

**MINOR SUBDIVISION APPLICATION** (a total of three or fewer lots)  
**City of Rochester, New Hampshire**

[office use only. Check # \_\_\_\_\_ Amount \$ \_\_\_\_\_ Date paid \_\_\_\_\_]

Date: 1/8/2019 Is a conditional needed? Yes: \_\_\_\_\_ No: X Unclear: \_\_\_\_\_  
(If so, we encourage you to submit an application as soon as possible.)

**Property information**

Tax map #: 216 Lot #(s): 11 & 11-1; Zoning district: Granite Ridge

Property address/location: 92 Farmington Road (Route 11) Rochester, NH 03868

Name of project (if applicable): The Ridge Marketplace

Size of site: ±86 acres; overlay zoning district(s)? Conservation Overlay District

**Property owner**

Name (include name of individual): Waterstone Rochester, LLC (Douglas R. Richardson)

Mailing address: 322 Reservoir Street, Needham, MA 02494

Telephone #: 781.559.3301 x112 Email: [drichardson@waterstonepg.com](mailto:drichardson@waterstonepg.com)

**Applicant/developer** (if different from property owner)

Name (include name of individual): \_\_\_\_\_

Mailing address: \_\_\_\_\_

Telephone #: \_\_\_\_\_ Email: \_\_\_\_\_

**Engineer/surveyor**

Name (include name of individual): Tighe & Bond (Engineer) & Doucet Survey Inc. (Surveyor)

Mailing address: 177 Corporate Drive, Portsmouth NH 03801 (Engineer)

102 Kent Place, Newmarket NH, 03857 (Surveyor)

Telephone #: 603.433.8818 (Engineer) & 603.659.6560 (Surveyor) Fax #: N/A

Email address: [PMCriminns@TigheBond.com](mailto:PMCriminns@TigheBond.com) (Engineer) & [Jeff@doucetsurvey.com](mailto:Jeff@doucetsurvey.com) (Surveyor)

Professional license #: 12378 (Engineer) & 964 (Surveyor)

**Proposed project**

Number of proposed lots: 2 (plus land to become City of Rochester ROW) Are there any  
pertinent covenants? Conservation land on site

Number of cubic yards of earth being removed from the site? N/A

City water? yes X no \_\_\_\_; How far is City water from the site? Within Route 11 ROW

City sewer? yes X no \_\_\_\_; How far is City sewer from the site? Within Route 11 ROW

Continued Minor Subdivision Plan application Tax Map: 216 Lot: 11 & 11-1 Zone Granite Ridge )

Wetlands: Is any fill proposed? No ; area to be filled: \_\_\_\_\_; buffer impact? \_\_\_\_\_.

**Comments**

Please feel free to add any comments, additional information, or requests for waivers here:

**Submission of application**

This application must be signed by the property owner, applicant/developer (if different from property owner), and/or the agent.

*I (we) hereby submit this Subdivision application to the City of Rochester Planning Board pursuant to the City of Rochester Subdivision Regulations and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant/developer (if different from property owner)/as agent, I attest that I am duly authorized to act in this capacity.*

Signature of property owner: \_\_\_\_\_  
*Josh Kelly* Date: 1/3/19

Signature of applicant/developer: \_\_\_\_\_  
Date: 1/3/19

Signature of agent: \_\_\_\_\_  
Date: \_\_\_\_\_

**Authorization to enter subject property**

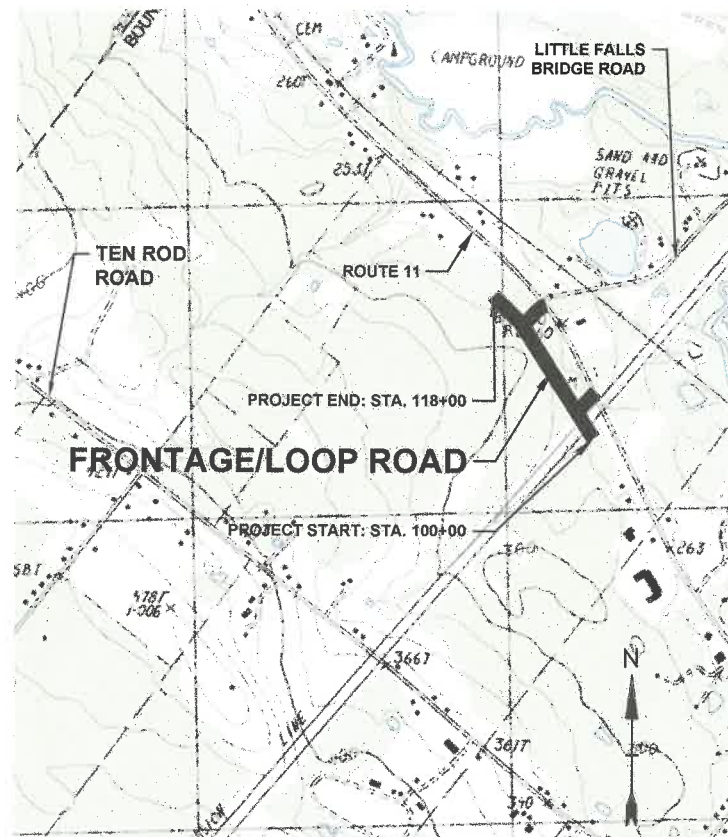
*I hereby authorize members of the Rochester Planning Board, Zoning Board of Adjustment, Conservation Commission, Planning Department, and other pertinent City departments, boards and agencies to enter my property for the purpose of evaluating this application including performing any appropriate inspections during the application phase, review phase, post-approval phase, construction phase, and occupancy phase. This authorization applies specifically to those particular individuals legitimately involved in evaluating, reviewing, or inspecting this specific application/project. It is understood that these individuals must use all reasonable care, courtesy, and diligence when entering the property.*

Signature of property owner: \_\_\_\_\_  
Date: 1/3/19

# GRANITE RIDGE DEVELOPMENT DISTRICT FRONTAGE ROAD FARMINGTON ROAD (ROUTE 11) ROCHESTER, NEW HAMPSHIRE

JANUARY 27, 2015

LAST REVISED: FEBRUARY 25, 2016

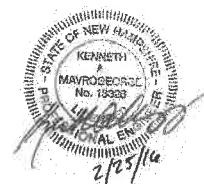


SCALE: 1"=1,000'

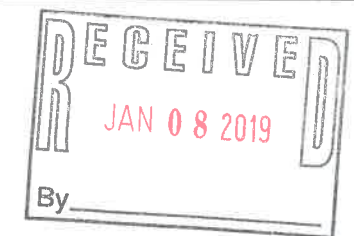
Prepared For: City of Rochester, New Hampshire  
45 Old Dover Road  
Rochester, New Hampshire 03867

Owner: Waterstone Rochester, LLC  
145 Rosemary Way, Suite B  
Needham Heights, MA 02494

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



SHEET NO.	TITLE	DATE
	COVER SHEET	01/27/2015
R-1	LEGEND AND NOTES SHEET	01/27/2015
R-2	EROSION CONTROL NOTES SHEET	01/27/2015
R-3	OVERALL FRONTAGE ROAD DEVELOPMENT PLAN	01/27/2015
R-4	TYPICAL CROSS SECTIONS	01/27/2015
R-5	EXISTING CONDITIONS AND DEMOLITION PLAN	01/27/2015
R-6	ROADWAY, GRADING, AND DRAINAGE PLAN AND PROFILE	07/27/2015
R-7	ROADWAY, GRADING, AND DRAINAGE PLAN AND PROFILE	02/25/2016
R-8	PRIMARY DRIVE AND SECONDARY DRIVE ROADWAY, GRADING, AND DRAINAGE PLAN AND PROFILE	02/25/2016
R-9	CURBING AND SITE LAYOUT	02/25/2016
R-10	MARKING AND SIGNAGE PLAN	02/25/2016
R-11	UTILITIES PLAN AND PROFILE	07/27/2015
R-12	UTILITIES PLAN AND PROFILE	02/25/2016
R-13	PRIMARY DRIVE AND SECONDARY DRIVE UTILITIES PLAN AND PROFILE	02/25/2016
R-14	LANDSCAPE PLAN	02/25/2016
R-15	DETAILS SHEET	02/20/2015
R-16	DETAILS SHEET	01/27/2015
R-17	DETAILS SHEET	08/03/2015
R-18	DETAILS SHEET	08/03/2015
R-19	DETAILS SHEET	02/20/2015
R-20	DETAILS SHEET	02/20/2015
R-21	PHOTOMETRIC PLAN	07/15/2015
R-22	STREET LIGHT CIRCUITRY PLAN	01/27/2015
R-23	ALTERNATE 1 GRADING, DRAINAGE, AND EROSION CONTROL PLAN	01/27/2015
R-24	ALTERNATE 1 GRADING DETAILS	01/27/2015
R-25	ALTERNATE 1 GRADING DETAILS	02/20/2015



PLAN SET 2 OF 3  
COMPLETE SET 26 SHEETS



**PROJECT NAME AND LOCATION**

FRONTAGE ROAD  
ROUTE 11 (FARMINGTON ROAD)  
ROCHESTER, NH 03867

LATITUDE: 43°-19'-56"N  
LONGITUDE: 71°-00'-31"W

**DESCRIPTION**

THE PROJECT CONSISTS OF THE CONSTRUCTION OF 2,164 LINEAR FEET OF ROADWAY, DRAINAGE, UTILITIES, AND LANDSCAPING.

**DISTURBED AREA**

THE TOTAL AREA TO BE DISTURBED IS APPROXIMATELY ±3.6 ACRES.

**SOIL CHARACTERISTICS**

BASED ON SITE SPECIFIC SOIL SURVEY CONDUCTED BY NHSG, INC. THE SITE CONSISTS MAINLY OF MODERATELY TO POORLY DRAINED SOILS WITH HYDROLOGIC SOIL GROUPS B, C, AND D.

**SEQUENCE OF MAJOR ACTIVITIES**

THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

- CUT AND CLEAR TREES.
- CONSTRUCT TEMPORARY AND PERMANENT SEDIMENT, EROSION AND DETENTION CONTROL FACILITIES. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH MOVING OPERATIONS THAT WILL INFLUENCE STORMWATER RUNOFF SUCH AS:
  - NEW CONSTRUCTION
  - DEVELOPMENT OF BORROW PIT AREAS
  - DISPOSAL OF SEDIMENT SPOILS, STUMP AND OTHER SOLID WASTE
  - FLOOD PLAIN EXCAVATION WORK
  - STREAM CHANNEL MODIFICATIONS
  - CONTROL OF DUST
  - CONSTRUCTION OF ACCESS AND HAUL ROAD
  - NEARNESS OF CONSTRUCTION SITE TO RECEIVING WATERS
  - CONSTRUCTION DURING LATE WINTER AND EARLY SPRING
- ALL PERMANENT DITCHES, SWALES, DETENTION, RETENTION AND SEDIMENTATION BASINS TO BE STABILIZED USING THE VEGETATIVE AND NON-STRUCTURAL BMPs PRIOR TO DIRECTING RUNOFF TO THEM.
  - CLEAR AND DISPOSE OF DEBRIS.
  - CONSTRUCT TEMPORARY CULVERTS AND DIVERSION CHANNELS AS REQUIRED.
  - GRADE AND GRAVEL ROADWAYS AND PARKING AREAS - ALL ROADS AND PARKING AREA SHALL BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
  - BEGIN PERMANENT AND TEMPORARY SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDDED AND MULCHED IMMEDIATELY AFTER THEIR CONSTRUCTION.
  - DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT FENCES, SEDIMENT TRAPS, ETC., MULCH AND SEED AS REQUIRED.
  - FINISH PAVING ALL ROADWAYS AND PARKING LOTS.
  - INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES.
  - COMPLETE PERMANENT SEEDING AND LANDSCAPING.
  - REMOVE TRAPPED SEDIMENTS FROM COLLECTOR DEVICES AS APPROPRIATE AND THEN REMOVE TEMPORARY EROSION CONTROL MEASURES.

NOTE: THE CONSTRUCTION SEQUENCE MUST LIMIT THE DURATION AND AREA OF DISTURBANCE.

**NAME OF RECEIVING WATERS**

THE STORM WATER RUNOFF WILL BE DISCHARGED VIA OVERLAND FLOW TO UNNAMED WETLANDS WHICH ULTIMATELY FLOW TO THE COCHEOC RIVER.

**EROSION AND SEDIMENT CONTROLS AND STABILIZATION PRACTICES**

- STABILIZATION SHALL BE INITIATED ON ALL LOAM STOCKPILES AND DISTURBED AREAS WHERE CONSTRUCTION ACTIVITY WILL NOT OCCUR FOR MORE THAN TWENTY ONE (21) CALENDAR DAYS BY THE FOURTEENTH (14TH) DAY AFTER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED IN THAT AREA. ALL CUT AND FILL SLOPES AND ROADWAYS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. STABILIZATION MEASURES TO BE USED INCLUDE:
  - TEMPORARY SEEDING
  - MULCHING
  - STONE RIP RAP
  - JUTE MATTING
- DURING CONSTRUCTION, RUNOFF WILL BE DIVERTED AROUND THE SITE WITH EARTH DIKES, PIPING OR STABILIZED CHANNELS, WHERE POSSIBLE. SHEET RUNOFF FROM THE SITE WILL BE FILTERED THROUGH HAYBALE BARRIERS AND SILT FENCES. ALL STORM DRAIN BASIN INLETS SHALL BE PROVIDED WITH FLARED END SECTIONS AND TRASH RACKS. THE SITE SHALL BE STABILIZED FOR THE WINTER BY NOVEMBER 15.
- AN AREA SHALL BE CONSIDERED STABLE WHEN ONE OF THE FOLLOWING HAS OCCURRED:
  - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
  - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED.
  - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED.
  - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

**WINTER CONSTRUCTION STABILIZATION PRACTICES**

- ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
- ALL DITCHES AND SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR DESIGN FLOW CONDITIONS, AND:
- AFTER NOVEMBER 15TH, INCOMPLETE ROAD WORK OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL, PER NHDOT ITEM 304.3.

**OFF SITE VEHICLE TRACKING**

THE CONTRACTOR SHALL CONSTRUCT THE STABILIZED CONSTRUCTION ENTRANCE(S) PRIOR TO ANY EXCAVATION ACTIVITIES.

**INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES OF EROSION AND SEDIMENT CONTROLS**

- GENERAL
  - THESE ARE THE GENERAL INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE USED TO IMPLEMENT THE PLAN.
  - ALL DITCHED AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
  - THE SMALLEST PRACTICAL PORTION OF THE SITE WILL BE DENuded AT ONE TIME, UNDER NO CIRCUMSTANCES SHALL MORE THAN 5.0 ACRES OF THE PROJECT SITE BE UNSTABILIZED AT ONE TIME.
  - ALL CONTROL MEASURES WILL BE INSPECTED AT LEAST ONCE EACH WEEK AND FOLLOWING ANY STORM EVENT OF 1/4 INCH OR GREATER.
  - ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
  - BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE OR HAYBALE BARRIERS WHEN IT HAS REACHED ONE THIRD THE HEIGHT OF THE FENCE OR BALE.
  - ALL DIVERSION DIKES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.
  - TEMPORARY SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND UNHEALTHY GROWTH.
  - A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION.
  - A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC), WILL BE RESPONSIBLE FOR INSPECTIONS AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES.
  - THE EROSION CONTROL PROCEDURES SHALL CONFORM TO THE "NH STORMWATER MANUAL, VOL. 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION" PREPARED BY COMPREHENSIVE ENVIRONMENTAL INC. AND THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES.
    - ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLOPPAGE, SETTLEMENT, SUBSIDENCE, OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, AND CONDUITS, ETC., SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL CODES OR SPECIFICATIONS.
    - THE USE OF SAND FOR THE PURPOSE OF PEDESTRIAN SAFETY AND SAFE DRIVING CONDITION SHALL BE MINIMIZED.
    - THE OWNER SHALL CLEAN ALL CATCH BASINS, DRAIN MANHOLES AND SWEEP THE PARKING LOT ON AN ANNUAL BASIS.
- FILTREXX SILT SOXX
  - APPLICATION
    - FILTREXX SILT SOXX ARE TO BE INSTALLED DOWN SLOPE OF ANY DISTURBED AREA REQUIRING EROSION AND SEDIMENT CONTROL AND FILTRATION OF SOLUBLE POLLUTANTS FROM RUNOFF. SILT SOXX ARE EFFECTIVE WHEN INSTALLED PERPENDICULAR TO SHEET OR LOW CONCENTRATED FLOW.
  - INSTALLATION DETAILS
    - SILT SOXX USED FOR PERIMETER CONTROL OF SEDIMENT AND SOLUBLE POLLUTANTS IN STORM RUNOFF SHALL MEET FILTREXX SOXX MATERIAL SPECIFICATIONS AND USE CERTIFIED FILTREXX FILTER MEDIA.
  - CONTRACTOR IS REQUIRED TO BE FILTREXX CERTIFIED AS DETERMINED BY FILTREXX INTERNATIONAL, LLC. CERTIFICATION SHALL BE CONSIDERED CURRENT IF APPROPRIATE IDENTIFICATION IS SHOWN DURING TIME OF BID OR AT TIME OF APPLICATION. LOOK FOR THE FILTREXX CERTIFIED SEAL.
  - SILT SOXX WILL BE PLACED AT LOCATIONS INDICATED ON PLANS AS DIRECTED BY THE ENGINEER.
  - SILT SOXX SHOULD BE INSTALLED PARALLEL TO THE BASE OF THE SLOPE OR OTHER DISTURBED AREA. IN EXTREME CONDITIONS (i.e. 2:1 SLOPES), A SECOND SILT SOXX SHALL BE CONSTRUCTED AT THE TOP OF THE SLOPE.
  - STAKES SHALL BE INSTALLED THROUGH THE MIDDLE OF THE SILT SOXX ON 10 FT CENTERS, USING 2 INCH BY 2 INCH BY 3 FEET WOODEN STAKES. IN THE EVENT STAKING IS NOT POSSIBLE, I.E., WHEN SILT SOXX ARE USED ON PAVEMENT, HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE SILT SOXX TO HELP STABILIZE DURING RAINFALL/RUNOFF EVENTS.
  - STAKING DEPTH FOR SAND AND SILT LOAM SOILS SHALL BE 12 INCHES, AND 8 INCHES FOR CLAY SOILS.

- LOOSE COMPOST MAY BE BACKFILLED ALONG THE UPSLOPE SIDE OF THE SILT SOXX, FILLING THE SEAM BETWEEN THE SOIL SURFACE AND THE DEVICE, IMPROVING FILTRATION AND SEDIMENT RETENTION.
- IF THE SILT SOXX IS TO BE LEFT AS A PERMANENT FILTER OR PART OF THE NATURAL LANDSCAPE, IT MAY BE SEEDDED AT TIME OF INSTALLATION FOR ESTABLISHMENT OF PERM FILTREXX SILT SOXX ARE NOT TO BE USED IN PERENNIAL, EPHEMERAL, OR INTERMITTENT STREAMS.
- SEE DETAIL FOR CORRECT FILTREXX SILT SOXX INSTALLATION.
- MAINTENANCE
  - SILT SOXX BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THEY SHALL BE REPAIRED IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.
  - SHOULD THE FABRIC ON A SILT SOXX BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
  - SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-THIRD (1/3) THE HEIGHT OF THE BARRIER.
  - ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT SOXX BARRIER IS NO LONGER REQUIRED MUST BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDDED.

**C. MULCHING**

**1. TIMING**

- IN ORDER FOR MULCH TO BE EFFECTIVE, IT MUST BE IN PLACE PRIOR TO MAJOR STORM EVENTS. THERE ARE TWO (2) TYPES OF STANDARDS WHICH SHALL BE USED TO ASSURE THIS:
  - APPLY MULCH IMMEDIATELY PRIOR TO ANY STORM EVENT. IT WILL BE NECESSARY TO CLOSELY MONITOR WEATHER PREDICTIONS, USUALLY BY CONTACTING THE NATIONAL WEATHER SERVICE IN CONCORD, TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.
  - REQUIRED MULCHING WITHIN A SPECIFIED TIME PERIOD. THE TIME PERIOD CAN RANGE FROM 14 TO 21 DAYS OF INACTIVITY ON A AREA. THE LENGTH OF TIME VARYING WITH SITE CONDITIONS. PROFESSIONAL JUDGMENT SHALL BE USED TO EVALUATE THE INTERACTION OF SITE CONDITIONS (SOILERODIBILITY, SEASON OF YEAR, EXTENT OF DISTURBANCE, PROXIMITY TO SENSITIVE RESOURCES, ETC.) AND THE POTENTIAL IMPACT OF EROSION ON ADJACENT AREAS TO CHOOSE AN APPROPRIATE TIME RESTRICTION.
- APPLICATION RATE
  - MULCH SHALL BE APPLIED AT A RATE OF BETWEEN 1.5 TO 2 TONS PER ACRE, OR 90 TO 100 POUNDS PER 1000 SQUARE FEET. THE MINIMUM MULCH REQUIREMENT, REGARDLESS OF APPLICATION RATE IS THAT SOIL MUST NOT BE VISIBLE.
- GUIDELINES FOR WINTER MULCH APPLICATION.
  - WHEN MULCH IS APPLIED TO PROVIDE PROTECTION OVER WINTER (PAST THE GROWING SEASON) IT SHALL BE AT A RATE OF 6,000 POUNDS OF HAY OR STRAW PER ACRE. A TACKIFIER MAY BE ADDED TO THE MULCH. NO MULCH IS TO BE APPLIED MORE THAN TWO (2) CLOTHES OF SNOW. IF SNOW DEPTH IS GREATER THAN TWO (2) INCHES IT SHALL BE REMOVED BEFORE MULCHING.
- MAINTENANCE
  - ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE APPLIED IMMEDIATELY.
- EXCLOSOR MATTING
  - EXCLOSOR MATTING SHALL BE USED IN PLACE OF MULCH ON ALL SLOPES STEEPER THAN 3:1.
- SLOPES
  - ALL SLOPES GREATER THAN 15% DURING THE REGULAR CONSTRUCTION SEASON ARE TO HAVE NETTING OVER MULCH OR COMBINATION EROSION CONTROL MAT USED (MULCH AND NET). THIS APPLIES TO ALL SLOPES GREATER THAN 8% AFTER OCTOBER 1. MULCHING IS REQUIRED OVER HYDROSEEDING.

**D. TEMPORARY GRASS COVER**

- SEEDBED PREPARATION
  - APPLY FERTILIZER AT THE RATE OF 600 POUNDS PER ACRE OF 10-10-10. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF THREE (3) TONS PER ACRE.
- SEEDING
  - UTILIZE ANNUAL RYE GRASS AT A RATE OF 40 LBS./ACRE.
  - WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF TWO (2) INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
  - APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). HYDROSEEDING, WHICH INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10% WHEN HYDROSEEDING.
- MAINTENANCE
  - TEMPORARY SEEDINGS SHALL BE PERIODICALLY INSPECTED. AT A MINIMUM, 95% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES USED IN THE INTERIM (MULCH, FILTER BARRIERS, CHECK DAMS, ETC.).

**E. PERMANENT MULCHING**

**1. TIMING**

- APPLYING PLANT RESIDUES OR OTHER SUITABLE MATERIALS THAT RESIST DECOMPOSITION SUCH AS WOOD CHIPS OR CRUSHED STONE TO THE SOIL SURFACE WHERE VEGETATION STABILIZATION IS EITHER IMPRACTICAL OR DIFFICULT TO ESTABLISH.
- WINTER STABILIZATION SHALL MEET OR EXCEED THE FOLLOWING REQUIREMENTS.
- CONSIDERATIONS
  - PERMANENT MULCHING SHALL BE USED TO STABILIZE CHRONIC EROSION AREAS WHICH RECEIVE HEAVY FOOT OR VEHICLE TRAFFIC, NOT INTENDED FOR AREAS OF CONCENTRATED FLOWS.
  - IF WOOD CHIPS ARE USED IN LANDSCAPED AREAS (TREES & SHRUBS), A SUPPLEMENTAL APPLICATION OF CHEMICAL FERTILIZER SHOULD BE APPLIED AT A RATE OF TWO POUNDS OF 5-10-5 PER 100 SQUARE FEET OF MULCH.
  - IF CRUSHED STONE IS USED, A PLASTIC FILTER CLOTH SHALL BE PLACED BETWEEN THE GROUND AND THE STONE.
- SPECIFICATIONS
  - WOOD CHIPS OR AGGREGATE SHALL BE USED ON SLOPES NO STEEPER THAN 3 HORIZONTALLY ON 1 VERTICALLY.
  - PERMANENT MULCH SHALL BE 3 INCHES OR MORE IN DEPTH.
  - WOOD CHIPS SHALL BE APPLIED AT A RATE OF 500-800 POUNDS PER 1,000 SQUARE FEET OR 10-20 TONS PER ACRE. WOOD CHIPS SHALL BE GREEN OR AIR-DRIED AND FREE OF OBJECTIONABLE CORSE MATERIALS.
  - AGGREGATE COVER (GRAVEL, CRUSHED STONE OR SLAG) SHALL BE WASHED, 1/4 INCH TO 2 1/2 INCHES AND APPLIED AT A RATE OF 9 CUBIC YARDS PER 1,000 SQUARE FEET.
- MAINTENANCE
  - WOOD CHIPS SHALL BE MONITORED FOR DECOMPOSITION AND NEW APPLICATIONS MADE.
  - CRUSHED STONE SHALL BE MONITORED FOR WASH OUT AND SLIPPING DOWN SLOPE. IF EITHER OCCUR, NEW MATERIAL SHALL BE PROVIDED ON THE BARREN AREAS.

**F. VEGETATIVE PRACTICE**

- FOR PERMANENT MEASURES AND PLANTINGS.
  - LIMESTONE SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM LAYER AT A RATE OF 3 TONS PER ACRE IN ORDER TO PROVIDE A PH VALUE OF 5.5 TO 6.5.
  - FERTILIZER SHALL BE SPREAD ON THE TOP LAYER OF LOAM AND WORKED INTO THE SURFACE. FERTILIZER APPLICATION RATE SHALL BE 800 POUNDS PER ACRE. ALL FERTILIZER IS TO BE LIMITED TO LIME, WOOD ASH, OR LOW PHOSPHATE AND SLOW RELEASE NITROGEN VARIETIES, UNLESS A SOIL TEST WARRANTS OTHERWISE.
  - SOIL CONDITIONERS AND FERTILIZER SHALL BE APPLIED AT THE RECOMMENDED RATES AND SHALL BE THOROUGHLY WORKED INTO THE LOAM. LOAM SHALL BE RAKED UNTIL THE SURFACE IS FINELY FULVERIZED, SMOOTH AND EVEN, AND THEN COMPACTED TO AN EVEN SURFACE CONFORMING TO THE REQUIRED LINE AND GRADES WITH APPROVED ROLLERS WEIGHING BETWEEN 4-1/2 POUNDS AND 5-1/2 POUNDS PER INCH OF WIDTH.
  - SEED SHALL BE SOWN AT THE RATE SHOWN BELOW. SOWING SHALL BE DONE ON A CALM, DRY DAY, PREFERABLY BY MACHINE, BUT IF BY HAND, ONLY BY EXPERIENCED WORKMEN. IMMEDIATELY BEFORE SEEDING, THE SOIL SHALL BE LIGHTLY RAKED. ONE HALF THE SEED SHALL BE SOWN IN ONE DIRECTION AND THE OTHER HALF AT RIGHT ANGLES TO THE ORIGINAL DIRECTION. IT SHALL BE LIGHTLY RAKED INTO THE SOIL TO A DEPTH NOT OVER 1/4 INCH AND ROLLED WITH A HAND ROLLER WEIGHING NOT OVER 100 POUNDS PER LINEAR FOOT OF WIDTH.
  - HAY MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING AS INDICATED ABOVE.
  - THE SURFACE SHALL BE WATERED AND KEPT MOIST WITH A FINE SPRAY AS REQUIRED, WITHOUT WASHING AWAY THE SOIL, UNTIL THE GRASS IS WELL ESTABLISHED. ANY AREAS WHICH ARE NOT SATISFACTORILY COVERED WITH GRASS SHALL BE RESEEDDED, AND ALL NOXIOUS WEEDS REMOVED.
  - THE CONTRACTOR SHALL PROTECT AND MAINTAIN THE SEEDDED AREAS UNTIL ACCEPTED.
  - A GRASS SEED MIXTURE CONTAINING THE FOLLOWING SEED REQUIREMENTS SHALL BE APPLIED AT THE INDICATED RATE:

**GENERAL COVER**

CREeping RED FESCUE	50 LBS/ACRE
KENTUCKY BLUEGRASS	100 LBS/ACRE
PERENNIAL RYE GRASS	50 LBS/ACRE

IN NO CASE SHALL THE WEED CONTENT EXCEED 1 PERCENT BY WEIGHT. ALL SEED SHALL COMPLY WITH STATE AND FEDERAL SEED LAWS. SEEDING SHALL BE DONE NO LATER THAN SEPTEMBER 15. IN NO CASE SHALL SEEDING TAKE PLACE OVER SNOW.

- DORMANT SEEDING (SEPTEMBER 15 TO FIRST SNOWFALL)
  - FOLLOW PERMANENT MEASURES SLOPE, LIME, FERTILIZER AND GRADING REQUIREMENTS. APPLY SEED MIXTURE AT TWICE THE INDICATED RATE. APPLY MULCH AS INDICATED FOR PERMANENT MEASURES.
- STORM DRAIN INLET PROTECTION
  - SILT SACK
    - SACK SHALL BE INSTALLED WITHIN CATCHBASIN, MAKING SURE EMPTY STRAPS ARE LAID FLAT OUTSIDE THE BASIN.
    - SACK SHALL FIT TIGHTLY WITHIN THE BASIN TO PREVENT SEDIMENT FROM GOING THROUGH ANY GAPS.
  - ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAINSTORM AND REPAIRS MADE AS NECESSARY.
  - SEDIMENT SHOULD BE REMOVED FROM THE DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE-THIRD THE DEPTH OF THE TRAP.
  - SILT SACK SHALL BE REMOVED UPON THE COMPLETION OF PROJECT.

**I. STABILIZED CONSTRUCTION ENTRANCE**

**1. SPECIFICATIONS**

- AGGREGATE SIZE: USE TWO (2) INCHES STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- AGGREGATE THICKNESS: NOT LESS THAN SIX (6) INCHES.
- WIDTH: TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH OF POINTS WHERE INGRESS OR EGRESS OCCURS.
- LENGTH: AS REQUIRED, BUT NOT LESS THAN FIFTY (50) FEET
- GEOTEXTILE: TO BE PLACED OVER THE ENTIRE AREA TO BE COVERED WITH AGGREGATE. PIPING OF SURFACE WATER UNDER ENTRANCE SHALL BE PROVIDED AS REQUIRED.
- CRITERIA FOR GEOTEXTILE: THE FABRICS SHALL BE TREVIA SPUNBOND 1135, MIRAFI 600X OR EQUIVALENT.

**2. MAINTENANCE**

- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH AGGREGATE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES OR WATERWAYS.
- STRAW/HAY BALES
  - BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE ON THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.
  - ALL BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED. BALES SHALL BE INSTALLED SO THAT BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES TO PREVENT DETEIORATION OF THE BINDINGS.
  - THE BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH OF FOUR (4) INCHES. AFTER THE BALES ARE STAKED AND CHINKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE BARRIER. BACKFILL SOIL SHALL CONFORM TO THE GROUND LEVEL ON THE DOWNHILL SIDE AND SHALL BE BUILT UP TO FOUR (4) INCHES AGAINST THE UPHILL SIDE OF THE BARRIER.
  - IDEALLY, BALES SHOULD BE PLACED TEN (10) FEET AWAY FROM THE TOE OF SLOPE.
  - EACH BALE SHALL BE SECURED ANCHORED BY AT LEAST TWO (2) STAKES OR REBARS DRIVEN THROUGH THE BALE. THE FIRST SAK E IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. STAKES OR REBARS SHALL BE DRIVEN DEEP ENOUGH INTO THE GROUND TO SECURELY ANCHOR THE BALES.
  - THE GAPS BETWEEN BALES SHALL BE CHINKED (FILLED BY WEDGING) WITH STRAW/HAY TO PREVENT WATER FROM ESCAPING BETWEEN THE BALES.
  - ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAINSTORM AND REPAIRS MADE AS NECESSARY.
  - SEDIMENT SHOULD BE REMOVED FROM THE DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE-THIRD THE DEPTH OF THE TRAP.
  - HAYBALES SHOULD BE REMOVED AND THE AREA REPAIRED AS SOON AS THE CONTRIBUTING DRAINAGE AREA TO THE INLET HAS BEEN COMPLETELY STABILIZED

**TIMING OF CONTROLS/MEASURES**

THE MAXIMUM AREA TO BE DISTURBED AT ONE TIME SHALL BE KEPT UNDER FIVE (5) ACRES. A PHASING PLAN DESCRIBING THE AREAS TO BE DISTURBED SHALL BE SUBMITTED TO THE DESIGN ENGINEER AND NHDES. AN INDEPENDENT MONITORING COMPANY SHALL BE HIRED BY THE CONTRACTOR TO MONITOR ALL EROSION CONTROL DEVICES.

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES THE EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO COMMENCING ANY CLEARING OR GRADING OF THE SITE. STRUCTURAL CONTROLS SHALL BE INSTALLED CONCURRENTLY WITH THE APPLICABLE ACTIVITY. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN TWENTY ONE (21) DAYS SHALL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN FOURTEEN (14) DAYS OF THE LAST DISTURBANCE. WHEN CONSTRUCTION ACTIVITY PERMANENTLY OR TEMPORARILY CEASES WITHIN 100 FEET OF ANY WETLAND OR STREAM, THE AREA SHALL BE STABILIZED WITHIN 7 DAYS OR PRIOR TO A RAIN EVENT. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, SILT FENCES AND HAYBALE BARRIERS AND ANY EARTH/DIKES WILL BE REMOVED ONCE PERMANENT MEASURES ARE ESTABLISHED.

**WASTE DISPOSAL**

**A. WASTE MATERIALS**

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

**SPILL PREVENTION**

- MATERIAL MANAGEMENT PRACTICES
  - THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES DURING CONSTRUCTION TO STORMWATER RUNOFF:
    - GOOD HOUSEKEEPING:
      - THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ON SITE DURING THE CONSTRUCTION PROJECT:
        - AN EFFORT WILL BE MADE TO STORE ONLY SUFFICIENT AMOUNTS OF PRODUCTS TO DO THE JOB.
        - ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR PROPER (ORIGINAL IF POSSIBLE) CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
        - MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
        - THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS.
        - SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
        - WHENEVER POSSIBLE ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
    - HAZARDOUS PRODUCTS:
      - THE FOLLOWING PRACTICES WILL BE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
        - PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
        - ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED FOR IMPORTANT PRODUCT INFORMATION.
        - SURPLUS PRODUCT THAT MUST BE DISPOSED OF WILL BE DISCARDED ACCORDING TO THE MANUFACTURER'S RECOMMENDED METHODS OF DISPOSAL.
- PRODUCT SPECIFICATION PRACTICES
  - THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:
    - PETROLEUM PRODUCTS:
      - ALL ON-SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT BASED SUBSTANCES USED ON SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
    - FERTILIZERS:
      - FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS DIRECTED BY THE SPECIFICATIONS. ONCE APPLIED FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED OR ENCLOSED TRAILERS. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.
    - PAINTS:
      - ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE DISPOSED OF PROPERLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

- SPILL CONTROL PRACTICES
  - IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTION THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
    - MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
    - MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST AND PLASTIC OR METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
    - ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
    - THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
    - SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
    - THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM RECURRING AND HOW TO CLEANUP THE SPILL IF IT RECURS. A DESCRIPTION OF THE SPILL, ITS CAUSE, AND THE CLEANUP MEASURES WILL BE INCLUDED.
    - THE SITE SUPERINTENDENT RESPONSIBLE FOR DAY-TO-DAY SITE OPERATIONS WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR.
- VEHICLE FUELING AND MAINTENANCE PRACTICES
  - EFFORTS SHOULD BE MADE TO PERFORM EQUIPMENT/VEHICAL FUELING AND MAINTENANCE AT AN OFF-SITE FACILITY.
  - CONTRACTOR SHALL PROVIDE AN ON-SITE FUELING AND MAINTENANCE AREA THAT IS CLEAN AND DRY.
  - IF POSSIBLE KEEP AREA COVERED.
  - KEEP A SPILL KIT AT THE FUELING AND MAINTENANCE AREA.
  - VEHICLES SHALL BE INSPECTED REGULARLY FOR LEAKS AND DAMAGE.
  - USE DRIP PANS, DRIP CLOTHS, OR ABSORBENT PADS WHEN REPLACING SPENT FLUID.

**DUST CONTROL**

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

**CONCRETE WASHOUT AREA**

- THE CONCRETE CONTRACTOR SHOULD BE ENCOURAGED WHERE POSSIBLE, TO USE WASHOUT FACILITIES AT THEIR OWN PLANT OR DISPATCH FACILITY.
- IF IT IS NECESSARY, SITE CONTRACTOR SHALL DESIGNATE SPECIFIC WASHOUT AREAS AND DESIGN FACILITIES TO HANDLE ANTICIPATED WASHOUT WATER.
- WASHOUT AREAS SHOULD ALSO BE PROVIDED FOR PAINT AND STUCCO OPERATIONS.
- ATTEMPTS SHOULD BE MADE TO LOCATE WASHOUT AREA A LEAST 50 YARDS AWAY FROM STORM DRAINS AND WATER WAYS WHENEVER POSSIBLE.
- INSPECT WASHOUT FACILITIES DAILY TO DETECT LEAKS OR TEARS AND TO IDENTIFY WHEN MATERIALS NEED TO BE REMOVED.

**ALLOWABLE NON-STORMWATER DISCHARGES**

- DISCHARGES FROM FIRE-FIGHTING ACTIVITIES
- FIRE HYDRANT FLUSHINGS
- WATERS USED TO WASH VEHICLES WHERE DETERGENTS ARE NOT USED
- WATER USED TO CONTROL DUST
- POTABLE WATER INC. UNCONTAMINATED WATER LINE FLUSHINGS
- ROUTINE EXTERNAL BUILDING WASH DOWN -NO DETERGENTS
- PAVEMENT WASH WATERS -NO SPILLS OR DETERGENTS
- UNCONTAMINATED AIR CONDITIONING/COMPRESSOR CONDENSATE
- UNCONTAMINATED GROUND WATER OR SPRING WATER
- FOUNDATION OR FOOTING DRAINS -NOT CONTAMINATED
- UNCONTAMINATED EXCAVATION DEWATERING
- LANDSCAPE IRRIGATION

**BLASTING NOTES**

- IF MORE THAN 5000 CUBIC YARDS ARE TO BE 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.
- THE FOLLOWING BEST MANAGEMENT PROCEDURES FOR BLASTING SHALL BE COMPLIED WITH:
  - LOADING PRACTICES.
    - THE FOLLOWING BLASTHOUSE 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 BLASTHOUSES 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

<b>PROJECT LENGTH</b>	1,800 LF
FRONTAGE ROAD	152 LF
FRONTAGE ROAD (PRIMARY DRIVE)	212 LF
FRONTAGE ROAD (SECONDARY DRIVE)	2,164 LF
<b>TOTAL</b>	

<b>BENCHMARK INFORMATION</b>
TBM "A"
MAG NAIL SET UP 12" IN
UP #PSNH362/206
ELEV.=260.63'
TBM "B"
MAG NAIL SET UP 12" IN
UP #PSNH431/1A
ELEV.=260.83'
TBM "C"
MAG NAIL SET UP 12" IN
UP #PSNH362/210
ELEV.=257.77'



**Granite Ridge Development District**

Frontage Road

Rochester, New Hampshire

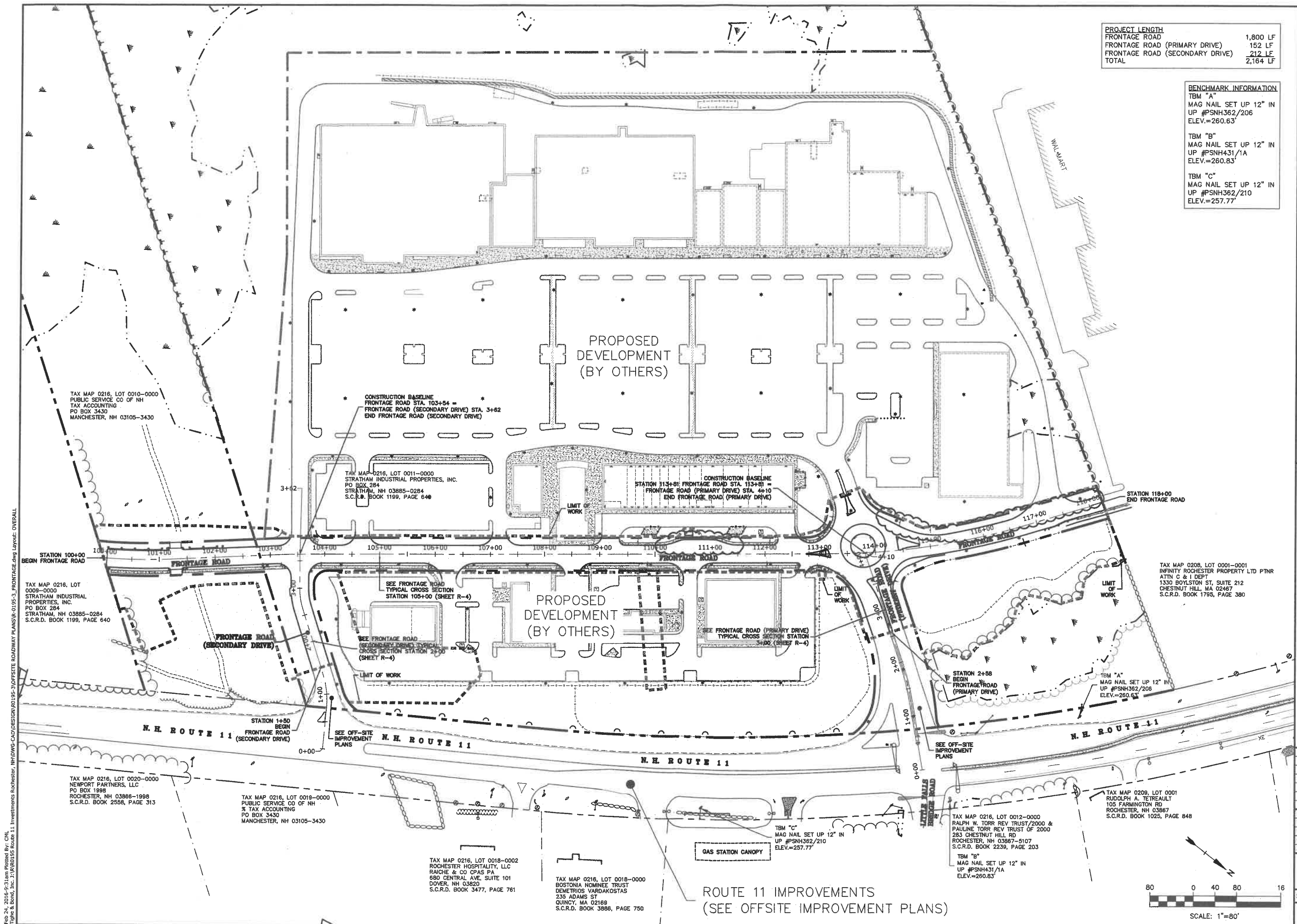
JANUARY 27, 2015

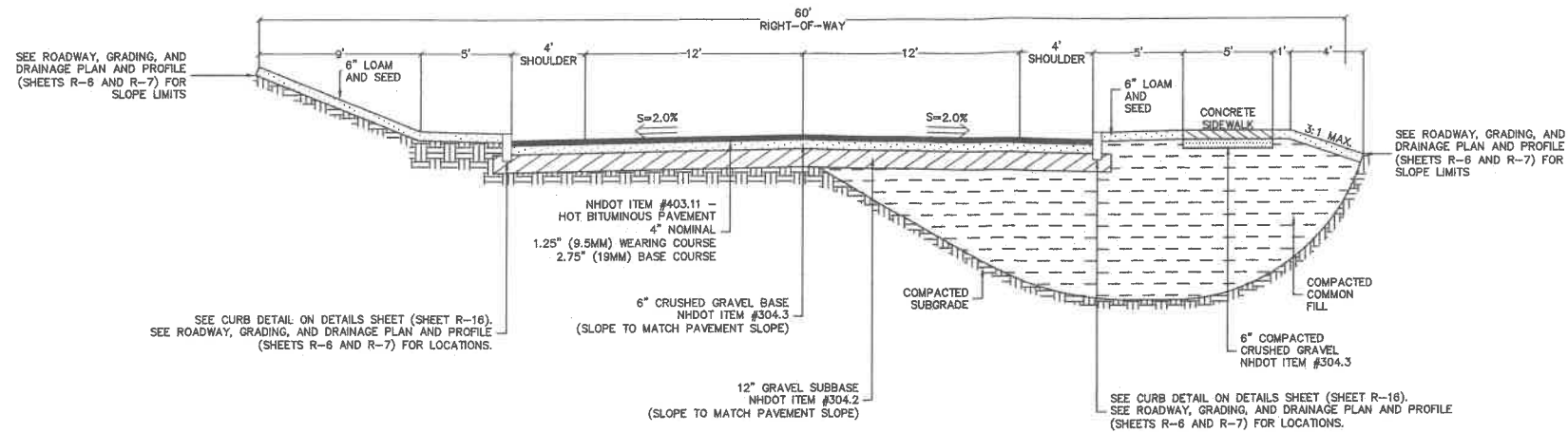
1.	2/25/16	Revised Site Layout
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PROJECT NO:	R-0195-3	
FILE:	R-0195-3_FRONTAGE.dwg	
DRAWN BY:	TPD	
CHECKED:	KAM	
APPROVED BY:	GMM	

OVERALL FRONTAGE ROAD DEVELOPMENT PLAN

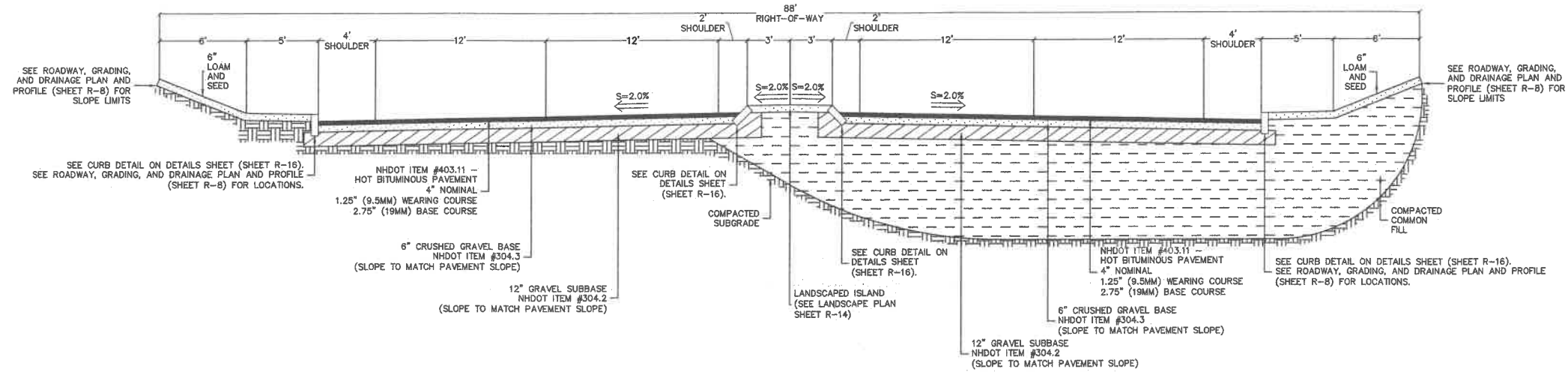
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R-3

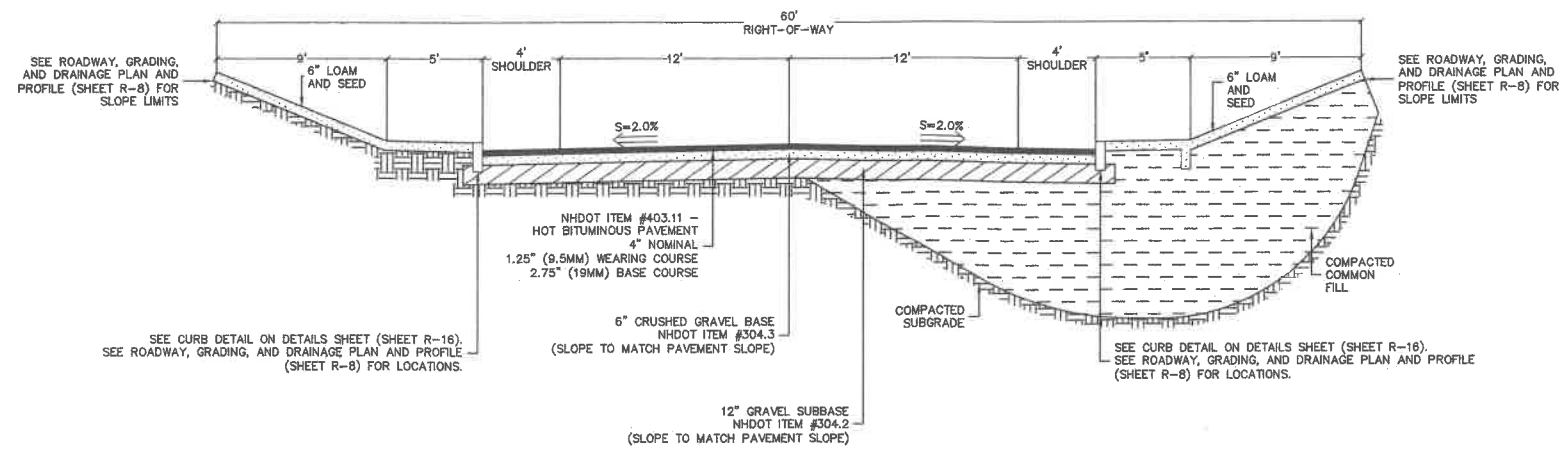




**FRONTAGE ROAD TYPICAL CROSS SECTION**  
**STATION 105+00**  
NOT TO SCALE



**FRONTAGE ROAD (PRIMARY DRIVE) TYPICAL CROSS SECTION**  
**STATION 3+00**  
NOT TO SCALE



**FRONTAGE ROAD (SECONDARY DRIVE) TYPICAL CROSS SECTION**  
**STATION 2+00**  
NOT TO SCALE



**Granite Ridge  
Development  
District**

Frontage Road

Rochester,  
New Hampshire

JANUARY 27, 2015

Mark	Date	Description
PROJECT NO:	R-0185-3	
FILE:	R-0185-3_FR_DETAILS.DWG	
DRAWN BY:	TPD	
CHECKED BY:	KAM	
APPROVED BY:	GMM	

TYPICAL CROSS SECTIONS

SCALE: AS SHOWN

R-4





Granite Ridge  
Development  
District

Frontage Road

Rochester,  
New Hampshire

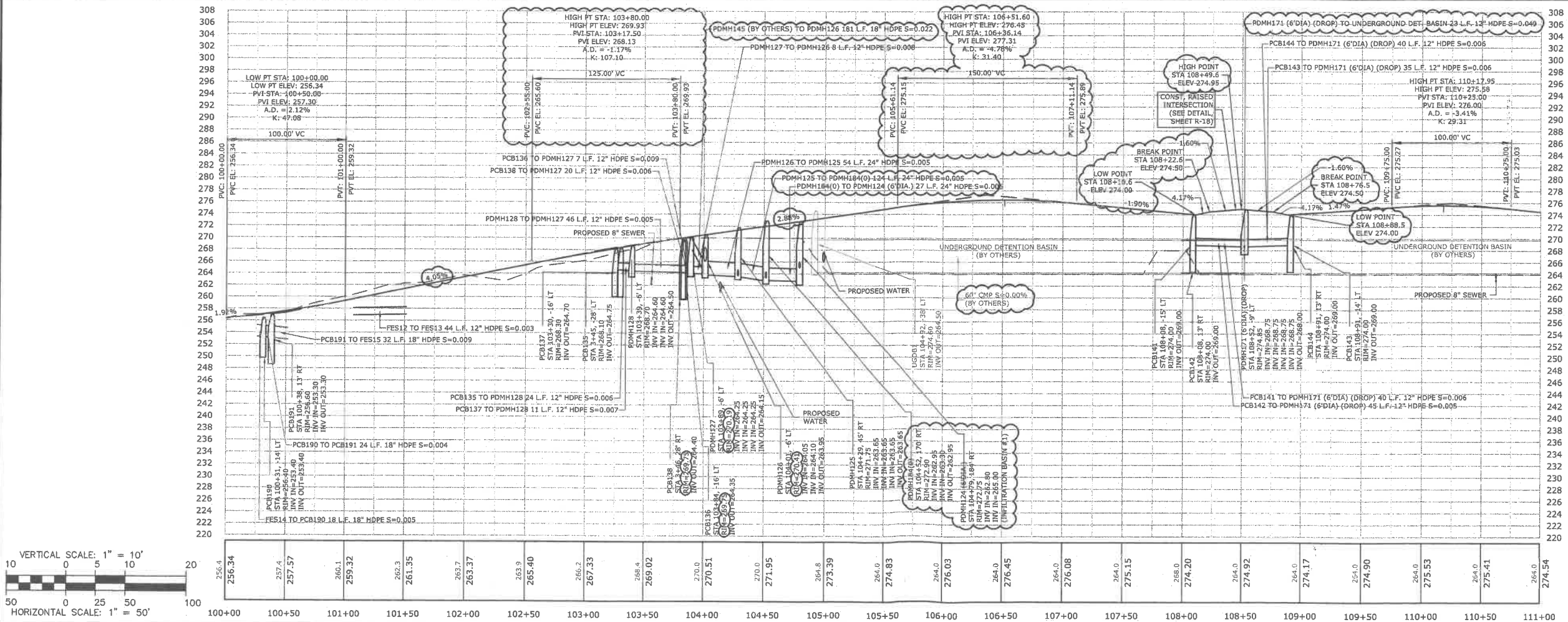
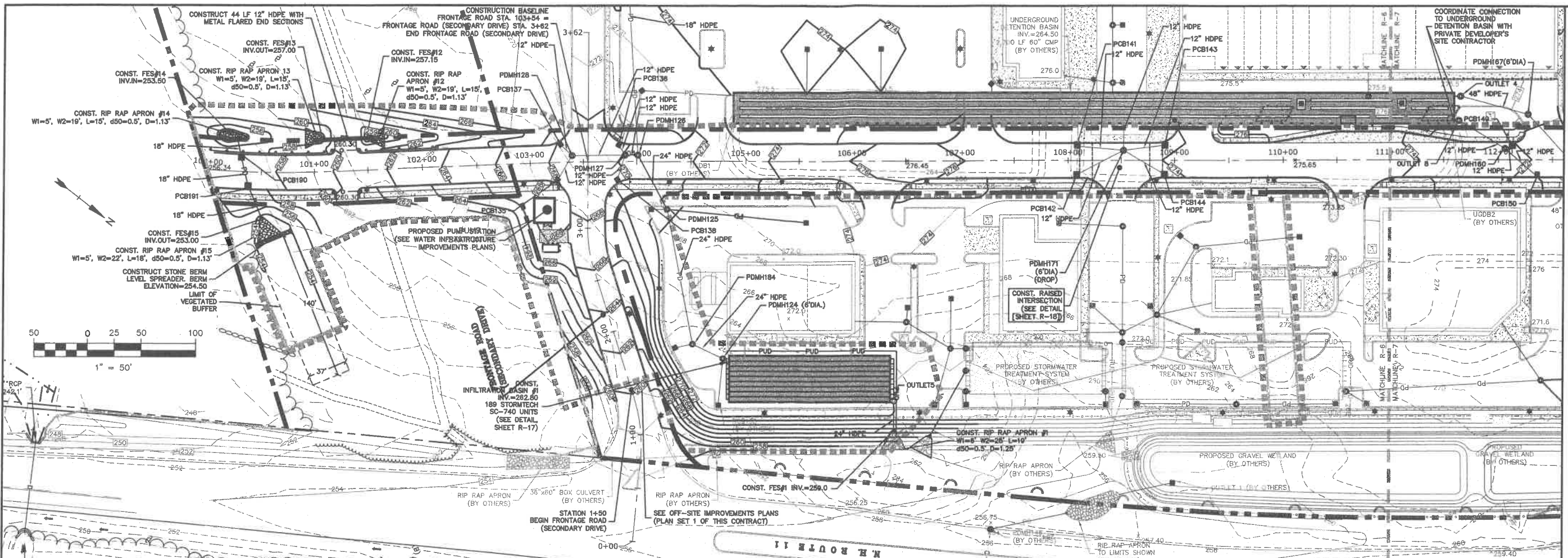
JANUARY 27, 2015

Mark	Date	Description
2.	7/27/15	Revised Grading and Drainage
1.	2/20/15	Revised Grading and Drainage

ROADWAY, GRADING, AND  
DRAINAGE PLAN AND PROFILE

SCALE: AS SHOWN

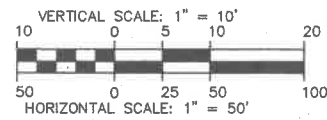
R-6



CONTRACTOR SHALL  
COORDINATE PHASING,  
CONSTRUCTION, AND  
COMPLETION OF ALL  
WORK WITHIN LIMITS OF  
WORK WITH PRIVATE  
DEVELOPER'S SITE  
CONTRACTOR.

SEE OFF-SITE  
IMPROVEMENT PLANS  
FOR WORK ASSOCIATED  
WITH IMPROVEMENTS TO  
ROUTE 11 AND  
CONTINUATION OF  
PRIMARY DRIVE AND  
SECONDARY DRIVE.

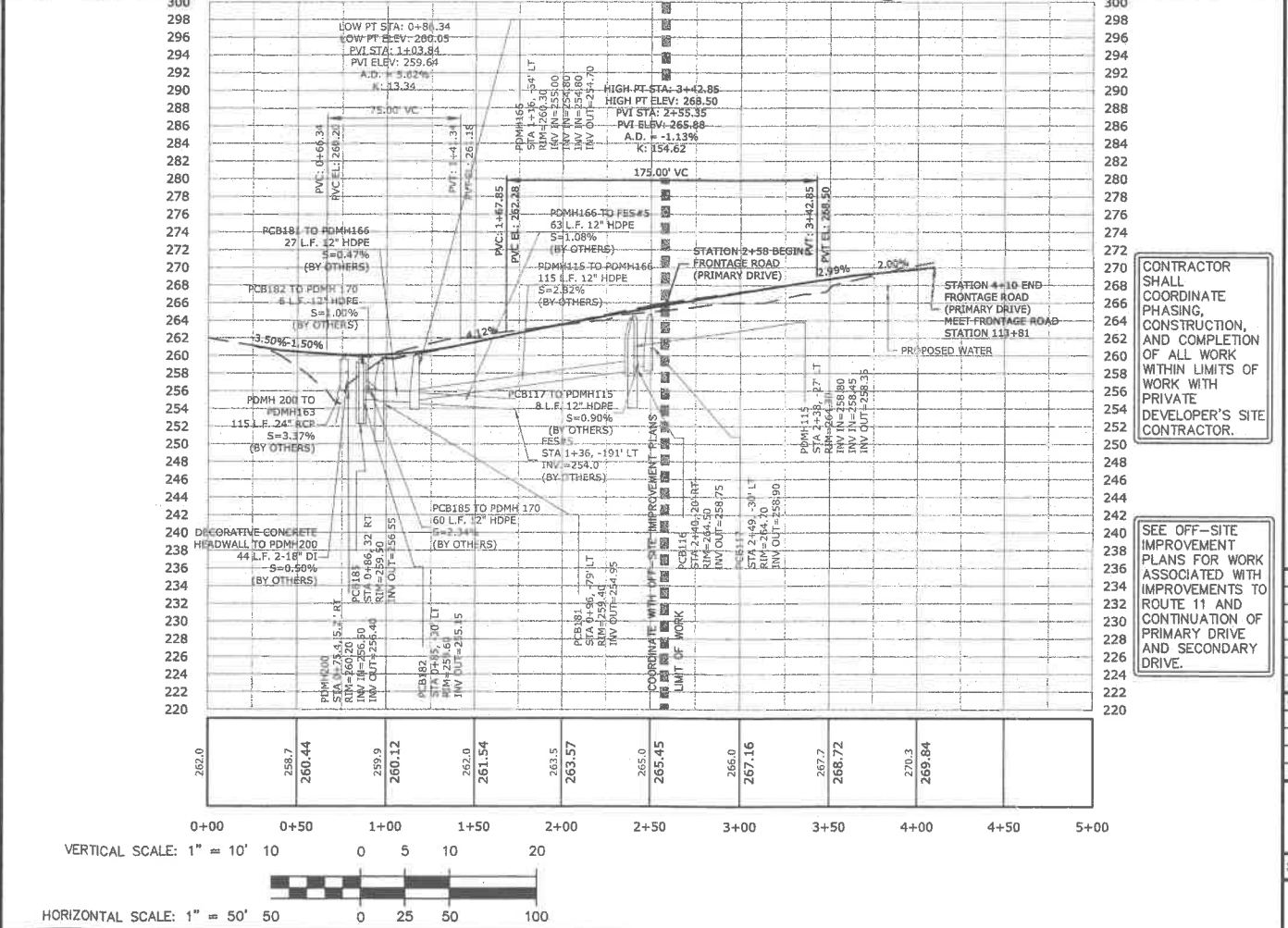
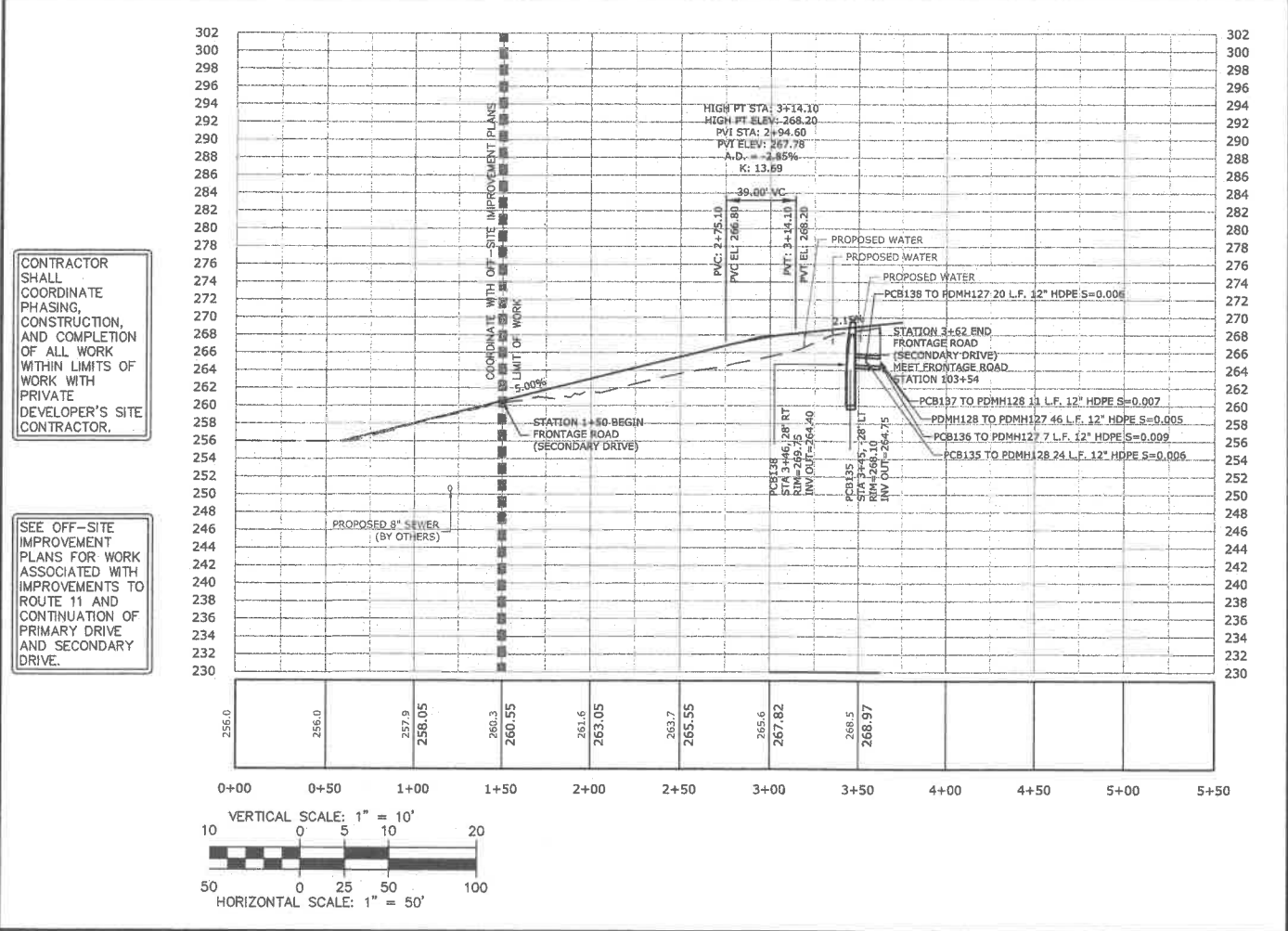
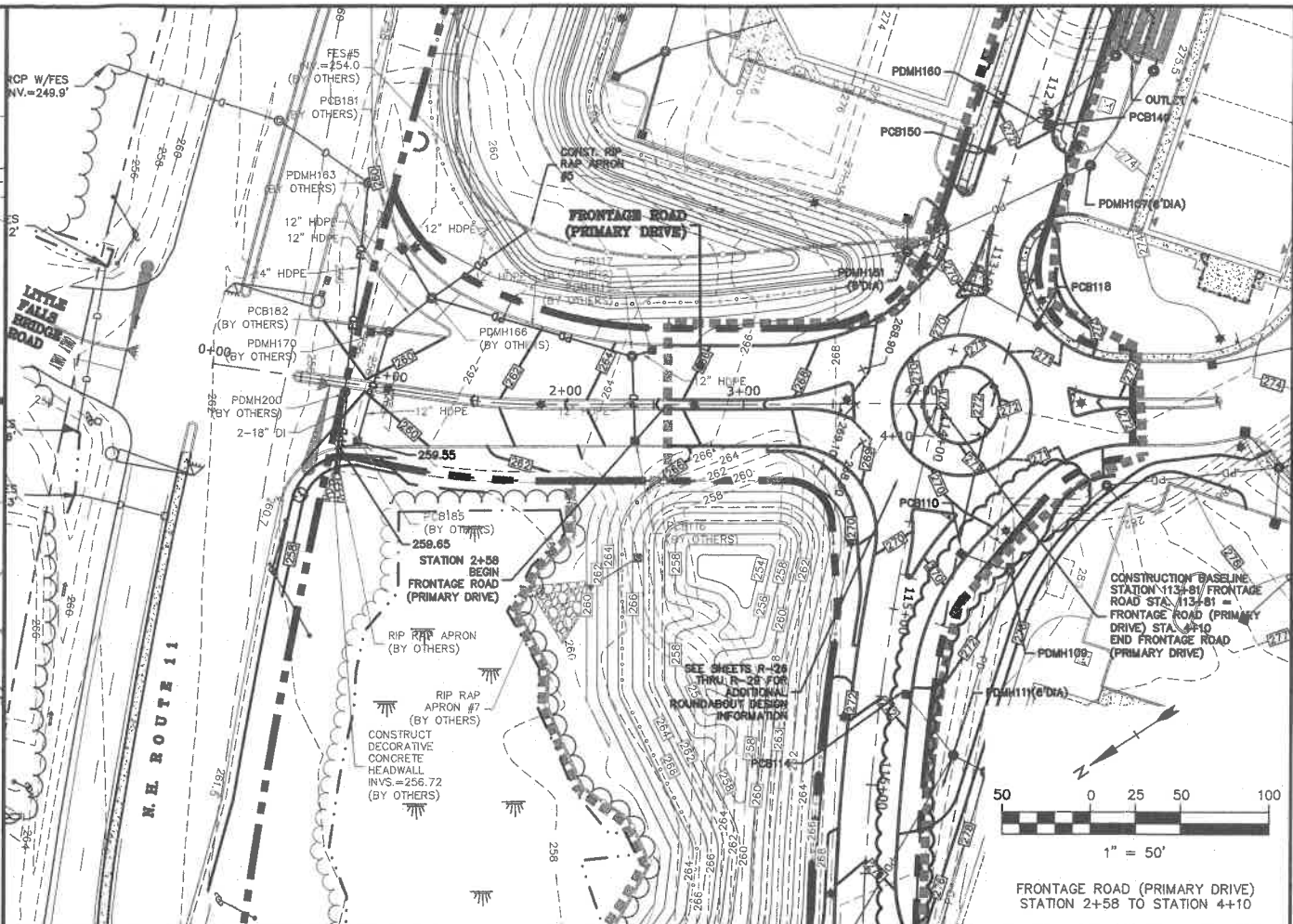
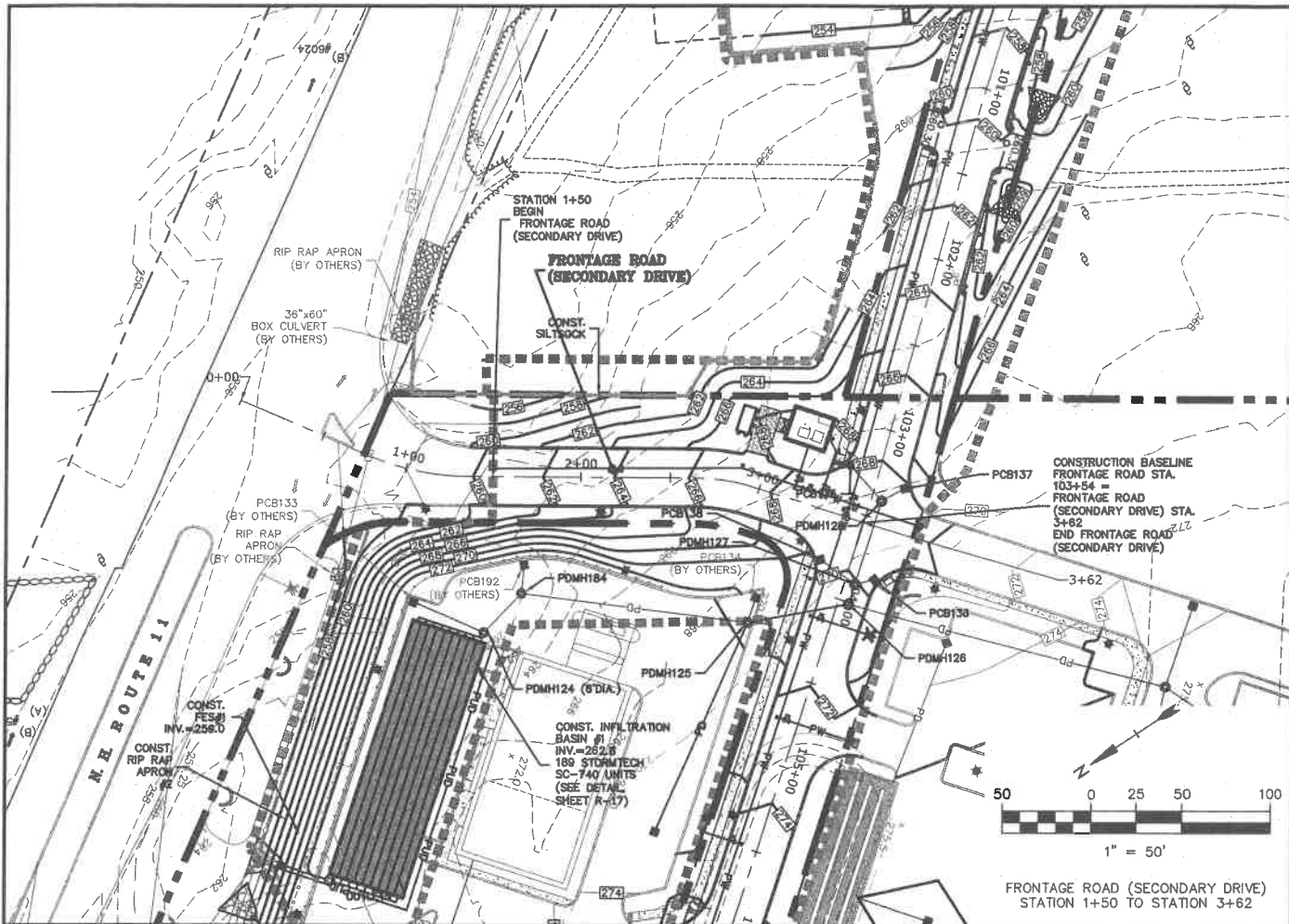
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Tighe & Bond, Inc. \\srvproj\projects\R0195-3\01\SITE ROADWAY PLANS\R-0195-3\_FRONTAGE.dwg Layout: PLAN1



SEE OFF-SITE  
IMPROVEMENT PLANS  
FOR WORK ASSOCIATED  
WITH IMPROVEMENTS TO  
ROUTE 11 AND  
CONTINUATION OF  
PRIMARY DRIVE AND  
SECONDARY DRIVE.

## -7





Granite Ridge  
Development  
District

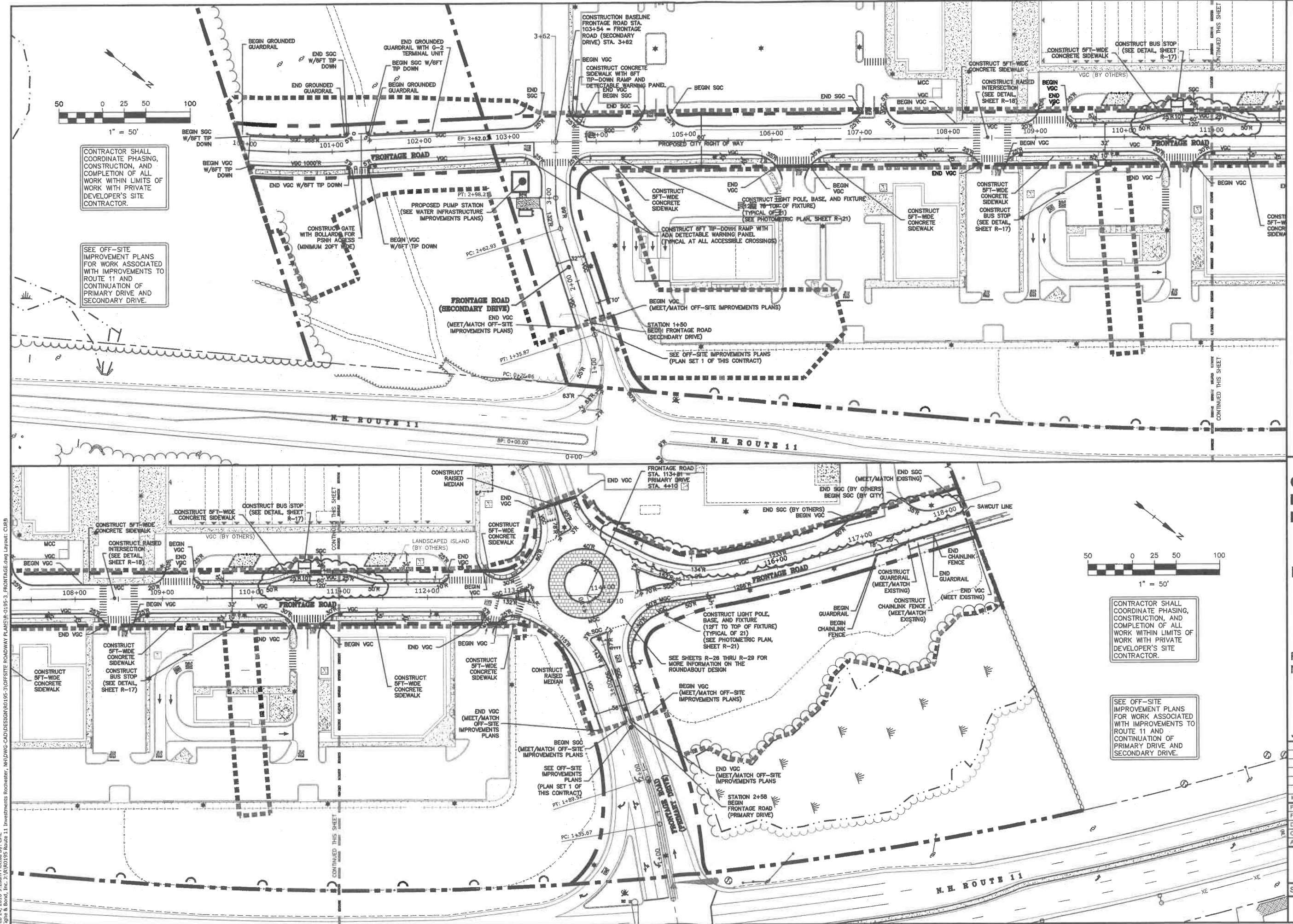
Frontage Road

Rochester,  
New Hampshire

JANUARY 27, 2015

Mark	Date	Description
4.	2/25/16	Revised Site Layout
3.	8/3/15	Revised Infiltration Basin
2.	7/27/15	Mac Revisions
1.	2/20/16	Revised Grading and Drainage
Mark Date Description		
PROJECT NO: R-0195-3		
FILE: R-0195-3_FRONTAGE.dwg		
DRAWN BY: TPD		
CHECKED: KAM		
APPROVED BY: GMM		
PRIMARY DRIVE AND SECONDARY DRIVE ROADWAY, GRADING, AND DRAINAGE PLAN AND PROFILE		
SCALE: AS SHOWN		
R-8		

Feb 24, 2016 9:09am Plotted By: CML  
Tighe & Bond, Inc. J:\R0195 Route 11 Investments Rochester, NH\DWG-CAD\DESIGN\R0195-3\OFFSITE ROADWAY PLAN\R-0195-3\_FRONTAGE.dwg Layout: PLAN3



STATE OF NEW HAMPSHIRE  
GREGORY A. MAYORGEORGE  
No. 6884  
LICENSED PROFESSIONAL ENGINEER  
2/25/16

STATE OF NEW HAMPSHIRE  
KENNETH A. HAVRGEORGE  
No. 1333  
LICENSED PROFESSIONAL ENGINEER  
2/25/16

**Granite Ridge Development District**

Frontage Road

Rochester, New Hampshire

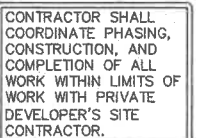
JANUARY 27, 2015

2.	2/25/16	Revised Site Layout
1.	7/27/15	Misc Revisions
Mark	Date	Description
PROJECT NO:	R-0195-3	
FILE:	R-0195-3_FRONTAGE.dwg	
DRAWN BY:	TPD	
CHECKED:	KAM	
APPROVED BY:	GMM	

CURBING AND SITE LAYOUT

SCALE: AS SHOWN





R-10

SEE OFF-SITE  
IMPROVEMENT PLANS  
FOR WORK ASSOCIATED  
WITH IMPROVEMENTS TO  
ROUTE 11 AND  
CONTINUATION OF  
PRIMARY DRIVE AND  
SECONDARY DRIVE.

SEE OFF-SITE  
IMPROVEMENT PLANS  
FOR WORK ASSOCIATED  
WITH IMPROVEMENTS TO  
ROUTE 11 AND  
CONTINUATION OF  
PRIMARY DRIVE AND  
SECONDARY DRIVE.

## Frontage Road

Rochester,  
New Hampshire

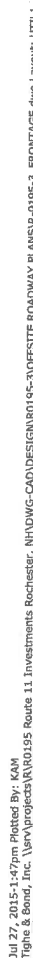
JANUARY 27, 2015

2.	7/27/15	Misc Revisions
1.	2/20/15	Revised Proposed Electric Layout
<b>Mark</b>	<b>Date</b>	<b>Description</b>
<b>PROJECT NO:</b>		R-0195-3
<b>FILE:</b>		R-0195-3_FRONTAGE.dwg
<b>DRAWN BY:</b>		TPD
<b>CHECKED:</b>		KAM
<b>APPROVED BY:</b>		GMM

## UTILITIES PLAN AND PROFILE

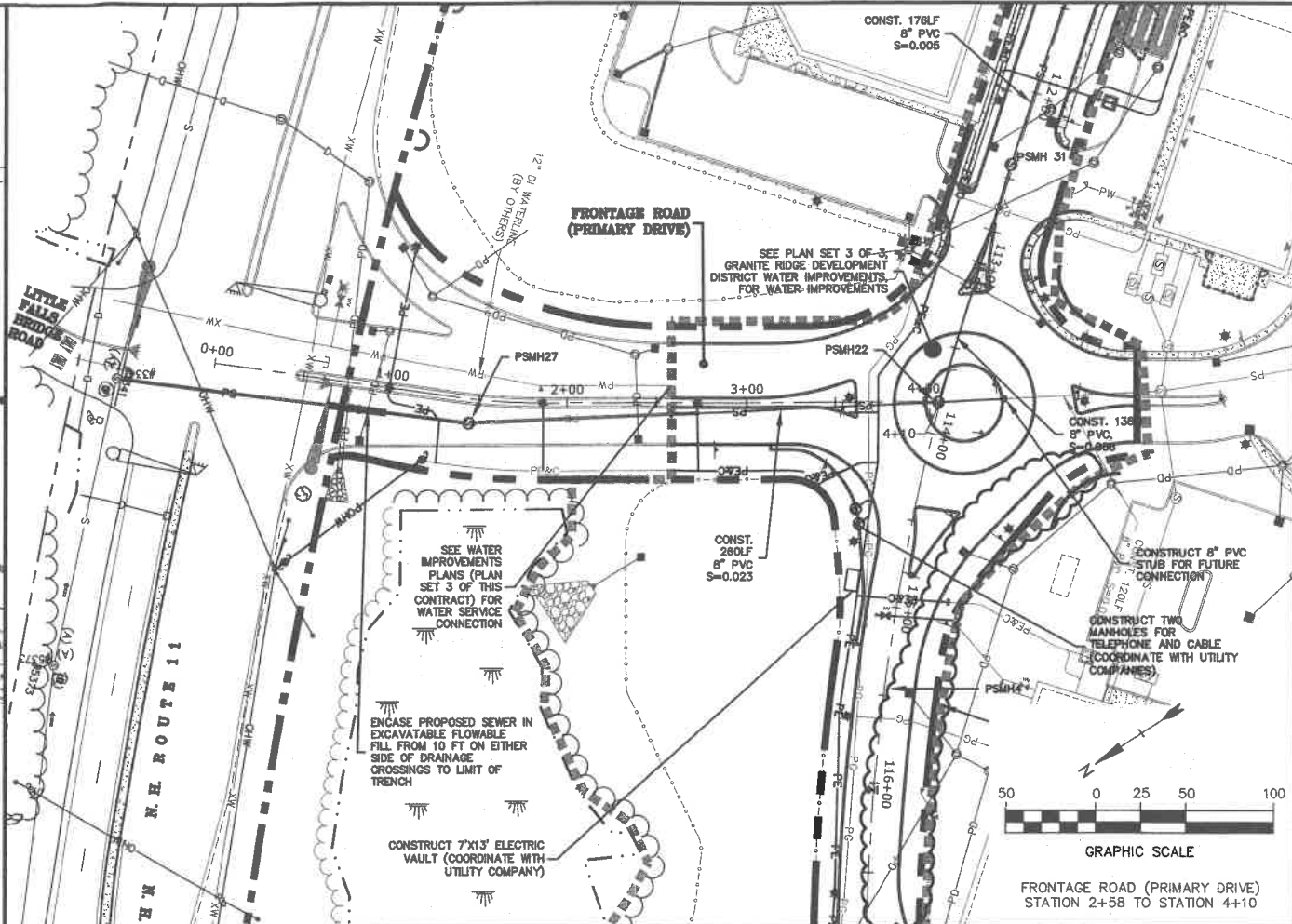
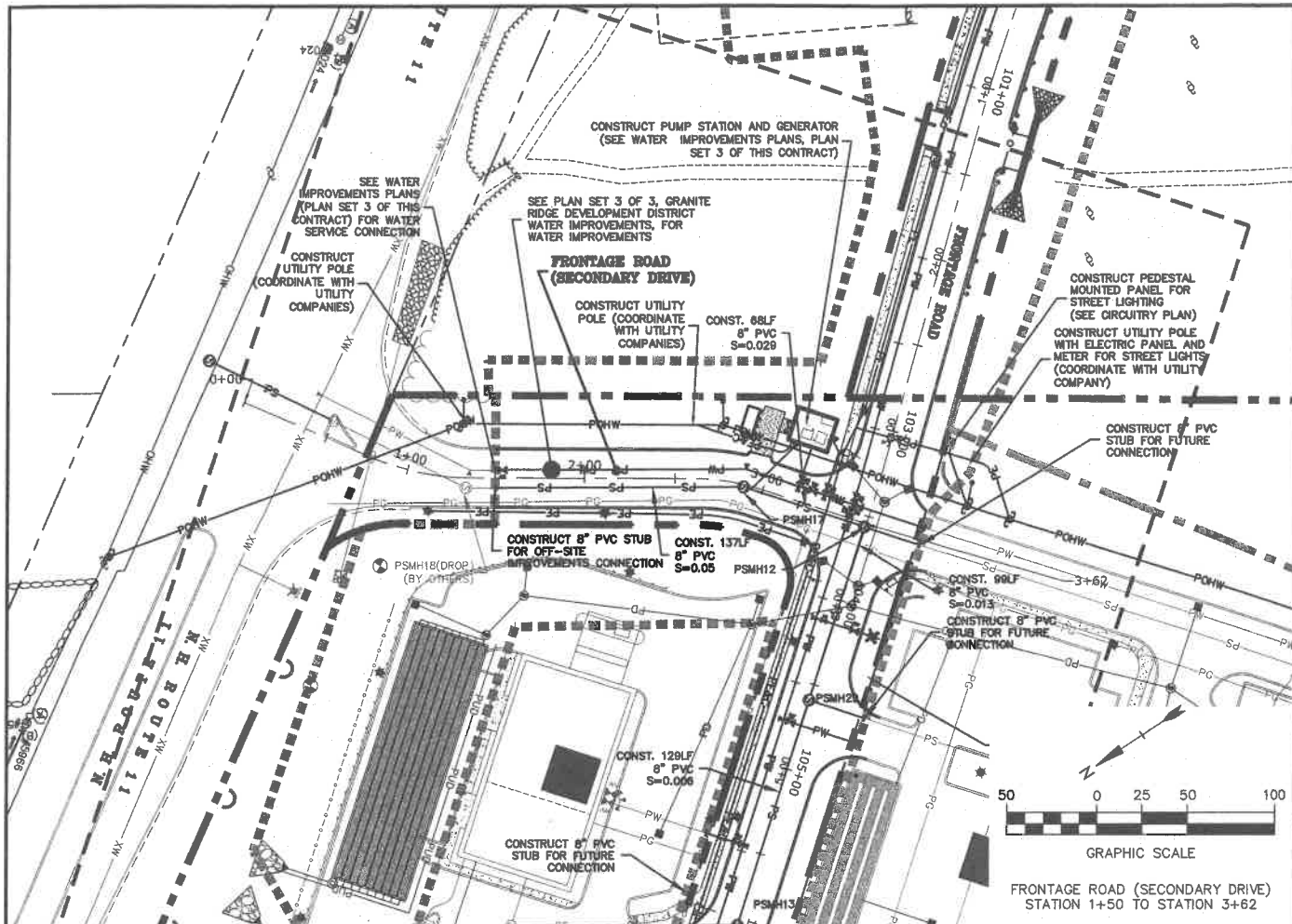
SCALE: AS SHOWN

R-11



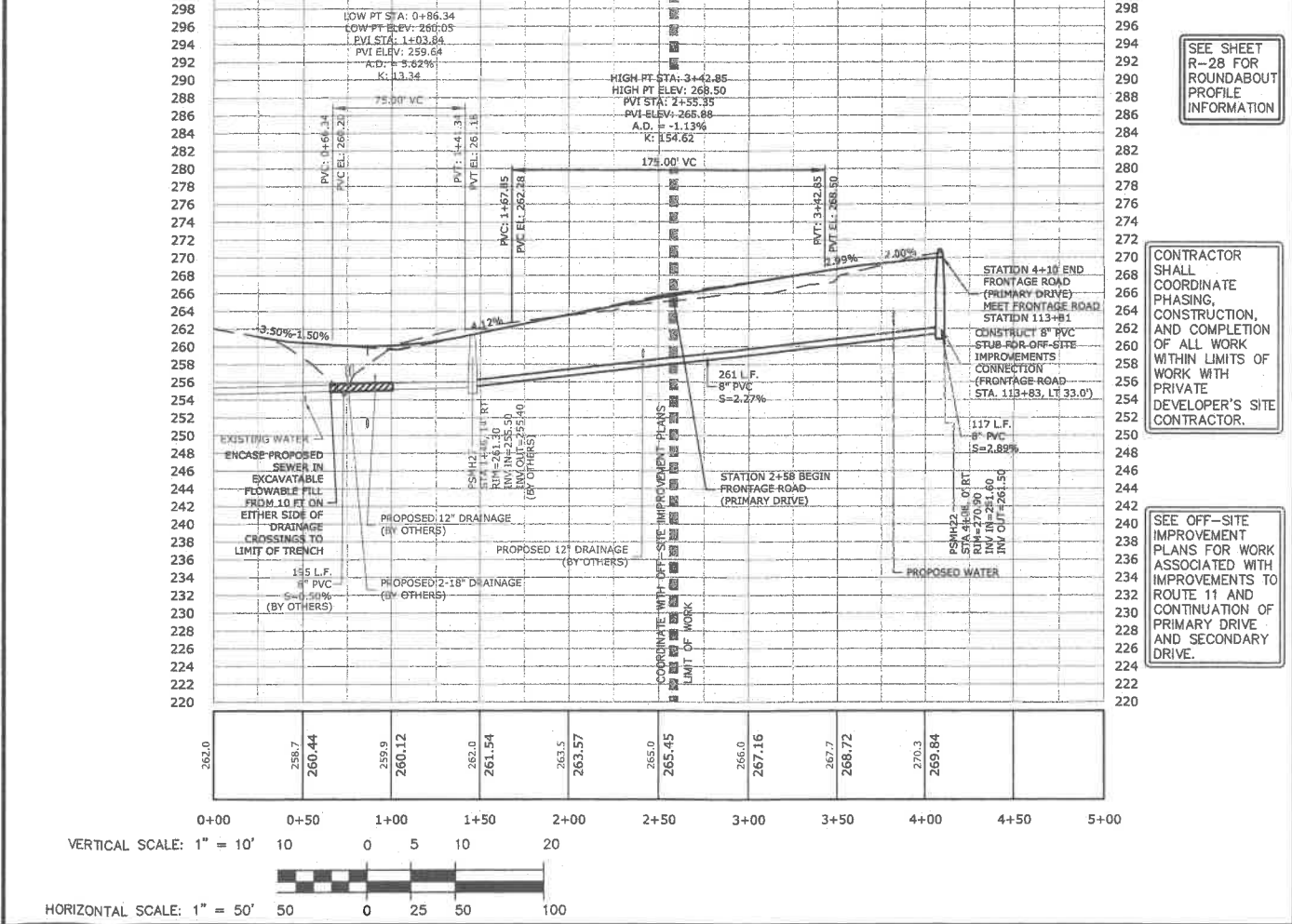
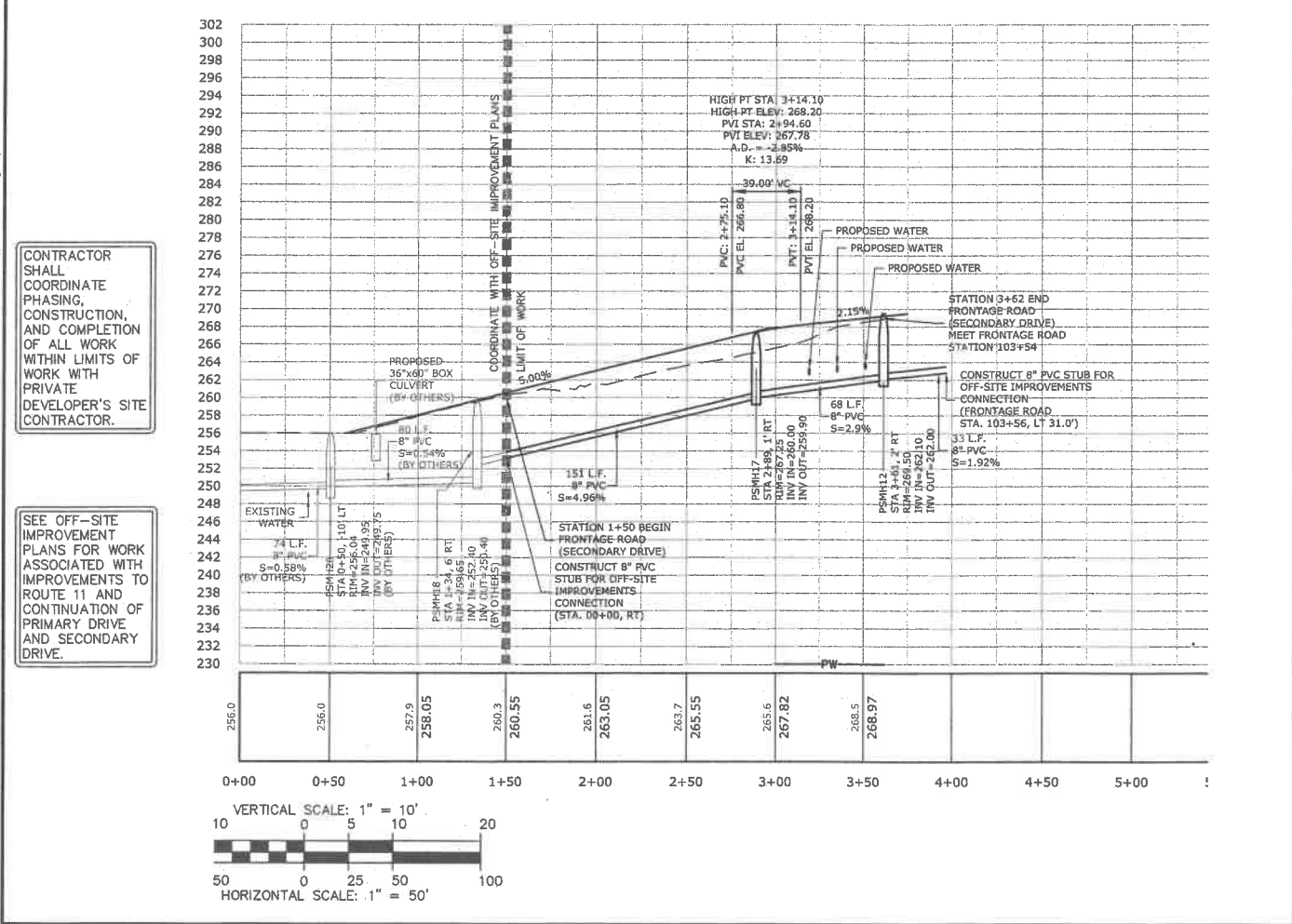






STATE OF NEW HAMPSHIRE  
GREGG A. MIKOLAITIS  
Professional Engineer  
No. 6884  
2/25/16

STATE OF NEW HAMPSHIRE  
KAREN M. HAYDOCK  
Professional Engineer  
No. 13328  
2/25/16



**Granite Ridge Development District**

**Frontage Road**

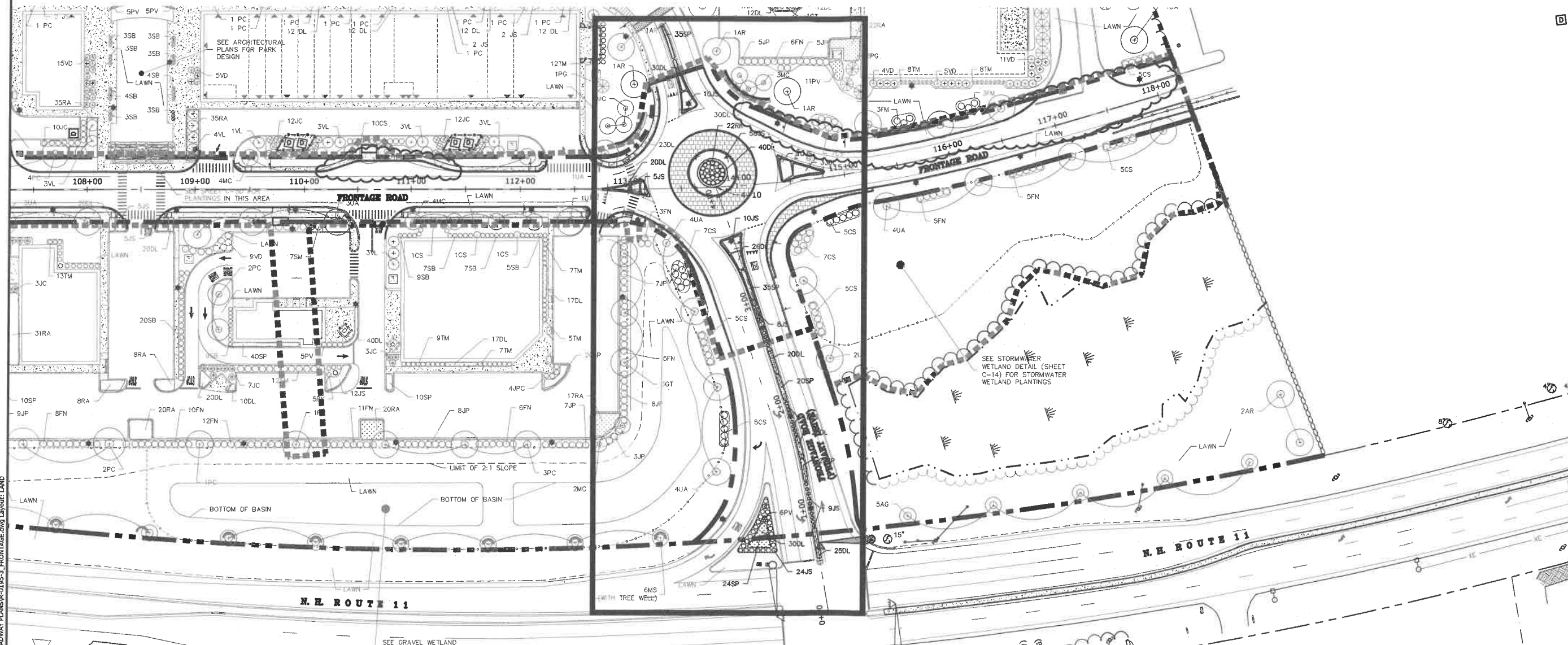
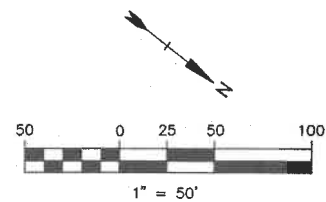
Rochester,  
New Hampshire

JANUARY 27, 2015

2.	2/25/16	Revised Site Layout
1.	7/27/15	Misc. Revisions
Rev.	Date	Description
PROJECT NO: R-0195-3		
FILE: R-0195-3_FRONTAGE.dwg		
DRAWN BY: TPD		
CHECKED: KAM		
APPROVED BY: GMM		
PRIMARY DRIVE AND SECONDARY DRIVE UTILITIES PLAN AND PROFILE		
SCALE: AS SHOWN		
R-13		

Feb 24, 2016 - 10:03am Plotted By: CHL  
Tighe & Bond, Inc. J:\R0195 Route 11 Investments Rochester, NH\DWG-CAD\DESIGN\0195-3\OFFSITE ROADWAY PLANS\R-0195-3\_FRONTAGE.dwg Layout: UTILS





PLANT SCHEDULE:

GROUNDCOVERS & PERENNIALS:				
CODE	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
JS	JUNIPERUS CHINENSIS 'SARGENTI'	GREEN SARGENT JUNIPER	#3	CONTAINER
DL	HEMEROCALLIS 'STELLA DORO'	STELLA DORO DAYLILY	#2	CONTAINER
SP	SEDUM PURPUREUM 'VERA JAMESON'	VERA JAMESON SEDUM	#2	CONTAINER
RK	ROSA KNOCKOUT	KNOCKOUT ROSE	#3	CONTAINER
PV	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	#3	CONTAINER

ONLY LANDSCAPING SHOWN IN BOLD ON THIS PLAN IS TO BE INCLUDED IN THIS PROJECT.  
ALL OTHER LANDSCAPING IN GRAY IS TO BE FURNISHED AND INSTALLED BY OTHERS.

Granite Ridge  
Development  
District

Frontage Road

Rochester,  
New Hampshire

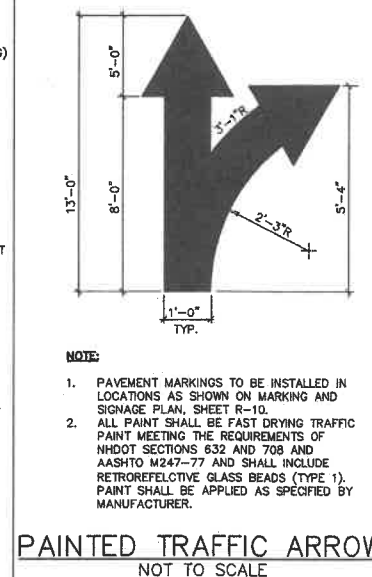
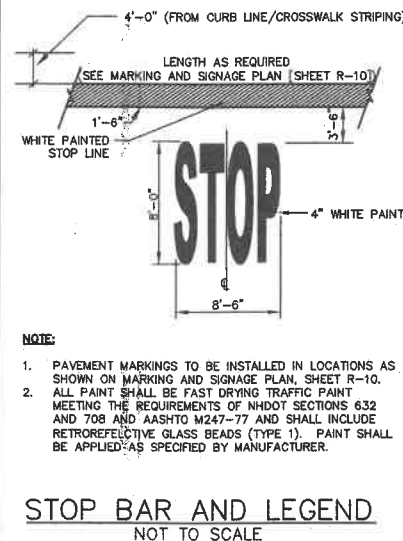
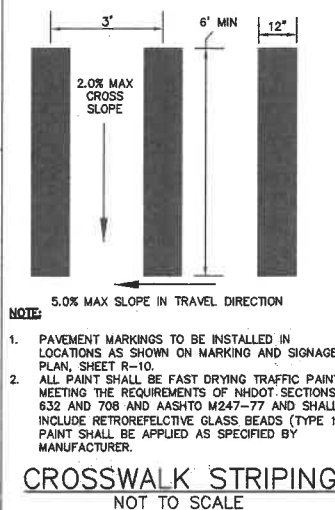
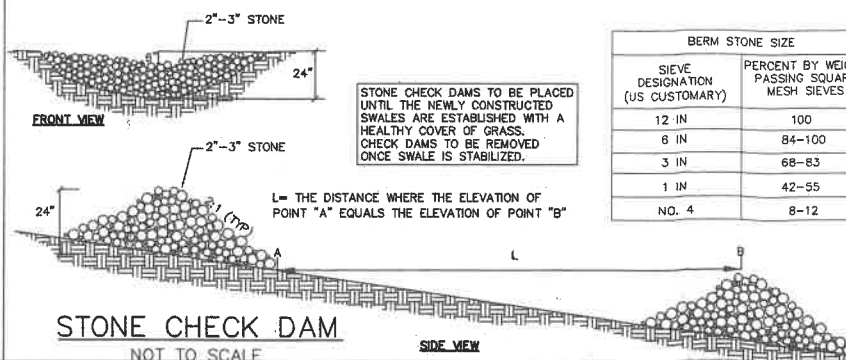
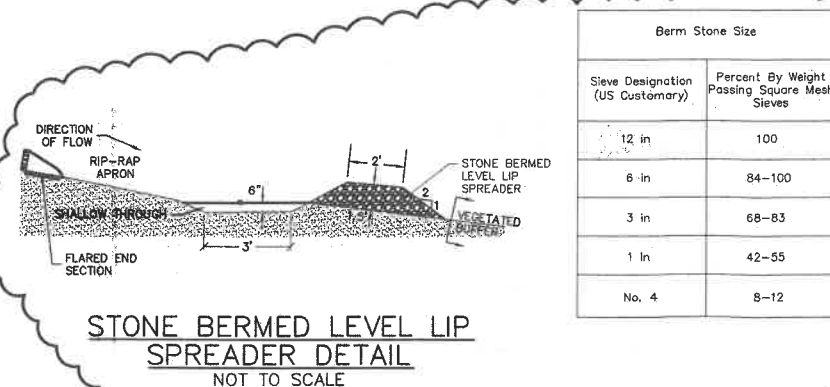
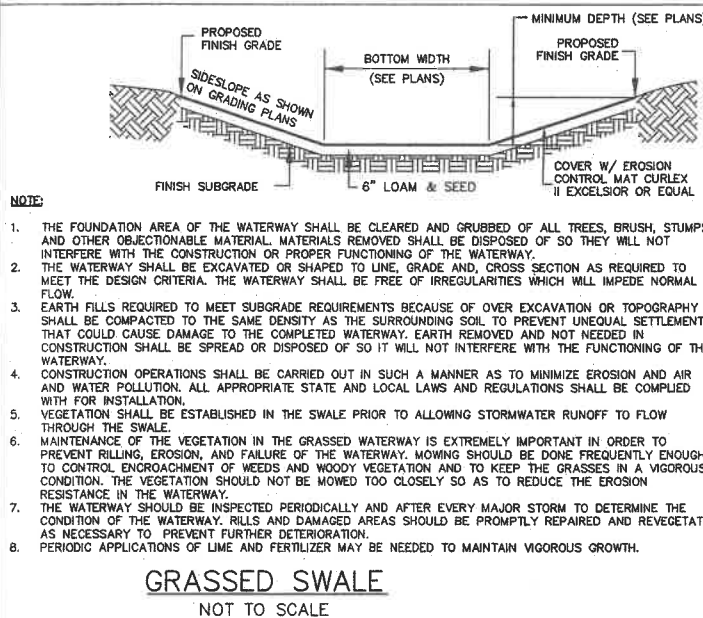
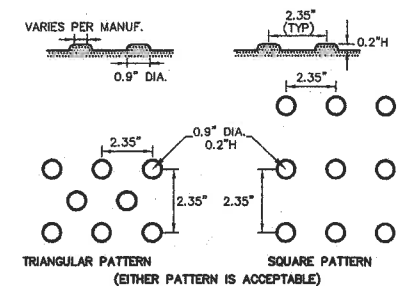
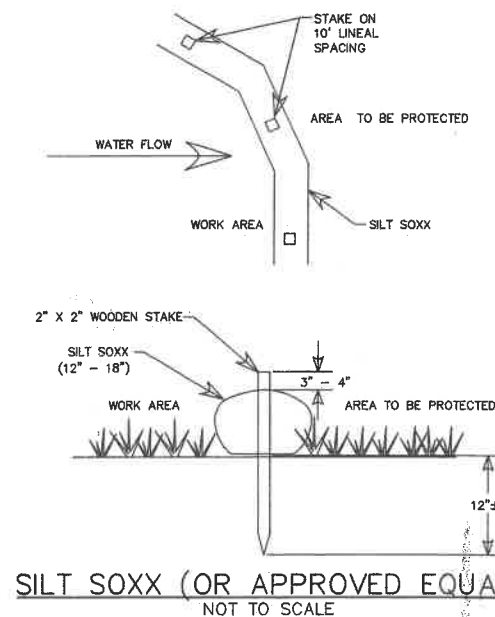
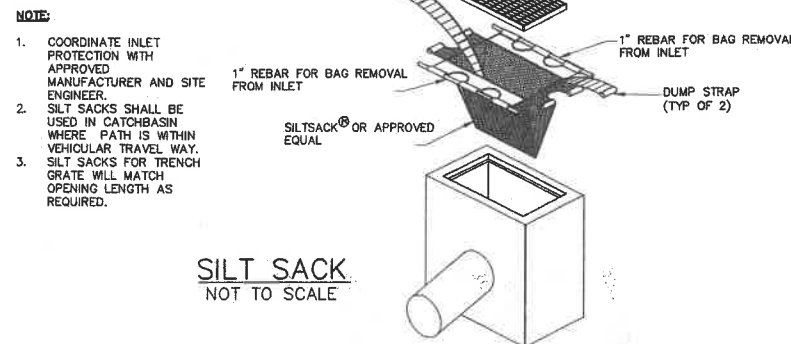
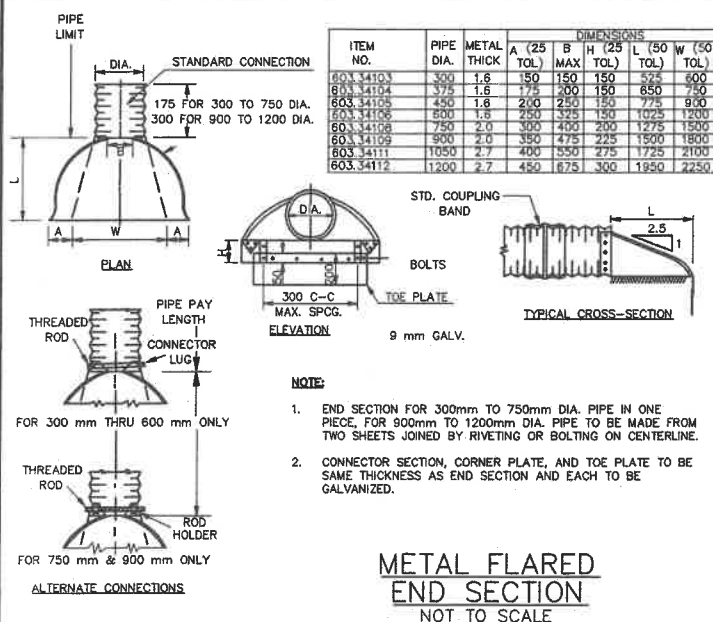
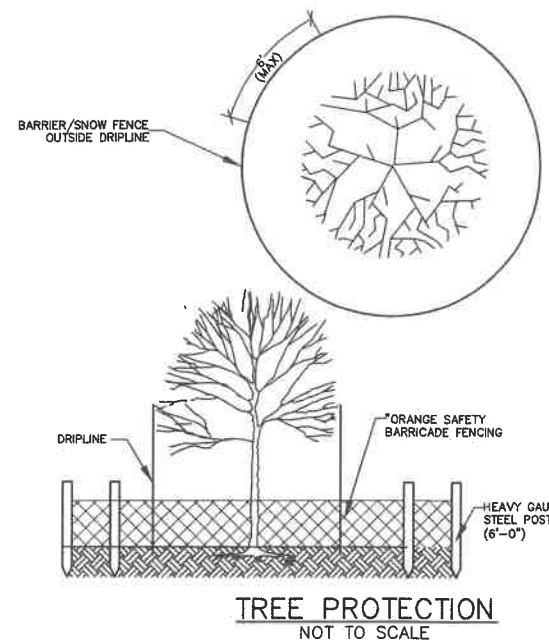
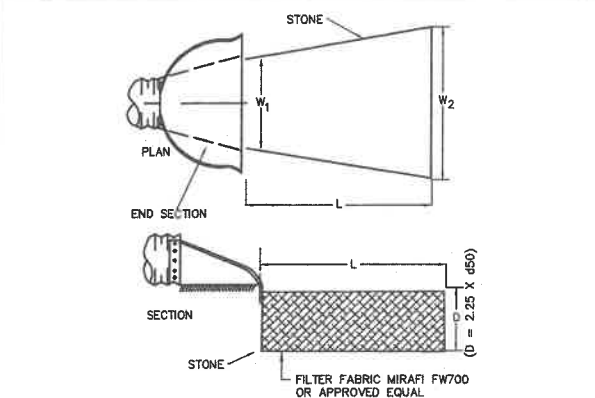
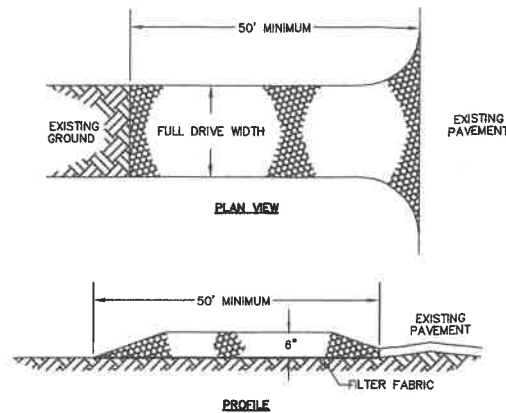
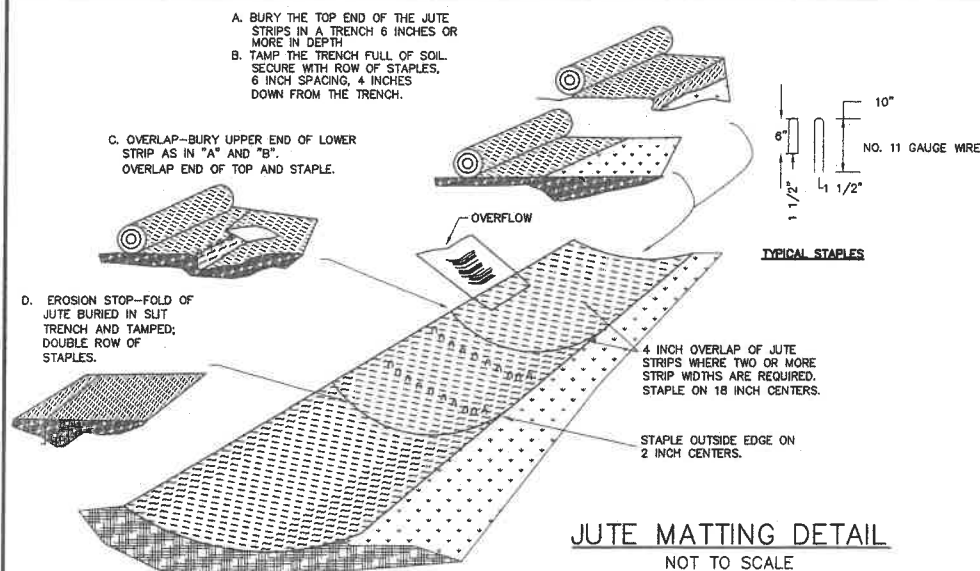
JANUARY 27, 2015

2.	2/25/16	Revised Site Layout
1.	2/20/15	Add Level Spreader Detail
Mark	Date	Description
PROJECT NO: R-0195-3		
FILE: R-0195-3_FRONTAGE.dwg		
DRAWN BY: TPD		
CHECKED: KAM		
APPROVED BY: GMM		

LANDSCAPE PLAN

SCALE: AS SHOWN

R-14



**Granite Ridge Development District**

**Frontage Road**

**Rochester, New Hampshire**

**JANUARY 27, 2015**

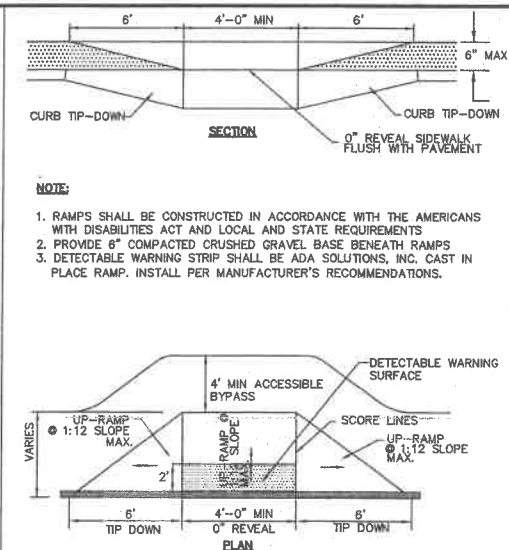
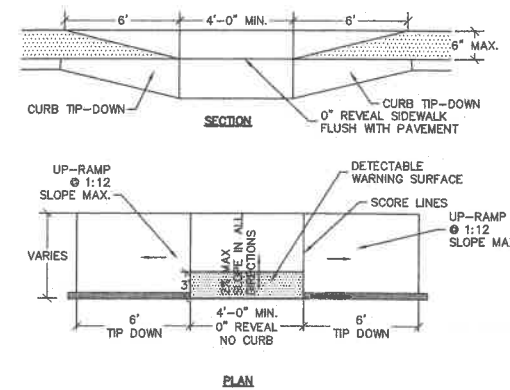
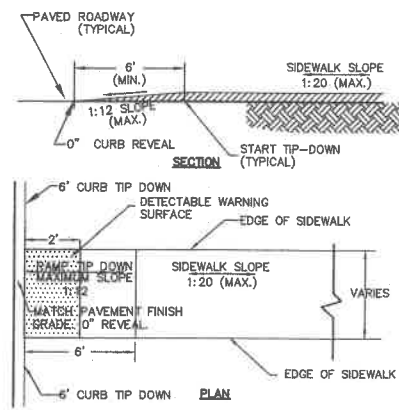
Mark	Date	Description
1.	2/20/15	Add Level Spreader Detail

**DETAILS SHEET**

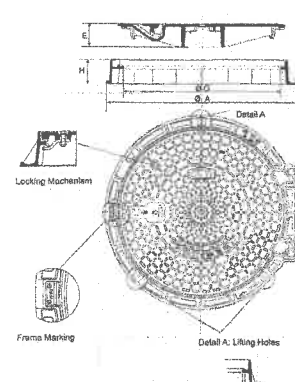
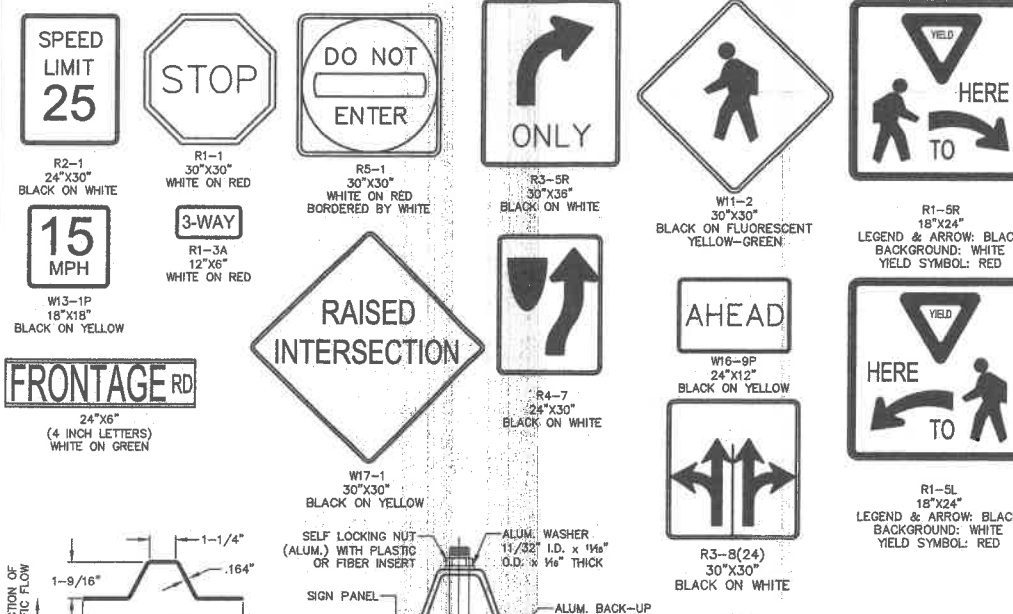
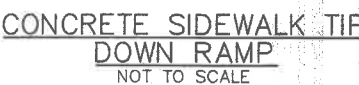
**SCALE: AS SHOWN**

**R-15**



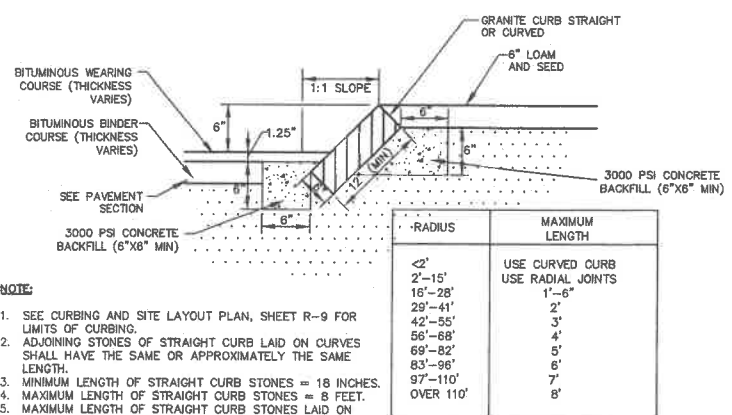


A circular postmark from the State of New Hampshire. The outer ring contains the text "THE STATE OF NEW HAMPSHIRE" at the top and "PROCLAMATION" at the bottom. Inside the ring, the text reads "GREGG M. MINOLATITIES" and "No. 6984". Below this, the date "1.22.15" is stamped. The entire postmark is partially obscured by a large, dark, handwritten signature or scribble.

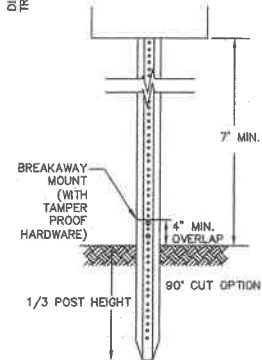


Model	A inches	E inches	H inches	O inches	Reference	Total Weight lbs	Cover Weight lbs
Non-ventilated	40	4 1/4	5	32	COPABOEH	269	162

PAMREX 32-INCH MANHOLE FRAME AND COVER  
NOT TO SCALE



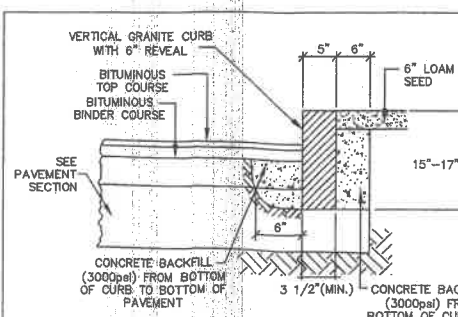
SLOPED GRANITE CURB  
NOT TO SCALE



IN LEDGE DRILL & GROUT TO A MIN OF

POST:  
LENGTH: AS REQUIRED  
WEIGHT PER LINE FOOT: 2.50 LBS (MIN.)  
HOLES: 3/8" DIAMETER, 1" C-C FULL  
STEEL: SHALL CONFORM TO ASTM A-495  
(GRADE 60) OR ASTM A-578  
(GRADE 1070 - 1080)  
FINISH: SHALL BE PAINTED WITH TWO CO.  
OF AN APPROVED MEDIUM GREEN  
PAINT ON OR OVER THE PAINT OF  
WEATHER RESISTANT QUALITY. ALL  
FABRICATION SHALL BE COMPLETE  
BEFORE PAINTING.

SIGN LEGEND AND  
SIGN POST  
NOT TO SCALE

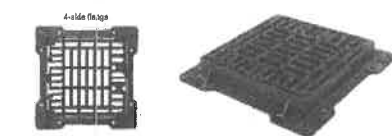


**NOTE:**

1. SEE CURBING AND SITE LAYOUT PLAN, SHEET R-9 FOR LIMITS OF CURBING.
2. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
3. MINIMUM LENGTH OF CURB STONES = 3'
4. MAXIMUM LENGTH OF CURB STONES = 10'
5. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES (SEE CHART).
6. ALL RADII 20 FEET AND SMALLER SHALL BE CONSTRUCTED USING CURVED SECTION

VERTICAL GRANITE CURB  
NOT TO SCALE

RADIUS	MAX. LENGTH
<20'	USE CURVED CURB
21'	3'
22'-28'	4'
29'-35'	5'
36'-42'	6'
43'-49'	7'
50'-56'	8'
57'-60'	9'
OVER 60'	10'



**Sherification:**

- REXUS or similar approved Grating and Frame.
- Gratings and Frames shall be manufactured from Ductile Iron in accordance with ISO 1083.
- Gratings shall incorporate a non-captive hinge system.
- Gratings shall be one-man operable using standard tools and shall be capable of withstanding a minimum load of 100,000 lbs.
- Gratings shall incorporate a spring bar lock as a deterrent to access by children or unauthorized adults. The spring bar lock should automatically activate and deactivate.
- Gratings shall be non-rocking and silent in use.
- Gratings shall be capable of being fitted with additional security devices after installation.
- Gratings will feature raised studs and slots layout for increased hydraulic performance and pedestrian and cyclist safety.
- Waterway area shall not be less than 250 square inches.
- Frame depth shall not exceed 4" and flanges shall incorporate bolt holes.
- All components shall be black coated.

CATCHBASIN FRAME AND GRATE  
NOT TO SCALE

### Granite Ridge Development District

Frontage Road

Rochester,  
New Hampshire

JANUARY 27, 2015

Mark	Date	Description
PROJECT NO:		R-0195-3
FILE:		R-0195-3_FR_DETAILS.DWG
DRAWN BY:		TPD
CHECKED:		KAM
APPROVED BY:		GMM

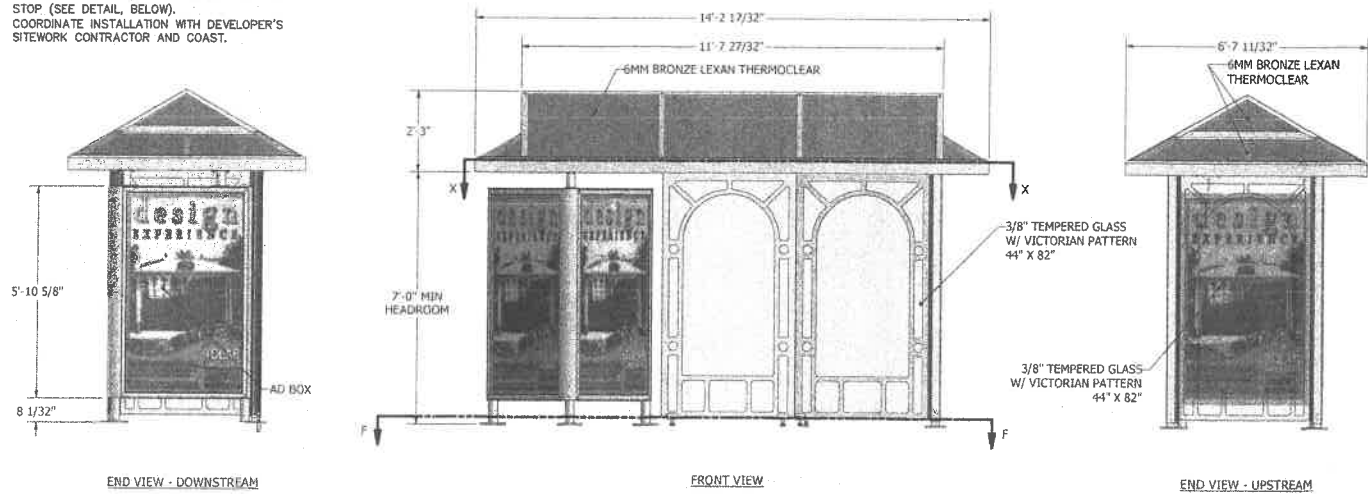
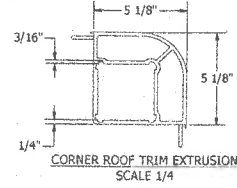
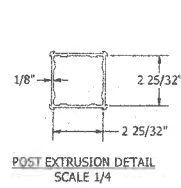
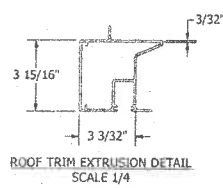
DETAILS SHEET

SCALE: AS SHOWN

B-16

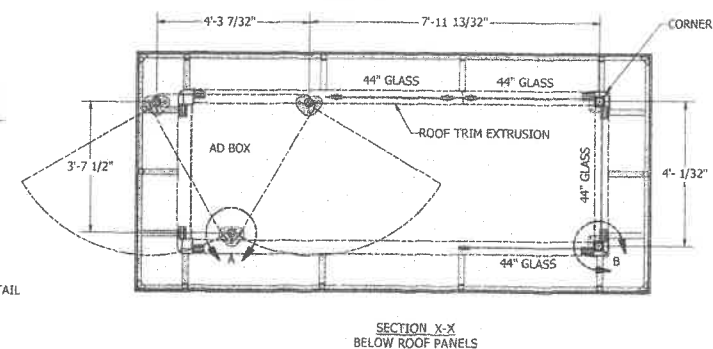
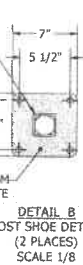
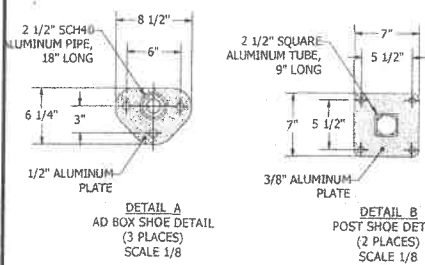
**NOTE:**

1. ALL STRUCTURAL STEEL, UNLESS OTHERWISE NOTED, SHALL BE ASTM A-36, MINIMUM YIELD STRENGTH 36,000 PSI.
2. ALL STEEL PIPE, UNLESS OTHERWISE NOTED, SHALL BE ASTM A500 (GRADE B) OR BETTER.
3. ALL STRUCTURAL STEEL, UNLESS OTHERWISE NOTED, SHALL BE OF ALLOY 6063-T5.
4. ALL HOLES SHALL BE DRILLED OR PUNCHED.
5. STEEL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STANDARD D1 1-98.
6. ALUMINUM WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STANDARD D1 2-97.
7. ALL WELDING TO BE DONE AT TOUR MANUFACTURING CO., INC. FACILITY.
8. CONCRETE PAD SHALL BE PROVIDED FOR BUS STOP (SEE DETAIL, BELOW).
9. COORDINATE INSTALLATION WITH DEVELOPER'S SITEWORK CONTRACTOR AND COAST.

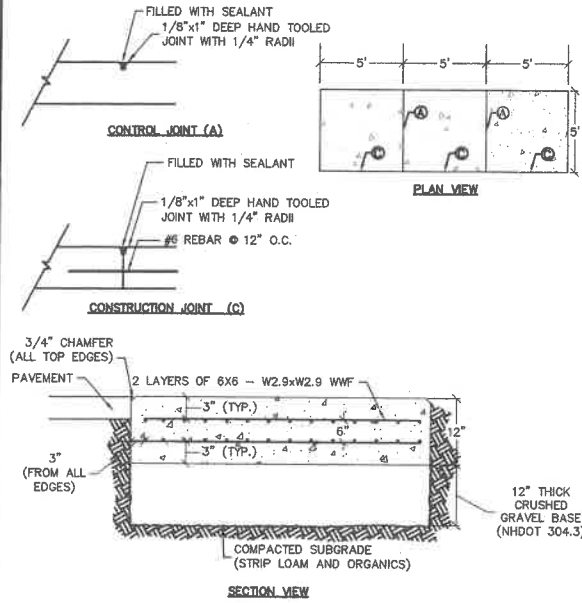


END VIEW - UPSTREAM

END VIEW - DOWNSTREAM



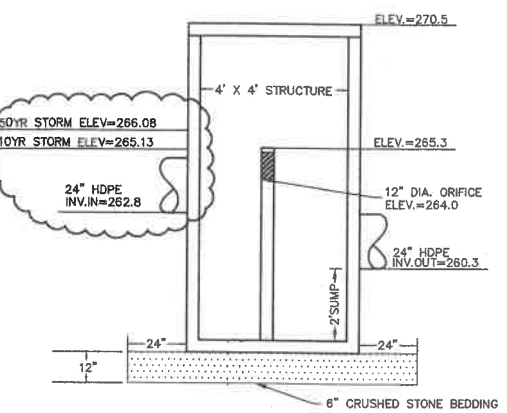
**BUS STOP**  
NOT TO SCALE



**NOTE:**

1. CONCRETE TO BE 4500 PSI, 7% AIR ENTRAINMENT.
2. STANDARD BROOM FINISH.

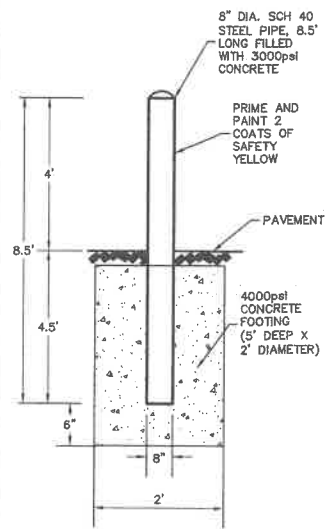
**CONCRETE PAD**  
NOT TO SCALE



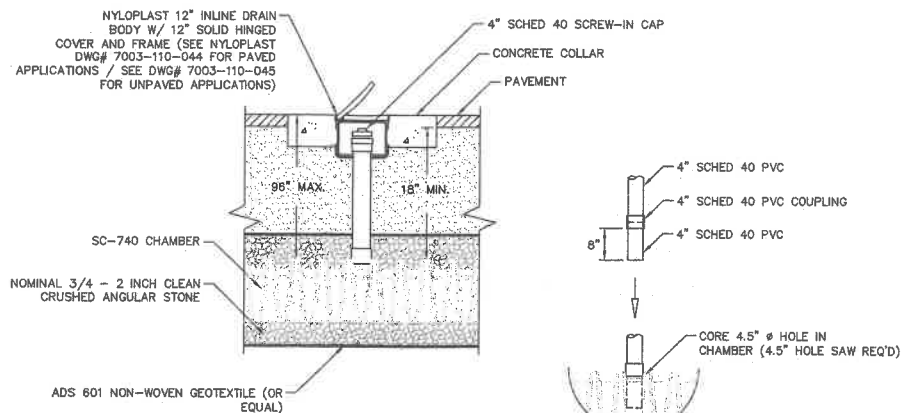
**NOTE:**

1. ALL JOINTS ON THE OUTLET STRUCTURE AND PIPING SHALL BE WATERTIGHT.
2. WATER SURFACE ELEVATIONS BASED ON NORMAL OPERATION OF BASIN.
3. ALL INLET AND OUTLETS FOR THE STRUCTURE TO HAVE REBAR SCREEN.

**OUTLET 5**  
NOT TO SCALE



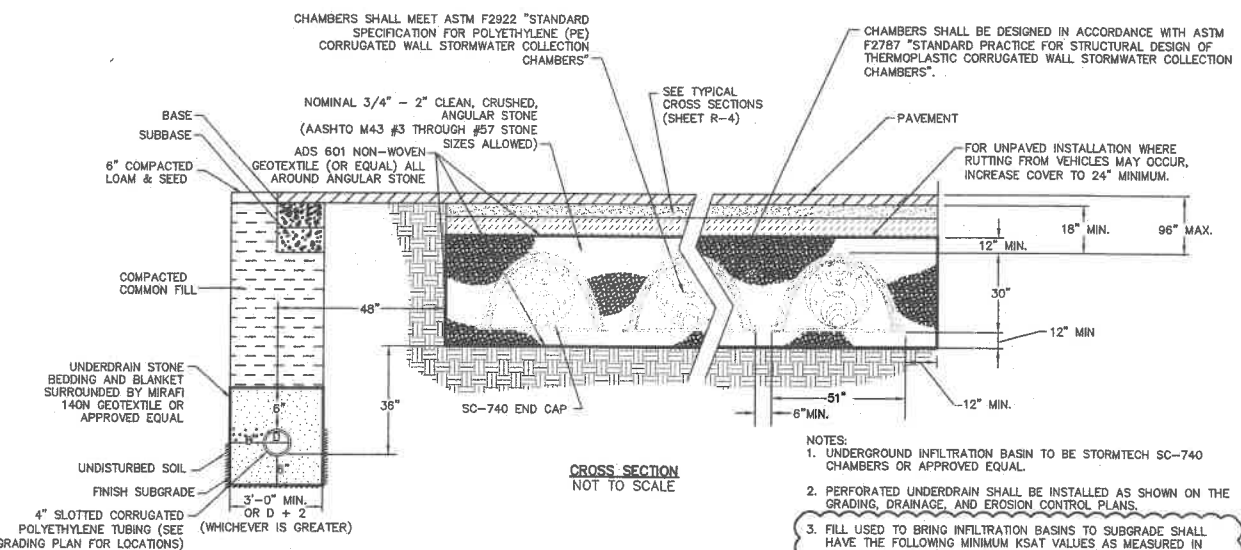
**BOLLARD DETAIL**  
NOT TO SCALE



**NOTE:**

1. INSPECTION PORT MUST BE CONNECTED THROUGH KNOCK-OUT LOCATED AT CENTER OF CHAMBER.
2. ALL SCHEDULE 40 FITTINGS TO BE SOLVENT CEMENTED.

**INSPECTION PORT DETAIL**



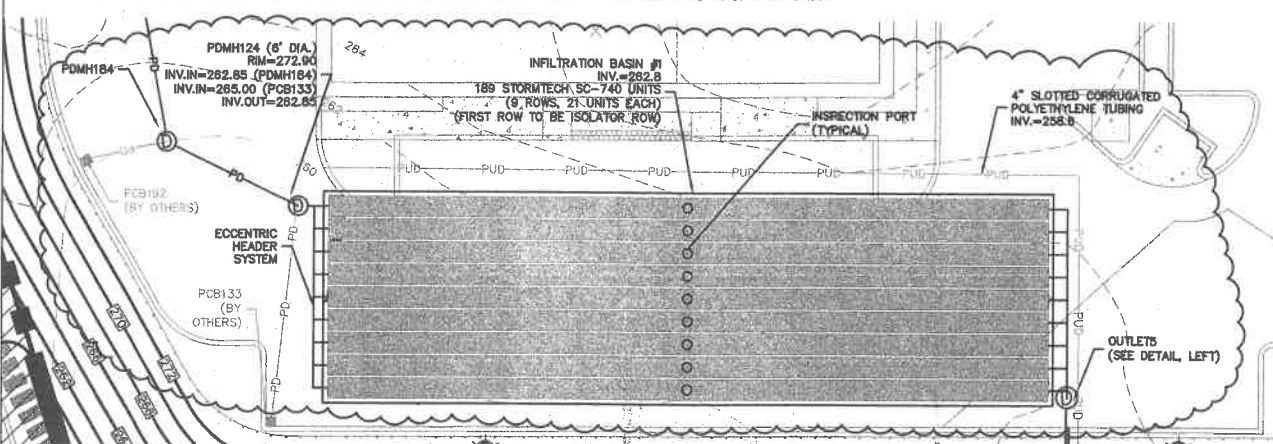
**CROSS SECTION**  
NOT TO SCALE

**NOTES:**

1. UNDERGROUND INFILTRATION BASIN TO BE STORMTECH SC-740 CHAMBERS OR APPROVED EQUAL.
2. PERFORATED UNDERDRAIN SHALL BE INSTALLED AS SHOWN ON THE GRADING, DRAINAGE, AND EROSION CONTROL PLANS.
3. FILL USED TO BRING INFILTRATION BASINS TO SUBGRADE SHALL HAVE THE FOLLOWING MINIMUM K<sub>sat</sub> VALUES AS MEASURED IN PLACE (AND IN ACCORDANCE WITH NHDES ENV-WQ 1504.13 (G), COMPACTED TO MIN. 95% (ASTM D-1557):  
INFILTRATION BASIN #1: 5.0 INCHES PER HOUR

**NOTE:**

1. INSTALLING CONTRACTORS ARE REQUIRED TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
2. STORMTECH'S TECHNICAL SERVICES DEPARTMENT OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. THE TECHNICAL SERVICES REPRESENTATIVE MUST BE CONTACTED AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE-INSTALLATION CONSULTATION. CALL 1-888-892-2694 TO SPEAK TO A TECHNICAL SERVICE REPRESENTATIVE OR VISIT WWW.STORMTECH.COM TO RECEIVE A COPY OF THE INSTALLATION INSTRUCTIONS.
3. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE DESIGN ENGINEER.
4. AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS INDICATED IN THE PROJECT PLANS.
5. STONE PLACEMENT BETWEEN CHAMBERS AND ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
6. BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
7. THE CONTRACTOR MUST REFER TO STORMTECH'S INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE AT STORMTECH'S WEBSITE: WWW.STORMTECH.COM. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEED STORMTECH'S REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE STORMWATER SYSTEM. DURING CONSTRUCTION TEMPORARY FENCING, WARNING TAPE, AND APPROPRIATELY LOCATED SIGNS ARE COMMONLY USED TO PREVENT UNAUTHORIZED VEHICLES FROM ENTERING SENSITIVE CONSTRUCTION AREAS.
8. THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES.
9. PER NHDES ALTERATION OF TERRAIN BUREAU, OWNER IS REQUIRED TO SUBMIT NOTIFICATION TO NHDES UPON THE COMPLETION OF CONSTRUCTION. NOTIFICATION IS REQUIRED TO INCLUDE A CERTIFICATION BY A NEW HAMPSHIRE LICENSED ENGINEER INDICATING THE INFILTRATION BASIN WAS CONSTRUCTED IN CONFORMANCE WITH PLAN AND SPECIFICATIONS. CONTRACTOR SHALL SCHEDULE APPROPRIATE OBSERVATIONS WITH ENGINEER PRIOR TO BACKFILLING THE INFILTRATION BASIN.



**PLAN VIEW**  
1" = 20'

**INFILTRATION BASIN #1**



**Granite Ridge Development District**

Frontage Road

Rochester, New Hampshire

January 27, 2015

2.	8/3/15	Revised Infiltration Basin Detail
1.	2/20/15	Add Inspection Ports
Mark	Date	Description
PROJECT NO: R-0195-3		
FILE: R-0195-3_FR_DETAILS.DWG		
DRAWN BY: TPD		
CHECKED: KAM		
APPROVED BY: GMM		

DETAILS SHEET

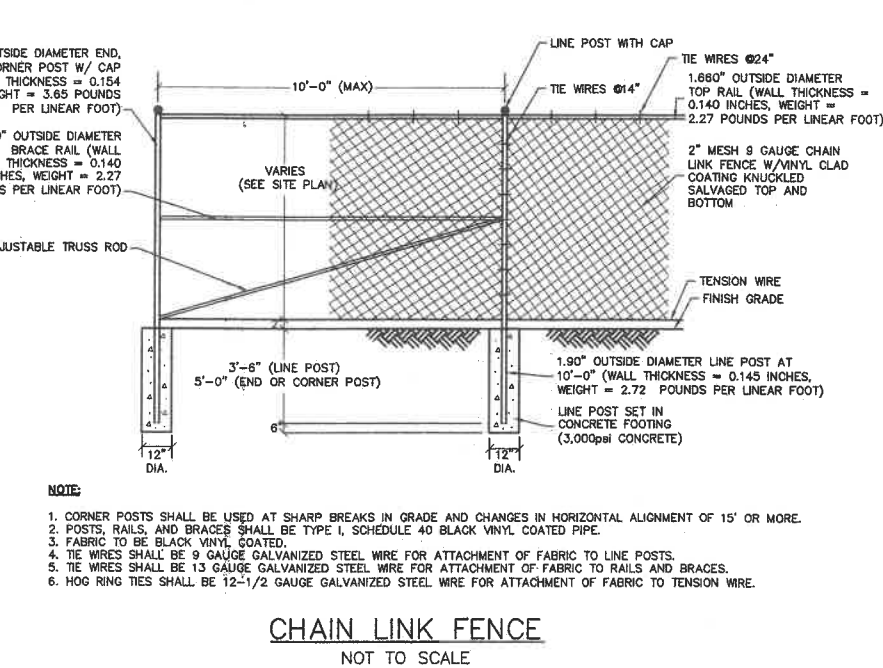
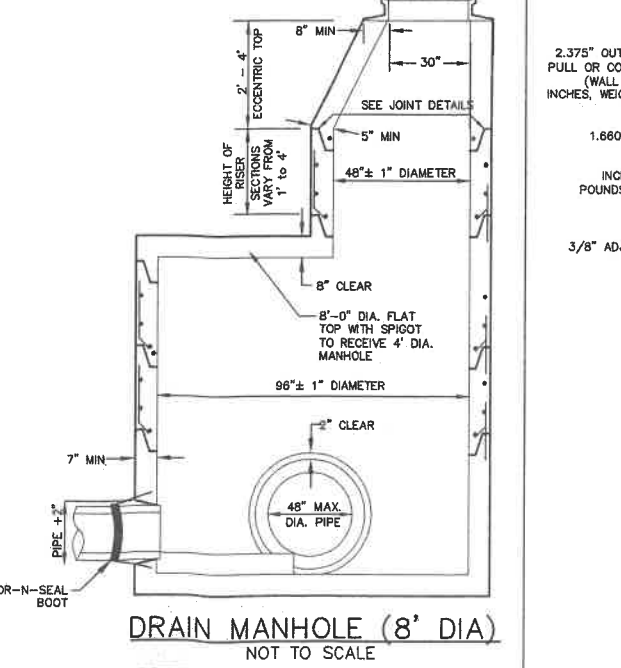
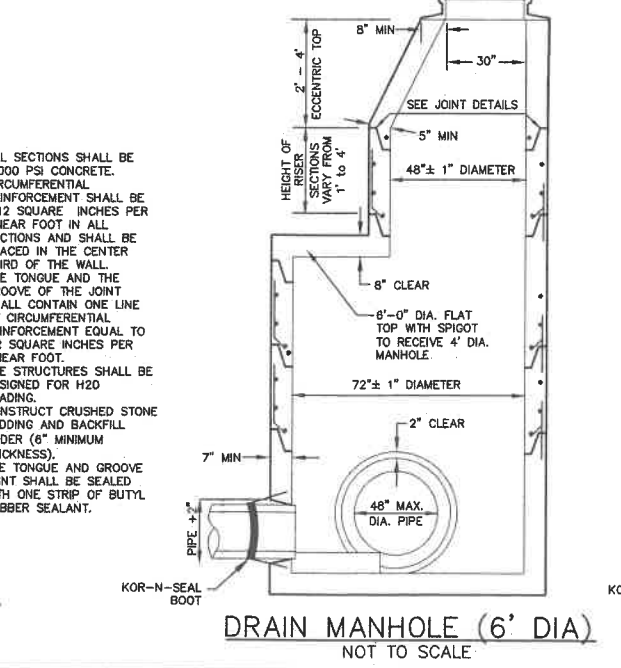
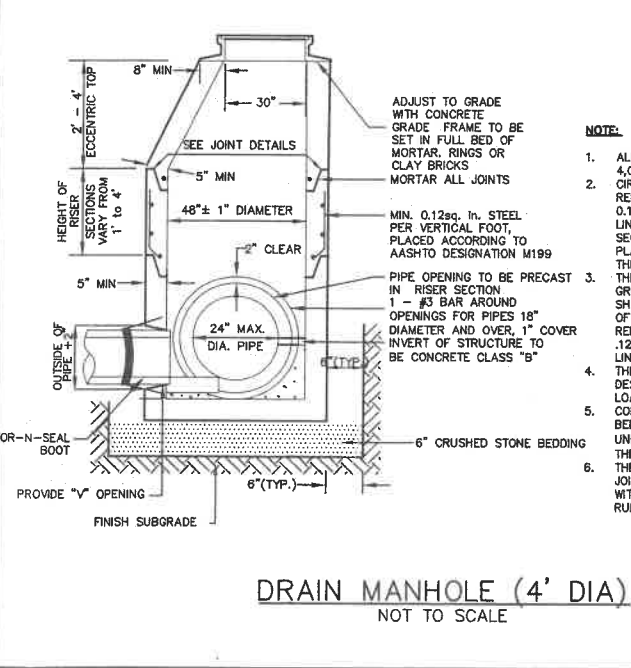
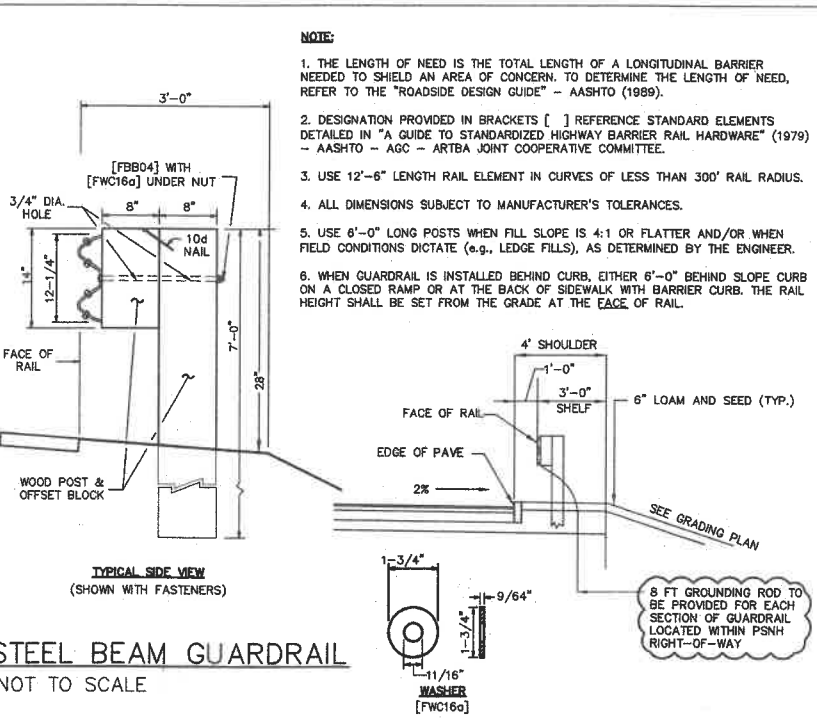
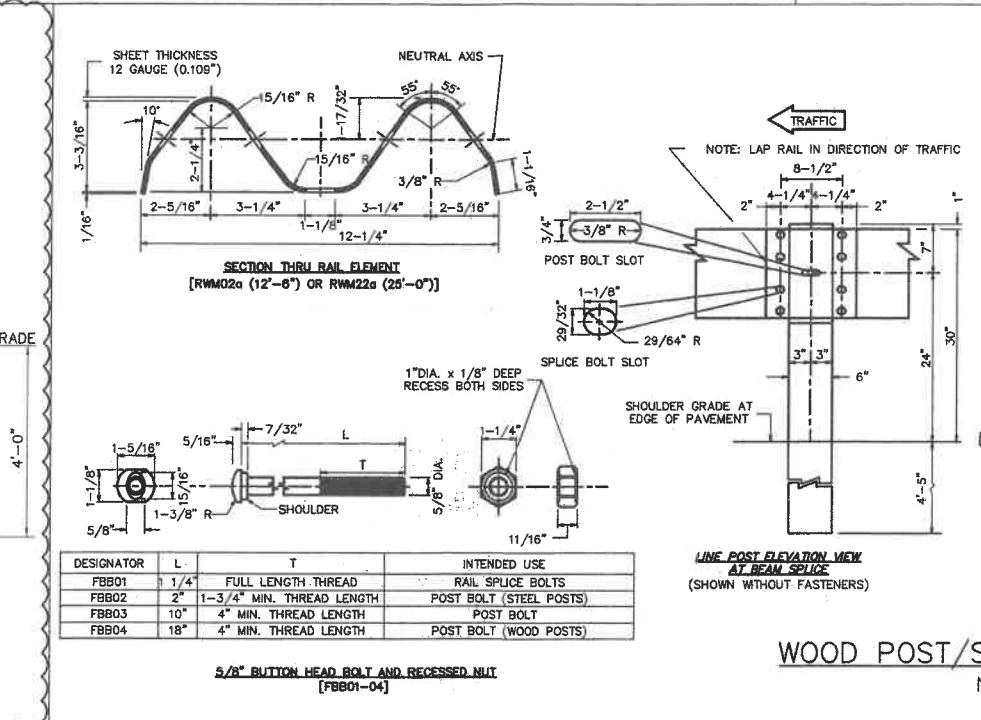
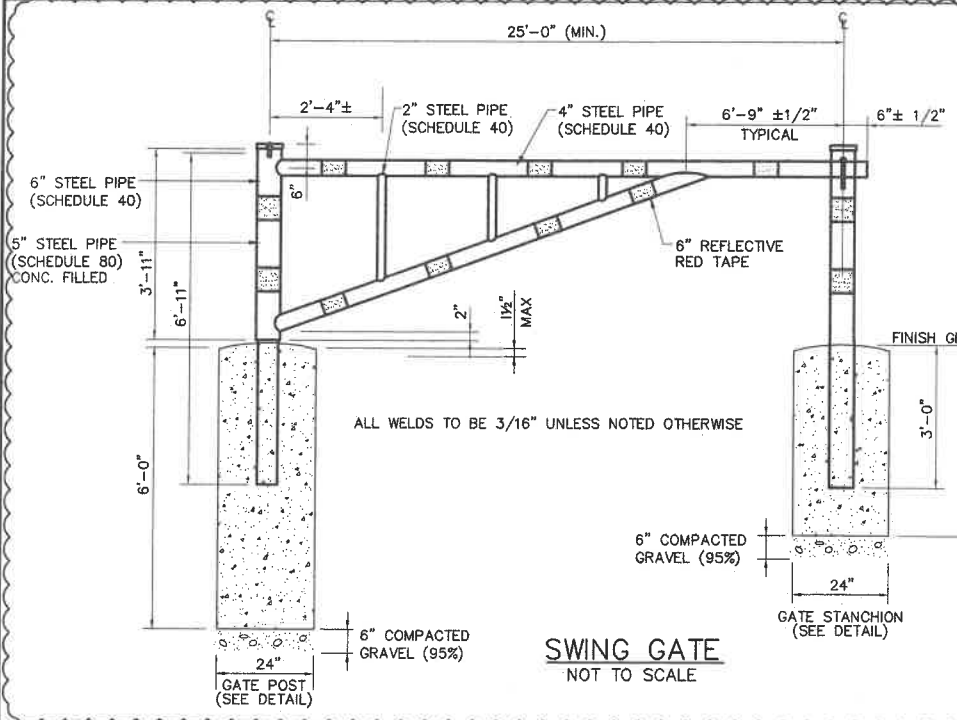
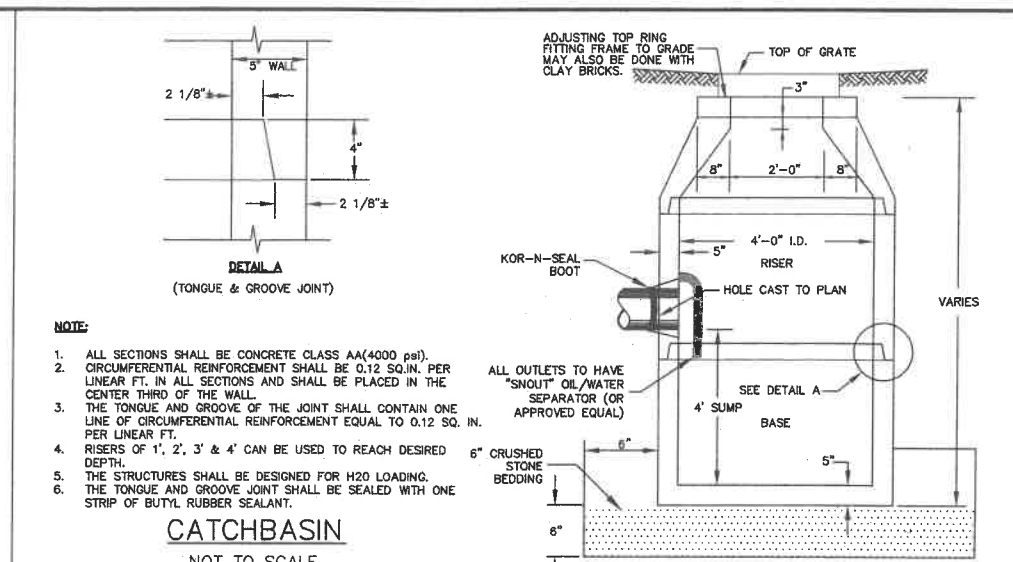
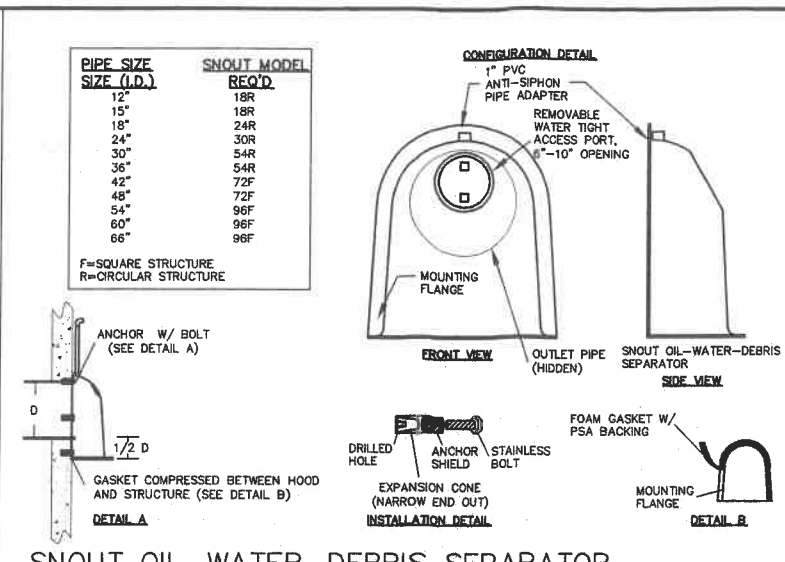
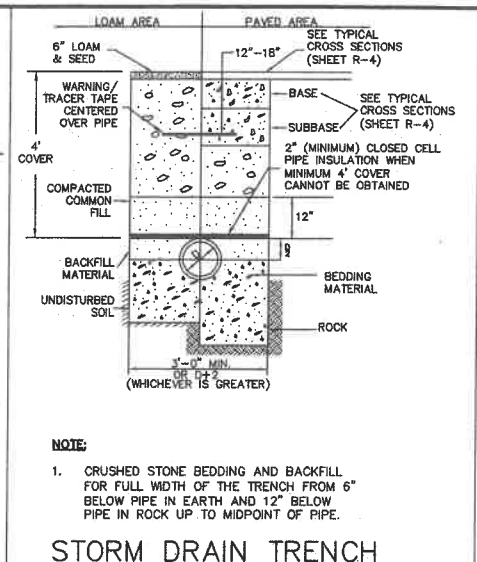
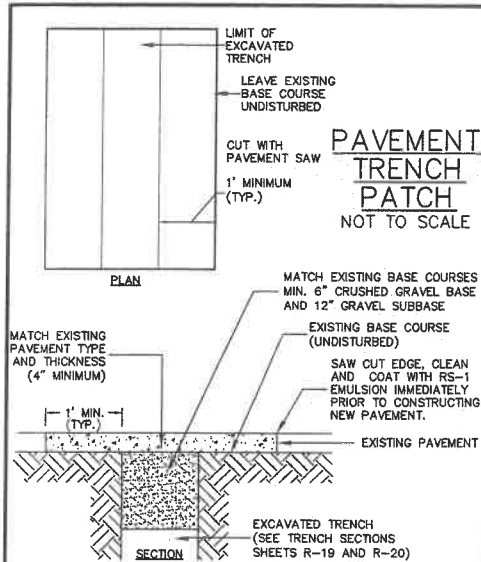
SCALE: AS SHOWN

R-17





Feb 20, 2015 1:32pm Plotted By: ksm  
Tighe & Bond, Inc. \\nvg\projects\R0195-3\OFFSITE ROADWAY PLANS\R-0195-3\_FR\_DETAILS.DWG Layout: R-19



**Tighe & Bond**  
Consulting Engineers  
www.tighebond.com

THE STATE OF NEW HAMPSHIRE  
GREGG M. MIKOLAITIS  
No. 6884  
LICENSED PROFESSIONAL ENGINEER  
2-20-15

THE STATE OF NEW HAMPSHIRE  
KENNETH A. MAMBOGEORGE  
No. 13308  
LICENSED PROFESSIONAL ENGINEER  
1-20-15

**Granite Ridge Development District**

Frontage Road

Rochester, New Hampshire

JANUARY 27, 2015

Mark	Date	Description
1.	2/20/15	Added gate detail.

PROJECT NO: R-0195-3  
FILE: R-0195-3\_FR\_DETAILS.DWG  
DRAWN BY: TPD  
CHECKED BY: KAM  
APPROVED BY: GMM

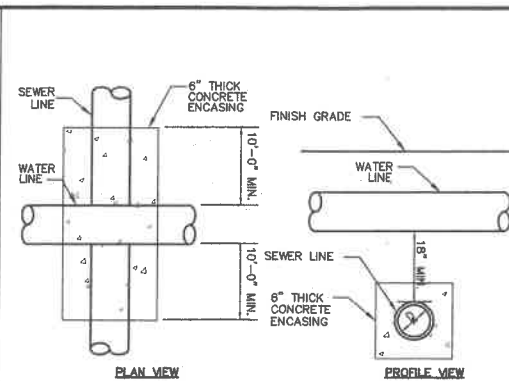
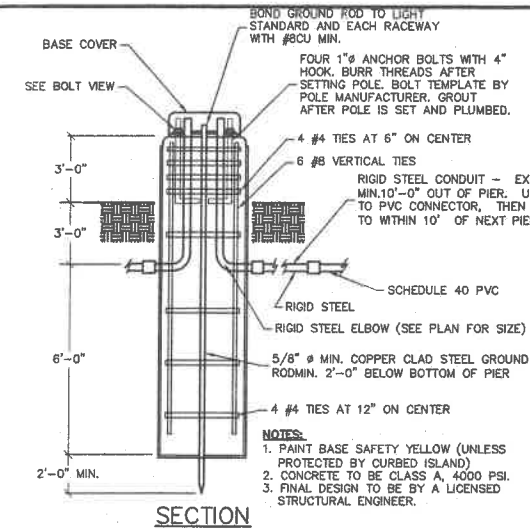
DETAILS SHEET

SCALE: AS SHOWN

R-19

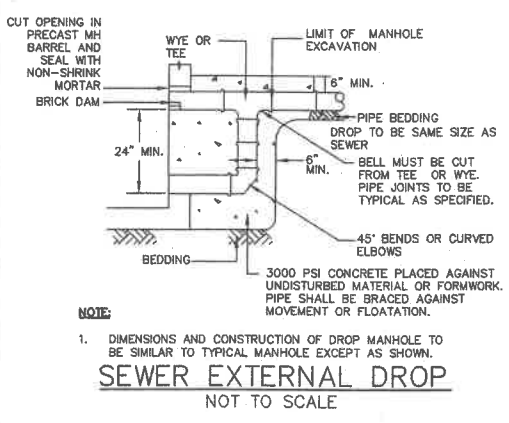
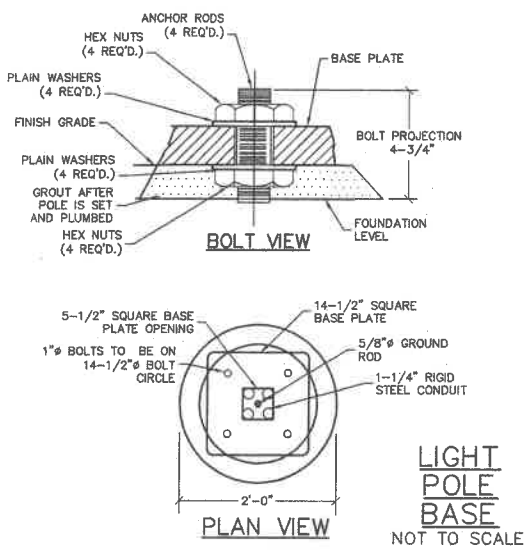


Feb 20, 2015 1:33pm Plotted By: KAM  
Tighe & Bond, Inc. W:\projects\RD195-3\RD195-3\_FR\_DETAILS.DWG Layout: R-20



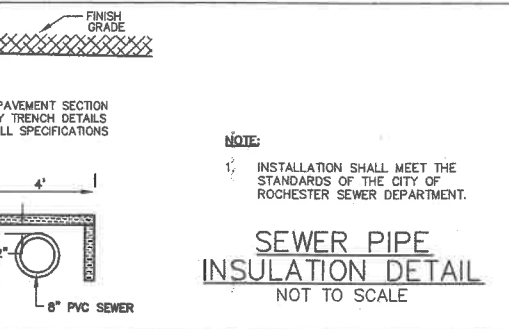
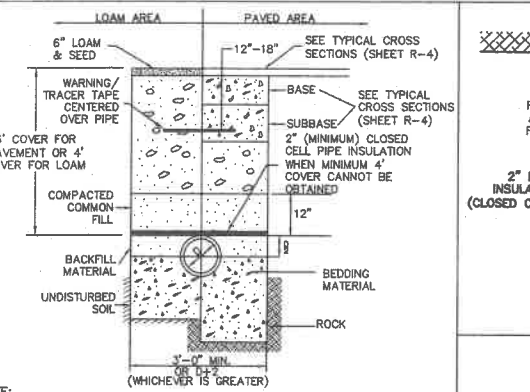
**NOTE:**  
1. A 10-FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18" MINIMUM OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER AND SANITARY SEWER CROSSINGS. WHERE SEWER AND WATER CROSS, ENCASE SEWER IN CONCRETE 6" THICK OR SUBSTITUTE RUBBER GASKETED PRESSURE PIPE WITH JOINTS FOR A MINIMUM DISTANCE OF 10 FEET EACH SIDE OF THE CROSSING. CROSSING SHALL CONFORM TO CITY OF ROCHESTER WATER DEPARTMENT STANDARDS AND SPECIFICATIONS.

**WATER AND SEWER CROSSING**  
NOT TO SCALE



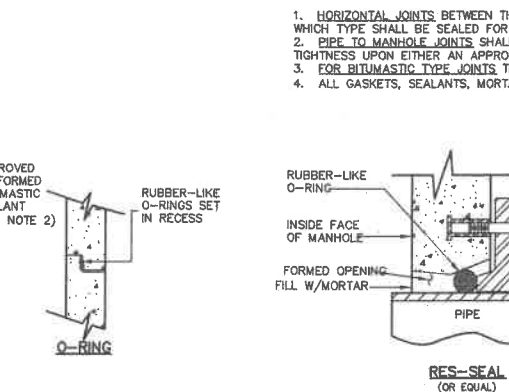
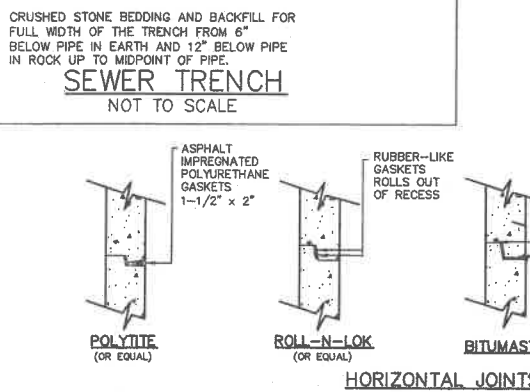
**NOTE:**  
1. DIMENSIONS AND CONSTRUCTION OF DROP MANHOLE TO BE SIMILAR TO TYPICAL MANHOLE EXCEPT AS SHOWN.

**SEWER EXTERNAL DROP**  
NOT TO SCALE



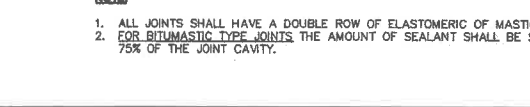
**NOTE:**  
1. INSTALLATION SHALL MEET THE STANDARDS OF THE CITY OF ROCHESTER SEWER DEPARTMENT.

**SEWER PIPE INSULATION DETAIL**  
NOT TO SCALE



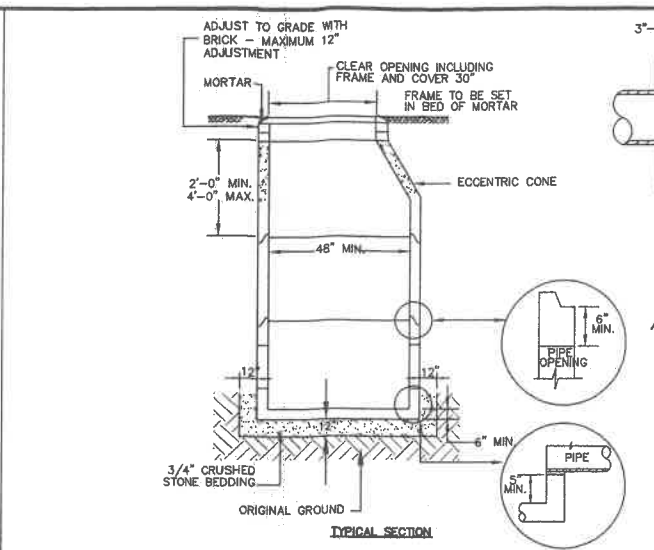
**NOTE:**  
1. CRUSHED STONE BEDDING AND BACKFILL FOR FULL WIDTH OF THE TRENCH FROM 6" BELOW PIPE IN EARTH AND 12" BELOW PIPE IN ROCK UP TO MIDPOINT OF PIPE.

**SEWER TRENCH**  
NOT TO SCALE

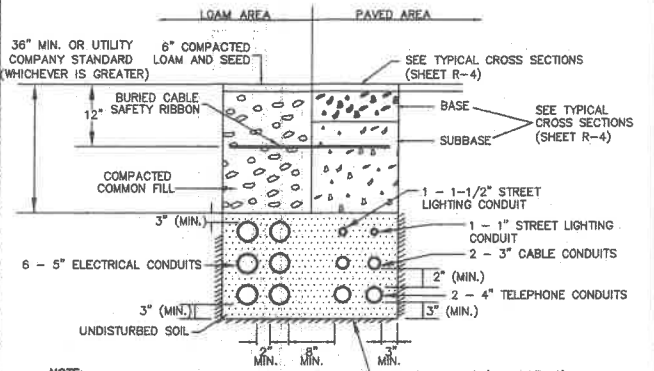


**NOTE:**  
1. ALL JOINTS SHALL HAVE A DOUBLE ROW OF ELASTOMERIC OR MASTIC-LIKE SEALANT.  
2. FOR BITUMASTIC TYPE JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY.

**HORIZONTAL JOINTS**  
NOT TO SCALE

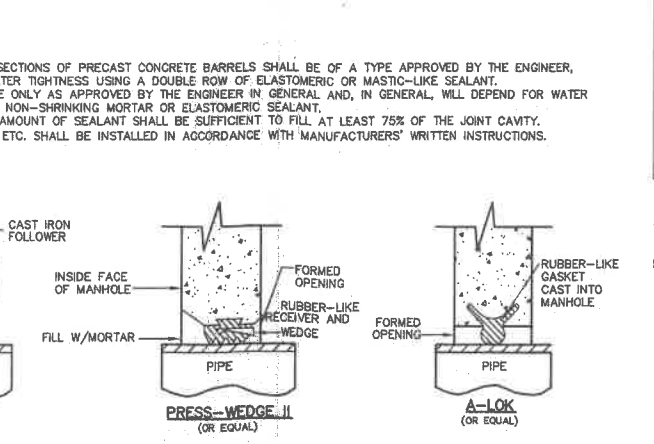


**SEWER MANHOLE**  
NOT TO SCALE

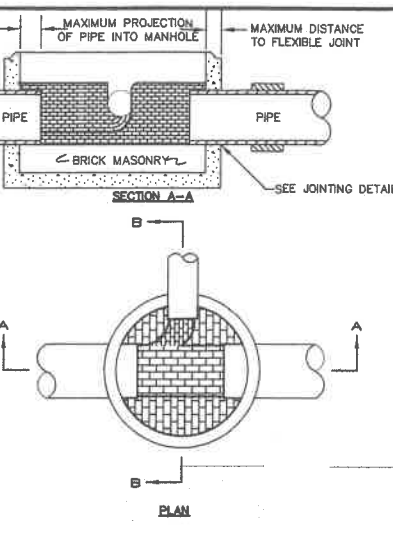


**NOTE:**  
1. NUMBER, MATERIAL, AND SIZE OF UTILITY CONDUITS TO BE DETERMINED BY LOCAL UTILITY OR AS SHOWN ON ELECTRICAL DRAWINGS. CONTRACTOR TO PROVIDE ONE SPARE CONDUIT FOR EACH UTILITY TO BUILDING.  
2. DIMENSIONS SHOWN REPRESENT OWNERS MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS MAY BE GREATER BASED ON UTILITY COMPANY STANDARDS, BUT SHALL NOT BE LESS THAN THOSE SHOWN.  
3. NO CONDUIT RUN SHALL EXCEED 360 DEGREES IN TOTAL BENDS.  
4. A SUITABLE PULLING STRING, CAPABLE OF 200 POUNDS OF PULL, MUST BE INSTALLED IN THE CONDUIT BEFORE UTILITY COMPANY IS NOTIFIED TO INSTALL CABLE. THE STRING SHOULD BE BLOWN INTO THE CONDUIT AFTER THE RUN IS ASSEMBLED TO AVOID BONDING THE STRING TO THE CONDUIT.  
5. UTILITY COMPANY MUST BE GIVEN THE OPPORTUNITY TO INSPECT THE CONDUIT PRIOR TO BACKFILL. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS SHOULD THE UTILITY COMPANY BE UNABLE TO INSTALL ITS CABLE IN A SUITABLE MANNER.  
6. ALL CONDUIT INSTALLATIONS MUST CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC SAFETY CODE, STATE AND LOCAL CODES AND ORDINANCES, AND, WHERE APPLICABLE, THE NATIONAL ELECTRIC CODE.  
7. ALL 60" SWEEPS WILL BE MADE USING RIGID GALVANIZED STEEL SWEEPS WITH A 36 TO 48 INCH RADIUS.  
8. SAND BEDDING TO BE REPLACED WITH CONCRETE ENCASEMENT WHERE COVER IS LESS THAN 3 FEET, WHEN LOCATED BELOW PAVEMENT, OR WHERE SHOWN ON THE UTILITIES PLAN AND PROFILE SHEETS R-11, THROUGH R-13.

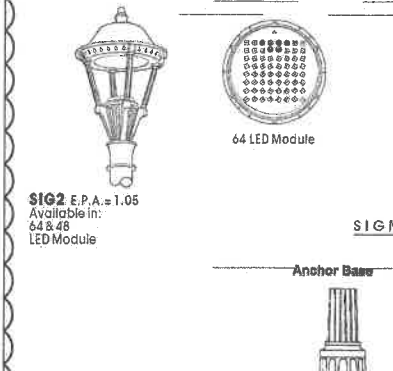
**ELECTRICAL AND COMMUNICATION CONDUIT**  
NOT TO SCALE



**SEWER MANHOLE JOINTS**  
NOT TO SCALE

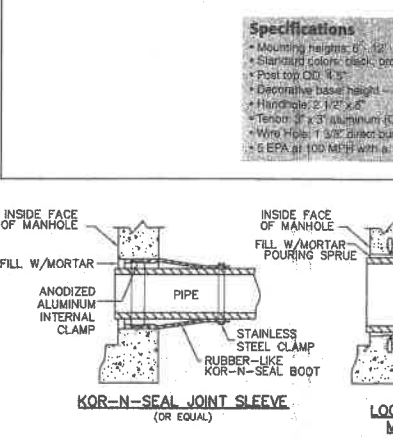


**SEWER MANHOLE**  
NOT TO SCALE

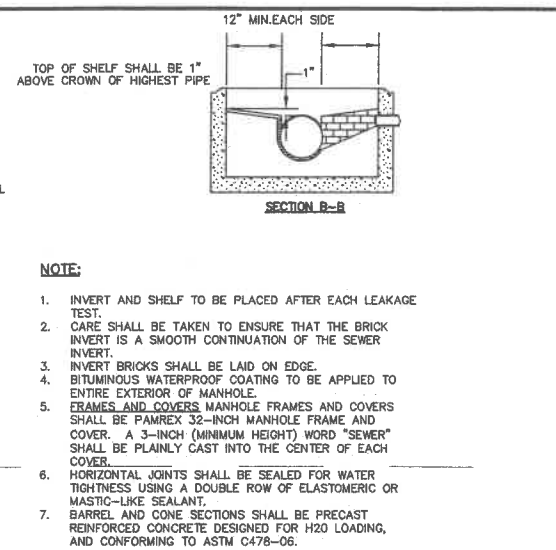


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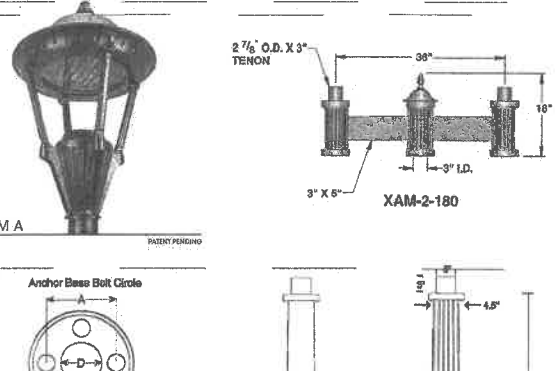
**ELECTRICAL AND COMMUNICATION CONDUIT**  
NOT TO SCALE



**SEWER MANHOLE JOINTS**  
NOT TO SCALE

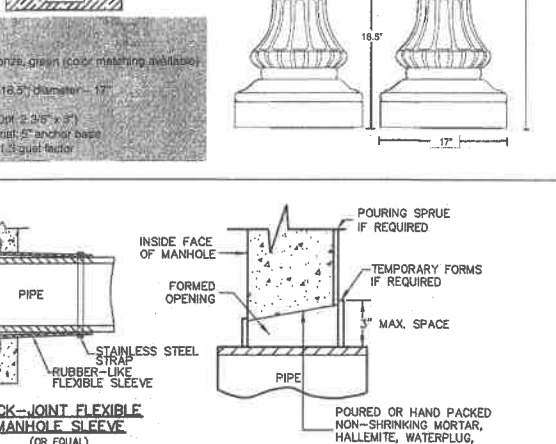


**SEWER MANHOLE**  
NOT TO SCALE



**NOTE:**  
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**ELECTRICAL AND COMMUNICATION CONDUIT**  
NOT TO SCALE



**SEWER MANHOLE JOINTS**  
NOT TO SCALE

**PIPE TO MANHOLE JOINTS**

**Tighe & Bond**  
Consulting Engineers  
www.tighebond.com

THE STATE OF NEW HAMPSHIRE  
GREGG M. NIKOLAITIES  
No. 6994  
LICENSED PROFESSIONAL ENGINEER  
2-2015

THE STATE OF NEW HAMPSHIRE  
KENNETH A. MAVROGEORGOS  
No. 13368  
LICENSED PROFESSIONAL ENGINEER  
2-2015

**Granite Ridge Development District**  
  
Frontage Road  
  
Rochester, New Hampshire

JANUARY 27, 2015

1.	2/20/15	Revise Conduit Bank
Mark	Date	Description
PROJECT NO:	R-0195-3	
FILE:	R-0195-3_FR_DETAILS.DWG	
DRAWN BY:	TPD	
CHECKED BY:	KAM	
APPROVED BY:	GMM	

DETAILS SHEET

SCALE: AS SHOWN

R-20



Granite Ridge  
Development  
District

Frontage Road

Rochester,  
New Hampshire

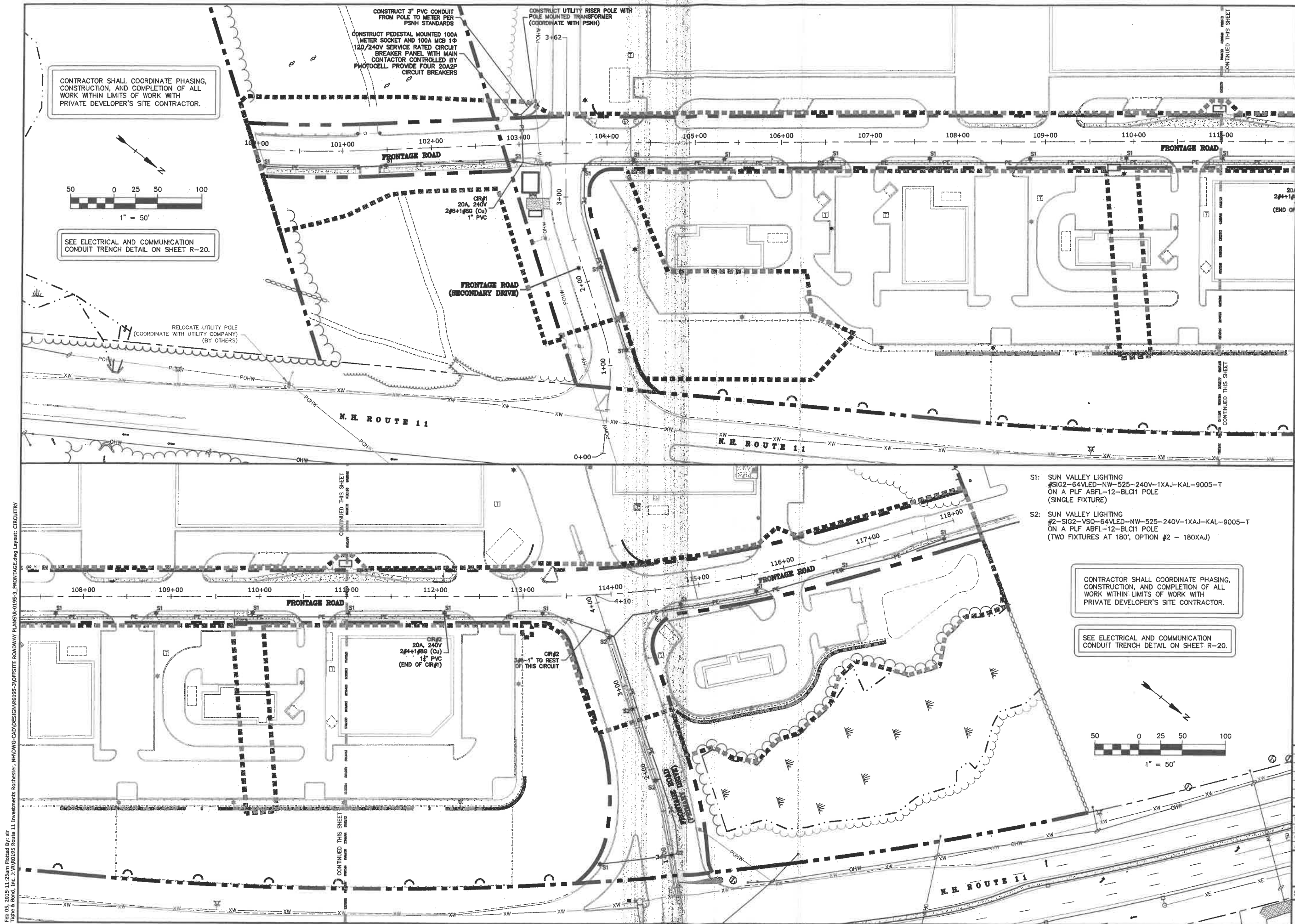
JANUARY 27, 2015

Mark	Date	Description
PROJECT NO:	R-0195-3	
FILE:	R-0195-3_FRONTAGE.dwg	
DRAWN BY:	TPD	
CHECKED:	KAM	
APPROVED BY:	GMM	

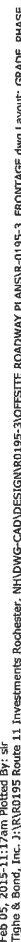
STREET LIGHT  
CIRCUITRY PLAN

SCALE: AS SHOWN

R-22







R-23



Granite Ridge  
Development  
District

Frontage Road

Rochester,  
New Hampshire

JANUARY 27, 2015

Mark	Date	Description
PROJECT NO:	R-0195-3	
FILE:	R-0195-3_FR_DETAILS.DWG	
DRAWN BY:	TPD	
CHECKED:	KAM	
APPROVED BY:	GMM	

ALTERNATE 1 GRADING DETAILS

SCALE: AS SHOWN

R-24

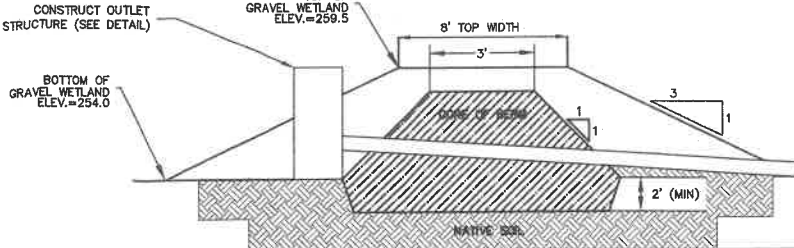
NOTES:

1. CORE MATERIAL SHALL MEET USGS CLASSIFICATION SC, SM, CL OR ML AND HAVE A MAXIMUM PARTICLE SIZE OF 3" AND A PERMEABILITY LESS THAN 0.00005 CM/S, AND MEET THE FOLLOWING GRADATION

SIEVE SIZE	PERCENT FINER BY WEIGHT
3 INCH	100
No. 200	50 - 100

2. PIPE SHALL BE FULLY EMBEDDED IN CORE TO ELIMINATE SEEPAGE

GRAVEL WETLAND BERM  
NOT TO SCALE



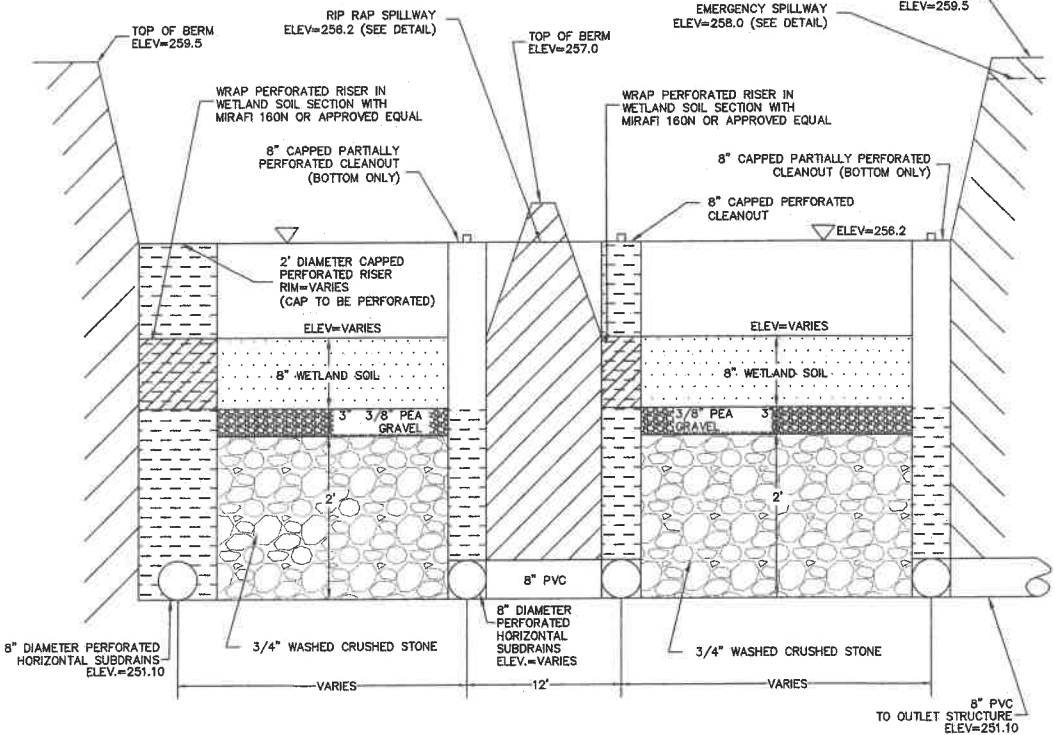
GRAVEL WETLAND PLANTING PLAN

SPECIES	PLANT SIZE	QUANTITY/SPACING
NEW ENGLAND EROSION CONTROL/RESTORATION MIX OR EQUIVALENT		35 LB/ACRE
"RED OSIER DOGWOOD" CORNUS SERICEA	2-3"	8'-10' ON CENTER
"SILKY DOGWOOD" CORNUS AMOMUM		
AND	2-3"	8'-10' ON CENTER
"Highbush Blueberry" VACCINIUM CORYMBOSUM		

NOTES:

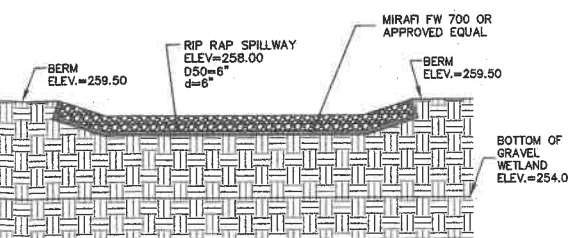
1. WETLAND SOIL SHALL BE A SANDY CLAY LOAM WITH A HYDRAULIC CONDUCTIVITY OF 0.1-0.01 FT/DAY. ORGANIC CONTENT SHALL BE GREATER THAN 15% BY VOLUME. CLAY CONTENT SHALL BE LESS THAN 15% BY VOLUME. THE MAXIMUM PARTICLE SIZE SHALL BE 3".
2. INFILTRATION TESTING OF THE NATIVE SOILS AT THE SUBGRADE OF THE PROPOSED GRAVEL WETLAND SHALL OCCUR PRIOR TO THE INSTALLATION OF THE GRAVEL WETLAND AND SHALL BE COORDINATED WITH THE ENGINEER. IF THE NATIVE SOILS EXCEED A PERMEABILITY RATE OF 0.03FT/DAY THE SOILS SHOULD AMENDED OR LINER ADDED AS DETERMINED BY THE ENGINEER.
3. PERFORATED RISERS SHALL HAVE VERTICAL SLOTS CUT INTO RISERS ABOVE GRADE MEASURING 3"x1/8".
4. SEE GRADING, DRAINAGE & EROSION CONTROL PLANS, SHEETS C-2A AND C-2B, FOR LOCATIONS AND ELEVATIONS.

GRAVEL WETLAND  
(TYPICAL CROSS  
SECTION A-A)  
NOT TO SCALE



GRAVEL WETLAND DETAIL

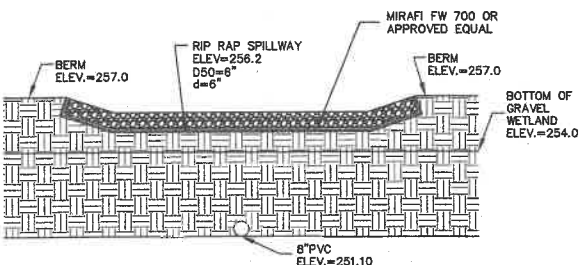
SCALE: 1" = 20'



NOTES:

1. SEE ALTERNATE 1 GRADING, DRAINAGE, AND EROSION CONTROL PLAN FOR LOCATIONS AND ELEVATIONS.

GRAVEL WETLAND  
EMERGENCY SPILLWAY  
NOT TO SCALE



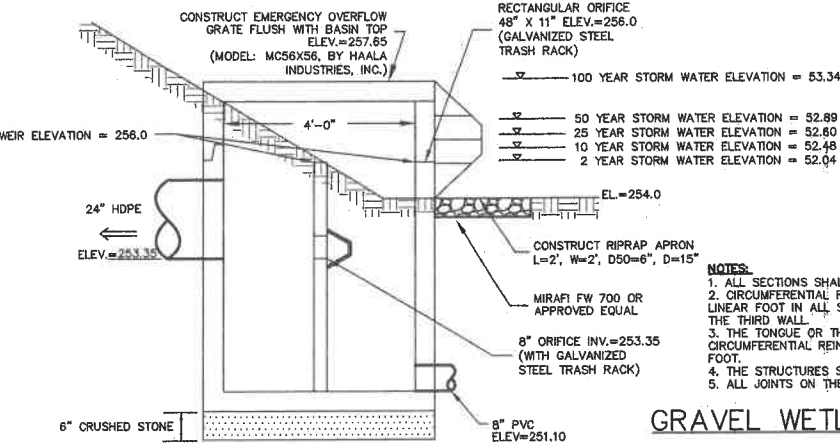
NOTES:

1. SEE ALTERNATE 1 GRADING, DRAINAGE, AND EROSION CONTROL PLAN FOR LOCATIONS AND ELEVATIONS.

GRAVEL WETLAND  
(TYPICAL CROSS SECTION B-B)  
NOT TO SCALE

GRAVEL WETLAND: OUTLET STRUCTURE

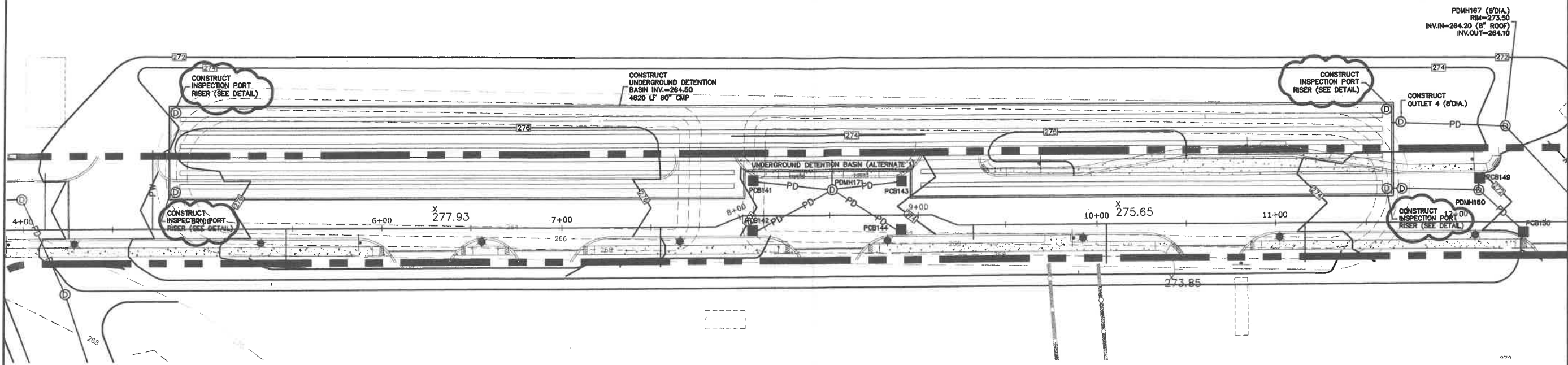
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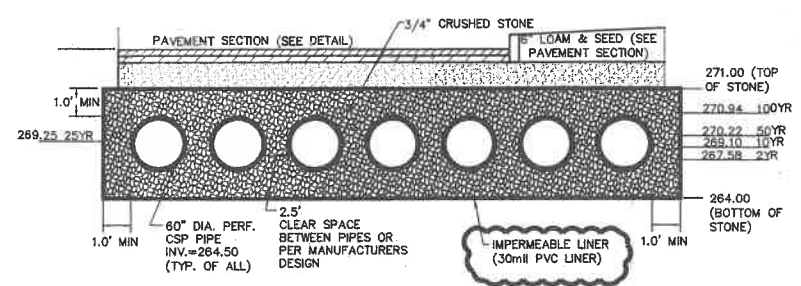
NOTES:

1. ALL SECTIONS SHALL BE 4,000PSI CONCRETE. (TYPE II CEMENT)
2. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQUARE INCHES PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER OF THE THIRD WALL.
3. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQUARE INCHES PER LINEAR FOOT.
4. THE STRUCTURES SHALL BE DESIGNED FOR H2O LOADING.
5. ALL JOINTS ON THE STRUCTURE AND PIPING SHALL BE WATERTIGHT.



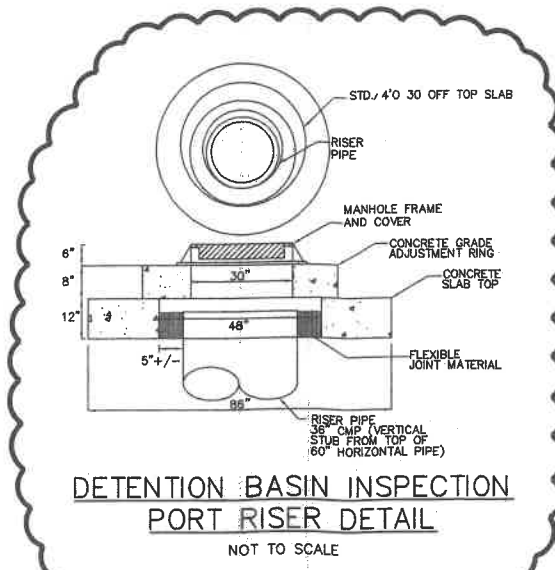


**UNDERGROUND DETENTION BASIN DETAIL**  
SCALE: 1" = 30'

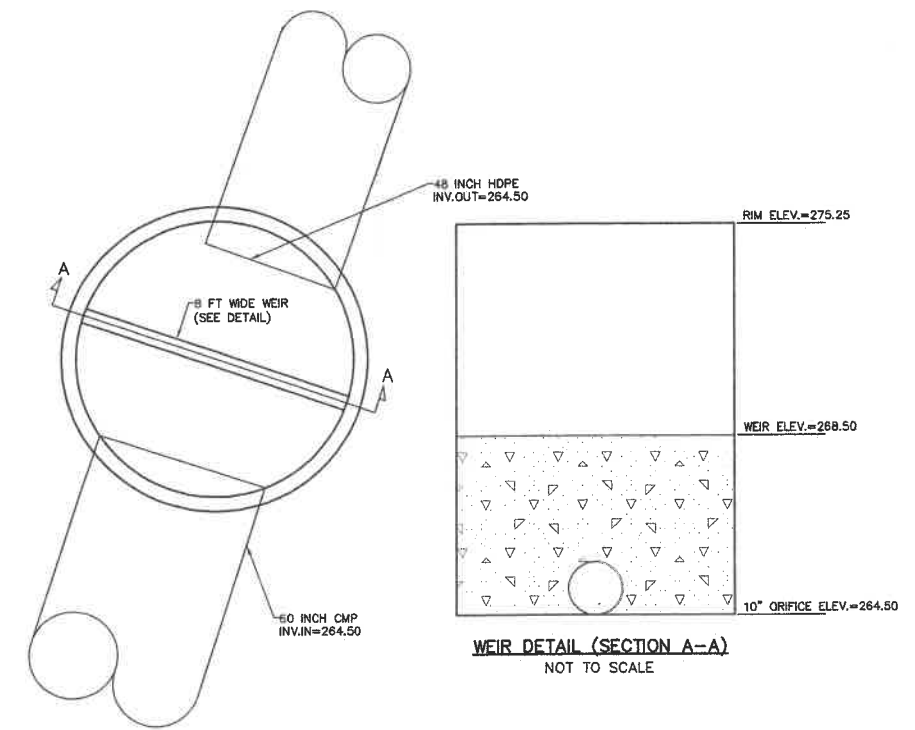


- NOTE:**
1. UNDERGROUND DETENTION SYSTEM TO BE ALUMINIZED 16 GAGE STEEL PIPE DESIGNED FOR H-20 LOADING. CONTRACTOR TO SUBMIT PIPE SPECIFICATIONS AND FINAL MANUFACTURERS DESIGN TO ENGINEER FOR REVIEW AND APPROVAL.
  2. MANUFACTURER TO SUBMIT PLANS STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE.
  3. THE DESIGN ENGINEER SHALL PROVIDE SUFFICIENT INSPECTION TO CERTIFY THAT THE SYSTEM HAS BEEN INSTALLED PER THE PROPOSED DESIGN PLAN.
  4. DESIGN SHALL REQUIRE INSPECTION PORTS/COVERS SUCH THAT SYSTEM CAN BE CLEANED BY VACUUM TRUCK. MIN. ONE EACH CORNER.
  5. TOTAL SYSTEM: 7 - 60" PIPES  
4,620 LINEAR FEET OF PIPE

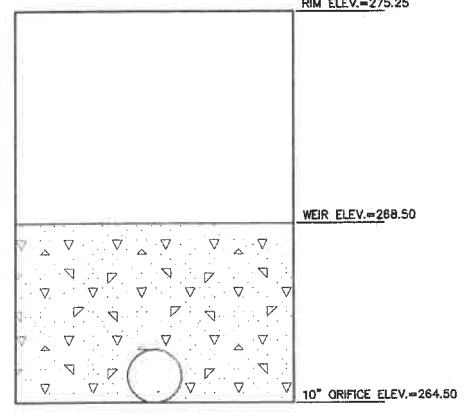
**UNDERGROUND DETENTION BASIN**  
NOT TO SCALE



**DETENTION BASIN INSPECTION PORT RISER DETAIL**  
NOT TO SCALE



**OUTLET 4 DETAIL**  
NOT TO SCALE



**WEIR DETAIL (SECTION A-A)**  
NOT TO SCALE

**Granite Ridge Development District**

**Frontage Road**

**Rochester, New Hampshire**

**JANUARY 27, 2015**

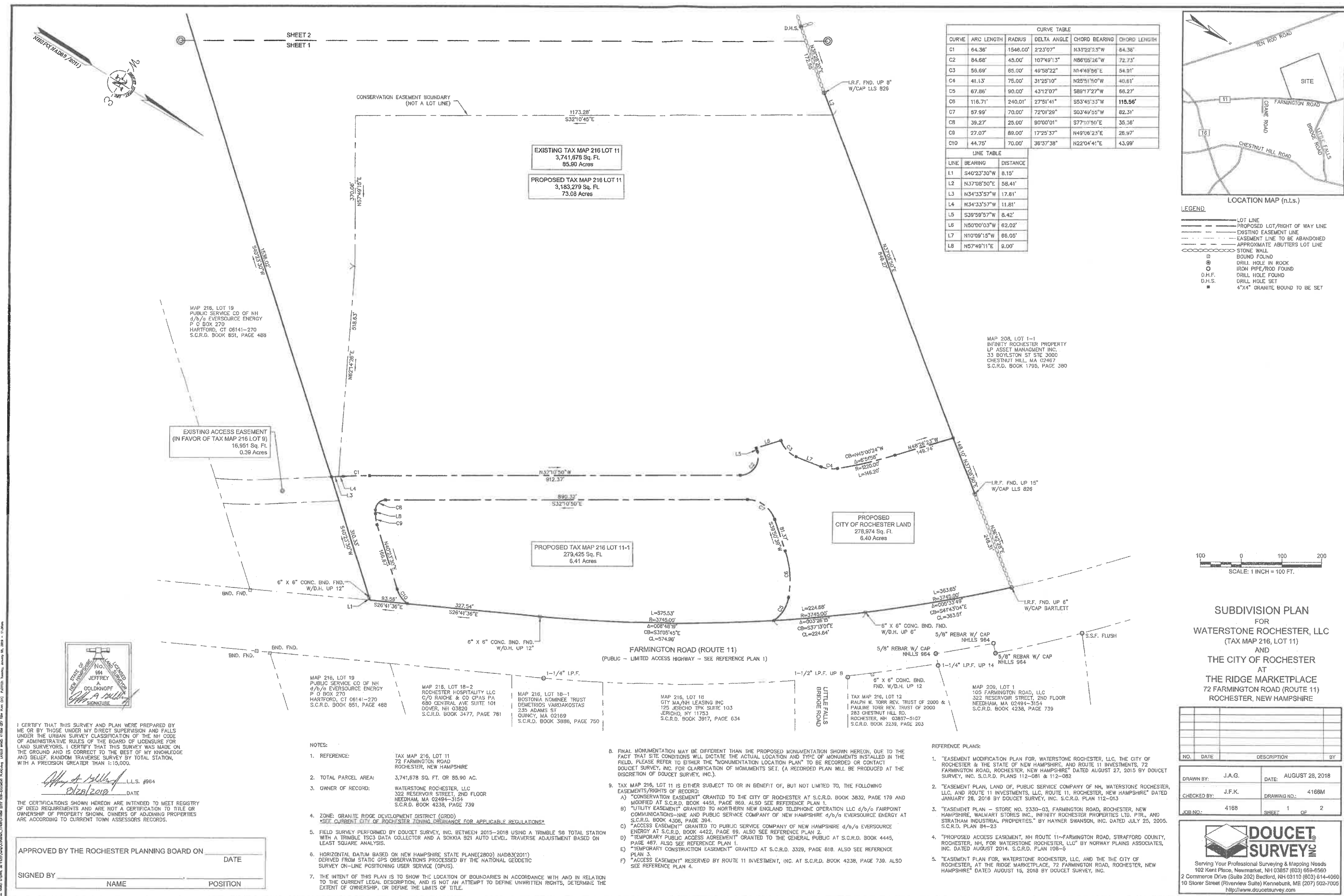
1.	2/20/15	Add Inspection Port and Imp. Liner
Mark	Date	Description
PROJECT NO:	R-0195-3	
FILE:	R-0195-3_FR_DETAILS.DWG	
DRAWN BY:	TPD	
CHECKED:	KAM	
APPROVED BY:	GMM	

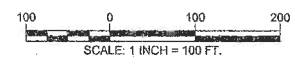
**ALTERNATE 1 GRADING DETAILS**

**SCALE: AS SHOWN**









NO.	DATE	DESCRIPTION	BY



**DOUCET**  
**SURVEY INC.**

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2 Commerce Drive (Suite 202) Bedford, NH 03110 (603) 614-4080  
10 Storer Street (Riverview Station) Kennebunk, ME (207) 502-7005  
<http://www.doucatsurvey.com>

APPROVED BY THE ROCHESTER PLANNING BOARD ON \_\_\_\_\_ DATE \_\_\_\_\_

SIGNED BY \_\_\_\_\_ NAME \_\_\_\_\_ POSITION \_\_\_\_\_

PROPOSED TAX MAP 216 LOT 11  
3,183,279 Sq. Ft.  
73.08 Acres