KEACH-NORDSTROM ASSOCIATES, INC. OF BEDFORD, NH PERFORMED THE DELINEATION OF JURISDICTIONAL WETLANDS IN OCTOBER OF 2020 USING THE TECHNICAL CRITERIA IN THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1, JANUARY 1987).

SURVEYOR'S CERTIFICATION:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. FURTHER, THAT THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY MADE ON THE GROUND BY THIS OFFICE IN SEPTEMBER OF 2017. SAID SURVEY HAS AN ERROR OF CLOSURE BETTER THAN ONE PART IN TEN THOUSAND (1:10,000).

DATE: 7/16/22

LICENSED LAND SURVEYOR

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	7/7/22	REVISED PER COMMENTS	ACL

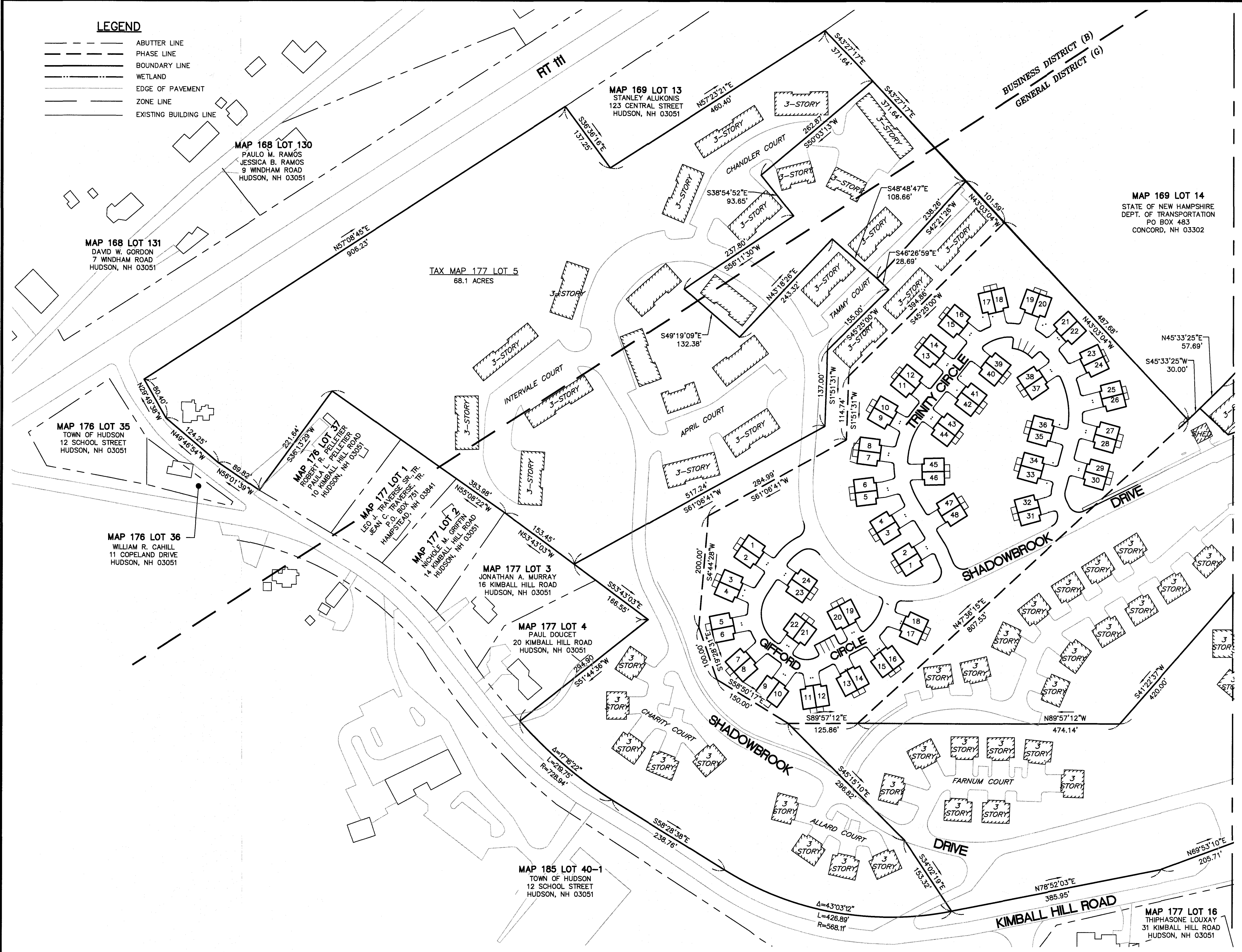
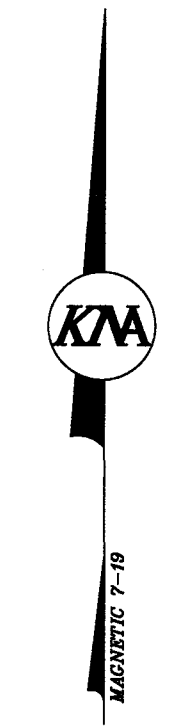
DATE: MAY 2, 2022 SCALE: 1"=200'

PROJECT NO: 17-0824-1 SHEET 1 OF 51

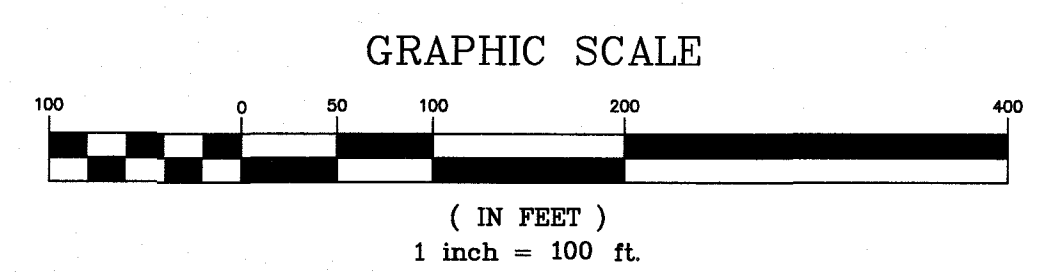
LEGEND

- ABUTTER LINE
- PHASE LINE
- BOUNDARY LINE
- WETLAND
- EDGE OF PAVEMENT
- ZONE LINE
- EXISTING BUILDING LINE

SEE SHEET 1 FOR NOTES & REFERENCE PLANS



MATCH TO SHEET 3



**MASTER SITE PLAN
SHEPHERDS HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY**

OWNER OF RECORD:
SHEPHERDS HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

APPLICANT:
SHEPHERDS HILL, LLC
253 MAIN STREET
NASHUA, NH 03060

KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

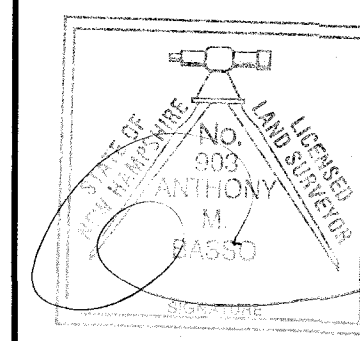
NPDES NOTE
THIS PROJECT DISTURBS IN EXCESS OF 1-ACRE OF LAND. THEREFORE IT WILL BE REQUIRED TO OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE AS ISSUED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THE OWNER/DEVELOPER AND "OPERATOR" (GENERAL CONTRACTOR) SHALL EACH BE REQUIRED TO PREPARE AND SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA PRIOR TO THE START OF CONSTRUCTION AND SHALL BE RESPONSIBLE FOR THE PREPARATION AND IMPLEMENTATION OF A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MEETING THE REQUIREMENTS OF THE CURRENT CONSTRUCTION GENERAL PERMIT.

UTILITY NOTE
THE UNDERGROUND UTILITIES DEPICTED HEREON HAVE BEEN DRAWN FROM FIELD SURVEY INFORMATION AND/OR PLOTTED FROM EXISTING DRAWINGS. KEACH-NORDSTROM ASSOCIATES, INC. MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES DEPICTED COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHER, KEACH-NORDSTROM ASSOCIATES, INC. DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. KEACH-NORDSTROM ASSOCIATES, INC. HAS NOT PHYSICALLY LOCATED THE UNDERGROUND PORTIONS OF THE UTILITIES.

JOSHUA BRIEN, CERTIFIED WETLAND SCIENTIST #256 OF KEACH-NORDSTROM ASSOCIATES, INC. OF BEDFORD, NH PERFORMED THE DELINEATION OF JURISDICTIONAL WETLANDS IN OCTOBER OF 2020 USING THE TECHNICAL CRITERIA IN THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1, JANUARY 1987).

SURVEYOR'S CERTIFICATION:
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. FURTHER, THAT THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY MADE ON THE GROUND BY THIS OFFICE IN SEPTEMBER 2017. SAID SURVEY HAS AN ERROR OF CLOSURE BETTER THAN ONE PART IN TEN THOUSAND (1:10,000).

[Signature]
LICENSED LAND SURVEYOR DATE



REVISIONS			
No.	DATE	DESCRIPTION	BY
1	7/7/22	REVISED PER COMMENTS	ACL

DATE: MAY 2, 2022 SCALE: 1"=100'
PROJECT NO: 17-0824-1 SHEET 2 OF 51

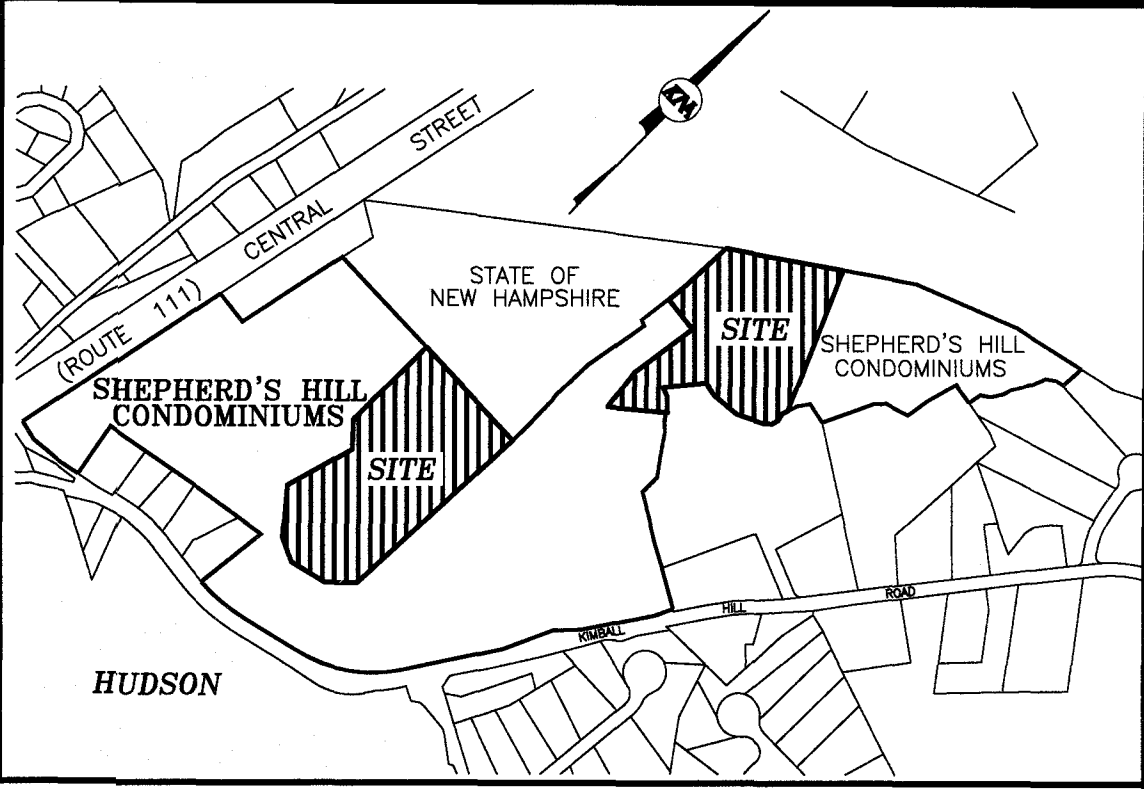
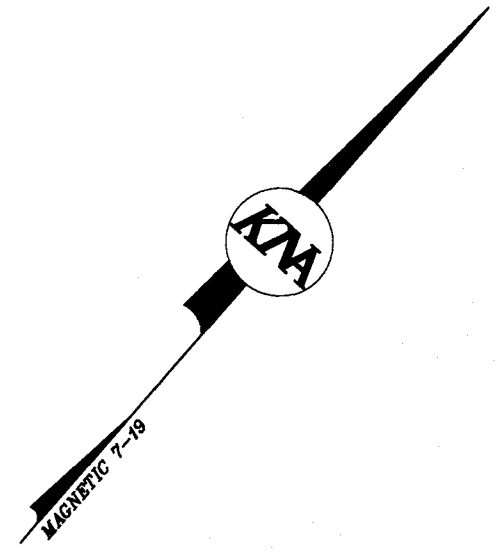
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL.

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____

SIGNATURE DATE: _____

SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.



VICINITY MAP
NOT TO SCALE

REFERENCE PLAN

- SHEPHERD'S HILL CONDOMINIUM, SITE AND FLOOR PLANS FOR LAND UNITS #1, #2 & #3. REMAINING CONVERTIBLE LAND ACCORDANCE WITH THE 24TH DECLARATION OF THE SHEPHERD'S HILL CONDOMINIUM. HCRD PLAN #37633.

NOTES:

- THE PURPOSE OF THIS PLAN IS TO DEPICT THE EXISTING CONDITIONS PRESENT ON ASSESSORS MAP 177 LOT 5, SPECIFICALLY IN LAND UNITS 2 & 3 AS SHOWN HEREON AND NO OTHER REASON.
- AREA OF PARCEL = 68.1 ACRES.
- OWNERS OF RECORD:
SHEPHERD'S HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTHERN PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833
DECLARATION OF CONDOMINIUM: HCRD BK. 6846 PG. 0065
24TH AMENDMENT BK. 8530 PG. 1901
SETTLEMENT AGREEMENT: HCRD BK. 8835 PG. 2477
COURT ORDER: HCRD BK. 8837 PG. 2078
- THE SUBJECT PARCEL LIES WITHIN THE GENERAL (G) & BUSINESS (B) ZONING DISTRICT
MINIMUM BUILDING SETBACK REQUIREMENTS: GENERAL: BUSINESS:
LOT AREA 43,560 S.F. 53,560 S.F.
LOT FRONTAGE 150' 150'
FRONT YARD 50 FT 50 FT
SIDE YARD 15 FT 15 FT
REAR YARD 15 FT 15 FT
- BOUNDARY INFORMATION IS BASED ON REFERENCE PLAN.
- NORTH ORIENTATION IS MAGNETIC. HORIZONTAL DATUM IS ASSUMED. VERTICAL DATUM IS NAVD88.
- EXISTING CONDITIONS FOR LAND UNITS 2 & 3 ARE BASED ON AN ACTUAL FIELD SURVEY MADE BY THIS OFFICE IN SEPTEMBER OF 2017.
- EXAMINATION OF THE FLOOD INSURANCE RATE MAP (FIRM) FOR THE TOWN OF HUDSON NEW HAMPSHIRE, HILLSBOROUGH COUNTY, MAP NUMBER 3301C0518D, PANEL NUMBER 518 OF 701, EFFECTIVE DATE: SEPTEMBER 25, 2009, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.
- BENCHMARKS SET AS NOTED, BASED ON NAVD88.
- THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. KEACH-NORDSTROM ASSOCIATES, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UTILITIES SHOWN, PRIOR TO ANY EXCAVATION ON SITE, THE OWNER OR CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
- WETLANDS WERE DELINEATED BY JOSHUA BRIEN, C.W.S. #256 OF KEACH-NORDSTROM ASSOCIATES, INC. IN OCTOBER OF 2020.
- EASEMENTS, RIGHTS AND RESTRICTIONS SHOWN OR IDENTIFIED HEREON ARE THOSE THAT WERE FOUND DURING RESEARCH CONDUCTED AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS. ADDITIONAL EASEMENTS, RIGHTS AND RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF THE PREMISES MAY DETERMINE.

LEGEND

GB-F	GRANITE BOUND FOUND
IPIN-F	IRON PIN FOUND
IPP-F	IRON PIPE FOUND
UTILITY POLE	UTILITY POLE
SIGN	SIGN
LIGHT	LIGHT
GAS VALVE	GAS VALVE
WATER VALVE	WATER VALVE
HYDRANT	HYDRANT
WATER SHUT OFF	WATER SHUT OFF
SEWER MANHOLE	SEWER MANHOLE
DRAINAGE MANHOLE	DRAINAGE MANHOLE
CATCH BASIN	CATCH BASIN
ABUTTER LINE	ABUTTER LINE
PHASE LINE	PHASE LINE
WETLAND	WETLAND
CHAIN LINK FENCE	CHAIN LINK FENCE
STOCKADE FENCE	STOCKADE FENCE
POST & RAIL FENCE	POST & RAIL FENCE
GUARDRAIL	GUARDRAIL
OHL	OVERHEAD UTILITIES
W	WATER LINE
S	SEWER LINE
G	GAS LINE
TREELINE	TREELINE
RETAINING WALL	RETAINING WALL
EDGE OF PAVEMENT	EDGE OF PAVEMENT
BITUMINOUS CURB	BITUMINOUS CURB
BUILDING SETBACK	BUILDING SETBACK
SSS SOIL LINE	SSS SOIL LINE
TEST PIT LOCATION	TEST PIT LOCATION

THIS SITE-SPECIFIC SOIL MAP WAS COMPLETED BY CYNTHIA M. BALCIUS, NEW HAMPSHIRE CERTIFIED SOIL SCIENTIST #82 OF STONEY RIDGE ENVIRONMENTAL LLC. FIELD WORK WAS COMPLETED ON SEPTEMBER 10, 2020:

- Field Indicators of Hydric Soils in the United States, Version 8.1. 2017. L.M. Vaslos, G.W. Hurt, and J.F. Berkowitz (eds.). United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the National Technical Committee for Hydric Soils.
- Field Indicators for Identifying Hydric Soils in New England, Version 4. June 2018. New England Hydric Soils Technical Committee.
- The Site-Specific Soil Mapping Standards For New Hampshire And Vermont. SSSNNE Special Publication No.3, Version 5, December 2017.
- Soil Survey Manual, United States Department of Agriculture Handbook No.18, issued March 2017. US Government Printing Office. Soil Survey Staff. Washington D.C. 20402
- New Hampshire State-Wide Numerical Soils Legend. USDA Natural Resources Conservation Service, Durham, New Hampshire. Issue #10, January 2011.
- Field Book for Describing and Sampling Soils, Version 3.0 National Soil Survey Center. Natural Resources Conservation Service, U. S. Department of Agriculture, Lincoln, Nebraska. September 2012.
- Keys to Soil Taxonomy, Twelfth Edition, 2014. United States Department of Agriculture. Natural Resources Conservation Service.

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	MAP UNIT	SLOPE CLASS	DRAINAGE CLASS	HSC/GROUP
88B/RK	HOLLIS LOAMY SAND	3-8%	EXCESSIVELY WELL DRAINED	C/4
88F/RK	HOLLIS LOAMY SAND	50%+	EXCESSIVELY WELL DRAINED	C/4
188D	CHATFIELD SANDY LOAM	15-25%	MODERATELY WELL DRAINED	B/3
188E	CHATFIELD SANDY LOAM	25-50%	MODERATELY WELL DRAINED	B/3
399A/RK	ROCK OUTCROP	0-3%		
399B/RK	ROCK OUTCROP	3-8%		
399C/RK	ROCK OUTCROP	8-15%		
399D/RK	ROCK OUTCROP	15-25%		
399E/RK	ROCK OUTCROP	25-50%		
399F/RK	ROCK OUTCROP	50%+		
550A	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/A/AAAA	0-3%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550B	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/A/AAAA	3-8%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550C	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/A/AAAA	8-15%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550D	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/A/AAAA	15-25%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550E	UDORTHENTS, SANDY COBBLY FILL OVER DEEPER LEDGE/A/AAAA	25-50%	SLOPES EXCESSIVELY WELL DRAINED	A/1
550A	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	0-3%	IMPERVIOUS	N/A
550B	UDORTHENTS, PAVEMENT OVER FILL/HAHDE	3-8%	IMPERVIOUS	N/A
393A/YPD	TIMAKWA MUCKY PEAT	0-3%	VERY POORLY DRAINED	D/6

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOILS SURVEY. IT IS A SPECIAL PURPOSE PRODUCT, PRODUCED BY A CERTIFIED SOIL SCIENTIST, AND IS NOT A PRODUCT OF THE USDA NATURAL RESERVE CONSERVATION SERVICE. THERE IS A NARRATIVE REPORT THAT ACCOMPANIES THIS MAP AND MAP KEY. CYNTHIA BALCIUS, CSS OF STONEY RIDGE ENVIRONMENTAL LLC PERFORMED THE SOIL MAPPING ON SEPTEMBER 10, 2020.

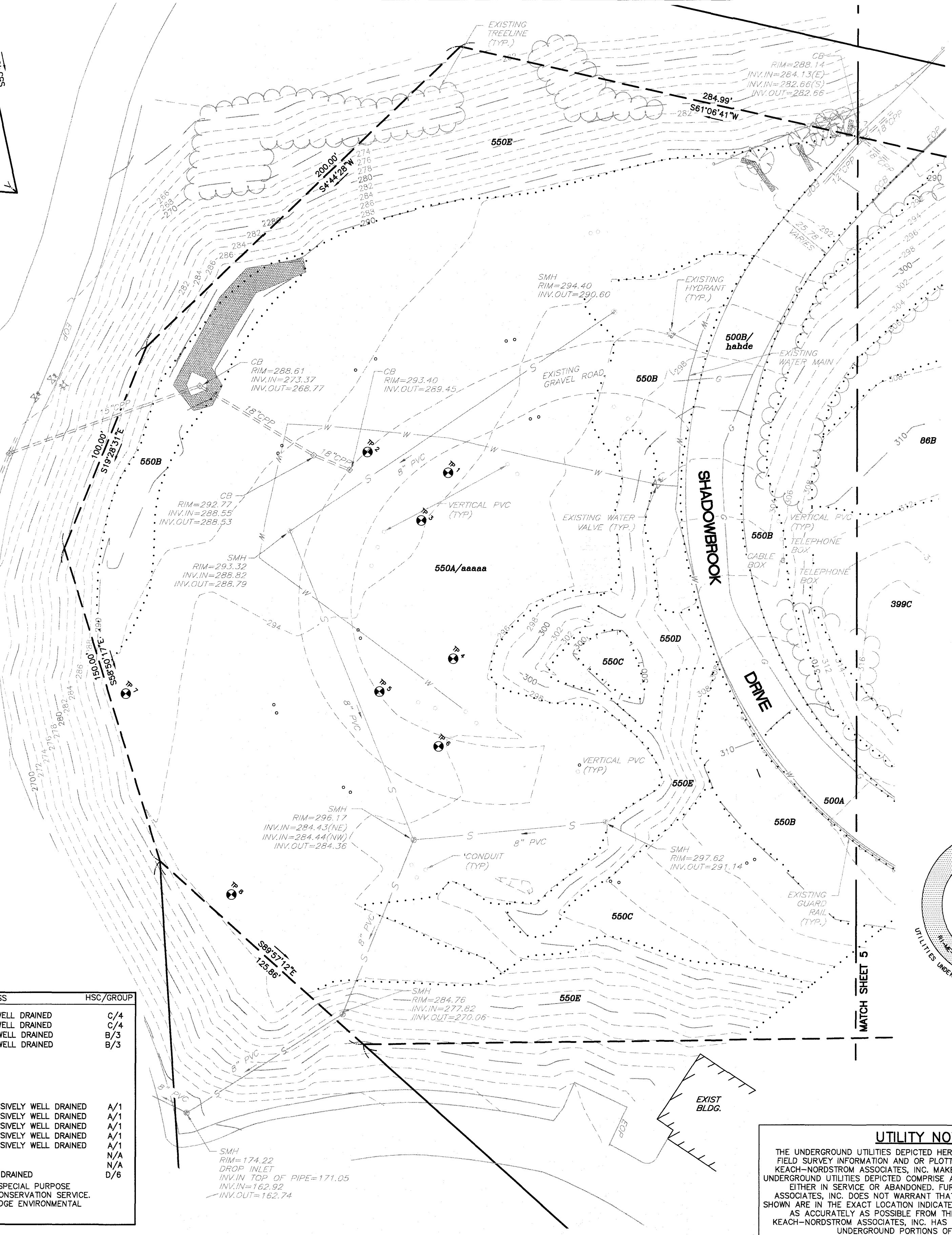
PURSUANT TO THE REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____

SIGNATURE DATE: _____

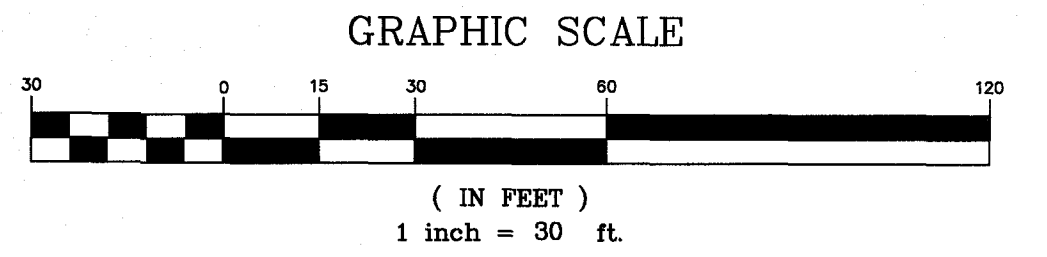
SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.



UTILITY NOTE

THE UNDERGROUND UTILITIES DEPICTED HEREON HAVE BEEN DRAWN FROM FIELD SURVEY INFORMATION AND/OR PLOTTED FROM EXISTING DRAWINGS. KEACH-NORDSTROM ASSOCIATES, INC. MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES DEPICTED COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHER, KEACH-NORDSTROM ASSOCIATES, INC. DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. KEACH-NORDSTROM ASSOCIATES, INC. HAS NOT PHYSICALLY LOCATED THE UNDERGROUND PORTIONS OF THE UTILITIES.



EXISTING CONDITIONS PLAN
SHEPHERD'S HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
SHEPHERD'S HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

APPLICANT:
SHEPHERD'S HILL, LLC
253 MAIN STREET
NASHUA, NH 03060

KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS

No.	DATE	DESCRIPTION	BY
1	7/7/22	REVISED PER COMMENTS	ACL

DATE: MAY 2, 2022
PROJECT NO: 17-0824-1
SCALE: 1"=30'
SHEET 4 OF 51

JOSHUA BRIEN, CERTIFIED WETLAND SCIENTIST #256 OF KEACH-NORDSTROM ASSOCIATES, INC. OF BEDFORD, NH PERFORMED THE DELINEATION OF JURISDICTIONAL WETLANDS IN OCTOBER OF 2020 USING THE TECHNICAL CRITERIA IN THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1, JANUARY 1987).

SURVEYOR'S CERTIFICATION:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. FURTHER, THAT THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY MADE ON THE GROUND BY THIS OFFICE IN SEPTEMBER OF 2017. SAID SURVEY HAS AN ERROR OF CLOSURE BETTER THAN ONE PART IN TEN THOUSAND (1:10,000).

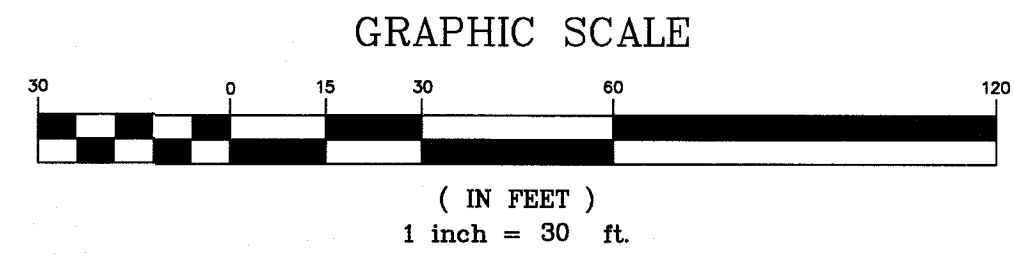
[Signature]
7/11/22
LICENSED LAND SURVEYOR DATE

SEE SHEET 4 FOR NOTES & LEGEND



UTILITY NOTE
 THE UNDERGROUND UTILITIES DEPICTED HEREON HAVE BEEN DRAWN FROM FIELD SURVEY INFORMATION AND OR PLOTTED FROM EXISTING DRAWINGS. KEACH-NORDSTROM ASSOCIATES, INC. MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES DEPICTED COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHER, KEACH-NORDSTROM ASSOCIATES, INC. DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. KEACH-NORDSTROM ASSOCIATES, INC. HAS NOT PHYSICALLY LOCATED THE UNDERGROUND PORTIONS OF THE UTILITIES.

- THIS SITE-SPECIFIC SOIL MAP WAS COMPLETED BY CYNTHIA M. BALCIUS, NEW HAMPSHIRE CERTIFIED SOIL SCIENTIST #82 OF STONEY RIDGE ENVIRONMENTAL LLC. FIELD WORK WAS COMPLETED ON SEPTEMBER 10, 2020:
- Field Indicators of Hydric Soils in the United States, Version 8.1, 2017. L.M. Vasilos, G.W. Hurt, and J.F. Berkkowitz (eds.), United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the National Technical Committee for Hydric Soils.
 - Field Indicators for Identifying Hydric Soils in New England, Version 4, June 2018. New England Hydric Soils Technical Committee.
 - The Site-Specific Soil Mapping Standards For New Hampshire And Vermont. SSSNIE Special Publication No.3, Version 5, December 2017.
 - Soil Survey Manual, United States Department of Agriculture Handbook No.18, Issued March 2017, US Government Printing Office, Soil Survey Staff, Washington D.C., 20402.
 - New Hampshire State-Wide Numerical Soils Legend, USDA Natural Resources Conservation Service, Durham, New Hampshire, Issue #10, January 2011.
 - Field Book for Describing and Sampling Soils, Version 3.0 National Soil Survey Center, Natural Resources Conservation Service, U. S. Department of Agriculture, Lincoln, Nebraska, September 2012.
 - Keys to Soil Taxonomy, Twelfth Edition, 2014, United States Department of Agriculture, Natural Resources Conservation Service.



EXISTING CONDITIONS PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

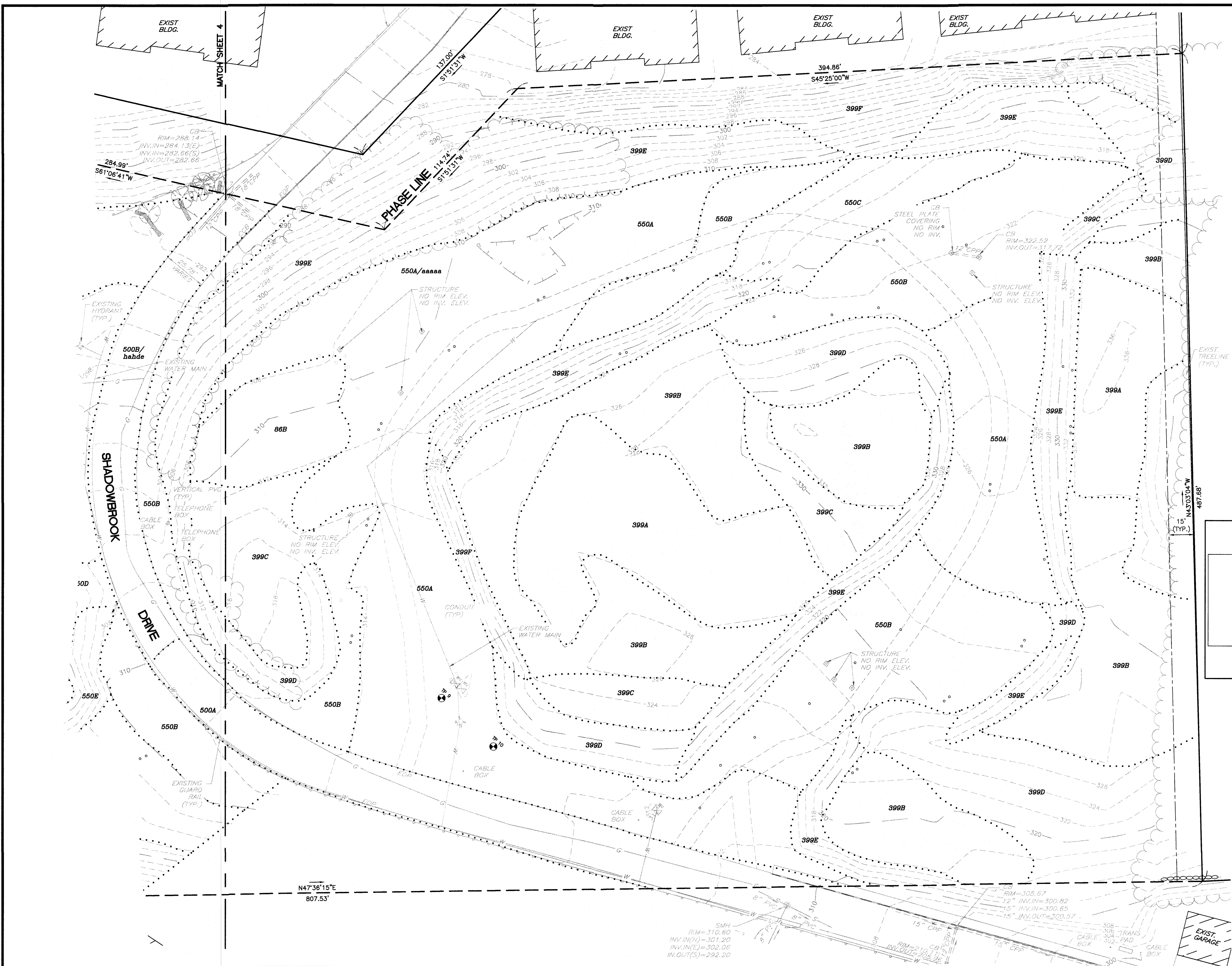
OWNER OF RECORD:
 SHEPHERDS HILL HOME OWNERS ASSOCIATION
 C/O GREAT NORTH PROPERTY MANAGEMENT
 3 HOLLAND WAY, SUITE 201
 EXETER, NH 03833

APPLICANT:
 SHEPHERDS HILL, LLC
 253 MAIN STREET
 NASHUA, NH 03060

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1	7/7/22	REVISED PER COMMENTS	ACL

DATE: MAY 2, 2022 SCALE: 1"=30'
 PROJECT NO: 17-0824-1 SHEET 5 OF 51



PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL

APPROVED BY THE HUDSON, NH PLANNING BOARD
 DATE OF MEETING: _____
 _____ SIGNATURE DATE: _____
 _____ SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

JOSHUA BRIEN, CERTIFIED WETLAND SCIENTIST #256 OF KEACH-NORDSTROM ASSOCIATES, INC. OF BEDFORD, NH PERFORMED THE DELINEATION OF JURISDICTIONAL WETLANDS IN OCTOBER OF 2020 USING THE TECHNICAL CRITERIA IN THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1, JANUARY 1987).

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[Signature] 7/11/22
 LICENSED LAND SURVEYOR DATE

EXIST. GARAGE

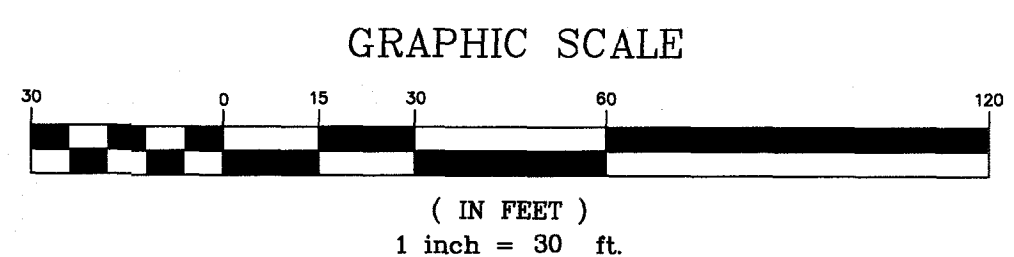


SEE SHEET 4 FOR NOTES & LEGEND



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- THIS SITE-SPECIFIC SOIL MAP WAS COMPLETED BY CYNTHIA M. BALCIUS, NEW HAMPSHIRE CERTIFIED SOIL SCIENTIST #2 OF STONEY RIDGE ENVIRONMENTAL LLC. FIELD WORK WAS COMPLETED ON SEPTEMBER 10, 2020:
- Field Indicators of Hydric Soils in the United States, Version 8.1. 2017. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the National Technical Committee for Hydric Soils.
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 - Field Book for Describing and Sampling Soils, Version 3.0 National Soil Survey Center. Natural Resources Conservation Service. U. S. Department of Agriculture, Lincoln, Nebraska. September 2012.
 - Keys to Soil Taxonomy, Twelfth Edition. 2014. United States Department of Agriculture. Natural Resources Conservation Service.



EXISTING CONDITIONS PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD:
 SHEPHERDS HILL HOME OWNERS ASSOCIATION
 C/O GREAT NORTH PROPERTY MANAGEMENT
 3 HOLLAND WAY, SUITE 201
 EXETER, NH 03833

APPLICANT:
 SHEPHERDS HILL, LLC
 253 MAIN STREET
 NASHUA, NH 03060

KMA KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____

SIGNATURE: _____ DATE: _____

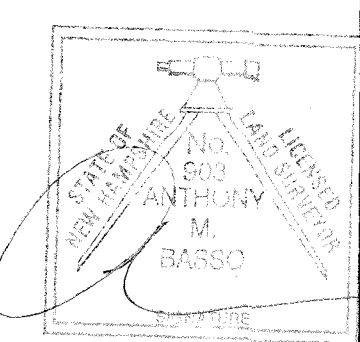
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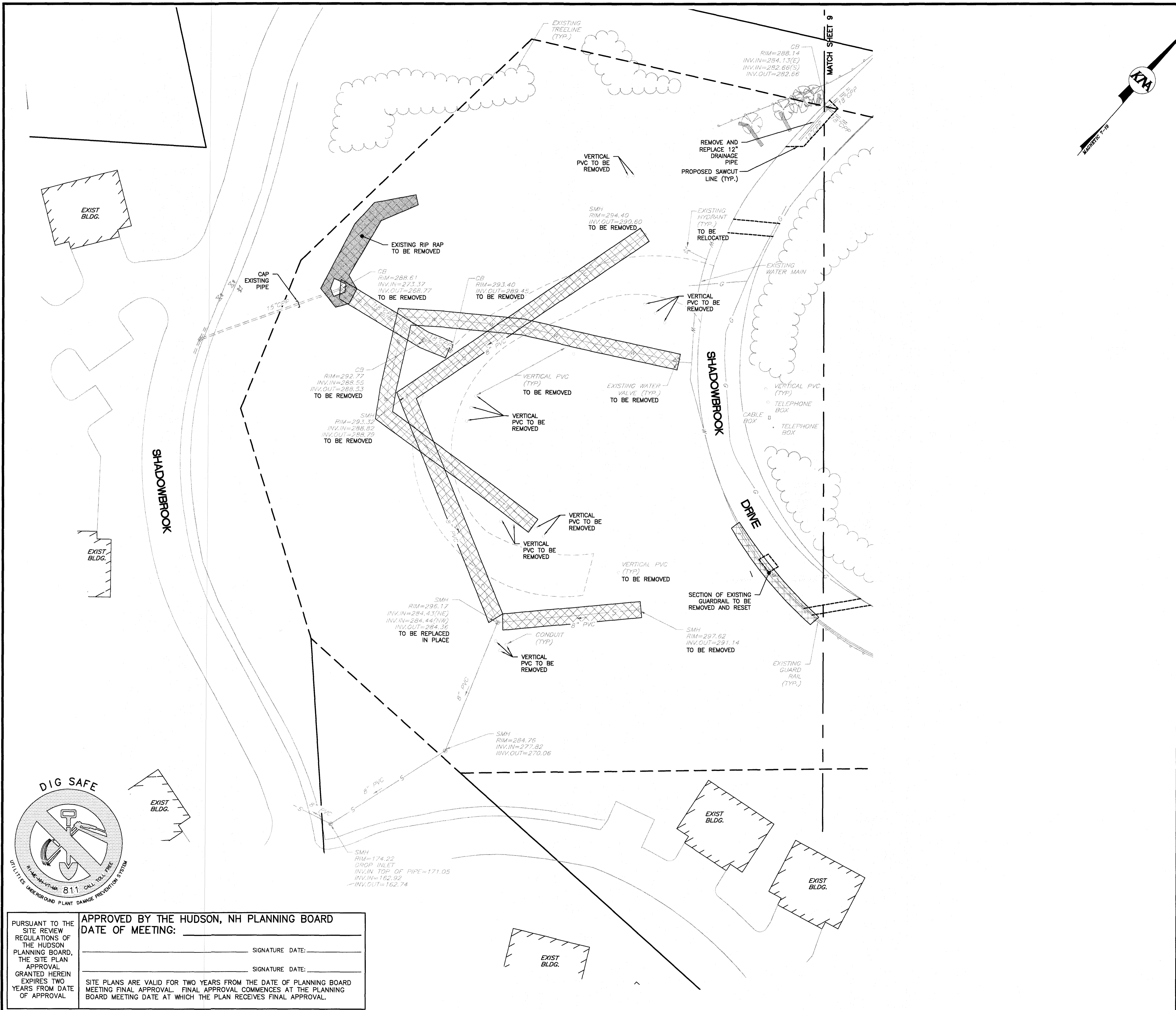
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[Signature]
 7/11/22
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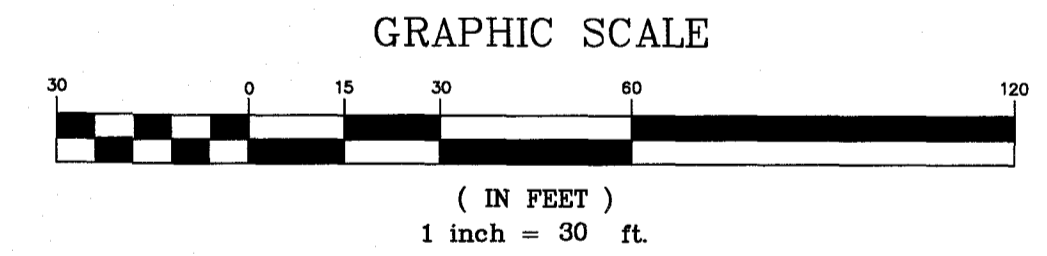
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No.	DATE	DESCRIPTION	BY
1	7/7/22	REVISED PER COMMENTS	ACL

DATE: MAY 2, 2022 SCALE: 1"=30'
 PROJECT NO: 17-0824-1 SHEET 7 OF 51



- REMOVALS/DEMOLITION NOTES:**
- ALL STUMPS, ROOTS, BRANCHES, BRUSH, WOODS AND OTHER PERISHABLE MATERIAL RESULTING FROM THE CLEARING AND GRUBBING OPERATIONS SHALL BE DISPOSED OF BY AN APPROVED METHOD.
 - ITEMS TO BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH THE TOWN OF HUDSON REQUIREMENTS, UNLESS OTHERWISE SHOWN HEREON OR DIRECTED BY OWNER.
 - ALL EXISTING PAVEMENT AND GRAVEL WITHIN THE CROSS HATCHED AREA IS TO BE REMOVED DURING THE DEMOLITION PHASE OF THE PROJECT. EXCESS MATERIAL FROM THESE AREAS SHALL BE APPROPRIATELY DISPOSED OF OFFSITE BY AN APPROVED METHOD.
 - THE CONTRACTOR SHALL CONTROL ALL DUST GENERATED DURING THE REMOVAL PHASE AND CONSTRUCTION PHASE SO THAT NO DUST LEAVES THE SITE.
 - ANY MONUMENTS DISTURBED DURING CONSTRUCTION SHALL BE RESET BY A NEW HAMPSHIRE LICENSED LAND SURVEYOR AT THE SITE CONTRACTORS EXPENSE.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "DIG SAFE" AT 811 AT LEAST 72 HOURS BEFORE DIGGING.
 - DEBRIS REMOVED FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
 - DURING REMOVAL OF EXISTING SEWER MANHOLES AND LINES, CONTRACTOR TO WORK WITH SITE ENGINEER TO ENSURE ALL EXISTING SANITARY SEWER IS REMOVED AND CAPPED.

- LEGEND**
- ⊗ GB-F GRANITE BOUND FOUND
 - ⊙ IPIN-F IRON PIN FOUND
 - ⊙ DH-F DRILL HOLE FOUND
 - ⊙ IPP-F IRON PIPE FOUND
 - ⊙ RRS-F RAILROAD SPIKE FOUND
 - ⊙ UTILITY POLE
 - ⊙ SIGN
 - ⊙ LIGHT
 - ⊙ GAS VALVE
 - ⊙ WATER VALVE
 - ⊙ HYDRANT
 - ⊙ WATER SHUT OFF
 - ⊙ WELL
 - ⊙ SEWER MANHOLE
 - ⊙ DRAINAGE MANHOLE
 - ⊙ CATCH BASIN
 - ⊙ FLARED END SECTION
 - ⊙ ABUTTER LINE
 - ⊙ PROPERTY LINE
 - ⊙ WETLAND
 - ⊙ STOCKADE FENCE
 - ⊙ OVERHEAD UTILITIES
 - ⊙ GAS LINE
 - ⊙ WATER LINE
 - ⊙ SEWER LINE
 - ⊙ DRAINAGE LINE
 - ⊙ TREELINE
 - ⊙ EDGE OF PAVEMENT
 - ⊙ VERTICAL GRANITE CURB
 - ⊙ SLOPED GRANITE CURB
 - ⊙ BITUMINOUS CURB
 - ⊙ EDGE OF GRAVEL
 - ⊙ 10' CONTOUR
 - ⊙ 2' CONTOUR
 - ⊙ STONEWALL
 - ⊙ SCS SOIL LINE
 - ⊙ BUILDING SETBACK
 - ⊙ EASEMENT
 - ⊙ LIMIT OF CLEARING
 - ⊙ SAWCUT LINE
 - ⊙ ITEMS TO BE REMOVED
 - ⊙ PHASE LINE



REMOVALS/DEMOLITION PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060
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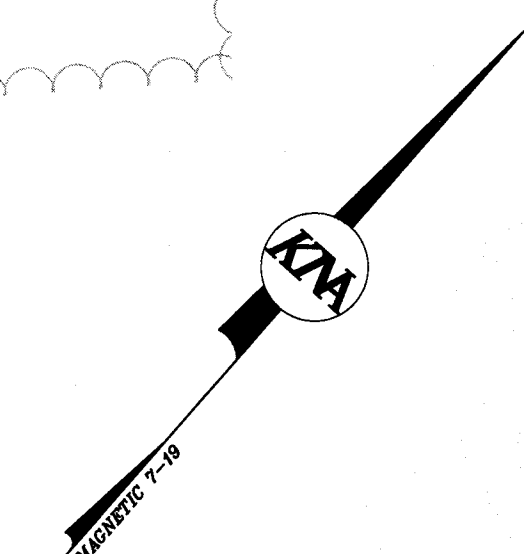
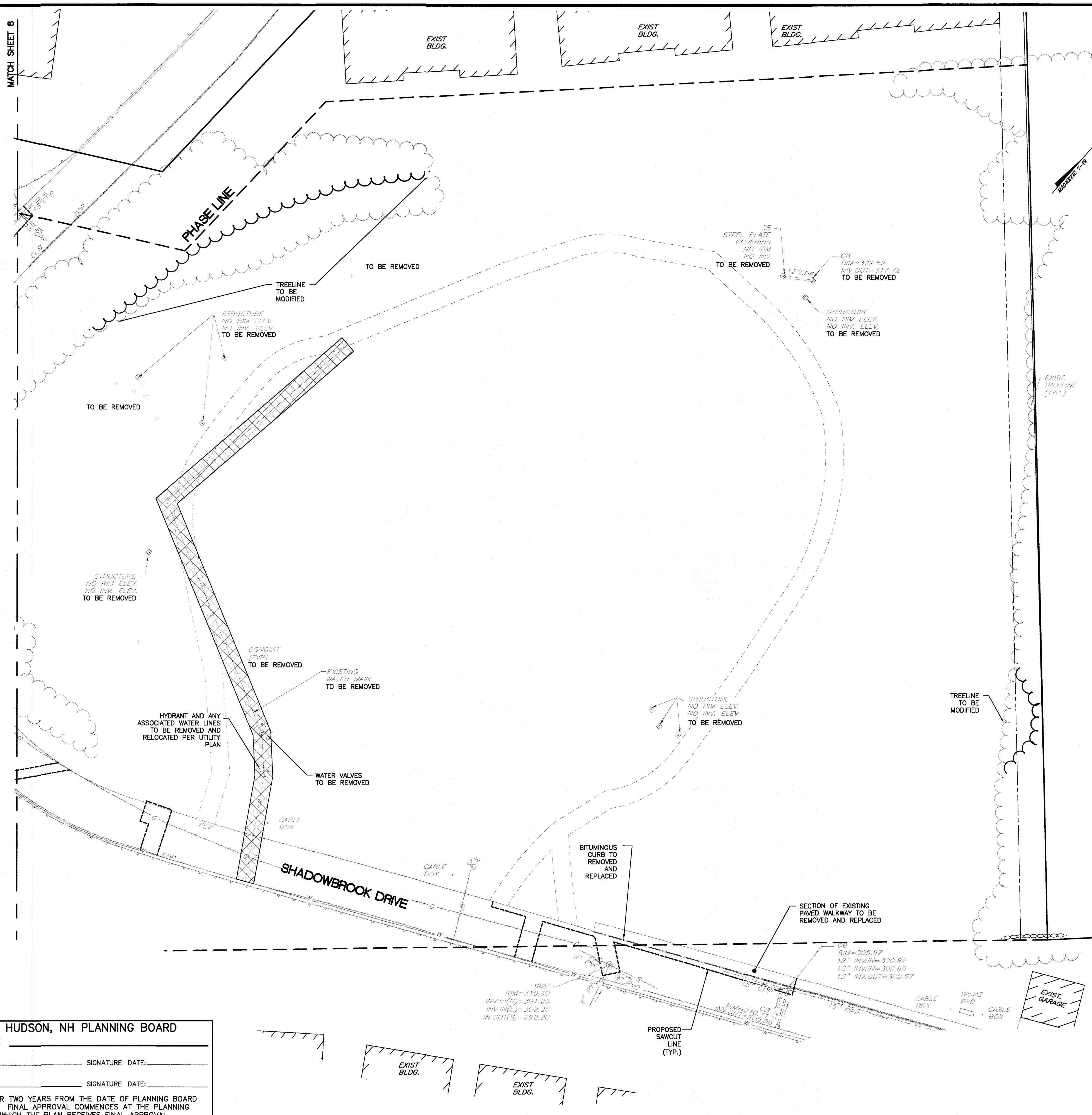
DATE: MAY 2, 2022 **SCALE:** 1"=30'
PROJECT NO: 17-0824-1 **SHEET** 8 OF 51



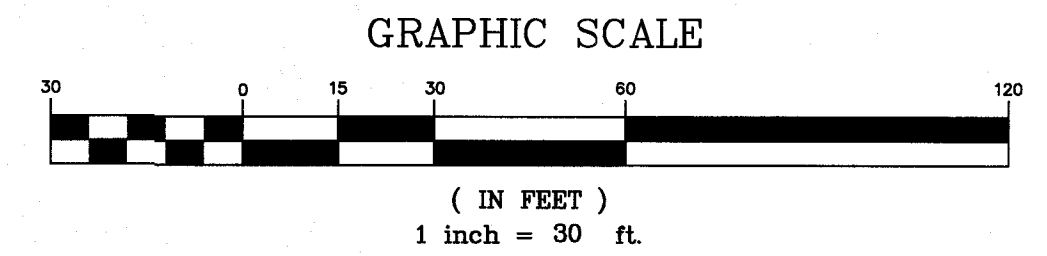
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SEE SHEET 8 FOR NOTES & LEGEND



REMOVALS/DEMOLITION PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD:
 SHEPHERDS HILL HOME OWNERS ASSOCIATION
 C/O GREAT NORTH PROPERTY MANAGEMENT
 3 HOLLAND WAY, SUITE 201
 EXETER, NH 03833

APPLICANT:
 SHEPHERDS HILL, LLC
 253 MAIN STREET
 NASHUA, NH 03060

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DATE: MAY 2, 2022 SCALE: 1"=30'
 PROJECT NO: 17-0824-1 SHEET 9 OF 51



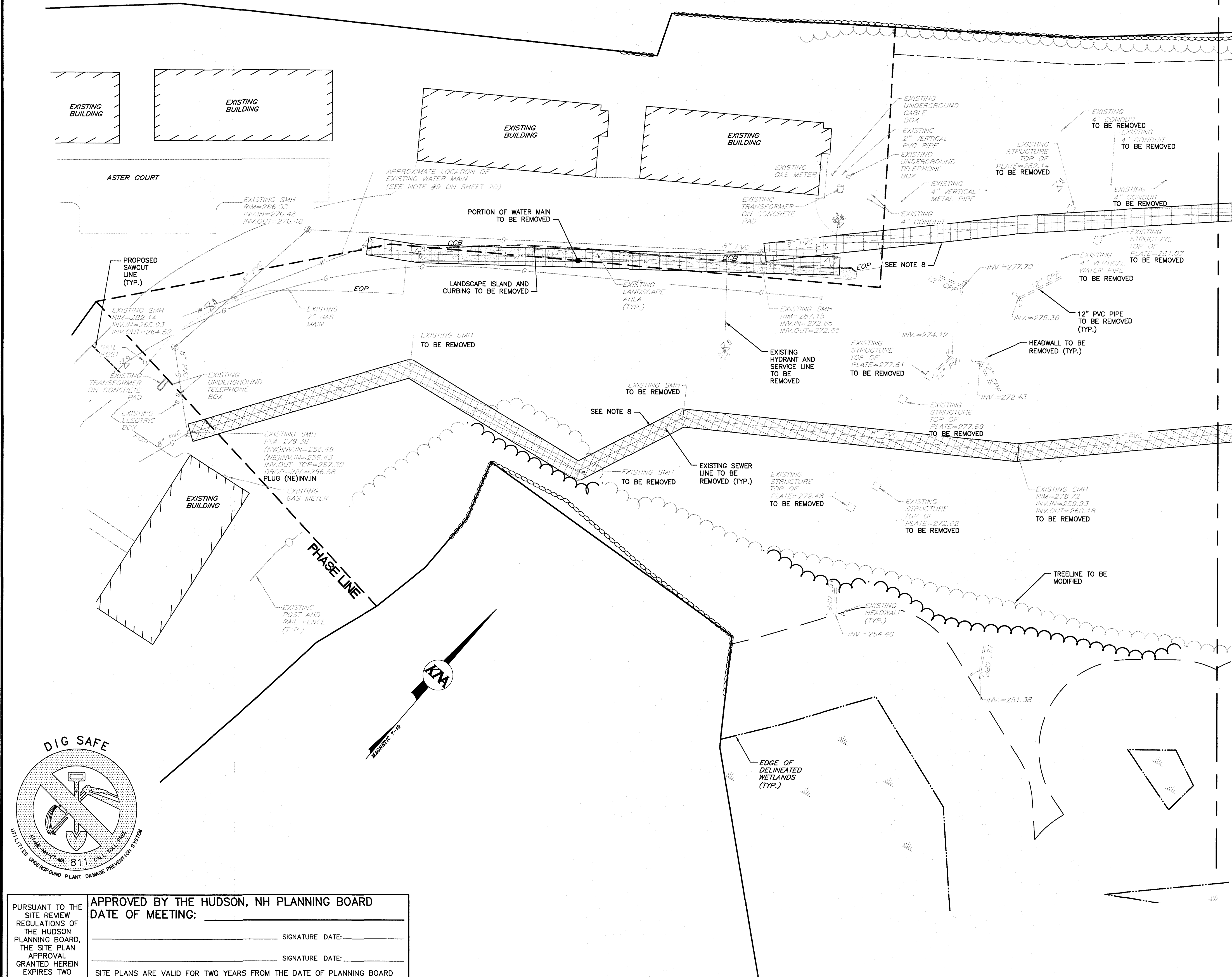
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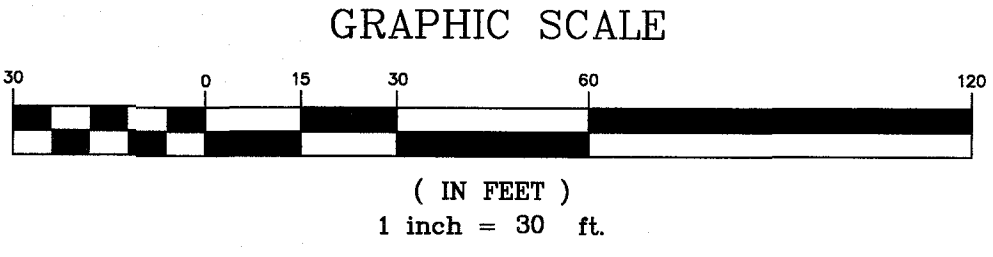
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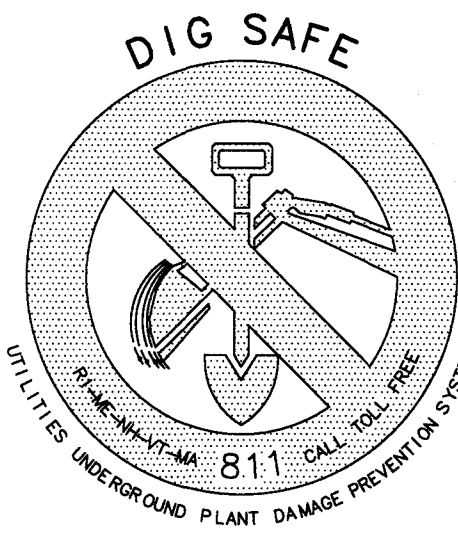


REMOVALS/DEMOLITION PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD:
 SHEPHERDS HILL HOME OWNERS ASSOCIATION
 C/O GREAT NORTH PROPERTY MANAGEMENT
 3 HOLLAND WAY, SUITE 201
 EXETER, NH 03833

APPLICANT:
 SHEPHERDS HILL, LLC
 253 MAIN STREET
 NASHUA, NH 03060

KN KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881



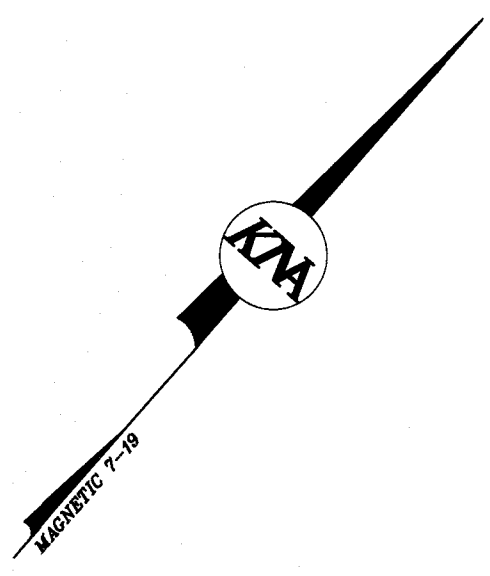
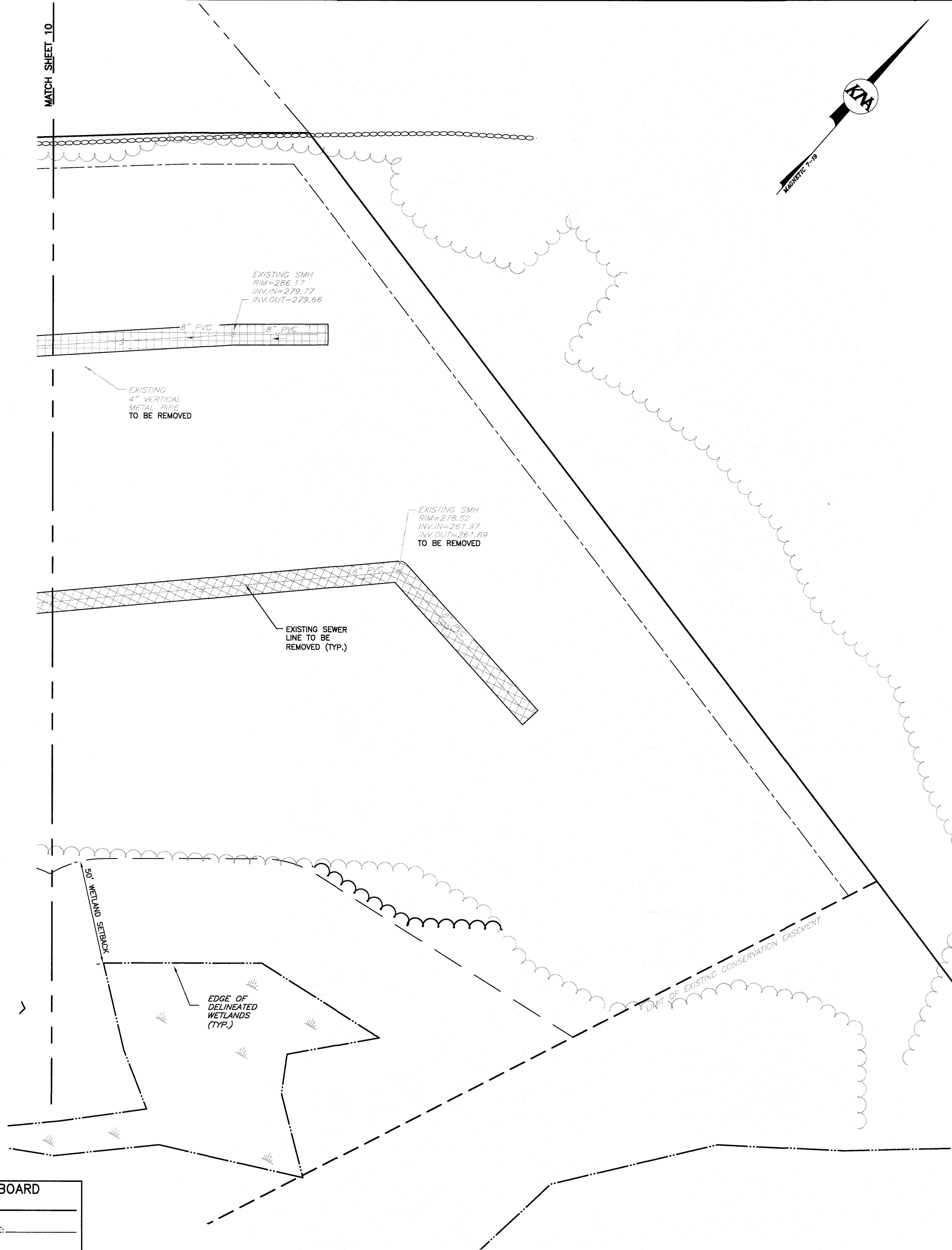
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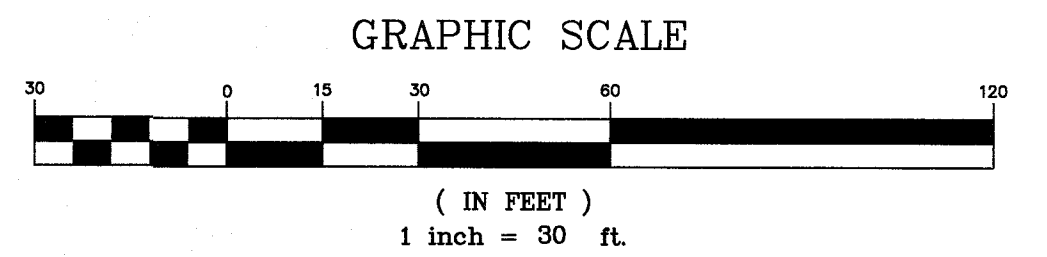
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DATE: MAY 2, 2022 SCALE: 1"=30'
 PROJECT NO: 17-0824-1 SHEET 10 OF 51



SEE SHEET 8 FOR
NOTES & LEGEND



REMOVALS/DEMOLITION PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060
--	---

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 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2861

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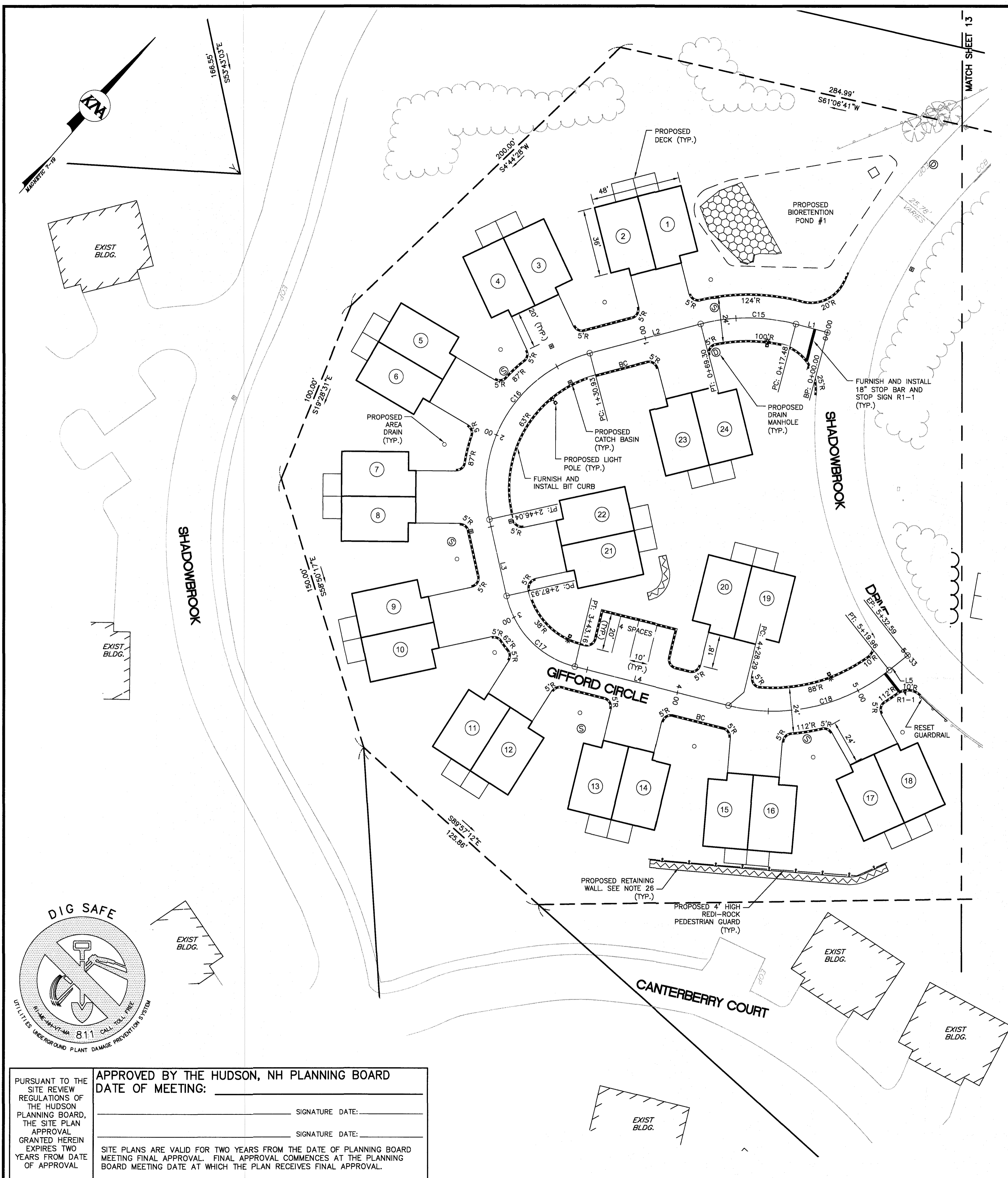
DATE: MAY 2, 2022 SCALE: 1"=30'
 PROJECT NO: 17-0824-1 SHEET 11 OF 51



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LEGEND

- GB-F GRANITE BOUND FOUND
- ⊙ IPIN-F IRON PIN FOUND
- ⊖ IPP-F IRON PIPE FOUND
- UTILITY POLE
- ⊕ SIGN
- LIGHT
- GAS VALVE
- WATER VALVE
- HYDRANT
- WATER SHUT OFF
- SEWER MANHOLE
- DRAINAGE MANHOLE
- CATCH BASIN
- ABUTTER LINE
- BROOK
- WETLAND
- CHAIN LINK FENCE
- STOCKADE FENCE
- POST & RAIL FENCE
- GUARDRAIL
- OVERHEAD UTILITIES
- TREELINE
- RETAINING WALL
- EDGE OF PAVEMENT
- BUILDING SETBACK
- PROPOSED BITUMINOUS CURB
- PROPOSED EDGE OF PAVEMENT
- SNOW STORAGE
- PROPOSED STORMWATER MANAGEMENT AREA
- SAWTOOTH LINE
- PROPOSED STONEWALL
- EASEMENT
- PROPOSED STOCKADE FENCE
- PHASE LINE

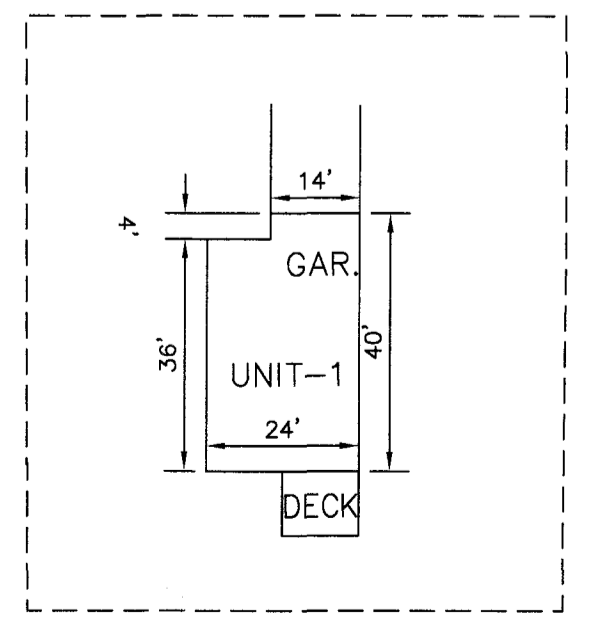
SEE SHEET 1 FOR NOTES & REFERENCE PLANS

LINE TABLE: GIFFORD CIRCLE

LINE #	LENGTH	BEARING
L1	12.626	N09° 49' 27.17"E
L2	85.129	N62° 20' 50.19"E
L3	41.893	S54° 21' 46.80"E
L4	61.629	S33° 34' 16.79"W
L5	17.476	S63° 16' 01.13"W

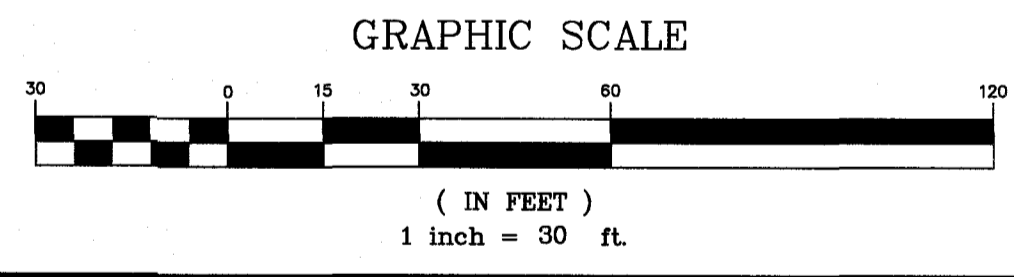
CURVE TABLE: GIFFORD CIRCLE

CURVE #	RADIUS	LENGTH	DELTA
C15	100.000	51.829	S48° 25' 08.96"W
C16	75.000	115.106	S10° 23' 45.01"E
C17	50.000	55.231	S86° 00' 28.30"E
C18	100.000	91.670	N36° 05' 08.68"E



TYPICAL UNIT DETAIL
Exterior Dimensions
not to scale

- NOTES:**
- THE PURPOSE OF THIS PLAN IS TO DEPICT THE FINAL PHASE OF SHEPHERD'S HILL CONDOMINIUM PROJECT WHICH CONSISTS OF 118 RESIDENTIAL UNITS, PARKING, AND ASSOCIATED SITE APURTEANCES.
 - EACH UNIT OWNER WITHIN THE DEVELOPMENT SHALL POSSESS AN EQUAL SHARE OF THE COMMON OPEN SPACE AREA ASSOCIATED WITH THIS DEVELOPMENT.
 - TOTAL SITE OF DEVELOPMENT AREA: 68.1 ACRES.
 - OWNER OF RECORD: SHEPHERD'S HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833
 - THE SUBJECT PARCEL IS LOCATED WITHIN THE GENERAL (G) & BUSINESS (B) ZONING DISTRICT AND IS SUBJECT TO THE FOLLOWING DIMENSIONAL REQUIREMENTS:
MINIMUM REQUIREMENTS: (G) (B)
- LOT AREA 43,560 SF 53,560 SF (MULTI)
- FRONTAGE 150 FT 150 FT
- FRONT SETBACK 50 FT 50 FT
- SIDE SETBACK 15 FT 15 FT
- REAR SETBACK 15 FT 15 FT
 - BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON A FIELD SURVEY PERFORMED BY THIS OFFICE IN SEPTEMBER 2017.
 - HORIZONTAL DATUM IS NAD83. VERTICAL DATUM IS NAVD83. BOTH DATUMS WERE OBTAINED THROUGH GPS METHODS UTILIZING NHOOT DISK #229-0420.
 - EXAMINATION OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAPS (FIRM) FOR THE TOWN OF HUDSON, NEW HAMPSHIRE, HILLSBOROUGH COUNTY, MAP NUMBER 3301100517D, PANEL NUMBER 517 OF 701 AND MAP NUMBER 3301100519D, PANEL NUMBER 519 OF 701, EFFECTIVE DATE SEPTEMBER 25, 2009, INDICATES THAT NO PORTION OF THE SUBJECT PARCEL IS LOCATED IN A DESIGNATED FLOOD ZONE.
 - THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. KEACH-NORDSTROM ASSOCIATES, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
 - EASEMENTS, RIGHTS AND RESTRICTIONS SHOWN OR IDENTIFIED HEREON ARE THOSE FOUND DURING RESEARCH AT THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS. OTHER EASEMENTS, RIGHTS AND RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF THE SUBJECT PREMISES MAY DETERMINE.
 - THE SITE IS TO BE SERVICED BY MUNICIPAL WATER & SEWER.
 - PROPER EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO CLEARING AND EXCAVATION. THE CONTROLS SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL COMPLETION OF CONSTRUCTION. THE TOWN OF HUDSON RESERVES THE RIGHT TO REQUIRE ADDITIONAL EROSION CONTROL MEASURES DURING CONSTRUCTION, IF NECESSARY.
 - IF DURING LOT DEVELOPMENT, SLOPES OF 2:1 EXCEED 20 FEET, 3:1 EXCEEDS 30 FEET, OR 4:1 EXCEEDS 40 FEET THE CONTRACTOR SHALL ADD BENCHING PER NHDES REQUIREMENTS.
 - PARKING CALCULATIONS:
REQUIRED: RESIDENTIAL = 2 PER UNIT = 118 UNITS X 2 = 236 SPACES
PROVIDED:
1 PER GARAGE = 118 PARKING SPACES
1 IN FRONT OF GARAGE = 118 PARKING SPACES
VISITOR PARKING = 9 PARKING SPACES
- REQUIRED SPACES = 236 PARKING SPACES
- PROVIDED SPACES = 244 PARKING SPACES
 - PERMITS REQUIRED:
-NHDES ADT: SUBMITTED
-NHDES SEWER CONNECTION: PERMIT #
 - THE ONSITE DRAINAGE SYSTEM SHALL BE CONSTRUCTED AND MAINTAINED IN COMPLIANCE WITH LOCAL AND NHDES REQUIREMENTS FOR SUCH SYSTEMS.
 - SEE ARCHITECTURAL PLANS FOR WALKWAYS AND OTHER FEATURES AT THE BUILDINGS. CONTRACTOR TO PERFORM THIS WORK AS DIRECTED BY THE OWNER.
 - IF LOT DEVELOPMENT INVOLVES BLASTING AND/OR RAMMING OF BEDROCK MATERIALS, SAID ACTIVITIES SHALL BE LIMITED TO THE HOURS BETWEEN 7:00 A.M. AND 5:00 P.M. MONDAY THROUGH FRIDAY ONLY. SAID BLASTING / RAMMING ACTIVITIES ARE PROHIBITED ON SATURDAY AND SUNDAY.
 - CONSTRUCTION ACTIVITIES INVOLVING THE UNITS SHALL BE LIMITED TO THE HOURS BETWEEN 7:00 A.M. AND 6:00 P.M., MONDAY THROUGH FRIDAY. INTERIOR CONSTRUCTION ACTIVITIES ARE ALLOWED ON SATURDAY 7:00 A.M. AND 5:00 P.M. BOTH INTERIOR AND EXTERIOR CONSTRUCTION ACTIVITIES ARE PROHIBITED ON SUNDAYS.
 - THIS PROJECT MEETS THE 2019 MS4 REQUIREMENTS.
 - THE DEVELOPMENT WILL BE RESIDENTIAL DUPLEX UNITS.
 - ALL BUILDINGS SHALL ADDRESS FIRE PROTECTION COMPLIANCE DURING THE BUILDING PERMIT PROCESS.
 - ALL SEWER CONNECTIONS SHALL CONFIRM TO THE TOWN OF HUDSON SANITARY SEWER CONSTRUCTION STANDARDS AND NHDES STANDARDS.
 - SEE ARCHITECTURAL DRAWING FOR FINAL UNIT DECK SIZING AND FINISHED HEIGHT OF PROPOSED BASEMENTS TO CONFIRM SITE GRADING AT WALKOUT EGRESS.
 - PROPOSED PRIVATE DRIVES WILL BE PLOWED AS A TOWN ROAD WITH EXCESS SNOW BEING STORED ALONG THE ROADWAY SHOULDERS.
 - PROPOSED RETAINING WALL TO BE GRAVITY REDI-ROCK OR TAPERED 1 TO 5 LEDGE FACE. CONTRACTOR TO VERIFY DEPTH TO LEDGE WITH ENGINEER PRIOR TO CONSTRUCTION OF EITHER.
 - THREE HANDICAP ACCESSIBLE UNITS MUST BE PROVIDED. THE DEVELOPER MAY CHOOSE WHICH THREE UNITS SHALL BE HANDICAP ACCESSIBLE BASED ON COMPLIANCE WITH ADA REGULATIONS.
 - ALL PROPOSED UNITS ARE UNDER 38 FEET IN HEIGHT.



RESIDENTIAL SITE LAYOUT PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION
 C/O GREAT NORTH PROPERTY MANAGEMENT
 3 HOLLAND WAY, SUITE 201
 EXETER, NH 03833

APPLICANT: SHEPHERDS HILL, LLC
 253 MAIN STREET
 NASHUA, NH 03060

KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS		
No.	DATE	DESCRIPTION
1	7/7/22	REVISED PER COMMENTS

DATE: MAY 2, 2022 **SCALE:** 1"=30'
PROJECT NO: 17-0824-1 **SHEET:** 12 OF 51



PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____
 _____ SIGNATURE DATE: _____
 _____ SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

SEE SHEET 1 FOR NOTES & REFERENCE PLANS

SEE SHEET 12 FOR LEGEND & ADDITIONAL NOTES

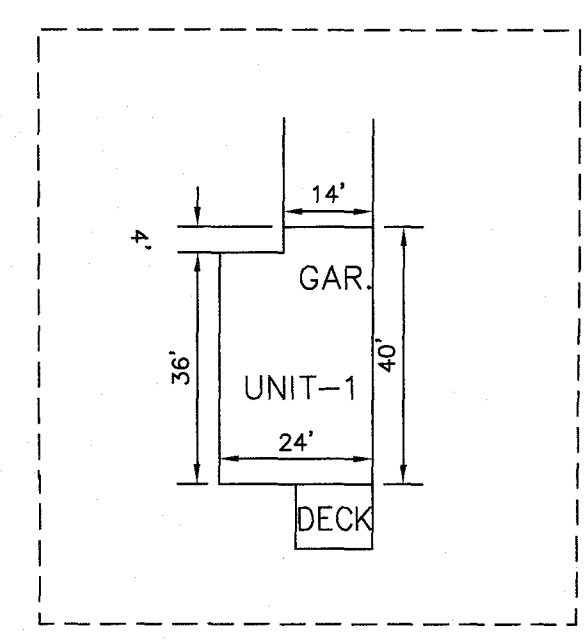


LINE TABLE: TRINITY CIRCLE

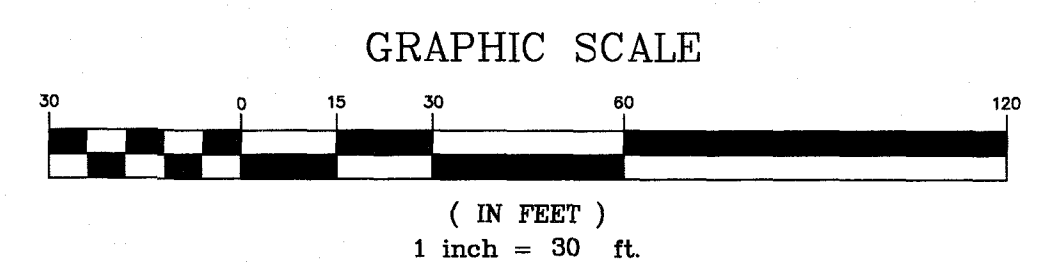
LINE #	LENGTH	BEARING
L6	42.922	N23° 15' 06.09"W
L7	89.906	N31° 49' 20.88"W
L8	155.747	N38° 34' 42.73"E
L9	16.905	S43° 03' 04.03"E
L10	91.238	S14° 50' 11.97"W
L11	4.153	S14° 50' 11.97"W
L12	30.546	S25° 54' 37.56"E

CURVE TABLE: TRINITY CIRCLE

CURVE #	RADIUS	LENGTH	DELTA
C19	100.000	14.959	N27° 32' 13.48"W
C20	137.000	168.336	N03° 22' 40.93"E
C21	88.000	151.599	N87° 55' 50.61"E
C22	163.000	164.684	S14° 06' 26.03"E
C23	38.000	27.024	S05° 32' 12.79"E



TYPICAL UNIT DETAIL
Exterior Dimensions not to scale



RESIDENTIAL SITE LAYOUT PLAN
SHEPHERDS HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
SHEPHERDS HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

APPLICANT:
SHEPHERDS HILL, LLC
253 MAIN STREET
NASHUA, NH 03060

KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS

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DATE: MAY 2, 2022 SCALE: 1"=30'
PROJECT NO: 17-0824-1 SHEET 13 OF 51



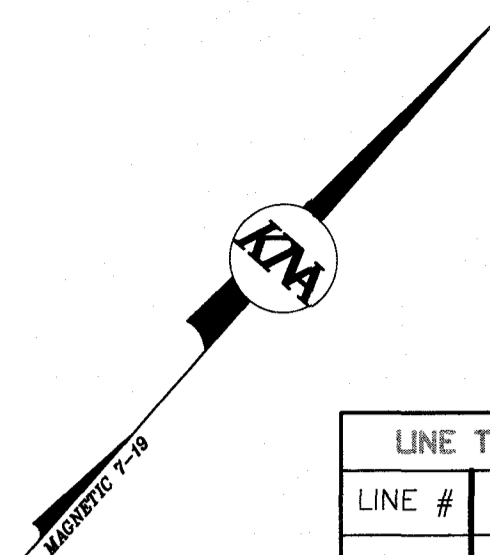
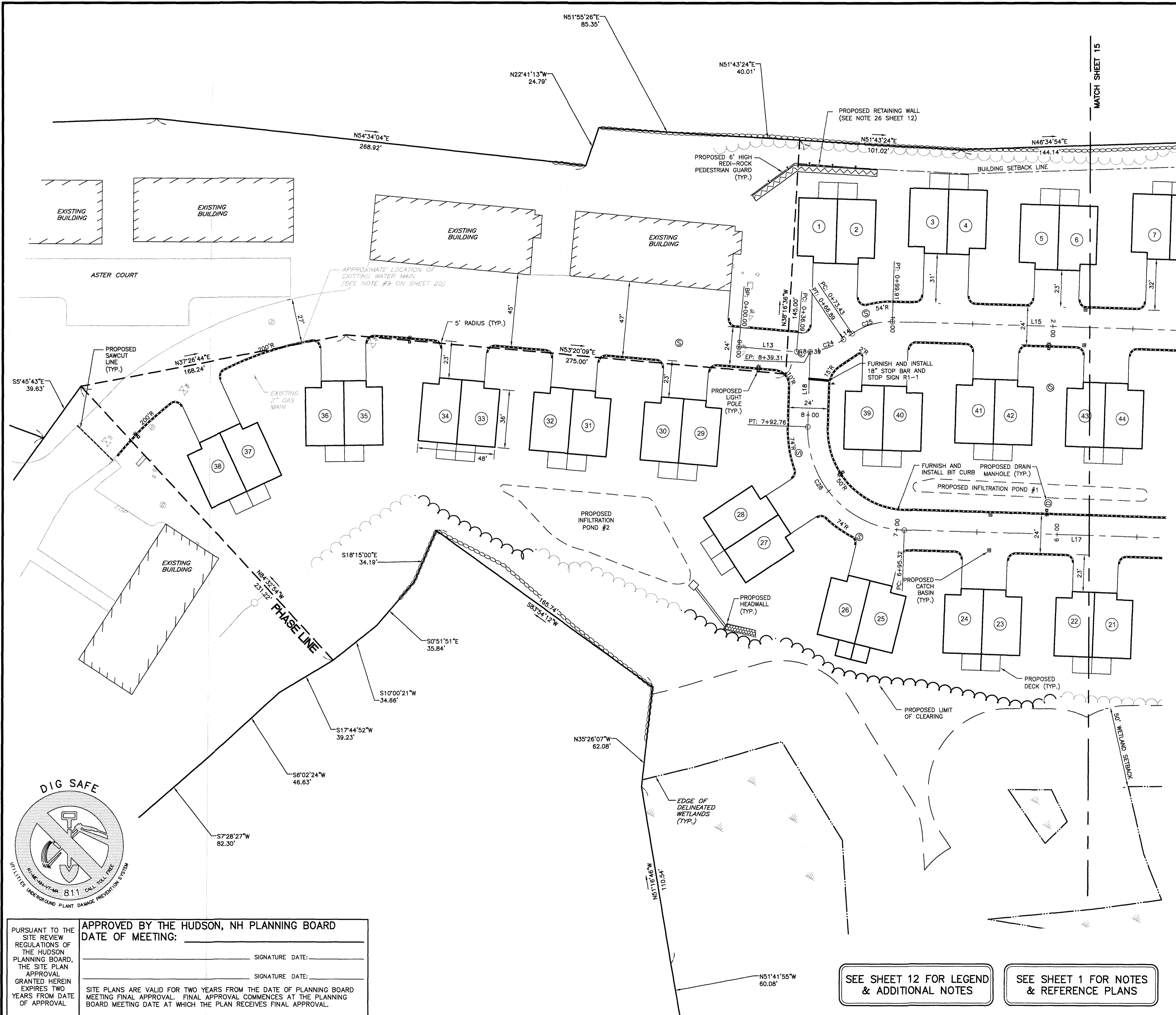
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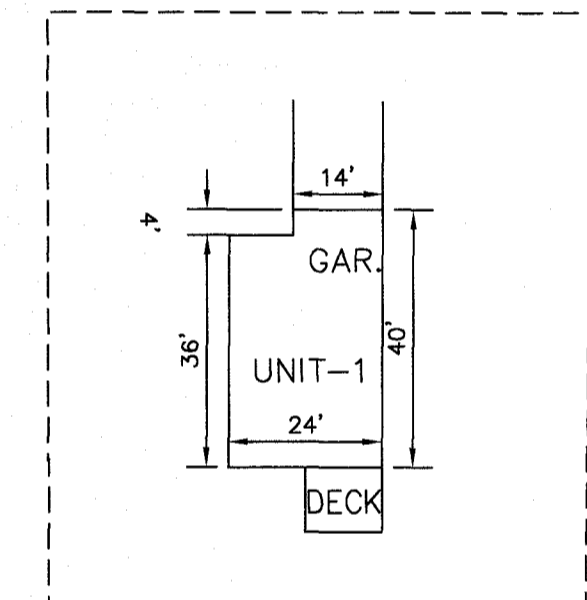


LINE TABLE: CLEARVIEW CIRCLE

LINE #	LENGTH	BEARING
L13	36.094	N53° 12' 03.34\"E
L14	6.548	N13° 59' 44.23\"E
L15	192.319	N50° 06' 30.17\"E
L16	59.397	S79° 05' 39.03\"E
L17	215.328	S50° 03' 39.54\"W
L18	46.558	N39° 53' 29.83\"W

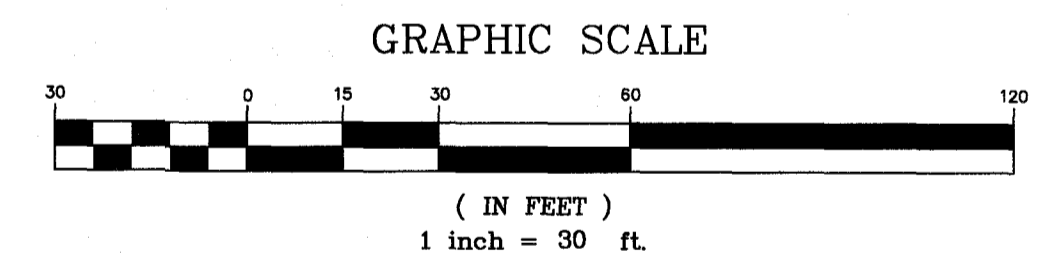
CURVE TABLE: CLEARVIEW CIRCLE

CURVE #	RADIUS	LENGTH	DELTA
C24	45.000	30.792	N33° 35' 53.78\"E
C25	42.000	26.472	N32° 03' 07.20\"E
C26	38.000	33.690	N75° 30' 25.57\"E
C27	42.000	94.676	S14° 30' 59.74\"E
C28	62.000	97.441	N84° 54' 55.14\"W



TYPICAL UNIT DETAIL

Exterior Dimensions
not to scale



RESIDENTIAL SITE LAYOUT PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060
--	---

KMA
 KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS			
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1	7/7/22	REVISED PER COMMENTS	ACL

DATE: MAY 2, 2022 SCALE: 1"=30'
 PROJECT NO: 17-0824-1 SHEET 14 OF 51



PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL

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SEE SHEET 12 FOR LEGEND & ADDITIONAL NOTES

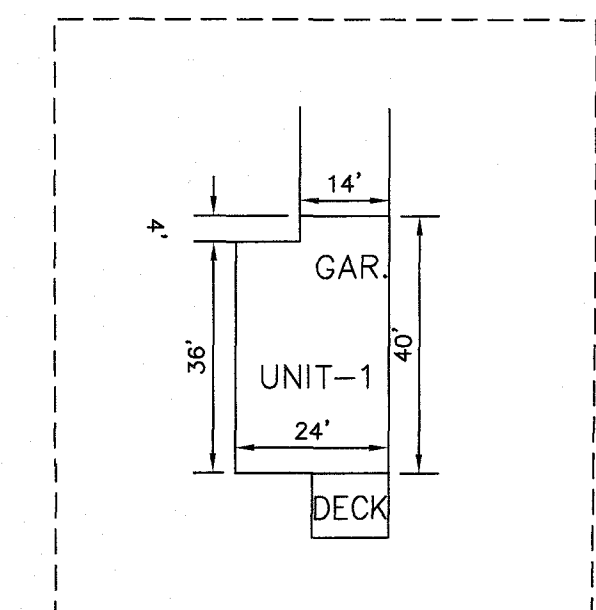
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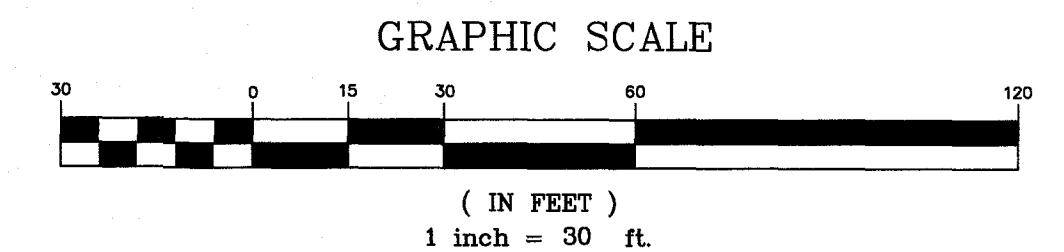


TYPICAL UNIT DETAIL

Exterior Dimensions
not to scale

SEE SHEET 12 FOR LEGEND
& ADDITIONAL NOTES

SEE SHEET 1 FOR NOTES
& REFERENCE PLANS



RESIDENTIAL SITE LAYOUT PLAN
SHEPHERDS HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
SHEPHERDS HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
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REVISIONS

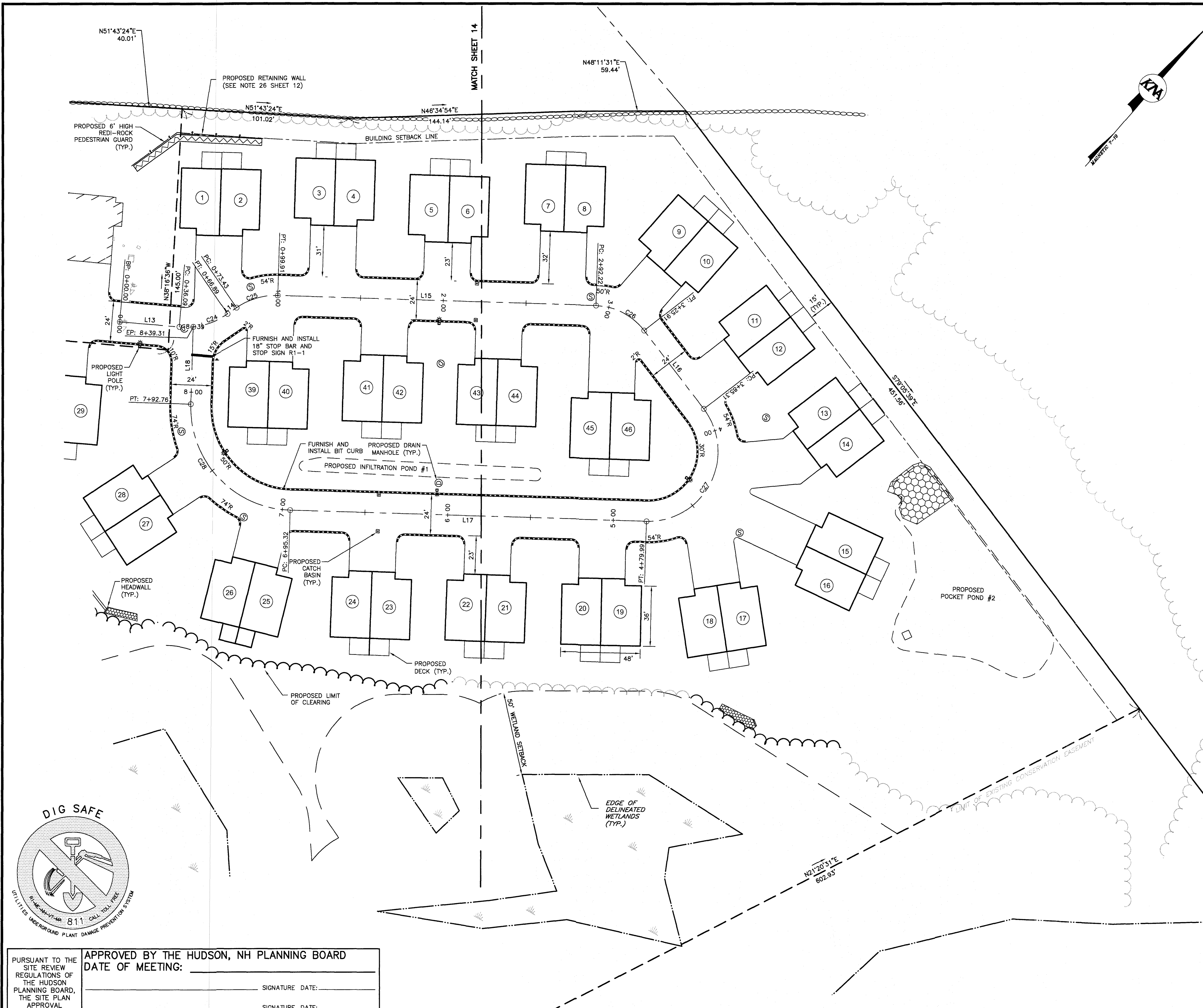
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DATE: MAY 2, 2022

SCALE: 1"=30'

PROJECT NO: 17-0824-1

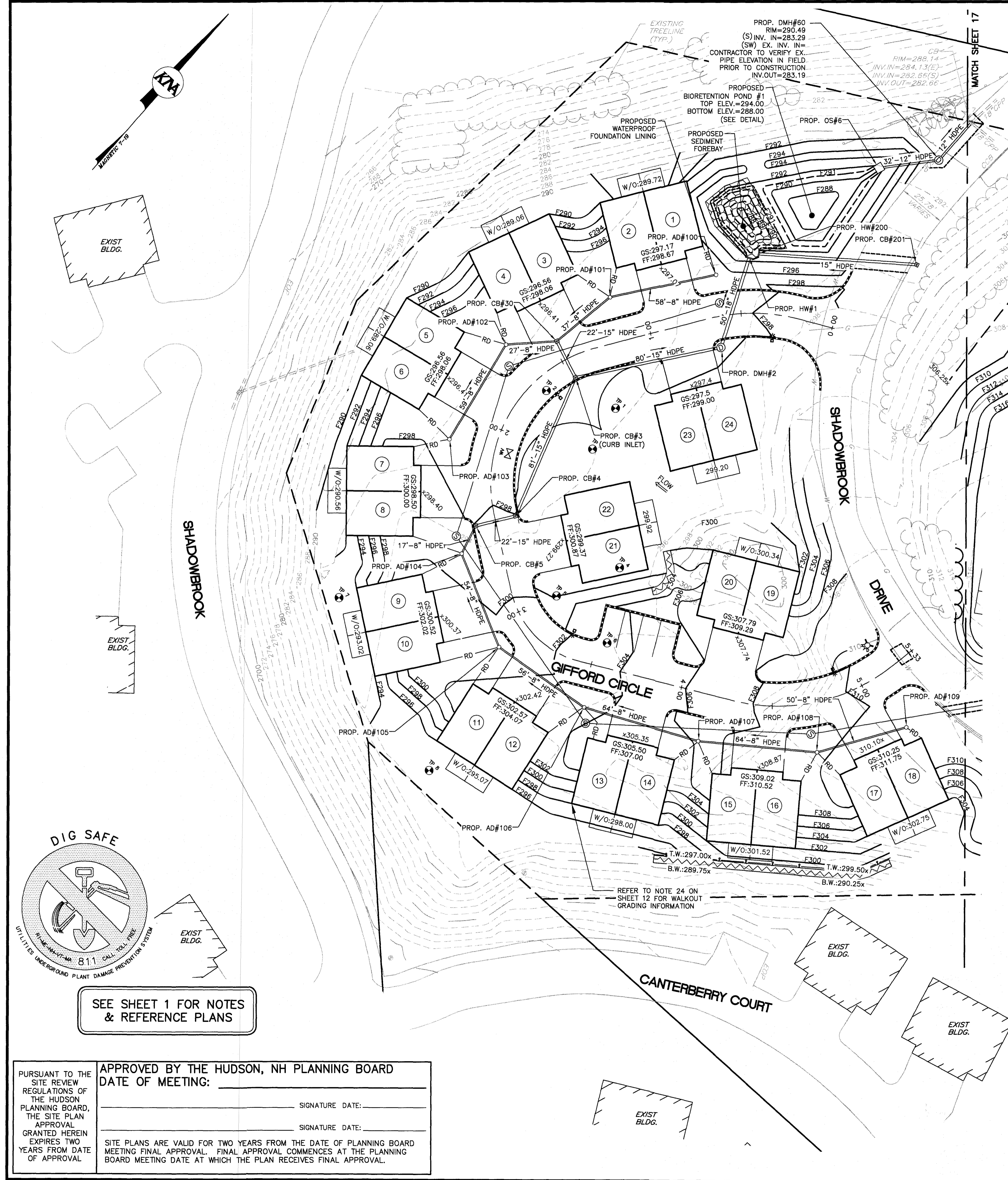
SHEET 15 OF 51



PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL

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STRUCTURE TABLE	
STRUCTURE NAME	DETAILS
AD#109	RIM = 310.05 INV OUT = 308.89
AD#108	RIM = 309.80 INV IN = 305.95 INV OUT = 305.85
AD#107	RIM = 306.30 INV IN = 302.96 INV OUT = 302.85
AD#106	RIM = 303.80 INV IN = 299.97 INV OUT = 299.87
AD#105	RIM = 301.00 INV IN = 297.63 INV OUT = 297.53
CB#4	RIM = 298.00 INV IN = 294.34 INV OUT = 294.24
AD#104	RIM = 299.00 INV IN = 295.38 INV OUT = 295.27
AD#100	RIM = 297.10 INV OUT = 295.81
CB#5	RIM = 298.00 INV IN = 294.66 INV OUT = 294.56
AD#103	RIM = 297.40 INV OUT = 294.23
AD#101	RIM = 297.00 INV IN = 294.35 INV OUT = 294.25
AD#102	RIM = 297.00 INV IN = 293.05 INV OUT = 292.95
CB#3	RIM = 296.31 INV IN = 292.58 INV IN = 292.19 INV OUT = 292.09
CB#30	RIM = 296.31 INV IN = 292.40 INV IN = 292.40 INV OUT = 292.30
DMH#2	RIM = 297.80 INV IN = 291.29 INV OUT = 291.19
HW#1	INV IN = 291.04
OS#6	RIM = 293.80 INV IN = 284.75
EX CB	RIM = 289.08 INV IN = 282.66
CB#201	RIM = 295.63 INV OUT = 291.88
HW#200	INV IN = 291.45
DMH#60	RIM = 290.49 INV IN = 283.29 INV OUT = 283.19

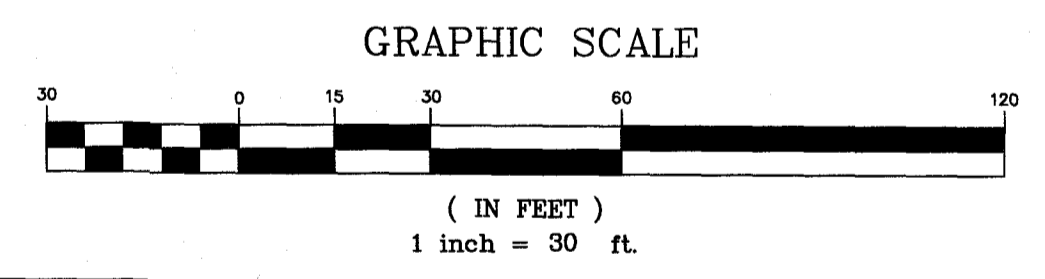
- CONSTRUCTION NOTES:**
- ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF HUDSON AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION, APPROVED AND ADOPTED 2016 ARE HEREBY INCORPORATED BY REFERENCE.
 - ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS, AND SHALL MEET THE REQUIREMENTS AND SPECIFICATIONS FOR ROAD CONSTRUCTION, PUBLIC WORKS DEPARTMENT, HUDSON, NEW HAMPSHIRE.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION, AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "DIG SAFE" AT 811 AT LEAST 72 HOURS BEFORE DIGGING.
 - SEE CONSTRUCTION DETAILS FOR SPECIFIC CONSTRUCTION INFORMATION.
 - CONTRACTOR TO COORDINATE ELECTRICAL CONDUITS TO PROPOSED BUILDING THROUGH LOCAL VENDOR.
 - SHOULD BLASTING BE REQUIRED ALL REQUIREMENTS LISTED IN THE TOWN OF HUDSON'S SITE PLAN REGULATIONS SECTION 202.

LEGEND

<ul style="list-style-type: none"> ● GB-F GRANITE BOUND FOUND ● IPIN-F IRON PIN FOUND ● DH-F DRILL HOLE FOUND ● IPP-F IRON PIPE FOUND ○ UTILITY POLE ○ SIGN ○ LIGHT ○ GAS VALVE ○ WATER VALVE ○ HYDRANT ○ WATER SHUT OFF ○ WELL ○ SEWER MANHOLE ○ DRAINAGE MANHOLE ○ CATCH BASIN ○ ABUTTER LINE ○ PROPERTY LINE ○ CHAIN LINK FENCE ○ STOCKADE FENCE ○ POST & RAIL FENCE ○ OVERHEAD UTILITIES ○ GAS LINE ○ WATER LINE ○ SEWER LINE ○ TRENCH ○ RETAINING WALL ○ EDGE OF PAVEMENT ○ EDGE OF GRAVEL ○ 10' CONTOUR ○ 2' CONTOUR ○ BUILDING SETBACK ○ EASEMENT ○ PROPOSED PROPERTY LINE ○ PROPOSED CHAIN LINK FENCE ○ PROPOSED STOCKADE FENCE ○ PROPOSED POST & RAIL FENCE ○ OHU PROPOSED OVERHEAD UTILITIES ○ UGU PROPOSED UNDERGROUND UTILITIES ○ G PROPOSED GAS LINE ○ W PROPOSED WATER LINE ○ S PROPOSED SEWER LINE ○ S PROPOSED DRAINAGE LINE 	<ul style="list-style-type: none"> ■ GB-TBS GRANITE BOUND TO BE SET ■ IPIN-TBS IRON PIN TO BE SET ○ DH-TBS DRILL HOLE TO BE SET ○ UTILITY POLE ○ SIGN ○ LIGHT ○ GAS VALVE ○ WATER VALVE ○ HYDRANT ○ WATER SHUT OFF ○ WELL ○ SEWER MANHOLE ○ DRAINAGE MANHOLE ○ CATCH BASIN ○ ABUTTER LINE ○ PROPERTY LINE ○ CHAIN LINK FENCE ○ STOCKADE FENCE ○ POST & RAIL FENCE ○ OVERHEAD UTILITIES ○ GAS LINE ○ WATER LINE ○ SEWER LINE ○ TRENCH ○ RETAINING WALL ○ EDGE OF PAVEMENT ○ EDGE OF GRAVEL ○ 10' CONTOUR ○ 2' CONTOUR ○ BUILDING SETBACK ○ EASEMENT ○ PROPOSED PROPERTY LINE ○ PROPOSED CHAIN LINK FENCE ○ PROPOSED STOCKADE FENCE ○ PROPOSED POST & RAIL FENCE ○ OHU PROPOSED OVERHEAD UTILITIES ○ UGU PROPOSED UNDERGROUND UTILITIES ○ G PROPOSED GAS LINE ○ W PROPOSED WATER LINE ○ S PROPOSED SEWER LINE ○ S PROPOSED DRAINAGE LINE
--	---

FLOOR ELEVATION LEGEND

FF	FINISH FLOOR
W/O	WALK OUT
GS	GARAGE SLAB



- EXCAVATION NOTES:**
- ALL LEDGE AND BOULDER EXCAVATION AND REMOVAL ACTIVITIES SHALL CONFORM WITH SECTION 203 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AS PUBLISHED BY THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION AND TOWN REQUIREMENTS FOR BLASTING PERMITS/SUBMITTALS. NO LEDGE OR BOULDERS SHALL BE BURIED WITHIN THE TOWN OWNED RIGHT-OF-WAY.
 - STUMPS SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES STANDARDS. PRIOR TOWN APPROVAL IS REQUIRED FOR ANY ON-SITE STUMP BURIALS. STUMPS CANNOT BE BURIED OR OTHERWISE DISPOSED OF WITHIN THE TOWN OWNED RIGHT-OF-WAY.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING, CONTAINING, AND DULY REMOVING ALL CONSTITUENTS OF CONCERN BROUGHT TO THE SITE BY THE CONTRACTOR, SUBCONTRACTORS, SUPPLIERS, OR ANYONE ELSE FOR WHOM CONTRACTOR IS RESPONSIBLE, AND FOR ANY ASSOCIATED COSTS; AND FOR THE COST FOR REMOVING AND REMEDIATING ANY HAZARDOUS ENVIRONMENTAL CONDITIONS CREATED BY THE PRESENCE OF ANY SUCH CONSTITUENTS OF CONCERN.
 - CONTRACTOR SHALL NOT IMPORT ANY FILL OVER THE AMOUNT OF TEN CUBIC YARDS CUMULATIVE TOTAL PER SOURCE TO ANY JOB SITE IN THE TOWN OF HUDSON WITHOUT SOILS TESTING VERIFYING THE ABSENCE OF ALL CONSTITUENTS OF CONCERN, AND WITHOUT PRIOR APPROVAL BY THE ENGINEERING DEPARTMENT STAFF. DOCUMENTATION SUCH AS TEST REPORTS, CERTIFICATIONS AND SIEVE ANALYSES OF FILL SHALL BE PROVIDED TO THE ENGINEERING DEPARTMENT FOR APPROVAL PRIOR TO TRANSPORTING THE MATERIAL TO HUDSON.

GRADING & DRAINAGE PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060
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KMA KEACH-NORDSTROM ASSOCIATES, INC.
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REVISIONS			
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DATE: MAY 2, 2022 SCALE: 1"=30'
 PROJECT NO: 17-0824-1 SHEET 16 OF 51



SEE SHEET 1 FOR NOTES & REFERENCE PLANS

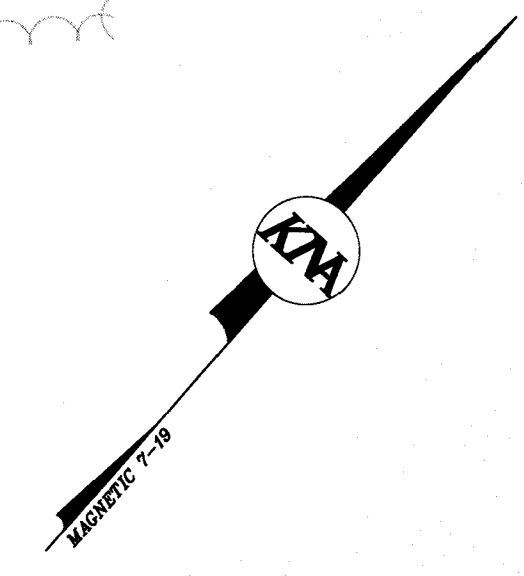
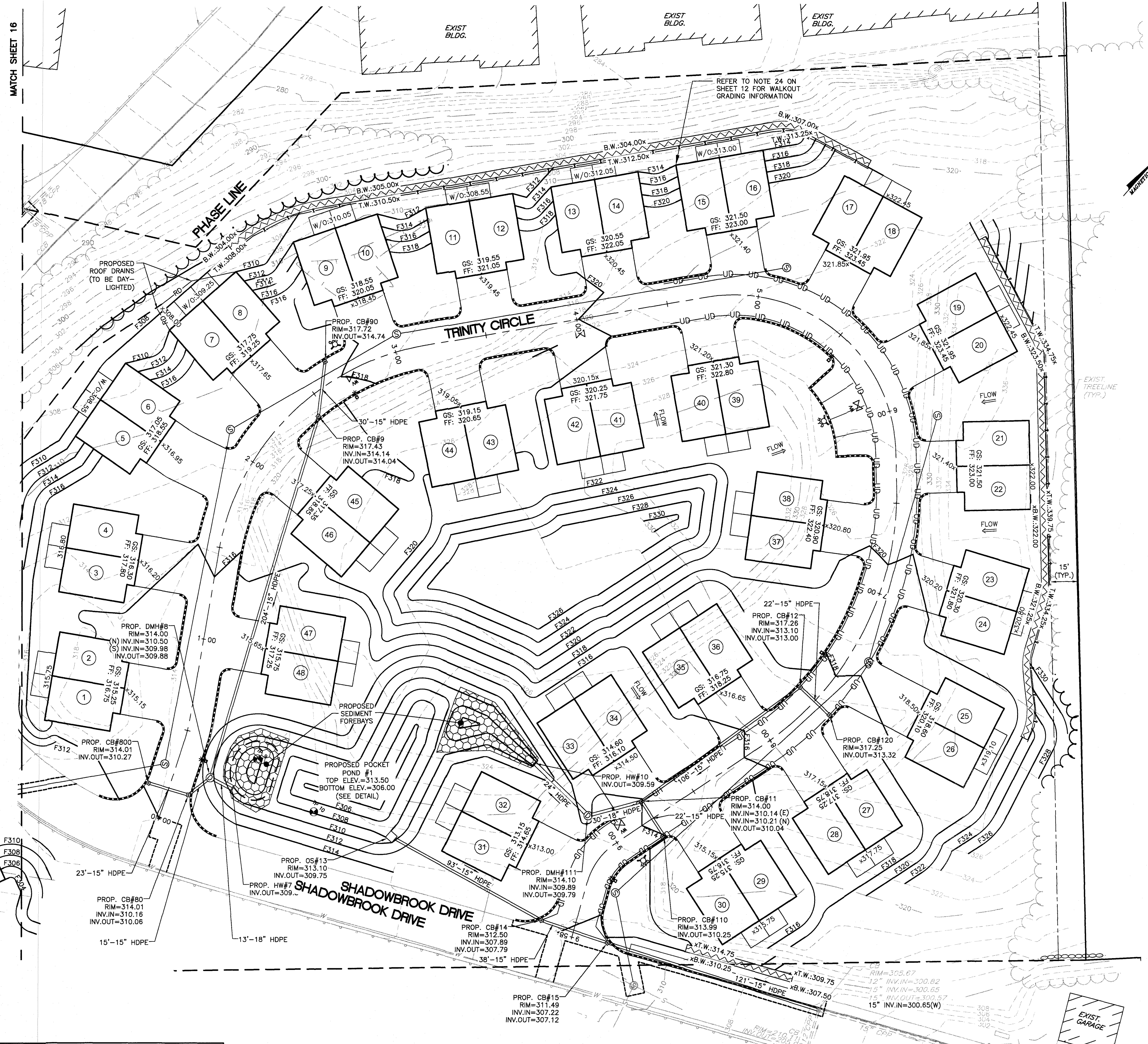
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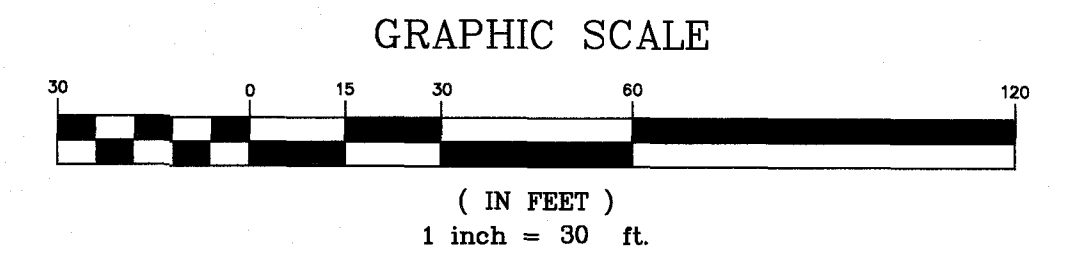
SEE SHEET 1 FOR NOTES & REFERENCE PLANS

LOAM & SEED ALL DISTURBED AREAS (TYP.)



SEE SHEET 1 FOR NOTES & REFERENCE PLANS

SEE SHEET 16 FOR ADDITIONAL NOTES AND LEGEND



GRADING & DRAINAGE PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
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 HILLSBOROUGH COUNTY

OWNER OF RECORD:
 SHEPHERDS HILL HOME OWNERS ASSOCIATION
 C/O GREAT NORTH PROPERTY MANAGEMENT
 3 HOLLAND WAY, SUITE 201
 EXETER, NH 03833

APPLICANT:
 SHEPHERDS HILL, LLC
 253 MAIN STREET
 NASHUA, NH 03060

KMA KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	7/7/22	REVISED PER COMMENTS	ACL

DATE: MAY 2, 2022 SCALE: 1"=30'
 PROJECT NO: 17-0824-1 SHEET 17 OF 51



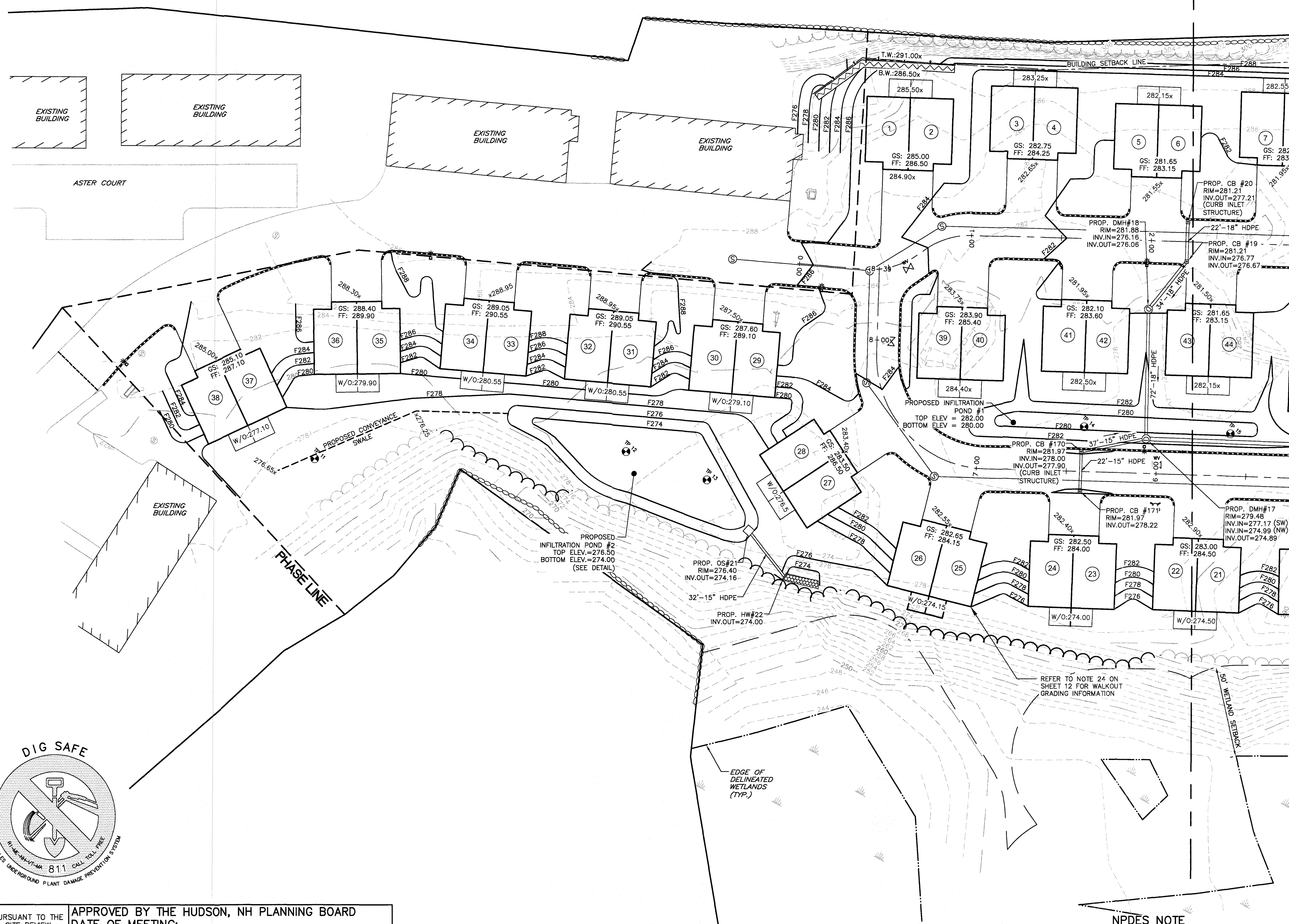
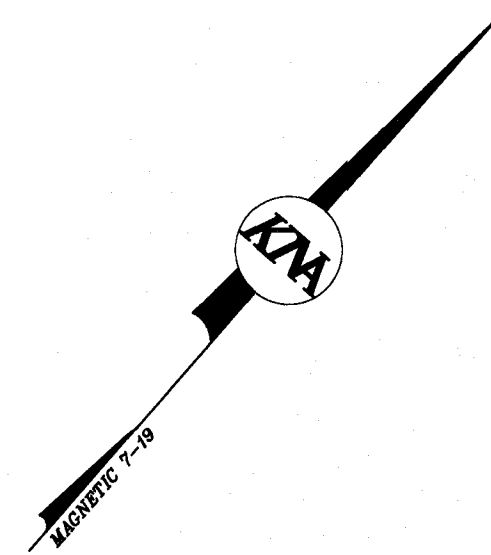
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL

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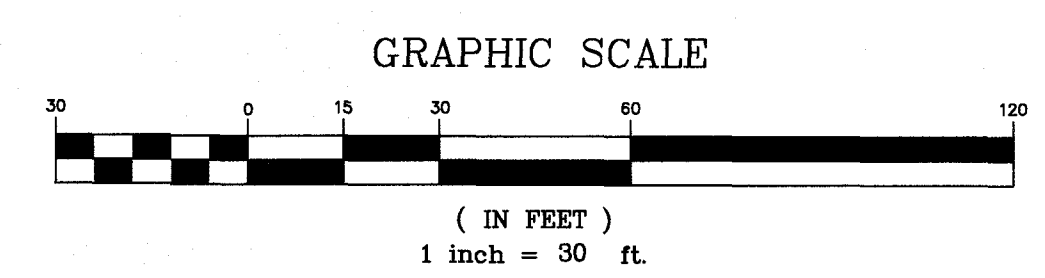
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SEE SHEET 1 FOR NOTES & REFERENCE PLANS

SEE SHEET 16 FOR ADDITIONAL NOTES AND LEGEND



GRADING & DRAINAGE PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD:
 SHEPHERDS HILL HOME OWNERS ASSOCIATION
 C/O GREAT NORTH PROPERTY MANAGEMENT
 3 HOLLAND WAY, SUITE 201
 EXETER, NH 03833

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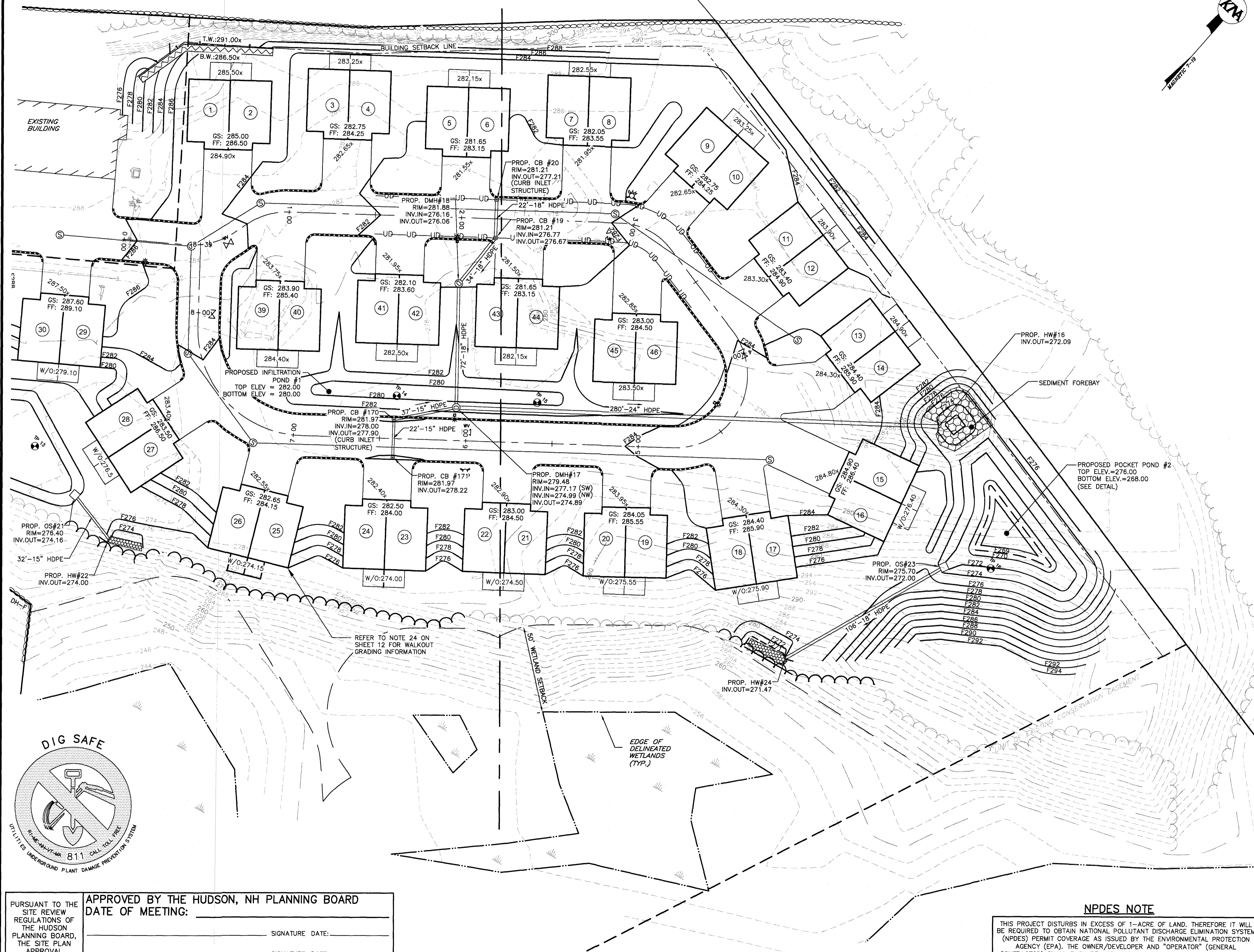
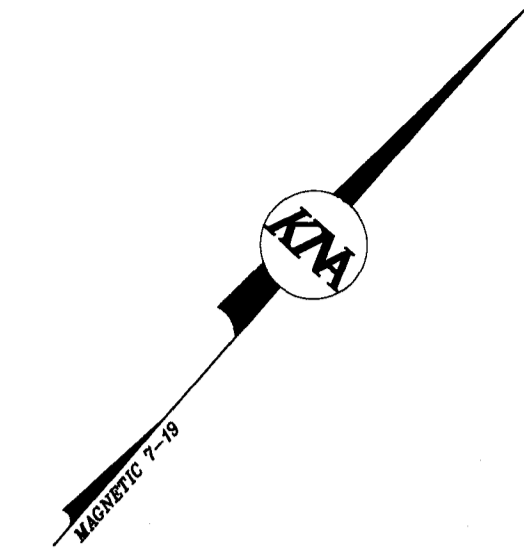
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NPDES NOTE

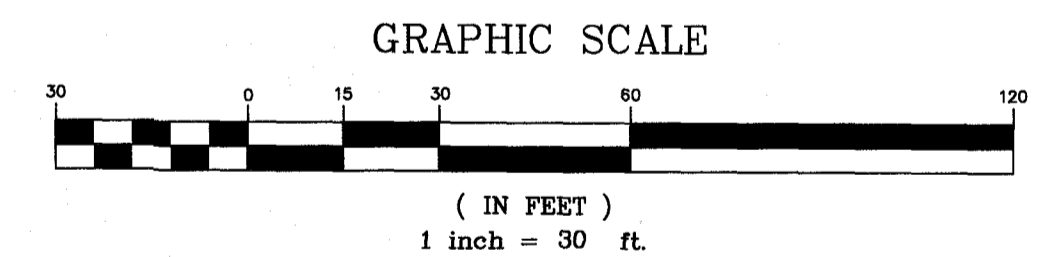
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MATCH SHEET 18



SEE SHEET 1 FOR NOTES & REFERENCE PLANS

SEE SHEET 16 FOR ADDITIONAL NOTES AND LEGEND

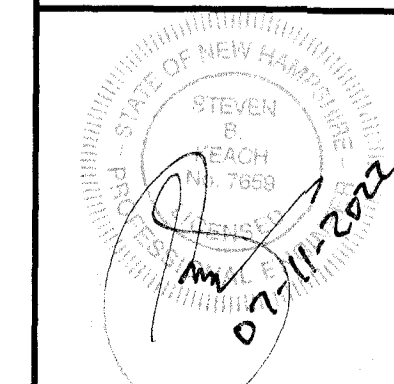


GRADING & DRAINAGE PLAN
SHEPHERDS HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
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PROJECT NO: 17-0824-1 SHEET 19 OF 51



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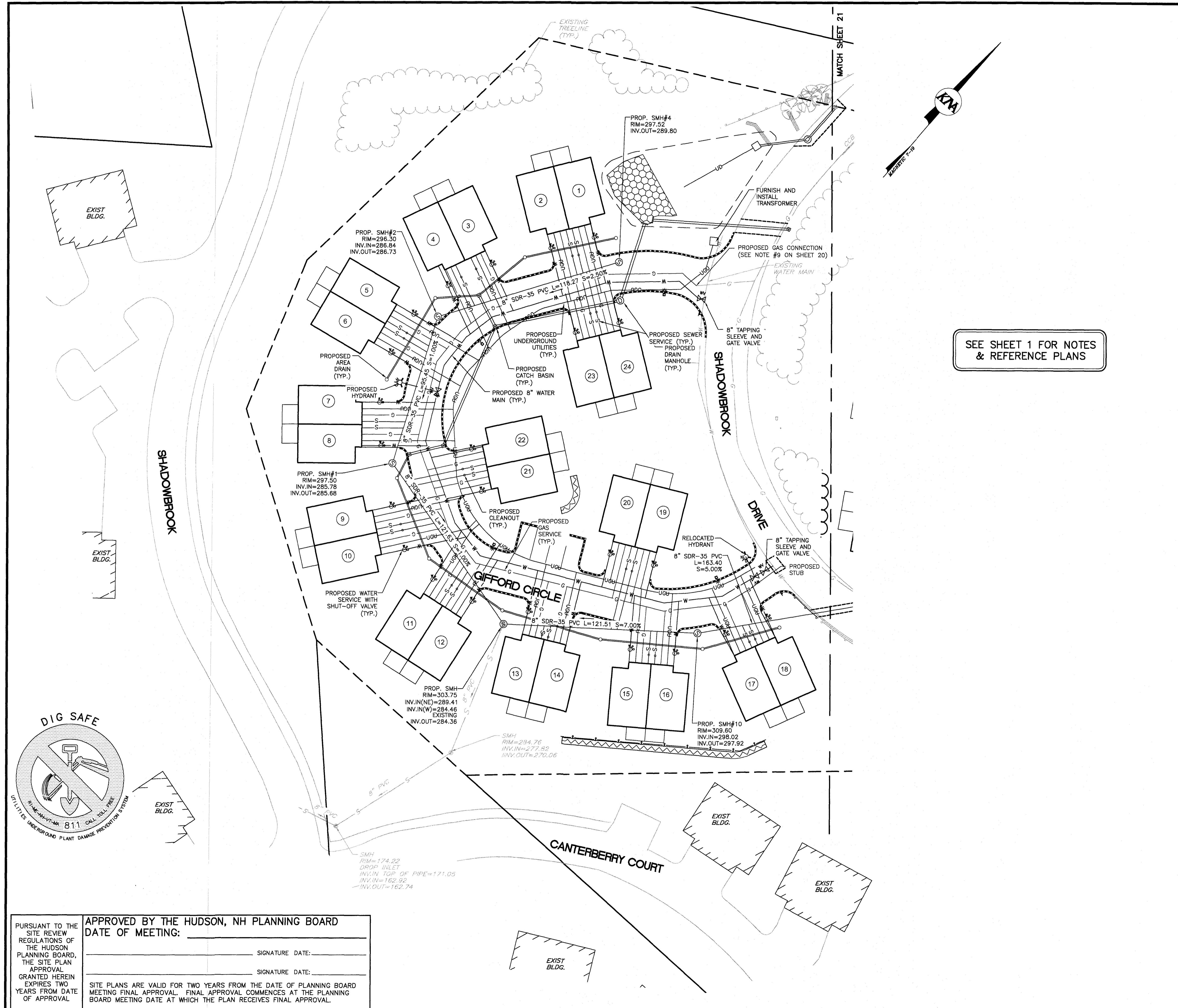
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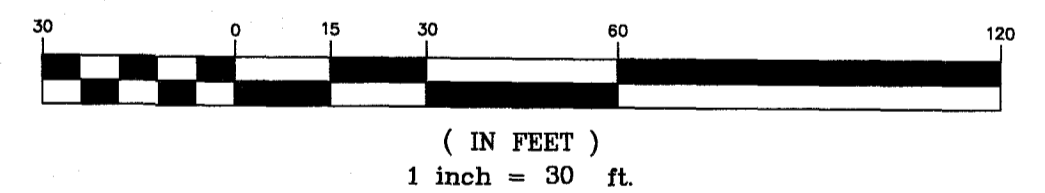
- CONSTRUCTION NOTES:**
1. THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED UTILITY SYSTEMS FOR THIS SITE.
 2. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF HUDSON, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS, AND CONFORM TO THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION, APPROVED AND ADOPTED 2016 ARE HEREBY INCORPORATED BY REFERENCE.
 3. CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS, AND SHALL MEET THE REQUIREMENTS AND SPECIFICATIONS FOR ROAD CONSTRUCTION, PUBLIC WORKS DEPARTMENT, HUDSON, NEW HAMPSHIRE.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION, AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "DIG SAFE" AT 811 AT LEAST 72 HOURS BEFORE DIGGING.
 5. ALL WATER UTILITIES SHALL CONFORM TO TOWN OF HUDSON WATER WORKS REGULATIONS.
 6. THE CONTRACTOR SHALL TAKE CARE WHEN EXCAVATING DUE TO LACK OF RECORD UTILITY INFORMATION. ANY UTILITIES DISCOVERED DURING CONSTRUCTION SHALL BE REPORTED TO THE DESIGN ENGINEER.
 7. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. KEACH-NORDSTROM ASSOCIATES, INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
 8. CONTRACTOR TO VERIFY LOCATION OF UNDERGROUND ELECTRIC, GAS, AND WATER FOR UNIT 29 THROUGH 38 ON CLEARVIEW CIRCLE PRIOR TO START OF CONSTRUCTION OF HOMES.
 9. CONTRACTOR TO DETERMINE THE MOST SUITABLE LOCATIONS FOR WATER AND GAS CONNECTIONS/EXTENSIONS BASED ON THE IN-FIELD LOCATION OF EXISTING UTILITIES.
 10. UNDERGROUND UTILITY SERVICE CONNECTIONS FOR UNITS 29 THROUGH 38 SHALL BE DETERMINED BY THE UTILITY PROVIDER.

SEE SHEET 1 FOR NOTES & REFERENCE PLANS

LEGEND

- GB-F GRANITE BOUND FOUND
- CB-F CONCRETE BOUND FOUND
- IPP-F IRON PIPE FOUND
- UTILITY POLE
- SIGN
- LIGHT
- GAS VALVE
- WATER VALVE
- HYDRANT
- WATER SHUT OFF
- SEWER MANHOLE
- DRAINAGE MANHOLE
- CATCH BASIN
- ABUTTER LINE
- PROPERTY LINE
- OVERHEAD UTILITIES
- GAS LINE
- WATER LINE
- SEWER LINE
- SEWER FORCEMAIN
- DRAINAGE LINE
- TREE LINE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- BUILDING SETBACK
- EXISTING EASEMENT
- SAWCUT LINE
- PROPOSED PAVEMENT
- PROPOSED EASEMENT
- PROPOSED DRAINAGE LINE
- PROPOSED UNDERGROUND UTILITIES
- PROPOSED GAS LINE
- PROPOSED WATER LINE
- PROPOSED SEWER LINE
- PHASE LINE

GRAPHIC SCALE



UTILITY PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060
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KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

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DATE: MAY 2, 2022 SCALE: 1"=30'
 PROJECT NO: 17-0824-1 SHEET 20 OF 51



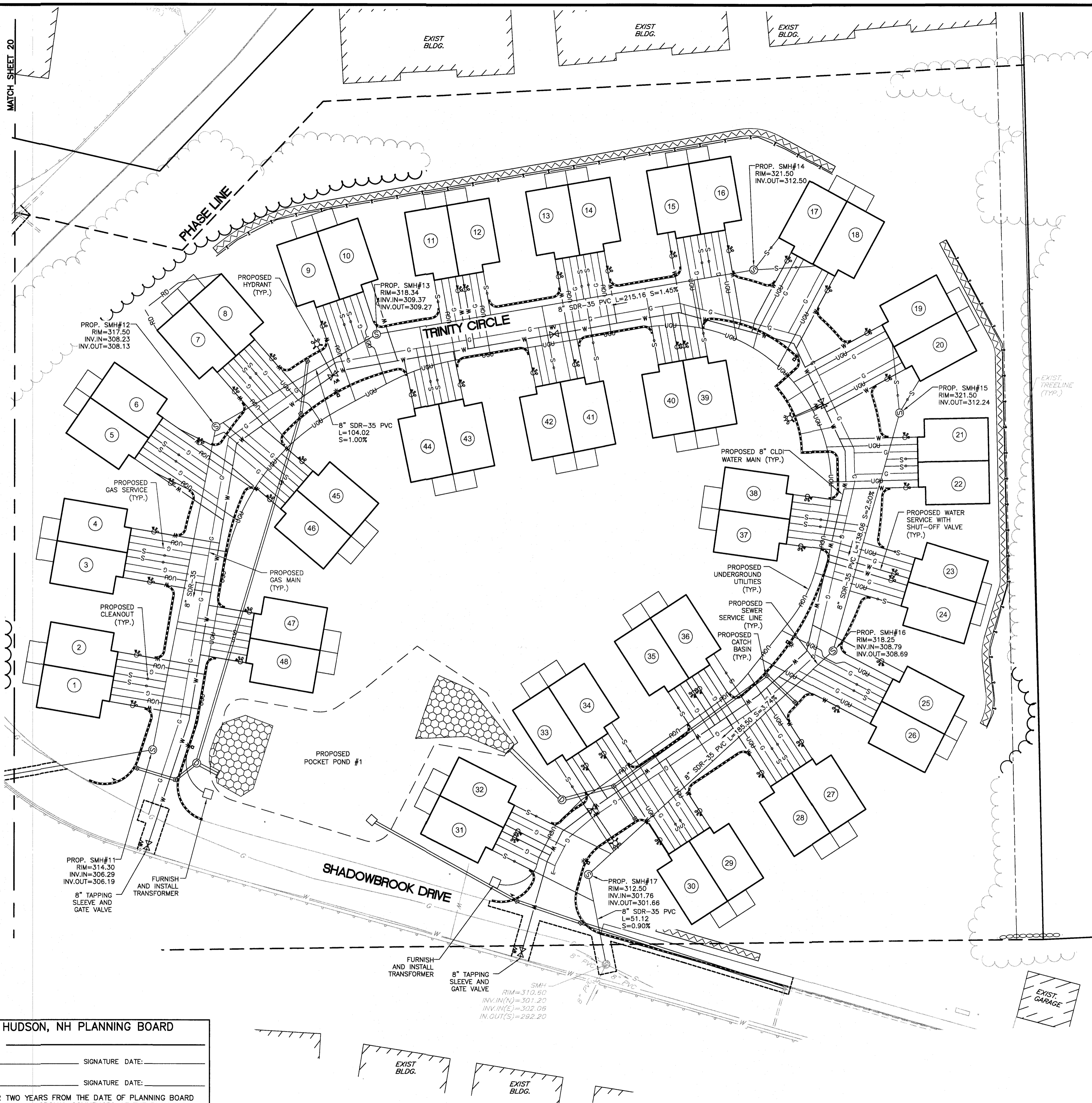
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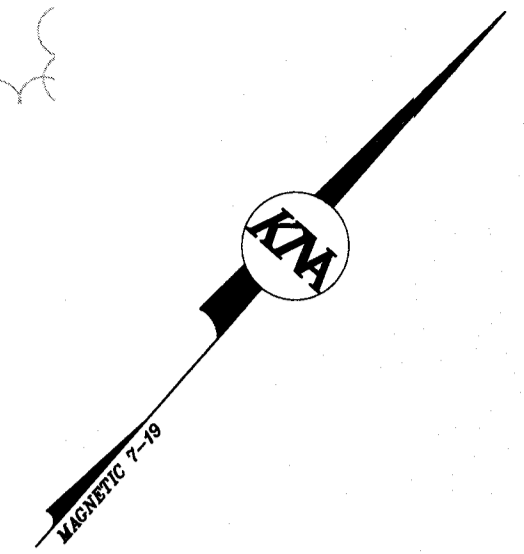
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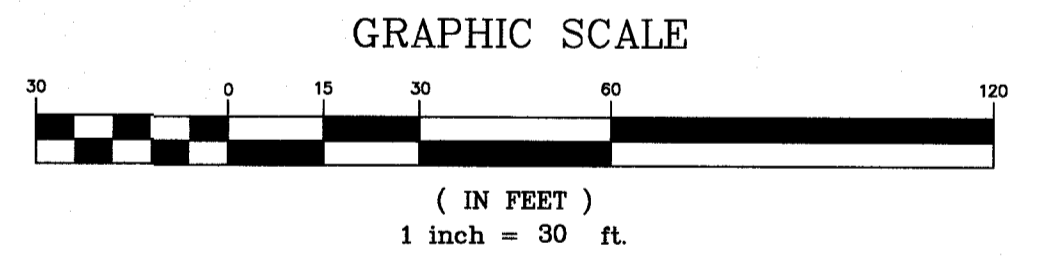


MATCH SHEET 20



SEE SHEET 1 FOR NOTES & REFERENCE PLANS

SEE SHEET 20 FOR ADDITIONAL NOTES AND LEGEND



UTILITY PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD:
 SHEPHERDS HILL HOME OWNERS ASSOCIATION
 C/O GREAT NORTH PROPERTY MANAGEMENT
 3 HOLLAND WAY, SUITE 201
 EXETER, NH 03833

APPLICANT:
 SHEPHERDS HILL, LLC
 253 MAIN STREET
 NASHUA, NH 03060

KM KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2801

REVISIONS			
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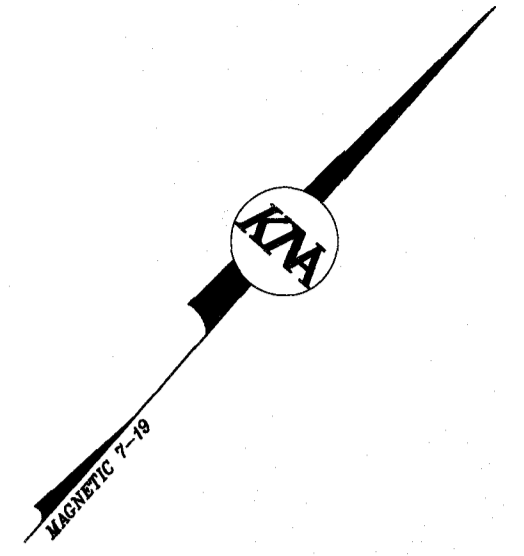
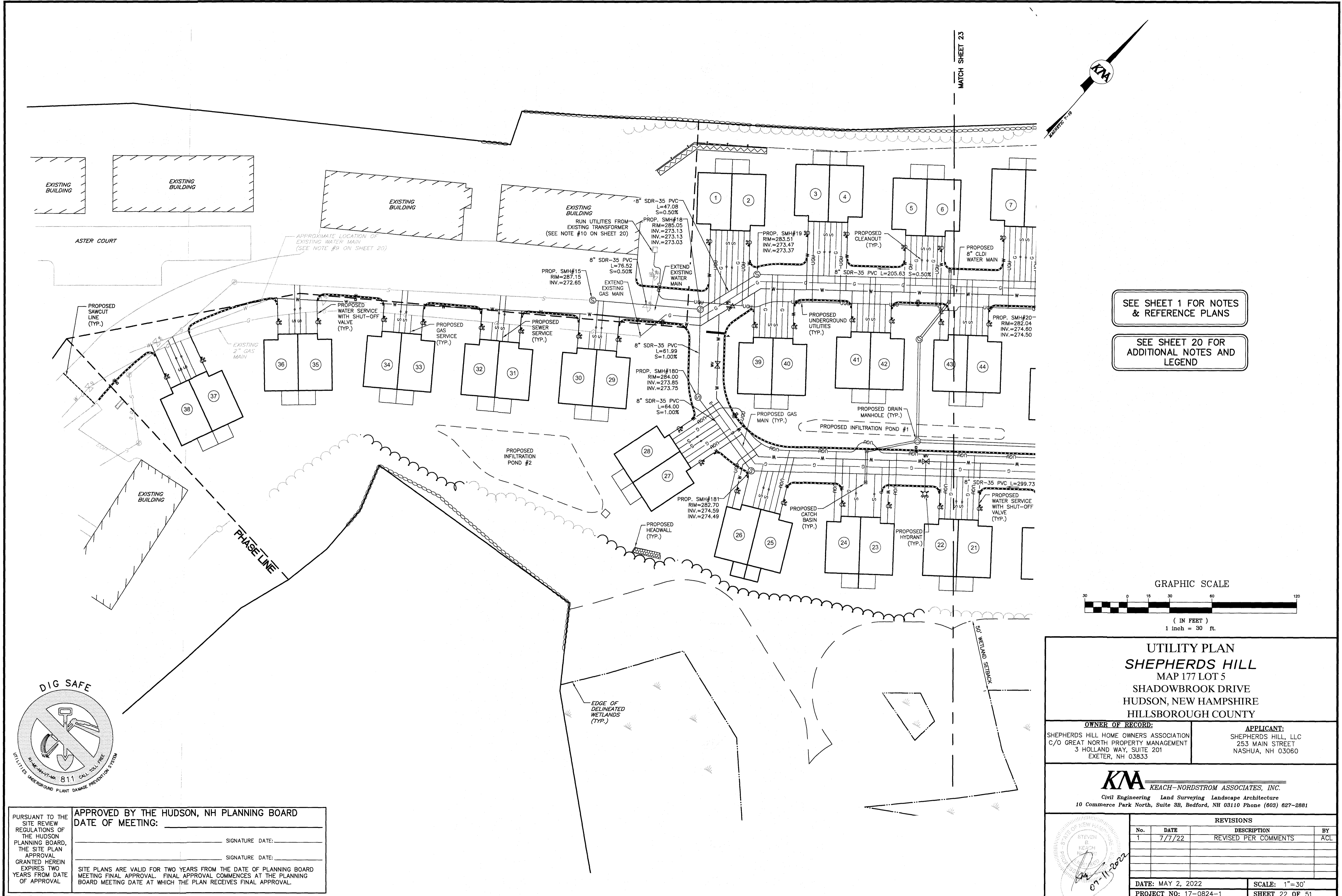
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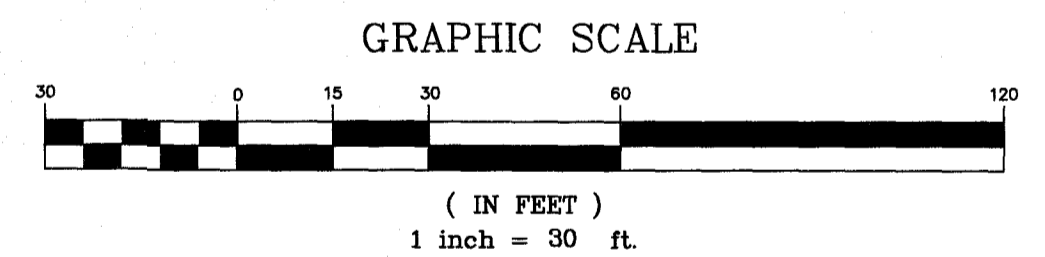
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SEE SHEET 20 FOR ADDITIONAL NOTES AND LEGEND



UTILITY PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060
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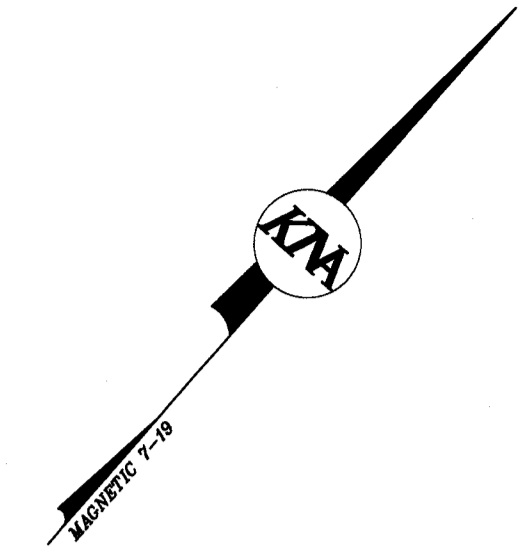
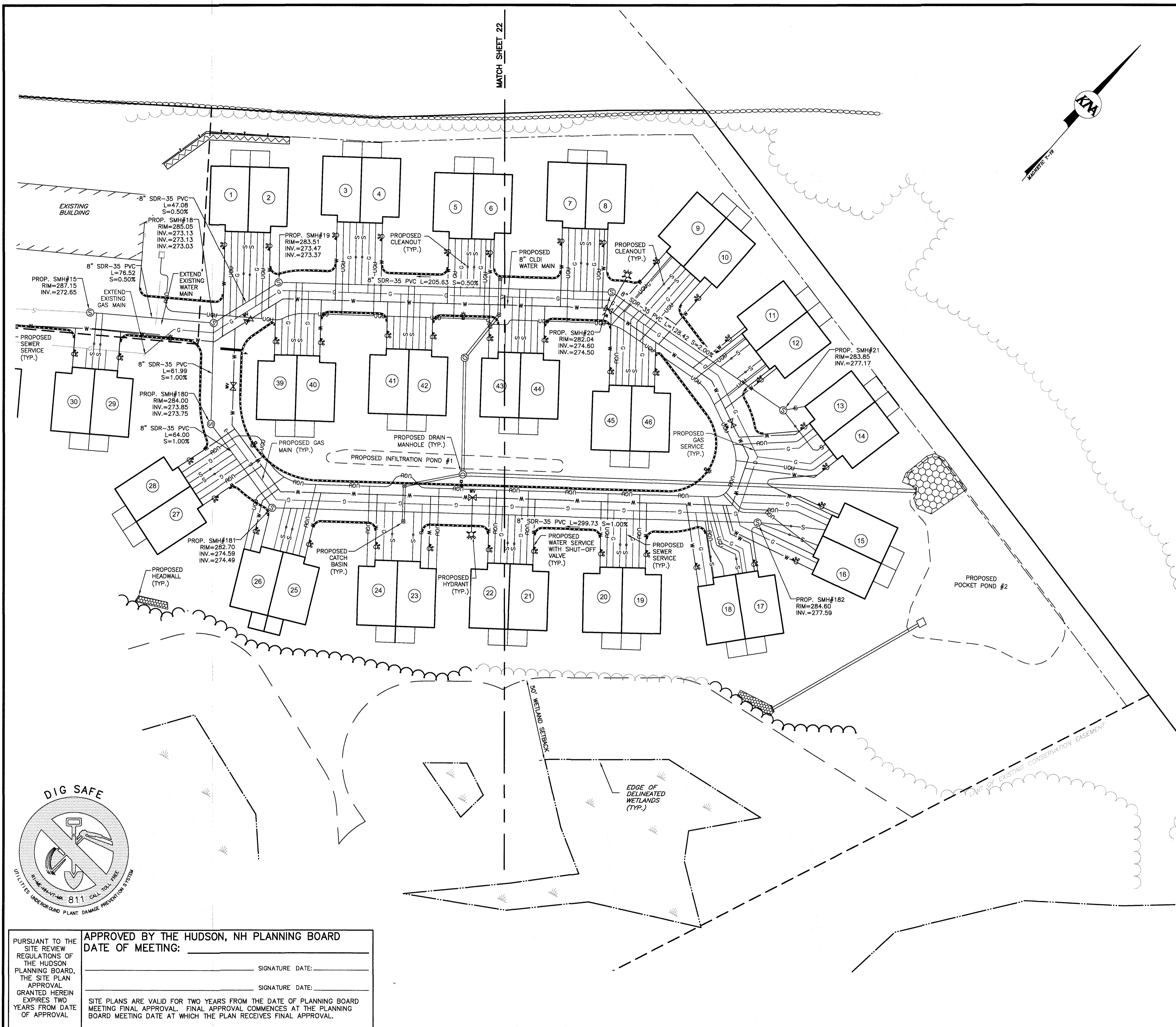
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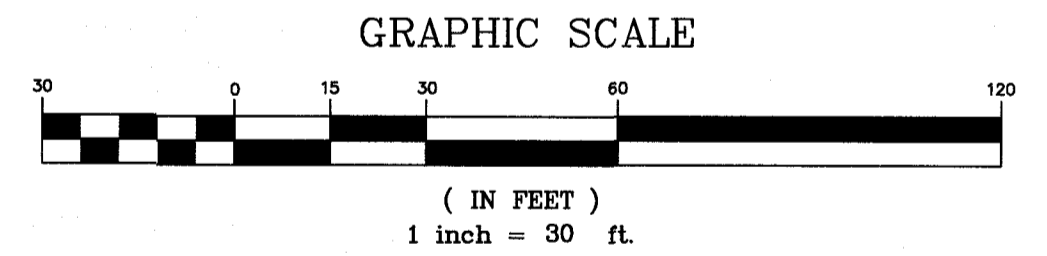
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UTILITY PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD:
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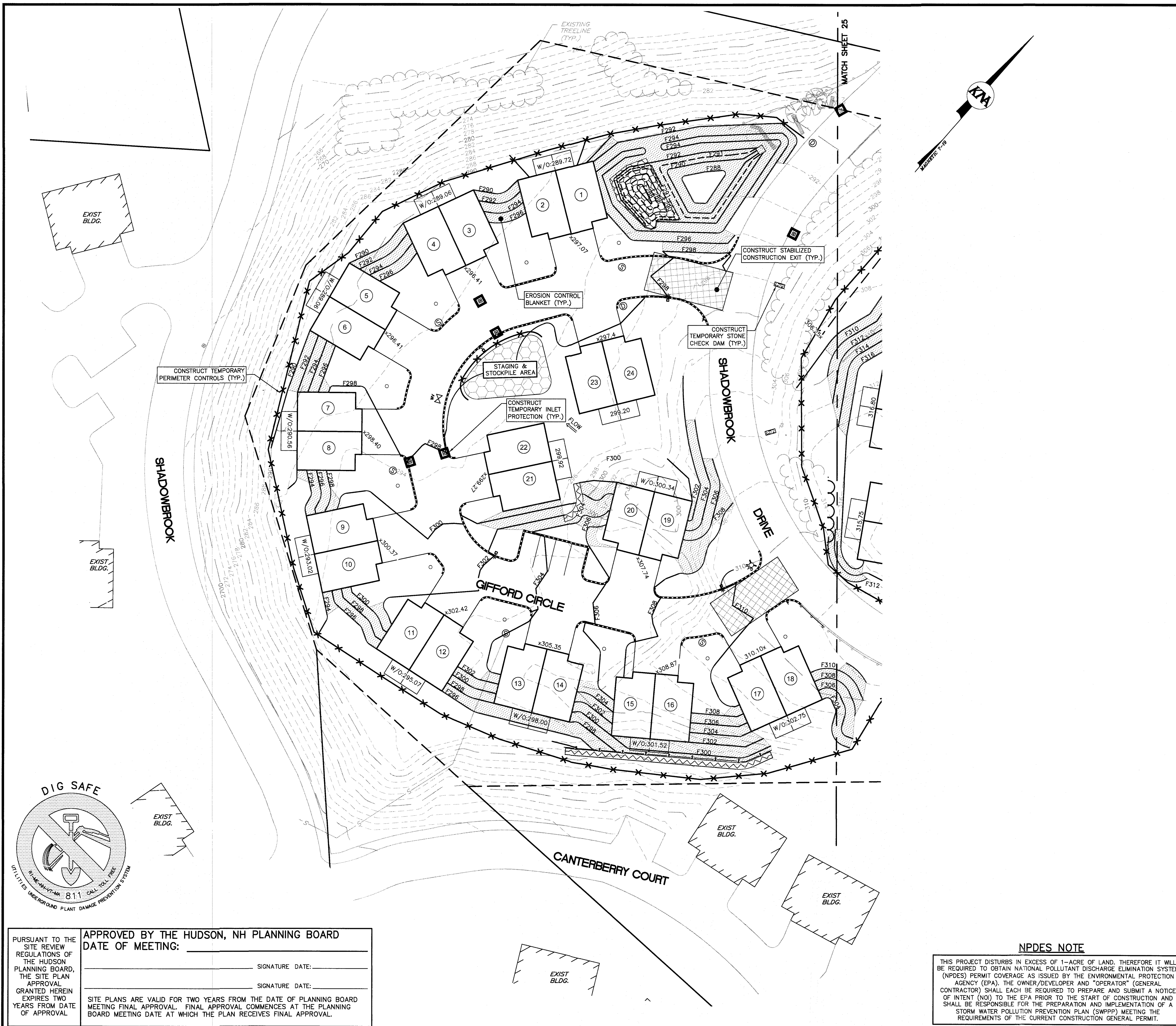
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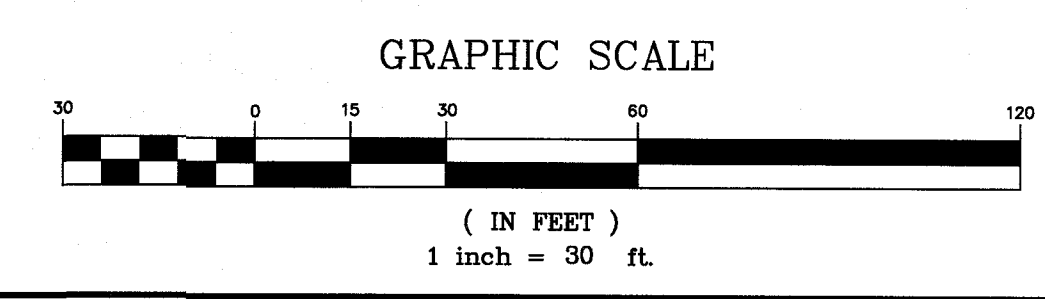
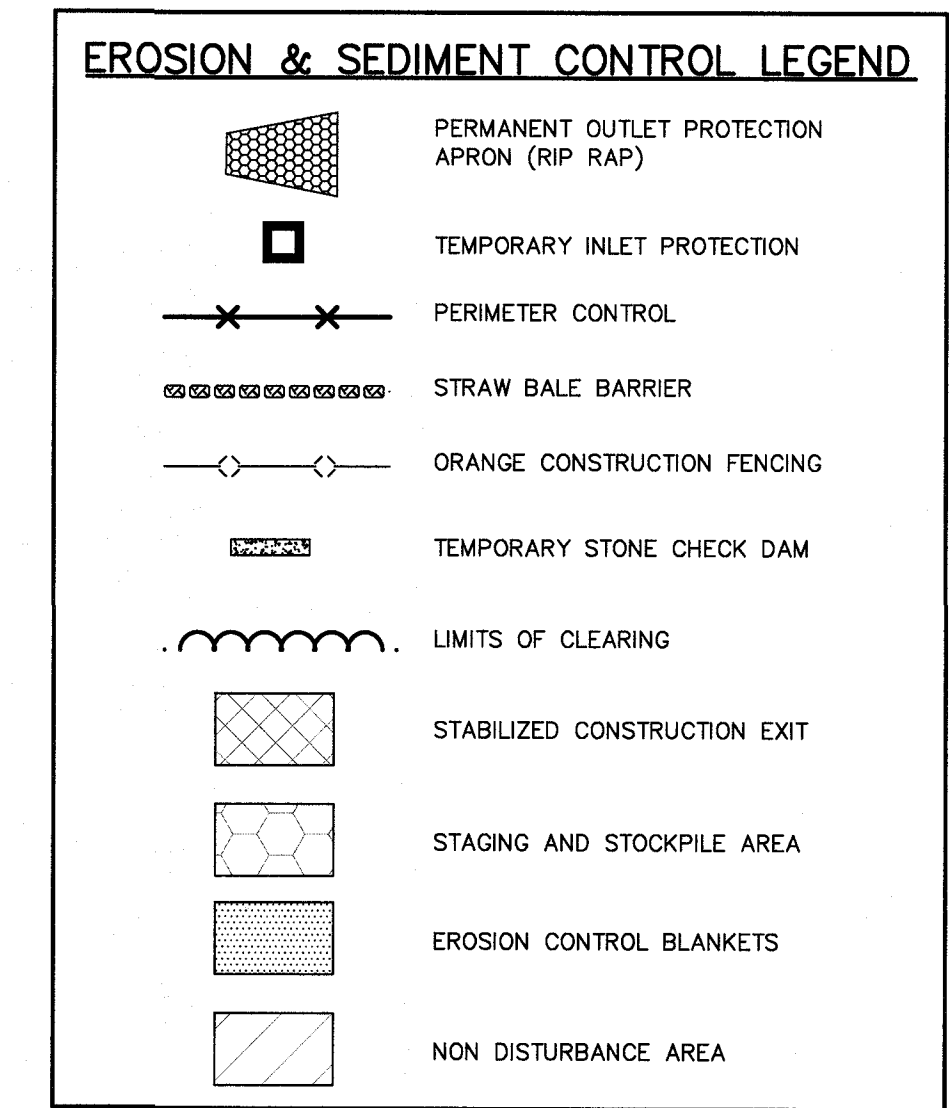
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- EROSION CONTROL NOTES:**
1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE REQUIRED ONSITE TEMPORARY CONSTRUCTION EROSION CONTROL MEASURES AS WELL AS THE PERMANENT EROSION CONTROL MEASURES.
 2. ALL MEASURES IN THE PLAN SHALL MEET AS A MINIMUM THE BEST MANAGEMENT PRACTICES SET FORTH IN VOLUME 3 OF THE NEW HAMPSHIRE STORMWATER MANUAL TITLED "EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION," DATED DECEMBER 2010, AS AMENDED FROM TIME TO TIME.
 3. WHENEVER PRACTICAL, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED OR SUPPLEMENTED. THE STRIPPING OF VEGETATION SHALL BE DONE IN A MANNER THAT MINIMIZES SOIL EROSION.
 4. APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO LAND DISTURBANCE.
 5. THE AREA OF DISTURBANCE SHALL BE KEPT TO A MINIMUM. DISTURBED AREAS REMAINING IDLE FOR MORE THAN 30 DAYS SHALL BE STABILIZED.
 6. MEASURES SHALL BE TAKEN TO CONTROL EROSION WITHIN THE PROJECT AREA. SEDIMENT IN RUNOFF WATER SHALL BE TRAPPED AND RETAINED WITHIN THE PROJECT AREA USING APPROVED MEASURES. WETLAND AREAS AND SURFACE WATERS SHALL BE PROTECTED FROM SEDIMENT.
 7. OFFSITE SURFACE WATER AND RUNOFF FROM UNDISTURBED AREAS SHALL BE DIVERTED AWAY FROM DISTURBED AREAS WHERE FEASIBLE OR CARRIED NON-EROSIVELY THROUGH THE PROJECT AREA. INTEGRITY OF DOWNSIDE DRAINAGE SYSTEMS SHALL BE MAINTAINED.
 8. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN FUNCTIONING CONDITION UNTIL FINAL SITE STABILIZATION IS ACCOMPLISHED.
 9. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AFTER FINAL SITE STABILIZATION. TRAPPED SEDIMENT AND OTHER DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED WITHIN 30 DAYS UNLESS CONDITIONS DICTATE OTHERWISE.
 10. THE TOWN OF HUDSON SHALL RESERVE THE RIGHT TO REQUIRE FURTHER EROSION CONTROL PRACTICES DURING CONSTRUCTION SHOULD THEY FIND IT NECESSARY.
 11. SNOW ACCUMULATED DURING THE WINTER CONSTRUCTION CONDITIONS SHOULD BE STORED IN THE STAGING & STOCKPILE AREA DETERMINED BY THE CONTRACTOR, SURROUNDED BY SILT FENCE.

LOAM & SEED ALL DISTURBED AREAS (TYP.)



EROSION CONTROL PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

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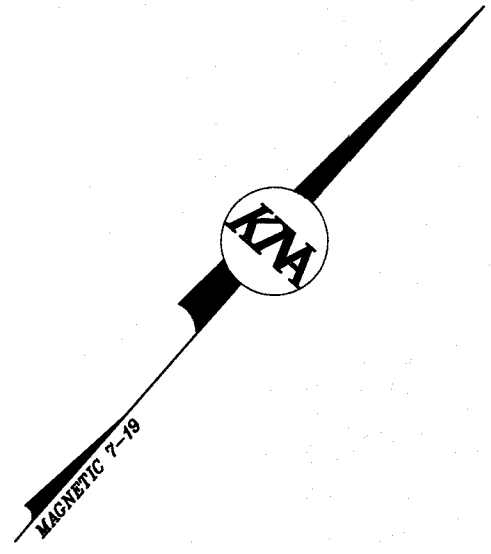
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MATCH SHEET 24

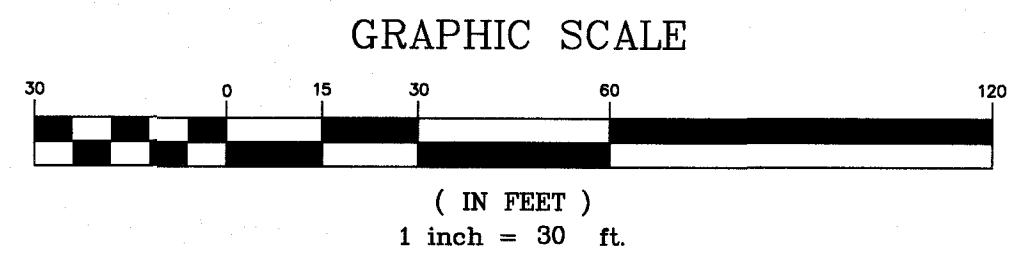


LOAM & SEED ALL DISTURBED AREAS (TYP.)

SEE SHEET 24 FOR NOTES

EROSION & SEDIMENT CONTROL LEGEND

	PERMANENT OUTLET PROTECTION APRON (RIP RAP)
	TEMPORARY INLET PROTECTION
	PERIMETER CONTROL
	STRAW BALE BARRIER
	ORANGE CONSTRUCTION FENCING
	TEMPORARY STONE CHECK DAM
	LIMITS OF CLEARING
	STABILIZED CONSTRUCTION EXIT
	STAGING AND STOCKPILE AREA
	EROSION CONTROL BLANKETS
	NON DISTURBANCE AREA



EROSION CONTROL PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
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 253 MAIN STREET
 NASHUA, NH 03060

KMA KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS

No.	DATE	DESCRIPTION	BY
1	7/7/22	REVISED PER COMMENTS	ACL

DATE: MAY 2, 2022 SCALE: 1"=30'
 PROJECT NO: 17-0824-1 SHEET 25 OF 51

NPDES NOTE

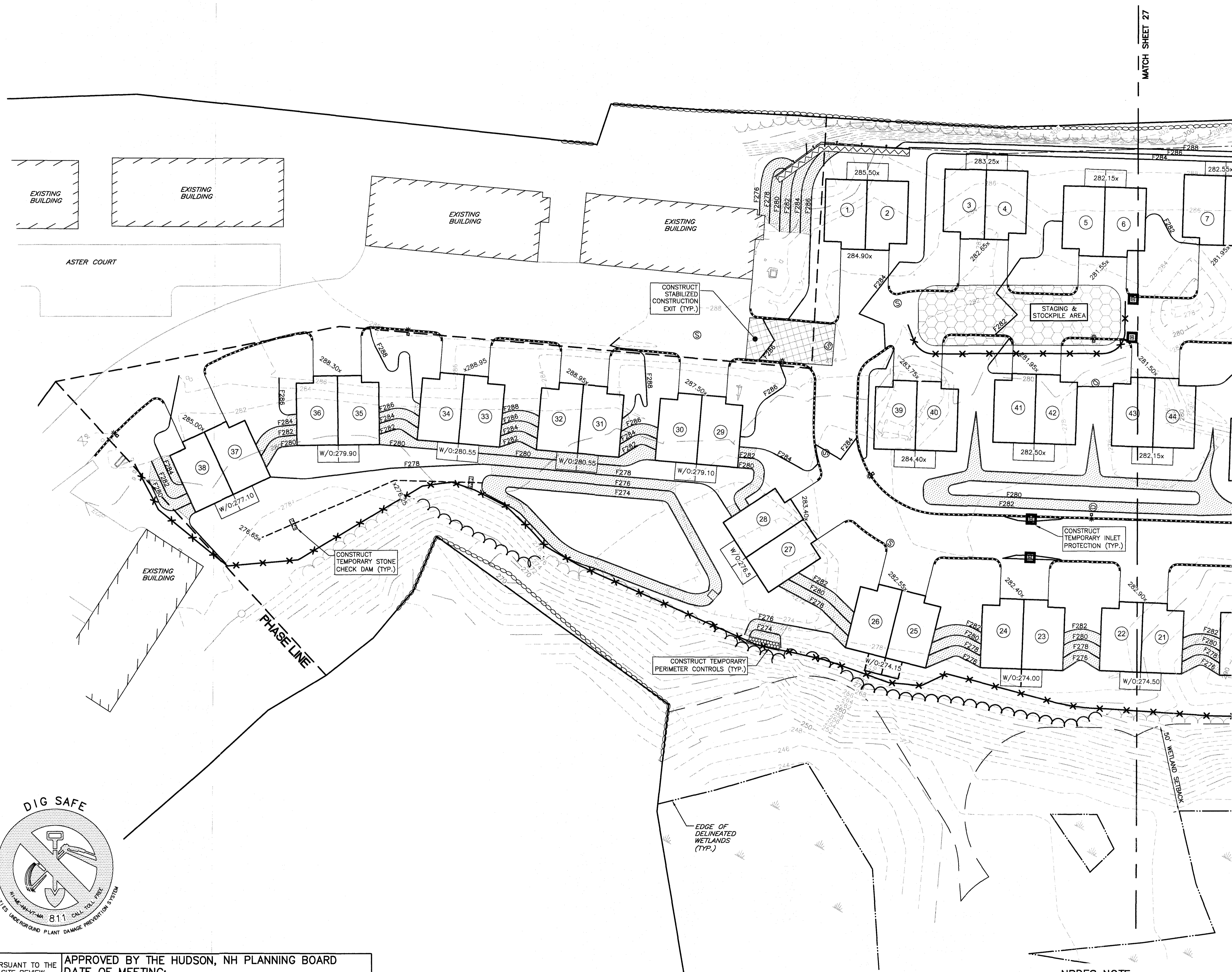
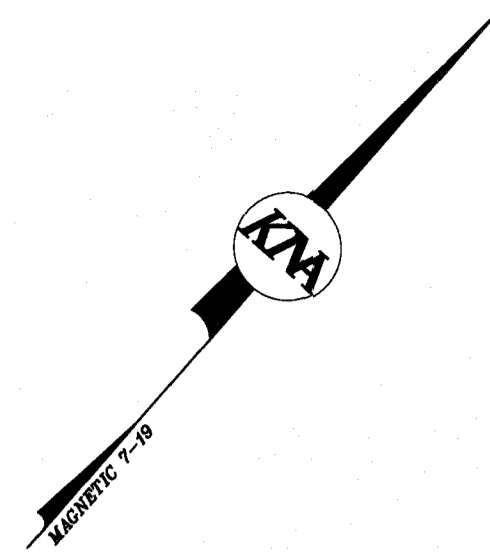
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PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL

APPROVED BY THE HUDSON, NH PLANNING BOARD
 DATE OF MEETING: _____
 _____ SIGNATURE DATE: _____
 _____ SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

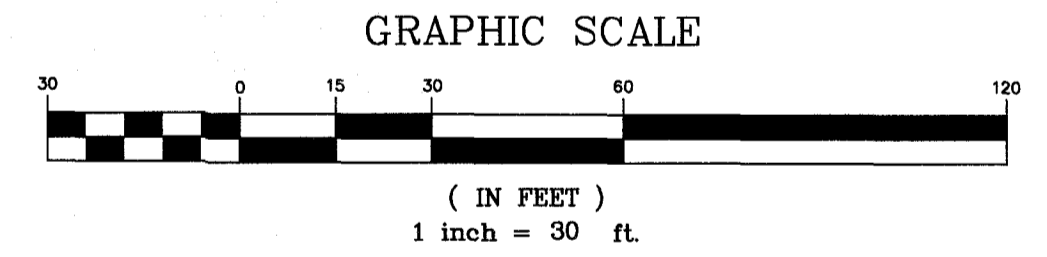


LOAM & SEED ALL
DISTURBED AREAS (TYP.)

SEE SHEET 24 FOR
NOTES

EROSION & SEDIMENT CONTROL LEGEND

- PERMANENT OUTLET PROTECTION APRON (RIP RAP)
- TEMPORARY INLET PROTECTION
- PERIMETER CONTROL
- STRAW BALE BARRIER
- ORANGE CONSTRUCTION FENCING
- TEMPORARY STONE CHECK DAM
- LIMITS OF CLEARING
- STABILIZED CONSTRUCTION EXIT
- STAGING AND STOCKPILE AREA
- EROSION CONTROL BLANKETS
- NON DISTURBANCE AREA



EROSION CONTROL PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD:
 SHEPHERDS HILL HOME OWNERS ASSOCIATION
 C/O GREAT NORTH PROPERTY MANAGEMENT
 3 HOLLAND WAY, SUITE 201
 EXETER, NH 03833

APPLICANT:
 SHEPHERDS HILL, LLC
 253 MAIN STREET
 NASHUA, NH 03060

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 PROJECT NO: 17-0824-1 SHEET 26 OF 51

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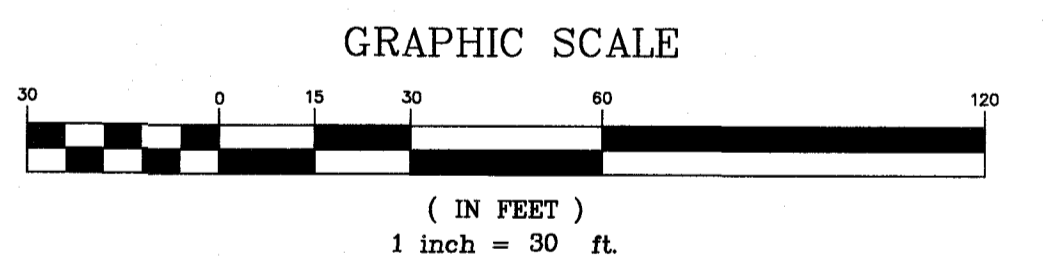


LOAM & SEED ALL DISTURBED AREAS (TYP.)

SEE SHEET 24 FOR NOTES

EROSION & SEDIMENT CONTROL LEGEND

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EROSION CONTROL PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060
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 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

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NPDES NOTE

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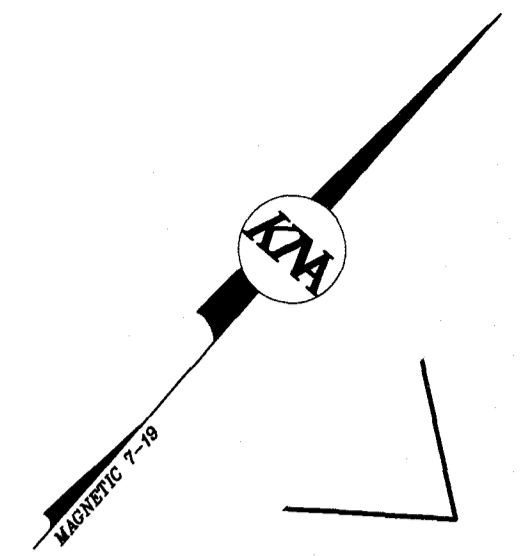
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- DECIDUOUS TREE
- EVERGREEN TREE
- FLOWERING OR ORNAMENTAL TREE
- LARGE EVERGREEN SHRUBS
- SMALL EVERGREEN SHRUBS
- PERENNIALS
- ORNAMENTAL GRASS
- GROUND COVER
- LARGE DECIDUOUS SHRUBS
- SMALL DECIDUOUS SHRUBS
- MASSING OF PERENNIALS
- NEW SHADE TREE

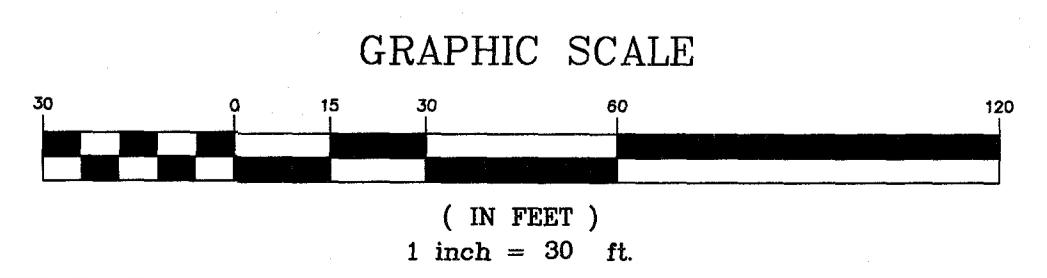
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LANDSCAPE NOTES:

- ALL PLANT MATERIALS USED SHALL BE NURSERY STOCK AND SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF INSTALLATION. ANY MATERIAL WHICH DIES OR DOES NOT SHOW HEALTHY APPEARANCE WITHIN THIS TIME SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE; WITH SAME WARRANTY REQUIREMENTS AS THE ORIGINAL. WARRANTIES TYPICALLY DO NOT COVER LOSS DUE TO INSECT INFESTATION OR MECHANICAL DAMAGE (I.E. SNOW STORAGE).
- IF THE SOIL CONDITIONS ARE EXTREMELY SANDY, ALL TREES SHALL HAVE A 6" LAYER OF COMPACTED TOPSOIL PLACED IN THE BASE OF THE PLANT PIT AS A MOISTURE RETENTION LAYER. THE PLANT PIT SIDEWALLS SHALL BE OVER EXCAVATED BY AN ADDITIONAL 12" BEYOND THE NORMAL OUTSIDE RADIUS OF THE HOLE. A TOPSOIL MIXTURE SHALL BE USED TO BACKFILL THE HOLE AS FOLLOWS: ORGANIC TOPSOIL, AMENDED WITH 10% WOOD ASH, 10% MANURE, 30% COMPOST AND A GRANULAR HYDROGEL TO ABSORB AND RETAIN WATER.
- PLANTING BEDS AND SAUCERS SHALL RECEIVE A FOUR INCH (4") MINIMUM THICKNESS OF PINE/HEMLOCK BARK MULCH OVER A 5 OZ. POLYPROPYLENE WEED CONTROL FABRIC.
- PAVEMENT AND ROAD BASE MATERIAL ENCOUNTERED IN ANY LAWN OR PLANTING BED SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AND SUITABLE AMENDED SOIL INSTALLED AS SPECIFIED ABOVE.
- NOT LESS THAN FOUR INCHES (4") OF LOAM SHALL BE RESTORED TO ALL DISTURBED AREAS INTENDED FOR LAWNS, PLANTING BEDS OR FOR NATURAL RE-GROWTH.
- LANDSCAPING PLAN TO MEET ALL APPLICABLE TOWN REGULATIONS IN SECTION 10 OF THE TOWN OF MERRIMACK'S SITE PLAN REGULATIONS INCLUDING BUFFER REQUIREMENTS AS AGREED UPON WITH THE PLANNING BOARD TO STAFF'S DISCRETION.
- ONLY LOW PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZERS SHALL BE USED ON LAWN AREAS.

LANDSCAPE IRRIGATION SYSTEM DESIGN NOTES:

- LANDSCAPE/IRRIGATION SYSTEM CONTRACTOR SHALL FURNISH AND INSTALL AN UNDERGROUND IRRIGATION SYSTEM CAPABLE OF PROVIDING SEASONAL COVERAGE OVER THOSE AREAS DESIGNATED ON THIS PLAN.
- PRIOR TO THE INSTALLATION OF IRRIGATION SYSTEM, LANDSCAPE/IRRIGATION SYSTEM CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS OF SYSTEM TOGETHER WITH CATALOGUE CUTS OF ALL HEADS, VALVING, CONTROLLER EQUIPMENT, PIPING AND BACKFLOW PREVENTION EQUIPMENT AND APPURTENANCES TO DESIGN ENGINEER FOR REVIEW AND APPROVAL. INSTALLATION OF SYSTEM SHALL NOT COMMENCE UNTIL DESIGN ENGINEER HAS APPROVED SAID SHOP DRAWINGS IN WRITING AND INFORMED THE GENERAL CONTRACTOR OF THE SAME.
- BACKFLOW PREVENTION AND WATER SUPPLY CONNECTIONS TO CONFORM TO THE REQUIREMENTS OF THE WATER PROVIDER.

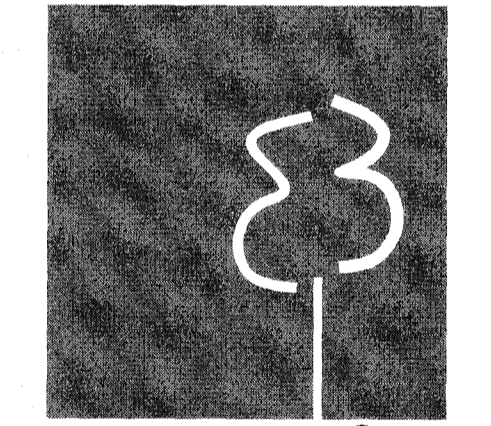
LOAM & SEED ALL DISTURBED AREAS (TYP.)

LANDSCAPE CALCULATIONS

PROPOSED PAVED AREA = 110,740 SF
 PROPOSED PARKING SPACES = _____
 REQUIRED SHADE TREES:
 1 SHADE TREE / 1,600 SF OF PAVED AREA OR, 1 SHADE TREE / 5 PARKING SPACES
 110,740 / 1,600 = 69 SHADE TREES REQUIRED
 TREES PROVIDED = 69 SHADE TREES + 12 EVERGREENS PROPOSED = 81 TREES TOTAL
 REQUIRED SHRUBS:
 1 SHRUB / 200 SF OF PAVED AREA OR, 1.6 SHRUBS / 1 PARKING SPACES
 110,740 / 200 = 554 SHRUBS REQUIRED
 SHRUBS PROVIDED = 840 SHRUBS PROPOSED AROUND UNITS

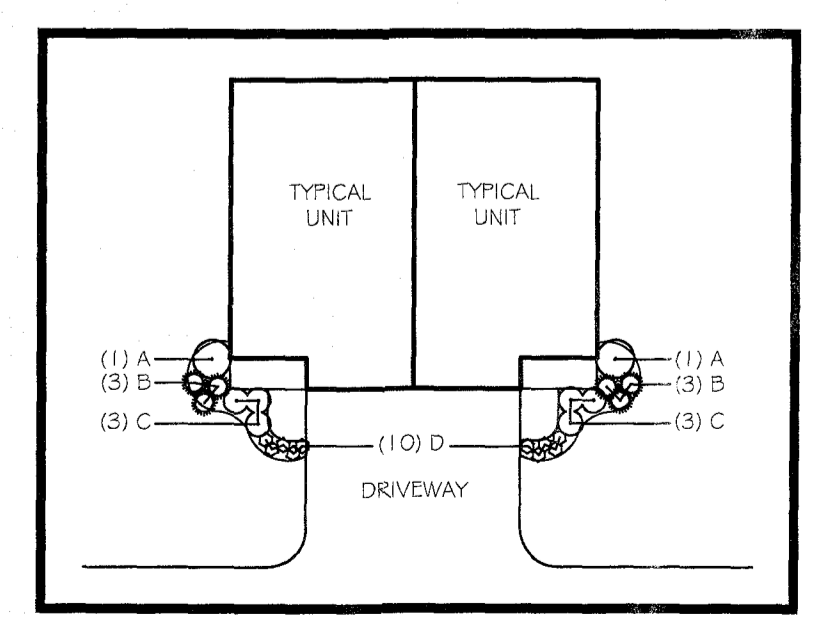
UNIT PLANTING PLANT SCHEDULE			
SYMBOL	PLANT NAME - SCIENTIFIC / COMMON	SIZE	QUANTITY
A	Hydrangea sp. 'Pink Winky' / Pink Winky Panicle Hydrangea	2-2.5' B&B	2
	Syringa meyeri 'Palibin' / Dwarf Korean Lilac	2-2.5' B&B	
	Viburnum carlesii / Mayflower Viburnum	2-2.5' B&B	
B	Calamagrostis s. 'Karl Foerster' / Karl Foerster Feather Reed Grass	#2	6
	Panicum virgatum 'Shenandoah' / Shenandoah Switch Grass	#2	
	Hydrangea paniculata 'Bobo' / Bobo Panicle Hydrangea	#2	
C	Physocarpus opulifolius 'Burgundy Candy' / Burgundy Candy Ninebark	#2	6
	Spiraea bumalda 'Goldflame' / Goldflame Spirea	#2	
	Hemerocallis 'Happy Returns' / Happy Returns Daylily	#1	
D	Nepeta 'Walker's Low' / Walker's Low Catmint	#1	10
	Rusbeckia fulgida 'Goldstrum' / Goldstrum Black-Eyed Susan	#1	

PLANTING SCHEDULE					
Botanical Name/ Common Name		Size	Label	Quantity	Mature Height
Trees					
Acer rubrum 'Redpointe' / Redpointe Red Maple		2.5-3" CAL.	AR	27	40-60'
Picea glauca / White Spruce		6-7' B&B	PG	12	40-60'
Platanus x acerifolia 'Exclamation' / Exclamation Planetree		2.5-3" CAL.	PA	19	40-60'
Tilia cordata 'Greenspire' / Greenspire Littleleaf Linden		2.5-3" CAL.	TC	22	40-60'



terrain
planning & design llc

311 kast hill road
hopkinton nh 03229
603. 746. 3512
terrainplanning.com



LANDSCAPE PLAN
SHEPHERDS HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060
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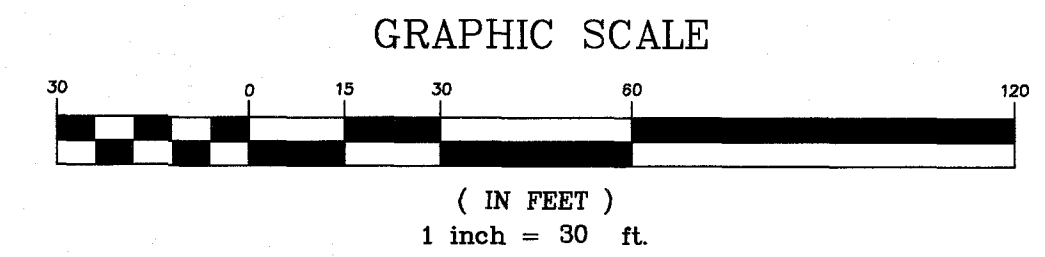
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PROJECT NO: 17-0824-1 SHEET 28 OF 51



SEE SHEET 28 FOR LANDSCAPE NOTES & LEGEND



LANDSCAPE PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

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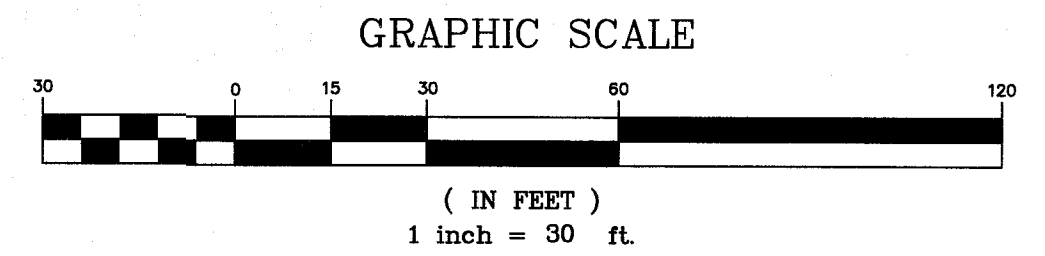
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SEE SHEET 28 FOR LANDSCAPE NOTES & LEGEND



LANDSCAPE PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

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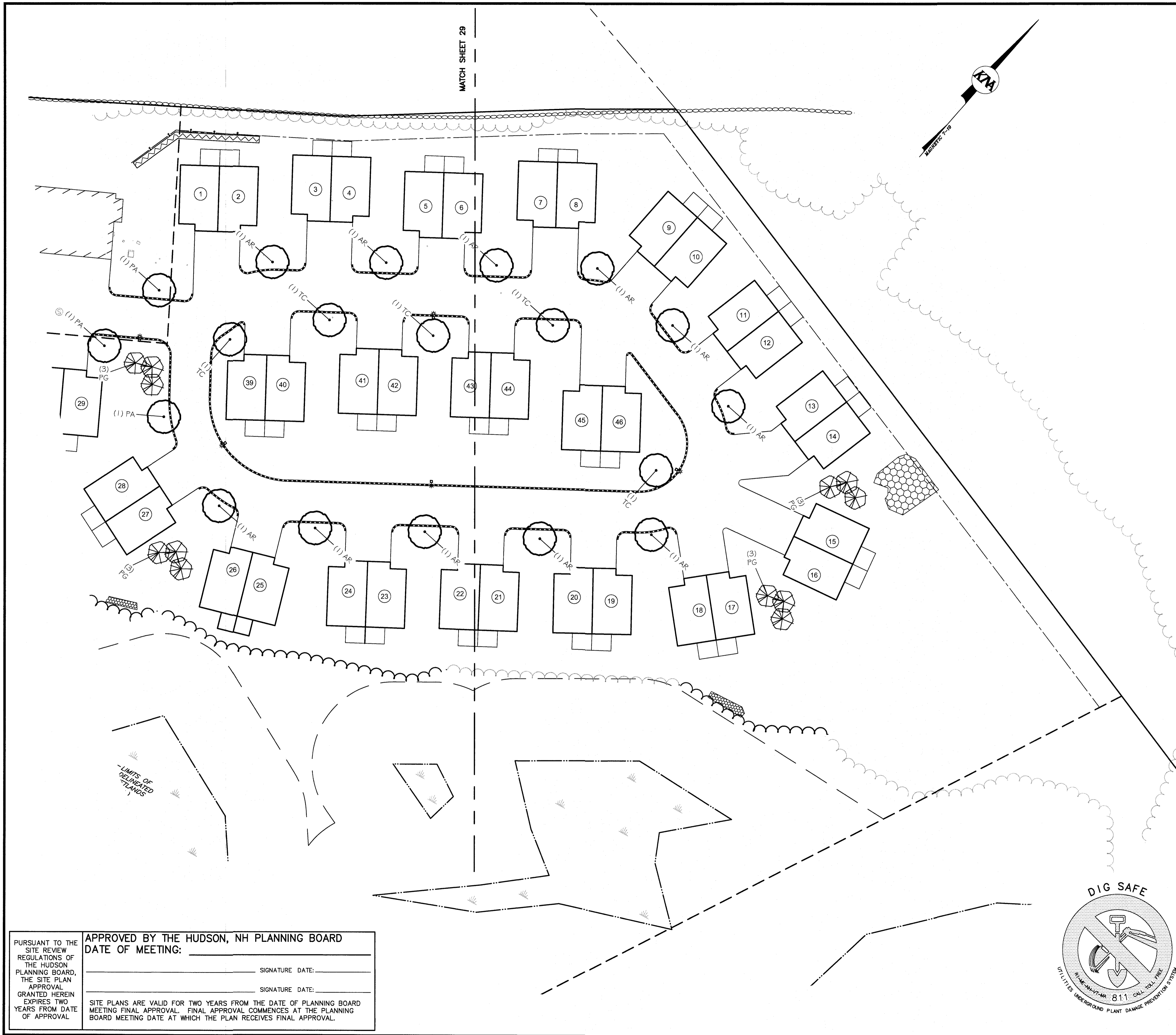
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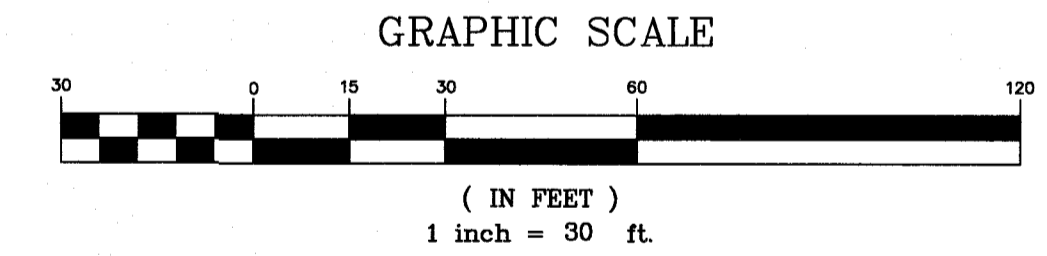
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SEE SHEET 28 FOR LANDSCAPE NOTES & LEGEND



LANDSCAPE PLAN
SHEPHERDS HILL
 MAP 177 LOT 5
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 HUDSON, NEW HAMPSHIRE
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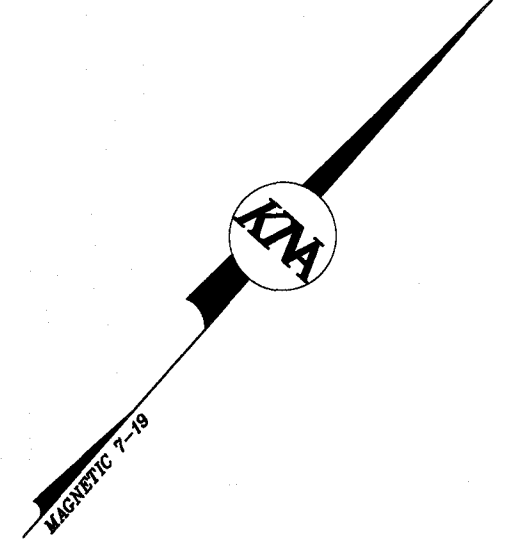
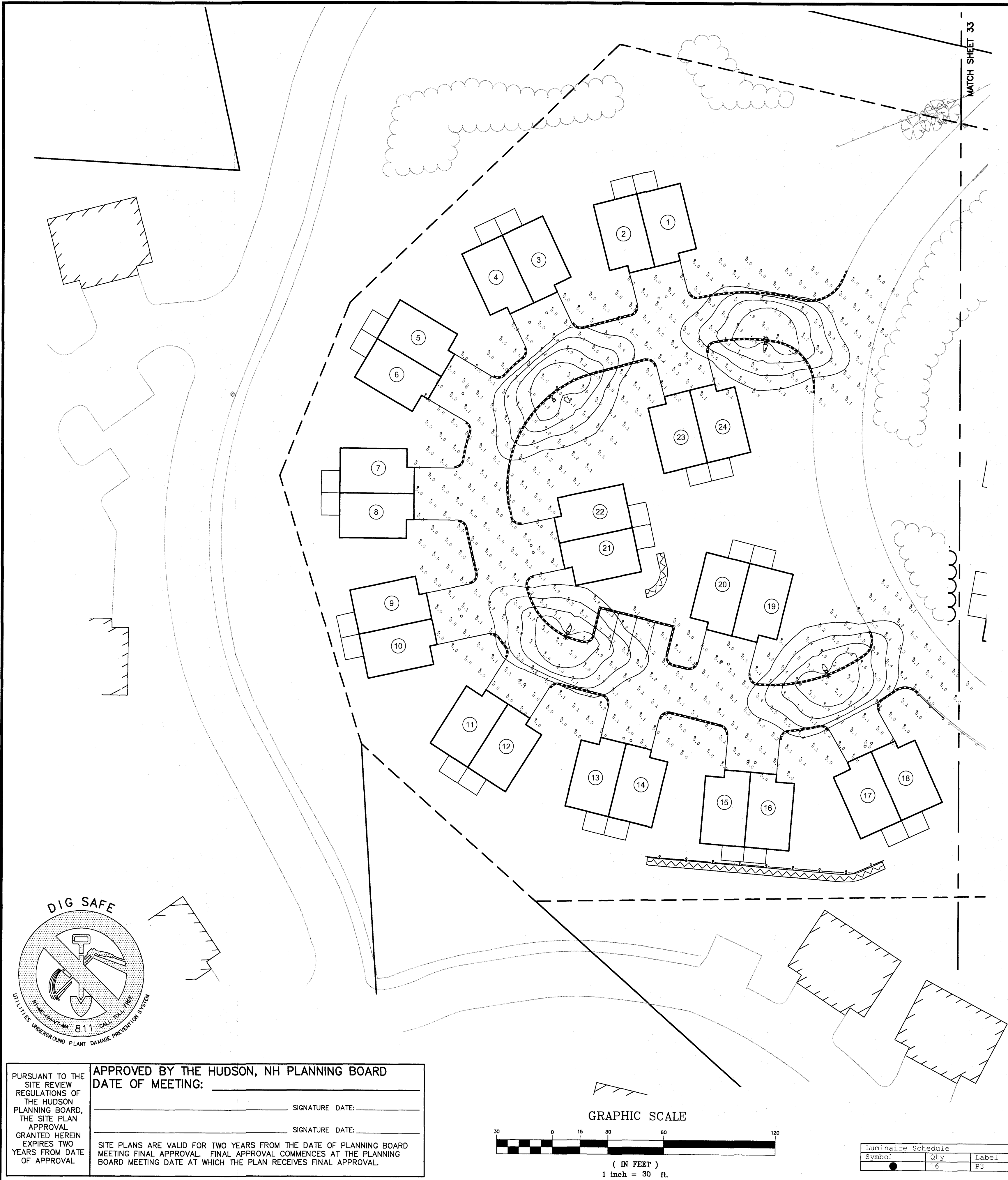
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 PROJECT NO: 17-0824-1 SHEET 31 OF 51



- LIGHTING NOTES:**
1. ALL LIGHTING FIXTURES AND POLES SHALL MATCH PREVIOUS PROJECT PHASE(S) EXISTING LIGHTING IN COLOR, SHAPE AND DESIGN TO THE MAXIMUM EXTENT PRACTICABLE.
 2. LIGHTS SHALL BE ON DURING ALL NIGHTTIME HOURS.
 3. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION REGARDING LIGHT INSTALLATION AND WIRING REQUIREMENTS.
 4. ALL PROPOSED LIGHTING SHALL MEET IES FULL CUT-OFF CLASSIFICATION.
 5. ALL LIGHTING MUST COMPLY WITH THE TOWN OF HUDSON'S SUBDIVISION/SITE PLAN REGULATIONS.
 6. ALL FINAL SITE LIGHTING AND CONDUIT LAYOUT SHALL BE COORDINATED WITH LOCAL UTILITY PROVIDER.
 7. LIGHT POLES SHOULD BE PLACED 4' FROM EDGE OF PAVEMENT WHEREVER POSSIBLE.
 8. UTILITY CONTACT INFORMATION:
PSNH
(800) 362-7764
PSDESK@PSNH.COM
DERRY WORK CENTER
16A STREET

PEMCO LIGHTING PRODUCTS Est. 1982
A QSSI COMPANY

PLB210

DECORATIVE ALUMINUM POLES

Specifications and Features:

- 3" - 8" to 12" standard heights
- Straight, smooth or fluted poles.

Shaft: Smooth or fluted shaft uses 6061-T5 aluminum alloy while tapered poles use 6061 aluminum alloy.

Structural Base: A306 alloy sand cast aluminum, four bolt base. An extra large access cover is included. A grounding lug is also provided.

Tenons: T300-Standard for post top (2 7/8" OD x 3' tall)
T305-Standard for shepherd's crook arms (2 7/8" OD x 5.5' tall)
SLV-Male sleeve welded to pole, ready for extension/arm set-up (consult factory)

Accessories: CAP-4x4 tenon, removable cap
PF-Decorative pole top finial (optional adder)

Anchor Bolts: Standard with each pole includes four 3/4" x 25" steel hot dip galvanized anchor bolts each with two nuts, two flat washers and one lock washer.

Accessories: GFCI-Weatherproof GFI in-use cover, cast aluminum (must indicate location)
GFI-Weatherproof GFI in-use cover, plastic (must indicate location)
DBS-Direct burial shaft to convert pole to embedment/burial installation. 48" shaft with anti-rotational fins included.
USB-Dual USB Port (must indicate location)

Finish - Super Durable Polyester TGIC Powder Coat

- Standard finishes: high gloss black, brushed black, high gloss white, medium bronze, dark bronze, green, gray, silver metallic
- Premium finishes (adder): Venetian patina, pewter patina, silver sparkle, semi-gloss or matte black
- Custom and Marquee finishes are available. All RAL colors are available to match (adder).

PEMCO Lighting Products 152 Perimeter Way/Hillsborough, DE 19804 Phone 302.862.8000 Fax 302.862.8005 www.pemco.com info@pemco.com

PEMCO LIGHTING PRODUCTS Est. 1982
A QSSI COMPANY

LEXINGTON

POST TOPS

Specifications and Features:

Radiant™ LED

- Conformal Coating LED light engine
- CCT: 2700, 3000, 4000, 5000

Distribution:

- Type II, III, IV
- Economic Driver, 120-277V, 50/60Hz or 347/480V, 50/60Hz
- 1-10v Dimmable Driver
- Surge Protection INCLUDED
- Surge protection device meets IEEE C82.41.2002 C High 10kA

Controls (Optional)

- 0-10v dimmer (P3)
- 3-gang touchless remoteless (PC23)**
- 7-gang touchless remoteless (PC27)**

Housing:

- Choice of multiple cast decorative housings with 3" slip fit

Finish:

- Super durable polyester powder coat finish. Custom finishes available, including patinas and all RAL colors.

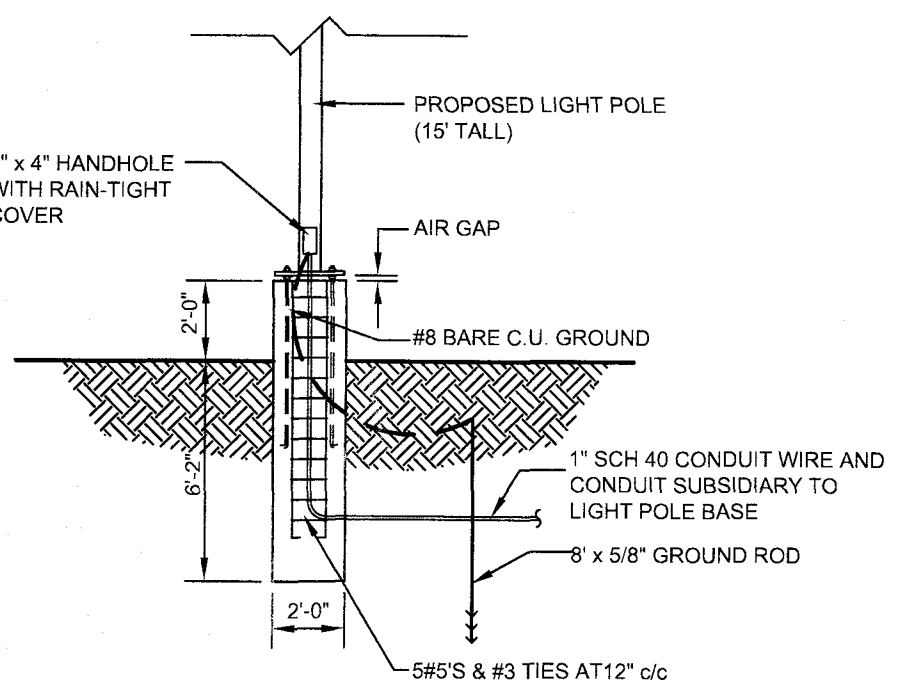
Listings & Ratings:

- ETL listed to UL 1588 standard for wet location.

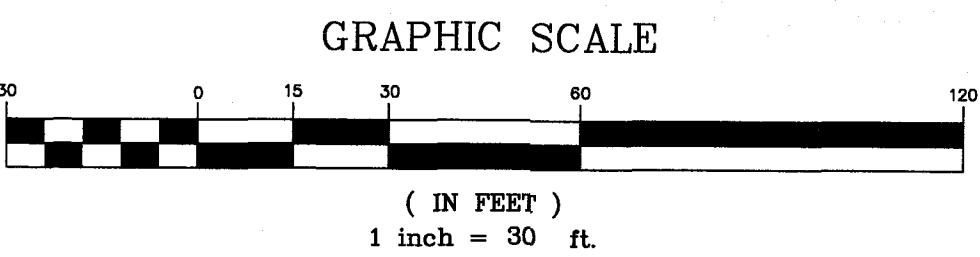
Warranty:

- 5 year limited warranty

PEMCO Lighting Products 152 Perimeter Way/Hillsborough, DE 19804 Phone 302.862.8000 Fax 302.862.8005 www.pemco.com info@pemco.com



CONCRETE LIGHT POLE BASE DETAIL
NOT TO SCALE
(MARCH 2008)



Symbol	Qty	Label	Arrangement	Description
●	16	P3	SINGLE	LEX-NL-60W3K-U-3-N-N-N / PLB-210-3-12-S-125-T300-N-COLOR

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL.

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____
SIGNATURE DATE: _____
SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

IN ASSOCIATION WITH:

P.O. BOX 4550
MANCHESTER, NH 03108
(603) 624-4527
FAX (603) 624-9764
SALES@CHARRONINC.COM

LIGHTING PLAN
SHEPHERDS HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

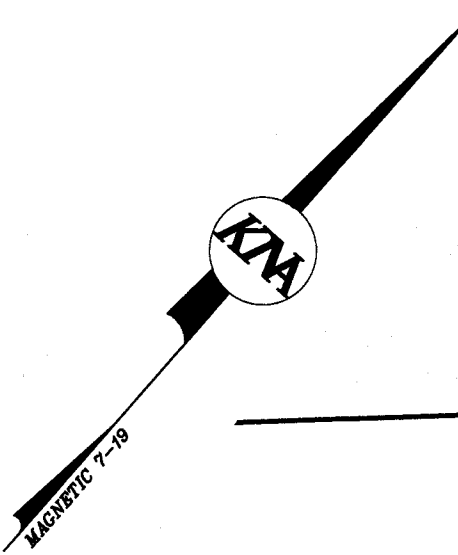
OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

APPLICANT: SHEPHERDS HILL, LLC
253 MAIN STREET
NASHUA, NH 03060

KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	7/7/22	REVISED PER COMMENTS	ACL

DATE: MAY 2, 2022 SCALE: 1"=30'
PROJECT NO: 17-0824-1 SHEET 32 OF 51



SEE SHEET 32 FOR
LIGHTING NOTES & DETAILS



IN ASSOCIATION WITH:

CHARRON
BRIGHTER.

P.O. BOX 4560
MANCHESTER, NH 03108
(603) 624-4827
FAX (603) 624-8784
SALES@CHARRONING.COM

LIGHTING PLAN
SHEPHERDS HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
SHEPHERDS HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

APPLICANT:
SHEPHERDS HILL, LLC
253 MAIN STREET
NASHUA, NH 03060

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10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 827-2881

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	7/7/22	REVISED PER COMMENTS	ACL

DATE: MAY 2, 2022 SCALE: 1"=30'
PROJECT NO: 17-0824-1 SHEET 34 OF 51

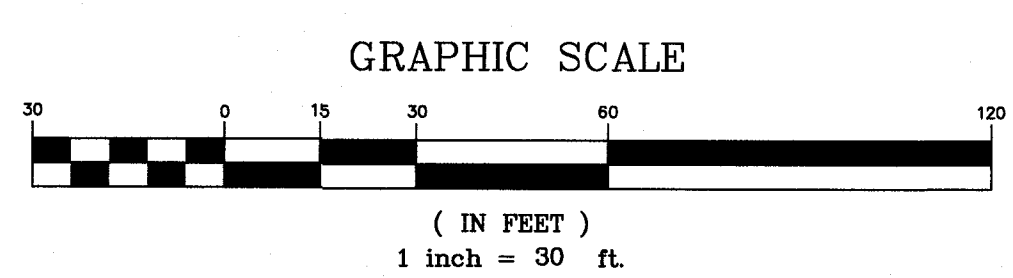
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL.

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____

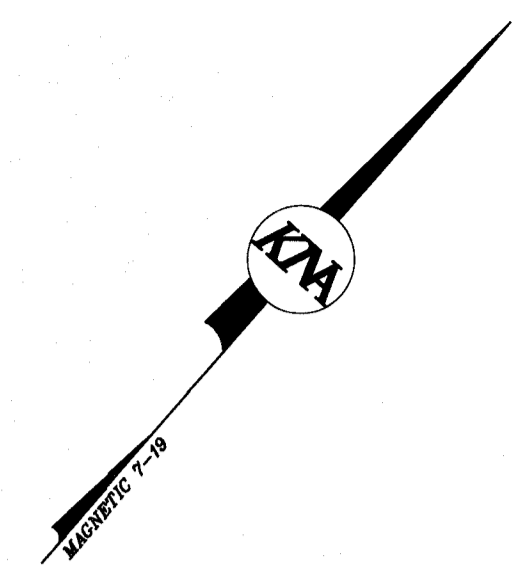
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SIGNATURE DATE: _____

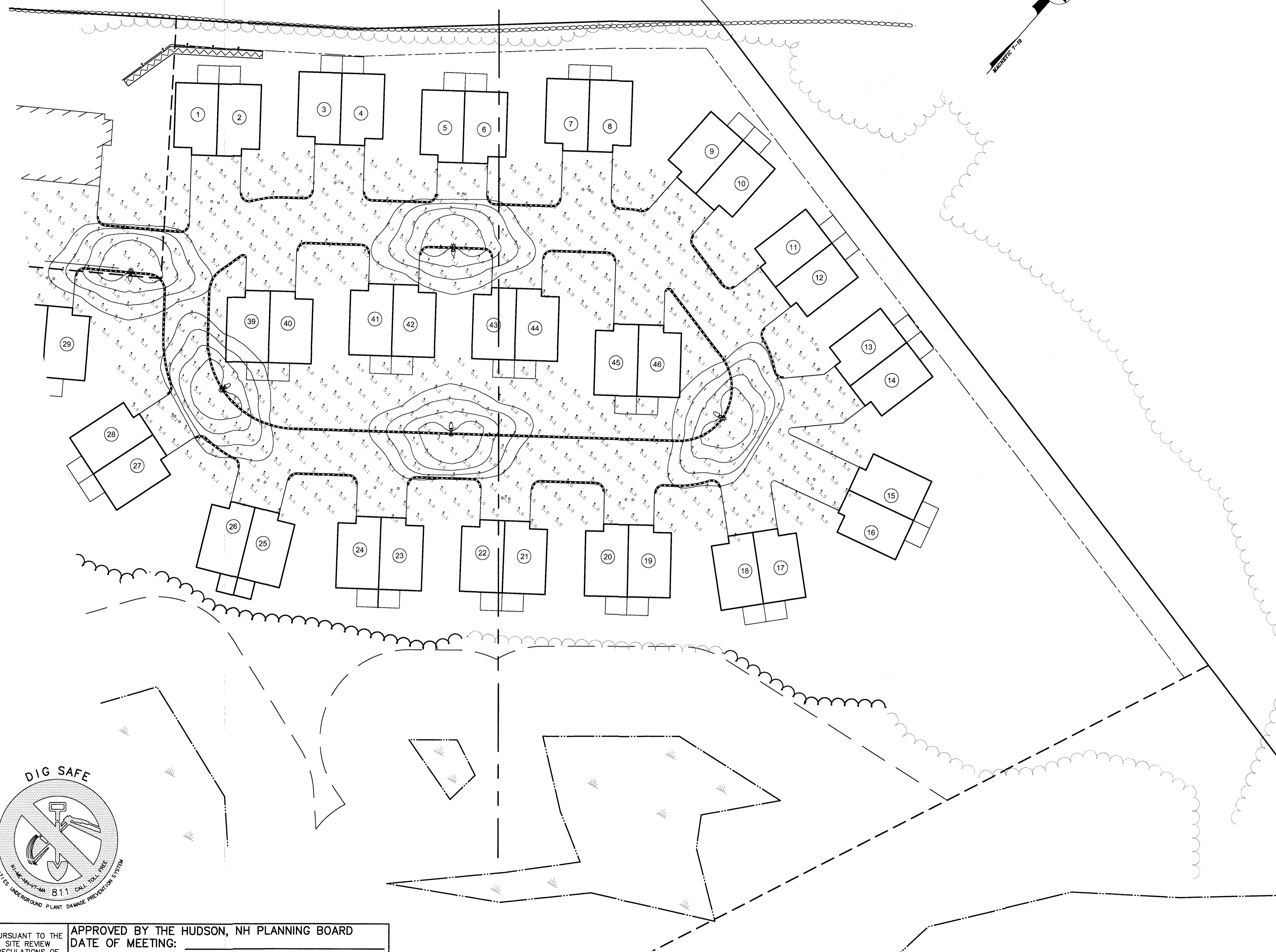
SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.



SEE SHEET 32 FOR
LIGHTING NOTES & DETAILS



MATCH SHEET 34



IN ASSOCIATION WITH:



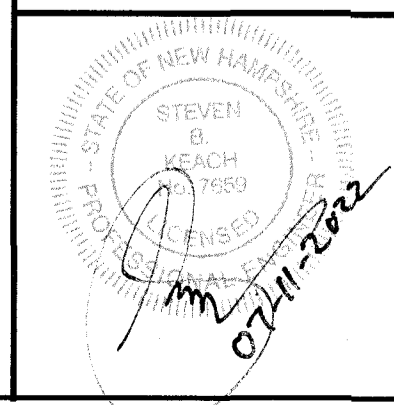
P.O. BOX 4550
MANCHESTER, NH 03108
(603) 624-4827
FAX (603) 624-9764
SALES@CHARRONINC.COM

LIGHTING PLAN
SHEPHERDS HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
SHEPHERDS HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

APPLICANT:
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253 MAIN STREET
NASHUA, NH 03060

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10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881



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DATE: MAY 2, 2022 SCALE: 1"=30'
PROJECT NO: 17-0824-1 SHEET 35 OF 51



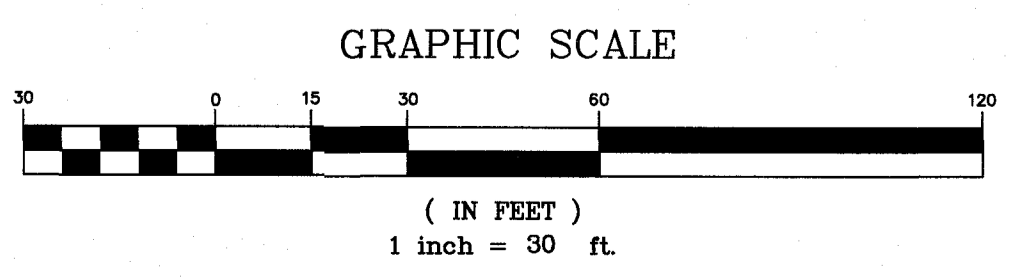
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEARS FROM DATE OF APPROVAL

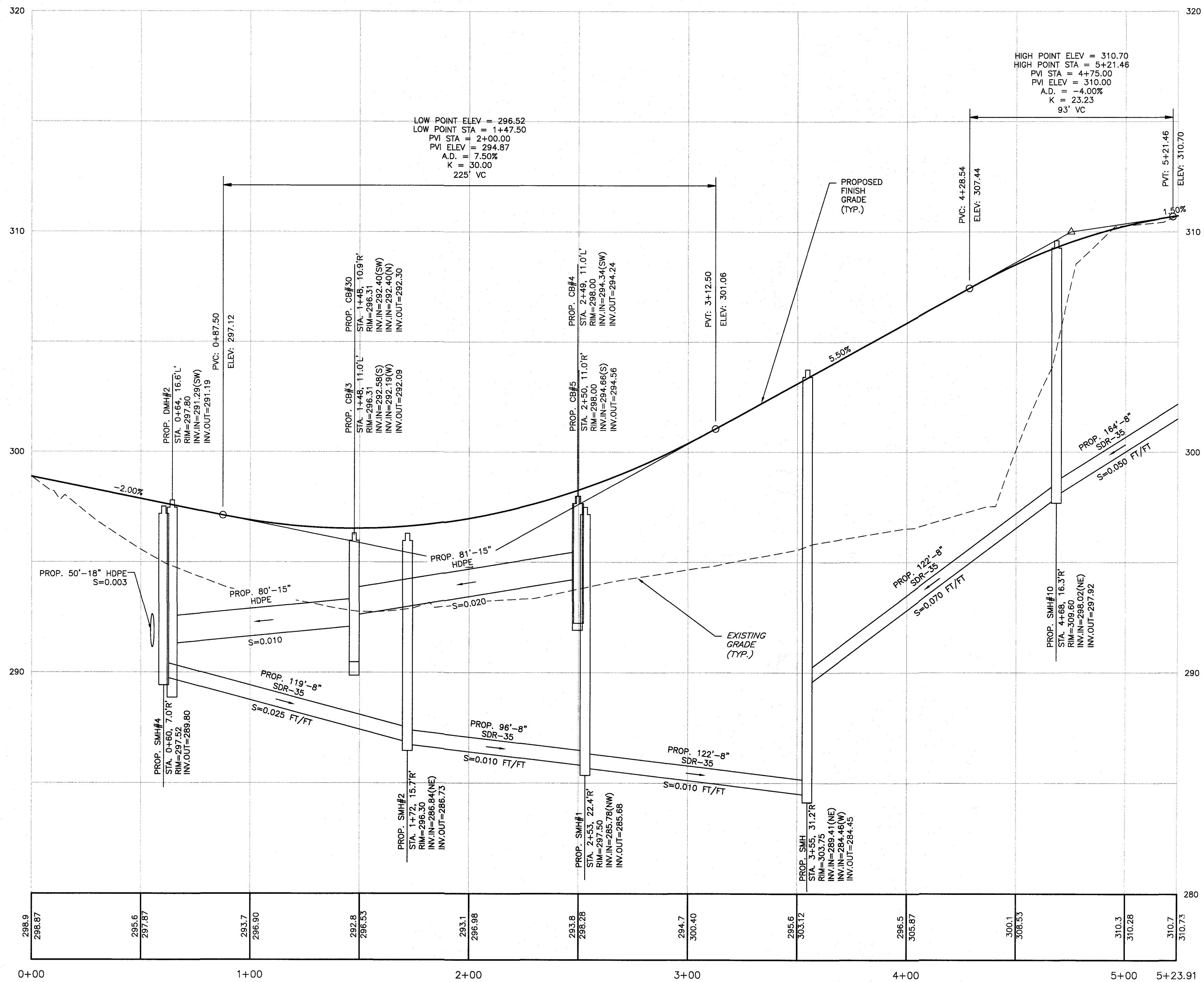
APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____

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SIGNATURE DATE: _____

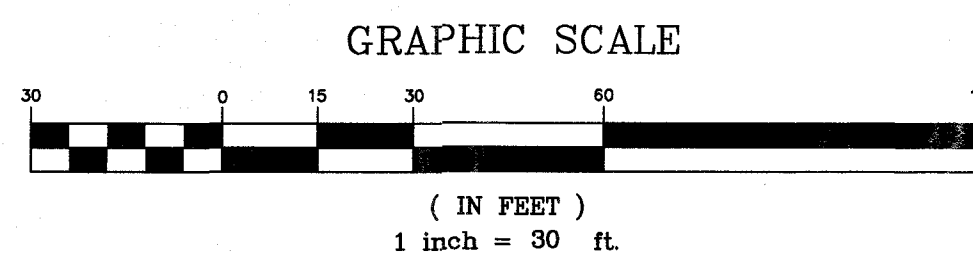
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GIFFORD CIRCLE PROFILE

SCALE: 1" = 30' (HORIZ.)
 1" = 3' (VERT.)



ROADWAY PROFILES SHEPHERDS HILL MAP 177 LOT 5 SHADOWBROOK DRIVE HUDSON, NEW HAMPSHIRE HILLSBOROUGH COUNTY	
OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060


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 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

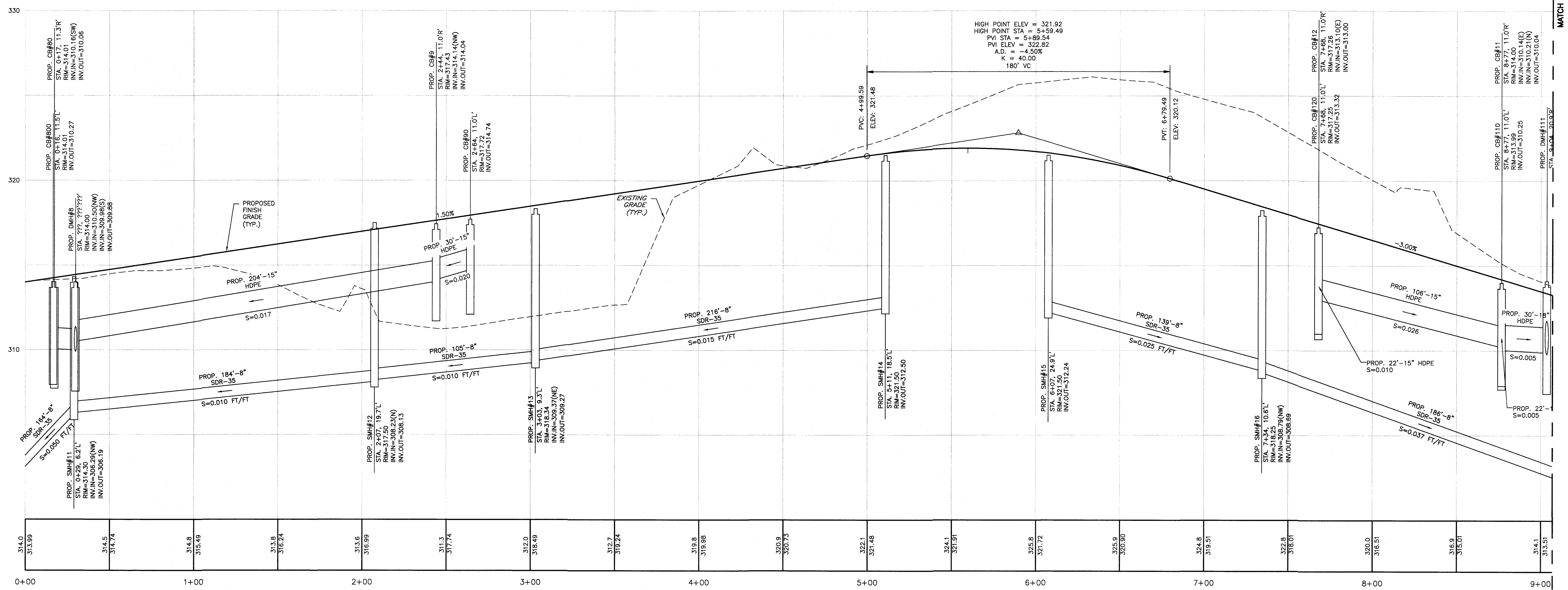
REVISIONS			
No.	DATE	DESCRIPTION	BY

DATE: MAY 2, 2022 SCALE: 1"=30'
 PROJECT NO: 17-0824-1 SHEET 36 OF 51

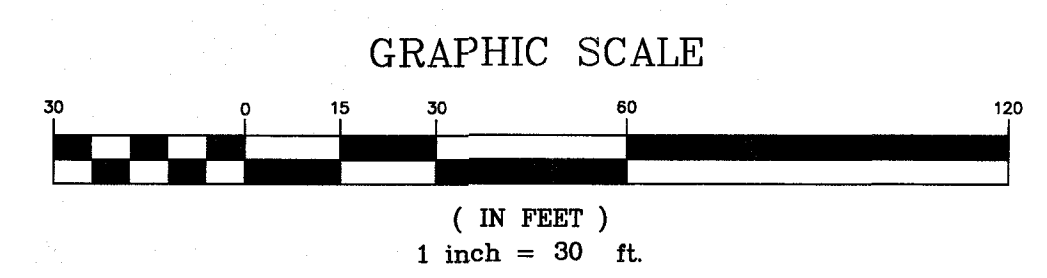
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TRINITY CIRCLE PROFILE
 SCALE: 1" = 30' (HORIZ.)
 1" = 3' (VERT.)



ROADWAY PROFILES
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

<p>OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833</p>	<p>APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060</p>
---	--

KMA
 KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS			
No.	DATE	DESCRIPTION	BY

DATE: MAY 2, 2022

SCALE: 1"=30'

PROJECT NO: 17-0824-1

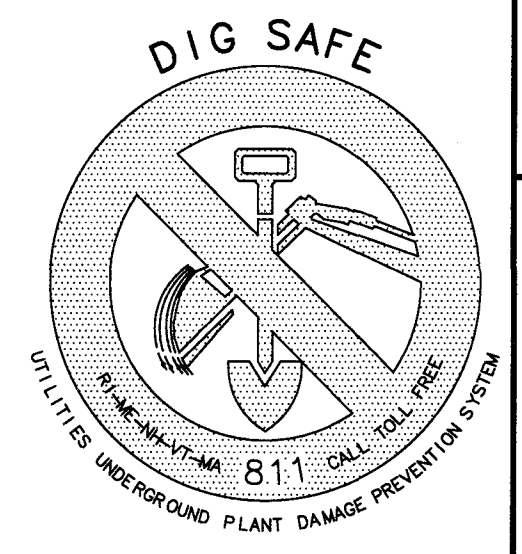
SHEET 37 OF 51

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

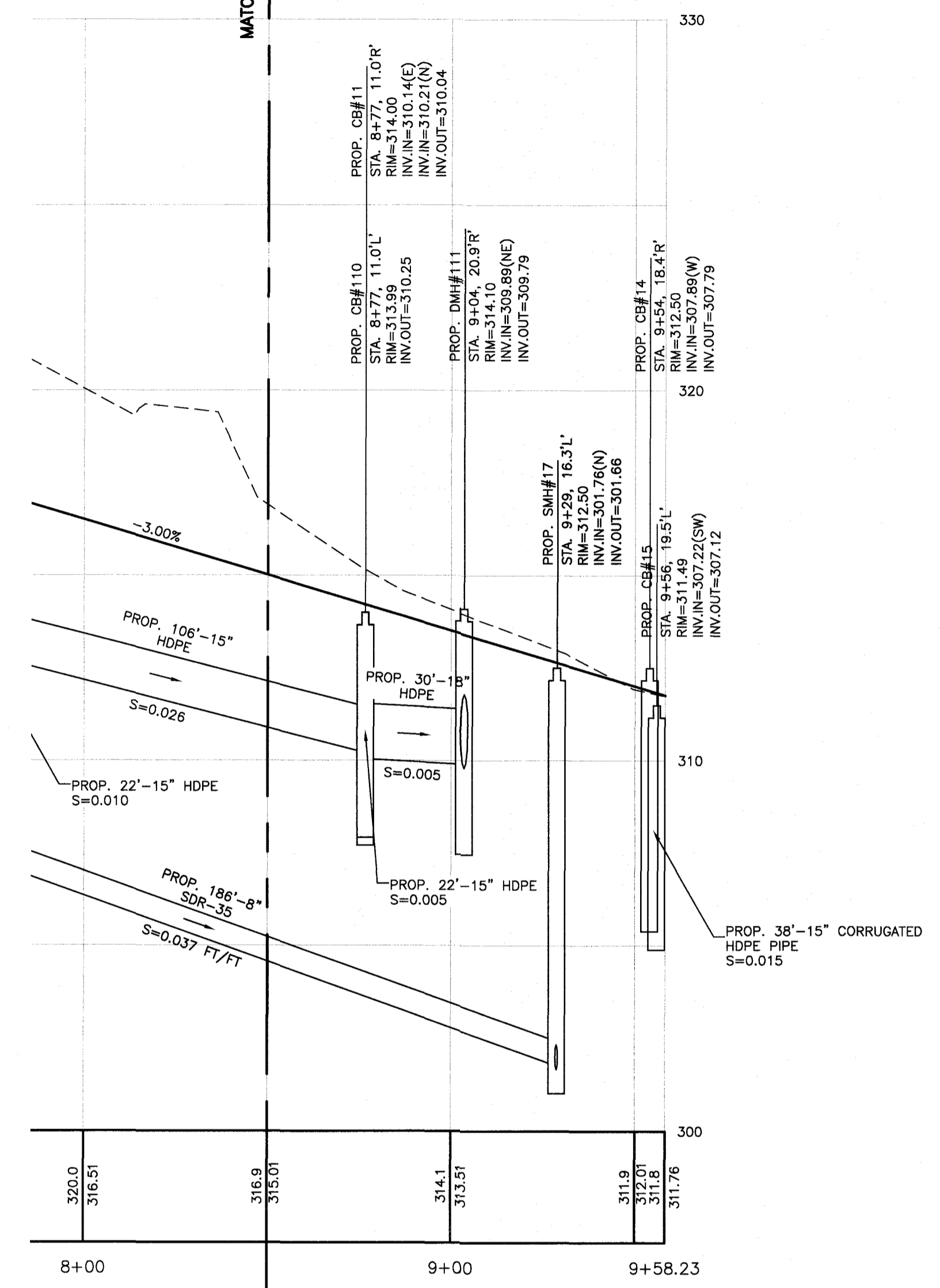
APPROVED BY THE HUDSON, NH PLANNING BOARD
 DATE OF MEETING: _____

_____ SIGNATURE DATE: _____
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MATCH SHEET 37

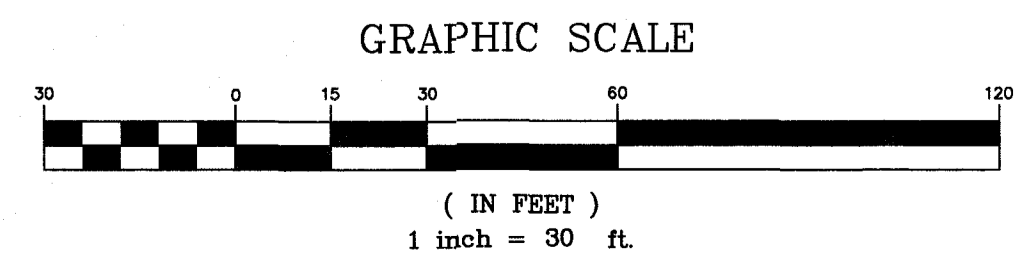


TRINITY CIRCLE PROFILE
 SCALE: 1" = 30' (HORIZ.)
 1" = 3' (VERT.)

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ROADWAY PROFILES
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

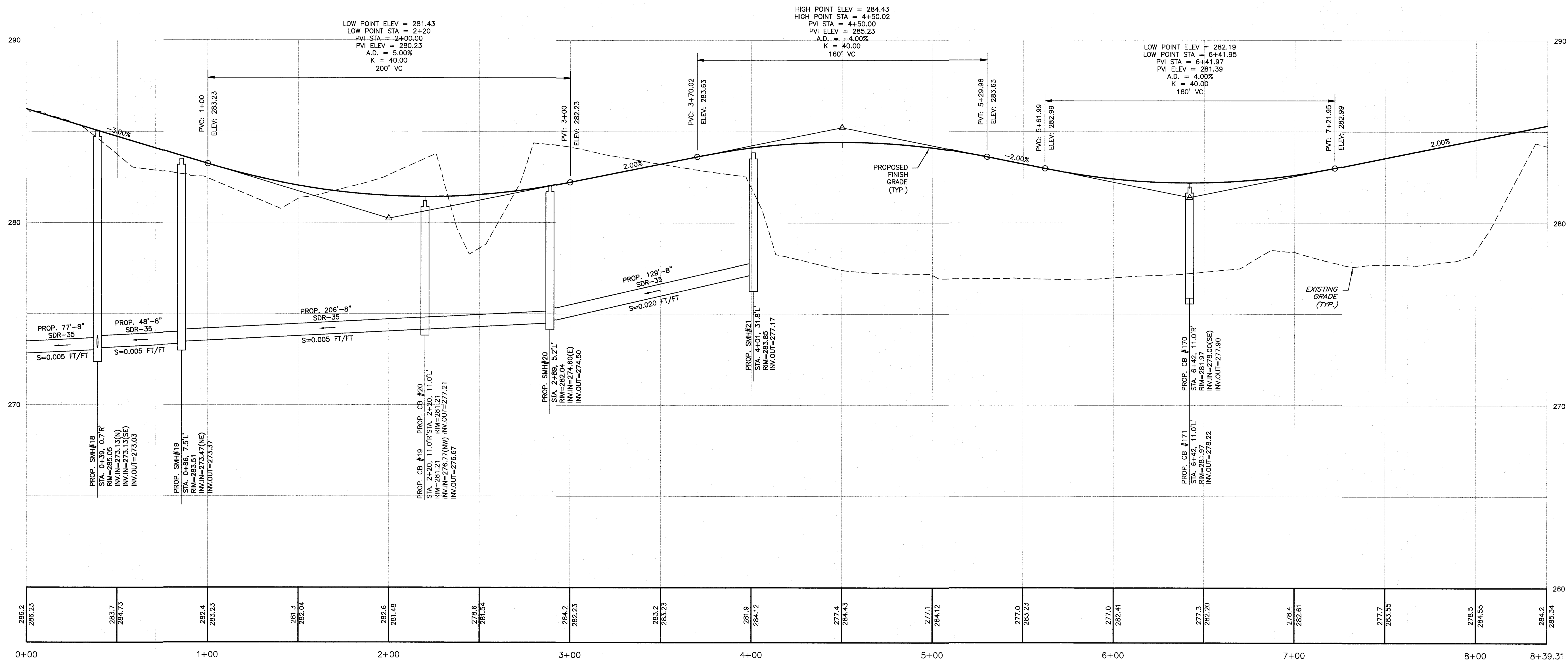
OWNER OF RECORD:
 SHEPHERDS HILL HOME OWNERS ASSOCIATION
 C/O GREAT NORTH PROPERTY MANAGEMENT
 3 HOLLAND WAY, SUITE 201
 EXETER, NH 03833

APPLICANT:
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 253 MAIN STREET
 NASHUA, NH 03060

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 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2861

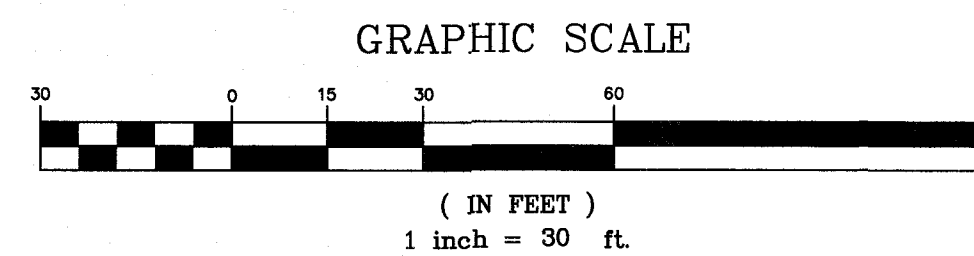
REVISIONS			
No.	DATE	DESCRIPTION	BY

DATE: MAY 2, 2022
 PROJECT NO: 17-0824-1
 SCALE: 1"=30'
 SHEET 38 OF 51



CLEARVIEW CIRCLE PROFILE

SCALE: 1" = 30' (HORIZ.)
1" = 3' (VERT.)



ROADWAY PROFILES
SHEPHERDS HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060
--	---

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Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS			
No.	DATE	DESCRIPTION	BY

DATE: MAY 2, 2022 SCALE: 1"=30'
PROJECT NO: 17-0824-1 SHEET 39 OF 51

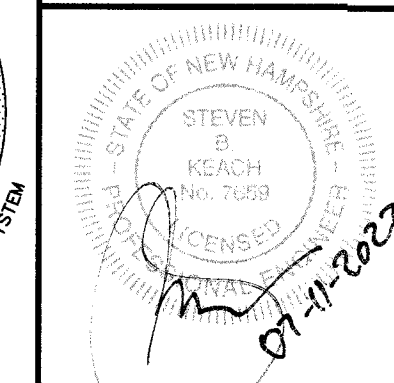
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

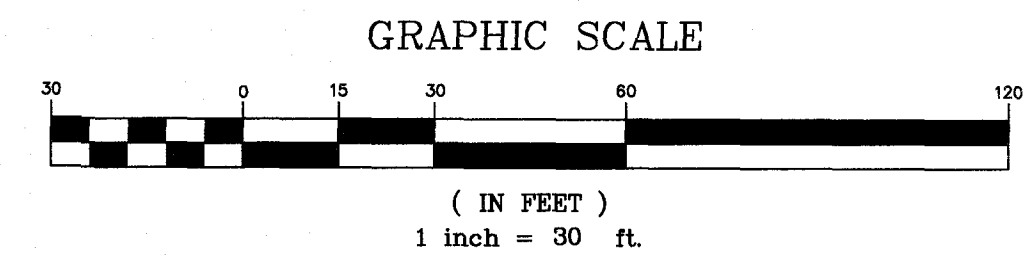
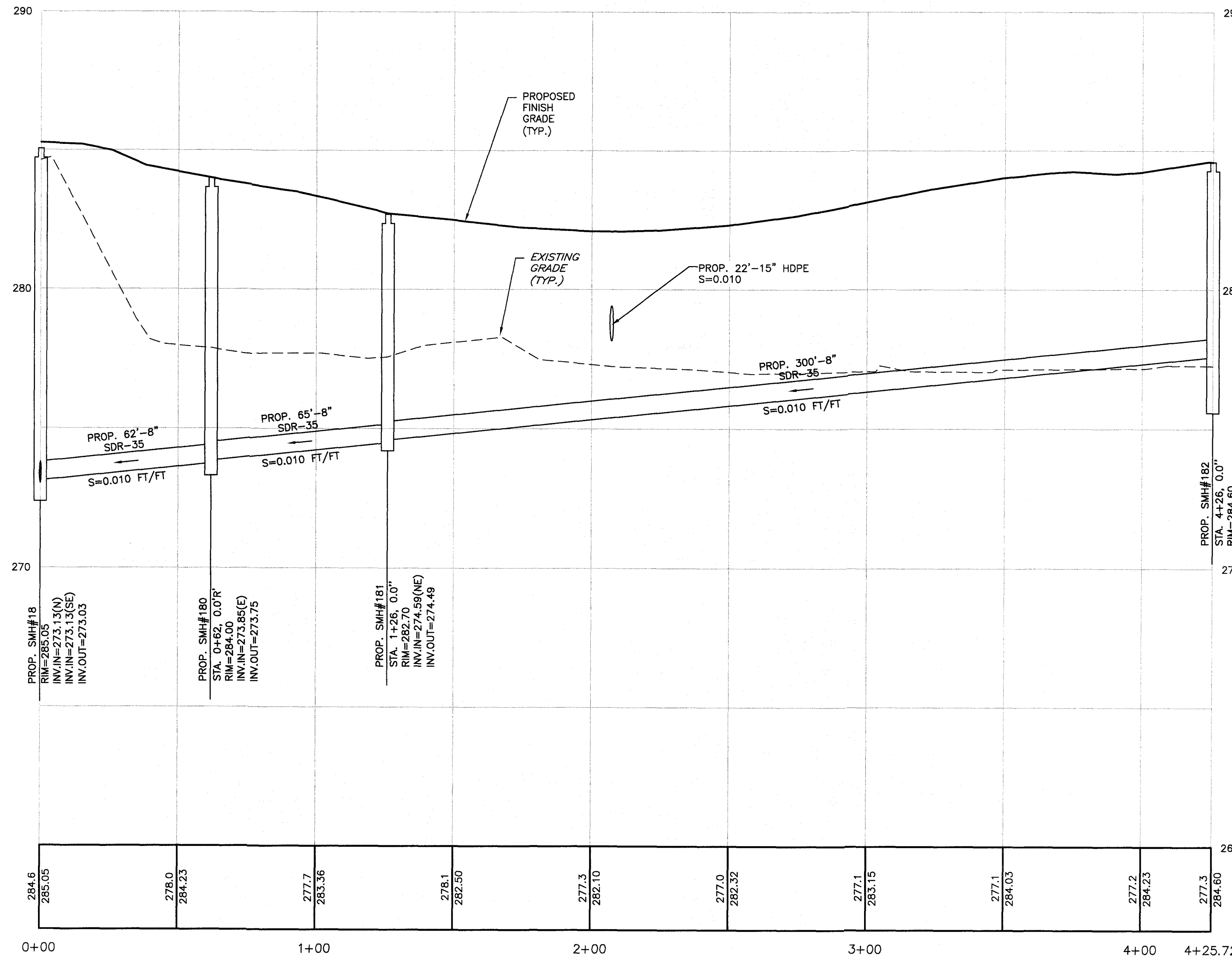
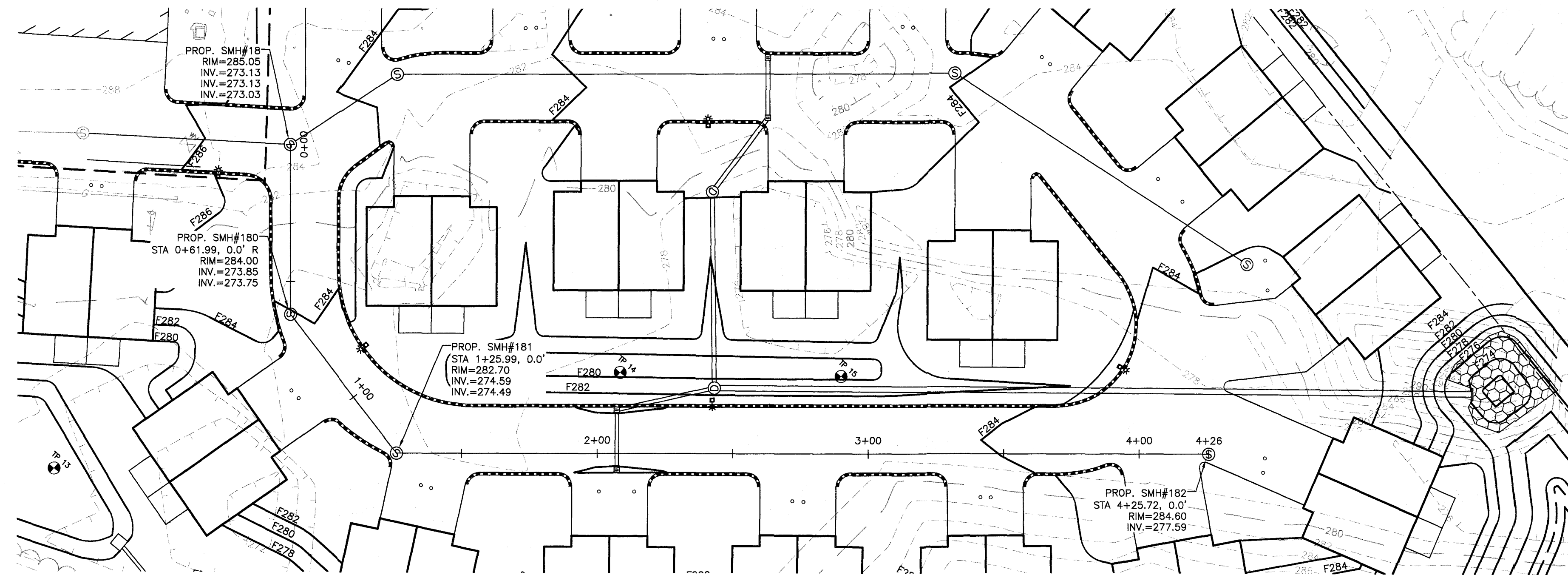
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SIGNATURE DATE: _____

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SEWER PLAN & PROFILE
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD:
 SHEPHERDS HILL HOME OWNERS ASSOCIATION
 C/O GREAT NORTH PROPERTY MANAGEMENT
 3 HOLLAND WAY, SUITE 201
 EXETER, NH 03833

APPLICANT:
 SHEPHERDS HILL, LLC
 253 MAIN STREET
 NASHUA, NH 03060

KMA
 KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS			
No.	DATE	DESCRIPTION	BY

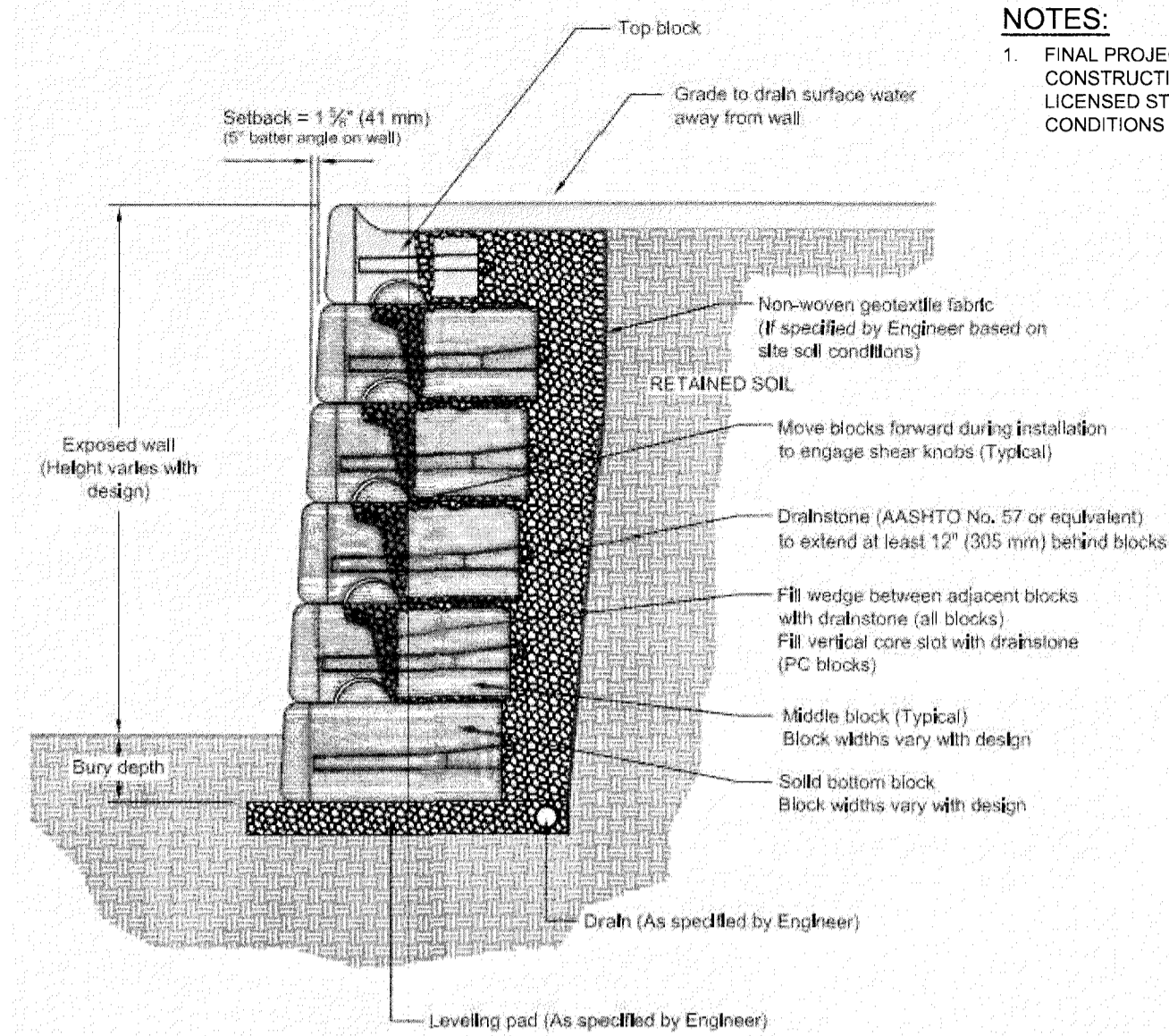
DATE: MAY 2, 2022 **SCALE:** 1"=30'
PROJECT NO: 17-0824-1 **SHEET:** 40 OF 51

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL

APPROVED BY THE HUDSON, NH PLANNING BOARD
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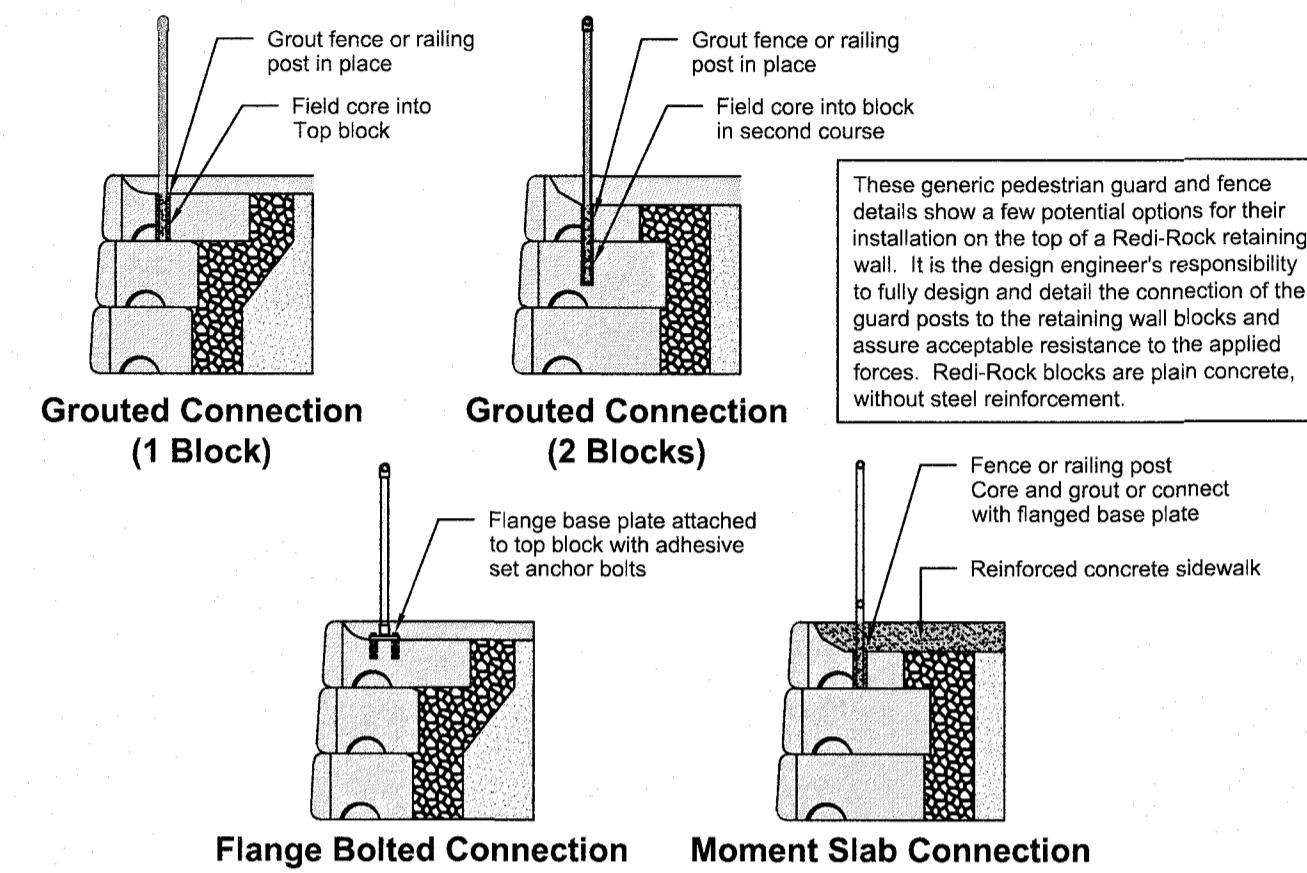
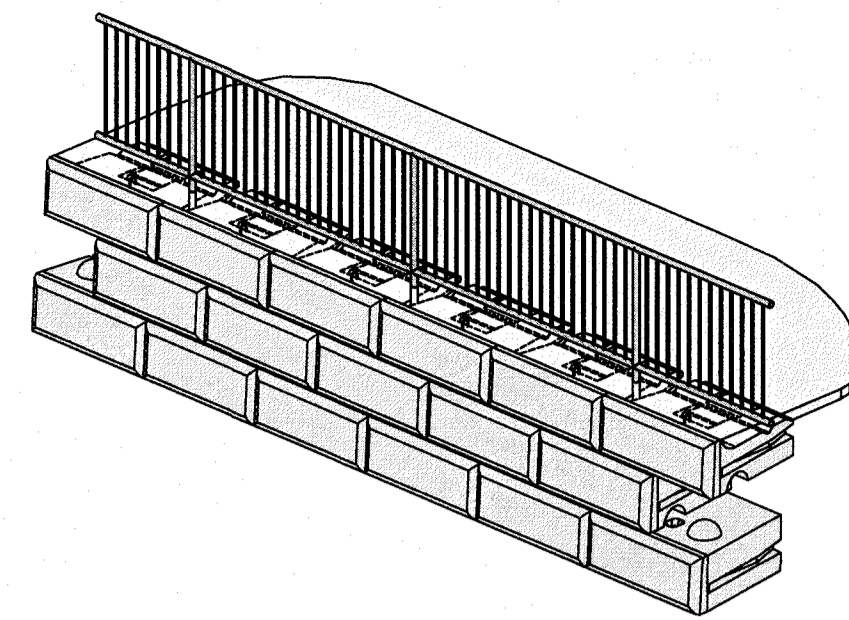
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CLEARVIEW CIRCLE SEWER PROFILE
 SCALE: 1" = 30' (HORIZ.)
 1" = 3' (VERT.)

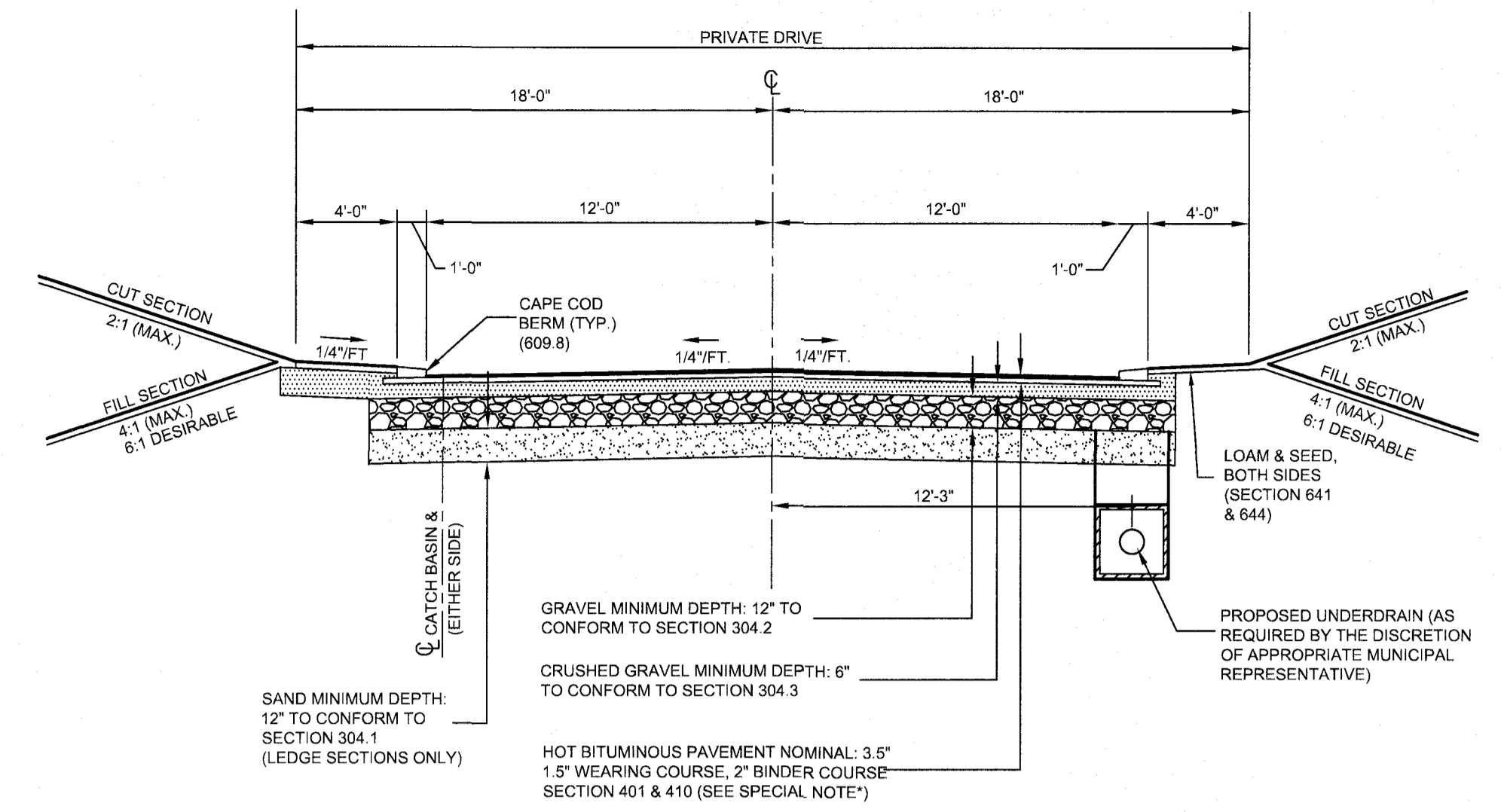


REDI-ROCK TYPICAL GRAVITY WALL DETAIL
NOT TO SCALE

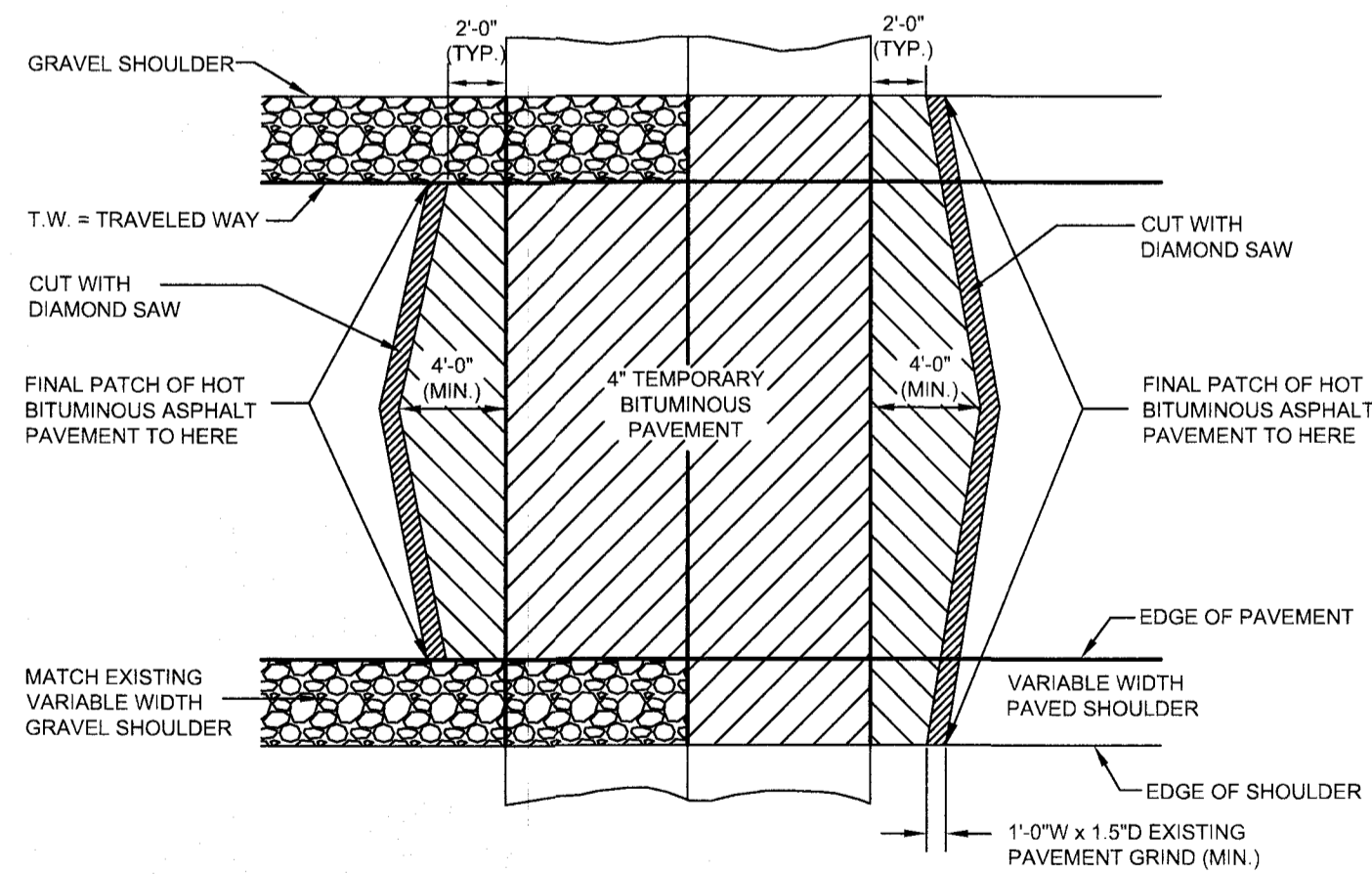
NOTES:
1. FINAL PROJECT DESIGNS, INCLUDING ALL CONSTRUCTION DETAILS, SHALL BE PREPARED BY A LICENSED STRUCTURAL ENGINEER USING THE ACTUAL CONDITIONS OF THE PROPOSED SITE.



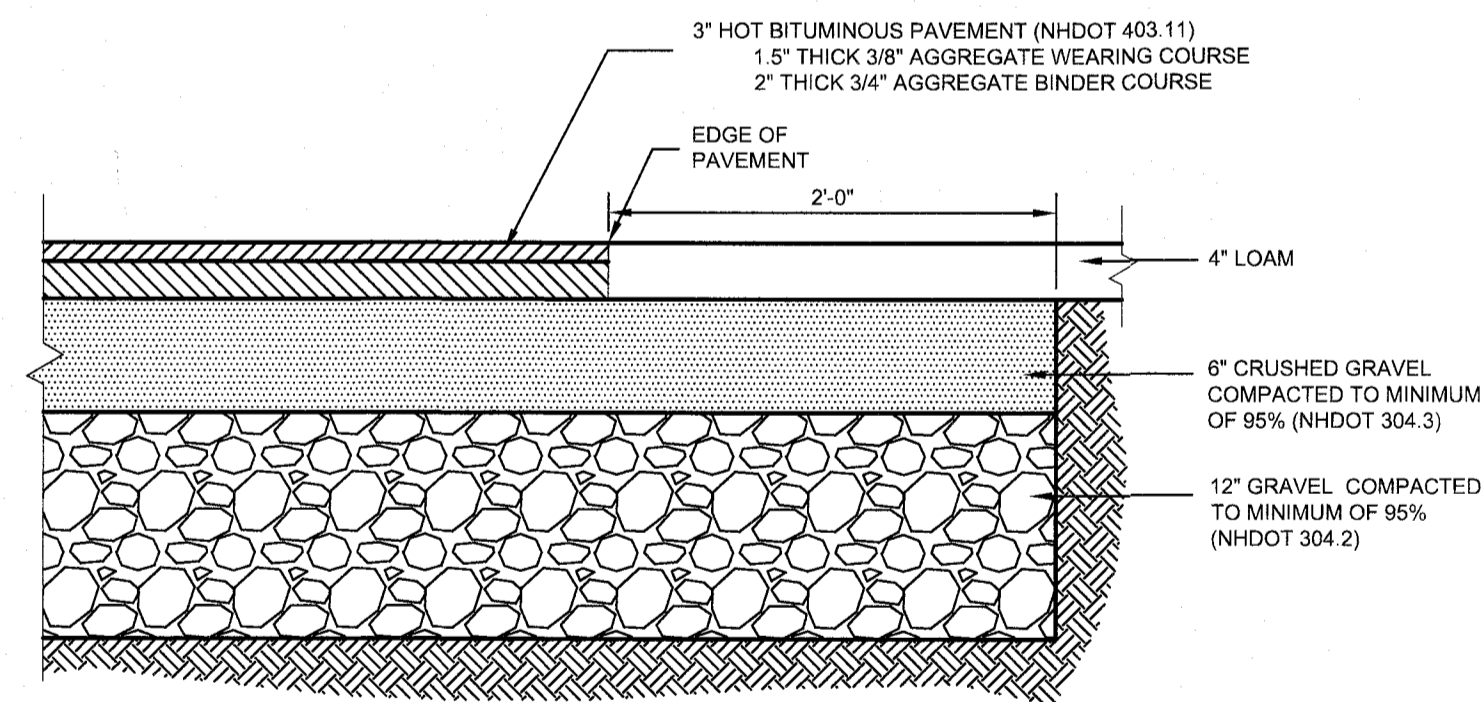
REDI-ROCK PEDESTRIAN GUARD
NOT TO SCALE



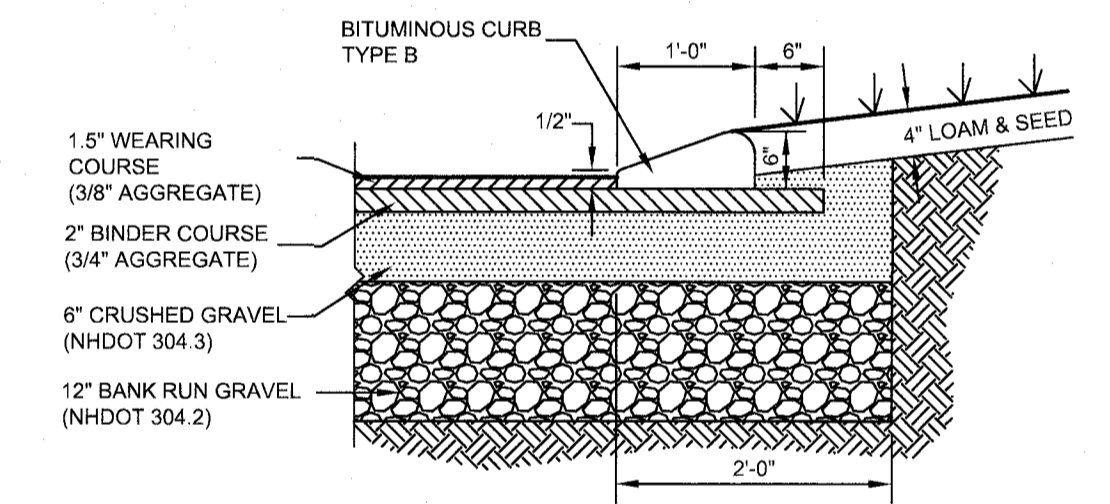
TYPICAL PRIVATE ROADWAY CROSS SECTION
NOT TO SCALE



PERMANENT PAVEMENT REPAIR
NOT TO SCALE



DRIVEWAY SECTION
NOT TO SCALE
(MARCH 2008)



BITUMINOUS CURB TYPE B DETAIL
NOT TO SCALE
(MARCH 2008)

CONSTRUCTION DETAILS
SHEPHERDS HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060
--	---

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REVISIONS			
No.	DATE	DESCRIPTION	BY
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DATE: MAY 2, 2022 **SCALE:** AS SHOWN
PROJECT NO: 17-0824-1 **SHEET** 41 OF 51

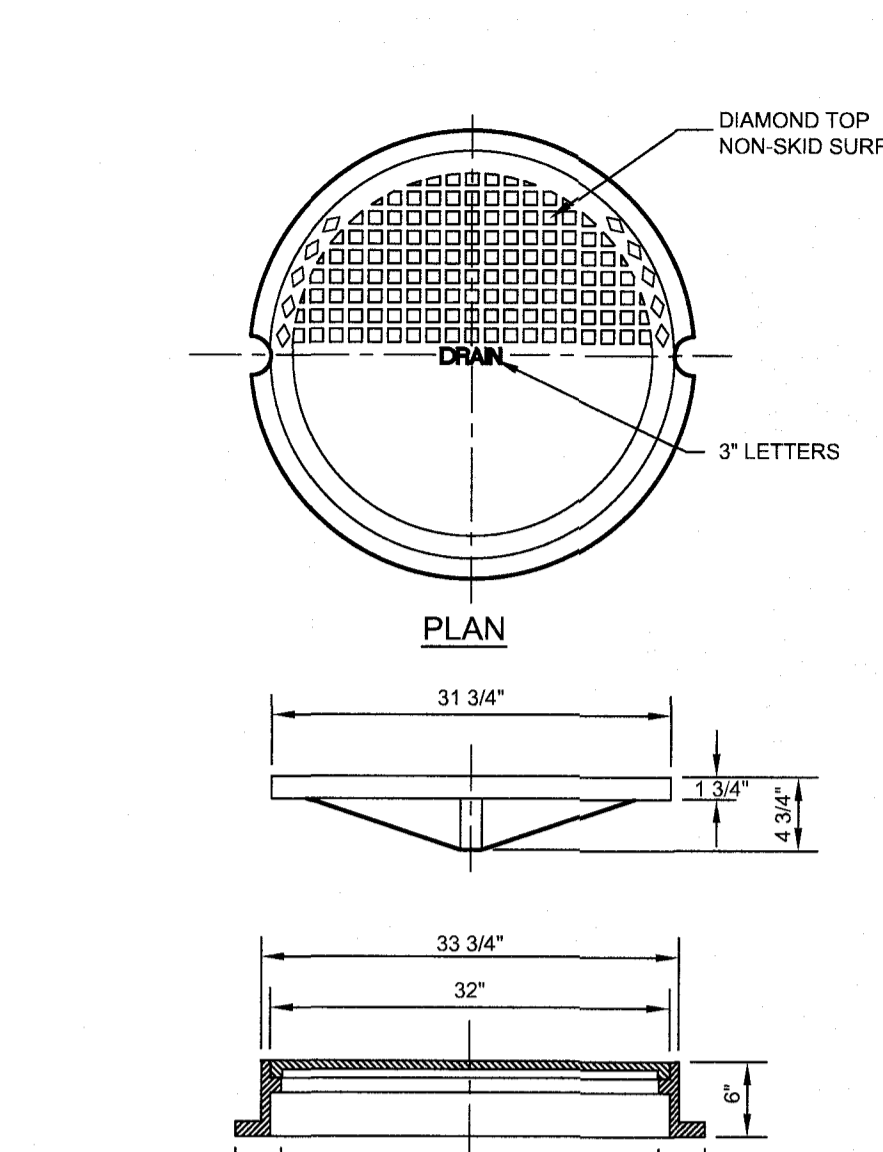
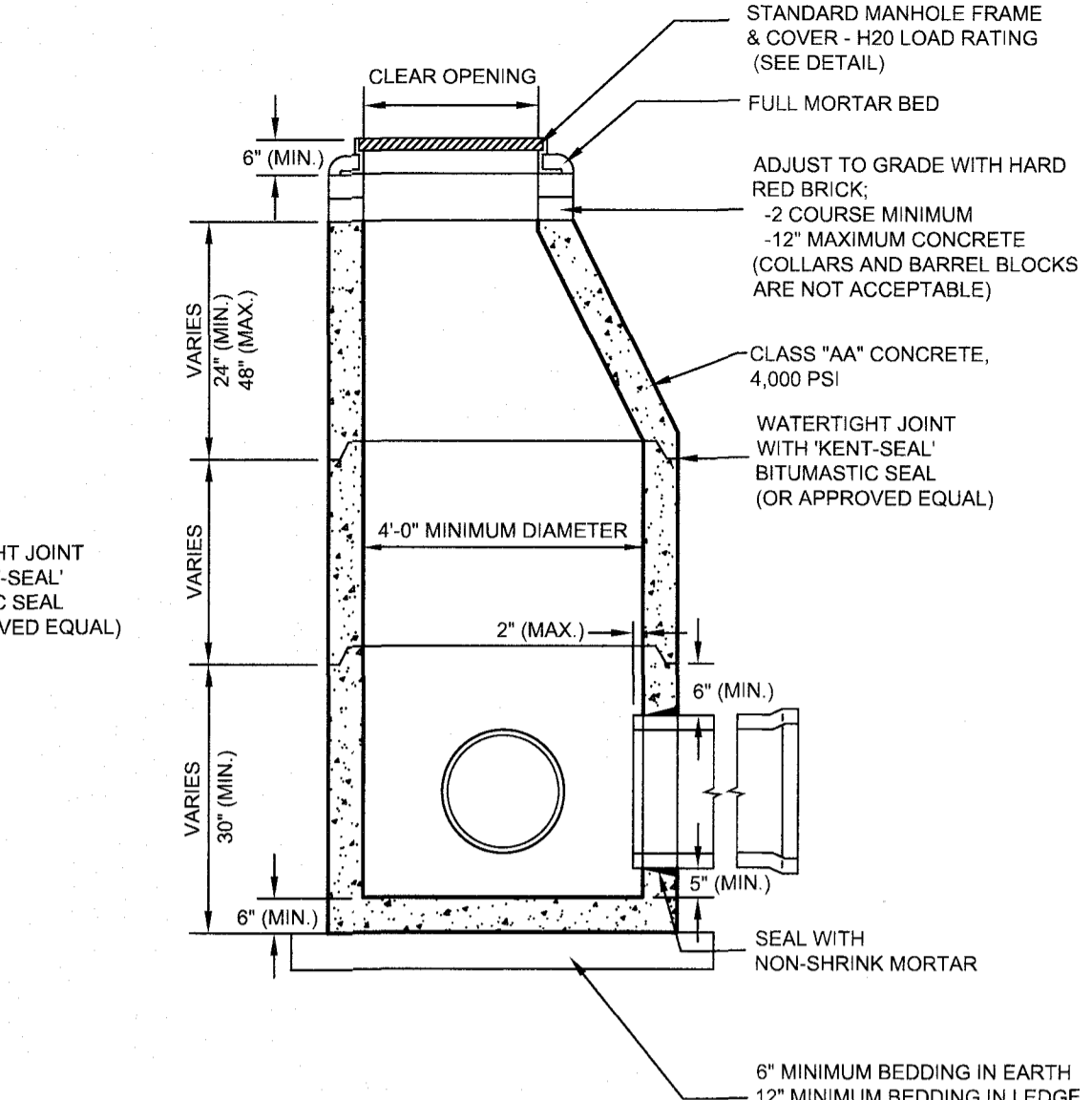
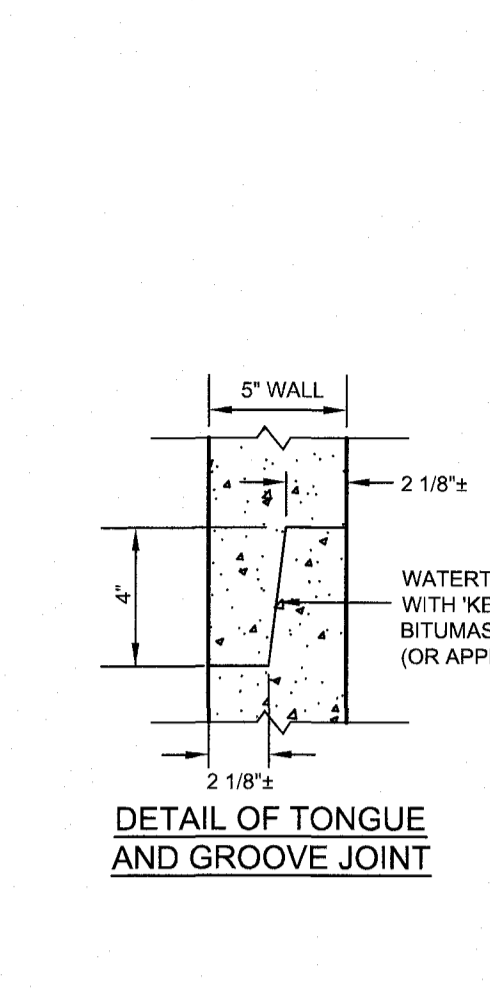
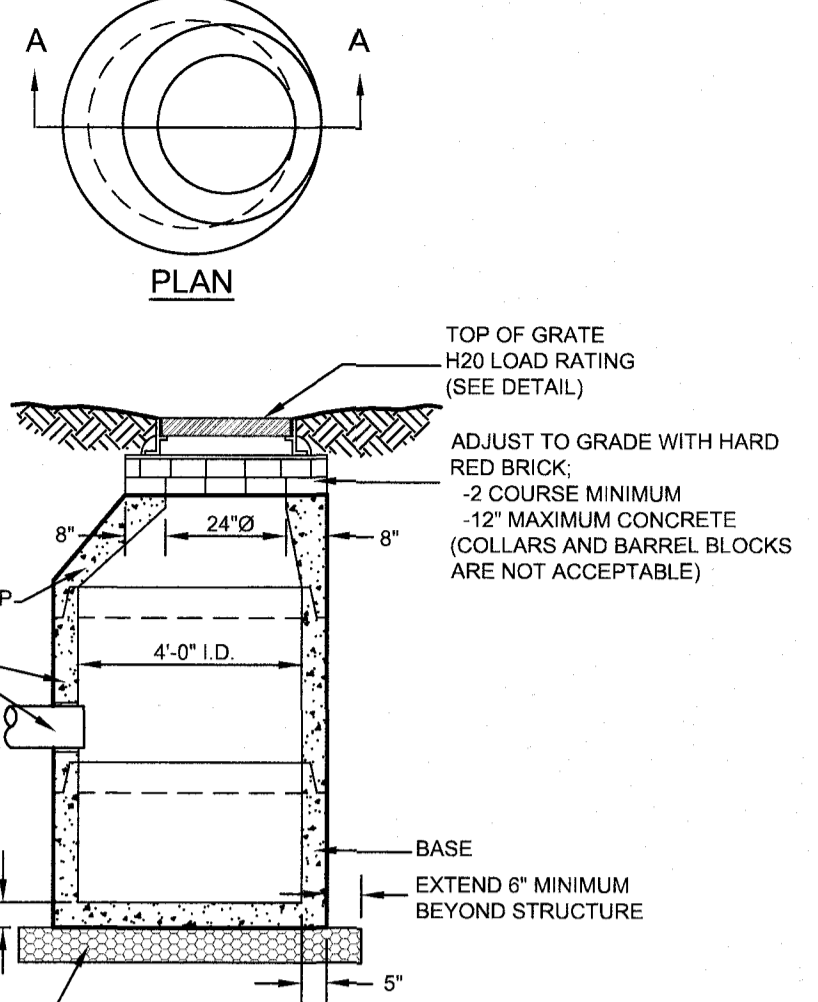
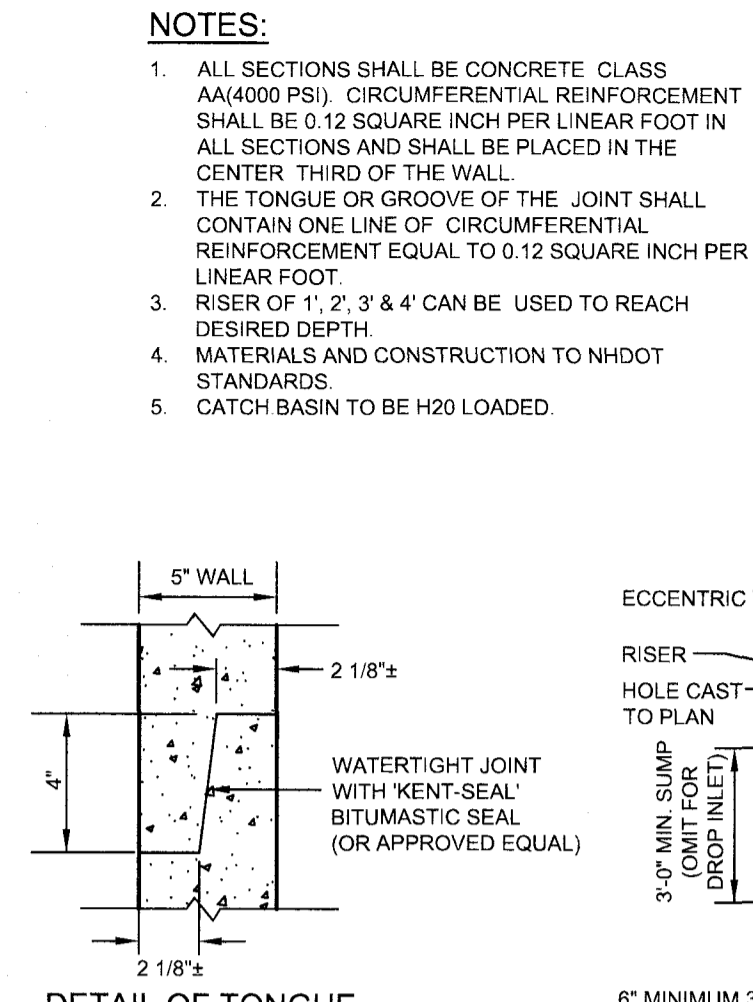
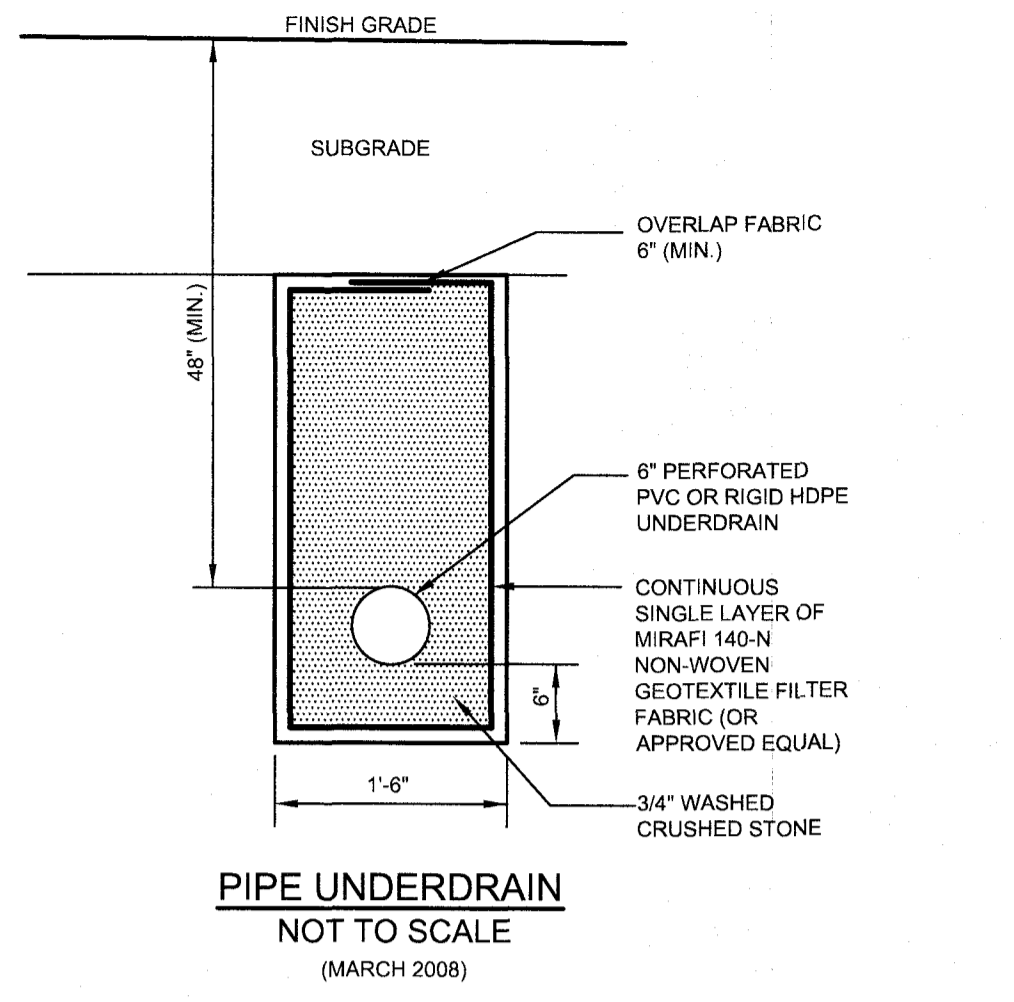
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEAR FROM DATE OF APPROVAL

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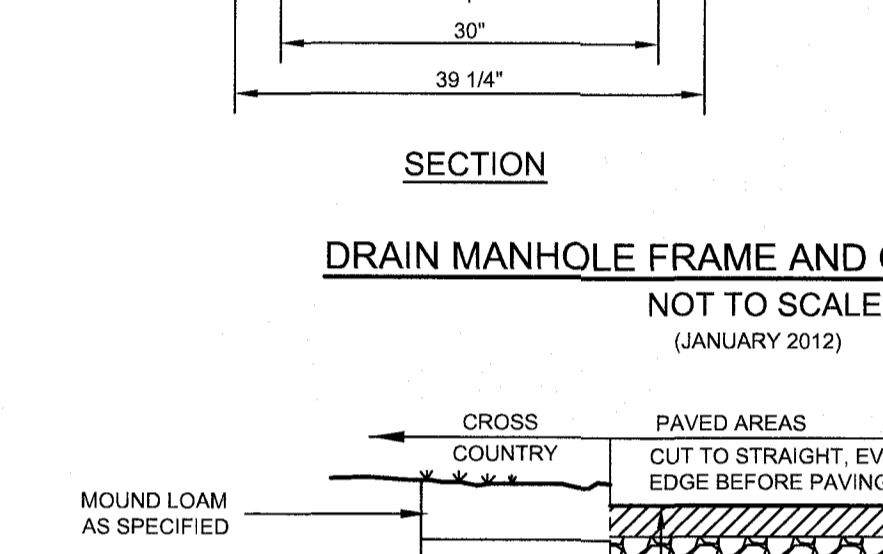
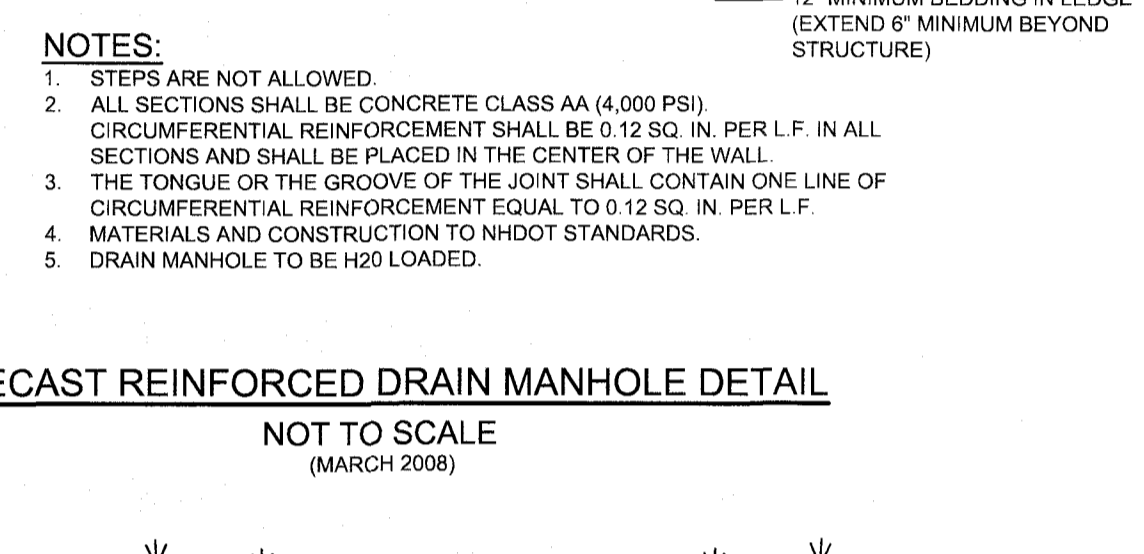
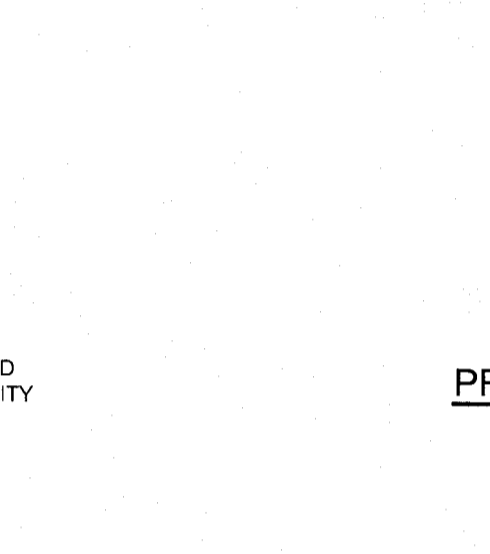
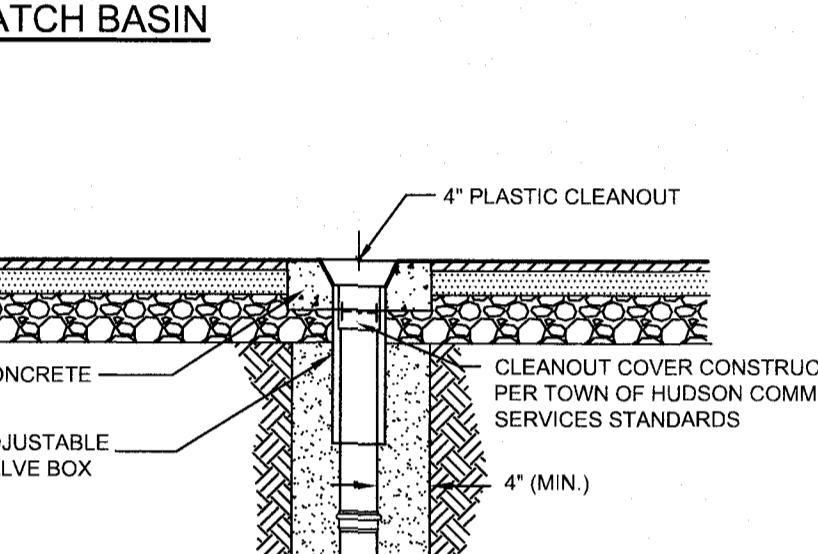
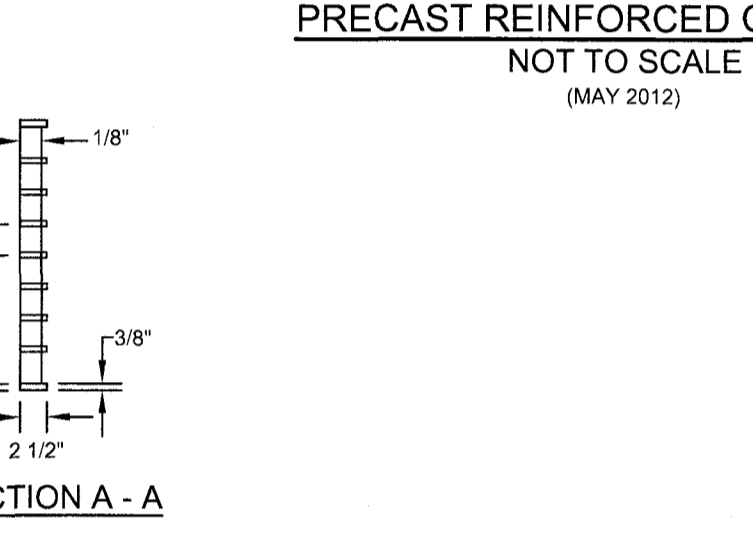
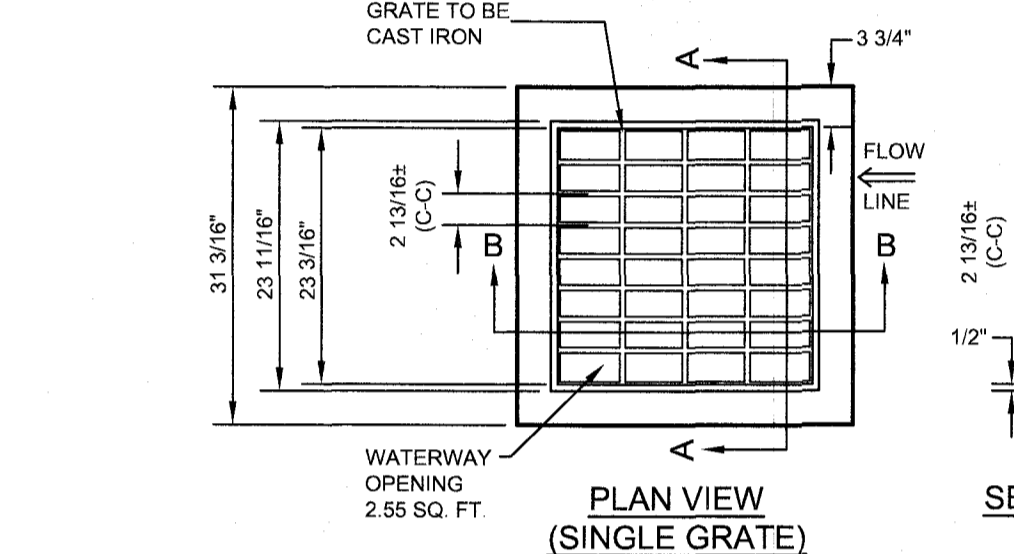


NOTES:
 1. ALL SECTIONS SHALL BE CONCRETE CLASS AA(4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCH PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL.
 2. THE TONGUE OR GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCH PER LINEAR FOOT.
 3. RISER OF 1', 2', 3' & 4' CAN BE USED TO REACH DESIRED DEPTH.
 4. MATERIALS AND CONSTRUCTION TO NHDOT STANDARDS.
 5. CATCH BASIN TO BE H20 LOADED.

NOTES:
 NEW HAMPSHIRE MAINTAINS A CLEAR OPENING DESIGNATION OF 30" FOR ITS MANHOLE CASTINGS

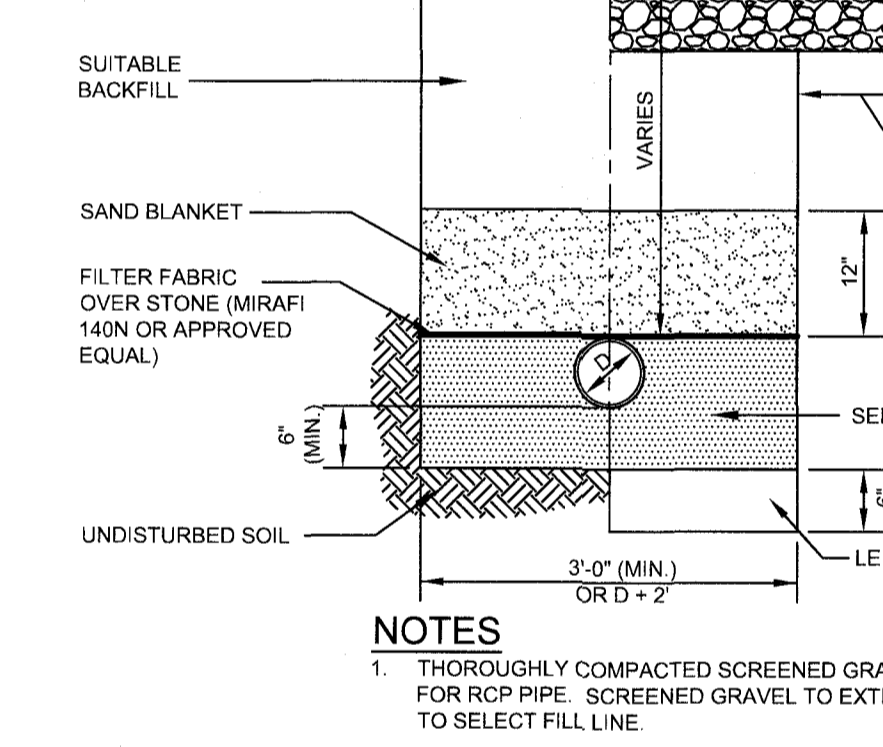
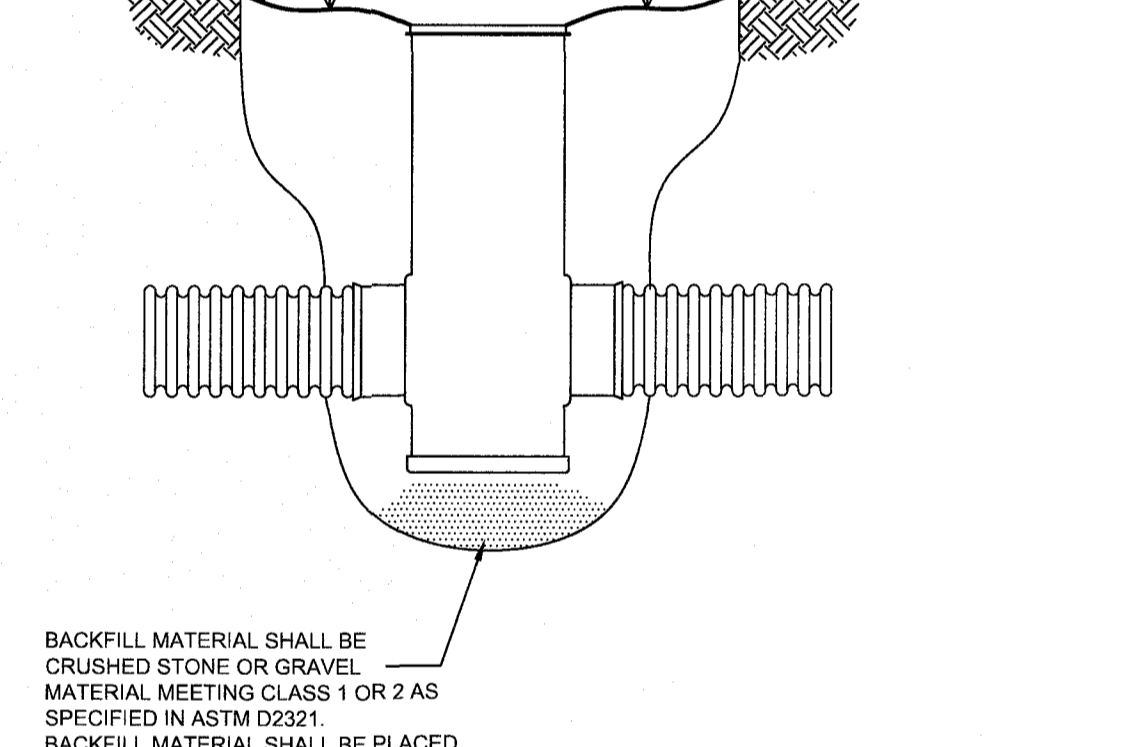
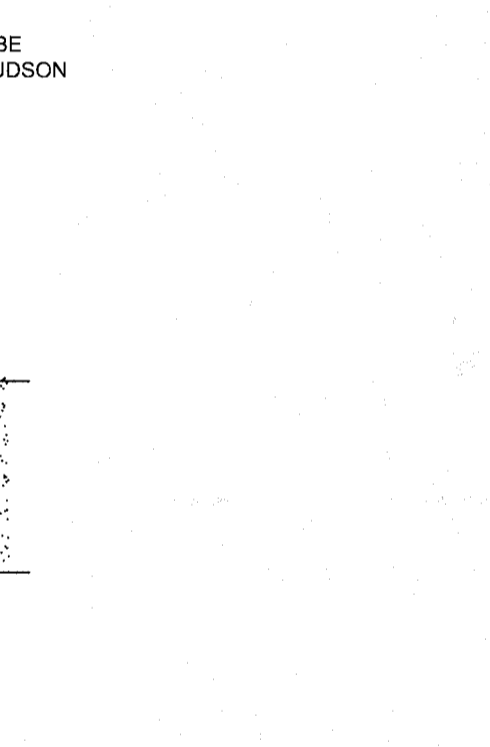
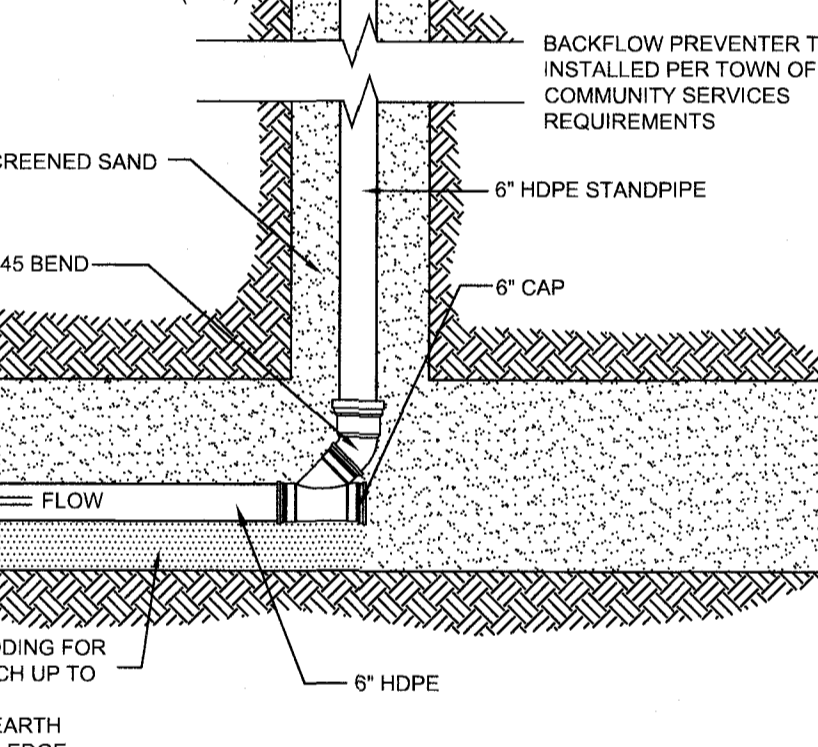
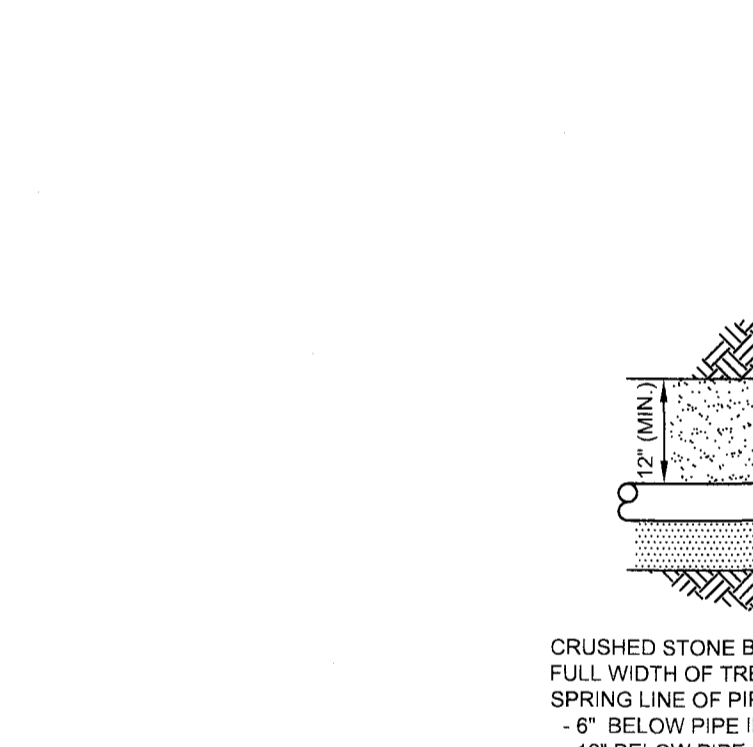
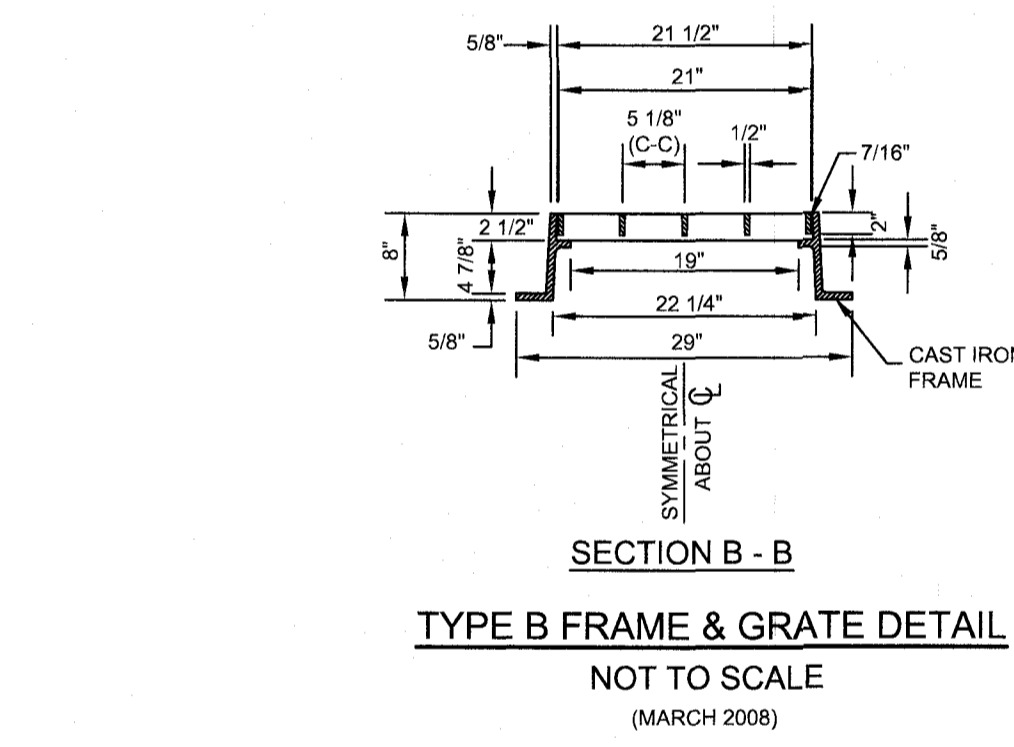
FEATURES:
 • 3" LETTERING
 • COVERS MARKED DRAIN
 • NONROCKING COVER
 • DIAMOND SURFACE DESIGN

SPECIFICATIONS:
 • FULLY MACHINED FRAME AND COVER
 • H-20 LOAD RATED
 • GRAY CAST IRON MEETS ASTM A48 CLASS 30



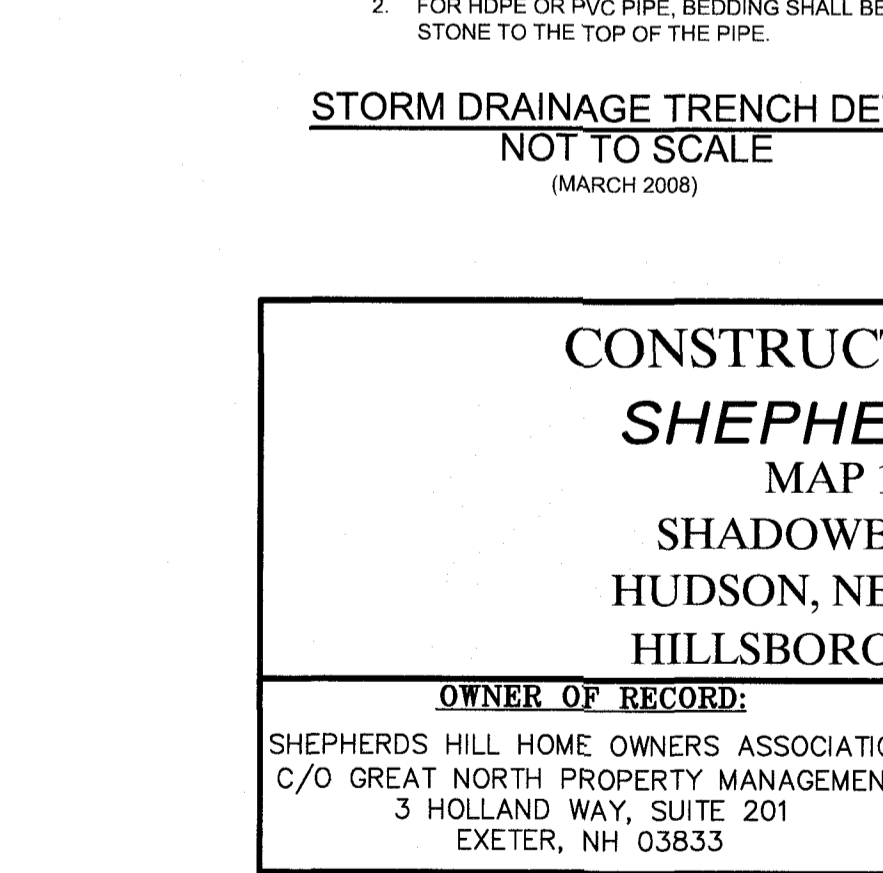
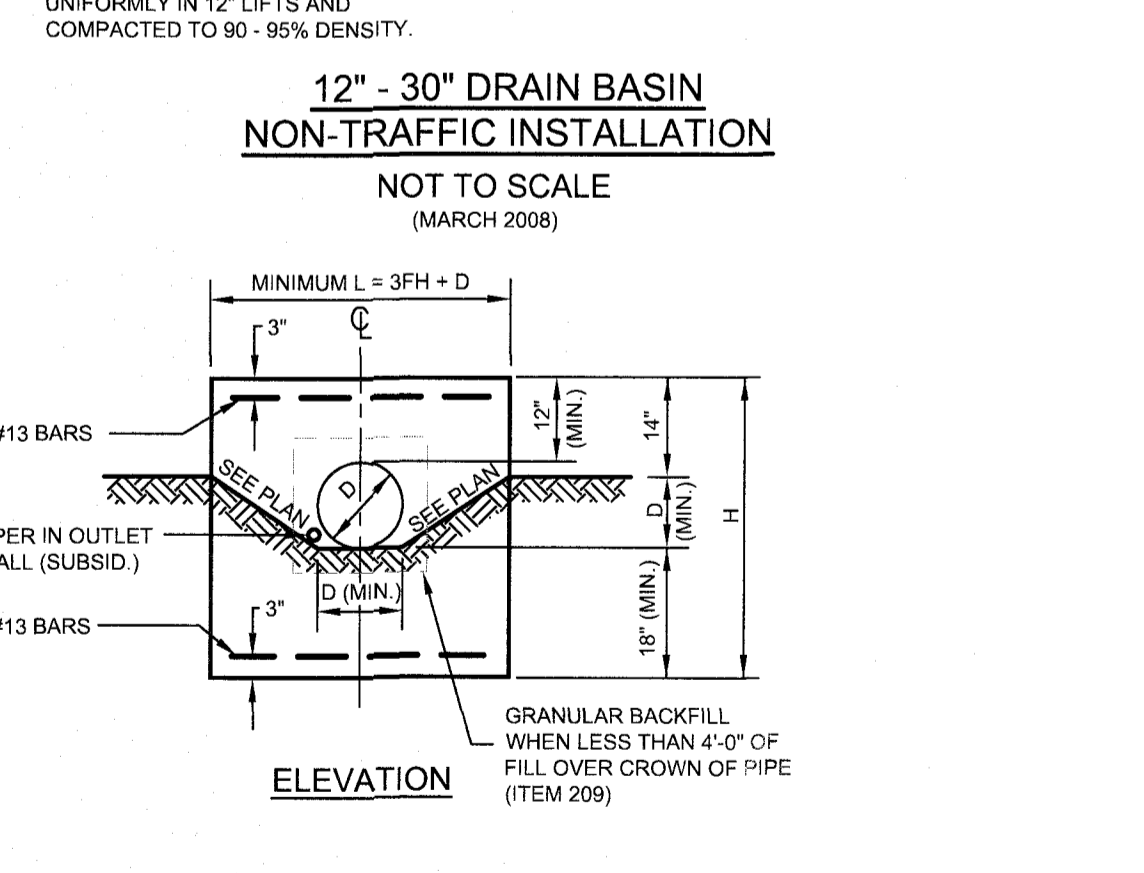
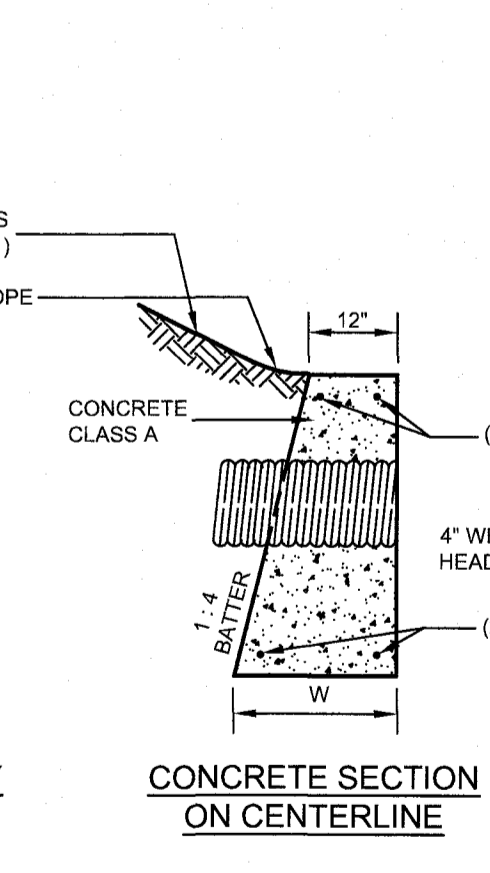
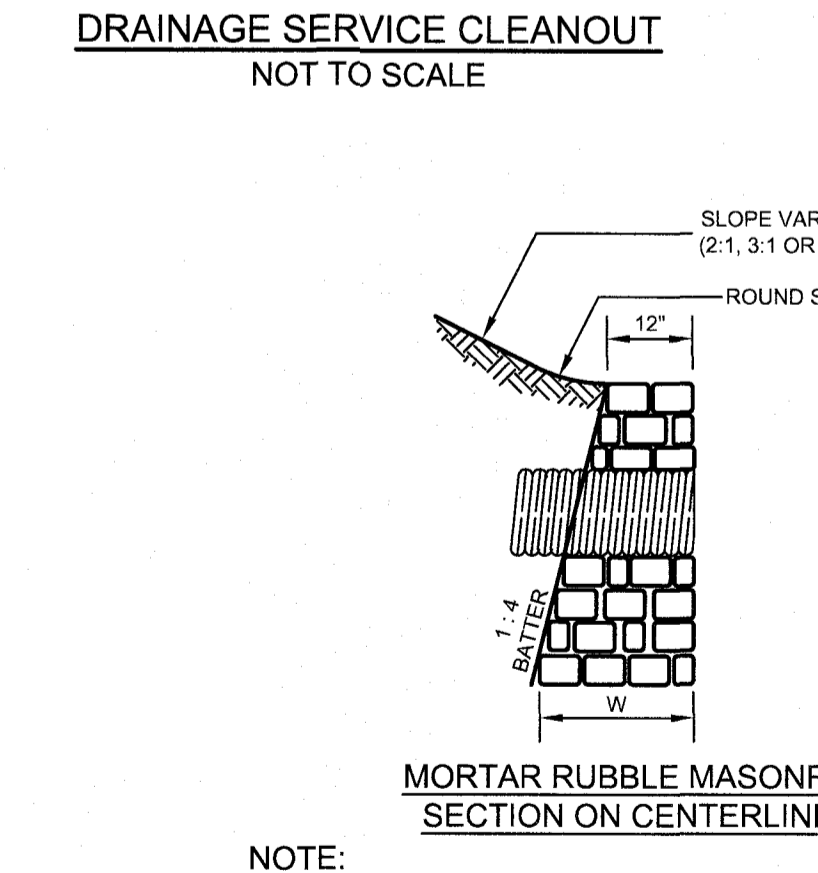
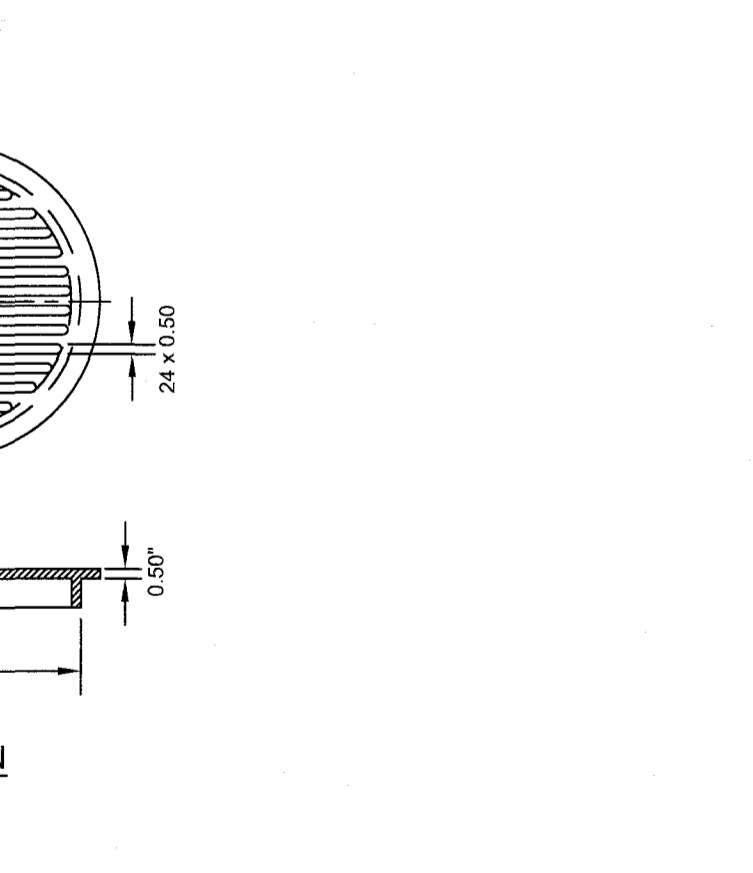
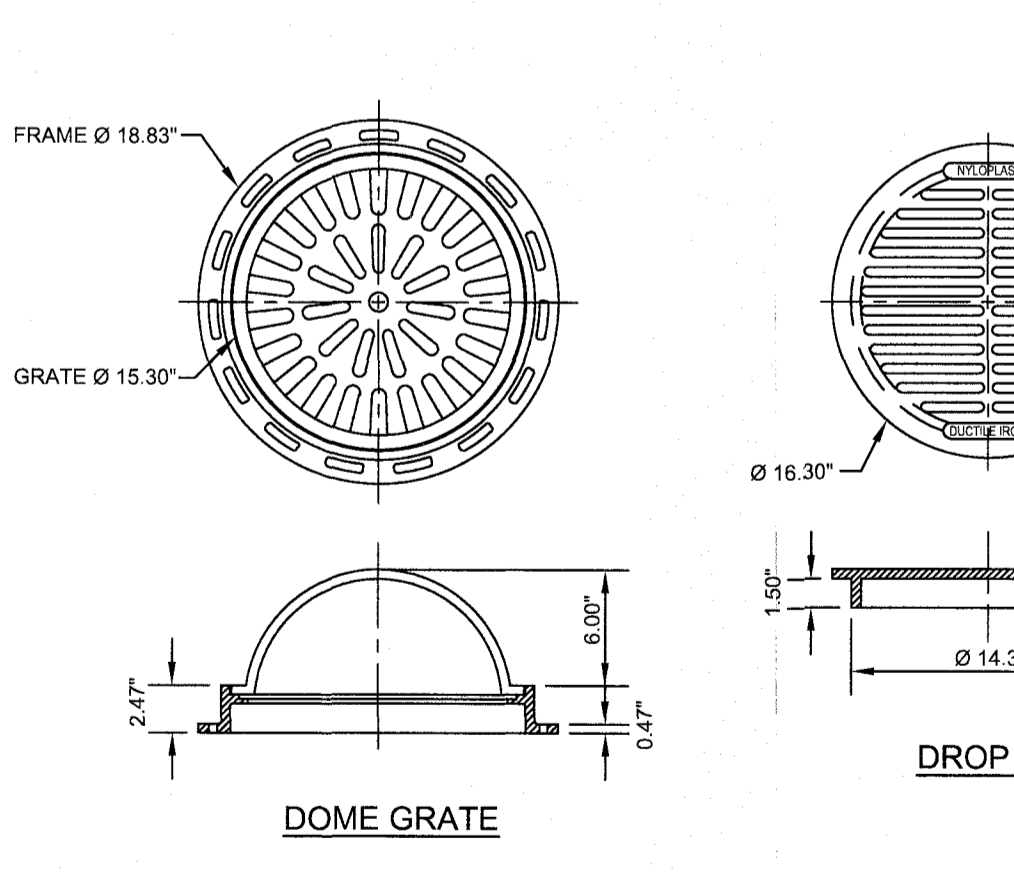
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 3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.
 4. MATERIALS AND CONSTRUCTION TO NHDOT STANDARDS.
 5. DRAIN MANHOLE TO BE H20 LOADED.

NOTES:
 THOROUGHLY COMPACTED SCREENED GRAVEL FOR RCP PIPE. SCREENED GRAVEL TO EXTEND TO SELECT FILL LINE.
 FOR HDPE OR PVC PIPE, BEDDING SHALL BE 3/4" STONE TO THE TOP OF THE PIPE.



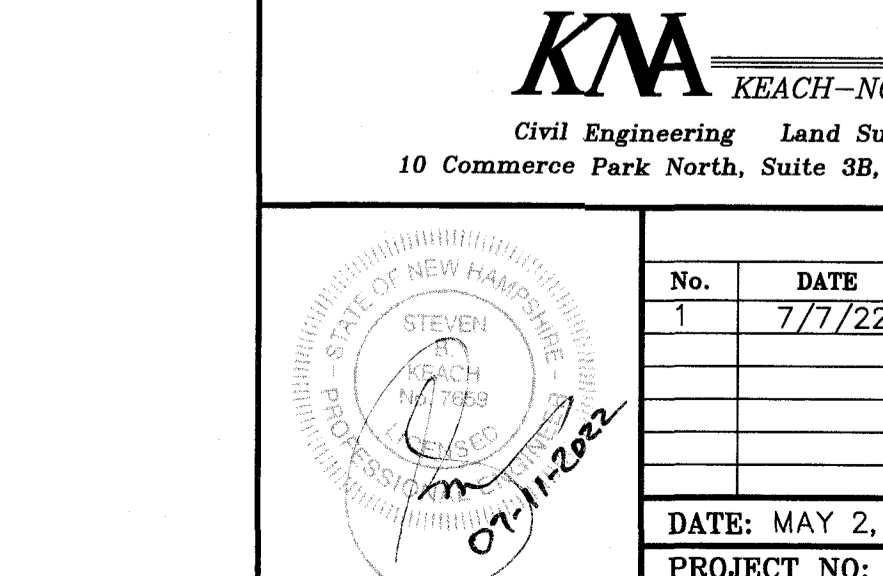
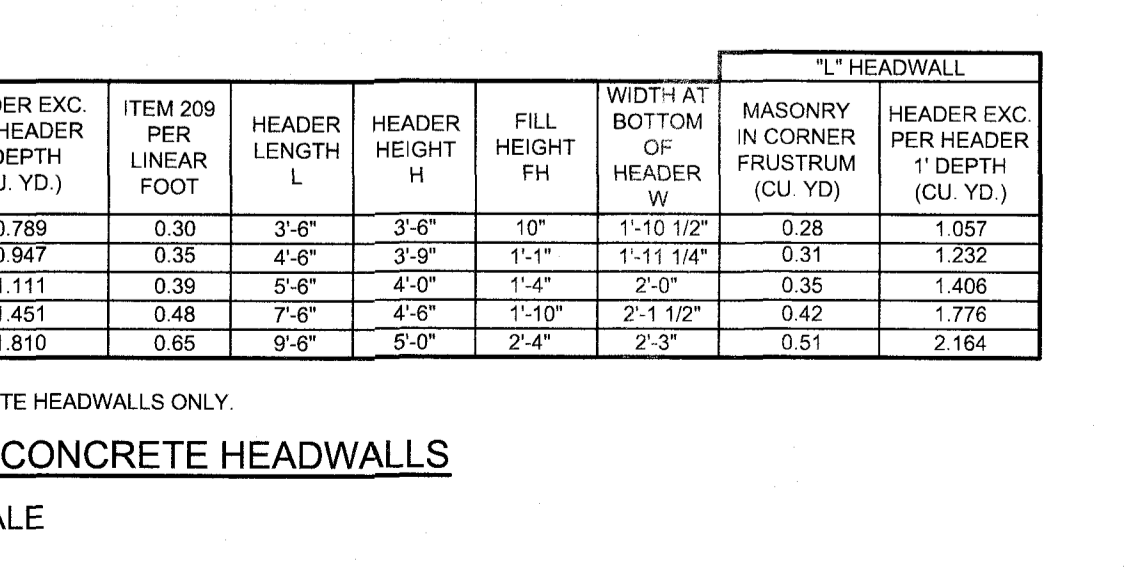
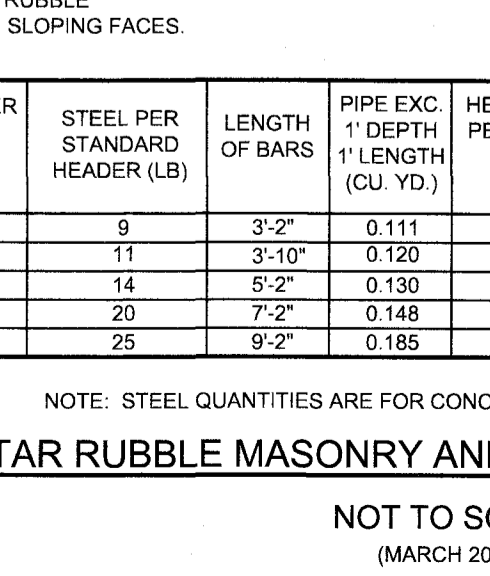
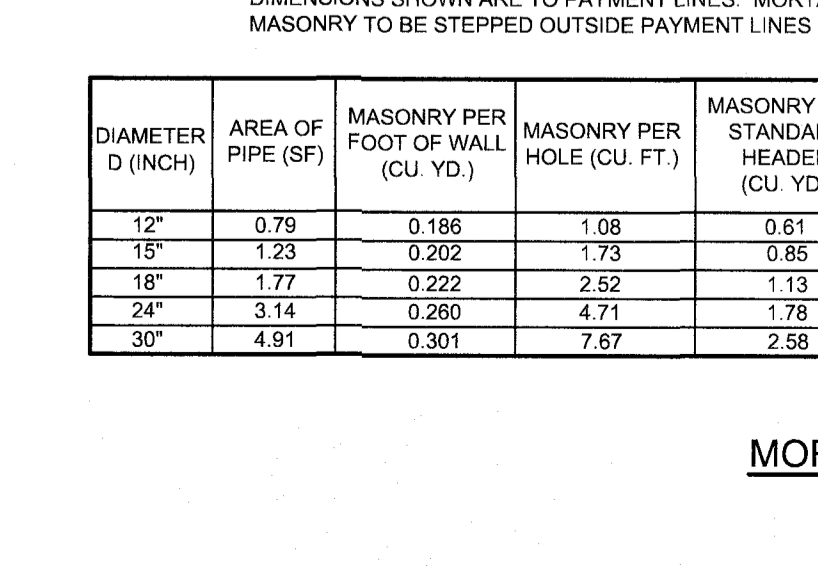
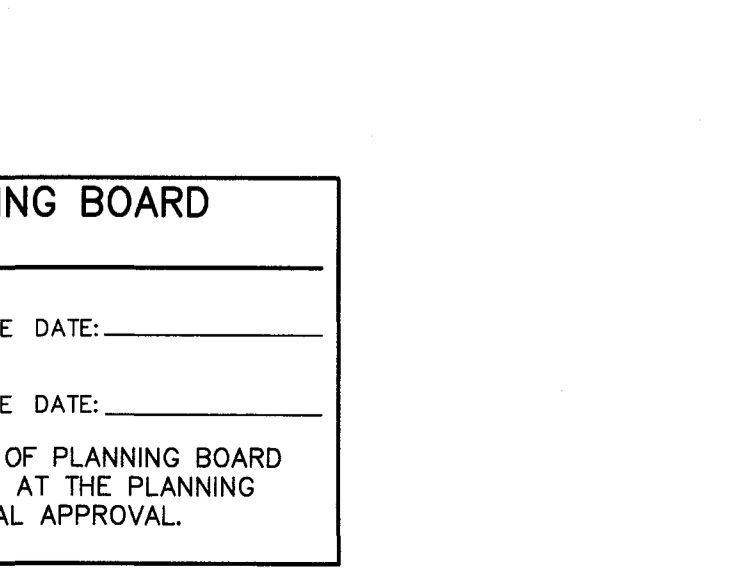
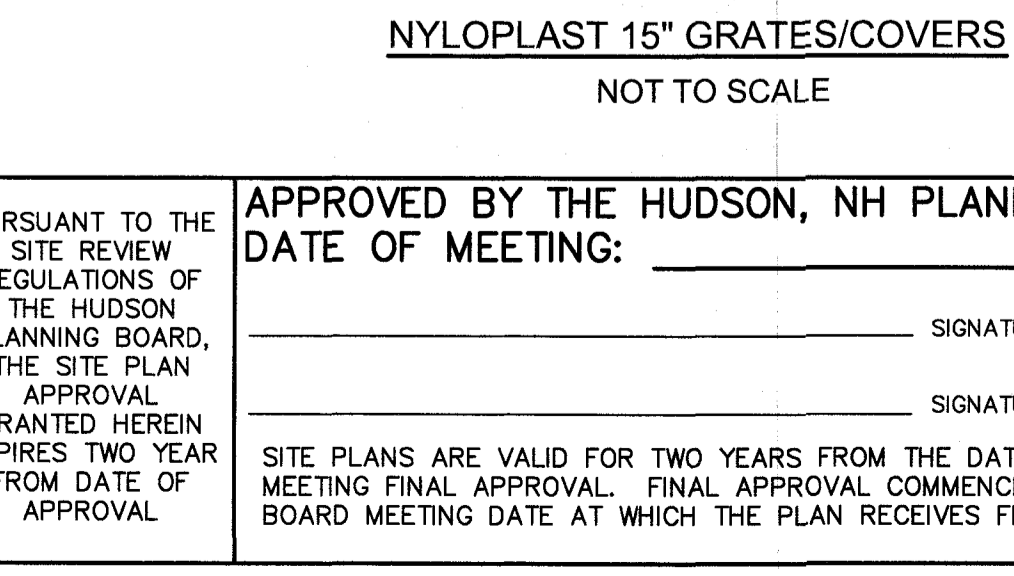
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CONSTRUCTION DETAILS
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION
 C/O GREAT NORTH PROPERTY MANAGEMENT
 3 HOLLAND WAY, SUITE 201
 EXETER, NH 03833

APPLICANT: SHEPHERDS HILL, LLC
 253 MAIN STREET
 NASHUA, NH 03060

KMA KEACH-NORDSTROM ASSOCIATES, INC.
 Civil Engineering Land Surveying Landscape Architecture
 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

No.	DATE	REVISIONS	BY
1	7/7/22	REVISED PER COMMENTS	ACL

DATE: MAY 2, 2022 **SCALE:** AS SHOWN
PROJECT NO: 17-0824-1 **SHEET** 42 OF 51

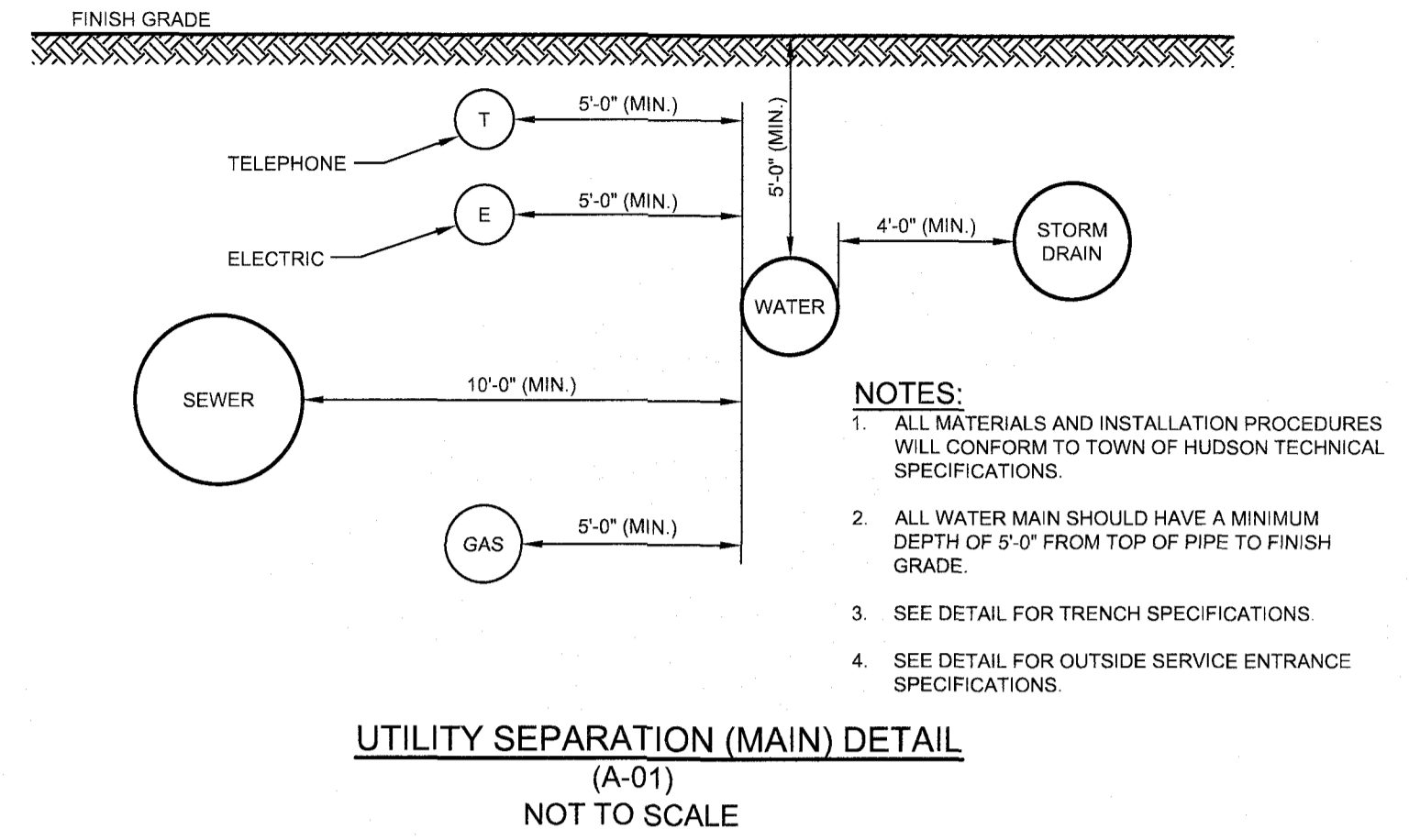
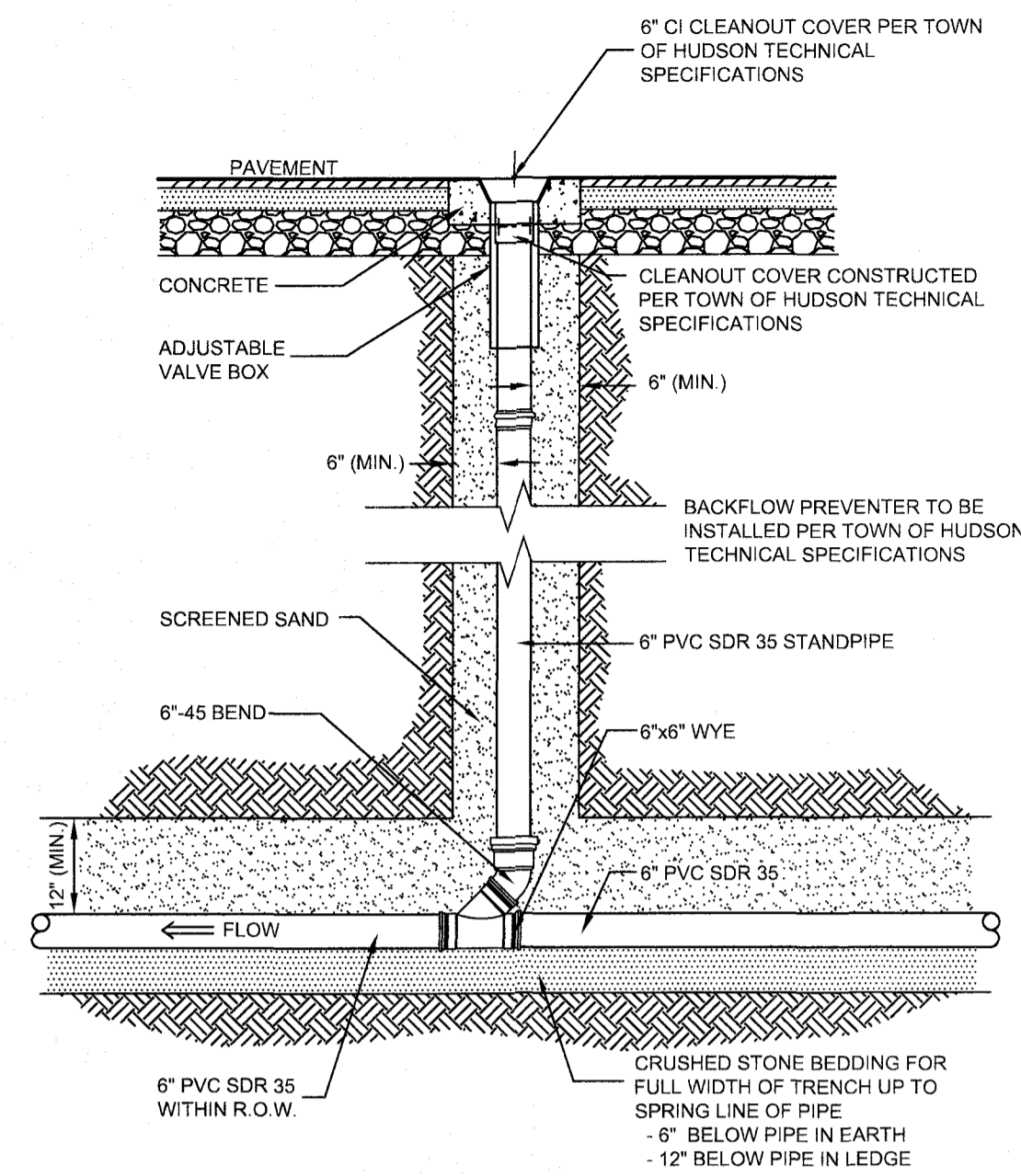
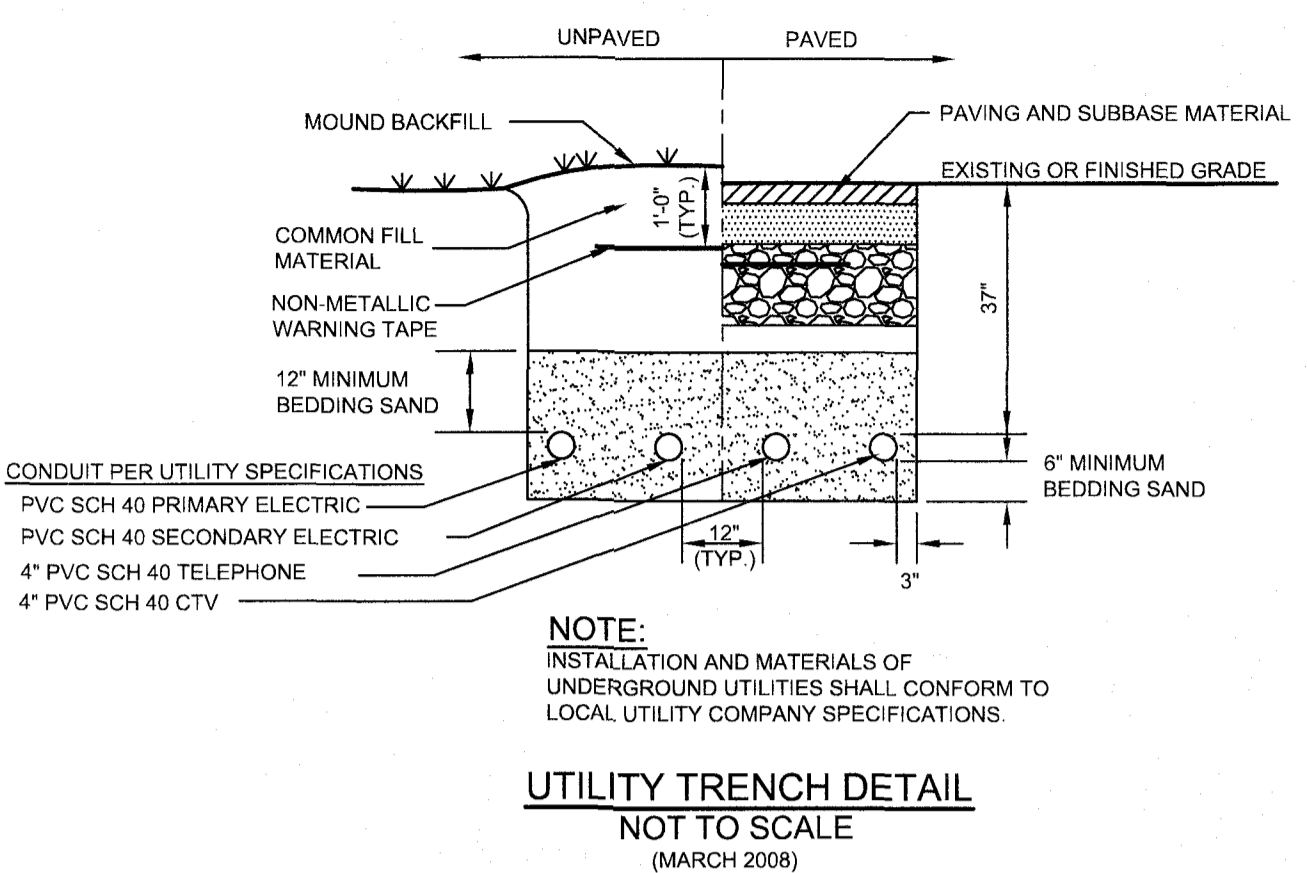
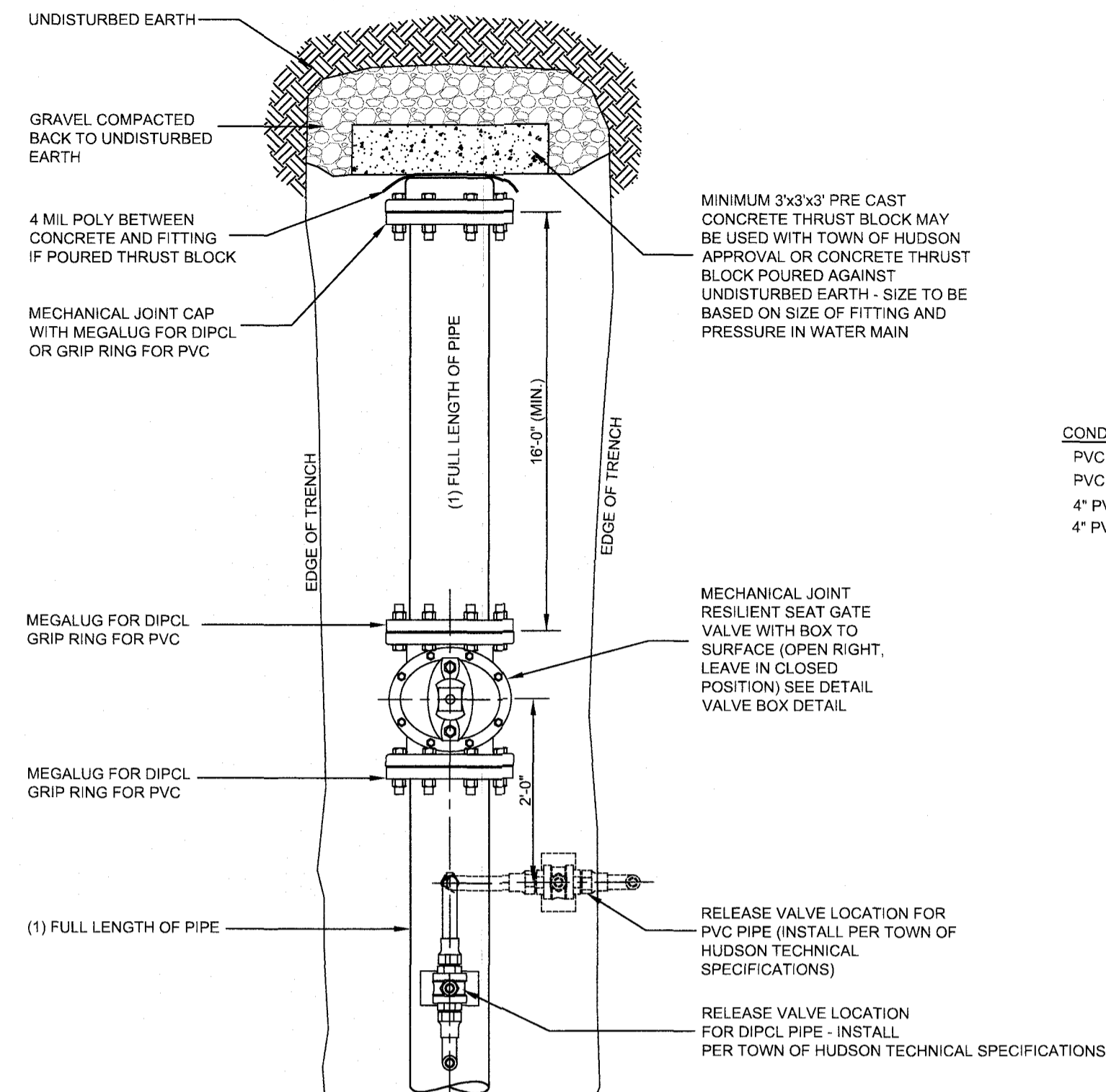
DIAMETER D (INCH)	AREA OF PIPE (SF)	MASONRY PER FOOT OF WALL (CU. YD.)	MASONRY PER HOLE (CU. FT.)	MASONRY PER STANDARD HEADER (CU. YD.)	STEEL PER STANDARD HEADER (LB)	LENGTH OF BARS	PIPE EXC. 1' DEPTH 1' LENGTH (CU. YD.)	HEADER EXC. PER HEADER 1' DEPTH (CU. YD.)	ITEM 209 PER LINEAR FOOT	HEADER LENGTH	HEADER HEIGHT	FILL HEIGHT FH	WIDTH AT BOTTOM OF HEADER W	MASONRY IN CORNER FRUSTRUM (CU. YD.)	HEADER EXC. PER HEADER 1' DEPTH (CU. YD.)
12"	0.79	0.186	1.08	0.61	9	3'-2"	0.111	0.789	0.30	3'-6"	3'-6"	10"	1'-10 1/2"	0.28	1.057
15"	1.23	0.202	1.73	0.85	11	3'-10"	0.120	0.947	0.35	4'-6"	3'-9"	1'-1"	1'-11 1/4"	0.31	1.232
18"	1.77	0.222	2.52	1.13	14	5'-2"	0.130	1.111	0.39	5'-6"	4'-0"	1'-4"	2'-0"	0.35	1.406
24"	3.14	0.280	4.71	1.78	20	7'-2"	0.148	1.451	0.48	7'-6"	4'-6"	1'-10"	2'-1 1/2"	0.42	1.776
30"	4.91	0.301	7.67	2.58	25	9'-2"	0.185	1.810	0.65	9'-6"	6'-0"	2'-4"	2'-3"	0.51	2.164

NOTE: STEEL QUANTITIES ARE FOR CONCRETE HEADWALLS ONLY.
MORTAR RUBBLE MASONRY AND CONCRETE HEADWALLS
 NOT TO SCALE
 (MARCH 2008)

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEAR FROM DATE OF APPROVAL

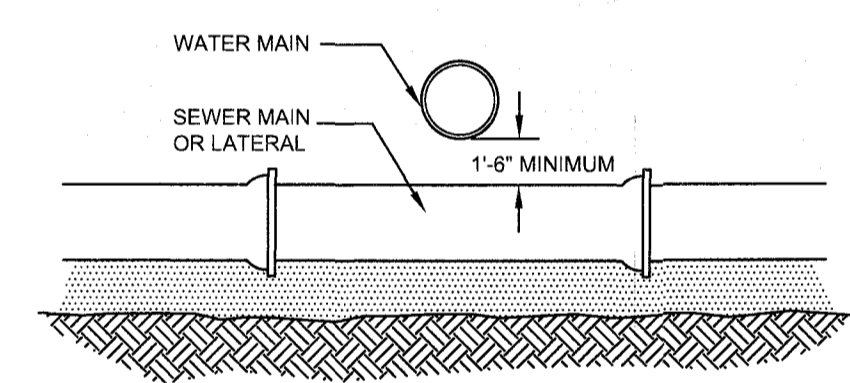
APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____
 _____ SIGNATURE DATE: _____
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SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

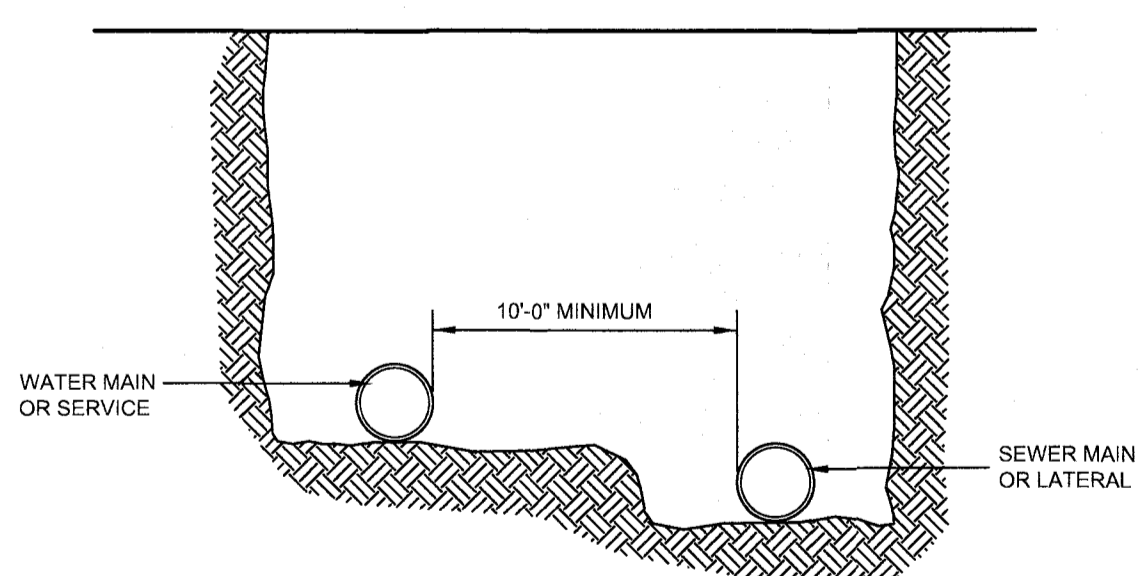


NOTES:
 1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF HUDSON TECHNICAL SPECIFICATIONS.
 2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5'-0" FROM TOP OF PIPE TO FINISH GRADE.

END OF MAIN INSTALLATION (A-08)
 NOT TO SCALE
 (MARCH 2008)

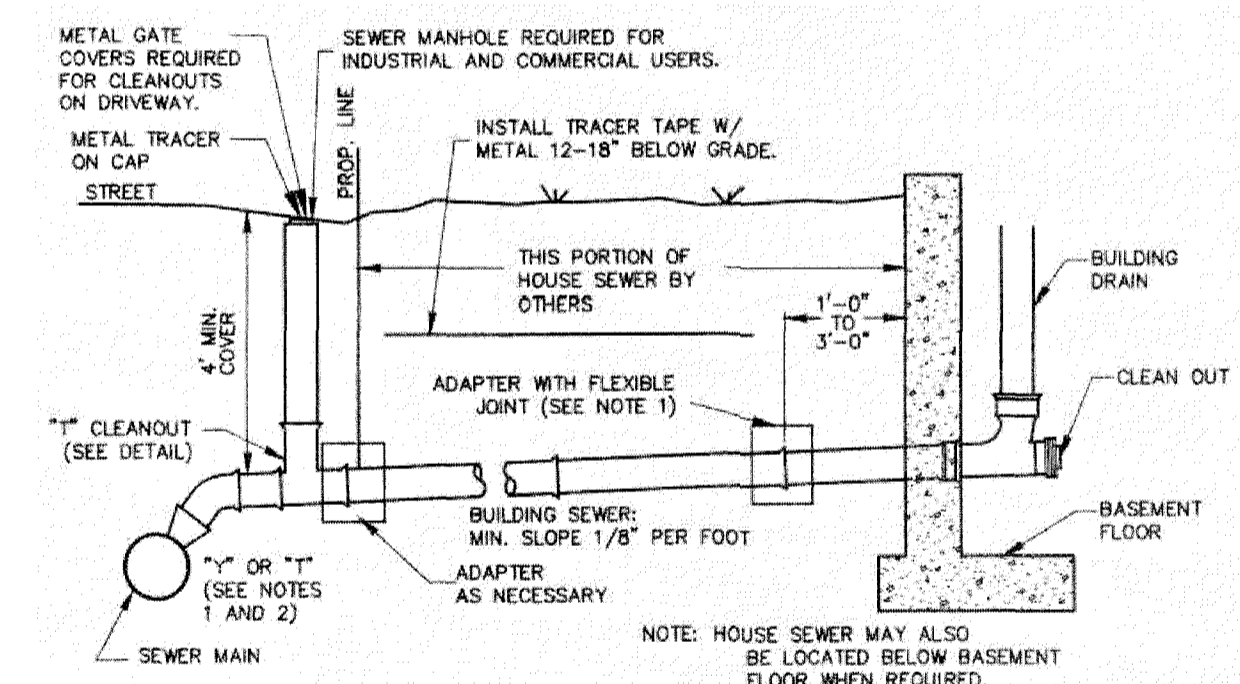


MAIN CROSSINGS



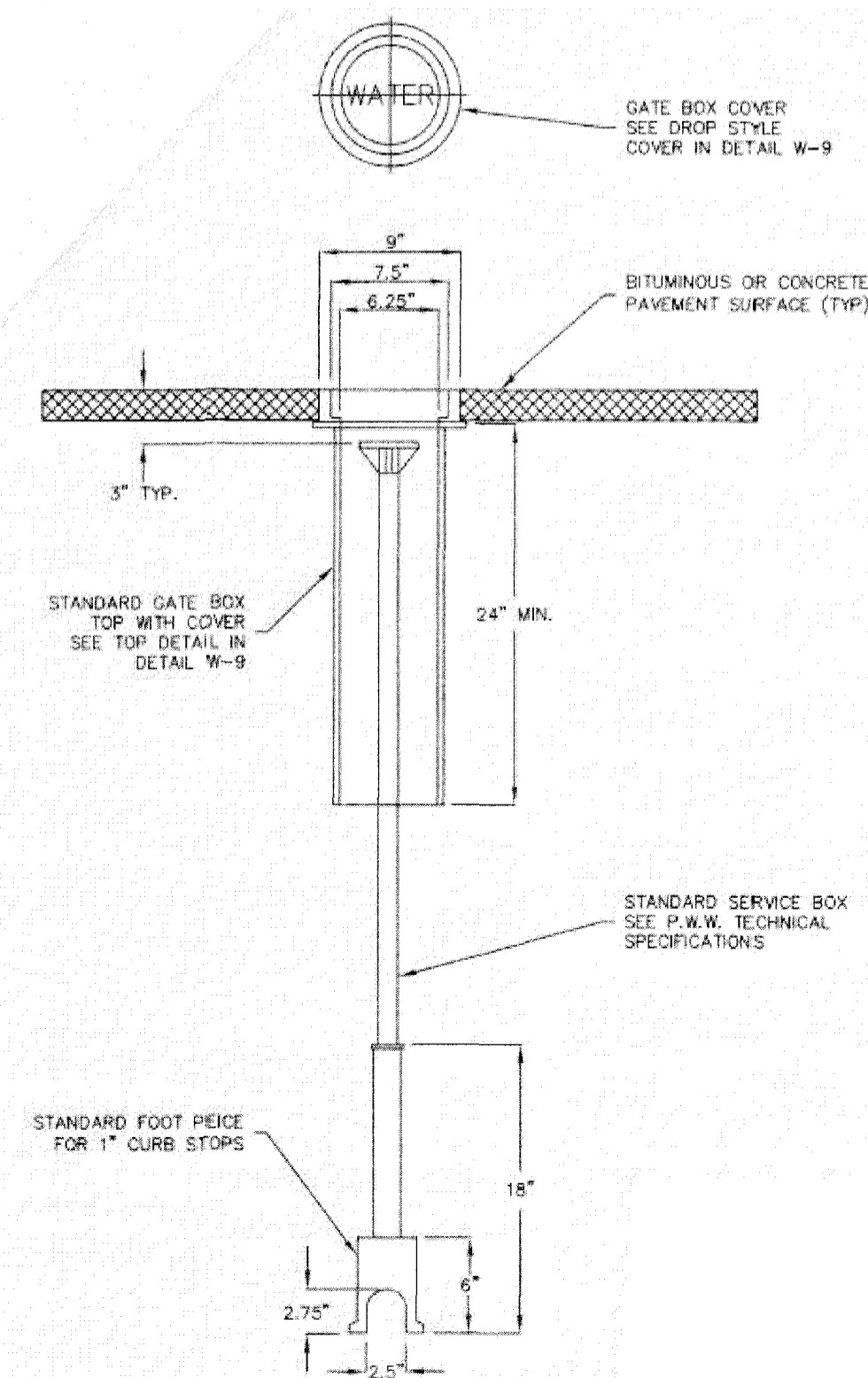
PARALLEL INSTALLATION

WATER MAIN/SEWER MAIN SEPARATION
 NOT TO SCALE



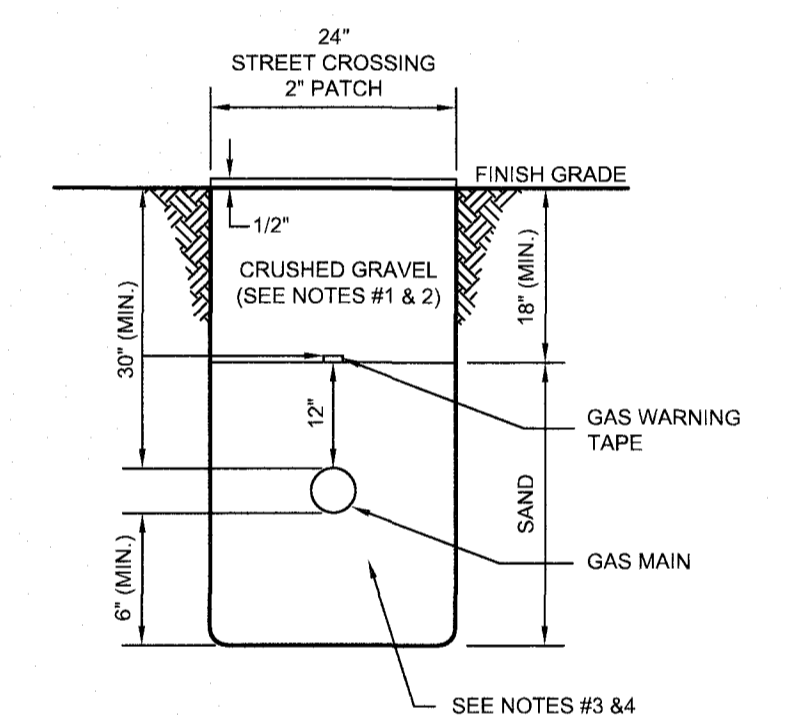
NOTES:
 1. JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER "Y" OR AT THE FOUNDATION WALL, APPROPRIATE ADAPTERS SHALL BE USED.
 2. WHERE A "Y" OR "Y" IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE IN ACCORDANCE WITH THE TOWN ENGINEER.
 3. PIPE SHALL BE 6" DIAMETER MINIMUM FROM SEWER MAIN TO EASEMENT (Ø R.) AND 4" DIAMETER MINIMUM FROM CLEANOUT TO BUILDING FOUNDATION.

SEWER BUILDING SERVICE CONNECTION DETAIL
 NOT TO SCALE



NOTE:
 ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF HUDSON TECHNICAL SPECIFICATIONS.

WATER SERVICE BOX IN PAVED AREAS DETAIL
 NOT TO SCALE



NOTES:
 1. TYPE II AGGREGATE BASE, REQUIRES 95% COMPACTION.
 2. THE TOP 18" OF ALL TRENCHES IN ESTABLISHED HIGHWAYS, STREETS AND OTHER PAVED AREAS SUBJECT TO TRAFFIC, SHALL BE BACKFILLED WITH TYPE II BASE.
 3. NO CONDUITS SHALL BE INSTALLED ABOVE OR PARALLEL TO GAS LINES.
 4. NON-METALLIC RED WARNING TAPE WILL BE 6" WIDE, MARKED "LE UTILITES BURIED BELOW" AND SHALL BE PLACED IN ALL TRENCHES AT LEAST 18" BELOW FINISH GRADE AND 12" ABOVE LE CONDUIT.

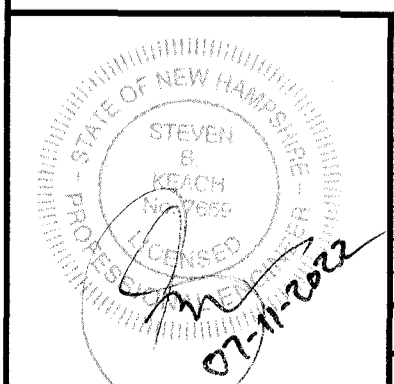
GAS MAIN TRENCH DETAIL
 NOT TO SCALE

CONSTRUCTION DETAILS
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

OWNER OF RECORD:
 SHEPHERDS HILL HOME OWNERS ASSOCIATION
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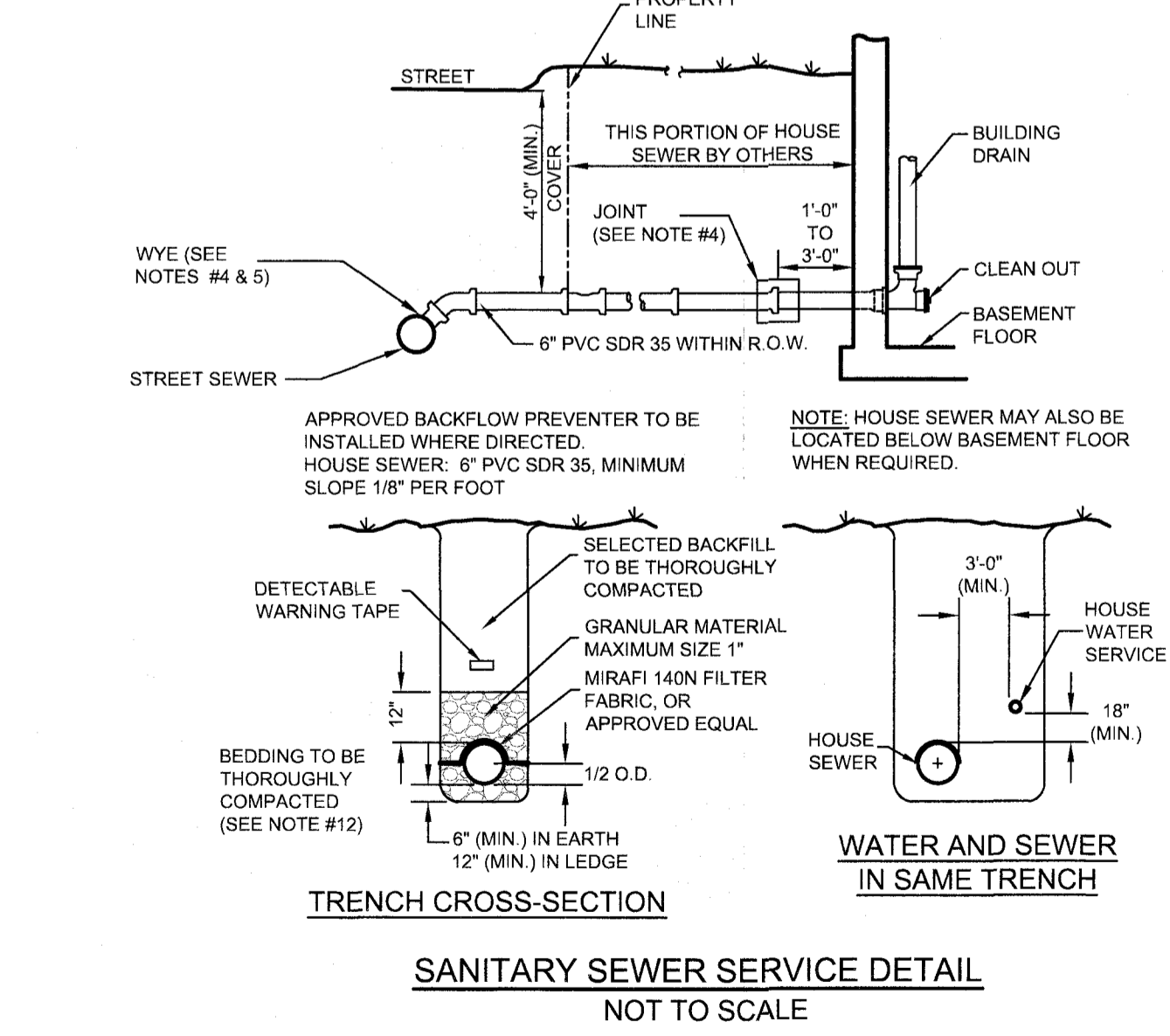
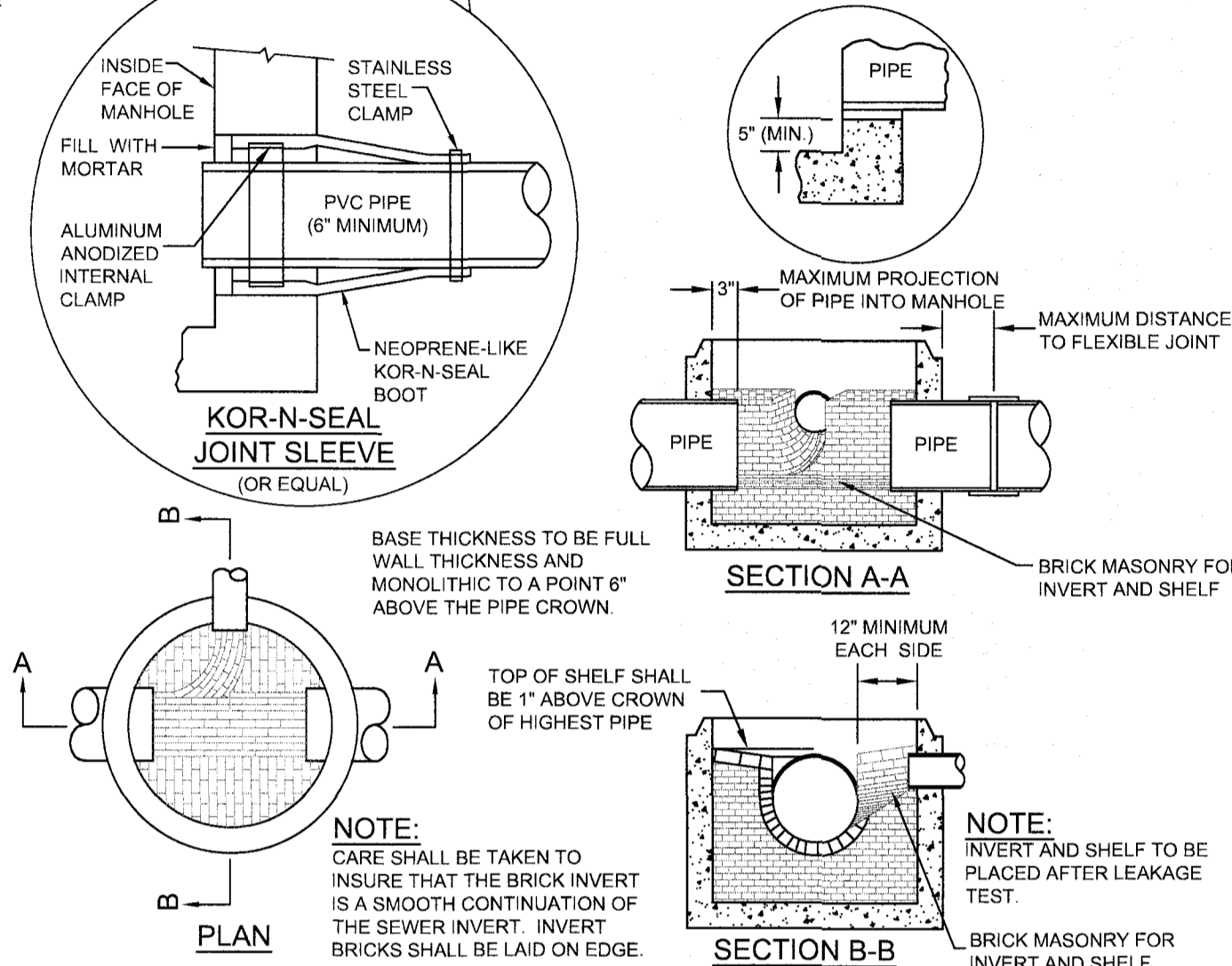
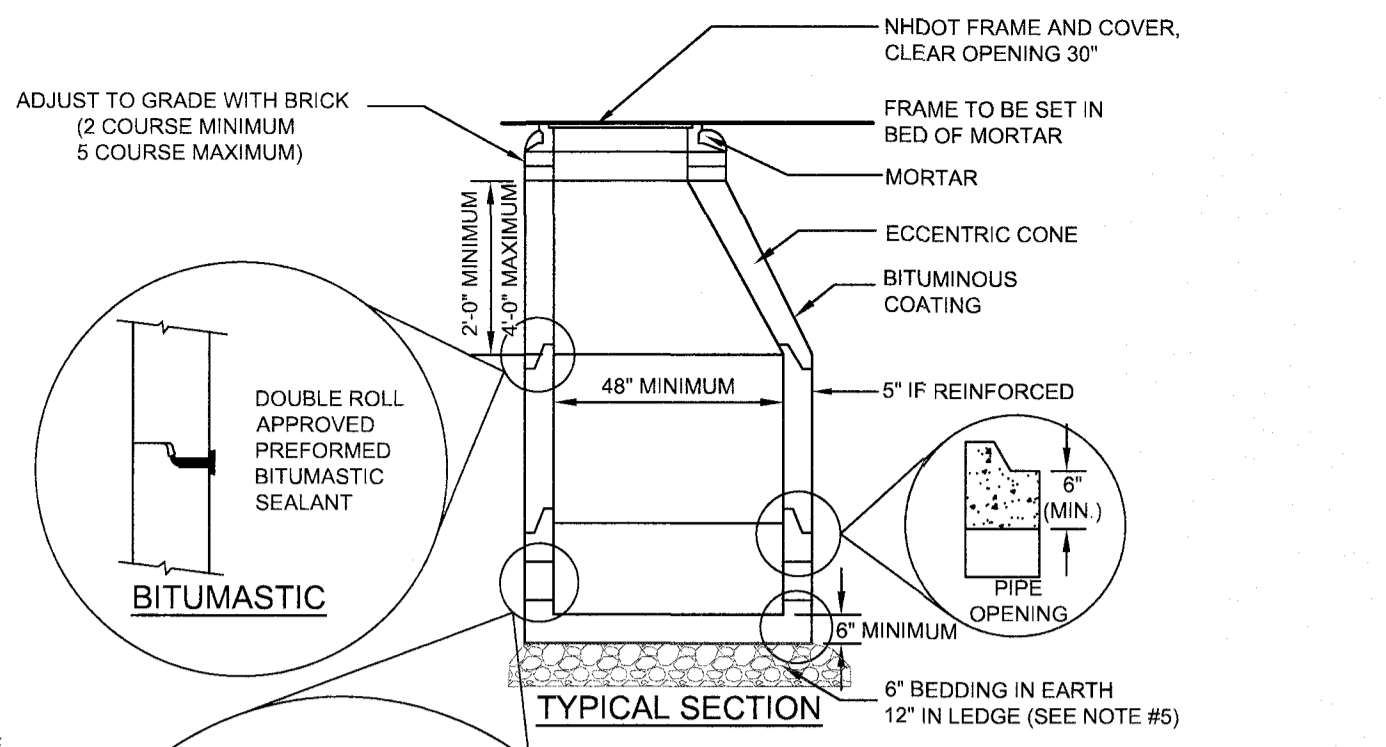
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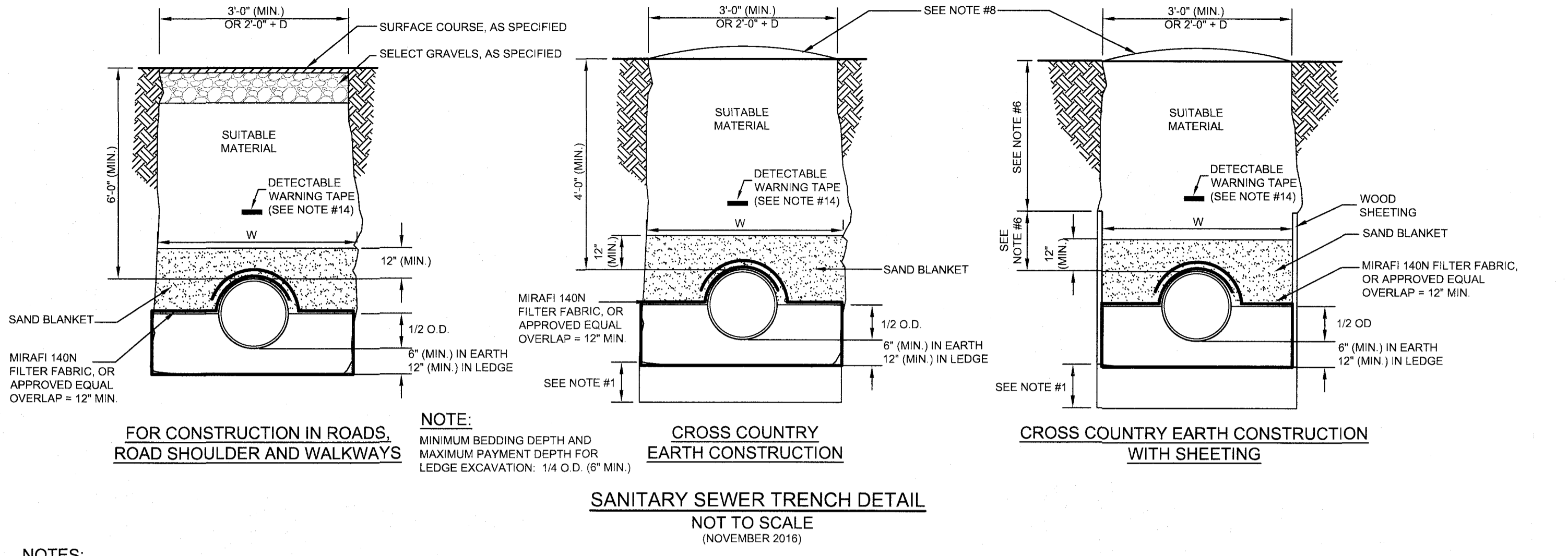
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NOTES: (NHDES ENV WQ700 - 2015)

- ALL COMPONENT PARTS OF MANHOLE STRUCTURES SHALL HAVE THE STRENGTH, LEAK RESISTANCE AND SPACE NECESSARY FOR THE INTENDED SERVICE.
- MANHOLE STRUCTURES SHALL HAVE A LIFE EXPECTANCY IN EXCESS OF 25 YEARS.
- MANHOLE STRUCTURES SHALL BE DESIGNED TO WITHSTAND H-20 LOADING AND SHALL NOT LEAK IN EXCESS OF ONE GPD PER VERTICAL FOOT OF MANHOLE FOR THE LIFE OF THE STRUCTURE.
- BARRELS, CONCRETE GRADE RINGS AND CONE SECTIONS SHALL BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE AND SHALL CONFORM TO ASTM C478.
- BEDDING: CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33 100% PASSING 1 INCH SCREEN
90% PASSING 3/4 INCH SCREEN
20-55% PASSING #8 SIEVE
0-10% PASSING #4 SIEVE
0-5% PASSING #8 SIEVE
- WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE, CRUSHED STONE 1/2 INCH TO 1-1/2 INCH SHALL BE USED. BASE SECTIONS SHALL BE OF MONOLITHIC CONSTRUCTION TO A POINT AT LEAST 6 INCHES ABOVE THE CROWN OF THE INCOMING PIPE.
- 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.
- PIPE TO MANHOLE JOINTS SHALL BE AS FOLLOWS:
 - ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES.
 - CAST INTO THE WALL OR SECURED WITH STAINLESS STEEL CLAMPS.
 - ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING; AND
 - NON-SHRINK GROUTED JOINTS WHERE WATERTIGHT BONDING TO THE MANHOLE AND PIPE CAN BE OBTAINED.
- MANHOLE CONE SECTIONS SHALL BE ECCENTRIC IN SHAPE.
- ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OR TRADEMARK OF THE MANUFACTURER IMPRESSED OR INDIBLY MARKED ON THE INSIDE WALL.
- ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
- MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, 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 SLOPED 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.
- MATERIALS OF CONSTRUCTION FOR MANHOLES SHALL BE AS FOLLOWS:
 - CONCRETE FOR PRECAST BASES OR GRADE RINGS SHALL CONFORM TO THE REQUIREMENTS FOR CLASS AA CONCRETE IN THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".
 - REINFORCING FOR PRECAST CONCRETE SHALL BE STEEL OR STRUCTURAL FIBERS THAT CONFORM TO THE REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".
 - PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL BE CERTIFIED BY THEIR MANUFACTURE(S) AS CONFORM TO ASTM C478.
 - THE MANHOLE FRAME AND COVER SHALL PROVIDE A 30-INCH DIAMETER CLEAR OPENING.
 - THE MANHOLE COVER SHALL HAVE THE WORD "SEWER" IN 3/4 INCH LETTERS CAST INTO THE TOP SURFACE.
 - THE CASTINGS SHALL BE OF EVEN-GRAINED CAST IRON, SMOOTH AND FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES AND DEFECTS.
 - CONTACT SURFACES OF COVERS AND FRAMES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION.
 - CASTINGS SHALL BE EQUAL TO CLASS 30, BE CERTIFIED BY THEIR MANUFACTURE(S) AS CONFORMING TO ASTM A48/A48M.
 - BRICK MASONRY FOR SHELF, INVERT AND GRADE ADJUSTMENT SHALL BE CERTIFIED BY THEIR MANUFACTURE(S) AS CONFORMING TO ASTM C32, CLAY OR SHALE, FOR GRADE SS HARD BRICK.
 - MORTAR SHALL BE COMPOSED OF TYPE I PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION.
 - PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE:
 - 4 PARTS SAND AND 1.5 PARTS CEMENT; OR
 - 2 PARTS SAND, ONE PART CEMENT AND 0.5 PARTS HYDRATED LIME.
 - CEMENT SHALL BE TYPE I PORTLAND CEMENT CONFORMING TO ASTM C150/C150M.
 - HYDRATED LIME SHALL BE TYPE S CONFORMING TO THE ASTM C207 "STANDARD SPECIFICATIONS FOR HYDRATED LIME FOR MASONRY PURPOSES".
 - SAND SHALL CONSIST OF INERT NATURAL SAND CONFORMING TO THE ASTM C33 "STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES".
 - CONCRETE FOR DROP SUPPORTS SHALL CONFORM TO THE REQUIREMENT FOR CLASS AAA CONCRETE OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".
 - SUBJECT TO (O) BELOW, A FLEXIBLE PIPE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES FROM ANY MANHOLE CONNECTION:
 - WITHIN 48-INCHES FOR REINFORCED CONCRETE (RC) PIPE; AND
 - WITHIN 60-INCHES FOR PVC PIPE LARGER THAN 15-INCH DIAMETER; AND
 - NO FLEXIBLE JOINT SHALL BE REQUIRED FOR D.I. PIPE OR FOR PVC PIPE UP THROUGH 15-INCH DIAMETER; AND
 - WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED IN LIEU OF A CONE SECTION, PROVIDED THE SLAB HAS AN ECCENTRIC ENTRANCE OPENING AND IS CAPABLE OF SUPPORTING H-20 LOADS.
- MANHOLE TESTING:
 - MANHOLES SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST.
 - THE MANHOLE VACUUM TEST SHALL CONFORM TO THE FOLLOWING:
 - INITIAL VACUUM GAUGE TEST PRESSURE SHALL BE 10 INCHES Hg; AND
 - THE MINIMUM ACCEPTABLE TEST HOLD TIME FOR A 1-1/2 INCH Hg PRESSURE DROP TO 9 INCH Hg SHALL BE:
 - NOT LESS THAN 2 MINUTES FOR MANHOLES LESS THAN 10 FEET DEEP IN DEPTH;
 - NOT LESS THAN 2.5 MINUTES FOR MANHOLES 10 TO 15 FEET DEEP; AND
 - NOT LESS THAN 3 MINUTES FOR MANHOLES MORE THAN 15 FEET DEEP.
 - THE MANHOLE SHALL BE RE-TESTED IF THE TEST HOLD TIMES FAIL TO ACHIEVE THE ACCEPTANCE LIMITS SPECIFIED IN (B) ABOVE.
 - FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON THE TOP OF THE MANHOLE OR SOME OTHER MEANS USED TO PREVENT ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN OR ANIMALS UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENTS TO GRADE.

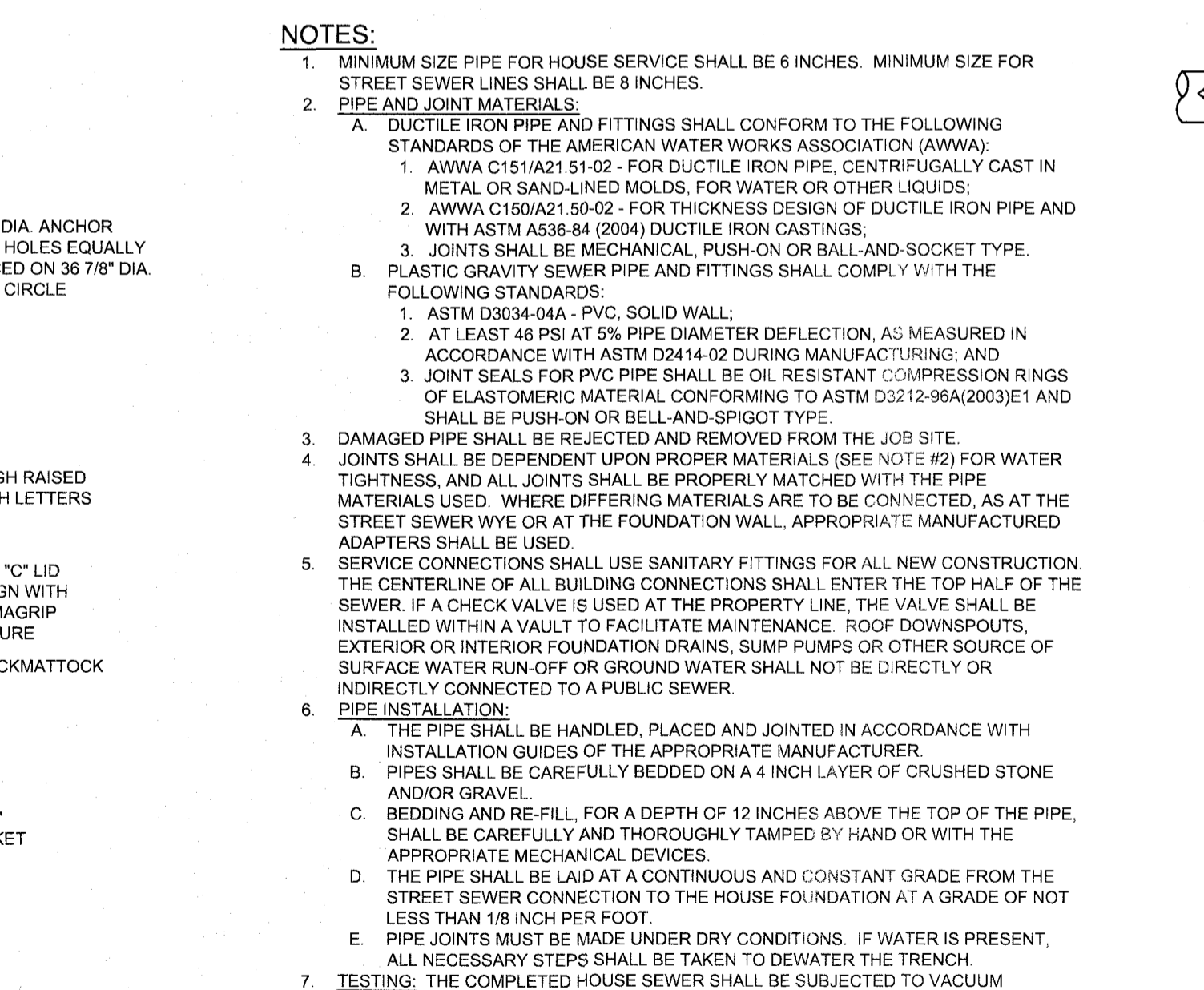
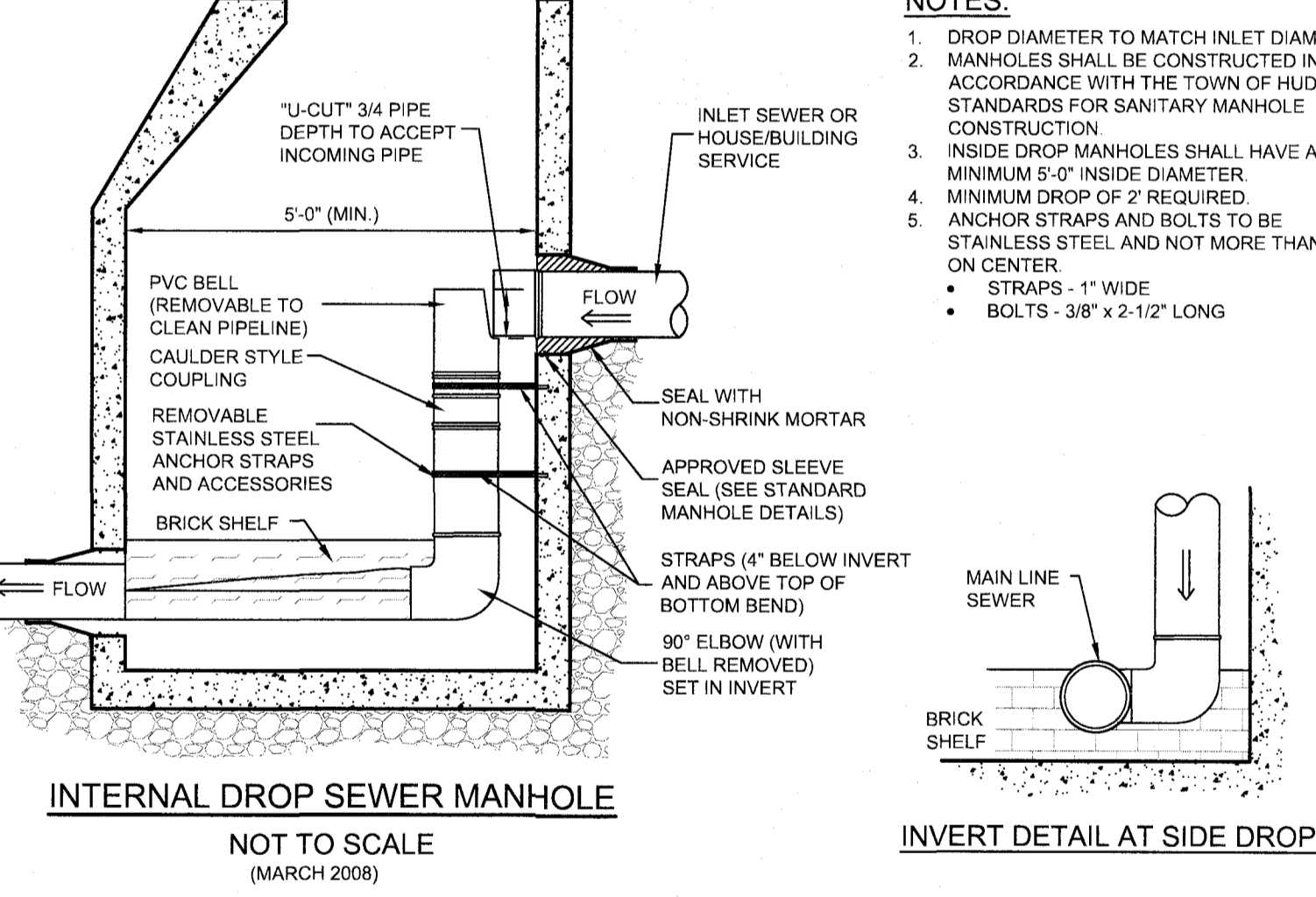


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 _____ SIGNATURE DATE: _____
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 SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.



- NOTES:**
- ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH BEDDING MATERIAL. ALSO SEE NOTE #7. BEDDING: CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATTER AND MEETING ASTM C33/C33M STONE SIZE NO. 67.
100% PASSING 1 INCH SCREEN
90 - 100% PASSING 3/4 INCH SCREEN
20 - 55% PASSING 3/8 INCH SCREEN
0 - 10% PASSING # 4 SIEVE
0 - 5% PASSING # 8 SIEVE
WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, GRADED CRUSHED STONE 1/2 INCH TO 1-1/2 INCHES SHALL BE USED.
 - SAND BLANKET: GRADED CLEAN SAND FREE FROM ORGANIC MATTER, SO THAT 100% PASSES A 1/2 INCH SIEVE AND NOT MORE THAN 15% WILL PASS A # 200 SIEVE. BLANKET MAY BE OMITTED FOR CAST IRON, DUCTILE IRON AND REINFORCED CONCRETE PIPE PROVIDED, HOWEVER, THAT NO STONE LARGER THAN 2 INCHES IS IN CONTACT WITH THE PIPE.
 - MIRAFI 140N FILTER FABRIC, OR APPROVED EQUAL, SHALL BE INSTALLED ABOVE PIPE.
 - SUITABLE MATERIAL: IN ROADS, ROAD SHOULDER, WALKWAYS AND TRAVELED WAYS SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL AND ALL ROCKS OVER 8 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. BASE COURSE, IF ORDERED BY THE ENGINEER, SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS".
 - WOOD SHEETING, IF REQUIRED, WHERE PLACED ALONGSIDE THE PIPE AND EXTENDING BELOW MID-DIAMETER, SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.
 - W = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
 - FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUND TO A HEIGHT OF 8 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
 - NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES DESIGN STANDARDS REQUIRE 10 FEET OF SEPARATION BETWEEN WATER AND SEWER. HOWEVER, SHOULD CONSTRUCTION REVEAL OR EXPOSE A WATERLINE (MAIN OR SERVICE) RUNNING APPROXIMATELY PARALLEL, AND LESS THAN 10 FEET HORIZONTALLY FROM THE PROPOSED SEWER INSTALLATION AND WHERE IT IS NOT PRACTICABLE TO LOCATE THE SEWER, A DEVIATION MAY BE GRANTED PROVIDED THAT THE SEWER IS CONSTRUCTED IN ACCORDANCE WITH THE FORCE MAIN CONSTRUCTION REQUIREMENT SPECIFIED BELOW:
 - FORCE MAINS SHALL BE CONSTRUCTED FROM DUCTILE IRON, HIGH DENSITY POLYETHYLENE, OR PVC PER ENV-WQ 704.06(B).
 - PVC SHALL CONFORM TO ASTM D2241-05 OR ASTM D1785-05.
 - HULL SHALL CONFORM TO ASTM D3035-03.
 - D.I. SHALL BE CORROSION PROTECTED IN CORROSIVE ENVIRONMENTS.

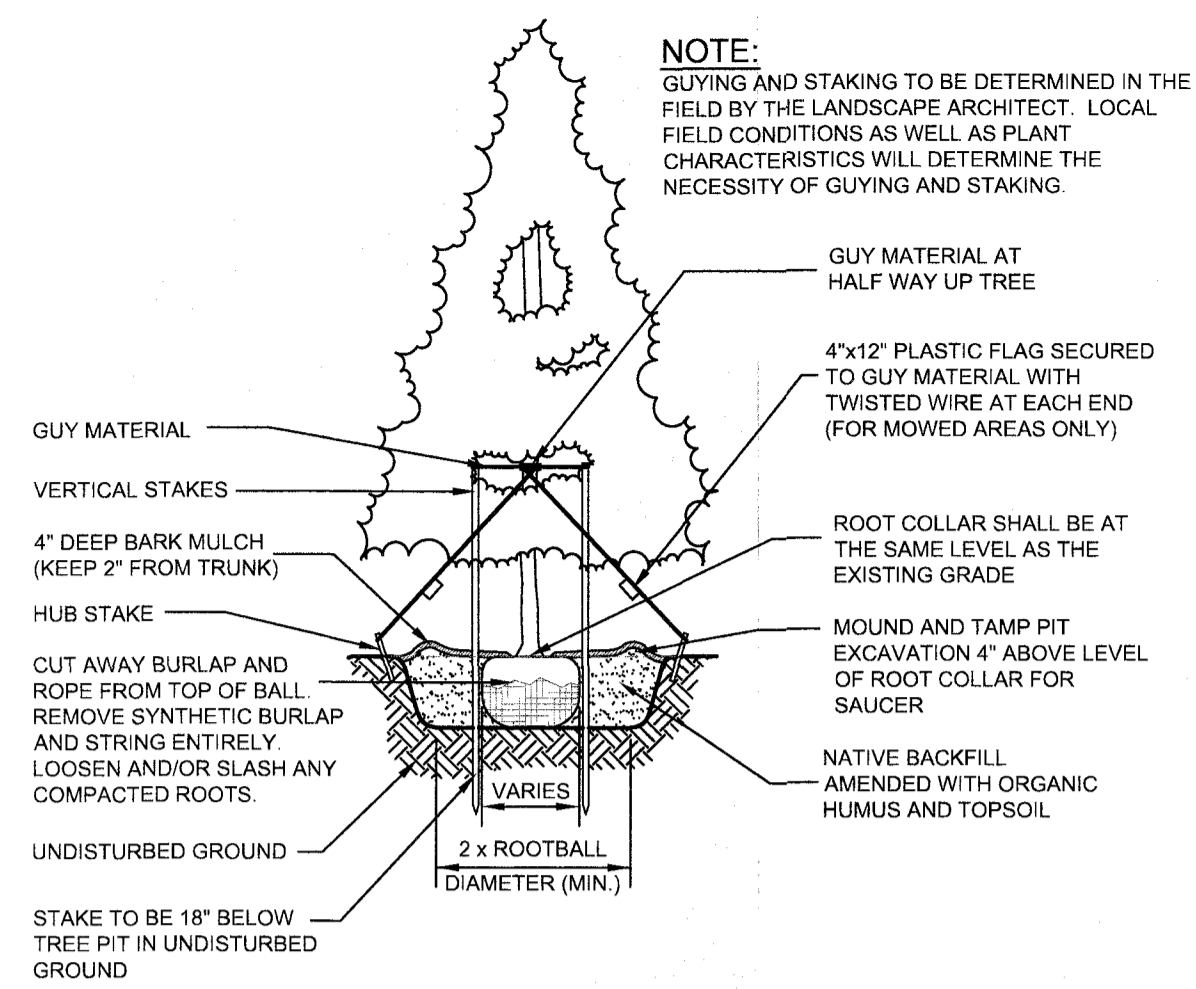
- WHERE WATER LINES AND SEWER LINES CROSS, THEY SHOULD CROSS AS PERPENDICULAR AS POSSIBLE AND THE WATER MAIN SHALL CROSS AT LEAST 18" INCHES ABOVE THE SEWER. FURTHER, THE SEWER JOINTS SHALL BE LOCATED AT LEAST 6 FEET HORIZONTALLY FROM THE WATER MAIN.
- ALL SEWERS AT 8 PERCENT SLOPE, OR GREATER, SHALL HAVE IMPERVIOUS TRENCH DAMS CONSTRUCTED EVERY 300 FEET.
- UNLESS OTHERWISE NOTED, ALL GRANULAR MATERIAL SHALL BE PLACED IN 12" LIFTS AND COMPACTED TO 95% OF THE MODIFIED PROCTOR TEST.
- WHERE WATER MAINS CROSS UNDER SEWER MAINS, BOTH THE SEWER AND WATER MAINS SHALL BE PRESSURE RATED PIPE PER ENV-WQ 704.06 AND TESTED PER AWWA C800-05 AT 1.5 TIMES DESIGN PRESSURE OR 100 PSI, WHICHEVER IS GREATER, WITH NO JOINTS WITHIN 9 FEET OF THE CROSSING POINT AND 18" MINIMUM VERTICAL SEPARATION.
- ALL SEWERS SHALL BE MARKED USING METAL IMPREGNATED MARKING TAPE OR TRACER WIRE THAT CAN BE LOCATED USING METAL DETECTION EQUIPMENT.
- GRAVITY PIPE SEWER TESTING:
 - ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTERS.
 - LOW-PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:
 - ASTM F1417-02(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW-PRESSURE AIR" OR
 - UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW-PRESSURE AIR TESTING OF INSTALLED SEWER PIPE" (1998).
 - ALL NEW GRAVITY SEWERS SHALL BE VIDEOED BY PACP CERTIFIED OPERATOR.
 - ALL PLASTIC SEWER PIPE SHALL BE DEFLECTION TESTED NOT LESS THAN 30 DAYS FOLLOWING INSTALLATION.
 - THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5 PERCENT OF AVERAGE INSIDE DIAMETER. A RIGID BALL OR MANDREL WITH A DIAMETER OF AT LEAST 95 PERCENT OF THE AVERAGE INSIDE PIPE DIAMETER SHALL BE USED FOR TESTING PIPE DEFLECTION. THE DEFLECTION TEST SHALL BE CONDUCTED WITHOUT MECHANICAL PULLING DEVICES.



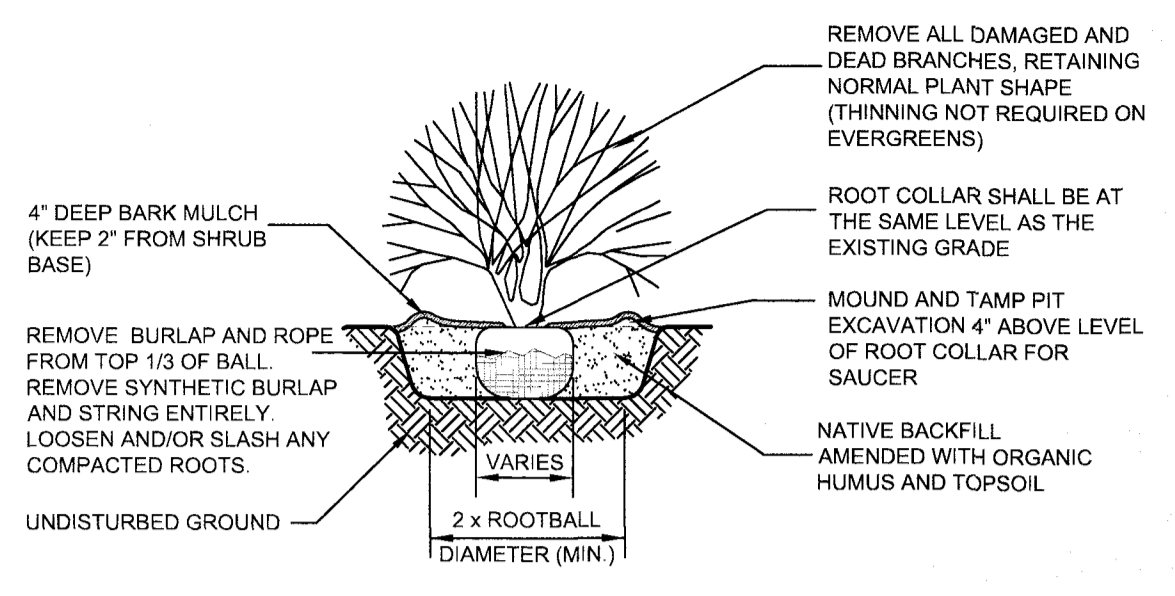
- NOTES:**
- MINIMUM SIZE PIPE FOR HOUSE SERVICE SHALL BE 6 INCHES. MINIMUM SIZE FOR STREET SEWER LINES SHALL BE 8 INCHES.
 - PIPE AND JOINT MATERIALS:
 - DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS:
 - AWWA C151/A21 51-02 - FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL OR SAND-LINED MOLDS, FOR WATER OR OTHER LIQUIDS;
 - AWWA C150/A21 50-02 - FOR THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A536-84 (2004) DUCTILE IRON CASTINGS;
 - JOINT SHALL BE OF THE ELASTOMERIC PUSH-ON OR CLAMP AND-SOCKET TYPE.
 - PLASTIC GRAVITY SEWER PIPE AND FITTINGS SHALL COMPLY WITH THE FOLLOWING STANDARDS:
 - ASTM D3034-04A - PVC, SOLID WALL;
 - AT LEAST 46 PSI AT 5% PIPE DIAMETER DEFLECTION, AS MEASURED IN ACCORDANCE WITH ASTM D2414-02 DURING MANUFACTURING; AND
 - JOINT SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D3212-96A(2003)E1 AND SHALL BE PUSH-ON OR BELL-AND-SPIGOT TYPE.
 - DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
 - JOINTS SHALL BE DEPENDENT UPON PROPER MATERIALS (SEE NOTE #2) FOR WATER TIGHTNESS, AND ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATION WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.
 - SERVICE CONNECTIONS SHALL USE SANITARY FITTINGS FOR ALL NEW CONSTRUCTION. THE CENTERLINE OF ALL BUILDING CONNECTIONS SHALL ENTER THE TOP HALF OF THE SEWER. IF A CHECK VALVE IS USED AT THE PROPERTY LINE, THE VALVE SHALL BE INSTALLED WITHIN A VAULT TO FACILITATE MAINTENANCE. ROOF DOWNSPOUTS, EXTERIOR OR INTERIOR FOUNDATION DRAINS, SUMP PUMPS OR OTHER SOURCE OF SURFACE WATER RUN-OFF OR GROUND WATER SHALL NOT BE DIRECTLY OR INDIRECTLY CONNECTED TO A PUBLIC SEWER.
 - PIPE INSTALLATION:
 - THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER.
 - PIPES SHALL BE CAREFULLY BEDDED ON A 4 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL.
 - BEDDING AND RE-FILL, TO A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE, SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH THE APPROPRIATE MECHANICAL DEVICES.
 - THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE HOUSE FOUNDATION AT A GRADE OF NOT LESS THAN 1/8 INCH PER FOOT.
 - PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.
 - TESTING: THE COMPLETED HOUSE SEWER SHALL BE SUBJECT TO VACUUM TESTING.
 - ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY, ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR ANY OTHER SIMILAR CONNECTION CARRYING RAIN WATER, DRAINAGE OR GROUND WATER, SHALL NOT BE PERMITTED.
 - WATER SERVICE SHALL NOT BE LAID IN THE SAME TRENCH AS THE SEWER SERVICE. WHEN NECESSARY, THE WATER SERVICE SHALL BE PLACED ABOVE AND TO ONE SIDE OF THE SEWER SERVICE, AS SHOWN.
 - LOCATION: THE LOCATION OF THE WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS MATERIAL ROD OR PIPE SHALL BE PLACED OVER THE WYE TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPE FINDER.
 - UNLESS OTHERWISE NOTED, ALL GRANULAR MATERIAL SHALL BE PLACED IN 12" MAXIMUM LIFTS AND COMPACTED TO 95% OF THE MODIFIED PROCTOR TEST DENSITY.

CONSTRUCTION DETAILS
SHEPHERDS HILL
 MAP 177 LOT 5
 SHADOWBROOK DRIVE
 HUDSON, NEW HAMPSHIRE
 HILLSBOROUGH COUNTY

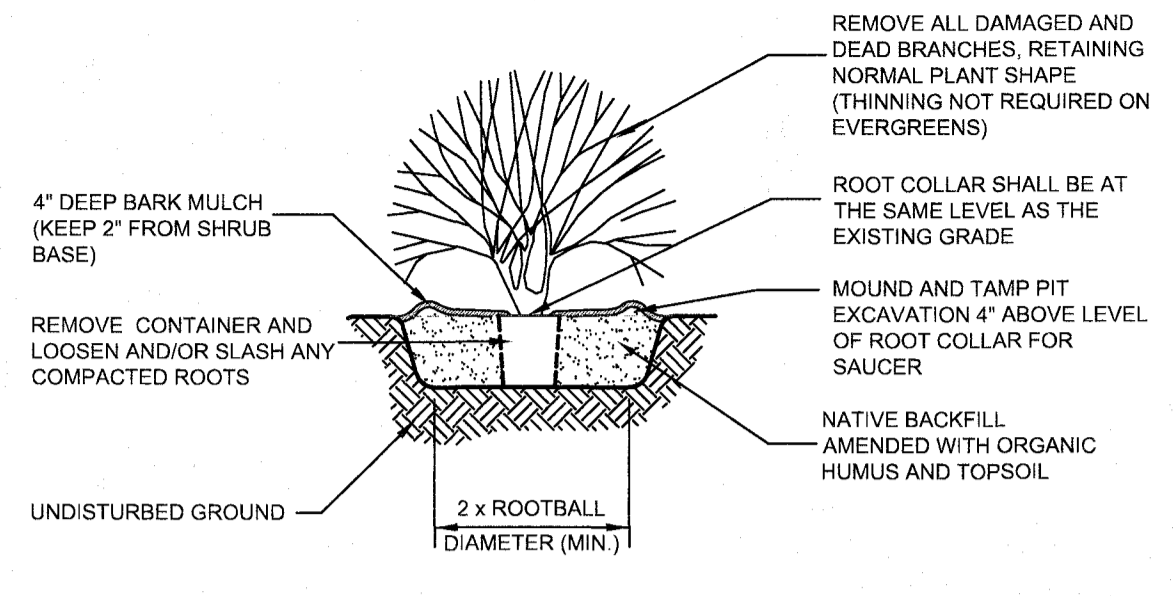
OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03633		APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060	
KMA KEACH-NORDSTROM ASSOCIATES, INC. Civil Engineering Land Surveying Landscape Architecture 10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881			
REVISIONS			
No.	DATE	DESCRIPTION	BY
1	7/7/22	REVISED PER COMMENTS	ACL
DATE: MAY 2, 2022		SCALE: AS SHOWN	
PROJECT NO: 17-0824-1		SHEET 44 OF 51	



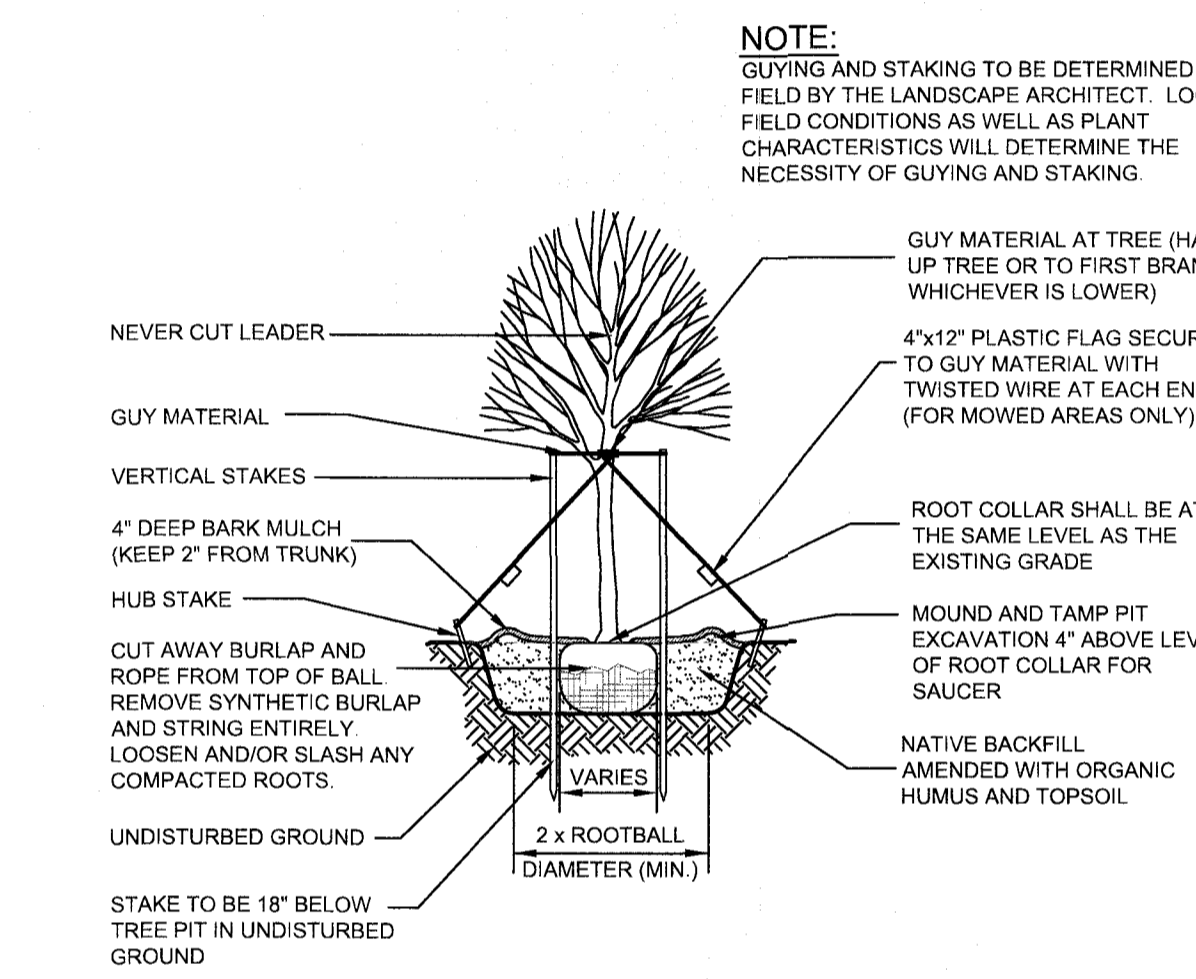
EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE
(JANUARY 2012)



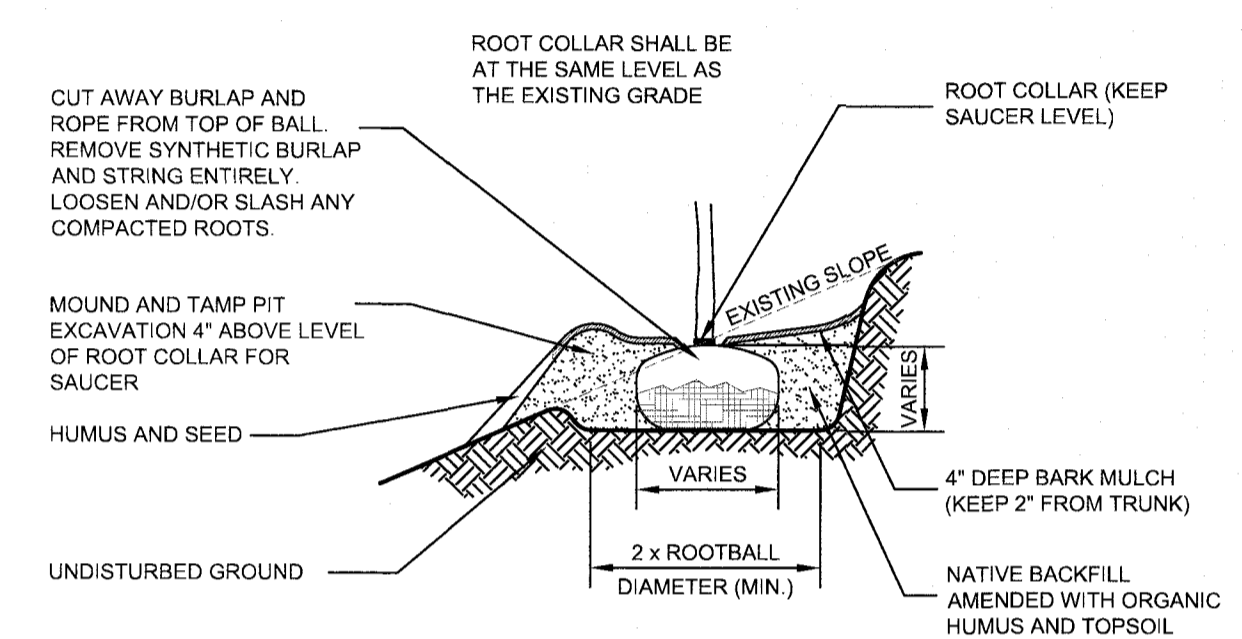
BALLED & BURLAP SHRUB PLANTING DETAIL
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(JANUARY 2012)



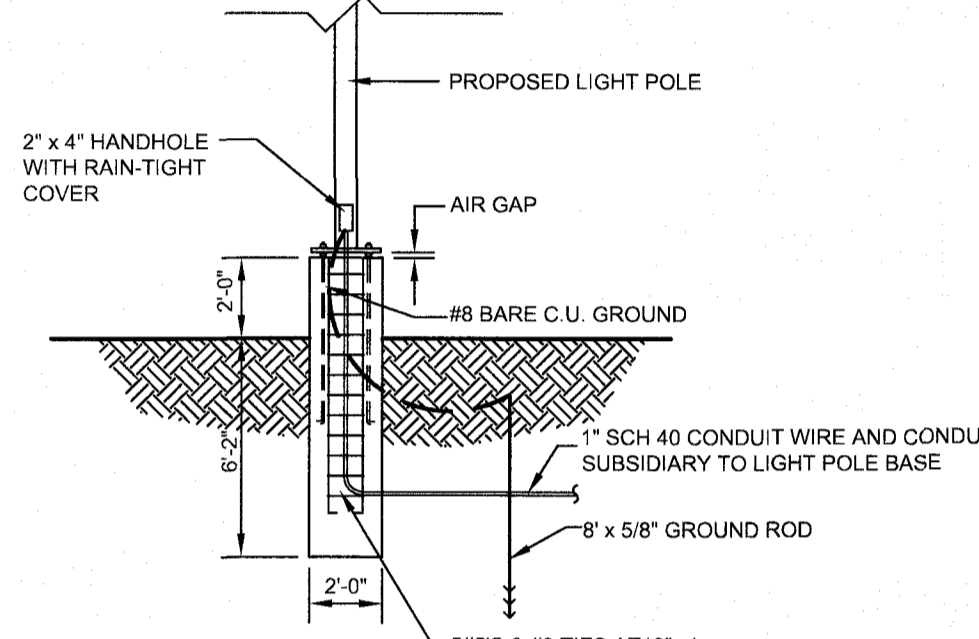
CONTAINER SHRUB PLANTING DETAIL
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(JANUARY 2012)



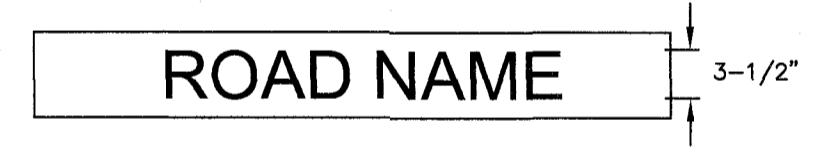
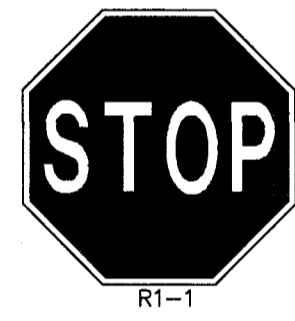
DECIDUOUS TREE PLANTING DETAIL
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(JANUARY 2012)



TYPICAL PLANTING PIT ON SLOPE 4:1 OR GREATER
NOT TO SCALE
(JANUARY 2012)

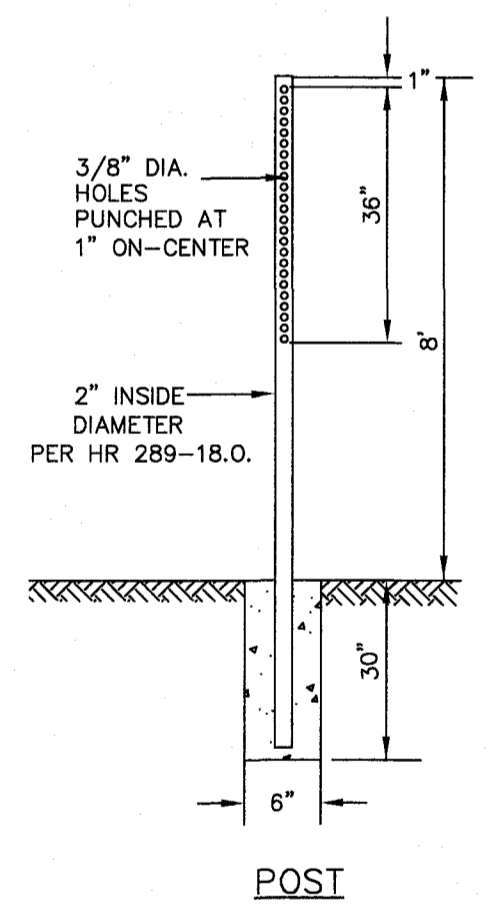


CONCRETE LIGHT POLE BASE DETAIL
NOT TO SCALE
(MARCH 2008)

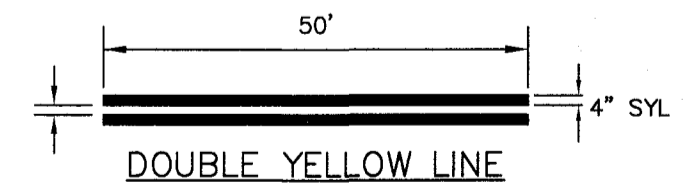


NOTES:
1. STREET NAME SIGNS SHALL BE METAL, IN CONFORMITY WITH NEW SIGNS PURCHASED BY THE TOWN, TWO-FACED AND REFLECTORIZED, SIX INCHES HIGH WITH THREE-AND-ONE-HALF-INCH LETTERS EMBOSSED AND REFLECTORIZED WITH GREEN BACKGROUND AND WHITE LETTERS, OF ALUMINUM METAL.

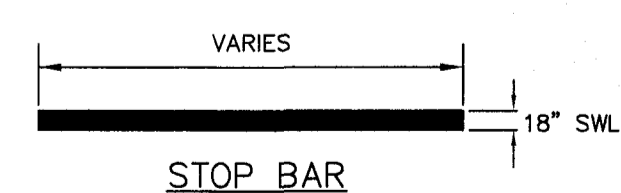
TYPICAL SIGN PLATE DETAILS
NOT TO SCALE



TYPICAL SIGN POST DETAIL
NOT TO SCALE



STRIPING NOTES:
1. ALL PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THESE STANDARDS AND THE CURRENT EDITION OF MUTCD.
2. WIDTH OF LINES SHALL VARY NO MORE THAN 1/4" INCH FROM THAT SPECIFIED.
3. THE WET FILM THICKNESS OF A PAINTED LINE SHALL BE A MINIMUM OF 15 MILS THROUGHOUT THE ENTIRE WIDTH AND LENGTH OF LINE SPECIFIED.
4. OVERSPRAY SHALL BE KEPT TO AN ABSOLUTE MINIMUM.
5. ALL PAINT SHALL COMPLY WITH NHDOT SPECIFICATION SECTION 708.



TYPICAL PAVEMENT MARKING DETAIL
NOT TO SCALE

TURF ESTABLISHMENT SCHEDULE

PURPOSE:
TO ESTABLISH AND MAINTAIN PERMANENT AND TEMPORARY TURF AREAS, RESTORE GROWTH TO EXISTING TURF AREAS DISTURBED DURING CONSTRUCTION AND CONTROL SOIL EROSION.

PREPARATION AND EXECUTION:

- RAKE THE SUBGRADE OF ALL AREAS TO BE LOAMED AND SEEDED TO REMOVE RUBBISH, STICKS, ROOTS AND STONES LARGER THAN 1 INCH.
- PLACE LOAM OVER AREAS TO BE SEEDED AND SPREAD.
- FINE GRADE SURFACE AND SUPPLEMENT WITH SUITABLE LOAM WHERE NEEDED TO CREATE A UNIFORM SURFACE ACCORDING TO THE FINISH GRADES INDICATED: TOP AND BOTTOM OF SLOPES SHALL BE ROUNDED. NO LOAM SHALL BE SPREAD IF THE SUBGRADE IS EXCESSIVELY WET OR FROZEN.
- IF THE pH OF THE SOIL NEEDS TO BE RAISED, APPLY LIME EVENLY OVER LOAM SURFACE AND THOROUGHLY INCORPORATE LIME INTO THE LOAM BY HEAVY RAKING TO AT LEAST ONE-HALF THE DEPTH OF THE LOAM.
- APPLY NO PHOSPHATE, SLOW RELEASE NITROGEN FERTILIZER AND MIX WITH THE UPPER 2 INCHES OF LOAM.
- DETERMINE APPROPRIATE MIXTURE FOR AREA TO BE SEEDED BASED ON EXAMINATION OF PROJECT PLANS. UNIFORMLY SPREAD THE SEED BY BROADCASTING OR HYDROSEEDING. IF BROADCASTING, LIGHTLY RAKE INTO THE PREPARED SURFACE AND ROLL. IF HYDROSEEDING, USE 4 TIMES THE RECOMMENDED RATE OF INOCULANT. AFTER SEED IS SPREAD, WATER THOROUGHLY WITH A FINE SPRAY.
- SEEDING AND INITIAL FERTILIZING SHALL BE DONE BETWEEN APRIL 1 AND JUNE 1 OR BETWEEN AUGUST 15 AND OCTOBER 14, OR AS PERMITTED. SEEDING SHALL NOT BE DONE DURING WINDY WEATHER OR WHEN THE GROUND IS FROZEN, EXCESSIVELY WET OR OTHERWISE UNTILLABLE.
- WITHIN 24 HOURS AFTER SEEDING OPERATION, UNIFORMLY MULCH THE AREA WITH STRAW. ANCHOR MULCH ON ALL SLOPES EXCEEDING 3:1 USING MULCH NETTING INSTALLED IN ACCORDANCE WITH THE MANUFACTURER.
- PROTECT AND PREVENT AGAINST WASHOUTS, ANY WASHOUTS WHICH OCCUR SHALL BE PROMPTLY REGRADED AND RESEDED.
- WHEN IT IS IMPRACTICAL TO ESTABLISH PERMANENT GROWTH ON DISTURBED EARTH BY OCTOBER 14, A TEMPORARY SEED MIXTURE SHALL BE USED. WHEN TEMPORARY SEEDING CANNOT ESTABLISH VISIBLE GROWTH, THE DISTURBED AREA SHALL BE COVERED WITH SIX INCHES OF MULCH FOR THE WINTER.

MAINTENANCE:
ALL SEEDED AREAS SHALL BE KEPT WATERED AND IN GOOD CONDITION. RESEED AS NECESSARY TO ESTABLISH HEALTHY UNIFORM GROWTH OVER THE ENTIRE SEEDED AREA. MAINTAIN SEEDED AREAS IN AN APPROVED CONDITION UNTIL FINAL ACCEPTANCE. MAINTENANCE SHALL INCLUDE REPAIRS FOR DAMAGE CAUSED BY EROSION.

APPLICATION RATES:

- LOAM SHALL BE APPLIED AT A MINIMUM COMPACTED THICKNESS OF 4 INCHES.
- LIME SHALL BE USED WHEN NECESSARY TO RAISE THE pH OF THE SOIL AND APPLIED AT ONE OF THE FOLLOWING RATES:

EXISTING SOIL Ph	TONS/ACRE	POUNDS/CUBIC YARD
4.0 - 4.4	3	12
4.5 - 4.9	2	8
5.0 - 5.4	1	4

- FERTILIZER SHALL BE APPLIED AT THE MANUFACTURER'S RECOMMENDED RATE. THE MIDDLE NUMBER OF THE FERTILIZER'S ANALYSIS RATIO, WHICH INDICATES PHOSPHORUS PERCENT ON A DRY WEIGHT BASIS, MUST BE ZERO (EX. 20-0-5, 19-0-9, 18-0-9, ETC.) CONTRACTOR MUST SUBMIT A "SOIL TESTING FORM-COMMERCIAL LANDSCAPE & GROUNDS MAINTENANCE" ALONG WITH A SOIL SAMPLE TO UNH COOPERATIVE EXTENSION PRIOR TO THE APPLICATION OF ANY FERTILIZER TO DETERMINE WHAT LEVELS AND RATES OF FERTILIZER ARE NECESSARY.
- MULCH SHALL BE APPLIED AT A RATE OF 13 CUBIC YARDS PER 1,000 S.F. OF LANDSCAPE BED.
- CONTRACTOR MUST SUBMIT A "SOIL TESTING FORM-COMMERCIAL LANDSCAPE & GROUNDS MAINTENANCE" ALONG WITH A SOIL SAMPLE TO UNH COOPERATIVE EXTENSION PRIOR TO THE APPLICATION OF ANY FERTILIZER.

MATERIALS:

- LOAM SHALL CONSIST OF LOOSE, FRIABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE OF VISIBLE PARTS OF PROHIBITED INVASIVE PLANTS AND BE GENERALLY FREE OF STONES, LUMPS, STUMPS AND SIMILAR OBJECTS LARGER THAN 2 INCHES IN GREATEST DIAMETER, SUBSOIL, ROOTS AND WEEDS. THE MINIMUM AND MAXIMUM pH VALUE SHALL BE FROM 5.5 TO 7.6.
- LIME SHALL BE A CALCIUM OR DOLOMITIC GROUND AGRICULTURAL LIMESTONE CONTAINING NOT LESS THAN 95% OF EITHER CALCIUM OR MAGNESIUM CARBONATE, OR BOTH. IT SHALL CONFORM TO THE STANDARDS OF THE ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS AND SHALL COMPLY WITH ALL STATE AND FEDERAL RULES AND REGULATIONS.
- FERTILIZER SHALL BE STANDARD COMMERCIAL GRADE, NO PHOSPHORUS, SLOW RELEASE NITROGEN FERTILIZER CONFORMING TO ALL STATE AND FEDERAL RULES AND REGULATIONS AND TO THE STANDARDS OF THE ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS.
- GRASS SEED SHALL MEET THE REQUIREMENTS OF THE NEW HAMPSHIRE AGRICULTURAL AND VEGETABLE SEED LAWS AND SHALL INCLUDE NO "PRIMARY NOXIOUS WEED SEEDS"
- SEED MIXTURE FOR LAWN AREAS SHALL CONSIST OF THE FOLLOWING:

KIND OF SEED	MINIMUM PURITY (%)	MINIMUM GERMINATION (%)	POUNDS/ACRE (TOTAL 120 POUNDS)
CREeping RED FESCUE	96	85	40
PERENNIAL RYEGRASS	98	90	50
KENTUCKY BLUEGRASS	97	85	25
REDTOP	95	80	5

7. SEED MIXTURE FOR SLOPE AREAS SHALL CONSIST OF THE FOLLOWING:

KIND OF SEED	MINIMUM PURITY (%)	MINIMUM GERMINATION (%)	POUNDS/ACRE (TOTAL 95 POUNDS)
CREeping RED FESCUE	96	85	35
PERENNIAL RYEGRASS	98	90	30
REDTOP	95	80	5
ALSIKE CLOVER	97	90	5
BIRDSFOOT TREFLOIL	98	80	5
LANCE-LEAVED COREOPSIS	95	80	4
OXEYE DAISY	95	80	3
BLACKKEYED SUSAN	95	80	4
WILD LUPINE	95	80	4

- TEMPORARY SEEDING MIXTURE SHALL BE APPLIED AT A RATE OF 2 POUNDS PER 1,000 SF AND SHALL BE AN APPROVED CONSERVATION MIX OR CONSIST OF THE FOLLOWING:
15% BLACKWELL OR SHELTER SWITCHGRASS
30% NIAGRA OR KAW BIG BLUESTEM
30% CAMPER OR BLAZE LITTLESTEM
15% NE 27 OR BLAZE SAND LOVEGRASS
10% VIKING BIRDSFOOT TREFLOIL
10% INOCULUM SPECIFIC TO BIRDSFOOT TREFLOIL MUST BE USED WITH THIS MIXTURE. IF SEEDING BY HAND, A STICKING AGENT SHALL BE USED. IF SEEDING WITH A HYDROSEEDER, USE FOUR TIMES THE RECOMMENDED AMOUNT OF INOCULUM.
- SEED MIXTURE FOR STORMWATER MANAGEMENT AREAS, INCLUDING DETENTION BASINS AND VEGETATED TREATMENT SWALES, SHALL BE APPLIED AT A RATE OF 70 POUNDS PER ACRE OR 1.6 POUNDS PER 1,000 SF, AND SHALL CONSIST OF THE FOLLOWING:
25% CREeping RED FESCUE
15% SWITCH GRASS
15% FOX SEDGE
15% CREeping BENTGRASS
10% FLATPEA
20% WILDFLOWER VARIETY
- STRAW USED FOR MULCH SHALL CONSIST OF MOWED AND PROPERLY CURED GRASS OR LEGUME MOWINGS, FREE FROM WEEDS, TWIGS, DEBRIS, INVASIVE SPECIES OR OTHER DELETERIOUS MATERIAL AND ROT OR MOLD.
- NATIVE PLANTINGS SHOULD BE USED FOR ALL NEW GREENSCAPES, TO THE EXTENT PRACTICABLE.
- ALL WILDFLOWER SEEDING MIXES SHOULD BE FREE OF INVASIVE SPECIES.



WETLAND CONSERVATION DISTRICT BOUNDARY MARKER
NOT TO SCALE
(MARCH 2010)

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEAR FROM DATE OF APPROVAL.

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____

SIGNATURE DATE: _____

SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

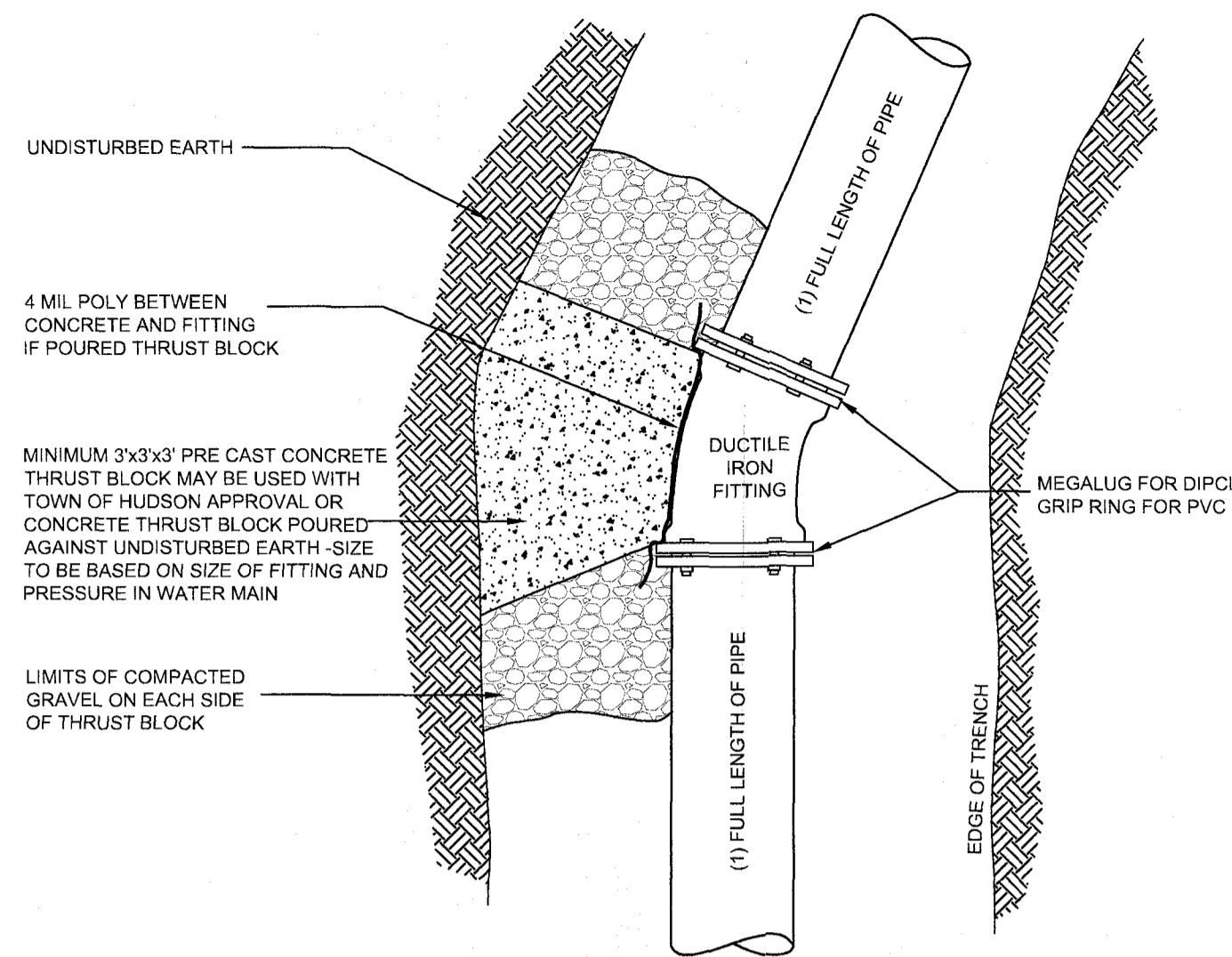
CONSTRUCTION DETAILS
SHEPHERDS HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060
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KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

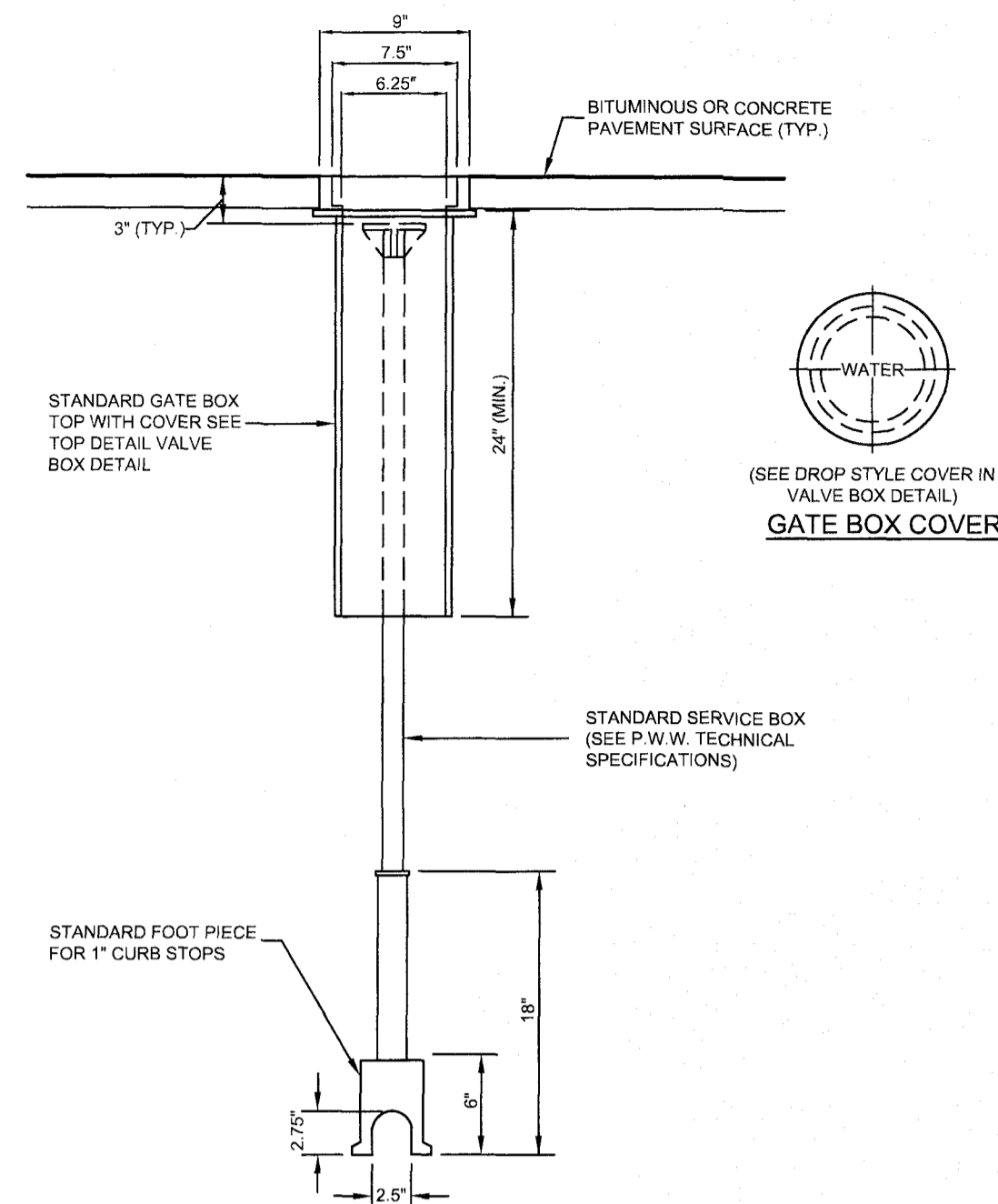
REVISIONS			
No.	DATE	DESCRIPTION	BY
1	7/7/22	REVISED PER COMMENTS	ACL

DATE: MAY 2, 2022 SCALE: AS SHOWN
PROJECT NO: 17-0824-1 SHEET 45 OF 51

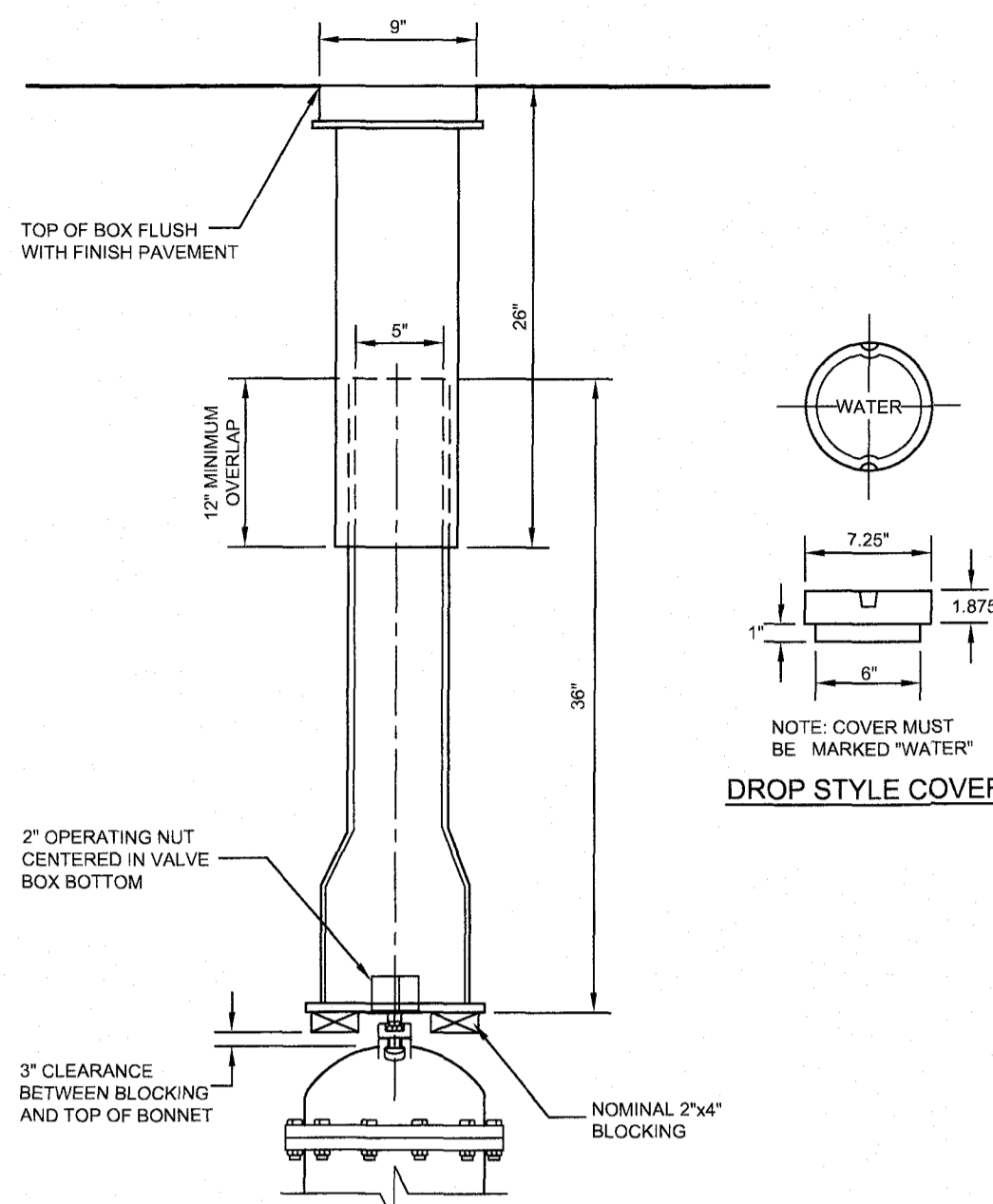


- NOTES:**
1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF HUDSON TECHNICAL SPECIFICATIONS.
 2. ALL PIPE SHOULD HAVE A MINIMUM DEPTHS OF 5'-0" FROM TOP OF PIPE TO FINISH GRADE.
 3. 3/4" Ø S.S. RODS SHALL BE USED IN CONJUNCTION WITH REQUIRED S.S. NUTS. RODS ARE TO BE ATTACHED TO FITTINGS WITH EITHER STAR BOLTS OR DUC LUGS
10" FITTING OR SMALLER = (2) 3/4" Ø S.S. RODS & ASSOCIATED HARDWARE
12" FITTING OR LARGER = (4) 3/4" Ø S.S. RODS & ASSOCIATED HARDWARE.
 4. MIN 3'x3'x3' PRE CAST CONCRETE THRUST BLOCK MAY BE USED WITH TOWN OF HUDSON APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH - SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATER MAIN.

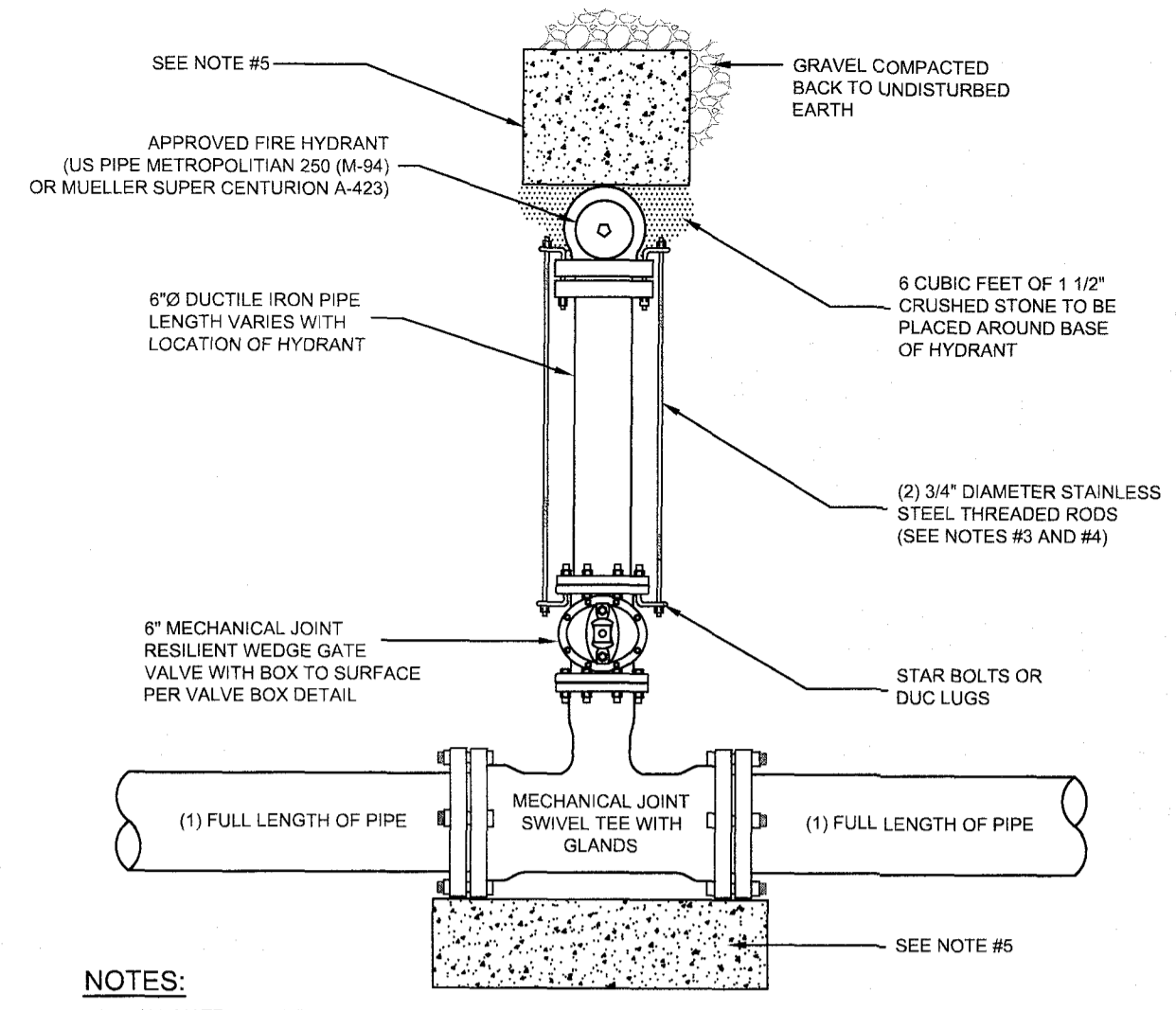
THRUST BLOCK BEHIND FITTINGS INSTALLATION (A-07)
NOT TO SCALE
(MARCH 2008)



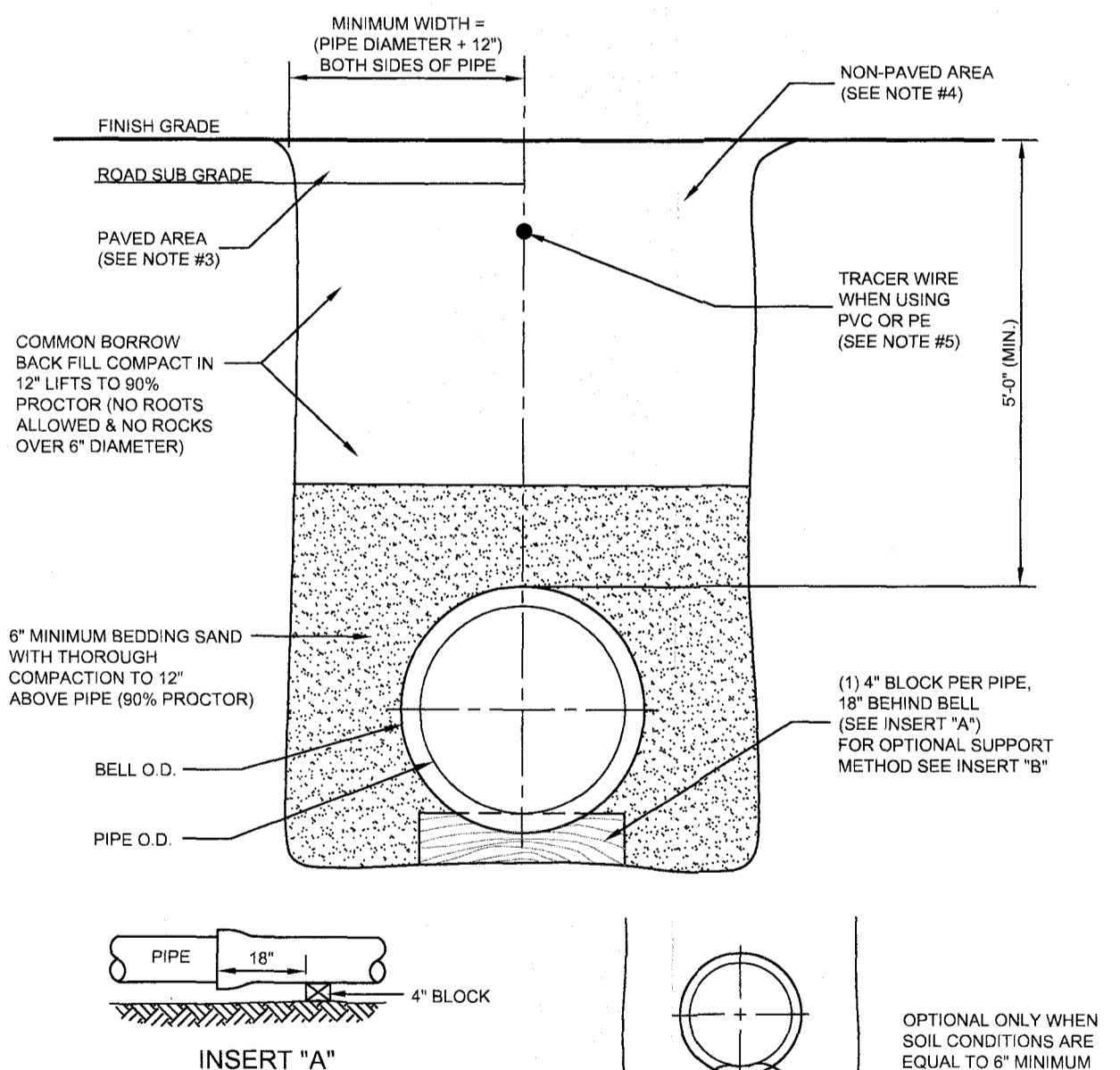
SERVICE BOX DETAIL IN PAVED AREAS (A-13)
NOT TO SCALE
(MARCH 2008)



VALVE BOX DETAIL (A-09)
NOT TO SCALE
(MARCH 2008)

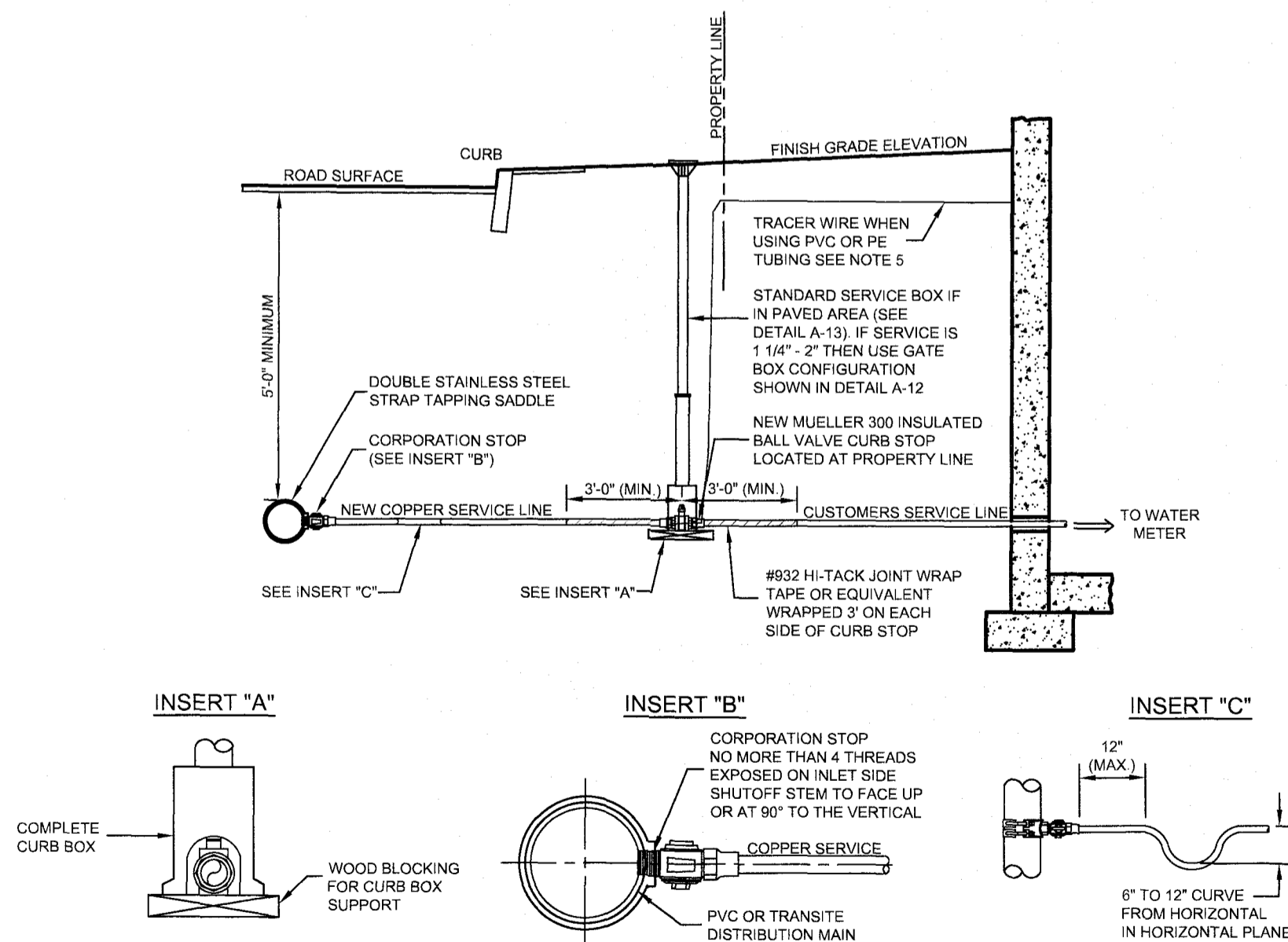


HYDRANT INSTALLATION (A-10)
NOT TO SCALE
(MARCH 2008)



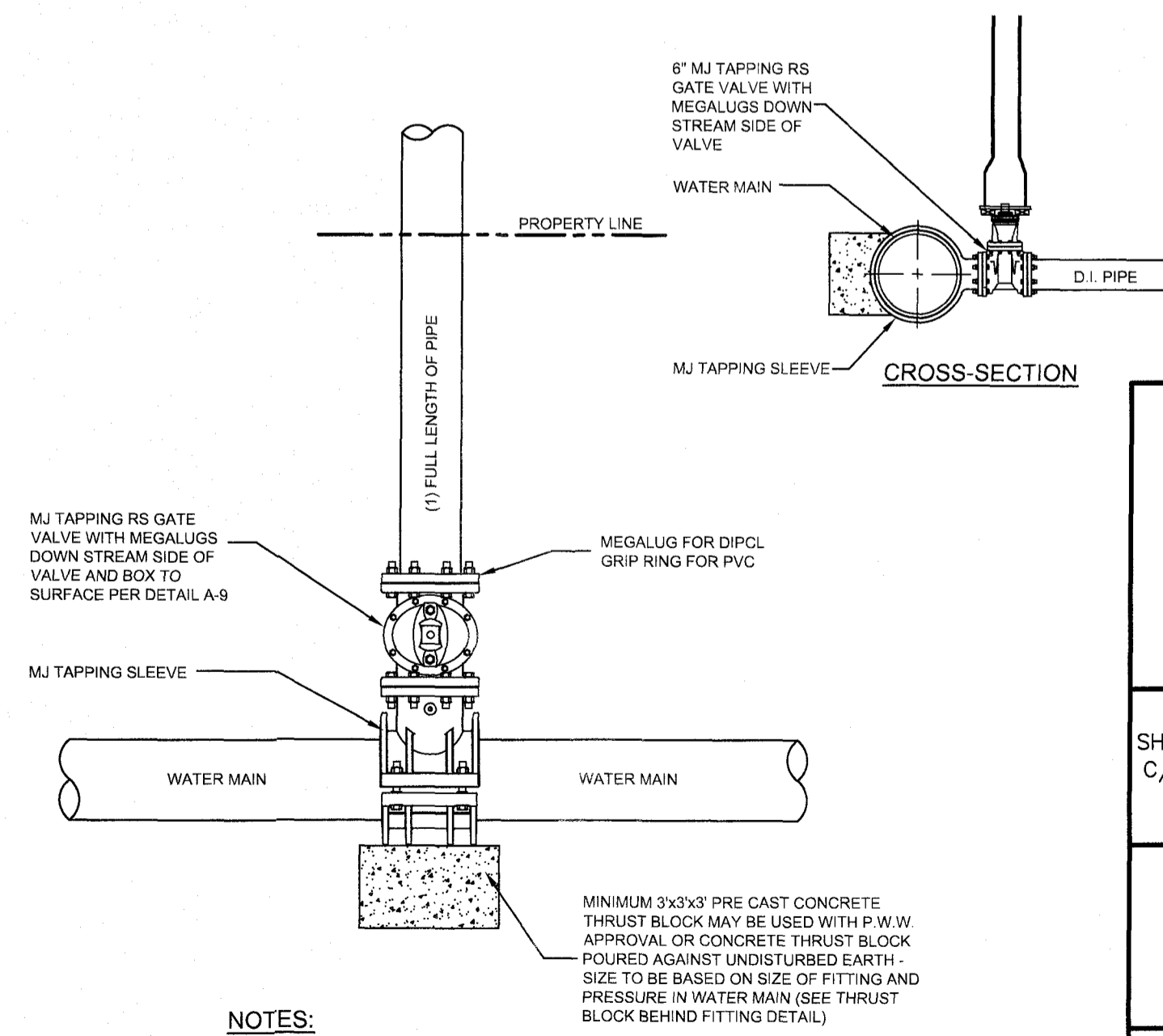
- NOTES:**
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF HUDSON TECHNICAL SPECIFICATIONS.
 2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5'-0" FROM TOP OF PIPE TO FINISH GRADE.
 3. REQUIREMENTS FOR SUBBASE AND BASE MATERIAL TYPE ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN PAVED AREAS.
 4. REQUIREMENTS FOR GRAVEL, LOAM AND/OR SEED ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN NON-PAVED AREAS.
 5. 10 GAUGE TRACER WIRE AS MANUFACTURED BY BMS, DIVISION OF ALBESTAR CORP., AVON, MA OR EQUIVALENT.
 6. ALL DUCTILE IRON WATER PIPE SHALL BE POLYETHYLENE ENCASED (WRAPPED IN PLASTIC) - SEE NOTE 1.

TRENCH DETAIL (A-02)
NOT TO SCALE
(MARCH 2008)



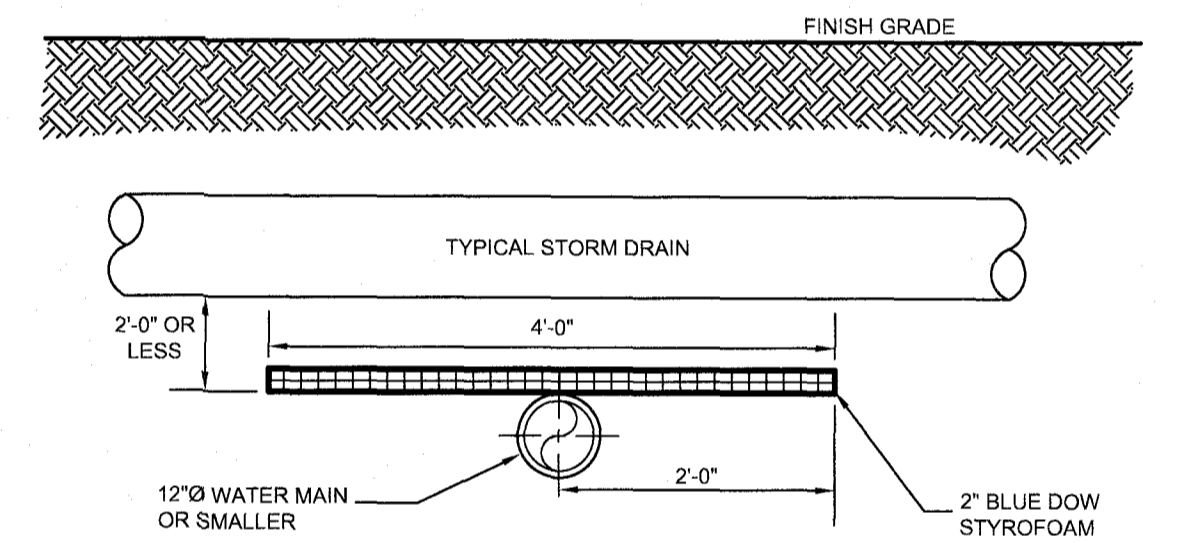
- NOTES:**
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF HUDSON TECHNICAL SPECIFICATIONS.
 2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5'-0" FROM TOP OF PIPE TO FINISH GRADE.
 3. A DOUBLE STAINLESS STEEL STRAP TAPPING SADDLE MUST BE USED TO CONNECT THE CORPORATION TO THE WATER MAIN.
 4. IF WATER MAIN IS A FIRE SERVICE, THEN SEE DETAIL A-24.
 5. 10 GAUGE TRACER WIRE AS MANUFACTURED BY BMS, DIVISION OF ALBESTAR CORP., AVON, MA OR EQUIVALENT.

COPPER SERVICE ON PVC AND TRANSITE MAINS (A-19)
NOT TO SCALE
(MARCH 2008)



- NOTES:**
1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF HUDSON TECHNICAL SPECIFICATIONS.
 2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5'-0" FROM TOP OF PIPE TO FINISH GRADE.

LARGE SERVICE AND/OR TAPPING SLEEVE DETAIL (A-21)
NOT TO SCALE
(MARCH 2008)



- CONDITION I**
- NOTES:**
1. THE CONTRACTOR RESERVES THE RIGHT TO MODIFY INSULATION REQUIREMENTS AS NECESSARY BASED ON FIELD CONDITIONS, ETC.
 2. THE LENGTH OR WIDTH OF INSULATION SHALL EXTEND 1 STORM DRAIN PIPE DIAMETER BEYOND THE EDGE OF STORM DRAIN PIPE IN EACH DIRECTION OR A MINIMUM OF 2' BEYOND THE CENTERLINE OF THE STORM DRAIN PIPE, WHICHEVER IS GREATER.
 3. ALL BUTT JOINT SEAMS TO BE OVERLAPPED WITH A 1' PIECE OF INSULATION CENTERED OVER SEAM.

STORM DRAIN/WATER MAIN INTERSECTION RUNS - ELEVATION VIEW
NOT TO SCALE

CONSTRUCTION DETAILS
SHEPHERDS HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD: SHEPHERDS HILL HOME OWNERS ASSOCIATION C/O GREAT NORTH PROPERTY MANAGEMENT 3 HOLLAND WAY, SUITE 201 EXETER, NH 03833	APPLICANT: SHEPHERDS HILL, LLC 253 MAIN STREET NASHUA, NH 03060
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KMA KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	7/7/22	REVISED PER COMMENTS	ACL

DATE: MAY 2, 2022 SCALE: AS SHOWN
PROJECT NO: 17-0824-1 SHEET 46 OF 51

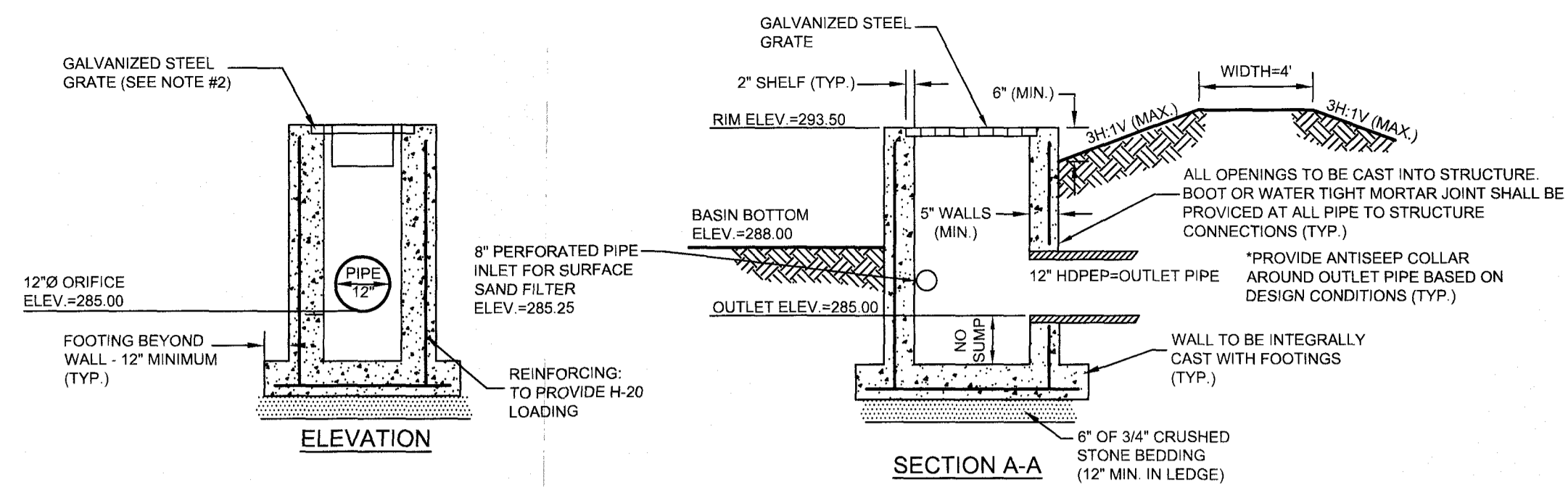
PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEAR FROM DATE OF APPROVAL

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____

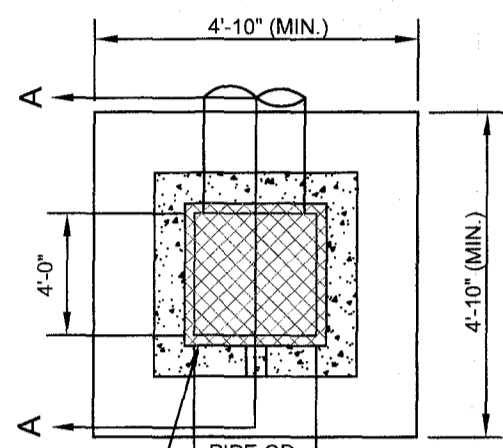
SIGNATURE DATE: _____

SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

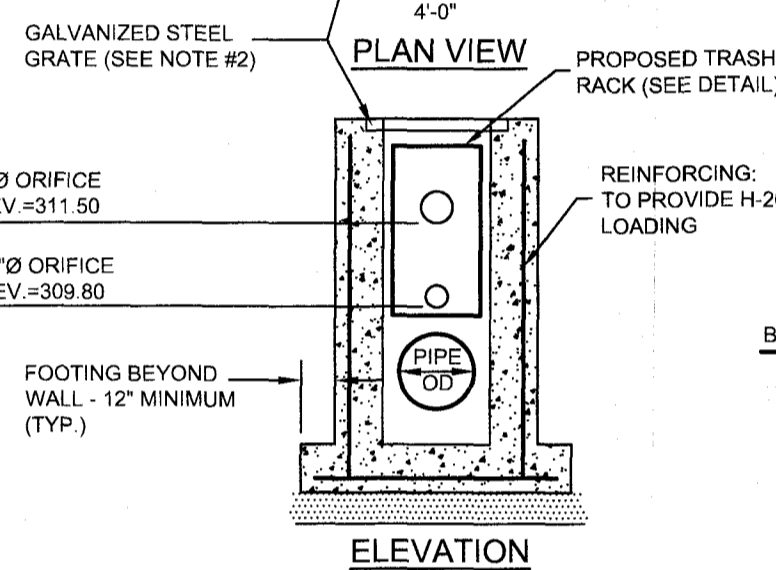


BIORETENTION POND OUTLET STRUCTURE
NOT TO SCALE



NOTES

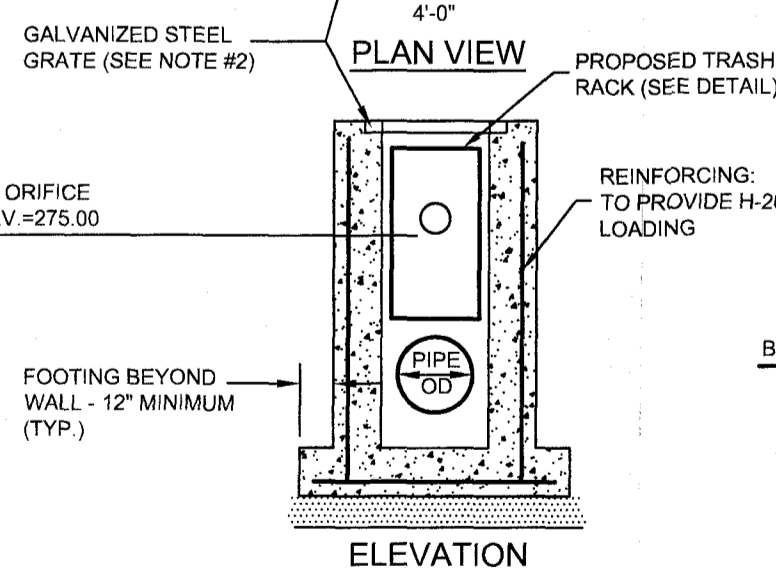
1. ALL CEMENT CONCRETE TO BE 4,000 PSI MINIMUM
2. GALVANIZED STEEL GRATE SHALL BE BOLTED TO TOP OF STRUCTURE
3. ALL OPENINGS CAST IN AS REQUIRED.
4. PRECAST REINFORCED CONCRETE STRUCTURE TO MEET ASTM C-478 DESIGNATION AND H-20 LOADING.



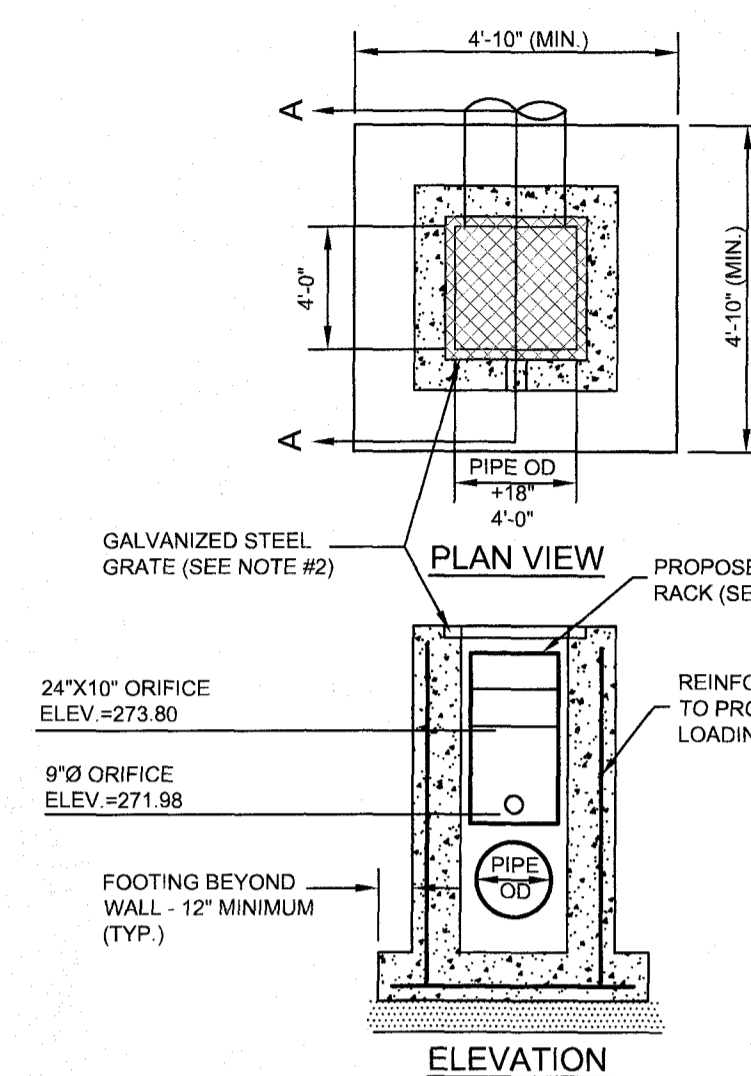
POCKET POND#1 OUTLET STRUCTURE
NOT TO SCALE

NOTES

1. ALL CEMENT CONCRETE TO BE 4,000 PSI MINIMUM
2. GALVANIZED STEEL GRATE SHALL BE BOLTED TO TOP OF STRUCTURE
3. ALL OPENINGS CAST IN AS REQUIRED.
4. PRECAST REINFORCED CONCRETE STRUCTURE TO MEET ASTM C-478 DESIGNATION AND H-20 LOADING.



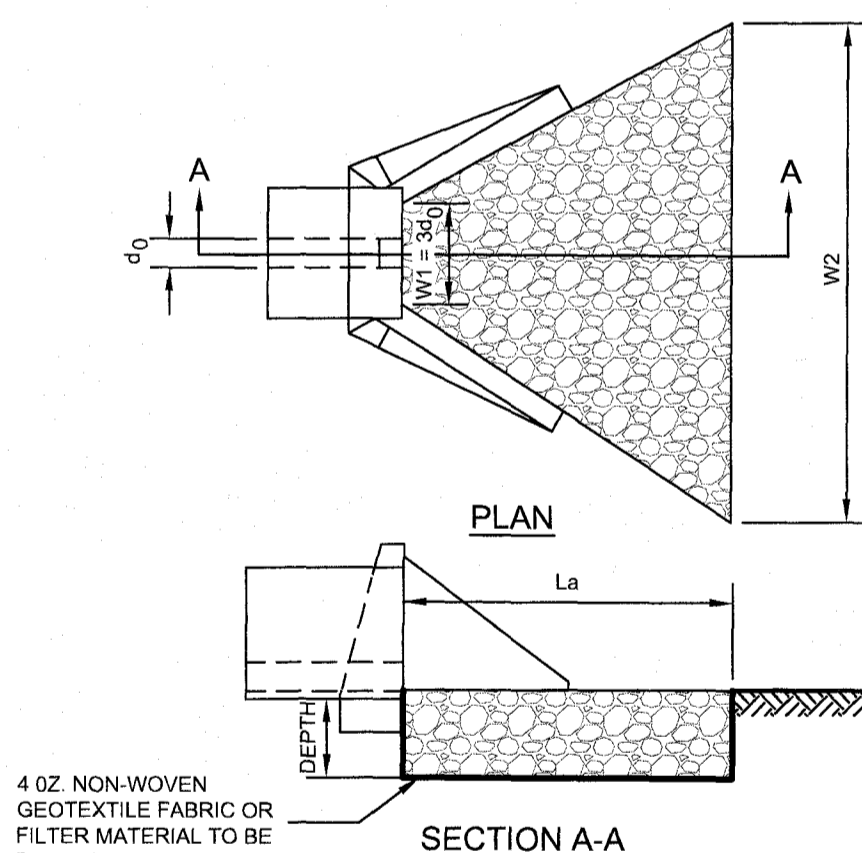
POCKET POND #2 OUTLET STRUCTURE
NOT TO SCALE



POCKET POND#2 OUTLET STRUCTURE
NOT TO SCALE

NOTES

1. ALL CEMENT CONCRETE TO BE 4,000 PSI MINIMUM
2. GALVANIZED STEEL GRATE SHALL BE BOLTED TO TOP OF STRUCTURE
3. ALL OPENINGS CAST IN AS REQUIRED
4. PRECAST REINFORCED CONCRETE STRUCTURE TO MEET ASTM C-478 DESIGNATION AND H-20 LOADING.



PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL
NOT TO SCALE
(MARCH 2008)

LOCATION	La	W1	W2	d50	DEPTH
PROP. HW#1	20'	5'	13'	2"	5"
PROP. HW#7	21'	5'	13'	2"	5"
PROP. HW#10	20'	4'	4'	2"	5"
PROP. HW#22	9'	10'	10'	2"	5"
PROP. HW#16	26'	10'	10'	2"	5"
PROP. HW#24	22'	4'	4'	6"	15"
PROP. HW#200	15'	4'	4'	2"	5"

PERCENT OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE
100%	1.5 TO 2.0 d50
85%	1.3 TO 1.8 d50
50%	1.0 TO 1.5 d50
15%	0.3 TO 0.5 d50

CONSTRUCTION SPECIFICATIONS:

1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. FRACTURED ROCK USED FOR FILTER OR RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE 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 PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. 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:

THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR RAIN EVENT. IF THE RIP RAP HAS BEEN DISPLACED, UNDERMINED, OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT 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.

CONSTRUCTION DETAILS
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MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

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1	7/7/22	REVISED PER COMMENTS	ACL

DATE: MAY 2, 2022 SCALE: AS SHOWN
PROJECT NO: 17-0824-1 SHEET 47 OF 51

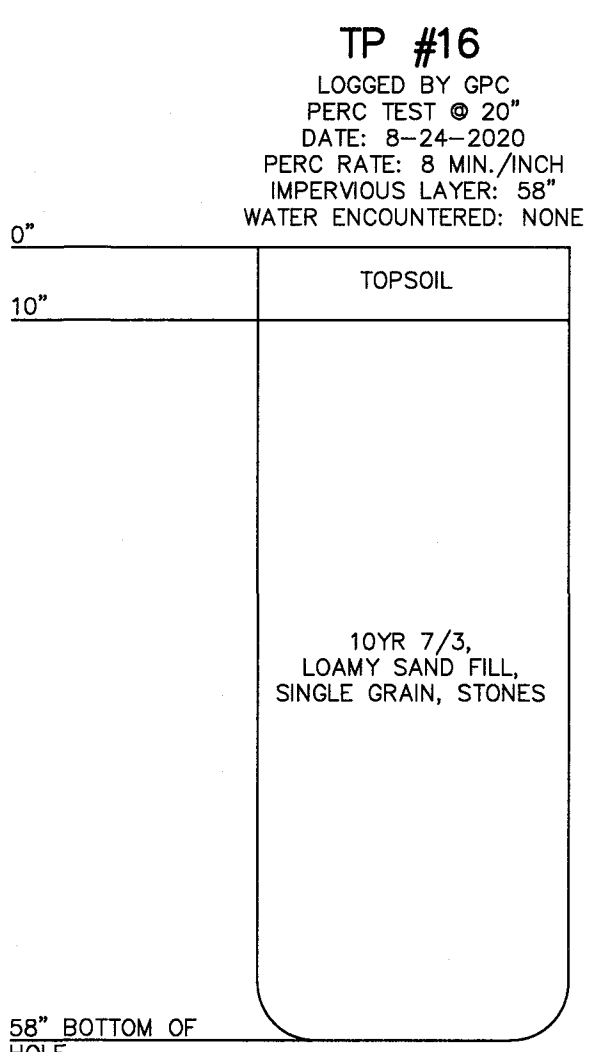
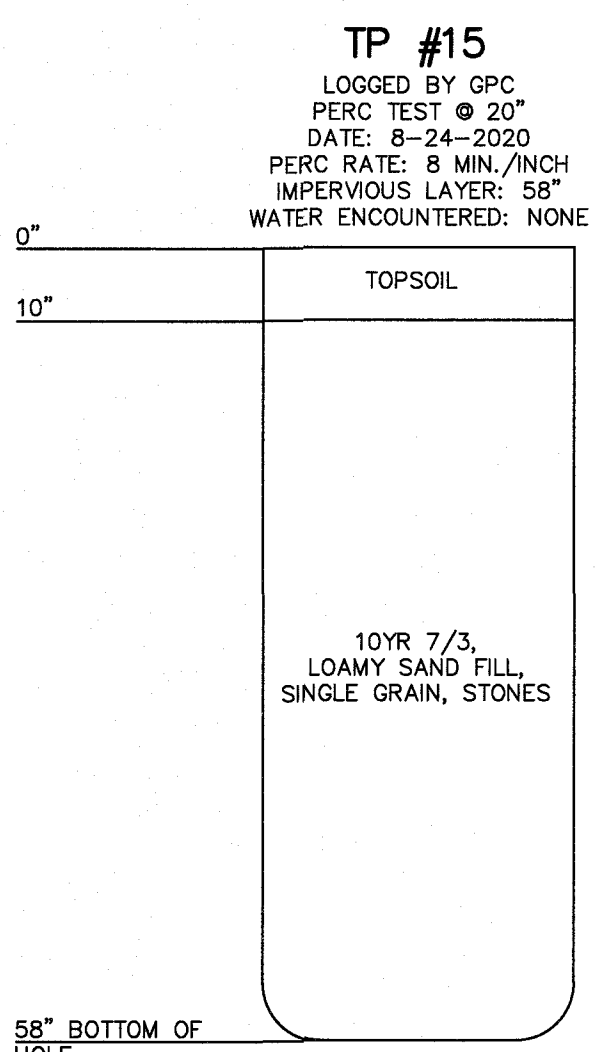
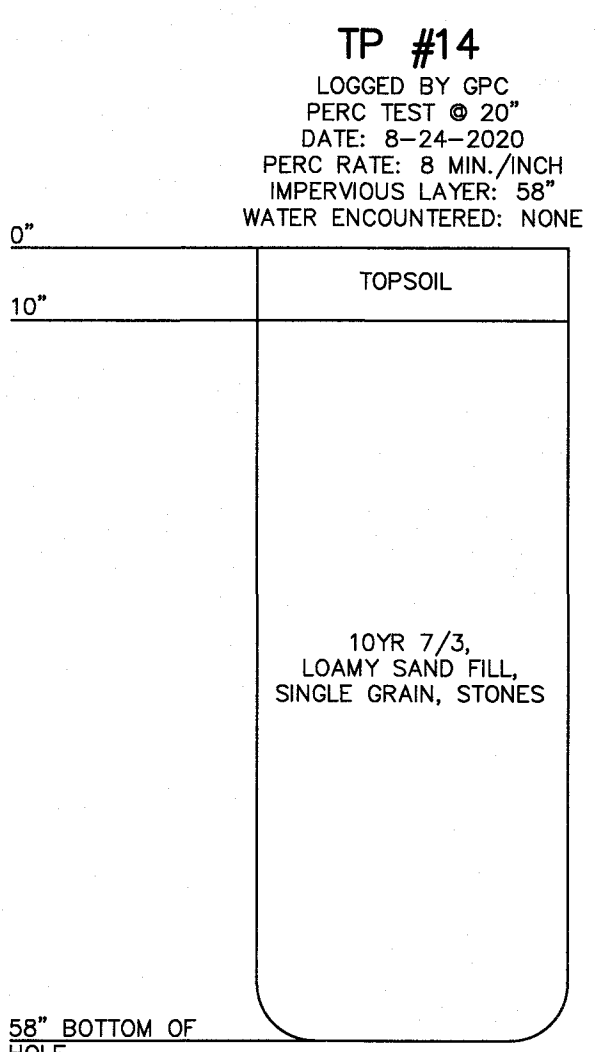
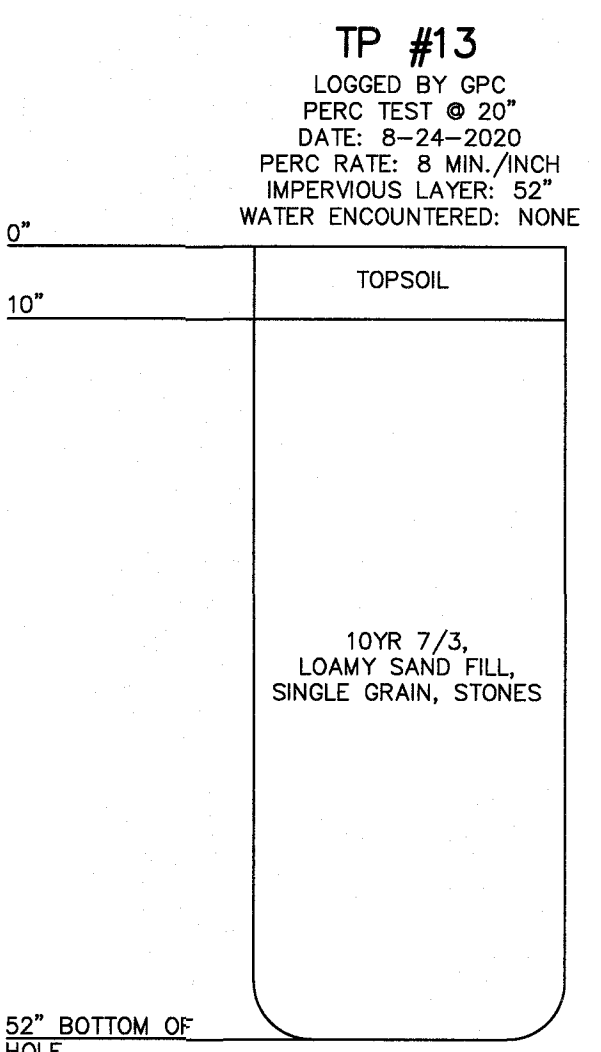
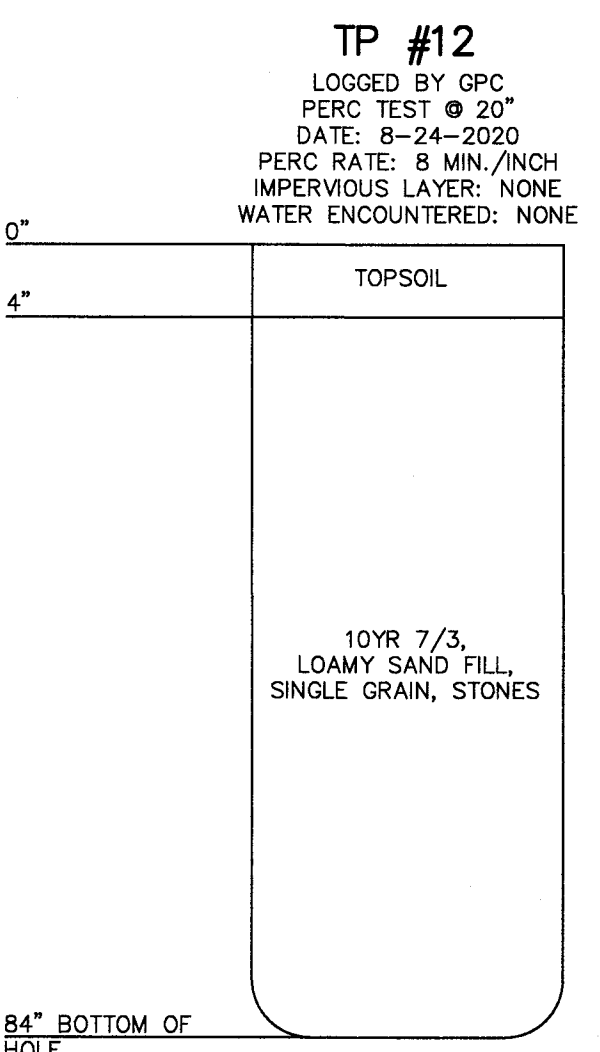
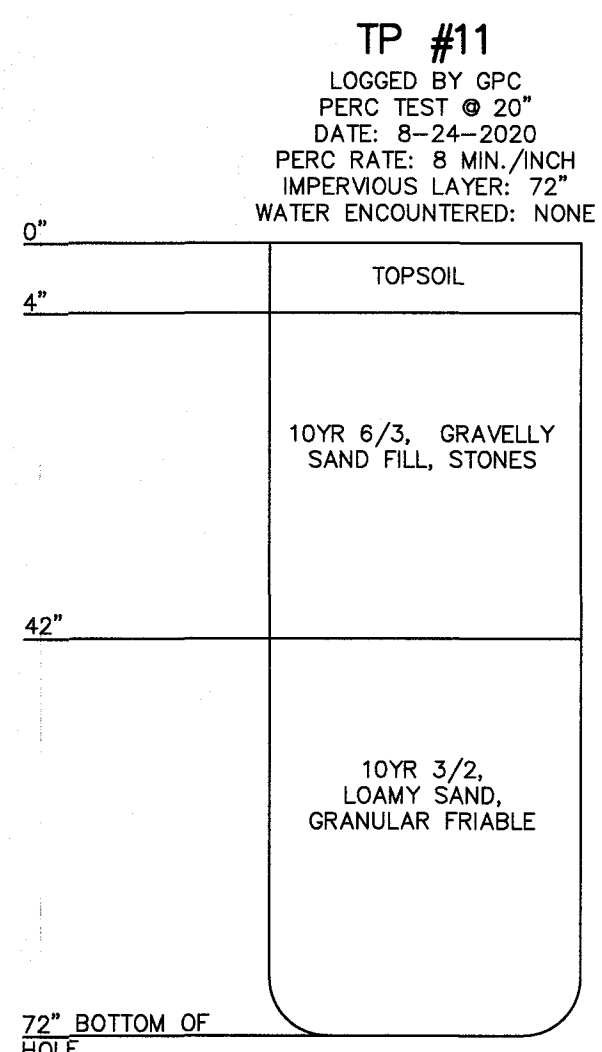
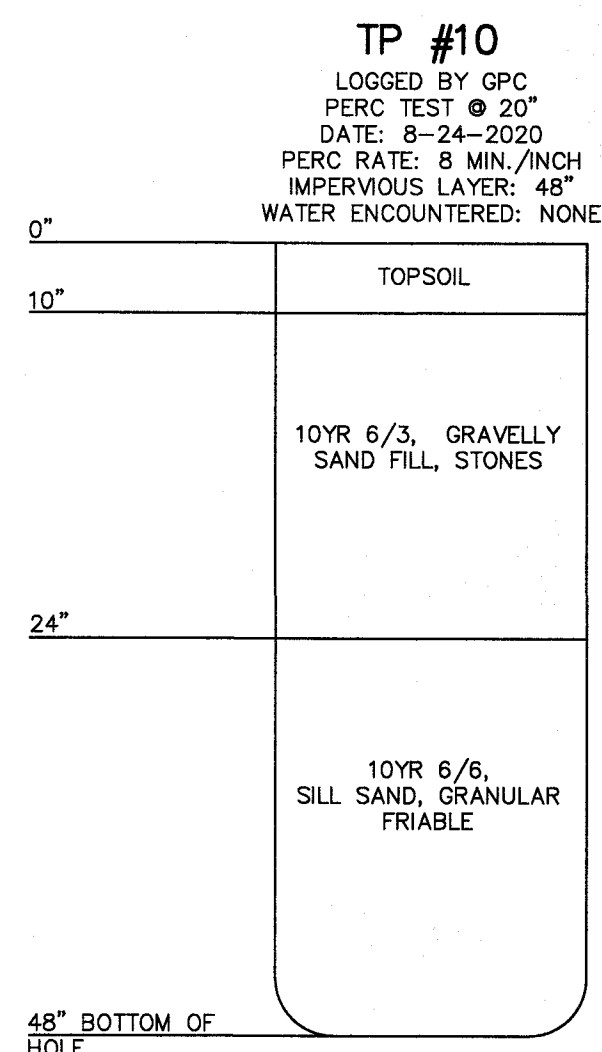
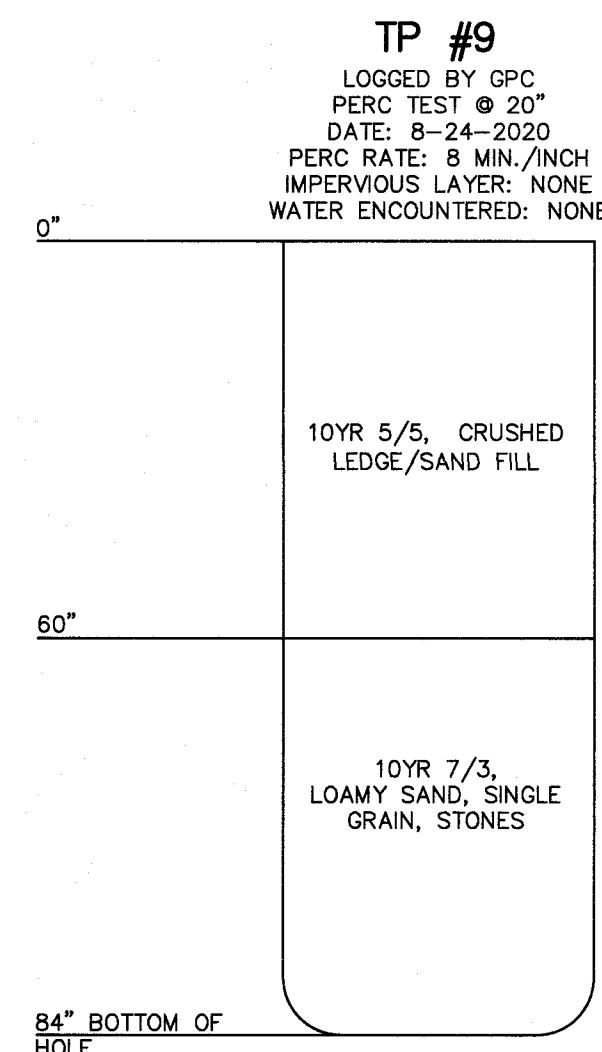
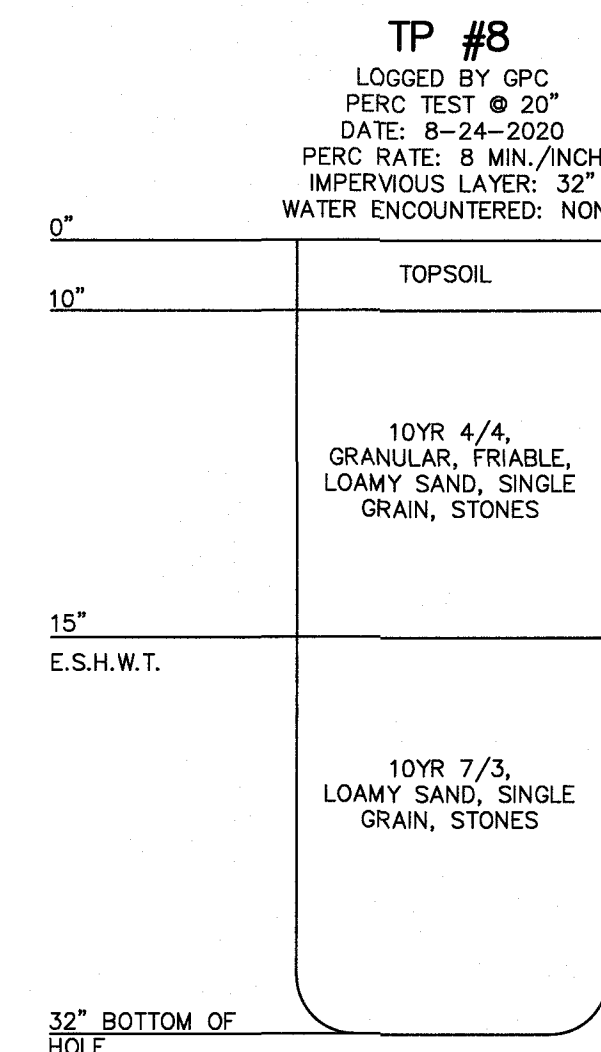
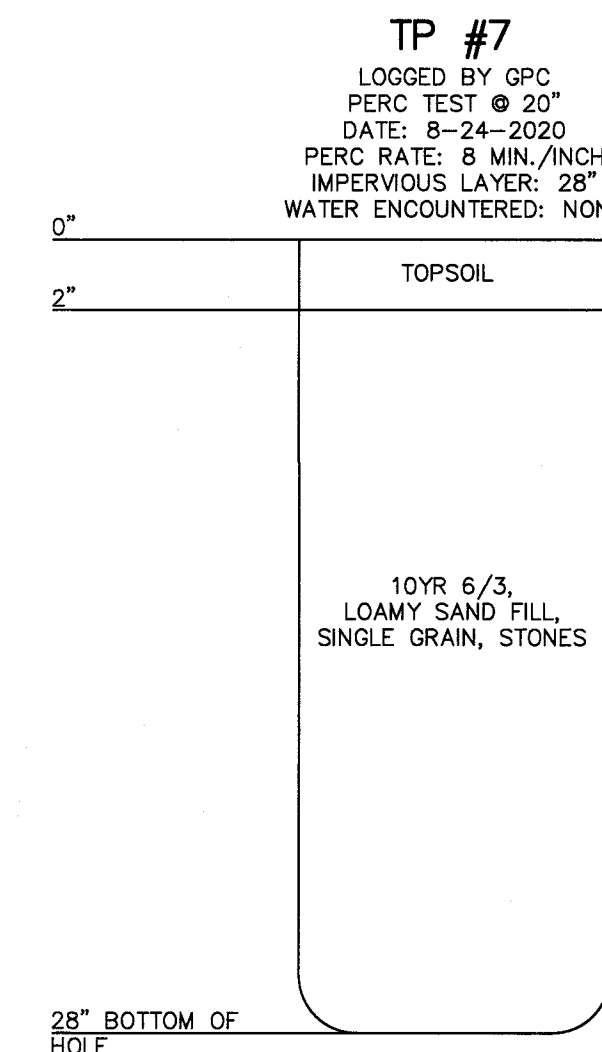
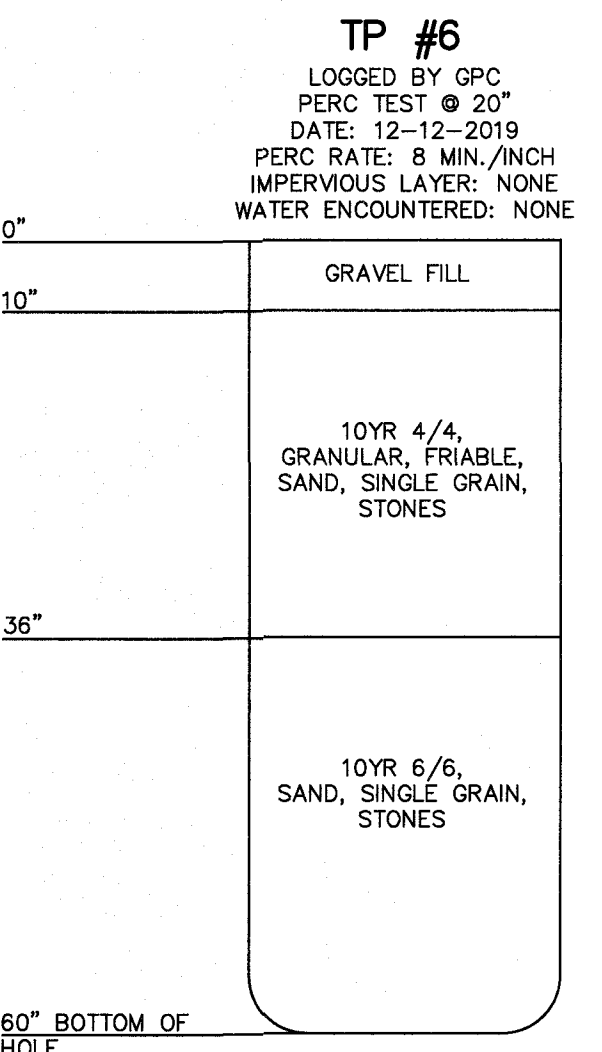
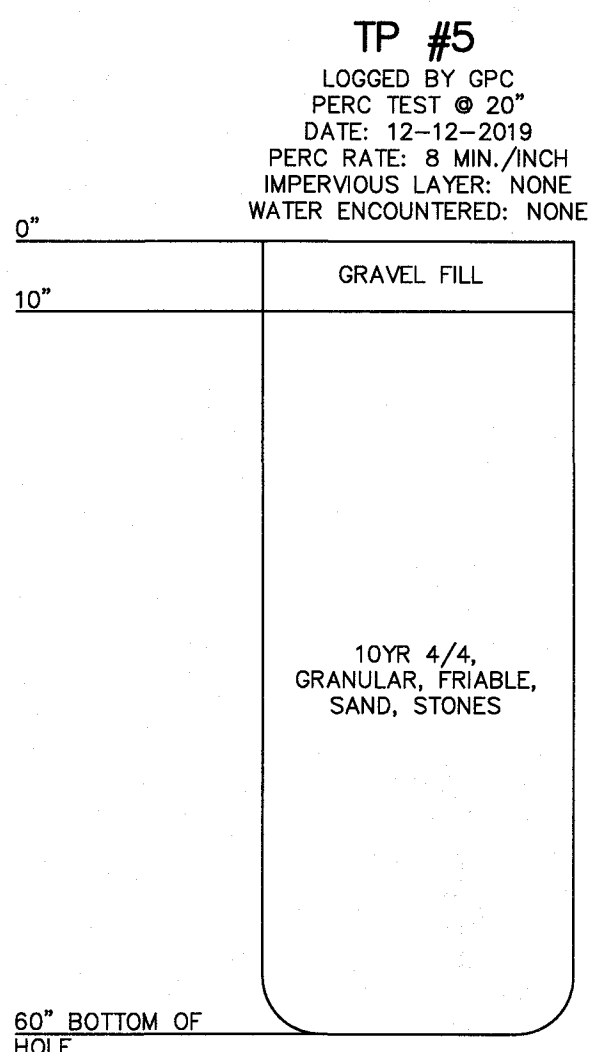
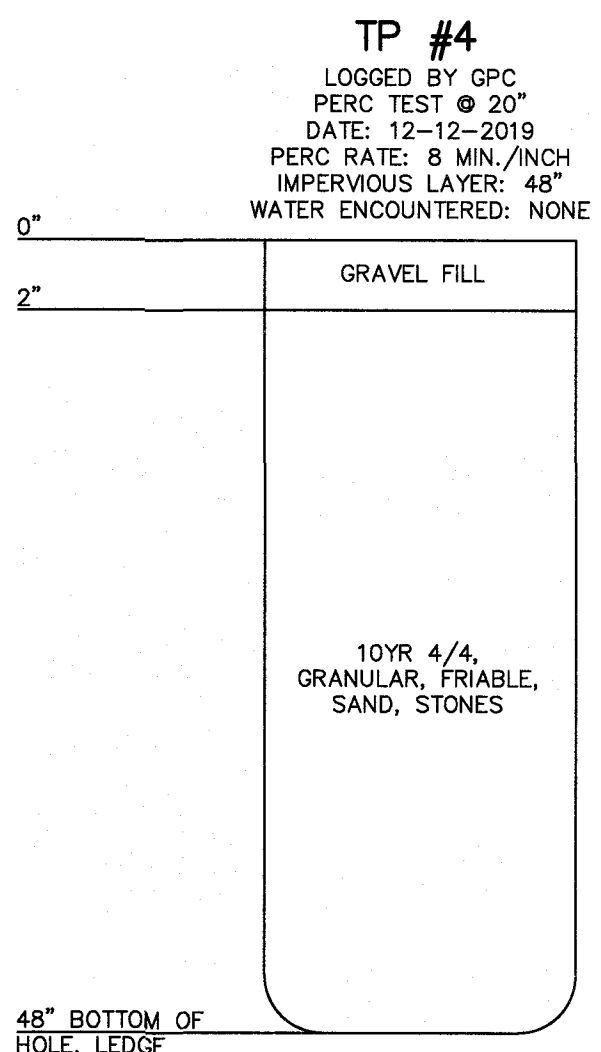
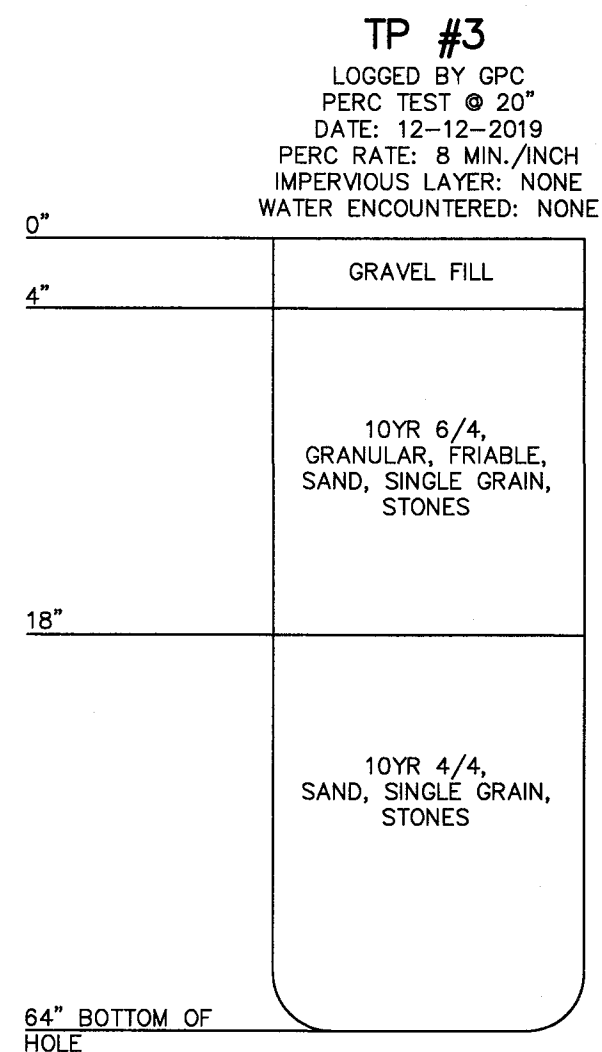
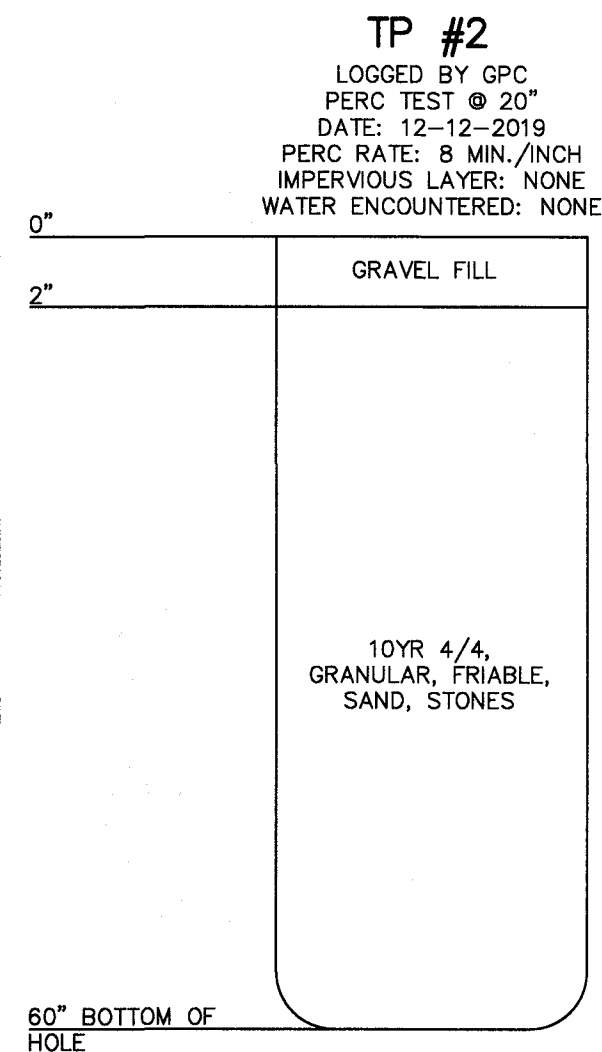
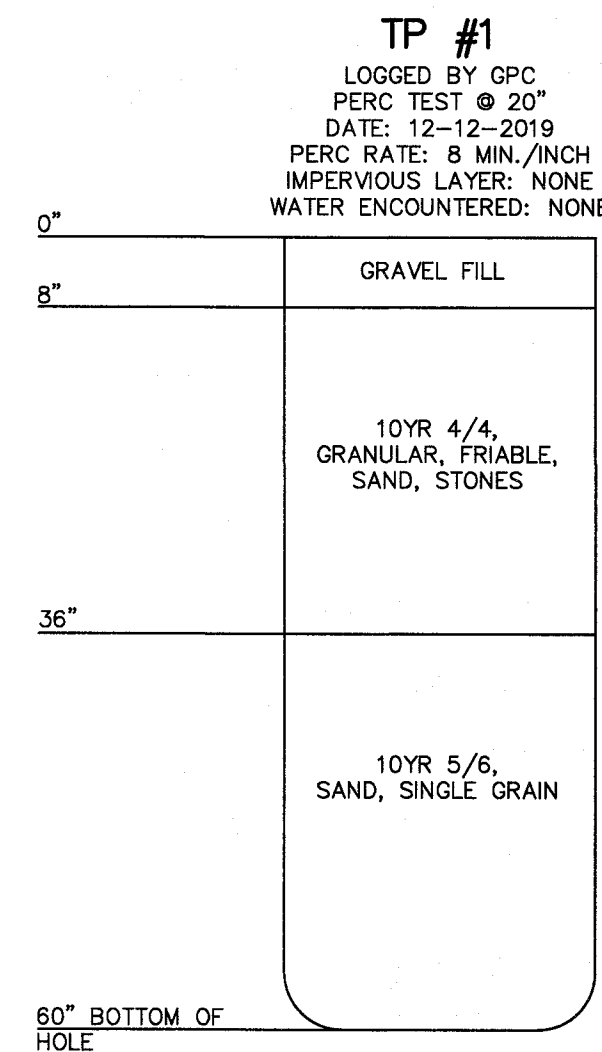
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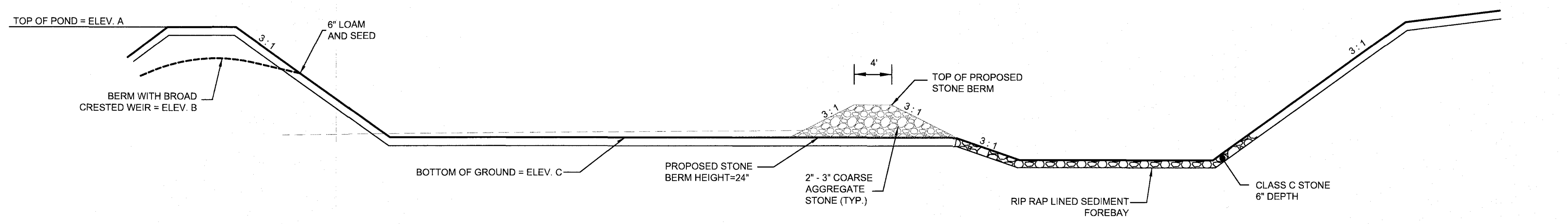
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 MAP 177 LOT 5
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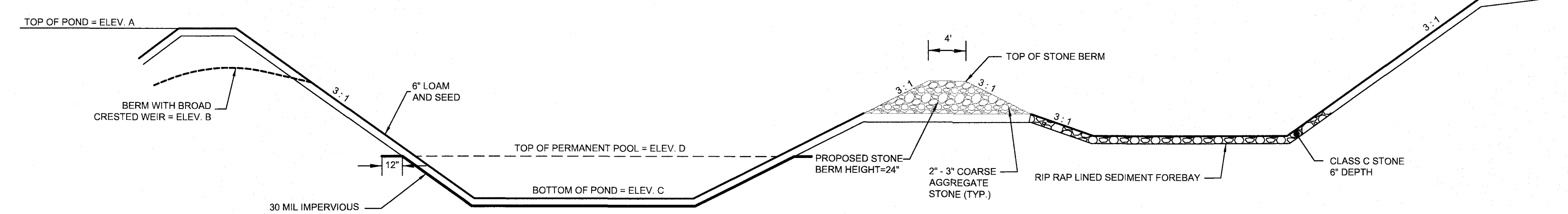
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 PROJECT NO: 17-0824-1 SHEET 48 OF 51



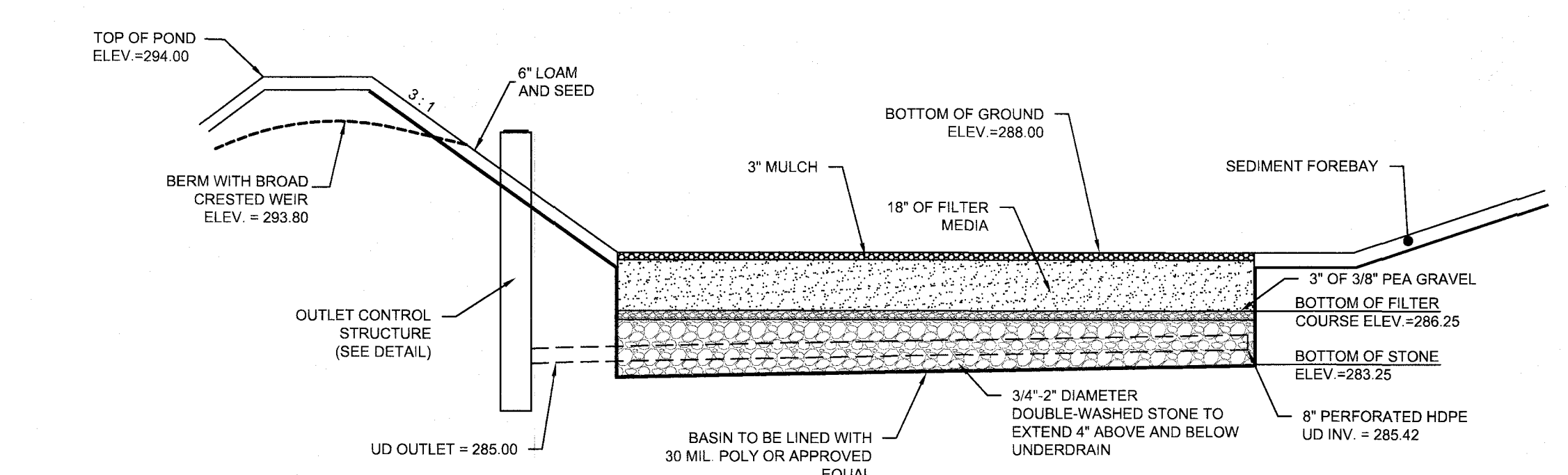
TYPICAL INFILTRATION POND SECTION - WITH FOREBAY
NOT TO SCALE

POND SUMMARY			
POND NUMBER	ELEV. A	ELEV. B	ELEV. C
INFILTRATION POND #1	282.00	N/A	280.00
INFILTRATION POND #2	276.00	N/A	274.00



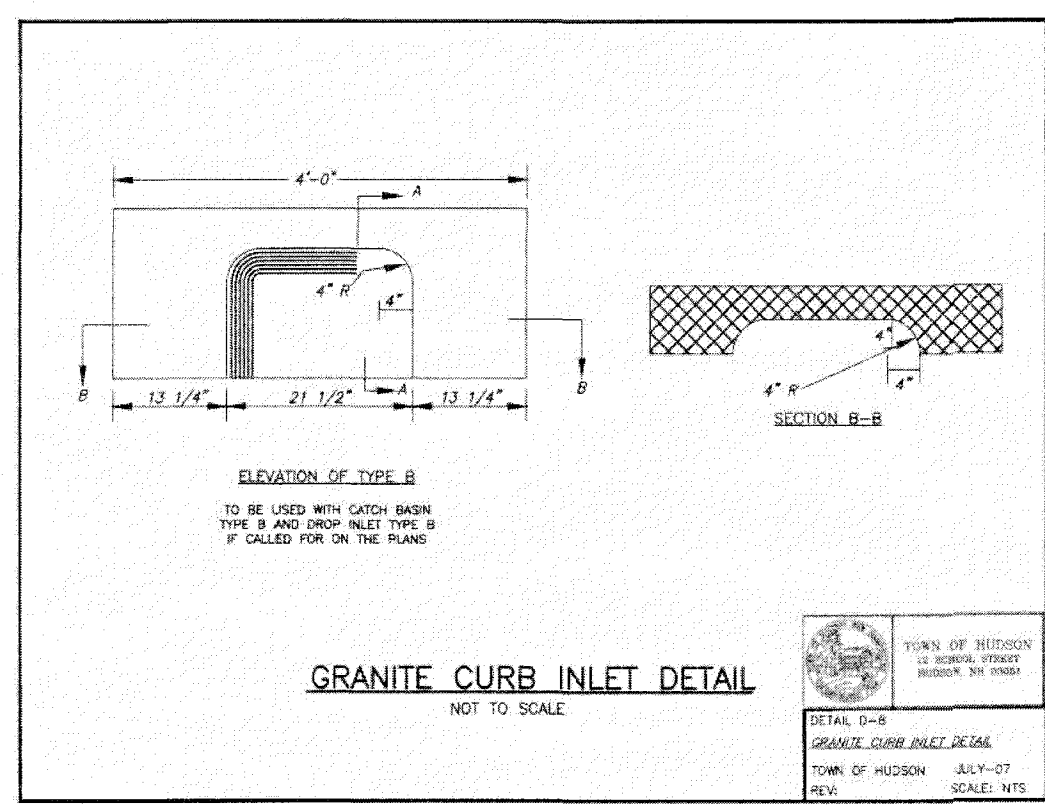
TYPICAL POCKET POND SECTION
NOT TO SCALE

POND SUMMARY				
POND NUMBER	ELEV. A	ELEV. B	ELEV. C	ELEV. D
POCKET POND #1	313.50	N/A	306.00	309.80
POCKET POND #2	276.00	275.35	268.00	272.10

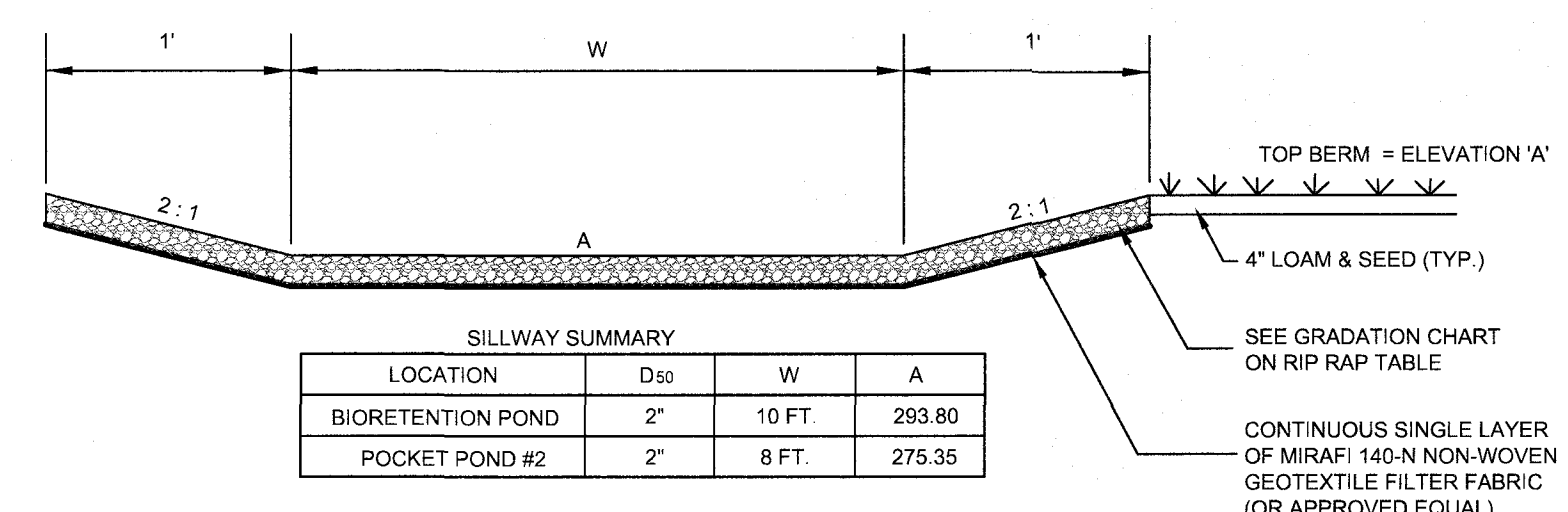


TYPICAL BIORETENTION POND SECTION
NOT TO SCALE

COMPONENT MATERIAL	PERCENT OF MIXTURE BY VOLUME	GRADATION OF MATERIAL	
		SIEVE NO.	PERCENT BY WEIGHT PASSING STANDARD SIEVE
FILTER MEDIA OPTION A			
ASTM C-33 CONCRETE SAND	50 TO 55		
LOAMY SAND TOPSOIL, WITH FINES AS INDICATED	20 TO 30	200	15 TO 25
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH, WITH FINES AS INDICATED	20 TO 30	200	<5
FILTER MEDIA OPTION B			
MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH, WITH FINES AS INDICATED	20 TO 30	200	<5
	70 TO 80	10	85 TO 100
		20	70 TO 100
		60	15 TO 40
LOAMY COARSE SAND		200	8 TO 15

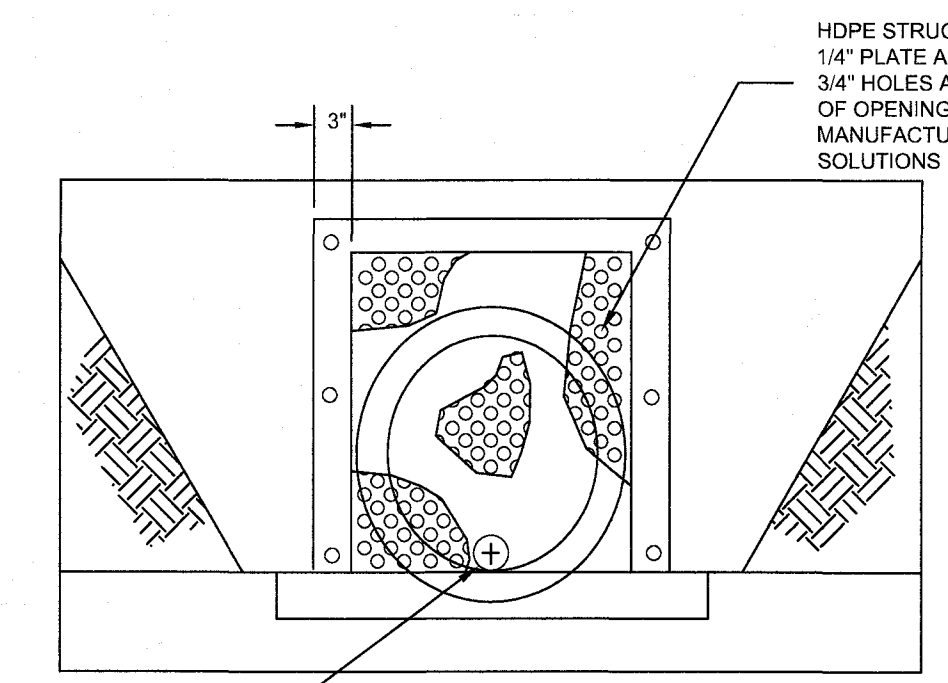


GRANITE CURB INLET DETAIL
NOT TO SCALE

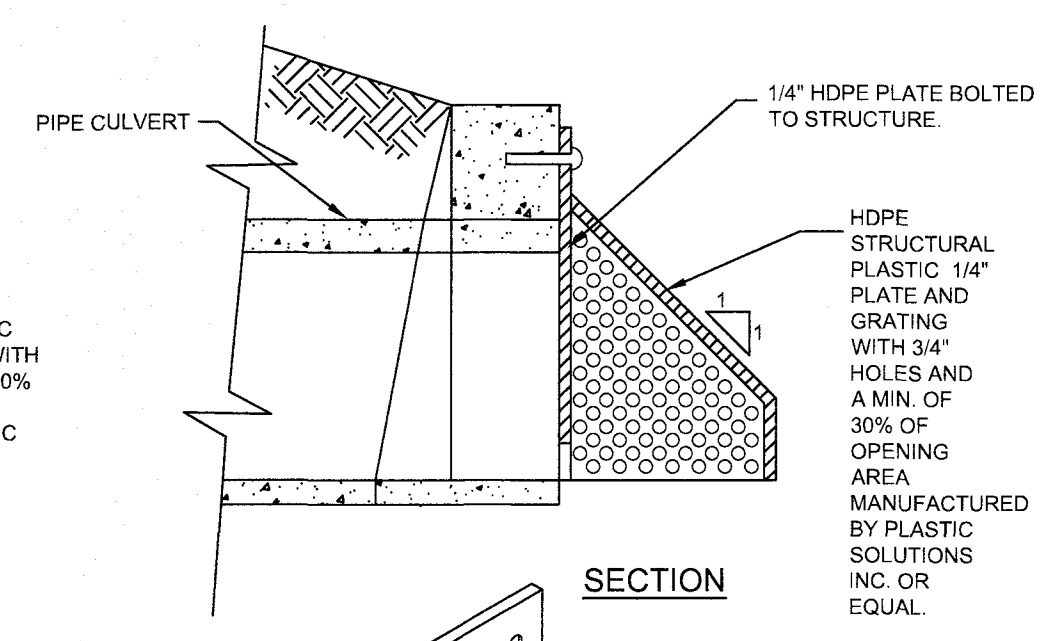


SPILLWAY SUMMARY			
LOCATION	D ₅₀	W	A
BIORETENTION POND	2"	10 FT.	293.80
POCKET POND #2	2"	8 FT.	275.35

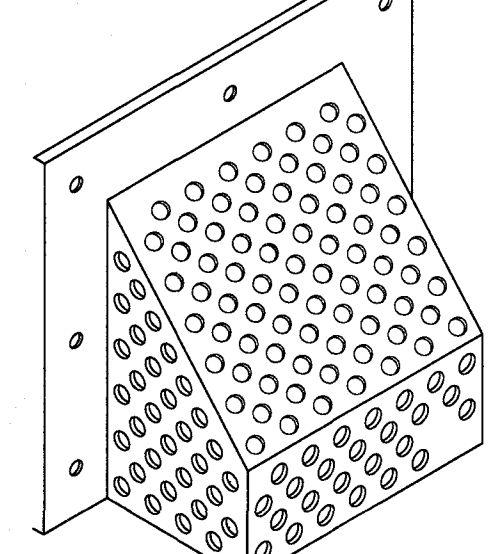
SPILLWAY DETAIL
NOT TO SCALE



TRASH RACK DETAIL
NOT TO SCALE



SECTION



ISOMETRIC

MAINTENANCE REQUIREMENTS:

- SEDIMENT FOREBAYS:**
- INSPECT AT LEAST ANNUALLY;
 - CONDUCT PERIODIC MOWING OF EMBANKMENTS (GENERALLY TWO TIMES PER YEAR) TO CONTROL GROWTH OF WOODY VEGETATION ON EMBANKMENTS;
 - REMOVE DEBRIS FROM OUTLET STRUCTURES AT LEAST ONCE ANNUALLY;
 - REMOVE AND DISPOSE OF ACCUMULATED SEDIMENT BASED ON INSPECTION;
 - INSTALL AND MAINTAIN A STAFF GAGE OR OTHER MEASURING DEVICE, TO INDICATE DEPTH OF SEDIMENT ACCUMULATION AND LEVEL AT WHICH CLEAN-OUT IS REQUIRED.
- INFILTRATION:**
- REMOVAL OF DEBRIS FROM INLET AND OUTLET STRUCTURES;
 - REMOVAL OF ACCUMULATED SEDIMENT;
 - INSPECTION AND REPAIR OF OUTLET STRUCTURES AND APPURTENANCES;
 - INSPECTION OF INFILTRATION COMPONENTS 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;
 - INSPECTION OF PRETREATMENT MEASURES AT LEAST TWICE ANNUALLY, AND REMOVAL OF ACCUMULATED SEDIMENT AS WARRANTED BY INSPECTION, BUT NO LESS THAN ONCE ANNUALLY;
 - PERIODIC MOWING OF EMBANKMENTS;
 - REMOVAL OF WOODY VEGETATION FROM EMBANKMENTS;
 - INSPECTION AND REPAIR OF EMBANKMENTS AND SPILLWAYS;
 - IF AN INFILTRATION SYSTEM 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 INFILTRATION FUNCTION, INCLUDING BUT NOT LIMITED TO REMOVAL OF ACCUMULATED SEDIMENTS OR RECONSTRUCTION OF THE INFILTRATION TRENCH.
- POCKET POND:**
- THE BOTTOMS, INTERIOR AND EXTERIOR SIDE SLOPES AND CREST OF EARTHEN DETENTION BASINS SHOULD BE MOWED, AND THE VEGETATION MAINTAINED IN HEALTHY CONDITION, AS APPROPRIATE TO THE FUNCTION OF THE FACILITY AND TYPE OF VEGETATION.
 - VEGETATED EMBANKMENTS THAT SERVE AS "BERMS" OR "DAMS" THAT IMPOUND WATER SHOULD BE MOWED AT LEAST ONCE ANNUALLY TO PREVENT THE ESTABLISHMENT OF WOODY VEGETATION;
 - INLET AND OUTLET PIPES, INLET AND OUTLET STRUCTURES, ENERGY DISSIPATION STRUCTURES OR PRACTICES AND OTHER STRUCTURAL APPURTENANCES SHOULD BE INSPECTED AT LEAST ANNUALLY BY A QUALIFIED PROFESSIONAL AND CORRECTIVE ACTION IMPLEMENTED (EG. MAINTENANCE, REPAIRS OR REPLACEMENT) AS INDICATED BY SUCH INSPECTION;
 - TRASH AND DEBRIS SHOULD BE REMOVED FROM THE BASIN AND ANY INLET OR OUTLET STRUCTURES WHENEVER OBSERVED BY INSPECTION;
 - ACCUMULATED SEDIMENT SHOULD BE REMOVED WHEN IT SIGNIFICANTLY AFFECTS BASIN CAPACITY.
- SWALES:**
- INSPECT AT LEAST TWICE ANNUALLY
 - CONDUCT PERIODIC MOWING OF EMBANKMENTS (GENERALLY TWO TIMES PER YEAR) TO CONTROL GROWTH OF WOODY VEGETATION ON EMBANKMENTS;
 - REMOVE TRASH AND DEBRIS AT LEAST EACH INSPECTION;
 - REMOVE AND DISPOSE OF ACCUMULATED SEDIMENT BASED ON INSPECTION;

CONSTRUCTION PRACTICE REQUIREMENTS:

- STORMWATER PONDS, INFILTRATION BASINS, AND SWALES MUST BE INSTALLED BEFORE ROUGH GRADING TO SITE.
- RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMPs ARE STABILIZED.
- STORMWATER PONDS, INFILTRATION BASINS, AND SWALES MUST BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATION WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION SYSTEM.
- AFTER THE INFILTRATION SYSTEM AREA IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
- DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
- INFILTRATION BASIN FLOOR PREPARATION WILL INCLUDE GRASS TURF THAT CAN BE INUNDATED FOR UP TO 72 HOURS.
- INFILTRATION AREAS ARE TO BE PROTECTED FROM OVER-COMPACTION DURING CONSTRUCTION.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEAR FROM DATE OF APPROVAL.

APPROVED BY THE HUDSON, NH PLANNING BOARD
DATE OF MEETING: _____

SIGNATURE DATE: _____

SIGNATURE DATE: _____

SITE PLANS ARE VALID FOR TWO YEARS FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

CONSTRUCTION DETAILS
SHEPHERDS HILL
MAP 177 LOT 5
SHADOWBROOK DRIVE
HUDSON, NEW HAMPSHIRE
HILLSBOROUGH COUNTY

OWNER OF RECORD:
SHEPHERDS HILL HOME OWNERS ASSOCIATION
C/O GREAT NORTH PROPERTY MANAGEMENT
3 HOLLAND WAY, SUITE 201
EXETER, NH 03833

APPLICANT:
SHEPHERDS HILL, LLC
253 MAIN STREET
NASHUA, NH 03060

KM KEACH-NORDSTROM ASSOCIATES, INC.
Civil Engineering Land Surveying Landscape Architecture
10 Commerce Park North, Suite 3B, Bedford, NH 03110 Phone (603) 627-2881

REVISIONS			
No.	DATE	DESCRIPTION	BY
1	7/7/22	REVISED PER COMMENTS	ACL

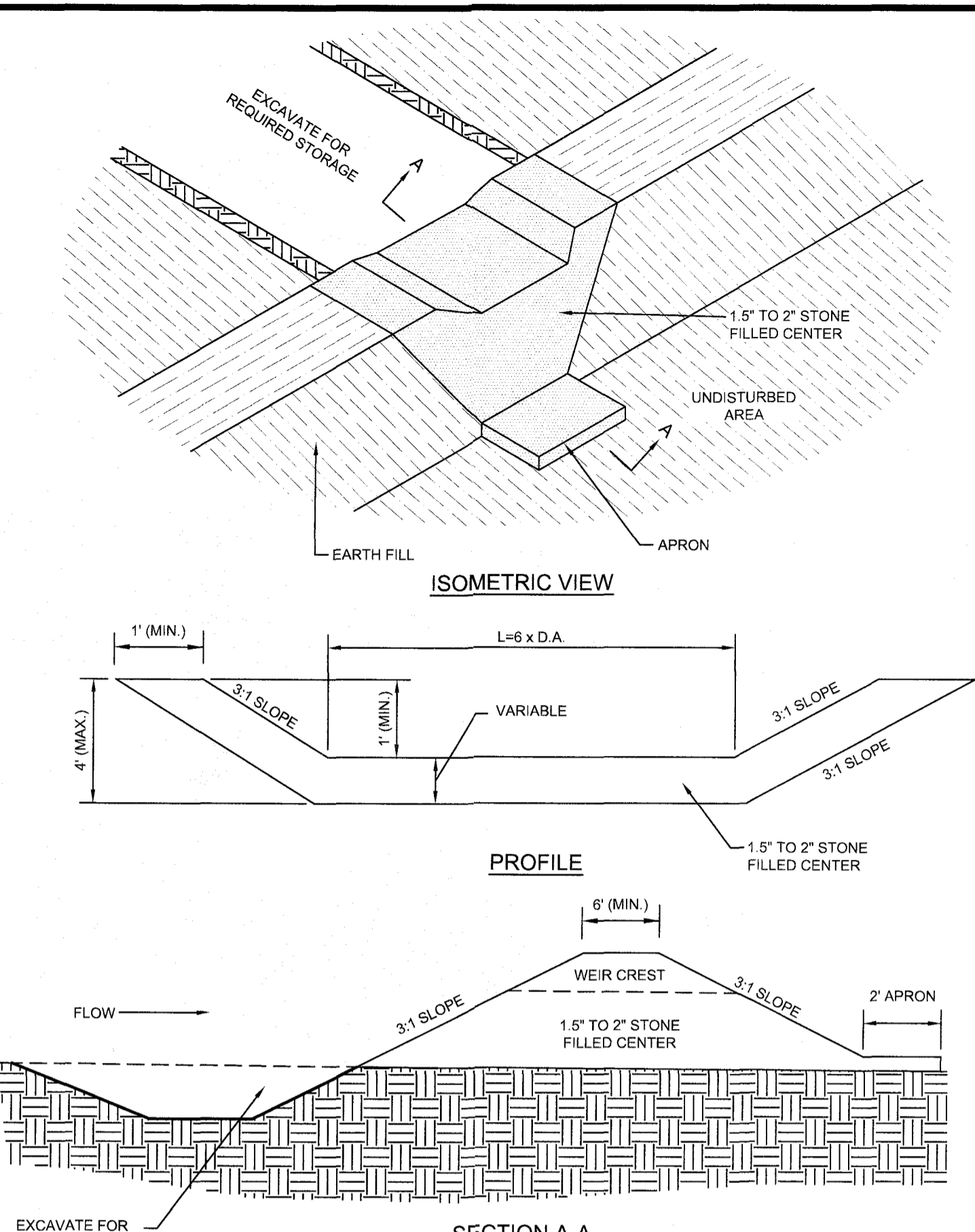
DATE: MAY 2, 2022 SCALE: AS SHOWN
PROJECT NO: 17-0824-1 SHEET 49 OF 51

BEST MANAGEMENT PRACTICES FOR BLASTING

IF MORE THAN 5000 CUBIC YARDS ARE BLASTED, IDENTIFY DRINKING WATER WELLS LOCATED WITHIN 2000 FEET OF THE PROPOSED BLASTING ACTIVITIES. DEVELOP A GROUNDWATER QUALITY SAMPLING PROGRAM TO MONITOR FOR NITRATE AND NITRITE EITHER IN THE DRINKING WATER SUPPLY WELLS OR IN OTHER WELLS THAT ARE REPRESENTATIVE OF THE DRINKING WATER SUPPLY WELLS IN THE AREA. THE PLAN MUST INCLUDE PRE AND POST BLAST WATER QUALITY MONITORING AND BE APPROVED BY NHDES PRIOR TO INITIATING BLASTING. THE GROUNDWATER SAMPLING PROGRAM MUST BE IMPLEMENTED ONCE APPROVED BY NHDES.

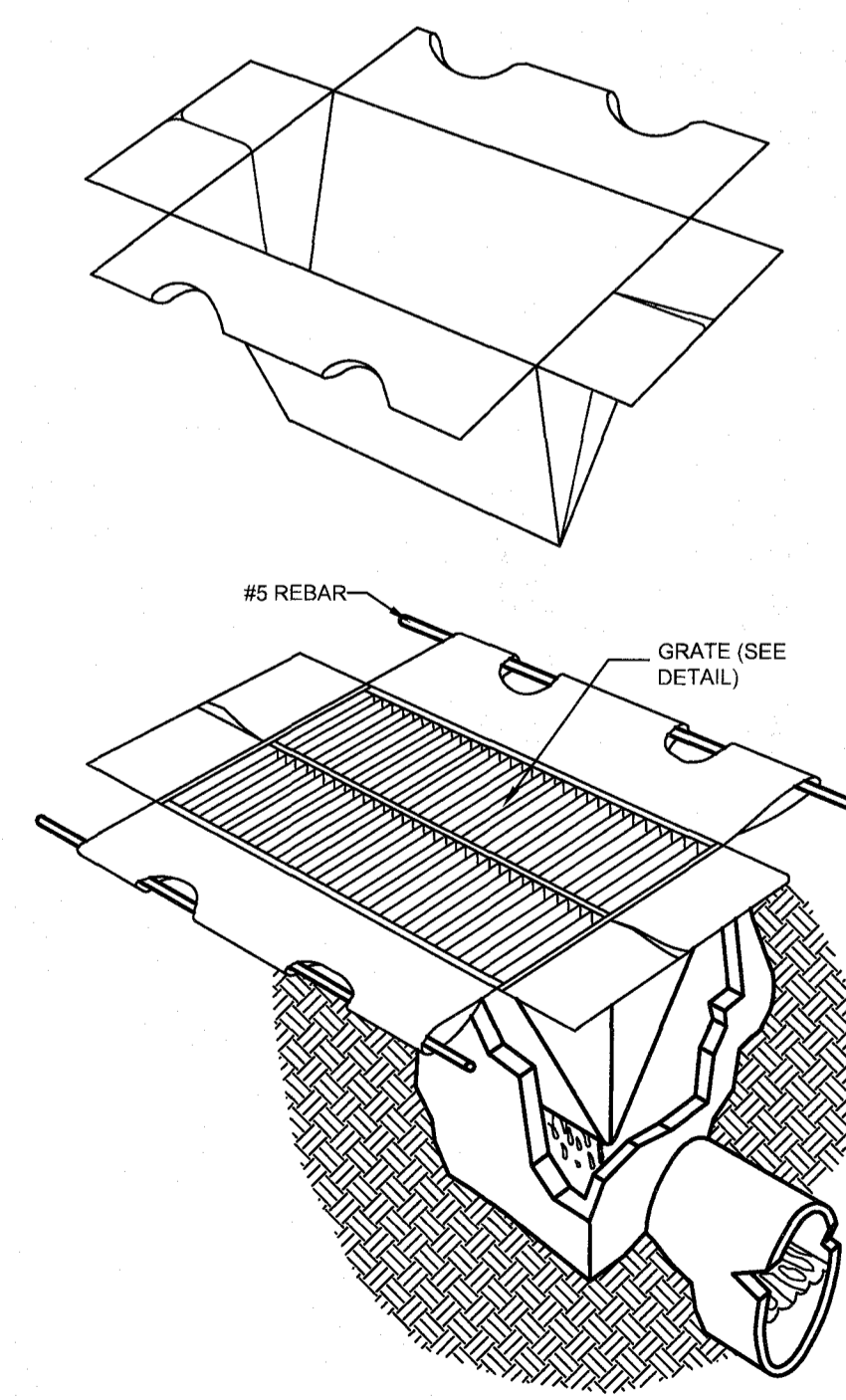
BEST MANAGEMENT PRACTICES FOR BLASTING: ALL ACTIVITIES RELATED TO BLASTING SHALL FOLLOW BEST MANAGEMENT PRACTICES (BMPs) TO PREVENT CONTAMINATION OF GROUNDWATER INCLUDING PREPARING, REVIEWING AND FOLLOWING AN APPROVED BLASTING PLAN; PROPER DRILLING, EXPLOSIVE HANDLING AND LOADING PROCEDURES; OBSERVING THE ENTIRE BLASTING PROCEDURES; EVALUATING BLASTING PERFORMANCE; AND HANDLING AND STORAGE OF BLASTED ROCK.

- LOADING PRACTICES. THE FOLLOWING BASTHOLE LOADING PRACTICES TO MINIMIZE ENVIRONMENTAL EFFECTS SHALL BE FOLLOWED:
 - DRILLING LOGS SHALL BE MAINTAINED BY THE DRILLER AND COMMUNICATED DIRECTLY TO THE BLASTER. THE LOGS SHALL INDICATE DEPTHS AND LENGTHS OF VOIDS, CAVITIES, AND FAULT ZONES OR OTHER WEAK ZONES ENCOUNTERED AS WELL AS GROUNDWATER CONDITIONS.
 - EXPLOSIVE PRODUCTS SHALL BE MANAGED ON SITE SO THAT THEY ARE EITHER USED IN THE BOREHOLE, RETURNED TO THE DELIVERY VEHICLE, OR PLACED IN SECURE CONTAINERS FOR OFF SITE DISPOSAL.
 - SPILLAGE AROUND THE BOREHOLE SHALL EITHER BE PLACED IN THE BOREHOLE OR CLEANED UP AND RETURNED TO AN APPROPRIATE VEHICLE FOR HANDLING OR PLACEMENT IN SECURED CONTAINERS FOR OFF SITE DISPOSAL.
 - LOADED EXPLOSIVES SHALL BE DETONATED AS SOON AS POSSIBLE AND SHALL NOT BE LEFT IN THE BASTHOLES OVERNIGHT, UNLESS WEATHER OR OTHER SAFETY CONCERNS REASONABLY DICTATE THAT DETONATION SHOULD BE POSTPONED.
 - LOADING EQUIPMENT SHALL BE CLEANED IN AN AREA WHERE WASTEWATER CAN BE PROPERLY CONTAINED AND HANDLED IN A MANNER THAT PREVENTS RELEASE OF CONTAMINANTS TO THE ENVIRONMENT.
 - EXPLOSIVES SHALL BE LOADED TO MAINTAIN GOOD CONTINUITY IN THE COLUMN LOAD TO PROMOTE COMPLETE DETONATION. INDUSTRY ACCEPTED LOADING PRACTICES FOR PRIMING, STEMMING, DECKING AND COLUMN RISE NEED TO BE ATTENDED TO.
- EXPLOSIVE SELECTION. THE FOLLOWING BMPs SHALL BE FOLLOWED TO REDUCE THE POTENTIAL FOR GROUNDWATER CONTAMINATION WHEN EXPLOSIVES ARE USED:
 - EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT ARE APPROPRIATE FOR SITE CONDITIONS AND SAFE BLAST EXECUTION.
 - EXPLOSIVE PRODUCTS SHALL BE SELECTED THAT HAVE THE APPROPRIATE WATER RESISTANCE FOR THE SITE CONDITIONS PRESENT TO MINIMIZE THE POTENTIAL FOR HAZARDOUS EFFECT OF THE PRODUCT UPON GROUNDWATER.
- PREVENTION OF MISFIRES. APPROPRIATE PRACTICES SHALL BE DEVELOPED AND IMPLEMENTED TO PREVENT MISFIRES.
- MUCK PILE MANAGEMENT. MUCK PILES (THE BLASTED PIECES OF ROCK) AND ROCK PILES SHALL BE MANAGED IN A MANNER TO REDUCE THE POTENTIAL FOR CONTAMINATION BY IMPLEMENTING THE FOLLOWING MEASURES:
 - REMOVE THE MUCK PILE FROM THE BLAST AREA AS SOON AS REASONABLY POSSIBLE.
 - MANAGE THE INTERACTION OF BLASTED ROCK PILES AND STORMWATER TO PREVENT CONTAMINATION OF WATER SUPPLY WELLS OR SURFACE WATER.
- SPILL PREVENTION MEASURES AND SPILL MITIGATION. SPILL PREVENTION AND SPILL MITIGATION MEASURES SHALL BE IMPLEMENTED TO PREVENT THE RELEASE OF FUEL AND OTHER RELATED SUBSTANCES TO THE ENVIRONMENT. THE MEASURES SHALL INCLUDE AT A MINIMUM:
 - THE FUEL STORAGE REQUIREMENTS SHALL INCLUDE:
 - STORAGE OF REGULATED SUBSTANCES ON AN IMPERVIOUS SURFACE.
 - SECURE STORAGE AREAS AGAINST UNAUTHORIZED ENTRY.
 - LABEL REGULATED CONTAINERS CLEARLY AND VISIBLY.
 - INSPECT STORAGE AREAS WEEKLY.
 - COVER REGULATED CONTAINERS IN OUTSIDE STORAGE AREAS.
 - WHEREVER POSSIBLE, KEEP REGULATED CONTAINERS THAT ARE STORED OUTSIDE MORE THAN 50 FEET FROM SURFACE WATER AND STORM DRAINS, 75 FEET FROM PRIVATE WELLS, AND 400 FEET FROM PUBLIC WELLS.
 - SECONDARY CONTAINMENT IS REQUIRED FOR CONTAINERS CONTAINING REGULATED SUBSTANCES STORED OUTSIDE, EXCEPT FOR ON PREMISE USE HEATING FUEL TANKS, OR ABOVEGROUND OR UNDERGROUND STORAGE TANKS OTHERWISE REGULATED.
 - THE FUEL HANDLING REQUIREMENTS SHALL INCLUDE:
 - EXCEPT WHEN IN USE, KEEP CONTAINERS CONTAINING REGULATED SUBSTANCES CLOSED AND SEALED.
 - PLACE DRIP PANS UNDER SPIGOTS, VALVES, AND PUMPS.
 - HAVE SPILL CONTROL AND CONTAINMENT EQUIPMENT READILY AVAILABLE IN ALL WORK AREAS.
 - USE FUNNELS AND DRIP PANS WHEN TRANSFERRING REGULATED SUBSTANCES.
 - PERFORM TRANSFERS OF REGULATED SUBSTANCES OVER AN IMPERVIOUS SURFACE.
- THE TRAINING OF ON SITE EMPLOYEES AND THE ON SITE POSTING OF RELEASE RESPONSE INFORMATION DESCRIBING WHAT TO DO IN THE EVENT OF A SPILL OF REGULATED SUBSTANCES.
- FUELING AND MAINTENANCE OF EXCAVATION, EARTHMOVING AND OTHER CONSTRUCTION RELATED EQUIPMENT WILL COMPLY WITH THE REGULATIONS OF THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NOTE THESE REQUIREMENTS ARE SUMMARIZED IN WO-DW68-22-8 BEST MANAGEMENT PRACTICES FOR FUELING AND MAINTENANCE OF EXCAVATION AND EARTHMOVING EQUIPMENT OR ITS SUCCESSOR DOCUMENT.



- NOTES:**
- THE TRAP SHALL BE INSTALLED AS CLOSE TO THE DISTURBED AREA OR SOURCE OF SEDIMENT AS POSSIBLE.
 - THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE TRAP SHALL BE LESS THAN 5 ACRES.
 - THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
 - THE SIDE SLOPES OF THE TRAP SHALL BE 3:1 OR FLATTER, AND SHALL BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
 - THE OUTLET OF THE TRAP SHALL BE A MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP AND SHALL DISCHARGE TO A STABILIZED AREA.
 - THE TRAP SHALL BE CLEANED WHEN 50 PERCENT OF THE ORIGINAL VOLUME IS FILLED.
 - THE MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.
 - SEDIMENT TRAPS AND/OR BASINS SHOULD BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL BASINS/PONDS ARE STABILIZED.

TEMPORARY SEDIMENT TRAP DETAIL
NOT TO SCALE



SILTSAK NOTES:

- THE SILTSAK SHALL BE MANUFACTURED FROM WOVEN POLYPROPYLENE AND SEWN BY A DOUBLE NEEDLE MACHINE, USING A HIGH STRENGTH NYLON THREAD.
- THE SILTSAK SEAMS HAVE A CERTIFIED WIDE WIDTH STRENGTH PER ASTM D-4884 STANDARDS AS FOLLOWS:

SILTSAK STYLE	TEST METHOD	TEST RESULT
REGULAR FLOW	ASTM D-4884	165.0 LBS/IN
HI-FLOW	ASTM D-4884	114.6 LBS/IN
- THE SILTSAK WILL BE MANUFACTURED TO FIT THE OPENING OF THE CATCH BASIN OR DROP INLET. THE SILTSAK WILL HAVE THE FOLLOWING FEATURES:
 - TWO DUMP STRAPS ATTACHED AT THE BOTTOM TO FACILITATE THE EMPTYING OF THE SILTSAK.
 - LIFTING LOOPS AS AN INTEGRAL PART OF THE SYSTEM TO BE USED TO LIFT THE SILTSAK FROM THE BASIN; AND
 - A RESTRAINT CORD APPROXIMATELY HALFWAY UP THE SACK TO KEEP THE SIDES AWAY FROM THE CATCH BASIN WALLS. THIS YELLOW CORD IS ALSO A VISIBLE MEANS OF INDICATING WHEN THE SACK SHOULD BE EMPTIED, CLEANED AND PLACED BACK INTO THE BASIN.
- THE GEOTEXTILE FABRIC SHALL BE WOVEN POLYPROPYLENE FABRIC WITH THE FOLLOWING PROPERTIES:

PROPERTY	TEST METHOD	TEST RESULT
GRAB TENSILE	ASTM D-4643	300 LBS
GRAB ELONGATION	ASTM D-4631	20%
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80%
APPARENT OPENING	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL./MIN./FT2
PERMITTIVITY	ASTM D-4491	0.55 SEC.

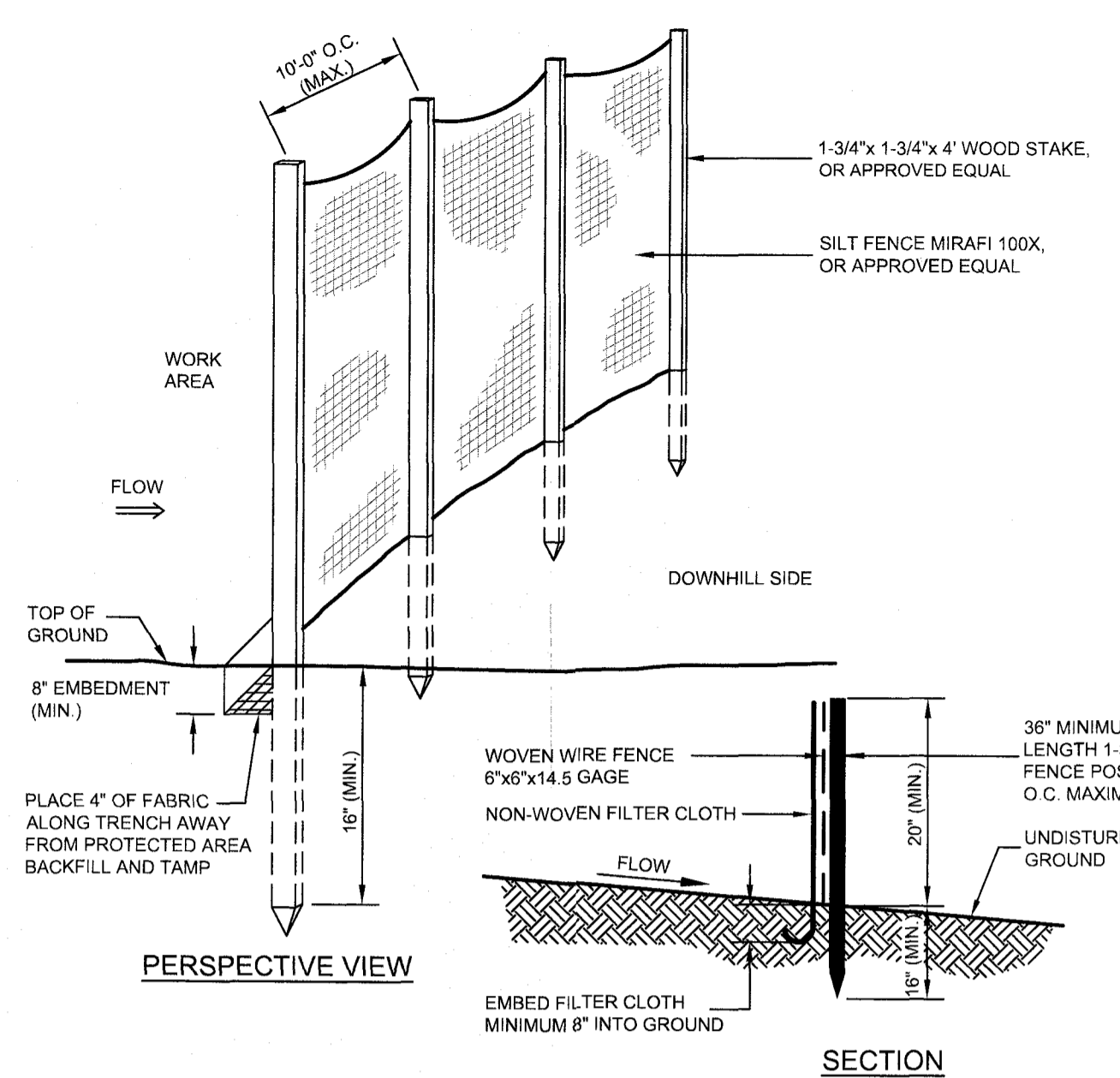
PROPERTY	TEST METHOD	TEST RESULT
GRAB TENSILE	ASTM D-4632	265 LBS
GRAB ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	20 GAL./MIN./FT2
PERMITTIVITY	ASTM D-4491	1.5 SEC.

CONSTRUCTION SPECIFICATIONS:

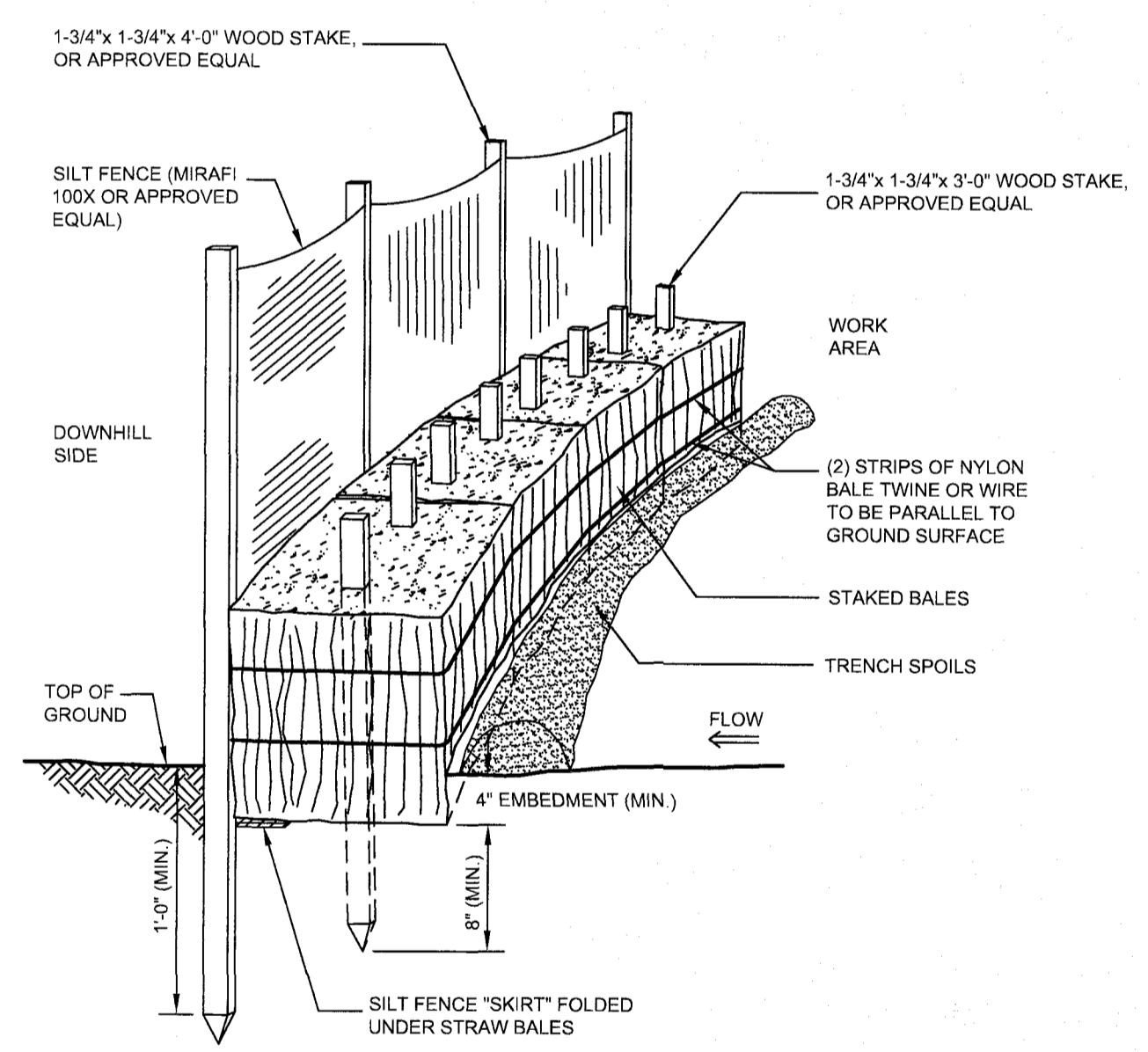
- THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.
- THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
- WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIE OR STAPLES WHERE NOTED OR AS DIRECTED BY DESIGN ENGINEER.
- FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MIDSECTION AND BOTTOM.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
- FENCE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND DRIVEN A MINIMUM OF 16 INCHES INTO THE GROUND. WOOD POSTS SHALL BE OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

MAINTENANCE:

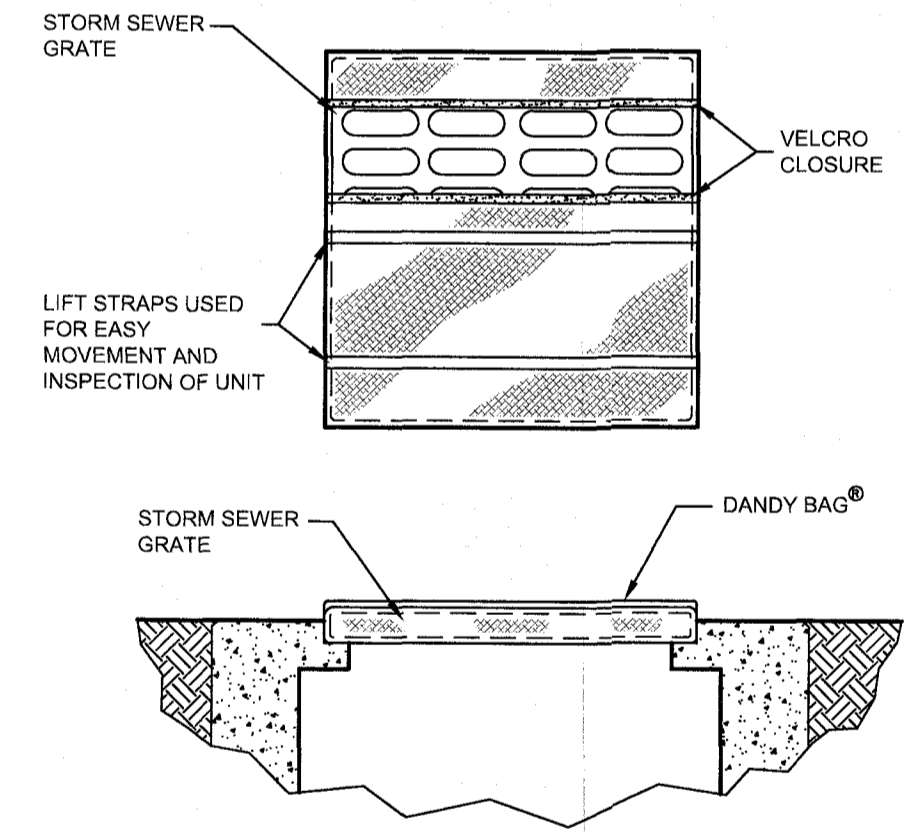
- SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.
- IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.
- SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
- SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.



SILT FENCE DETAIL
NOT TO SCALE
(MARCH 2008)



SILT FENCE WITH STRAW BALE BARRIER
NOT TO SCALE
(MARCH 2008)



HI-FLOW DANDY BAG® (SAFETY ORANGE)

MECHANICAL PROPERTIES	TEST METHOD	UNITS	MARV
GRAB TENSILE STRENGTH	ASTM D 4632	kN (lbs)	1.62 (365) x 0.89 (200)
GRAB TENSILE ELONGATION	ASTM D 4632	%	24 x 10
PUNCTURE STRENGTH	ASTM D 4833	kN (lbs)	0.40 (90)
MULLEN BURST STRENGTH	ASTM D 3786	kPa (psi)	3097 (450)
TRAPEZOID TEAR STRENGTH	ASTM D 4533	kN (lbs)	0.51 (115) x 0.33 (75)
UV RESISTANCE	ASTM D 4355	%	90
APPARENT OPENING SIZE	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
FLOW RATE	ASTM D 4491	l/min/m² (gal/min/ft²)	5907 (145)
PERMITTIVITY	ASTM D 4491	Sec-1	2.1

DANDY BAG®
NOT TO SCALE
(APRIL 2010)

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES TWO YEAR FROM DATE OF APPROVAL.

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DATE: MAY 2, 2022 SCALE: AS SHOWN
PROJECT NO: 17-0824-1 SHEET 50 OF 51

