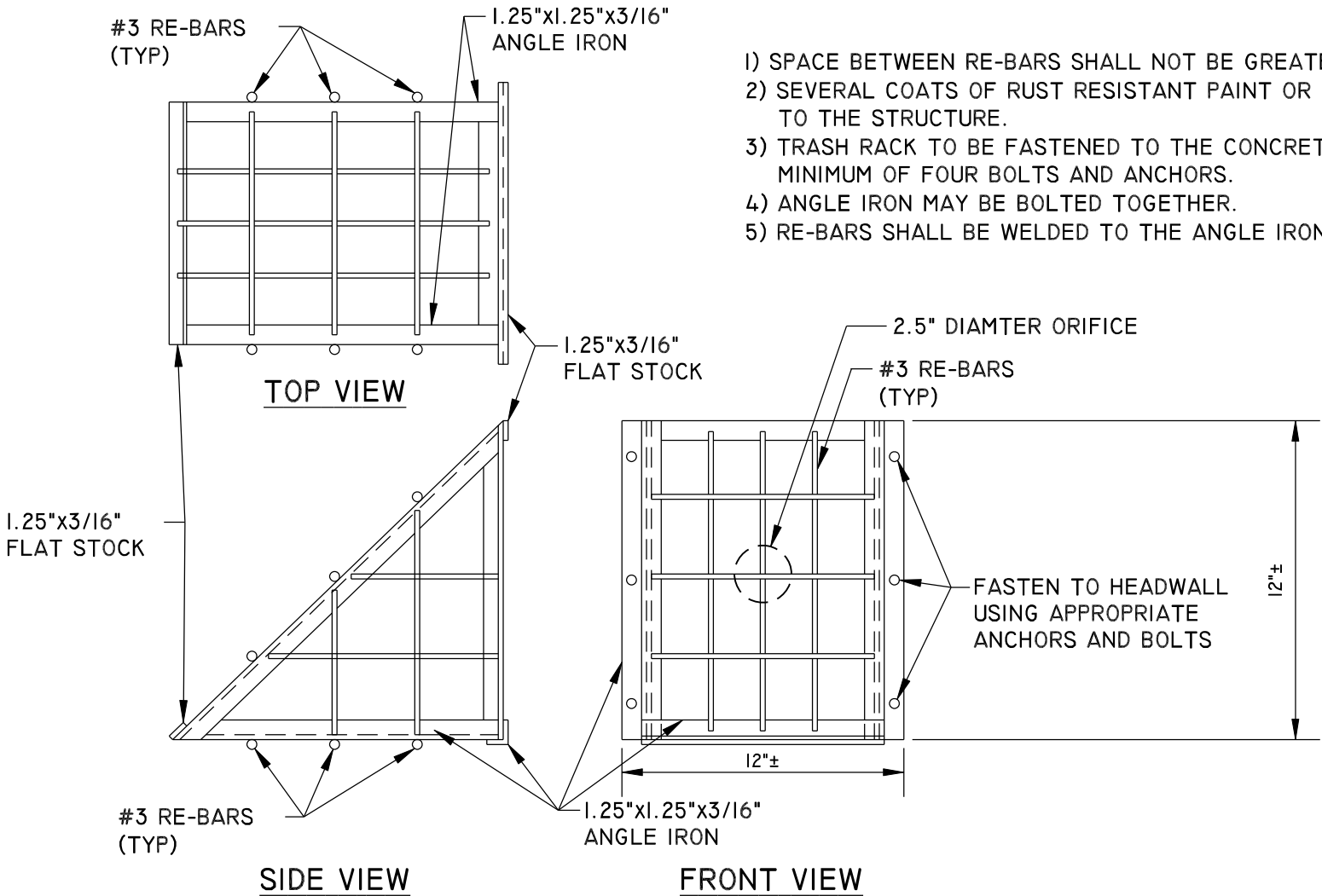
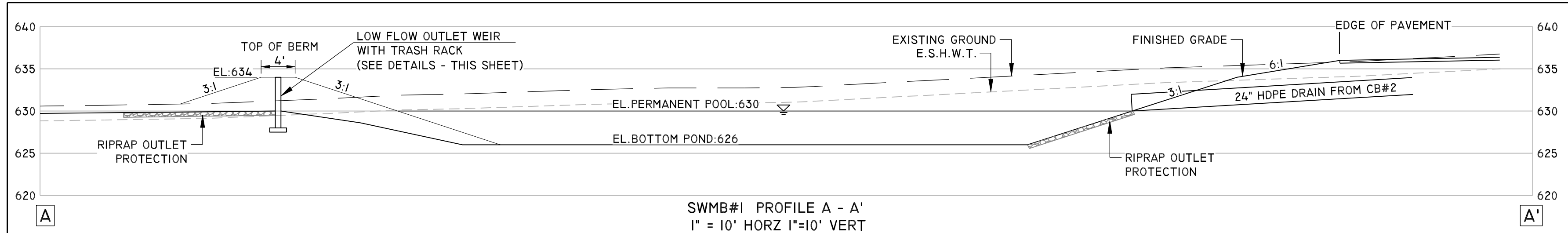
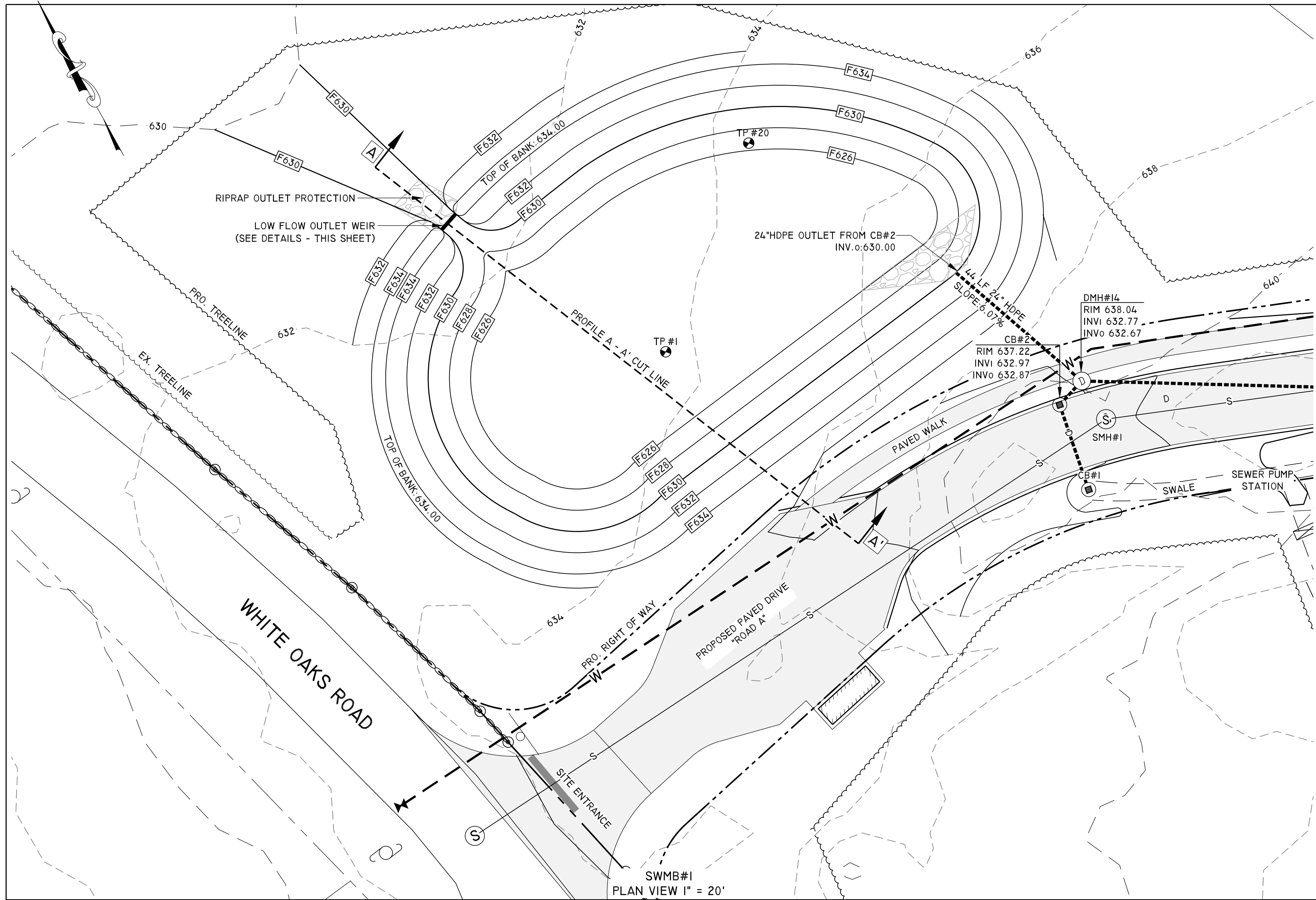


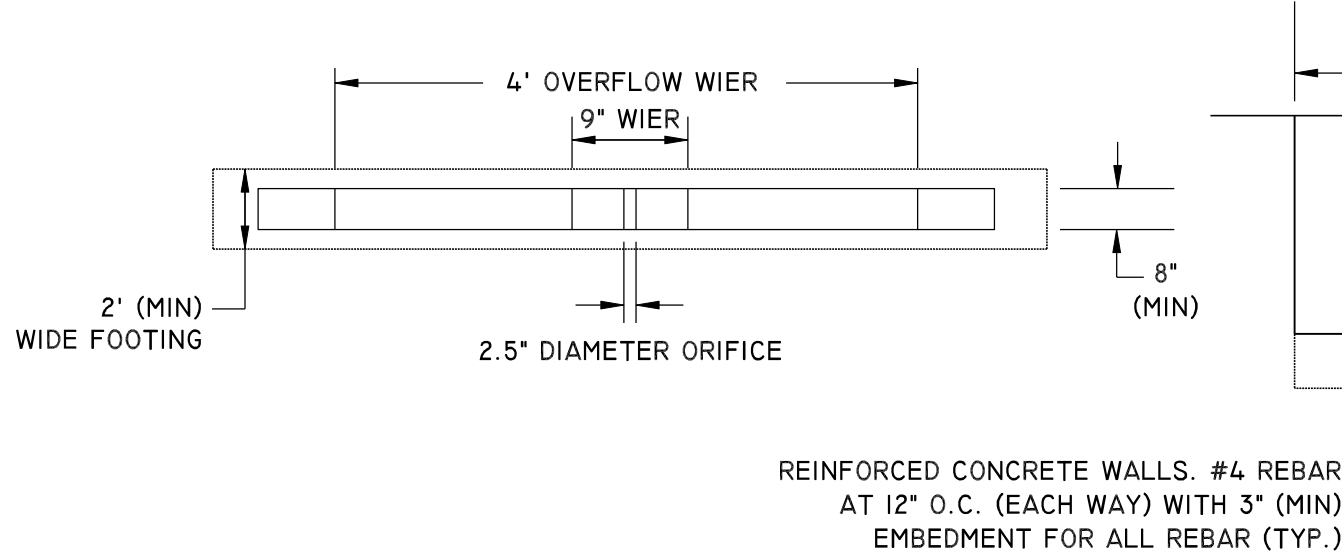
DRAWING NAME: G:\CLIENTS\1770-01 WHITE OAKS ESTATES - WHITE OAKS LACONIA.DWG 1770-01 LADY OF THE LAKES.DWG



- 1) SPACE BETWEEN RE-BARS SHALL NOT BE GREATER THAN 3.5 INCHES.
- 2) SEVERAL COATS OF RUST RESISTANT PAINT OR EPOXY ENAMEL TO BE APPLIED TO THE STRUCTURE.
- 3) TRASH RACK TO BE FASTENED TO THE CONCRETE OULET STRUCTURE WITH A MINIMUM OF FOUR BOLTS AND ANCHORS.
- 4) ANGLE IRON MAY BE BOLTED TOGETHER.
- 5) RE-BARS SHALL BE WELDED TO THE ANGLE IRON.

TRASH RACK DETAIL

NOT TO SCALE



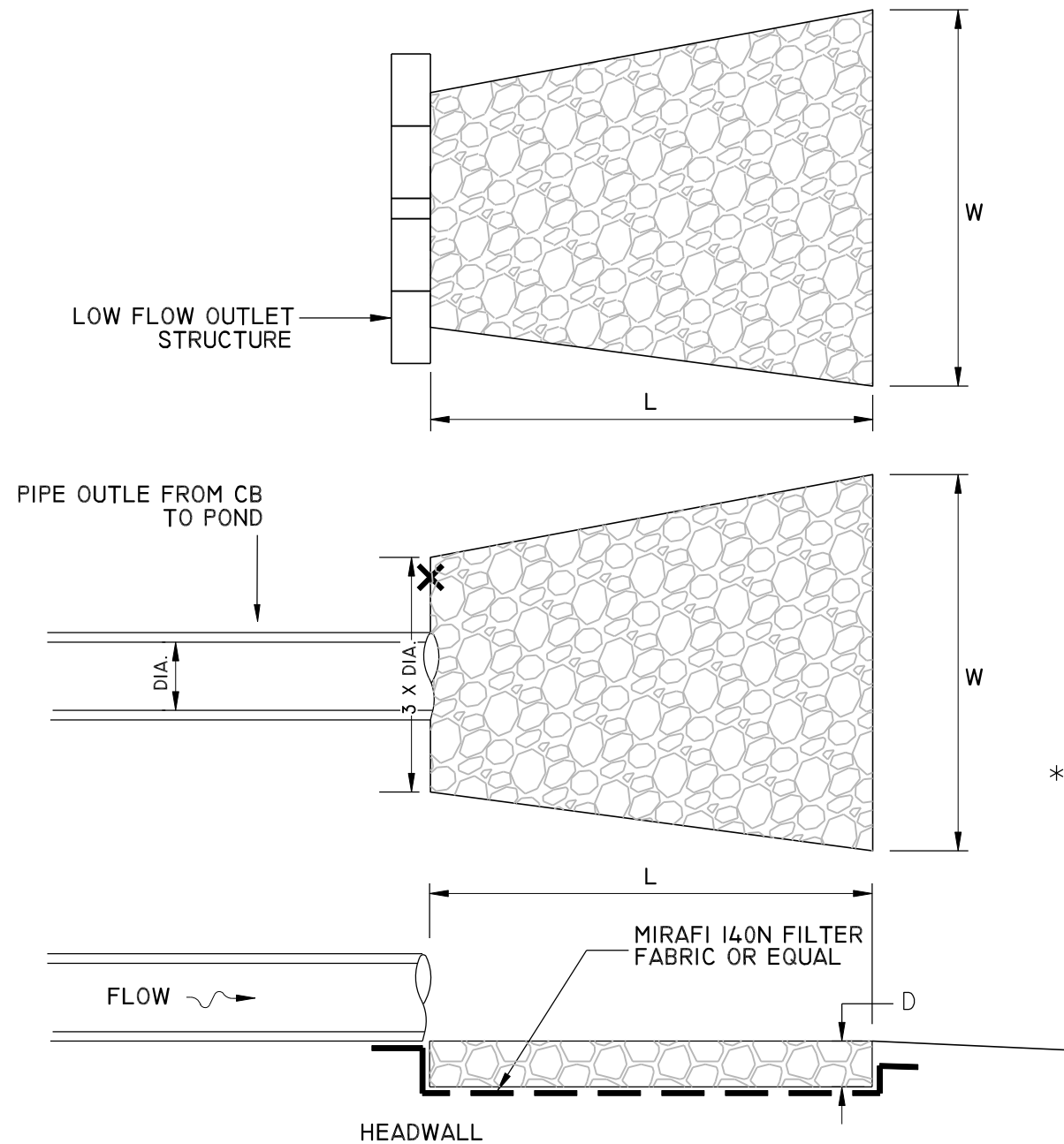
LOW FLOW OUTLET STRUCTURE AT SWMB #1

GENERAL NOTES:

1. FOR EROSION CONTROL MEASURES SEE SHEET DET-1 & DET-2
2. STORMWATER PONDS MUST BE PROTECTED FROM EROSION, RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMP'S ARE STABILIZED
3. SIDE SLOPES SHALL BE NO STEEPER THAN 3:1 AND NO FLATTER THAN 20:1
4. THE POND FLOOR SHALL BE FLAT, OR ZERO PERCENT SLOPE
5. THE BASIN EMBANKMENTS SHALL BE PREPARED WITH A GRASS TURF THAT CAN SURVIVE INUNDATION FOR UP TO 72 HOURS AND STILL PROVIDE A DENSE, VIGOROUS TURF LAYER

MAINTENANCE

1. MAINTENANCE IS NECESSARY IF THE BASIN IS TO CONTINUE TO FUNCTION AS DESIGNED. THE LANDOWNER MUST BE AWARE OF THE REQUIREMENTS FOR A PROPERLY OPERATIONAL BASIN AND A PLAN BE DEVELOPED FOR REGULAR SCHEDULED MAINTENANCE.
2. THE EMBANKMENT SHALL BE INSPECTED TO DETERMINE IF RODENT BURROWS, WET AREAS OR EROSION OF THE FILL IS TAKING PLACE.
3. THE VEGETATION SHALL BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC AND DENSE WEED GROWTH. LIME AND FERTILIZER SHOULD BE APPLIED AS NECESSARY AS DETERMINED BY SOIL TESTS. TREES AND SHRUBS SHALL BE KEPT OFF THE EMBANKMENT AND EMERGENCY SPILLWAY AREAS.
4. PIPE INLETS AND SPILLWAY STRUCTURES SHALL BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM. ACCUMULATED DEBRIS AND SEDIMENT SHOULD BE REMOVED. IF PIPES ARE COATED, THE COATING SHOULD BE CHECKED AND REPAIRED AS NECESSARY.
5. PIPE OUTLETS SHALL BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM. THE CONDITION OF THE PIPES SHALL BE NOTED AND REPAIRS MADE AS NECESSARY. IF EROSION IS TAKING PLACE, THEN MEASURES SHALL BE TAKEN TO STABILIZE AND PROTECT THE AFFECTED AREA OF THE OUTLET.
6. SEDIMENT SHOULD BE CONTINUALLY CHECKED IN THE BASIN. WHEN SEDIMENT ACCUMULATIONS REACHED 6" IN DEPTH, THEN THE SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF.



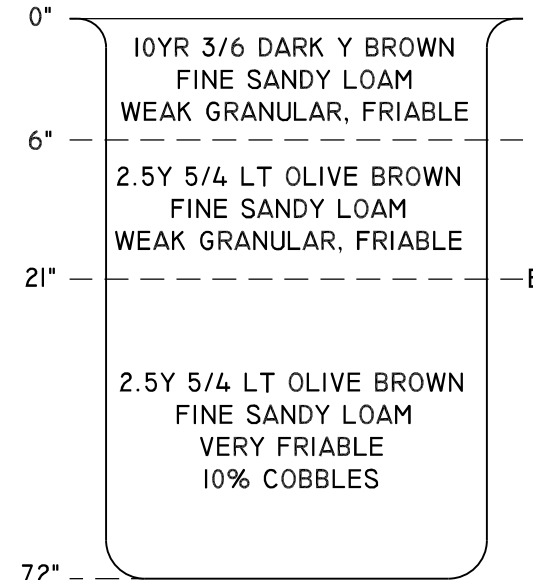
MAINTENANCE

THE OUTLET PROTECTION SHALL BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIPRAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHALL BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHALL BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHALL BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS AND SEDIMENT THAT COULD CHANGE THE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

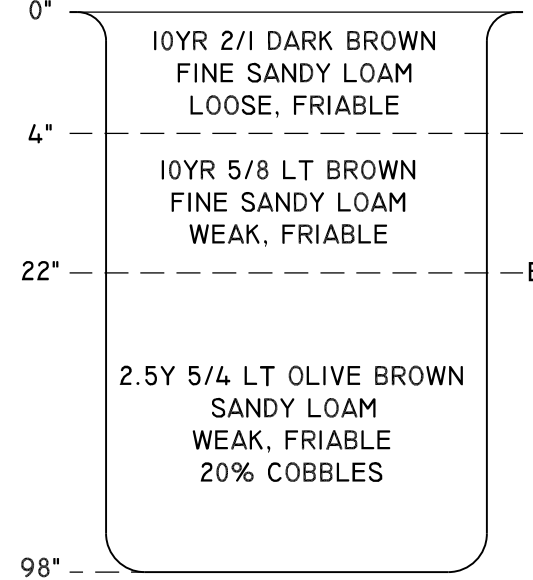
RIP-RAP OUTLET PROTECTION APRON

NOT TO SCALE

TEST PIT #1
MAY 13, 2013
LOGGED BY: KENT BROWN, P.E.
BROWN ENGINEERING LLC



TEST PIT #20
FEBRUARY 16, 2024
LOGGED BY: KENT BROWN, P.E.
BROWN ENGINEERING LLC



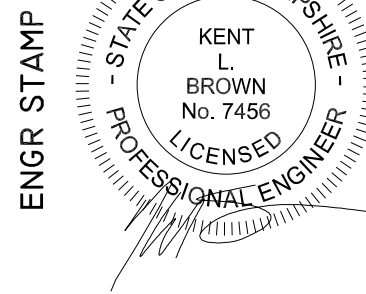
RIP-RAP SIZING CHART				
LOCATION	L	W	D	STONE SIZE
OUTLET PROTECTION FROM LOW FLOW WIER	11.5'	12.52'	9'	CLASS C, D ₅₀ = 6"
OUTLET PROTECTION FROM CB #2	24'	25.5'	6'	CLASS C, D ₅₀ = 3"
FES #1 FROM DMH #6	8.5'	9.5'	6'	CLASS C, D ₅₀ = 3"
FES #2 FROM DMH #2	17'	18.5'	6'	CLASS C, D ₅₀ = 3"
FES #3 OUTLET STRCTR 1	4'	4.5'	6'	CLASS C, D ₅₀ = 3"
FES #4 OUTLET STRCTR 2	9.5'	11.0'	6'	CLASS C, D ₅₀ = 3"
EMERGENCY SPILL WAY SWMB#3	12.0'	20.0'	9'	CLASS C, D ₅₀ = 6"

* STONE SIZE SHOWN ON THE PLANS AS CLASS A, B, OR C STONE FILL SHALL CONFORM WITH THE REQUIREMENTS OF SECTION 585 OF THE NHDOT STANDARD SPECIFICATIONS.

FIFTY PERCENT BY WEIGHT OF THE RIPRAP MIXTURE SHALL BE SMALLER THAN THE MEDIAN SIZED STONE DESIGNATED AS D₅₀. THE LARGEST STONE IN THE MIXTURE SHALL BE 1.5 TIMES THE D₅₀ SIZE.

NOTE

1. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIP-RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK USED FOR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP-RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP-RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.



REVISIONS

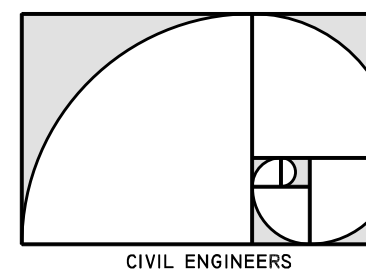
NO.	DESCRIPTION	DATE
1	REVISIONS PER AOT COMMENTS	5-7-24

SWMB#1 - WET POND
LADY OF THE LAKES ESTATES
TAX MAP 235-241-4 & 223-241-6
WHITE OAKS ROAD, LACONIA, NH.
PREPARED FOR:
LADY OF THE LAKES ESTATES LLC.
C/O MIKE BOUSALEH 453 WHITE OAKS ROAD LACONIA, NH. 03246

MARCH 6, 2024

SCALE
AS NOTED

BROWN
ENGINEERING



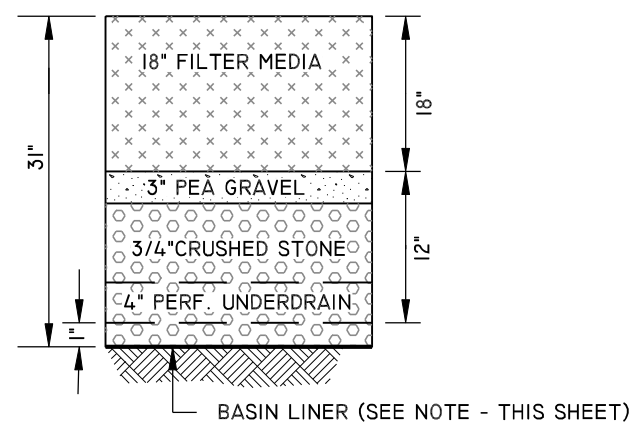
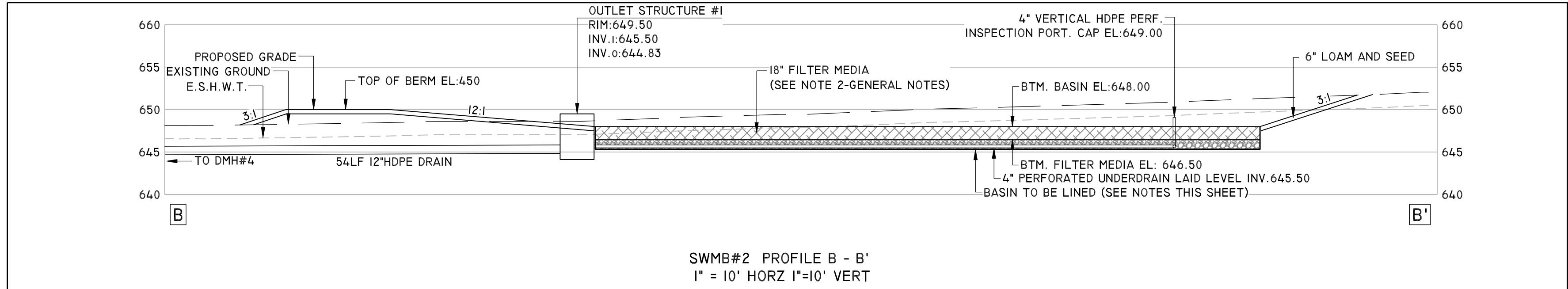
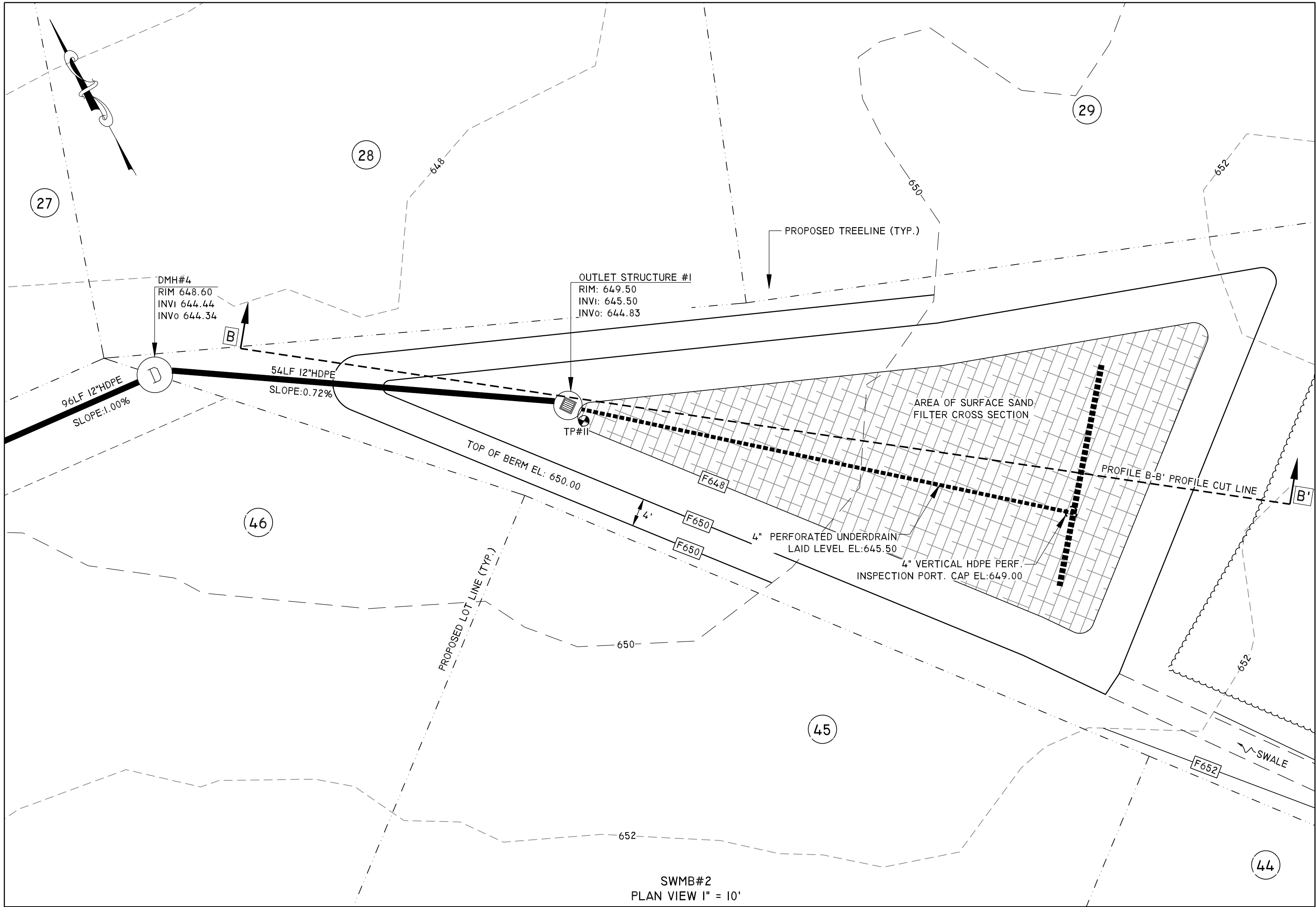
63 WEST STREET - P.O. BOX 703
ASHLAND, NH. 03217
TEL: (603) 744-1044
WWW.BROWNEENGINEERINGLLC.COM

JN: 4770-01

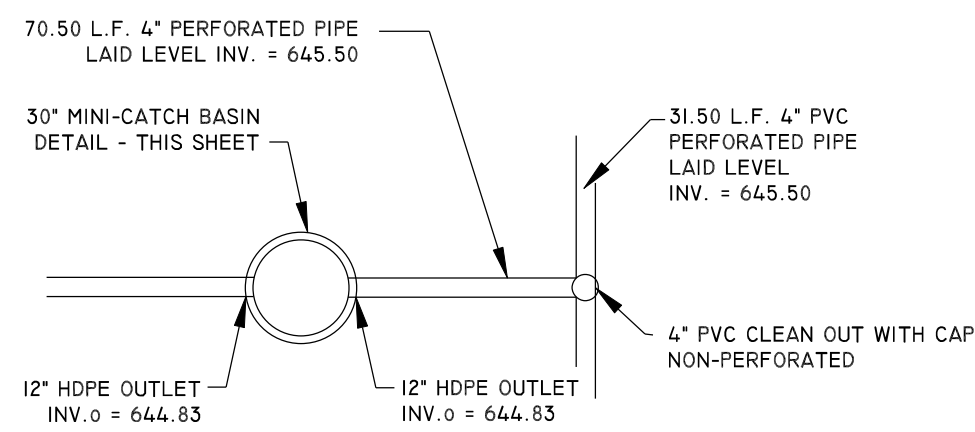
SWMB-1
SHT 16 OF 29

NOT TO SCALE

DRAWING NAME: G:\CLIENTS\0770-01 WHITE OAKS LACONIA\DWGS\4770-01 LADY OF THE LAKES.DWG

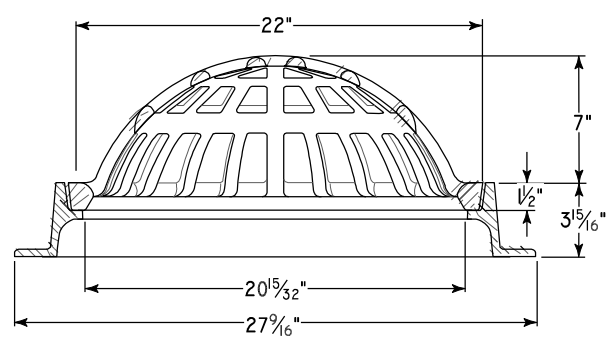


SURFACE SAND FILTER SECTION



OUTLET STRUCTURE #1

NOT TO SCALE



BEEHIVE FRAME AND GRATE

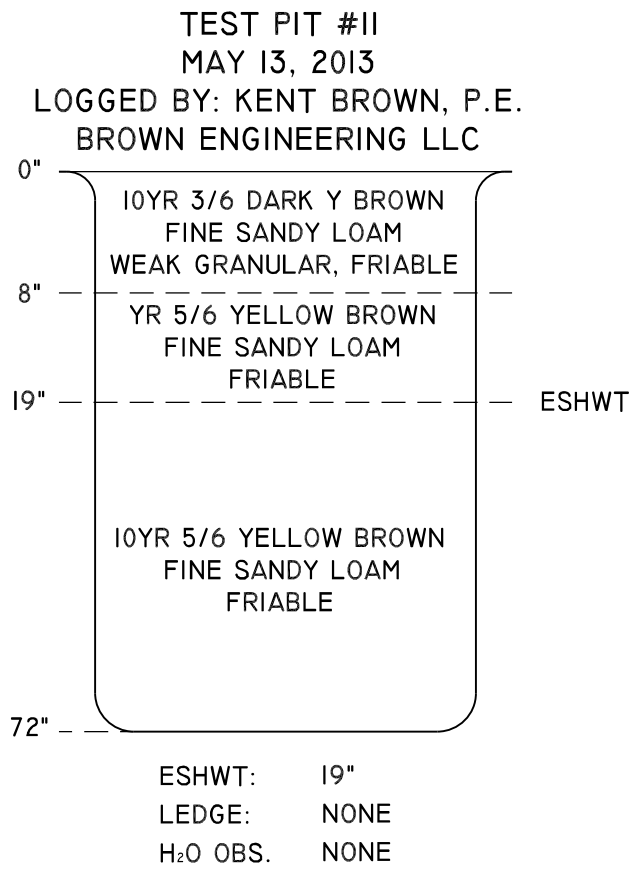
NOT TO SCALE

SURFACE SAND FILTER NOTES

- FILTER MEDIA SHALL BE A MINIMUM OF 18" DEEP.
- FILTER MEDIA SHALL CONSIST OF ONE OF THE FOLLOWING MIXTURES VOLUME:
 - 50% TO 55% BY VOLUME SAND THAT IS CERTIFIED BY ITS PRODUCER AS MEETING THE REQUIREMENTS FOR ASTM C-33 CONCRETE SAND, 20% TO 30% BY VOLUME OF LOAMY SAND TOPSOIL WITH 15% TO 25% FINES PASSING THE NUMBER 200 SIEVE, AND 20% TO 30% BY VOLUME MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 5% PASSING THE NUMBER 200 SIEVE.
 - 20% TO 30% BY VOLUME OF MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH THAT HAS NO MORE THAN 5% FINES PASSING THE NUMBER 200 SIEVE, WITH 80% TO 80% BY VOLUME LOAMY COARSE SAND USED IN THE MIXTURE MEETING THE FOLLOWING SIEVE ANALYSIS SPECIFICATION:
 - FROM 85 TO 100 PERCENT BY WEIGHT SHALL PASS THE NUMBER 10 SIEVE;
 - FROM 70 TO 100 PERCENT BY WEIGHT SHALL PASS THE NUMBER 20 SIEVE;
 - FROM 15 TO 40 PERCENT BY WEIGHT SHALL PASS THE NUMBER 60 SIEVE; AND
 - FROM 8 TO 15 PERCENT BY WEIGHT SHALL PASS THE NUMBER 200 SIEVE;
- FILTER MATERIAL AND SIDE SLOPES SHALL BE SEEDED WITH A RYE GRASS MIXTURE CONTAINING PERENNIAL AND WINTER RYES, AT A RATE SPECIFIED BY THE MANUFACTURER. STABILIZE THE SLOPES WITH STRAW TO A DEPTH OF 1".
- INSPECTION PORT CAP IS NOT TO BE SEALED TO VERTICAL PIPE.
- PERFORATIONS ON VERTICAL INSPECTION PORT ARE NOT TO BE ABOVE THE ELEVATION OF THE BOTTOM OF THE POND.

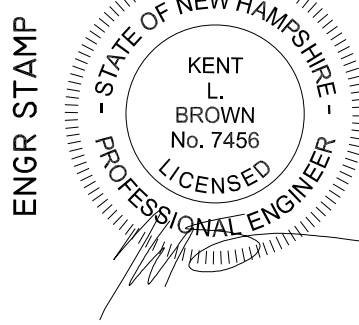
BASIN LINER NOTE:

- STORMWATER BASIN SHALL BE LINED DUE TO RELATIVE LOCATION OF THE ESTIMATED SEASONAL HIGH WATER TABLE. ONE OF THE FOLLOWING METHODS MUST BE USED AT THE BASE OF THE BASIN.
- 6-12 IN CLAY-SOIL (MINIMUM 15% PASSING THE #200 SIEVE AND A MAXIMUM PERMEABILITY OF (X10-5 CM/S)
 - A 40 MIL PVC LINER WITH SAND BEDDING AND NON-WOVEN GEOTEXTILE ON BOTTOM
 - A BENTONITE LAYER WITH A MINIMUM THICKNESS OF 4 IN



MAINTENANCE

- MAINTENANCE IS NECESSARY IF THE BASIN IS TO CONTINUE TO FUNCTION AS DESIGNED. THE LANDOWNER MUST BE AWARE OF THE REQUIREMENTS FOR A PROPERLY OPERATIONAL BASIN AND A PLAN BE DEVELOPED FOR REGULAR SCHEDULED MAINTENANCE.
- THE EMBANKMENT SHALL BE INSPECTED TO DETERMINE IF RODENT BURROWS, WET AREAS OR EROSION OF THE FILL IS TAKING PLACE.
- THE VEGETATION SHALL BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC AND DENSE WEED GROWTH. LIME AND FERTILIZER SHOULD BE APPLIED AS NECESSARY AS DETERMINED BY SOIL TESTS. TREES AND SHRUBS SHOULD BE KEPT OFF THE EMBANKMENT AND EMERGENCY SPILLWAY AREAS.
- PIPE INLETS AND SPILLWAY STRUCTURES SHALL BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM. ACCUMULATED DEBRIS AND SEDIMENT SHOULD BE REMOVED. IF PIPES ARE COATED, THE COATING SHOULD BE CHECKED AND REPAIRED AS NECESSARY.
- PIPE OUTLETS SHALL BE INSPECTED ANNUALLY AND AFTER EVERY MAJOR STORM. THE CONDITION OF THE PIPES SHOULD BE NOTED AND REPAIRS MADE AS NECESSARY. IF EROSION IS TAKING PLACE, THEN MEASURES SHALL BE TAKEN TO STABILIZE AND PROTECT THE AFFECTED AREA OF THE OUTLET.



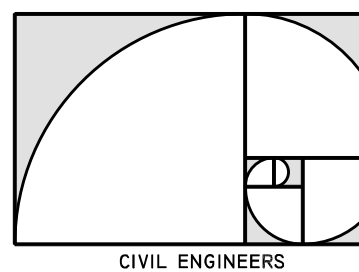
NO.	DESCRIPTION	DATE			

SWMB#2 - SURFACE SAND FILTER
LADY OF THE LAKES ESTATES
TAX MAP 235-241-4 & 223-241-6
WHITE OAKS ROAD, LACONIA, NH.
PREPARED FOR:
LADY OF THE LAKES ESTATES LLC.
C/O MIKE BOUSALEH 453 WHITE OAKS ROAD, LACONIA, NH. 03246

MARCH 6, 2024

SCALE
AS NOTED

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ASHLAND, NH. 03217
TEL: (603) 744-1044
WWW.BROWNEENGINEERINGLLC.COM

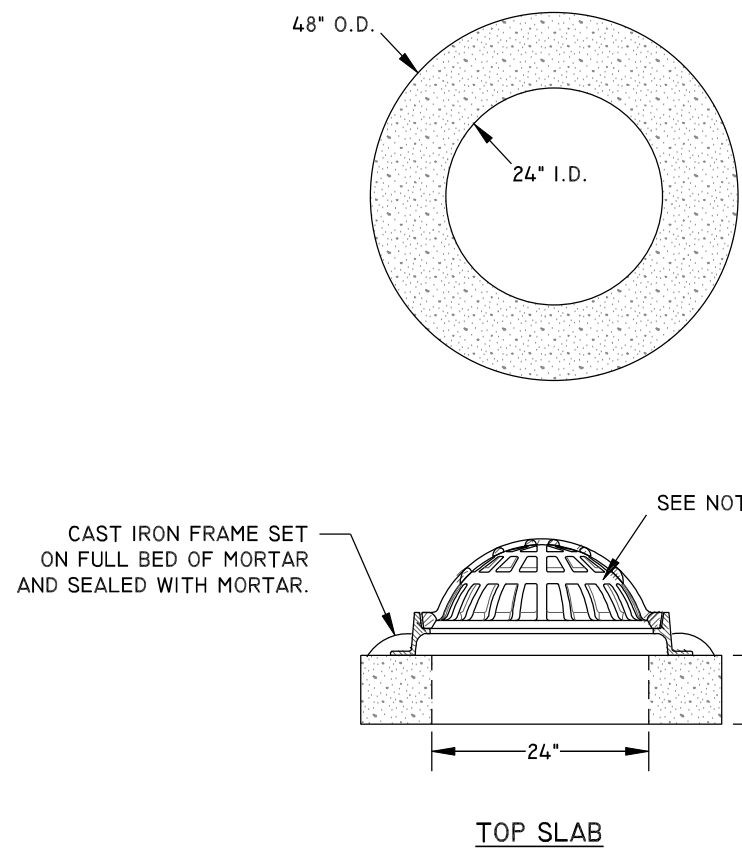
JN: 4770-01

SWMB-2
SHT 17 OF 29

MINI-CATCH BASIN DETAIL

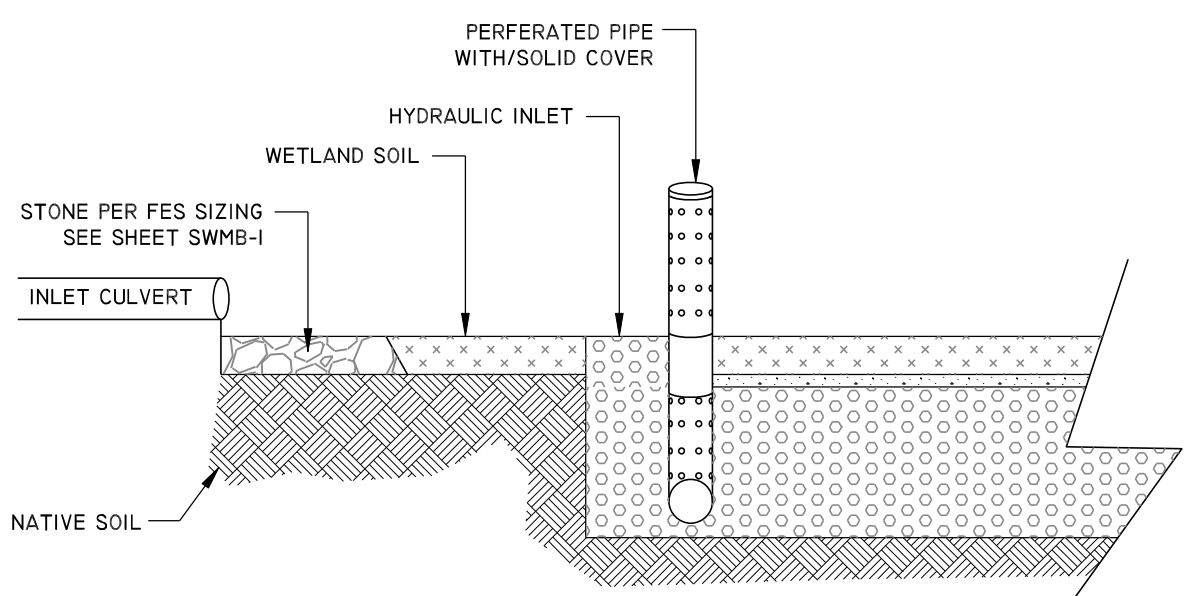
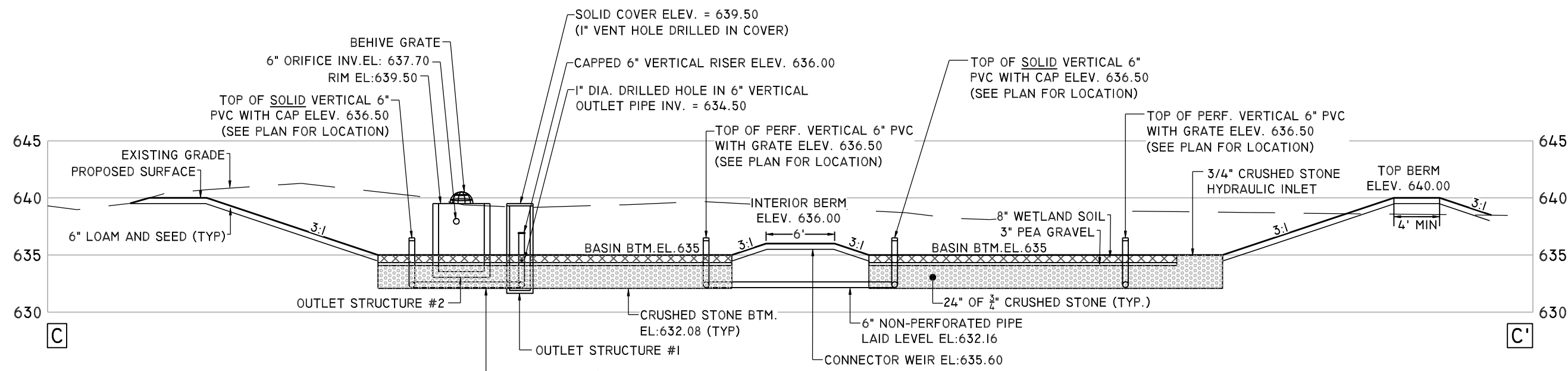
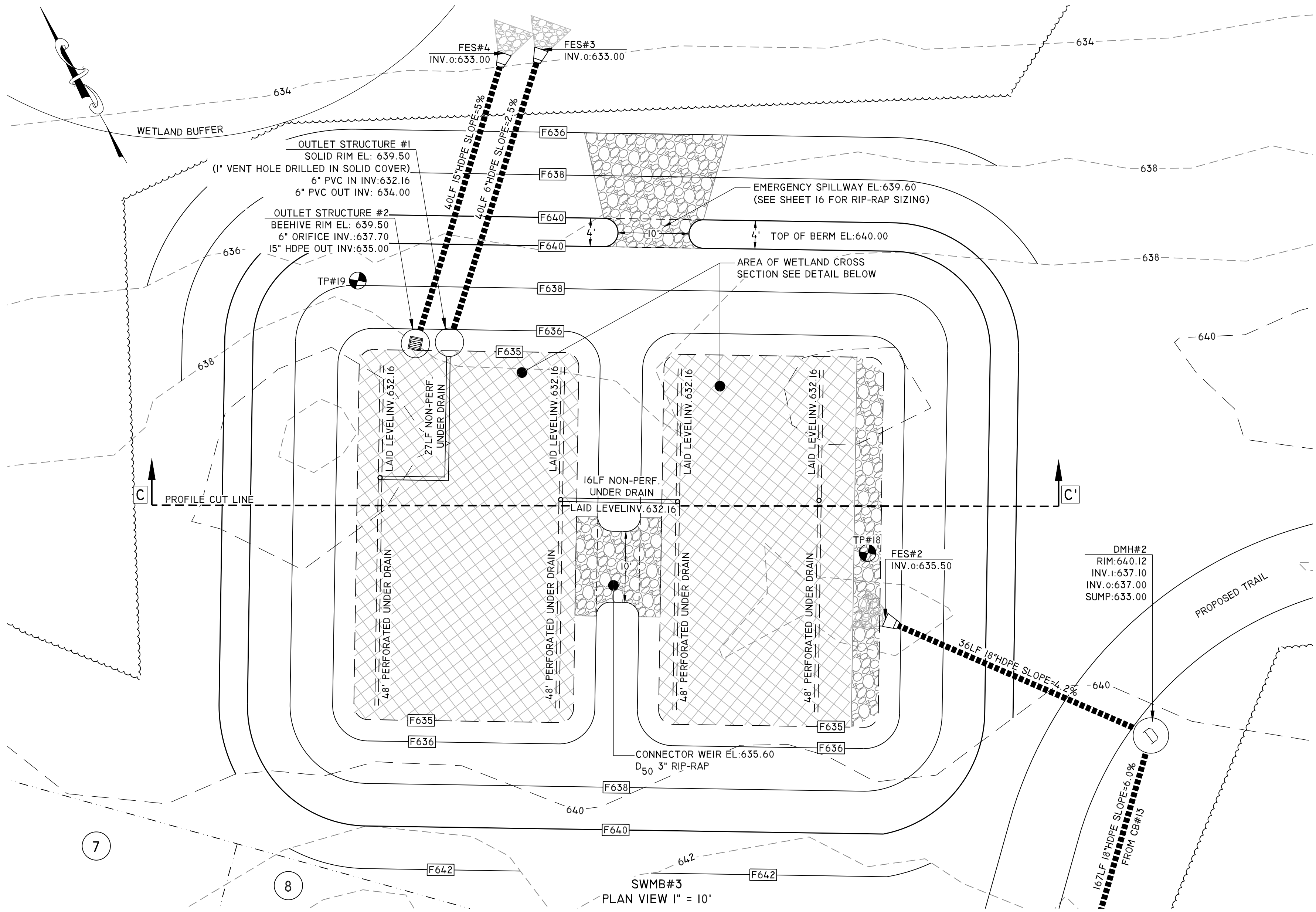
FOR DRAIN LINES

NOT TO SCALE



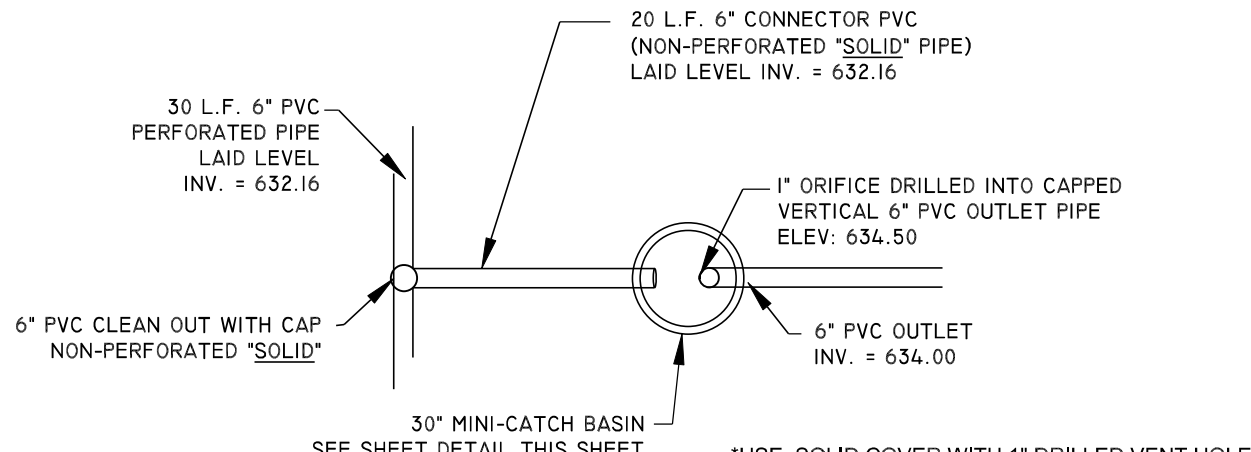
- GENERAL NOTES:
- ITEM TO BE PHOENIX PRECAST PRODUCTS "30" DIAMETER AREA DRAINS" OR APPROVED EQUAL.
 - BEEHIVE FRAME AND GRATE (NEENAH R-2563) OR APPROVED EQUAL.
 - CONCRETE FC = 4,000 PSI @ 28 DAYS MINIMUM.
 - DESIGN LOADING: AASHTO-HS20-44.

DRAWING NAME: G:\CLIENTS\0770-01 WHITE OAKS LACONIA\DWGS\4770-01 LADY OF THE LAKES.DWG



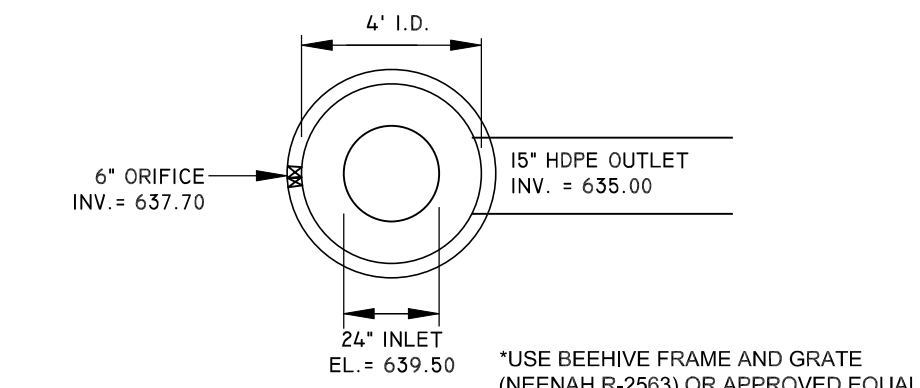
F.E.S. #2 IN GRAVEL WETLAND

NOT TO SCALE



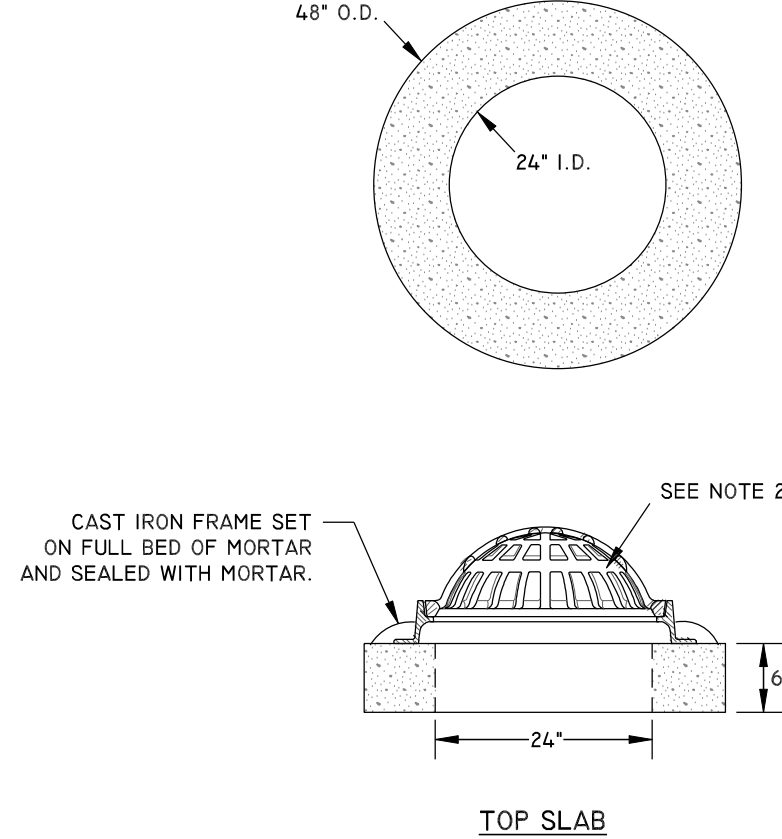
OUTLET STRUCTURE #1

NOT TO SCALE



OUTLET STRUCTURE #2

NOT TO SCALE



- GENERAL NOTES:
- ITEM TO BE PHOENIX PRECAST PRODUCTS "30" DIAMETER AREA DRAINS" OR APPROVED EQUAL
 - FRAME AND GRATE AS SPECIFIED
 - CONCRETE FC = 4,000 PSI @ 28 DAYS MINIMUM
 - DESIGN LOADING: AASHTO-HS20-44

MINI-CATCH BASIN DETAIL

OUTLET STRUCTURE #1

NOT TO SCALE

GRAVEL WETLAND SECTION

GRAVEL WETLAND GENERAL NOTES

- DO NOT PLACE GRAVEL WETLAND SYSTEM INTO SERVICE UNTIL THE BASIN AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
- RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMP'D ARE STABILIZED
- ALL CEMENT CONCRETE TO BE 4,000 P.S.I (MIN.)
- GALVANIZED STEEL GRATE SHALL BE BOLTED TO THE TOP OF THE STRUCTURE WITH 1/2" STAINLESS STEEL BOLTS AND THREADED INSERTS.
- THE SYSTEM SHOULD BE PLANTED TO ACHIEVE A RIGOROUS ROOT MAT WITH GRASSES, FORBS, AND SHRUBS WITH OBLIGATE AND FACULTATIVE WETLAND SPECIES
- AREAS OUTSIDE OF POND AREA TO BE LOAM AND SEEDED PER SEEDING SPECS AS SHOWN ON DET-2
- MINIMUM EMBANKMENT WIDTH TO BE 4' WIDE
- FOR OVERFLOW OUTLET WEIR RIP-RAP SIZING SEE SHEET DET-3

SUBSURFACE GRAVEL WETLAND MATERIALS

THE SURFACE INFILTRATION RATES OF THE GRAVEL WETLAND SOIL SHOULD BE SIMILAR TO A LOW HYDRAULIC CONDUCTIVITY WETLAND SOIL (0.1-0.01 FT/DAY) THIS SOIL MAY BE MANUFACTURED USING A COMBINATION OF LOAM, SAND, AND SOME FINE SOILS BLENDED AT A HIGH % ORGANIC MATTER CONTENT SOIL (LESS THAN OR EQUAL TO 15% ORGANIC MATTER). AVOID A FINAL WETLAND SOIL MIX WITH CLAY CONTENT IN EXCESS OF 15% THAT MAY RESULT IN DRYING AND CRACKING AND POTENTIAL MIGRATION OF FINES INTO THE SUBSURFACE GRAVEL LAYER. DO NOT USE GEOTEXTILES BETWEEN THE HORIZONTAL LAYERS OF THIS SYSTEM AS THEY WILL CLOG DUE TO FINES AND MAY RESTRICT ROOT GROWTH.

AN INTERMEDIATE LAYER OF GRADED AGGREGATE FILTER (I.E. 3/8" IN PEA GRAVEL) IS NEEDED TO PREVENT THE FINER WETLAND SOILS FROM MIGRATING DOWN INTO THE COURSE GRAVEL SUB-LAYER. MATERIAL COMPATIBILITY SHOULD BE EVALUATED USING THE FOLLOWING FHWA CRITERIA:

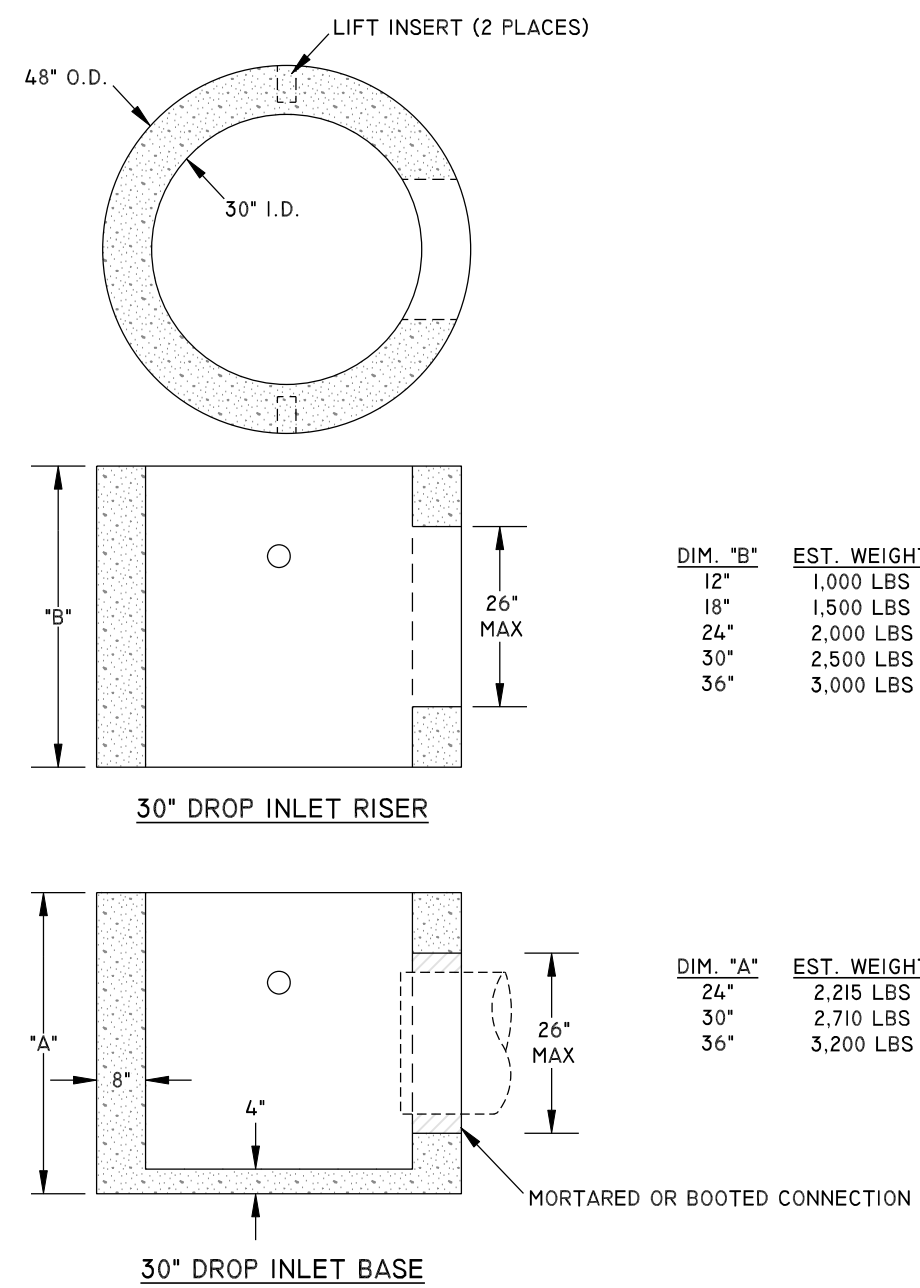
CRITERIA 1: D15, COARSE SUBLAYER \leq 5 X D15, SETTING BED
CRITERIA 2: D50, COARSE SUBLAYER \leq 25 X D50, SETTING BED

PARTICLE SIZE DISTRIBUTION AND TESTING TOLERANCES FOR WETLAND SOIL FOR THE SUBSURFACE GRAVEL WETLAND SYSTEM.

US STANDARD SIEVE SIZE (IN)	PERCENT PASSING	PERCENT PASSING TESTING TOLERANCES
#5	100	+10.0
#10	90-75	+5.0
#100	40-50	+5.0
#200	25-50	+5.0

SAFETY

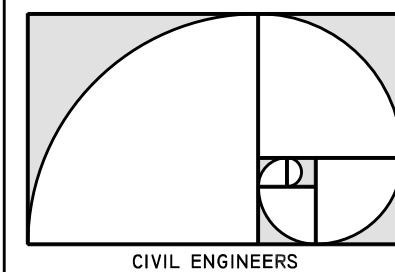
- PONDS THAT ARE EASILY ACCESSIBLE IN POPULATED AREAS SHOULD INCORPORATE ALL POSSIBLE SAFETY PRECAUTIONS. DUE TO ONLY TEMPORARY WATER LEVELS IN THESE BASINS, FENCING IS NOT NECESSARY.



MARCH 6, 2024

SCALE
AS NOTED

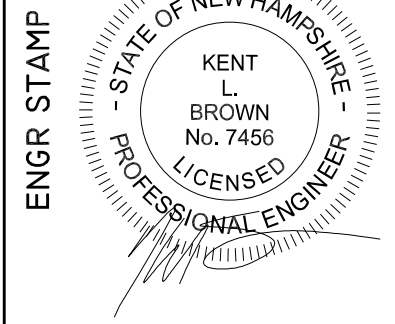
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ASHLAND, NH, 03217
TEL: (603) 744-1044
WWW.BROWNEENGINEERINGLLC.COM

JN: 4770-01

SWMB-3
SHT 18 OF 29

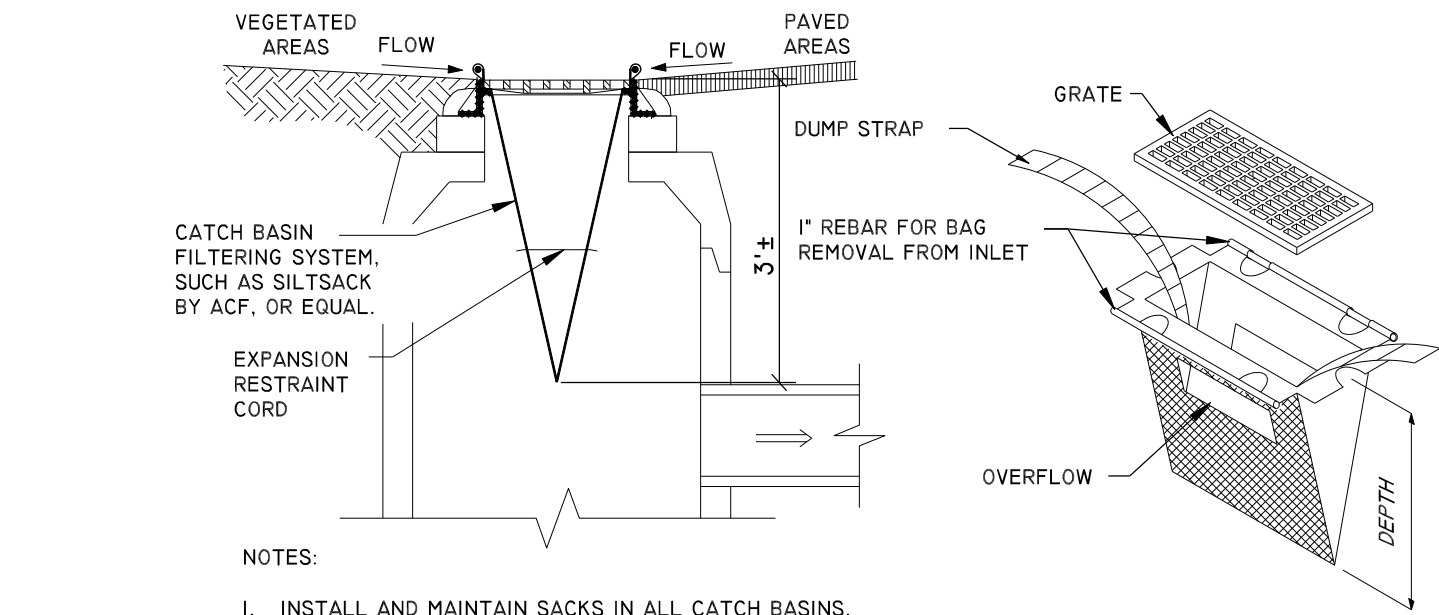


REVISIONS

NO.	DESCRIPTION	DATE
1	REVISIONS PER AUT COMMENTS	5-7-24

SWMB#3 - GRAVEL WETLAND
LADY OF THE LAKES ESTATES
TAX MAP 235-241-4 & 223-241-6
WHITE OAKS ROAD, LACONIA, NH.
PREPARED FOR:
LADY OF THE LAKES ESTATES LLC.
C/O MIKE BOUSALEH 453 WHITE OAKS ROAD, LACONIA, NH. 03246

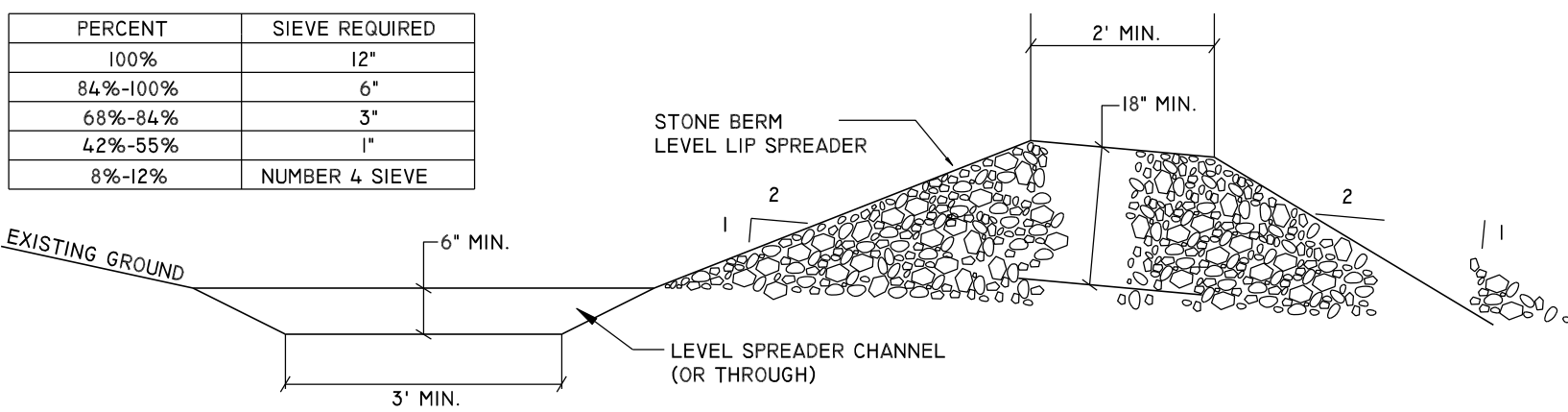
DRAWING NAME: G:\CLIENTS\14770-01 WHITE OAKS LACONIA.DWG\$14770-01 LADY OF THE LAKES.DWG



- NOTES:
1. INSTALL AND MAINTAIN SACKS IN ALL CATCH BASINS.
 2. TO INSTALL SACK, REMOVE CATCH BASIN GRATE AND PLACE SACK IN OPENING. HOLD OUT APPROXIMATELY SIX INCHES OF THE SACK OUTSIDE THE FRAME FOR THE LIFTING STRAPS. REPLACE THE GRATE TO HOLD THE SACK IN PLACE.
 3. THE SACK SHALL BE INSPECTED AFTER EVERY STORM, OR ONCE EVERY TWO WEEKS, WHICH EVER OCCURS FIRST.
 4. THE RESTRAINT CORD SHOULD BE VISIBLE AT ALL TIMES. IF THE CORD IS COVERED WITH SEDIMENT, THE SACK SHOULD BE EMPTIED. EMPTY THE SACK AWAY FROM THE CATCH BASIN TO PREVENT SEDIMENT FROM RE-ENTERING THE CATCH BASIN. EMPTY THE SACK PER THE MANUFACTURER'S RECOMMENDATIONS.
 5. REPLACE THE SACK IN THE CATCH BASIN AFTER THE SACK HAS BEEN EMPTIED. ONCE CONSTRUCTION IS COMPLETE AND ALL DISTURBED AREAS HAVE BEEN STABILIZED BY PAVING OR A HEALTHY VEGETATIVE COVER, REMOVE THE SACK FROM THE CATCH BASINS.

"SILT-SAK" SEDIMENT CONTROL

NOT TO SCALE



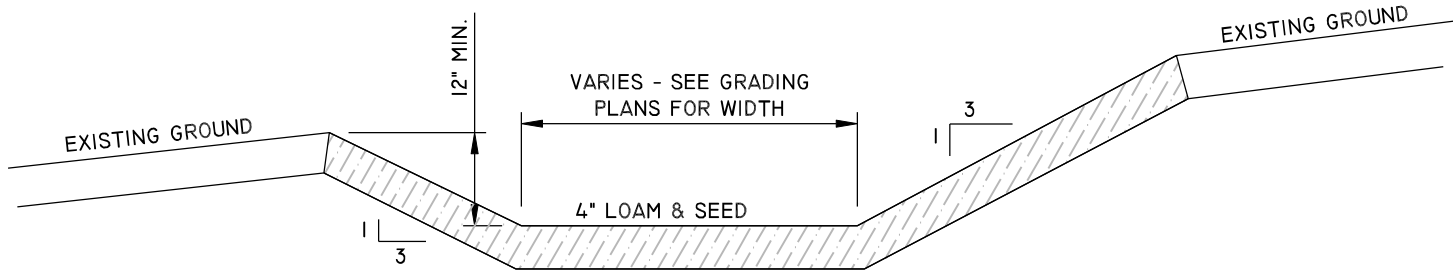
- NOTE
- CROSS SECTION
- 1) CONSTRUCT THE LEVEL SPREADER LIP ON A ZERO PERCENT GRADE TO INSURE UNIFORM SPREADING OF RUNOFF.
 - 2) LEVEL SPREADER SHALL BE CONSTRUCTED ON UNDISTURBED SOIL, NOT ON FILL.
 - 3) THE FLOW FROM THE LEVEL SPREADER SHALL OUTLET ONTO STABILIZED AREAS. WATER SHOULD NOT BE ALLOWED TO RE-CONCENTRATE BELOW THE SPREADER.
 - 4) PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PERFORMED.

MAINTENANCE

THE LEVEL SPREADER SHALL BE CHECKED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE IF THE LIP HAS BEEN DAMAGED AND TO DETERMINE THAT THE MAJOR DESIGN CONDITIONS HAVE NOT CHANGED. ANY DETRIMENTAL SEDIMENT ACCUMULATION SHALL BE REMOVED. IF RILLING HAS TAKEN PLACE ON THE LIP, THEN THE DAMAGE SHOULD BE REPAIRED AND RE-VEGETATED. THE VEGETATION SHALL BE MOWED ON OCCASION TO CONTROL WEEDS AND THE ENCROACHMENT OF WOODY VEGETATION. CLIPPINGS SHOULD BE REMOVED AND DISPOSED OF OUTSIDE THE SPREADER AREA AND AWAY FROM THE OUTLET AREA. FERTILIZATION SHALL BE DONE AS NECESSARY TO KEEP THE VEGETATION HEALTHY AND DENSE.

TEMPORARY LEVEL SPREADER

NOT TO SCALE



CONSTRUCTION NOTES

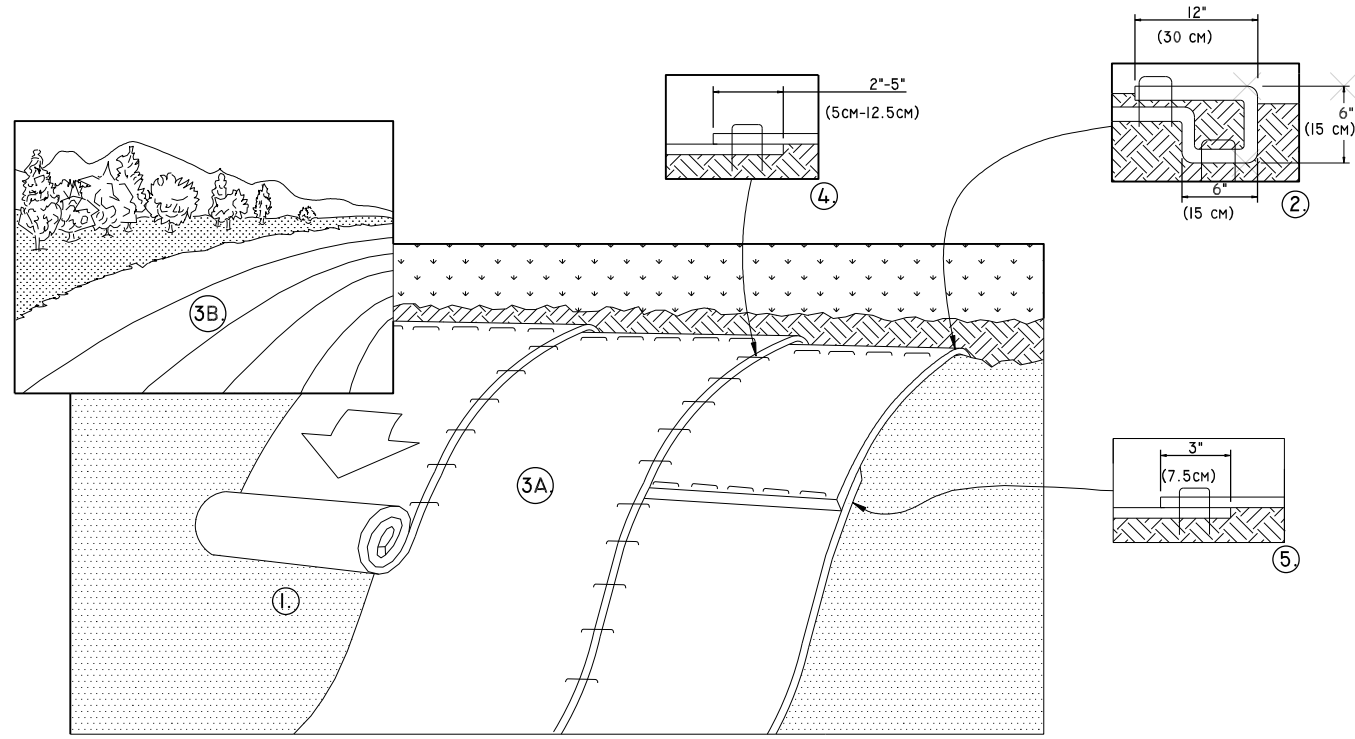
- 1) THE FOUNDATION AREA OF THE WATERWAY SHALL BE CLEARED AND GRUBBED OF ALL TREES, BRUSH, STUMPS AND OTHER OBJECTIONABLE MATERIAL. MATERIALS REMOVED SHALL BE DISPOSED OF SO THEY DO NOT INTERFERE WITH THE CONSTRUCTION OR PROPER FUNCTION OF THE WATERWAY.
- 2) THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE DESIGN CRITERIA. THE WATERWAY SHALL BE FREE OF IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
- 3) EARTH FILLS REQUIRED TO MEET SUBGRADE REQUIREMENTS BECAUSE OF OVER EXCAVATION OR TOPOGRAPHY SHALL BE COMPACTED TO THE SAME DENSITY AS THE SURROUNDING SOIL TO PREVENT UNEQUAL SETTLEMENT THAT COULD CAUSE DAMAGE TO THE COMPLETED WATERWAY. EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE WATERWAY.
- 4) CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER AS TO MINIMIZE EROSION AND AIR AND WATER POLLUTION. ALL APPROPRIATE STATE AND LOCAL LAWS AND REGULATIONS SHALL BE COMPLIED WITH FOR DESIGN AND INSTALLATION.
- 5) THE WATERWAY SHALL BE STABILIZED USING THE APPROPRIATE "BEST MANAGEMENT PRACTICES" FOR VEGETATIVE MEASURES.

MAINTENANCE

MAINTENANCE OF THE VEGETATION IN THE GRASSED WATERWAY IS EXTREMELY IMPORTANT IN ORDER TO PREVENT RILLING, EROSION AND FAILURE OF THE WATERWAY. MOWING SHALL BE DONE FREQUENTLY ENOUGH TO KEEP THE VEGETATION IN VIGOROUS CONDITION AND TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION. HOWEVER IT SHALL NOT BE MOWED TO CLOSELY AS TO REDUCE EROSION RESISTANCE IN THE WATERWAY. THE WATERWAY SHALL BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE SWALE. RILLS AND DAMAGED AREAS SHALL BE PROMPTLY REPAIRED AND RE-VEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION. FERTILIZE ON AN "AS-NEEDED" BASIS TO KEEP THE GRASS HEALTHY.

GRASS LINED SWALE

NOT TO SCALE



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

NOTE:

*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

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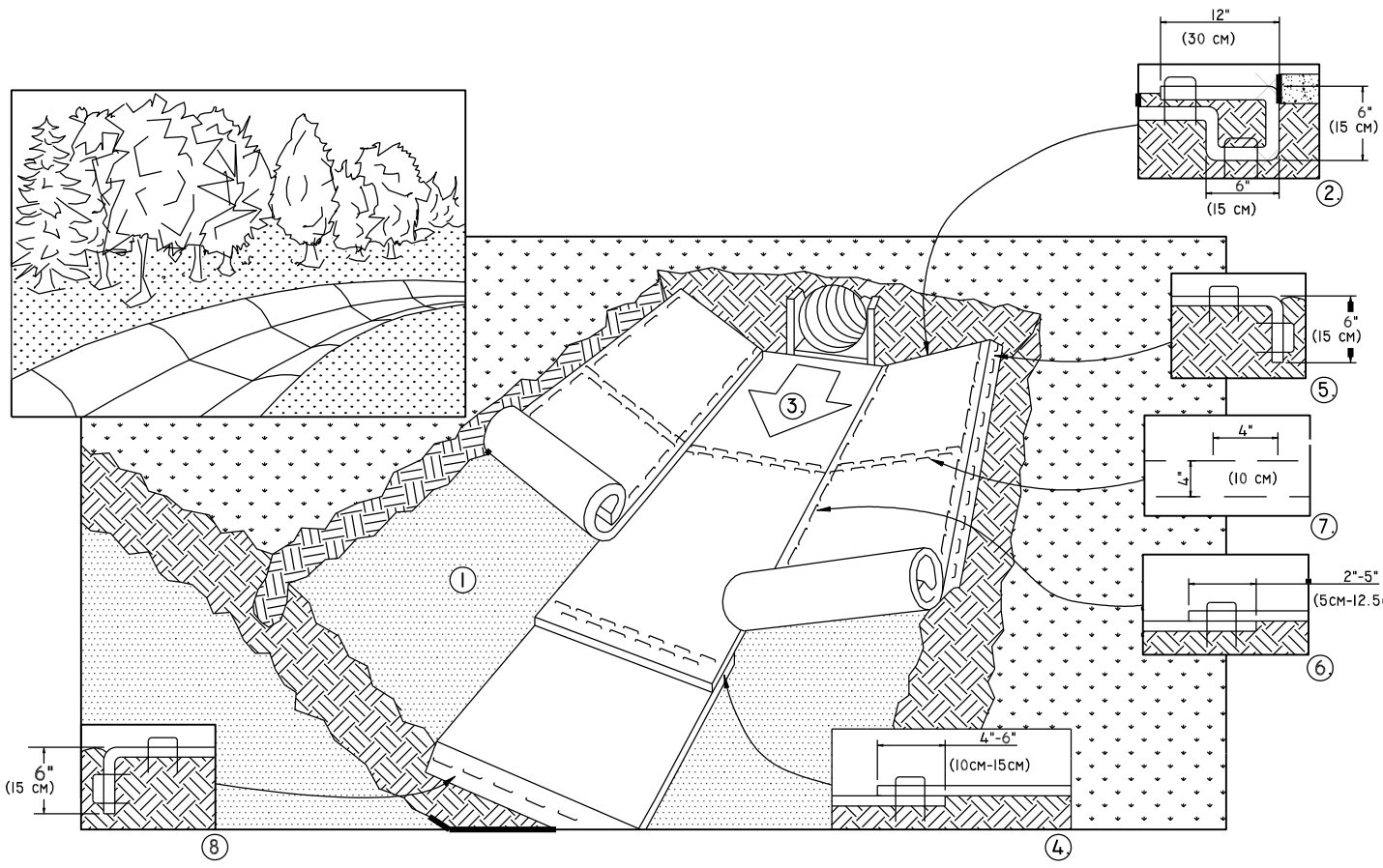


SLOPE INSTALLATION

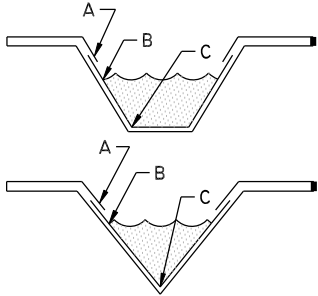
FOR EROSION CONTROL

NOT TO SCALE

THERE SHALL BE NO PLASTIC, OR MULTI-FILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES MATERIAL UTILIZED



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



CRITICAL POINTS

A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

- NOTE:
- * HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
 - ** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

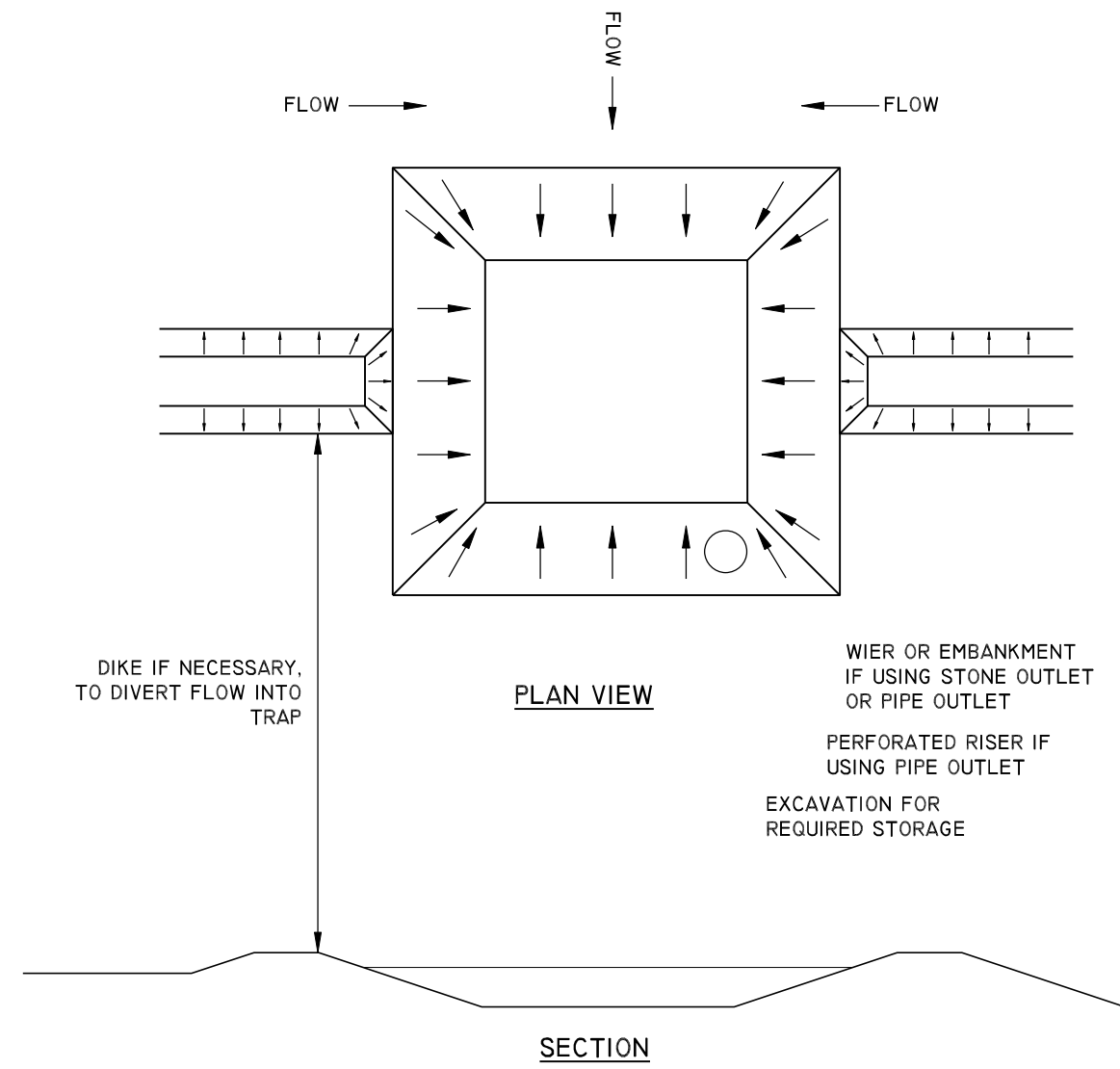
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CHANNEL INSTALLATION

FOR EROSION CONTROL

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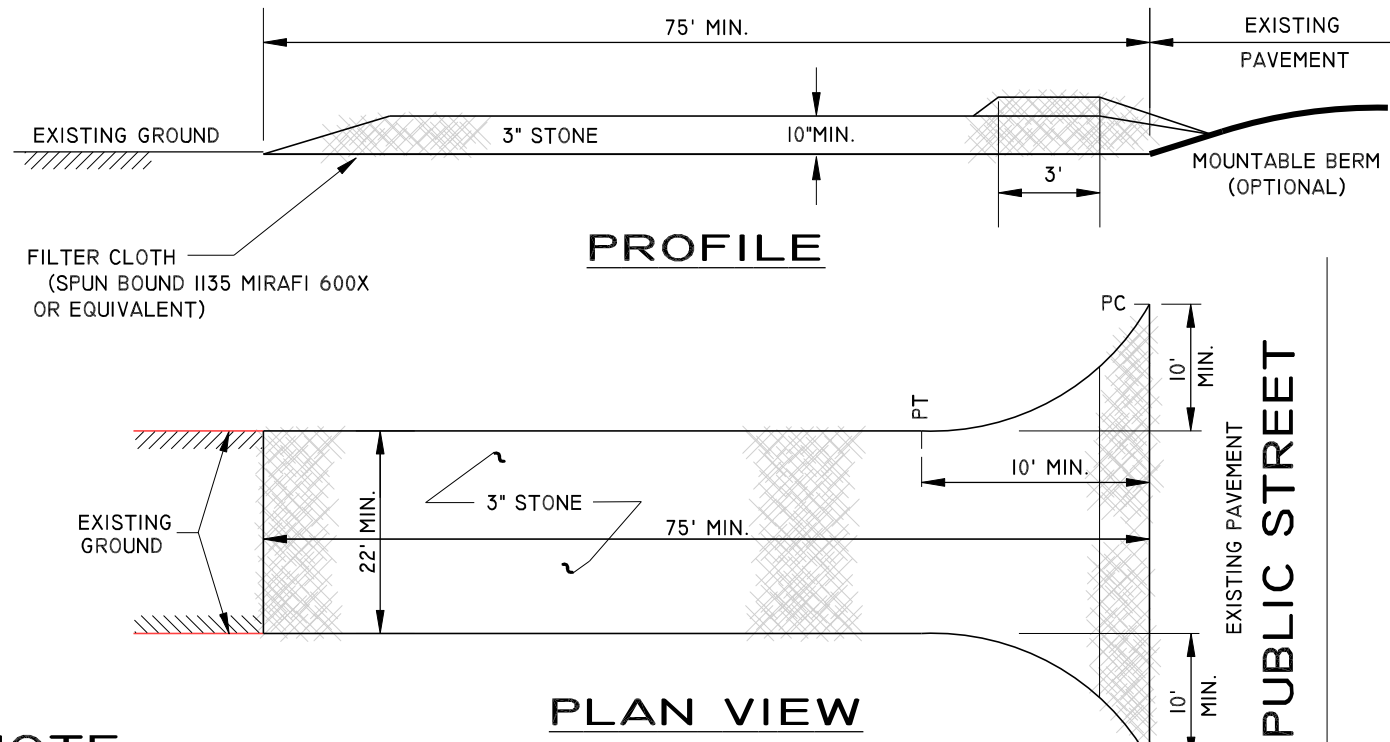
THERE SHALL BE NO PLASTIC, OR MULTI-FILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES MATERIAL UTILIZED



- NOTES:
1. THE TRAP SHALL BE INSTALLED AS CLOSE TO THE DISTURBED AREA AS POSSIBLE.
 2. THE MAXIMUM CONTRIBUTING AREA TO SINGLE TRAP SHALL BE LESS THAN 5 ACRES.
 3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,000 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
 4. TRAP OUTLET SHALL BE MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP.
 5. TRAP SHALL DISCHARGE TO A STABILIZED AREA.
 6. TRAP SHALL BE CLEANED WHEN 50 PERCENT OF THE ORIGINAL VOLUME IS FILLED.
 7. MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.
 8. SEDIMENT TRAPS MUST BE USED AS NEEDED TO CONTAIN RUNOFF UNTIL SOILS ARE STABILIZED.

SEDIMENT TRAP DETAIL

NOT TO SCALE

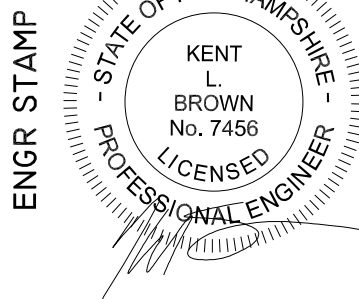


NOTE

1. STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 3 INCH STONE RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL BE NOT LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
3. THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICH EVER IS GREATER.
5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENTIAL LOT.
6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.
8. WHEELS SHALL BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



NO.	DESCRIPTION	REVISIONS			
		DATE			

EROSION CONTROL DETAILS

LADY OF THE LAKES ESTATES

TAX MAP 235-241-4 & 223-241-6

WHITE OAKS ROAD, LACONIA, NH.

PREPARED FOR:

LADY OF THE LAKES ESTATES LLC.

c/o MIKE BOUSALEH 453 WHITE OAKS ROAD, LACONIA, NH. 03246

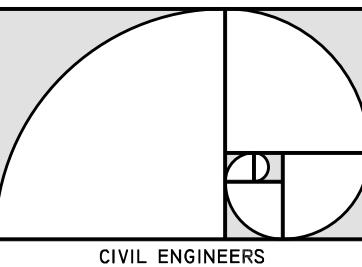
MARCH 6, 2024

SCALE

AS NOTED

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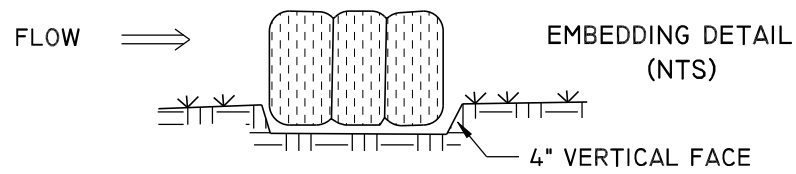
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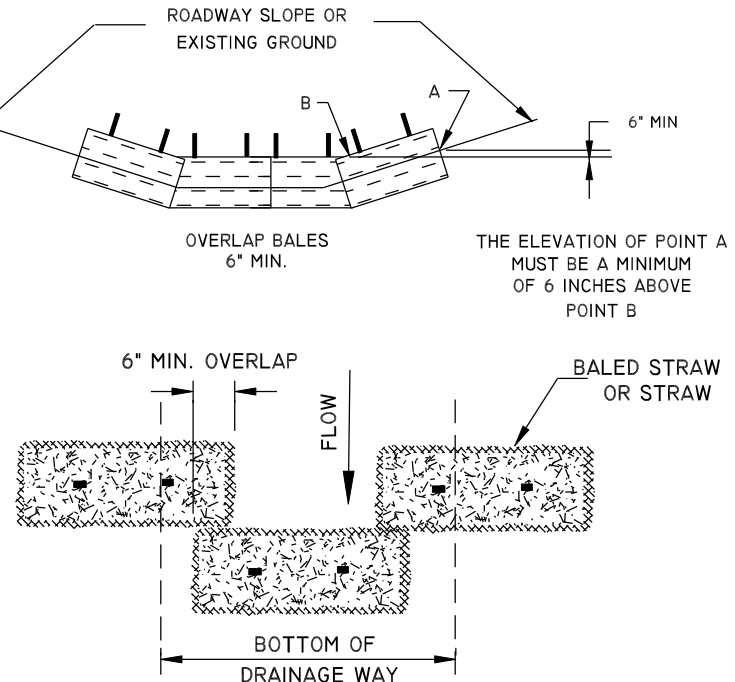
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DRAWING NAME: G:\CLIENTS\10770-01 WHITE OAK ESTATES - WHITE OAKS LACONIA\DWGS\10770-01 LADY OF THE LAKES.DWG



PLAN VIEW



STRAW BALE CHECK DAM

(EMBEDDED IN SWALE)

NOT TO SCALE

SEEDING RATES

MIXTURE	POUNDS/ACRE	POUNDS/1,000 SF
TALL FESCUE	20	0.45
CREeping RED FESCUE	20	0.45
BIRDSFOOT TREFOIL	8	0.20
TOTAL	48	1.10

SEEDING SPECIFICATIONS

SEEDING RECOMMENDATIONS

- SEEDBED PREPARATION
 - SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
 - STONES LARGER THAN FOUR INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT FOUR INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.
- ESTABLISHING A STAND
 - LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:
AGRICULTURAL LIMESTONE: 2 TONS PER ACRE OR 0.09 LBS. PER SQ. FT.
NITROGEN (N): 50 LBS. PER ACRE OR 1 LBS. PER 1000 SQ. FT.
PHOSPHATE (P): 100 LBS. PER ACRE OR 2 LBS. PER 1000 SQ. FT.
POTASH (K): 100 LBS. PER ACRE OR 2.2 LBS. PER 1000 SQ. FT.
(NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1000 LBS. PER ACRE OF 5-10-10)
SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING, AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH 0.25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.
 - REFER TO TABLE 7-35 OF "STORMWATER MANAGEMENT AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE" FOR APPROPRIATE SEED MIXTURES AND TABLE 7-36 FOR RATES OF SEEDING. ALL LEGUMES (CROWN VETCH, BIRDSFOOT TREFOIL, AND FLATPEA) MUST BE INOCULATED WITH THEIR SPECIFIC INNOCUANT.
 - 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 10 TO SEPTEMBER 1.
- MULCH
 - STRAW OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.
 - MULCH WILL BE HELD IN PLACE USING TECHNIQUES FROM THE "BEST MANAGEMENT PRACTICE FOR MULCHING", AS SHOWN IN, "STORMWATER MANAGEMENT AND SEDIMENTATION CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE".
- MAINTENANCE TO ESTABLISH A STAND
 - PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ONSITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME ESTABLISHED.
 - IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, OCCASIONAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

TEMPORARY SEEDING RATES:

- FOR FALL SEEDING (SEED FROM AUGUST 15 - SEPTEMBER 5 FOR BEST COVER): WINTER RYE: 2.5 LBS PER 1,000 SF SEED TO A DEPTH OF 1 INCH
- FOR SPRING SEEDING (SEED NO LATER THAN MAY 15 FOR SUMMER PROTECTION) OATS: 2 LBS PER 1,000 SF SEED TO A DEPTH OF 1 INCH
- ALTERNATIVE: PERENNIAL REYGRASS: 0.7 LBS PER 1,000 SF SEED BETWEEN APRIL 1 AND JUNE 1 AND/OR BETWEEN AUGUST 15 AND SEPTEMBER 15) MULCHING WILL ALLOW SEEDING THROUGHOUT THE GROWING SEASON. SEED TO A DEPTH OF 0.5 INCHES
- 10-10-10 FERTILIZER SHOULD BE UNIFORMLY SPREAD OVER AREA PRIOR TO BE INCORPORATED INTO THE SOIL AT A MINIMUM OF 7 LBS PER 1,000 SF
- TOP SOIL: 4" MINIMUM APPROVED TOPSOIL STRAW MULCH - 2 BALES PER 1,000 SF APPLY BINDER OF NETTING AS NEEDED

EROSION CONTROL NOTES

ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS (EPA, NHDES AND TOWN REGULATIONS). THE GENERAL NOTES AND DETAILS CONTAINED IN THIS PLAN SERVE AS A GUIDE ONLY.

- PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS. INSTALLATION OF STRAWBALE BARRIERS AND SILTATION FENCES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY SPECIFIC AREA. PREFABRICATED SILTATION FENCES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
- STRAWBALE BARRIERS AND SILTATION FENCES SHALL BE KEPT CLEAN DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A HEALTHY STAND OF VEGETATIVE COVER. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES.
- EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
- THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. ALL ROADWAYS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE. CUT AND FILL SLOPES SHALL BE LOANED & SEEDED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE TEMPORARY AND/OR PERMANENT STABILIZATION SHALL BE INSTALLED WITHIN 45 DAYS OF INITIAL CONSTRUCTION. AN AREA SHALL BE CONSIDERED STABLE IF 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 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED
 - OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED

TIME LIMIT: ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.

- ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 4" OF LOAM INSTALLED WITH NOT LESS THAN 1.1 POUNDS OF SEED MIX PER 1,000 SQ. FT. SEE SEEDING SPECIFICATIONS ON THIS SHEET.
- LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE SOIL PRIOR TO OR AT THE TIME OF AT THE TIME OF SEEDING. A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS. PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. SEEDING PRACTICES SHALL COMPLY WITH LOCAL USDA SOIL CONSERVATION SERVICES RECOMMENDATIONS.
- STRAW MULCH OR JUTE MATTING SHALL BE USED IF/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 FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 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 AREA 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.
- STRAW MULCH OR JUTE MATTING SHALL BE USED IF/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 FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 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 AREA 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.

LOT DEVELOPMENT CRITERIA

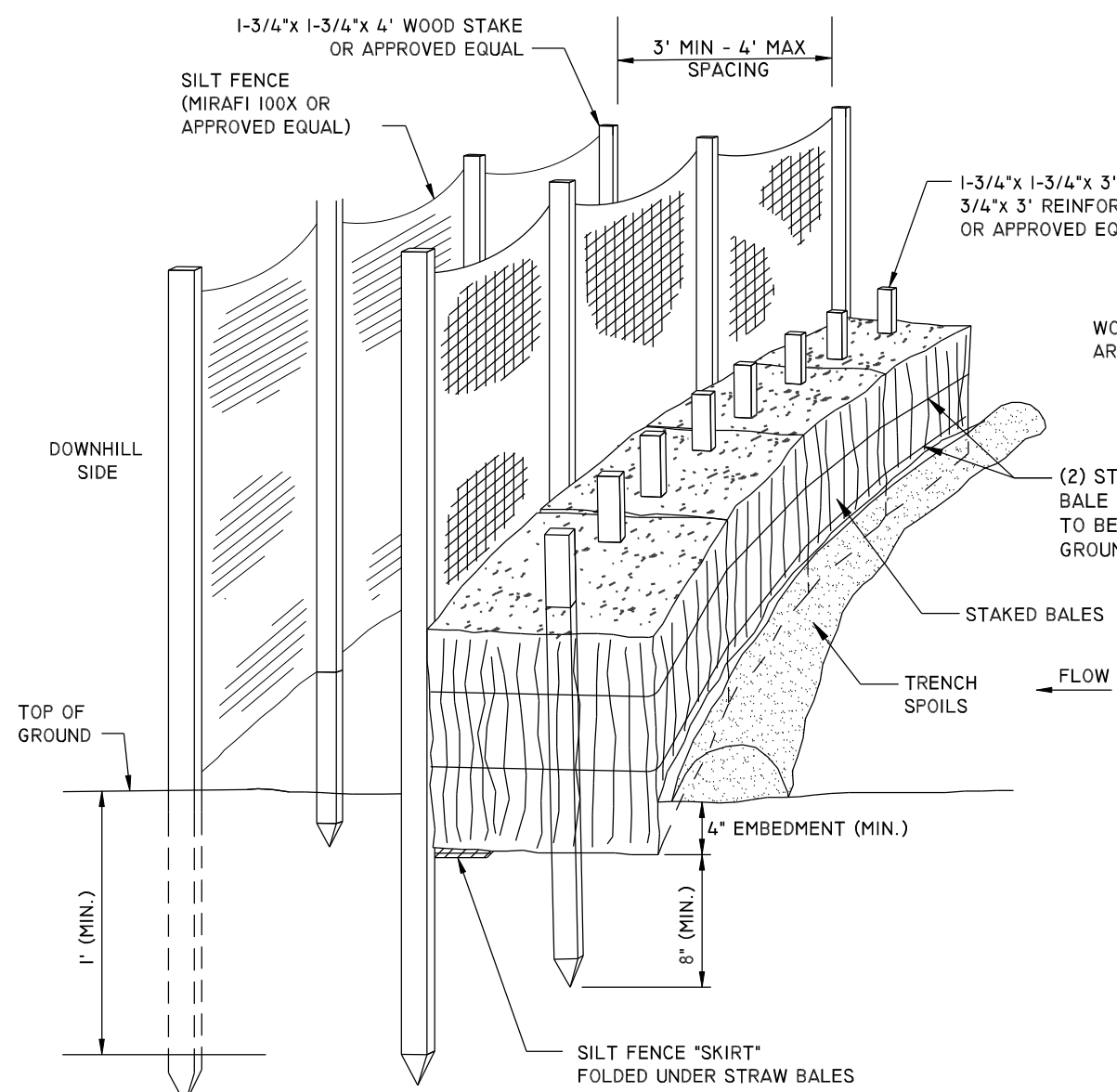
- PROVISIONS SHALL BE MADE TO SAFELY CONDUCT SURFACE RUNOFF TO STORM DRAINS, PROTECTED OUTLETS, OR TO A STABLE WATERCOURSE TO INSURE THAT THE RUNOFF WILL NOT DAMAGE SLOPES OR OTHER GRADED AREAS.
- CUT AND FILL SLOPES SHALL NOT BE STEEPER THAN 2:1 IF THE SLOPES ARE TO BE MOWED THEN THE SLOPES SHALL BE 3:1 OR FLATTER.
- SUBSURFACE DRAINAGE IS TO BE PROVIDED IN AREAS HAVING HIGH WATER TABLES TO INTERCEPT DRAINAGE WHICH WOULD AFFECT SLOPE STABILITY, BUILDING FOUNDATIONS, ESTABLISHMENT OF ADEQUATE VEGETATION, OR CREATE UNDESIRABLE WETNESSES.

CONSTRUCTION SEQUENCE

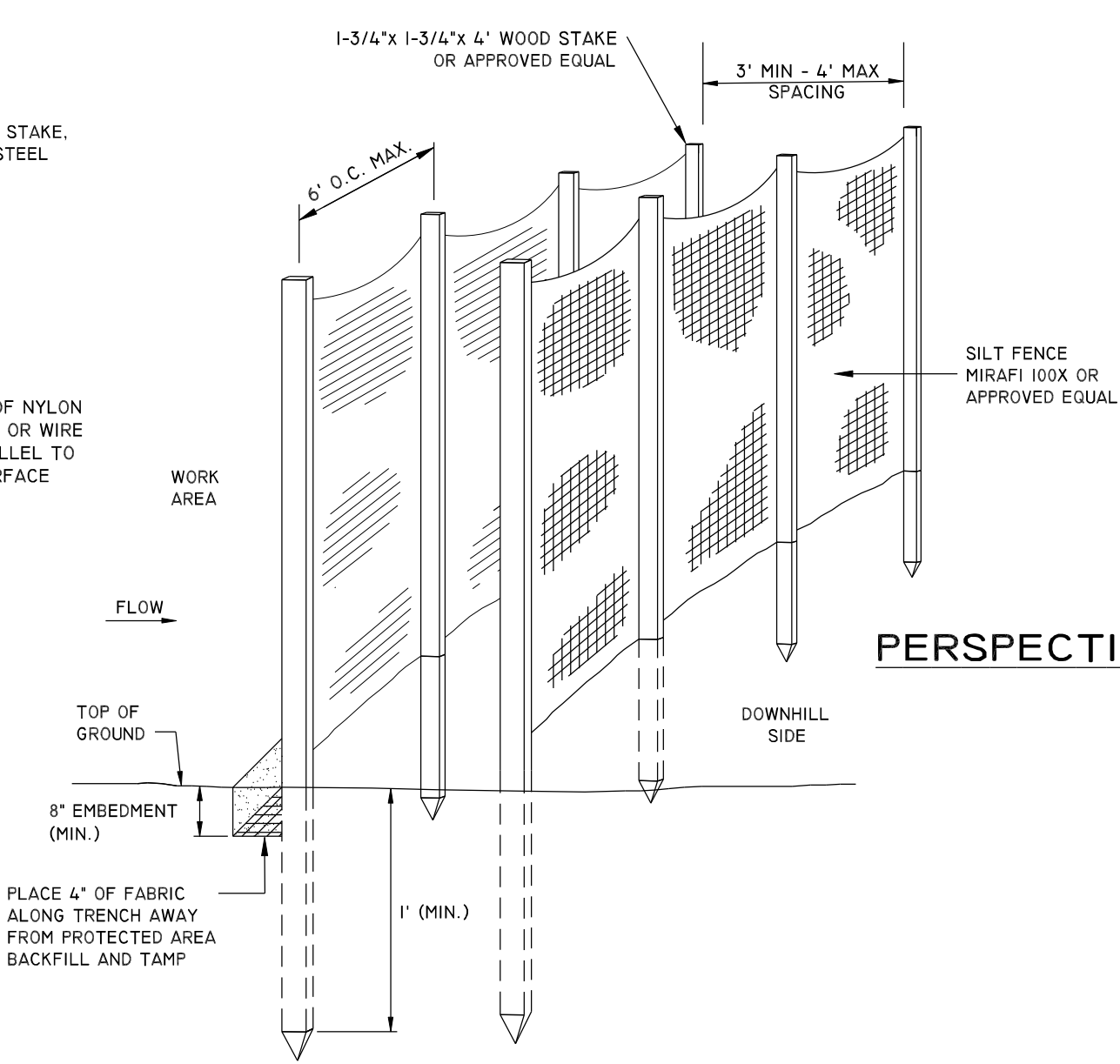
- CUT AND CLEAR TREES WITHIN LIMIT OF WORK (PROPOSED TREELINE). UNLESS OTHERWISE NOTED, ALL STUMPS, BRANCHES, TOPS AND BRUSH TO BE PROPERLY DISPOSED OF, PREFERABLY OFF SITE.
- CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AS SHOWN AND DETAILED IN THIS PLAN SET.
- CONSTRUCT TEMPORARY AND PERMANENT EROSION CONTROL FACILITIES (DETENTION BASINS, TREATMENT SWALES, GRASS SWALES AND STONE LINED RIP-RAP SWALES) PRIOR TO ANY EARTH MOVING OPERATION.
- ALL SWALES AND DITCH LINES SHALL BE PROTECTED FROM EROSION. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- ALL STORM DRAINAGE SYSTEMS SUCH AS DETENTION/RETENTION BASINS, TREATMENT SWALES AND LEVEL SPREADERS SHALL BE PROTECTED FROM EROSION. ALL STORM DRAINAGE SYSTEMS SHALL BE STABILIZED PRIOR TO DIRECTING FLOW INTO THEM.
- NO CATCH BASIN FRAME AND GRATE SHALL BE INSTALLED PRIOR TO PAVING (IF APPLICABLE). ALL DRAINAGE STRUCTURES ARE TO BE "PLATED" AND CUT OUT FOLLOWING PAVING OPERATIONS. ONLY IF ALL DOWNSTREAM DRAINAGE ELEMENTS ARE STABLE, INCLUDING, BUT NOT LIMITED TO OUTLET PROTECTION, ALL SLOPE GRADING, VEGETATED OR RIP-RAP SWALES, DETENTION BASIN AND TREATMENT SWALES.
- IF FRAME AND GRATES ARE INSTALLED, SPECIFIC SOIL EROSION MEASURES MUST BE INSTALLED SUCH AS GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER OR BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER.
- CONSTRUCT TEMPORARY CULVERTS, DIVERSION DITCHES/SWALES OR BERMS AS REQUIRED TO MINIMIZE THE EROSION EFFECTS OF STORMWATER RUNOFF DURING ALL CONSTRUCTION ACTIVITIES.
- COMPLETE GRUBBING OPERATIONS. ALL STUMPS AND DEBRIS SHALL BE PROPERLY DISPOSED OF, PREFERABLY OFF SITE.
- ALL MATERIAL SUITABLE FOR USE AS TOPSOIL SHALL BE STOCKPILED IN UPLANDS AREAS. ALL STOCKPILES SHALL BE SEEDED WITH WINTER RYE AND IF NECESSARY, SURROUNDED WITH SILT FENCE, AND/OR STRAW BALES, IN ORDER TO PREVENT OR CONTAIN SOIL EROSION.
- ALL MATERIAL SUITABLE FOR FILL OR SELECT MATERIAL SHALL BE STOCKPILED IN UPLANDS AREAS. ALL STOCKPILES SHALL BE SURROUNDED WITH SILT FENCE, AND/OR STRAW BALES, IN ORDER TO CONTAIN SOIL EROSION.
- REMOVE ALL IMPROPER ROADWAY/SITE FOUNDATION MATERIAL WITHIN 18" OF SUBGRADE. REPLACE WITH COMPACTED GRANULAR FILL ACCEPTABLE TO THE STATE/TOWN SPECIFICATIONS. ALL SUITABLE FILL MATERIAL SHALL BE COMPACTED TO AT LEAST 95% OF THE DRY WEIGHT AS DETERMINED BY MODIFIED PROCTOR TESTING (ASTM D-1556) REQUIREMENTS.
- CONSTRUCT ALL UNDERGROUND UTILITIES INCLUDING, BUT NOT LIMITED TO DRAIN, DATA, CABLE AND POWER.
- ROUGH GRADE ACCESS ROADWAYS/SITE WITHIN LIMIT OF WORK AND COMMENCE CONSTRUCTION OF BUILDING, ROADWAY AND PARKING.
- COMPLETE SLOPE GRADING/EMBANKMENT CONSTRUCTION. ALL SLOPES SHALL BE STABILIZED AND SEEDED IMMEDIATELY AFTER GRADING. THE CONTRACTOR SHALL STABILIZE SLOPES WITH APPROPRIATE SEEDING PROGRAM OR JUTE MAT, WHEREVER SPECIFIED.
- APPLY TOPSOIL TO SLOPES AND OTHER AREAS DISTURBED BY CONSTRUCTION. TOPSOIL USED MAY BE NATIVE ORGANIC MATERIAL SCREENED AS TO BE FREE FROM ROOTS, BRANCHES, STONES, AND OTHER DELETERIOUS MATERIALS. TOPSOIL SHALL BE APPLIED SO AS TO PROVIDE A MINIMUM OF A 4-INCH COMPACTED THICKNESS. UPON COMPLETION OF TOPSOILING, FINISHED SECTIONS ARE TO BE LIMED, SEEDED, AND MULCHED. THE CONTRACTOR SHALL INSPECT COMPLETED SECTIONS OF WORK ON A REGULAR BASIS AND REMEDY ANY PROBLEM AREAS UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.
- PERFORM FINAL PAVING OPERATIONS (IF APPLICABLE), INSTALL GUARDRAIL (IF APPLICABLE) AS SHOWN ON THE APPROVED PLANS.
- MAINTAIN, REPAIR, AND REPLACE TEMPORARY EROSION CONTROL MEASURES AS NECESSARY FOR A MINIMUM PERIOD OF 12 MONTHS FOLLOWING SUBSTANTIAL COMPLETION.
- AFTER STABILIZATION (12 MONTHLY FOLLOWING SUBSTANTIAL COMPLETION), REMOVE AND PROPERLY DISPOSE OF TEMPORARY EROSION CONTROL MEASURES, PREFERABLY OFF-SITE.
- FOLLOWING SUBSTANTIAL COMPLETION OF ALL ROADWAY ACTIVITIES AND ONCE STABLE CONDITIONS ARE ACHIEVED, CAREFULLY AND REGULARLY MONITOR CONSTRUCTION ACTIVITIES ON ALL INDIVIDUAL LOTS TO INSURE CONSTRUCTION ACTIVITIES ARE BEING PERFORMED IN SUCH A WAY AS NOT TO ENDANGER THE INTEGRITY OF ROADWAY EMBANKMENTS, STORMWATER SYSTEMS AND UTILITIES.
- THE PROJECT IS TO BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENT AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

WINTER CONSTRUCTION NOTES

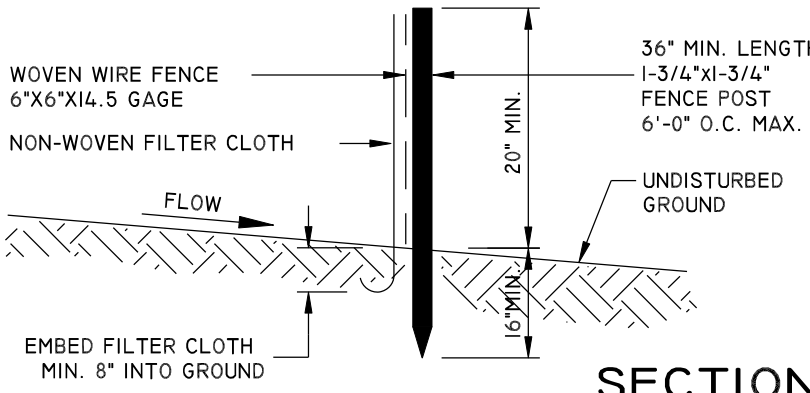
- ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
- ALL DITCHES OR 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 THE DESIGN FLOW CONDITIONS.
- AFTER OCTOBER 15TH, INCOMPLETE ROAD 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.



WITH STRAW BALE BARRIER



PERSPECTIVE VIEW



SECTION

WITHOUT STRAW BALE BARRIER

MAINTENANCE

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

"DOUBLED UP" SILT FENCE DETAILS

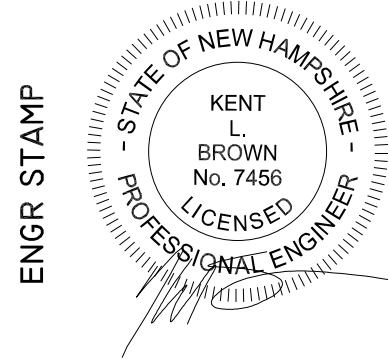
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TEMPORARY STONE CHECK DAM

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NOTE

- STRUCTURES SHALL BE INSTALLED ACCORDING TO THE DIMENSIONS SHOWN ON THE PLANS AT THE APPROPRIATE SPACING.
- CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER SO THAT EROSION WILL BE MINIMIZED.
- SEEDING, FERTILIZING AND MULCHING SHALL CONFORM TO THE RECOMMENDATIONS IN THE APPROPRIATE BMP.
- STRUCTURES ARE TEMPORARY AND ARE TO BE REMOVED FROM THE CHANNEL WHEN THEIR USEFUL LIFE HAS EXPIRED, WHEN A SOLID STAND OF GRASS HAS GROWN AND STABILIZED.



REVISIONS

NO.	DESCRIPTION	DATE

EROSION CONTROL DETAILS

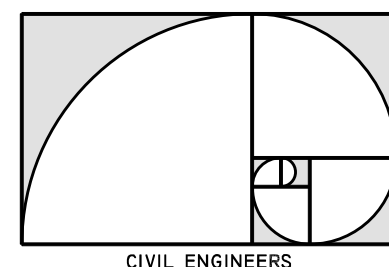
LADY OF THE LAKES ESTATES
TAX MAP 235-241-4 & 223-241-6

WHITE OAKS ROAD, LACONIA, NH.
LADY OF THE LAKES ESTATES LLC.
C/O MIKE BOUSALEH 453 WHITE OAKS ROAD LACONIA, NH. 03246

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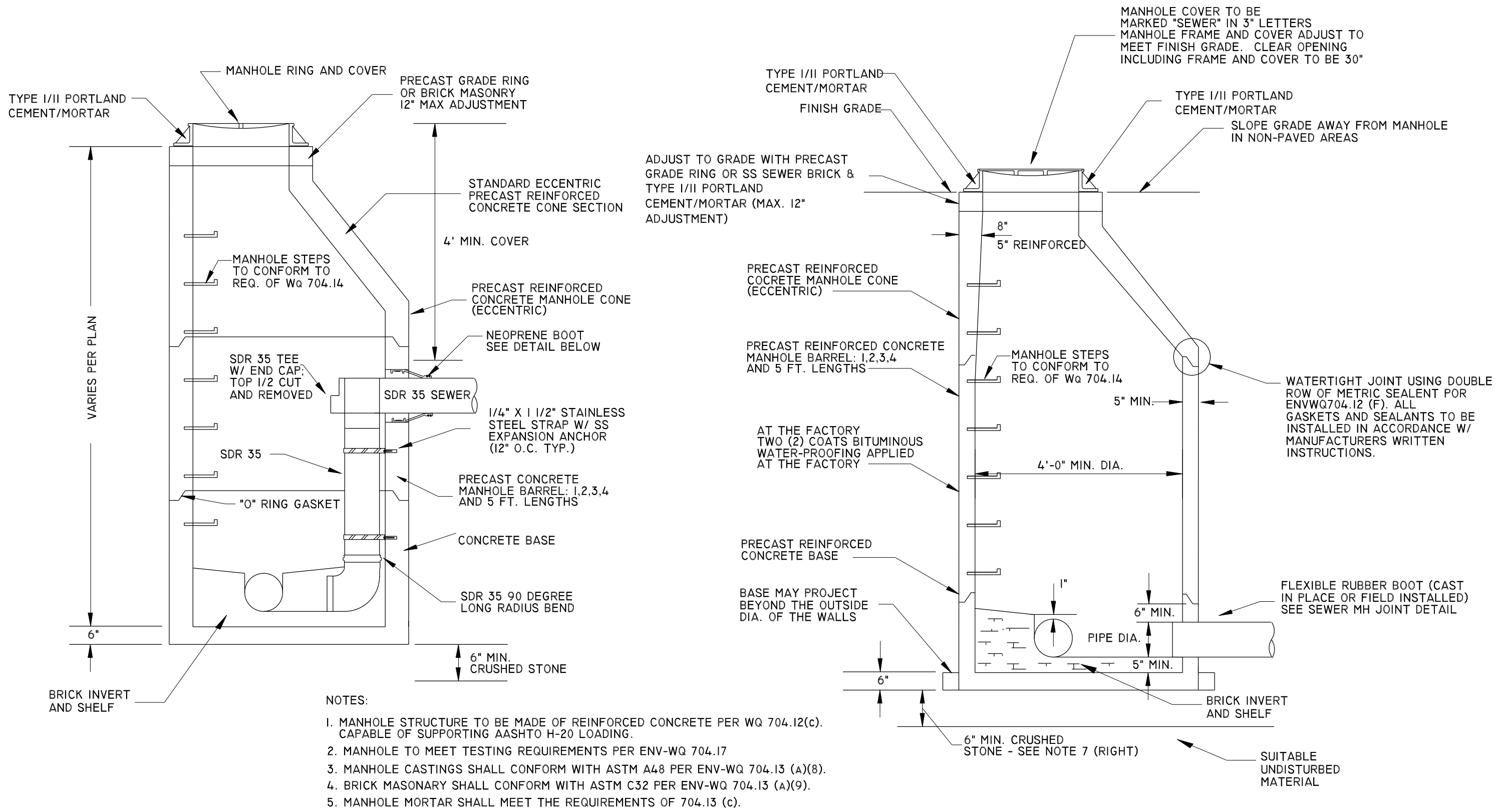


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DET-2
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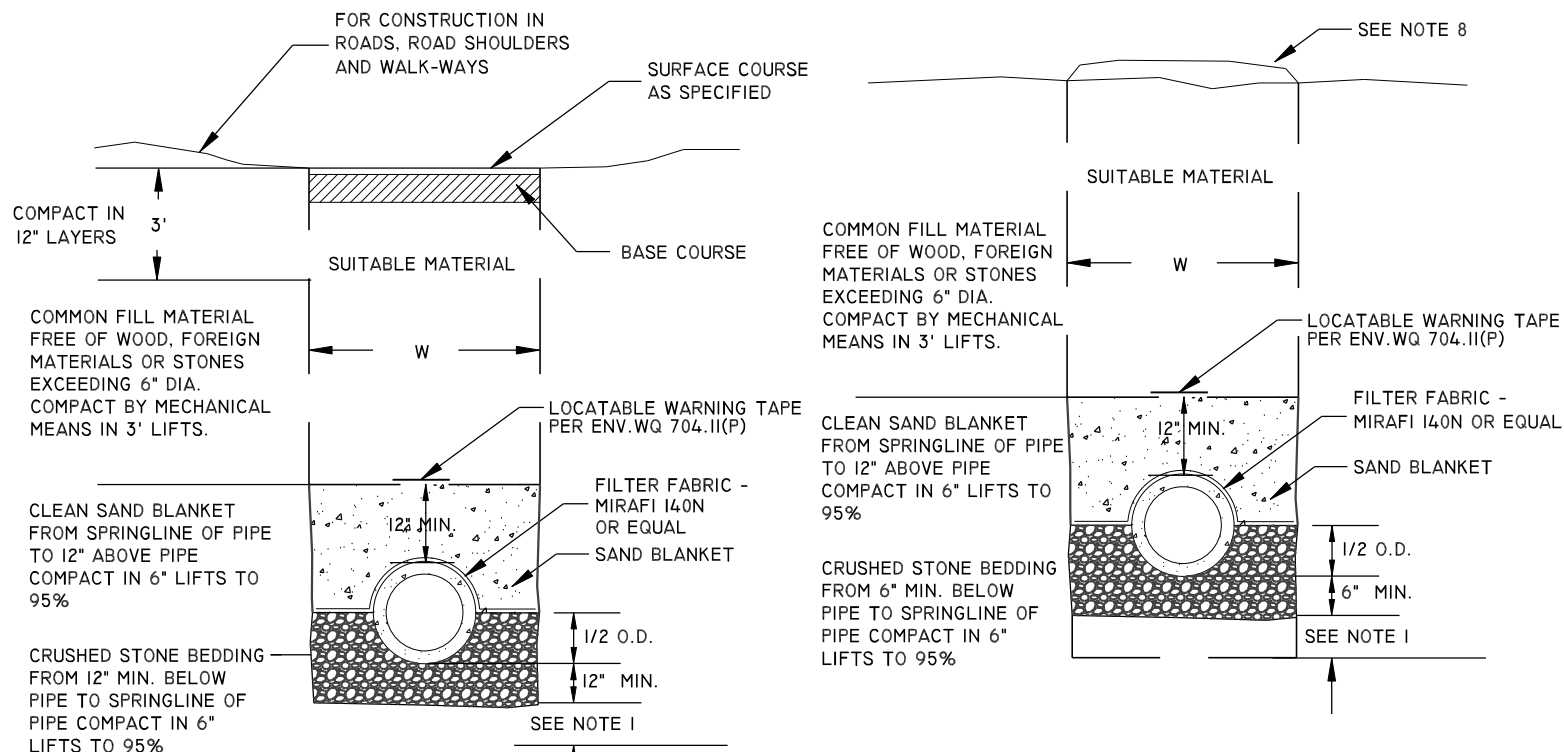


INTERIOR DROP SEWER MANHOLE DETAIL

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SEWER MANHOLE DETAIL

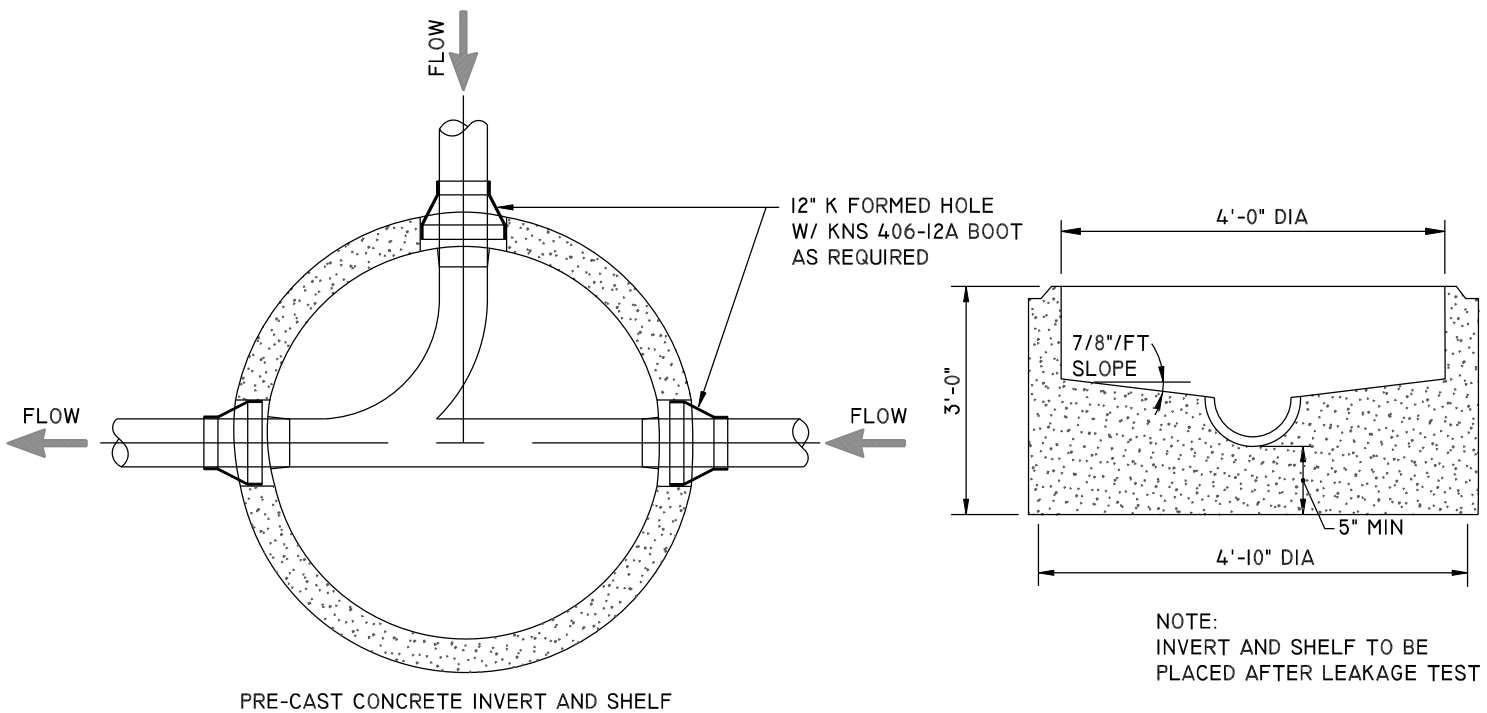
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EARTH CONSTRUCTION

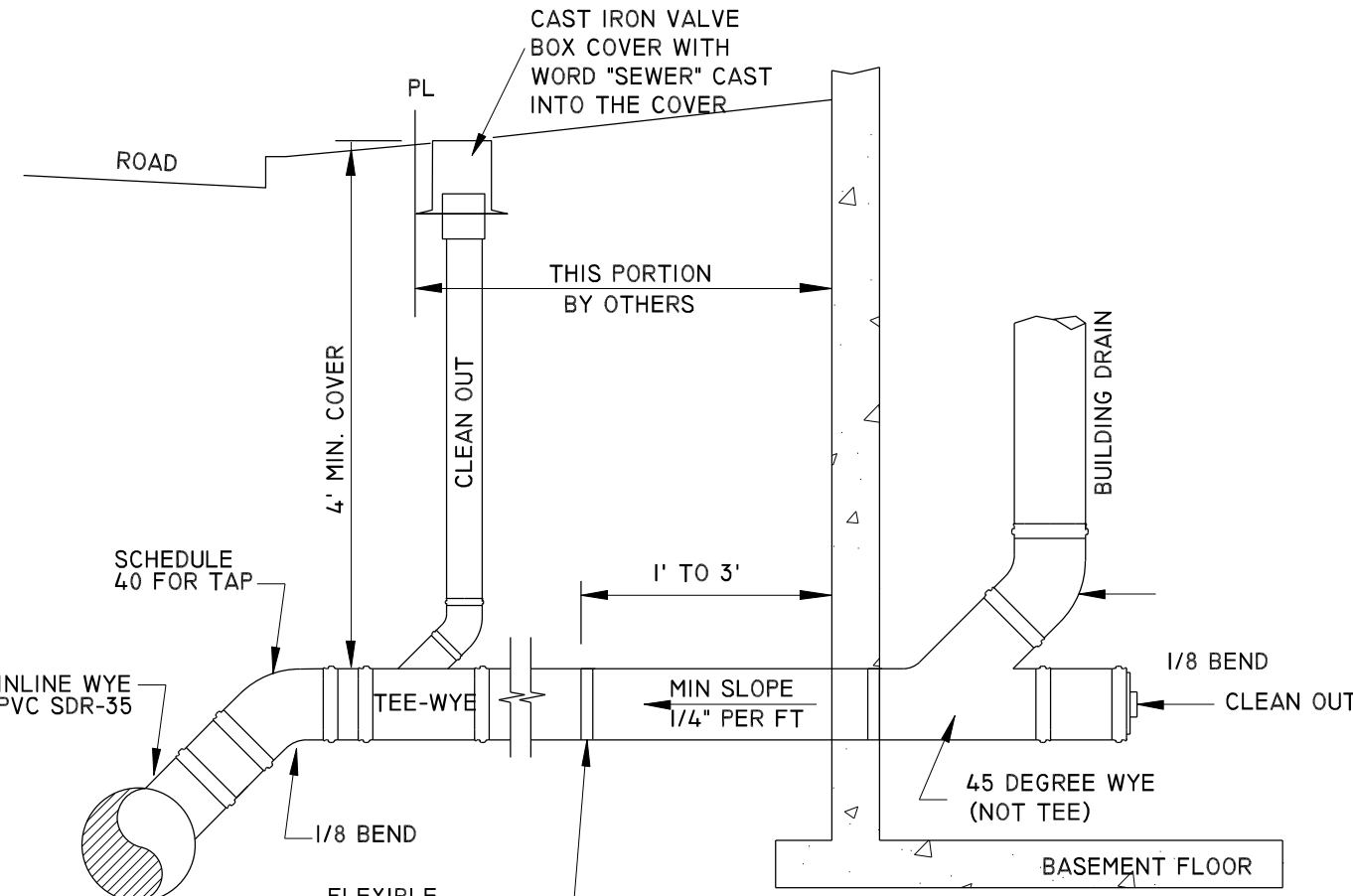
COMPACTION EXPRESSED AS A PERCENTAGE OF MAXIMUM DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM D1557 (MODIFIED PROCTOR).

5. BASE COURSE, IF ORDERED BY THE ENGINEER, SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE STATE OF NEW HAMPSHIRE, DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS.
6. WOOD SHEETING: IF REQUIRED, WHERE SHEETING IS PLACED ALONGSIDE THE PIPE AND EXTENDS BELOW MID-DIAMETER, IT SHALL BE CUT OFF AND LEFT IN PLACE AT AN ELEVATION NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE. WHERE SHEETING IS ORDERED BY THE ENGINEER TO BE LEFT IN PLACE, IT SHALL BE CUT OFF AT LEAST 3 FEET BELOW THE FINISHED GRADE, BUT NOT LESS THAN 1 FOOT ABOVE THE TOP OF THE PIPE.
7. W. = MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER, W SHALL BE NO MORE THAN 36 INCHES. FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL 24 INCHES PLUS PIPE O.D. W SHALL BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
8. FOR CROSS COUNTRY CONSTRUCTION, BACKFILL OR FILL SHALL BE MOUNDED TO A HEIGHT OF 6 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
9. NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES DESIGN STANDARDS REQUIRE 10 FT SEPARATION. HOWEVER, SHOULD CONSTRUCTION OR OPERATIONS REVEAL OR EXPOSE A WATERLINE (MAIN OR SERVICE) RUNNING APPROXIMATELY PARALLEL AND LESS THAN 10 FEET HORIZONTALLY FROM THE PROPOSED SEWER INSTALLATION AND WHERE IT IS NOT PRACTICAL TO RELOCATE THE SEWER, THE FOLLOWING METHODS OF PROTECTION MUST BE EMPLOYED:
- A. SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC), SOLID WALL (SDR21) AND SHALL CONFORM WITH ASTM D2241 STANDARD
8. JOINTS SHALL BE PRESSURE TESTED WITH ZERO LEAKAGE AT 25 POUNDS PER SQUARE INCH FOR GRAVITY SEWERS, AND TIMES WORKING PRESSURE FOR FORCE MAINS.
10. WHERE WATER LINES AND SEWER LINES CROSS, THEY SHALL CROSS AS PERPENDICULAR AS POSSIBLE AND THE WATER MAIN SHALL CROSS AT LEAST 18 INCHES ABOVE THE SEWER. FURTHER, THE SEWER JOINTS SHALL BE LOCATED AT LEAST 9 FEET HORIZONTALLY FROM THE WATER MAIN. SEWER JOINTS SHALL BE PRESSURE TESTED WITH ZERO LEAKAGE AT 25 POUNDS PER SQUARE INCH FOR GRAVITY SEWERS, AND 1-1/2 TIMES WORKING PRESSURE FOR FORCE MAINS.



SEWER MANHOLE INVERT & SHELF DETAILS

NOT TO SCALE



SEWER SERVICE DETAIL

NOT TO SCALE

1. MANHOLES, INCLUDING ALL COMPONENT PARTS, SHALL HAVE ADEQUATE SPACE, STRENGTH, AND LEAKPROOF QUALITIES NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS WITH STEEL REINFORCEMENT, WITH ADEQUATE JOINTING. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND H-20 LOADING WITHOUT FAILURE AND PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE, A PERIOD GENERALLY IN EXCESS OF 25 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.

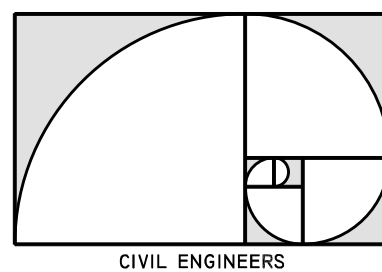
2. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED OR PRECAST CONCRETE SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT SHELF SHALL CONSIST OF BRICK MASONRY.

MARCH 6, 2024

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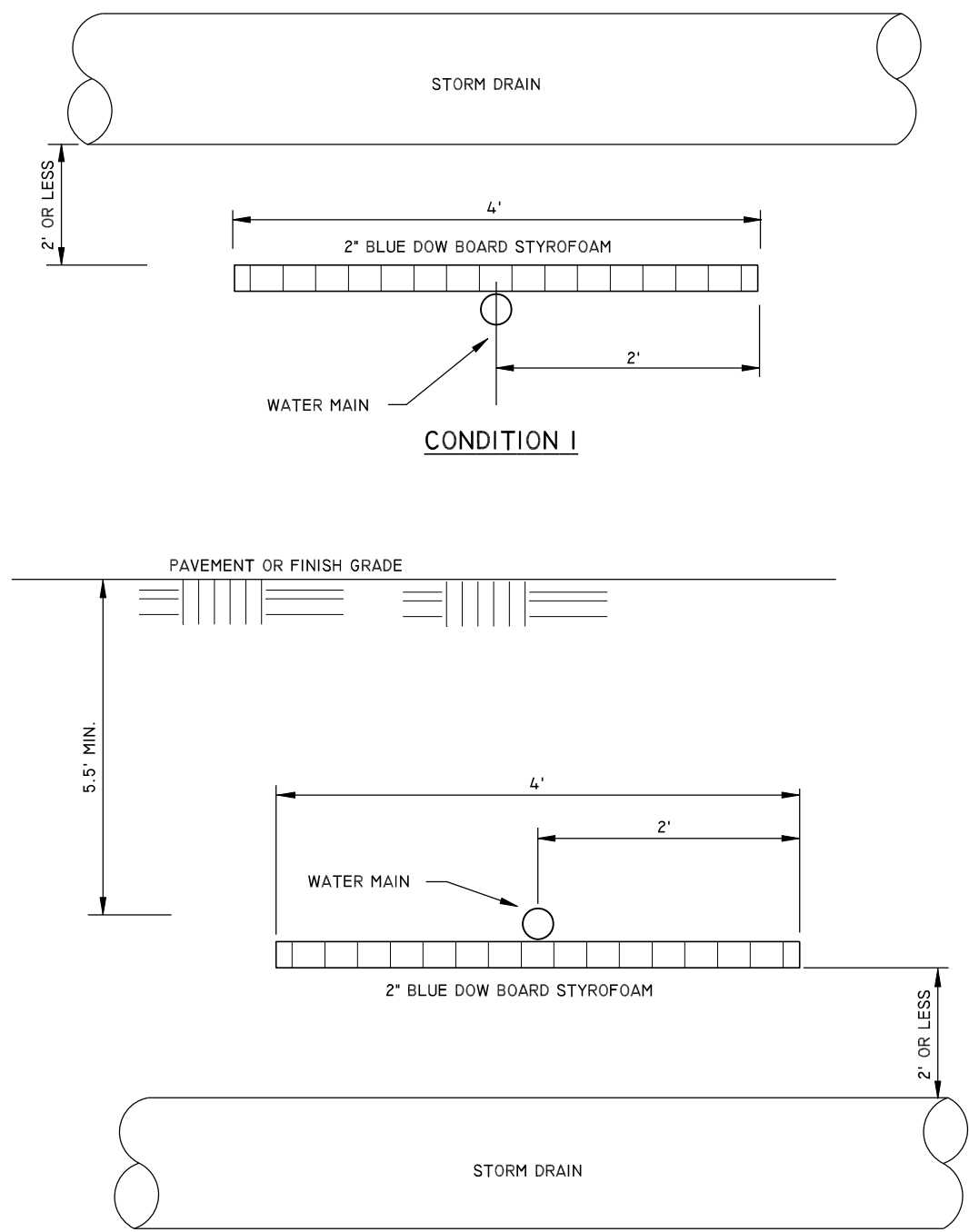


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SHT 21 OF 29

DRAWING NAME: G:\CLIENTS\0770-01 WHITE OAK ESTATES - WHITE OAKS LACONIA.DWG\$4770-01 LADY OF THE LAKES.DWG



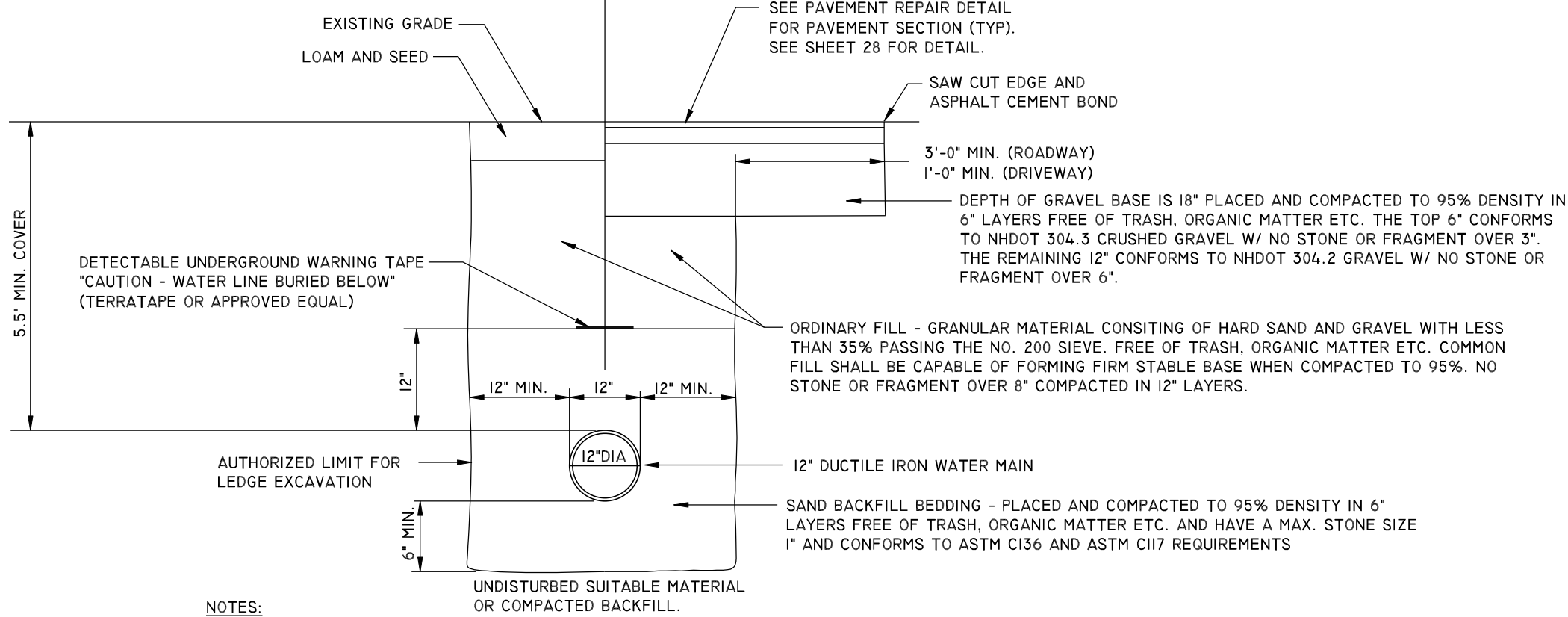
NOTE:

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

STORM DRAIN / WATER MAIN INSULATION

NOT TO SCALE

GRAVEL SHOULDER, CROSS-COUNTRY, AND LAWNS PAVEMENT (SEE TRENCH PATCH DETAIL)

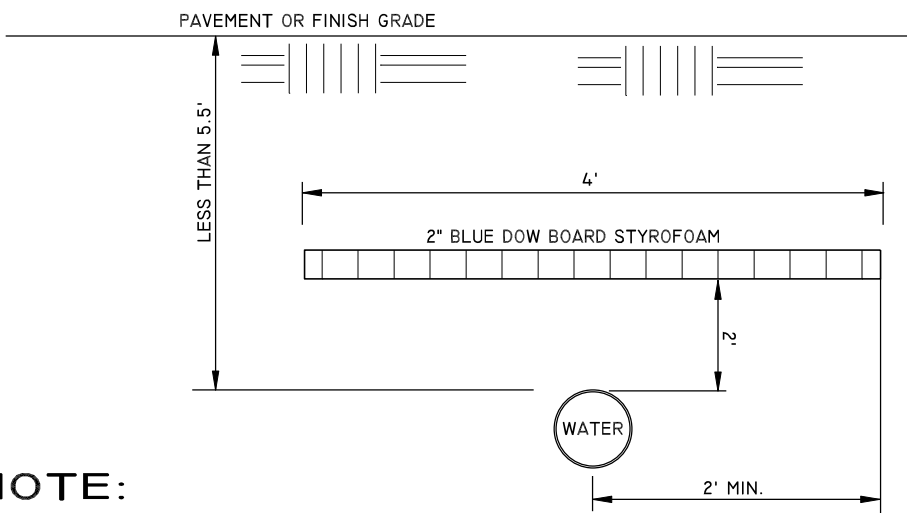


NOTES:

1. HOT BITUMINOUS PAVEMENT CONFORMS TO DIVISION 400 AND GRAVEL BASE CONFORMS TO DIVISION 300 REQUIREMENTS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION LATEST EDITION.

WATER TRENCH DETAIL

NOT TO SCALE

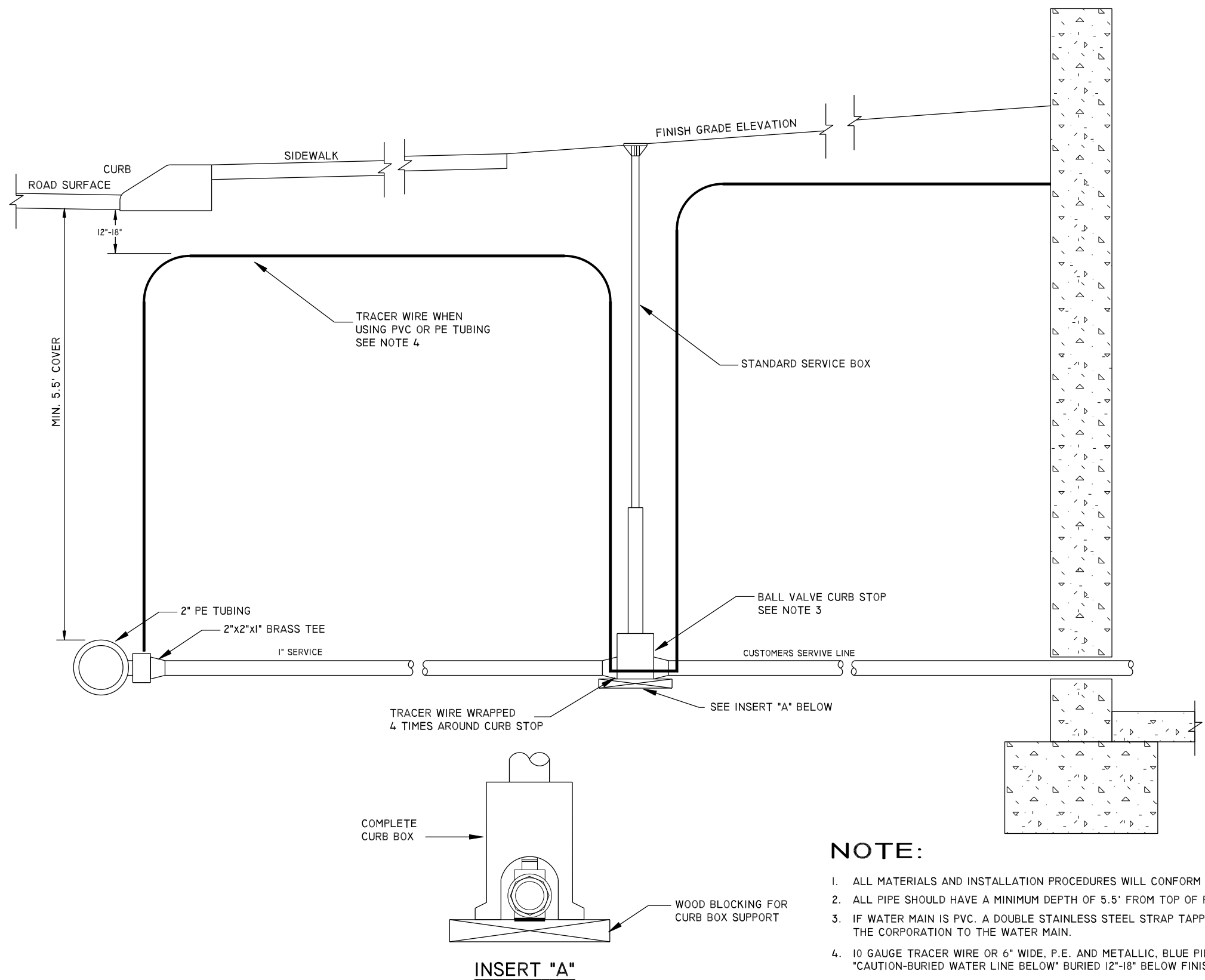


NOTE:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO NHDWGB TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5.5' FROM TOP OF PIPE TO FINISH GRADE.
3. SITE ENGINEER RESERVES THE RIGHT TO MODIFY INSULATION REQUIREMENTS AS NECESSARY BASED ON FIELD CONDITIONS, ETC.
4. ALL BUTT JOINT SEAMS TO BE OVERLAPPED WITH 1' PIECE OF INSULATION CENTERED OVER SEAM.

TYPICAL INSULATION DETAIL FOR LESS THAN 4'-0" OF COVER

NOT TO SCALE



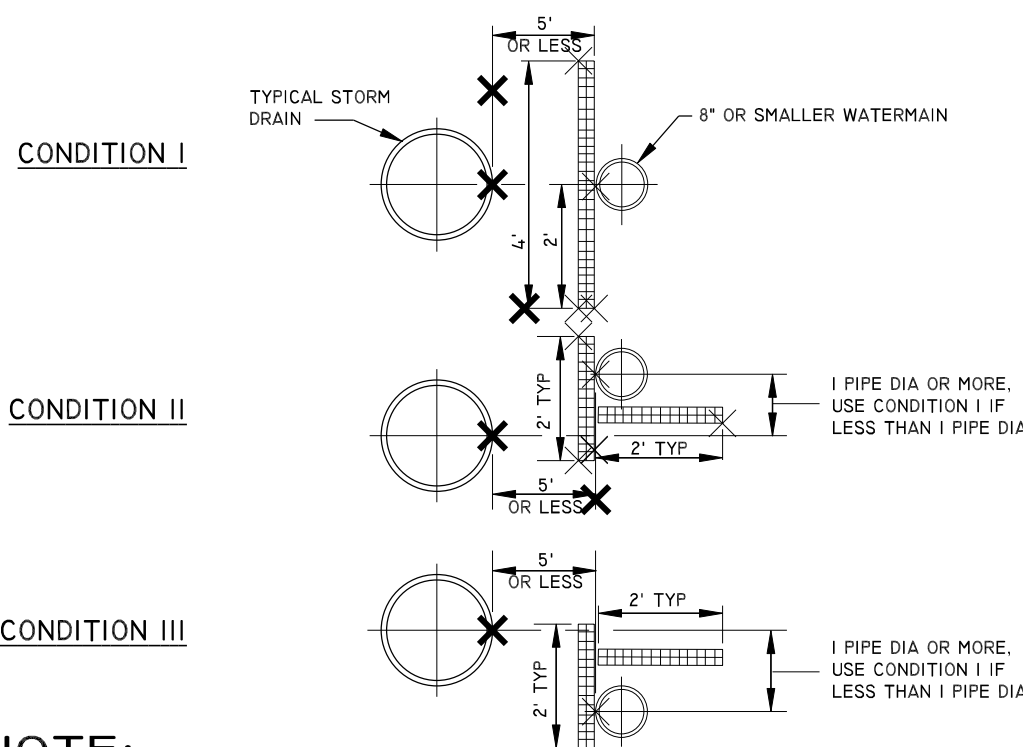
NOTE:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO NHDWGB TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5.5' FROM TOP OF PIPE TO FINISH GRADE.
3. IF WATER MAIN IS PVC, A DOUBLE STAINLESS STEEL STRAP TAPPING SADDLE MUST BE USED TO CONNECT THE CORPORATION TO THE WATER MAIN.
4. 10 GAUGE TRACER WIRE OR 4" WIDE, F.E. AND METALLIC, BLUE PIPE LOCATING TAPE LABELED "CAUTION-BURIED WATER LINE BELOW" BURIED 12"-18" BELOW FINISHED GRADE.

SERVICE AND VALVE BOX INSTALLATION DETAIL

WATER NOTES:

1. ALL WATER TRANSMISSION PROJECT MATERIALS INCLUDING: MAINS, FITTINGS, AND VALVES TO MEET APPLICABLE NEW HAMPSHIRE DRINKING WATER GROUNDWATER BUREAU NHDWGB, AND AMERICAN WATERWORKS ASSOCIATION (AWWA) STANDARDS, AS APPLICABLE. ALL INSTALLATION OF MATERIALS TO CONFORM TO APPLICABLE NHDWGB AND AWWA STANDARDS AND SPECIFICATIONS FOR POTABLE WATER SYSTEMS.
2. ALL VALVES, TEES, BENDS, AND THEIR RELATED JOINTS TO BE PROPERLY RESTRAINED USING APPROVED FUSED FITTINGS WITH MJ ADAPTERS, OR AS PER MANUFACTURER'S SPECIFICATIONS.
3. ALL 2" WATER MAIN, 1" SERVICE LINES AND APPURTENANCES TO BE MANUFACTURED IN ACCORDANCE WITH CURRENT AWWA STANDARDS BEING AWWA C-901, MINIMUM 200PSI PE TUBING, AWWA C-800 VALVES AND FITTINGS.
4. DISTRIBUTION MAIN SHALL BE 2" AWWA C-901 POLYETHYLENE TUBING, WITH BRASS COMPRESSION SERVICE FITTINGS WITH SS INSERTS. INSTALL MAINS AS SHOWN ON PLANS APPROVED BY NHDWGB. ALL WATER MAIN TO BE INSTALLED WITH A MINIMUM OF 66" OF COVER AND SHALL BE PROPERLY SAND BEDDED AND BACKFILLED AND COMPACTED WITH SUITABLE MATERIAL. ISOLATION VALVES SHALL BE INSTALLED AT LOCATIONS SHOWN ON UTILITY PLANS. ALL VALVES SHALL BE 2" AWWA C-800 APPROVED CURB STOP BALL VALVES WITH STAINLESS STEEL BALL, OPEN LEFT (COUNTER CLOCKWISE) ONE QUARTER TURN. CURB BOXES SHALL BE ADJUSTABLE AWWA APPROVED FOR 2" VALVES.
5. WATER SERVICES SHALL BE 1" DIAMETER, CTS, 200 PSI, AWWA C-901 POLYETHYLENE TUBING, WITH BRASS COMPRESSION SERVICE FITTINGS WITH SS INVERTS. CURB STOP BALL VALVES WITH STAINLESS STEEL BALL, AND CURB BOXES SHALL BE ADJUSTABLE AWWA APPROVED. COMPRESSION TEE, 2x2x1 WITH SS INSERTS SHALL BE USED TO CONNECT SERVICES LINES INTO THE MAIN. EACH UNIT SHALL HAVE ITS OWN WATER SERVICE AND WATER METER PROVIDING DOMESTIC WATER INTO THE INDIVIDUAL UNIT. FLUSHING POINTS SHALL BE 2" FLUSHING HYDRANTS AND SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE PROJECT PLANS. ALL FLUSHING POINTS SHALL MEET SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM FLUSHING PURPOSES.
6. SEPERATION OF WATER MAINS AND SEWER LINES SHALL BE IN ACCORDANCE WITH ACCEPTED WATER WORKS STANDARDS AND NHDWGB RULES. ON PARALLEL INSTALLATION, WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY DISTANT FROM ANY EXISTING OR PROPOSED SEWER. IF LESS THAN TEN FEET, WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH, OR AN UNDISTURBED EARTH SELF LOCATED ON ONE SIDE OF THE SEWER AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER WITH AT LEAST THREE FEET HORIZONTAL SEPERATION. AT CROSSING THERE SHALL BE A MINIMUM VERTICAL SEPERATION OF 18 INCHES BETWEEN THE WATER MAIN AND SEWER. AT CROSSINGS THE JOINTS SHALL BE LOCATED AS FAR FROM THE SEWER CROSSING POINT AS POSSIBLE BUT SHALL NOT BE LESS THAN 9 FEET ON EITHER SIDE OF THE CROSSING.
7. ALL WATER MAIN AND SERVICES TO BE FLUSHED, PRESSURE TESTED, AND DISINFECTED, IN ACCORDANCE WITH THE LATEST PROVISIONS OF AWWA C-800 AND C-651, PRIOR TO ACCEPTANCE. WRITTEN CERTIFICATION OF THE PRESSURE TESTING AND BACTERIOLOGICAL TEST RESULTS SHALL BE PROVIDED FROM A THIRD-PARTY TESTING COMPANY AND AN APPROVED WATER TESTING LAB. OWNER SHALL SUBMIT ALL TEST RESULTS TO THE TOWNS LAND USE DEPARTMENT. ALL SEWER PIPE LOCATED WITHIN 10 FEET OF WATER MAINS SHALL BE FORCE MAIN CONSTRUCTION MATERIALS THAT MEET THE REQUIREMENTS OF ENV-WQ 704.08.
8. A RECORD DRAWING OF THE WATER FACILITIES SHALL BE PROVIDED FOLLOWING INSTALLATION, IN ACCORDANCE WITH NHDWGB STANDARDS. OWNER SHALL SUBMIT RECORD DRAWINGS TO THE TOWNS LAND USE DEPARTMENT

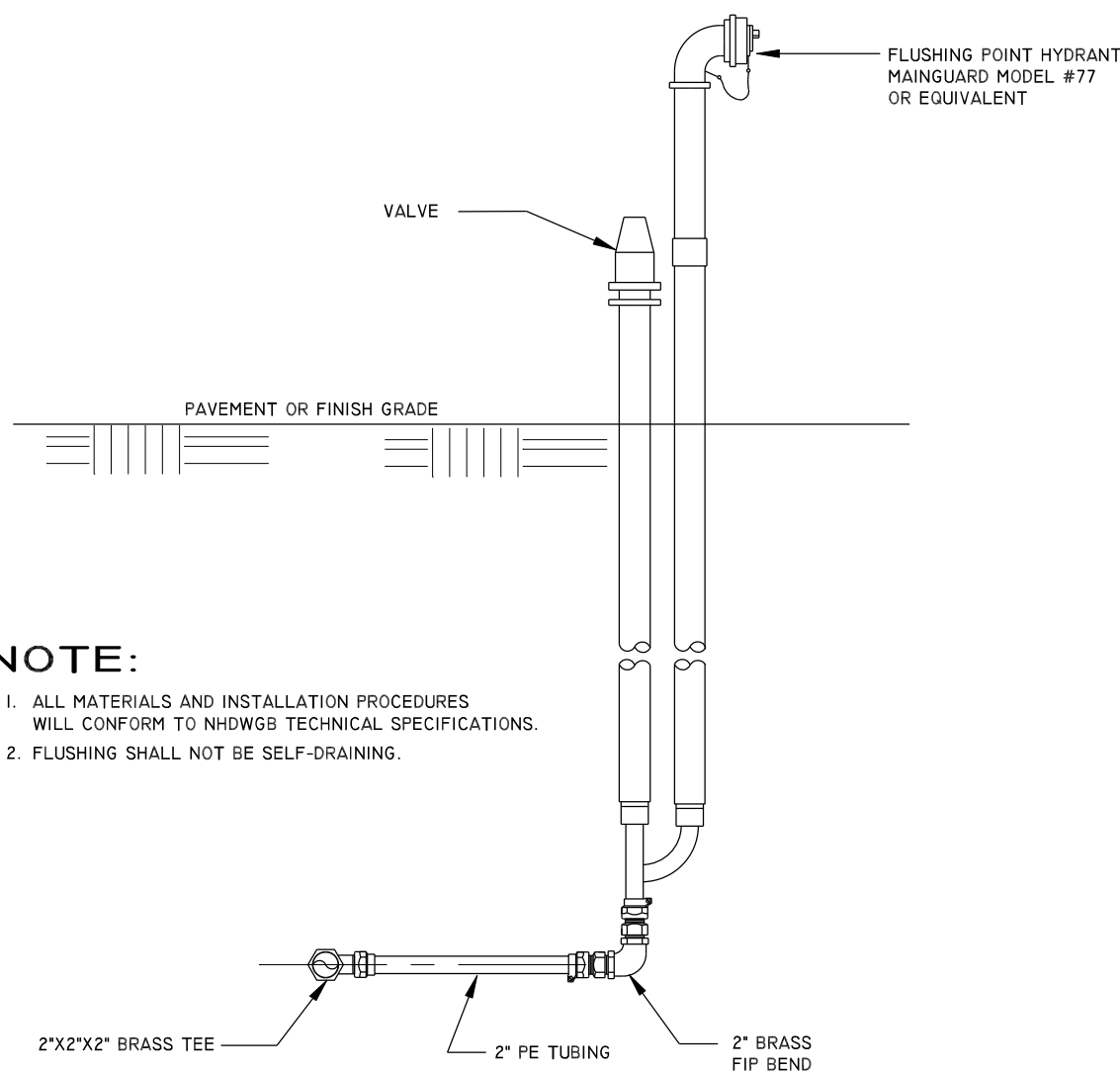


NOTE:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO NHDWGP TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SITE ENGINEER RESERVES THE RIGHT TO MODIFY INSULATION REQUIREMENTS AS NECESSARY BASED ON FIELD CONDITIONS, ETC.
4. INSULATION TO BE RUN HORIZONTALLY AS LONG AS CONDITIONS I, II, OR III ABOVE EXIST. ALL BUTT JOINT SEAMS TO BE OVERLAPPED WITH 1' PIECE OF INSULATION CENTERED OVER SEAM.
5. 1.5" (MIN) BLUE DOW STYROFOAM

INSULATION AT STORM DRAIN AND WATER MAIN PARALLEL RUNS

NOT TO SCALE

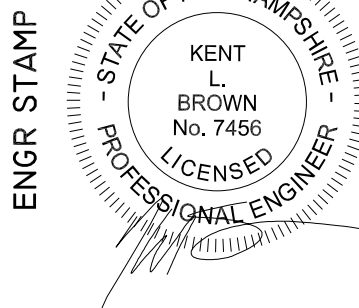


NOTE:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO NHDWGB TECHNICAL SPECIFICATIONS.
2. FLUSHING SHALL NOT BE SELF-DRAINING.

FLUSHING POINT

NOT TO SCALE



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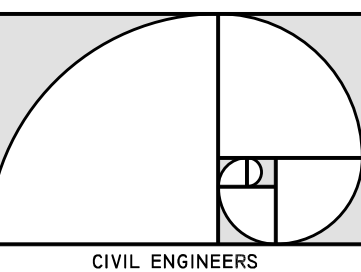
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WATER DETAILS
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WHITE OAKS ROAD, LACONIA, NH.
PREPARED FOR:
LADY OF THE LAKES ESTATES LLC.
c/o MIKE BOUSALEH 453 WHITE OAKS ROAD LACONIA, NH. 03246

MARCH 6, 2024

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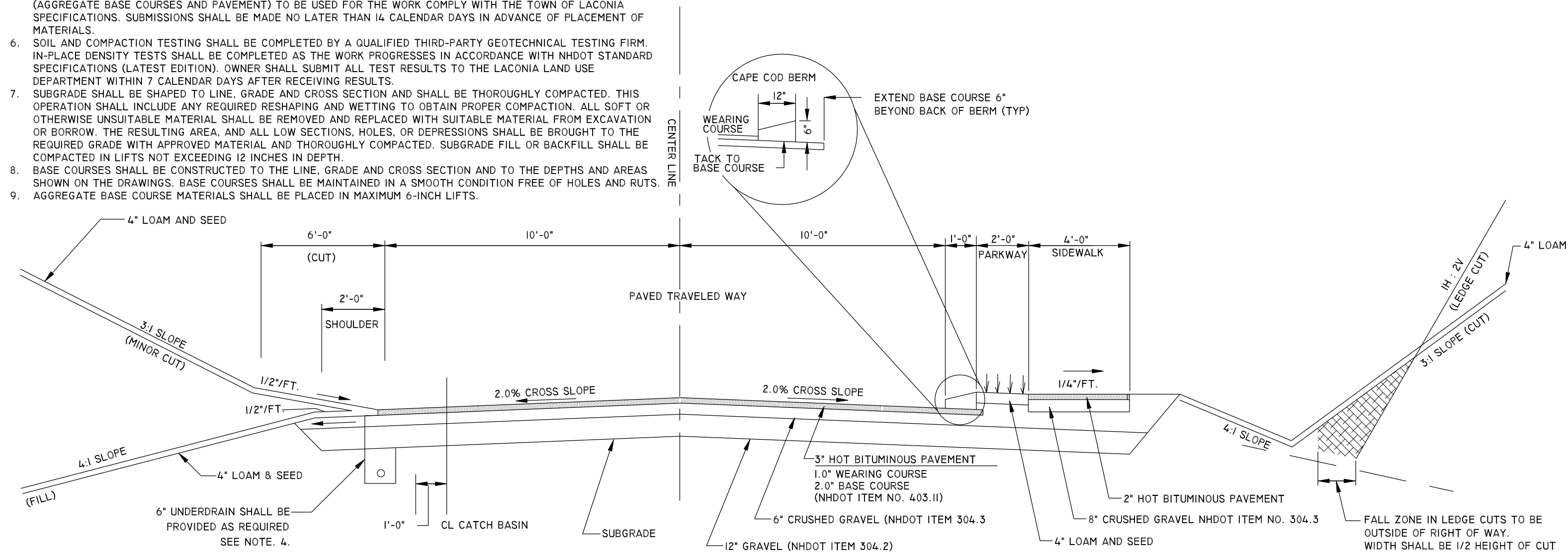
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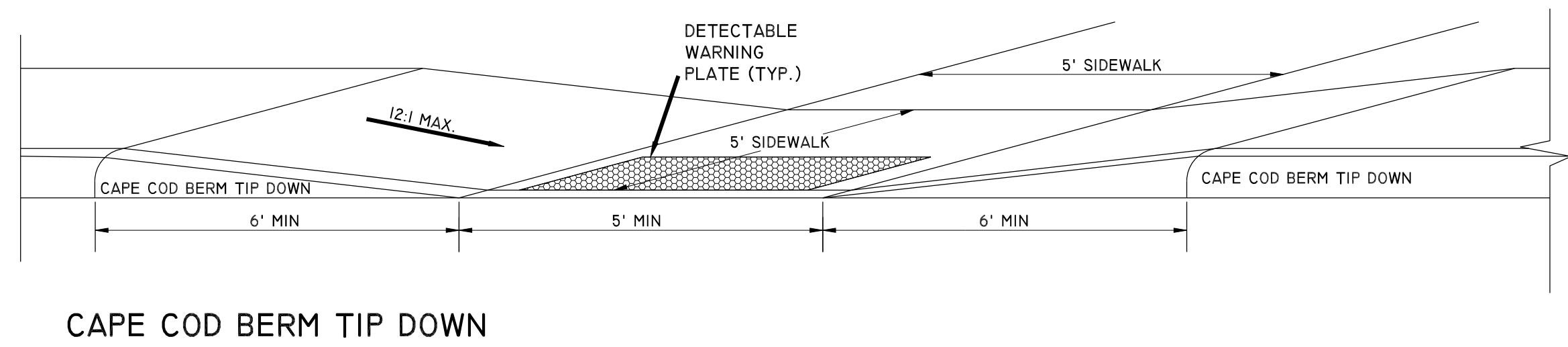
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ROADWAY GENERAL NOTES:

1. ALL ROADWAY MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE CURRENT N.H.D.O.T. SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION AND LACONIA SUBDIVISION REGULATIONS.
2. PROVIDE 4" (MIN) COMPACTED LOAM AND SEED ON ALL SLOPES SIDES AND DRAINAGE SWALES UNLESS OTHERWISE NOTED.
3. ALL LEDGE AND STONES GREATER THAN ONE (1) FOOT IN DIAMETER SHALL BE REMOVED TO 18" BELOW SUBGRADE ROADWAY UNDERDRAIN SHALL BE PROVIDED IN ALL CUT SECTIONS (AT SIDE WITH CUTO) AND WHERE SEASONAL HIGH WATER FLOODING OCCURS. THERE SHALL BE A MINIMUM OF FOUR FEET OF COVER OVER ANY EXPOSED ROCK.
4. SUBMIT CERTIFICATES OF COMPLIANCE TO THE LACONIA LAND USE DEPARTMENT THAT THE PROPOSED MATERIALS (AGGREGATE BASE COURSES AND PAVEMENT) TO BE USED FOR THE WORK COMPLY WITH THE TOWN OF LACONIA REQUIREMENTS. SUBMISSIONS SHALL BE MADE NO LATER THAN 16 CALENDAR DAYS IN ADVANCE OF PLACEMENT OF MATERIALS.
5. SOIL AND COMPACTION TESTING SHALL BE COMPLETED BY A QUALIFIED THIRD-PARTY GEOTECHNICAL TESTING FIRM. FIELD DENSITY TESTS SHALL BE COMPLETED AS THE WORK PROGRESSES IN ACCORDANCE WITH NH STANDARD SPECIFICATION LIFTS IN ORDER TO AVOID UNNECESSARY REWORK. TEST RESULTS TO LACONIA LAND USE DEPARTMENT WITHIN 7 CALENDAR DAYS AFTER RECEIVING RESULTS.
6. SUBGRADE SHALL BE SHAPED TO LINE, GRADE AND CROSS SECTION AND SHALL BE THOROUGHLY COMPACTED. THIS CONTRACTOR SHALL REMOVE ANY REQUIRED RESHEDGING OR WETTING TO OBTAIN PROPER COMPACTION. ALL SOFT OR OTHERWISE UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL FROM EXCAVATION OR BORROW. THE RESULTING AREA, AND ALL LOW SPOTS, HOLES, OR DEPRESSIONS SHALL BE BROUGHT TO THE SAME ELEVATION AS THE ADJACENT AREAS. ALL AREAS OF EXCAVATED OR COMPACTED, SUBGRADE FILL OR BACKFILL SHALL BE COMPACTED IN LIFTS NOT EXCEEDING 12 INCHES IN DEPTH.
7. BASE COURSES SHALL BE CONSTRUCTED TO THE LINE, GRADE AND CROSS SECTION AND TO THE DEPTHS AND AREAS INDICATED ON THE PLAN SHEETS. ALL AREAS OF EXCAVATION OR COMPACTION SHALL BE MAINTAINED FREE OF HOLES AND RUTS.
8. AGGREGATE BASE COURSE MATERIALS SHALL BE PLACED IN MAXIMUM 6-INCH LIFTS.



NOT TO SCALE



Technical drawing of a stop sign and its post. The drawing includes a plan view of the stop sign at a road intersection, showing dimensions for the stop bar, stop sign, and sight triangle. A side view shows the stop sign on a post with dimensions for the post height and sign size. A detail view shows the post section with dimensions for the post diameter, sign size, and mounting hardware.

STOP SIGN PLAN VIEW:

- MAJOR ROAD
- MINOR ROAD
- STOP BAR (SEE NOTE 9)
- MIN. 1.8M (6FT) TO 3.7M (12FT)
- MIN. 1.8M (6FT) TO 3.7M (12FT)

STOP SIGN SIDE VIEW:

- RI-I
- 30" X 30"

STOP SIGN DETAIL VIEW:

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

LENGTH: P-12, 12'-0", P-14, 14'-0", P-16, 16'-0".

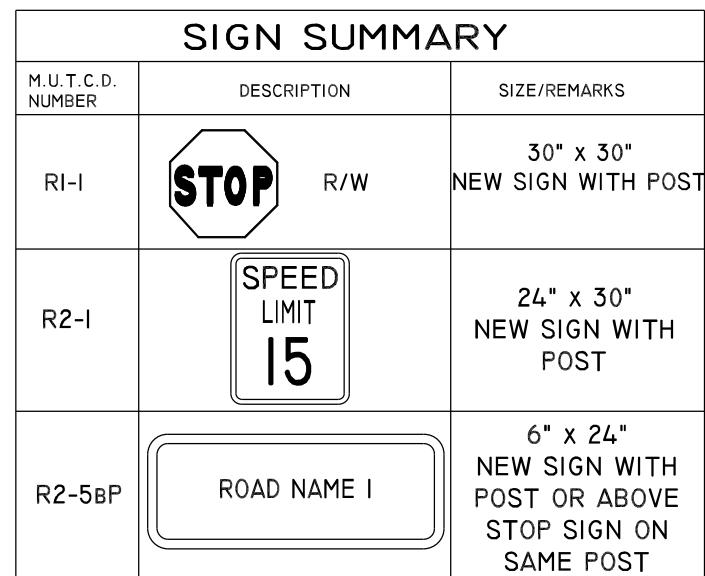
WEIGHT PER LINEAR FOOT: 2.50 LBS. (MIN.)

HOLES: 3/8" DIA. 1" C-C FULL LENGTH

STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070-1080).

FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GRAIN, BASED ON AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

1. POSTS SHALL BE PLUMB; ANY POST BENT OR OTHERWISE DAMAGED SHALL BE REMOVED AND PROPERLY REPLACED. POSTS MAY BE SET OF DRIVEN.
2. WHEN POSTS ARE SET, HOLES SHALL BE DEEP TO THE FROHER DEPTH AS THE POSTS. POSTS SHALL BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NOT TO EXCEED 6" DEEP THOROUGHLY COMPACTED, CARE BEING TAKEN TO PRESERVE THE ALIGNMENT OF THE POST.
3. WHEN POSTS ARE DRIVEN, A SUITABLE DRIVING CAP SHALL BE USED AND AFTER DRIVING, THE TOP OF THE POST SHALL HAVE SUBSTANTIALLY THE SAME ELEVATION AS THE SURFACE DIMENSION AS THE BODY OF THE POST; BATTERED HEADS WILL NOT BE ACCEPTED.
4. POSTS SHALL NOT BE DRIVEN WITH THE SIGN ATTACHED TO THE POST.
5. SIGNS SHALL BE ERECTED IN CONFORMANCE WITH THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
6. WHEN SIGN IS IN PLACE NO PART OF POST SHALL EXTEND ABOVE THE SIGN.
7. DIMENSIONS SHOWN ARE NOMINAL
8. ALTERNATE SECTIONS MUST BE APPROVED PRIOR TO USE.
9. TOP BAR SHALL BE PLACED 10" FROM THE EDGE OF PAVEMENT INTERSECTION STRIP AND SHALL BE 2" X 1/4"



ROAD INTERSECTION SIGNS
ALL ROAD INTERSECTION SIGNS SHALL BE HIGH INTENSITY RETRO-REFLECTIVE SHEETING, GREEN IN COLOR, ON A 9" ALUMINUM EXTRUDED PANEL (1/8" THICK, WITH 3/16" AT EXTRUDED EDGE), THE LETTERING SHALL BE 6" WHITE REFLECTIVE LETTERING. THE SIGN PANEL LENGTH TO BE DETERMINED BY NAME LENGTH. SIGN MOUNTING SHALL BE ON A U CHANNEL POST WITH TOP MOUNT 90° SIGN MOUNTING BRACKET. THE SIGNPOSTS MUST BE A TWO-POST SYSTEM. BREAK-A-WAY DESIGN WITH A 3' IN GROUND MOUNTING POST, COUPLED TO A 10' TOP POST, WHICH MUST BE A MINIMUM OF 7 1/2 FEET OFF ROADWAY SURFACE. SIGNS SHOULD BE MOUNTED A MINIMUM OF 50' FROM THE ROADWAYS EDGE.


NOT TO SCALE

REVISIONS		
NO.	DESCRIPTION	DATE
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5

LADY OF THE LAKES ESTATES
TAX MAP 235-241-4 & 223-241-6
 WHITE OAKS ROAD, LACONIA NH.
PREPARED FOR:
LADY OF THE LAKES ESTATES LLC.
 c/o MIKE BOUSALEH 453 WHITE OAKS ROAD LACONIA, NH. 03246

MARCH 6, 2024

SCALE
AS NOTED



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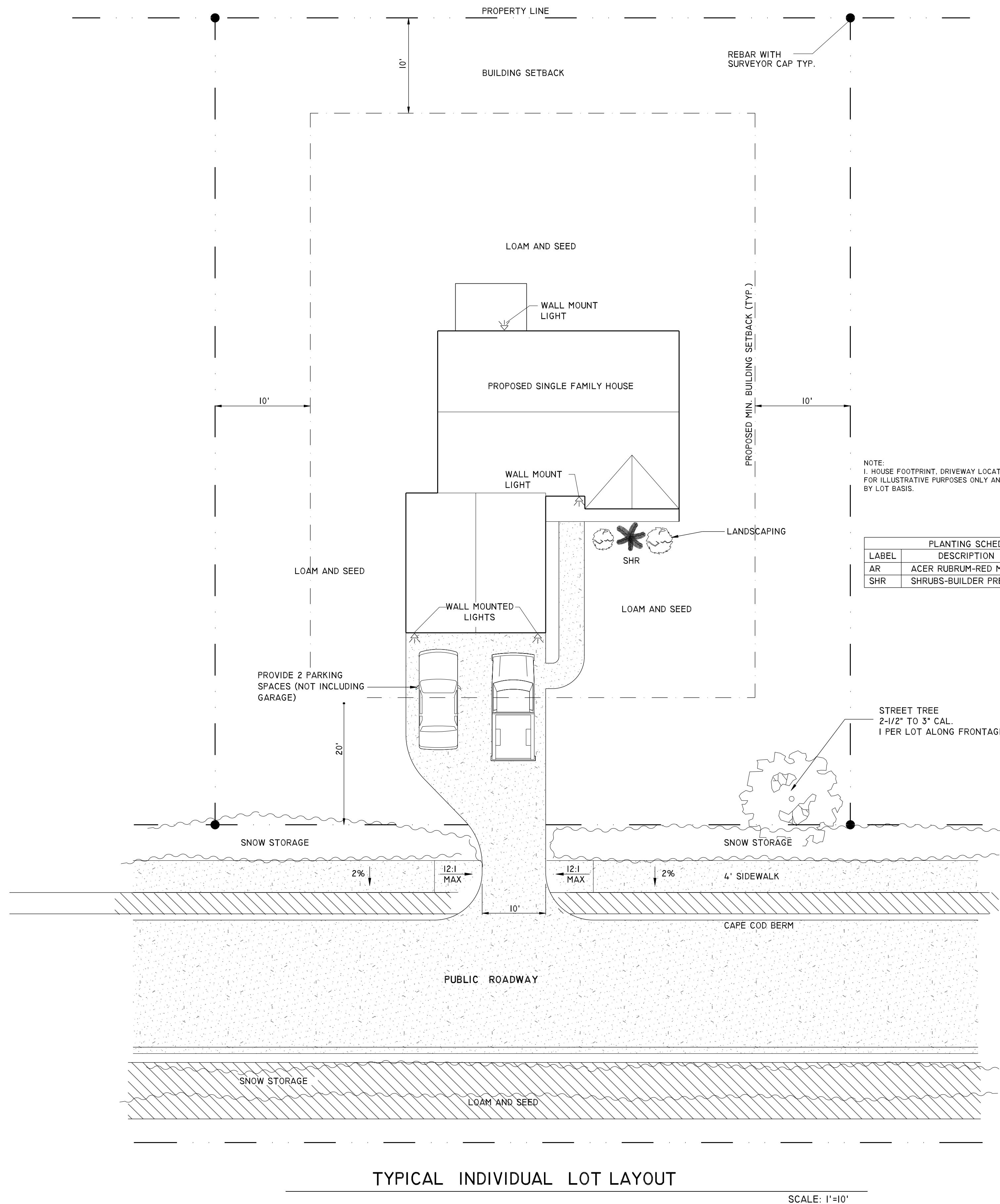
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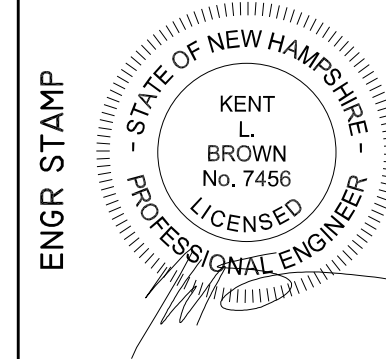
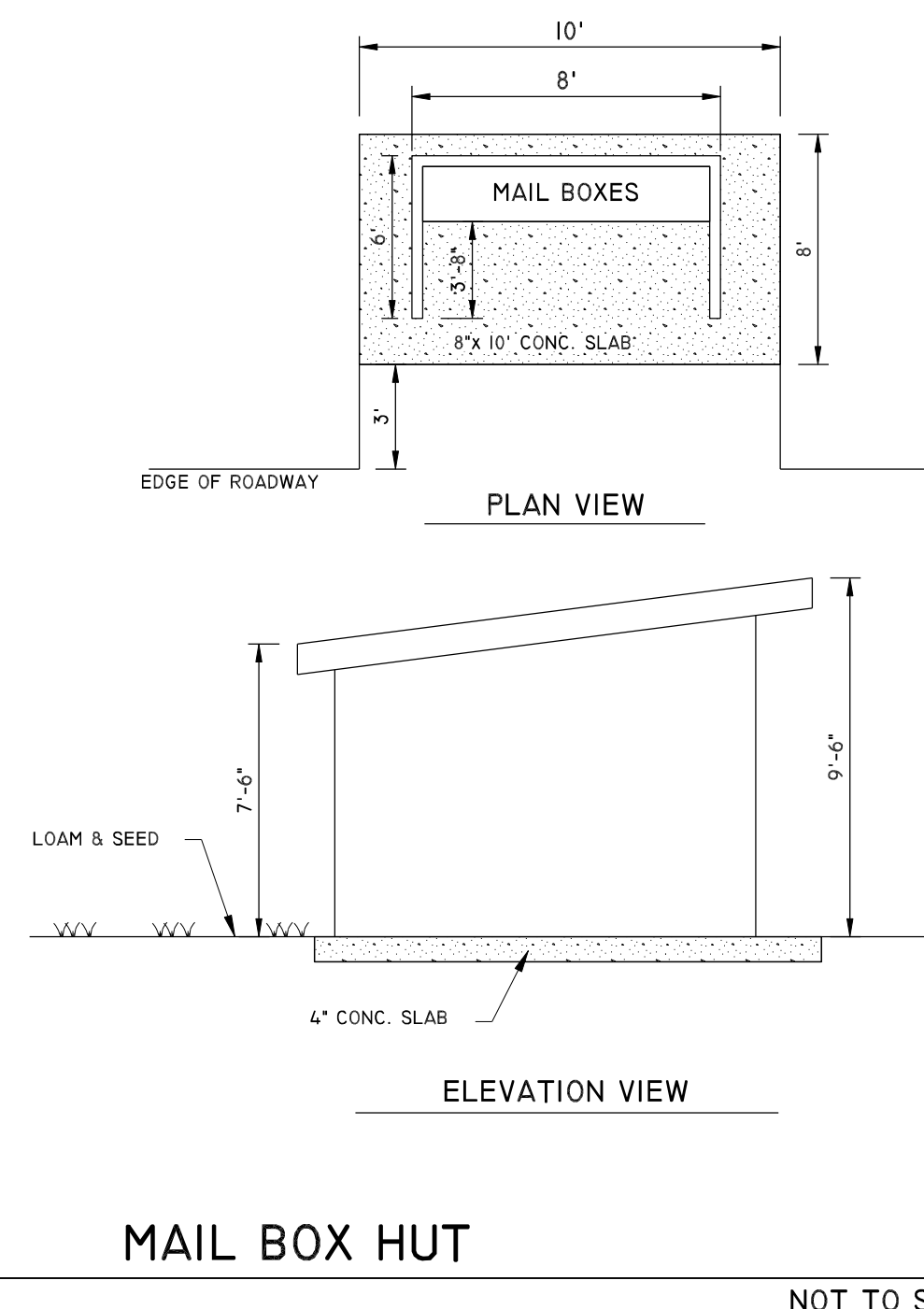
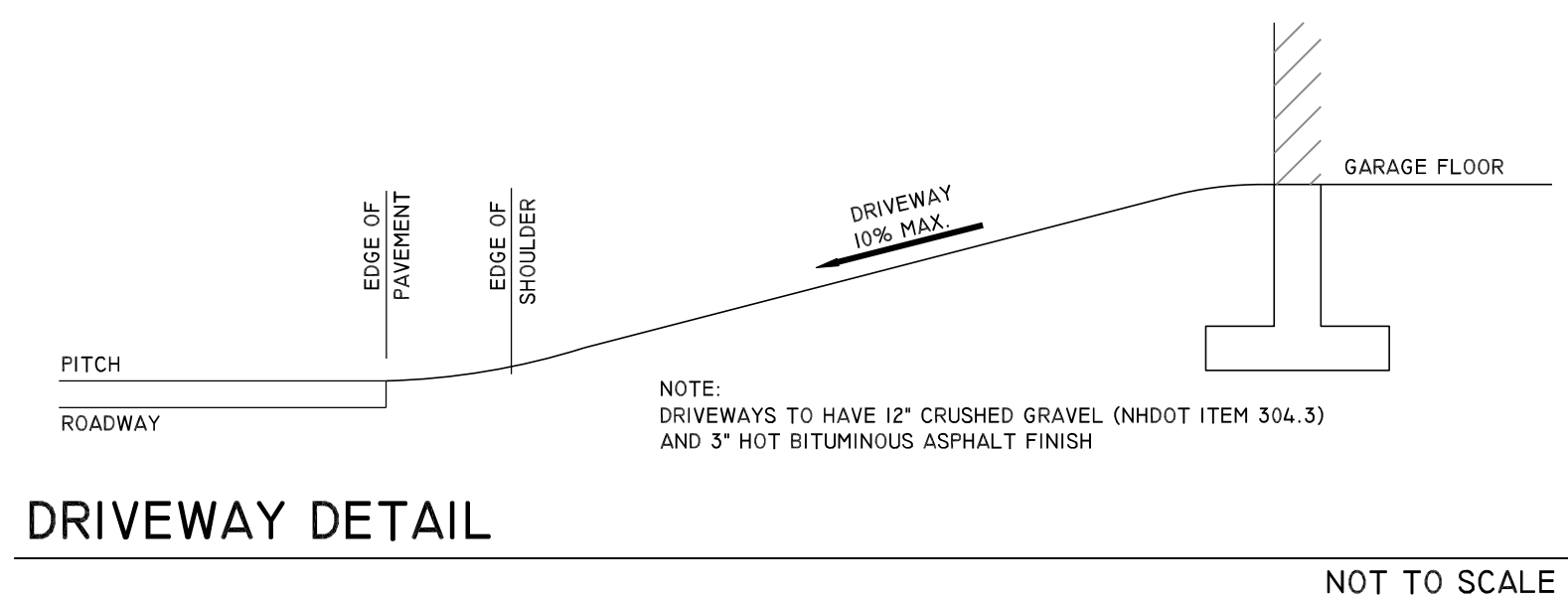
JN: 4770-01

DET-6
SHT 23 OF 29

DRAWING NAME: G:\CLIENTS\10770-01 WHITE OAK ESTATES - WHITE OAKS LACONIA.DWG 10770-01 LADY OF THE LAKES.DWG



ENTRANCE SIGN DETAIL
NOTE: SIGN TO MEET CITY OF LACONIA SIGN ORDINANCE
NOT TO SCALE



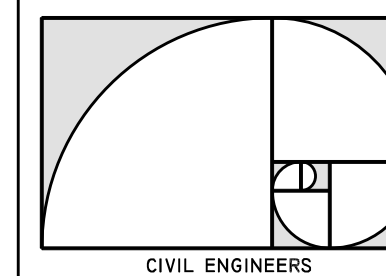
REVISIONS	
NO.	DESCRIPTION

SITE DETAILS
LADY OF THE LAKES ESTATES
TAX MAP 235-241-4 & 223-241-6
WHITE OAKS ROAD, LACONIA, NH.
PREPARED FOR:
LADY OF THE LAKES ESTATES LLC.
c/o MIKE BOUSALEH 453 WHITE OAKS ROAD, LACONIA, NH. 03246

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DET-7
SHT 24 OF 29

PIPE DIAMETER	12"	15"	18"	24"	30"	36"	42"	48"	54"	60"
NUMBER	4	4	4	4	4	4	4	4	4	4
LENGTH OF BARS	3'-0"	3'-0"	3'-0"	3'-0"	4'-0"	4'-0"	5'-0"	5'-0"	6'-0"	6'-0"

PIPE DIAMETER	12"	15"	18"	24"	30"	36"	42"	48"	54"	60"
CONCRETE QUANTITY (YDS)	1.0	1.3	1.8	2.7	3.5	4.9	6.4	8.0	10.0	12.3

1. FOR DESCRIPTIONS, MATERIALS, AND CONSTRUCTION METHODS, SEE LATEST NHDOT SPECIFICATIONS.
2. ALL CONCRETE DIMENSIONS SHOWN ARE MINIMUM.
3. THE PLANNING BOARD RESERVES THE RIGHT TO REQUIRE THAT THE DEVELOPER PROVIDE CAST-IN-PLACE CONCRETE HEADWALLS WITH STONE FACING IF THE CAST-IN-PLACE TYPE IS TO BE USED



NHDOT TYPE C INLET WITH TYPE B ALT. I FRAME & GRATE



CONCRETE OR MORTAR RUBBLE MASONRY HEADWALLS

NOT TO SCALE



- ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C-478.
STRUCTURE SHALL BE CAPABLE OF AASHTO H-20 LOADING WITHOUT FAILURE

CONCENTRIC CONE

NOT TO SCALE



COMPACTION EXPRESSED AS A PERCENTAGE OF MAXIMUM DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM D1557 (MODIFIED PROCTOR).

DRAINAGE TRENCH DETAIL

FOR DRAIN LINES

NOT TO SCALE



RIP-RAP GRADATION					
% FINER BY WEIGHT					
STONE SIZE	D ₃₀ = 6"	D ₅₀ = 9"	D ₅₀ = 12"	D ₈₀ = 18"	D ₁₀₀ = 24"
2"	0-15%	0%	-	-	-
4"	20-35%	10-20%	0-10%	-	-
6"	35-50%	25-35%	10-25%	0-10%	-
8"	50-65%	30-50%	20-30%	10-20%	0-10%
10"	60-80%	40-60%	30-40%	15-30%	5-15%
12"	75-100%	-	-	-	-
15"	-	70-100%	45-60%	25-40%	20-30%
20"	-	-	70-100%	40-60%	30-45%
30"	-	-	-	70-100%	50-70%

NOT TO SCALE



1. ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C-478.
CATCH BASIN STRUCTURE SHALL BE CAPABLE OF AASHTO H-20 LOADING WITHOUT FAILURE.
2. USE TYPE B FRAME AND GRATE (NEENAH R-3570) UNLESS OTHERWISE NOTED ON PLANS
3. ALL CATCH BASINS TO BE DEEP SUMP UNLESS OTHERWISE NOTED

CONCENTRIC CONE

NOT TO SCALE

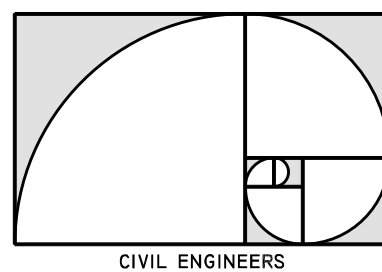
REVISIONS		
NO.	DESCRIPTION	DATE
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-	-	-
-	-	-
-	-	-

DRAINAGE DETAILS
LADY OF THE LAKES ESTATES
 TAX MAP 235-241-4 & 223-241-6
 WHITE OAKS ROAD, LACONIA NH.
 PREPARED FOR:
LADY OF THE LAKES ESTATES LLC.
 c/o MIKE BOUSALEH 453 WHITE OAKS ROAD LACONIA, NH. 03246

MARCH 6, 2024

SCALE
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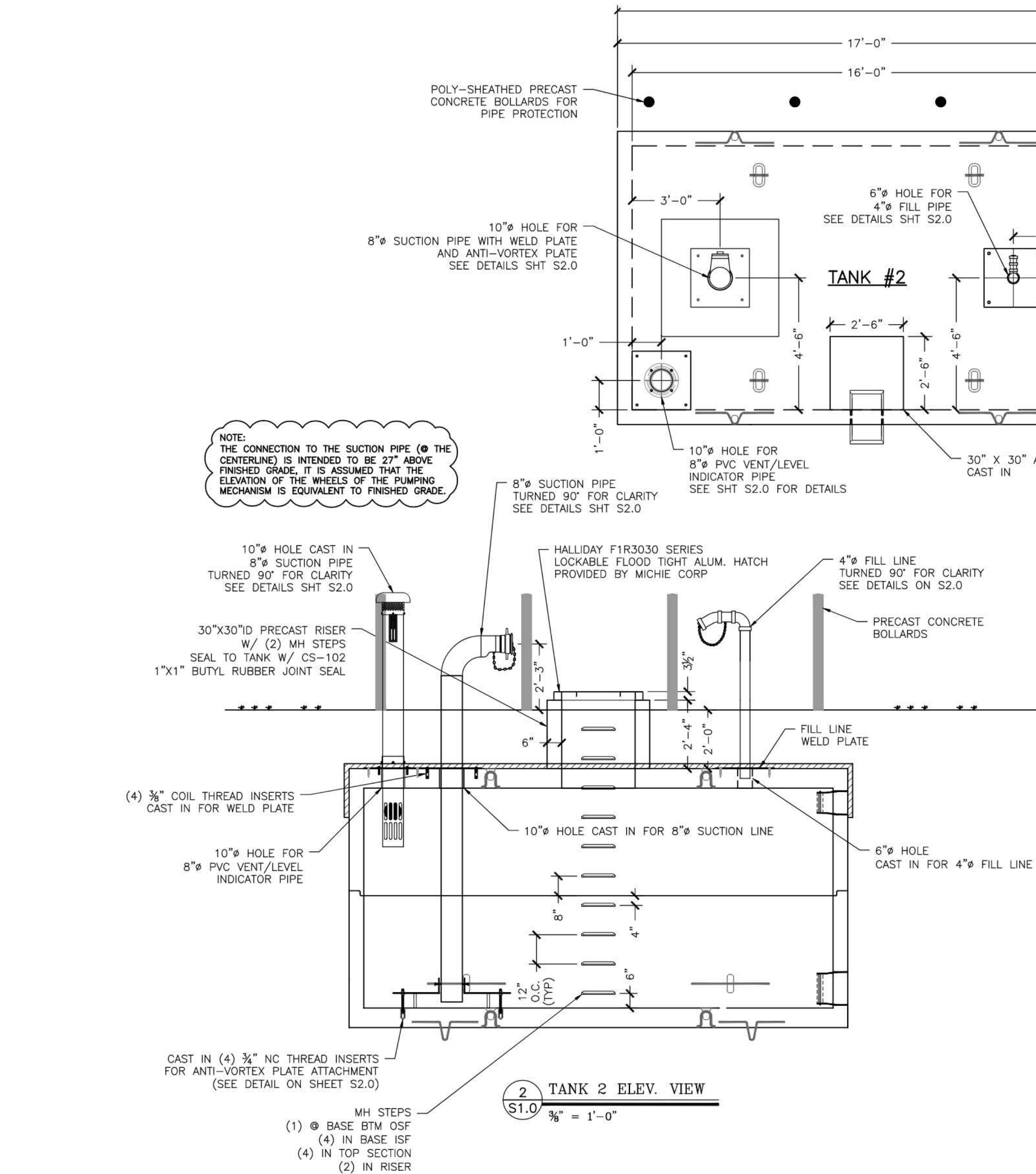


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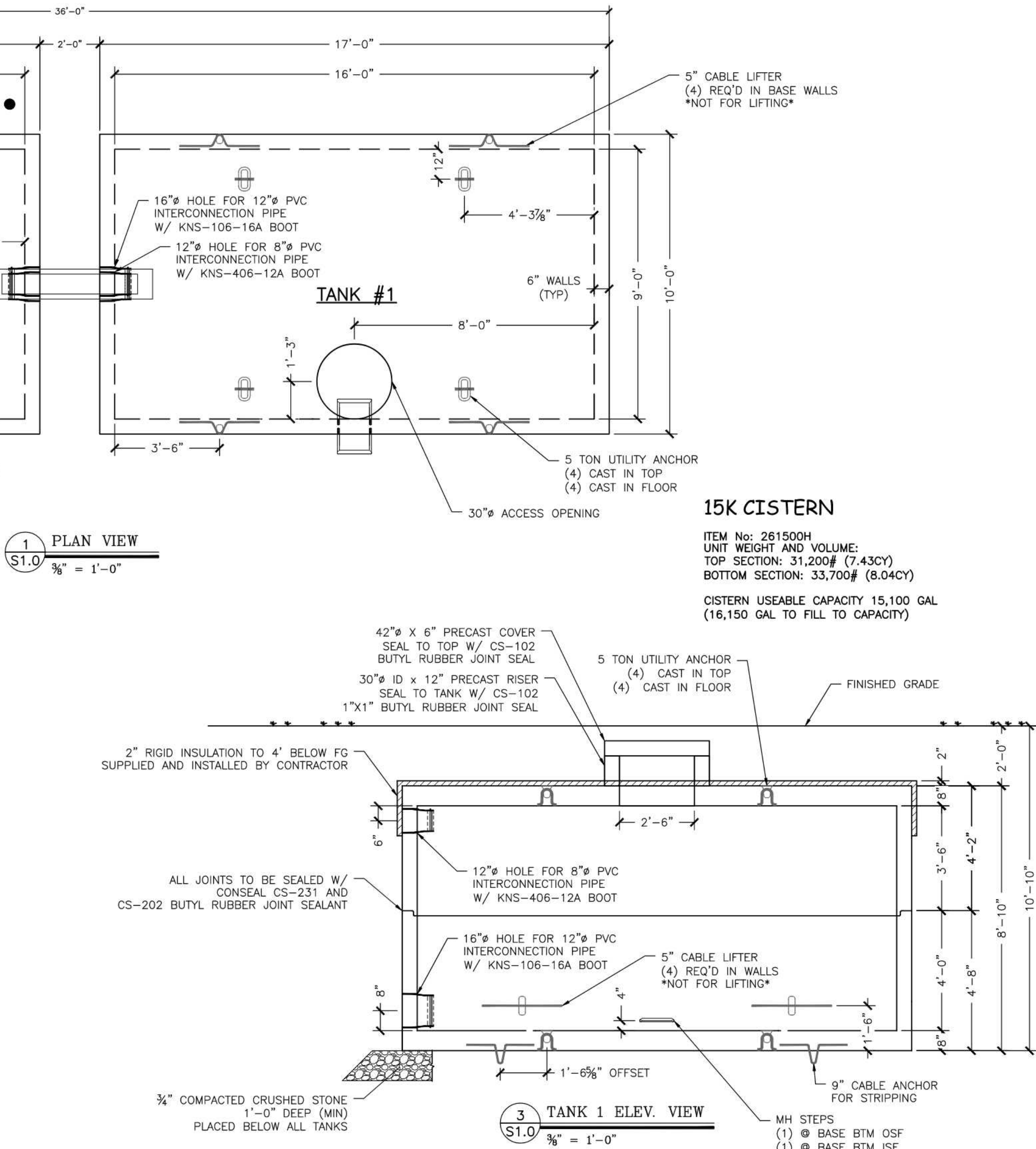
DET-8
SHT 25 OF 29

DRAWING NAME: G CLIENTS\U770-01 WHITE OAKS LAKES - WHITE OAKS LAKES\DWGS\U770-01 LADY OF THE LAKES.DWG



- NOTES:
1. MAINTAIN MINIMUM 60 DEGREE SLING ANGLE WHEN HANDLING PRECAST COMPONENTS.
 2. PRECAST COMPONENTS SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI PRIOR TO STRIPPING, AND THE MINIMUM DESIGN COMPRESSIVE STRENGTH PRIOR TO SHIPPING, UNLESS OTHERWISE APPROVED.
 3. CONCRETE SHALL BE SELF-CONSOLIDATING CONFORMING TO ASTM C260 WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. AGGREGATE SHALL CONFORM TO ASTM C-33 WITH A MAXIMUM DIAMETER OF ¾". CEMENT SHALL CONFORM TO ASTM C150.
 4. REINFORCING SHALL BE 60,000 PSI GRADE 60 DEFORMED BLACK BARS CONFORMING TO ASTM A-615. ALL BARS SHALL BE BENT COLD.
 5. ALL JOINTS AND VOIDS SHALL BE FILLED WITH NON-SHRINK GROUT. VERTICAL SURFACE VOIDS MAY BE FILLED WITH FOAM SEALANT.
 6. TANK DESIGNED USING THE FOLLOWING PROPERTIES:
 - DESIGN LOAD: ASHTO HS-20
 - EARTH COVER:
 - 0-2' FOR WATER TABLE 5' BELOW GRADE.
 - 0-2.5' FOR WATER TABLE 3.5'-5' BELOW GRADE.
 - LATERAL EARTH PRESSURES: DRY - 40PCF; SAT - 81PCF
 - ADEQUACY OF THE ABOVE INFORMATION SHALL BE REVIEWED FOR SITE SPECIFIC CONDITIONS BY QUALIFIED LICENSED PROFESSIONAL ENGINEER.
 7. ALL EXCAVATED HOLES SHALL BE PREPARED PER OSHA STANDARDS; NOTHING IN THESE PLANS SHALL BE CONSTRUED TO PROVIDE EXCAVATION GUIDANCE. TANK EXCAVATION SHALL BE KEPT DEWATERED THROUGHOUT INSTALLATION AND BACKFILL OPERATIONS.
 8. STRUCTURE SHALL BE PLACED AT ELEVATIONS SHOWN ON THE DRAWINGS ON A MINIMUM OF 12" OF COMPACTED CRUSHED STONE WITH AN AGGREGATE SIZE OF ¾" TO 1½". ALL TOPSOIL, LOOSE FILL, AND DELETERIOUS MATERIALS SHALL BE REMOVED BEFORE PLACING MATERIAL.
 9. BACKFILL MATERIAL SHALL BE SCREENED GRAVEL OR SAND, FREE OF DELETERIOUS MATERIAL WITH A MAXIMUM AGGREGATE SIZE OF 1½". BACKFILL SHALL EXTEND FOR A MINIMUM DISTANCE OF 3'-0" BEYOND THE HORIZONTAL LIMITS OF THE STRUCTURE. MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 12" AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DENSITY DETERMINED BY ASTM D1557 (MODIFIED PROCTOR TEST). ALL COMPACTION SHALL BE DONE WITH HAND-OPERATED COMPACTION EQUIPMENT. NE WITH HAND-OPERATED COMPACTION EQUIPMENT.

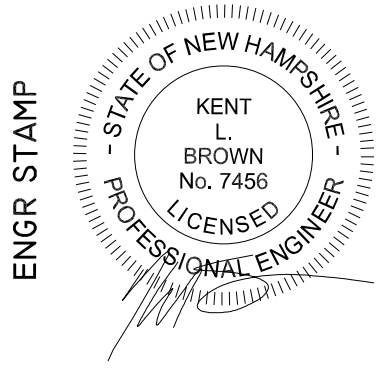
- NOTES CONTINUED:
10. SHOP DRAWINGS WERE DEVELOPED USING THE FOLLOWING RESOURCES FOR THE CONTRACT:
 - "Project Design Plan Set", DATED: Month, Year. PREPARED BY: Engineer, Location.
 11. IF THERE IS ADDITIONAL INFORMATION PERTINENT TO THE FABRICATION AND INSTALLATION OF THESE UNITS THAT IS NOT CONTAINED WITHIN THE RESOURCES LISTED ABOVE IT SHALL BE BROUGHT TO THE ATTENTION OF MICHELLE CORPORATION. FAILURE TO MAKE SUCH ADDITIONAL INFORMATION AVAILABLE SHALL RELIEVE MICHELLE CORPORATION OF ALL LIABILITIES ARISING FROM ERRORS OR OMISSIONS RELATED TO THE OMITTED INFORMATION.



BILL OF MATERIALS					
QTY	DESCRIPTION	IN STOCK	ORDERED FROM	DATE ORDERED	DATE DELIVERED
ITEMS CAST-IN					
4	3/8" NC THREADED INSERTS (FOR WELD PLATE)				
4	3/4" NC THREADED INSERTS (FOR ANTI-VORTEX ASSY)				
16	5 TON UTILITY ANCHOR				
8	5" CABLE LIFTER				
8	5" CABLE LIFTER				
ITEMS FOR SHIPPING PREP					
1	ANTI-VORTEX PLATE ASSEMBLY				
4	3/4" THREADED ROD 8' LONG W/ NUT AND WASHER (VORTEX PL. ATT.)				
110LF	CS-231 1"X1" CONTROLLED EXP. WATERSTOP SEALANT (14' ROLLS)				
110LF	CS-202 1 1/2" BUTYL W/ RED ADHESIVE (10' ROLLS)				
20 Gals.	ASPHALTIC COATING				
2	KNS-406-12A BOOT				
2	KNS-106-16A BOOT				
3 Gals.	TREMECO				
3	24"X24"X1/4" WELD PLATES				
13	POLYPROPYLENE COATED MANHOLE STEPS				
12	3/8" ANCHOR BOLT (FOR WELD PLATES)				
ITEMS TO SHIP TO THE JOB					
1	8" PVC VENT/LEVEL INDICATOR ASSEMBLY				
1	4" GALV. PIPE CLAMP W/ THREADED ROD BOLTS/ NUTS				
1	SUCTION ASSEMBLY				
1	FILL ASSEMBLY				
1	8" PVC INTERCONNECTION PIPE (4'-6" LONG)				
2	EXTERNAL PIPE CLAMP FOR 8" PIPE				
2	INTERNAL EXPANSION BAND FOR 8" BOOT				
1	12" SDR 35 INTERCONNECTION PIPE (4'-6" LONG)				
2	EXTERNAL PIPE CLAMP FOR 12" PIPE				
2	INTERNAL EXPANSION BAND FOR 12" BOOT				
1	42" X 6" PRECAST COVERS				
1	30" DIA. ID X 12' PRECAST RISER				
1	30" X 30" X 2'-4" PRECAST RISER				
36LF	CS102 BUTYL RUBBER TO (SEAL RISER AND COVER)				
1	HALLIDAY F1R3030 ALUM. HATCH				
4	POLY-SHEATHED PRECAST BOLLARDS				



- LIST OF SHEETS:
- S1.0 - CISTERN PLAN AND ELEVATIONS
 - S2.0 - CISTERN MISC. DETAILS
 - S3.0 - CISTERN REINFORCING DETAILS



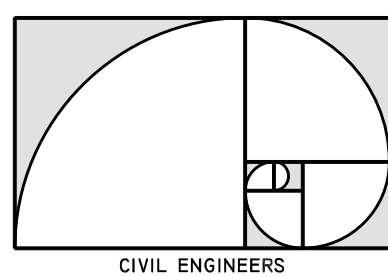
REVISIONS		DATE	DESCRIPTION
NO.			

CISTERN DETAILS
LADY OF THE LAKES ESTATES
TAX MAP 235-241-4 & 223-241-6
WHITE OAKS ROAD, LACONIA, NH.
PREPARED FOR:
LADY OF THE LAKES ESTATES LLC.
C/O MIKE BOUSALEH 453 WHITE OAKS ROAD, LACONIA, NH. 03246

MARCH 6, 2024

SCALE
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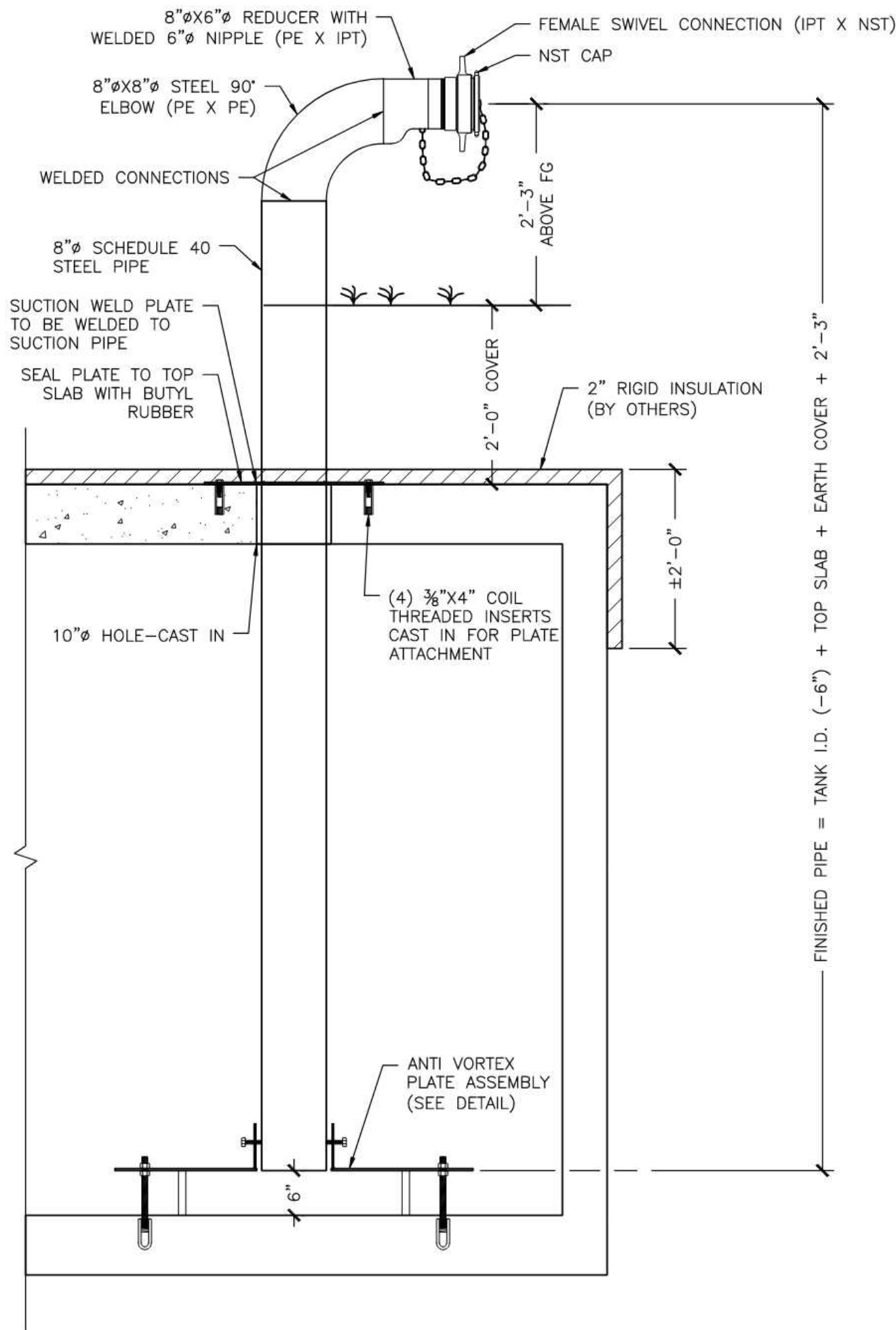


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DET-9
SHT 29 OF 29

DRAWING NAME: G:\CLIENTS\1770-01 WHITE OAK ESTATES - WHITE OAKS LACONIA.DWG 1770-01 LADY OF THE LAKES.DWG

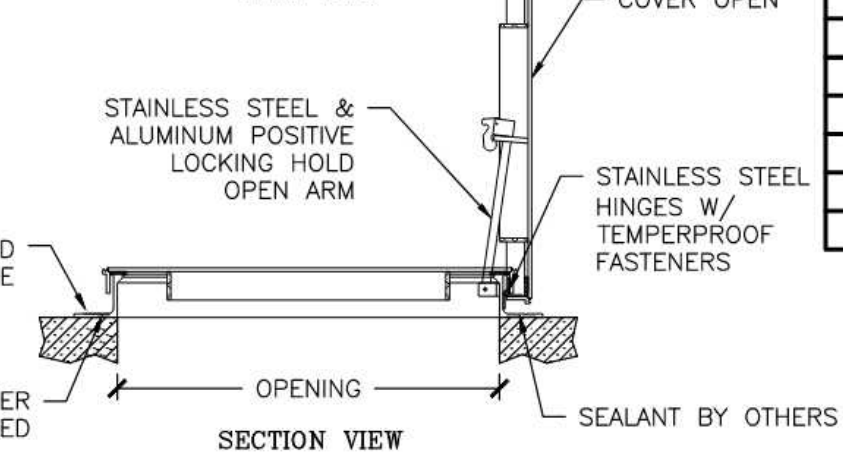
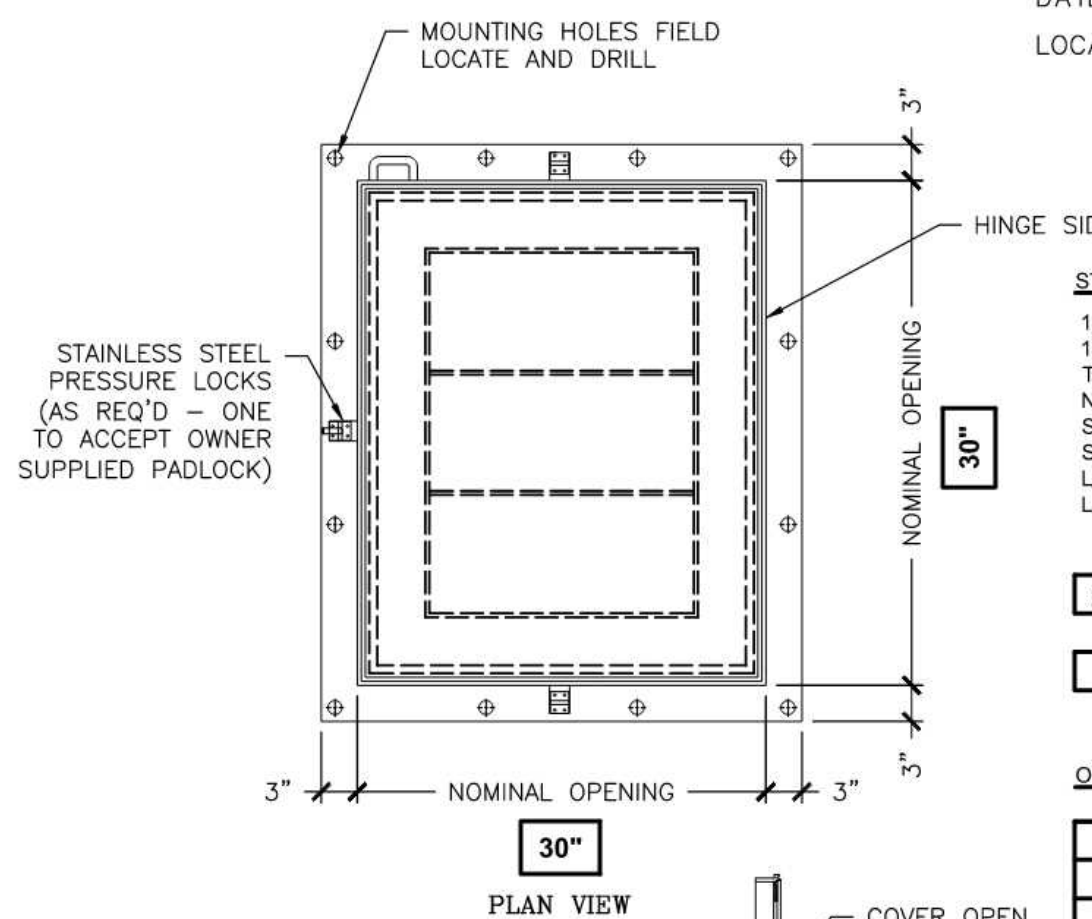


1 SUCTION ASSEMBLY DETAIL
S2.0 3/4" = 1'-0"

HALLIDAY PRODUCTS, INC.
ORLANDO, FL
http://www.hallidayproducts.com



MODEL NO. F1R3030M-C
QUANTITY:
ORDER NO.
DATE:
LOCATION/TAG:



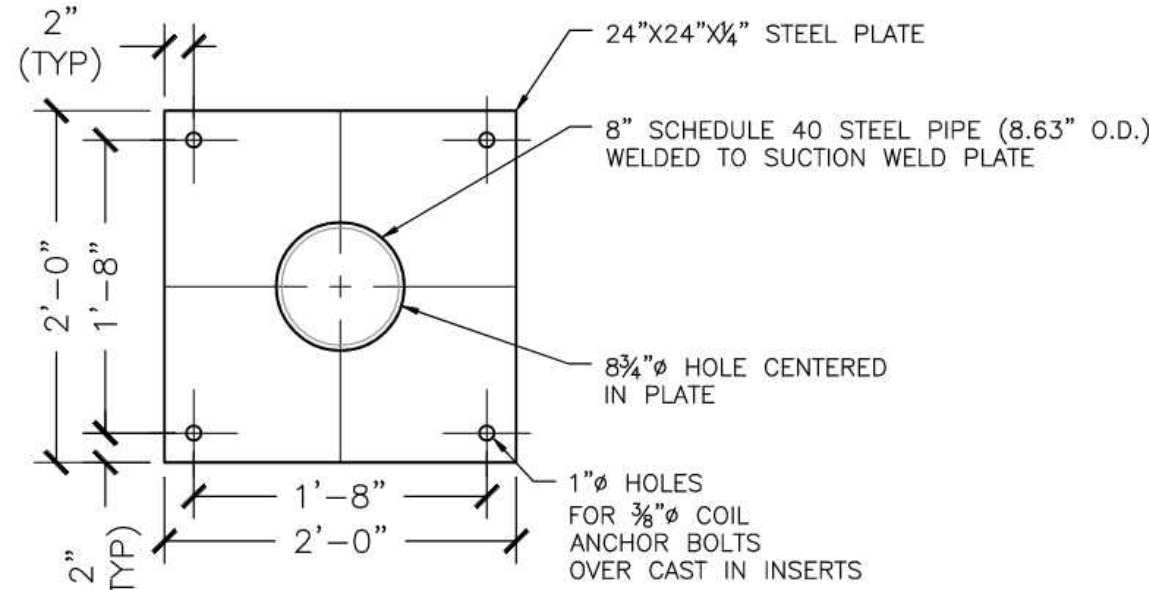
2 ALUM. ACCESS HATCH DETAIL
S2.0 NOT TO SCALE

STANDARD FEATURES:
1/4" ALUMINUM TREAD PLATE COVER
1/4" THICK ALUMINUM FRAME EXTRUSION
T-316 STAINLESS STEEL HARDWARE
NEOPRENE GASKET (ON COVER)
S-STL & ALUM. HOLD OPEN ARM
S-STL PRESSURE LOCKS
LOCKING LUG
LIFETIME GUARANTEE

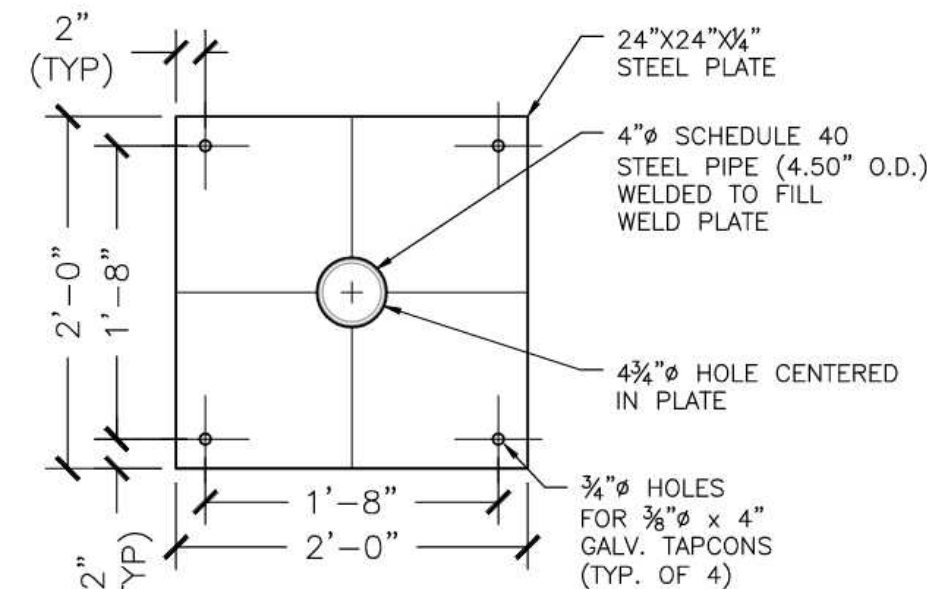
☒ 625 LB. PER SQ. FT. LOAD RATING
☐ 300 LB. PER SQ. FT. LOAD RATING

OPTIONS/FEATURES:
☐ BITUMINOUS COATING
☐ CLEAR ANODIZED FINISH
☐ LACQUER FINISH
☐ SPRING ASSIST
☐ 2" INSULATION W/ CAPTIVE PAN
☐ SLAB SKIRTING
☐ PVC PROTECTIVE FILM
☐ SHOP DRILL MOUNTING HOLES
☐ MISCELLANEOUS

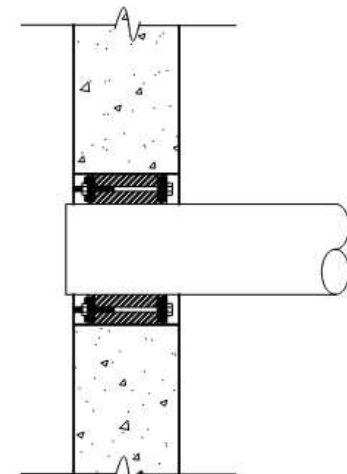
NOTE:
ACTUAL CLEAR OPENING =
NOMINAL OPENING - 1.25"



3 SUCTION WELD PLATE DETAIL
PLAN VIEW
S2.0 1" = 1'-0"

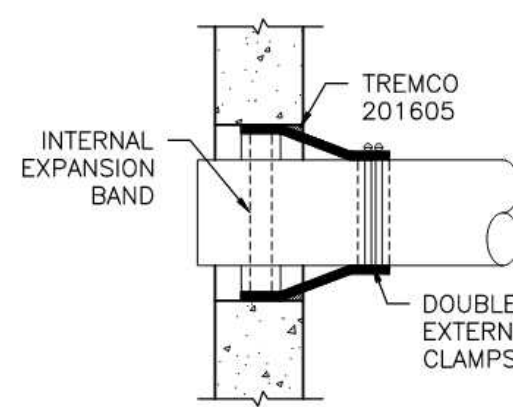


4 FILL LINE WELD PLATE DETAIL
PLAN VIEW
S2.0 1" = 1'-0"



LINK SEALS SHALL BE MODULAR, MECHANICAL TYPE, CONSISTING OF INTER-LOCKING SYNTHETIC RUBBER LINKS SHAPED TO CONSINUOUSLY FILL THE ANNULAR SPACE BETWEEN THE PIPE AND THE WALL OPENING.
MATERIAL PROPERTIES OF LINK SEAL ELASTOMERS MEET OR EXCEED THE APPLICABLE REQUIREMENTS OF THE FOLLOWING ASTM SPECIFICATIONS:
D-2240, D-412, S-395 AND D-297.
BOLT AND MATING NUT HAVE A TENSILE STRENGTH OF 74,000 PSI

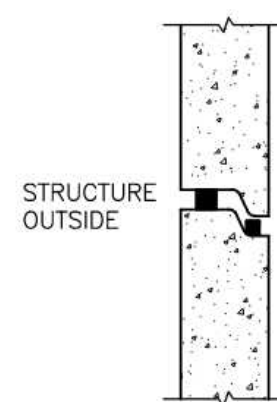
5 TYPICAL LINK SEAL PIPE CONNECTION
S2.0 3/4" = 1'-0"



FLEXIBLE SLEEVE PIPE CONNECTION RUBBER ELEMENT SHALL MEET OR EXCEED ALL REQUIREMENTS OF ASTM C-923 FOR "RESILIENT CONNECTORS BETWEEN CONCRETE MANHOLE STRUCTURES & PIPES", AND HAVE A MINIMUM TENSILE STRENGTH OF 2600 PSI.

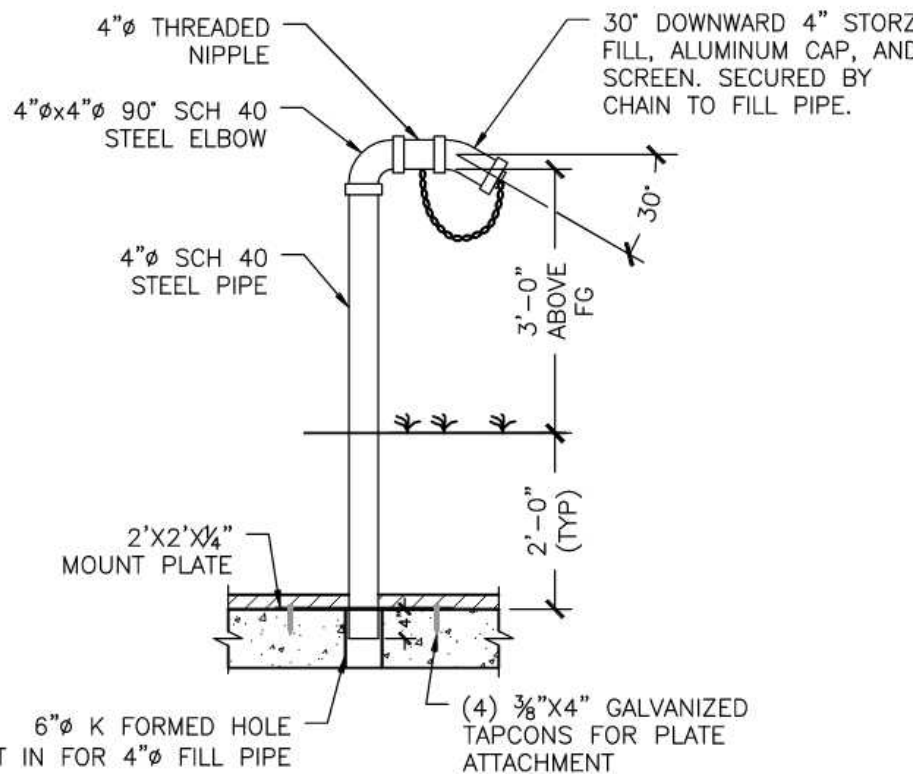
INTERNAL EXPANSION BAND (S106-16AB W1A) AND EXTERNAL PIPE CLAMPS (80667) SHALL BE CONSTRUCTED OF SERIES 304 AND SERIES 305 NON-MAGNETIC STAINLESS STEEL (TORQUE TO 45 FT/LBS)

6 TYPICAL FLEXIBLE SLEEVE PIPE CONNECTION DETAIL
S2.0 1" = 1'-0"

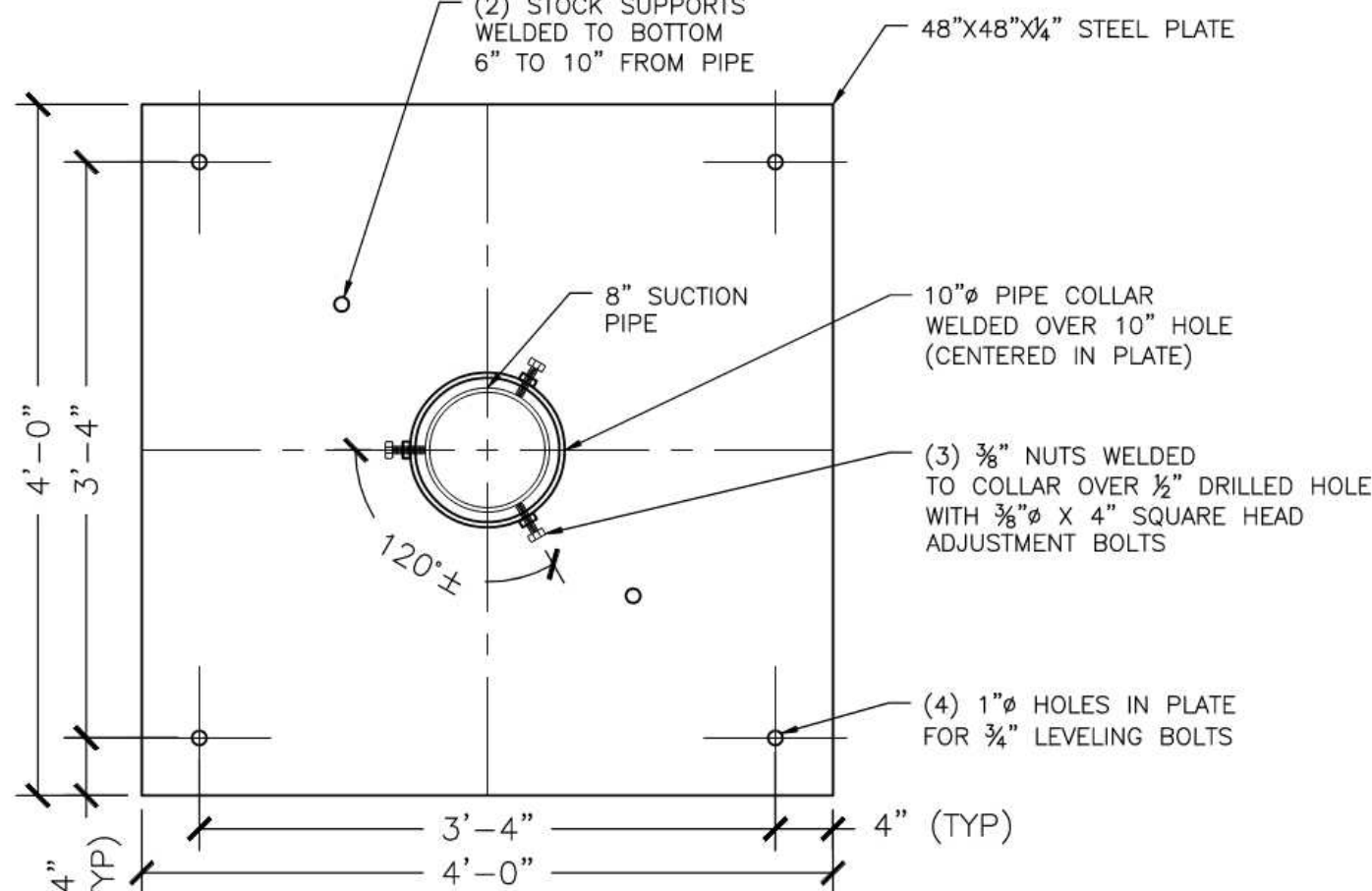


1 1/2" CONSEAL 202 (OUTSIDE)
BUTYL RUBBER JOINT SEALANT SHALL FILL 75% OF JOINT CAVITY. BUTYL RUBBER JOINT SEALANT SHALL MEET OR EXCEED THE REQUIREMENTS OF FEDERAL SPECIFICATION SS-5-210, ASTM C-990 AND ASHTO M-198B
1" CONSEAL 231 (INSIDE)
CONSEAL CS-231 CONTROLLED EXPANSION WATERSTOP SEALANT SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM SPECIFICATION NUMBERS D-71, D-4, D-6 AND D-217.

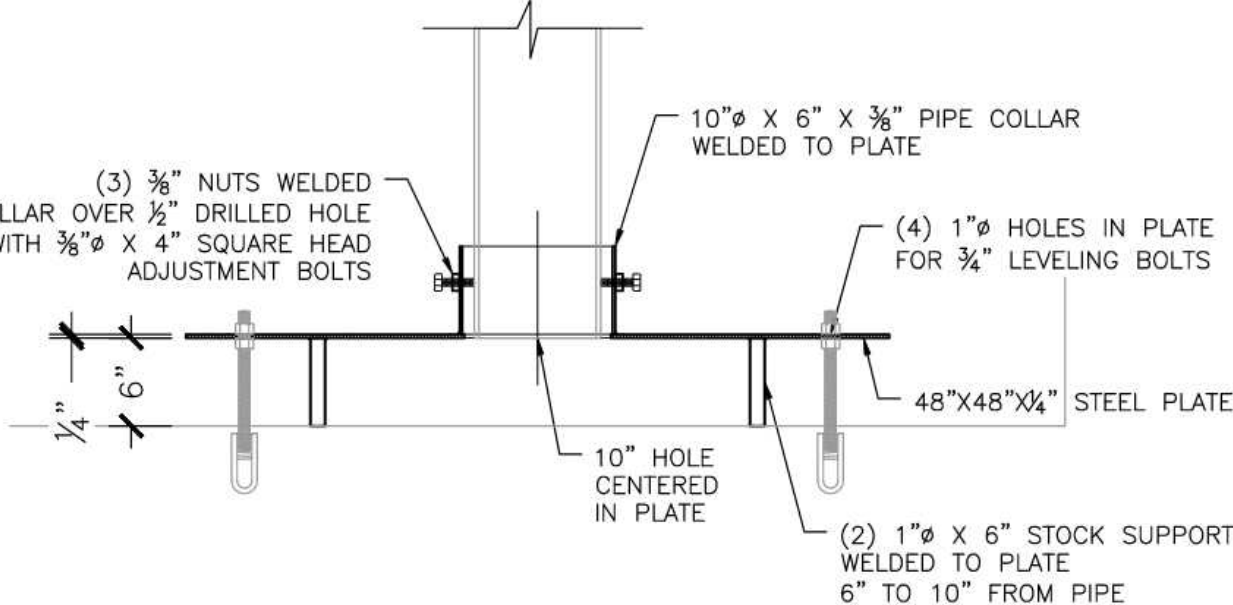
7 CONSEAL JOINT SEALANT DETAIL
S2.0 1" = 1'-0"



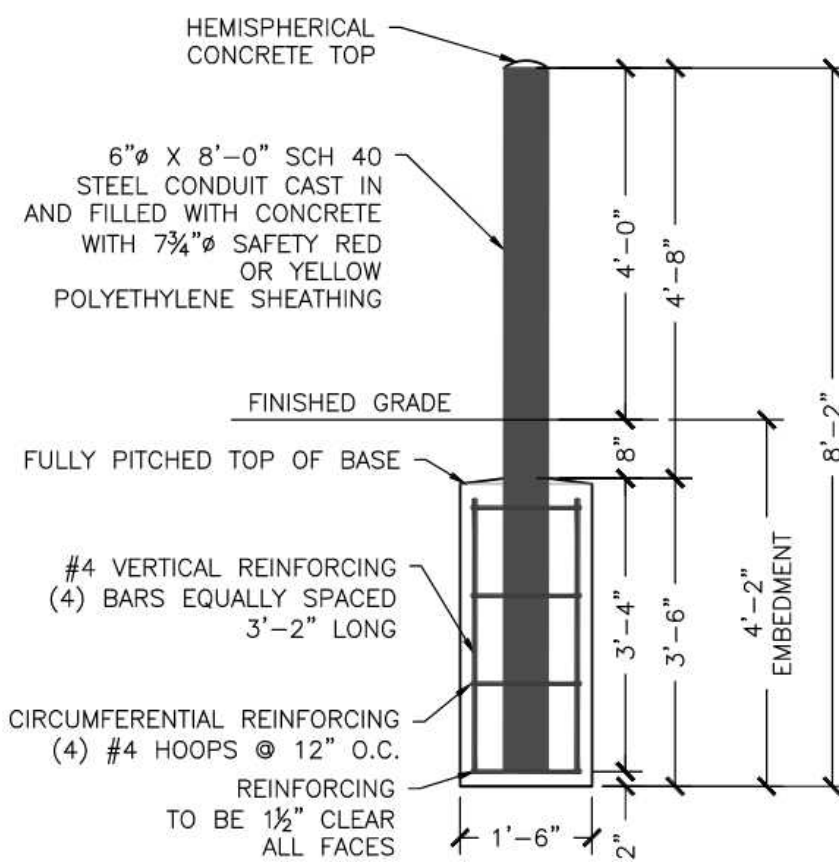
8 FILL LINE ASSEMBLY DETAIL
S2.0 1/2" = 1'-0"



9A ANTI VORTEX PLATE DETAIL
PLAN VIEW
S2.0 1" = 1'-0"

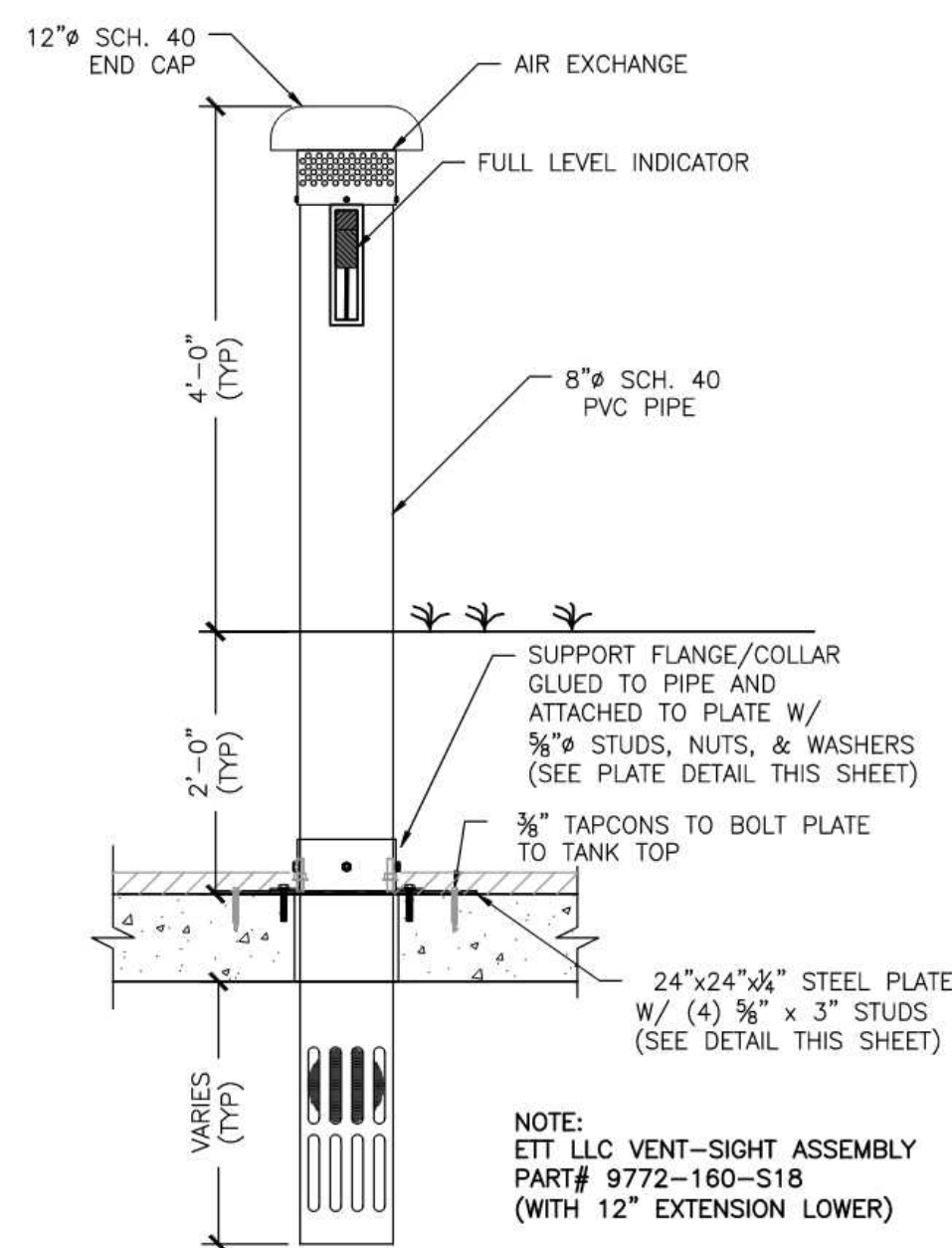


9B ANTI VORTEX PLATE DETAIL
ELEVATION VIEW
S2.0 1" = 1'-0"

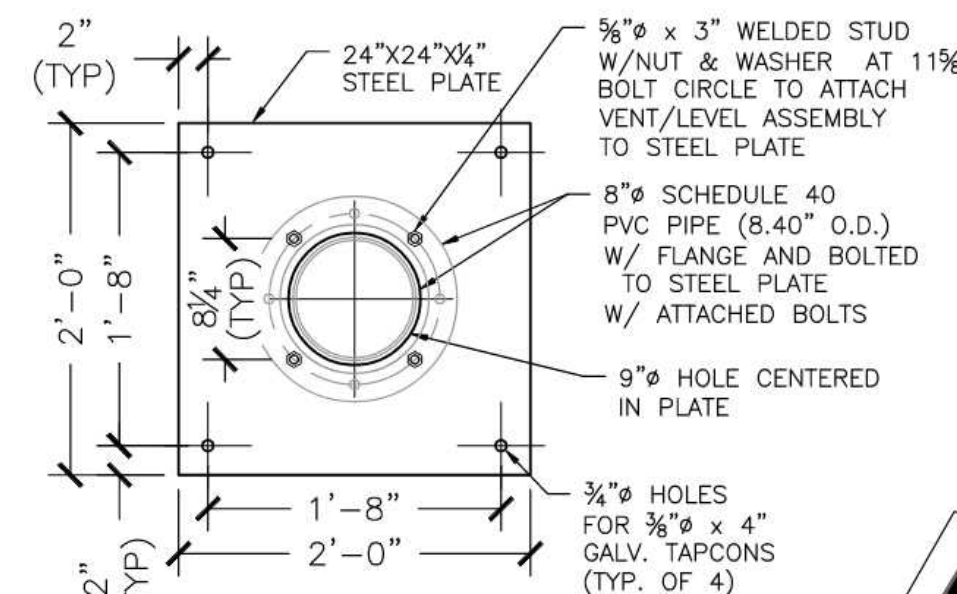


NOTES:
1. CONCRETE: 4,000 PSI @ 28 DAYS.
2. REINFORCING PER ASTM A-615, GRADE 60 DEFORMED BLACK BARS.
3. EACH UNIT TO WEIGH 1300# (0.25 CY CONCRETE + 170# STEEL).

10 POLY SHEATHED PRECAST BOLLARD
S2.0 1/2" = 1'-0"

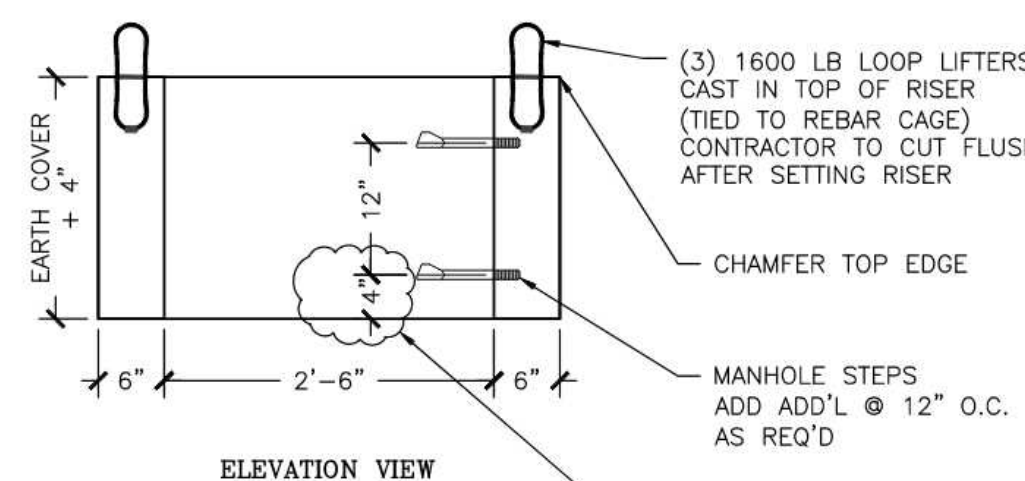


11 VENT/LEVEL INDICATOR ASSEMBLY DETAIL
S2.0 3/4" = 1'-0"

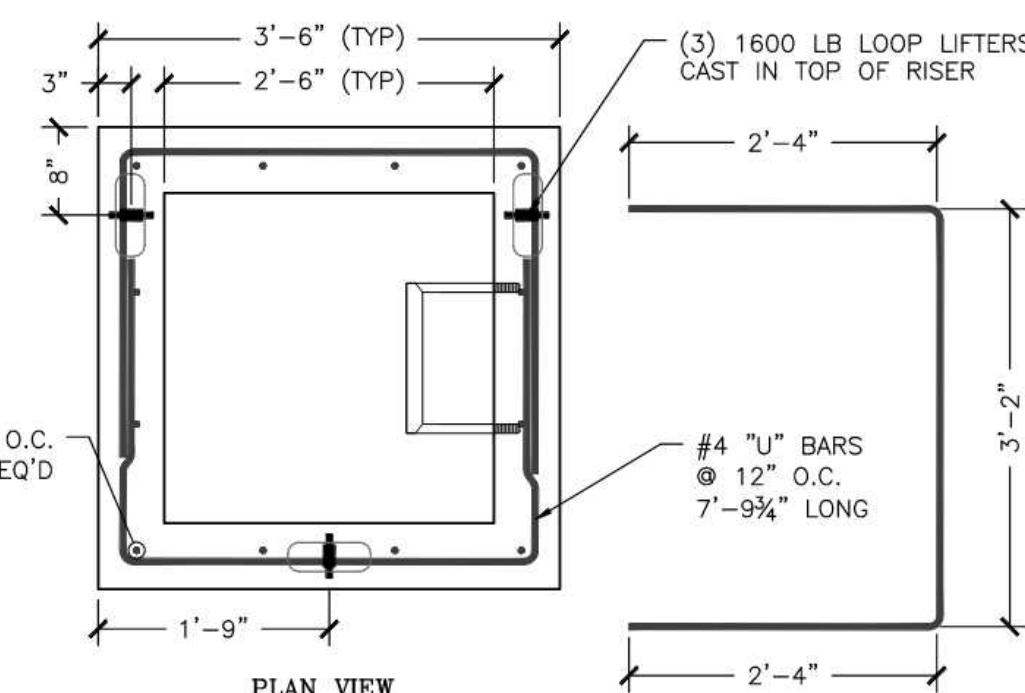


12 VENT/LEVEL INDICATOR ASSEMBLY
WELD PLATE DETAIL PLAN VIEW
S2.0 1" = 1'-0"

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173 BUXTON INDUSTRIAL DRIVE - PO BOX 870
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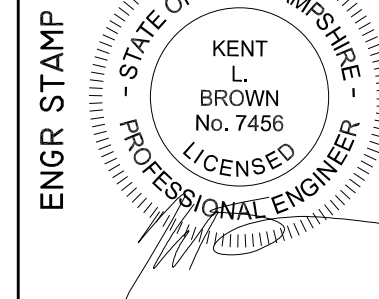
13 PLAN VIEW
S2.0 3/4" = 1'-0"



14 PLAN VIEW
S2.0 3/4" = 1'-0"

30"x30" RISER TURRET
ITEM NUMBER: 279999
UNIT WEIGHT AND VOLUME:
.22CY/FT (920#/FT)

NOTES:
1. CONCRETE: 4,000 PSI @ 28 DAYS.
2. REINFORCING PER ASTM A-615, GRADE 60 DEFORMED BLACK BARS.



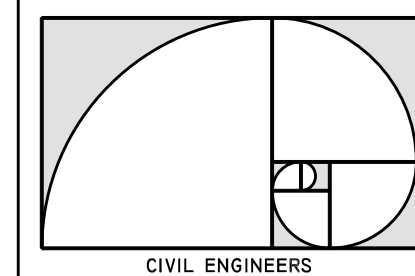
NO.	DESCRIPTION	DATE

LADY OF THE LAKES ESTATES
TAX MAP 235-241-4 & 223-241-6
WHITE OAKS ROAD, LACONIA, NH.
LADY OF THE LAKES ESTATES LLC.
C/O MIKE BOUSALEH 453 WHITE OAKS ROAD, LACONIA, NH. 03246

MARCH 6, 2024

SCALE
AS NOTED

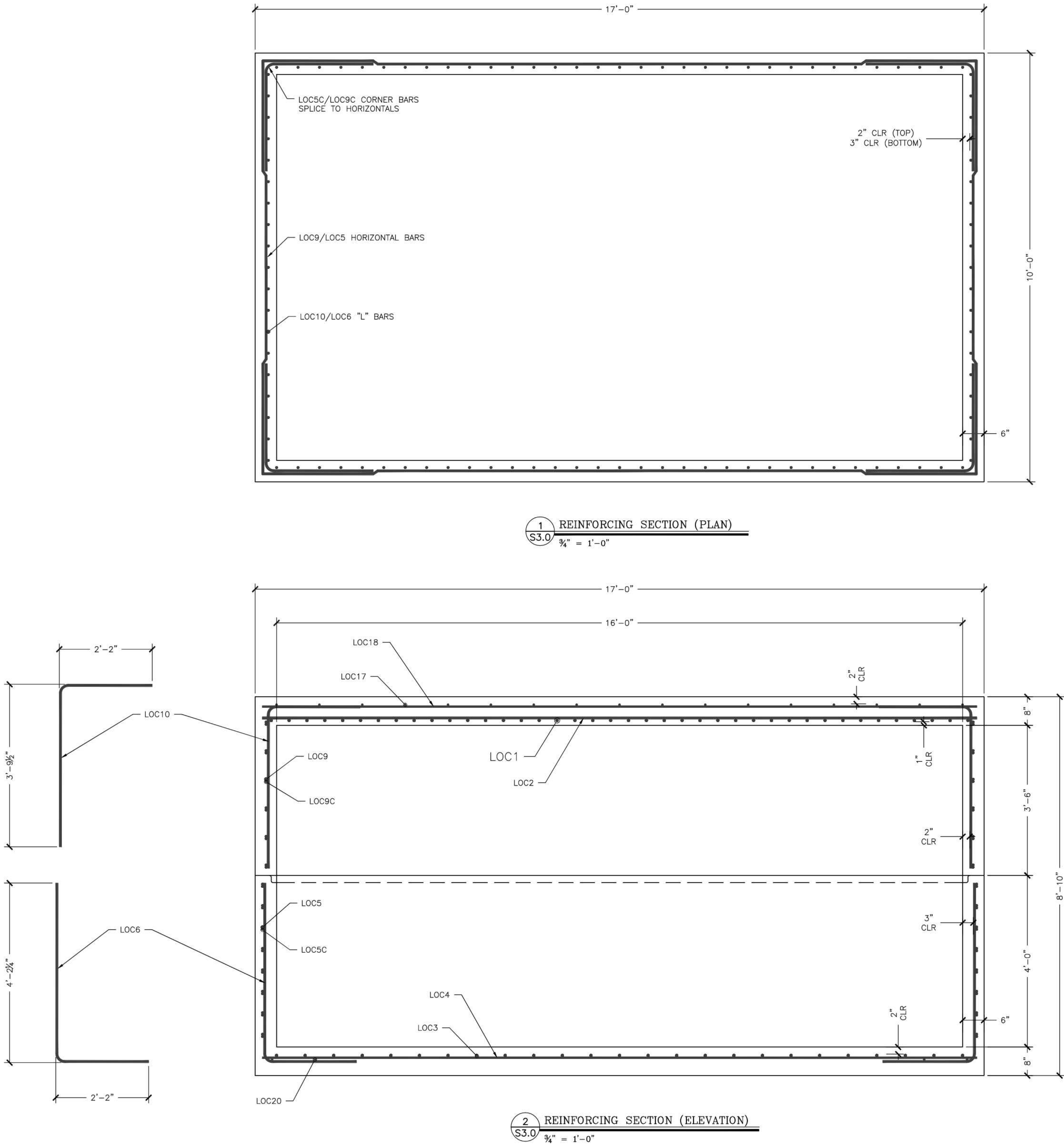
BROWN ENGINEERING



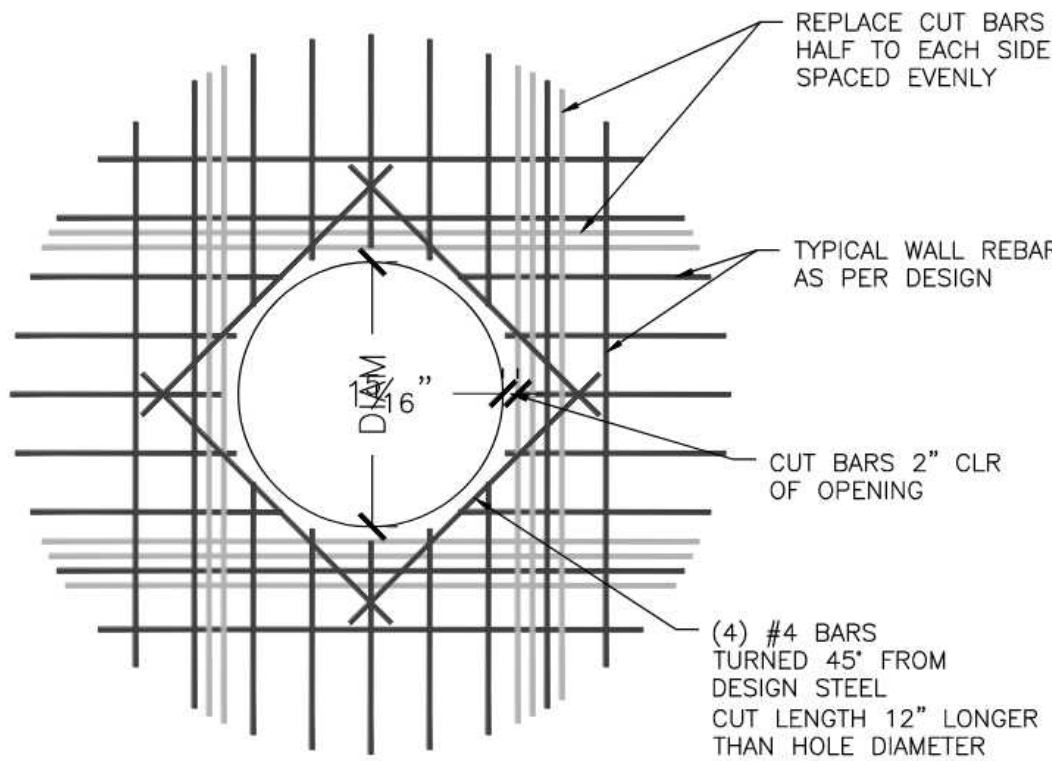
63 WEST STREET - P.O. BOX 703
ASHLAND, NH. 03217
Tel: (603) 744-1044
WWW.BROWNEENGINEERINGLLC.COM

JN: 4770-01
DET-9
SHT 29 OF 29

DRAWING NAME: G:\CLIENTS\U770-01 WHITE OAKS LACONIA\DWGS\4770-01 LADY OF THE LAKES.DWG



- FOUNDATION & BACKFILL NOTES:
1. FOUNDATION MATERIAL SHALL BE 3/4" CRUSHED STONE, MINIMUM 12" THICK.
 2. 1 1/2" BANK RUN GRAVEL SHALL BE USED FOR BACKFILL OPERATIONS SURROUNDING TANK. BACKFILL SHALL BE PLACED IN MAXIMUM 12" LOOSE LIFTS. IT SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY BY MODIFIED PROCTOR METHOD (ASTM 1557). ALL COMPACTION SHALL BE DONE WITH HAND-OPERATED COMPACTION EQUIPMENT.
 3. TANK EXCAVATION SHALL BE KEPT DEWATERED THROUGHOUT INSTALLATION AND BACKFILL OPERATIONS.
 4. ALL AREAS BETWEEN TANKS SHALL BE FILLED TO A MINIMUM OF 12" ABOVE CROWN OF INTERCONNECTION PIPE WITH 3/4" CRUSHED STONE. 1 1/2" BANK RUN GRAVEL MAY BE USED ABOVE THIS ELEVATION, PROVIDED THAT PROPER COMPACTION AS STATED IN NOTE 2 ABOVE CAN BE ACHIEVED.
 5. ALL BACKFILL MATERIAL BETWEEN TANKS SHALL BE PLACED IN 12" LIFTS AT THE SAME TIME AS THE MATERIAL SURROUND THE TANKS.



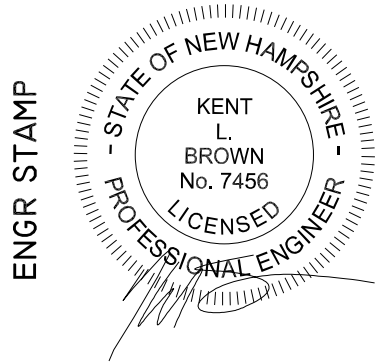
3
S3.0
3/4" = 1'-0"

TYPICAL REINFORCING AT HOLE

REINFORCEMENT SCHEDULE							
	MARK	SIZE	BEND	SPACING	LENGTH	QTY	NOTES
TOP SECTION	LOC10	#5	L	6"	5'-10"	108	
	LOC9	#5	STR	8"	9'-8" SHORT WALL 16'-8" LONG WALL	6/WALL	
	LOC9C	#5	CORNER	8"	26" X 26"	6/CORNER	5'-5 1/4" UNBENT
	LOC18	#4	STR	12"	16'-8"	10	EXCLUDES REPLACEMENTS
	LOC17	#4	STR	12"	9'-8"	17	EXCLUDES REPLACEMENTS
	LOC2	#5	STR	10"	16'-8"	12	EXCLUDES REPLACEMENTS
	LOC1	#6	STR	5"	9'-8"	40	EXCLUDES REPLACEMENTS
BTM SECTION	LOC6	#5	L	6"	6'-2 5/8"	108	
	LOC5	#5	STR	6"	9'-8" SHORT WALL 16'-8" LONG WALL	8/WALL	
	LOC5C	#5	CORNER	6"	26" X 26"	8/CORNER	
	LOC4	#4	STR	6"	16'-8"	20	
	LOC3	#6	STR	8"	9'-8"	25	
	LOC20	#4	STR	12"	9'-8"	4	SHORT WALLS ONLY

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REVISIONS		DATE
NO.	DESCRIPTION	

CISTERN DETAILS

LADY OF THE LAKES ESTATES

TAX MAP 235-241-4 & 223-241-6

WHITE OAKS ROAD, LACONIA, NH.

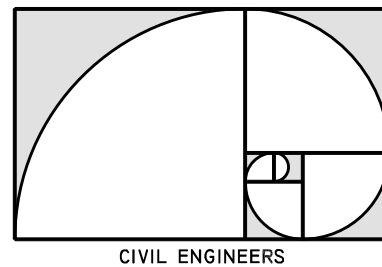
PREPARED FOR:
LADY OF THE LAKES ESTATES LLC.

c/o MIKE BOUSALEH 453 WHITE OAKS ROAD LACONIA, NH. 03246

MARCH 6, 2024

SCALE
AS NOTED

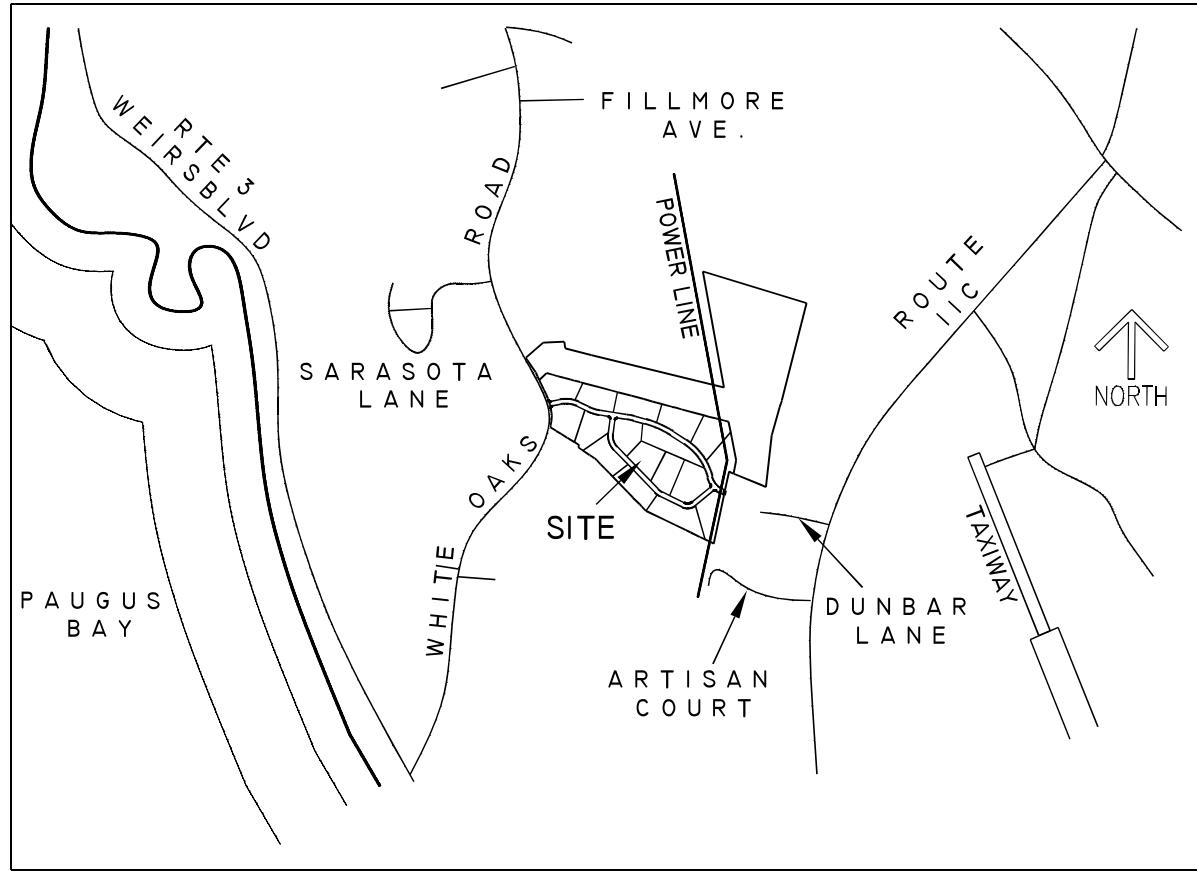
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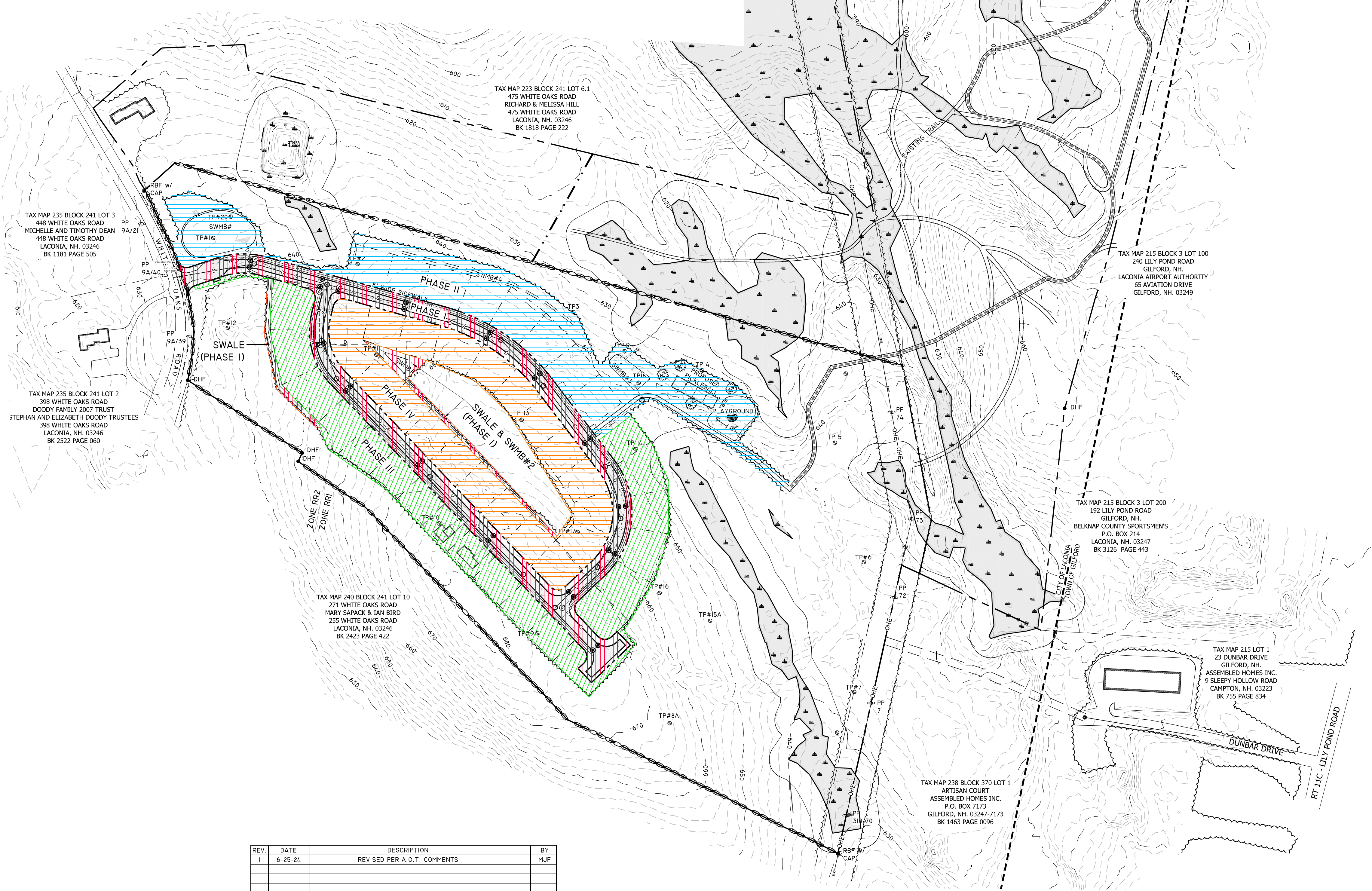
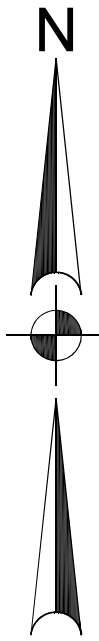
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JN: 4770-01

DET-9
SHT 29 OF 29



VICINITY PLAN
SCALE: 1"=2000'±



LEGEND:

- EXISTING PROPERTY LINE
- EXISTING ABUTTERS PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING RIGHT OF WAY
- EXISTING PROPERTY SETBACK LINE
- EXISTING STONE WALL
- EXISTING SEWER LINE
- SOIL DELINEATION LINE / SOIL SYMBOL
- EXISTING SEWER MANHOLE
- EXISTING 2 FOOT CONTOUR
- EXISTING 10 FOOT CONTOUR
- EXISTING WETLAND BOUNDARY
- EXISTING OVERHEAD ELECTRIC
- TEMPORARY BENCH MARK (TBM)
- TEST PIT LOCATION (TP)
- IRON PIPE FOUND (IPF)
- DRILL HOLE FOUND (DHF)
- EXISTING BUILDING
- EXISTING TRAIL
- EXISTING TRAIL USED FOR NEW TRAIL SYSTEM
- PROPOSED TRAIL
- PROPOSED 2 FOOT CONTOUR
- PROPOSED 10 FOOT CONTOUR
- PROPOSED LOT LINE
- PROPOSED RIGHT OF WAY LINE
- PROPOSED TREE LINE
- PROPOSED DRAIN MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED SEWER MANHOLE

PHASES:

- PHASE I (3.96 ACRES)
- PHASE II (4.92 ACRES)
- PHASE III (4.38 ACRES)
- PHASE IV (4.26 ACRES)

PHASING NOTES:

- THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION
- EACH PHASE MUST BE STABILIZED PRIOR TO ADVANCING TO A SUCCESSIVE PHASE
- NO MORE THAN 5 ACRES SHALL BE DISTURBED AT ONE TIME
- ALL ROADWAYS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE
- CUT AND FILL SLOPES SHALL BE LOAMED & SEEDED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE
- TEMPORARY AND/OR PERMANENT STABILIZATION SHALL BE INSTALLED WITHIN 45 DAYS OF INITIAL CONSTRUCTION
- AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURED:
 - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED
 - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
 - A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED
 - OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED
- TIME LIMIT: ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE

LADY OF THE LAKES ESTATES

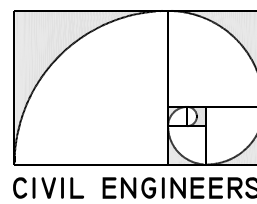
PHASING PLAN

TAX MAP 235-241-4 & 223-241-6

WHITE OAKS ROAD, LACONIA NH.

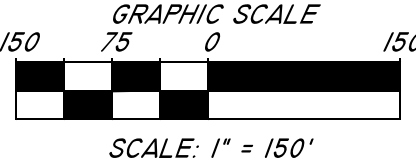
PREPARED FOR:
MIKE BOUSALEH
LADY OF THE LAKES ESTATES LLC.
455 WHITE OAKS ROAD
LACONIA, NH

PREPARED BY:
BROWN ENGINEERING LLC
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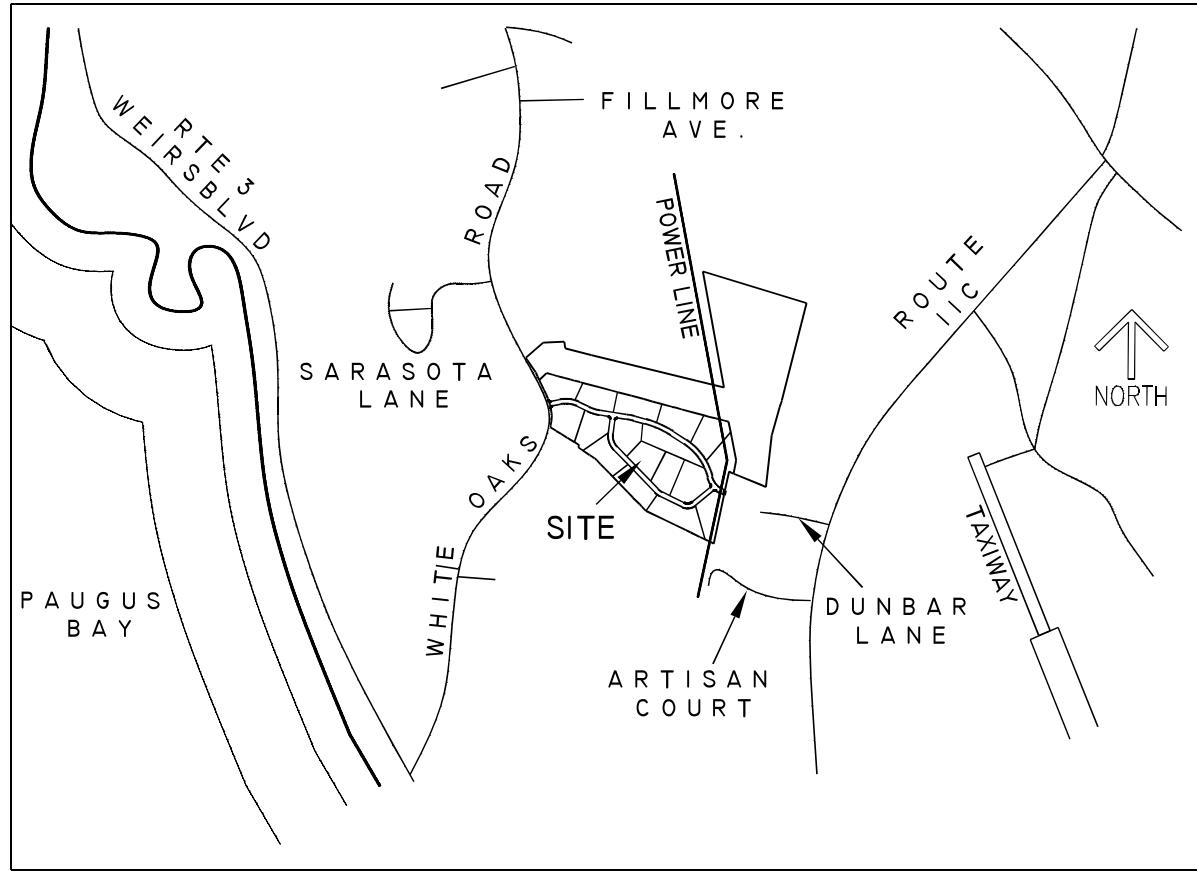
CIVIL ENGINEERS



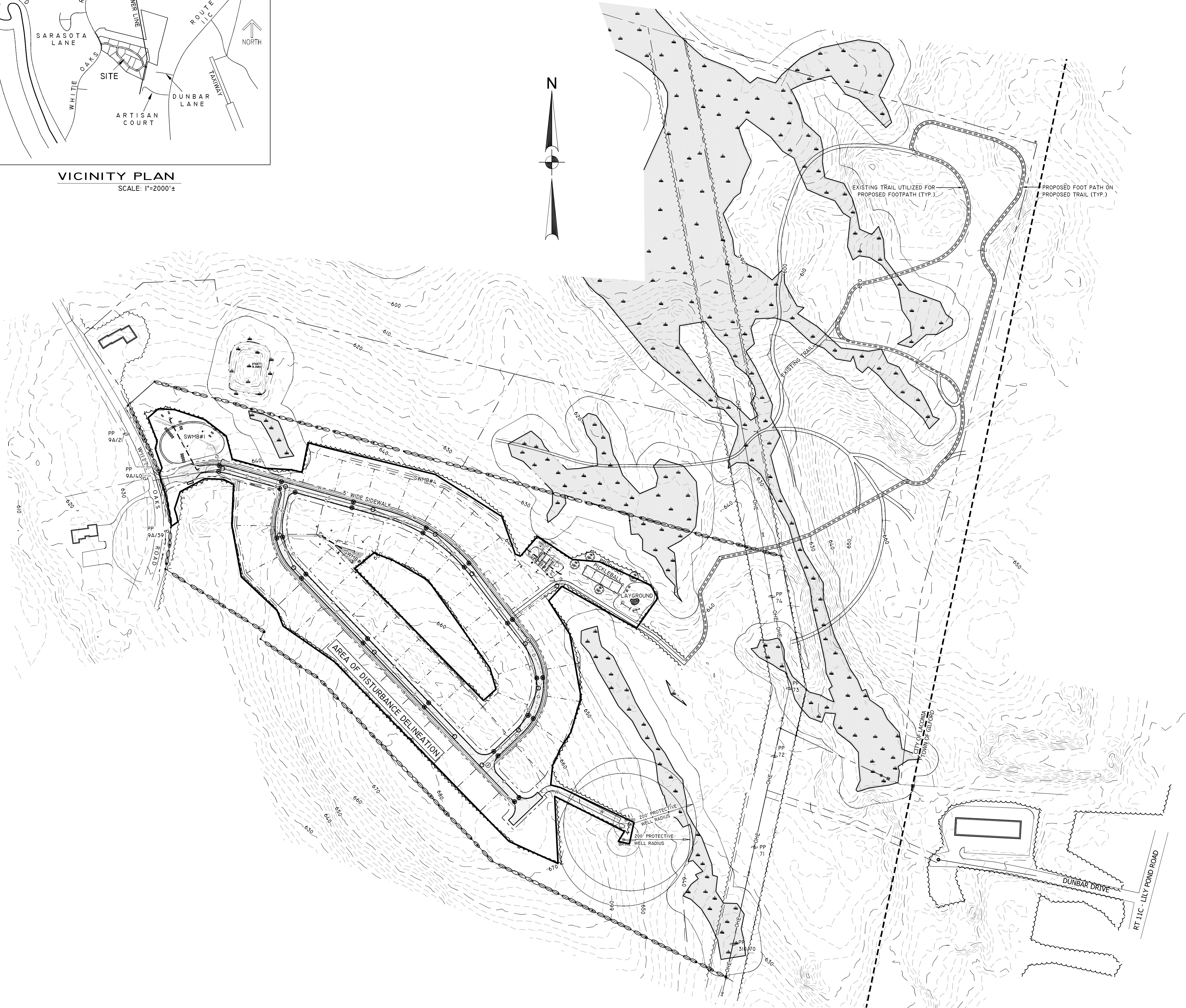
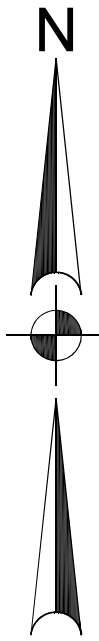
DATE: MAY 2024

JOB NO: 4770-01

REV.	DATE	DESCRIPTION	BY
1	6-25-24	REVISED PER A.O.T. COMMENTS	MJF



VICINITY PLAN
SCALE: 1"=2000'±



LADY OF THE LAKES ESTATES

DISTURBANCE AREA - AOT PERMIT

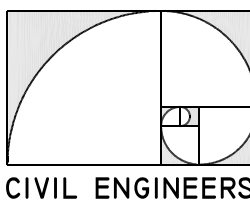
TAX MAP 235-241-4 & 223-241-6

WHITE OAKS ROAD, LACONIA NH.

PREPARED FOR:
MIKE BOUSALEH
LADY OF THE LAKES ESTATES LLC.
453 WHITE OAKS ROAD
LACONIA, NH

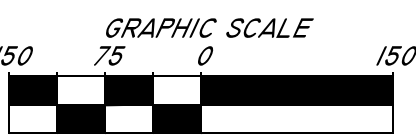
PREPARED BY:
BROWN ENGINEERING LLC

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SCALE: 1" = 150'

DATE: MARCH 2024

JOB NO: 4770-01