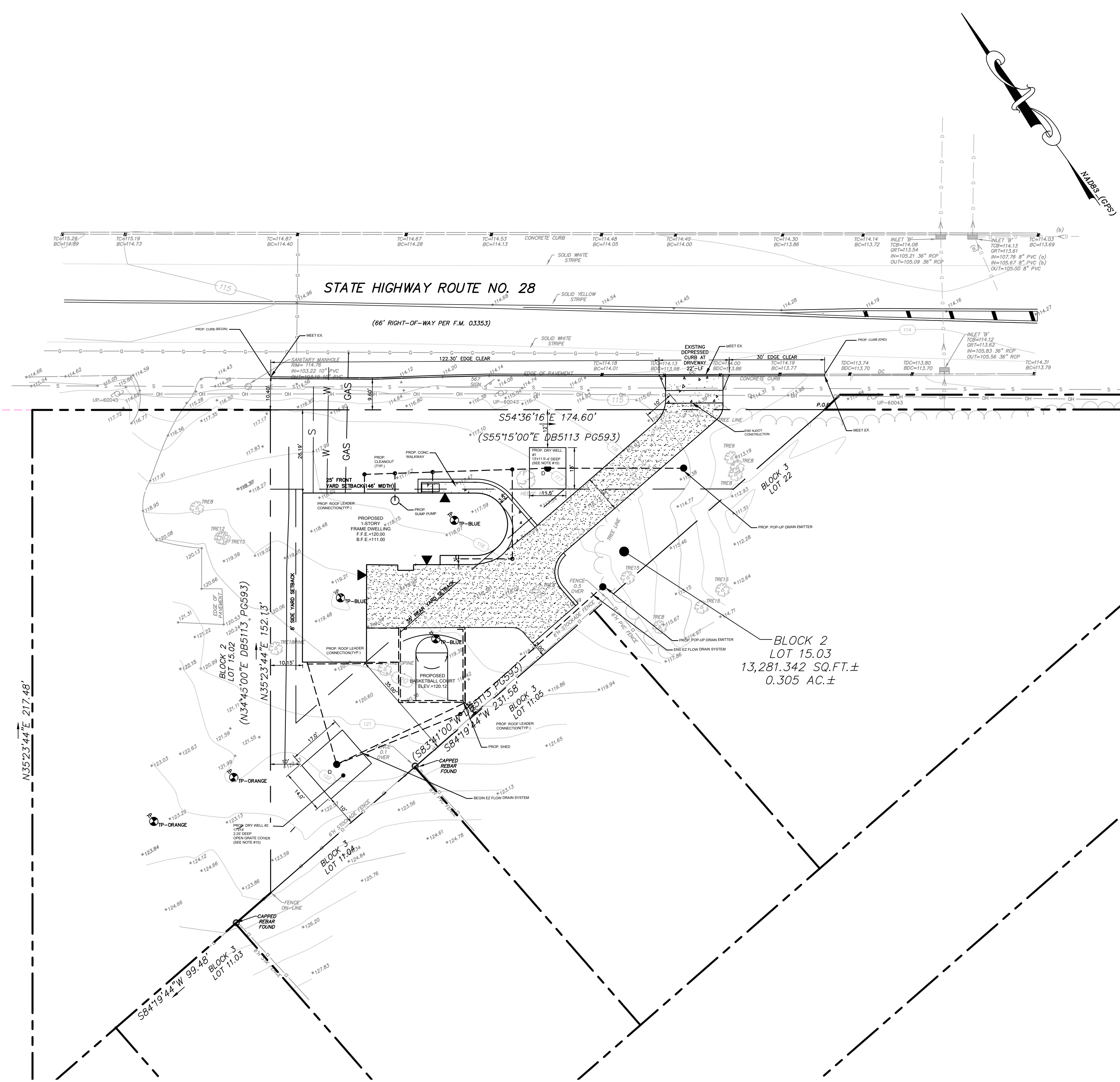
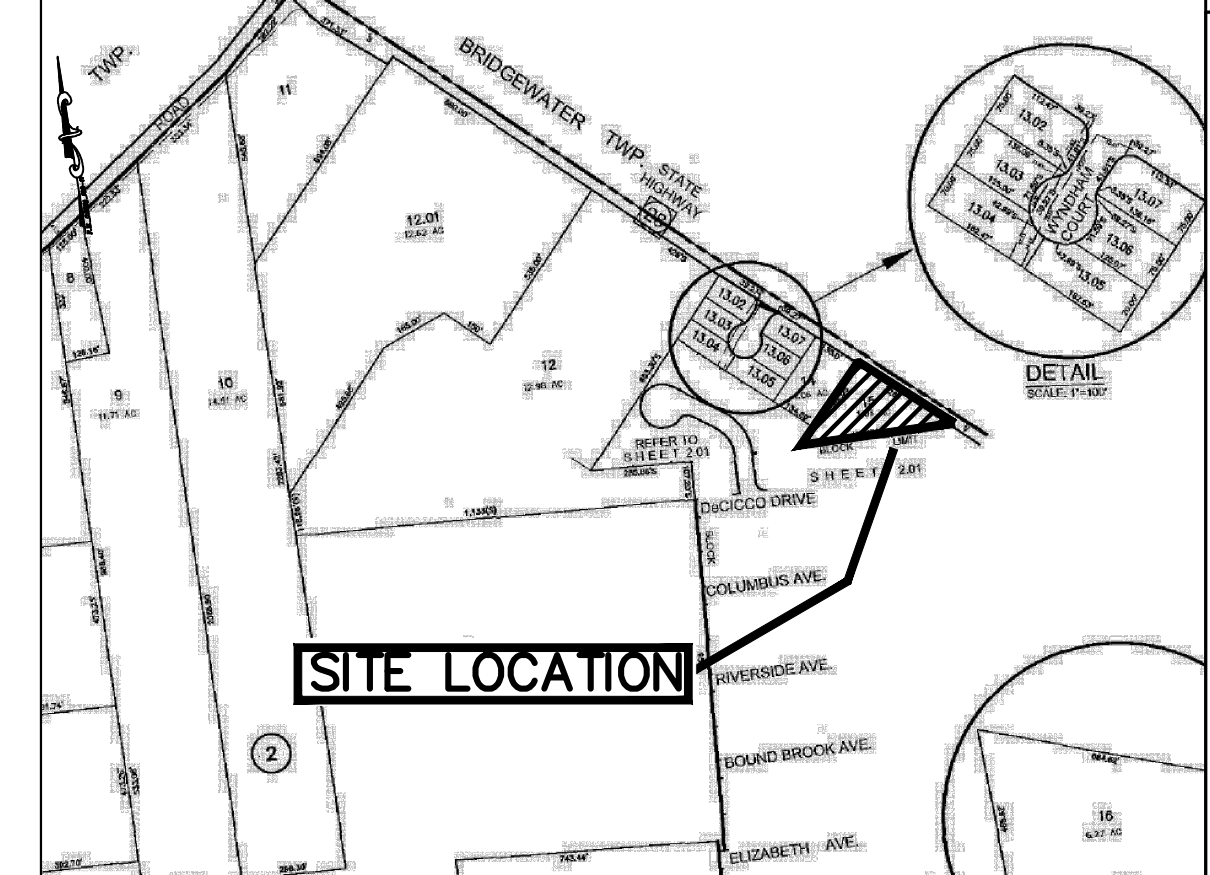


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**GENERAL NOTES:**

- BOUNDARY INFORMATION TAKEN FROM A CERTAIN PLAN ENTITLED "TOPOGRAPHIC & BOUNDARY SURVEY FOR MAXWELL FIELD", LOT 15.03 IN BLOCK 2 ON TAX MAPS OF BOROUGH OF RARITAN, SOMERSET COUNTY, NJ BY LANDMARK SURVEYS, DATED 06/07/2024.
- THIS SET OF PLANS HAVE BEEN PREPARED FOR PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED ON THE DRAWINGS AND EACH DRAWING HAS BEEN REVISED TO INDICATE "ISSUED FOR CONSTRUCTION".
- ALL CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH ALL LOCAL, FEDERAL AND STATE REGULATIONS.
- ALL PROPOSED UTILITY LOCATIONS ARE APPROXIMATE. THE LOCATION OF ALL UTILITIES MUST BE APPROVED BY THE UTILITY COMPANY PRIOR TO THEIR CONSTRUCTION. ALL UTILITY CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THE UTILITY COMPANY'S SPECIFICATIONS.
- THE CONTRACTOR SHALL RECEIVE ALL THE NECESSARY APPROVALS FROM ALL LOCAL, COUNTY AND STATE GOVERNING AGENCIES, PRIOR TO CONSTRUCTION.
- ALL ABOVE AND BELOW GROUND UTILITIES SHALL BE PROTECTED FROM DESTRUCTION AND DEBRIS AT ALL TIMES.
- TELEPHONE, ELECTRIC, GAS AND CABLE LINES AND STRUCTURE LOCATIONS SHOWN ON THE PLANS ARE TENTATIVE AND MAY CHANGE PER UTILITY COMPANY'S DIRECTION. THE CONTRACTOR SHALL COORDINATE FINAL LOCATIONS AND INSTALLATION REQUIREMENTS WITH THE APPLICABLE UTILITY COMPANIES.
- IF ENFORCED, THE CONTRACTOR SHALL BE RESPONSIBLE TO SUPPLY ANY OR ADDITIONAL SOIL EROSION & SEDIMENT CONTROL MEASURES AS REQUESTED BY THE GOVERNING SOIL CONSERVATION DISTRICT.
- THE PLANS DESIGNATE AT LEAST ONE BENCHMARK FOR THE PROJECT. ONLY DESIGNATED BENCHMARK ELEVATIONS SHALL BE USED WHEN ESTABLISHING INTERIM AND FINAL ELEVATIONS FOR ALL NEW CONSTRUCTION IMPROVEMENTS. THE CONTRACTOR IS PROCEEDING AT ITS OWN RISK IF NEW ELEVATIONS ARE ESTABLISHED BY REFERENCING ANY ELEVATION OTHER THAN A DESIGNATED BENCHMARK.
- PROPOSED BUILDING FOOTPRINT DIMENSIONS TAKEN FROM A CERTAIN PLAN ENTITLED "FIELD-RESIDENCE 608-NJ-28 RARITAN-BOROUGH", FOR MAXWELL FIELD, BY GIDEON GILBER ARCHITECT, DATED 9/15/2024.
- PROPOSED AND EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
- ALL ROOF LEADERS WILL BE DIRECTED TOWARDS THE FRONT AND REAR YARD, NOT TOWARDS THE ADJACENT PROPERTIES.
- ALL LAWN AREAS SHALL BE TREATED WITH TOPSOIL, SEEDING, AND FERTILIZER IN ACCORDANCE WITH THE BERGEN SOILS CONSERVATION DISTRICT STANDARDS. SOIL STABILIZATION FOR ALL DISTURBED AREAS SHALL ALSO CONFORM TO THE STANDARDS SET FORTH BY THE SOMERSET COUNTY SOILS CONSERVATION DISTRICT.
- ANY SIDEWALK, PAVEMENT, OR CONCRETE CURB ALONG THE FRONTAGE OF THE PROPERTY THAT IS BROKEN OR DAMAGED DURING CONSTRUCTION MUST BE REPLACED.
- ALL ROOF LEADERS SHALL CONNECT TO DRY WELLS. SEE DRY WELL DETAIL. THE DRYWELL EXCAVATION MUST BE INSTALLED A MINIMUM OF 10 FEET FROM A PROPERTY LINE AND A MINIMUM OF 5 FEET FROM THE BASE OF ANY TREE. ALL PORTIONS OF THE DRYWELL TO BE A MINIMUM OF 2 FEET ABOVE S.H.W.T. INSTALLATION OF DRYWELL TO BE INSPECTED BY BOROUGH ENGINEER. 48 HOUR NOTICE IS REQUESTED. THE HOMEOWNER IS RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE OF THE STORMWATER MANAGEMENT SYSTEM ON SITE. THE SYSTEM SHALL BE CLEANED TWICE ANNUALLY AS WELL AS AFTER A MAJOR STORM EVENT.
- PRIOR TO CONSTRUCTION, CONTRACTOR TO SUBMIT SHOP DRAWINGS OF RETAINING WALL FOR APPROVAL BY BOROUGH ENGINEER.
  - THE OWNER MUST BE AWARE THAT ALL RETAINING WALL THREE (3) FEET OR GREATER IN EXPOSED HEIGHT REQUIRE RETAINING WALL STABILITY CALCULATIONS TO BE PROVIDED, SIGNED, AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY AND APPROVED PRIOR TO CONSTRUCTION.
  - ALL RETAINING WALLS CONSTRUCTED ON SITE OVER THREE (3) FEET OR GREATER IN HEIGHT WILL REQUIRE A CERTIFICATION OF A LICENSED PROFESSIONAL ENGINEER THAT HE/SHE HAS PROVIDED ON SITE INSPECTION DURING WALL CONSTRUCTION, PROPER METHODS WERE UTILIZED IN THE CONSTRUCTION, THE WALL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED DESIGN DRAWINGS, THE WALL HAS BEEN PROPERLY STABILIZED AND THE WALL WILL BE ADEQUATE FOR THE INTENDED PURPOSES. INSPECTING ENGINEERS MUST ALSO CERTIFY APPROPRIATE BATTER, HEIGHTS, AND LOCATIONS RESPECTED PURSUANT TO THE APPROVED DRAWINGS. COPIES OF THESE CERTIFICATIONS ARE TO BE FORWARDED TO THE MUNICIPAL ENGINEER.
- FRONT DRIVEWAY CURB MUST BE CONSTRUCTED WITH CONCRETE.
- DEVELOPER MUST TAKE CAUTION WHEN COMPLETING FINAL GRADING OF THE PROPERTY SO AS NOT CAUSE SURFACE WATER RUNOFF ONTO ADJACENT PROPERTIES.



NO.	DESCRIPTION	BY	DATE
1	REVISED PER CLIENT	R.B.	5/20/25

ENGINEER:  
 12/01/2025  
 RICHARD L. BERNARDES, P.E.  
 PROFESSIONAL ENGINEER  
 NO. LICENSE NO. 144278900

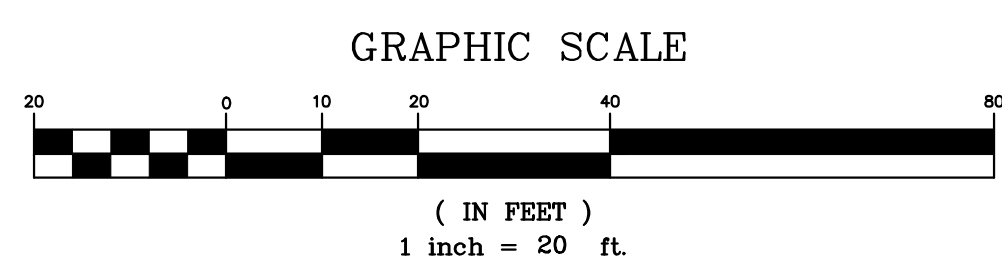
PLOT PLAN  
 PREPARED FOR  
 GOS, NJ-28  
 BLOCK 2, LOT 15.03  
 SITUATED IN  
 BOROUGH OF RARITAN,  
 SOMERSET COUNTY, NEW JERSEY

ENGINEERING  
 BUILDING DESIGN & LAYOUT  
 STORMWATER MANAGEMENT

Bernard Engineering and Design  
 Consultants  
 1529 High Street  
 Perth Amboy, NJ 08861  
 LICENSE NO. 144278900  
 CONTRACT NO. 202403040000

SCALE:	DATE:	DRAWN:	CHECKED:
1"=20'	07/28/24	RB	EJ
PROJECT NO:	DRAWING NO:	REVISION:	
107	SHEET 1 OF 6	05/20/25	

- LEGEND :**
- T.B.R. TO BE REMOVED
  - EOP EDGE OF PAVEMENT
  - R RADIUS
  - ELEV. ELEVATION
  - F.F.E. FIRST FLOOR ELEVATION
  - SILT FENCE
  - LIMIT OF DISTURBANCE
  - OHW— OHW
  - 8.8 Existing Contour
  - PROPOSED CONTOUR
  - 8.8 Existing Tree Line
  - PROPOSED TREE LINE
  - 8.8 Existing Elevation
  - 8.8 PROPOSED ELEVATION



**OWNER/APPLICANT:**  
 MAXWELL FIELD  
 415 MANSFIELD VILLAGE  
 HACKETTSTOWN, NJ 07840

**ZONE REQUIREMENTS-MEDIUM DENSITY RESIDENTIAL (R-3)**

PRINCIPAL BUILDING	REQUIRED	EXISTING	PROVIDED
MINIMUM LOT AREA	7,500 S.F.	13,281.342 S.F.	13,281.342 S.F.
MINIMUM LOT WIDTH	75 FT.	148 FT.	148 FT.
MINIMUM FRONT YARD SETBACK	25 FT.	N/A	26.19 FT.
MINIMUM REAR YARD SETBACK	35 FT.	N/A	35 FT.
MINIMUM SIDE YARD SETBACK	8 FT.	N/A	10.15 FT.
TOTAL SIDE YARD SETBACK	20 FT.	N/A	N/A
MAXIMUM BUILDING HEIGHT	35 FT.	N/A	±18.75 FT.
	2 1/2 STORIES	N/A	1 1/2 STORIES
MAXIMUM IMPERVIOUS COVERAGE	30%	0%	36.44%*
MINIMUM NET FLOOR AREA	1,000 S.F.	0 S.F.	1,964.32 S.F.

**ACCESSORY BUILDING**

	REQUIRED	EXISTING	PROVIDED
MINIMUM FRONT YARD SETBACK	25 FT.	N/A	68 FT.
MINIMUM REAR YARD SETBACK	5 FT.	N/A	5 FT.
MINIMUM SIDE YARD SETBACK	5 FT.	N/A	40 FT.

**\* PROPOSED VARIANCE**

	EXISTING	PROPOSED
UNDEVELOPED SITE	- S.F.	WALKWAYS 283.45 S.F.
		DRIVEWAY 2,036.52 S.F.
		BUILDING 1,964.32 S.F.
		BASKETBALL COURT 490.07 S.F.
		WALLS 65.15 S.F.
TOTAL	- S.F.	4,839.51 S.F.
LOT AREA	13,281.34 S.F.	
BUILDING COVERAGE	0.00%	14.79%
LOT COVERAGE	0.00%	36.44%*

**PROTECT YOURSELF**  
 A PHONE CALL  
 CAN BE YOUR INSURANCE POLICY



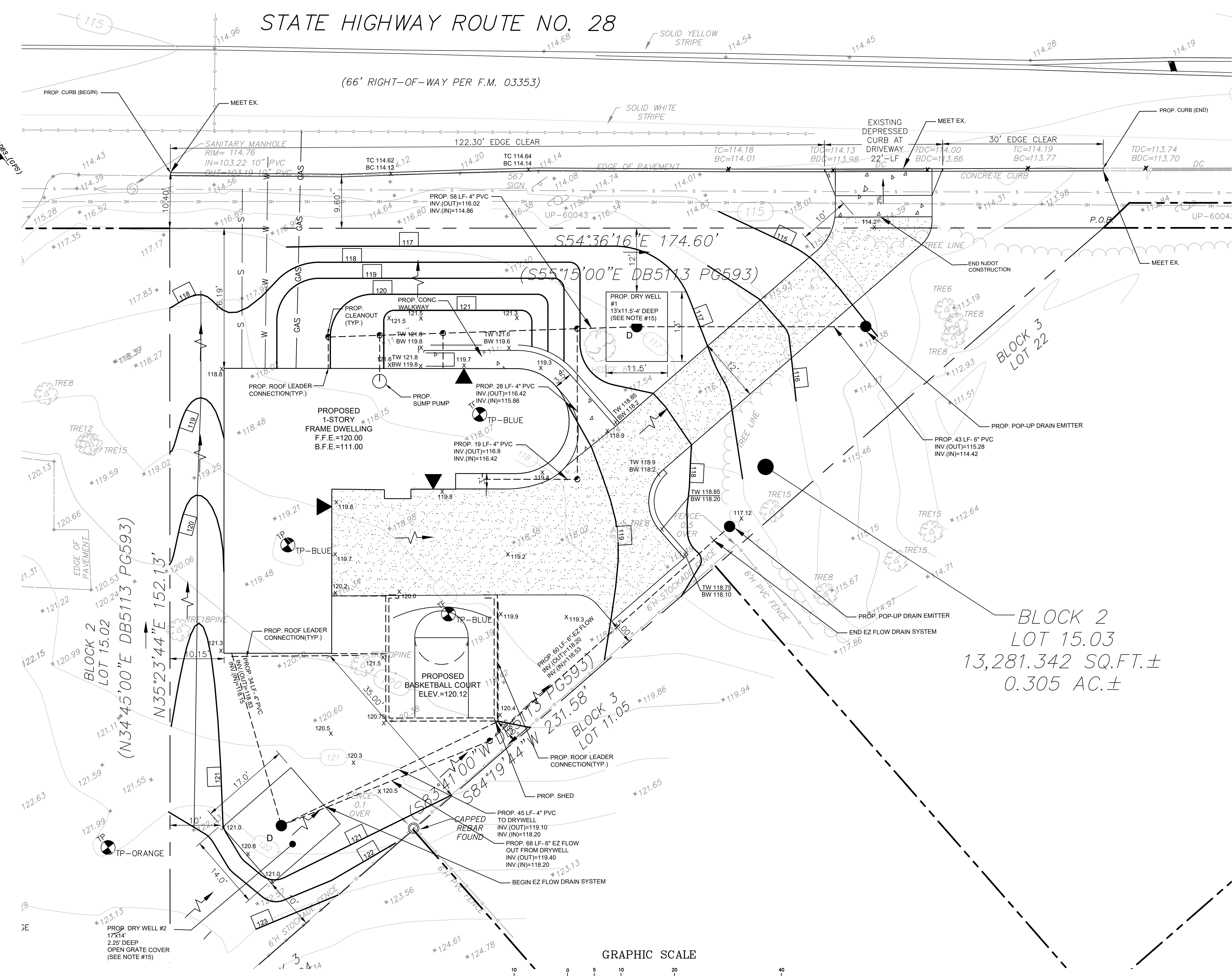
WHAT YOU DON'T KNOW CAN HURT YOU.  
 THE STATE OF NEW JERSEY REQUIRES INSTALLATION OF EDUCATIONAL  
 DESIGNER/DRYWELL PREPARATION TO PROTECT THE EARTH'S  
 SURFACE ANYWHERE IN THE STATE.

www.bernardengineering.com

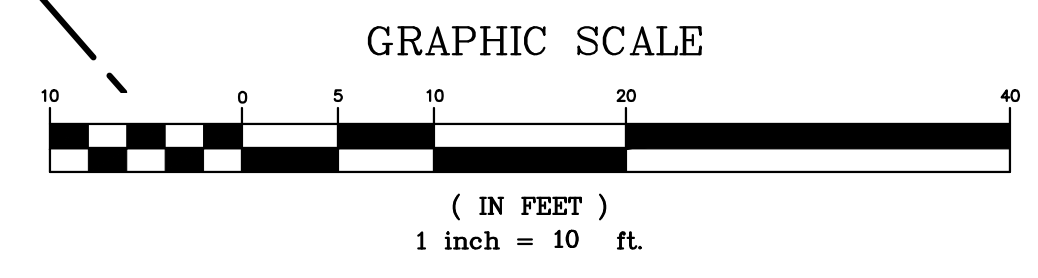
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# STATE HIGHWAY ROUTE NO. 28

(66' RIGHT-OF-WAY PER F.M. 03353)



BLOCK 2  
 LOT 15.03  
 13,281.342 SQ.FT. ±  
 0.305 AC. ±



- LEGEND :**
- EOP    EDGE OF PAVEMENT
  - R       RADIUS
  - ELEV.    ELEVATION
  - F.F.E.    FIRST FLOOR ELEVATION
  - SILT FENCE
  - — —    LIMIT OF DISTURBANCE
  - OHW —    OHW
  - 8.8 - - -    Existing Contour
  - 8.8 — — —    PROPOSED CONTOUR
  - 8.8 — — —    Existing Tree Line
  - 8.8 — — —    PROPOSED TREE LINE
  - 8.8       Existing Elevation
  - 8.8       PROPOSED ELEVATION
  - ▼        ENTRANCE/DOORWAY



NO.	DESCRIPTION	BY	DATE
1	REVISED PER CLIENT		5/20/25

**ENGINEER:**  
 12/01/2025  
 RICHARD L. BERNARDES, P.E.  
 PROFESSIONAL ENGINEER  
 NO. LICENSE NO. 040200000000

**GRADING PLAN**  
 PREPARED FOR:  
 GOS, N.L. 28  
 BLOCK 2, LOT 15.03  
 SITUATED IN  
 BOROUGH OF FORT LINDEN  
 SOMERSET COUNTY, NEW JERSEY

**ENGINEERING**  
**BUILDING DESIGN & LAYOUT**  
**STORMWATER MANAGEMENT**

Bernardes Engineering and Design  
 Consultants  
 152 High Street  
 Perth Amboy, NJ 08861  
 TEL: 732-261-1111  
 FAX: 732-261-1112  
 www.bernardesengineering.com

SCALE: 1"=10'	DATE: 07/28/24	DRAWN: RB	CHECKED: EJ
PROJECT NO: 107	DRAWING NO: SHEET 2 OF 6	REVISION:	05/20/25

## SOIL EROSION AND SEDIMENT CONTROL NOTES

- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCES, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 30 DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO NJ STATE STANDARDS.
- PERMANENT VEGETATION SHALL BE SEED OR SODED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH WILL BE USED FOR PROTECTION UNTIL SEEDING IS ESTABLISHED.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NJ STATE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY, 7th EDITION LAST REVISED JANUARY 2014.
- A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS IN ORDER TO STABILIZE STREETS, ROADS, DRIVEWAYS AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN 15 DAYS OR PRELIMINARY GRADING.
- IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING ALL CRITICAL AREAS SUBJECT TO EROSION (I.E.: STEEP SLOPES, ROADWAY EMBANKMENTS) WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO THE NJ STATE STANDARDS.
- ANY STEEP SLOPES RECEIVING PIPELINE INSTALLATION WILL BE BACKFILLED AND STABILIZED DAILY, AS THE INSTALLATION PROCEEDS (I.E.: SLOPES GREATER THAN 3:1).
- TRAFFIC CONTROL STANDARDS REQUIRE THE INSTALLATION OF A 50'X30'X6" PAD OF 1 1/2" OR 2" STONE, AT ALL CONSTRUCTION DRIVEWAYS, IMMEDIATELY AFTER INITIAL SITE DISTURBANCE.
- THE SOMERSET-UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING 48 HOURS IN ADVANCE OF ANY LAND DISTURBING ACTIVITY.
- AT THE TIME WHEN THE SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER, SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES.
- IN THAT NJSA 4:24-39 ET SEQ., REQUIRES THAT NO CERTIFICATE OF OCCUPANCY BE ISSUED BEFORE THE PROVISIONS OF THE CERTIFIED PLAN FOR SOIL EROSION AND SEDIMENT CONTROL HAVE BEEN COMPLIED WITH FOR PERMANENT MEASURES, ALL SITE WORK FOR SITE PLANS AND ALL WORK AROUND INDIVIDUAL LOTS IN SUBDIVISIONS, WILL HAVE TO BE COMPLETED PRIOR TO THE DISTRICT ISSUING A REPORT OF COMPLIANCE FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE MUNICIPALITY.
- CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
- ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT NJ STATE SOIL EROSION & SEDIMENT CONTROL STANDARDS.
- THE SOMERSET-UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED OF ANY CHANGES IN COMPLIANCE.
- MULCHING TO THE NJ STANDARDS IS REQUIRED FOR OBTAINING A CONDITIONAL REPORT OF COMPLIANCE. CONDITIONALS ARE ONLY ISSUED WHEN THE SEASON PROHIBITS SEEDING.
- CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL ADJACENT ROADS CLEAN DURING LIFE OF CONSTRUCTION PROJECT.
- THE DEVELOPER SHALL BE RESPONSIBLE FOR REMEDIATING ANY EROSION OR SEDIMENT PROBLEMS THAT ARISE AS A RESULT OF ONGOING CONSTRUCTION AT THE REQUEST OF THE SOMERSET-UNION SOIL CONSERVATION DISTRICT.
- HYDRO SEEDING IS A TWO-STEP PROCESS. THE FIRST STEP INCLUDES SEED, FERTILIZER, LIME, ETC., ALONG WITH MINIMAL AMOUNTS OF MULCH TO PROMOTE CONSISTENCY. GOOD SEED TO SOIL CONTACT, AND GIVE A VISUAL INDICATION OF COVERAGE. UPON COMPLETION OF SEEDING OPERATION, HYDRO-MULCH SHOULD BE APPLIED AT A RATE OF 1500 LBS. PER ACRE IN SECOND STEP. THE USE OF HYDRO-MULCH, AS OPPOSED TO STRAW, IS LIMITED TO OPTIMUM SEEDING DATES AS LISTED IN THE NJ STANDARDS.

SOMERSET-UNION SOIL CONSERVATION DISTRICT  
308 MILLTOWN ROAD  
BRIDGEWATER, NJ 08807  
TEL (908) 526-2701

### SEEDING SPECIFICATION

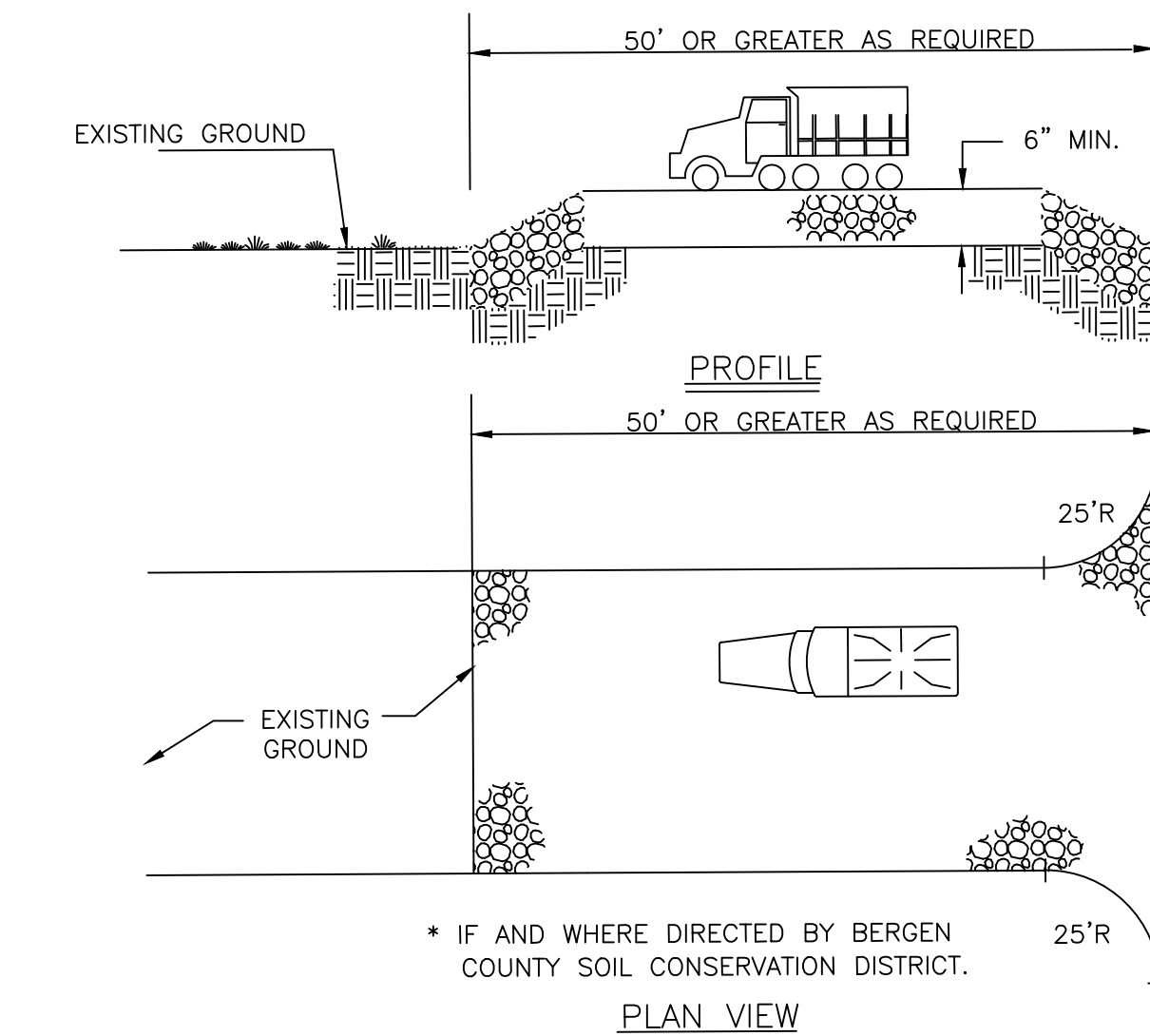
- TOPSOIL:** TOPSOIL SHALL BE SPREAD OVER ALL DISTURBED AREAS TO A MINIMUM DEPTH OF 6" WHEN COMPACTED (SEE SPECIFICATIONS).
- FERTILIZATION LIMEING:** SHALL BE APPLIED AT SUCH RATES DETERMINED NECESSARY FOR GOOD PLANT GROWTH. PER SOIL TEST FINDINGS. IN LIEU OF SOIL TEST RESULTS, APPLY TWO (2) TONS GROUND AGRICULTURAL LIMESTONE AND 1000 LBS. 10-10-10 OR EQUIVALENT ANALYSIS FERTILIZER PER ACRE. AT LEAST 40% OF THE FERTILIZER NITROGEN SHALL BE OF AN ORGANIC ORIGIN.
- SEEDING:** AREAS TO BE SEED SHALL BE SEED WITH SELECT HIGH-QUALITY SEED. SEEDING MIXTURE AND SEEDING RATES, SHALL BE AS SPECIFIED BELOW. TO ENSURE AN EVEN UNIFORM COVERAGE, SEED SHALL BE APPLIED IN TWO SUCCESSIVE SOWINGS WITH THE SECOND SOWING PERPENDICULAR TO THE FIRST. THE RATE OF EACH SOWING SHALL BE 1/2 THE TOTAL SEEDING RATE SPECIFIED BELOW. TO ENSURE GOOD GERMINATION, THE SEED SHALL BE RAKED INTO THE SOIL TO A DEPTH OF 1/2".
- MULCHING:** ALL SEEDED AREAS SHALL BE MULCHED IMMEDIATELY AFTER SEEDING. MULCH MAY BE EITHER DRY STRAW OR HAY, FREE OF WEED SEEDS. APPLY AT A RATE OF 100 LBS./1000 SQ. FT. ON SLOPES GREATER THAN 3:1. MULCH SHALL BE STABILIZED WITH AN EMULSIFIED ASPHALT BINDER APPLIED AT 5 GAL./1000 SQ. FT.
- WATERING:** SEEDS SHALL BE WATERED DAILY TO INSURE GOOD GERMINATION. ONCE SEEDS HAVE GERMINATED, IRRIGATION MAY BE DECREASED BUT THE SEEDS MUST NEVER BE ALLOWED TO DRY OUT COMPLETELY. FREQUENT WATERING SHOULD BE CONTINUED FOR APPROXIMATELY THREE (3) WEEKS AFTER GERMINATION OR UNTIL GRASS HAS BECOME SUFFICIENTLY ESTABLISHED TO WARRANT WATERING ON AN "AS NEEDED" BASIS.
- PLANTING DATES:** ACCEPTABLE: MAY 1 TO AUG 14.  
OPTIMAL: MAY 1 THRU APR 30 AND AUG 15 TO OCTOBER 15.
- LAWN SEED MIXTURE:** SEE STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION NOTE 3A (THIS SHEET) AND STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION NOTE 3A (SHEET SE-6)

## CONSTRUCTION SEQUENCE

	DURATION	SCHEDULED TIME
1. INSTALLATION OF ALL SEDIMENT AND EROSION CONTROL DEVICES PRIOR TO ANY MAJOR SOIL DISTURBANCES OR IN THEIR PROPER SEQUENCE AND MAINTENANCE UNTIL PERMANENT PROTECTION IS ESTABLISHED. TEMPORARY VEGETATIVE STABILIZATION MUST BE PROVIDED SITE WIDE UPON INITIAL CLEARING.	1 WEEK	1ST WEEK
2. CLEAR AND REMOVE ALL EXISTING VEGETATION IN THOSE AREAS WHERE NECESSARY. ALL REMAINING VEGETATION TO BE PROPERLY PROTECTED AND TO REMAIN IN ITS NATURAL STATE.	1 WEEK	1ST WEEK
3. THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE ENTIRE DRIVEWAY (ROAD) BE STABILIZED WITH ASPHALT WHERE THE SLOPE EXCEEDS 5%.	2 DAYS	1ST WEEK
4. EXCAVATE FOR DWELLING FOUNDATION.	1 WEEK	2ND WEEK
5. CONSTRUCT FOUNDATION WALLS FOR DWELLING'S BASEMENT.	2 WEEKS	3RD - 4TH WEEK
6. INSTALL MODULAR DWELLING ONTO FOUNDATION WALLS.	6 WEEKS	5TH - 6TH WEEK
7. CONSTRUCT DECKS & GARAGE FOUNDATION.	1 WEEK	7TH WEEK
8. CONNECT ALL UTILITIES TO DWELLING.	4 DAYS	7TH WEEK
9. CONSTRUCT SHED.	3 WEEKS	8TH - 10TH WEEK
10. CONSTRUCT DRIVEWAY AND DRIVEWAY APRON.	4 DAYS	11TH WEEK
11. SOIL DE-COMPACTION TESTING AND REMEDIATION.	1 TO 3 DAYS	12TH WEEK
12. FINE GRADE FRONT AND REAR YARD AREAS.	2 DAYS	12TH WEEK
13. REMOVAL OF ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES.	1 DAY	12TH WEEK
14. STABILIZATION OF THE SITE WITH PERMANENT VEGETATIVE COVER AND LANDSCAPING.	2 DAYS	12TH - 13TH WEEK

## SODBED PREPARATION

- A. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM, FINE SODBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SODBED WHEREVER FEASIBLE.
- B. REMOVE FROM THE SURFACE ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLOUDS, LUMPS, OR OTHER UNSUITABLE MATERIAL.
- C. INSPECT SODBED JUST BEFORE SODDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED AND FIRMED AS ABOVE.
- D. SOD TO BE INSTALLED IMMEDIATELY FOLLOWING BED PREPARATION.
- E. SOD TO BE IRRIGATED AS NEEDED UNTIL STABILIZED. (6 WEEKS MINIMUM)
- NOTE:
- SEED MIXTURE: TUCKAHOE TURF BLEND SOD CONTAINING 45% MILLENNIUM TURF TYPE TALL FESCUE, 45% PLANTATION TURF TYPE TALL FESCUE, 10% TUCKAHOE TURF BLUEGRASS BLEND.
  - EARTHWORK AND FINAL TOPSOIL INSTALLATION MUST BE COMPLETED BEFORE INSTALLATION OF SOD.
  - SOIL SAMPLES AND STARTER FERTILIZER TO BE PROVIDED BY THE CONTRACTOR PRIOR TO THE INSTALLATION OF SOD.



## STABILIZED CONSTRUCTION ACCESS NOTES

AT POORLY DRAINED LOCATIONS, SUBSURFACE DRAINAGE GRAVEL FILTER OR GEOTEXTILE SHALL BE INSTALLED BEFORE INSTALLING THE STABILIZED CONSTRUCTION ENTRANCE.

PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FT.	100 FT.
2 TO 5%	100 FT.	200 FT.
>5%	ENTIRE SURFACE STABILIZED WITH HOT MIX ASPHALT BASE COURSE, MIX 1-21	

WHERE A STABILIZED CONSTRUCTION EXIT TRAVERSES BETWEEN TWO BUILDINGS, IT SHALL BE STONED THE ENTIRE LENGTH OF THE RIGHT-OF-WAY. MOUNTABLE STONE BERMIS PLACED ACROSS THE WIDTH OF THE EXIT MAY ALSO BE REQUIRED AT THE TRANSITION POINT BETWEEN PAVED AND NON-PAVED AREAS TO TRAP SEDIMENTS WHICH ARE CARRIED BY STORMWATER FLOWING ALONG THE CURB LINE.

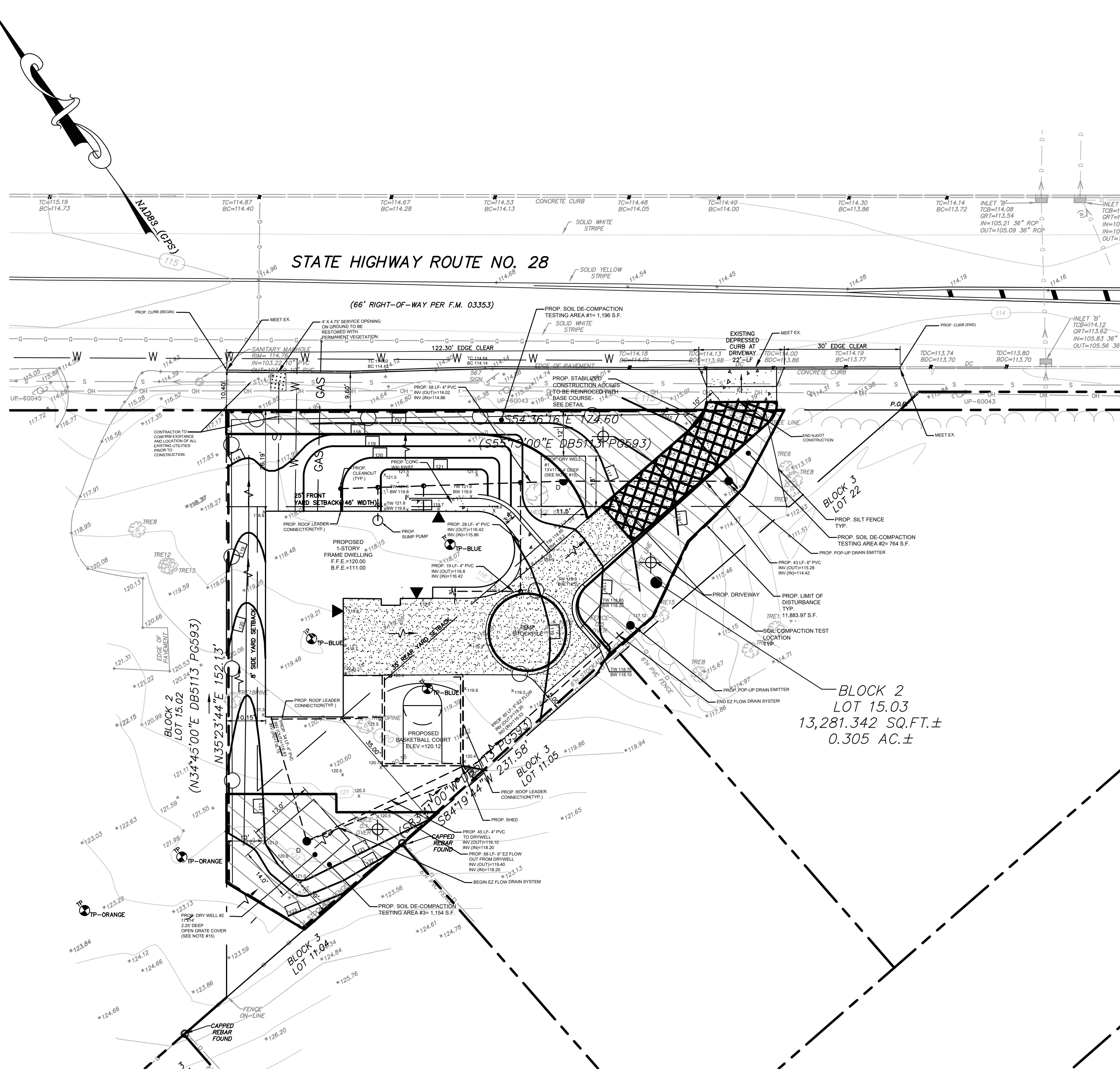
INDIVIDUAL LOT ENTRANCE AND EGRESS - AFTER INTERIOR ROADWAYS ARE PAVED, INDIVIDUAL LOT INGRESS/EGRESS POINTS MAY REQUIRE A STABILIZED CONSTRUCTION ENTRANCE CONSISTING OF NO. 3 STONE (1"-2") TO PREVENT OR MINIMIZE TRACKING OF SEDIMENTS. WIDTH OF THE STONE INGRESS/EGRESS SHALL BE EQUAL TO LOT ENTRANCE WIDTH AND SHALL BE A MINIMUM OF TEN FEET IN LENGTH. IF SPACE IS LIMITED, VEHICLE TIRES MAY BE WASHED WITH CLEAN WATER BEFORE ENTERING A PAVED AREA. A WASH STATION MUST BE LOCATED SUCH THAT WASH WATER WILL NOT FLOW ONTO PAVED ROADWAYS OR INTO UNPROTECTED STORM DRAINAGE SYSTEMS.

WHEN THE CONSTRUCTION ACCESS EXISTS ONTO A MAJOR ROADWAY, A PAVED TRANSITION AREA MAY BE INSTALLED BETWEEN THE MAJOR ROADWAY AND THE STONED ENTRANCE TO PREVENT LOOSE STONES FROM BEING TRANSPORTED OUT ONTO THE ROADWAY BY HEAVY EQUIPMENT ENTERING OR LEAVING THE SITE.

### MAINTENANCE

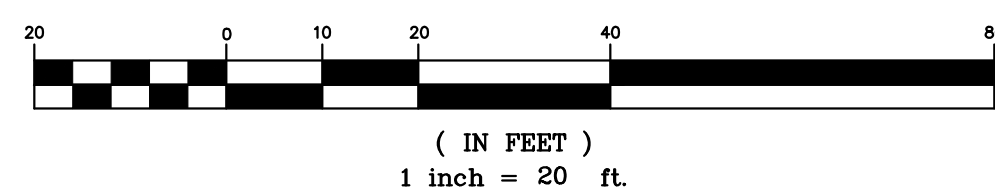
THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO ROADWAYS (PUBLIC OR PRIVATE) OR OTHER IMPERVIOUS SURFACES MUST BE REMOVED IMMEDIATELY.

WHERE ACCUMULATION OF DUST/SEDIMENT IS INADEQUATELY CLEANED OR REMOVED BY CONVENTIONAL METHODS, A POWER BROOM OR STREET SWEEPER WILL BE REQUIRED TO CLEAN PAVED OR IMPERVIOUS SURFACES. ALL OTHER ACCESS POINTS WHICH ARE NOT STABILIZED SHALL BE BLOCKED OFF.



BLOCK 2  
LOT 15.03  
13,281.342 SQ.FT.±  
0.305 AC.±

### GRAPHIC SCALE



### LEGEND :

T.B.R.	TO BE REMOVED		SILT FENCE
EOP	EDGE OF PAVEMENT		LIMIT OF DISTURBANCE
R	RADIUS		OHW
ELEV.	ELEVATION		Existing Contour
F.F.E.	FIRST FLOOR ELEVATION		PROPOSED CONTOUR
	CONSTRUCTION DRIVEWAY		Existing Tree Line
	SOIL DE-COMPACTION TESTING AREA		PROPOSED TREE LINE
	SOIL DE-COMPACTION TESTING LOCATION		8.8 Existing Elevation
			8.8 PROPOSED ELEVATION

SOIL DE-COMPACTION AREAS	
AREA #1	1,196 S.F.
AREA #2	764
AREA #3	1,154
TOTAL	3,114 S.F.



NO.	DESCRIPTION	BY	DATE
1	REVISED PER CLIENT	R.B.	5/20/25
2	REVISED PER SESS	R.B.	1/27/28

ENGINEER:

RENATO L. BERNARDES, P.E.  
PROFESSIONAL ENGINEER  
NO. LICENSE NO. 1542700007

SOIL EROSION & SEDIMENT CONTROL PLAN  
PREPARED BY  
GOS NJ 08  
BLOCK 2 LOT 15.03  
SITELAND IN  
ROBOUTCH OF RAHWAY  
SOMERSET COUNTY - NEW JERSEY

ENGINEERING  
BUILDING DESIGN & LAYOUT  
STORMWATER MANAGEMENT

Bernardes Engineering and Design  
Consultants  
152 High Street  
Perth Amboy, NJ 08861  
www.bernardesengineering.com

SCALE: 1"=20'	DATE: 07/28/24	DRAWN: RB	CHECKED: EJ
PROJECT NO: 107	DRAWING NO: SHEET 3 OF 6	REVISION:	01/27/28

## STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

**DEFINITION:**  
ESTABLISHMENT OF PERMANENT VEGETATIVE COVER ON EXPOSED SOILS WHERE PERENIAL VEGETATION IS NEEDED FOR LONG-TERM PROTECTION.

**PURPOSE:**  
TO PERMANENTLY STABILIZE THE SOIL, ENSURING CONSERVATION OF SOIL AND WATER, AND TO ENHANCE THE ENVIRONMENT.

**WATER QUALITY ENHANCEMENT:**  
SLOWS THE OVER LAND MOVEMENT OF STORMWATER RUNOFF, INCREASES INFILTRATION AND RETAINS SOIL AND NUTRIENTS ON SITE, PROTECTING STREAMS OR OTHER STORMWATER CONVEYANCES.

**WHERE APPLICABLE:**  
ON EXPOSED SOILS THAT HAVE A POTENTIAL FOR CAUSING OFF-SITE ENVIRONMENTAL DAMAGE, SUCH AS PERMANENT CUT OR FILL SLOPES, DETENTION BASINS, MEDIAN AREAS, AND INFILLED AREAS.

**METHODS AND MATERIALS:**

- SITE PREPARATION**
  - GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING.
  - IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.
  - TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 3 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES. TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER, AS NEEDED, IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING.
  - INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE-STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.

- SEEDBED PREPARATION**
  - UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED, ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS CO-OPERATIVE EXTENSION OFFICES (HTTP://WWW.RUTGERS.EDU/CO-OP). FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES. IF FERTILIZER IS NOT INCORPORATED DURING SEEDBED PREPARATION, REPEAT ANOTHER ONE-HALF RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING.
  - WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING-TOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
  - HIGH ACID PRODUCING SOILS OR HAVING A PH OF 4.0 OR LESS CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A PH OF 5.0 OR MORE BEFORE INITIATING SEEDBED PREPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH-ACID-PRODUCING SOILS FOR SPECIFIC REQUIREMENTS.

- SEEDING**
  - SELECT A MIXTURE FROM TABLE 4-3 OR USE A MIXTURE RECOMMENDED BY RUTGERS CO-OPERATIVE EXTENSION OR NATURAL RESOURCES CONSERVATION SERVICE WHICH IS APPROVED BY THE SOIL CONSERVATION DISTRICT. SEED GERMINATION SHALL HAVE BEEN TESTED WITHIN 12 MONTHS OF THE PLANTING DATE. NO SEED SHALL BE ACCEPTED WITH A GERMINATION TEST DATE MORE THAN 12 MONTHS OLD UNLESS RETESTED.
    - SEEDING RATES ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO A REPORT OF COMPLIANCE. THESE REDUCTIONS APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVERAGE WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDED AREA AND MOVED ONCE.
    - WARM-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT HIGH TEMPERATURES, GENERALLY 85°F AND ABOVE. SEE TABLE 4-3 MIXTURES 1 TO 7. PLANTING RATES FOR WARM-SEASON GRASSES SHALL BE THE AMOUNT OF PURE SEED AS DETERMINED BY GERMINATION TESTING RESULTS.
    - COOL-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT TEMPERATURES BELOW 85°F. MANY GRASSES BECOME ACTIVE AT 85°F. SEE TABLE 4-3, MIXTURES 8-20. ADJUSTMENT OF PLANTING RATES TO COMPENSATE FOR THE AMOUNT OF SEED NOT REQUIRED FOR COOL-SEASON GRASSES.

- CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER, EXCEPT FOR DRILLED, HYDROSEEDER OR CULTIPACKED SEEDINGS. SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE-TEXTURED SOIL.
- AFTER SEEDING, FIRING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD, WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.
- HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK OR TRAILER MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT-FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4-MULCHING BELOW). HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL WHEN POOR SEED-TO-SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION RENTH.

- MULCHING**  
MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANCE WITH THIS MULCHING REQUIREMENT.

- STRAW OR HAY, UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, TO BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE RESIDUE OF WOOD SEED.
- APPLICATION - SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT AT LEAST 85% OF THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITH EACH SECTION.
- ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
  - PEGS AND TWINE, DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STRIKE TWINE BETWEEN PEGS IN A CRIS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
  - MULCH NETTINGS - STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.
  - CRIMPER (MULCH ANCHORING COUPLER TOOL) - A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.
  - LIQUID MULCH-BINDERS - MAY BE USED TO ANCHOR SALT HAY, OR STRAW MULCH.
    - APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPEARANCE.
    - USE ONE OF THE FOLLOWING:
      - ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER-BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOLOGIC EFFECT OR IMPED E GROWTH OF TURF GRASS. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.
      - SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND, FOLLOWING APPLICATION OF MULCH, DRYING AND CURING, SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. BINDERS SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

- WOOD-FIBER OR PAPER-FIBER MULCH - SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS, USED AT THE RATE OF 1,500 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PROJECT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER. MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.
- PELLETIZED MULCH, COMPRESSED AND EXTRUDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO-POLYMERS, TACKIFIERS, FERTILIZERS, AND COLORING AGENTS, THE DRY PELLETS, WHEN APPLIED TO A SEEDED AREA AND WATERED, FORM A MULCH. PELLETIZED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60-75 LBS./1,000 SQUARE FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS. SEEDED AREAS WITH FREE MULCH IS DESIRED OR ON SITES WHERE STRAW MULCH AND TACKIFIER AGENT ARE NOT PRACTICAL OR DESIRABLE. APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

- IRRIGATION (WHERE FEASIBLE)**  
IF SOIL MOISTURE IS DEFICIENT SUPPLY NEW SEEDING WITH ADEQUATE WATER (A MINIMUM OF 1/4 INCH APPLIED UP TO TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR ON DROUGHTY SITES.
- TOPDRESSING**  
SINCE SOIL ORGANIC MATTER CONTENT AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PRESCRIBED IN SECTION 2A OF THIS STANDARD, NO FOLLOW-UP OF TOPDRESSING IS MANDATORY. AN EXCEPTION MAY BE MADE WHERE GROSS NITROGEN DEFICIENCY EXISTS IN THE SOIL TO THE EXTENT THAT TURF FAILURE MAY DEVELOP. IN THAT INSTANCE, TOPDRESS WITH 10-10-10 OR EQUIVALENT AT 300 POUNDS PER ACRE OR 7 POUNDS PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF IS AMELIORATED.
- ESTABLISHING PERMANENT VEGETATIVE STABILIZATION**  
THE QUALITY OF PERMANENT VEGETATION RESTS WITH THE CONTRACTOR. THE TIMING OF SEEDING, PREPARING THE SEEDBED, APPLYING NUTRIENTS, MULCH AND OTHER MANAGEMENT ARE ESSENTIAL. THE SEED APPLICATION RATES IN TABLE 4-3 ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN APPLICATION RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED PRIOR TO REQUESTING REPORT OF COMPLIANCE FROM THE DISTRICT. THESE RATES APPLY TO ALL METHODS OF SEEDING AND ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVER (OF THE SEEDED SPECIES) AND MOWED ONCE. NOTE THIS DESIGNATION OF MOWED ONCE DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD OTHER MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE NEGLIGENT.

## STANDARD FOR TREE PROTECTION DURING CONSTRUCTION

CRITERIA FOR PROTECTING REMAINING TREES:

- GENERAL MECHANICAL DAMAGE - SEE FIGURE 9.3 FOR CORRECT ROOT ZONE CALCULATION AND PLACEMENT OF TREE PROTECTION.
- BOX TREES WITHIN 25 FEET OF A BUILDING SITE TO PREVENT MECHANICAL INJURY. FENCING OR OTHER BARRIER SHOULD BE INSTALLED BEYOND THE CRITICAL ROOT RADIUS SEE FIGURE 9.3. TREE ROOT SYSTEMS COMMONLY EXTEND WELL BEYOND THE DRIP LINE.
- BOARDS WILL NOT BE NAILED TO TREES DURING BUILDING OPERATIONS.
- FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA INSIDE THE PROTECTED ROOT ZONE (PRZ).
- DAMAGED TRUNKS OR EXPOSED ROOTS SHOULD HAVE DAMAGED BARK REMOVED IMMEDIATELY AND NO PAINT SHALL BE APPLIED, EXPOSED ROOTS SHOULD BE COVERED WITH TOPSOIL IMMEDIATELY AFTER EXCAVATION IS COMPLETE. ROOTS SHALL BE PRUNED TO GIVE A CLEAN, SHARP SURFACE AMENABLE TO HEALING. ROOTS EXPOSED DURING HOT WEATHER SHOULD BE IRRIGATED TO PREVENT PERMANENT TREE INJURY. CARE FOR SERIOUS INJURY SHOULD BE PROVIDED BY A PROFESSIONAL FORESTER OR LICENSED TREE EXPERT.
- TREE LIMB REMOVAL, WHERE NECESSARY, WILL BE DONE AS NATURAL CUTOFF PRUNING TO REMOVE THE DESIRED BRANCH AS CLOSE AS POSSIBLE TO THE BRANCH COLLAR. THERE SHOULD BE NO FLUSH CUTS, FLUSH CUTS DESTROY A MAINTENANCE DEFENSE SYSTEM OF THE TREE. SEE FIGURE 9-1. NO TREE PAINT SHALL BE APPLIED. ALL CUTS SHALL BE MADE AT THE OUTSIDE EDGE OF THE BRANCH COLLAR (FIG. 9-1 AND 9-2). CUTS MADE TOO FAR BEYOND THE BRANCH COLLAR MAY LEAD TO EXCESS SPROUTING, CRACKS AND ROOT REMOVAL OF A "V" CROTCH SHOULD BE CONSIDERED FOR FREE STANDING SPECIMEN TREES (SEE FIGURE 9-2) TO AVOID FUTURE SPLITTING DAMAGE.

NOTE: FOR MORE SPECIFIC DATA ON CERTAIN TREE CHARACTERISTICS BY SPECIES, SEE TABLE 9.1, TREE CHARACTERISTICS OR CONSULT WITH A LICENSED PROFESSIONAL TREE EXPERT, SOIL CONSERVATION DISTRICT OR RUTGERS CO-OPERATIVE EXTENSION. (SEE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL.)

## STANDARD FOR TOPSOILING

**DEFINITION:**  
TOPSOILING ENTAILS THE DISTRIBUTION OF SUITABLE SOIL ON AREAS TO BE VEGETATED.

**PURPOSE:**  
TO IMPROVE THE SOIL MEDIUM FOR PLANT ESTABLISHMENT AND MAINTENANCE.

**WATER QUALITY ENHANCEMENT:**  
GROWTH AND ESTABLISHMENT OF A VIGOROUS VEGETATIVE COVER IS FACILITATED BY TOPSOIL, PREVENTATIVE SOIL LOSS BY WIND, RAIN, OFFSITE AND INTO STREAMS AND OTHER STORMWATER CONVEYANCES.

**WHERE APPLICABLE:**  
TOPSOIL SHALL BE USED WHERE SOILS ARE TO BE DISTURBED AND WILL BE REVEGETATED.

**METHODS AND MATERIALS:**

- MATERIALS:**
  - TOPSOIL SHALL BE FRABLE(1), LOAMY(2), FREE OF DEBRIS, OBJECTIONABLE WEEDS AND STONES, AND CONTAIN NO TOXIC SUBSTANCES OR ADVERSE CHEMICAL OR PHYSICAL CONDITION THAT MAY BE HARMFUL TO PLANT GROWTH. SOLUBLE SALTS SHOULD NOT BE EXCESSIVE. (CONDUCTIVITY LESS THAN 0.5 MILLIMOHS PER CENTIMETER. MORE THAN 0.5 MILLIMOHS MAY DESICcate SEEDLINGS AND ADVERSELY IMPACT GROWTH.) IMPORTED TOPSOIL SHALL HAVE A MINIMUM ORGANIC MATTER CONTENT OF 2.75 PERCENT. ORGANIC MATTER CONTENT MAY BE RAISED BY ADDITIVES.
  - TOPSOIL SUBSTITUTE IS A SOIL MATERIAL WHICH MAY HAVE BEEN AMENDED WITH SAND, SALT, CLAY, ORGANIC MATTER, FERTILIZER OR LIME AND HAS THE APPEARANCE OF TOPSOIL. TOPSOIL SUBSTITUTES MAY BE UTILIZED ON SITES WITH INSUFFICIENT TOPSOIL FOR ESTABLISHING PERMANENT VEGETATION. ALL TOPSOIL SUBSTITUTE MATERIALS SHALL MEET THE REQUIREMENTS OF TOPSOIL NOTED ABOVE. SOIL TESTS SHALL BE PERFORMED TO DETERMINE THE COMPONENTS OF SAND, SALT, CLAY, ORGANIC MATTER, SOLUBLE SALTS AND PH LEVEL.
  - STRIPPING AND STOCKPILING:
    - A FIELD EXPLORATION SHOULD BE MADE TO DETERMINE WHETHER QUANTITY AND OR QUALITY OF SURFACE SOIL JUSTIFIES STRIPPING.
    - STRIPPING SHOULD BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA.
    - WHERE FEASIBLE, LIME MAY BE APPLIED BEFORE STRIPPING AT A RATE DETERMINED BY SOIL TESTS TO BRING THE SOIL PH TO APPROXIMATELY 6.5. IN LIEU OF SOIL TESTS, USE LIME RATE GUIDE IN SEEDBED PREPARATION FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, PG. 4-1.
    - A 4-6 INCH STRIPPING DEPTH IS COMMON, BUT MAY VARY DEPENDING ON THE PARTICULAR SOIL.
    - STOCKPILES OF TOPSOIL SHOULD BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFFSITE ENVIRONMENTAL DAMAGE.
    - STOCKPILES SHOULD BE VEGETATED IN ACCORDANCE WITH STANDARDS PREVIOUSLY DESCRIBED HEREIN; SEE STANDARDS FOR PERMANENT (pg. 4-1) OR TEMPORARY (pg. 7-1) VEGETATIVE COVER FOR SOIL STABILIZATION. WEEDS SHOULD NOT BE ALLOWED TO GROW ON STOCKPILES.
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  - WHERE FEASIBLE, LIME MAY BE APPLIED BEFORE STRIPPING AT A RATE DETERMINED BY SOIL TESTS TO BRING THE SOIL PH TO APPROXIMATELY 6.5. IN LIEU OF SOIL TESTS, USE LIME RATE GUIDE IN SEEDBED PREPARATION FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, PG. 4-1.
  - A 4-6 INCH STRIPPING DEPTH IS COMMON, BUT MAY VARY DEPENDING ON THE PARTICULAR SOIL.
  - STOCKPILES OF TOPSOIL SHOULD BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFFSITE ENVIRONMENTAL DAMAGE.
  - STOCKPILES SHOULD BE VEGETATED IN ACCORDANCE WITH STANDARDS PREVIOUSLY DESCRIBED HEREIN; SEE STANDARDS FOR PERMANENT (pg. 4-1) OR TEMPORARY (pg. 7-1) VEGETATIVE COVER FOR SOIL STABILIZATION. WEEDS SHOULD NOT BE ALLOWED TO GROW ON STOCKPILES.

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## STANDARD FOR STABILIZATION WITH MULCH ONLY (WHERE APPLICABLE)

**DEFINITION:**  
STABILIZING EXPOSED SOILS WITH NON-VEGETATIVE MATERIALS.

**PURPOSE:**  
TO PROTECT EXPOSED SOIL SURFACES FROM EROSION DAMAGE AND TO REDUCE OFFSITE ENVIRONMENTAL DAMAGE.

**WATER QUALITY ENHANCEMENT:**  
PROVIDES TEMPORARY MECHANICAL PROTECTION AGAINST WIND OR RAINFALL INDUCED SOIL EROSION UNTIL PERMANENT VEGETATIVE COVER MAY BE ESTABLISHED.

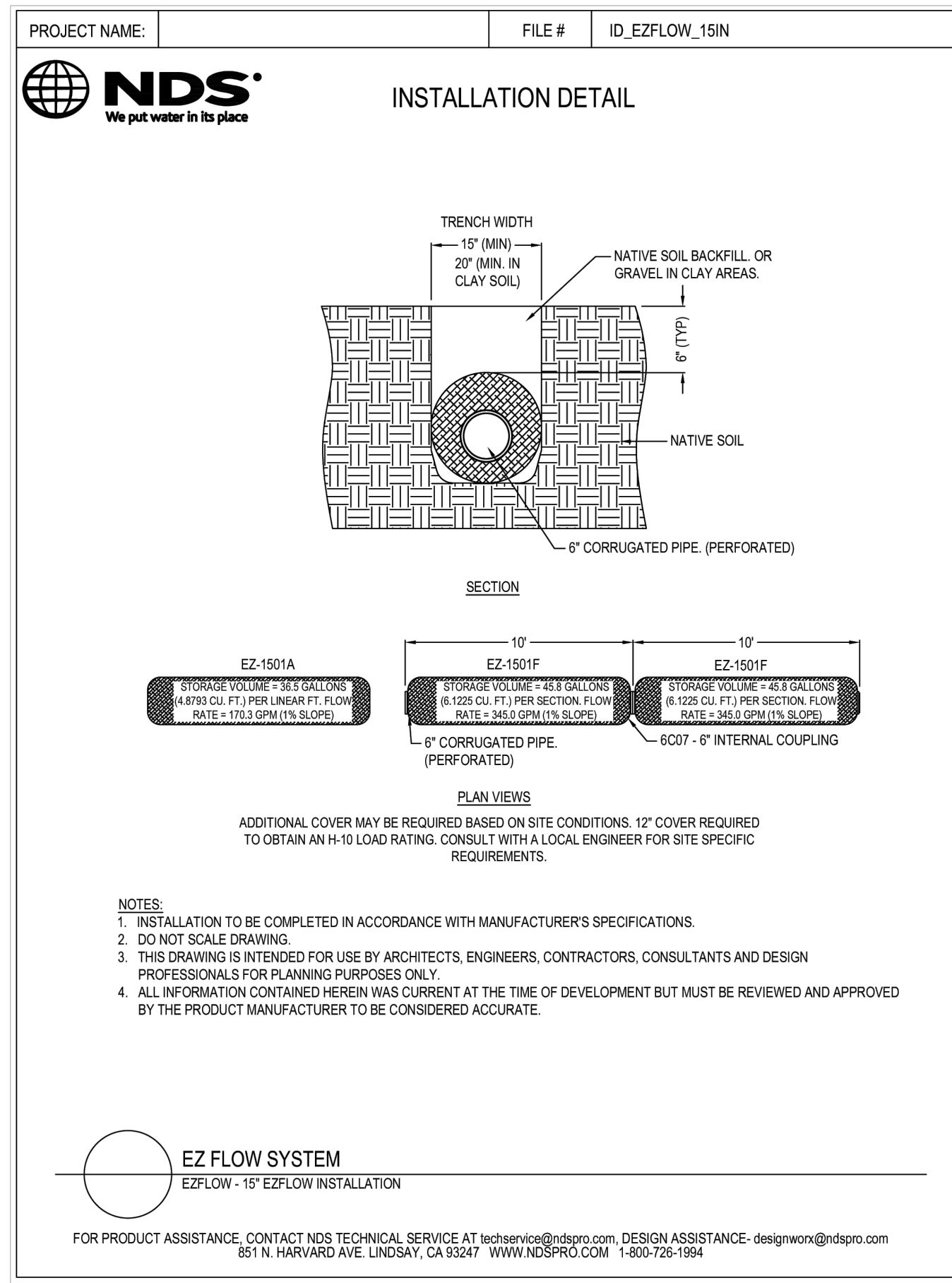
**WHERE APPLICABLE:**  
THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO EROSION WHERE THE SEASON AND OTHER CONDITIONS MAY NOT BE SUITABLE FOR GROWING AN EROSION-RESISTANT COVER OR WHERE STABILIZATION IS NEEDED FOR A SHORT PERIOD UNTIL MORE SUITABLE PROTECTION CAN BE APPLIED.

**METHODS AND MATERIALS:**

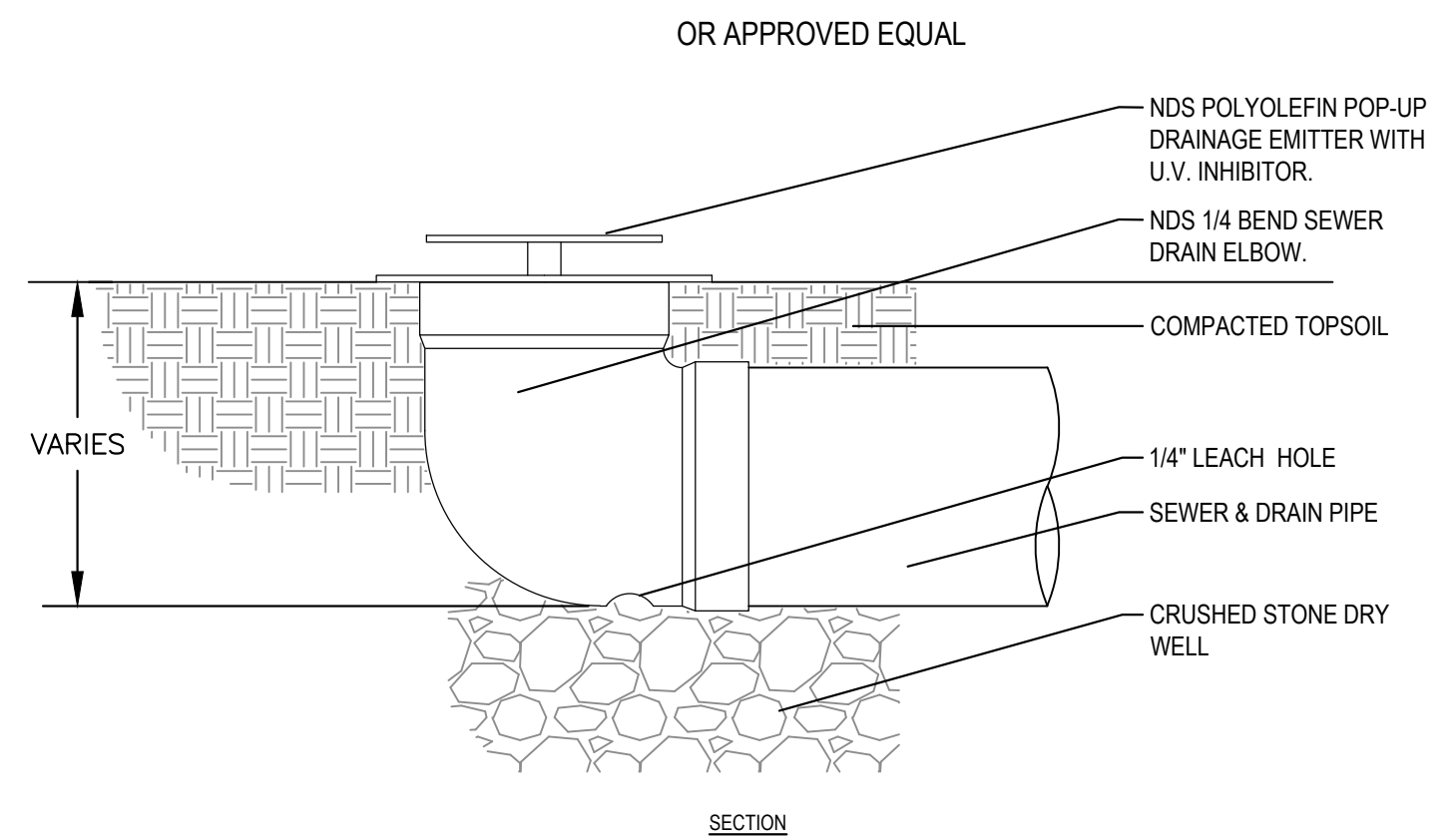
- SITE PREPARATION:**
  - GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING, PG. 19-1.
  - INSTALL NEEDED EROSION CONTROL PRACTICES OF FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.
  - PROTECTIVE MATERIALS:**
    - UNROTTED SMALL-GRAIN STRAW OR SALT HAY AT 2.0 TO 2.5 TONS PER ACRE IS SPREAD UNIFORMLY AT 80 TO 115 POUNDS PER 1,000 SQUARE FEET AND ANCHORED WITH A MULCH ANCHORING TOOL, LIQUID MULCH BINDERS OR NETTING (WOOD-FIBER OR PAPER-FIBER MULCH). OTHER SUITABLE MATERIALS MAY BE USED IF APPROVED BY THE SOIL CONSERVATION DISTRICT.
    - WOOD-FIBER OR PAPER-FIBER MULCH SHALL BE APPLIED AT THE RATE OF 600 TO 1,000 GALLONS PER ACRE. THIS IS SUITABLE FOR A LIMITED PERIOD OF TIME WHEN TRAVEL BY PEOPLE, ANIMALS OR MACHINES IS NOT A PROBLEM.
    - SYNTHETIC OR ORGANIC SOIL STABILIZERS MAY BE USED UNDER SUITABLE CONDITIONS AND IN QUANTITIES AS RECOMMENDED BY THE MANUFACTURER.
    - WOOD-FIBER OR PAPER-FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE MAY BE APPLIED BY A HYDROSEEDER.
    - MULCH NETTINGS, SUCH AS PAPER JUTE, EXCELOR, COTTON, OR PLASTIC, MAY BE USED.
    - WOODCHIPS APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 2 INCHES MAY BE USED. WOODCHIPS WILL NOT BE USED ON AREAS WHERE FLOWING WATER COULD WASH THEM INTO AN INLET AND PLUG IT.
    - GRAVEL, CRUSHED STONE, OR SLAG AT THE RATE OF 9 CUBIC YARDS PER 1,000 SQ FT APPLIED UNIFORMLY TO A MINIMUM DEPTH OF 3 INCHES MAY BE USED. SEE 2 OR 3 (ASTM C-935) IS RECOMMENDED.
- MULCH ANCHORING:**  
MULCH ANCHORING SHOULD BE DONE IMMEDIATELY AFTER PLACEMENT OF HAY OR STRAW MULCH TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING UPON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
  - PEGS AND TWINE, DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STRIKE TWINE BETWEEN PEGS IN A CRIS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
  - MULCH NETTINGS - STAPLE PAPER, COTTON OR PLASTIC NETTINGS OVER MULCH. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.
  - CRIMPER (MULCH ANCHORING COUPLER TOOL) - A TRACTOR-DRAWN IMPLEMENT, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH 3 TO 4 INCHES INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSABLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.
  - LIQUID MULCH-BINDERS - MAY BE USED TO ANCHOR SALT HAY, OR STRAW MULCH.
    - APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPEARANCE.
    - USE ONE OF THE FOLLOWING:
      - ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER-BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOLOGIC EFFECT OR IMPED E GROWTH OF TURF GRASS. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.
      - SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND, FOLLOWING APPLICATION OF MULCH, DRYING AND CURING, SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. BINDERS SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

- SITE PREPARATION:**
  - GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING, PG. 19-1.
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  - PEGS AND TWINE, DRIVE 8 TO 10 INCH WOOD

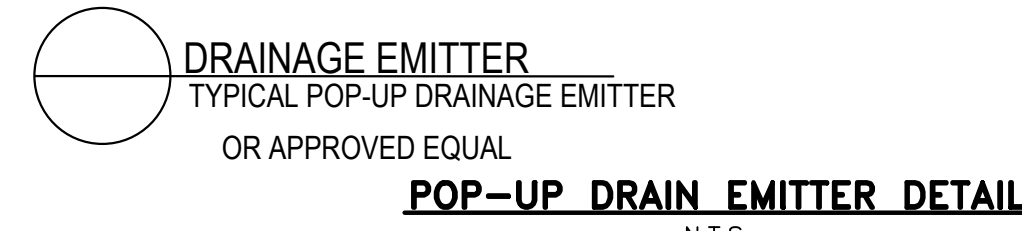




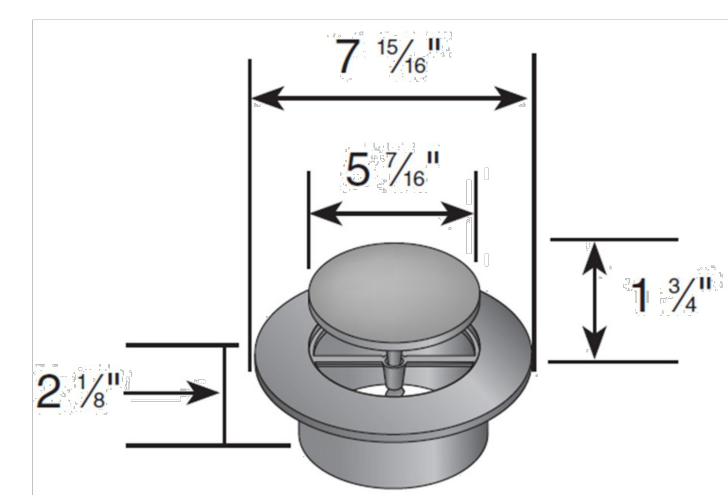
**EZFLOW/EZDRAIN SYSTEM DETAIL**  
 N.T.S.  
 OR APPROVED EQUAL



- NOTES:  
 1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.  
 2. DO NOT SCALE DRAWING.  
 3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY.  
 4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.

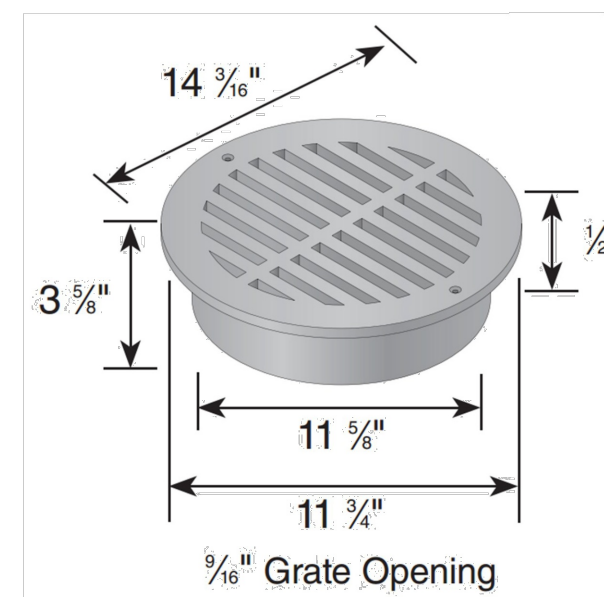


**6" Pop-Up Drainage Emitter**



Part #: 620  
 Material: High Density Polyethylene (HDPE)  
 Color: Green  
 Fits: 6" sewer and drain fittings and NDS 6" Spool-D Basin  
 Spring: Stainless Steel Grade 302  
 Open Pressure: 1 PSI  
 Open Surface Area: 28.5 Sq. Inches  
 Flow Rate:  
 1" Head: 124.60 GPM  
 0.5" Head: 85.10 GPM  
 Weight Per Each: 0.64 lbs.  
 UV Inhibitor  
**Load Recommendation Guide**  
 Class A  
 + Loads of 6000 lb  
 + Recommended for pedestrian, bicycles and wheel chair traffic.

**12" ROUND GRATE**



Material: UV Protected High Density Polyethylene (HDPE)  
 Colors: Black (1240), Green (1250), Gray (1260)  
 Weight: 2.66 lbs  
 Fits: 12" SDR-35, Corrugated, SCH-40, Class 125, & Double wall pipes  
 Grate Openings: 46,000 in<sup>2</sup> open space  
 Will accommodate 140.72 gallons per minute with 1/2" of head.  
**Load Recommendation Guide**  
 Class B  
 + Loads of 60-175 psi  
 + Recommended for medium-duty pavement, the traffic, auto and light trucks at speeds less than 20 mph.

**Downspout Grate**



Part Number:	1200DSG
Material:	HDPE - High-Density Polyethylene
Color:	Black
Weight:	1.56 lbs.
Fits:	NDS 12" Catch Basin (1200, 1203, 1204, 1200NGB) Catch Basin Risers (1215, 1217) Low-Profile Adapters (1230, 1221, 1222)
Opening:	54.54 square inches
Flow Rate with 1/2" of head:	166.84 GPM



- NOTES:  
 1. GRATE TO BE ATTACHED TO CATCH BASIN WITH SCREW PROVIDED AT TIME OF INSTALLATION.  
 2. RISER CAN BE CUT TO ACHIEVE EXACT ELEVATION.  
 3. DO NOT USE OVER 5 RISERS WITH CATCH BASIN.  
 4. EXISTING SOILS SHOULD BE EVALUATED TO ENSURE PROPER STRUCTURAL AND PERMEABILITY PROPERTIES.  
 5. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.  
 6. DO NOT SCALE DRAWINGS.  
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**ROOFTOP RECHARGE TRENCH DESIGN #1**  
 (Roof Runoff)

**PROPOSED RUNOFF VOLUME**

area= 1,366.39 sf Front Roof Runoff  
 Total Area= 1,366.39 sf (impervious)  
 CN= 98.00  
 $S=(1000/CN)-10$   
 $S= 0.20$   
 $P= 2.00$  inches (2" Rainfall)  
 $Q=(P-0.2S)^2/(P+0.8S)$   
 $Q= 1.77$  inches (TR-55 SCS Method)  
 0.15 feet

Runoff Volume= 202.04 cf

**STORAGE VOLUME**

length= 13.00  
 width= 11.50  
 depth= 4.00  
 total volume stone= 587.80 cf  
 33% Void Ratio Volume= 0.33  
 void volume= 193.97 cf  
 total volume pipe= 10.205 cf  
**Total Trench Volume= 204.18 cf**  
 (greater than runoff volume therefore storage sufficiently sized)  
 surface area= 149.50  
 infiltration rate= 2.40 in/hr = 0.20 ft/hr  
 time= 72.00 hours  
 Infiltration Volume= 2,152.80 cf  
 factor of safety= 2.00  
**Infiltration Volume= 1,076.40 cf**  
 Infiltration Volume plus Void Volume= 1,280.58 cf

BY: RB  
 DATE: 5/2/25  
 REV: 5/20/25  
 JOB#: 107



NO.	DESCRIPTION	BY	DATE
1	REVISED PER CLIENT	R.B.	5/20/25

ENGINEER:

12/01/2025  
 RENAULT BERNARDIS, P.E.  
 PROFESSIONAL ENGINEER  
 NO. LICENSE NO. 1402800007

**ROOFTOP RECHARGE DRYWELL DESIGN #2**  
 (Roof Runoff)

**PROPOSED RUNOFF VOLUME**

area= 1,219.46 sf Back Roof & Shed Runoff  
 Total Area= 1,219.46 sf (impervious)  
 CN= 98.00  
 $S=(1000/CN)-10$   
 $S= 0.20$   
 $P= 2.00$  inches (2" Rainfall)  
 $Q=(P-0.2S)^2/(P+0.8S)$   
 $Q= 1.77$  inches (TR-55 SCS Method)  
 0.15 feet

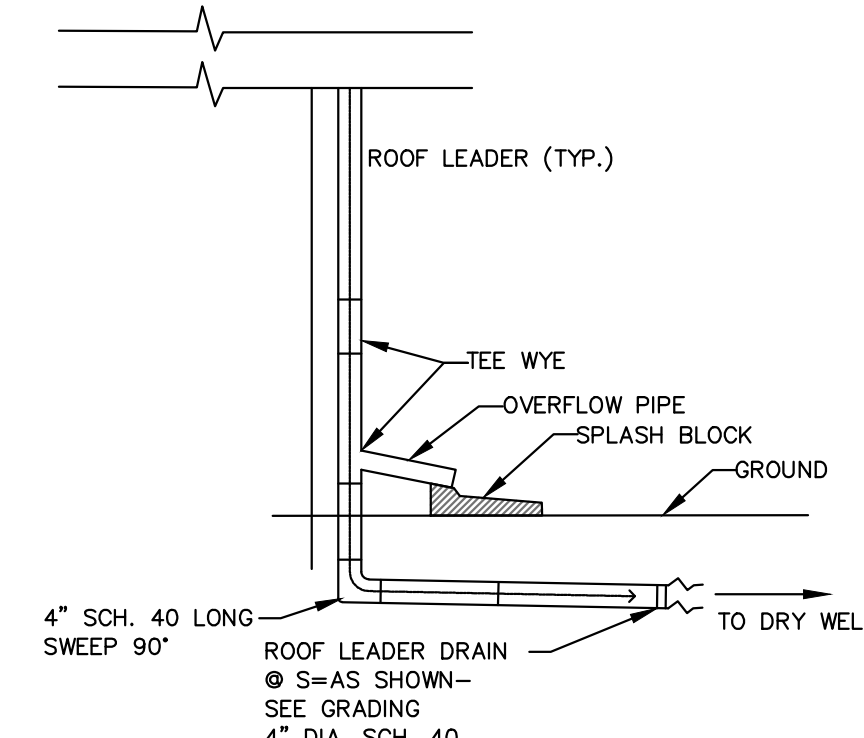
Runoff Volume= 180.31 cf

**STORAGE VOLUME**

length= 17.00  
 width= 14.00  
 depth= 2.25  
 total volume stone= 522.16 cf  
 33% Void Ratio Volume= 0.33  
 void volume= 172.31 cf  
 total volume pipe= 13.345 cf  
**Total Trench Volume= 185.66 cf**  
 (greater than runoff volume therefore storage sufficiently sized)  
 surface area= 238.00  
 infiltration rate= 2.40 in/hr = 0.20 ft/hr  
 time= 72.00 hours  
 Infiltration Volume= 3,427.20 cf  
 factor of safety= 2.00  
**Infiltration Volume= 1,713.60 cf**  
 Infiltration Volume plus Void Volume= 1,899.26 cf

BY: RB  
 DATE: 5/2/25  
 REV: 5/20/25  
 JOB#: 107

DETAILS  
 PREPARED FOR  
 GOS N.J. 03  
 BLOCK 2, LOT 15, 03  
 STRAVID IN  
 BOBOLICH OF RAMBLAN  
 SOMERSET COUNTY, NEW JERSEY



NOTE:  
 ROOF LEADER LOCATIONS ARE APPROXIMATE. ACTUAL ROOF LEADER LOCATIONS ARE TO BE COORDINATED WITH ARCHITECT AND SHALL BE VERIFIED IN THE FIELD. OVERFLOW PIPE TO BE ONLY PLACED AS SHOWN. SEE PLAN.

**ROOF LEADER DETAIL**  
 N.T.S.

SCALE:	N.T.S.	DATE:	07/28/24	DRAWN:	RB	CHECKED:	EJ
PROJECT NO:	107	DRAWING NO:	SHEET 6 OF 6	REVISION:			05/20/25

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