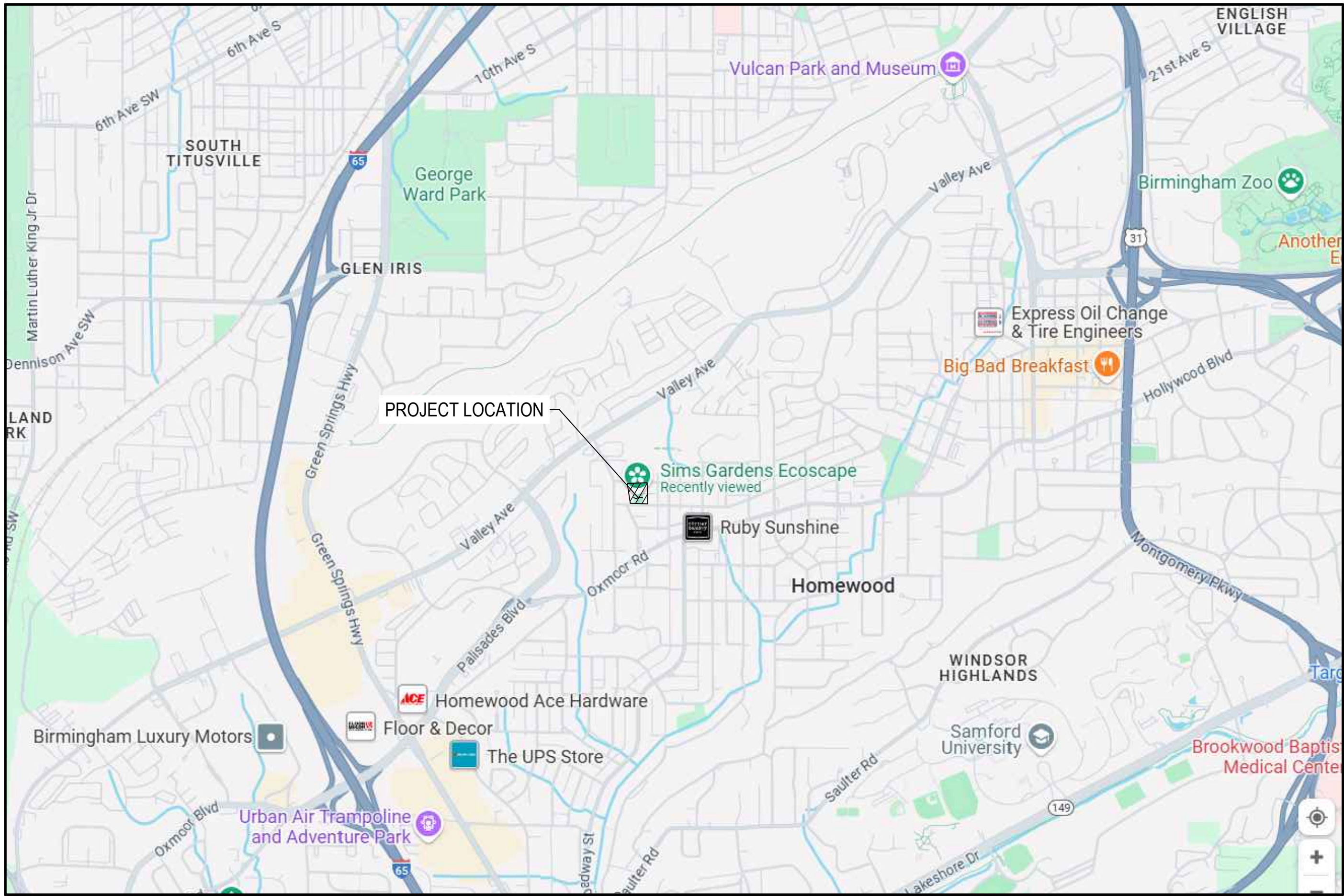


SITE DEVELOPMENT PLANS

FOR

MISS SIMS GARDEN

908 HIGHLAND ROAD
HOMEWOOD, AL



INDEX OF SHEETS

C0.0	COVER SHEET
V1.0	EXISTING CONDITIONS (BY WEYGAND)
C1.0	DEMOLITION PLAN
C2.0	SITE LAYOUT PLAN
C3.0	GRADING PLAN
C4.0	EROSION CONTROL PLAN
C5.0	DETAILS
C5.1	DETAILS

PROJECT NUMBER:
24012

REVISIONS

MISS SIMS GARDEN
HOMEWOOD, AL

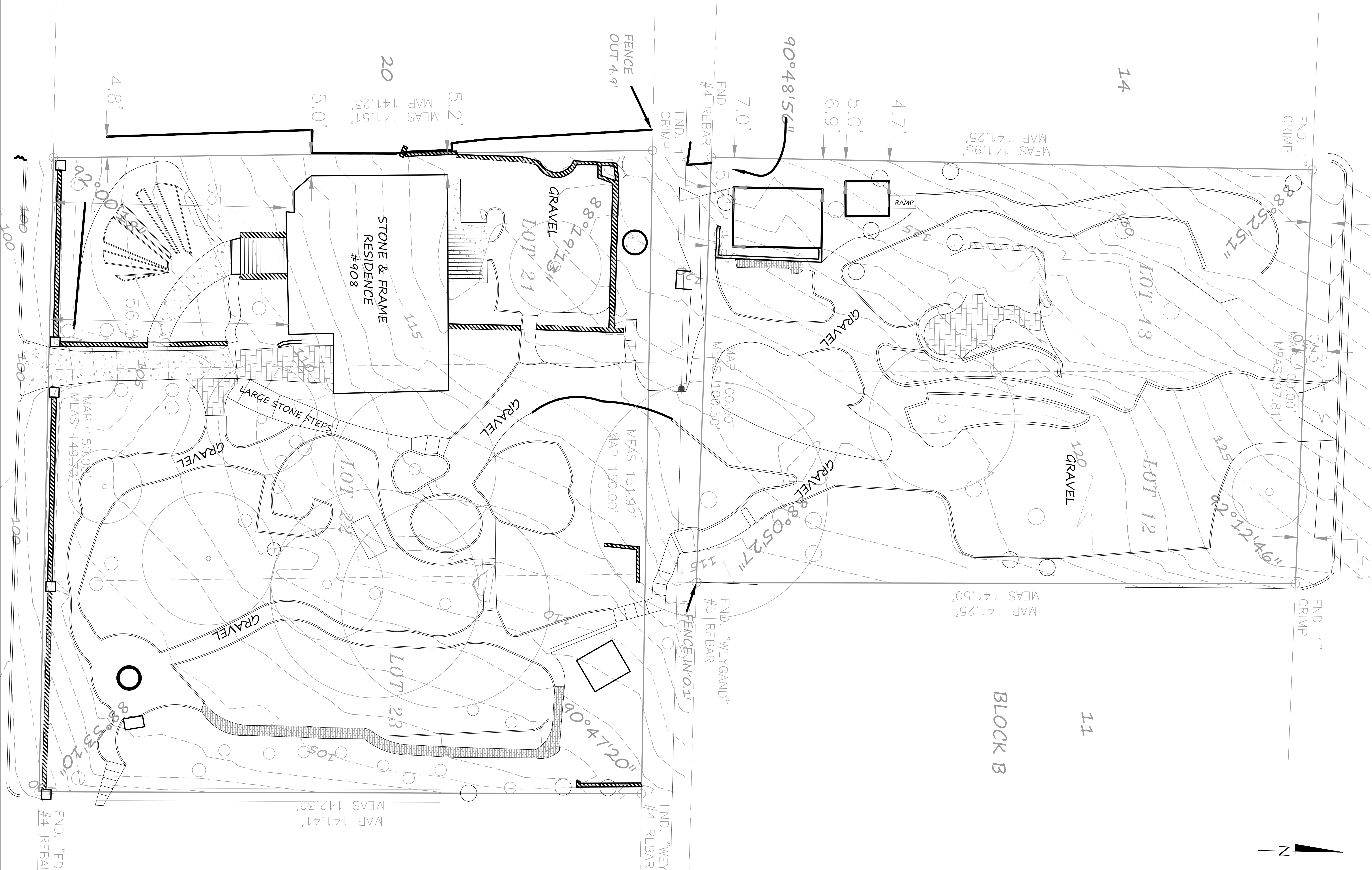
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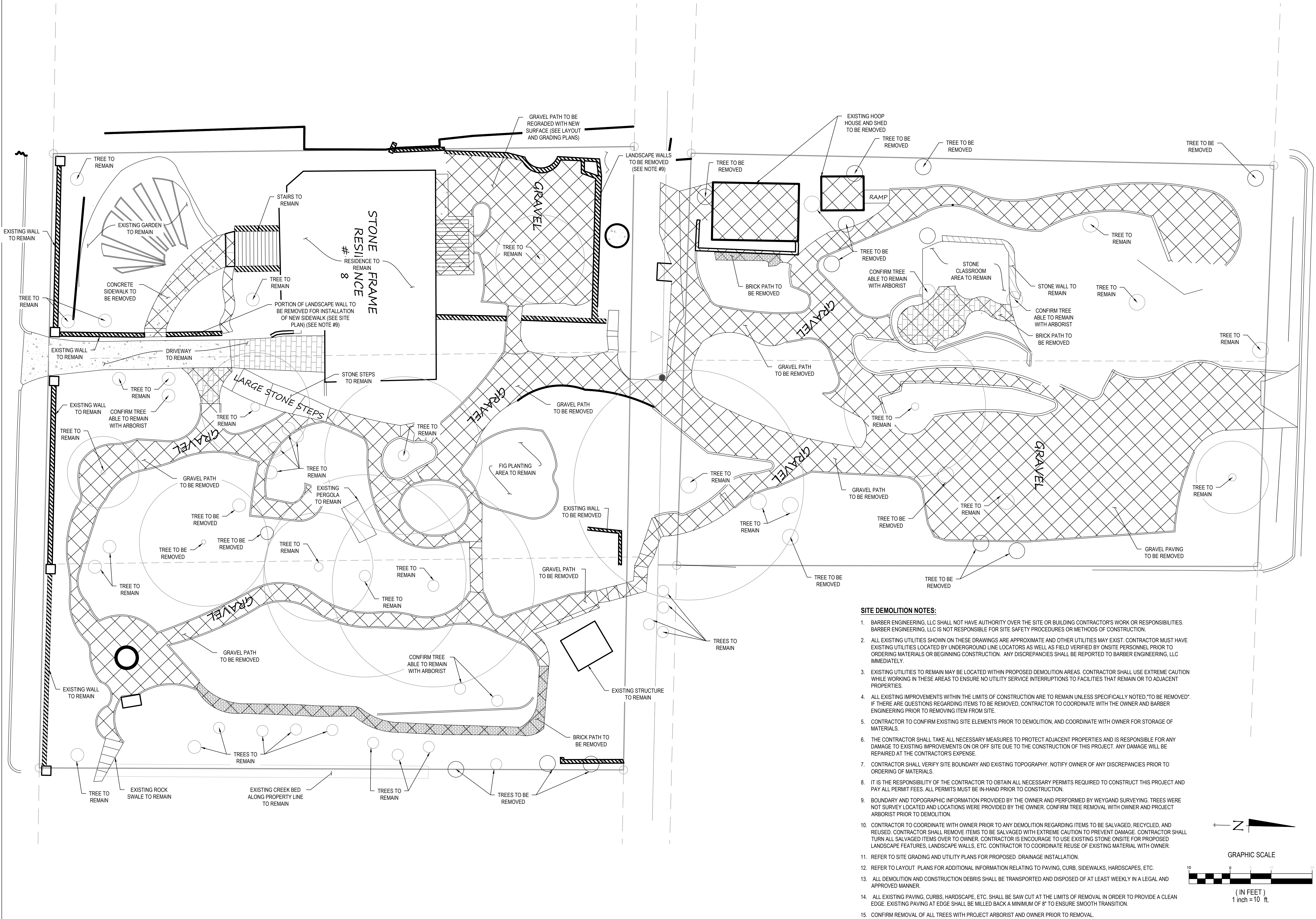
SHEET TITLE:
EXISTING CONDITIONS
WEYGAND SURVEY
DATED MAY 14, 2019.
ORDER NO. 2705

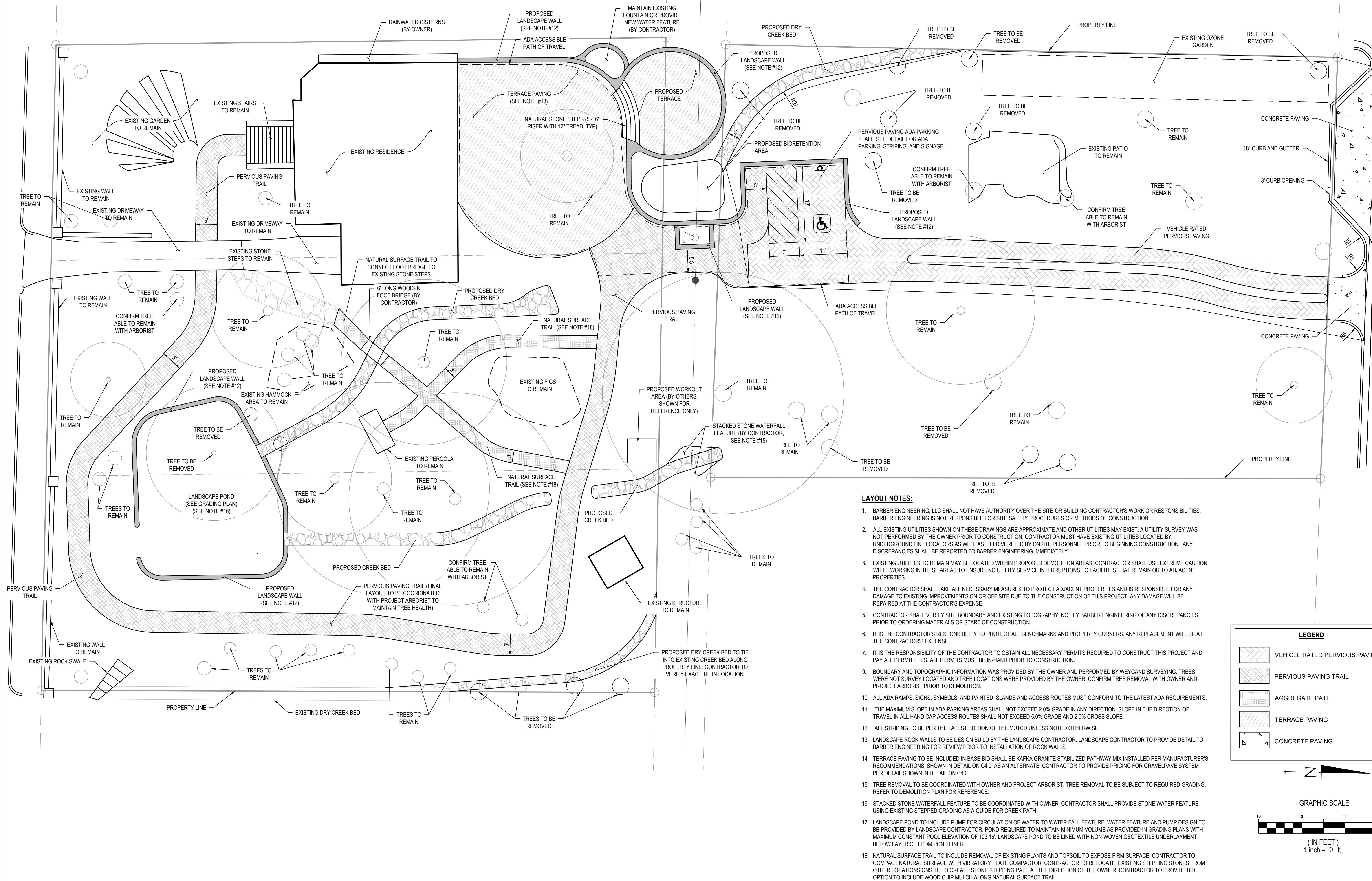
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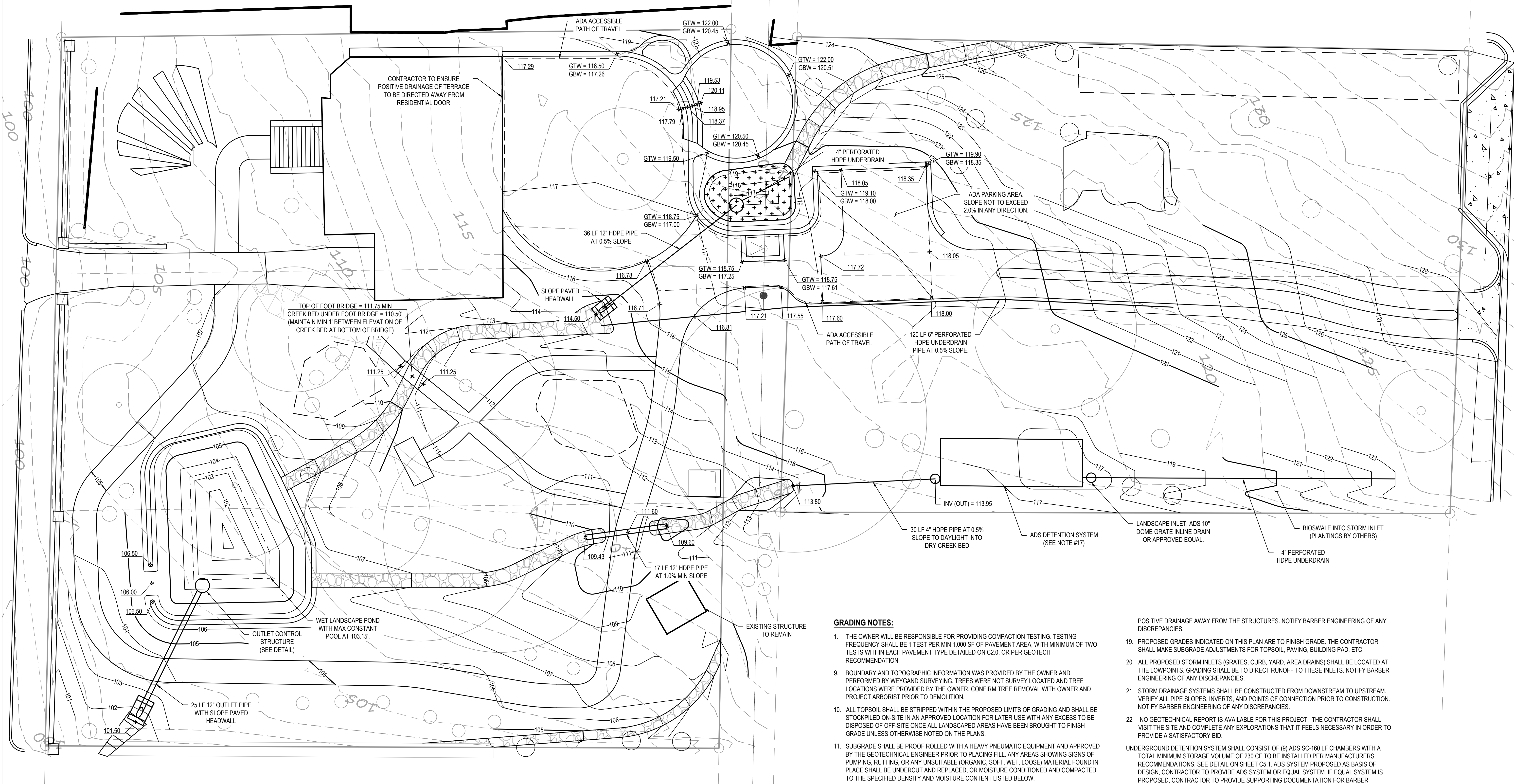
SHEET NO.

V1.0









THE FOLLOWING PROPOSED STORMWATER BMP'S ARE DESIGNED TO TREAT STORMWATER RUNOFF FOR THE FIRST FLUSH WATER QUALITY VOLUME, CALCULATED BASED ON A REQUIRED WATER QUALITY VOLUME RAIN EVENT OF 1.1 INCHES. THE WATER QUALITY VOLUME REQUIRED (VR) IS BASED ON THE CONTRIBUTING DRAINAGE AREA (DA) TO EACH BMP. THE WATER QUALITY VOLUME PROVIDED (VP) IS THE STORAGE CAPACITY OF THE BMP AS DESIGNED.

BIORETENTION AREA:
DA = 0.20 AC
VR = 399.30 CF MIN
VP = 481.50 CF

BIOSWALE:
DA = 0.05 AC
VR = 47.96 CF MIN
VP = 126.75 CF

TERRACE PAVING:
DA = .06 AC
VR = 114.58 CF MIN
VP = 208.80 CF

*PERMEABLE PAVEMENT VOLUME PROVIDED IS CALCULATED BASED ON AREA OF PAVERS DESIGNED AT LESS THAN 4.0% SLOPE. PAVEMENT AREAS WITH SLOPE GREATER THAN 4.0% HAVE POTENTIAL TO PROVIDE ADDITIONAL STORAGE VOLUME, BUT ARE NOT INCLUDED IN CALCULATIONS DUE TO GRADING CONSTRAINTS.

VEHICLE RATED PERMEABLE PAVERS:
DA = 0.18 AC
TOTAL AREA OF PAVERS = 1712 SF
AREA OF PAVERS LESS THAN 4.0% SLOPE = 535 SF
VR = 124.60 CF MIN
VP = 166.00 CF*

PEDESTRIAN RATED PERMEABLE PAVERS:
DA = 0.11 AC
TOTAL AREA OF PAVERS = 1506 SF
AREA OF PAVERS LESS THAN 4.0% SLOPE = 830 SF
VR = 100.35 CF MIN
VP = 107.00 CF*

TYPICAL WATER QUALITY TREATMENT VOLUME REQUIREMENTS ARE BASED ON THE TOTAL INCREASE IN IMPERVIOUS AREA FROM THE EXISTING CONDITION. THE PROPOSED PLAN FOR MISS SIMS GARDEN PROVIDES A DECREASE IN TOTAL IMPERVIOUS AREA FROM THE EXISTING CONDITION. HOWEVER, ONE OF THE MAJOR GOALS FOR THE PROJECT IS TO PROVIDE WATER QUALITY MEETING CALCULATIONS FOR THE PROPOSED DEVELOPMENT. AS SUCH, THE CONTRACTOR IS REQUIRED TO INSTALL PROPOSED BMP'S PER THE PLAN AND DETAILS TO ENSURE THAT WATER QUALITY TREATMENT VOLUMES ARE MET.

PRE CONDITION: 0.844 AC
IMPERVIOUS: 0.112 AC
GRAVEL: 0.219 AC
PERVIOUS: 0.513 AC

POST CONDITION: 0.844 AC
IMPERVIOUS: 0.078 AC
GRAVEL: 0.044 AC
PERVIOUS PAVING: 0.128 AC
PERVIOUS: 0.594 AC

WATER QUALITY VOLUME REQUIRED BASED ON POST CONDITION:
VR = 1031 CF MIN
VP = 1090 CF

UNDERGROUND DETENTION SYSTEM, WET POND, AND CREEK BEDS PROVIDE STORMWATER DETENTION AND STORMWATER CONVEYANCE. THESE BMP'S MAY ALSO PROVIDE ADDITIONAL WATER QUALITY TREATMENT VOLUMES, BUT THEIR PRIMARY FUNCTIONS ARE FOR STORMWATER DETENTION AND CONVEYANCE.

DRAINAGE CALCULATIONS

STORM FREQUENCY	PRE-DEVELOPMENT RUNOFF (CFS)	POST-DEVELOPMENT RUNOFF (CFS)	NET RUNOFF (CFS)
2 YEAR	1.538	1.309	- 0.229
5 YEAR	2.242	1.975	- 0.267
10 YEAR	2.934	2.639	- 0.295
25 YEAR	4.064	3.736	- 0.328
50 YEAR	5.056	4.709	- 0.347
100 YEAR	6.148	5.787	- 0.361

GRADING NOTES:

- THE OWNER WILL BE RESPONSIBLE FOR PROVIDING COMPACTION TESTING. TESTING FREQUENCY SHALL BE 1 TEST PER MIN 1,000 SF OF PAVEMENT AREA, WITH MINIMUM OF TWO TESTS WITHIN EACH PAVEMENT TYPE DETAILED ON C2.6, OR PER GEOTECH RECOMMENDATION.
- BOUNDARY AND TOPOGRAPHIC INFORMATION WAS PROVIDED BY THE OWNER AND PERFORMED BY WEYGAND SURVEYING. TREES WERE NOT SURVEY LOCATED AND TREE LOCATIONS WERE PROVIDED BY THE OWNER. CONFIRM TREE REMOVAL WITH OWNER AND PROJECT ARBORIST PRIOR TO DEMOLITION.
- ALL TOPSOIL SHALL BE STRIPPED WITHIN THE PROPOSED LIMITS OF GRADING AND SHALL BE STOCKPILED ON-SITE IN AN APPROVED LOCATION FOR LATER USE WITH ANY EXCESS TO BE DISPOSED OF OFF-SITE ONCE ALL LANDSCAPED AREAS HAVE BEEN BROUGHT TO FINISH GRADE UNLESS OTHERWISE NOTED ON THE PLANS.
- SUBGRADE SHALL BE PROOF ROLLED WITH A HEAVY PNEUMATIC EQUIPMENT AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING FILL. ANY AREAS SHOWING SIGNS OF PUMPING, RUTTING, OR ANY UNSUITABLE (ORGANIC, SOFT, WET, LOOSE) MATERIAL FOUND IN PLACE SHALL BE UNDERCUT AND REPLACED, OR MOISTURE CONDITIONED AND COMPACTED TO THE SPECIFIED DENSITY AND MOISTURE CONTENT LISTED BELOW.
- ALL EXPOSED SUBGRADE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 12" AND RECOMPACTED TO THE SPECIFIED DENSITY AND MOISTURE CONTENT LISTED BELOW.
- CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING THE SUBGRADE AFTER IT HAS BEEN INITIALLY PREPARED DUE TO INCLEMENT WEATHER AND CONSTRUCTION TRAFFIC.
- FILL MATERIAL SHALL HAVE THE FOLLOWING PROPERTIES: VIRTUALLY FREE OF ORGANICS, NO ROCK FRAGMENTS GREATER THAN 4" WITHIN 4" OF FINISH GRADE. LIQUID LIMIT NOT EXCEEDING 50, PLASTICITY INDEX NOT EXCEEDING 30. MINIMUM STANDARD PROCTOR (ASTM D-698) OF 100 PCF. COMPACTED 98% IN PAVED AND STRUCTURAL AREAS, 95% NON-STRUCTURAL AND LANDSCAPED AREAS, PLACED IN 8" LOOSE LIFTS, AND WITHIN $\pm 2.0\%$ OF OPTIMUM MOISTURE CONTENT. STRUCTURAL AREAS INCLUDE ZONES OF INFLUENCE AROUND THE BUILDING, PAVEMENT AREAS, FILL SLOPES, ETC.
- NO GRADING OFF-SITE OR IN ANY ROAD RIGHT-OF-WAY WITHOUT PROPER APPROVALS AND PRIOR NOTIFICATION.
- COORDINATE THE SEQUENCING OF ALL GRADING OPERATIONS WITH THE EROSION CONTROL PLAN.
- THE MAXIMUM SLOPE IN ADA PARKING AREAS SHALL NOT EXCEED 2.0% GRADE IN ANY DIRECTION. SLOPE IN THE DIRECTION OF TRAVEL IN ALL ADA ACCESS ROUTES SHALL NOT EXCEED 5.0% GRADE AND 2.0% CROSS SLOPE.
- ALL GRADING ADJACENT TO EXISTING OR PROPOSED BUILDINGS SHALL BE SLOPED AWAY FROM THE STRUCTURES AT A MINIMUM OF 1.0% GRADE. THE CONTRACTOR SHALL ENSURE

POSITIVE DRAINAGE AWAY FROM THE STRUCTURES. NOTIFY BARBER ENGINEERING OF ANY DISCREPANCIES.

- PROPOSED GRADES INDICATED ON THIS PLAN ARE TO FINISH GRADE. THE CONTRACTOR SHALL MAKE SUBGRADE ADJUSTMENTS FOR TOPSOIL, PAVING, BUILDING PAD, ETC.
- ALL PROPOSED STORM INLETS (GRATES, CURB, YARD, AREA DRAINS) SHALL BE LOCATED AT THE LOWPOINTS. GRADING SHALL BE TO DIRECT RUNOFF TO THESE INLETS. NOTIFY BARBER ENGINEERING OF ANY DISCREPANCIES.
- STORM DRAINAGE SYSTEMS SHALL BE CONSTRUCTED FROM DOWNSTREAM TO UPSTREAM. VERIFY ALL PIPE SLOPES, INVERTS, AND POINTS OF CONNECTION PRIOR TO CONSTRUCTION. NOTIFY BARBER ENGINEERING OF ANY DISCREPANCIES.
- NO GEOTECHNICAL REPORT IS AVAILABLE FOR THIS PROJECT. THE CONTRACTOR SHALL VISIT THE SITE AND COMPLETE ANY EXPLORATIONS THAT IT FEELS NECESSARY IN ORDER TO PROVIDE A SATISFACTORY BID.
- UNDERGROUND DETENTION SYSTEM SHALL CONSIST OF (8) ADS SC-160 LF CHAMBERS WITH A TOTAL MINIMUM STORAGE VOLUME OF 230 CF TO BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS. SEE DETAIL ON SHEET C5.1. ADS SYSTEM PROPOSED AS BASIS OF DESIGN, CONTRACTOR TO PROVIDE ADS SYSTEM OR EQUAL SYSTEM. IF EQUAL SYSTEM IS PROPOSED, CONTRACTOR TO PROVIDE SUPPORTING DOCUMENTATION FOR BARBER ENGINEERING REVIEW TO ENSURE COMPLIANCE WITH STORMWATER REQUIREMENTS. BARBER ENGINEERING TO APPROVE EQUAL SYSTEM PRIOR TO PURCHASE OF MATERIALS.
- PROPOSED WATER FEATURE TO BE DESIGN BUILD BY THE CONTRACTOR.
- CONTOURS FOLLOW DRY CREEK BED. SPOT ELEVATIONS FOLLOW PEDESTRIAN FOOTBRIDGE. PEDESTRIAN FOOTBRIDGE TO BE MINIMUM OF 1' HIGHER THAN BOTTOM OF DRY CREEK BED ELEVATION.
- LANDSCAPE RETAINING WALLS SHALL BE A TOTAL DESIGN BUILD BY THE CONTRACTOR. THE CONTRACTOR'S WALL DESIGNER/INSTALLER SHALL HAVE AT LEAST 10 YEARS OF EXPERIENCE IN THE DESIGN AND INSTALLATION OF SEGMENTAL/LANDSCAPE RETAINING WALLS.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, INCLUDING WALL DETAILS AND DESIGN PARAMETERS, STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF ALABAMA.
- CONTRACTOR SHALL BE RESPONSIBLE FOR HIRING A GEOTECHNICAL ENGINEER TO PERFORM SITE EXPLORATION TO GATHER INFORMATION CONCERNING SUBSURFACE SOILS TO BE USED IN THE DESIGN OF THE WALL. AT A MINIMUM, THE GEOTECHNICAL ENGINEER SHALL PROVIDE SOIL CONDITIONS AND SOIL STRENGTH PARAMETERS NECESSARY FOR WALL DESIGN AND EVALUATION AND SHALL INCLUDE THE SUITABILITY OF THE ONSITE SOILS FOR USE IN THE FOUNDATION, RETAINED AND REINFORCED ZONE OF THE WALL.

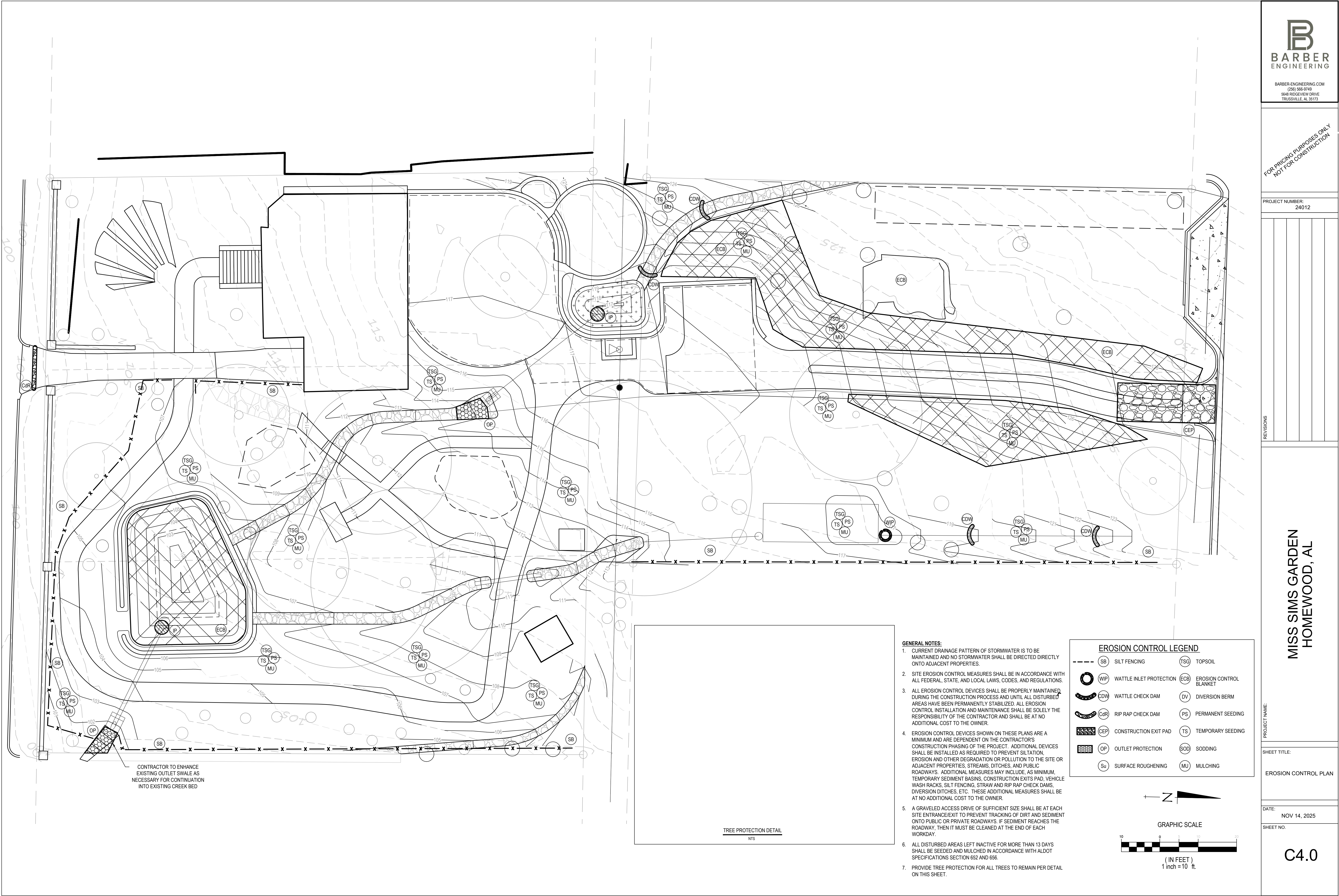
LANDSCAPE WALL NOTES:

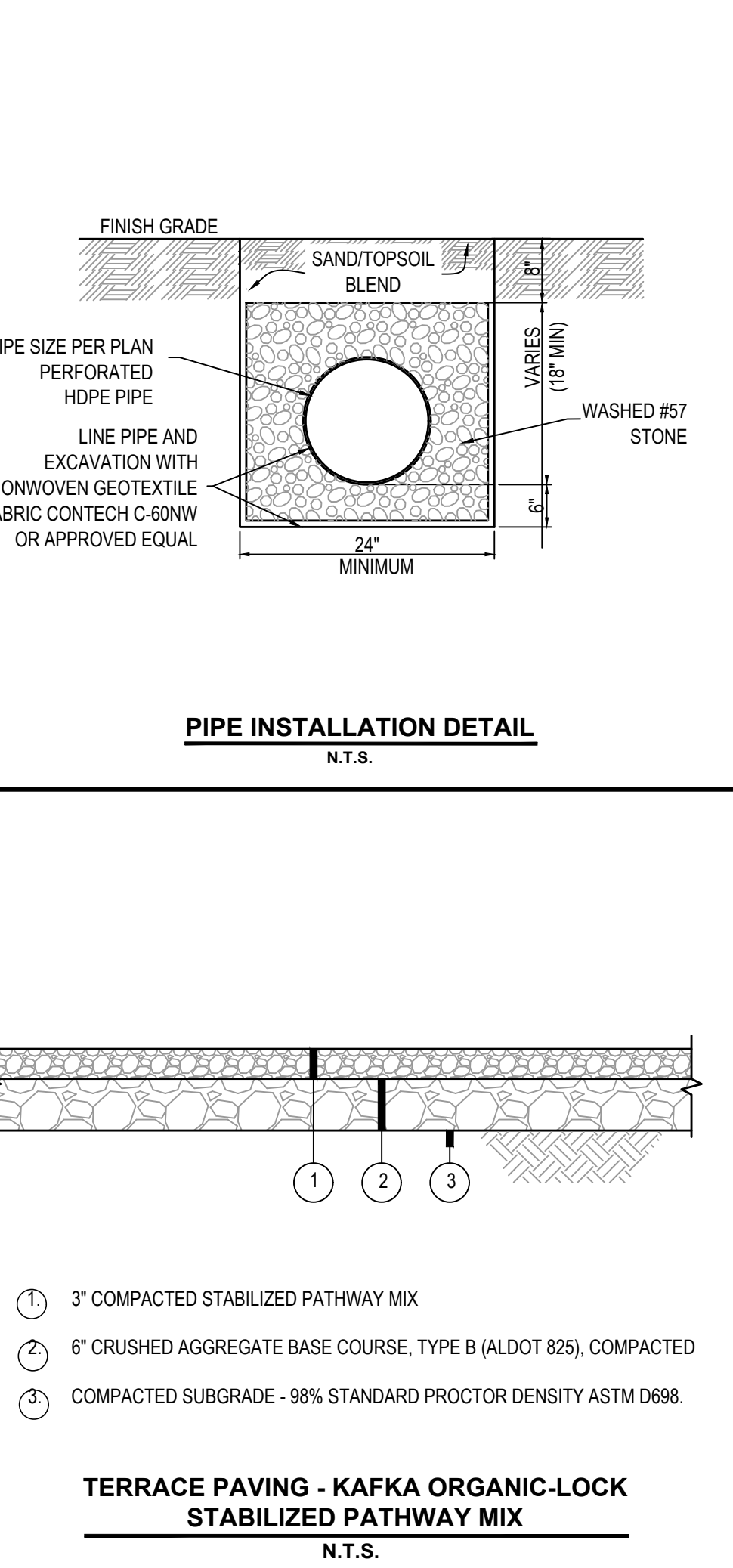
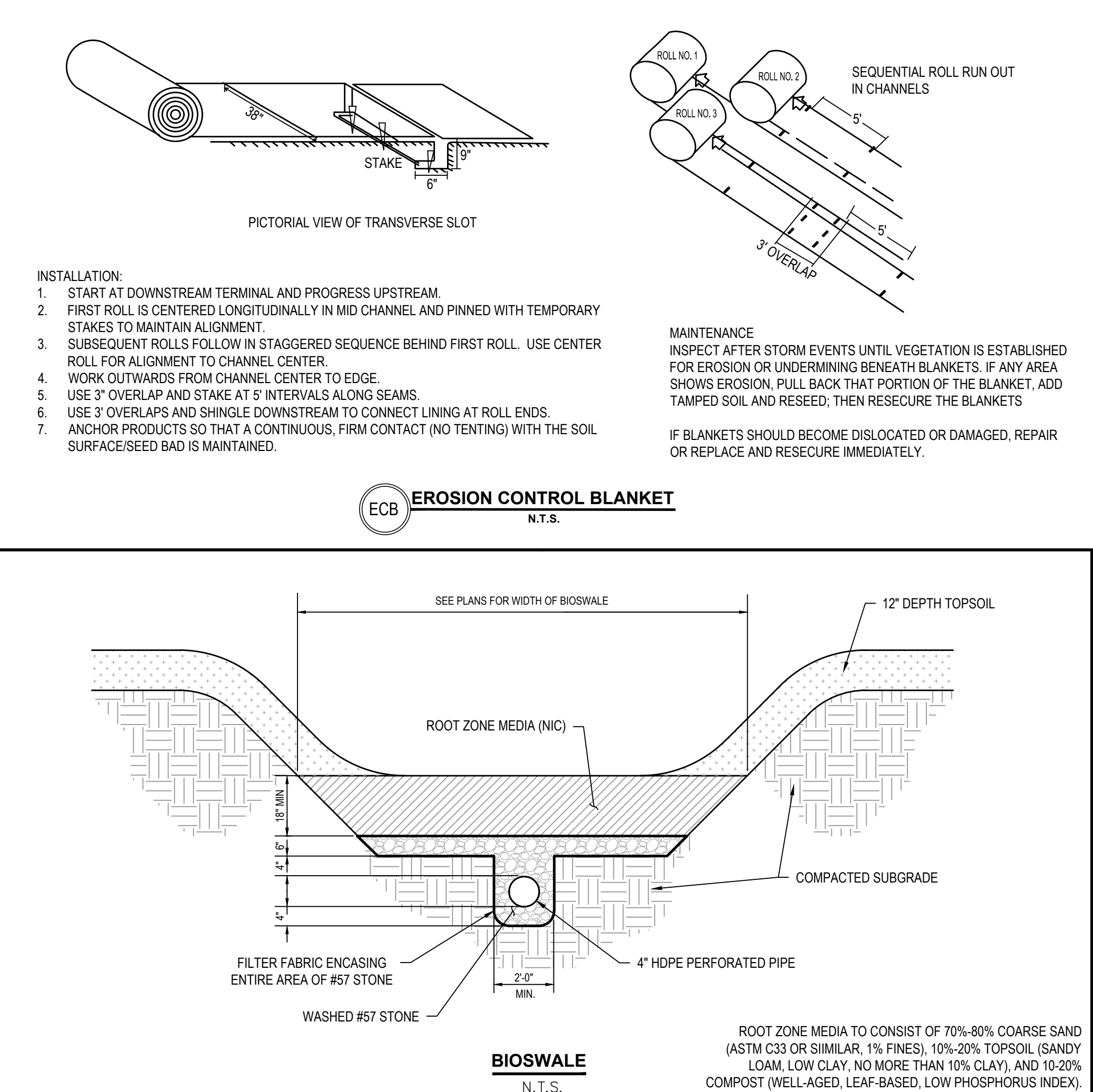
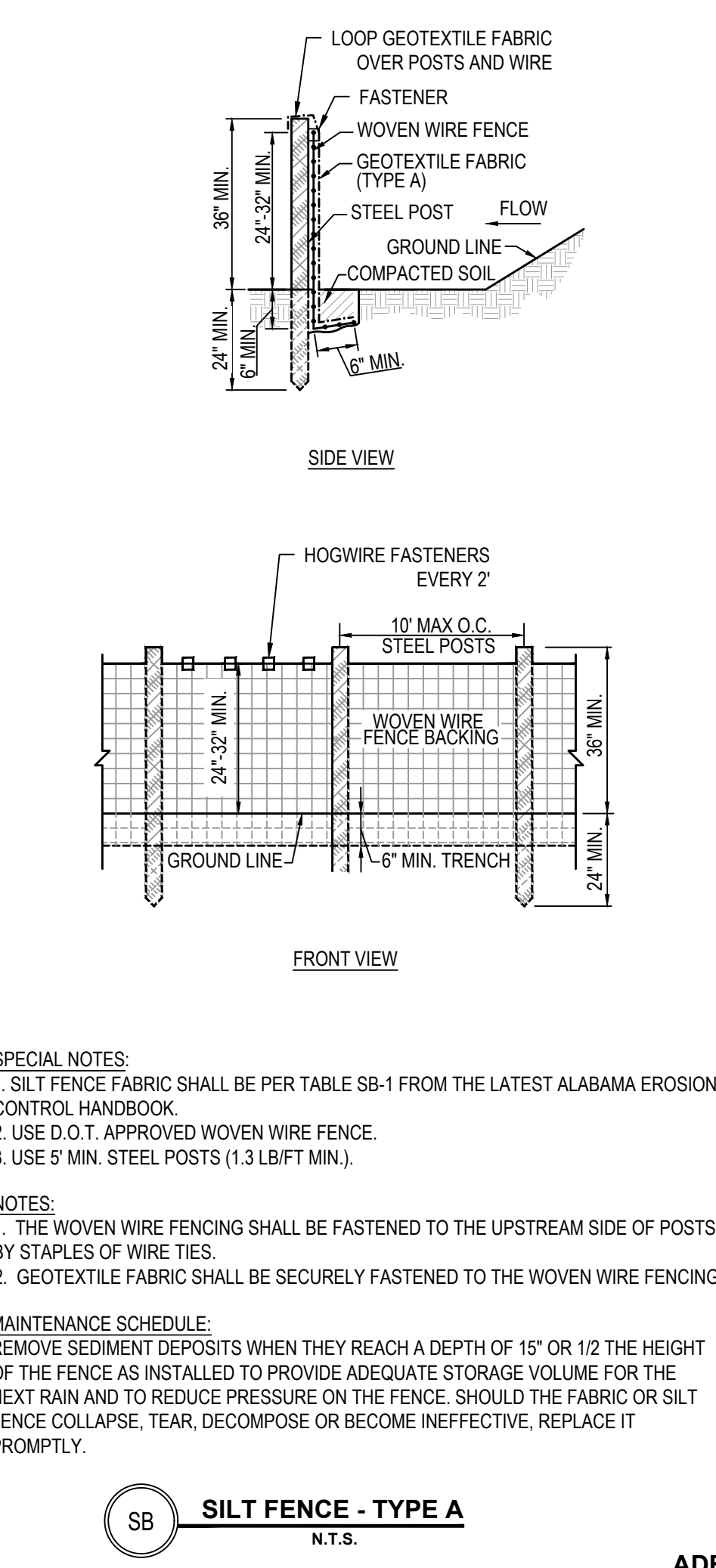
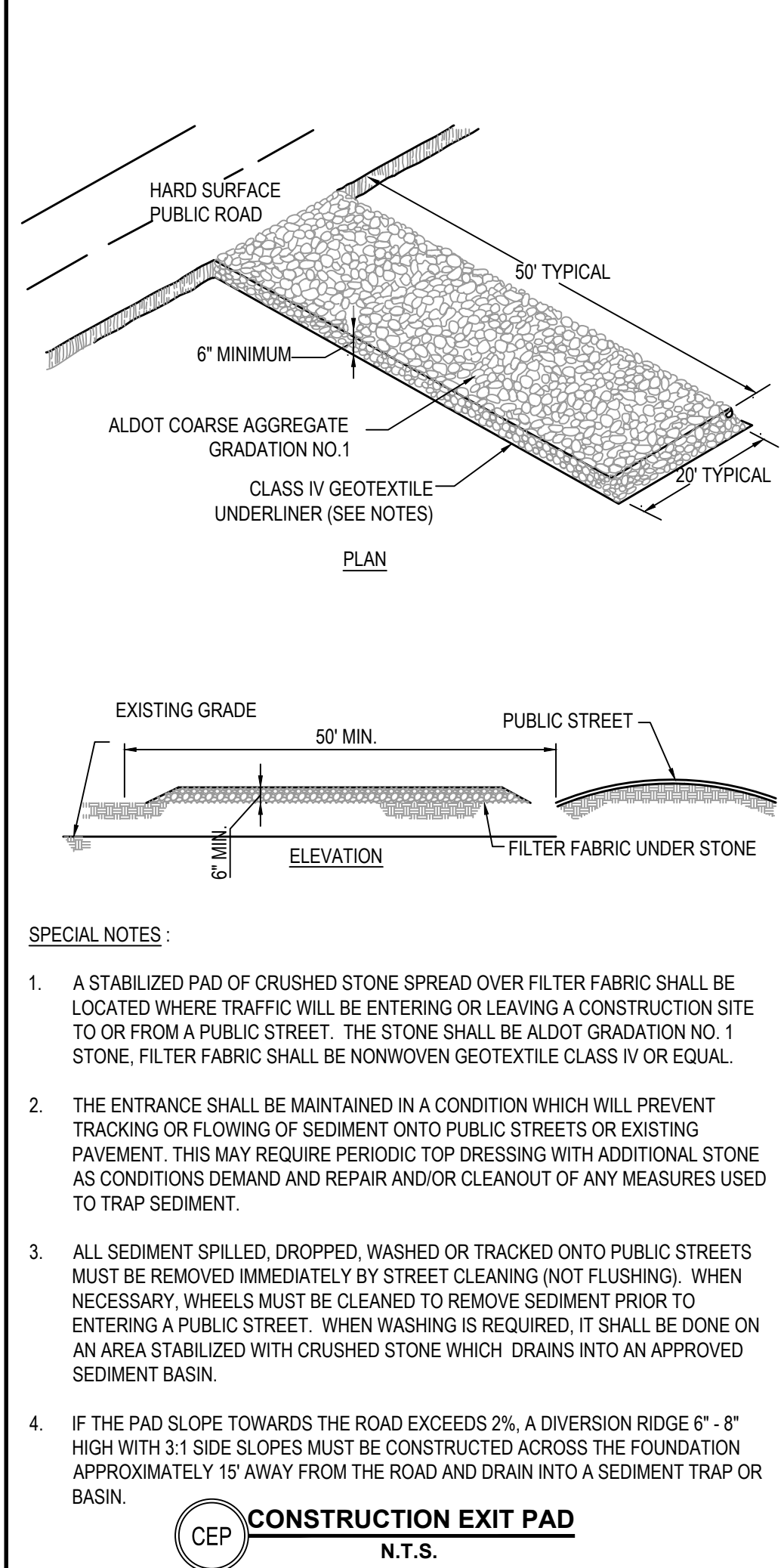
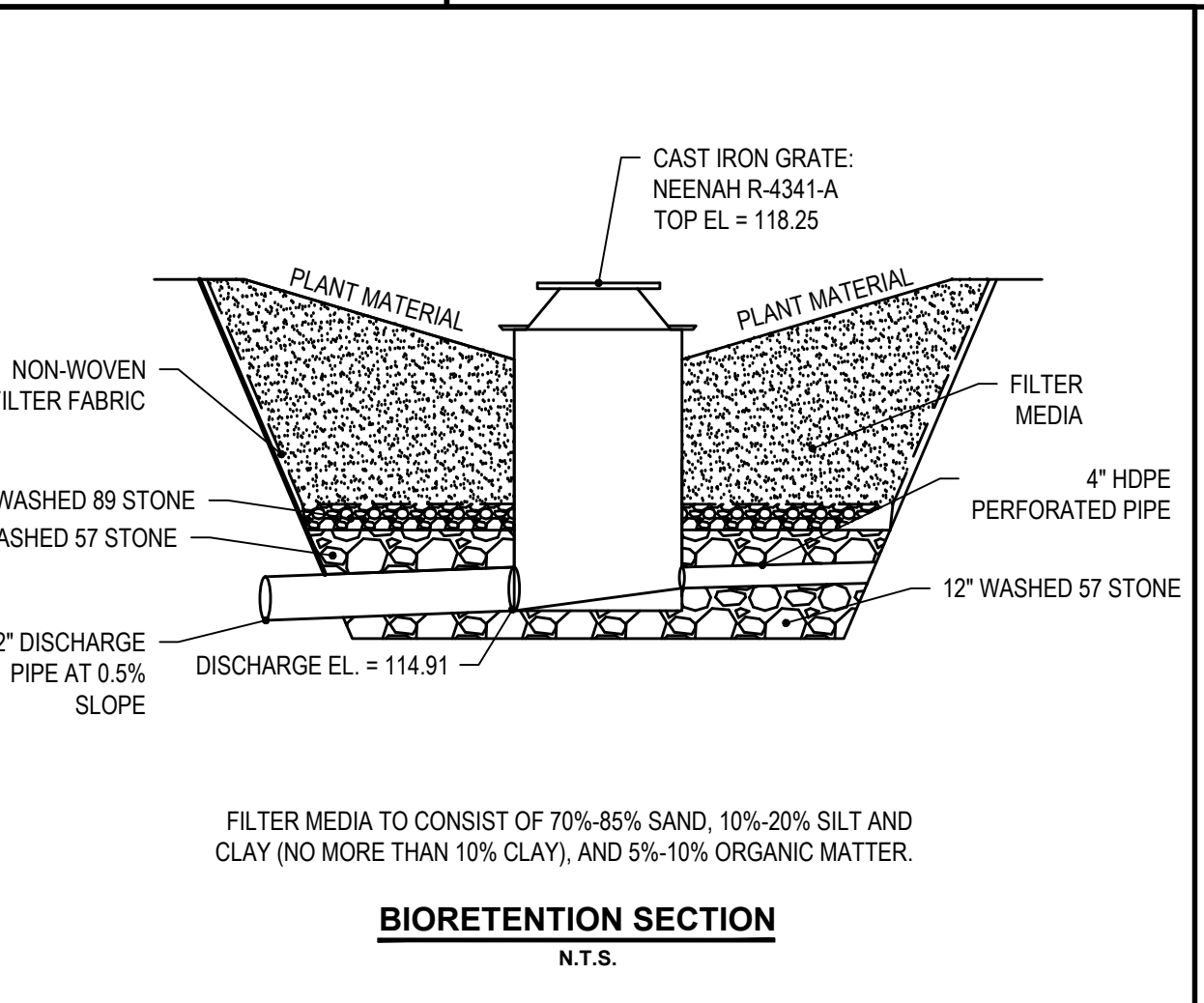
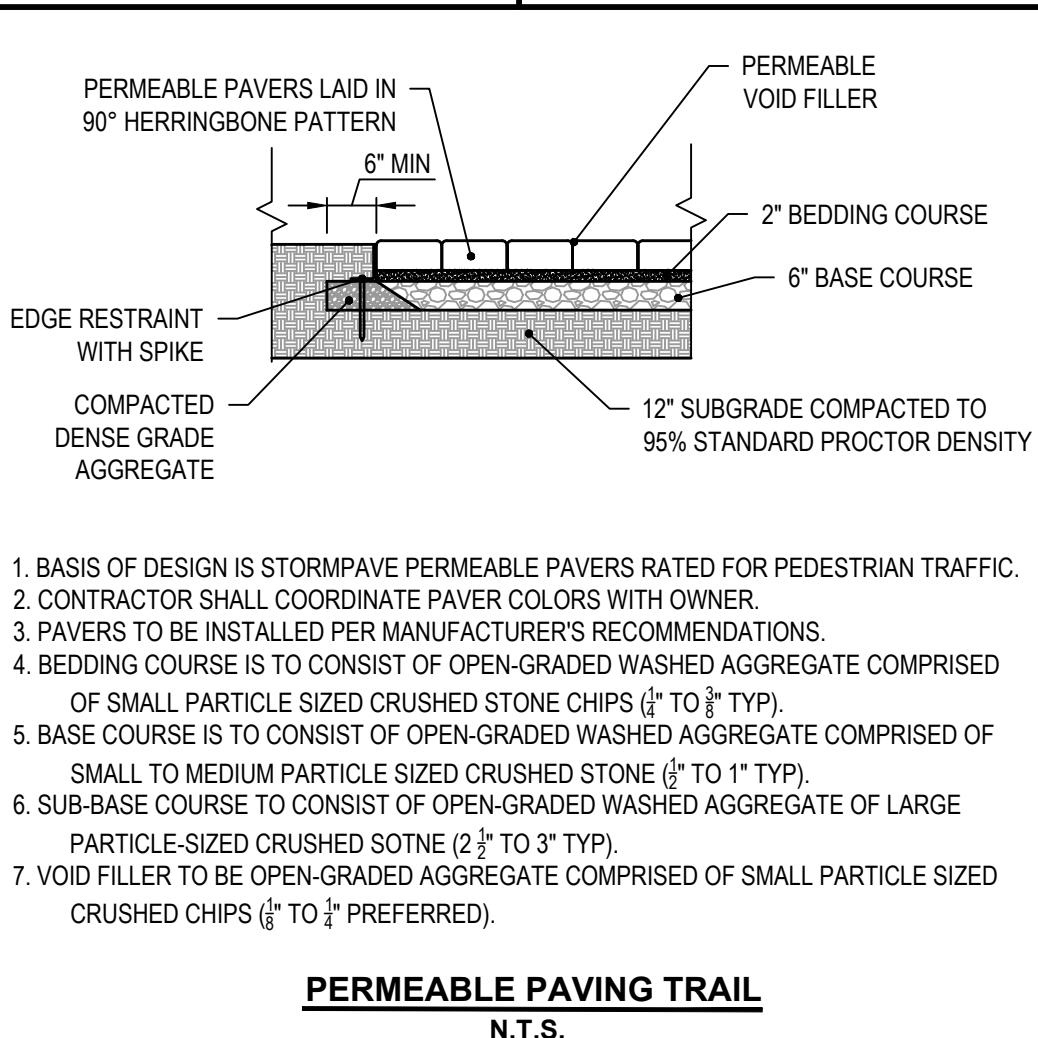
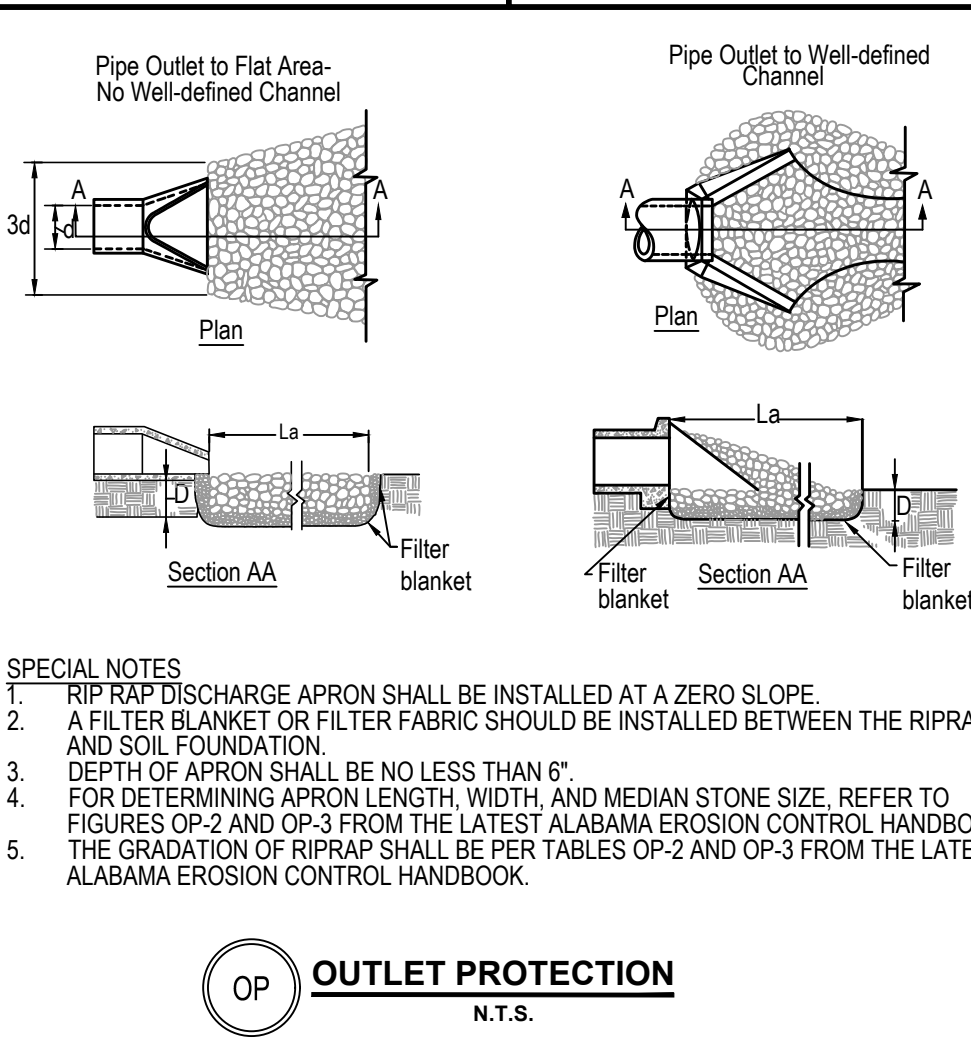
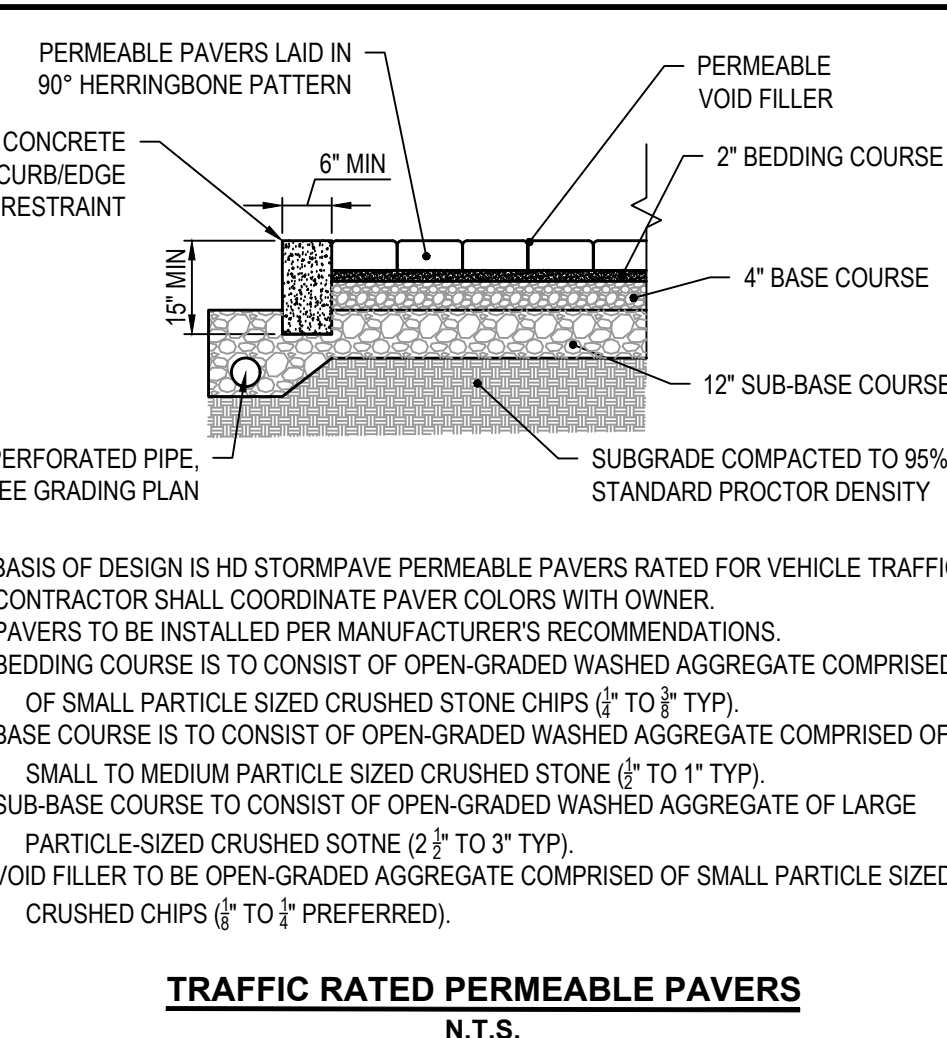
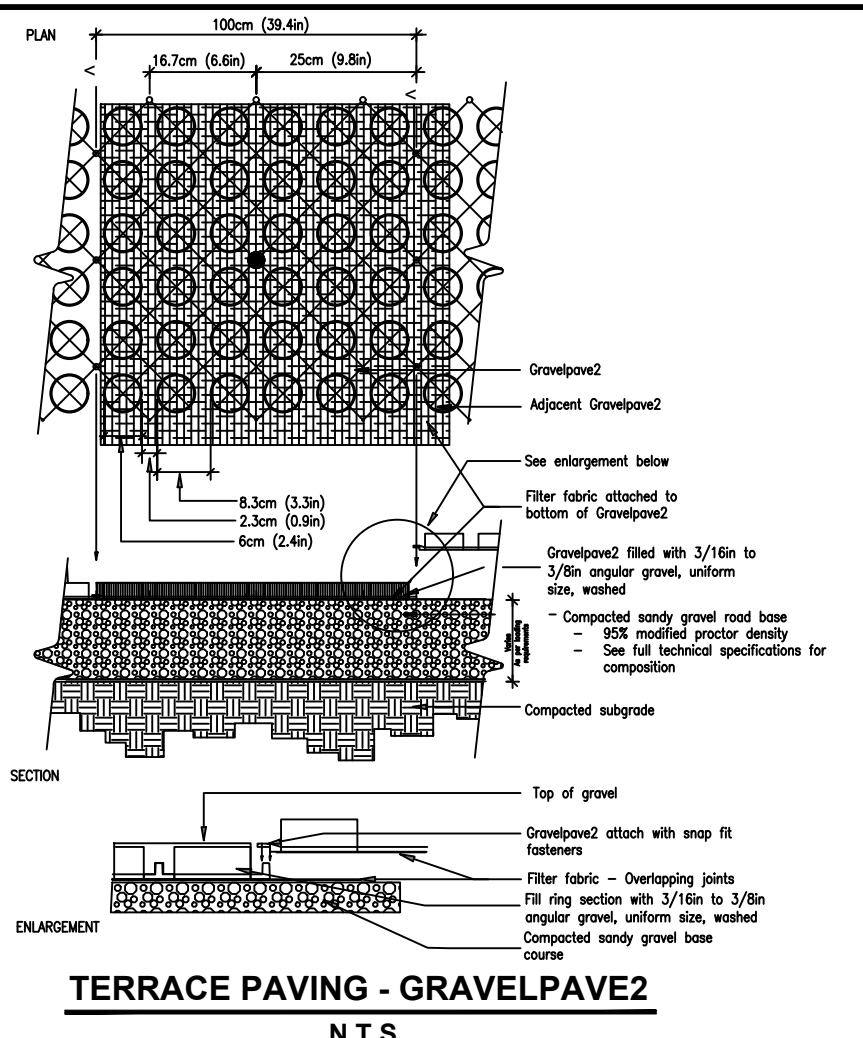
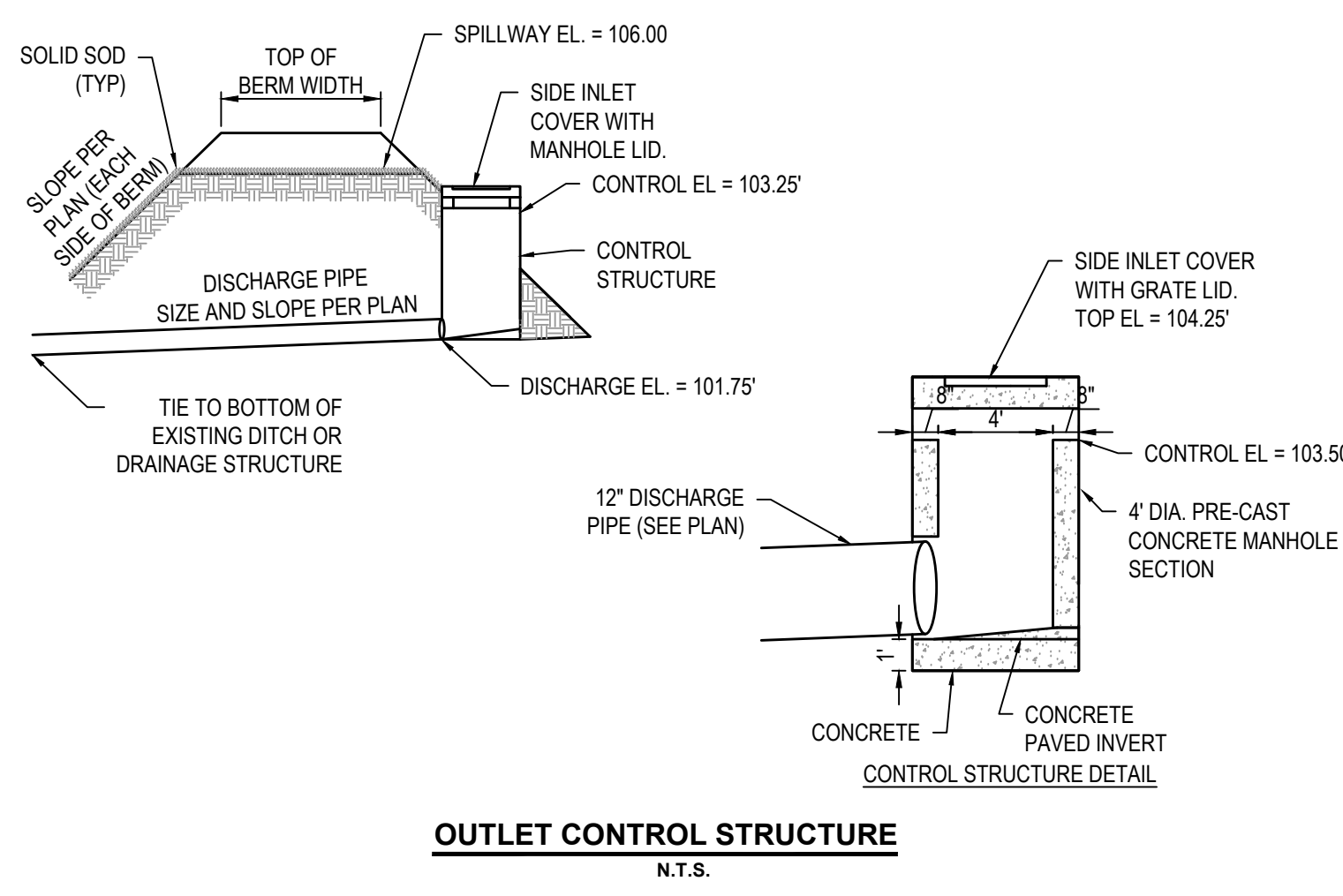
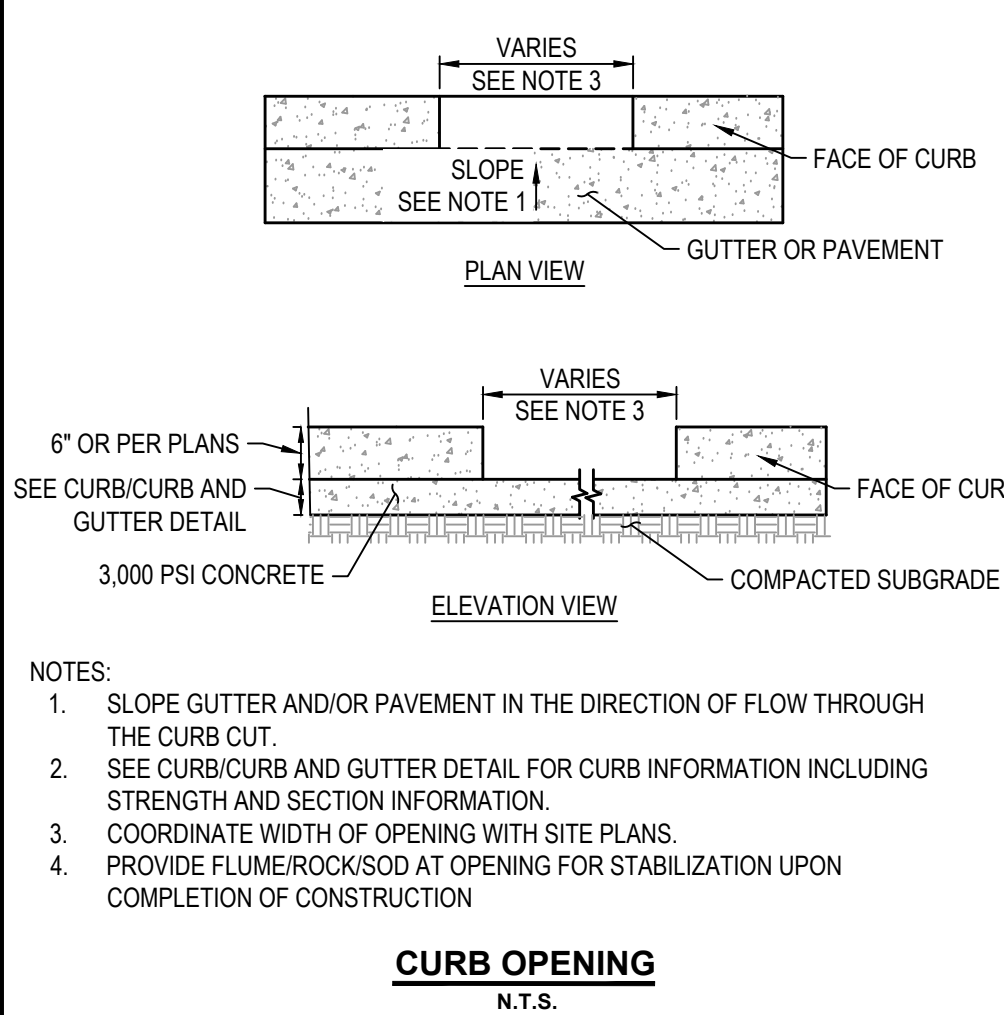
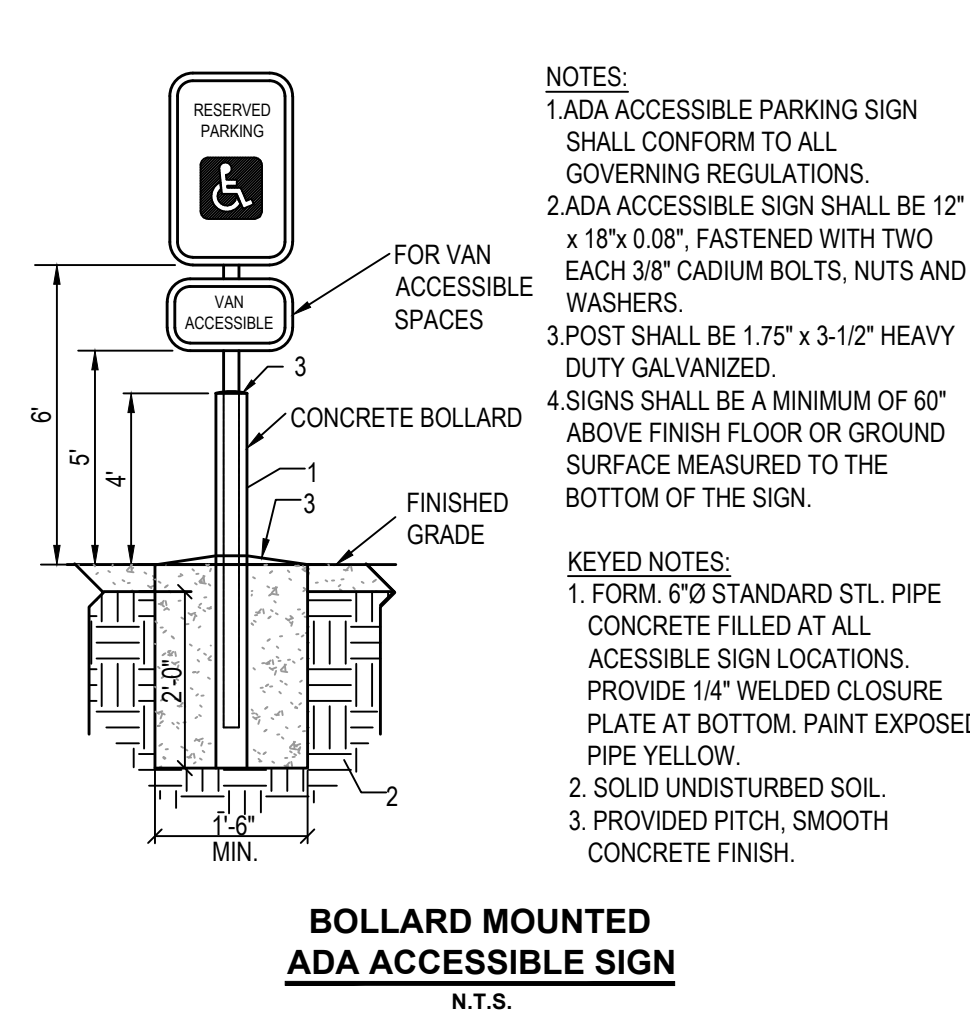
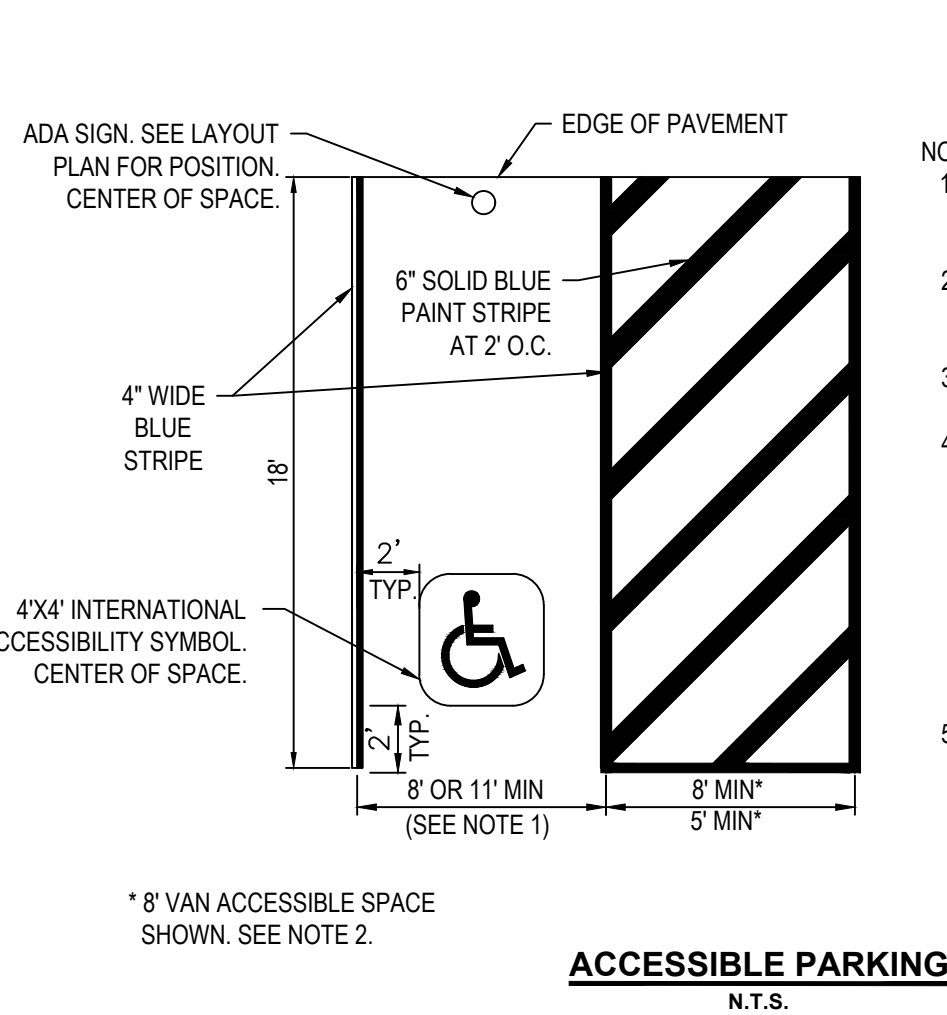
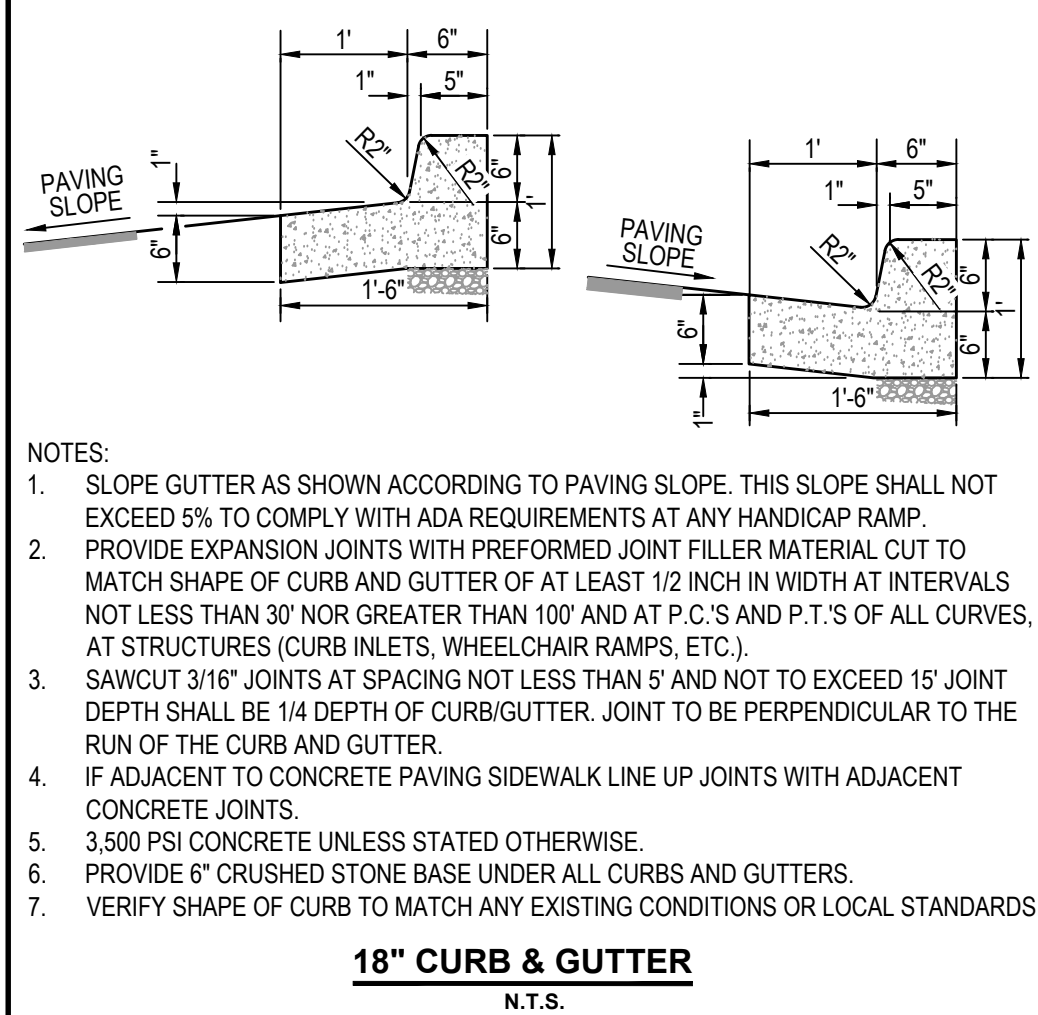


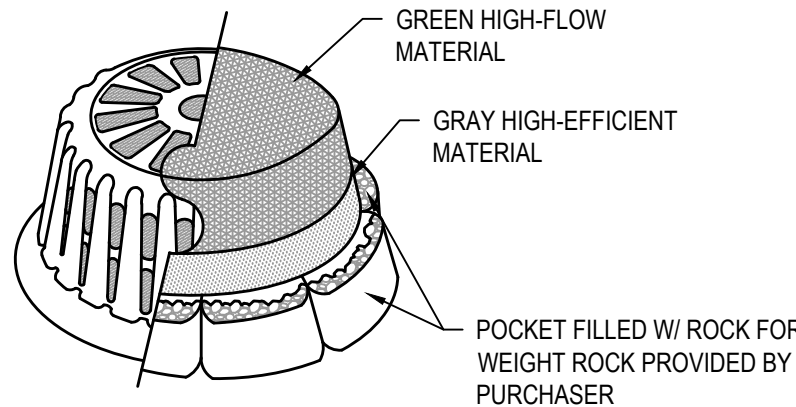
GRAPHIC SCALE



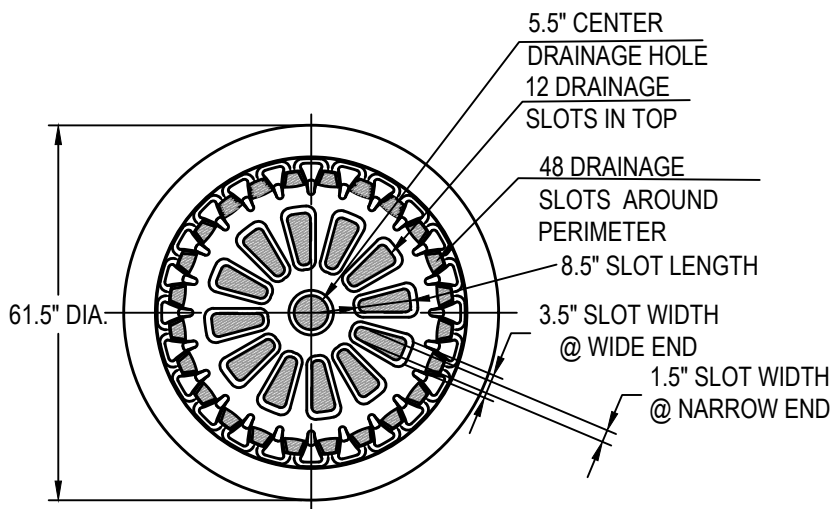
(IN FEET)
1 inch = 10 ft.



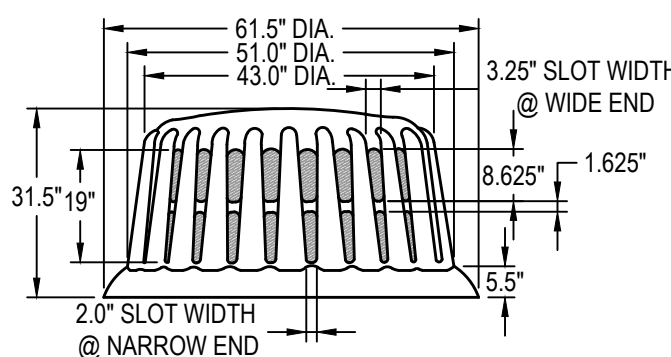




ISOMETRIC VIEW
SHOWN WITH ROADWAY PROJECTS FILTER HAT



PLAN VIEW



ELEVATION VIEW

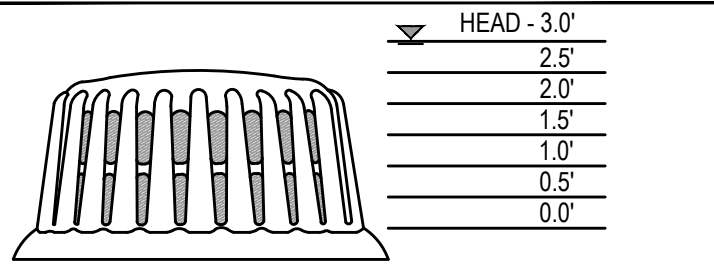
REPLACEMENT FILTERS: MODEL # R-140
FRAME MATERIAL: BLACK 0.25" HMWPE
FILTER FABRIC MATERIAL: REFER TO SPEC
ROUND FRAME & FILTER ASSEMBLY
MODEL # R-100A

FILTER OPTIONS
FILTER HAT IS AVAILABLE IN THREE OPTIONS:
1) ALL HIGH-FLOW MATERIAL
2) ALL HIGH-EFFICIENCY MATERIAL
3) HIGH-FLOW MATERIAL ON TOP HALF OF HAT, HIGH-EFFICIENCY MATERIAL ON BOTTOM HALF (THIS FILTER COVER IS RECOMMENDED FOR ALL ROADWAY PROJECTS.)
IT IS THE PURCHASERS RESPONSIBILITY TO PURCHASE APPROPRIATE FILTER HAT. PURCHASER SHALL PROVIDE ROCK FOR FILTER POCKETS.

FILTER HAT INSTALLATION
FILTER HAT SLIDES DIRECTLY OVER FILTER FRAME. TO KEEP FILTER FRAME IN PLACE OVER STORM STRUCTURE, ROCK POCKETS ARE SEWN DIRECTLY INTO FILTER HAT MATERIAL. EVERY FILTER HAT COMES IN ONE PIECE FOR EASY INSTALLATION.

MAINTENANCE
ALL TEMPORARY EROSION, SEDIMENTATION, & POLLUTION CONTROL PRACTICES SHOULD BE INSPECTED DAILY. CONTRACTOR SHALL REMOVE SEDIMENT AND DISPOSE OF IN A PROPER MANNER. INSPECT R-100A DAILY FOR CUTS, ABRASIONS, AND PROPER INSTALLATION. REPLACE OR REPOSITION AS NECESSARY.

SPECIFICATIONS
FILTER FABRIC SILT-SAVER HAT SHALL BE BASED ON DESIGN PROFESSIONAL'S SPECIFICATIONS.

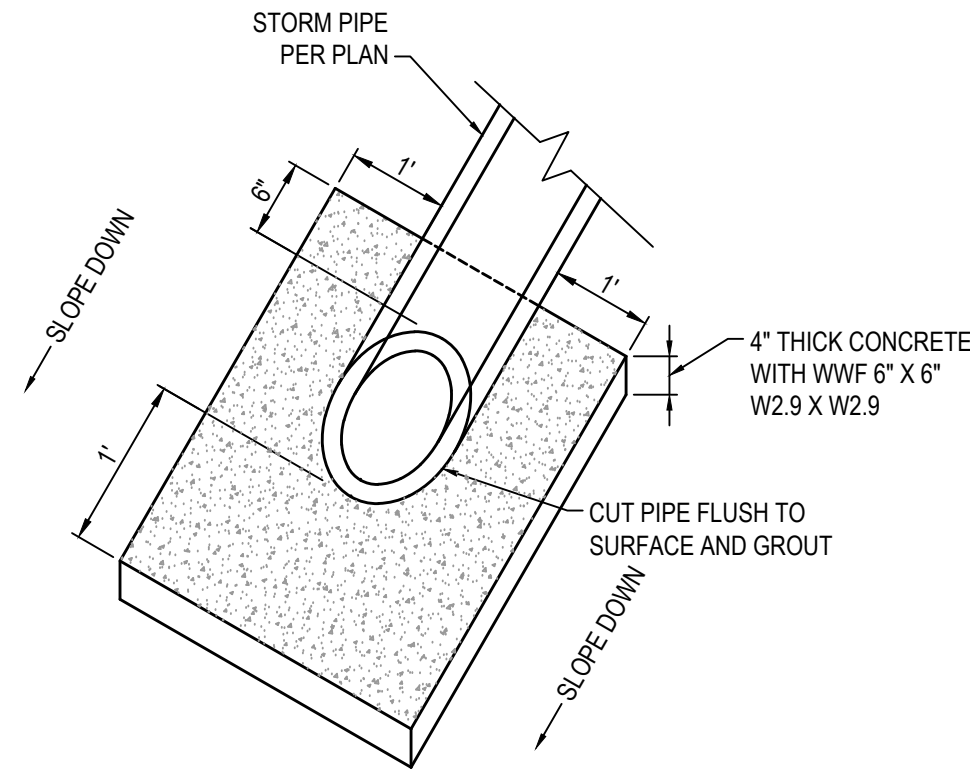


FRAME & FILTER DISCHARGE ANALYSIS					
HEAD (FT)	EQUATION USED	OPENINGS AREA (SF)	FRAME FLOW (CFS)	FILTER AREA (SF)	FILTERED FLOW (CFS)
0.5	O	2.1	7	6	2
1.0	O	3.9	19	12	3
1.5	O	7.0	41	18	5
2.0	O	8.0	54	24	7
2.5	O	9.2	70	30	9
3.0	O	9.2	77	—	77

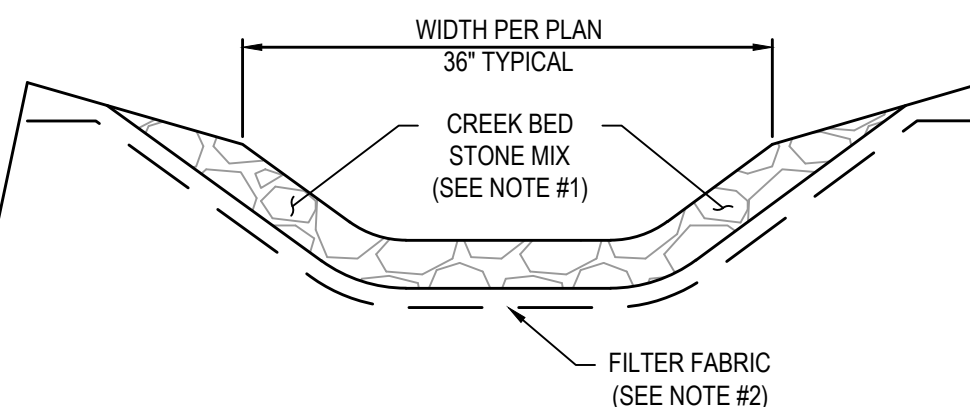
DUE TO NARROW SLOT, A TRANSITION WILL OCCUR BETWEEN WEIR AND ORIFICE CONDITIONS. ORIFICE FLOW WILL PROVIDE A MORE CONSERVATIVE ESTIMATE OF FLOW, THEREFORE THE LESSER OF THE ORIFICE AND WEIR FLOWS WILL BE USED FOR EACH STAGE CALCULATION.

FILTER MATERIAL ALLOWS 129 gpm/SF OR 0.29cfs/SF
ORIFICE EQUATION (O) = $Q = 0.6A(2gh)^{0.5}$
P = FEET PERIMETER
h = HEAD IN FEET
Q = CAPACITY IN cfs
A = FREE OPEN AREA OF FRAME
g = 32.2 FEET-PER-SECOND/SECOND

SILT SAVER
N.T.S.



SLOPE PAVED HEADWALL
N.T.S.



NOTES:
1. CREEK BED STONE MIX. BASIS OF DESIGN IS FLAT RIVER BED STONE MIX FROM ALABAMA WHOLESAL STONE. VERIFY FINAL STONE MIX AND COLOR WITH OWNER PRIOR TO PURCHASING MATERIALS.
2. NON-WOVEN FILTER FABRIC TO BE BURIED AT EDGES OF CREEK BED. INSTALLED WITH 6" LONG STAPLES AT EDGES, CENTERLINE OF CREEK BED, AND ALONG ALL JOINTS. STAPLES TO BE SPACED EVERY 6" MAX. FILTER FABRIC TO OVERLAP A MIN OF 18" AT ALL JOINT LOCATIONS.

CREEK BED DETAIL
N.T.S.

TABLE MU-1
MULCHING MATERIALS AND APPLICATION RATES

MATERIAL	RATE PER ACRE (PER 1,000 SQ.FT.)	NOTES
STRAW WITH SEED	1 1/2 - 2 TONS (70 LBS - 90 LBS)	SPREAD BY HAND OR MACHINE TO ATTAIN 75% GROUND COVER; ANCHOR WHEN SUBJECT TO BLOWING.
STRAW ALONE (NO SEED)	2 1/2 - 3 TONS (115 LBS - 160 LBS)	SPREAD BY HAND OR MACHINE; ANCHOR WHEN SUBJECT TO BLOWING.
WOOD CHIPS	5-6 TONS (225 LBS - 270 LBS)	TREAT WITH 12 LBS. NITROGEN/TON.
BARK	35 CUBIC YARDS (0.8 CUBIC YARD)	CAN APPLY WITH MULCH BLOWER.
PINE STRAW	1-2 TONS (45 LBS - 90 LBS)	SPREAD BY HAND OR MACHINE; WILL NOT BLOW LIKE STRAW.
PEANUT HULLS	10-20 TON (450 LBS - 900 LBS)	WILL WASH OFF SLOPES. TREAT WITH 12 LBS. NITROGEN/TON.

TABLE TS-1
COMMONLY USED PLANTS FOR TEMPORARY COVER

SPECIES	SEEDING RATE PER AC PLS	NORTH	CENTRAL	SOUTH
MILLET, BROWNTOP, OR GERMAN RYE	40 LBS	MAY 1 - AUG 1	APR 1 - AUG 15	APR 1 - AUG 15
RYEGRASS	3 BU	SEPT 1 - NOV 15	SEPT 15 - NOV 15	SEPT 15 - NOV 15
RYEGRASS	30 LBS	AUG 1 - SEPT 15	SEPT 1 - OCT 15	SEPT 1 - OCT 15
SORGHUM - SUDAN HYBRIDS	40 LBS	MAY 1 - AUG 1	APR 15 - AUG 1	APR 1 - AUG 15
SUNDANGRASS	40 LBS	MAY 1 - AUG 1	APR 15 - AUG 1	APR 1 - AUG 15
WHEAT	3 BU	SEPT 1 - NOV 1	SEPT 15 - NOV 15	SEPT 15 - NOV 15
COMMON BERMUDAGRASS	10 LBS	APR 1 - JULY 1	MAR 15 - JULY 15	MAR 1 - JULY 15
CRIMSON CLOVER	10 LBS	SEPT 1 - NOV 1	SEPT 1 - NOV 1	SEPT 1 - NOV 1

TABLE PS-1
COMMONLY USED PLANTS FOR PERMANENT COVER WITH SEEDING RATES AND DATES

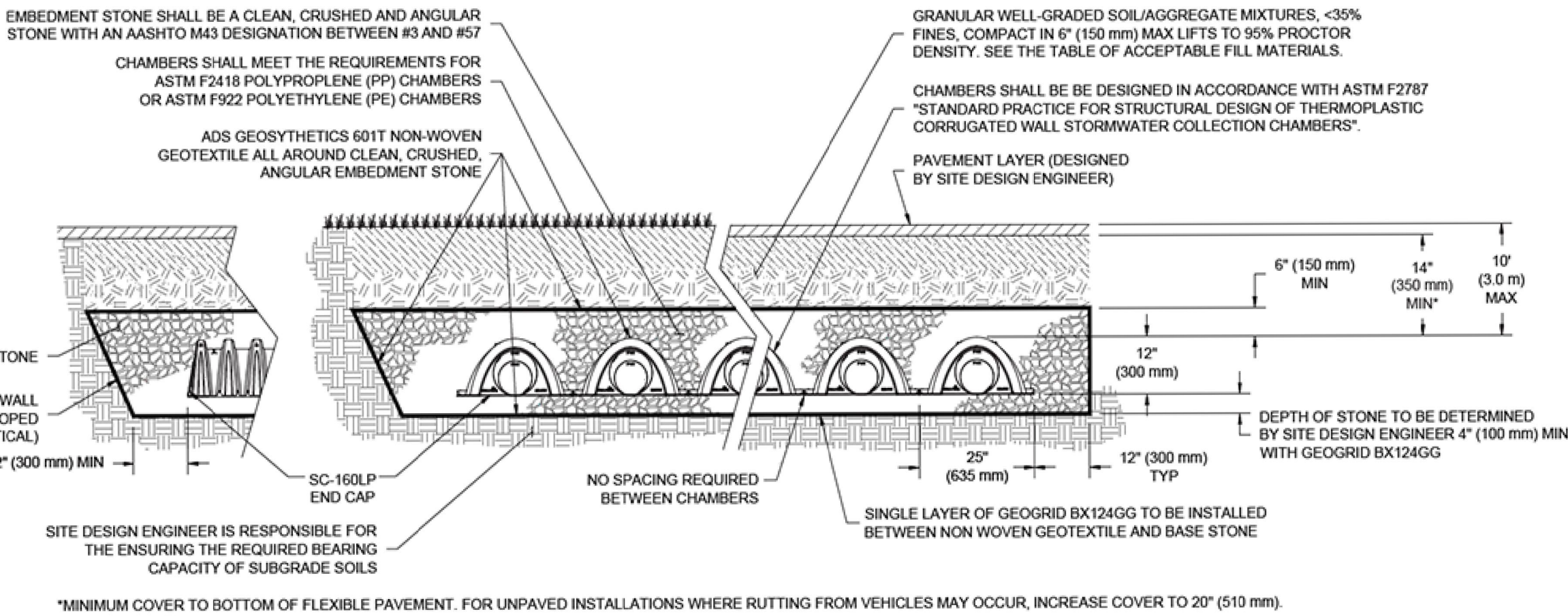
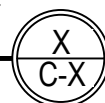
SPECIES	SEEDING RATE PER AC PLS	NORTH	CENTRAL	SOUTH
BAHIA GRASS, PENSACOLA	40 LBS	--	MAR 1 - JULY 1	FEB 1 - NOV 1
BERMUDAGRASS, COMMON	10 LBS	APR 1 - JULY 1	MAR 15 - JULY 15	MAR 1 - JULY 15
BAHIA GRASS, PENSACOLA	30 LBS	--	MAR 1 - JULY 1	MAR 1 - JULY 15
BERMUDAGRASS, COMMON	5 LBS	--	MAR 1 - JULY 1	MAR 1 - JULY 15
BERMUDAGRASS, HYBRID (LAWN TYPES)	SOLID SOD	ANYTIME	ANYTIME	ANYTIME
BERMUDAGRASS, HYBRID (LAWN TYPES)	SPRIGS 1/50 FT	MAR 1 - AUG 1	MAR 1 - AUG 1	FEB 15 - SEPT 1
FESCUE, TALL	40 - 50 LBS	SEPT 1 - NOV 1	SEPT 1 - NOV 1	--
SERICEA	40 - 60 LBS	MAR 15 - JULY 15	MAR 1 - JULY 15	FEB 15 - JULY 15
SERICEA & COMMON BERMUDAGRASS	40 - 60 LBS	MAR 15 - JULY 15	MAR 1 - JULY 15	FEB 15 - JULY 15
SWITCHGRASS, ALAMO	4 LBS	APR 1 - JUN 15	MAR 15 - JUN 15	MAR 15 - JUN 15

PLS MEANS PURE LIVE SEED AND IS USED TO ADJUST SEEDING RATES. FOR EXAMPLE: TO PLANT 10 LBS PLS OF A SPECIES WITH GERMINATION OF 80% AND 10% INERT MATERIAL -> 10 LBS / 0.70 = 14.3 LBS.

NOTES:
1. ANY DISTURBED AREA SHALL, WITHIN FOURTEEN (14) DAYS OF STOPPING WORK, BE PLANTED OR OTHERWISE PROVIDED WITH GROUND COVER, MATERIALS, DEVICES, AND/OR STRUCTURES SUFFICIENT TO RESTRAIN ALL FORMS OF EROSION, TO THE MAXIMUM EXTENT PRACTICABLE.
2. CONTRACTOR TO COORDINATE PERMANENT SEEDING WITH OWNER.

MULCHING, TEMPORARY SEEDING, & PERMANENT SEEDING DIRECTIONS

N.T.S.



ADS UNDERGROUND DETENTION SYSTEM
N.T.S.