DM ROMA
CONSULTING ENGINEERS

July 6, 2018

Amanda Lessard, Town Planner
Town of Windham
8 School Road
Windham, Maine 04062

Re: Response to Review Comments – Ruby Meadows Subdivision

Dear Amanda:

We have received review comments from the Town's Planning and Engineering office for the above referenced project and offer the following response and additional information:

1. In 2014 the property was conveyed to the current owners Shirley Littlefield and Sherry Littlefield by deed recorded in CCRD book 31910 page 207. We have updated the deed references on the Subdivision Plan and attached a copy of the deed for reference. The deed was correctly referenced in the Purchase & Sale Agreement.
2. The applicant is in the process of obtaining a revised Purchase & Sale Agreement to list Ruby Meadows, LLC as the Buyer. Once the agreement is obtained, the applicant will provide a copy to the Town along with the requested map showing the land that is intended to be conveyed.
3. Notation regarding the granting of a proposed right-of-way to seller's remaining land has been added to the Subdivision Plan as Note 15. Easements over Lot 13 for driveway access and stormwater management have been added to the Subdivision Plan. We proposed to include a deed exhibit with the deeds for Lots 13 and 14 to more clearly describe the geometry and benefit of the easement.
4. The additional test pit locations that were shown on the DM Roma plans have been added to the Subdivision Plan with notation referencing the test pit numbers.
5. We understand that the applicant is providing a letter of financial capability under separate cover.
6. The subdivision plan shows the overall parcel that is owned under the attached deed, with the land to be retained noted as "Remaining Land of Shirley Littlefield and Sherry Littlefield".
7. Contour lines with a 2-foot interval have been added to the Subdivision Plan, as requested.
8. The amount of vehicle traffic estimated to be generated by the subdivision is 150 daily trips.
9. A waiver request form has been attached for waivers of performance standards and submission requirements. The following outlines the reasons that we feel the waivers could reasonably be granted.
    a. 911-M-5-B-5-2: Dead-end street standard. We have proposed a hammerhead turnaround in accordance with the Town's minimum design standards in lieu of the standard requirement for a cul-de-sac. The proposed roadway is likely to provide

access to other land that is owned by the sellers, and it would be more appropriate to end the road with a hammerhead that could be extended rather than installing a cul-de-sac.

b. 911-M-5-B-6-2: Sidewalks or Shoulders Standard. The proposed roadway is designed to be 24 feet wide paved with 2-foot gravel shoulders on each side. We are requesting a waiver from the standard that would require the roadway to be 26 feet wide paved with 2-foot gravel shoulders. The 24-foot wide paved surface provides adequate and safe vehicle and pedestrian access.
c. 911-B-1-A: Connection to public water supply. The project proposes to extend 1,000 feet of new water main to serve 13 of the 15 lots with public water. We moved one of the proposed lots on Pope Road to be accessed from Albion Road so that only 2 lots will not be served by public water. A water main would need to be extended approximately 700 feet on Pope Road to serve lots 1 and 2, which is not economically feasible.
d. 910-C-1-C-1: High Intensity Soil Survey. The design of the project included extensive wetland mapping and the excavation of 24 test pits by a Licensed Site Evaluator. The wetland mapping and soil test pit logs provides ample information to appropriately site the building lots and proposed roadway so that suitable building envelopes exist. The soils on the property were modeled as Hydrologic Soil Group C and D predominately, so it is unlikely that a high-intensity soil survey would provide information that would result in the proposed stormwater BMP's being undersized.
e. 910-C-1-C-5: Traffic Impact Assessment. The Subdivision Ordinance requires a Traffic Impact Assessment for projects that generate more than 140 vehicle trips. The proposed project is estimated to generate 150 vehicle trips, with 50 of the daily vehcel trips being accessed by driveways on existing Town roads. It is unlikely that a Traffic impact Assessment would provide useful information that would help the Planning board determine if the Town's ordinances are being met.
f. 910-C-1-C-3: Hydrogeologic Assessment. Existing single-family lots in the general project vicinity are served by public water from the Portland Water District. The existing adjacent single-family lot on Pope Road is not located hydraulically down-gradient from any proposed leach fields, and is not expected to be impacted by the installation of a subsurface wastewater disposal system.

10. Notes 8, 9 and 12 were removed from the Subdivision Plan and the notes were renumbered.
11. Areas of wetland impact were added to the Subdivision Plan and note 16 was added to indicate the cumulative total wetland area that is proposed to be impacted.
12. The driveway location and associated easement shown on the Subdivision Plan for lots 13 and 14 was revised to be consistent with the DM Roma plans.
13. A note referencing tree clearing restrictions was added to the Subdivision Plan as Note 14.
14. A note referring to the plans prepared by DM Roma was added to the Subdivision Plan as Note 9.
15. A note requiring roofline drip edges was added to the Subdivision Plan as Note 8.
16. The proposed forested buffer on Lot 14 has been added to the Subdivision Plan. Plan note 12 was added to require permanent marking of the stormwater buffer in the field prior to construction.
17. The wetland impact area #1 on the Subdivision Plan was relabeled to be consistent with the DM Roma plans, which labeled the impact area as 6,265 Square Feet.

18. A revised Plan and Profile drawing is attached, which labels the sight distance at the proposed roadway intersection.
19. A roadway restoration detail was added to the plans showing the required trench repair and surface restoration for roadway trenching in Albion Road, which is under moratorium.
20. A revised Stormwater Management Report is attached, which correctly labels the pre-development flow rate at Study Point 1 as 7.18 CFS.
21. We propose that ground topography of the stormwater filter basins and rain gardens be surveyed as a condition of preliminary approval and prior to final approval.
22. A revised Lot Development Plan is attached, which shows proposed grading for the bioretention cells on lots 1, 2, 13, 14 and 15.
23. A summary table showing the proposed impervious and developed area on each lot was added to the Subdivision Plan.

Please let me know if you have any additional questions or require additional information.

Sincerely,

DM ROMA CONSULTING ENGINEERS

Dustin Roma

Dustin M. Roma, P.E.
President

Cc: Paul Hollis

TOWN OF WINDHAM
SUBDIVISION & SITE PLAN APPLICATION

Performance and Design Standards Waiver Request Form

(Section 808 – Site Plan Review, Waivers)
(Section 908 – Subdivision Review, Waivers)

For each waiver request from the Performance and Design Standards detailed in Section 811 or Section 911 of the Town of Windham Land Use Ordinance, as applicable, please submit a separate completed copy of this waiver request form.

Subdivision or Project Name: RUBY MEADOWS SUBDIVISION

Tax Map: 10 **Lot:** 78

Waivers are requested from the following Performance and Design Standards (add rows as necessary):

	Ordinance Section	Standard	Mark which waiver this form is for
1)	911-M-5-B-5-2	DEAD END STREET STANDARD	X
2)	911-M-5-B-6-2	SIDEWALKS OR SHOULDERS STANDARD	X
3)	911-B-1-A	CONNECTION TO PUBLIC WATER SYSTEM	X
4)	910-C-1-C-1	HIGH INTENSITY SOIL SURVEY	X
5)	910-C-1-C-5	TRAFFIC IMPACT ASSESSMENT	X
6)	910-C-1-C-3	HYDROGEOLOGIC ASSESSMENT	X

a. Describe how a waiver from the standard indicated above will improve the ability of the project to take the property's pre-development natural features into consideration. Natural features include, but are not limited to, topography, location of water bodies, location of unique or valuable natural resources, relation to abutting properties or land uses. Attach a separate sheet if necessary.

NOTE: SEE RESPONSE LETTER FOR DESCRIPTION OF HOW THE WAIVER REQUESTS CAN REASONABLY BE GRANTED.

(continued next page)

Ordinance Section: _____

b. Will the waiver have an impact on any of the following criteria?

	Yes	No
Water or air pollution		X
Light pollution or glare		X
Water supply		X
Soil erosion		X
Traffic congestion or safety		X
Pedestrian safety or access		X
Supply of parking		X
Sewage disposal capacity		X
Solid waste disposal capacity		X
Scenic or natural beauty, aesthetics, historic sites, or rare or irreplaceable natural areas		X
Flooding or drainage issues on abutting properties		X
The Town's ability to provide the subdivision with public safety services (if subdivision)		X

If granting the waiver will result in an impact on any of the criteria above, please provide more detail below.

Doc#: 55032 Bk:31910 Ps: 207

Warranty Deed

(Statutory Short Forms Deeds Act - 33 M.R.S.A. § 761 et seq.)

Shirley A. Littlefield, being married and of the Town of Raymond, County of Cumberland and State of Maine, with a mailing address of P. O. Box 446, Raymond ME 04071, for consideration paid, grants to **Shirley A. Littlefield** and **Sherry H. Littlefield**, both of the Town of Raymond, County of Cumberland and State of Maine, with a mailing address of P. O. Box 446, Raymond ME 04071, as *joint tenants* and with *warranty covenants*, the land in the Town of **Windham**, County of Cumberland and State of Maine, bounded and described as follows: *Reference Exhibit A attached and incorporated herein by reference.*

The deed preparer makes no certification as to record marketable title, a title search not having been performed attendant to preparation of this deed.

This deed is given for estate planning purposes and creates a joint tenancy between wife and husband, without consideration.

Witness my hand and seal this date: September 8, 2014.

Shirley A. Littlefield

Shirley A. Littlefield

State of Maine
Cumberland, *ss.* September 8, 2014

Personally appeared the above-named SHIRLEY A. LITTLEFIELD who acknowledged the foregoing instrument to be her free act and deed. *Before me,*

Julie Pease Galipeau

Julie Pease Galipeau
Notary Public
Comm Exp: 5/24/2018

SEAL

Exhibit A

A certain lot or parcel of land, together with the buildings thereon, situated in the Town of **Windham**, County of Cumberland and State of Maine, bounded and described as follows:

A certain lot or parcel of land bounded on the North by land of Charles Sawyer, East by land of Edith Brackett and Albert Waterhouse, South by Pope Road, West by Albion Road, containing one hundred nineteen (119) acres more or less. Buildings thereon. Subject to easement of Portland Pipe Line Company recorded in Cumberland County Registry of Deeds in Book 1646 at Page 151, and easement deeded Portland Pipe Line company by Inhabitants of the Town of Windham, dated December 18, 1953.

Excepting from the herein-described parcel, that parcel of land distributed to Herbert H. Foss, Sr., by Shirley L. Littlefield, Personal Representative of the Estate of Walter B. Greenlaw, pursuant to Deed of Distribution by Personal Representative (Testate) dated April 28, 2004 and recorded in Cumberland County Registry of Deeds in Book 21207, Page 113.

Further **excepting** from the above- Warranty Deed from Shirley A. Littlefield to Susan M. Olson and Douglas Scott Riggs, dated August 17, 2005 and recorded in said Registry in Book 23043, Page 111.

Further **excepting** from the above-described parcel, that parcel of land conveyed from Shirley A. Littlefield to Karl Edward Arnberg and Margaret C. Arnberg, dated January 25, 2011, and recorded in Cumberland County Registry of Deeds in Book 29303, Page 343.

Being all of the remaining premises distributed to Shirley A. Littlefield by Shirley A. Littlefield, Personal Representative of the Estate of Walter B. Greenlaw, pursuant to Deed of Distribution by Personal Representative (Testate) dated May 12, 2004 and recorded in Cumberland County Registry of Deeds in Book 21348, Page 104.

Received
Recorded Register of Deeds
Nov 13,2014 11:45:28A
Cumberland County
Pamela E. Lovley

DM ROMA
CONSULTING ENGINEERS

STORMWATER MANAGEMENT REPORT

RUBY MEADOWS SUBDIVISION
ALBION ROAD & POPE ROAD
WINDHAM, MAINE

A. Narrative

Ruby Meadows, LLC is proposing to develop a 29.6-acre parcel at the intersection of Albion Road and Pope Road in Windham. The project site is located on a portion of Lot 78 on the Town of Windham Assessors Map 10 and is located in the Farm Zoning District.

This proposed development will consist of 15 single family residential lots including the construction of approximately 1,030 linear feet of paved roadway, utilities and stormwater infrastructure. In general, the site drains to westerly to Albion Road or southerly to Pope Road. Runoff in both directions is tributary to Colley Wright Brook. The brook eventually drains to the Presumpscot River.

B. Alterations to Land Cover

The 29.6-acre parcel consists of undeveloped woods and meadow. The proposed roadway will generate approximately 30,108 square feet (0.69± acres) of new impervious area including the paved travelway and gravel shoulders. The roadway construction and installation of the stormwater infrastructure will generate an additional 245,492 square feet (5.64± acres) of landscaping/lawn resulting in 275,600 square feet (6.33± acres) of developed area associated with the road construction and stormwater infrastructure. Based on the layout indicated on the Post Development Watershed Map, the lot development will generate an additional 25,443 square feet (0.58 ac.) and approximately 105,297 square feet (2.42± ac.) of landscaped area creating a developed area of 406,340 square feet (9.33± ac.)

It is the intention of the applicant to only build the roadway, utilities and stormwater infrastructure and sell the lots undeveloped in the proposed subdivision. Since the applicant will not be developing the lots, the parcel area is less than 30 acres and the road construction will not generate more than one (1) acre of land disturbance, no stormwater related permit will need to be obtained from the Maine Department of Environmental Protection (MDEP). The project will be reviewed by the Town of Windham as a Major Subdivision.

The site is moderately sloped, draining westerly to Albion Road or southerly to Pope Road conveyed through a wetland network to several culverts beneath the roads. Both directions are

tributary to Coley Wright Brook. The onsite soils as identified on the Medium Intensity Soil Maps for Cumberland County, Maine published by the Natural Resources Conservation Service are listed below in Table 1:

Table 1 – Onsite Soils		
Map Unit Symbol	Soil Name	Hydrologic Soils Group
BgB	Belgrade Very Fine Sandy Loam	B
BuB	Lamoine Silt Loam	C/D
PbB	Paxton Fine Sandy Loam	C
Sn	Scantic Silt Loam	D
Sp	Sebago Mucky Peat	A/D
SuD2	Suffield Silt Loam	C
WrB	Woodbridge Fine Sandy Loam	C
WsB	Woodbridge Very Stony Fine Sandy Laom	C

The soils boundaries and hydrologic soils group (HSG) designations are indicated on the Watershed Maps. The Medium Intensity Soils Map has been included as Attachment 1 of this report.

C. Methodology and Modeling Assumptions

The proposed stormwater management system has been designed utilizing Best Management Practices to maintain existing drainage patterns while providing stormwater quality improvement measures. The goal of the storm drainage system design is to remove potential stormwater pollutants from runoff generated by the development while providing attenuation of the peak rates of runoff leaving the site. The method utilized to predict the surface water runoff rates in this analysis is a computer program entitled HydroCAD, which is based on the same methods that were originally developed by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service, and utilized in the TR-20 modeling program. Peak rates of runoff are forecasted based upon land use, hydrologic soil conditions, vegetative cover, contributing watershed area, time of concentration, rainfall data, storage volumes of detention basins and the hydraulic capacity of structures. The computer model predicts the amount of runoff as a function of time, with the ability to include the attenuation effect due to dams, lakes, large wetlands, floodplains and constructed stormwater management basins. The input data for rainfalls with statistical recurrence frequencies of 2-, 10- and 25 years was obtained from Appendix H of the MDEP, Chapter 500 Stormwater Management, last revised in 2015. The National Weather Service developed four synthetic storm types to simulate rainfall patterns around the country. For analysis in Cumberland County, Maine, the type III rainfall pattern with a 24-hour duration is appropriate.

D. Basic Standards

The project is required by the Town to provide permanent and temporary Erosion Control Best Management Practices. These methods are incorporated into the project design and outlined in detail in the plan set.

E. General Standard

The Town of Windham requires the entire project to meet the General Standards outlined in the MDEP Chapter 500 to provide water quality treatment for no less than 95% of the new road and lot impervious surface and 80% of the total developed area associated with the project.

To provide the required stormwater treatment for the 15-lot subdivision, one (1) underdrained filter basin, four (4) bioretention cells, forested buffer and roofline dripedges around each house will be constructed as part of the development. As a result of the proposed stormwater infrastructure, the project provides water quality treatment for 95% of the new impervious surfaces and 80% of the new developed areas. Calculations can be found on the Watershed Maps and enclosed as Attachment 2 in this report.

F. Flooding Standard

The Town of Windham Land Use Ordinance requires the project to detain, retain or result in the infiltration of stormwater from the 24-hour storms of the 2-year, 10-year and 25-year frequencies such that the peak flows of stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project. To maintain these rates, one (1) underdrained filter basin and four (4) bioretention cells have been proposed as part of the stormwater infrastructure.

The proposed project design has been modeled to evaluate and analyze the stormwater runoff characteristics of the site prior to construction of the project and upon completion of all proposed construction activities. The first study point (SP-1) is located in the northwesterly corner of the project site and is associated with a sub-basin watershed that consists of land of existing woods, existing landscaping associated with existing road. In the developed condition this area will be the location of one of the proposed lot development. Stormwater runoff tributary to SP-1 is conveyed overland to the southwest, after being captured and conveyed in an existing culvert, and ultimately into Colley Wright Brook.

Study point 2 (SP-2) is located to the south of SP-1 near the northwesterly corner of the project site. The sub-basin watershed tributary to SP-2 consists of the existing, undeveloped woods, area associated with existing residential lot, and area of proposed project site associated with the lot development consisting of two dwellings and a shared driveway. Stormwater runoff tributary to SP-2 is conveyed overland to the southwest, after being captured and conveyed in an existing culvert, and ultimately into Colley Wright Brook.

Study point 3 (SP-3) is located near the central portion of the project site. The sub-basin watershed tributary to SP-3 consists of natural woodland and meadow, and proposed single family residences that are proposed as part of the proposed. In the developed condition a portion of this area will be conveyed overland in a swale and will be directed to a Filter Basin. Stormwater runoff tributary to SP-3 is conveyed overland to the southwest, after being captured and conveyed in an existing culvert, and ultimately into Colley Wright Brook.

Study point 4 (SP-4) is located near the mid-point of the project site's, at the Pope Road and Albion Road intersection. The sub-basin watershed tributary to SP-4 will consist of a portion of the rear lots of the proposed residences associated with the proposed road, as well as consisting of natural woodland, natural meadow, and existing roadway. Stormwater runoff tributary to SP-4 is conveyed overland to the south, after being captured and conveyed in an existing culvert, and ultimately into Colley Wright Brook.

Study point 5 (SP-5) is located near southeasterly corner of the project site. The sub-basin watershed tributary to SP-5 will consist of area associated with the proposed lot development (2 lots), as well as consisting of natural woodland, natural meadow, and existing roadway. Stormwater runoff tributary to SP-5 is conveyed overland to the south, after being captured and conveyed in an existing culvert, and ultimately into Colley Wright Brook.

The following table summarizes the analysis prepared for this stormwater management report:

Table 1 – Peak Rates of Stormwater Runoff

Study Point	**2-Year (cfs)**		**10-Year (cfs)**		**25-Year (cfs)**	
	Pre	Post	Pre	Post	Pre	Post
SP-1	2.16	1.93	4.82	4.75	7.18	7.01
SP-2	13.48	10.16	28.63	21.80	41.81	31.62
SP-3	3.99	3.44	8.89	8.78	13.23	13.08
SP-4	4.97	4.86	10.82	10.33	15.95	15.09
SP-5	5.96	4.90	12.36	10.96	17.89	15.92

As illustrated by the table above, the proposed BMP's as incorporated in the project's storm water design, effectively reduces the peak at all study points.

The watershed maps showing pre-development and post-development drainage patterns are included in the plan set and the computations performed with the HydroCAD software program are included as Attachment 3 of this report.

G. Maintenance of common facilities or property

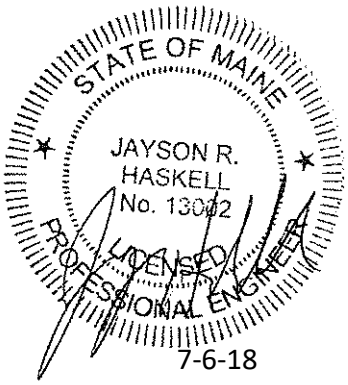
The applicant will be responsible for the maintenance of the stormwater facilities until a homeowners' association is created. Enclosed within this submission is an Inspection, Maintenance and Housekeeping Plan for the project.

Prepared by:

DM ROMA CONSULTING ENGINEERS

J.P. Connolly
Senior Project Engineer

Jayson R. Haskell P.E.
Southern Maine Regional Manager



7-6-18

Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

July 6, 2018

Jayson R. Haskell, P.E.
DM Roma
Southern Maine Regional Manager
2 Main Street, Suite 18-128
Biddeford, ME 04005

Re: 65 Pope Road, WI
Ability to Serve with PWD Water

Dear Mr. Haskell:

The Portland Water District has received your request for an Ability to Serve Determination for the noted site submitted on June 15, 2018. Based on the information provided per plans dated July 6, 2018, we can confirm that the District will be able to serve the proposed project as further described in this letter. **Please note that this letter constitutes approval of the water system as currently designed. Any changes affecting the approved water system will require further review and approval by PWD.**

Conditions of Service

The following conditions of service apply:

- The District can confirm that the existing water system has the capacity to serve the additional ten single family house lots within the Ruby Meadows Subdivision in Windham, including three single family house lots with frontage on Albion Road. An 8-inch diameter ductile iron water main extension is required within the private way, from the intersection of Albion Road to the end of the proposed subdivision.
- New 1-inch services may be installed to each single family house lot from the water main extension in the private way. The services should enter through the lot's frontage at least 10-feet from any side property lines.
- New 1-inch services may be installed from the existing water main for the single family house lots on Albion Road. The services should enter through the lot's frontage on Albion Road at least 10-feet from any side property lines.
- Any service line exceeding 300-feet from the property line to the point of service will requrie a meter pit. The meter pit should be located on private property within 10-20 feet of the property line. It is recommended that any service line on private after the meter pit be increased to 2-inches in order to avoid significant pressure loss due to pipe friction.

Prior to construction, the owner or contractor will need to complete the main extension initiation form and pay all necessary fees. PWD will guide the applicant through the new development process.

225 DOUGLASS STREET P.O. BOX 3553 PORTLAND, MAINE 04104-3553
PHONE: 207.774.5961 FAX: 207.761.8307 WEB: WWW.PWD.ORG

Existing Site Service

According to District records, the project site does not currently have existing water service.

Water System Characteristics

According to District records, there is an 12-inch diameter ductile iron water main in Albion Road and a public fire hydrant located adjacent to the site. Recent flow data is not available in this area. The most recent static pressure reading was 80 psi.

Public Fire Protection

The installation of new public hydrants to be accepted into the District water system will most likely be required. It is your responsibility to contact the Town of Windham Fire Department to ensure that this project is adequately served by existing and/or proposed hydrants.

Domestic Water Needs

The data noted above indicates there should be adequate pressure and volume of water to serve the domestic water needs of your proposed project. Based on the high water pressure in this area, we recommend that you consider the installation of pressure reducing devices that comply with state plumbing codes.

Private Fire Protection Water Needs

You have indicated that this project will not require water service to provide private fire protection to the site.

Should you disagree with this determination, you may request a review by the District's Internal Review Team. Your request for review must be in writing and state the reason for your disagreement with the determination. The request must be sent to MEANS@PWD.org or mailed to 225 Douglass Street, Portland Maine, 04104 c/o MEANS. The Internal Review Team will undertake review as requested within 2 weeks of receipt of a request for review.

If the District can be of further assistance in this matter, please let us know.

Sincerely,
Portland Water District

Robert A. Bartels, P.E.
Senior Project Engineer

NET RESIDENTIAL ACERAGE CALCULATION

Total Subdivision Area	1,288,651 sq.ft.
Wetlands	211,543 sq.ft.
Road Right of Way	51,593 sq.ft.
100 Year Flood Zone	0 sq.ft.
Slopes >25%	24,143 sq.ft.
Net Residential Acerage	1,001,372 sq.ft.
Net Density	60,000 sq.ft.
Allowed Lots	16.68 lots

SUBDIVISION LOT DEVELOPMENT TABLE

Ruby Meadows Subdivision

Lot #	TOWN OF WINDHAM ASSESSOR'S MAP	TOWN OF WINDHAM ASSESSOR'S LOT	LOT AREA DATA DEVELOPED AREA (Square feet)	LOT AREA DATA IMPERVIOUS AREA (Square feet)
1	10		28,828	5,510
2	10		26,446	4,851
3	10		26,454	3,434
4	10		28,774	3,625
5	10		22,644	3,113
6	10		25,967	3,569
7	10		30,408	5,413
8	10		18,631	3,703
9	10		21,638	3,655
10	10		25,028	3,634
11	10		26,295	3,524
12	10		34,775	3,405
13	10		23,943	5,515
14	10		21,522	4,936
15	10		37,213	5,630

NOTES

1. Owner of record is Shirley A. Littlefield and Sherry H. Littlefield by deed recorded in the Cumberland County Registry of Deeds in book 31,910 page 207.
2. The permiter boundaries on this plan were taken from the plan in reference 1.
3. The wetlands and topography on this plan are as shown on the plan in reference 2 by Sebago Technics.
4. This property is a portion of Lot 78 on Tax Map 10 and is in the Farm Zoning District.
5. The elevation datum for the topography is NAVD 1988.
6. There are no Special Flood Hazard Zones as defined by FEMA on this site.
7. Soils information was supplied by Mark Cenci Geologic.
8. Houses within this subdivision shall be constructed with a roofline drip edge to comply with the projects stormwater treatment design, per the detail on the DM Roma Erosion & Sedimention Control Plan (sheet D–1).
9. The project engineer, DM Roma Consulting Engineers, has prepared the Civil design plans which includes the project's Plan and Profile (PP–1), Lot Development (LD–1), Erosion & Sedimentation Plan (D–1), and Detail Sheets (D–2 & D–3).
10. This project will be serviced with public water by the Portland Water District.
11. These lots will be serviced by individual on–site septic systems.
12. A proposed forested buffer is proposed on Lot 14, and permanent marking of the buffer shall installed prior to construction.
13. The total area of the subdivision is 1,288,651 square feet or 29.58 acres.
14. The clearing limits shown on this plan shall be maintained for a period of five (5) years from the date of planning board approval, and in accordance with section 911.e.1.a of the land use ordinance.
15. An access, utitity and maintenance easement shall be dedicated to the record owner, over the Ruby Meadows Subdivision Road illustrated on this plan, to act as a private road serving the remaining land of Shirley A. & Sherry H. Littlefield.
16. The wetland crossings (labeled on plan as "Wetland Impact") shown hereon consist of five areas totaling 10,744± sq. ft. in area. For additional detail refer to the exhibits "Wetland Impact" prepared for Ruby Meadows LLC, dated 6/19/2018, as prepared by DM Roma Consulting Engineers.

PLAN REFERENCES

1. "Boundary Survey Albion Road & Pope Road, Windham, Maine for Shirley A. Littlefield" by Survey, Inc. dated May 20, 2011.
2. "Final Major Subdivision Plan of Ruby Meadows Subdivision Phase I and II Pope Road and Albion Road, Windham, Maine for Shirley A. Littlefield" by Sebago Technics dated 1/04/06 recorded in plan book 207 page 97.

WAIVERS GRANTED

1. Section 911.M.5.B.5.2 – DEAD END STREET STANDARD
2. Section 911.M.5.B.6.2 – SIDEWALKS OR SHOULDERS STANDARD
3. Section 911.B.1.A – CONNECTION TO PUBLIC WATER SYSTEM

Approved by the Town of Windham Planning Board:

Signed: _____

_____

_____

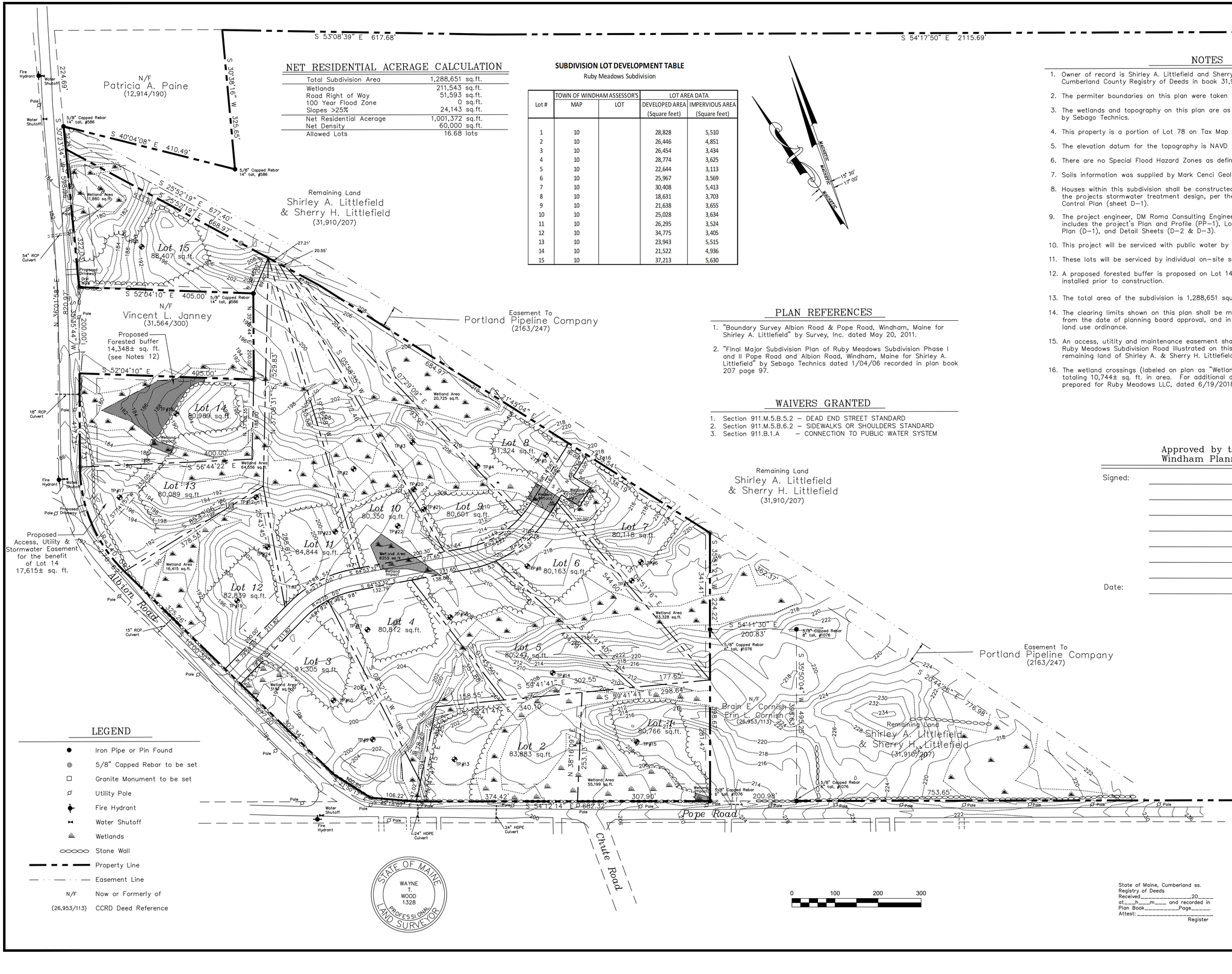
_____

_____

_____

_____

Date: _____



LEGEND

- Iron Pipe or Pin Found
- 5/8" Capped Rebar to be set
- Granite Monument to be set
- Utility Pole
- Fire Hydrant
- Water Shutoff
- Wetlands
- Stone Wall
- Property Line
- Easement Line
- N/F Now or Formerly of
- (26,953/113) CCRD Deed Reference

STATE OF MAINE
WAYNE T. WOOD
1328
PROFESSIONAL LAND SURVEYOR

State of Maine, Cumberland ss.
Registry of Deeds
Received _____ 20____
at ___h___m___ and recorded in Plan Book _____ Page _____
Attest: _____
Register

Ruby Meadows Subdivision
On
Albion Road & Pope Road
In
Windham, Maine
For
Paul Hollis
28 Weare Rd. ~ Seabrook, NH 03874

WAYNE WOOD &CO.
Gray, Maine 04039 (207)657–3330

Drawn By: WTW	Date June 2018
Scale: 1" = 100'	Job No. 218035
Checked By: WTW	
Field Crew:	

12" HDPE CULVERT
L=76'
S=0.4%
INV. OUT=188.0

FILTER BASIN CELL-2
POND BOTTOM=190.4

15" DIA. STAND PIPE
TOP OF PIPE ELEV.=191.8
12" INV. OUT=188.23

RIPRAPPED SPILLWAY
CREST ELEV.=193.7

SET NEW UTILITY POLE, INSTALL CONDUIT DROP AND CONTINUE CONDUIT UNDERGROUND. CONTRACTOR TO COORDINATE INSTALLATION WITH SERVICE PROVIDERS PRIOR TO CONSTRUCTION

15"SD INV.OUT=190.0

TRENCH REPAIR
SEE ALBION ROAD TRENCH REPAIR SECTION DETAIL

SIGHT DISTANCE 465'

INSTALL 12"x8" TAPPING SLEEVE AND 8" GATE VALVE. CONTRACTOR TO COORDINATE INSTALLATION WITH PORTLAND WATER DISTRICT PRIOR TO CONSTRUCTION

INSTALL STABILIZED CONSTRUCTION ENTRANCE

15" HDPE CULVERT
L=51'
S=0.5%
INV.OUT=190.2

ALBION ROAD

FILTER BASIN CELL-1
POND BOTTOM=190.4

50' WIDE PRIVATE RIGHT OF WAY AND UTILITY EASEMENT TO THE PORTLAND WATER DISTRICT

15"SD
INV.OUT=190.5

15" HDPE CULVERT
L=48'
S=0.5%
INV.OUT=190.75

INSTALL SILT FENCE, TYP.

STREET TREES SHALL BE PLANTED OR PRESERVED AT AN INTERVAL NO LESS THAN ONE TREE EVERY 50 FEET OF ROADWAY, AND IN ACCORDANCE WITH SECTION 911.E.1.B OF THE LAND USE ORDINANCE

WETLAND IMPACT #1
AREA=6,265 SF

STREET TREES TO BE NO CLOSER THAN 10' O.C. FROM ANY WATER SERVICE LINE.

1" WATER SERVICE AND CURB STOP SET 6" INSIDE RIGHT OF WAY, TYP.

INSTALL HYDRANT
8" X 6" SWIVEL TEE WITH 6" VALVE FINAL LOCATION TO BE APPROVED BY THE FIRE CHIEF & PORTLAND WATER DISTRICT AT THE TIME OF INSTALLATION.

WETLAND IMPACT #2
AREA=2,623 SF

2" BLOW OFF

8" GATE VALVE

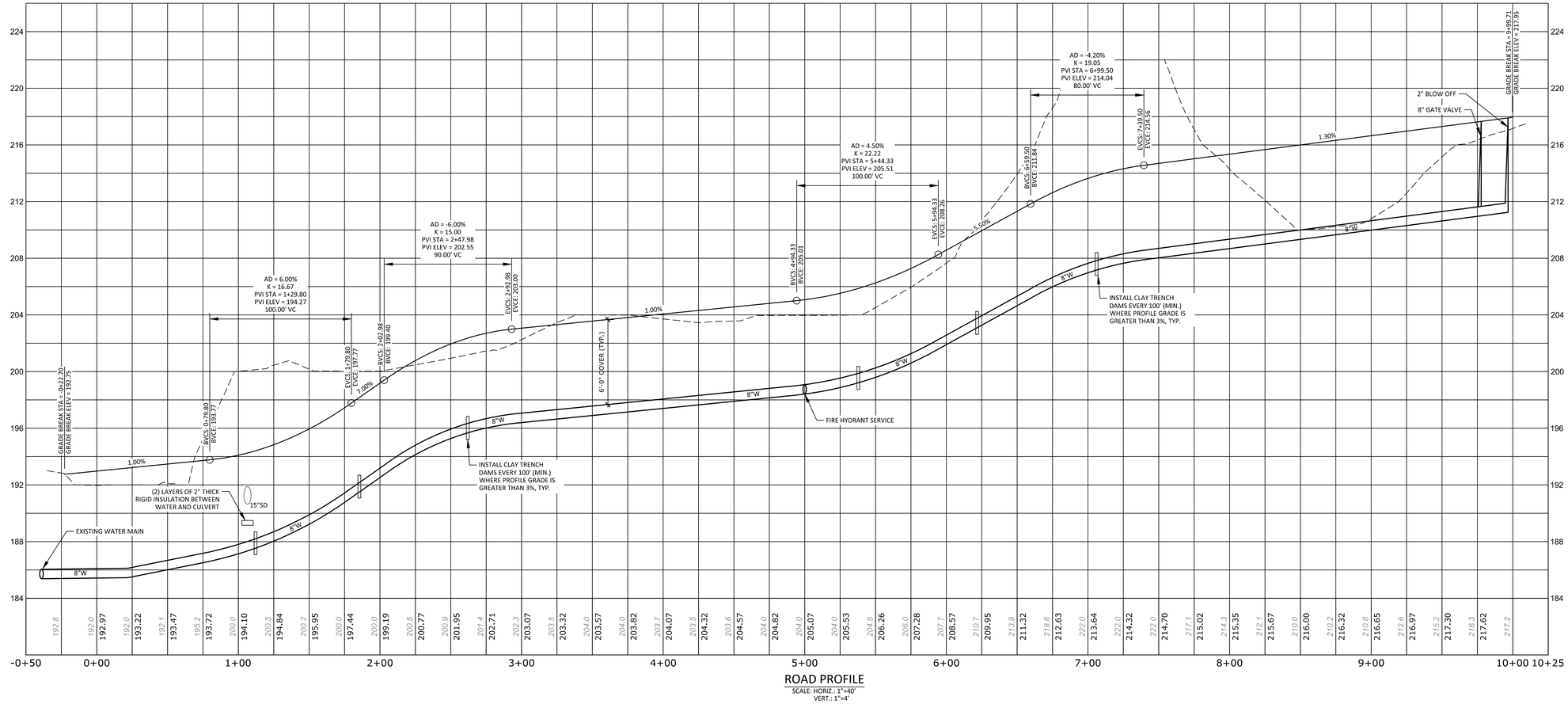
FIRST (3) SLIP JOINTS PRIOR TO GATE VALVE SHALL HAVE RESTRAINED JOINTS

WETLAND IMPACT #3
AREA=493 SF

N

MAG

ROAD PLAN
SCALE: 1"=40'
GRAPHIC SCALE 0 20 40 80



ROAD PROFILE
SCALE: HORIZ.: 1"=40'
VERT.: 1"=4'

REV	DATE	BY	DESCRIPTION
A	6-15-18	DMR	ISSUED FOR PWD REVIEW
B	6-18-18	DMR	ISSUED FOR PRELIMINARY SUBDIVISION REVIEW
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STATE OF MAINE
DUSTIN M. ROMA
No. 12191
REGISTERED PROFESSIONAL ENGINEER
7-6-18

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 310 - 0506

ROADWAY PLAN & PROFILE

RUBY MEADOWS SUBDIVISION
WINDHAM, MAINE

FOR:
RUBY MEADOWS, LLC
28 WEARE ROAD
SEABROOK, NH 03874

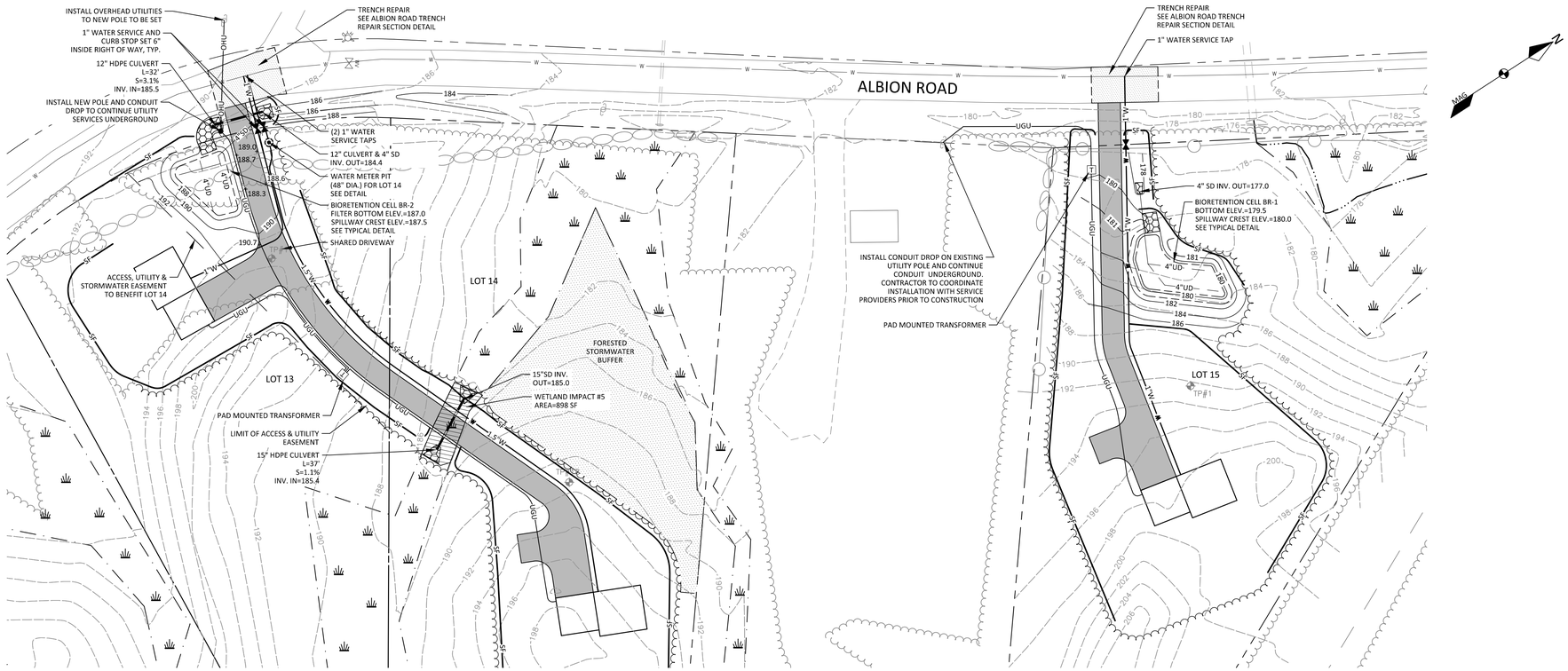
18026
JOB NUMBER:

AS SHOWN
SCALE:

7-6-2018
DATE:

SHEET 1 OF 5

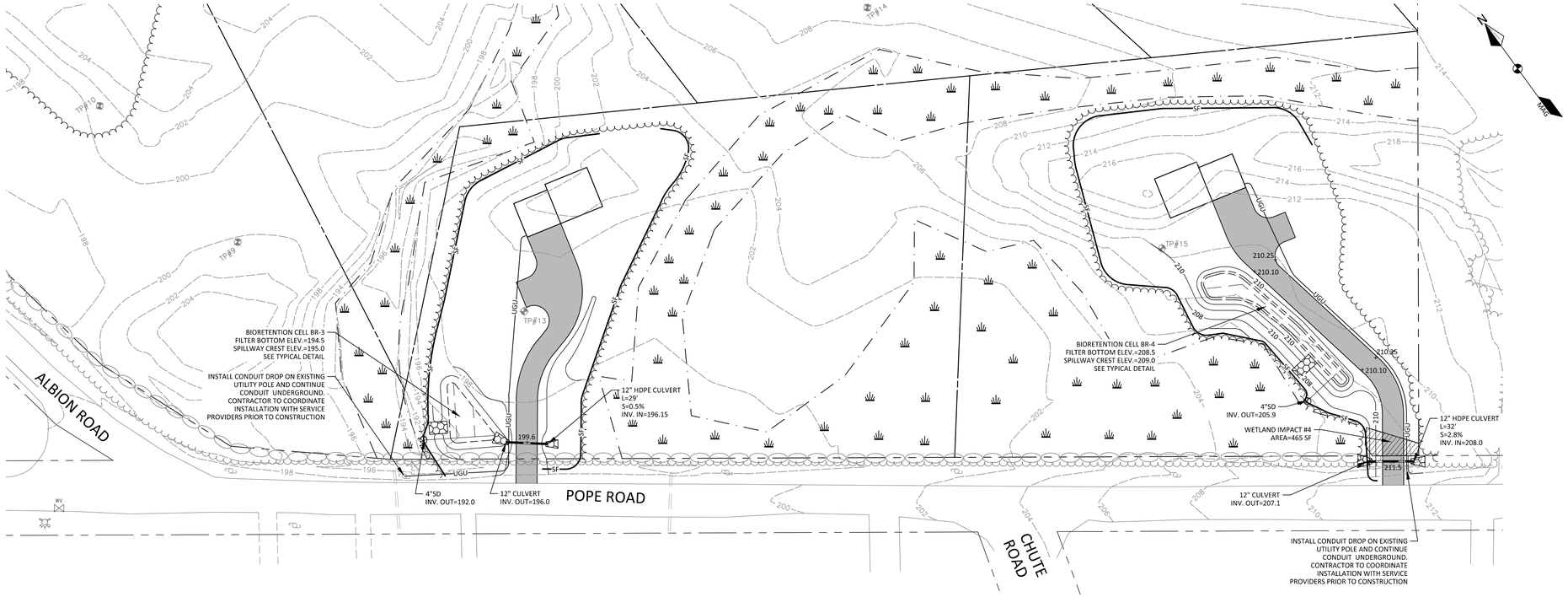
PP-1



ALBION ROAD LOT PLANS

SCALE: 1"=40'

GRAPHIC SCALE



POPE ROAD LOT PLANS

SCALE: 1"=40'

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE/R.O.W.	
	ABUTTER PROPERTY LINE	
	EASEMENT LINE	
	CENTERLINE	
	BUILDING	
	EDGE OF PAVEMENT/CURB	
	EDGE OF GRAVEL	
	EDGE OF WETLANDS	
200 201	CONTOUR LINE	200 201
	TREELINE	
	CULVERT/STORMDRAIN	
	UNDERDRAIN	UD
W	WATER MAIN	W
WV	WATER VALVE	
	HYDRANT	
	UTILITY POLE	
OHU	OVERHEAD UTILITIES	OHU
UGU	UNDERGROUND UTILITIES	UGU
	TRANSFORMER PAD	T
	RIPRAP	
	SILT FENCE	SF

DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
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STATE OF MAINE — DUSTIN M. ROMA No. 12191 — REGISTERED PROFESSIONAL ENGINEER — 7-6-18

REV	DATE	BY	DESCRIPTION
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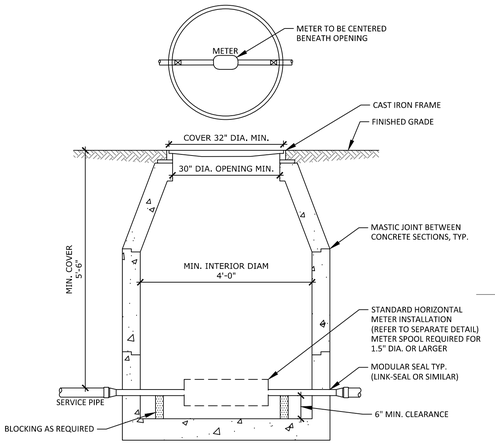
LOT DEVELOPMENT PLAN

RUBY MEADOWS SUBDIVISION
WINDHAM, MAINE

FOR:
RUBY MEADOWS, LLC
28 WEARE ROAD
SEABROOK, NH 03874

18026	JOB NUMBER:
1" = 40'	SCALE:
7-6-2018	DATE:
SHEET 2 OF 5	
LD-1	



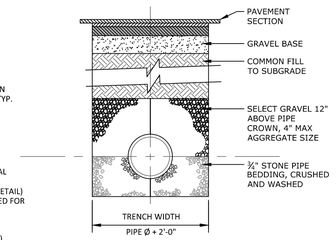
METER PIT AND COVER NOTES:

1. SPECIAL APPROVAL BY PWD IS REQUIRED, PRIOR TO CONSTRUCTION, FOR ALL PROPOSED METER PIT INSTALLATIONS.
2. BACKFLOW PREVENTION DEVICES MAY NOT BE INSTALLED WITHIN SMALL METER PITS.
3. A METER PIT MAY HOUSE UP TO TWO 5/8", 3/4" OR 1" METERS WITH PRIOR APPROVAL FROM PWD.
4. METER PIT SHALL BE LOCATED ON PRIVATE PROPERTY BETWEEN 10' AND 20' FROM PROPERTY LINE UNLESS OTHERWISE APPROVED BY PWD.
5. THE METER PIT SHALL BE MADE OF PRECAST CONCRETE OF SUFFICIENT SIZE TO PROVIDE 5.5' MIN. GROUND COVER FROM FINISHED GRADE TO THE TOP OF THE SERVICE PIPE.
6. ALL SEAMS BETWEEN CONCRETE SECTIONS SHALL BE SEALED WITH MASTIC JOINT. ALL OPENINGS IN THE CONCRETE FOR SERVICE PIPING SHALL BE SEALED WITH A MODULAR SEAL (LINK-SEAL OR SIMILAR).
7. METER PIT INTERIOR MUST BE AT LEAST 48" IN DIAMETER. THE OPENING MUST BE AT LEAST 30" IN DIAMETER, WITH A CAST IRON FRAME. THE COVER SHALL BE CAST IRON OR STEEL, 32" MIN. IN DIAMETER, AND BE EITHER PERMANENTLY LABELED "WATER" OR HAVE NO LABEL. STEEL PLATE MATERIAL SHALL BE COATED WITH A RUST INHIBITOR PAINT.
8. WALL-MOUNTED LADDER RUNGS ARE NOT TO BE INSTALLED WITHIN METER PIT.
9. ALL PIPING INSIDE AND EXTENDING THROUGH THE METER PIT WILL BE MADE OF COPPER, WITH A MIN. OF 6" CLEARANCE FROM THE METER PIT FLOOR. USE BLOCKING AS NEEDED TO SUPPORT THE PIPE.
10. CUSTOMER SHALL ENSURE THE METER PIT AND COVER ARE PROPERLY RATED FOR TRAFFIC FLOW, IF APPLICABLE

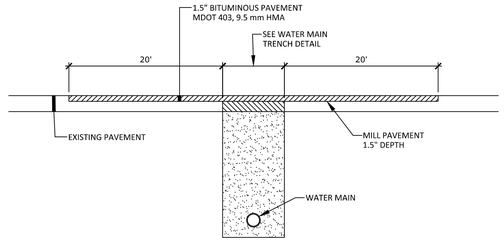
METER INSTALLATION NOTES:

11. ONLY PWD PERSONNEL ARE AUTHORIZED TO INSTALL WATER METERS. PWD PERSONNEL ARE ADDITIONALLY AUTHORIZED TO OPERATE METER VALVES AS NEEDED FOR INSTALLATION AND MAINTENANCE.
12. PWD WILL SUPPLY THE WATER METER. ALL OTHER FITTINGS, INCLUDING A METER RESETTER FOR 1" OR SMALLER METERS SHALL BE SUPPLIED AND INSTALLED BY CUSTOMER.
13. FOR 1.5" AND 2" METERS, CUSTOMER WILL INSTALL A FLANGED METER SPOOL PIECE SUPPLIED BY PWD AT NO ADDITIONAL CHARGE, PRIOR TO METER SET. THE METER SPOOL WILL BE MADE AVAILABLE FOR CUSTOMER PICKUP AT PWD CUSTOMER SERVICE, 225 DOUGLAS STREET, PORTLAND DURING NORMAL BUSINESS HOURS.
14. CUSTOMER WILL INSTALL TWO BALL VALVES AT LEAST 24" APART FOR METER INSTALLATION, ALLOWING FOR THE WATER METER TO BE CENTERED UNDER THE METER PIT OPENING. THE BALL VALVES SHALL BE SOLDERED IN PLACE.

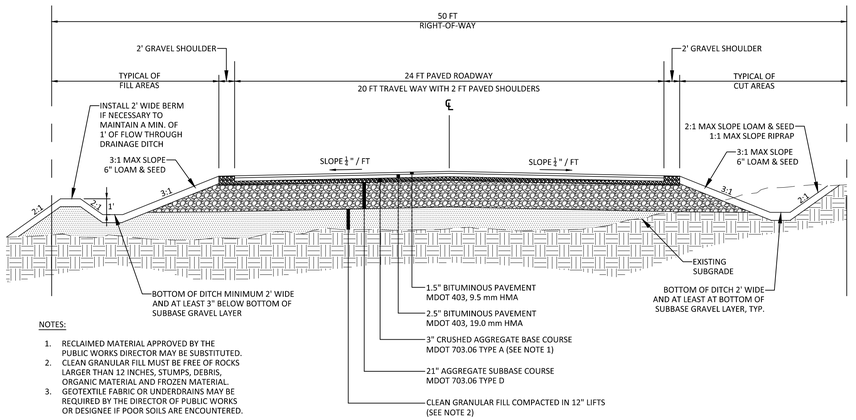
SMALL METER PIT (5/8" TO 2" METER)
NOT TO SCALE



TYPICAL TRENCH SECTION
NOT TO SCALE



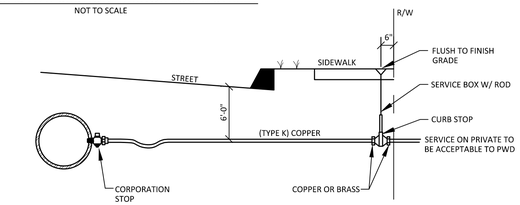
ALBION ROAD TRENCH REPAIR DETAIL
NOT TO SCALE



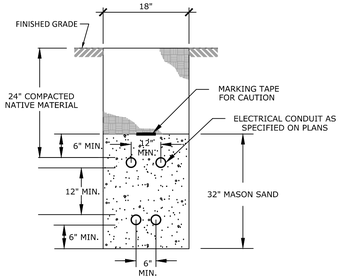
NOTES:

1. RECLAIMED MATERIAL APPROVED BY THE PUBLIC WORKS DIRECTOR MAY BE SUBSTITUTED.
2. CLEAN GRANULAR FILL MUST BE FREE OF ROCKS LARGER THAN 12 INCHES, STUMPS, DEBRIS, ORGANIC MATERIAL AND FROZEN MATERIAL.
3. GEOTEXTILE FABRIC OR UNDERDRAINS MAY BE REQUIRED BY THE DIRECTOR OF PUBLIC WORKS OR DESIGNEE IF POOR SOILS ARE ENCOUNTERED.

TYPICAL ROADWAY SECTION - MINOR LOCAL STREET
NOT TO SCALE



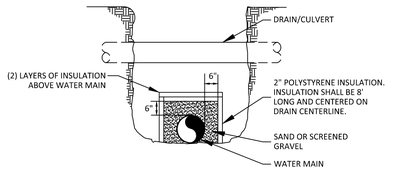
TYPICAL SERVICE CONNECTION
NOT TO SCALE



TRENCH DETAIL - ELECTRICAL CONDUIT
NOT TO SCALE

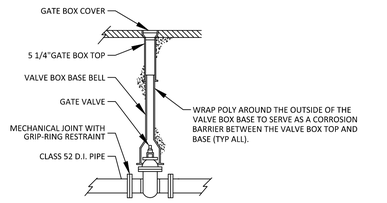
NOTES:

1. ALL CONDUITS SHALL BE 4" DIA. PVC SCH 40 EXCEPT FOR ROAD CROSSINGS SHALL BE PVC SCH 80
2. INSTALLATION SHOULD NOT ALLOW THE INTER-TWINING OF CABLES.
3. BEDDING AND BACKFILL SHALL BE FREE OF ROOTS, STUMPS AND OTHER DEBRIS.
4. COMMUNICATION CABLE AND POWER CABLE SHALL HAVE NO LESS THAN 12 INCHES OF RADIAL SEPARATION.



NOTES: INSULATION IS REQUIRED AT ALL DRAIN & CULVERT CROSSINGS THAT DO NOT PROVIDE A MINIMUM OF 18" OF VERTICAL SEPARATION

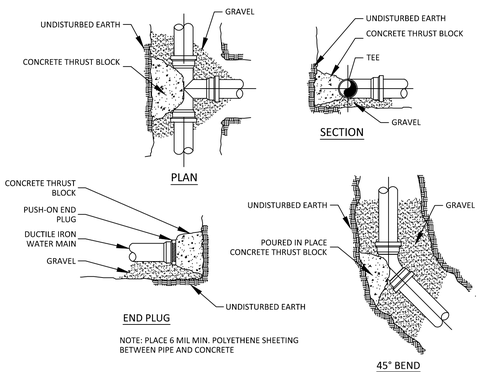
INSULATION DETAIL
NOT TO SCALE



GATE VALVE
NOT TO SCALE

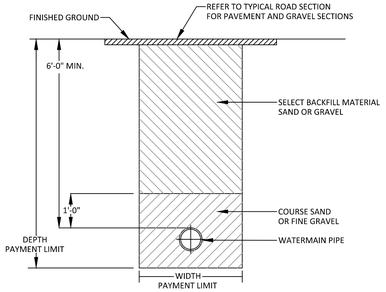
CONCRETE THRUST BLOCK SIZE REQUIREMENTS				
		SQ. FT. OF BEARING ON UNDISTURBED SOIL		
FITTINGS		90°BENDS	45°BENDS	TEES AND PLUGS
PIPE SIZE	6"	4.0	2.0	3.0
	8"	8.0	4.0	6.0
	12"	15	9	12
	16"	26	14	19
	20"	40	22	28

BASED ON SOIL BEARING PRESSURE OF 2000PSF AND 100PSI LINE PRESSURE. COMPACT COURSE TO FINE SANDS AND CLAYS REQUIRE ENGINEERED BLOCKS. ENGINEERED BLOCKS WILL TYPICALLY REQUIRE REINFORCING STEEL OF #5 AT 12".

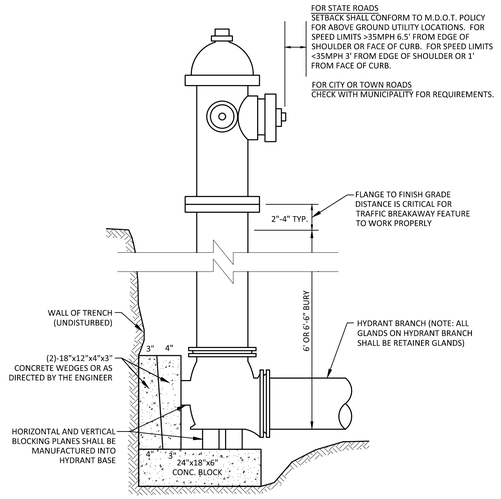


NOTE: PLACE 6 MIL MIN. POLYETHENE SHEETING BETWEEN PIPE AND CONCRETE

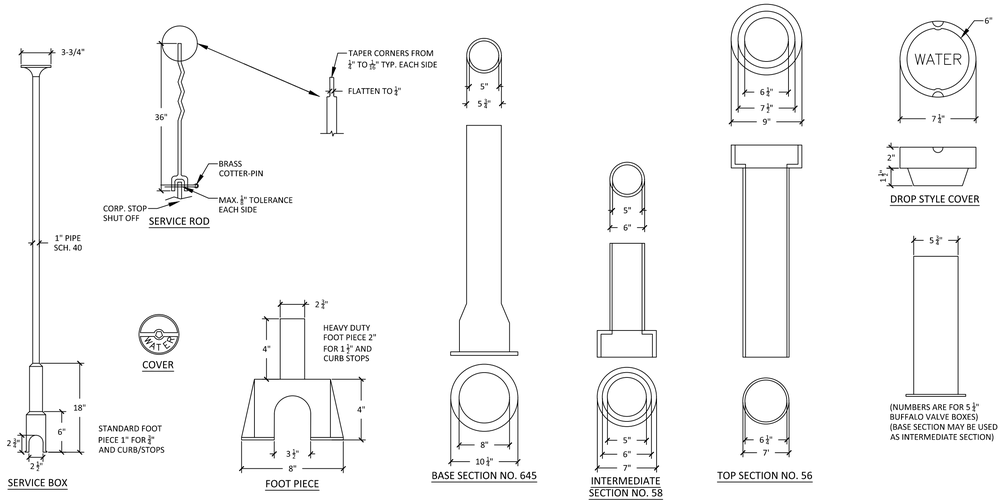
THRUST BLOCK DETAIL
NOT TO SCALE



WATERMAIN TYPICAL TRENCH CROSS-SECTION
NOT TO SCALE



TYPICAL HYDRANT INSTALLATION DETAIL
NOT TO SCALE



VALVE BOX & COVER
NOT TO SCALE

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STATE OF MAINE — DUSTIN M. ROMA — No. 12191 — REGISTERED PROFESSIONAL ENGINEER — 7-6-18

DM ROMA
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DETAILS
RUBY MEADOWS SUBDIVISION
WINDHAM, MAINE
FOR: RUBY MEADOWS, LLC
28 WEARE ROAD
SEABROOK, NH 03874

18026
JOB NUMBER:

AS SHOWN
SCALE:

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DATE:

SHEET 4 OF 5

D-2