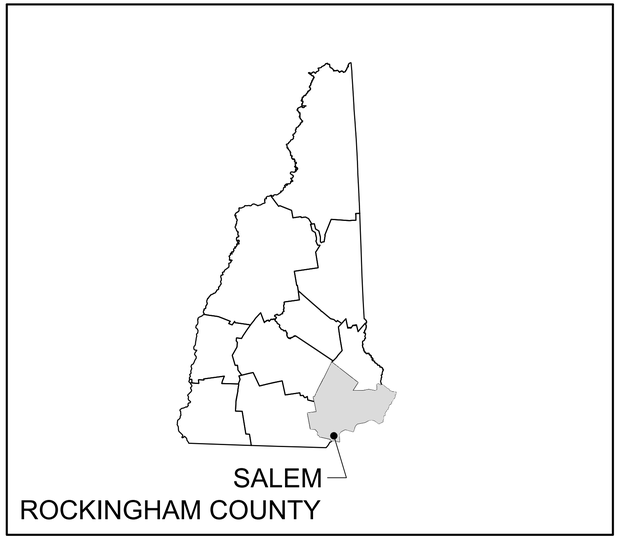
TOWN OF SALEM

2021 ROADWAY IMPROVEMENT PROJECT
MANOR PARKWAY, FREEDOM DRIVE, LEMAY ROAD



NEW HAMPSHIRE

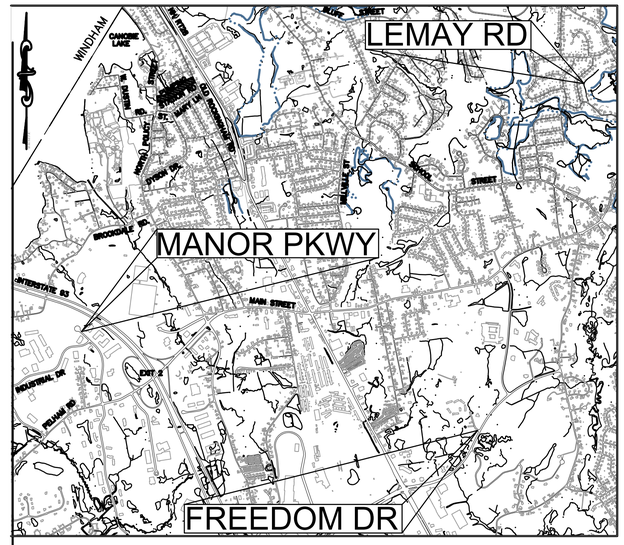
LOCATION MAP

DECEMBER 30, 2020

SALEM

ROCKINGHAM COUNTY

NEW HAMPSHIRE



SALEM, NH

VICINITY MAP

PREPARED FOR:

TOWN OF SALEM
33 GEREMONTY DRIVE
SALEM, NEW HAMPSHIRE
(603)890-2033
HTTPS://WWW.TOWNOFSALEMNH.ORG/

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
1	COVER
2	MANOR PARKWAY PLAN AND PROFILE (SHEET 1 OF 3)
3	MANOR PARKWAY PLAN AND PROFILE (SHEET 2 OF 3)
4	MANOR PARKWAY PLAN AND PROFILE (SHEET 3 OF 3)
5	LEMAY ROAD PLAN AND PROFILE (SHEET 1 OF 3)
6	LEMAY ROAD PLAN AND PROFILE (SHEET 2 OF 3)
7	LEMAY ROAD PLAN AND PROFILE (SHEET 3 OF 3)
8	FREEDOM DRIVE PLAN AND PROFILE (SHEET 1 OF 1)
9	CIVIL DETAILS 1
10	CIVIL DETAILS 2
11	CIVIL DETAILS 3
12	CIVIL DETAILS 4
13	CIVIL DETAILS 5
14	CIVIL DETAILS 6
15	CIVIL DETAILS 7
16	CIVIL DETAILS 8

811 DigSafe MA-ME-NH-RI-VT

THE LOCATION OF ANY UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. THE TOWN OF SALEM, NH MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UTILITIES SHOWN. 72 HOURS PRIOR TO ANY EXCAVATION ON SITE. THE CONTRACTOR SHALL CONTACT DIG SAFE AT 1-888-DIG-SAFE.

PREPARED BY:

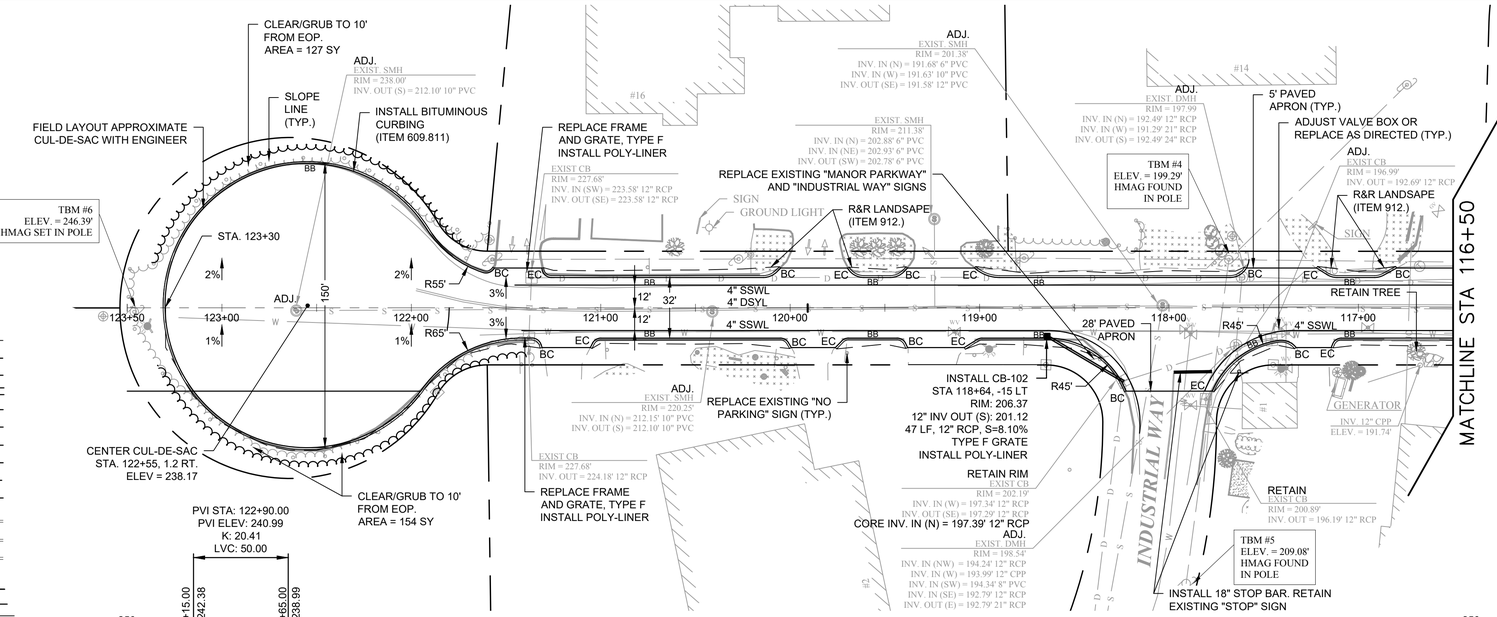
McFarland Johnson

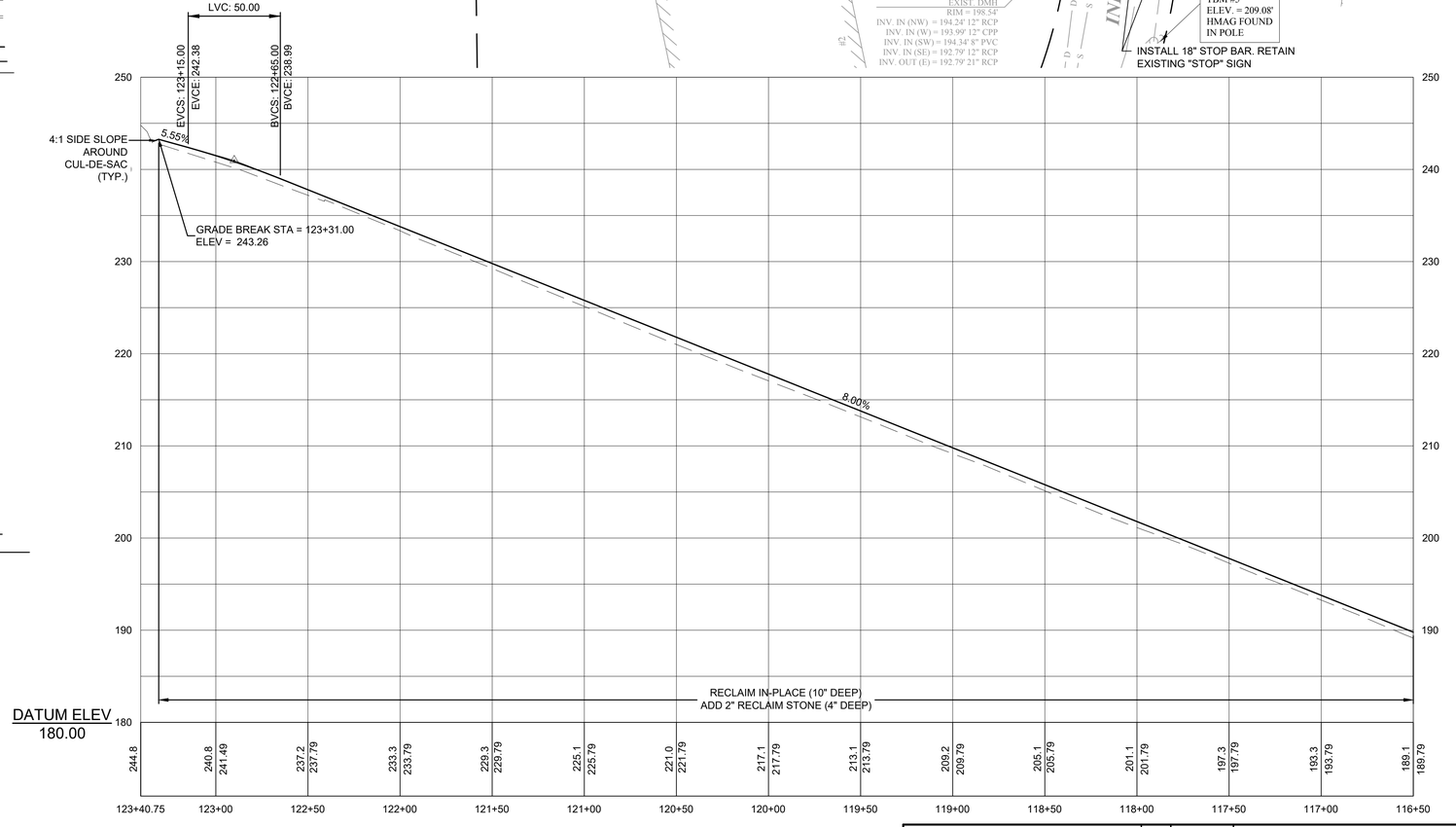
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

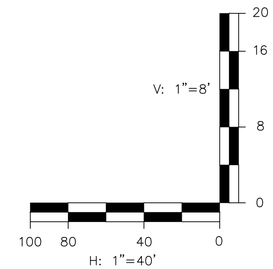
STATE OF NEW HAMPSHIRE — BRIAN P. COUGHLIN — NO. 11917 — LICENSED PROFESSIONAL ENGINEER

NO.	DATE	REVISION DESCRIPTION
1	1-14-21	ADDENDUM #1

MCFARLAND JOHNSON PROJECT NUMBER: 18587.04







LEGEND

(STANDARD LEGEND - ALL SYMBOLS SHOWN DO NOT NECESSARILY APPEAR IN THE PLAN SET)

	EXISTING	PROPOSED
2' CONTOUR	148	148
10' CONTOUR	150	150
EDGE OF PAVEMENT		
DRAIN LINE	D	
SEWER LINE	S	S
UNDERGROUND UTILITIES	UGU	UGU
TELEPHONE LINE	T	T
GAS LINE	GAS	GAS
WATER LINE	W	W
OVERHEAD UTILITIES	OHW	OHW
VERTICAL GRANITE CURB		VGC
SLOPED GRANITE CURB		SGC
BITUMINOUS CURB		BB
BEGIN CURB / END CURB		BC / EC
CHAIN LINK FENCE		
GUARD RAIL		
TREE LINE		
SPOT GRADE		X P200.0
SEWER MANHOLE	S	S
CATCH BASIN		
DRAIN MANHOLE	D	D
FIRE HYDRANT		
GAS GATE	GV	GV
WATER VALVE	WV	WV
ELECTRIC MANHOLE	E	E
TELEPHONE MANHOLE	T	T
HEADWALL		
FLARED END SECTION		
STREET SIGN		
TRANSFORMER	T	
UTILITY BOX	U	
CABLE BOX	C	
LIGHT POLE		
UTILITY POLE		
GUY WIRE		
IRON PIN,DRILL HOLE,BOUND		
MAILBOX	MB	MB
DECIDUOUS TREE		
CONIFER TREE		
TRAFFIC FLOW		
STONE WALL		
EDGE OF WETLANDS		
PROPERTY LINE		
SILT FENCE		SF
HAY BALES		
4" SINGLE SOLID WHITE LINE		4" SSWL
4" DOUBLE SOLID YELLOW LINE		4" DSYL

GENERAL CONSTRUCTION NOTES

1. THE INTENT OF THIS PLAN IS TO PROVIDE ROADWAY IMPROVEMENTS FOR MANOR PARKWAY AND STILES ROAD AS PART OF THE 2021 ROADWAY IMPROVEMENT PROJECT. THE WORK WILL INCLUDE RECLAMATION ACTIVITIES, FINE GRADING, AND REPAVE OF THE ROADWAYS. SUPPLEMENTAL DRAINAGE IMPROVEMENTS AND SHOULDER WORK WILL ALSO BE INCORPORATED INTO THE PROJECT.

2. REFER TO SHEET 16 FOR GENERAL PROJECT NOTES.

3. RECLAIM NOTE: RECLAIM THE FULL WIDTH OF THE EXISTING ROADWAY FOR THE ENTIRE LENGTH TO A DEPTH OF 10 OR 12-INCHES. PROFILE ADJUSTMENTS SHALL BE MADE AS NOTED IN THE PROFILE. WORK SHALL ALSO INCLUDE MILLING AND OVERLAY FOR APPROXIMATELY 325 FEET ON STYLES ROAD.

4. GRADING INTENT: IT IS THE INTENT OF THIS PLAN FOR THE CONTRACTOR TO;

   4.1. SHAPE THE ROADWAY GRAVELS SUCH THAT MINIMAL IMPACTS TO DRIVEWAYS OCCUR.

   4.2. THE CONTRACTOR SHALL PROFILE THE ROAD WITH GRADE STAKES ACCORDING TO THE DESIGN. MODIFICATIONS TO THE PROFILE MAY BE NECESSARY UPON FIELD VERIFICATION OF THE DESIGN GRADES. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY MINOR ADJUSTMENTS.

5. LANDSCAPE NOTE: ALL DISTURBED LANDSCAPE AREAS ADJACENT TO THE WORK (INCLUDING LANDSCAPE AREAS AROUND MAILBOXES) SHALL BE RESTORED AND CONSIDERED PART OF ITEM 912. LOAM AND SEED (ITEM 646.) SHALL BE RE-ESTABLISHED TO WORK LIMIT. DISTURBED BARK MULCH AREAS SHALL BE RESTORED AND PAID AS ITEM 646. UNDERLAY MULCH WITH FABRIC IF PRESENT IN EXISTING CONDITION (INCIDENTAL).

6. DRIVEWAY NOTE: IT IS THE INTENT OF THIS PLAN TO PROVIDE RECONSTRUCTED DRIVEWAY APRONS 5-FEET (OR AS OTHERWISE NOTED) FROM THE NEW EDGE OF PAVEMENT. IN SOME CASES DRIVEWAY APRONS MAY NEED TO EXTEND FURTHER TO OBTAIN POSITIVE DRAINAGE AND/OR BETTER TRANSITION GRADES. SEE DRIVEWAY DETAILS ON SHEET 10.

   6.1. DRIVEWAYS IN FILL AREAS SHALL BE SHIMMED WITH GRAVEL TO OBTAIN POSITIVE GRADE TO STREET.

7. TEST PITTING NOTE: THE CONTRACTOR SHALL CONDUCT TEST PITS AS DIRECTED BY THE ENGINEER. AS-BUILT PLANS SHALL INDICATE TEST PIT LOCATIONS AND ELEVATION OF UTILITIES.

8. RIGHT OF WAY SHOWN IS APPROXIMATE. NO FORMAL RIGHT OF WAY SURVEY WAS CONDUCTED FOR THIS PROJECT.

STATE OF NEW HAMPSHIRE
BRIAN R. COLBURN
No. 11917
LICENSED PROFESSIONAL ENGINEER

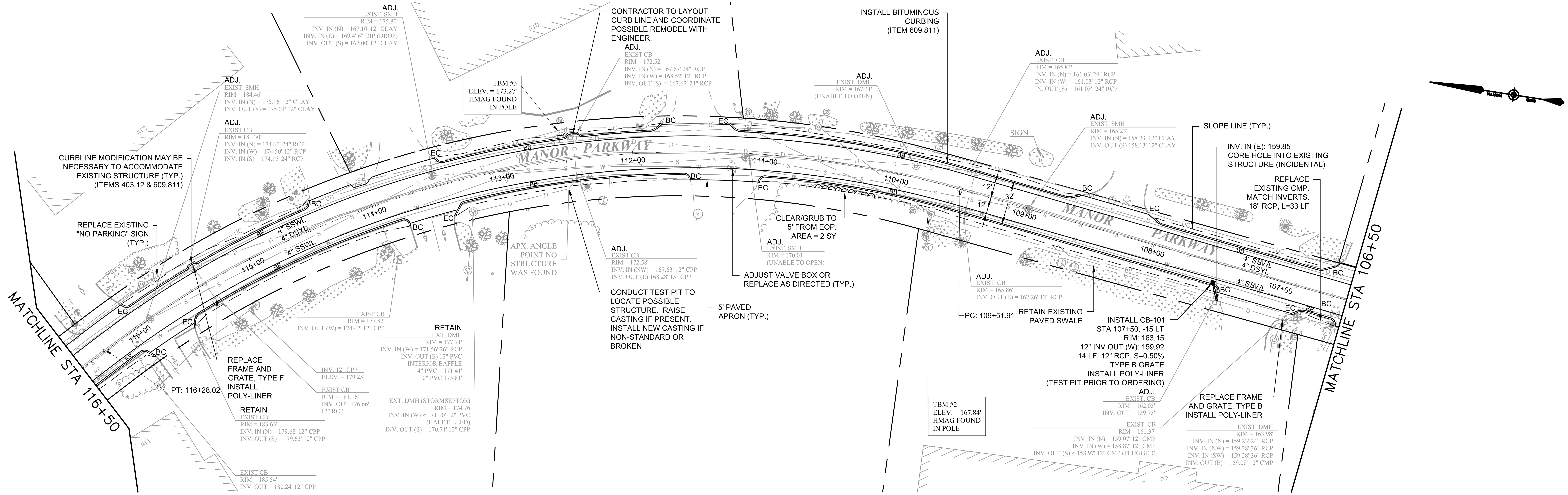
REV	DATE	DESCRIPTION	BY

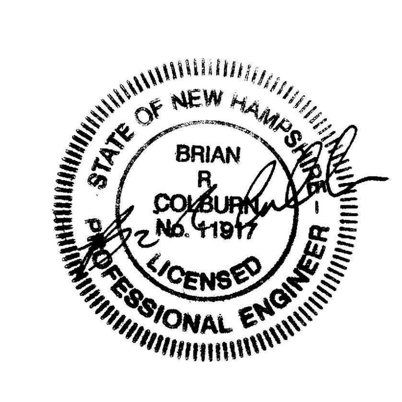
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

MANOR PARKWAY PLAN AND PROFILE (SHEET 1 OF 3)

SCALE: AS SHOWN	DESIGN: MKM
DRAWN: MRV	PROJECT: 18587.06
CHECKED: BRC	DATE: DECEMBER 2020





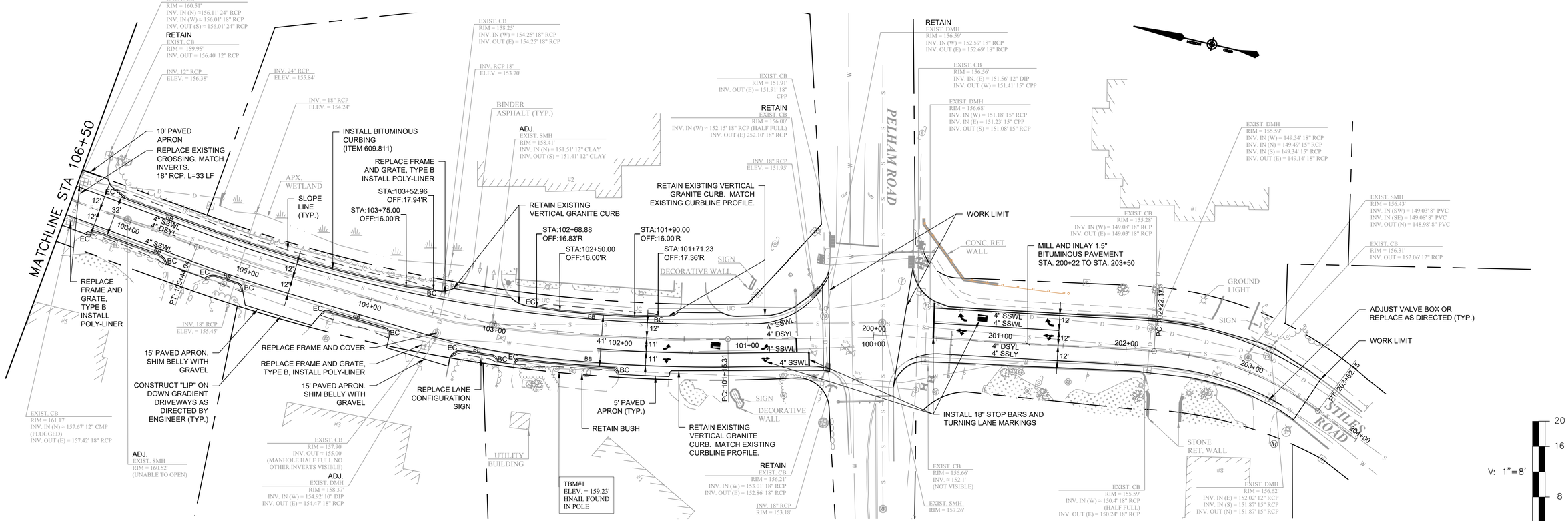
REV	DATE	DESCRIPTION	BY

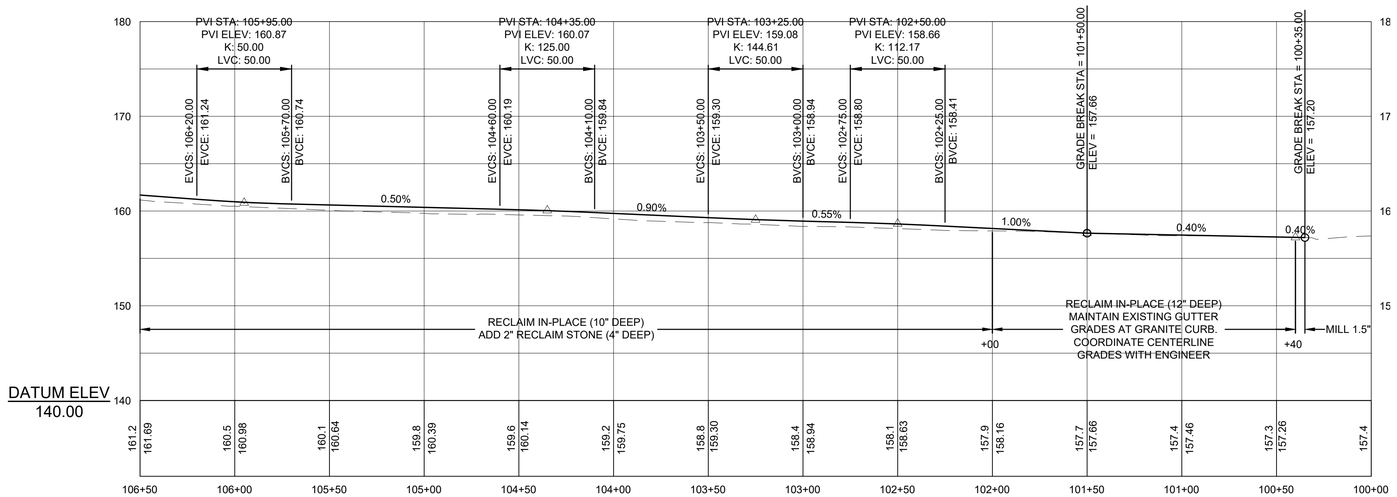
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

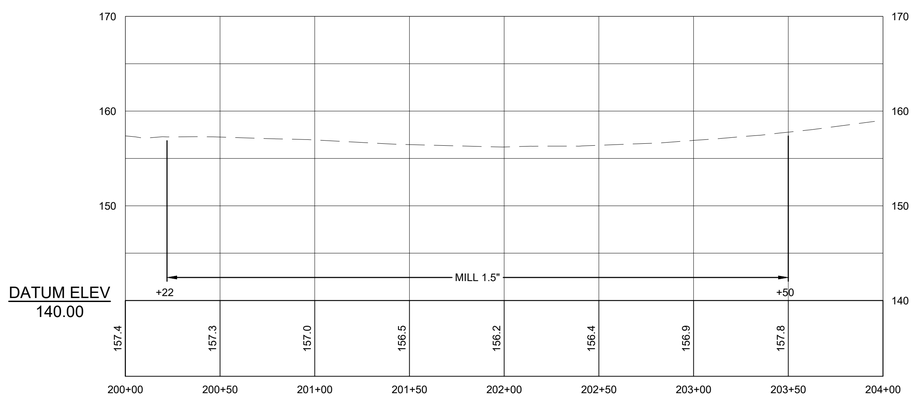
TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

MANOR PARKWAY PLAN AND PROFILE (SHEET 2 OF 3)

SCALE: AS SHOWN	DESIGN: MKM	3 OF 16
DRAWN: MRV	PROJECT: 18587.06	
CHECKED: BRC	DATE: DECEMBER 2020	







REV	DATE	DESCRIPTION	BY

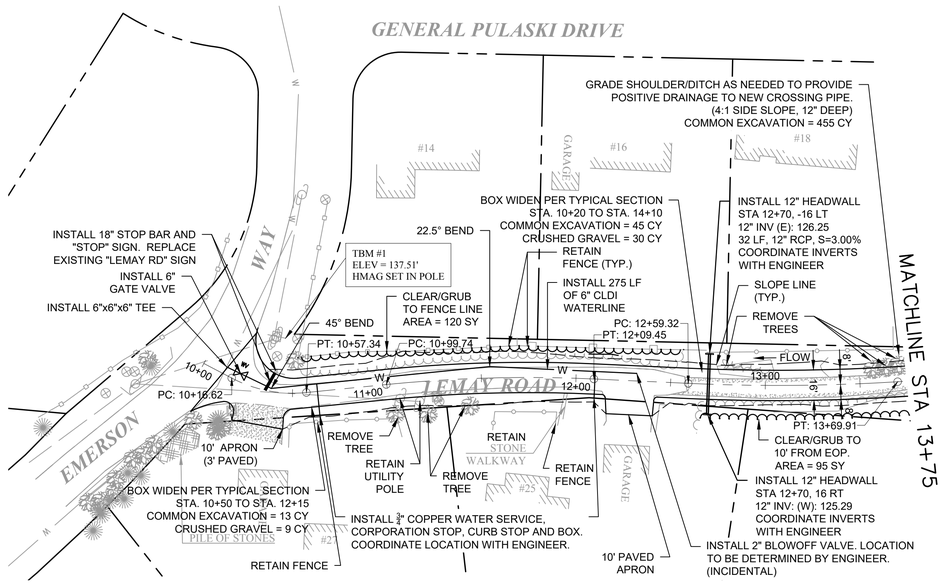
STATE OF NEW HAMPSHIRE
BRIAN R. COLBURN
No. 11917
LICENSED PROFESSIONAL ENGINEER

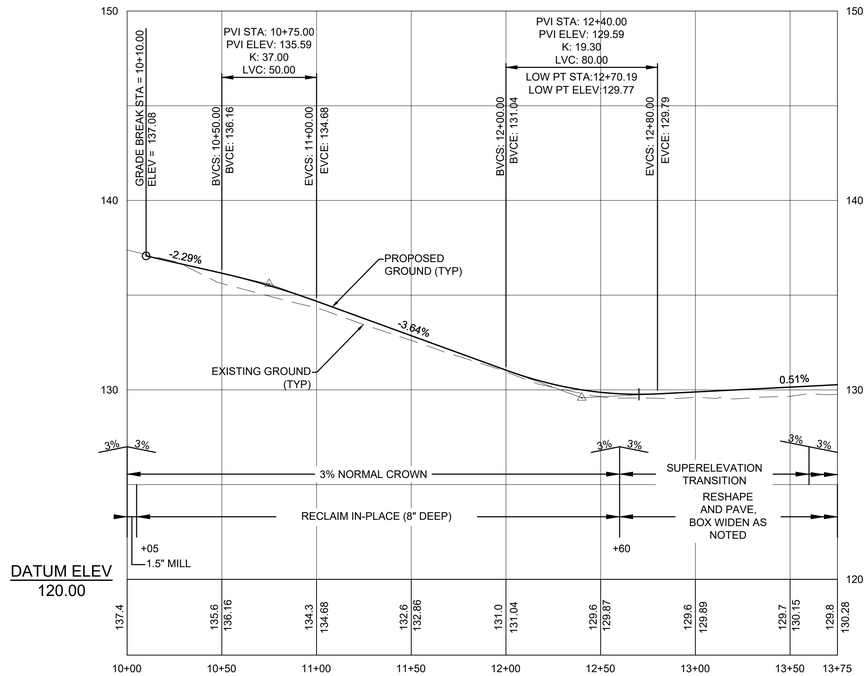
TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

MANOR PARKWAY PLAN AND PROFILE (SHEET 3 OF 3)

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

SCALE: AS SHOWN	DESIGN: MKM
DRAWN: MRV	PROJECT: 18587.06
CHECKED: BRC	DATE: DECEMBER 2020





GENERAL CONSTRUCTION NOTES:

1. THE INTENT OF THIS PLAN IS TO PROVIDE ROADWAY IMPROVEMENTS FOR LEMAY ROAD AS PART OF THE 2021 ROADWAY IMPROVEMENT PROJECT. THE WORK WILL INCLUDE RECLAMATION ACTIVITIES, FINE GRADING, AND REPAVE OF THE ROADWAYS. SUPPLEMENTAL DRAINAGE IMPROVEMENTS AND SHOULDER WORK WILL ALSO BE INCORPORATED INTO THE PROJECT.

2. REFER TO SHEET 16 FOR GENERAL PROJECT NOTES.

3. RECLAIM NOTE: RECLAIM THE FULL WIDTH OF THE EXISTING ROADWAY AS NOTED IN THE PROFILE TO A DEPTH OF 8 INCHES. PROFILE ADJUSTMENTS SHALL BE MADE AS NOTED IN THE PROFILE. WORK SHALL ALSO INCLUDE GRADING AND SHAPING OF THE EXISTING GRAVEL ROAD AS WELL AS MILLING AND OVERLAY FOR APPROXIMATELY 5 FEET AT EACH END OF THE ROAD.

4. GRADING INTENT: IT IS THE INTENT OF THIS PLAN FOR THE CONTRACTOR TO;

   4.1. ADJUST THE CROSS SLOPE OF LEMAY ROAD AS NOTED IN THE PROFILES. SEE SHEETS 5, 6, & 7.

   4.2. SHAPE THE ROADWAY GRAVELS SUCH THAT MINIMAL IMPACTS TO DRIVEWAYS OCCUR.

   4.3. THE CONTRACTOR SHALL PROFILE THE ROAD WITH GRADE STAKES ACCORDING TO THE DESIGN. MODIFICATIONS TO THE PROFILE MAY BE NECESSARY UPON FIELD VERIFICATION OF THE DESIGN GRADES. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY MINOR ADJUSTMENTS.

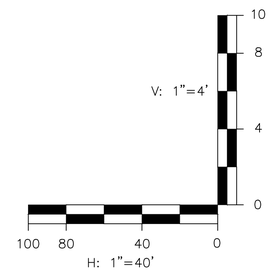
5. LANDSCAPE NOTE: ALL DISTURBED LANDSCAPE AREAS ADJACENT TO THE WORK (INCLUDING LANDSCAPE AREAS AROUND MAILBOXES) SHALL BE RESTORED AND CONSIDERED PART OF ITEM 912. LOAM AND SEED (ITEM 646.) SHALL BE RE-ESTABLISHED TO WORK LIMIT. DISTURBED BARK MULCH AREAS SHALL BE RESTORED AND PAID AS ITEM 646. UNDERLAY MULCH WITH FABRIC IF PRESENT IN EXISTING CONDITION (INCIDENTAL).

6. DRIVEWAY NOTE: IT IS THE INTENT OF THIS PLAN TO PROVIDE RECONSTRUCTED DRIVEWAY APRONS 5-FEET (OR AS OTHERWISE NOTED) FROM THE NEW EDGE OF PAVEMENT. IN SOME CASES DRIVEWAY APRONS MAY NEED TO EXTEND FURTHER TO OBTAIN POSITIVE DRAINAGE AND/OR BETTER TRANSITION GRADES. SEE DRIVEWAY DETAILS ON SHEET 10.

   6.1. DRIVEWAYS IN FILL AREAS SHALL BE SHIMMED WITH GRAVEL TO OBTAIN POSITIVE GRADE TO STREET.

7. TEST PITTING NOTE: THE CONTRACTOR SHALL CONDUCT TEST PITS AS DIRECTED BY THE ENGINEER. AS-BUILT PLANS SHALL INDICATE TEST PIT LOCATIONS AND ELEVATION OF UTILITIES.

8. RIGHT OF WAY SHOWN IS APPROXIMATE. NO FORMAL RIGHT OF WAY SURVEY WAS CONDUCTED FOR THIS PROJECT.



STATE OF NEW HAMPSHIRE
BRIAN R. COLBURN
No. 14917
LICENSED PROFESSIONAL ENGINEER

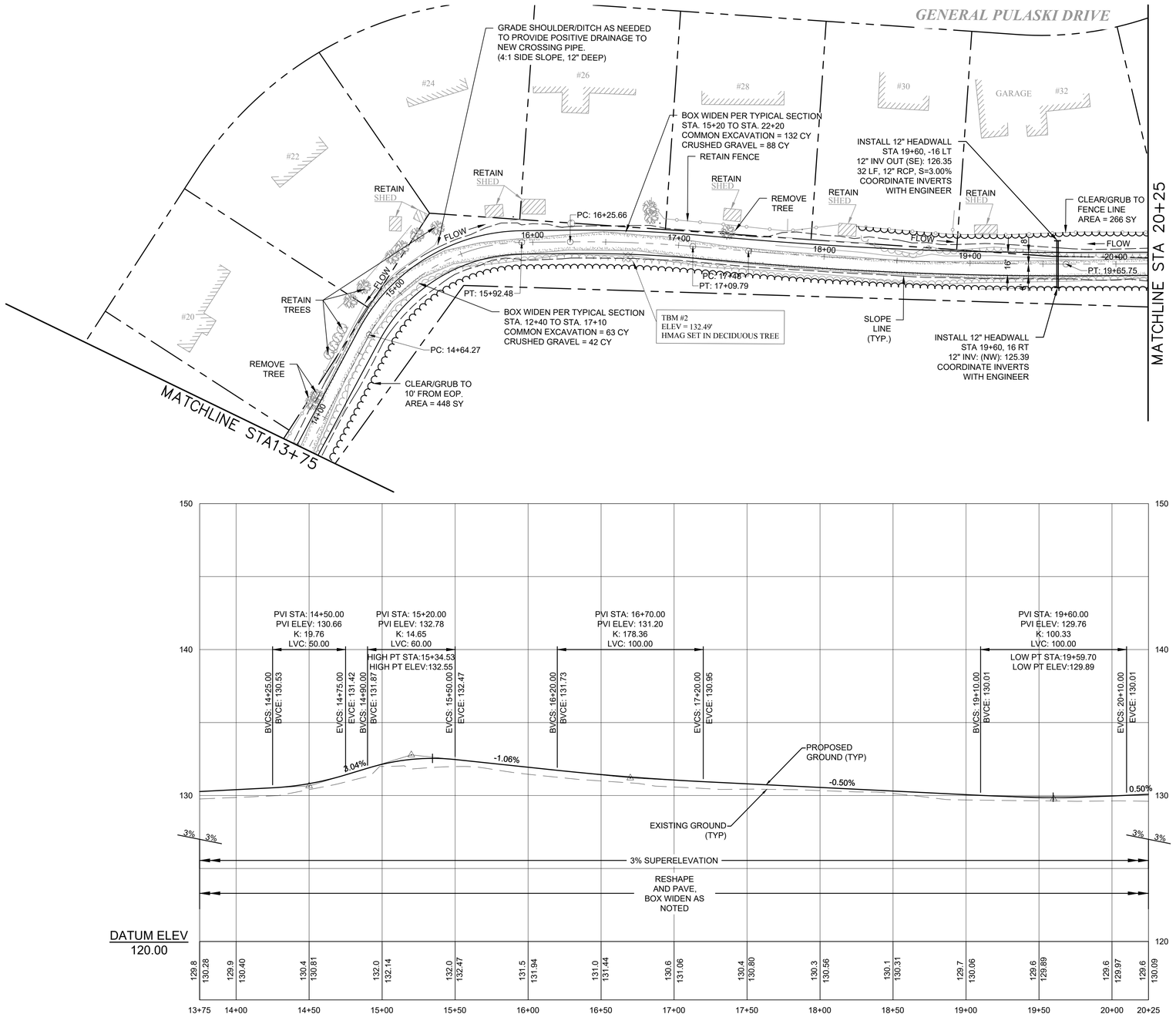
REV	DATE	DESCRIPTION	BY

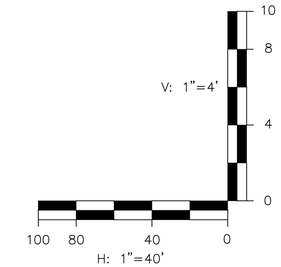
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

LEMAY ROAD PLAN AND PROFILE (SHEET 1 OF 3)

SCALE: AS SHOWN	DESIGN: BEP	5 OF 16
DRAWN: MRV	PROJECT: 18587.06	
CHECKED: BRC	DATE: DECEMBER 2020	





REV	DATE	DESCRIPTION	BY

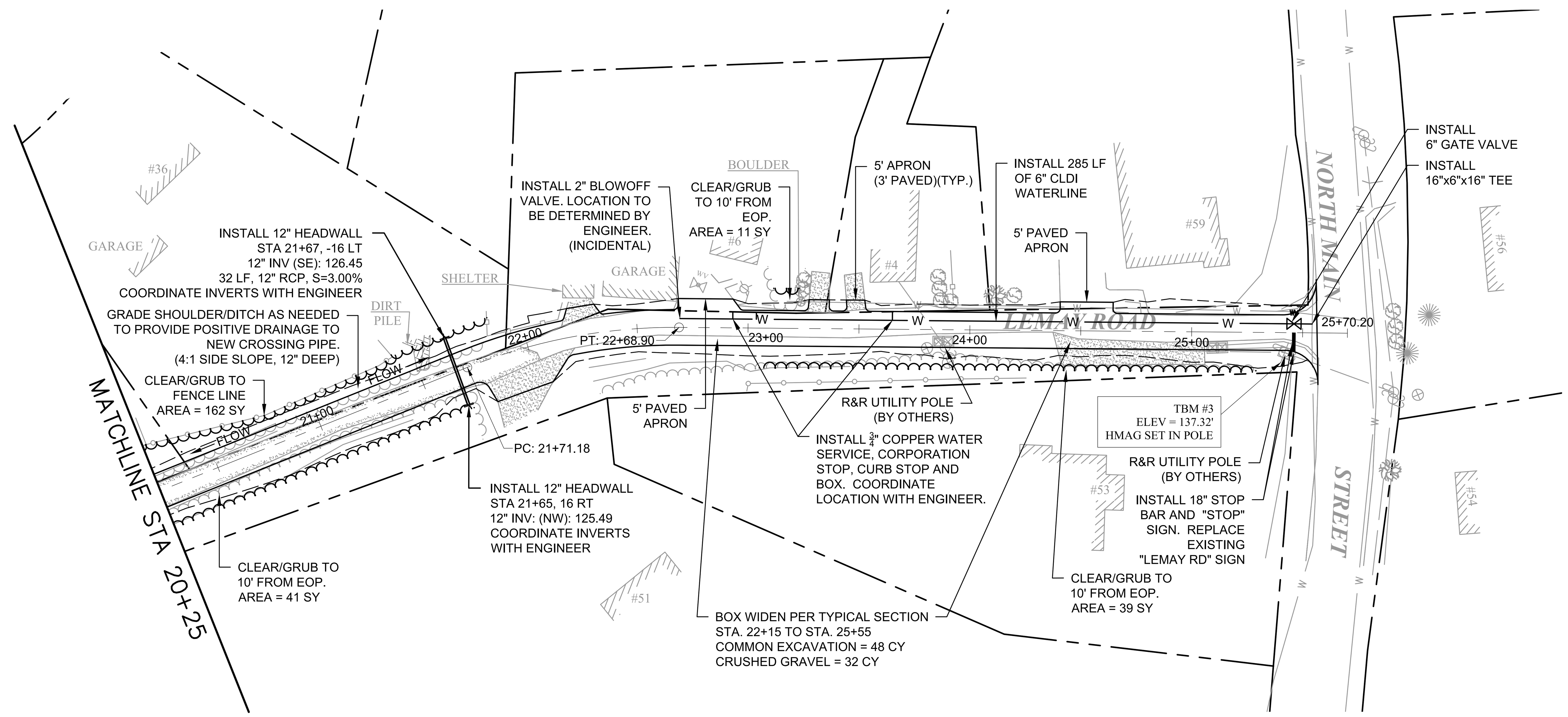
TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

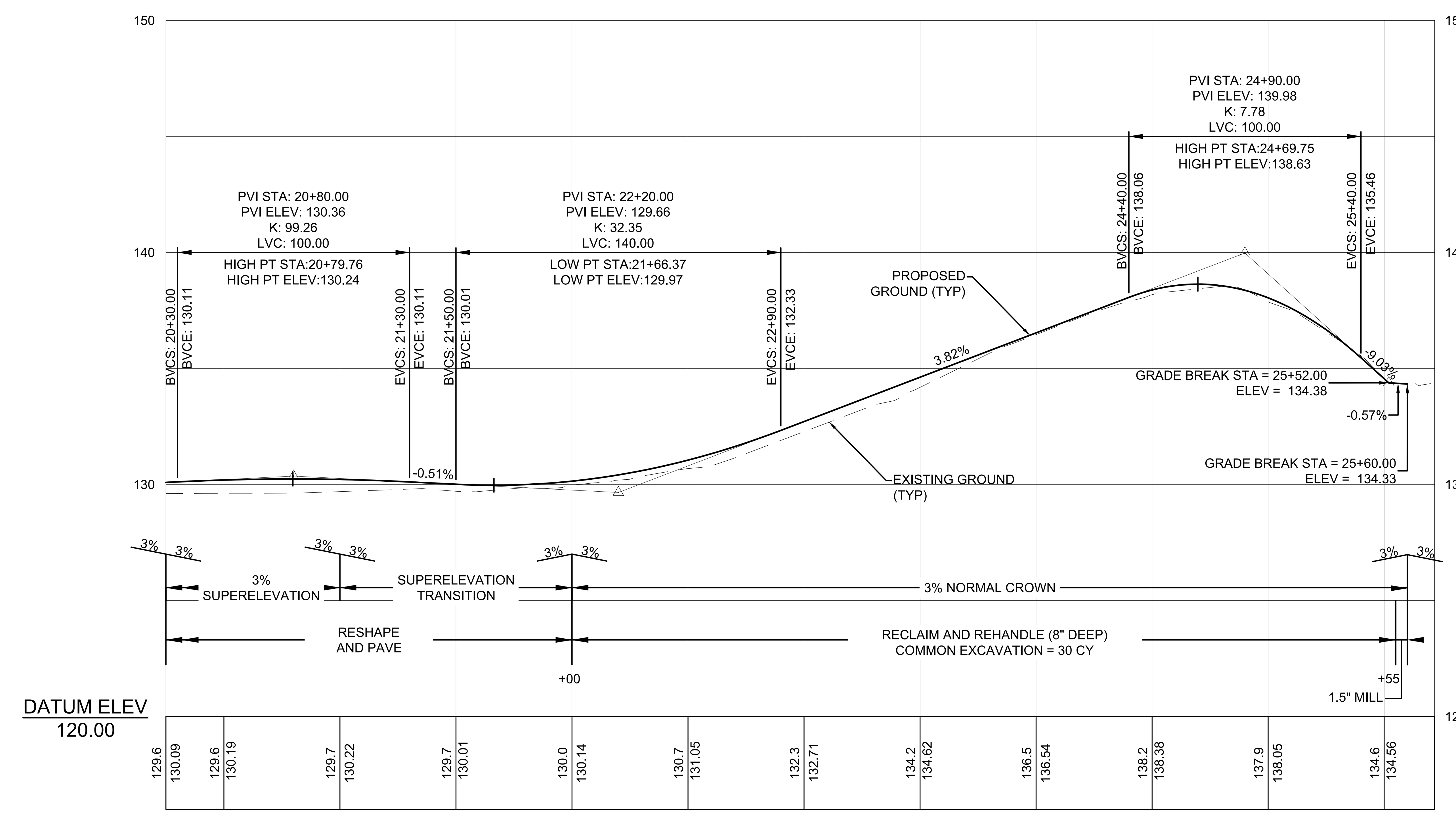
LEMAY ROAD PLAN AND PROFILE (SHEET 2 OF 3)

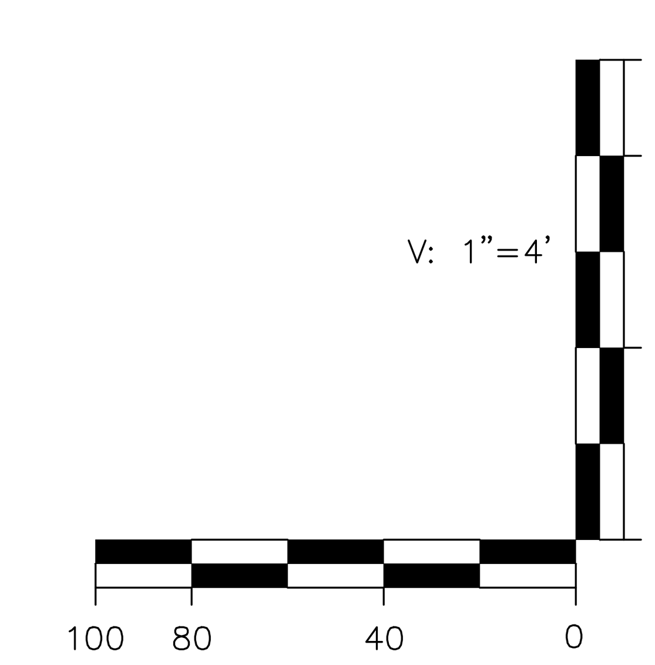
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

BRIAN R. COLBURN No. 17917 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE

SCALE: AS SHOWN	DESIGN: BEP	6 OF 16
DRAWN: MRV	PROJECT: 18587.06	
CHECKED: BRC	DATE: DECEMBER 2020	







STATE OF NEW HAMPSHIRE BRIAN R. COLBURN No. 11917 LICENSED PROFESSIONAL ENGINEER

[illegible]

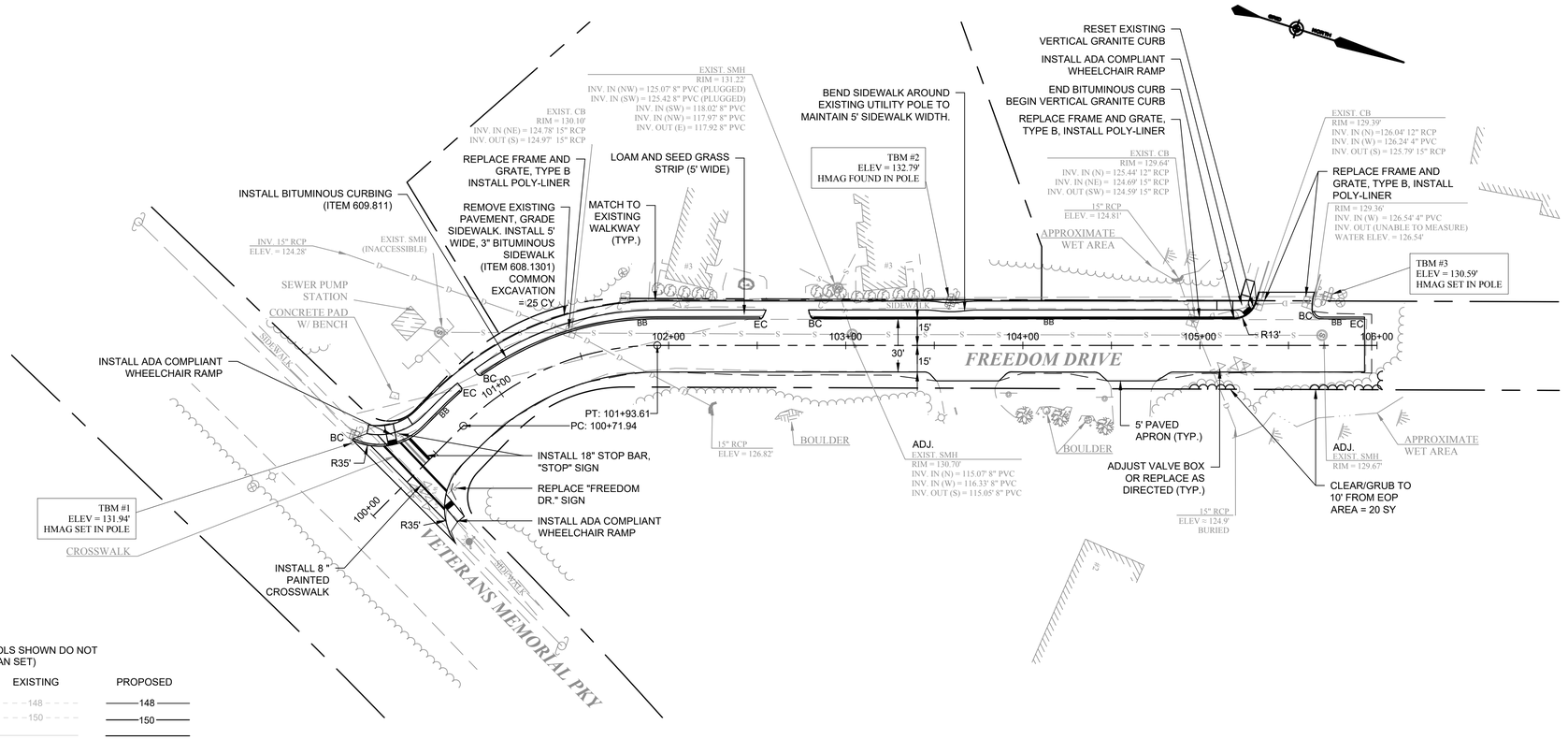
REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

LEMAY ROAD PLAN AND PROFILE (SHEET 3 OF 3)

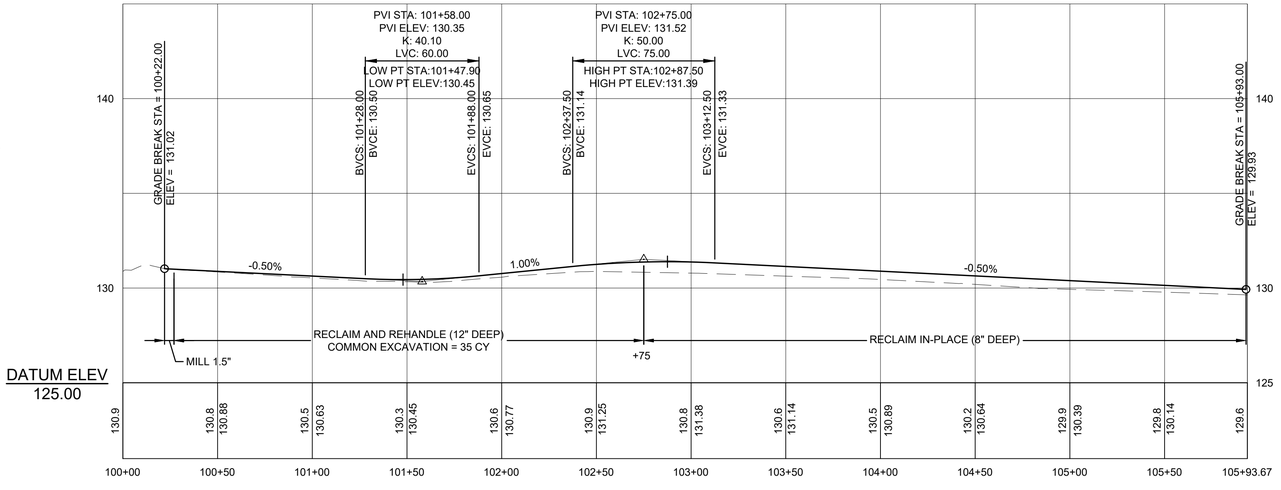
SCALE: AS SHOWN	DESIGN: BEP	7 OF 16
DRAWN: MRV	PROJECT: 18587.06	
CHECKED: BRC	DATE: DECEMBER 2020	

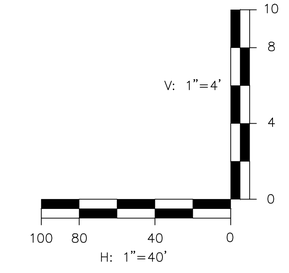


LEGEND

(STANDARD LEGEND - ALL SYMBOLS SHOWN DO NOT NECESSARILY APPEAR IN THE PLAN SET)

	EXISTING	PROPOSED
2' CONTOUR	148	148
10' CONTOUR	150	150
EDGE OF PAVEMENT		
DRAIN LINE	D	
SEWER LINE	S	S
UNDERGROUND UTILITIES	UGU	UGU
TELEPHONE LINE	T	T
GAS LINE	GAS	GAS
WATER LINE	W	W
OVERHEAD UTILITIES	OHW	OHW
VERTICAL GRANITE CURB		VGC
SLOPED GRANITE CURB		SGC
BITUMINOUS CURB		BB
BEGIN CURB / END CURB		BC /EC
CHAIN LINK FENCE		
GUARD RAIL		
TREE LINE		
SPOT GRADE		X P200.0
SEWER MANHOLE	S	S
CATCH BASIN		
DRAIN MANHOLE	D	D
FIRE HYDRANT	FH	FH
GAS GATE	GV	GV
WATER VALVE	WV	WV
ELECTRIC MANHOLE	E	E
TELEPHONE MANHOLE	T	T
HEADWALL		
FLARED END SECTION		
STREET SIGN		
TRANSFORMER	T	
UTILITY BOX	U	
CABLE BOX	C	
LIGHT POLE		
UTILITY POLE		
GUY WIRE		
IRON PIN,DRILL HOLE,BOUND		
MAILBOX	MB	MB
DECIDUOUS TREE		
CONIFER TREE		
TRAFFIC FLOW		
STONE WALL		
EDGE OF WETLANDS		
PROPERTY LINE		
SILT FENCE		SF
HAY BALES		





GENERAL CONSTRUCTION NOTES

1. THE INTENT OF THIS PLAN IS TO PROVIDE ROADWAY IMPROVEMENTS FOR FREEDOM DRIVE AS PART OF THE 2021 ROADWAY IMPROVEMENT PROJECT. THE WORK WILL INCLUDE RECLAMATION ACTIVITIES, FINE GRADING, AND REPAVE OF THE ROADWAY. SUPPLEMENTAL DRAINAGE IMPROVEMENTS AND SHOULDER WORK WILL ALSO BE INCORPORATED INTO THE PROJECT.
2. REFER TO SHEET 16 FOR GENERAL PROJECT NOTES.
3. RECLAIM NOTE: RECLAIM THE FULL WIDTH OF THE EXISTING ROADWAY FOR THE ENTIRE LENGTH TO A DEPTH OF 8-INCHES. THE PROFILE IDENTIFIES SECTIONS OF REMOVE & REHANDLE AS WELL AS IN-PLACE. PROFILE ADJUSTMENTS SHALL BE MADE AS NOTED IN THE PROFILE.
4. GRADING INTENT: IT IS THE INTENT OF THIS PLAN FOR THE CONTRACTOR TO;
   - 4.1. SHAPE THE ROADWAY GRAVELS SUCH THAT MINIMAL IMPACTS TO DRIVEWAYS OCCUR.
   - 4.2. THE CONTRACTOR SHALL PROFILE THE ROAD WITH GRADE STAKES ACCORDING TO THE DESIGN. MODIFICATIONS TO THE PROFILE MAY BE NECESSARY UPON FIELD VERIFICATION OF THE DESIGN GRADES. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ANY MINOR ADJUSTMENTS.
5. LANDSCAPE NOTE: ALL DISTURBED LANDSCAPE AREAS ADJACENT TO THE WORK (INCLUDING LANDSCAPE AREAS AROUND MAILBOXES) SHALL BE RESTORED AND CONSIDERED PART OF ITEM 912. LOAM AND SEED (ITEM 646.) SHALL BE RE-ESTABLISHED TO WORK LIMIT. DISTURBED BARK MULCH AREAS SHALL BE RESTORED AND PAID AS ITEM 646. UNDERLAY MULCH WITH FABRIC IF PRESENT IN EXISTING CONDITION (INCIDENTAL).
6. DRIVEWAY NOTE: IT IS THE INTENT OF THIS PLAN TO PROVIDE RECONSTRUCTED DRIVEWAY APRONS 5-FEET (OR AS OTHERWISE NOTED) FROM THE NEW EDGE OF PAVEMENT. IN SOME CASES DRIVEWAY APRONS MAY NEED TO EXTEND FURTHER TO OBTAIN POSITIVE DRAINAGE AND/OR BETTER TRANSITION GRADES. SEE DRIVEWAY DETAILS ON SHEET 10.
   - 6.1. DRIVEWAYS IN FILL AREAS SHALL BE SHIMMED WITH GRAVEL TO OBTAIN POSITIVE GRADE TO STREET.
7. TEST PITTING NOTE: THE CONTRACTOR SHALL CONDUCT TEST PITS AS DIRECTED BY THE ENGINEER. AS-BUILT PLANS SHALL INDICATE TEST PIT LOCATIONS AND ELEVATION OF UTILITIES.
8. MAIL BOX NOTE: NOT ALL MAILBOXES WILL BE RESET. MAILBOXES SHALL BE RESET WHERE MINIMUM DISTANCES ARE NOT MET AND WHERE DIRECTED BY THE ENGINEER.
9. RIGHT OF WAY SHOWN IS APPROXIMATE. NO FORMAL RIGHT OF WAY SURVEY WAS CONDUCTED FOR THIS PROJECT.

STATE OF NEW HAMPSHIRE — BRIAN R. COLBURN — NO. 11917 — LICENSED PROFESSIONAL ENGINEER

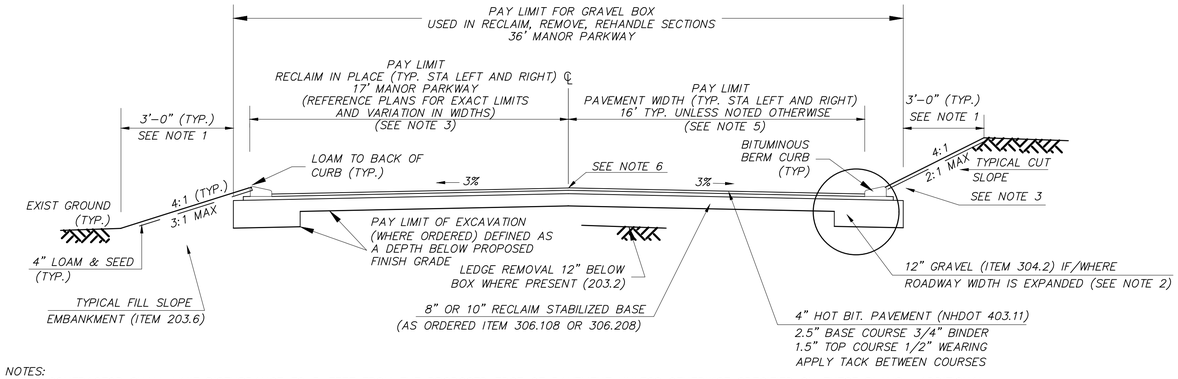
REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

FREEDOM DRIVE PLAN AND PROFILE (SHEET 1 OF 1)

SCALE: AS SHOWN	DESIGN: BEP
DRAWN: MRV	PROJECT: 18587.06
CHECKED: BRC	DATE: DECEMBER 2020

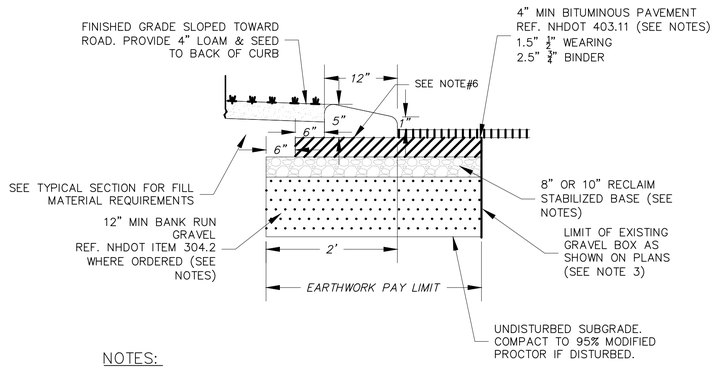


NOTES:

1. THE CONTRACTOR SHALL LIMIT DISTURBANCE TO 3–FEET FROM THE PROPOSED EDGE OF PAVEMENT UNLESS OTHERWISE SPECIFIED ON THESE PLANS. ADDITIONAL DISTURBANCE MUST FIRST BE COORDINATED WITH THE ENGINEER FOR APPROVAL.
2. ON RECLAIM PROJECTS WHERE THERE IS A ROADWAY WIDTH INCREASE DEPTH OF EXCAVATION SHALL BE 16" TO ALLOW FOR 12" RECLAIM AND 4" PAVEMENT. MINIMUM EXCAVATION WIDTH SHALL BE 2–FEET.
3. IN CONDITIONS WHERE ADDITIONAL RECLAIMED MATERIAL IS REQUIRED TO ACCOMMODATE A WIDER GRAVEL SECTION THEN THE ADDITIONAL WIDTH SHALL BE PAID UNDER ITEM 203.6 WHEN AVAILABLE AT THE PROJECT SITE OR WHEN AVAILABLE BY THE OWNER OFF SITE. HAULING AND HANDLING SHALL BE INCIDENTAL. WHEN ADDITIONAL RECLAIM IS PROVIDED BY THE CONTRACTOR IT SHALL BE PAID AS ITEM 304.4.
4. SECTION TO BE MODIFIED AS APPROPRIATE TO PROVIDE FOR BITUMINOUS BERM WHERE SHOWN ON THE PLANS. SEE BITUMINOUS BERM DETAIL FOR CONSTRUCTION.
5. PAVING INTENT: PAY LIMIT FOR PAVING SHALL BE AS STATED ON THE PLAN AND PER THIS DETAIL EXCEPT WHERE BITUMINOUS CURB IS USED. CURBED SECTIONS SHALL HAVE NOTED LANE WIDTH PLUS 1.5' PER SIDE (BINDER ONLY) FOR THE PURPOSES OF A BITUMINOUS BERM PAD. SEE BITUMINOUS BERM DETAIL.
6. ALL SEAMS AND JOINTS SHALL BE RAKED AND LUTED PRIOR TO COMPACTION AND ROLLING.
7. STRUCTURAL FILL (ITEM 508) SHALL BE PLACED ABD CINOACTED IN AREAS OF LEDGE REMOVAL BELOW THE GRAVEL BOX.

Manor Parkway Typical Roadway Section

NO SCALE

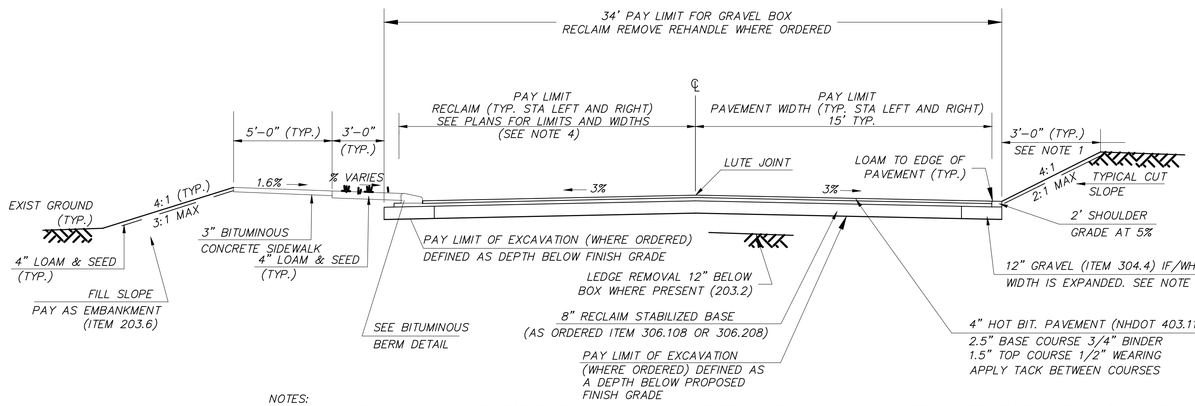


NOTES:

1. REFERENCE NHDOT MATERIAL SPECIFICATIONS. ALL MATERIALS SHALL CONFORM TO APPLICABLE NHDOT MATERIAL SPECIFICATIONS.
2. ALL GRAVELS TO BE COMPACTED TO 95% MODIFIED PROCTOR.
3. WHERE NECESSARY TO WIDEN THE GRAVEL BOX FOR BITUMINOUS CURB THE GRAVEL DEPTHS SHALL BE MINIMUM SPECIFIED OR MATCH THE EXISTING, WHICHEVER IS GREATER TO PAY LIMITS.
4. EXISTING WORK: EARTHWORK PAY LIMIT FOR BOX WIDENING SHALL BEGIN AT THE LIMIT OF THE EXISTING GRAVEL BOX. NOTE THAT IF SUITABLE GRAVELS EXIST THEN WIDENING SHALL NOT APPLY.
5. CURB TO BE PAID PER UNIT LENGTH COMPLETE IN PLACE. PAVEMENT, ROAD BED GRAVELS AND CUT/FILLS SHALL BE PAID UNDER RESPECTIVE ITEM NUMBERS.
6. BINDER SHALL BE TACK COATED BELOW BERM. TACK IS A SUBSIDIARY ITEM TO THE BERM.

Bituminous Berm Curb

NO SCALE

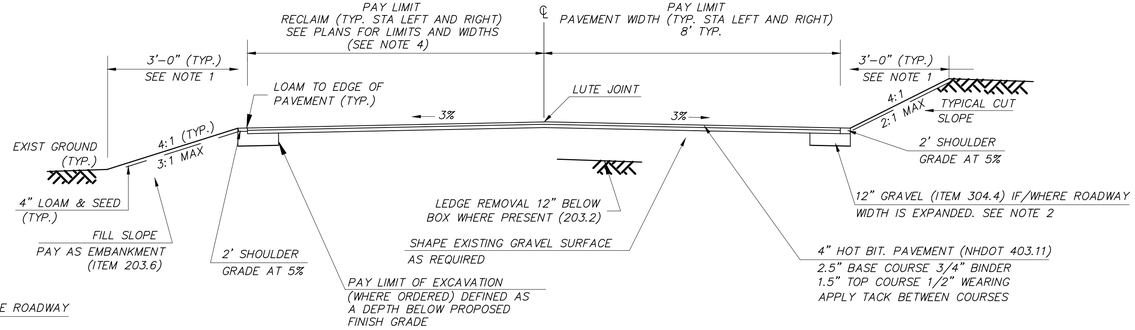


NOTES:

1. THE CONTRACTOR SHALL LIMIT DISTURBANCE TO 3–FEET FROM THE PROPOSED EDGE OF PAVEMENT UNLESS OTHERWISE SPECIFIED ON THESE PLANS. ADDITIONAL DISTURBANCE MUST FIRST BE COORDINATED WITH THE ENGINEER FOR APPROVAL.
2. ON RECLAIM PROJECTS WHERE THERE IS A ROADWAY WIDTH INCREASE DEPTH OF EXCAVATION SHALL BE 12" TO ALLOW FOR 8" CRUSHED GRAVEL AND 4" PAVEMENT. MINIMUM EXCAVATION WIDTH SHALL BE 2–FEET.
3. STRUCTURAL FILL (ITEM 508) SHALL BE PLACED AND COMPACTED IN AREAS OF LEDGE REMOVAL BELOW THE GRAVEL BOX.
4. SECTION TO BE MODIFIED AS APPROPRIATE TO PROVIDE FOR BITUMINOUS BERM WHERE SHOWN ON THE PLANS. SEE BITUMINOUS BERM DETAIL FOR CONSTRUCTION.
5. PAVING INTENT: PAY LIMIT FOR PAVING SHALL BE AS STATED ON THE PLAN AND PER THIS DETAIL EXCEPT WHERE BITUMINOUS CURB IS USED. CURBED SECTIONS SHALL HAVE NOTED LANE WIDTH PLUS 1.5' PER SIDE (BINDER ONLY) FOR THE PURPOSES OF A BITUMINOUS BERM PAD. SEE BITUMINOUS BERM DETAIL
6. IN CONDITIONS WHERE ADDITIONAL RECLAIMED MATERIAL IS REQUIRED TO ACCOMMODATE A WIDER GRAVEL SECTION THEN THE ADDITIONAL WIDTH SHALL BE PAID UNDER ITEM 203.6 WHEN AVAILABLE AT THE PROJECT SITE OR WHEN AVAILABLE BY THE OWNER OFF SITE. HAULING AND HANDLING SHALL BE INCIDENTAL. WHEN ADDITIONAL RECLAIM IS PROVIDED BY THE CONTRACTOR IT SHALL BE PAID AS ITEM 304.4.
7. ALL SEAMS AND JOINTS SHALL BE RAKED AND LUTED PRIOR TO COMPACTION AND ROLLING.

Freedom Drive Typical Roadway Section

NO SCALE



NOTES:

1. THE CONTRACTOR SHALL LIMIT DISTURBANCE TO 3–FEET FROM THE PROPOSED EDGE OF PAVEMENT UNLESS OTHERWISE SPECIFIED ON THESE PLANS. ADDITIONAL DISTURBANCE MUST FIRST BE COORDINATED WITH THE ENGINEER FOR APPROVAL.
2. WHERE THERE IS A ROADWAY WIDTH INCREASE DEPTH OF EXCAVATION SHALL BE 12" TO ALLOW FOR 8" CRUSHED GRAVEL AND 4" PAVEMENT. MINIMUM EXCAVATION WIDTH SHALL BE 2–FEET.
3. STRUCTURAL FILL (ITEM 508) SHALL BE PLACED AND COMPACTED IN AREAS OF LEDGE REMOVAL BELOW THE GRAVEL BOX.
4. IN CONDITIONS WHERE ADDITIONAL RECLAIMED MATERIAL IS REQUIRED TO ACCOMMODATE A WIDER GRAVEL SECTION THEN THE ADDITIONAL WIDTH SHALL BE PAID UNDER ITEM 203.6 WHEN AVAILABLE AT THE PROJECT SITE OR WHEN AVAILABLE BY THE OWNER OFF SITE. HAULING AND HANDLING SHALL BE INCIDENTAL. WHEN ADDITIONAL RECLAIM IS PROVIDED BY THE CONTRACTOR IT SHALL BE PAID AS ITEM 304.4.
5. ALL SEAMS AND JOINTS SHALL BE RAKED AND LUTED PRIOR TO COMPACTION AND ROLLING.

Lemay Rd Roadway Section

NO SCALE

STATE OF NEW HAMPSHIRE
BRIAN R. COLBURN
No. 11917
LICENSED
PROFESSIONAL ENGINEER

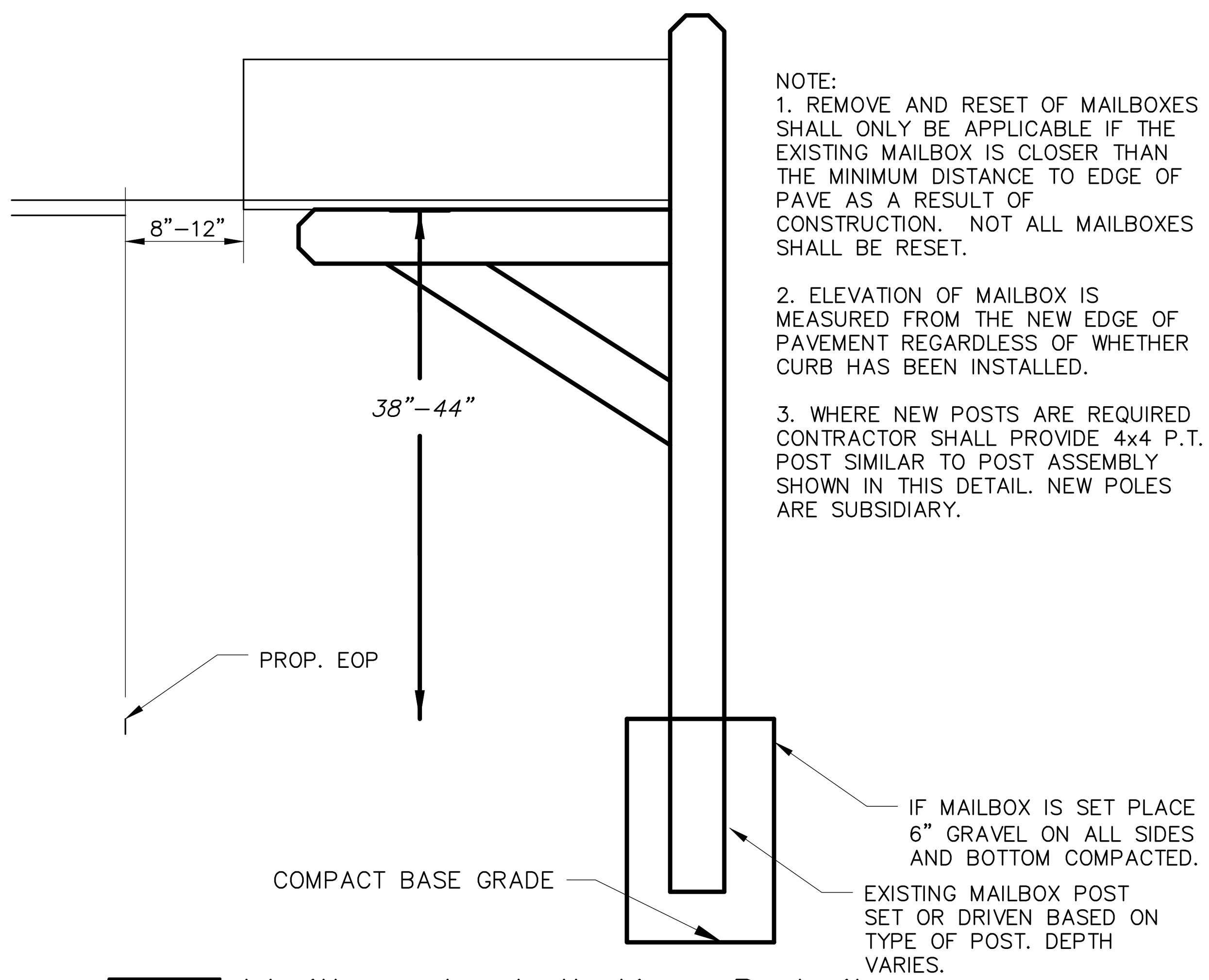
REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

CIVIL DETAILS 1

SCALE:	----	DESIGN: BEP	9 OF 16
DRAWN:	MRV	PROJECT: 18587.06	
CHECKED:	BRC	DATE: DECEMBER 2020	



NOTE:
1. REMOVE AND RESET OF MAILBOXES SHALL ONLY BE APPLICABLE IF THE EXISTING MAILBOX IS CLOSER THAN THE MINIMUM DISTANCE TO EDGE OF PAVE AS A RESULT OF CONSTRUCTION. NOT ALL MAILBOXES SHALL BE RESET.

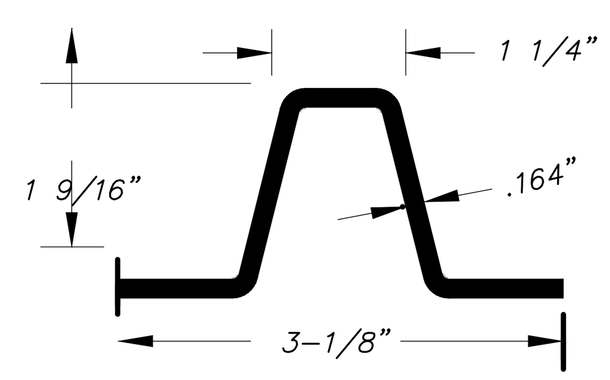
2. ELEVATION OF MAILBOX IS MEASURED FROM THE NEW EDGE OF PAVEMENT REGARDLESS OF WHETHER CURB HAS BEEN INSTALLED.

3. WHERE NEW POSTS ARE REQUIRED CONTRACTOR SHALL PROVIDE 4x4 P.T. POST SIMILAR TO POST ASSEMBLY SHOWN IN THIS DETAIL. NEW POLES ARE SUBSIDIARY.

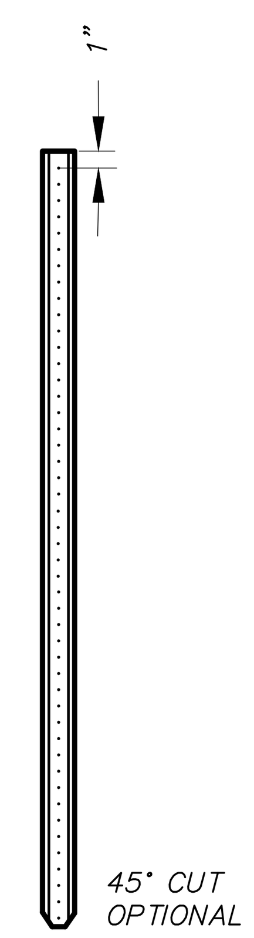
Mailbox Installation Detail

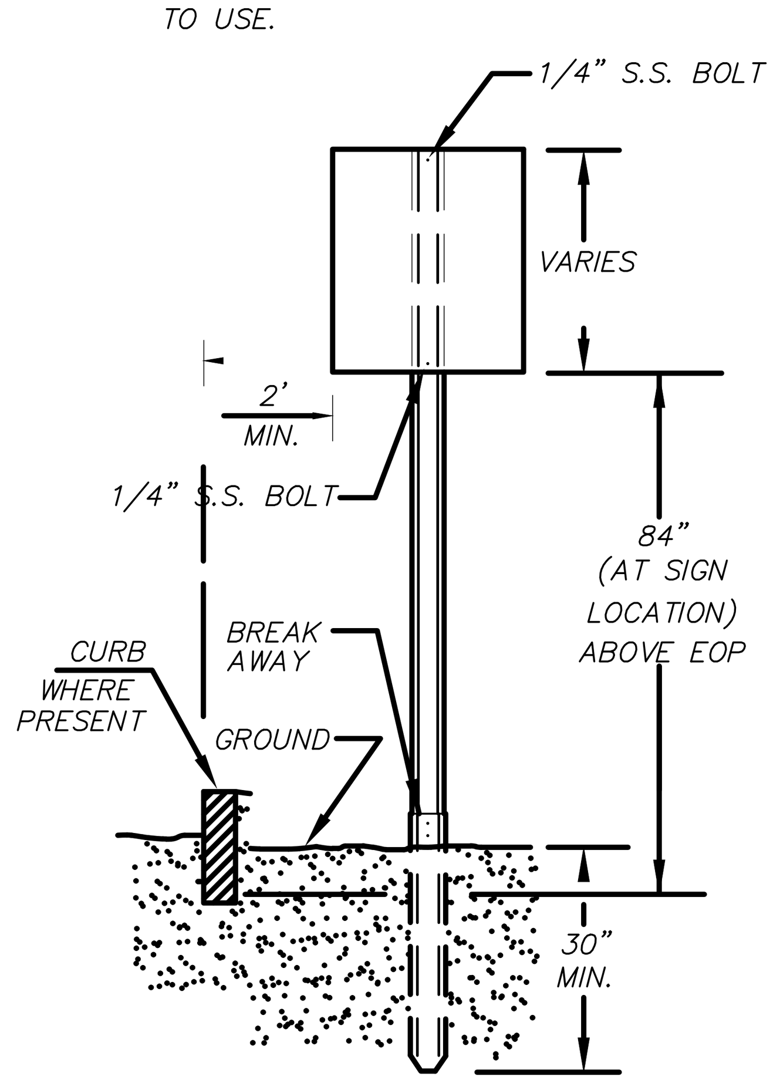
NO SCALE

<u>LENGTH</u>: P–12, 12'–0"; P–14, 14'–0"; P–16, 16'–0".
<u>WEIGHT PER LINEAR FOOT</u>: 2.50 LBS. (MIN.)
<u>HOLES</u>: 3/8" DIA. 1' C–C FULL LENGTH
<u>STEEL</u>: SHALL CONFORM TO ASTM A–499 (GRADE 60) OR ASTM A–576 (GRADE 1070–1080).
<u>FINISH</u>: SHALL BE GALVANIZED



DIMENSIONS SHOWN ARE NOMINAL
ALTERNATE SECTIONS MUST BE APPROVED PRIOR TO USE.





NOTES:

1. SIGN CONSTRUCTION AND INSTALLATION SHALL MEET THE REQUIREMENTS OF NHDOT ITEM 615.

2. POSTS AND SIGNS SHALL BE BREAKAWAY CONSTRUCTION WITH STAINLESS STEEL HARDWARE. NYLON WASHERS SHALL BE PLACED AGAINST THE SIGN SURFACE.

3. POSTS SHALL BE PLUMB; ANY POST BENT OR OTHERWISE DAMAGED SHALL BE REMOVED AND PROPERLY REPLACED. POSTS MAY BE SET OR DRIVEN.

4. WHEN POSTS ARE SET, HOLES SHALL BE DUG TO THE PROPER DEPTH; AFTER INSERTING POSTS, THE HOLES SHALL BE BACK FILLED WITH SUITABLE MATERIAL IN LAYERS NOT TO EXCEED 6" DEEP AND THOROUGHLY COMPACTED, CARE BEING TAKEN TO PRESERVE THE ALIGNMENT OF THE POST.

5. WHEN POSTS ARE DRIVEN, A SUITABLE DRIVING CAP SHALL BE USED AND AFTER DRIVING THE TOP OF THE POST SHALL HAVE SUBSTANTIALLY THE SAME CROSS– SECTIONAL DIMENSION AS THE BODY OF THE POST; BATTERED HEADS WILL NOT BE ACCEPTED.

6. POSTS SHALL NOT BE DRIVEN WITH THE SIGN ATTACHED TO THE POST.

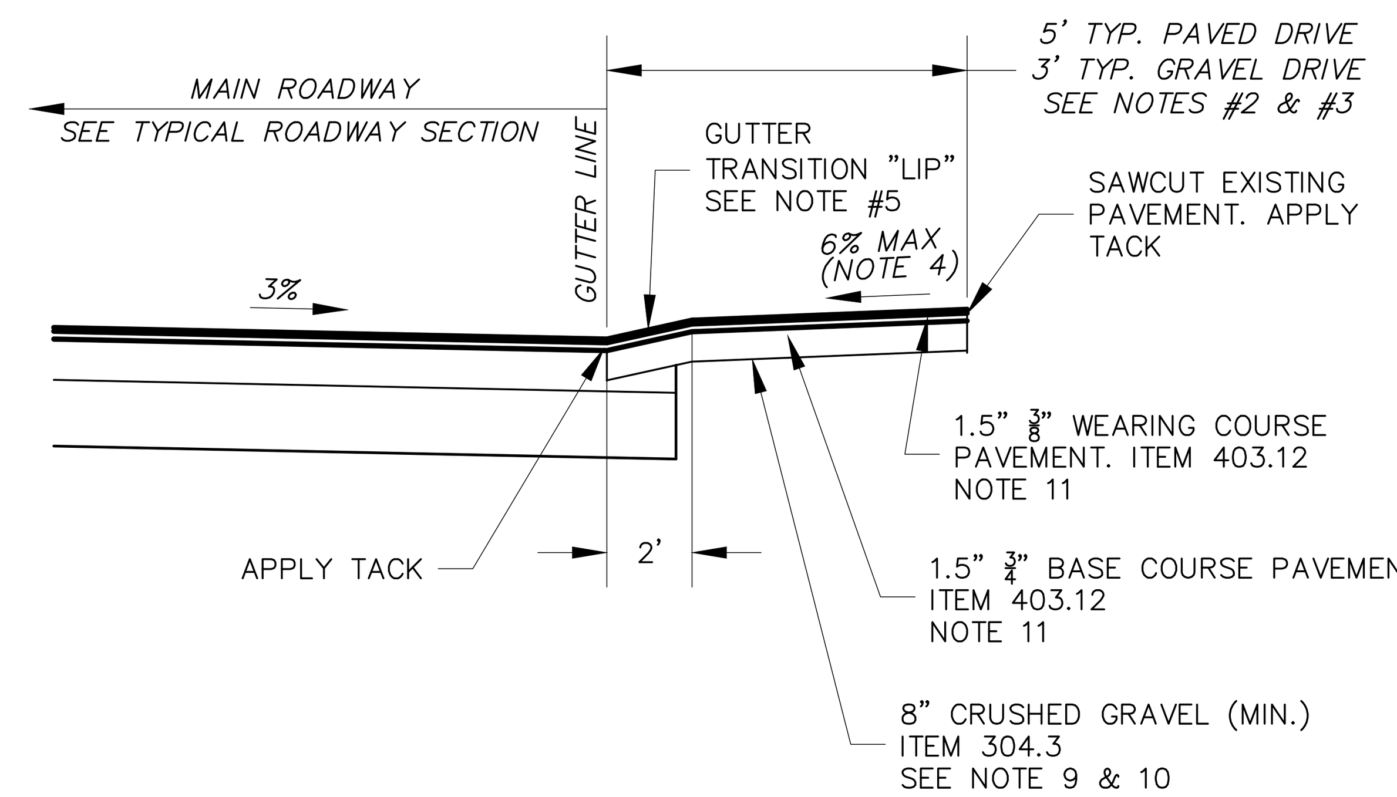
7. SIGNS SHALL BE ERECTED IN CONFORMANCE WITH THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", CURRENT EDITION.

8. WHEN SIGN IS IN PLACE NO PART OF POST SHALL EXTEND ABOVE THE SIGN.

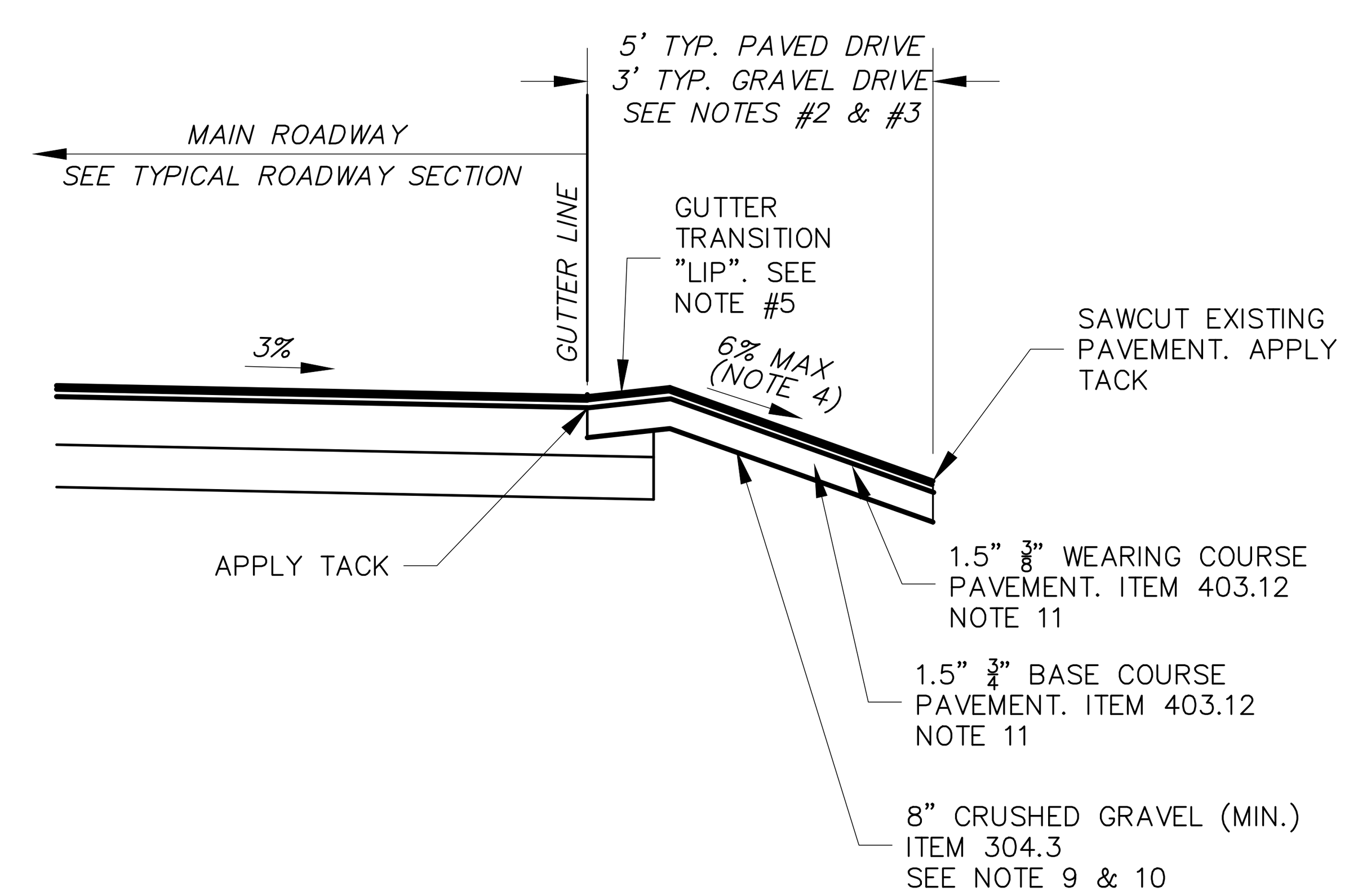
9. EXISTING SIGN REMOVAL SHALL BE CONSIDERED INCIDENTAL.

Sign Post

NO SCALE



<u>DRIVEWAY APRON ABOVE ROAD GRADE</u>



<u>DRIVEWAY APRON BELOW ROAD GRADE</u>

Typical Driveway Apron Profile Detail

NO SCALE

NOTES:
1. REFERENCE PROJECT SPECIFICATIONS FOR MEASUREMENT AND PAYMENT.

2. UNLESS OTHERWISE NOTED HORIZONTAL DIMENSION FOR DRIVEWAYS SHALL BE GOVERNED BY MAXIMUM SLOPE REQUIREMENTS AND AS DIRECTED BY THE ENGINEER. ANY DIMENSION GREATER THAN 5–FEET SHALL BE COORDINATED WITH THE ENGINEER FIRST. ANY AREA NOT PRE–APPROVED BY THE ENGINEER SHALL NOT BE PAID.

3. UNLESS OTHERWISE NOTED TOTAL HORIZONTAL DIMENSION OF GRAVEL DRIVE APRONS SHALL BE 5–FEET WITH A MAXIMUM OF 3–FEET BEING PAVED. THE REMAINING DISTANCE SHALL BE CRUSHED GRAVEL

4. MAXIMUM 6% SLOPE FOR DRIVEWAY APRONS MAY BE MODIFIED ONLY AS DIRECTED BY THE ENGINEER BASED ON FIELD CONDITIONS.

5. GUTTER TRANSITION ("LIP"): ALL DRIVEWAYS SHALL RECEIVE A GUTTER TRANSITION WITH AN INCLINE OF 1–2 INCHES IN 2–FEET FROM THE EDGE OF PAVEMENT. NO ADDITIONAL COMPENSATION SHALL BE GRANTED FOR TRANSITIONS. ELEVATION OF LIPS SHALL BE AS DIRECTED BASED ON FIELD CONDITIONS.

6. TACK COAT SHALL BE APPLIED TO THE JOINTS AND BETWEEN PAVEMENT COURSES AND AS DIRECTED AND SHALL BE SUBSIDIARY TO UNIT ITEM COST.

7. GRAVELS SHALL BE COMPACTED TO 95% MODIFIED PROCTOR.

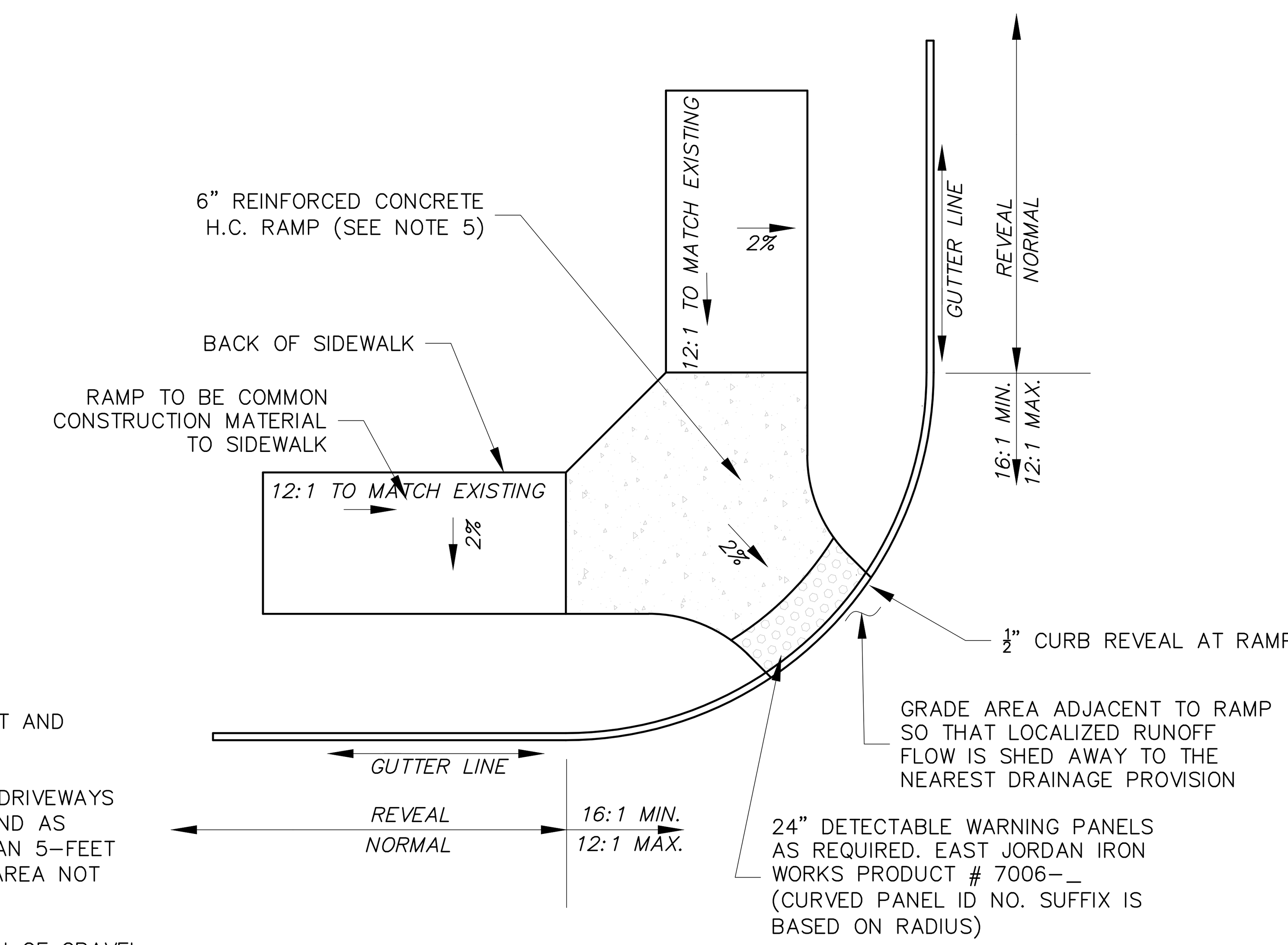
8. SUB–BASE SHALL BE COMPACTED AS NEEDED AND/OR AS DIRECTED.

9. WHERE RECLAIM IS PERMITTED IN–LIEU OF 304.3 EXCESS RECLAIM OR RECLAIM PROVIDED BY OWNER SHALL BE PAID AS 203.6. HAULING AND HANDLING SHALL BE INCIDENTAL

10. WHERE EXISTING GRAVELS ARE DETERMINED TO BE SUITABLE IN PLACE BY THE ENGINEER THEN NO EXCAVATION OR GRAVEL REPLACEMENT SHALL OCCUR. APRON PREP SHALL BE INCIDENTAL. ADDITIONAL GRAVEL SHIM TO MEET ROAD GRADES SHALL BE PAID UNDER 304.3 OR 203.6.

11. WHERE A PAVER IS USED TO PAVE DRIVEWAYS THE PAVEMENT SHALL BE PAID AS 403.11 (MACHINE METHOD)

12. REMOVAL OF LEDGE, IF ENCOUNTERED, SHALL EXTEND TO BOTTOM OF GRAVEL ONLY. DO NOT OVEREXCAVATE.



NOTES:

1. REFERENCE NHDOT MATERIAL SPECIFICATIONS. ALL MATERIALS SHALL CONFORM TO APPLICABLE NHDOT MATERIAL SPECIFICATIONS.

2. REFERENCE CONCRETE SIDEWALK WITH GRANITE CURB DETAIL.

3. INTERCEPT DRAINAGE ALONG THE CURB IN ADVANCE OF THE RAMP.

4. CURB RAMPS SHALL COMPLY WITH SECTION 4.7 OF THE AMERICANS WITH DISABILITIES ACT.

5. SIDEWALK CROSS SLOPE NOT TO EXCEED 2% IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT

6. CONCRETE SHALL BE CURED AND TREATED 4,000 PSI, AIR ENTRAINED, BROOM FINISHED (SO AS TO BE SLIP RESISTANT) WITH TOOLED EDGES. SURFACE TREATMENT IS INCIDENTAL TO THE ITEM.

7. SIDEWALK ENTRANCE CURB REVEAL SHALL HAVE A 1/4" REVEAL WITH 2:1 BEVEL IN ACCORDANCE WITH ADA DESIGN GUIDELINES.

Corner Sidewalk Ramp

NO SCALE

STATE OF NEW HAMPSHIRE
BRIAN R. COLBURN
No. 11917
LICENSED
PROFESSIONAL ENGINEER
[illegible]

REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

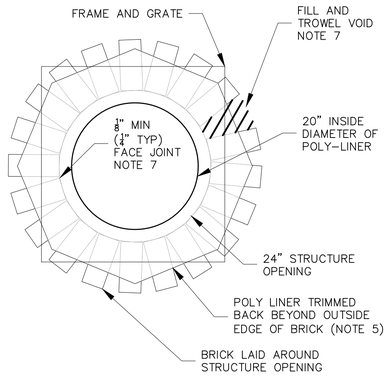
TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

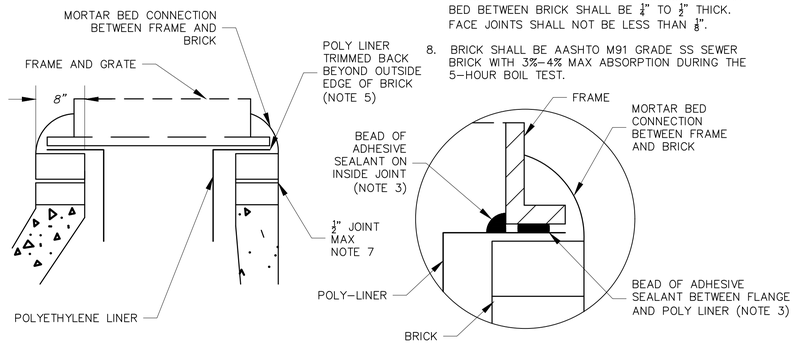
CIVIL DETAILS 2

SCALE: N.T.S.	DESIGN: BEP	10 OF 16
DRAWN: MRV	PROJECT: 18587.06	
CHECKED: BRC	DATE: DECEMBER 2020	

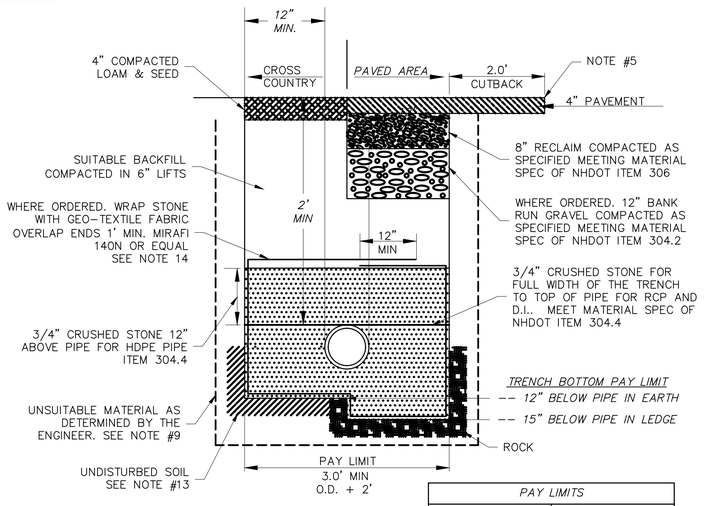
NOTES:

1. ALL CATCH BASINS SHALL BE OUTFITTED WITH A POLYETHYLENE LINER DOWNSPOUT.
2. POLYETHYLENE LINER SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
3. PLACE A CONTINUOUS BEAD OF AN APPROVED BONDING ADHESIVE SEALENT BETWEEN FRAME AND POLYETHYLENE SHEET AND AT THE INSIDE JOINT AFTER ASSEMBLY IS COMPLETE.
4. PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).
5. TRIM POLYETHYLENE BEYOND THE OUTSIDE EDGE OF BRICK TO PROVIDE A MORTAR CONNECTION BETWEEN THE FRAME AND BRICK. ALTERNATE TRIMMING METHODS MAY/SHALL BE REQUIRED BY THE OWNER WHEN USED WITH CURBING AND GUTTER INLETS.
6. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 1" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.
7. BRICK MORTAR: COMPLETELY FILL AND TROWEL ANNULAR SPACE BETWEEN ALL BRICKS. MORTAR BED BETWEEN BRICK SHALL BE ¼" TO ½" THICK. FACE JOINTS SHALL NOT BE LESS THAN ⅛".
8. BRICK SHALL BE AASHTO M91 GRADE SS SEWER BRICK WITH 3%–4% MAX ABSORPTION DURING THE 5–HOUR BOIL TEST.





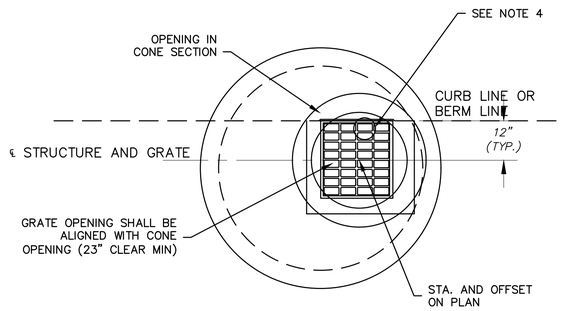
Poly–Liner Detail
NO SCALE



PAY LIMITS	
TRENCH WIDTH	I.D.
36" I.D. + 24" 2 x I.D.	UP TO 12" 12" TO 24" OVER 24"

Typical Drain Trench Detail (with less than 4' cover)
NO SCALE

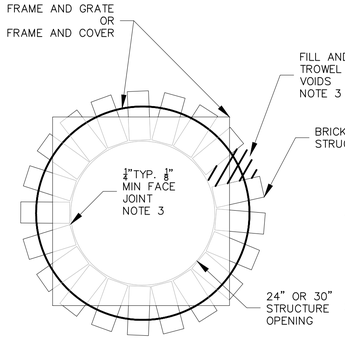
NOTE:
1. IF SITE CONDITIONS DO NOT ALLOW FOR SETTING CATCH BASINS AS SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO SETTING STRUCTURE.
2. CONTRACTOR SHALL VERIFY ALL STRUCTURE LOCATIONS PRIOR TO LAYING PIPE
3. ALL CB RIMS (SINGLE AND DOUBLE) AGAINST GRANITE CURBING SHALL BE 3–FLANGED. ALL CB RIMS NOT AGAINST GRANITE CURBING SHALL BE 4–FLANGED.
4. CATCH BASIN GRATES SHALL BE ROTATED SUCH THAT HOLES IN GRATE ARE PARALLEL TO GUTTER ON LONG SIDE.



Casting Placement at Curbline Detail
NO SCALE

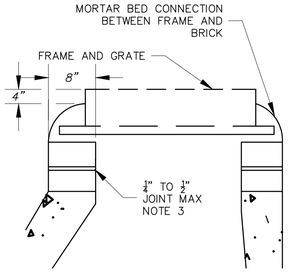
DRAINAGE TRENCH NOTES:

1. REFERENCE TOWN OF SALEM STANDARD SPECIFICATIONS FOR METHOD OF MEASUREMENT AND PAYMENT.
2. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
3. ALL LOCAL STATE AND FEDERAL SAFETY STANDARDS SHALL BE STRICTLY ADHERED TO.
4. NEW ROADWAY CONSTRUCTION SHALL CONFORM TO TOWN OF SALEM SUBDIVISION REQUIREMENTS
5. TRENCH PATCH: AFTER THE BASE COURSE HAS BEEN ROLLED TO THE REQUIRED GRADE, ANY BROKEN OR IRREGULAR EDGES OF THE EXISTING PAVEMENT SHALL BE SAW CUT IN STRAIGHT LINES LEAVING A SOUND VERTICAL FACE 24–INCHES BACK FROM THE EDGE OF THE TRENCH OR OTHER EXCAVATIONS TO ACCEPT PLACEMENT OF A 24–INCH MINIMUM OVERLAP OF BITUMINOUS BASE COURSE PAVEMENT ON UNDISTURBED MATERIAL.
6. BITUMINOUS PAVEMENT, DEPTH EQUAL TO EXISTING PAVEMENT WITH 4" MIN. (1.5" OF ½" WEARING, 2.5" OF ¾" BINDER). PAVEMENT SHALL CONFORM TO NHDOT STANDARD SPECIFICATION 403.
7. DAMAGED OR OTHERWISE DEFICIENT PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE
8. INSPECTION: FOLLOWING INSTALLATION DRAIN LINES SHALL BE CLEANED AND VISUALLY INSPECTED. PIPES SHALL BE TRUE TO LINE AND GRADE PRIOR TO ACCEPTANCE AND USE.
9. UNSUITABLE MATERIAL & OVER EXCAVATION: ANY EXCAVATION OUTSIDE OF DEFINED PAY LIMIT SHALL BE STRICTLY COORDINATED AND MEASURED WITH THE ENGINEER FOR PAYMENT. ANY MATERIAL REMOVED WITHOUT PRIOR AUTHORIZATION SHALL NOT BE PAID. EXCAVATION AREAS SHALL BE BACKFILLED WITH APPROPRIATE BEDDING MATERIALS. UNSUITABLES WITHIN TRENCH PAY LIMITS ARE SUBSIDIARY.
10. MATERIAL SHALL BE REPLACED IN KIND WHENEVER POSSIBLE.
11. SUITABLE MATERIAL: IN ROADS, ROAD SHOULDERS, WALKWAYS AND TRAVELED WAYS, SUITABLE MATERIAL FOR TRENCH BACKFILL SHALL BE THE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOP SOIL, ALL WET OR SOFT MUCK, PEAT OR CLAY, ALL EXCAVATED LEDGE MATERIAL AND ALL ROCKS OVER SIX INCHES IN THE LARGEST DIMENSION, OR ANY MATERIAL WHICH, AS DETERMINED BY THE TOWN OF SALEM DEPARTMENT OF ENGINEERING, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION. SUITABLE MATERIAL SHALL BE PLACED IN 6" LIFTS AND THOROUGHLY COMPACTED.
12. COMPACTION: BACKFILL OF THE TRENCHES SHALL BE COMPACTED TO 95% MAX. DRY DENSITY UNDER ALL PAVED AREAS AND 92% MAX. DRY DENSITY UNDER OTHER AREAS IN ACCORDANCE WITH NHDOT STANDARD SPECIFICATIONS – SECTION 304.
13. IF TRENCH BOTTOM IS DISTURBED THEN CONTRACTOR SHALL COMPACT AS APPROPRIATE.
14. ENGINEER SHALL DETERMINE AT THE TIME OF CONSTRUCTION IF STONE IN SHALLOW TRENCHES SHALL BE WRAPPED IN FABRIC WHERE FIELD CONDITIONS DICTATE. FABRIC IS SUBSIDIARY TO PIPE ITEM NUMBER.
15. WHERE ROCK IS ENCOUNTERED IN TRENCH EXCAVATION. ALLOWABLE PAY LIMIT SHALL BE AS DEFINED IN THE CHART SHOWN IN THIS DETAIL TO 12–INCHES BELOW PIPE.
16. CORES: WHERE IT IS NECESSARY TO CORE AN EXISTING STRUCTURE THE CORE SHALL BE COMPLETED WITH A CIRCULAR HOLE SAW AND SHALL BE LARGE ENOUGH TO RECEIVE THE PIPE AND NEOPRENE BOOT. CRUDE METHODS WITH A PIPE SAW, SLEDGE HAMMER OR OTHER TOOLS ARE UNACCEPTABLE. CORES INTO STRUCTURES SHALL BE INCIDENTAL TO THE PROJECT EXCEPT WHERE SPECIFICALLY CALLED AS A PAY ITEM ON THE PLAN.

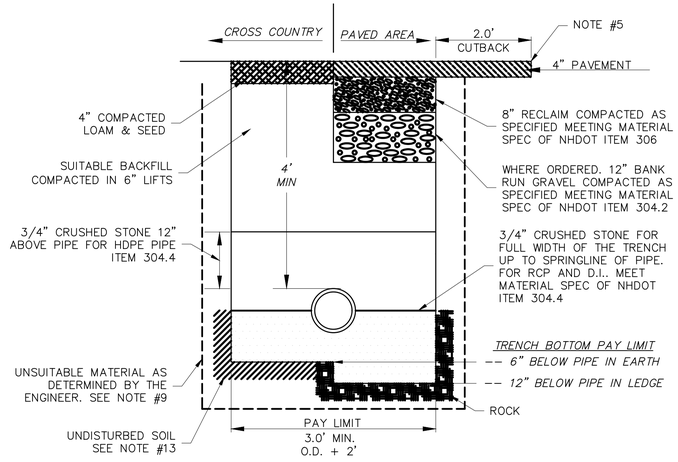


NOTES:

1. ALL STANDARD CATCH BASINS SHALL BE OUTFITTED WITH A POLYETHYLENE LINER DOWNSPOUT. EXCEPTIONS MAY APPLY. REFER TO SPECIFIC STRUCTURE TYPE AND CORRESPONDING CONSTRUCTION DETAILS (I.E. DOUBLE GRATE CB, "C–TOP" CB, DROP INLET, ETC.).
2. PLACE MORTAR TO 4" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO STRUCTURE ITEM).
3. BRICK MORTAR: COMPLETELY FILL AND TROWEL ANNULAR SPACE BETWEEN ALL BRICKS. MORTAR BED BETWEEN BRICK SHALL BE ¼" TO ½" THICK. FACE JOINTS SHALL AVERAGE ¼" BUT NOT BE LESS THAN ⅛".
4. DO NOT PLASTER OR MORTAR OVER BRICK WORK. ALL JOINTS SHALL BE CLEAN AND PROPERLY POINTED.
5. BRICK SHALL BE AASHTO M91 GRADE SS SEWER BRICK WITH 3%–4% MAX ABSORPTION DURING THE 5–HOUR BOIL TEST. CONCRETE GRADE RINGS SHALL NOT BE ALLOWED.
6. DMH & SEWER FRAME AND COVER SHALL BE NEENAH MODEL #R–1743. DMH SHALL READ "DRAIN". SMH SHALL READ "SEWER". CB FRAME AND GRATE SHALL BE NEENAH MODEL #R–3570. DOUBLE GRATES SHALL BE EJ MODEL #0MA552000066.
7. ALL CATCH BASIN FRAMES (SINGLE AND DOUBLE) INSTALLED AT GRANITE CURBING LOCATIONS SHALL BE 3–FLANGED. ALL CATCH BASIN FRAMES (SINGLE AND DOUBLE) INSTALLED WITH NO CURBING SHALL BE 4–FLANGED.



Frame Set Detail (SMH, DMH or CB)
NO SCALE



PAY LIMITS	
TRENCH WIDTH	I.D.
36" I.D. + 24" 2 x I.D.	UP TO 12" 12" TO 24" OVER 24"

Typical Drain Trench Detail
NO SCALE

REV	DATE	DESCRIPTION	BY

STATE OF NEW HAMPSHIRE — BRIAN R. COLBURN — No. 11917 — LICENSED PROFESSIONAL ENGINEER

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

CIVIL DETAILS 3

SCALE: N.T.S.	DESIGN: BEP	11 OF 16
DRAWN: MRV	PROJECT: 18587.06	
CHECKED: BRC	DATE: DECEMBER 2020	

GENERAL DRAIN STRUCTURE NOTES:

1. REFERENCE NHDOT SECTION 604 AND TOWN OF SALEM SUPPLEMENTAL SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

2. SEPARATE CONSTRUCTION SPECIFICATIONS ARE ATTACHED OR INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD DRAWINGS ARE NOT COMPLETE WITHOUT SPECIFICATIONS.

3. ALL STRUCTURE COMPONENTS INCLUDING CASTING ASSEMBLIES WILL BE INSPECTED FOR ACCEPTABILITY. REJECTED MATERIALS SHALL BE REMOVED FROM THE SITE.

4. FLAT TOP OPTION: FOR STRUCTURES WITH A DIAMETER GREATER THAN 4 FEET THE DIAMETER MAY BE CONSTANT FROM TOP TO BOTTOM WITH A FLAT TOP LID OR A RISER SECTION THAT REDUCES FROM THE LARGER DIAMETER TO THE STANDARD 4' ECCENTRIC CONE SECTION.

5. ADJUSTMENT BRICK SHALL CONFORM TO AASHTO M32, GRADE SS SEWER BRICK. MAX ABSORPTION SHALL BE 3%–4% DURING THE 5–HOUR BOIL TEST.

6. BRICK FACE WORK SHALL BE LAID CLOSE WITH JOINTS NOT EXCEEDING 1/4". JOINTS SHALL BE FILLED AND POINTED. CONCRETE COLLARS ARE NOT ALLOWED.

7. CB AND DI GRATES IN PAVED AREAS SHALL BE SET ACCORDING TO THE STANDARD SALEM PAVEMENT DEPRESSION DETAIL.

8. INVERTS SHALL BE CONSTRUCTED USING GRADE SS SEWER BRICK (SEE ADJUSTMENT BRICK ABOVE). POURED AND SHAPED CONCRETE INVERTS SHALL NOT BE ALLOWED.

9. DOUBLE GRATES: WHERE DOUBLE GRATES ARE NEEDED A 5–FOOT MIN. DIAMETER STRICTURE WITH FLAT TOP LID SHALL BE USED. DOUBLE GRATE SHALL BE *EJ MODEL #0MA552000066.*

10. BEDDING 3/4" CRUSHED STONE CONFORMING TO NHDOT ITEM 304.4 SHALL BE USED FOR BEDDING. WHERE ORDERED BY THE ENGINEER TO STABILIZE THE BASE ADDITIONAL SCREENED GRAVEL OR CRUSHED STONE 1/2 TO 1–1/2 INCH SHALL BE USED.

11. PIPE TO MANHOLE JOINTS SHALL BE ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND OPENING SURFACES; OR CAST INTO THE WALL AND SECURED WITH STAINLESS STEEL CLAMPS. ELASTOMERIC SEALING RING SHALL FORM A WATER TIGHT SEAL ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING. NON–SHRINK GROUT SHALL BE PLACED IN THE ANNULAR SPACE BETWEEN THE SEALING BOOT AND PIPE.

12. CORE SPACING: ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF OUTSIDE SURFACE BETWEEN CORE HOLES, NO MORE THAN 75% OF A HORIZONTAL CROSS SECTION SHALL BE CORE HOLES AND CORE HOLES SHOULD BE 6" TYPICAL FROM JOINTS BUT IN NO CASE CLOSER THAN 3" AS APPROVED.

13. THE CORE HOLE SHALL NOT BE CLOSER THAN 3" TO JOINTS WITH USE OF AN ELASTOMERIC BOOT CONNECTOR. ELASTOMERIC BOOT CONNECTORS FOR INVERTS SHALL NOT BE ALLOWED IN SHALLOW TRENCHES (LESS THAN 3.5 FEET RIM TO INVERT)

14. CORES: WHERE IT IS NECESSARY TO CORE AN EXISTING STRUCTURE THE CORE SHALL BE COMPLETED WITH A CIRCULAR HOLE SAW AND SHALL BE LARGE ENOUGH TO RECEIVE THE PIPE AND NEOPRENE BOOT. CRUDE METHODS WITH A PIPE SAW, SLEDGE HAMMER OR OTHER TOOLS ARE UNACCEPTABLE. *FIELD CORES SHALL BE INCIDENTAL UNLESS SPECIFICALLY PROVIDED FOR.*

15. OUTSIDE EDGES OF THE OUTLET PIPE SHALL PROJECT NO MORE THAN 3" BEYOND THE INSIDE WALL OF THE STRUCTURE.

16. LIFTING HOLES SHALL BE FILLED WITH MORTAR.

17. UNSUITABLE MATERIAL & OVER EXCAVATION: PAY LIMITS FOR STRUCTURE INSTALLATION SHALL BE COMPLETE IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS AND METHODS OF STRUCTURE INSTALLATION. CLAIMS FOR OVER EXCAVATION SHALL NOT BE GRANTED. EXCAVATION AREAS SHALL BE BACKFILLED WITH APPROPRIATE BEDDING MATERIALS. REMOVAL OF UNSUITABLES AND REPLACEMENT WITH SUITABLE GRANULAR FILL ARE SUBSIDIARY.

18. BACKFILL WITHIN 1–FOOT OF THE STRUCTURE WALL SHALL BE SAND CONFORMING TO NHDOT MATERIAL SPEC ITEM 304.1. REMAINING BACKFILL SHALL CONFORM TO SALEM TYPICAL TRENCH REQUIREMENTS. BACKFILL SHALL BE COMPACTED IN 6" LIFTS.

19. STEPS ARE NOT ALLOWED.

20. CASTINGS CASTINGS SHALL BE EVEN–GRAINED CAST IRON, SMOOTH AND FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES AND DEFECTS. CONTACT SURFACES OF FRAMES AND GRATES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION. *ALL CATCH BASIN FRAMES (SINGLE AND DOUBLE) INSTALLED AT GRANITE CURBING LOCATIONS SHALL BE 3–FLANGED. ALL CATCH BASIN FRAMES (SINGLE AND DOUBLE) INSTALLED WITH BITUMINOUS CURB OR NO CURBING SHALL BE 4–FLANGED.*

21. ALL STRUCTURES SHALL BE H20 LOAD RATED.

22. ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C–478. ALL REINFORCING STEEL SHALL CONFORM TO ASSHTO M31 (ASTM A615) GRADE 60, AND SHALL MEET THE REQUIREMENTS OF SECTION 544 REINFORCING STEEL OF THE NHDOT STANDARD SPECS.

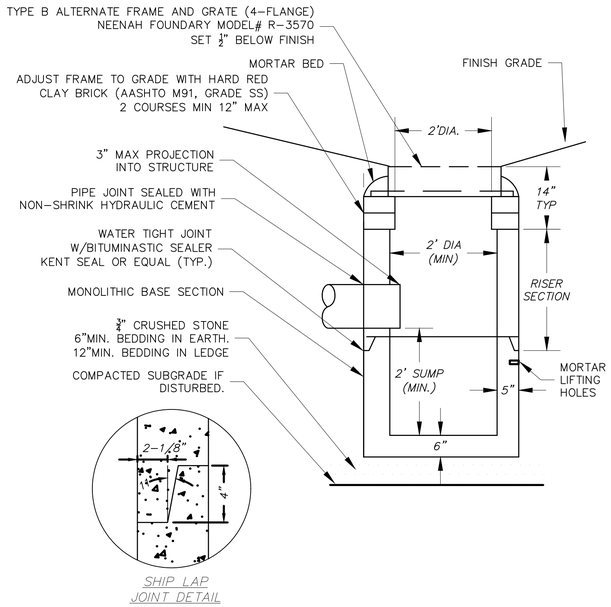
23. CONE SECTIONS SHALL BE ECCENTRIC. WHERE PIPE CORE WOULD OTHERWISE ENTER INTO THE CONE SECTION AN H–20 LOAD RATED FLAT TOP ECCENTRIC LID MAY BE USED.

24. CIRCUMFERENTIAL REINFORCEMENT REQUIREMENTS SHALL CONFORM TO THE LATEST ASTM A185 SPECIFICATIONS.

25. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI).

26. CIRCUMFERENTIAL REINFORCEMENT SHALL BE PLACED IN THE CENTER THIRD OF THE WALL

27. EACH COMPONENT OF THE SHIP LAP JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.



DROP INLET:

1. REFERENCE GENERAL DRAIN STRUCTURE NOTES, NHDOT SECTION 604, AND TOWN OF SALEM SUPPLEMENTAL SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

2. SEPARATE CONSTRUCTION SPECIFICATIONS ARE ATTACHED OR INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD DRAWINGS ARE NOT COMPLETE WITHOUT SPECIFICATIONS.

3. USE OF A DROP INLET IN THE PUBLIC INFRASTRUCTURE SHALL BE SOLELY GOVERNED BY THE SALEM ENGINEERING DEPARTMENT AND SHALL BE ON A CASE BY CASE BASIS. NORMAL ENGINEERING PRACTICE IN SALEM SHALL NOT PERMIT THE USE OF A DROP INLET.

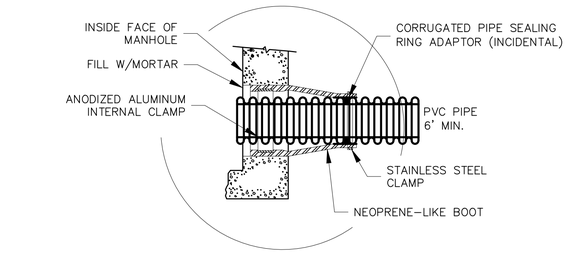
4. IF/WHERE A DROP INLET IS ALLOWED THERE SHALL NOT BE ANY STRUCTURE OR INLET UPSTREAM OF IT.

5. BOOT CONNECTORS, ARE GENERALLY NOT USED IN TRENCHES LESS THAN 3.5 FEET. USE OF A BOOT CONNECTOR ON A DROP INLET SHALL BE DETERMINED AT THE TIME OF SHOP DRAWING SUBMITTAL.

6. USE OF POLY–LINER ON DROP INLETS SHALL BE SITE SPECIFIC BASED ON INVERT DEPTHS. TRIMMING MAY BE REQUIRED TO PREVENT BLOCKAGE OF THE INVERTS.

Precast Reinforced Drop Inlet (Square or Round)

NO SCALE



Corrugated Pipe/Boot Connection Detail

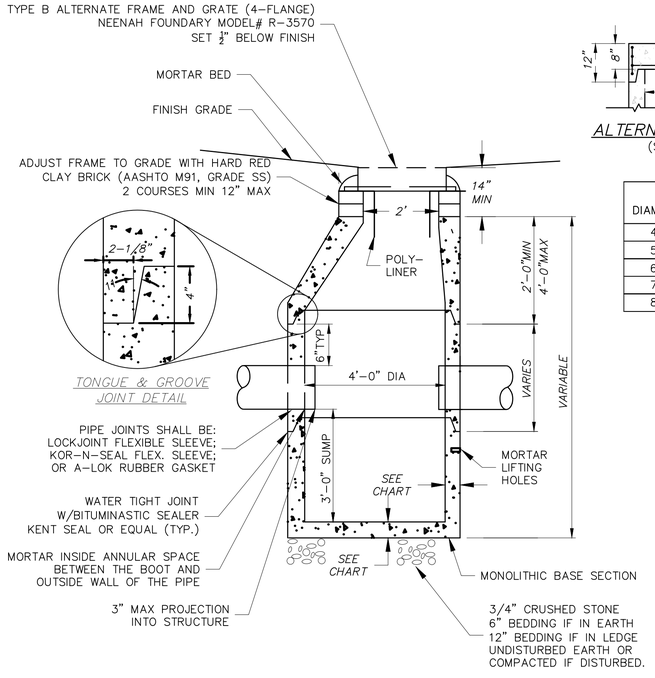
NO SCALE

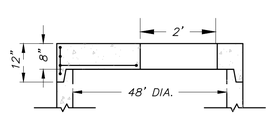
DMH NOTES:

1. REFERENCE GENERAL DRAIN STRUCTURE NOTES, NHDOT SECTION 604, AND TOWN OF SALEM SUPPLEMENTAL SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

2. MANHOLE FRAMES AND COVERS SHALL PROVIDE A THIRTY INCH CLEAR OPENING. A 3–INCH (MINIMUM HEIGHT) WORD "DRAIN" SHALL BE CAST INTO THE TOP SURFACE.

3. SEPARATE CONSTRUCTION SPECIFICATIONS ARE ATTACHED OR INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD DRAWINGS ARE NOT COMPLETE WITHOUT SPECIFICATIONS.





ALTERNATE H–20 TOP SLAB
(SEE NOTE #4)

DIAMETER	WALL THICKNESS MIN.	FLOOR THICKNESS MIN.
4'	5"	6"
5'	6"	8"
6'	7"	8"
7'	8"	10"
8'	9"	10"

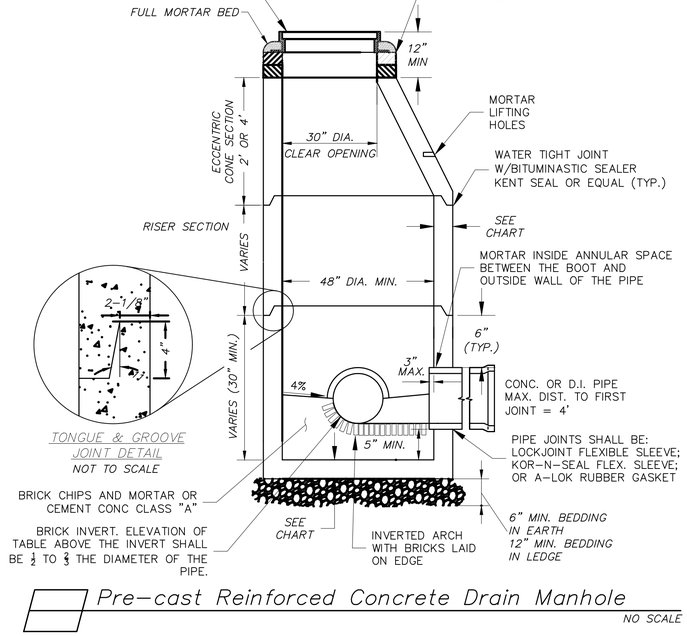
CB NOTES:

1. REFERENCE GENERAL DRAIN STRUCTURE NOTES, NHDOT SECTION 604, AND TOWN OF SALEM SUPPLEMENTAL SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

2. SEPARATE CONSTRUCTION SPECIFICATIONS ARE ATTACHED OR INCLUDED IN THE CONTRACT DOCUMENTS. THESE STANDARD DRAWINGS ARE NOT COMPLETE WITHOUT SPECIFICATIONS.

Precast Reinforced Catch Basin

NO SCALE



Pre–cast Reinforced Concrete Drain Manhole

NO SCALE

STATE OF NEW HAMPSHIRE
BRIAN
R.
COLBURN
No. 11917
LICENSED
PROFESSIONAL ENGINEER

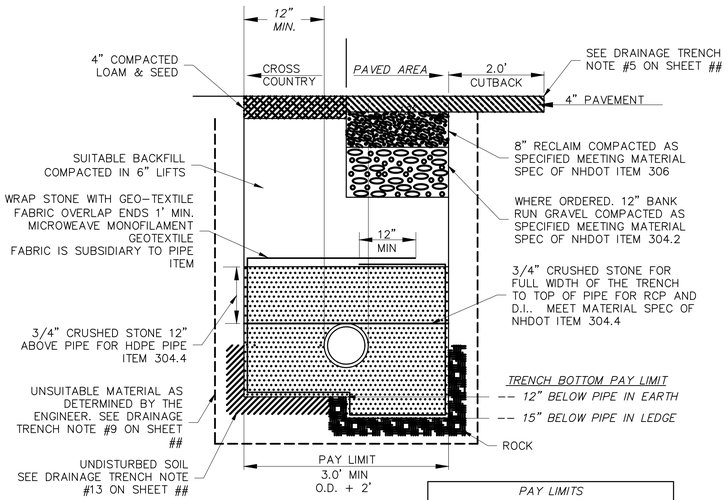
REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

CIVIL DETAILS 4

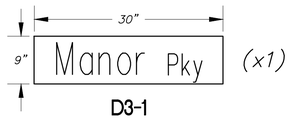
SCALE: N.T.S.	DESIGN: BEP		
DRAWN: MRV	PROJECT: 18587.06		12 OF 16
CHECKED: BRC	DATE: DECEMBER 2020		

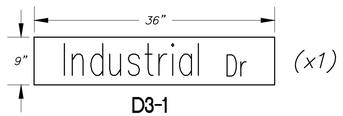


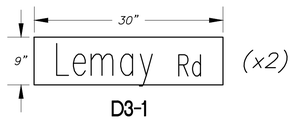
PAY LIMITS	
TRENCH WIDTH	I.D.
36" I.D. + 24" 2 x I.D.	UP TO 12" 12" TO 24" OVER 24"

Typical Perforated Drain Trench Detail

NO SCALE







NOTES:
1. SIGNS SHALL MEET THE REQUIREMENTS OF THE CURRENT EDITION THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

2. SIGNS SHALL BE GREEN WITH WHITE LETTERS. NO BORDER.

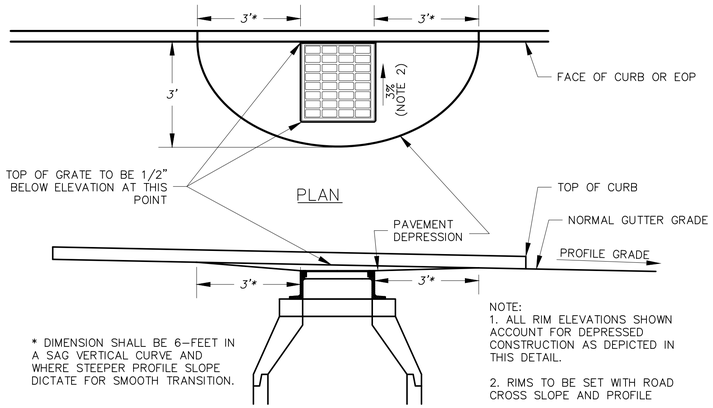
3. THE FIRST LETTER OF THE NAME SHALL BE 6" UPPER CASE. THE REMAINING LETTERS SHALL BE 4.5" LOWER CASE.

4. THE FIRST LETTER OF ROAD INDICATORS (AVE, ST, RD) SHALL BE 4". THE REMAINING LETTERS SHALL BE 3.5"

5. TOP AND BOTTOM EDGES OF THE SIGN SHALL BE EXTRUDED CONSTRUCTION.

Street Name Signs

NO SCALE



Standard Salem Pavement Depression Detail

NO SCALE

NOTES:

1. EXACT TRENCH PATCH METHODS SHALL BE DETERMINED BY THE ENGINEER BASED ON SITE SPECIFIC CONDITIONS. REFERENCE APPLICABLE TOWN OF SALEM TRENCH SECTION DETAILS FOR PROPER BEDDING REQUIREMENTS.

2. REFERENCE TOWN OF SALEM STREET EXCAVATION REQUIREMENTS FOR ADDITIONAL REQUIREMENTS AND INFORMATION. THIS DETAIL IS NOT COMPLETE WITHOUT ALL REFERENCED ITEMS.

3. TEMPORARY PATCHING: AN APPROVED BITUMINOUS PLANT MIX MATERIAL SHALL BE PLACED AND CAREFULLY GRADED AND ROLLED TO THE ADJACENT PAVEMENT GRADE AS A TEMPORARY PATCH. JUST BEFORE COMPLETION OF THE PROJECT AND AFTER SUITABLE EXPOSURE OF THE TEMPORARY PATCHES TO TRAFFIC COMPACTION, THE PAVEMENT SHALL BE SAWCUT, REMOVED AND REPAVED AS SHOWN.

4. TWO FOOT MINIMUM OVERLAP ON UNDISTURBED MATERIAL SHALL BE SAWCUT IN A DIAMOND SHAPE PATTERN THAT WILL PERMIT ONLY ONE WHEEL OF A VEHICLE AT A TIME TO STRIKE THE PATCH AREA. ON WIDER ROADS THE 4-FOOT DIMENSION AT THE CENTER OF THE ROAD MAY NEED TO BE EXTENDED TO MEET THIS INTENT. ALL SAW CUTS FOR THE FINAL PATCH SHALL BE AS DIRECTED BY THE PERMITTING AUTHORITY.

4A. INITIAL CUT LINE IN PAVEMENT SHALL BE ESTABLISHED DIRECTLY OVER TRENCH WALLS. FINAL CUT LIMITS SHALL NOT BE DONE UNTIL AFTER ALL EXCAVATION AND BACK FILL ACTIVITIES HAVE BEEN COMPLETED.

4B. CUT AND GRIND LIMITS SHALL BE EXTENDED FOR LARGER TRENCHES. SPECIFIC GRIND LIMITS SHALL BE DETERMINED BY THE PERMITTING AUTHORITY AT THE TIME OF CONSTRUCTION. ADDITIONAL CUT/GRIND LIMITS SHALL BE FIELD DETERMINED BASED ON DAMAGE TO THE SURROUNDING PAVEMENT.

5. SHOULDERS, OTHER THAN PAVED, DISTURBED DURING CONSTRUCTION, SHALL BE RESTORED BY EXCAVATING TO A DEPTH SUFFICIENT TO RECEIVE 6" CRUSHED BANK RUN GRAVEL WHICH SHALL BE GRADED AND COMPACTED ON A SLOPE OF 5% AWAY FROM THE PAVEMENT OR AS ORDERED BY THE TOWN. PAVED SHOULDER SHALL BE RECONSTRUCTED WITH IN-KIND GEOMETRY AND ACCORDING TO THE PAVEMENT SECTION DESCRIBED ON THIS TYPICAL.

6. OTHER HIGHWAY SLOPES AND SHOULDERS DISTURBED SHALL BE RESTORED IN-KIND WITH APPROPRIATE SLOPE AND EROSION PROTECTION MEASURES OR INSTRUCTIONS ISSUED BY THE TOWN.

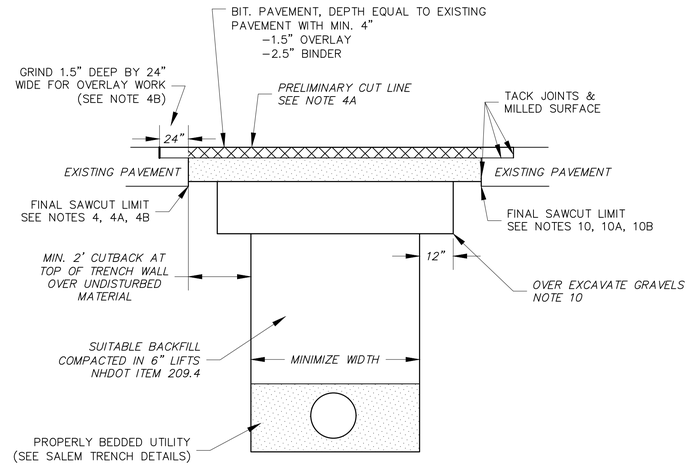
6A. ALL OTHER DISTURBED AREAS (CURB, SIDEWALK, GRASSED AREAS, WALLS, ETC.) SHALL BE RESTORED IN-KIND AND/OR AS DIRECTED BY THE TOWN ACCORDING TO ACCEPTED CONSTRUCTION PRACTICES.

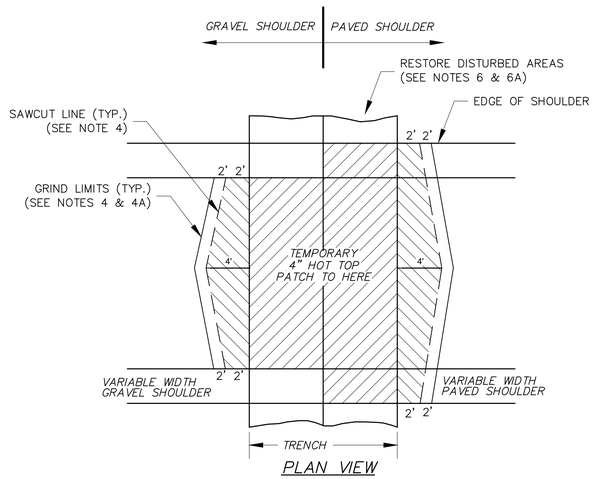
7. TRAFFIC SHALL BE MAINTAINED, CONTROLLED AND PROTECTED BY SUITABLE WARNING AND/OR CHANNELIZING DEVICES, ADVANCE WARNING SIGNS AND FLAGS DURING THE PERFORMANCE OF THE WORK IN ACCORDANCE WITH THE TOWN REQUIREMENTS AND ACCEPTED CONSTRUCTION PRACTICES.

8. THE CONTRACTOR SHALL MARK ALL HAZARDS WITHIN THE LIMITS OF THE PROJECT AND CONNECTING ROADS. THESE DEVICES SHALL BE MOVED, SUPPLEMENTED, CHANGED OR REMOVED DURING THE PROGRESS OF THE CONSTRUCTION. UNIFORMED TRAFFIC CONTROL OFFICERS SHALL BE PROVIDED FOR THE PROTECTION OF THE PUBLIC WHILE WORKING WITHIN A TOWN RIGHT-OF-WAY.

9. IN ALL CASES, TRENCH SHALL BE PAVED FLUSH WITH EXISTING PAVEMENT AT THE END OF THE WORK DAY EXCEPT AS ALLOWED BY PERMITTING AUTHORITY.

10. UPON COMPLETION OF BACK FILL OPERATIONS THE EXISTING ROAD GRAVELS SHALL BE OVER EXCAVATED 12" BEYOND THE TRENCH WALL. THIS WORK SHALL NOT BE COMPLETED PRIOR TO COMPLETING BACKFILL AND COMPACTION.





Permanent Pavement Repair Detail

NO SCALE

REV	DATE	DESCRIPTION	BY

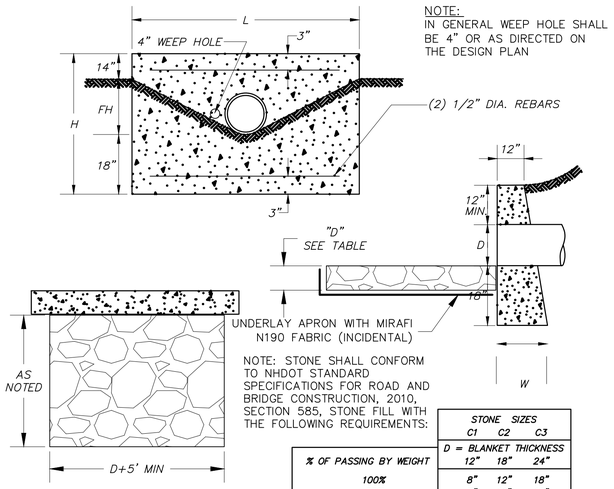
McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

CIVIL DETAILS 5

SCALE: N.T.S.	DESIGN: BEP	13 OF 16
DRAWN: MRV	PROJECT: 18587.06	
CHECKED: BRC	DATE: DECEMBER 2020	

D	MAS.PER STD.HDR. CU.YD.	STEEL PER STD. HDR.LB.	LENGTH OF BARS	L	H	FH	W
12	0.61	9	3'-2"	3'-6"	3'-6"	0'-10"	1'-10.5"
15	0.85	11	3'-10"	4'-6"	3'-9"	1'-1"	1'-11.25"
18	1.13	14	5-2	5-6	4-0	1-4	2-0
24	1.78	20	7-2	7-6	4-6	1-10	2-1.5
36	3.53	31	11-2	11-6	5-6	2-10	2-4.5



NOTE:
IN GENERAL WEEP HOLE SHALL BE 4" OR AS DIRECTED ON THE DESIGN PLAN

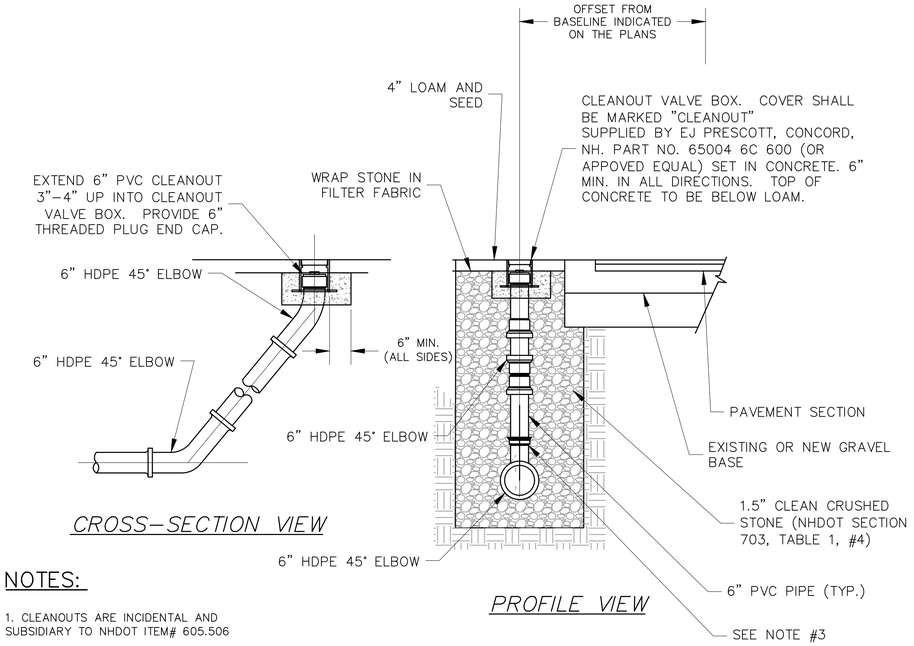
NOTE: STONE SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2010, SECTION 585, STONE FILL WITH THE FOLLOWING REQUIREMENTS:

% OF PASSING BY WEIGHT	STONE SIZES C1 D = BLANKET THICKNESS 12"	C2 18"	C3 24"
100%	8"	12"	18"
85%	7"	11"	16"
50%	5"	8"	12"
15%	2"	3"	4"

NOTE: ALL STONE TO BE SIZE "C1" EXCEPT WHERE NOTED.

Typical Headwall & Stone Apron Detail

NO SCALE



CROSS-SECTION VIEW

PROFILE VIEW

NOTES:

1. CLEANOUTS ARE INCIDENTAL AND SUBSIDIARY TO NHDOT ITEM# 605.506

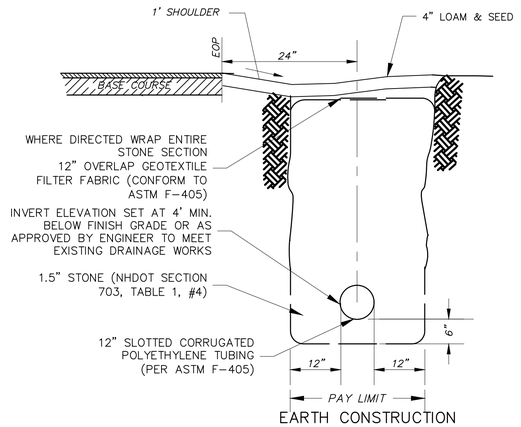
2. CLEAN OUT SHALL BE CONSTRUCTED COMPLETE IN-PLACE AS SHOWN IN THIS DETAIL.

3. PROVIDE COUPLING IF NEEDED FOR DISSIMILAR MATERIALS.

4. PROVIDE DELINEATOR FOR UNDERDRAIN CLEANOUT WHERE INSTALLED OFF PAVEMENT. NHDOT ITEM# 621.331

Typical Underdrain Cleanout Detail

NO SCALE



Underdrain Detail

NO SCALE

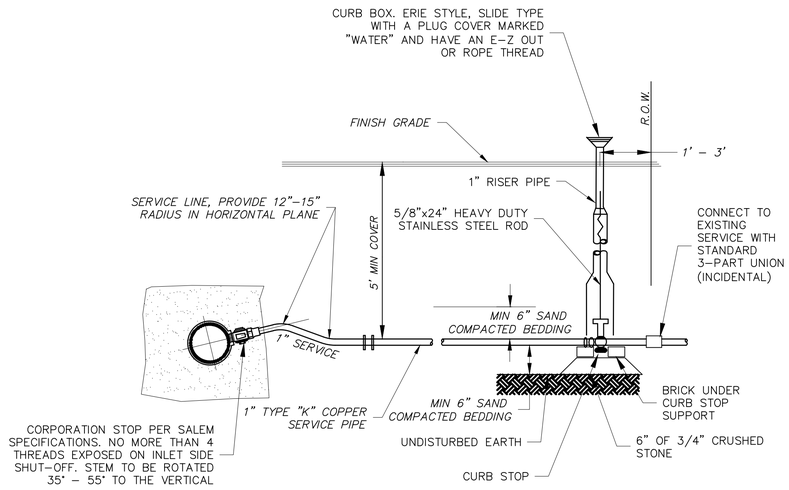
REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

CIVIL DETAILS 6

SCALE: N.T.S.	DESIGN: BEP	14 OF 16
DRAWN: MRV	PROJECT: 18587.06	
CHECKED: BRC	DATE: DECEMBER 2020	



NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF SALEM SPECIFICATIONS.

2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.

3. BEDDING MATERIAL SHALL BE COURSE SAND CONFORMING TO NHDOT 304.1 MATERIAL SPECIFICATION.

4. IF WATER MAIN IS PVC OR TRANSITE, A DOUBLE STAINLESS STEEL STRAP TAPPING SADDLE MUST BE USED TO CONNECT THE CORPORATION TO THE WATER MAIN.

5. WATER SERVICE BOXES MUST BE LOCATED BEHIND THE CURBLINE AND IN FRONT OF THE R.O.W.

6. NEW COPPER LINE SHALL BE CONTINUOUS WITHOUT JOINTS UNTIL BEYOND ROADWAYS AND SIDEWALKS.

7. UNION SHALL BE SUCH THAT IT CONNECTS BETWEEN THE PROPOSED AND EXISTING SERVICE. PROVIDING AND INSTALLING THE UNION (INCLUDING CHANGES IN PIPE SIZE) SHALL BE INCIDENTAL.

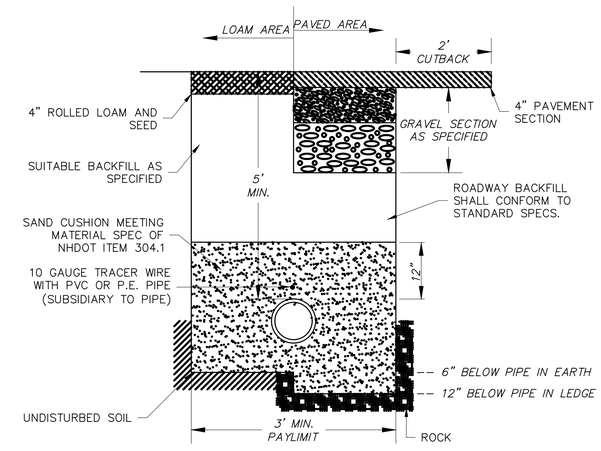
8. TRENCH SHALL MEET REQUIREMENTS OF TYPICAL WATER TRENCH DETAIL.

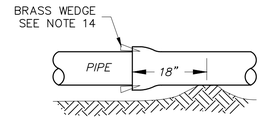
9. LOCATION OF TAPPING VALVE, CURB STOP, AND CORPORATION SHALL BE VERIFIED BY THE TOWN OF SALEM WATER DEPARTMENT PRIOR TO MAKING THE FINAL CONNECTION AND BACKFILLING THE TRENCH. DUAL SWING TIES SHALL BE PROVIDED AS PART OF THE PERMITTING PROCESS.

10. AS-BUILD INFORMATION DEPICTING THE LAYOUT OF WATER SERVICE BETWEEN THE CURB STOP AND THE ENTRANCE TO A STRUCTURE SHALL BE PROVIDED AS PART OF THE PERMITTING PROCESS.

Typical Salem 1in Water Service Installation

NO SCALE





MOUNDING DETAIL
SEE NOTE 15

PAY LIMITS	
TRENCH WIDTH	I.D.
36" I.D. + 24" 2 x I.D.	UP TO 12" 12" TO 24" OVER 24"

WATER TRENCH NOTES:

1. REFERENCE DRAIN TRENCH NOTES FOR ADDITIONAL REQUIREMENTS.

2. BRASS WEDGES SHALL BE INSERTED AT THE JOINTS OF ALL PUSH-ON DUCTILE IRON PIPE. SEE SPECIFICATION FOR PLACEMENT AND NUMBER AT EACH JOINT. (SUBSIDIARY TO PIPE ITEM)

3. MOUNDING UNDER THE PIPE SHALL BE PROVIDED AT THE TIME OF PIPE INSTALLATION TO ENSURE PROPER PIPE ALIGNMENT, LEVEL TRENCH BOTTOM, AND PROPER DEPTH OF SAND BEDDING.

Typical Water Trench Detail

NO SCALE

NOTES:

1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO TOWN OF SALEM TECHNICAL SPECIFICATIONS.

2. ALL PIPE SHOULD HAVE A MINIMUM DEPTHS OF 5' FROM TOP OF PIPE TO FINISH GRADE.

3.PROVIDE MIN 2'x2'x4' PRECAST OR POURED CONCRETE THRUST BLOCK AGAINST UNDISTURBED EARTH – SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATER MAIN. WHERE PRECAST BLOCKS ARE USED ADDITIONAL CONCRETE MUST STILL BE POURED AT THE FITTING (MIN 2 80LB BAGS) TO PROVIDE AN EVEN BEARING SURFACE OVER THE ENTIRE CONTACT AREA. USE 8 MIL POLY BETWEEN POURED CONCRETE AND FITTINGS. ROCKS SHALL NOT BE USED AS THRUST BLOCKS.

4. 6 CUBIC FEET MIN. OF 3/4" CRUSHED STONE TO BE PLACED AROUND BASE OF HYDRANT TO 12" OVER DRAIN PORT. COVER WITH FABRIC. DEPTH OF PIT SHALL BE DICTATED BY THE PERVIOUSNESS OF SURROUNDING SOIL. SEE SPECIFICATIONS.

5. ALL JOINTS SHALL BE RESTAINED.

6. HYDRANT BRANCH PIPE SHALL BE A SINGLE PIECE WITH NO JOINTS UNLESS SPECIFICALLY AUTHORIZED BY THE SALEM UTILITIES DIVISION. SERVICE STUBS GREATER THAN 18-FEET SHALL HAVE RESTRAINED JOINTS.

Typical Hydrant Installation

NO SCALE

STATE OF NEW HAMPSHIRE — BRIAN R. COBURN — No. 11917 — LICENSED PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

CIVIL DETAILS 7

SCALE: N.T.S.	DESIGN: BEP	15 OF 16
DRAWN: MRV	PROJECT: 18587.06	
CHECKED: BRC	DATE: DECEMBER 2020	

GENERAL NOTES:

1. CONSTRUCTION BASELINE: ELECTRONIC AUTOCAD DRAWINGS ARE AVAILABLE FOR CONSTRUCTION PURPOSES. THE CONTRACTOR SHALL LAY OUT BASE LINE TO BE APPROVED BY THE OWNER PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. MINOR ADJUSTMENTS IN ALIGNMENT MAY BE NECESSARY BASED ON FIELD CONDITIONS IN AN EFFORT TO CREATE A 'BEST FIT' ROADWAY AND MINIMIZE ADJACENT IMPACTS.

2. EXISTING CONDITIONS INFORMATION DEPICTED HEREON IS A COMPOSITE BASED ON RECORD PLANS AND TOPOGRAPHIC SURVEY. TOPOGRAPHIC FIELD SURVEY CONDUCTED BY S&H LAND SERVICES IN AUGUST AND DECEMBER 2020.

3. THE CONTRACTOR SHALL BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND STANDARDS.

4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND EXISTING AND PROPOSED CONDITIONS SURROUNDING IT. IF ANY ERROR OR OMISSION IN THESE PLANS IS DISCOVERED BY THE CONTRACTOR, THE CONTRACTOR SHALL CONTACT THE ENGINEER AND OWNER IMMEDIATELY IN WRITING FOR DIRECTION ON HOW TO PROCEED. THE CONTRACTOR SHALL DISCONTINUE WORK IN THE AFFECTED PROJECT AREA UNTIL DIRECTION HAS BEEN PROVIDED BY THE TOWN OF SALEM ON CORRECTIVE ACTION.

5. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS, IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.

6. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.

7. THE CONTRACTOR SHALL SUBMIT HIS/HER PROPOSED CONSTRUCTION SCHEDULE TO THE SALEM ENGINEERING DEPARTMENT FOR REVIEW AND APPROVAL IN ACCORDANCE TO BID SPECIFICATION DOCUMENTS PRIOR TO CONSTRUCTION. NO WORK SHALL BE CONDUCTED WITHOUT AN APPROVED SCHEDULE.

8. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF HIS INTENT OF THE START OF WORK IN ACCORDANCE TO THE BID SPECIFICATION DOCUMENTS.

9. ALL WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE AND ELEVATION OF ALL EXISTING UTILITIES SHOWN ON THESE PLANS PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT NEW HAMPSHIRE DIG SAFE, AT 1-888-DIG-SAFE, AT LEAST 72 HOURS BEFORE DIGGING.

11. THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE. THE EXACT LOCATION SHOULD BE ESTABLISHED IN THE FIELD BY THE UTILITY COMPANY PRIOR TO ANY EXCAVATION OR POST DRIVING. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGE TO UTILITIES AND FACILITIES PUBLIC OR PRIVATE.

12. THE CONTRACTOR SHALL COORDINATE UTILITY WORK, MATERIALS, AND INSTALLATION SPECIFICATIONS WITH THE INDIVIDUAL UTILITY AGENCIES/COMPANIES, AND ARRANGE FOR ALL INSPECTIONS.

13. ALL WORK SHALL CONFORM TO TOWN OF SALEM STANDARD SPECIFICATIONS AND SHALL BE SUBJECT TO FINAL INSPECTION BY THE SALEM ENGINEERING DIVISION.

14. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES. THE CONTRACTOR MUST CONTACT THE SALEM FIRE AND POLICE DEPARTMENTS PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL SIGNAGE, BARRICADES, POLICE DETAILS AS REQUIRED FOR TRAFFIC CONTROL AND COORDINATION WITH OTHER CONSTRUCTION OPERATIONS ON ADJACENT STREETS.

15. ALL PERMANENT CONSTRUCTION WARNING SIGNS MUST BE ERECTED PRIOR TO BEGINNING CONSTRUCTION. ALL CONSTRUCTION SIGNAGE DESIGN, PLACEMENT, AND METHOD (PERMANENT OR TEMPORARY) SHALL MEET THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

16. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN IN THE PLANS THROUGHOUT THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES AND TOWN OF SALEM STANDARDS AND SPECIFICATIONS. THE DETAILS PROVIDED SERVE AS A GUIDE ONLY. ALL EROSION CONTROL SHALL BE MAINTAINED AND/OR REPLACED IF DAMAGED. EROSION CONTROL PRACTICES SHOWN HEREIN SHALL BE CONSIDERED A MINIMUM STANDARD. THE CONTRACTOR SHALL IMPLEMENT ANY EROSION CONTROL MEASURE DEEMED NECESSARY AND APPROPRIATE AS FIELD CONDITIONS DICTATE OR AS DIRECTED. BY MENTION, THE "STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE" IS HEREBY INCORPORATED INTO THE DESIGN PLANS.

18. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL RETAIN ALL RESPONSIBILITY FOR ERRORS AND REMEDIAL WORK NECESSARY AS A RESULT BENCHMARK ERRORS.

19. ALL ELEVATIONS AND LOCATIONS OF DRAINAGE STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO UTILIZATION OF THE DESIGN ELEVATIONS SHOWN ON THE PLAN.

20. ALL MATERIAL MUST MEET OR EXCEED SPECIFICATIONS.

21. ALL NEW MANHOLES IN PAVEMENT SHALL HAVE RIMS SET TO FINISH GRADE REGARDLESS OF ANY ELEVATIONS OTHERWISE SHOWN. ALL NEW CATCH BASINS IN PAVEMENT SHALL HAVE RIMS SET ½" BELOW FINISH REGARDLESS OF ANY ELEVATIONS OTHERWISE SHOWN.

22. ALL EXISTING MANHOLES, WATER GATE RISERS, GAS GATE RISERS, AND OTHER STRUCTURES LOCATED WITHIN THE LIMITS OF THE PROJECT SHALL BE ADJUSTED TO FINISHED GRADE BY THE CONTRACTOR UNLESS INDICATED OTHERWISE BY THESE PLANS. EXISTING CATCH BASINS SHALL BE ADJUSTED ½" BELOW FINISH GRADE.

23. ALL CATCH BASINS SHALL BE TYPE B UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER.

24. CATCH BASIN POLYETHYLENE LINERS : POLY-LINERS (ITEM 604.0007) SHALL BE INSTALLED ON ALL CATCH BASINS (NEW AND EXISTING) WITHIN THE PROJECT.

25. IN GENERAL ALL DRIVEWAYS SHALL RECEIVE GUTTER LINE TRANSITIONS OF 1 – 2 INCHES FOR 2-FEET AT THE EDGE OF PAVEMENT OR AS DIRECTED BY THE ENGINEER. ALL WORK AND MATERIAL TO CONSTRUCT GUTTER TRANSITIONS SHALL BE SUBSIDIARY TO THE DRIVEWAY APRON UNIT ITEMS.

26. THE SUBGRADE SHALL BE SCARIFIED TO ASSURE THAT ALL BOULDERS AND COBBLES OVER 6 INCHES ARE REMOVED.

27. NO EXISTING MONUMENTS, BOUNDS, OR BENCHMARKS SHALL BE DISTURBED WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION AND REPLACEMENT.

28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF TRAFFIC DURING CONSTRUCTION AND UNTIL SUCH TIME AS ALL IMPROVEMENTS HAVE BEEN APPROVED BY THE TOWN OF SALEM. ALL MAINTENANCE OF TRAFFIC SHALL CONFORM TO THE STANDARDS SET FORTH IN THE LATEST EDITION OF THE "FEDERAL HIGHWAY ADMINISTRATION, MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR THE STREETS AND HIGHWAYS". ALL TEMPORARY SIGNING, PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE ABOVE, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

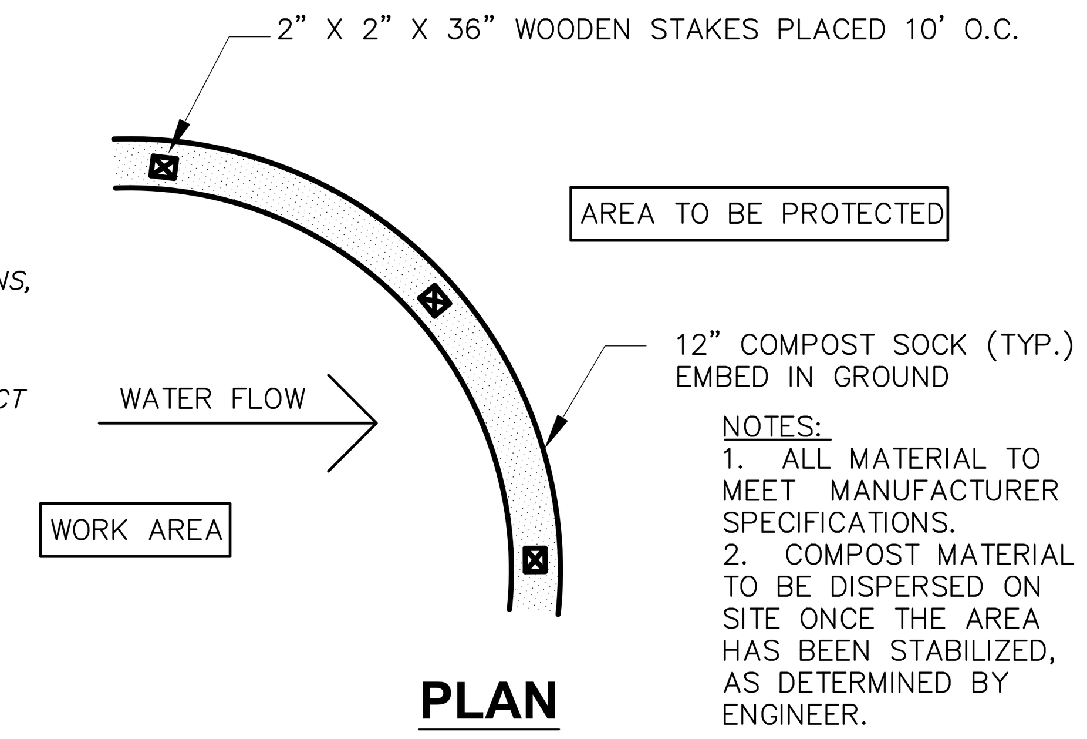
29. THE CONTRACTOR SHALL ENSURE THAT POSTAL SERVICE IS UNINTERRUPTED FOR THE DURATION OF THE PROJECT. CONTRACTOR SHALL COORDINATE WITH USPS FOR ANY ADDITIONAL REQUIREMENTS.

30. MAILBOX NOTE: NOT ALL MAILBOXES WILL BE RELOCATED. MAILBOXES THAT DO NOT MEET MINIMUM DISTANCES SHALL BE RESET OR AS DIRECTED BY THE ENGINEER.

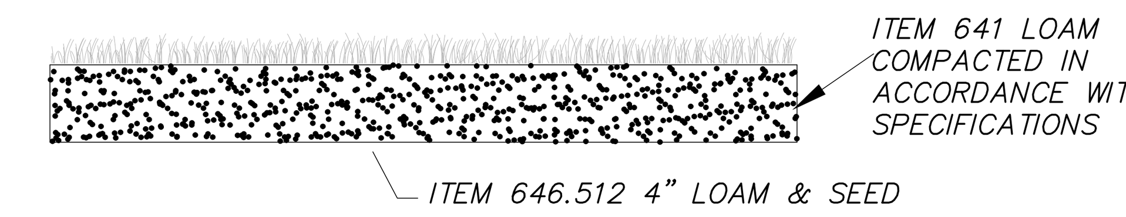
31. TREE REMOVAL: COORDINATE TREE REMOVAL WITH THE ENGINEER PRIOR TO THE START OF WORK.

32. GRUBBING NOTE: IN GENERAL, GRUBBING THE SHOULDERS AS SHOWN ON THE PLAN SHALL BE INCLUSIVE OF SMALL TREE REMOVAL. NOT ALL SHOULDER WORK SHALL BE CONSIDERED GRUB. ONLY THOSE AREAS SPECIFICALLY IDENTIFIED AS GRUB SHALL BE PAID.

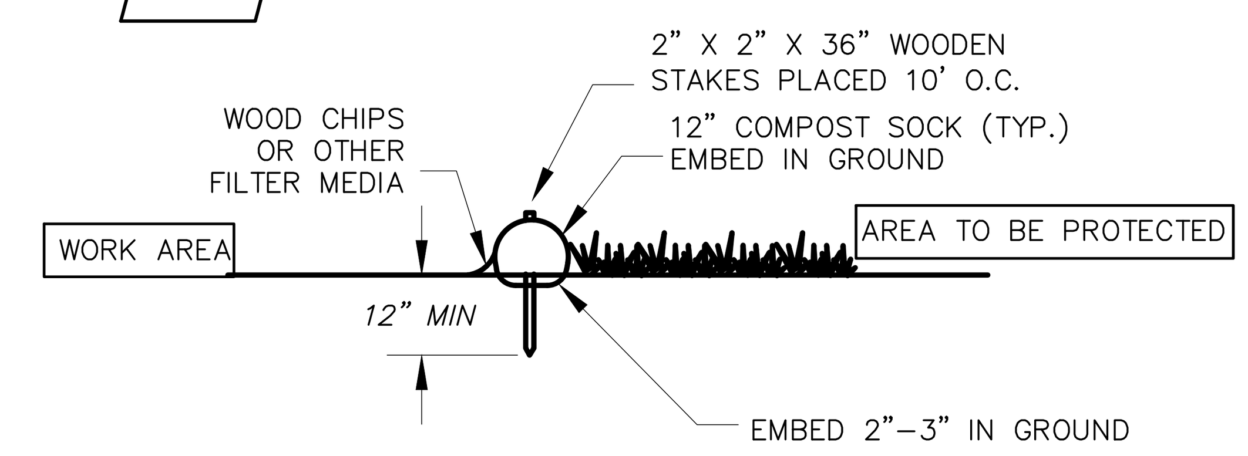
33. NPDES NOTE: THE 2021 ROADWAY RECONSTRUCTION PROJECT IS LARGELY A RECLAIM IN-PLACE OPERATION WHICH IS CONSIDERED STABLE UPON COMPLETION OF RECLAIM ACTIVITIES. EACH ROAD CONTAINS LESS THAN 1-ACRE OF DISTURBANCE OUTSIDE OF RECLAIM AREAS. THEREFORE A NOTICE OF INTENT IS NOT REQUIRED FOR THIS PROJECT.



NOTES:
1. ALL MATERIAL TO MEET MANUFACTURER SPECIFICATIONS.
2. COMPOST MATERIAL TO BE DISPERSED ON SITE ONCE THE AREA HAS BEEN STABILIZED, AS DETERMINED BY ENGINEER.

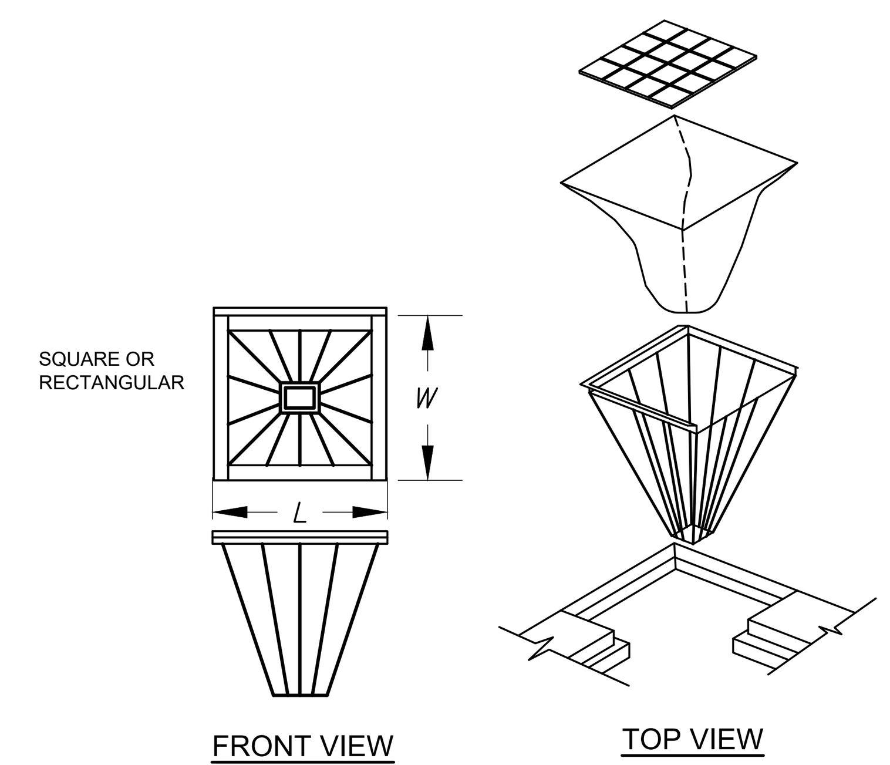


Loam & Seed Detail
NO SCALE



SECTION

Compost Sock Detail
NO SCALE



FILTER BASKET NOTES:
1. INLET BASKETS SHALL BE USED ON ALL CATCH BASINS DURING CONSTRUCTION. INLET BASKETS SHALL BE "METAL-ERA" OR APPROVED EQUAL.

2. FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND EXTEND AT LEAST 6 INCHES PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.

3. THE FILTER FABRIC SHALL BE A GEO-TEXTILE FABRIC: POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE OR POLYVINYL CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
GRAB STRENGTH: 45 lb. MINIMUM IN ANY PRINCIPAL DIRECTION (ASTM D1682).
MULLEN BURST STRENGTH: MINIMUM 60 psi (ASTM D774).

4. THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 20 U.S. STANDARD SIEVE AND MINIMUM PERMEABILITY OF 120 gpm/sq. ft.

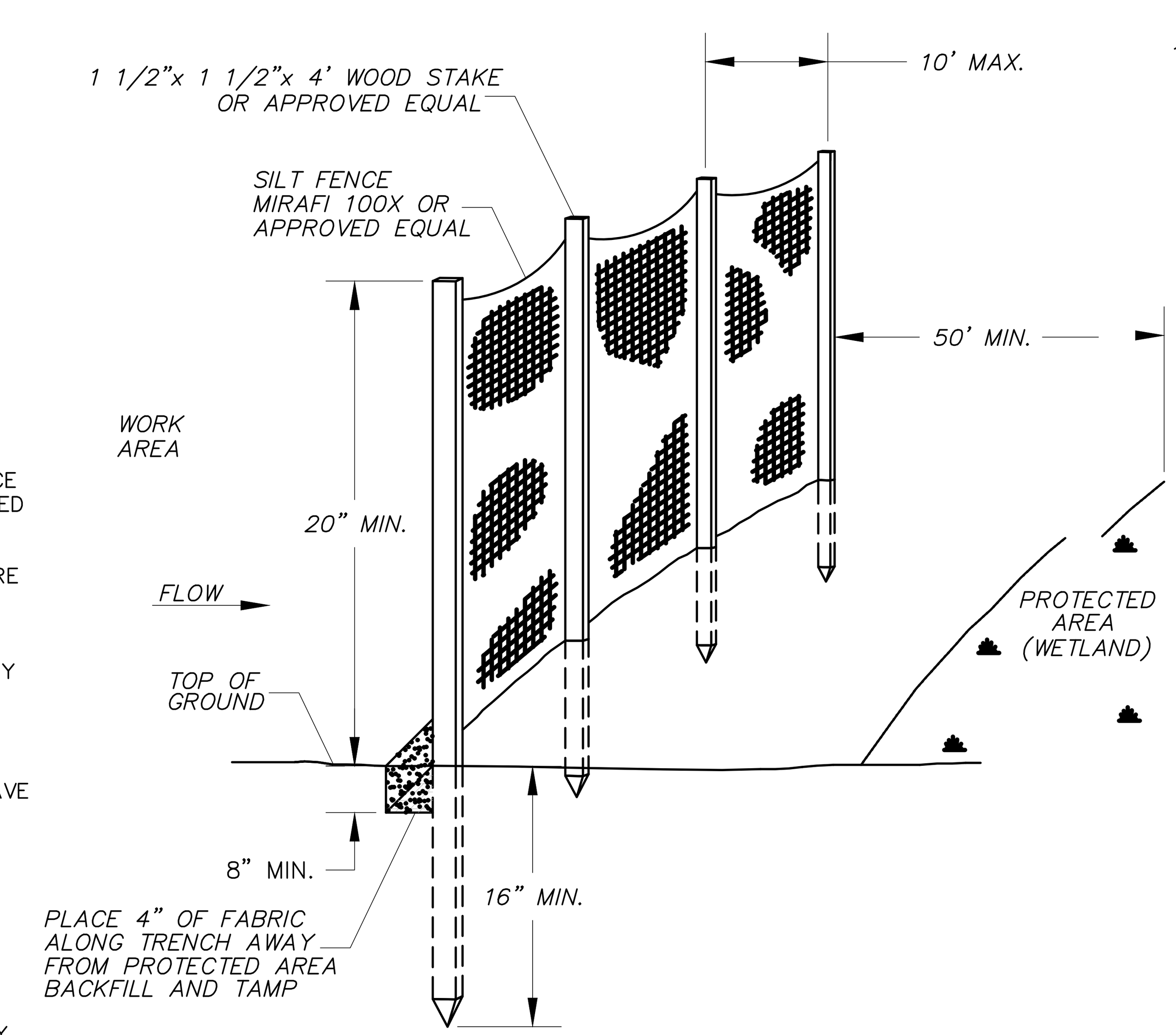
5. THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM ENTERING THE DRAINAGE PIPING SYSTEM AND/OR CAUSING SURFACE FLOODING.

6. INLET BASKET SHALL BE MAINTAINED IN PLACE UNTIL ALL PAVING IS COMPLETED AND ALL UNPAVED AREAS HAVE BEEN STABILIZED WITH VEGETATION.

Siltsack Inlet Filter Basket
NO SCALE

CONSTRUCTION SPECIFICATIONS:
1. THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.
2. THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 10 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
3. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIE OR STAPLES WHERE NOTED OR AS DIRECTED BY DESIGN ENGINEER.
4. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MIDSECTION AND BOTTOM.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
6. FENCE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND DRIVEN A MINIMUM OF 10 INCHES INTO THE GROUND. WOOD POSTS SHALL BE OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES.
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

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



Silt Fence Barrier
NO SCALE

EROSION CONTROL:

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. ALL EROSION CONTROL MEASURES SHOWN, DESCRIBED AND NOTED SHALL BE CONSIDERED A MINIMUM STANDARD. THE CONTRACTOR SHALL IMPLEMENT ALL NECESSARY EROSION CONTROL PRACTICES AS NEEDED, AS FIELD CONDITIONS DICTATE, OR AS ORDERED TO MAINTAIN PROPER EROSION PROTECTION.

1. EXISTING VEGETATION SHALL BE LEFT UNDISTURBED WHEREVER POSSIBLE.
2. TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED IN STRICT ACCORDANCE WITH PROJECT PLANS.
3. ALL TEMPORARY EROSION CONTROL MEASURES USED SHALL BE KEPT CLEAN AND REMOVED ONCE VEGETATIVE COVER HAS BEEN FULLY ESTABLISHED. INSPECT WEEKLY AND WITHIN 24 HOURS AFTER 0.5" OF RAINFALL OR MORE.
4. THE CONTRACTOR SHALL MAINTAIN RESPONSIBILITY OF ALL EROSION CONTROL, TURF ESTABLISHMENT MEASURES, AND LANDSCAPE THROUGHOUT CONSTRUCTION AND AFTER PROJECT COMPLETION UNTIL SUCH TIME AS VEGETATIVE COVER HAS BEEN FULLY ESTABLISHED.
5. INSTALLATION OF HAY BALE BARRIERS AND SILTATION FENCES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA. PREFABRICATED SILTATION FENCES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
6. ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 4" OF LOAM INSTALLED WITH NOT LESS THAN INDICATED SEED MIX PER 1,000 SQ. FT. GROUND COVER WILL BE ESTABLISHED BY HYDRO SEEDING. SEED MIXTURE SHALL BE:

PERMANENT (PARK SEED MIX)	
PERENNIAL RYEGRASS –	1.15 LBS.
CREEPING RED FESCUE –	0.92 LBS.
KENTUCKY BLUEGRASS –	0.57 LBS.
RED TOP –	0.11 LBS.
	2.74 LBS/1000 S.F.
PERMANENT (OTHER THAN LAWN AREAS)	
PERENNIAL RYEGRAS –	0.69 LBS.
CREEPING RED FESCUE –	0.80 LBS.
BIRDSFOOT TREFOIL –	0.11 LBS.
RED TOP –	0.11 LBS.
ALSIKE CLOVER –	0.11 LBS.
	1.82 LBS/1000 S.F.
TEMPORARY	
ANNUAL RYEGRASS –	1.1 LBS./1000 S.F.

USE ABOVE SEED MIXES UNLESS OTHERWISE SPECIFIED.

7. LIME AND FERTILIZER OF PROPER PROPORTIONS SHALL BE INCORPORATED INTO THE SOIL PRIOR TO SEEDING IN ACCORDANCE WITH NHDOT ITEMS 642 & 643. SEEDING PRACTICES SHALL COMPLY WITH LOCAL USDA SOIL CONSERVATION SERVICES RECOMMENDATION.
8. HAY MULCH OR JUTE MATTING SHALL BE USED WHERE INDICATED ON THE PLANS. A MINIMUM OF 1.5 TONS OF MULCH PER ACRE SHALL BE APPLIED. MULCH SHALL BE ANCHORED IN PLACE WHERE NECESSARY. JUTE MATTING SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
9. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 15 TO SEPTEMBER 15. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS, PLANT ANNUAL RYEGRASS PRIOR TO OCTOBER 15TH.
10. IN THE EVENT THAT, DURING CONSTRUCTION OF ANY PORTION OF THIS PROJECT, A WINTER SHUTDOWN IS NECESSARY, THE CONTRACTOR SHALL STABILIZE ALL INCOMPLETE WORK AND PROVIDE FOR SUITABLE METHODS OF DIVERTING RUNOFF IN ORDER TO ELIMINATE SHEET FLOW ACROSS FROZEN SURFACES.
11. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
    A. BASE COURSE GRAVELS ARE INSTALLED IN AREAS TO BE PAVED;
    B. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
    C. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP RAP HAS BEEN INSTALLED; OR
    D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
12. DUST SHALL BE CONTROLLED BY THE USE OF WATER AS NECESSARY THROUGHOUT THE CONSTRUCTION PERIOD. WATER IS SUBSIDIARY.
13. SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH JUTE MATTING WHEN AND IF FIELD CONDITIONS WARRANT, OR IF SO ORDERED. JUTE MATTING INSTALLED TO CONFORM WITH THE RECOMMENDED BEST MANAGEMENT PRACTICE OUTLINED IN THE "STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE".
14. USE OF STONE TO STABILIZE A TRENCH, ROAD OR DITCH (SWALE) SHALL BE CONSIDERED SUBSIDIARY TO MAINTENANCE OF TRAFFIC (ITEM 619.1) REGARDLESS OF WHETHER ITS USE IS DIRECTED.

CONSTRUCTION SEQUENCE:

CONSTRUCTION SEQUENCE NOTES ARE PROVIDED AS A GENERAL GUIDELINE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING AND SUBMITTING A DETAILED CONSTRUCTION SEQUENCE PRIOR TO THE START OF CONSTRUCTION.

1. INSTALL CONSTRUCTION SIGNS.
2. INSTALL EROSION CONTROL MEASURES. INSPECT AND MAINTAIN EROSION CONTROL MEASURES ON A DAILY BASIS. IMPLEMENT NECESSARY MEASURES PER NHDES BEST MANAGEMENT PRACTICES TO MAINTAIN A STABILE WORK AREA.
3. ESTABLISH HORIZONTAL ALIGNMENT LAYOUT AND VERTICAL CONTROL. VERIFY BENCH MARKS AND EXISTING ELEVATIONS.
4. REMOVE TREES AND STUMP. DISPOSE OF DEBRIS. IF TOPSOIL IS STRIPPED THEN IT SHALL BE STOCKPILED AND STABILIZED.
5. CONDUCT TEST PITTING OPERATIONS.
6. INSTALL PROPOSED DRAINAGE CATCH BASINS, CULVERTS, ETC.
7. COMMENCE PAVEMENT RECLAMATION ACTIVITIES.
8. COMMENCE GRADING ACTIVITIES TO ACHIEVE PROPER SUBBASE ELEVATIONS.
9. PLACE, COMPACT, AND FINE GRADE RECLAIMED GRAVEL/ PAVEMENT MATERIALS.
10. INSTALL CURBING AS SHOWN OR IF SHOWN ON DESIGN PLANS.
11. REPLANT DISTURBED LANDSCAPE AREAS.
12. PLACE LOAM, SEED, AND MULCH AS SHOWN AND AS NECESSARY TO STABILIZE AND VEGETATE DISTURBED AREAS. TEMPORARY EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL THE SITE IS FULLY STABILIZED.
13. INSTALL SIGNS WHERE SHOWN.
14. PLACE PAVEMENT WEARING COURSE.
15. CLEAN ROADWAY AND DRAIN STRUCTURES.
16. PLACE PAVEMENT MARKINGS.
17. DUST SHALL BE CONTROLLED THROUGHOUT CONSTRUCTION WITH ADEQUATE USE OF WATER AND OTHER MEANS NECESSARY TO AVOID A PUBLIC NUISANCE.

STATE OF NEW HAMPSHIRE BRIAN R. COLBURN No. 11917 LICENSED PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	BY

McFarland Johnson
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301

TOWN OF SALEM
SALEM, NEW HAMPSHIRE
2021 ROADWAY IMPROVEMENT PROJECT

CIVIL DETAILS 8

SCALE:	N.T.S.	DESIGN:	BEP
DRAWN:	MRV	PROJECT:	18587.06
CHECKED:	BRC	DATE:	DECEMBER 2020