# PROPOSED MULTI-FAMILY DEVELOPMENT

# 823, 833 AND 0 DEMING ROAD (ROUTE 160) BERLIN, CONNECTICUT

MMI #3571-40 JUNE 22, 2020

REVISED: JULY 1, 2020 (PLANNING AND ZONING SUBMISSION)

### **GENERAL NOTES**

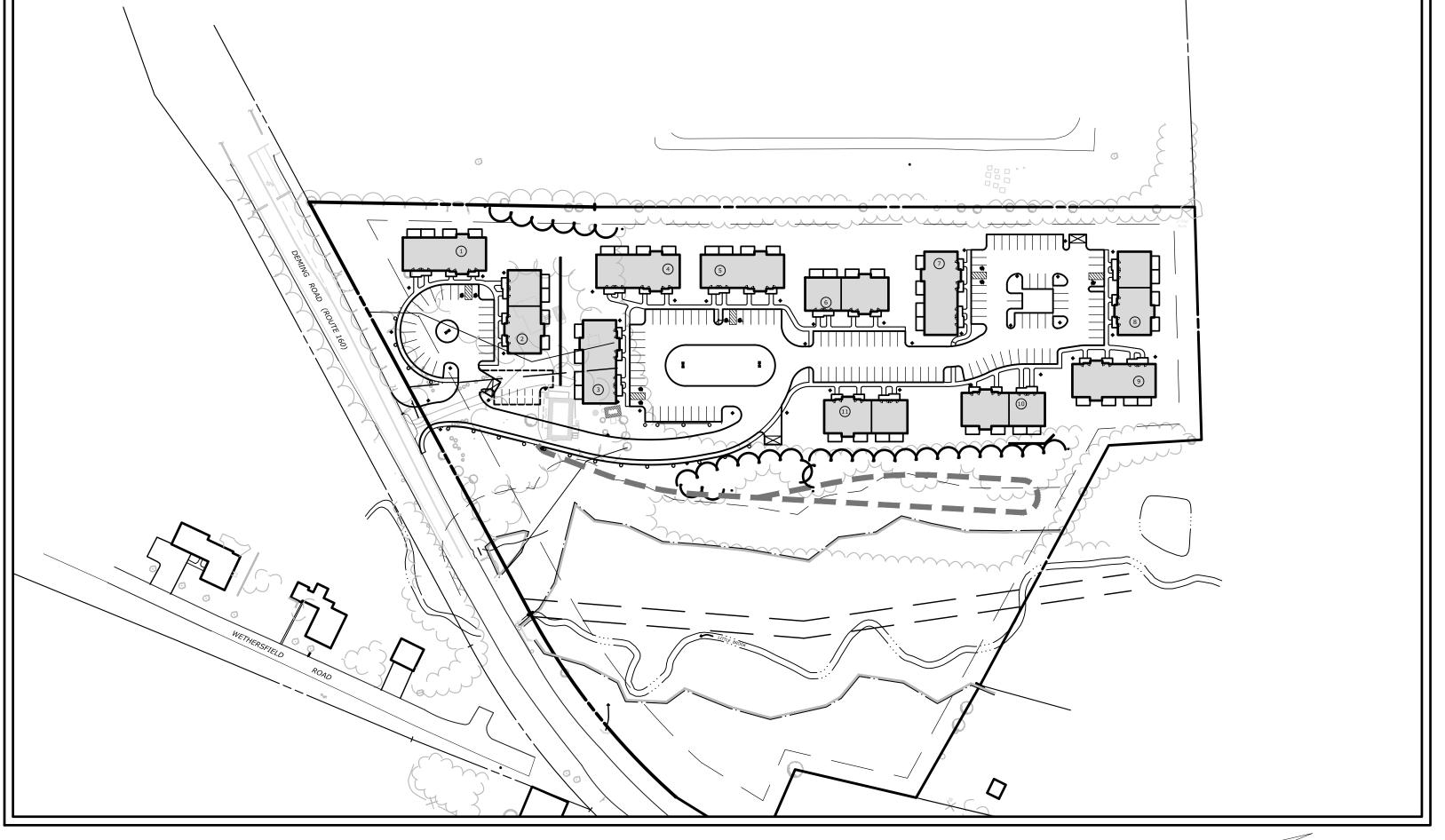
BOUNDARY AND TOPOGRAPHIC INFORMATION IS BASED UPON FIELD SURVEY CONDUCTED BY: MILONE & MACBROOM, INC., TAKEN FROM A MAP ENTITLED "PROPERTY/TOPOGRAPHIC SURVEY, PREPARED FOR METRO REALTY GROUP, DEMING ROAD, BERLIN, CONNECTICUT," AT A SCALE OF 1"=40',

- WHERE SHOWN SHOULD BE CONSIDERED APPROXIMATE. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE CONFIRMED PRIOR TO BEGINNING CONSTRUCTION. CALL "CALL BEFORE YOU DIG", 1-800-922-4455. ALL UTILITY LOCATIONS THAT DO NOT MATCH THE VERTICAL OR HORIZONTAL CONTROL SHOWN ON THE PLANS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.
- 4. ALL UTILITY SERVICES ARE TO BE UNDERGROUND. THE EXACT LOCATION, MEANS OF CONSTRUCTION, AND SIZE OF ELECTRIC, TELEPHONE, AND CABLE TELEVISION ARE TO BE DETERMINED BY THE RESPECTIVE UTILITY COMPANIES
- 6. SEDIMENT AND EROSION CONTROL MEASURES AS DEPICTED ON THESE PLANS AND DESCRIBED WITHIN THE SEDIMENT AND EROSION CONTROL NARRATIVE SHALL BE IMPLEMENTED AND MAINTAINED UNTIL PERMANENT COVER AND STABILIZATION IS ESTABLISHED. ALL SEDIMENT AND EROSION
- 7. ALL DISTURBED AREAS SHALL RECEIVE A MINIMUM OF 6" TOPSOIL, AND BE SEEDED WITH GRASS, AS SHOWN ON THE PLANS.
- 9. ALL CONSTRUCTION MATERIALS AND METHODS SHALL CONFORM TO THE TOWN OF BERLIN REQUIREMENTS AND TO THE APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, AND INCIDENTAL
- 10. THE PLANS REQUIRE A CONTRACTOR'S WORKING KNOWLEDGE OF LOCAL, MUNICIPAL, WATER AUTHORITY, AND STATE CODES FOR UTILITY SYSTEMS. ANY CONFLICTS BETWEEN MATERIALS AND LOCATIONS SHOWN, AND LOCAL REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE EXECUTION OF WORK. THE ENGINEER WILL NOT BE HELD LIABLE FOR COSTS INCURRED TO IMPLEMENT OR CORRECT WORK WHICH DOES NOT CONFORM TO LOCAL CODE.
- 11. ALL FUEL, OIL, PAINT, OR OTHER HAZARDOUS MATERIALS USED DURING CONSTRUCTION SHOULD BE STORED IN A SECONDARY CONTAINER AND
- 12. COMPLIANCE WITH THE PERMIT CONDITIONS IS THE RESPONSIBILITY OF BOTH THE CONTRACTOR AND THE PERMITTEE.

| ZONING DATA TABLE             |  |  |  |  |  |  |
|-------------------------------|--|--|--|--|--|--|
| WORKFORCE HOUSING DEVELOPMENT |  |  |  |  |  |  |
| REQUIRED                      | PROPOSED   |  |  |  |  |  |
| 11-13 ACRES                   | 11.48 ACRES  |  |  |  |  |  |
| 900 FEET MIN.                 | 940 FEET   |  |  |  |  |  |
| 50 FEET MIN.                  | 58 FEET  |  |  |  |  |  |
| 20 FEET MIN.                  | 34 FEET  |  |  |  |  |  |
| 25 FEET MIN.                  | 50 FEET  |  |  |  |  |  |
| 15 FEET MIN.                  | 16 FEET  |  |  |  |  |  |
| 20 FEET MIN.                  | 32 FEET  |  |  |  |  |  |
| 15 FEET MIN.                  | 107 FEET   |  |  |  |  |  |
| 35 FEET (2 STORIES)<br>MAX.   | 2 STORIES  |  |  |  |  |  |
| 8 UNITS/ACRE MAX.             | 7.7 UNITS/ACRE   |  |  |  |  |  |
| 20 FEET MIN.                  | 24 FEET  |  |  |  |  |  |
| 25% MAX.                      | 9%   |  |  |  |  |  |
| 60% MAX.                      | 29%  |  |  |  |  |  |
| 10 FEET MIN.                  | 12 FEET  |  |  |  |  |  |
| 24 FEET MIN.                  | 24 FEET  |  |  |  |  |  |
| 10,000 SQUARE FEET            | 11,380 SQUARE FEET   |  |  |  |  |  |
|                               | REQUIRED  11-13 ACRES  900 FEET MIN.  50 FEET MIN.  20 FEET MIN.  15 FEET MIN.  20 FEET MIN.  35 FEET MIN.  35 FEET (2 STORIES)  MAX.  8 UNITS/ACRE MAX.  20 FEET MIN.  25% MAX.  60% MAX.  10 FEET MIN. |  |  |  |  |  |

<sup>\*</sup>PER PROPOSED TEXT AMENDMENT

| PARKING DATA                               |          |          |  |  |
|--|----------|----------|--|--|
|  | REQUIRED | PROPOSED |  |  |
| STANDARD SPACES                            |          | 137      |  |  |
| HANDICAP/ VAN ACCESSIBLE PARKING<br>SPACES | 9        | 9        |  |  |
| TOTAL PARKING SPACES                       | 132**    | 146      |  |  |
| **88 UNITS X 1.5 SPACES/UNIT=132 SPACES    |          |          |  |  |



## **PROJECT SITE VICINITY MAP:**







# PREPARED FOR:

METRO REALTY 6 EXECUTIVE DRIVE, SUITE 100 FARMINGTON, CT 06032

# **LOCATION MAP: LEGEND**

| EXISTING        | LLOLIND                    | PROPOSED        |
|-----------------|----------------------------|-----------------|
|                 | STREET LINE                |                 |
|                 | PROPERTY LINE              |                 |
|                 | SETBACK LINE               |                 |
| 70 —            | MAJOR CONTOUR              |                 |
| 68              | MINOR CONTOUR              | 98              |
| × 70.5          | SPOT GRADE                 | <b>+</b> 70.5   |
| . ~ ~ ~ ~ .     | TREE LINE                  |                 |
|                 | TREE/ SHRUB                | (TG) (TG)       |
|                 | STONEWALL                  | tumb (          |
| <b>\$</b>       | SITE LIGHT                 | •               |
| 470             | HYDRANT                    | ≻¥0             |
| o <sub>WV</sub> | WATER VALVE                | ° <sub>WV</sub> |
| ° <sub>GV</sub> | GAS VALVE                  | ° <sub>GV</sub> |
|                 | CATCH BASIN                |                 |
| 0               | MANHOLE/YARD DRAIN         |                 |
|                 | SANITARY SEWER W/MANHOLE   |                 |
|                 | STORM DRAIN                |                 |
| w               | WATER MAIN                 | w               |
| G               | GAS MAIN                   | G               |
| E               | ELECTRIC LINE              | Е               |
| ETC             | ELECTRIC, TELEPHONE, CABLE | ETC             |
| P               | UTILITY POLE               | P               |
|                 | TRAFFIC SIGN               |                 |
| 0               | IRON PIPE                  | •               |
| •               | MONUMENT                   | •               |
|                 | EDGE OF PAVEMENT W/CURB    |                 |
| 000000          | GUARD RAIL                 | . • • • • • •   |
| <del></del>     | CHAIN LINK FENCE           | <b>──</b>       |
|                 | WATERCOURSE                |                 |
|                 | WETLAND                    |                 |
|                 |                            | •               |

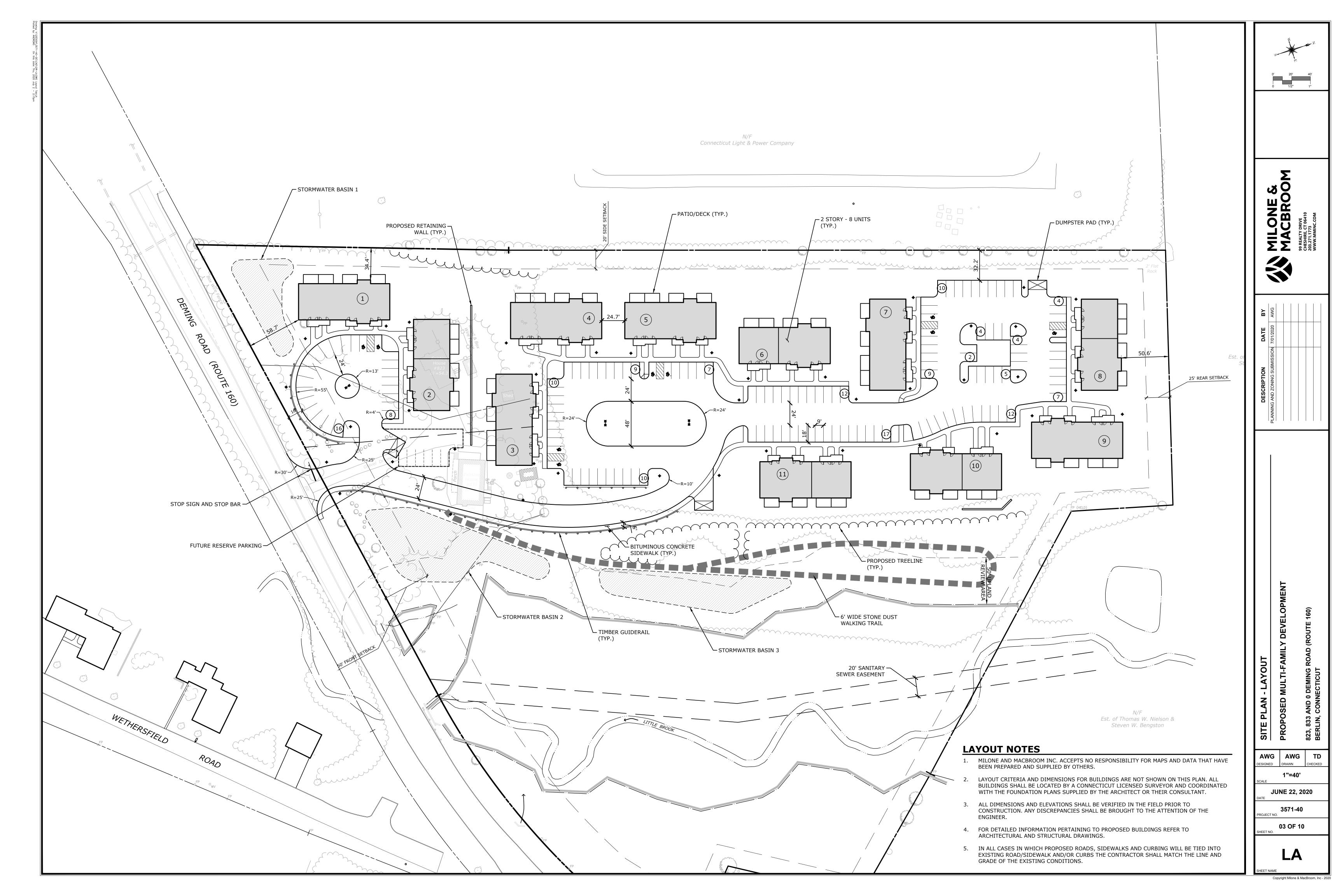
# LIST OF DRAWINGS

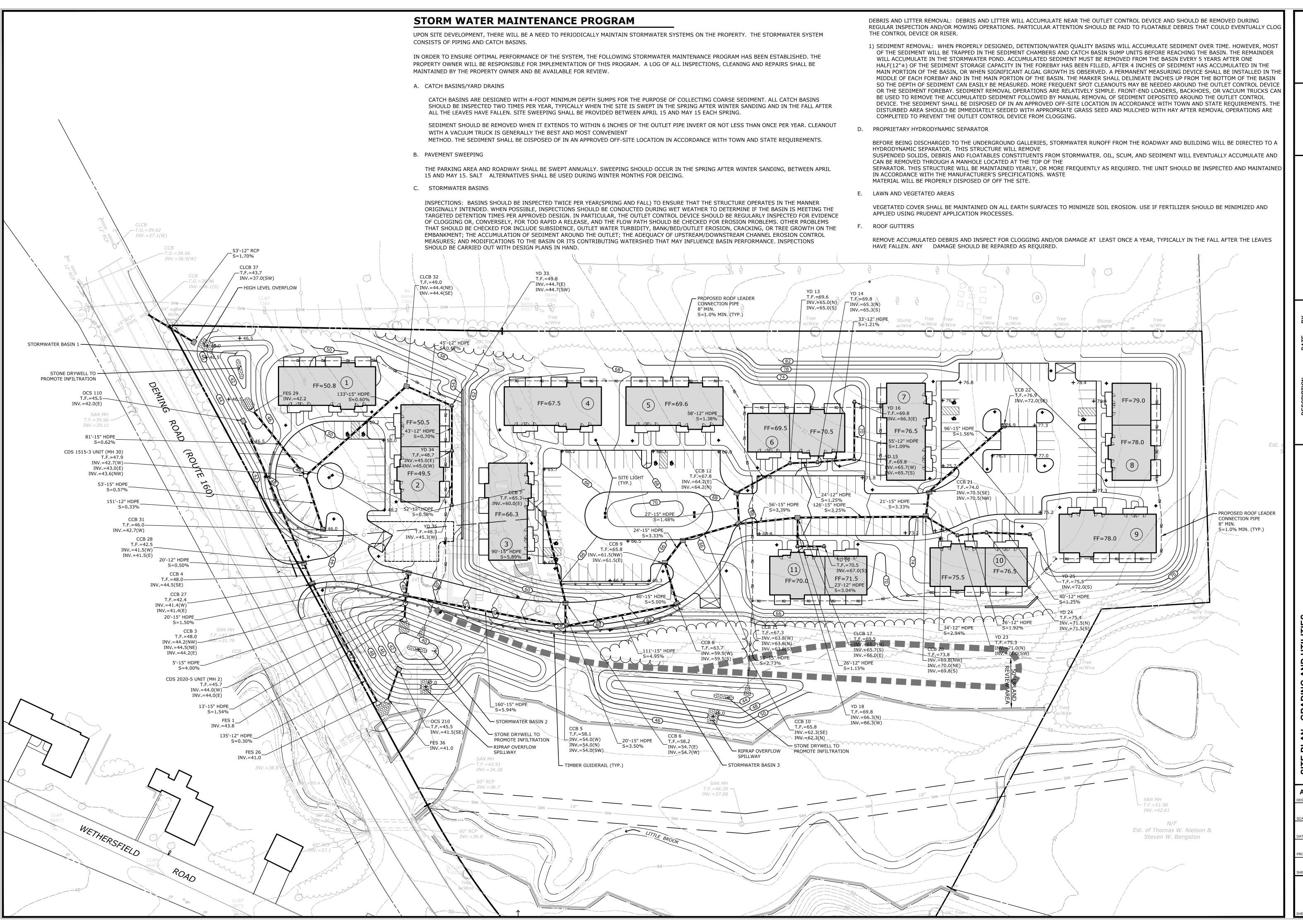
| AILS |
|------|
|      |
|      |
|      |
|      |
|      |

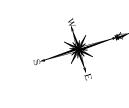












Σ

MILONE & MACBRO 6 99 REALTY DRIVE CHESHIRE, CT 06410 203.271.1773 WWWW.MMINC.COM

PLANNING AND ZONING SUBMISSION 7/01/2020 AWG

POSED MULTI-FAMILY DEVELOPMENT

AWG AWG TD
DESIGNED DRAWN CHECKED

1"=40'
SCALE

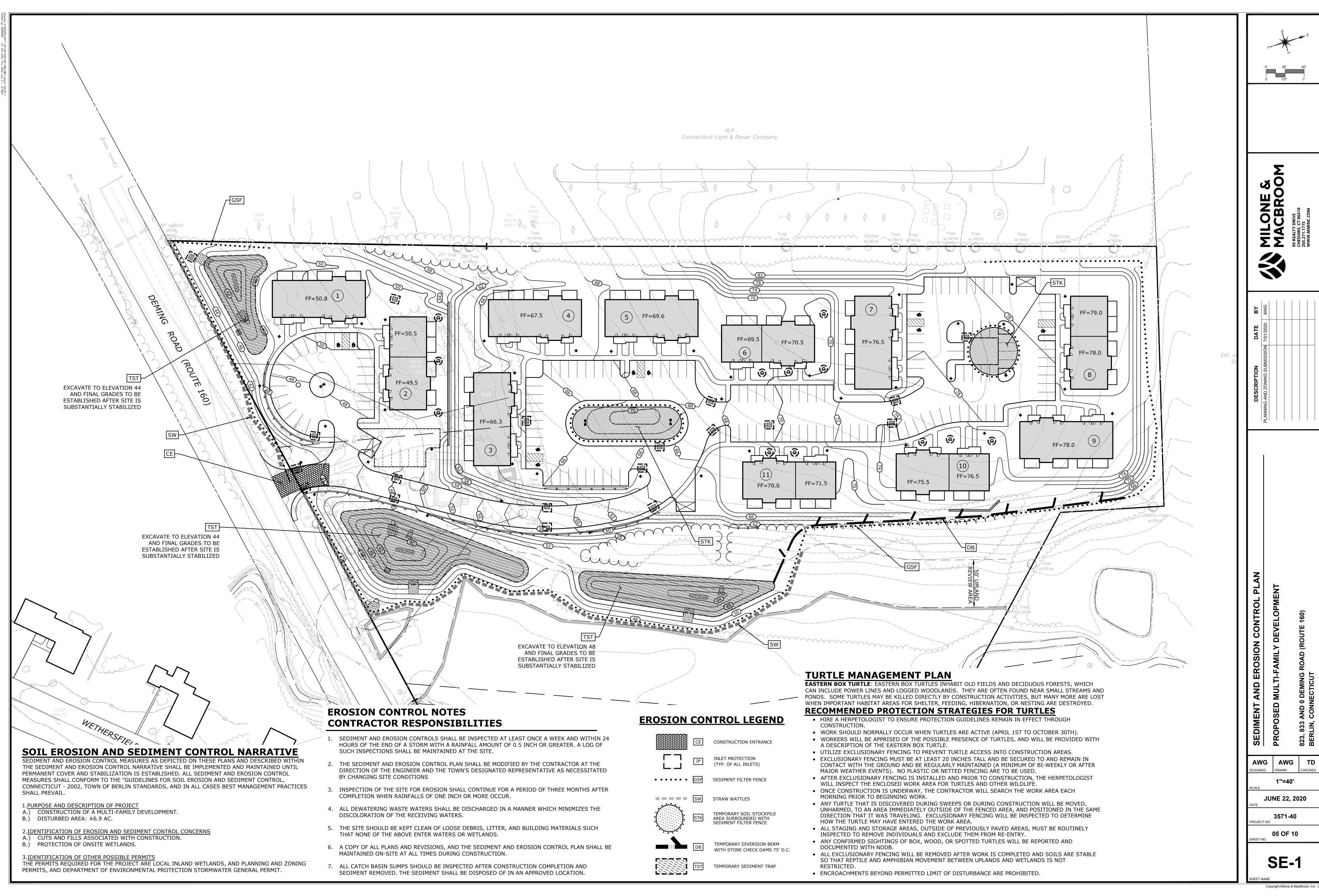
JUNE 22, 2020
DATE

3571-40
PROJECT NO.

04 OF 10

GU

Copyright Milone & MacBroom, Inc.



THESE GUIDELINES SHALL APPLY TO ALL WORK CONSISTING OF ANY AND ALL TEMPORARY AND/OR PERMANENT MEASURES TO CONTROL WATER POLLUTION AND SOIL EROSION, AS MAY BE REQUIRED, DURING THE CONSTRUCTION OF THE PROJECT. IN GENERAL, ALL CONSTRUCTION ACTIVITIES SHALL PROCEED IN SUCH A MANNER SO AS NOT TO POLLUTE ANY WETLANDS, WATERCOURSE, WATERBODY, AND CONDUIT CARRYING WATER, ETC. THE CONTRACTOR SHALL LIMIT, INSOFAR AS POSSIBLE, THE SURFACE AREA OF EARTH MATERIALS EXPOSED BY CONSTRUCTION METHODS AND IMMEDIATELY PROVIDE PERMANENT AND TEMPORARY POLLUTION CONTROL MEASURES TO PREVENT

CONTAMINATION OF ADJACENT WETLANDS, WATERCOURSES, AND WATERBODIES, AND TO PREVENT, INSOFAR AS POSSIBLE, EROSION ON THE SITE.

#### GENERAL:

- 1. THE RESHAPING OF THE GROUND SURFACE BY EXCAVATION AND FILLING OR A COMBINATION OF BOTH, TO OBTAIN PLANNED GRADES, SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING CRITERIA:
- a. THE CUT FACE OF EARTH EXCAVATION SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1). b. THE PERMANENT EXPOSED FACES OF FILLS SHALL NOT BE STEEPER THAN TWO
- HORIZONTAL TO ONE VERTICAL (2:1). c. THE CUT FACE OF ROCK EXCAVATION SHALL NOT BE STEEPER THAN ONE
- HORIZONTAL TO FOUR VERTICAL (1:4). d. PROVISION SHOULD BE MADE TO CONDUCT SURFACE WATER SAFELY TO STORM DRAINS TO PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL
- e. EXCAVATIONS SHOULD NOT BE MADE SO CLOSE TO PROPERTY LINES AS TO ENDANGER ADJOINING PROPERTY WITHOUT PROTECTING SUCH PROPERTY FROM
- EROSION, SLIDING, SETTLING, OR CRACKING NO FILL SHOULD BE PLACED WHERE IT WILL SLIDE OR WASH UPON THE PREMISES OF ANOTHER OWNER OR UPON ADJACENT WETLANDS,
- WATERCOURSES, OR WATERBODIES. g. PRIOR TO ANY REGRADING, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PLACED AT THE ENTRANCE TO THE WORK AREA IN ORDER TO REDUCE MUD AND OTHER SEDIMENTS FROM LEAVING THE SITE.

#### GENERAL:

- TOPSOIL SHALL BE SPREAD OVER ALL EXPOSED AREAS IN ORDER TO PROVIDE A SOIL MEDIUM HAVING FAVORABLE CHARACTERISTICS FOR THE ESTABLISHMENT, GROWTH,
- AND MAINTENANCE OF VEGETATION. UPON ATTAINING FINAL SUBGRADES, SCARIFY SURFACE TO PROVIDE A GOOD BOND WITH TOPSOIL
- REMOVE ALL LARGE STONES, TREE LIMBS, ROOTS AND CONSTRUCTION DEBRIS. APPLY SOIL AMENDMENTS AS FOLLOWS:
  - LIME: ACCORDING TO SOIL TEST OR AT THE RATE OF 2 TONS PER ACRE. ROCK DUST: ACCORDING TO SOIL TEST OR AT THE RATE OF 2 TONS PER ACRE

#### MATERIAL:

- TOPSOIL SHOULD HAVE PHYSICAL, CHEMICAL, AND BIOLOGICAL CHARACTERISTICS FAVORABLE TO THE GROWTH OF PLANTS.
- TOPSOIL SHOULD HAVE A SANDY OR LOAMY TEXTURE. TOPSOIL SHOULD BE RELATIVELY FREE OF SUBSOIL MATERIAL AND MUST BE FREE OF LARGE STONES, LUMPS OF SOIL, ROOTS, TREE LIMBS, TRASH, OR CONSTRUCTION DEBRIS. IT SHOULD BE FREE OF ROOTS OR RHIZOMES SUCH AS THISTLE, NUTGRASS, AND OUACKGRASS.
- AN ORGANIC MATTER CONTENT OF SIX PERCENT (6%) IS REQUIRED. AVOID LIGHT COLORED SUBSOIL MATERIAL.
- SOLUBLE SALT CONTENT OF LESS THAN 400 PPM IS REQUIRED. THE TOPSOIL SHALL BE WARRANTED BY SELLER TO BE FREE OF DETECTABLE RESIDUES OF CHEMICAL PESTICIDES, HERBICIDES, PETROLEUM PRODUCTS, OR OTHER UNSUITABLE TOXINS.

#### APPLICATION:

AVOID SPREADING WHEN TOPSOIL IS WET OR FROZEN. SPREAD TOPSOIL UNIFORMLY TO A DEPTH OF AT LEAST FOUR INCHES (4"), OR TO THE

DEPTH SHOWN ON THE LANDSCAPING PLANS.

**TEMPORARY VEGETATIVE COVER** 

TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED ON ALL UNPROTECTED AREAS THAT PRODUCE SEDIMENT, AREAS WHERE FINAL GRADING HAS BEEN COMPLETED, AND AREAS WHERE THE ESTIMATED PERIOD OF BARE SOIL EXPOSURE IS LESS THAN 12 MONTHS. TEMPORARY VEGETATIVE COVER SHALL BE APPLIED IF AREAS WILL NOT BE PERMANENTLY SEEDED BY SEPTEMBER 1.

#### GENERAL

- INSTALL REQUIRED SURFACE WATER CONTROL MEASURES. REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA. APPLY SOIL AMENDMENTS AS FOLLOWS:
- LIME: ACCORDING TO SOIL TEST OR AT THE RATE OF 1 TONS PER ACRE. ROCK DUST: ACCORDING TO SOIL TEST OR AT THE RATE OF 1 TONS PER ACRE UNLESS HYDROSEEDED, WORK IN LIME TO A DEPTH OF 4 INCHES WITH A DISK OR
- ANY SUITABLE EQUIPMENT. DO NOT WORK FINISHED COMPOST INTO THE SOIL -APPLY IT EVENLY TO SOIL SURFACE AS A SEED BED. TILLAGE SHOULD ACHIEVE A REASONABLY UNIFORM LOOSE SEEDBED. WORK ON CONTOUR IF SITE IS SLOPING.

#### SITE PREPARATION:

- SELECT APPROPRIATE SPECIES FOR THE SITUATION. NOTE RATES AND SEEDING DATES (SEE VEGETATIVE COVER SELECTION & MULCHING)
- APPLY SEED UNIFORMLY ACCORDING TO THE RATE INDICATED BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
- UNLESS HYDROSEEDED, COVER RYEGRASS SEEDS WITH NOT MORE THAN 1/4 INCH OF SOIL USING SUITABLE EQUIPMENT.

**EROSION CONTROL** 

MEASURE

CONSTRUCTION ENTRANCE (CE)

TEMPORARY SEDIMENT TRAP (TST)

TEMPORARY DIVERSION BERM/SWAL

SILT FENCE (SF) AND

STRAW WATTLES (SW)

INLET PROTECTION (IP)

(RELATED: IP, STK)

MULCH IMMEDIATELY AFTER SEEDING IF REOUIRED. (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION BELOW.) APPLY STRAW AND ANCHOR TO SLOPES GREATER THAN 3% OR WHERE NEEDED.

#### PERMANENT VEGETATIVE COVER

PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED AS VARIOUS SECTIONS OF THE PROJECT ARE COMPLETED IN ORDER TO STABILIZE THE SOIL, REDUCE DOWNSTREAM DAMAGE FROM SEDIMENT AND RUNOFF, AND TO ENHANCE THE AESTHETIC NATURE OF THE SITE. IT WILL BE APPLIED TO ALL CONSTRUCTION AREAS SUBJECT TO EROSION WHERE FINAL GRADING HAS BEEN COMPLETED AND A PERMANENT COVER IS NEEDED.

#### SITE PREPARATION:

- INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
- REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA. PERFORM ALL PLANTING OPERATIONS PARALLEL TO THE CONTOURS OF THE SLOPE. APPLY TOPSOIL AS INDICATED ELSEWHERE HEREIN.
- APPLY SOIL AMENDMENTS AS FOLLOWS: LIME: ACCORDING TO SOIL TEST OR AT THE RATE OF 1 TONS PER ACRE.
- ROCK DUST: ACCORDING TO SOIL TEST OR AT THE RATE OF 1 TONS PER ACRE 6. UNLESS HYDROSEEDED, WORK IN LIME TO A DEPTH OF 4 INCHES WITH A DISK OR ANY SUITABLE EQUIPMENT. DO NOT WORK FINISHED COMPOST

#### VEGETATED COVER SELECTION AND MULCHING

#### TEMPORARY VEGETATIVE COVER:

PERENNIAL RYEGRASS 5 LBS./1,000 SQ.FT. (LOLIUM PERENNE) DUTCH WHITE CLOVER (TRIFOLIUM REPENS) 1/4 LBS PER 1000 SF. OR 6LBS/AC.

#### \* PERMANENT VEGETATIVE COVER:

#### DUTCH WHITE CLOVER 30% BARON KENTUCKY BLUEGRASS 30% JAMESTOWN II CHEWINGS FESCUE 20%

PALMER PERENNIAL RYEGRASS 20%

NEW ENGLAND EROSION CONTROL/R3ESOTRATION MIX FOR MOIST SITES AT 1/8 LB PER 1000 S.F. FOR 5 LBS/AC.

#### NEW ENGLAND SHOWY WILD FLOW MIX AT 1/16 LB PER 1000 S.F. OR 2 LBS/AC

\* LOFTS - "TRIPLEX GENERAL" MIX OR APPROVED EQUAL. RECOMMENDED RATE/TIME

#### SPRING SEEDING: 4/1 to 5/31 FALL SEEDING: 8/16 to 10/15

#### TEMPORARY MULCHING:

STRAY 70-90 LBS./1,000 SQ.FT. (TEMPORARY VEGETATIVE AREAS) WOOD FIBER IN HYDROMULCH SLURRY 25-50 LBS./1,000 SQ. FT.

- SMOOTH AND FIRM SEEDBED WITH CULTIPACKER OR OTHER SIMILAR EQUIPMENT PRIOR TO SEEDING (EXCEPT WHEN HYDROSEEDING).
- SELECT ADAPTED SEED MIXTURE FOR THE SPECIFIC SITUATION. NOTE RATES AND THE SEEDING DATES (SEE VEGETATIVE COVER SELECTION & MULCHING SPEC.
- 3. APPLY SEED UNIFORMLY ACCORDING TO RATE INDICATED, BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
- 4. COVER GRASS AND LEGUME SEED WITH NOT MORE THAN 1/4 INCH OF SOIL WITH SUITABLE EQUIPMENT (EXCEPT WHEN HYDROSEEDING). MULCH IMMEDIATELY AFTER SEEDING, IF REQUIRED, ACCORDING TO TEMPORARY
- MULCHING SPECIFICATIONS. (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION BELOW). USE PROPER INOCULAT ON ALL LEGUME SEEDLINGS, USE FOUR (4) TIMES NORMAL RATES WHEN HYDROSEEDING.
- USE SOD WHERE THERE IS A HEAVY CONCENTRATION OF WATER AND IN CRITICAL AREAS WHERE IT IS IMPORTANT TO GET A QUICK VEGETATIVE COVER TO PREVENT EROSION.

# MAINTENANCE:

1. TEST FOR SOIL ACIDITY EVERY THREE (3) YEARS AND LIME AS REQUIRED.

#### GENERAL:

1. TEMPORARY PERVIOUS BARRIERS USING BALES OF HAY OR STRAW, HELD IN PLACE WITH STAKES DRIVEN THROUGH THE BALES AND INTO THE GROUND OR GEOTEXTILE FABRIC FASTENED TO A FENCE POST AND BURIED INTO THE GROUND, SHALL BE INSTALLED AND MAINTAINED AS REQUIRED TO CHECK EROSION AND REDUCE SEDIMENTATION.

#### CONSTRUCTION:

CONTROL OBJECTIVE

· INTERCEPT, AND REDIRECT/DETAIN

SMALL AMOUNTS OF SEDIMENT FROM

DECREASE VELOCITY OF SHEET FLOW.

PROTECT SENSITIVE SLOPES OR SOILS

REDUCE THE TRACKING OF SEDIMENT OFF-SITE

PROHIBIT SILT IN CONSTRUCTION-RELATED RUNOF

DETAIN SEDIMENT-LADEN RUNOFF FROM SMALL

DISTURBED AREAS LONG ENOUGH TO ALLOW A

MAJORITY OF THE SEDIMENT TO SETTLE OUT.

MINIMIZE VELOCITY AND CONCENTRATION OF

SHEET FLOW ACROSS CONSTRUCTION SITE TO A

DIVERT WATER ORIGINATING FROM UNDISTURBED

SEDIMENT TRAPPING FACILITY.

AREA AWAY FROM CONSTRUCTION.

FROM ENTERING STORM DRAINAGE SYSTEM.

SMALL DISTURBED AREAS.

ONTO PAVED SURFACES.

FROM EXCESSIVE WATER FLOW.

- BALES SHOULD BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE
- EACH BALE SHALL BE EMBEDDED INTO THE SOIL A MINIMUM OF FOUR (4") INCHES. BALES SHALL BE SECURELY ANCHORED IN PLACE BY WOOD STAKES OR REINFORCEMENT BARS DRIVEN THROUGH THE BALES AND INTO THE GROUND. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD THE PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
- 4. GEOTEXTILE FABRIC SHALL BE SECURELY ANCHORED AT THE TOP OF A THREE FOOT (3') HIGH FENCE AND BURIED A MINIMUM OF FOUR INCHES (4") TO THE SOIL. SEAMS BETWEEN SECTIONS OF FILTER FABRIC SHALL OVERLAP A MINIMUM OF TWO FEET (2').

#### INSTALLATION AND MAINTENANCE:

- BALED HAY EROSION BARRIERS SHALL BE INSTALLED AT ALL STORM SEWER INLETS. BALED HAY EROSION BARRIERS AND GEOTEXTILE FENCE SHALL BE INSTALLED AT THE LOCATION INDICATED ON THE PLAN AND IN ADDITIONAL AREAS AS MAY BE
- DEEMED APPROPRIATE DURING CONSTRUCTION. 3. ALL EROSION CHECKS SHALL BE MAINTAINED UNTIL ADJACENT AREAS ARE
- INSPECTION SHALL BE FREQUENT (AT MINIMUM MONTHLY AND BEFORE AND AFTER HEAVY RAIN) AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED. EROSION CHECKS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORMWATER FLOW OR DRAINAGE.

OPERATIONS IF USED FOR DEWATERING OPERATIONS.

IMMEDIATELY REMOVED.

AND HAY BALES PER NOTED ABOVE.

REACHES ½ OF THE REQUIRED WET STORAGE.

AND ANY OTHER ASSOCIATED MEASURES WITHIN 24 HOURS.

EROSION CONTROL MAINTENANCE INTERVALS

INSPECTION/MAINTENANCE

NSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH

A RAINFALL OF 0.5 INCHES OR MORE. ACCUMULATED SEDIMENT MUST BE REMOVED ONCE

ITS DEPTH IS EQUAL TO ½ THE TRENCH HEIGHT. INSPECT FREQUENTLY DURING PUMPING

PERIODIC ADDITION OF STONE, OR LENGTHENING OF ENTRANCE MAY BE REQUIRED AS

INSPECT AFTER ANY RAIN EVENT. IF FILTER BAG INSIDE CATCH BASIN CONTAINS MORE

THAN 6" OF SEDIMENT, REMOVE SEDIMENT FROM BAG. CHECK SURROUNDING SILT FENCE

NSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH

A RAINFALL OF 0.5 INCHES OR MORE. STONE OUTLET SHOULD BE AT LEAST 1 FOOT

BELOW CREST OF EMBANKMENT. SEDIMENT MUST BE REMOVED WHEN ACCUMULATION

WHEN LOCATED WITHIN CLOSE PROXIMITY TO ONGOING CONSTRUCTION ACTIVITIES,

THERWISE INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A

STORM WITH A RAINFALL OF 0.5 INCHES OR MORE. REPAIR THE TEMPORARY MEASURE

INSPECT AT THE END OF EACH WORK DAY AND IMMEDIATELY REPAIR DAMAGES.

CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO

PAVED SURFACES AS A RESULT OF INEFFICIENCY OF CONSTRUCTION ENTRANCE SHALL BE

INSPECT AT THE END OF EACH WORK DAY AND IMMEDIATELY REPAIR DAMAGES.

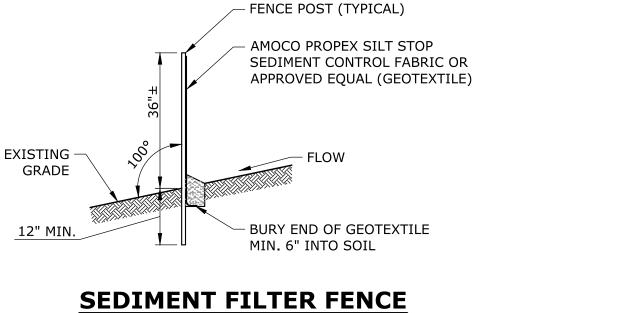
# Straw Wattle Installation Guide Typical Wattle Spacing based on Slope Gradient **Entrenchment Detail**

- BEGIN AT THE LOCATION WHERE THE WATTLE IS TO BE INSTALLED BY EXCAVATING A 2-3" (5-7.5 CM) DEEP X 9" (22.9 CM) WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UP-SLOPE FROM THE ANCHOR TRENCH.
- PLACE THE WATTLE IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE, COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE WATTLE ON THE UPHILL SIDE, ADJACENT WATTLES SHOULD TIGHTLY ABUT.
- SECURE THE WATTLE WITH 18-24" (45.7-61 CM) STAKES EVERY 3-4" (0.9 1.2 M) AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE WATTLE LEAVING AT LEAST 2-3" (5-7.5 CM) OF STAKE EXTENDING ABOVE THE WATTLE. STAKES SHOULD BE DRIVEN PERPENDICULAR TO SLOPE FACE. North American Green Straw Wattles are a Best Management Practice (BMP) that offers an effective and economical alternative to silt fence and straw bales

Guidelines are provided to assist in design, installation, and structure specing. The guidelines may require modification due to variation in soil type, rainfall intensity or duration, and amount of runoff affecting the application site. To maximize sediment containment with the Straw Wattle, place the initial structure at the top/crest of the slope iff significant runoff is expected from above. If no runoff from above is expected, the initial Straw Wattle can be installed at the appropriate distance downhill from the top/crest of the slope. The final structure should be installed at or just beyond the bottom/toe of the slope. Wattles should be installed perpendicular to the primary direction of overland flow. Straw Wattles are a temporary sediment control device and are not intended to replace rolled erosion control products (RECPs) or hydraulic erosion control products (HECPs). If vegetation is desired for permanent erosion control, North American Green recommends that RECPs or HECPs be used to provide effective immediate erosion control until vegetation is established. Straw Wattles may be used in conjunction with blankets, mats, and mulches as supplemental sediment and runoff control for these applications. Like all sediment control devices, the effectiveness of the Straw Wattle is dependent on

For additional installation assistance, please contact North American Green's Technical Services Department at 1 -800-772-2040 14649 Highway 41 North, Evansville, Indiana 47725 1-800-772-2040 <u>www.nagreen.com</u> Rev. 1/2008

# **STRAW WATTLE (SW)**



REMOVAL

SILT FENCE MAY BE REMOVED AFTER

UPHILL AND SENSITIVE AREAS HAVE

CONSTRUCTION ENTRANCE MAY BE

REMOVED ONCE THE SITE HAS BEEN

PERMANENTLY STABILIZED, AND ALL

BEEN PERMANENTLY PAVED.

INLET PROTECTION MAY BE

PERMANENTLY PAVED.

OTHER SECTIONS OF ROADWAY HAVE

REMOVED ONCE THE SITE HAS BEEN

PERMANENTLY STABILIZED, AND ALL

SECTIONS OF ROADWAY HAVE BEEN

TST MAY BE REMOVED ONCE THE

PERMANENTLY STABILIZED.

DRAINAGE AREA HAS BEEN

PERMANENTI Y STABII 17ED

CONTRIBUTING DRAINAGE AREA IS

TEMPORARY DIVERSIONS MAY BE

CEASED AND THE CONTRIBUTING

REMOVED ONCE CONSTRUCTION HAS

BEEN PERMANENTLY STABILIZED.

FAILURE INDICATORS

PHYSICAL DAMAGE OR DECOMPOSITION

**CAPTURE** 

- REPETITIVE FAILURE

- EVIDENCE OF OVERTOPPED OR UNDERCUT

- EVIDENCE OF SIGNIFICANT FLOWS EVADING

- SEDIMENT IN ROADWAY ADJACENT TO SITE

FAILED HAY BALES / SILT FENCE

DRAINAGE SYSTEM OUTFLOW.

· OVERTOPPING EVIDENCE

TURBID WATER

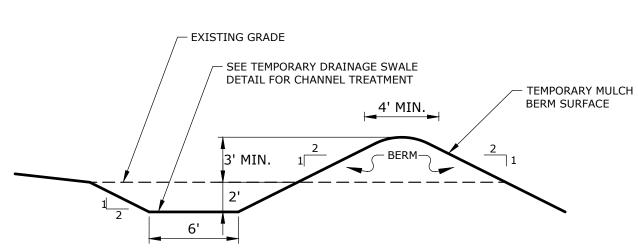
PHYSICAL DAMAGE

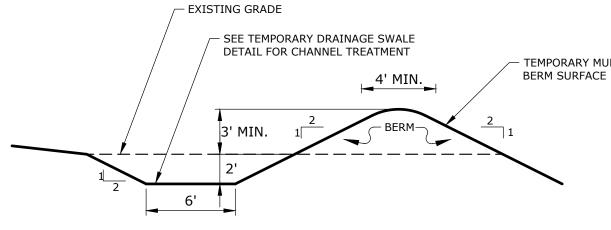
REPETITIVE FAILURE

- SIGNIFICANT SILT PRESENCE IN STORM

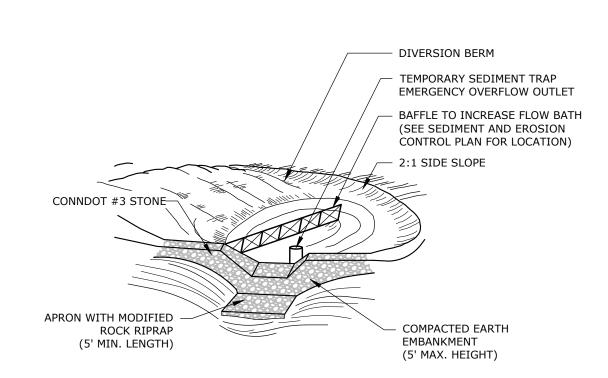
EXCESSIVE SEDIMENT ACCUMULATION

- EXCESSIVE SCOURING/EROSION

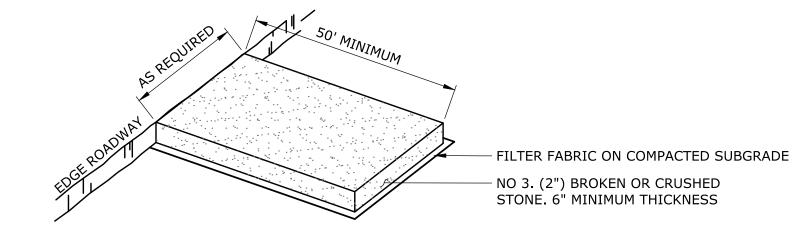




**TEMPORARY DIVERSION BERM/SWALE (DB)** 

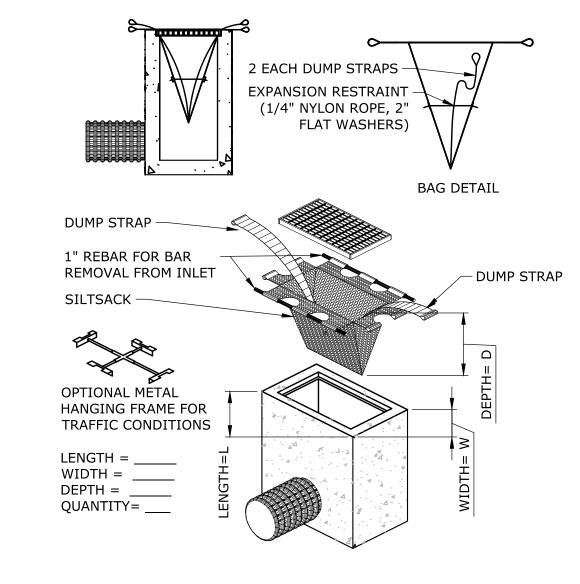


**TEMPORARY SEDIMENT TRAP (TST)** 

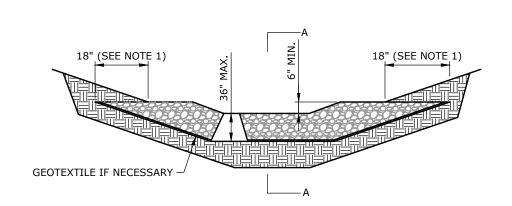


1. CONSTRUCTION ENTRANCE PAD SHALL BE INSTALLED AND MAINTAINED DURING OPERATIONS WHICH GENERATE VEHICULAR TRACKING OF MUD.

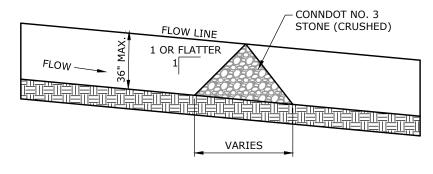
# **CONSTRUCTION ENTRANCE PAD**



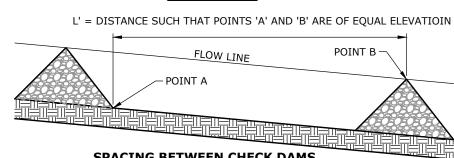
# **INLET SEDIMENT CONTROL DEVICE**



#### **STONE CHECK DAM UPSTREAM**



#### **SECTION A-A**



#### SPACING BETWEEN CHECK DAMS

- 1. KEY STONE INTO THE DITCH BANKS AND EXTEND INTO THE ABUTMENTS A MINIMUM OF 18" TO PREVENT FLOW FROM FLANKING THE CHECK DAM.
- 2. THE MINIMUM DESIGN CAPACITY SHALL CONVEY A 2 YEAR-24 HOUR PEAK FLOW.
- STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN ON THE PLAN. 4. SET SPACING OF CHECK DAMS TOP ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM
- PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.

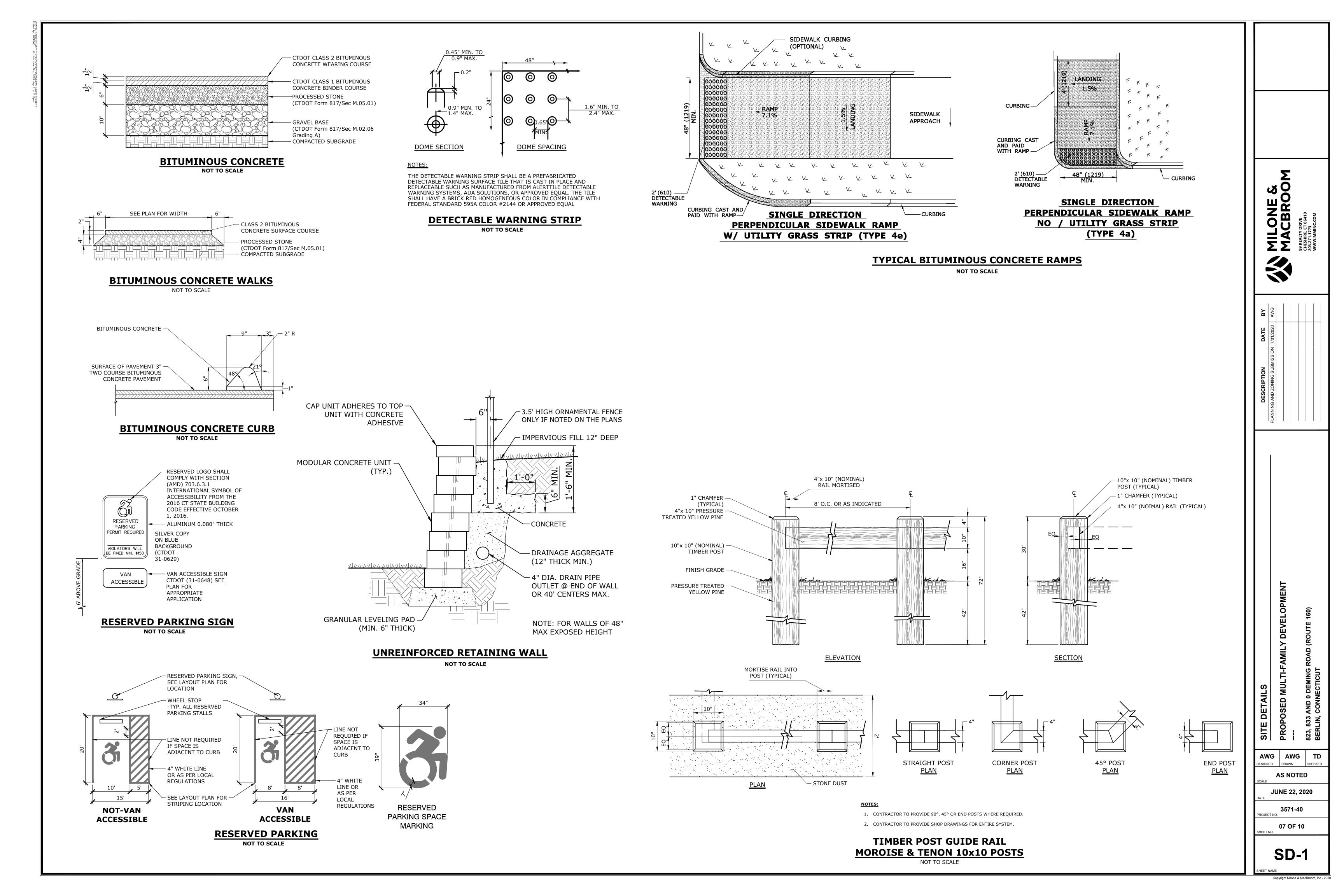
DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.

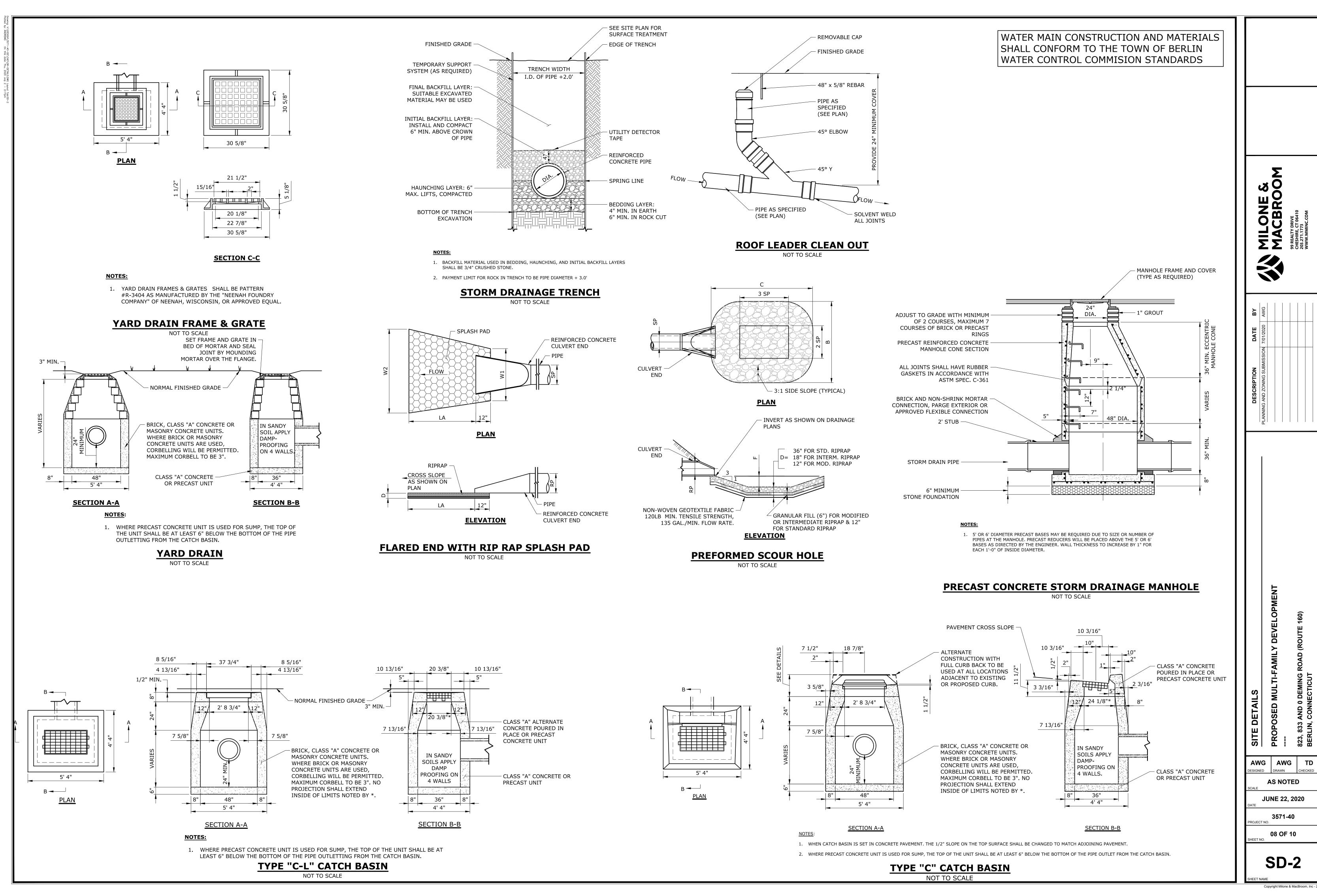
STONE CHECK DAM

3571-40 06 OF 10

Copyright Milone & MacBroom, Inc - 202

AWG AWG **AS NOTED JUNE 22, 2020** 





Copyright Milone & MacBroom, Inc - 2020

#### . MATERIALS

ALL FILL MATERIALS SHALL BE OBTAINED FROM REQUIRED EXCAVATIONS OR DESIGNATED BORROW AREAS. FILL MATERIAL SHALL CONTAIN NO FROZEN MATERIAL, SOD, BRUSH, ROOTS, OR OTHER ORGANIC MATERIAL. EARTH EMBANKMENTS SHALL CONTAIN NO STONES OR ROCK PARTICLES OVER THREE INCHES

THE MATERIAL USED IN THE CENTER PORTION OF THE EMBANKMENT SHALL BE THE MOST IMPERVIOUS MATERIAL OBTAINED FROM THE BORROW AREAS IF REQUIRED. THE MORE PERVIOUS MATERIALS SHALL BE USED IN THE OUTER PORTION OF THE EMBANKMENT AS SHOWN ON THE PLANS.

#### A. IMPERVIOUS FILL MATERIALS

IMPERVIOUS FILL SHALL BE A GLACIAL TILL, AND TO BE PROVIDED FROM AN OFFSITE SOURCE IN THE OUANTITIES REQUIRED FOR COMPLETION. FILL TO BE APPROVED BY THE ENGINEER, GLACIAL TILL SHALL CONSIST OF HARD AND DURABLE PARTICLES OR FRAGMENTS AND SHALL BE FREE FROM ORGANIC MATTER AND OTHER OBJECTIONABLE MATERIALS. GLACIAL TILL SHALL GENERALLY CONFORM TO THE FOLLOWING GRADATION LIMITS:

#### U.S. STANDARD PERCENTAGE PASSING SIEVE SIZE BY WEIGHT 3 INCH NO. 4 60-95 NO. 10 50-95 NO. 40 30-75 NO. 100 20-65 10-40

NO. 200

#### 2. EMBANKMENT FOUNDATION PREPARATION

AREAS WHERE EMBANKMENTS ARE TO BE FORMED SHALL BE CLEARED AND GRUBBED OF ALL TOPSOIL AND OTHER ORGANIC MATERIALS TO A DEPTH OF AT LEAST 24 INCHES. UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS, FOUNDATION AREAS SHALL BE SCARIFIED TO A DEPTH OF THREE INCHES PRIOR TO PLACEMENT OF FILL MATERIAL.

#### 3. PLACEMENT

NO FILL SHALL BE PLACED UNTIL THE FOUNDATION PREPARATION AND EXCAVATIONS IN THE FOUNDATION HAVE BEEN COMPLETED. NO FILL SHALL BE PLACED ON A FROZEN SURFACE NOR SHALL FROZEN MATERIAL BE INCORPORATED.

#### A. EMBANKMENT

MATERIAL SHALL BE PLACED IN HORIZONTAL LAYERS. THE THICKNESS OF LAYERS SHALL BE SIX INCHES. DURING CONSTRUCTION, THE SURFACE OF THE FILL SHALL HAVE A CROWN OR CROSS-SLOPE OF NOT LESS THAN TWO PERCENT. EACH LAYER OR LIFT SHALL EXTEND OVER THE ENTIRE AREA OF THE FILL.

THE FILL SHALL BE FREE FROM LENSES, POCKETS, STREAKS, OR LAYERS OF MATERIAL DIFFERING SUBSTANTIALLY IN TEXTURE OR GRADATION FROM THE SURROUNDING MATERIAL. THE MORE PERVIOUS MATERIAL SHALL BE PLACED IN THE OUTSIDE PORTION OF THE EMBANKMENT OR AS INDICATED ON THE DRAWINGS. THE FINISHED FILL SHALL BE SHAPED AND GRADED TO THE LINES AND GRADE SHOWN ON

#### B. BACKFILL AT THE PIPE OUTLET

BACKFILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED THREE INCHES IN THICKNESS AND SHALL BE BROUGHT UP UNIFORMLY AROUND THE OUTLET PIPE AND FLARED END SECTION

#### 4. MOISTURE CONTROL

FORMATION OF EMBANKMENTS FOR STORMWATER BASINS

THE MOISTURE CONTENT OF MATERIALS IN THE EMBANKMENT SHALL BE CONTROLLED TO MEET THE REQUIREMENTS OF SECTION 5, "COMPACTION OF EMBANKMENT." WHEN NECESSARY, MOISTURE SHALL BE ADDED BY USE OF APPROVED SPRINKLING EQUIPMENT. WATER SHALL BE ADDED UNIFORMLY AND EACH LAYER SHALL BE THOROUGHLY DISKED OR HARROWED TO PROVIDE ROPER MIXING. ANY LAYER FOUND TOO WET FOR PROPER COMPACTION SHALL BE ALLOWED TO DRY BEFORE ROLLING. PLACING OR ROLLING OF MATERIAL ON EARTH FILLS WILL NOT BE PERMITTED DURING OR IMMEDIATELY AFTER RAINFALLS WHICH INCREASE THE MOISTURE CONTENT BEYOND THE LIMIT OF SATISFACTORY COMPACTION. THE EARTH FILL SHALL BE BROUGHT UP UNIFORMLY AND ITS TOP SHALL BE KEPT GRADED AND SLOPED SO THAT A MINIMUM OF RAINWATER WILL BE RETAINED THEREON. COMPACTED

EARTH FILL DAMAGED BY WASHING SHALL BE ACCEPTABLY REPLACED BY THE CONTRACTOR.

#### A. EMBANKMENT

EMBANKMENT MATERIAL SHALL BE COMPACTED TO 95% OF THE STANDARD PROCTOR DENSITY AT NEAR OPTIMUM MOISTURE CONTENT AND BY THE COMPACTION EQUIPMENT SPECIFIED HEREIN. THE COMPACTION EQUIPMENT SHALL TRAVERSE THE ENTIRE SURFACE OF EACH LAYER OF FILL MATERIAL.

APPROVED TAMPING ROLLERS SHALL BE USED FOR COMPACTING ALL PARTS OF THE EMBANKMENTS WHICH THEY CAN EFFECTIVELY REACH. THE CONTRACTOR SHALL DEMONSTRATE THE EFFECTIVENESS OF THE ROLLER BY ACTUAL SOIL COMPACTION RESULTS OF THE SOIL TO BE USED IN THE EMBANKMENT WITH LABORATORY WORK PERFORMED BY AN APPROVED SOIL TESTING LABORATORY.

#### B. BACKFILL AT OUTLET CONDUIT

BACKFILL SHALL BE COMPACTED BY HAND TAMPING WITH MECHANICAL TAMPERS. HEAVY EQUIPMENT SHALL NOT BE OPERATED WITHIN TWO FEET OF ANY STRUCTURE. EQUIPMENT SHALL NOT BE ALLOWED TO OPERATE OVER THE OUTLET CONDUITS UNTIL THERE IS 24 INCHES OF FILL OVER THE

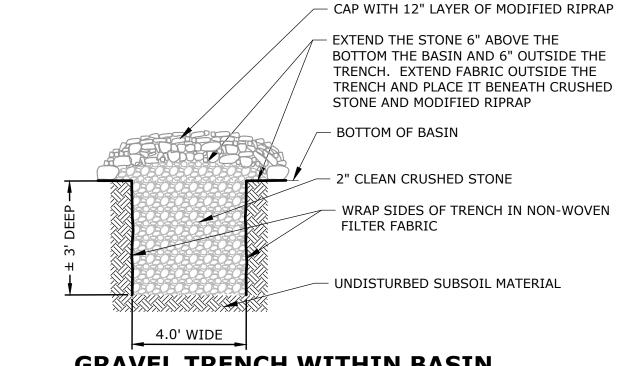
#### 6. FINISHING EMBANKMENTS

THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE ELEVATIONS, LINES, GRADES AND CROSS-SECTIONS AS SHOWN ON THE DRAWINGS. THE EMBANKMENTS SHALL BE MAINTAINED IN A MANNER SATISFACTORY TO THE ENGINEER AND SURFACES SHALL BE COMPACT AND ACCURATELY GRADED BEFORE TOPSOIL IS PLACED ON THEM. THE CONTRACTOR SHALL CHECK THE EMBANKMENT SLOPES WITH STRING LINES TO INSURE THAT THEY CONFORM TO THE SLOPES GIVEN ON THE PLANS AND ARE UNIFORM FOR THE ENTIRE LENGTH OF THE SLOPE.

#### 7. CONTROL OF WATER

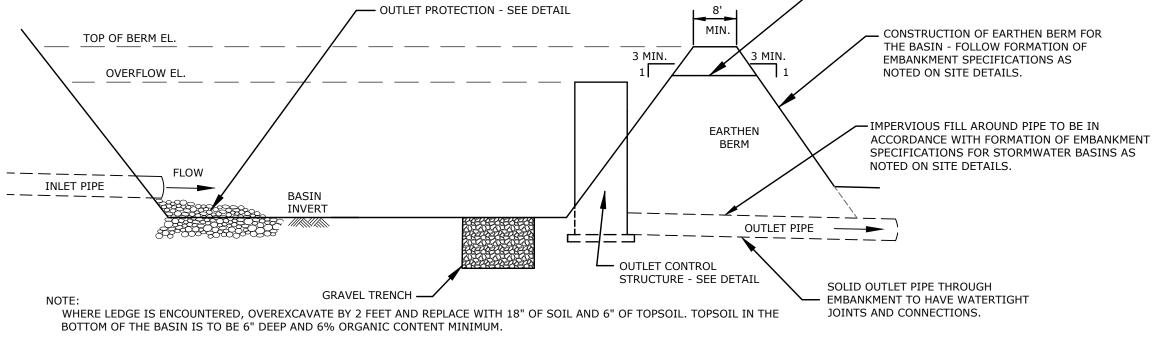
THE PROJECT SITE IS SUBJECT TO HIGH WATER TABLE. THE CONTRACTOR SHALL USE TEMPORARY PIPES OR PUMPS TO ASSURE PLACEMENT OF SELECT FILL IN DRY CONDITIONS.

#### 3:1 MAX. SIDE SLOPE — TOP OF FOREBAY BERM DEPTH = 0.5 FTSPILLWAY CREST - (TYP) 12" MODIFIED RIPRAP -NON WOVEN GEOTEXTILE FILTER FABRIC MIRAFI 140N OR IMPERVIOUS FILL MATERIAL AS -EQUIVALENT TO BE INSTALLED IN DESCRIBED IN THE FORMATION ACCORDANCE WITH OF EMBANKMENT FOR MANUFACTURER'S STORMWATER BASIN RECOMMENDATIONS **SPECIFICATIONS SEDIMENT FOREBAY OVERFLOW SPILLWAY**



# **GRAVEL TRENCH WITHIN BASIN**

- EMERGENCY OVERFLOW SPILLWAY (SEE PLAN VIEW FOR LOCATION) THE BASIN - FOLLOW FORMATION OF 3 MIN. EMBANKMENT SPECIFICATIONS AS NOTED ON SITE DETAILS.

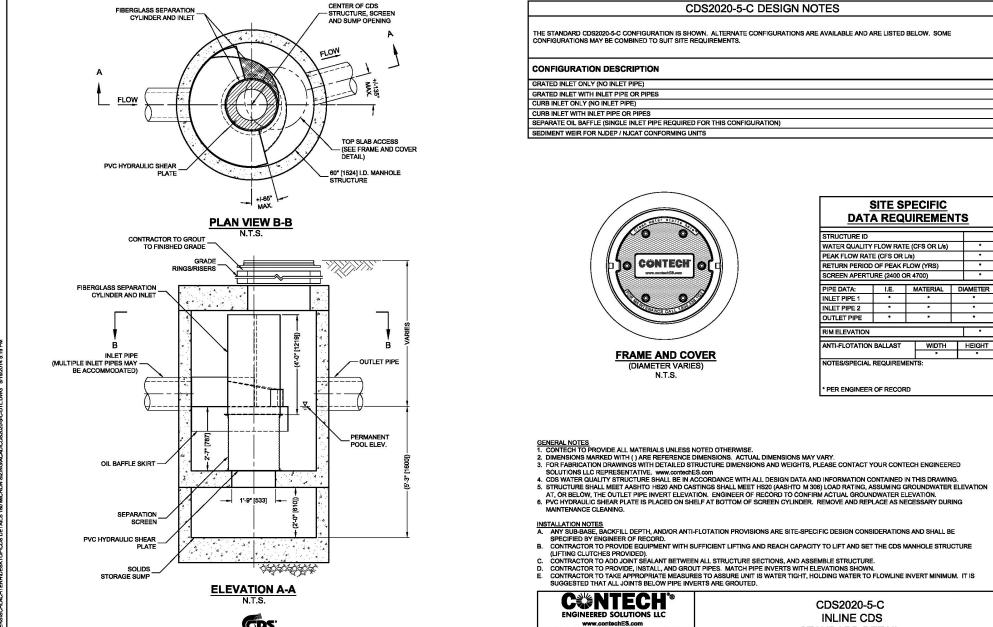


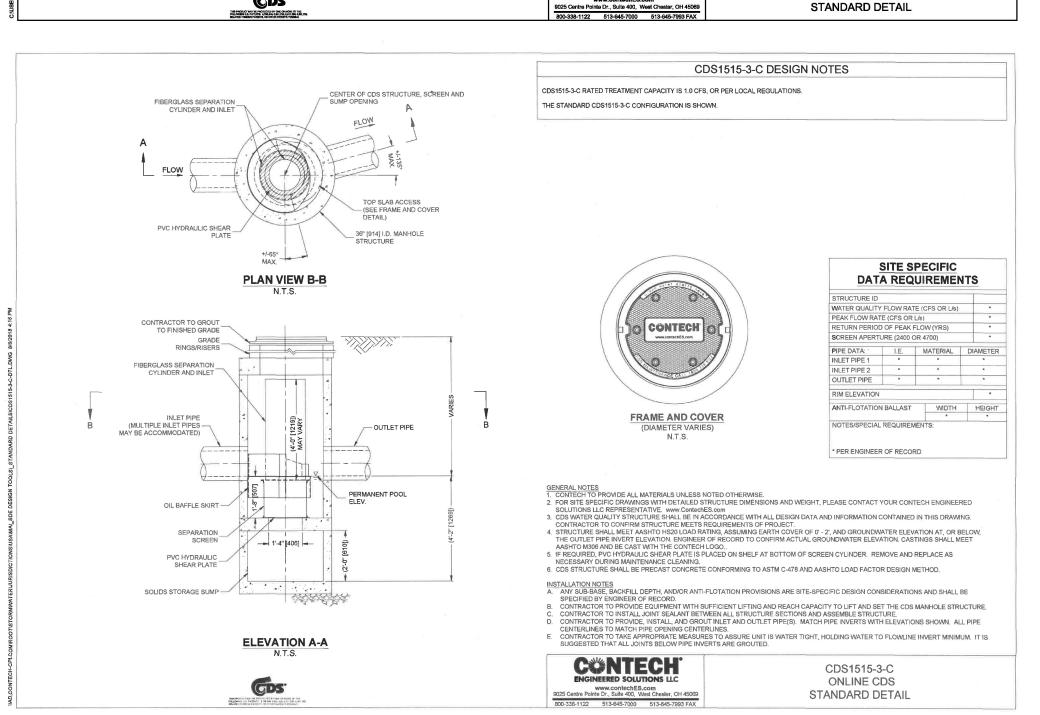
# **TYPICAL DETENTION BASIN**

- SEE PLAN VIEW 8"W x 8"L x 8"H CONCRETE BLOCKS \_ INTEGRATED INTO OUTLET STRUCTURE OVERFLOW WEIR AT ALL 4 CORNERS 3" STRUCTURAL ANGLE AROUND ON ALL 4 SIDES TOP OF BERM ELEV. PERIMETER OF GRATING (SEE \_OF STRUCTURE DETAIL) 8"W x 8"L x 8"H CONCRETE-BLOCKS INTEGRATED INTO OUTLET STRUCTURE AT ALL 4 CORNERS OVERFLOW ELEV. REINFORCED CONCRETE OUTLET CONTROL STRUCTURE WITH 8" WALLS GALVANIZED STEEL TOP GRATING TO BE 1-1/2" X 3-1/16" SWAGE LOCKED FLUSH TOP BAR REINFORCED -GRATING. OUTSIDE DIMENSION OF GRATE: 52" CONCRETE OUTLET BY 40". SUSPEND GRATING OVER STRUCTURE. STRUCTURE WITH 8" WALLS OVERFLOW WEIR ON ALL 4 SIDES -OF STRUCTURE (TYP.) OUTLET CONTROL STRUCTURE -POND DRAIN ORIFICE 1-12" (4'0" INSIDE W/ 8" REINFORCED CONC. WALL) 12" ≻#4 @ 12" O.C. BOTTOM OF BASIN OUTLET PIPE PLAN VIEW STRUCTURAL ANGLE 3" x 2" x 1/2" EMBED IN CONCRETE BLOCK AROUND PERIMETER OF GRATING AND GALVANIZED

| #4 @ 12" O.C.  8-1/2" CRUSHED  STONE BEDDING |   |  |  | A A          |
|--|---|--|--|--------------|
|  | FRONT VIEW  |  |  | NOTCH DETAIL |
|  |   | DET 110 (OCS 110)  | DET 210 (OCS 210)  |              |
|  | TOP OF BERM ELEVATION GRATE ELEVATION 100-YEAR WATER SURFACE ELEV. POND DRAIN ORIFICE 1 DIAMETER POND DRAIN ORIFICE 1 INVERT BASIN BOTTOM ELEVATION OUTLET PIPE DIAMETER OUTLET PIPE INVERT EMERGENCY OVERFLOW SPILLWAY ELEV. | 46.5<br>45.5<br>45.6<br>1 ORIF. OF 2.0"<br>42.0<br>40.0<br>12"<br>40.0<br>46.0 | 48.0<br>46.5<br>45.6<br>1 ORIF. OF 2.0"<br>42.0<br>40.0<br>12"<br>40.0<br>47.0 |              |

# **OUTLET CONTROL STRUCTURE**





MILONE & MACBRO

MUL ED

1/2" DIA. x 3-1/8" H4L HEADED STUD @ 12" O.C.

> AWG AWG **AS NOTED JUNE 22, 2020** 3571-40 09 OF 10