#### PROPERTY OWNERS WITHIN 200 FT. BOROUGH OF SAYREVILLE Borough of Sayreville Sayreville, NJ 08872 Borough of Sayreville Sayreville, NJ 08872 Leaf Industries, LLC 26 Brick Yard Road Cranbury, NI 08512 Hercules, Inc. P.O. Box 55348 Lexington, KY 40555 251 Jernee Mill Road Sayreville, NJ 08872 South River, NJ 08882 John C. Polak, Sr. Hillsborough, NJ 08844 DuPont Specialty Products USA, LLC Wilmington, DE 19805 Daniel Kilcomons 17 Embroidery Stree **OUALIFIER** Sayreville, NI 08872 AES Red Oak, LLC EASEMENT 832 Red Oak Lane Sayreville, NJ 08872 New Jersey Natural Gas Company Wall Township, NJ 07727 DuPont Specialty Products USA, LLC OF WAY Wilmington, DE 19805 OF WAY c/o Intax, Inc. P.O. Box 55348 Lexington, KY 40555 Middlesex County Utilities Authority OF WAY P.O. Box 159 Sayreville, NJ 08872 SAYREVILLE UTILITIES LIST (2022): 36 West State Street New Brunswick, NJ 08902 Trenton, NJ 08625 80 Park Plaza Middlesex County Planning Boar New Brunswick, NJ 08902 300 Madison Avenue P.O. Box 1911 732-745-3812 Morristown, NJ 07962-1911 David Goldberg Transportation Center 1035 Parkway Avenue 732-723-6609 or 1-800-662-3115 Borough of Sayreville Water & Sewer Trenton, NJ 08625 NJ Natural Gas Company Sayreville, NJ 732-390-7060 John Wyckoff Road **Middlesex County Utilities Authority** (MCUA) P.O. Box 159 2571 Main Street 275 Centennial Avenue CN8805 Sayreville, NJ 08872-0086 Piscataway, NJ 08855-6805 Attn: Construction Departmen 732-583-0606 ranscontinental Gas Pipeline Lawrenceville, NJ 08540 Attn: Robert Ford East Brunswick, NJ 08816-1636 1-800-440-8475 Consolidated Rail Corporation 717 Arch Street or 2001 Market Street Verizon New Jersey 908-753-0801 Newark, NJ 07102 BOROUGH OF SOUTH RIVER BOROUGH COUNCIL Oliveira Jason, President Tony Ciulla Henry Dziemian John M. Krenzel BOROUGH OF SOUTH RIVER OFFICE OF PLANNING AND ZONING MIDDLESEX COUNTY 48 WASHINGTON STREET SOUTH RIVER, NJ 08882-1247 March 5, 2024 Re: Block: 58 Lots: 2.01, 9 Sayreville Borough, NJ After reviewing the Middlesex County's property records site, the referenced block and lots in Sayreville Borough does not touch upon any property lines belonging to the Borough of South River. p: (732) 257-1999 Ext. 519 is 722.257.1000 Fee 516 | £ 722.612.6105 | see hiters///www.continuousl.com

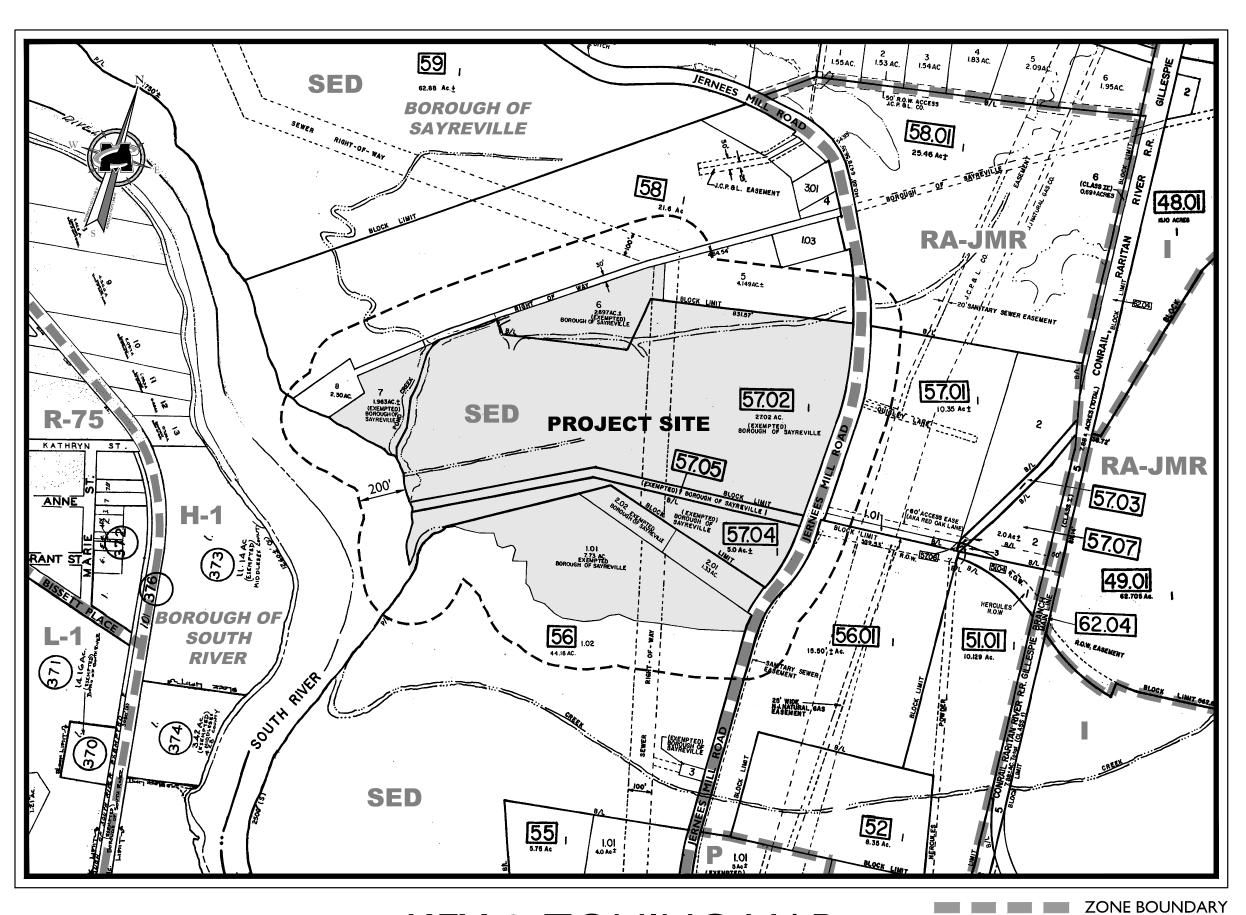
	t: 732-257-1999 Ext. 516   f: 732-613-6105   w: https://www.southriv.	ernj.org
	INDEX OF SHEETS	
SHT. No.	DESCRIPTION	LATEST REVISION
İ	COVER SHEET	3/4/2025
2	EXISTING CONDITIONS/DEMOLITION PLAN	3/4/2025
3	OVERALL SITE PLAN	3/4/2025
4-5	DIMENSION PLANS	3/4/2025
6-7	UTILITY PLANS	3/4/2025
8-9	GRADING PLANS	3/4/2025
10-11	SOIL EROSION AND SEDIMENT CONTROL PLANS	3/4/2025
12-13	soil erosion & sediment control details	3/4/2025
14	SOIL MANAGEMENT AND PREPARATION PLAN	3/4/2025
15	LANDSCAPE PLAN	3/4/2025
16	LANDSCAPE DETAILS	3/4/2025
17-18	LIGHTING PLANS AND DETAILS	3/4/2025
19-20	PROFILES	3/4/2025
21-24	CONSTRUCTION DETAILS	3/4/2025
25-26	TREE PRESERVATION PLANS	3/4/2025
27	TRUCK CIRCULATION PLAN	3/4/2025
28	REFUSE VEHICLE CIRCULATION PLAN	3/4/2025
29	EMERGENCY VEHICLE CIRCULATION PLAN	3/4/2025

# AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN AND MINOR SUBDIVISION

JERNEE MILL INDUSTRIAL

BLOCK 58, LOTS 2.01 & 9

BOROUGH OF SAYREVILLE MIDDLESEX COUNTY **NEW JERSEY** 



# **KEY & ZONING MAP**





PPROVED BY THE PLANNING BOARD OF THE BOROUGH OF SAYREVILLE C			
OARD CHAIRPERSON	DATE	COUNTY PLANNING BOARD	DATE
OARD SECRETARY	DATE	COUNTY PLANNING BOARD SECRETARY	DATE
OARD ENGINEER	DATE	COUNTY PLANNING DIRECTOR	DATE

### **GENERAL INFORMATION**

# **GENERAL NOTES:**

JERSEY, BLOCK 58, LOT 2.01 IS FORMERLY KNOWN AS BLOCK 56, LOT 2.01. BLOCK 58, LOT 9 IS FORMERLY KNOWN AS BLOCK 56 LOTS 1.01 AND 2.02. BLOCK 57.02 LOT 1, BLOCK 57.04 
2. THE PROPERTY IS LOCATED IN THE ECO-INDUSTRIAL REDEVELOPMENT AREA (RA-EI) AND CONTAINS A TOTAL TRACT AREA ± 46.485 ACRES (2,024,895 SF). 3. THE APPLICANT IS PROPOSING TO CONSTRUCT ONE COLD STORAGE WAREHOUSE BUILDING WITH ASSEMBLED TRAILER STORAGE AREAS AND ASSOCIATED SITE IMPROVEMENTS. THIS SET OF

4. PROPERTY OWNERS: (BLOCK 58, LOT 9) 167 MAIN STREET

> SAYREVILLE, NJ 08872 JERNEE MILL ASSOCIATES, LLC 190 ROUTE 18, SUITE 205

> > 32 MOUNT KEMBLE AVENUE

MORRISTOWN, NJ 07960 5. THE MAJORITY OF THE SITE (BLOCK 58, LOT 9) IS PART OF THE FORMER SAYREVILLE LANDFILL #3 AND IS BOUNDED ON THE EAST BY JERNEE MILL ROAD AND SOUTH RIVER ON THE WEST.

6. THE SITE WAS FORMERLY OPERATED AS A SOLID WASTE DISPOSAL FACILITY FROM 1971 TO 1977 BY THE BOROUGH OF SAYREVILLE. IN 1983 THE USEPA INCLUDED THE SITE ON THE FEDERAL SUPERFUND NATIONAL PRIORITY LIST (NPL) BASED UPON THE PRESENCE OF HAZARDOUS WASTE ON SITE. (EPA ID#: NJD980505754). THE SITE IS UNDER THE OVERSIGHT OF NJDEP (NJEMS

PREFERRED ID # 5286). REMEDIAL ACTION ACTIVITIES WERE COMPLETED IN 1999 WITH THE INSTALLATION OF A COMPOSITE CAP SYSTEM AND PASSIVE VENTILATION SYSTEM. THE SITE IS ENTIRELY COVERED BY CLASSIFICATION EXCEPTION AREA (CEA) FOR GROUNDWATER AND LANDFILL GAS MONITORING FOR METHANE HAS BEEN ONGOING SINCE 2000.

7. THE APPLICANT IS OBTAINING A PERMIT TO MODIFY THE LANDFILL CLOSURE AND POST-CLOSURE CARE PLAN FOR THE SITE. THE CONTRACTOR WILL BE RESPONSIBLE TO COMPLY WITH THE

BULK STANDARD	REQUIRED	PROPOSED (LOT A)	PROPOSED (LOT B)
MINIMUM LOT SIZE (AC.)	5 AC.	± 20.98 AC.	± 25.50 AC.
FRONT YARD SETBACK - PRINCIPAL & ACCESSORY BUILDINGS (FT)	50 FT	86.5 FT	N/A
SIDE YARD SETBACK - PRINCIPAL & ACCESSORY BUILDINGS (FT)	50 FT	144.61 FT	N/A
REAR YARD SETBACK - PRINCIPAL & ACCESSORY BUILDINGS (FT)	50 FT	172.55 FT	N/A
HEIGHT - PRINCIPAL BUILDING (FT)	75 FT	75 FT	N/A
HEIGHT - ACCESSORY BUILDINGS & OUTDOOR MATERIAL STORAGE (FT)	40 FT (STORAGE 25 FT)	N/A	N/A
MAX. IMPERVIOUS LOT COVERAGE (%)	85 %	54.53 %	0%

REQUIRED: COLD STORAGE WAREHOUSE (INCLUSIVE OF ANY ANCILLARY OFFICE FLOOR AREA)

OFFICE USE: 1 SPACE/300 SF GFA

7,706 SF OFFICE USE = 26 SPACES REQUIRED 247,760 SF WAREHOUSE USE (MAX. 56 EMPLOYEES) = 62 SPACES REQUIRED (MAX. EMPLOYEES + 10%) TOTAL = 88 SPACES REQUIRED

PROVIDED = 88 SPACES

REQUIRED: ACCESSIBLE PARKING SPACES BUILDING 1 (76-100 SPACES PROVIDED) = 4 ACCESSIBLE SPACES REQUIRED

PROVIDED - 4 ACCESSIBLE SPACES REQUIRED: EV PARKING SPACES

BUILDING 1 (76-100 SPACES PROVIDED) = 3 EV SPACES REQUIRED

PROVIDED - 4 EV SPACES 10. THE APPLICANT IS REQUESTING THE FOLLOWING CHECKLIST WAIVERS

• ITEM #2, A WAIVER IS REQUESTED AS EIGHT (8) PLAN SHEETS ARE AT SCALES OTHER THAN 1" = 30'.

• ITEM #4, A WAIVER IS REQUESTED AS 30" x 42" PLANS ARE PROVIDED. ITEM #5, A WAIVER IS REQUESTED AS APPLICANT, OWNER, AND ZONING INFORMATION ONLY APPEAR ON THE COVER SHEET ITEM #22. A TEMPORARY WAIVER IS BEING REQUESTED. WILL BE PROVIDED AS A CONDITION OF APPROVAL.

 ITEM #23, A WAIVER IS BEING REQUESTED AS CONSTRUCTION STAGING FOR THE PROPOSED DEVELOPMENT, LOCATED ON AN EXISTING LANDFILL, WILL BE PROVIDED IN ACCORDANCE. WITH THE PROPOSED LANDFILL CLOSURE & POST-CLOSURE CARE PLAN, AS SUBMITTED TO NJDEP AND CURRENTLY PENDING APPROVAL

 ITEM #25. A TEMPORARY WAIVER IS BEING REQUESTED PENDING DETERMINATION OF LOCATION AND EXTENT OF REQUIRED EASEMENT: • ITEM #26, A TEMPORARY WAIVER IS BEING REQUESTED AS IT WILL BE PROVIDED AS A CONDITION OF AFFIRMATIVE ACTION BY THE BOARD.

• ITEM #2, A WAIVER IS REQUESTED AS EIGHT (8) PLAN SHEETS ARE AT SCALES OTHER THAN 1" = 30'.

ITEM #5, A WAIVER IS REQUESTED AS APPLICANT, OWNER, AND ZONING INFORMATION ONLY APPEAR ON THE COVER SHEET.
ITEM #7, A TEMPORARY WAIVER IS BEING REQUESTED AS IT WILL BE PROVIDED WHEN THE LIMITS OF EASEMENTS, RIGHTS-OF-WAY, ETC. ARE DETERMINED BY THE BOARD.

11. THE BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON WAS TAKEN FROM A PLAN ENTITLED "ALTA/NSPS LAND TITLE SURVEY FOR BLOCK 58, LOTS 2.01 & 9, JERNEES MILL ROAD

BOROUGH OF SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY", PREPARED BY COLLIERS ENGINEERING & DESIGN, DATED SEPTEMBER 9, 2022 AND REVISED THROUGH FEBRUARY 1, 2024. 12. THE VERTICAL DATUM IS RELATIVE TO NAVD 88 AND THE HORIZONTAL DATUM IS RELATIVE TO NAD 1983, NEW JERSEY STATE PLANE COORDINATE SYSTEM.

14. THE CONTRACTOR SHALL BE FAMILIAR WITH THE APPLICABLE ENVIRONMENTAL REPORTS

15. THE FOLLOWING PERMITS ARE REQUIRED FOR THE PROPOSED DEVELOPMENT

BOROLIGH OF SAYREVILLE PLANNING BOARD MIDDLESEX COUNTY PLANNING BOARD

 NJDEP DIVISION OF WATER QUALITY - RFA N.IDEP DIVISION OF LAND USE -WETLANDS NJDEP DIVISION OF LAND USE -FLOOD HAZARI

 NJDEP DIVISION OF LAND USE - WATERFRONT DEVELOPMENT NJDEP LANDFILL CLOSURE AND POST-CLOSURE CARE PLAN MODIFICATION UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

SAYREVILLE ECONOMIC REDEVELOPMENT AUTHORITY

BOROUGH OF SAYREVILLE FILL PLACEMENT AND SOIL REMOVAL PERMIT

20.THE SITE CONTRACTOR IS RESPONSIBLE TO OBTAIN ANY NECESSARY DEWATERING PERMITS FROM THE NJDEP, SOIL CONSERVATION DISTRICT AND/OR BOROUGH REQUIRED FOR 21. EXISTING UTILITY INFORMATION SHOWN HEREON HAS BEEN COLLECTED FROM VARIOUS SOURCES AND IS NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. THE CONTRACTOR SHALL

VERIFY ALL INFORMATION TO HIS SATISFACTION PRIOR TO EXCAVATION. WHERE EXISTING UTILITIES ARE TO BE CROSSED BY PROPOSED CONSTRUCTIONS, TEST PITS SHALL BE DUG BY THE CONTRACTOR PRIOR TO CONSTRUCTION TO ASCERTAIN EXISTING INVERTS, MATERIALS, AND SIZES. TEST PIT INFORMATION SHALL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION TO PERMIT ADJUSTMENTS AS REQUIRED TO AVOID CONFLICTS. THE CONTRACTOR SHALL NOTIFY THE UNDER SIGNED PROFESSIONAL IMMEDIATELY IF ANY FIELD CONDITIONS ENCOUNTERED DIFFER MATERIALLY FROM THOSE REPRESENTED HEREON. SUCH CONDITIONS COULD RENDER THE DESIGNS HEREON INAPPROPRIATE OR INEFFECTIVE. 22. ALL STRUCTURES, CONCRETE PADS, BURIED PIPE AND UTILITIES ENCOUNTERED WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED (UNLESS NOTED OTHERWISE) AND DISPOSED OF IN

ACCORDANCE WITH THE MATERIAL HANDLING PROVISIONS CONTAINED WITHIN THE RAWP. 23. CONTRACTOR IS RESPONSIBLE TO ENSURE NO CONTAMINATED MATERIAL OR WATER IS DISCHARGED FROM THE SITE, INCLUDING AS A RESULT OF CONSTRUCTION ACTIVITIES, STORM EVENTS,

24. THE WETLANDS SHOWN HEREON ARE TAKEN FROM A PLAN ENTITLED "ALTA/NSPS LAND TITLE SLIRVEY FOR BLOCK 58, LOTS 2.01 & 9. JERNEES MILL ROAD, BOROLIGH OF SAYREVILLE MIDDLESEX

COUNTY, NEW JERSEY\*, PREPARED BY COLLIERS ENGINEERING & DESIGN, DATED SEPTEMBER 9, 2022 AND REVISED THROUGH FEBRUARY 1, 2024. FRESHWATER WETLANDS/WATERS BOUNDAI 25. THE TIDAL FLOOD HAZARD LIMITS SHOWN HEREON WERE TAKEN FROM THE FEMA PRELIMINARY FLOOD INSURANCE RATE MAP DATED JANUARY 31, 2014. THE FLOOD HAZARD AREA ZONE AE

THE NON-TIDAL FLOOD HAZARD LIMITS SHOWN HEREON WERE TAKEN FROM PLAN ENTITLED "FLOOD HAZARD VERIFICATION PLAN FOR JERNEE MILL INDUSTRIAL" PREPARED BY COLLIERS 26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARATION AND SUBMISSION OF CATALOG CUTS, SHOP DRAWINGS AND/OR DESIGN CALCULATIONS FOR APPROVAL BY THE MUNICIPAL

27. SOIL INFORMATION FOR PORTIONS OF THE SITE IS PROVIDED WITHIN A REPORT ENTITLED "GEOTECHNICAL ENGINEERING REPORT, JERNEE MILL INDUSTRIAL", PREPARED BY GEO-TECHNOLOGY

28. ARCHITECTURAL INFORMATION FOR THE PROPOSED BUILDING IS TAKEN FROM A PLAN ENTITLED "OVERALL FLOOR PLAN, CLAREMONT DEVELOPMENT, SAYREVILLE NJ", PREPARED BY RKB 29. STORM SEWERS SHALL BE CLASS IV (OR HIGHER IF NOTED) REINFORCED CONCRETE PIPE WITH 'O' RING GASKETS OR INTERNALLY PRELUBRICATED GASKET (TYLOX SUPERSEAL OR

EQUIVALENT). PROPER PIPE COVERAGE SHALL BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION. PIPE LENGTHS SHOWN HEREON ARE FROM CENTER OF STRUCTURE TO CENTER OF ALL STORMWATER STRUCTURES TO BE INSTALLED SATISFYING ASSHTO H-20 LOADING REQUIREMENTS.

GROUNDWATER ELEVATIONS, SOIL CONDITIONS AND OVERALL GEOTECHNICAL PROPERTIES VARY THROUGHOUT THE SITE. CONTRACTOR TO PROVIDE PIPE AND STRUCTURE STABILIZATION WHEN THESE CONDITIONS ARE ENCOUNTERED DURING CONSTRUCTION. CONTRACTOR TO FOLLOW ALL PIPE MANUFACTURE SPECIFICATIONS. FACILITIES WILL BE ADEQUATELY MAINTAINED IN ACCORDANCE WITH THE STANDARDS OF MIDDLESEX COUNTY. REFER TO THE PARAGRAPH IN THE STORMWATER MAINTENANCE AGREEMEN ENTITLED 'RIGHT OF COUNTY OF MIDDLESEX TO MAINTAIN DRAINAGE BASINS'. CONDITIONS THAT AFFECT NON-COUNTY FACILITIES SHOULD BE REVIEWED AND APPROVED BY THE APPROPRIATE

31. POTABLE WATER SERVICE IS TO BE PROVIDED FROM THE EXISTING WATER MAIN IN JERNEE MILL ROAD. PROPOSED WATER MAIN EXTENSIONS AND FIRE HYDRANT LOCATIONS ARE SUBJECT TO MUNICIPAL REVIEW AND APPROVAL, ACCORDING TO THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION REGULATIONS, AMERICAN WATERWORKS ASSOCIATION STANDARDS AND BOROUGH OF SAYREVILLE REGULATIONS. PIPE MATERIALS SHALL BE CEMENT LINED DUCTILE IRON PIPE, CLASS 52 WITH ASPHALTIC EPOXY TYPE COATING OR HIGH DENSITY POLYETHYLENE (HDPE) PIPE MANUFACTURED IN DUCTILE IRON PIPE SIZES IN ACCORDANCE WITH AWWA STANDARD C906. ALL WATER MAINS SHALL BE INSTALLED TO PROVIDE A MINIMUM 4 FEET OF COVER OVER THE TOP OF PIPE TO PROPOSED GRADE EXCEPT WHERE SHALLOWER DEPTHS ARE PERMITTED BY THE MUNICIPALITY OR UTILITY AUTHORITY, ALL OFF-SITE WATER MAINS SHALL BE

32. SANITARY SEWER SERVICE SHALL BE PROVIDED BY A GRAVITY SEWER CONNECTION TO THE EXISTING SANITARY SEWER LINE IN JERNEE MILL ROAD. ONSITE GRAVITY SEWER PIPE MATERIAL SHALL BE PVC SDR-35, FOR DEPTHS LESS THAN 20 FEET AND SDR-26 FOR PIPES DEEPER THAN 20 FEET. SEWER LINES, LATERALS, SHALL BE INSTALLED TO PROVIDE A MINIMUM 3 FEET OF COVER FROM THE TOP OF PIPE TO PROPOSED GRADE EXCEPT WHERE SHALLOWER DEPTHS ARE PERMITTED BY THE MUNICIPALITY OR UTILITY AUTHORITY. GRAVITY SEWER PIPE TO BE SHALL BE IN SEPARATE TRENCHES (STEP TRENCHES ARE PROHIBITED) WITH THE TOP OF THE SEWER LINE AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN OR WITH SUCH SEPARATION EXPRESSLY APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION. AT CROSSINGS OF SEWER LINES AND WATER MAINS, THE TOP OF THE SEWER LINES SHALL BE AT

IF SUCH VERTICAL SEPARATION IS NOT POSSIBLE, THE SEWER LINE SHALL BE OF WATERTIGHT CONSTRUCTION (THAT IS DUCTILE IRON PIPE WITH MECHANICAL RESTRAINT JOINTS), WITH WATERTIGHT JOINTS THAT ARE A MINIMUM OF 10 FEET FROM THE WATER MAIN. CONTRACTOR SHALL USE TRANSITION COUPLING, POWERSEAL MODEL #3501-8AAB OR EQUIVALENT AT DIP/PVC 34. CONTRACTOR TO HAND DIG UTILITIES WITHIN EXISTING LANDFILL LIMIT (STONE TRENCH) WHEN EXCAVATING BELOW EXISTING GRADE. IF LANDFILL CAP MEMBRANE IS ENCOUNTERED, EXCAVATION SHALL STOP AND THE CONTRACTOR SHALL IMMEDIATELY CONTACT PROJECT ENVIRONMENTAL CONSULTANT

35. MATERIALS, WORKMANSHIP, AND CONSTRUCTION FOR THE SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH: A. NEW JERSEY DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", 2019; AS SUPPLEMENTED. B. CURRENT PREVAILING MUNICIPAL, COUNTY, AND/OR STATE AGENCY SPECIFICATIONS, STANDARDS, CONDITIONS, AND REQUIREMENTS.

C. CURRENT PREVAILING LITH ITY COMPANY/AUTHORITY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS D. CURRENT MANUFACTURER SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.

36. CABLE, TELEPHONE, ELECTRIC, AND GAS LINES SHALL BE INSTALLED UNDERGROUND.

37. CURBS SHALL BE DEPRESSED FLUSH WITH PAVEMENT AND HANDICAPPED ACCESSIBLE RAMPS IN ACCORDANCE WITH APPLICABLE NJDOT, FEDERAL & STATE ADA STANDARDS INSTALLED WHERE SIDEWALKS AND CROSSWALKS INTERSECT SAME. DETECTABLE WARNINGS SHALL BE INCLUDED ON HANDICAP ACCESSIBLE RAMPS. 38. THE SITE COMPLIES WITH CURRENT ADA AND NJ BARRIER FREE REQUIREMENTS.

39, TRAFFIC SIGNAGE AND STRIPING SHALL CORRESPOND TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LONGITUDINAL TRAFFIC STRIPING WITHIN ROADWAY TO BE THERMOPLASTIC. 40. THE CONTRACTOR IS RESPONSIBLE FOR PROJECT SAFETY, INCLUDING PROVISION OF ALL APPROPRIATE SAFETY DEVICES AND TRAINING REQUIRED. THE SITE HAS DOCUMENTED CONTAMINATED SURFACE AND SUBSURFACE SOIL. A HEALTH AND SAFETY PLAN HAS BEEN PREPARED AND SHALL BE REVIEWED AND IMPLEMENTED BY THE CONTRACTOR AT ALL TIMES. 41. EARTHWORK ACTIVITIES WILL BE LIMITED BY THE MATERIALS ENCOUNTERED WHICH MAY RESULT IN INCREASED HANDLING COSTS AND QUANTITY OF IMPORTED FILL MATERIALS IN LIEU OF REUSING EXCAVATED SITE MATERIALS. SUBSURFACE EXPLORATIONS SHOULD BE PERFORMED TO BETTER QUANTIFY THE REUSABILITY OF ONSITE EXCAVATED MATERIALS. 42. PURSUANT TO THE "ONE CALL" LAW, CONTRACTOR SHALL CALL 1-800-272-1000 OR 811 PRIOR TO ANY EXCAVATION TO REQUEST A MARKOUT OF UNDERGROUND UTILITIES.

44, ALL SIGNAGE AND STRIPING OF FIRE ZONES/LANES SHALL BE APPROVED BY THE BOROUGH FIRE OFFICIAL. THE DESIGN AND ADEQUACY OF FIRE SUPPRESSION SYSTEMS AND BOTH PUBLIC AND PRIVATE FIRE HYDRANT LOCATIONS SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE BOROUGH FIRE OFFICIAL.

43. MANY FACTORS WILL AFFECT THE FINAL EARTHWORK RESULTS. THESE FACTORS MAY INCLUDE BUT ARE NOT LIMITED TO, WEATHER CONDITIONS DURING CONSTRUCTION, EARTH MOVING EQUIPMENT USED, EXPERIENCE OF EQUIPMENT OPERATORS, COMPACTION ACCURACY, PRIOR DISTURBANCE, ASSUMPTIONS REGARDING EXISTING TOPOGRAPHY, VARIABLE SHRINK/SWELL

45, ALL GRADING WITHIN LAWN AREAS SHALL BE A MINIMUM OF 2% AND A MAXIMUM OF 3 FT HORIZONTALLY TO 1 FT VERTICALLY AND AWAY FROM ALL PROPOSED AND EXISTING BUILDINGS. 46. ALL GRADING WITHIN PAVED AREAS SHALL BE A MINIMUM OF 0.75%.

47. PLANS AND DETAILS OF PROPOSED RETAINING WALL ARE TO BE PREPARED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER AND SUBMITTED TO THE BOROUGH ENGINEER PRIOR TO

48. ALL SANITARY SEWER LATERAL PIPES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH BOROUGH STANDARDS AND REQUIREMENTS. 49. ALL WATER MAINS SHALL BE INSTALLED, DISINFECTED AND TESTED IN ACCORDANCE WITH BOROUGH STANDARDS AND REQUIREMENTS.

50. THE INSTALLATION OF ALL WATER METERS SHALL BE REVIEWED AND APPROVED BY THE BOROUGH WATER DEPARTMENT. 51. ALL WATER MAIN FITTINGS SHALL BE MECHANICAL JOINT AND UTILIZE TWO MEANS OF RESTRAINT.

52. IF REQUIRED, STRUCTURAL CALCULATIONS SHALL BE PROVIDED FOR REVIEW AND APPROVAL BY THE BOROUGH ENGINEER FOR ANY OVERSIZED DRAINAGE STRUCTURES.

53. ALL SITE IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE BOROUGH CONSTRUCTION STANDARDS.

54. TRASH AND RECYCLABLES TO BE PICKED UP BY PRIVATE HAULER.

55. NO LOADING OR UNLOADING OF MATERIALS SHALL BE PERFORMED IN THE PROPOSED PARKING AREAS. 56. THESE GENERAL NOTES SHALL APPLY TO ALL SHEETS.

**Colliers** & Design

Engineering

www.colliersengineering.com

n the services were contracted or to whom it is certified. This drawing m e copied, reused, disclosed, distributed or relied upon for any other pu

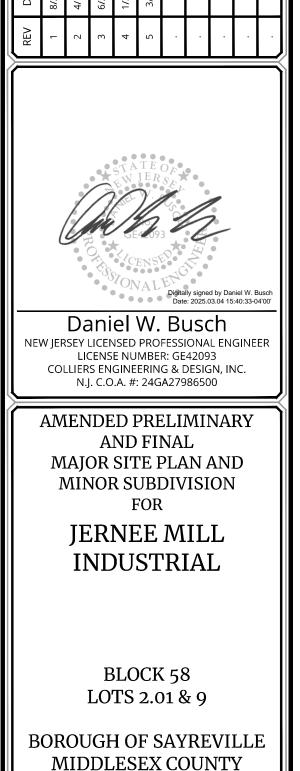
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW CALL811 COM

PREPARING TO DISTURB THE EART

SURFACE ANYWHERE IN ANY STATE

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

**COVER SHEET** 

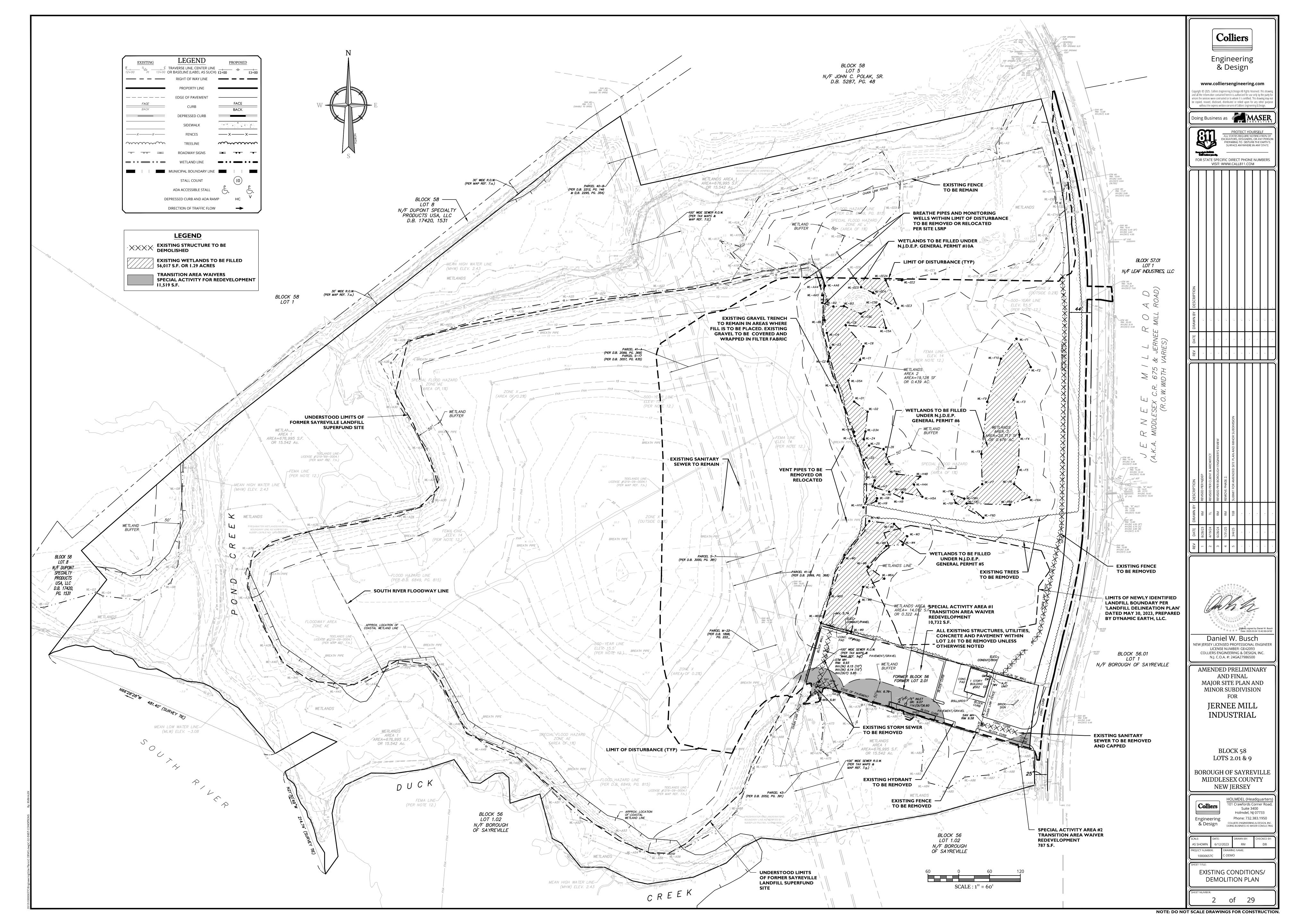


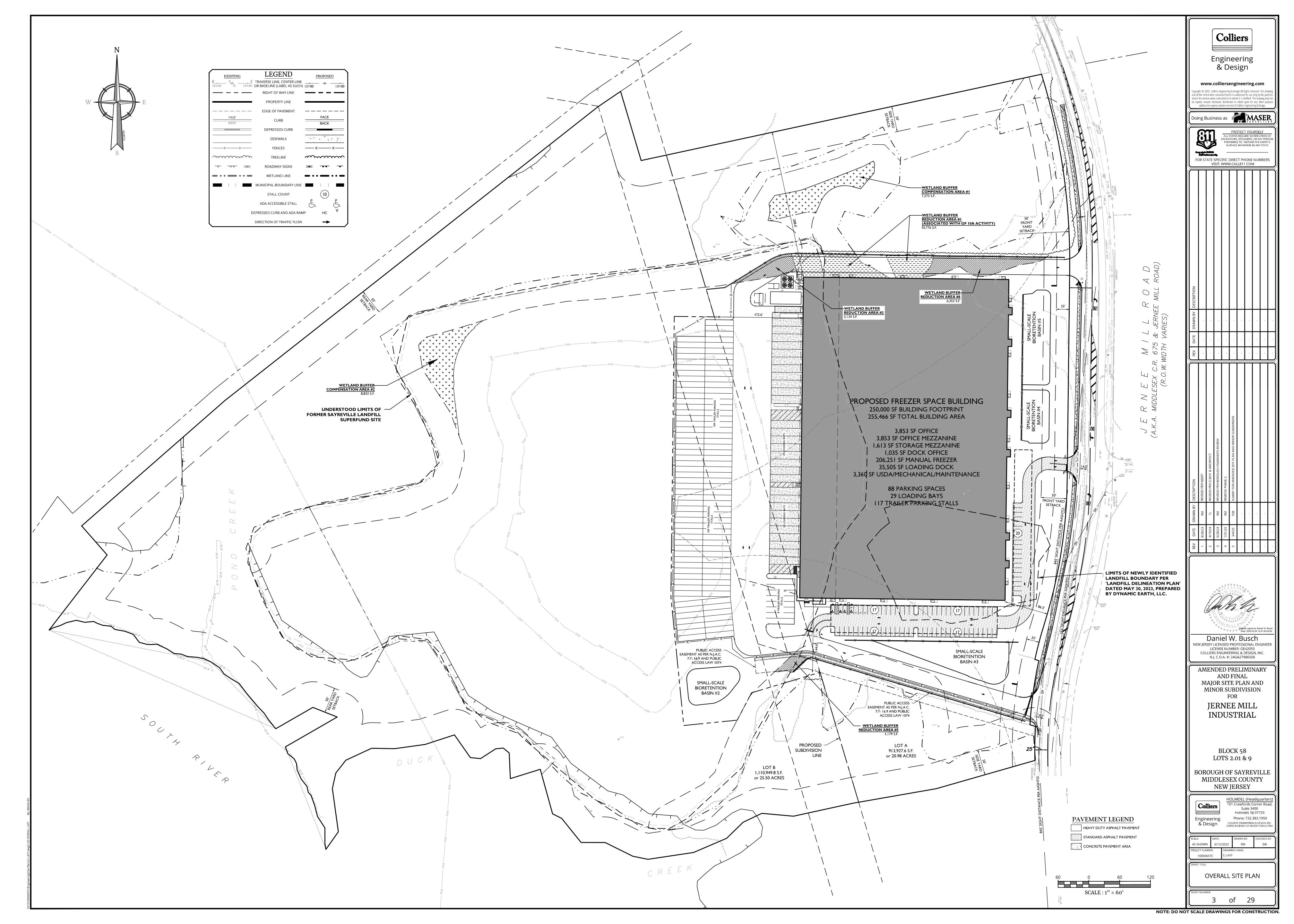
NEW JERSEY

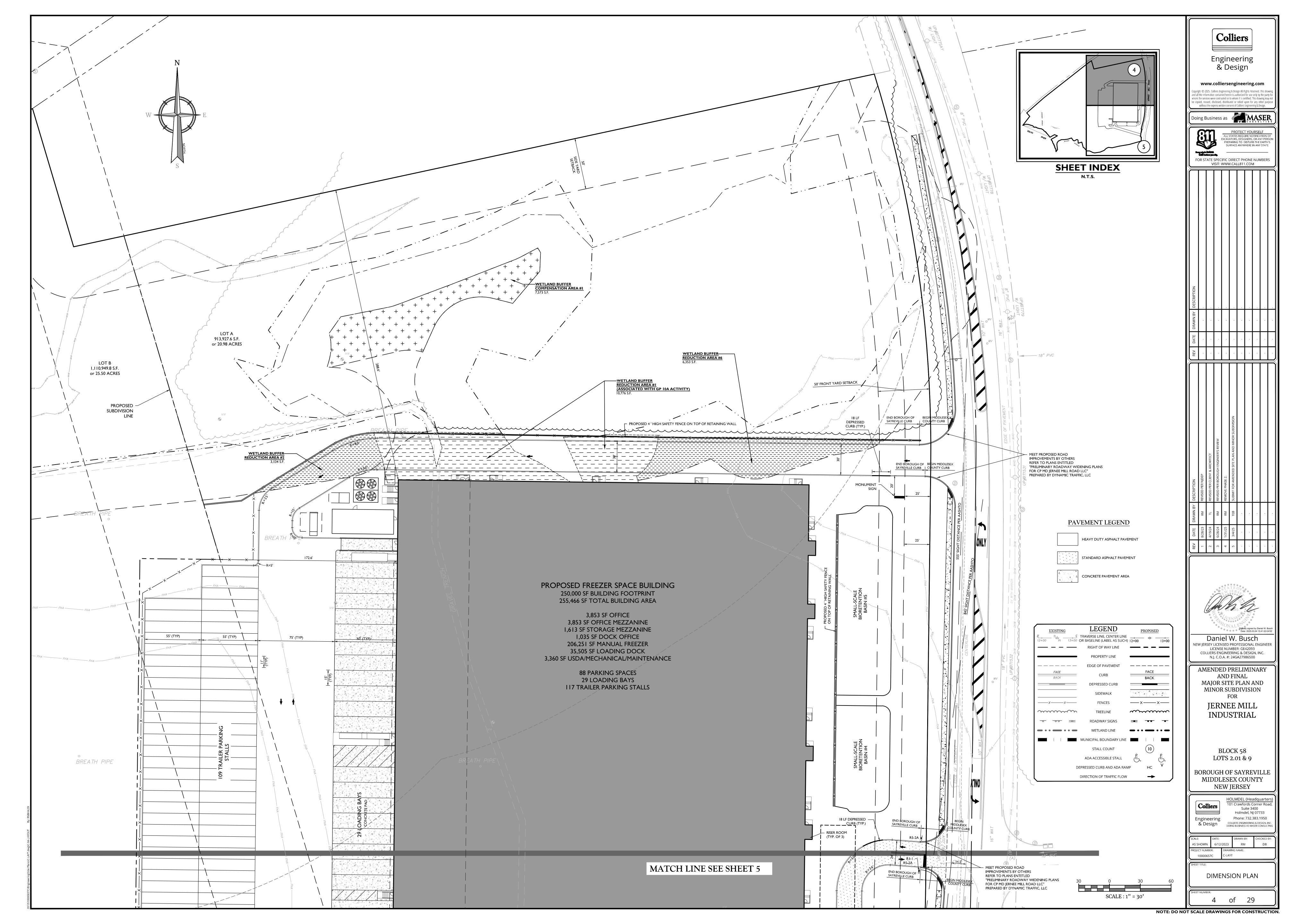
101 Crawfords Corner Road

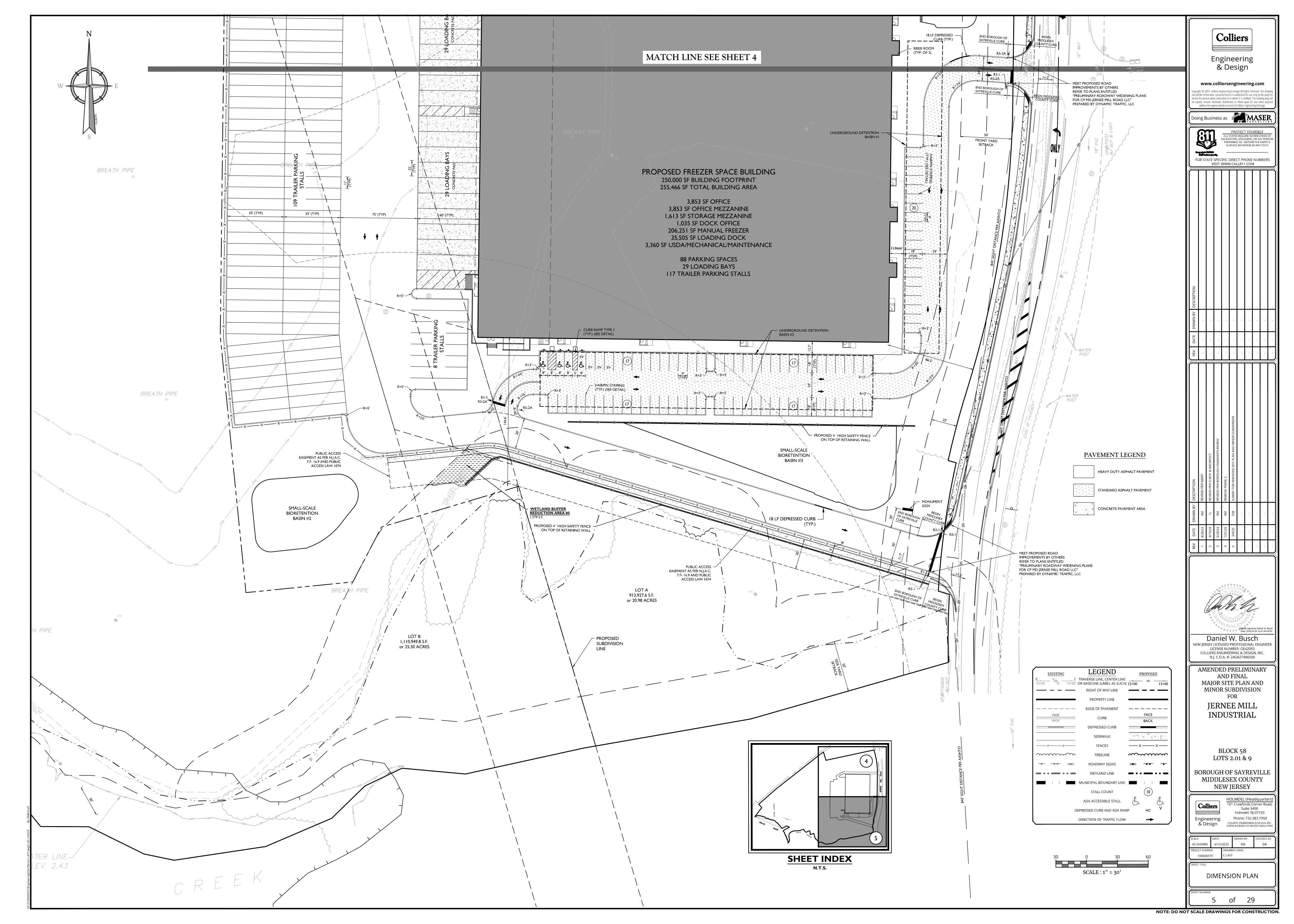
Holmdel, NJ 07733

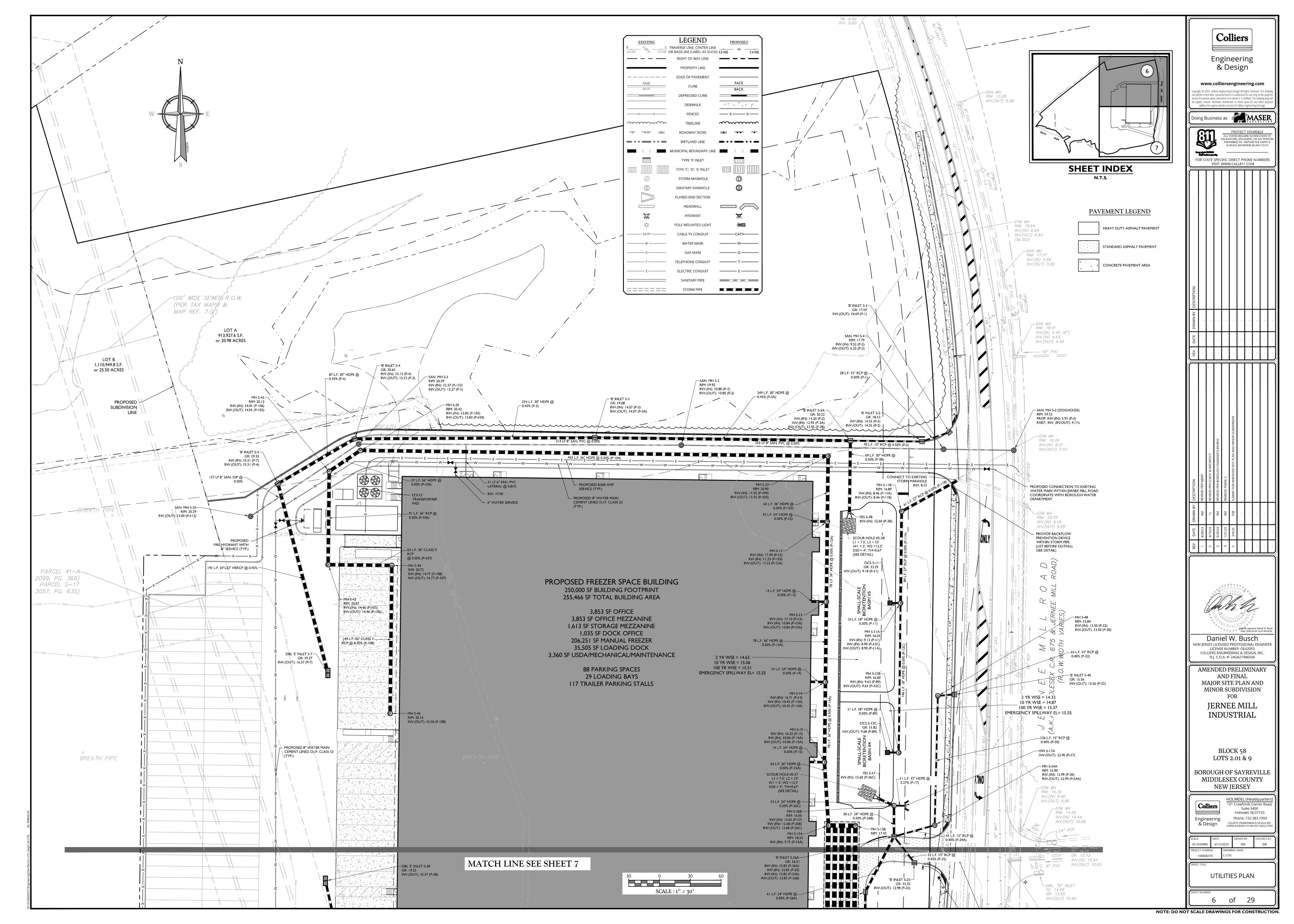
Phone: 732.383.1950 COLLIERS ENGINEERING & DESIGN, INC

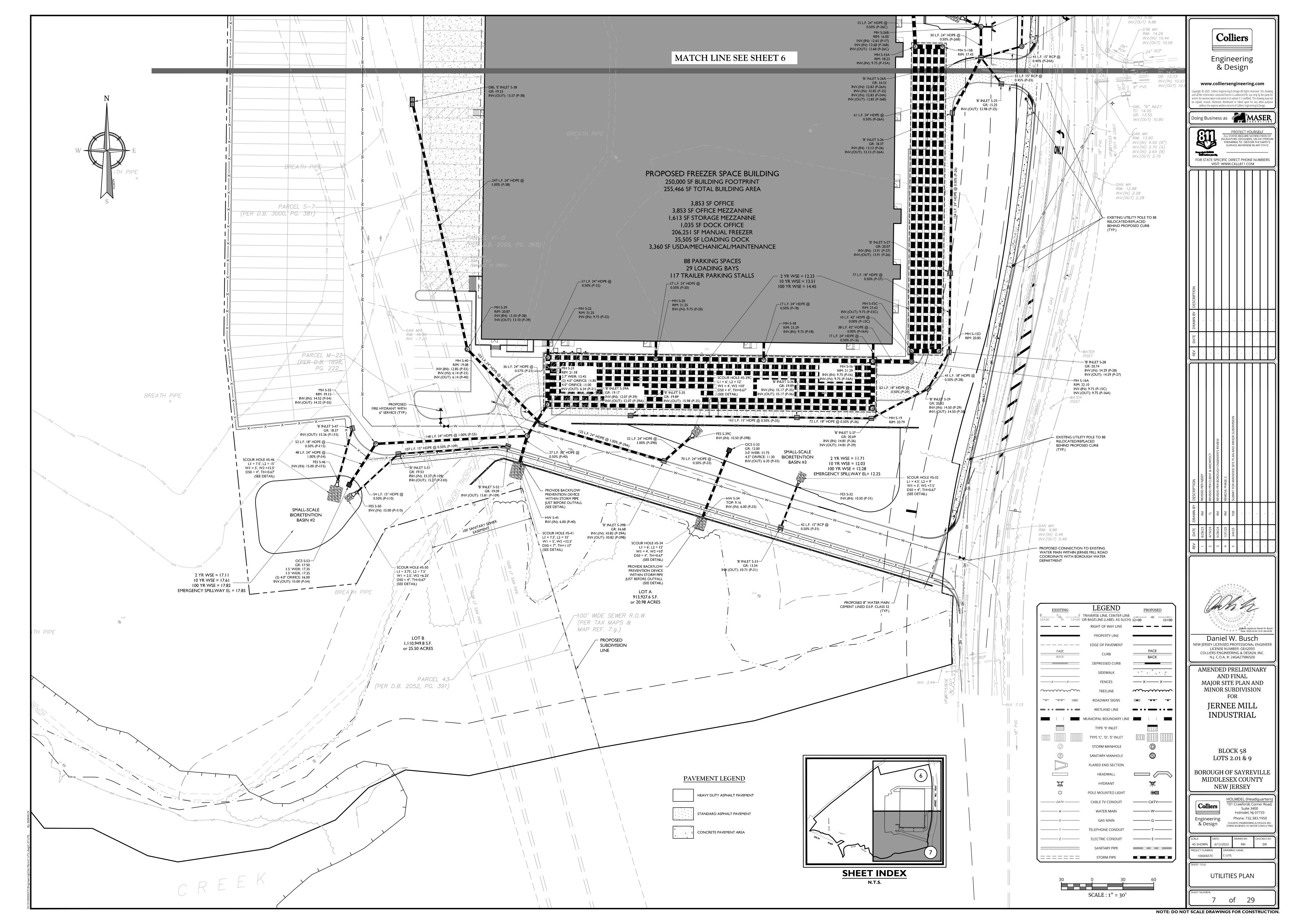


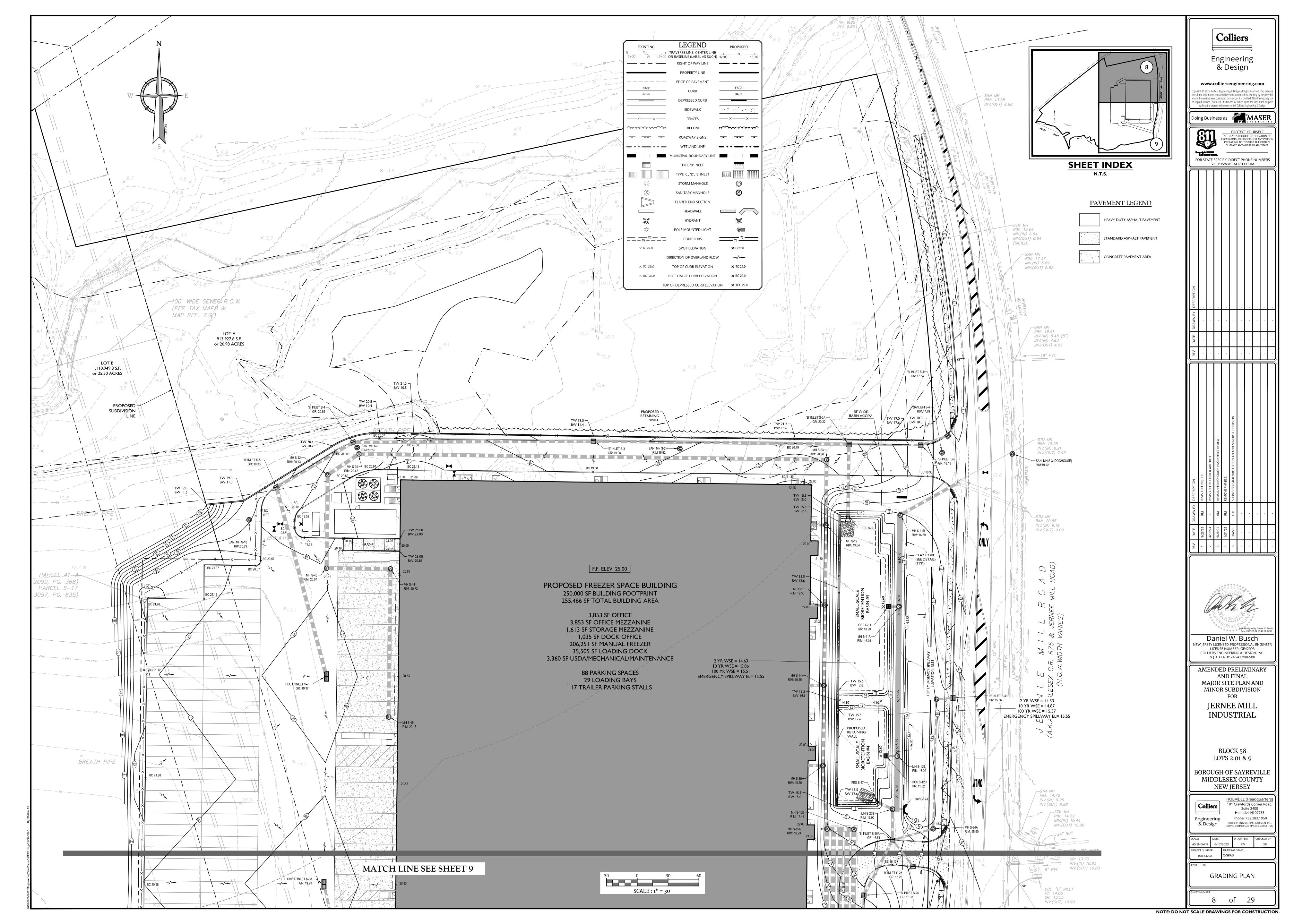


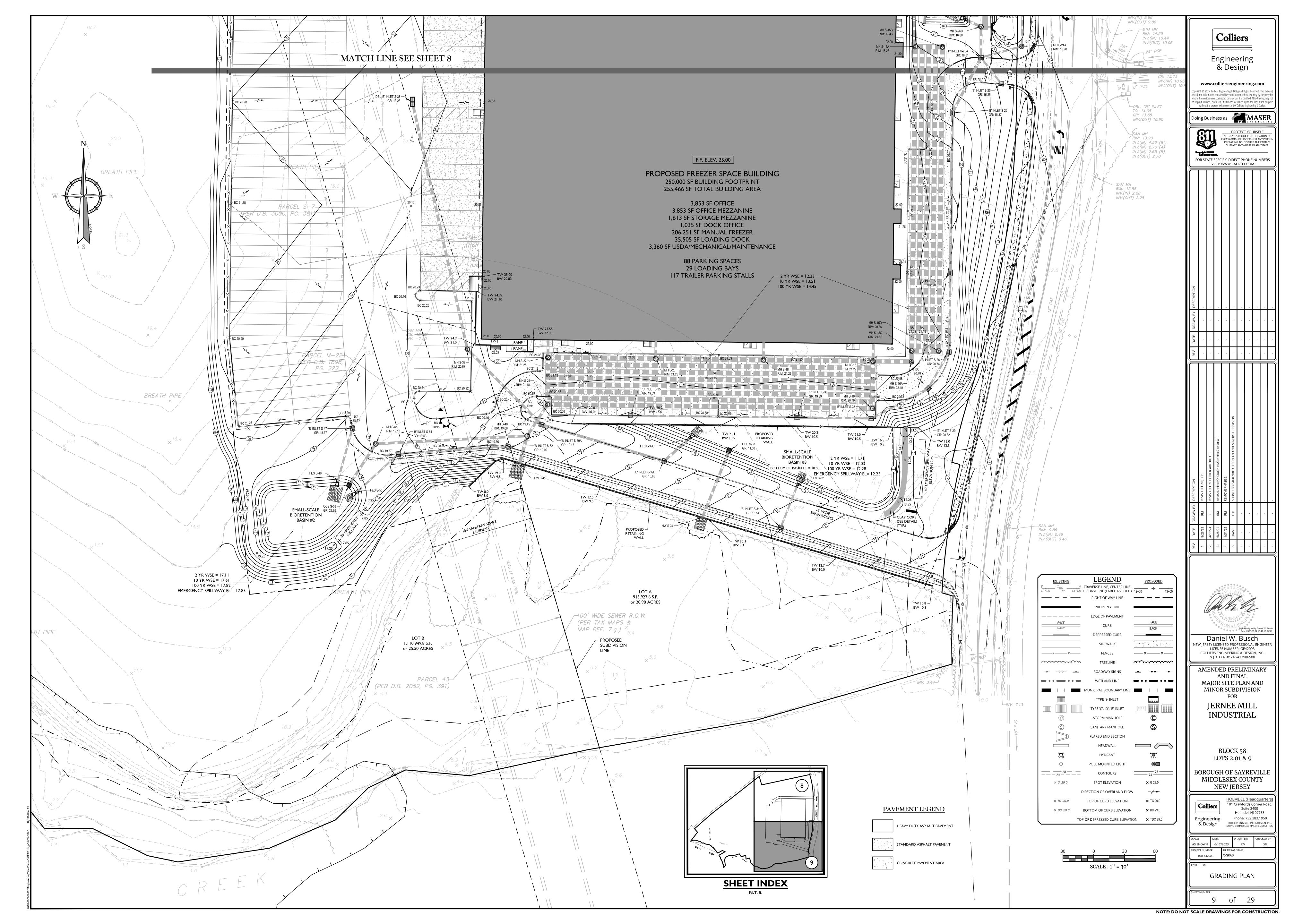


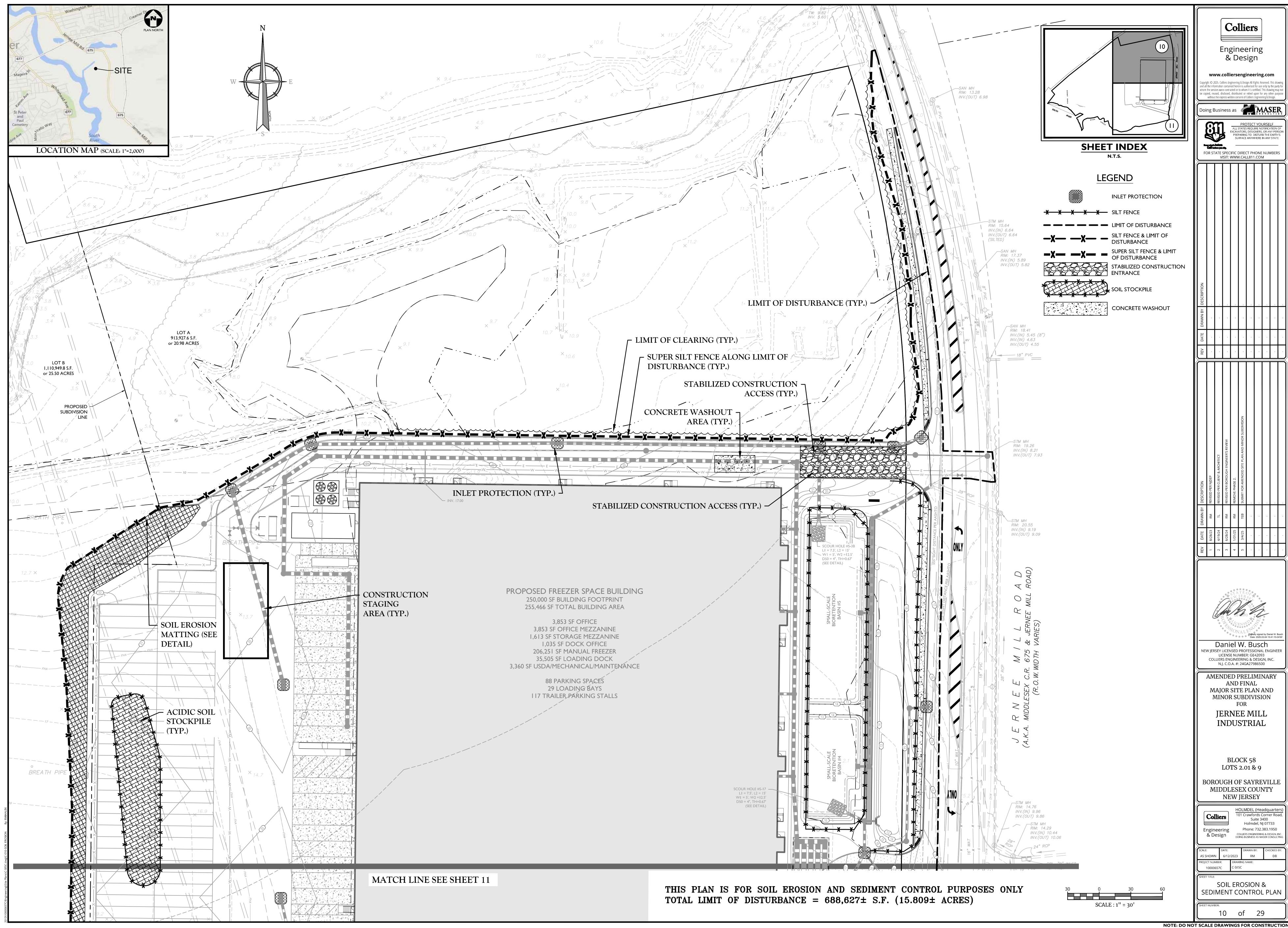


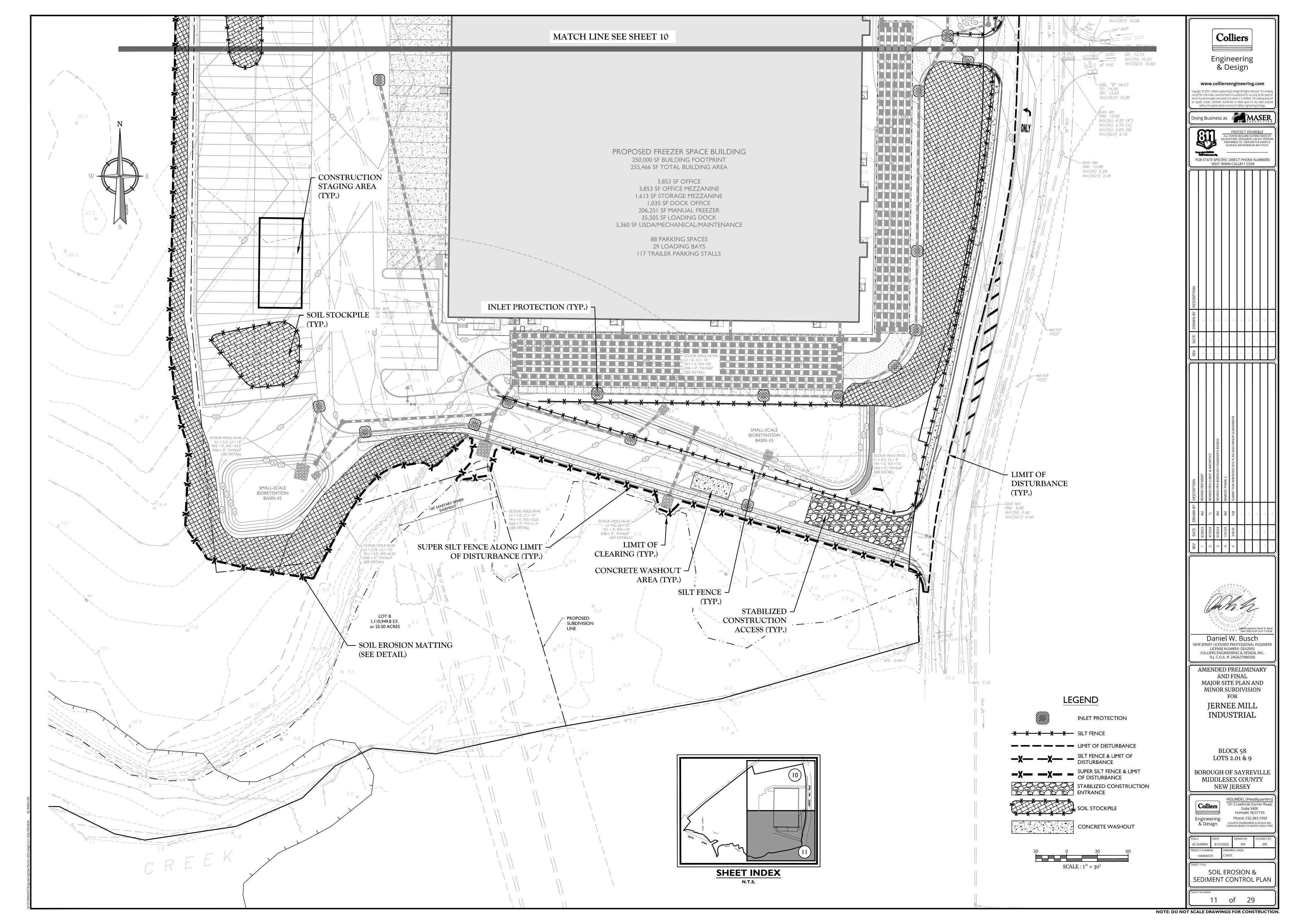












#### BOROUGH OF SAYREVILLE SOIL CONSERVATION DISTRICT NOTES DTL\_NUMBER THE BOROUGH OF SAYREVILLE HALL BE NOTIFIED FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY SOIL DISTURBING ACTIVITY. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED. ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WIL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE BOROUGH OF SAYREVILLE FOR RE-CERTIFICATION. THE REVISED PLANS MUST

- MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL STANDARDS. N.I.S.A 4:24-39 ET. SEQ. REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THE BOROUGH OF SAYREVILLE DETERMINES THAT A PROJECT OR PORTION THEREOF IS IN FULL COMPLIANCE WITH THE CERTIFIED PLAN AND STANDARDS FOR soil erosion and sediment control in new jersey and a report c COMPLIANCE HAS BEEN ISSUED. UPON WRITTEN REQUEST FROM THE APPLICANT, THI DISTRICT MAY ISSUE A REPORT OF COMPLIANCE WITH CONDITIONS ON A LOT-BY-LOT OR SECTION-BY-SECTION BASIS, PROVIDED THAT THE PROJECT OR PORTION THEREOF IS IN SATISFACTORY COMPLIANCE WITH THE SEQUENCE OF DEVELOPMENT AND TEMPORARY MEASURES FOR SOIL EROSION AND SEDIMENT CONTROL HAVE BEEN IMPLEMENTED, INCLUDING PROVISIONS FOR STABILIZATION AND SITE WORK.
- ANY STOCKPILE OR DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN FOURTEEN (14) DAYS. AND NOT SUBJECT TO CONSTRUCTION TRAFFIC. WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TO 2 ½ TONS PER ACRE, ACCORDING TO THE STANDARD FOR STABILIZATION WITH MULCH ONLY.
- IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. SOIL STOCKPILES, STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AND A MULCH ANCHOR, IN ACCORDANCE WITH STATE STANDARDS.
- A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS. AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT. THE SUB-BASE SHALL BE INSTALLED WITHIN FIFTEEN (15) DAYS OF THE PRELIMINARY GRADING.
- THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A PAD OF CLEAN CRUSHED STONE AT POINTS WHERE TRAFFIC WILL BE ACCESSING THE CONSTRUCTION SITE AFTER INTERIOR ROADWAYS ARE PAVED INDIVIDUAL LOTS REQUIRE A STABILIZED CONSTRUCTION ACCESS CONSISTING OF ONE INCH TO TWO INCH (I" - 2") STONE FOR A MINIMUM LENGTH OF TEN FEET (I0') EQUAL TO THE LOT ENTRANCE WIDTH. ALL OTHER ACCESS POINTS SHALL BE BLOCKED OFF.
- ALL SOIL WASHED, DROPPED, SPILLED, OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT-OF-WAYS WILL BE REMOVED IMMEDIATELY.
- PERMANENT VEGETATION IS TO BE SEEDED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (I0) DAYS AFTER FINAL GRADING.
- AT THE TIME THAT 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 IT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THI REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE
- IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, ANY SOIL HAVING A PH OF 4 OR LESS OR CONTAINING IRON SUI FIDES SHALL BE UI TIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS/ACRE, (OR 450 LBS/I,000 SQ FT OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12" OF SETTLED SOIL WITH A PH OF 5 OR MORE, OR 24" WHERE TREES OR SHRUBS ARE TO BE PLANTED.
- . CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
- LINER TERED DEWATERING IS NOT PERMITTED NECESSARY PRECAUTIONS MUST RE taken during all dewatering operations to minimize sediment transfer. ANY DEWATERING METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR DEWATERING.
- SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY. THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET. TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED AS REQUIRED BY THE STANDARD FOR DUST
- . STOCKPILE AND STAGING LOCATIONS ESTABLISHED IN THE FIELD SHALL BE PLACED WITHIN THE LIMIT OF DISTURBANCE ACCORDING TO THE CERTIFIED PLAN STAGING AND STOCKPILES NOT LOCATED WITHIN THE LIMIT OF DISTURBANCE WILL REQUIRE CERTIFICATION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN. CERTIFICATION OF A NEW SOIL EROSION AND SEDIMENT CONTROL PLAN MAY BE required for these activities if an area greater than 5,000 square feet i
- ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE #6.
- THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.

BOROUGH OF SAYREVILLE 167 MAIN STREET, SAYREVILLE, NJ 08872 PHONE (732) 390-7000

# SEQUENCE OF COMMERCIAL CONSTRUCTION

MCNJ-SOIL-NOTE-1500

- CLEARING OF ENTRANCE AND LIMIT OF DISTURBANCE FOR INSTALLATION OF SILT FENCE AND CONSTRUCTION ENTRANCE PAD (I WEEK).
- CONSTRUCTION OF STORM WATER BASINS (2 WEEKS)

CLEARING AND ROUGH GRADING (2 WEEKS)

- INSTALL STORM DRAINAGE SYSTEM, CONDUIT OUTLET PROTECTION AND ALL
- OTHER UTILITIES. INSTALL INLET PROTECTION (3 WEEKS) CONSTRUCT CURBS AND PLACE ROAD SUBBASE (2 WEEKS).
- CLEAR AND GRADE BUILDING AREAS AND CONSTRUCT BUILDINGS. ALL DISTURBED AREAS SHALL BE STABILIZED AS DEFINED IN SOIL EROSION AND SEDIMENT CONTROL NOTES. (ONGOING FROM COMMENCEMENT OF PROJECT).
- ESTABLISH FINISH GRADES. CONDUCT SOIL COMPACTION TESTING AS REQUIRED, OF SCARIFY/TILL 6" MINIMUM DEPTH OF SUBSOIL IN THE LANDSCAPED AND LAWN AREA.
- ALL SURFACES HAVING LAWN OR LANDSCAPING AS FINAL COVER ARE TO BE PROVIDED

5" OF TOPSOIL, FIRM IN PLACE, PRIOR TO SEEDING, SODDING OR PLANTING. PLACE

- PERMANENT VEGETATION COVER (I WEEK) PAVE SITE AND COMPLETE FINAL LANDSCAPING (I MONTH)
- . REMOVE TEMPORARY ACCESS PROTECTION, SILT FENCE, AND INLET PROTECTION AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED

### STANDARD FOR VEGETATIVE COVER

MCNJ-SOIL-NOTE-1100

ADHESIVE AGENT IS REQUIRED.

b. USE ONE OF THE FOLLOWING:

IN THIS STATE.

SHOULD BE UNIFORM IN APPEARANCE.

SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR

a. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE

MULCH. IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF THE AREA

I) 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

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

2) 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.

BINDER SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER

NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES

NOT CONSTITUTE A RECOMMENDATION OF THESE PRODUCTS TO THE

B. 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 PRODUCT

MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEFDER. MUI CH SHALL NOT BE

MIXED IN THE TANK WITH SEED. USE IS LIMITED TO FLATTER SLOPES AND DURING

C. 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 MAT. 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/I,000 SQUARE

FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER, THIS MATERIAL HAS BEEN

AREAS WHERE WEED- SEED 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

IF SOIL MOISTURE IS DEFICIENT SUPPLY NEW SEEDING WITH ADEQUATE WATER (A

NO FOLLOW-UP TOPDRESSING IS MANDATORY UNLESS WHERE GROSS NITROGEN

DIFICIENCY EXISTS IN THE SOIL TO THE EXTENT THAT TURF FAILURE MAY DEVELOP. IN

THAT INSTANCE TOPDRESS WITH 10-10-10 OR FOUIVALENT AT 300 LB PER ACRE OR 7 LB

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 4-2 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 A REPORT OF

ONCE DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD OTHER

MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

PER 1,000 SF EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF

FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS, SEEDED

AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

EXCLUSION OF OTHER PRODUCTS.

OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

MULCH TO PROVIDE SOIL COVERAGE.

ESTABLISHING PERMANENT VEGETATIVE STABILIZATION

5. IRRIGATION (WHERE FEASIBLE):

NOT RESULT IN A PHYTOTOXIC EFFECT OR IMPEDE GROWTH OF TURF GRASS

4. LIQUID MULCH-BINDERS - MAY BE USED TO ANCHOR SALT HAY, HAY OR STRAW

**OPTIMUM SEEDING DATES:** 8/15 - 10/15 (ZONE 6b)

> **ACCEPTABLE SEEDING DATES:** 3/I - 4/30 (ZONE 6b)

SUMMER SEEDING DATES \*: 5/I - 8/I4 (ZONE 6b)

\* NOTE: SUMMER SEEDING SHOULD ONLY BE CONDUCTED WHEN THE SITE IS IRRIGATED. MIXES INCLUDING WHITE CLOVER REQUIRE THAT AT LEAST SIX WEEKS OF GROWING SEASON REMAIN AFTER SEEDING TO ENDURE ESTABLISHMENT BEFORE FREEZING CONDITIONS.

# 2. DETENTION BASINS:

DEERTONGUE 20 LBS/ACRE REDTOP 2 LBS/ACRE WILD RYE (ELYMUS) 15 LBS/ACRE SWITCHGRASS 25 LBS/ACRE

OPTIMUM SEEDING DATES: 3/I - 4/30 (Zone 6b)

C. CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED. HYDROSEEDED 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 I/4 INCH DEEPER ON COARSE-TEXTURED SOIL.

D. AFTER SEEDING, FIRMING 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

E. 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 MUICH 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 ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. WHEN POOR SEED TO SOIL CONTACT OCCURS, THERE IS A REDUCED SEED GERMINATION AND GROWTH.

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

A. STRAW OR HAY. UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, TO BE APPLIED MINIMUM OF 1/4 INCH APPLIED UP TO TWICE A DAY UNTIL VEGETATION IS WELL AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER OR HOT WEATHER OR ON DROUGHTY SITES. (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 PRESENCE OF WEED SEED.

APPLICATION - SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT AT LEAST 85% OF THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF IS AMELIORATED. HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN 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.

OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN COMPLIANCE FROM THE DISTRICT. THESE RATES APPLY TO ALL METHODS OF SEEDING BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVER (OF STRETCHING TWINE BETWEEN PEGS IN A CRISS-CROSS AND A SQUARE PATTERN. THE SEEDED SPECIES) AND MOWED ONCE. NOTE THIS DESIGNATION OF MOWED SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.

2. MULCH NETTINGS - STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOWED.

3. CRIMPER (MULCH ANCHORING COULTER 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

CONSTRUCTION SITE WASTE CONTROL

THESE REQUIREMENTS.

MATERIAL MANAGEMENT TO PREVENT OR REDUCE WASTE - ANY PESTICIDES, FERTILIZERS, FUELS, LUBRICANTS, PETROLEUM PRODUCTS, ANTI-FREEZE, PAINTS AND

WASTE HANDLING - THE FOLLOWING REQUIREMENTS APPLY ONLY TO CONSTRUCTION SITE WASTE THAT HAS THE POTENTIAL TO BE TRANSPORTED BY THE STORMWATER DISCHARGE AUTHORIZED BY THIS PERMIT. THE HANDLING AT THE CONSTRUCTION SITE OF WASTE BUILDING MATERIAL AND RUBBLE AND OTHER CONSTRUCTION SITE WASTES, INCLUDING LITTER AND HAZARDOUS AND SANITARY WASTES, SHALL CONFORM WITH THE STATE SOLID WASTE MANAGEMENT ACT, N.I.S.A. 13:1E-1 ET SEC AND ITS IMPLEMENTING RULES AT N.J.A.C. 7:26, 7:26A, AND 7:26G; THE NEW JERSEY PESTICIDE CONTROL CODE AT N.J.A.C. 7:30; THE STATE LITTER STATUTE (N.J.S.A. 13:1E-99.3); AND OSHA REQUIREMENTS FOR SANITATION AT 29 C.F.R. 1926 (EXCEPT WHERE SUCH CONFORMANCE IS NOT RELEVANT TO THE STORMWATER DISCHARGE AUTHORIZED BY THIS PERMIT). CONSTRUCTION SITES SHALL HAVE ONE OR MORE DESIGNATED WASTE COLLECTION AREAS ONSITE OR ADJACENT TO THE SITE, AND AN ADEQUATE NUMBER OF CONTAINERS (WITH LIDS OR COVERS) FOR WASTE. WASTE SHALL BE COLLECTED FROM SUCH CONTAINERS BEFORE THEY OVERFLOW, AND SPILLS

A. CONSTRUCTION SITE WASTES INCLUDE BUT ARE NOT LIMITED TO:

"CONSTRUCTION AND DEMOLITION WASTE," AS DEFINED IN N.I.A.C. 7:26-1.4 AS FOLLOWS: "WASTE BUILDING MATERIAL AND RUBBLE RESULTING FROM CONSTRUCTION, REMODELING, REPAIR, AND DEMOLITION OPERATIONS ON HOUSES, COMMERCIAL BUILDINGS, PAVEMENTS AND OTHER STRUCTURES. THE FOLLOWING MATERIALS MAY BE FOUND IN CONSTRUCTION AND DEMOLITION WASTE: TREATED AND UNTREATED WOOD SCRAP; TREE PARTS, TREE STUMPS AND BRUSH; CONCRETE, ASPHALT, BRICKS, BLOCKS AND OTHER MASONRY; PLASTER AND WALLBOARD; ROOFING MATERIALS; CORRUGATED CARDBOARD AND MISCELLANEOUS PAPER: FERROUS AND NON-FERROUS METAL: NON-ASBESTOS BUILDING INSULATION; PLASTIC SCRAP; DIRT; CARPETS AND PADDING; GLASS (WINDOW AND DOOR); AND OTHER MISCELLANEOUS MATERIALS; BUT SHALL NOT INCLUDE OTHER SOLID WASTE TYPES."

ii. ANY WASTE BUILDING MATERIAL AND RUBBLE RESULTING FROM SUCH OPERATIONS THAT IS HAZARDOUS FOR PURPOSES OF N.I.A.C. 7:26G (THE HAZARDOUS WASTE

iii. DISCARDED (INCLUDING SPILLED) PESTICIDES, FERTILIZERS, FUELS, LUBRICANTS, PETROLEUM PRODUCTS, ANTI-FREEZE, PAINTS AND PAINT THINNERS, PAINT CHIPS AND SANDRI ASTING GRITS, CLEANING SOLVENTS, ACIDS FOR CLEANING MASONRY SURFACES, DETERGENTS, CHEMICAL ADDITIVES USED FOR SOIL STABILIZATION (E.G. CALCIUM CHLORIDE), AND CONCRETE CURING COMPOUNDS.

iv. OTHER "LITTER," AS DEFINED AT N.J.S.A. 13:1E-215.D AS FOLLOWS: "ANY USED OR PRIMARY PROCESSES OF MINING OR OTHER EXTRACTION PROCESSES, LOGGING, SAWMILLING, FARMING OR MANUFACTURING."

vi. CONTAMINATED SOILS ENCOUNTERED OR DISCOVERED DURING EARTHMOVING ACTIVITIES OR DURING THE CLEANUP OF A LEAK OR DISCHARGE OF A HAZARDOU

B. CONCRETE WASHOUT - CONCRETE WASHOUT ONSITE IS PROHIBITED OUTSIDE DESIGNATED AREAS. WASHOUT ACTIVITIES INCLUDE, BUT NOT LIMITED TO, THE WASHING OF TRUCKS, CHUTES, HOSES, MIXERS, HOPPERS, AND TOOLS.

DISCHARGES TO SURFACE AND GROUNDWATER.

REMOVED AND PROPERLY DISPOSED OF. iii. The concrete washout area shall be clearly designated with a sign

INDICATING THE AREAS USES. C. SANITARY SEWAGE/SEPTAGE DISPOSAL - DISCHARGES OF RAW SANITARY SEWAGE OR SEPTAGE ONSITE ARE STRICTLY PROHIBITED. ADEQUATE FACILITIES WITH PROPER

SPILLS; DISCHARGES OF HAZARDOUS SUBSTANCES; FEDERALLY REPORTABLE RELEASES. A. SPILL KITS SHALL BE AVAILABLE ONSITE OR ADJACENT TO THE SITE FOR ANY MATERIALS THAT ARE LISTED IN 2. ABOVE AND USED OR APPLIED ONSITE. ALL SPILLS

B. DISCHARGES OF HAZARDOUS SUBSTANCES (AS DEFINED IN N.J.A.C. 7:1E-I.6) IN CONSTRUCTION SITE WASTES ARE SUBJECT TO THE PROVISIONS OF THE SPILL COMPENSATION AND CONTROL ACT, N.I.S.A. 58:10-23.11 ET SEQ., AND OF DEPARTMENT RULES FOR DISCHARGES OF PETROLEUM AND OTHER HAZARDOUS SUBSTANCES AT N.I.A.C. 7:1E. NO DISCHARGE OF HAZARDOUS SUBSTANCES RESULTING FROM AN ONSITE SPILL SHALL BE DEEMED TO BE "PURSUANT TO AND IN

COMPLIANCE WITH [THIS] PERMIT" WITHIN THE MEANING OF THE SPILL COMPENSATION AND CONTROL ACT AT N.J.S.A. 58:10-23.11C. C. RELEASES IN EXCESS OF REPORTABLE QUANTITIES (RQ) ESTABLISHED UNDER 40 C.F.R 110, 117, AND 302 THAT OCCUR WITHIN A 24-HR PERIOD MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER (800 424-8802).

#### STANDARD FOR STABILIZATION WITH SOD

MCNJ-SOIL-NOTE-1300 HIGH OUALITY CULTIVATED SOD IS PREFERRED OVER NATIVE OR PASTURE SOD.

SOD SHOULD BE FREE OF WEEDS AND UNDESIRABLE COARSE WEEDY GRASSES. SOD SHOULD BE UNIFORM THICKNESS, APPROXIMATELY 5/8 INCH, PLUS OR MINUS 1/4 INCH. AT TIME OF CUTTING (EXCLUDES TOP GROWTH).

SOD SHOULD BE VIGOROUS AND DENSE AND BE ABLE TO RETAIN ITS OWN SHAPE WEIGHT WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP FROM THE UPPER 10 PERCENT OF THE STRIP. BROKEN PADS OR TORN AND UNEVEN ENDS WILL NOT B

ACCEPTABLE FOR DROUGHTY SITES, A SOD OF TURF-TYPE TALL FESCUE OR TURF-TYPE TALL FESCUE MIXED WITH KENTUCKY BLUEGRASS IS PREFERRED OVER A 100% KENTUCKY BLUEGRASS SOD. ALTHOUGH NOT WIDELY AVAILABLE, A SOD OF FINE FESCUE IS ALSO ACCEPTABLE FOR DROUGHTY SITES.

ONLY MOIST, FRESH, UNHEATED SOD SHOULD BE USED. SOD SHOULD BE HARVESTED. DELIVERED AND INSTALLED WITHIN A PERIOD OF 24 HOURS OR LESS DURING SUMMER

I. SITE PREPARATION

II. SOIL PREPARATION

FINE SEEDBED IS PREPARED.

AMELIORATED

A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EOUIPMENT FOR LIMING, FERTILIZING, INCORPORATING ORGANIC MATTER, AND OTHER SOIL PREPARATION PROCEDURES. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING.

B. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK

WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO DEPTH

OF 5 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES. SEE STANDARD FOR TOPSOILING FOR TOPSOIL AMENDMENT REQUIREMENTS. C. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH A DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.

A. APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES (HTTP://NIAES.RUTGERS.EDU/COUNTY/). FERTILIZER SHALL B APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SOUAR FEET USING 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, APPLY  $\frac{1}{2}$  THE RATE DESCRIBED ABOVE DURING SEEDBED PREPARATION AND REPEAT ANOTHER 1/2 RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING APPLY LIMESTONE AT THE RATE OF 2 TONS/ACRE UNLESS SOIL TESTING INDICATES OTHERWISE. CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES. UNIFORMLY APPLY GROUND LIMESTONE TO TOPSOIL, WHICH HAS BEEN SPREAD AND FIRMED. ACCORDING TO SITE SPECIFIC SOIL TEST RECOMMENDATIONS SUCH AS OFFERED

BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES (HTTP://NJAES.RUTGERS.EDU/COUNTY/). B. WORK LIME AND FERTILIZER INTO THE TOPSOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE

C. REMOVE FROM THE SURFACE ALL OBJECTS THAT WOULD PREVENT GOOD SOD TO TOPSOIL CONTACT AND REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TRE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS, OR OTHER UNSUITABLE MATERIAL. D. INSPECT SITE JUST BEFORE SODDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED

THE AREA MUST BE RETILED AND FIRMED IN ACCORDANCE WITH THE ABOVE.

EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON

THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM,

III. SOD PLACEMENT A. SOD STRIPS SHOULD BE LAID ON THE CONTOUR, NEVER UP AND DOWN THI SLOPE STARTING AT THE ROTTOM OF THE SLOPE AND WORKING UP. ON STEEP SLOPES, THE USE OF LADDERS WILL FACILITATE THE WORK AND PREVEN

DAMAGE TO THE SOD. DURING PERIODS OF HIGH TEMPERATURE, LIGHTLY

IRRIGATE THE SOIL IMMEDIATELY PRIOR TO LAYING THE SOD.

B. PLACE SOD STRIPS WITH SNUG, EVEN JOINTS THAT ARE STAGGERED. OPEN SPACES INVITE EROSION. C. LIGHTLY ROLL OR TAMP SOD IMMEDIATELY FOLLOWING PLACEMENT TO INSURE SOLID CONTACT OF ROOT, MAT AND SOIL SURFACE, DO NOT OVERLAP SOD, AL IOINTS SHOULD BE BUTTED TIGHTLY IN ORDER TO PREVENT VOIDS WHICH

D. ON SLOPES GREATER THAN 3 TO I. SECURE SOD TO SURFACE SOIL WITH WOOD PEGS, WIRE STAPLES BIODEGRADABLE PLASTIC SPIKES, OR SPLIT SHINGLES (8 TO 10 INCHES LONG BY 3/4 INCH WIDE).

WOULD CAUSE DRYING OF THE ROOTS AND INVASION OF WEEDS.

E. SURFACE WATER CANNOT ALWAYS BE DIVERTED FROM FLOWING OVER THE FACE OF THE SLOPE. BUT A CAPPING STRIP OF HEAVY JUTE OR PLASTIC NETTING PROPERLY SECURED. ALONG THE CROWN OF THE SLOPE AND EDGES WIL PROVIDE EXTRA PROTECTION AGAINST LIFTING AND UNDERCUTTING OF SOC THE SAME TECHNIQUE CAN BE USED TO ANCHOR SOD IN WATER-CARRYING CHANNELS AND OTHER CRITICAL AREAS. WIRE STAPLES MUST BE USED T ANCHOR NETTING IN CHANNEL WORK.

F. IMMEDIATELY FOLLOWING INSTALLATION, SOD SHOULD BE WATERED UNTIl MOISTURE PENETRATES THE SOIL LAYER BENEATH SOD TO A DEPTH OF I INCH. MAINTAIN OPTIMUM MOISTURE FOR AT LEAST TWO WEEKS. IV. TOP DRESSING

SINCE SOIL ORGANIC MATTER AND SLOW RELEASE NITROGEN FERTILIZER (WATER SOLUBLE) ARE PRESCRIBED IN SECTIONS I AND 2 IN THIS STANDARD, A FOLLOW-UP TOP DRESSING IS NOT MANDATORY, EXCEPT WHERE GROSS NITROGEN DEFICIENCY EXISTS TO THE EXTENT THAT TURF FAILURE MAY DEVELOP, TOP DRESSING SHALL THEN BE APPLIED. TOP DRESS WITH 10-10-10 OR EQUIVALENT AT 400 POUNDS PER ACRE OR 7 POUNDS PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IS THE TURF I

#### SPPP REQUIRED INSPECTIONS AND REPORTS

MCNJ-SOIL-NOTE-1201 09/01/17

A COPY OF THE AUTHORIZATION SHALL BE POSTED ONSITE AT A SAFE, PUBLICLY ACCESSIBLE LOCATION IN CLOSE PROXIMITY OF THE CONSTRUCTION SITE AT ALL TIMES UNTIL A NOTICE OF COMPLETION HAS BEEN ISSUED. THE PERMITTEE SHALL POST THE NJDEP HOTLINE NUMBER

(I-877-WARN-DEP) WITH THE COPY OF THE AUTHORIZATION.

05/01/17

A. THE PERMITTEE SHALL CONDUCT AND DOCUMENT WEEKLY (MINIMUM) INSPECTIONS OF THE FACILITY TO IDENTIFY AREAS CONTRIBUTING TO TH STORMWATER DISCHARGE AUTHORIZED BY THIS PERMIT AND EVALUATE WHETHER THE STORMWATER POLITION PREVENTION PLAN (SPPP) IDENTIFIED UNDER E.I. O THE CONSTRUCTION ACTIVITY STORMWATER (GP) PART I NARRATIVE REQUIREMENTS, INCLUDING THIS SOIL FROSION AND SEDIMENT CONTROL PLAN IS BEING PROPERLY IMPLEMENTED AND MAINTAINED, OR WHETHER ADDITIONAL MEASURES ARE NEEDED TO IMPLEMENT THE SPPP.

B. ONCE INSTALLATION OF ANY REQUIRED OR OPTIONAL EROSION CONTROL DEVICE OR MEASURE HAS BEEN IMPLEMENTED, ROUTINE INSPECTIONS, MINIMUM WEEKLY, OF EACH MEASURE SHALL BE PERFORMED BY THE CONTRACTOR'S INSPECTION PERSONNEL AND THE RESULTS RECORDED TO INVENTORY AND REPORT THE CONDITION OF EACH MEASURE TO ASSIST IN MAINTAINING THE EROSION AND SEDIMENT CONTROL MEASURES IN GOOD WORKING ORDER.

. THESE REPORT FORMS SHALL BECOME AN INTEGRAL PART OF THE SPPP AND SHALL BE MADE READILY ACCESSIBLE TO GOVERNMENTAL INSPECTION OFFICIALS, THE OPERATOR'S ENGINEER, AND THE OPERATOR FOR REVIEW UPON REQUEST DURING VISITS TO THE PROJECT SITE. IN ADDITION, COPIES OF THE REPORTS SHALL BE PROVIDED TO ANY OF THESE PERSONS, UPON REQUEST, VIA MAIL OR FACSIMILE TRANSMISSION.

D. OTHER RECORD-KEEPING REQUIREMENTS

THE CONTRACTOR SHALL KEEP THE FOLLOWING RECORDS RELATED TO CONSTRUCTION ACTIVITIES AT THE SITE: DATES WHEN MAJOR GRADING ACTIVITIES OCCUR AND THE AREAS WHICH WERE DATES AND DETAILS CONCERNING THE INSTALLATION OF STRUCTURAL

DATES WHEN AN AREAS IS STABILIZED, EITHER TEMPORARILY OR PERMANENTLY

DATES OF RAINFALL AND THE AMOUNT OF RAINFALL DATES AND DESCRIPTIONS OF THE CHARACTER AND AMOUNT OF AN SPILLS OF HAZARDOUS MATERIALS - RECORDS OF REPORTS FILED WITH REGULATORY AGENCIES IF REPORTABLE QUANTITIES OF HAZARDOUS MATERIALS SPILLED

DATES WHEN CONSTRUCTION ACTIVITIES CEASE IN AN AREA

STORMWATER POLLUTION PREVENTION PLAN (SPPP) A. CONSTRUCTION ACTIVITY THAT MAY RESULT IN A STORMWATER DISCHARGE AUTHORIZED BY THIS PERMIT SHALL BE EXECUTED ONLY IN ACCORDANCE WITH A

SPPP THAT CONSISTS OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN, AND (WHERE APPLICABLE) THE CONSTRUCTION SITE WASTE CONTROL COMPONENT SET FORTH IN ATTACHMENT B TO THE GENERAL PERMIT. A COPY OF THIS SPPP SHALL BE RETAINED BY THE PERMITTEE FOR A PERIOD OF AT LEAST FIVE ( YEARS AFTER THE COMPLETION OF CONSTRUCTION THIS PERIOD MAY BE EXTENDED BY WRITTEN REQUEST OF THE DEPARTMENT AT ANY TIME (SEE N.I.A.C

REPORTS OF NONCOMPLIANCE

NOTIFICATION OF COMPLETION.

A. ALL INSTANCES OF NONCOMPLIANCE NOT REPORTED UNDER N.J.A.C. 7:14A-6.10 SHALL BE REPORTED TO THE DEPARTMENT ANNUALLY. NOTIFICATION OF COMPLETION

THE REPORT OF COMPLIANCE ISSUED UNDER NIAC 2:90-1 FOR COMPLETE CONSTRUCTION ACTIVITIES. EXCEPT SINGLE FAMILY HOME CONSTRUCTION UNDER B. BELOW. THE REPORT OF COMPLIANCE SHALL SERVE AS THE NOTIFICATION OF B. THE BUILDER OF A SINGLE FAMILY HOME THAT IS AUTHORIZED UNDER THIS PERMIT BUT NOT WITHIN THE DEFINITION OF "PROJECT AT N.I.S.A. 4:24-41G, SHALL SEND A

COPY OF THE FINAL CERTIFICATE OF OCCUPANCY TO THE SOIL CONSERVATION

DISTRICT. THE SOIL CONSERVATION DISTRICT WILL PROVIDE A COPY OF THE FINAL

CERTIFICATE OF OCCUPANCY TO THE DEPARTMENT, WHICH WILL SERVE AS

C. THE DOT SHALL PROVIDE WRITTEN NOTIFICATION TO THE DEPARTMENT WHEN DOT CERTIFIED PROJECTS ARE COMPLETED.

**Colliers** 

Engineering

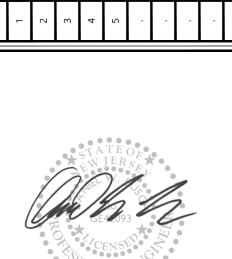
www.colliersengineering.com m the services were contracted or to whom it is certified. This drawing may r e copied, reused, disclosed, distributed or relied upon for any other pure

& Design

without the express written consent of Colliers Engineering & Design.

MASE LL STATES REQUIRE NOTIFICATION OF AVATORS, DESIGNERS, OR ANY PERSO PREPARING TO DISTURB THE FARTH SURFACE ANYWHERE IN ANY STATE

Name and a second second FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW CALL811 COM



MINOR SUBDIVISION JERNEE MILI **INDUSTRIAL** 

> BLOCK 58 LOTS 2.01 & 9

**NEW JERSEY** 

HOLMDEL (Headquarter 101 Crawfords Corner Road Engineering

**SOIL EROSION &** SEDIMENT CONTROL PLAN

12 of 29

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

A. 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. B. IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SUBSOIL SHALL BE

EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO AN AVERAGE DEPTH OF 5 INCHES, MINIMUM OF 4 INCHES, FIRMED IN PLACE IS REQUIRED. ALTERNATIVE DEPTHS MAY BE CONSIDERED WHERE SPECIAL REGULATORY AND/OR INDUSTRY DESIGN STANDARDS ARE APPROPRIATE SUCH AS ON GOLF COURSES. SPORTS FIELDS. LANDFILL CAPPING ETC. TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER. AS

D. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS. GRADE-STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.

NEEDED, IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING.

SEEDBED PREPARATION A. UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED. ACCORDING TO SITE SPECIFIC SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION, SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES (HTTP://NJAES.RUTGERS.EDU/COUNTY/).

1. FOR TEMPORARY SEEDING: FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE, LIMING RATE SHALL BE ESTABLISHED PER SOIL TESTING.

b. FOR PERMANENT SEEDING: FERTILIZER SHALL BE APPLIED AT THE RATE OF 500

POUNDS PER ACRE OR II POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR FOUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES. IF FERTILIZER IS NOT INCORPORATED, APPLY ONE-HALF THE RATE DESCRIBED ABOVE DURING SEEDBED PREPARATION AND REPEAT ANOTHER ONE-HALF RATE APPLICATION OF THE SAME FERTILIZER WITHIN 3 TO 5 WEEKS AFTER SEEDING.

B. WORK LIME AND FERTILIZER INTO THE TOPSOIL 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

C. HIGH ACID PRODUCING SOIL. SOILS HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A PH OF 4. MULCHING 5 OR MORE BEFORE INITIATING SEEDBED REPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH ACID-PRODUCING SOILS FOR SPECIFIC REQUIREMENTS. D. IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SURFACE SHOULD

PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.). SEE "SOIL DECOMPACTION AND TESTING REQUIREMENTS" E. REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION AND OTHER DEBRIS SUCH AS WIRE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS

BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS

A. TEMPORARY SEEDING SPECIFICATIONS - TEMPORARY VEGETATIVE COVER SHALL CONSIST OF PERENNIAL RYEGRASS APPLIED UNIFORMLY AT A RATE OF 1.0 POUNDS PER 1,000 SQ.FT. (100 LBS/ACRE), OR A MIXTURE FROM TABLE 7-2 OF THE STANDARDS APPROVED BY THE SOIL CONSERVATION DISTRICT.

B. PERMANENT SEEDING SPECIFICATIONS - SELECT AN APPROVED MIXTURE FROM THOSE LISTED BELOW, AN APPROVED MIXTURE FROM TABLE 4-3 OF THE STANDARDS, OR USE A MIXTURE RECOMMENDED BY RUTGERS COOPERATIVE EXTENSION OR NATURA 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. SEED SHALL BE APPLIED AS NOTED BELOW WITHIN THE DATES SPECIFIED IN THE STANDARDS:

I. LAWN AREAS:

**DUST CONTROL METHODS:** 

05/01/18

CONTROL STANDARDS.

OR OTHER UNSUITABLE MATERIAL.

MIX #16 (POORLY DRAINED SOIL)

ROUGH BLUEGRASS 90 LBS/ACRE STRONG CREEPING RED FESCUE 130 LBS/ACRE

DUST CONTROL

MCNJ-SOIL-NOTE-1400

APPLY MULCHES OR VEGETATIVE COVER AS PER NJ SOIL EROSION AND SEDIMENT

TILL AND ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A

TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL

BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE

PLOWS SPACED ABOUT 12 INCHES APART AND SPRING-TOOTHED HARROWS ARE

ERECT BARRIERS SUCH AS SOLID BOARD FENCES, SNOW FENCES, BURLAP

FENCES, CRATE WALLS, BALES OF HAY AND SIMILAR MATERIAL TO CONTROL AIR

APPLY CALCIUM CHLORIDE IN THE FORM OF LOOSE, DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT

WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. NOT

SUITABLE ON STEEPER SLOPES NEAR THE STREAMS OR POTENTIALLY

USE SPRAY-ON ADHESIVE ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS).

TYPE OF NOZZLE

COARSE SPRAY

FINE SPRAY

FINE SPRAY

COARSE SPRAY

SEE SEDIMENT BASIN STANDARD, P. 26-1

APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

MAY ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS

TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS

GALLONS/ACRE

1200

235

EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

KEEP TRAFFIC OFF THESE AREAS. MATERIALS AS FOLLOWS:

WATER

NONE

DILUTION

SPRINKLE THE SITE UNTIL THE SURFACE IS WET.

CURRENTS AND SOIL BLOWING.

ACCUMULATE AROUND PLANTS.

ANIONIC ASPHALT EMULSION

LATEX EMULSION

RESIN IN WATER

POLYACRYLAMIDE (PAM) -

POLYACRYLAMIDE (PAM) -

ACIDULATED SOY BEAN

SOAP STICK

SPRAY ON

DRY SPREAD

# **MITIGATION NOTES**

STOCKPILED HIGH ACID PRODUCING SOILS.

STOCKPILES OF HIGH ACID-PRODUCING SOIL SHOULD BE LOCATED ON LEVEL LAND TO MINIMIZE ITS MOVEMENT, ESPECIALLY WHEN THIS MATERIAL HAS A HIGH CLAY

SLOPE TO CONTAIN MOVEMENT OF THE STOCKPILED MATERIAL. TOPSOIL SHALL NOT ACID-PRODUCING SOIL.

AS FOLLOWS:

EQUIPMENT USED FOR MOVEMENT OF HIGH ACID-PRODUCING SOILS SHOULD BE CLEANED AT THE END OF EACH DAY TO PREVENT SPREADING OF HIGH ACID-PRODUCING SOIL MATERIALS TO OTHER PARTS OF THE SITE, INTO STREAMS OR

FROM, AROUND, OR OFF THE SITE.

THE PROJECT SITE IS LOCATED WITHIN THE RARITAN (Kr) GEOLOGIC FORMATION.

# FOR ACIDIC SOIL

MCNJ-SOIL-NOTE-1700 LIMIT THE EXCAVATION AREA AND EXPOSURE TIME WHEN HIGH-ACID PRODUCING SOILS ARE ENCOUNTERED

TEMPORARILY STOCKPILED HIGH ACID-PRODUCING SOIL MATERIAL TO BE STORED MORE THAN 48 HOURS SHOULD BE COVERED WITH PROPERLY ANCHORED, HEAVY GRADE SHEETS OF POLYETHYLENE WHERE POSSIBLE. IF NOT POSSIBLE, STOCKPILES SHALL BE COVERED WITH A MINIMUM OF 3 TO 6 INCHES OF WOOD CHIPS TO MINIMIZE

BE APPLIED TO THE STOCKPILES TO PREVENT TOPSOIL CONTAMINATION WITH HIGH HIGH ACID PRODUCING SOILS WITH A pH OF 4.0 OR LESS OR CONTAINING IRON SULFIDE (INCLUDING BORROW FROM CUTS OR DREDGED SEDIMENT) SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS

ADEQUATE STABILIZATION AND THAT NO HIGH ACID-PRODUCING SOIL PROBLEMS EMERGE. IF PROBLEMS STILL EXIST, THE AFFECTED AREA MUST BE TREATED AS INDICATED

TOPSOIL STRIPPED FROM THE SITE SHALL BE STORED SEPARATELY FROM TEMPORARILY

A. AREAS WHERE TREES OR SHRUBS ARE TO BE PLANTED SHALL BE COVERED WITH A MINIMUM OF 24 INCHES OF SOIL WITH A pH OF 5 OR MORE.

STORMWATER CONVEYANCES, AND TO PROTECT MACHINERY FROM ACCELERATED RUSTING.

FOLLOWING BURIAL OR REMOVAL OF HIGH ACID-PRODUCING SOIL, TOPSOILING AND SEEDING OF THE SITE (SEE TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION. PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, AND TOPSOILING), MONITORING MUST CONTINUE FOR A MINIMUM OF 6 MONTHS TO ENSURE THERE IS

ABOVE TO CORRECT THE PROBLEM.

EROSION OF THE STOCKPILE. SILT FENCE SHALL BE INSTALLED AT THE TOE OF THE

PER ACRE (OR 450 POUNDS PER 1,000 SQUARE FEET OF SURFACE AREA) AND COVERED WITH A MINIMUM OF 12 INCHES OF SETTLED SOIL WITH A PH OF 5.0 OR MORE EXCEPT

B. DISPOSAL AREAS SHALL NOT BE LOCATED WITHIN 24 INCHES OF ANY SURFACE OF A SLOPE OR BANK, SUCH AS BERMS, STREAM BANKS, DITCHES, AND OTHERS, TO PREVENT POTENTIAL LATERAL LEACHING DAMAGES.

NON-VEGETATIVE EROSION CONTROL PRACTICES (STONE TRACKING PADS, STRATEGICALLY PLACED LIMESTONE CHECK DAM, SEDIMENT BARRIER, WOOD CHIPS) SHOULD BE INSTALLED TO LIMIT THE MOVEMENT OF HIGH ACID-PRODUCING SOILS

I PEG AND TWINE - DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES

COMPONENT OF THE STORMWATER POLLUTION PREVENTION PLAN (SPPP)

MCNJ-SOIL-NOTE-1200 12/07/07/ THE CONSTRUCTION SITE WASTE CONTROL COMPONENT OF THE SPPP CONSISTS OF THE REQUIREMENTS IN 2., 3., AND 4. BELOW. THESE REQUIREMENTS BECAME OPERATIVE ON MARCH 3, 2004 AND APPLY TO CONSTRUCTION ACTIVITIES THAT COMMENCE ON OR AFTER MARCH 3, 2004. ANY NEW CONSTRUCTION ACTIVITY FOR WHICH AN RFA IS SUBMITTED ON OR AFTER MARCH 3, 2004 OR WHICH RECEIVE AUTOMATIC RENEWAL OF AUTHORIZATION UNDER THIS PERMIT AFTER MARCH 3, 2004 ALSO SHALL COMPLY WITH

PAINT THINNERS, CLEANING SOLVENTS AND ACIDS, DETERGENTS, CHEMICAL ADDITIVES, AND CONCRETE CURING COMPOUNDS SHALL BE STORED IN CONTAINERS IN A DRY COVERED AREA MANUFACTURERS' RECOMMENDED APPLICATION RATES. USES. AND METHODS SHALL BE STRICTLY FOLLOWED TO THE EXTENT NECESSARY TO PREVENT OR MINIMIZE THE PRESENCE OF WASTE FROM SUCH MATERIALS IN THE STORMWATER DISCHARGE AUTHORIZED BY THIS PERMIT. (THE PRECEDING SENTENCE DOES NOT APPLY TO ANY MANUFACTURERS' RECOMMENDATIONS ABOUT FERTILIZER OR OTHER MATERIAL THAT CONFLICT WITH THE EROSION AND SEDIMENT CONTROL lacksquareCOMPONENT OF THE FACILITY'S SPPP.)

AT SUCH CONTAINERS SHALL BE CLEANED UP IMMEDIATELY.

UNCONSUMED SUBSTANCE OR WASTE MATERIAL WHICH HAS BEEN DISCARDED WHETHER MADE OF ALUMINUM, GLASS, PLASTIC, RUBBER, PAPER, OR OTHER NATURAL OR SYNTHETIC MATERIAL, OR ANY COMBINATION THEREOF, INCLUDING, BUT NOT LIMITED TO, ANY BOTTLE, IAR OR CAN, OR ANY TOP, CAP OR DETACHABLE TAB OF ANY BOTTLE, JAR OR CAN, ANY UNLIGHTED CIGARETTE, CIGAR, MATCH OR ANY FLAMING OR GLOWING MATERIAL OR ANY GARBAGE, TRASH, REFUSE, DEBRIS, RUBBISH, GRASS CLIPPINGS OR OTHER LAWN OR GARDEN WASTE, NEWSPAPERS MAGAZINES, GLASS, METAL, PLASTIC OR PAPER CONTAINERS OR OTHER PACKAGING OR CONSTRUCTION MATERIAL, BUT DOES NOT INCLUDE THE WASTE OF THE

v. SANITARY SEWAGE AND SEPTAGE.

SUBSTANCE.

DESIGNATED WASHOUT AREAS SHALL BE LINED AND BERMED TO PREVENT ii. HARDENED CONCRETE FROM THE CONCRETE WASHOUT WASHOUT SHALL BE

DISPOSAL SHALL BE PROVIDED AND MAINTAINED ONSITE OR ADJACENT TO THE SITE FOR ALL WORKERS AND OTHER SANITARY NEEDS.

OF SUCH MATERIAL SHALL BE CONTAINED AND CLEANED UP IMMEDIATELY. CLEANED UP MATERIALS SHALL BE PROPERLY DISPOSED OF.

a. The soil conservation district will provide the department a copy of

CERTIFICATION, AUTHORIZATION UNDER NJPDES CONSTRUCTION ACTIVITY TORMWATER GENERAL PERMIT, ALL CORRESPONDENCE AND NOTES TO AND FROM THE NIDEP AND SOIL CONSERVATION DISTRICT (OR DESIGNATED MUNICIPALITY) SHALL BE MAINTAINED ON-SITE.

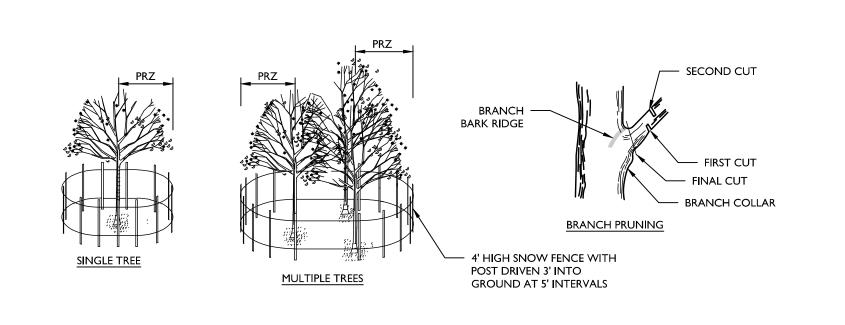
Daniel W. Busch IEW IERSEY LICENSED PROFESSIONAL ENGINEER LICENSE NUMBER: GE42093 COLLIERS ENGINEERING & DESIGN, INC. N.J. C.O.A. #: 24GA27986500 AMENDED PRELIMINARY

AND FINAL

MAJOR SITE PLAN AND

**BOROUGH OF SAYREVILLI** MIDDLESEX COUNTY

Suite 3400 Holmdel, NJ 07733 Phone: 732.383.1950 COLLIERS ENGINEERING & DESIGN, INC & Design DOING BUSINESS AS MASER CONSULT



PROTECTIVE FENCING IS TO BE ERECTED PRIOR TO CONSTRUCTION AND MAINTAINED DURING CONSTRUCTION AS DIRECTED BY THE LANDSCAPE ARCHITECT, SOIL CONSERVATION DISTRICT AND/OR MUNICIPAL ENGINEER.

- NO CONSTRUCTION ACTIVITY IS PERMITTED WITHIN THE PROTECTIVE FENCING.
- AS CONSTRUCTION NEARS COMPLETION THE FENCING WILL BE REMOVED AS DIRECTED. AT THE COMPLETION OF CONSTRUCTION, ALL TREES WILL BE PRUNED AS NECESSARY TO CORRECT ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITY.
- GENERAL MECHANICAL DAMAGE SEE CRITICAL ROOT ZONE CALCULATION (CRZ) FOR CORRECT 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 ZONE.
- BOARDS WILL NOT BE NAILED TO TREES DURING BUILDING OPERATIONS.
- 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 PRESCRIBED BY A PROFESSIONAL FORESTER OR CERTIFIED TREE EXPERT.

FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA INSIDE THE PROTECTED ROOT ZONE (PRZ) OR CRITICAL ROOT ZONE (CRZ). TREE ROOT SYSTEM COMMONLY EXTEND BEYOND THE

- TREE LIMB REMOVAL WHERE NECESSARY, WILL BE DONE AS NATURAL TARGET PRUNING TO REMOVE THE DESIRED BRANCH COLLAR. THERE SHOULD BE NO FLUSH CUTS. FLUSH CUTS DESTROY A MAJOR DEFENSE SYSTEM OF THE TREE. NO TREE PAINT SHALL BE APPLIED. ALL CUTS SHALL BE MADE AT THE OUTSIDE EDGE OF THE BRANCH COLLAR. CUTS MADE TOO FAR BEYOND THE BRANCH COLLAR MAY LEAD TO EXCESS SPROUTING, CRACKS AND ROT. REMOVAL OF A "V" CROTCH SHOULD BE CONSIDERED FOR FREE STANDING SPECIMEN TREES TO AVOID FUTURE SPLITTING DAMAGE.
- CRITICAL ROOT ZONE (CRZ) OR PROTECTED ROOT ZONE (PRZ) CALCULATION: MEASURE DHB OF THE TREE (DIAMETER OF TREE IN BREAST HEIGHT OR 4.5' ABOVE GROUND ON THE UPHILL SIDE) IN INCHES. CRZ OR PRZ = DHB TIMES 1.5 (FOR OLD/UNHEALTHY/SENSITIVE TREES) OR DHB X 1.0 (FOR YOUNG/HEALTH/TOLERANT TREES), EXPRESS IN FEET.

ROLL THE RECP'S (A.) DOWN OR (B.) HORIZONTALLY STEP BY STEP ACROSS THE SLOPE TAMPERING IT DOWN ALONG THE WAY. RECP'S

SHALL UNROLL WITH APPROPRIATE SIDE TIGHTLY AGAINST THE SOIL SURFACE. RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE

BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE, WHEN USING THE DOT SYSTEM,

STAPLES/STAKESSHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.

CONSECUTIVE RECP'S SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP.

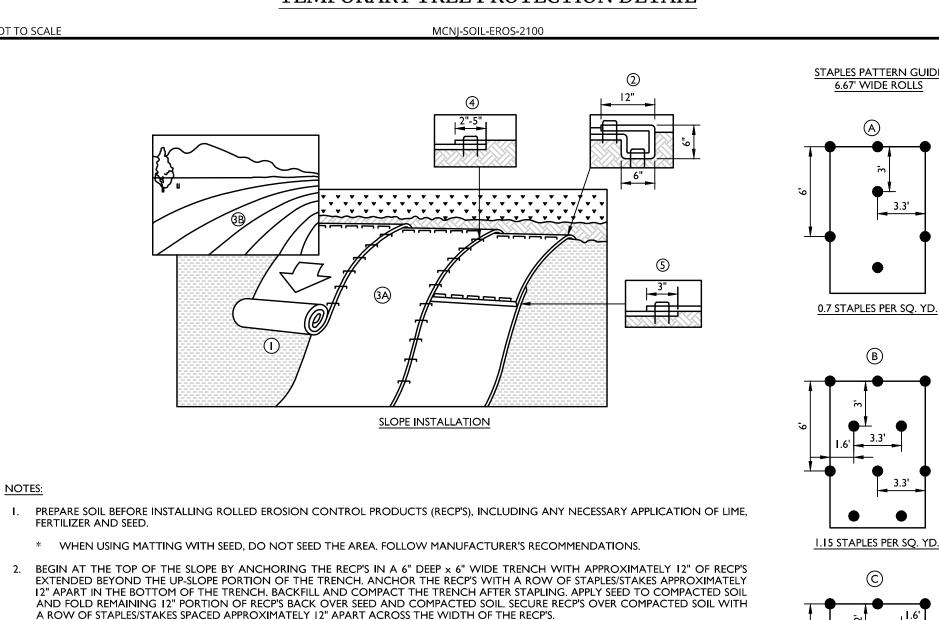
\* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE

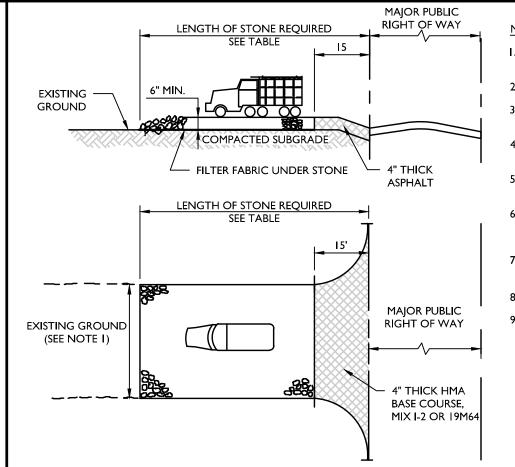
EROSION MATTING (CURLEX ENFORCER I) DETAIL

4. THE EDGES OF PARALLEL RECP'S MUST BE STAKED WITH APPROXIMATELY 2" TO 5" OVERLAP DEPENDING ON RECP'S TYPE.

STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP'S WIDTH.

### TEMPORARY TREE PROTECTION DETAIL





PARTIALLY FILLED SAND BAGS —

EXTEND SAND BAGS ON -

EXCEPT AT LOW POINTS

PARTIALLY FILLED SAND BAGS -

IF NECESSARY

-

<u>PLAN</u>

FILTER FABRIC SHALL BE MIRAFI 140N OR APPROVED EQUIVALENT.

- SAND BAGS TO DIRECT FLOW

TO INLET (IF NECESSARY)

TO EXCAVATE AND REMOVE EXCESS SEDIMENT FROM AROUND INLETS.

INLET FILTER BAG TO REMAIN UNTIL COMPLETION OF FINAL GRADING, PAVING

AND ESTABLISHMENT OF COVER. PERIODICALLY CHECK AFTER EACH RAINFALL

(SAND BAG) DETAIL

EXTENDING 2" TO 3" ABOVE GRATE

PLACED SIDE BY SIDE TO PROVIDE A

DAM ACROSS THE INLET CURB PIECE

EXTENDING 2" TO 3" ABOVE GRATE

PLACED SIDE BY SIDE TO PROVIDE A

DAM ACROSS THE INLET CURB PIECE.

DOWNSTREAM SIDE OF GRATE

GRADE WITHOUT —

INSTALLED

FILTER FABRIC ON TOP OF

GRATE & TUCK UNDER SIDES

IN BETWEEN FRAME & GRATE

SURFACE COURSE

NOTES:

OT TO SCALE

1.7 STAPLES PER SQ. YD.

WIDTH OF POINTS OF INGRESS OR EGRESS, OR AS SHOWN ON THE PLAN. THICKNESS SHOWN IS FOR STONE CONSTRUCTION ENTRANCE ONLY. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO ROADWAYS. THE ENTRANCE SHALL BE PERIODICALLY TOP DRESSED WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS ON-SITE CONDITIONS REQUIRE. SPILLED, DROPPED, WASHED, OR TRACKED SEDIMENT ONTO ROADWAYS OR OTHER IMPERVIOUS SURFACES SHALL BE REMOVED IMMEDIATELY.

THE WIDTH OF CONSTRUCTION ENTRANCE SHALL NOT BE LESS THAN THE FULL

6. WHERE ACCUMULATION OF DUST AND SEDIMENT IS INADEQUATELY CLEANED OR REMOVED BY CONVENTIONAL METHODS, A POWER BROOM OR STREET SWEEPER SHALL ALL OTHER ACCESS POINTS TO THE SITE WHICH DO NOT CONTAIN A CONSTRUCTION ACCESS PAD SHALL BE BLOCKED OFF. 8. STONE SIZE PER ASTM C-33, SIZE #2 (2  $\frac{1}{2}$ " TO I  $\frac{1}{2}$ ") OR #3 (2" TO I") STONE.

INDIVIDUAL INTERIOR LOT INGRESS/EGRESS CONSTRUCTION ACCESS SHALL HAVE # 3 (I" TO 2") STONE, MINIMUM 10' (L)  $\times$  10' (W) AND 6" THICK. LENGTH OF STONE REQUIRED OARSE GRAINED SOILS FINE GRAINED SOILS 0% TO 2% ENTIRE SURFACE STABILIZED WITH HOT MIX ASPHALT

STABILIZED CONSTRUCTION ACCESS

(WITH PAVEMENT) DETAIL

STRUCTURE

- INLET FILTER

FILTER FABRIC ON TOP OF

BETWEEN FRAME & GRATE

— EXTEND SAND BAGS ON DOWNSTREAM SIDE OF GRATE EXCEPT AT LOW POINTS

CURB

INLET FILTER BAG

GRATE & TUCK UNDER SIDES IN

BAG

<u>SECTION</u>

BASE COURSE, MIX I-2

MOD: 06/27/24

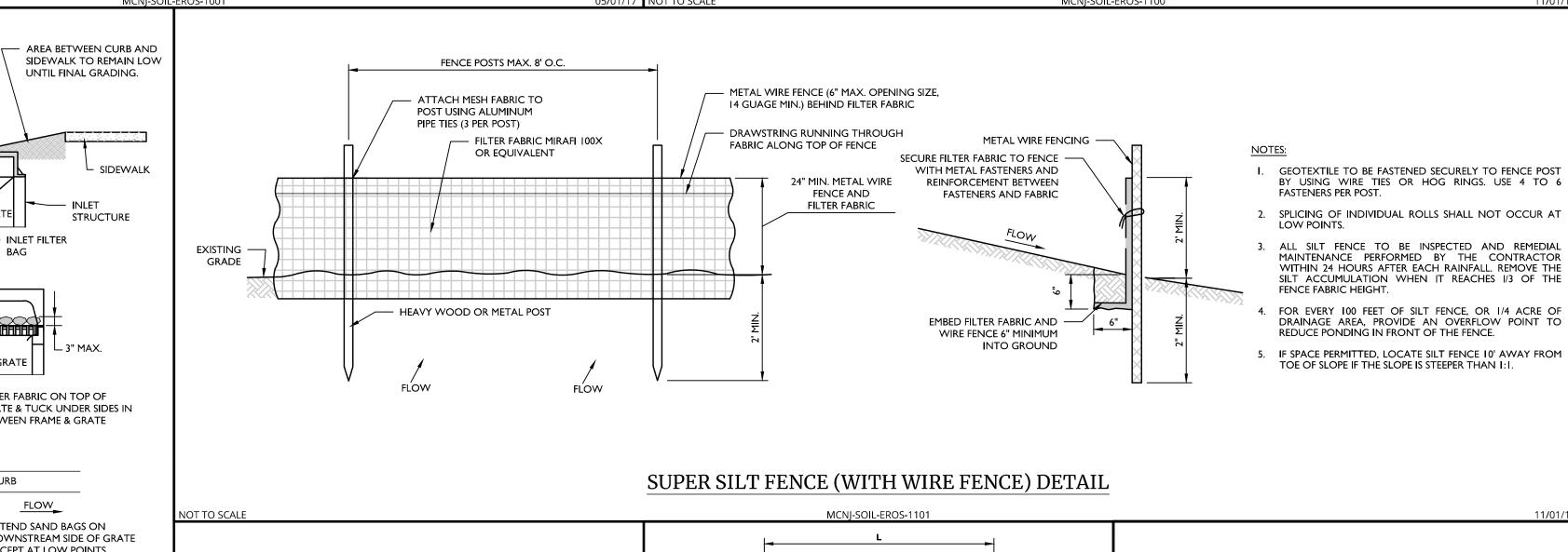
- 2"x2"x4'-6" OAK OR OTHER HARDWOOD POSTS (TYP.) (SPACING 8' ON CENTER) FILTER FABRIC SECURED TO POST — DRAWSTRING RUNNING WITH METAL FASTENERS AND THROUGH FABRIC ALONG REINFORCEMENT BETWEEN FASTENER TOP OF FENCE AND FABRIC (3'-0" WIDE) 10' (SEE NOTE 5) - FILTER FABRIC DIG 6" WIDE & DEEP, -MIRAFI 100X OR BURY BOTTOM I' OF 2' MIN. EQUIVALENT FABRIC, TAMP IN PLACE NOTES: GEOTEXTILE TO BE FASTENED SECURELY TO FENCE POST BY USING WIRE TIES OR HOG RINGS. USE 4 TO 6 FASTENERS PER POST.

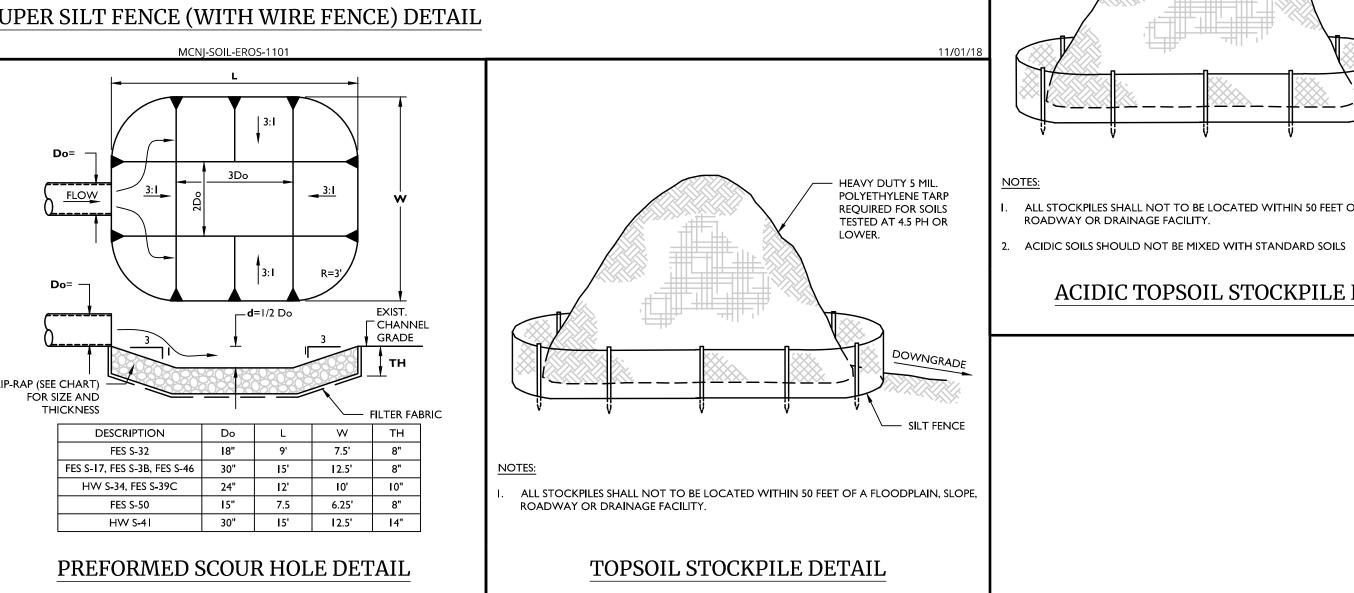
SPLICING OF INDIVIDUAL ROLLS SHALL NOT OCCUR AT LOW POINTS. ALL SILT FENCE TO BE INSPECTED AND REMEDIAL MAINTENANCE PERFORMED BY THE CONTRACTOR WITHIN 24 HOURS AFTER EACH

RAINFALL. REMOVE THE SILT ACCUMULATION WHEN IT REACHES I/3 OF THE FENCE FABRIC HEIGHT. FOR EVERY I00 FEET OF SILT FENCE, OR 1/4 ACRE OF DRAINAGE AREA, PROVIDE AN OVERFLOW POINT TO REDUCE PONDING IN

FRONT OF THE FENCE. IF SPACE PERMITTED, LOCATE SILT FENCE 10' AWAY FROM TOE OF SLOPE IF THE SLOPE IS STEEPER THAN 1:1.

### SILT FENCE DETAIL





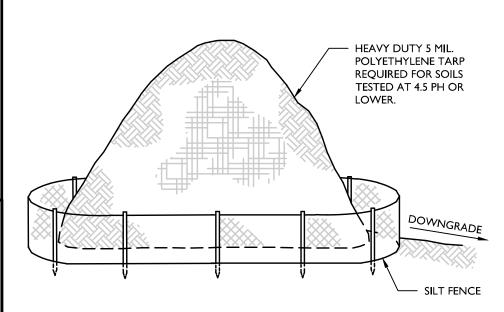
NOTES:

- CONCRETE WASHOUTS ARE REQUIRED ON ALL CONSTRUCTION SITES INVOLVING CONCRETE AND STUCCO USE:
- THE CONTRACTOR SHALL REQUIRE ALL CONCRETE DRIVERS TO UTILIZE THE CONCRETE WASHOUTS ONSITE.
- WASHOUT FACILITIES SHALL BE LOCATED AT LEAST 50 YARDS AWAY FROM STORM SEWER DRAIN INLETS, GUTTERS, OPEN DITCHES, AND WATER COURSES.
- APPROPRIATE STONE SHOULD COVER PATHS TO CONCRETE WASHOUT. THE NUMBER OF CONCRETE WASHOUTS DEPENDS ON THE EXPECTED DEMAND FOR
- STORAGE CAPACITY. LARGE SITES WITH EXTENSIVE CONCRETE WORK SHALL BE PLACED AT MULTIPLE LOCATIONS FOR USE BY CONCRETE TRUCK DRIVERS.
- . CONCRETE WASHOUT AREAS SHALL BE IDENTIFIED BY POSTING SIGNS ONSITE. CONCRETE WASHOUTS ARE TO BE INSPECTED DAILY BY THE CONTRACTOR FOR
- LEAKS OR TEARS IN PLASTIC LINER.
- REMOVE AND DISPOSE OF ALL MATERIAL WHEN THE WASHOUT HAS BEEN FILLED TO
- PRIOR TO ANY RAINFALL, ALL CONCRETE WASHOUTS ARE TO BE CLEANED OUT OR
- . ONCE THE MATERIAL HAS BEEN CLEANED OUT OF THE CONCRETE WASHOUT FACILITY, THE FACILITY MUST BE INSPECTED FOR REPAIR, RECONSTRUCTION OR
- REPLACEMENT. ALL PLASTIC LINING SHALL BE REMOVED AND REPLACED. PRE-FABRICATED OR ONSITE FABRICATED CONCRETE WASHOUTS MAY BE USED.
- 2. OPTIONS FOR ONSITE CONCRETE WASHOUTS:
- B. CREATE AN ABOVE-GROUND STRUCTURE FROM STRAW BALES OR SANDBAGS,

A. DIG A PIT AND LINE WITH 10 MIL PLASTIC SHEETING.

WITH 10 MIL PLASTIC LINING.

#### CONCRETE WASHOUT NOTES



ALL STOCKPILES SHALL NOT TO BE LOCATED WITHIN 50 FEET OF A FLOODPLAIN, SLOPE, ROADWAY OR DRAINAGE FACILITY.

ACIDIC TOPSOIL STOCKPILE DETAIL

Colliers

Engineering

& Design

www.colliersengineering.com

copied, reused, disclosed, distributed or relied upon for any other pur without the express written consent of Colliers Engineering & Desig

PROTECT YOURSELF

L STATES REQUIRE NOTIFICATION (
AVATORS, DESIGNERS, OR ANY PER PREPARING TO DISTURB THE EARTH SURFACE ANYWHERE IN ANY STAT

I B∀	BY DESCRIPTION	REV	DATE	DRAWN BY DESCRIPTION	DESCRIPTION	FC
	REVISED PER NJDEP		·	·		OR ST
	REVISED PER CLIENT & ARCHITECT	٠				
	REVISED PER BOROUGH ENGINEER'S REVIEW		٠			
	REMOVE PHASE 2.	٠				
	SUBMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION	٠		·		
		٠				CT PF _L811
		٠		·		
		٠		·		
		·				<b>/</b> IBER
						S



Daniel W. Busch NEW JERSEY LICENSED PROFESSIONAL ENGINEER LICENSE NUMBER: GE42093

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN AND MINOR SUBDIVISION FOR

BLOCK 58

BOROUGH OF SAYREVILLE MIDDLESEX COUNTY **NEW JERSEY** 

HOLMDEL (Headquarters 101 Crawfords Corner Road Colliers Holmdel, NJ 07733 Phone: 732.383.1950 Engineering

COLLIERS ENGINEERING & DESIGN, INC. DOING BUSINESS AS MASER CONSULTING

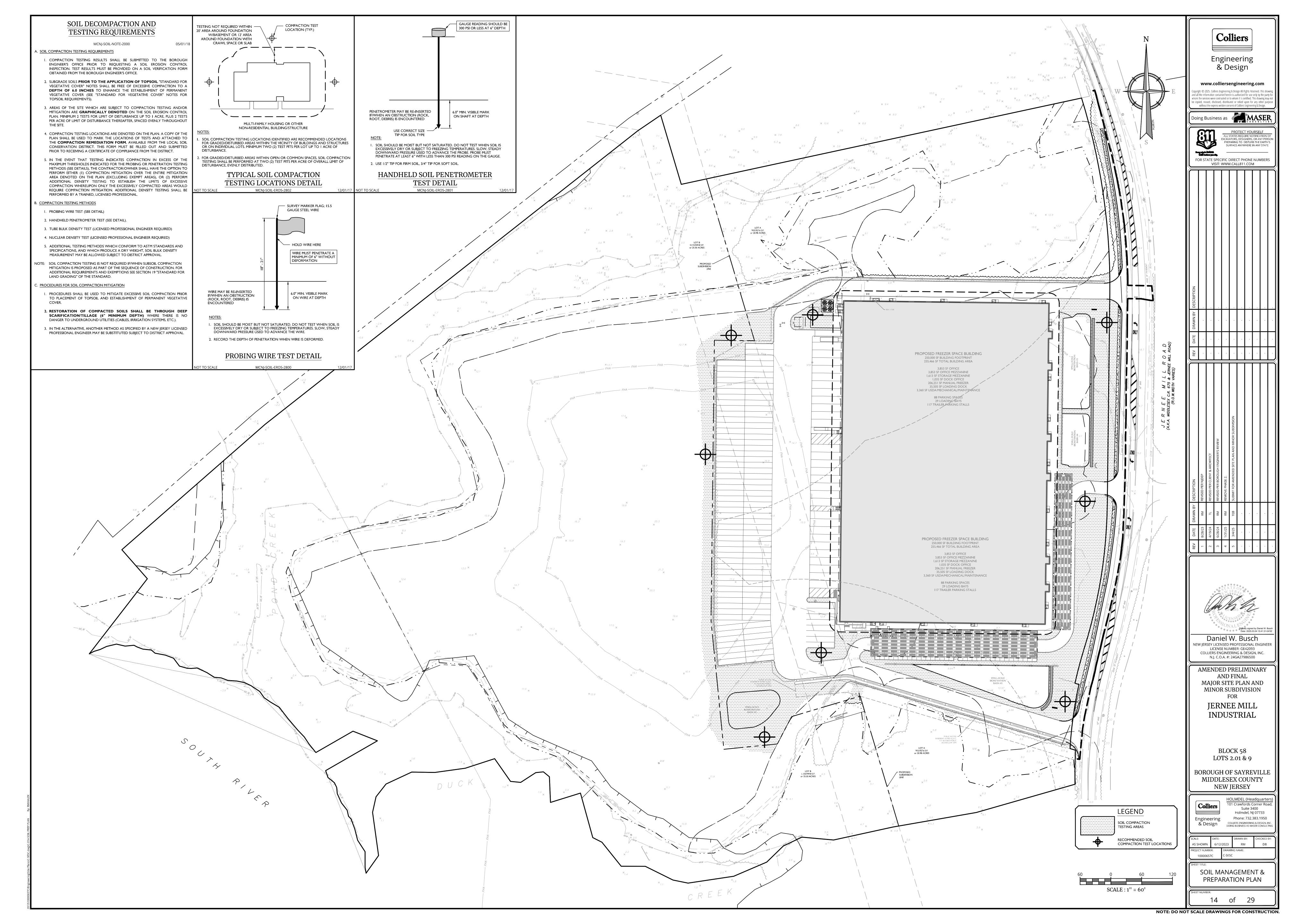
Suite 3400

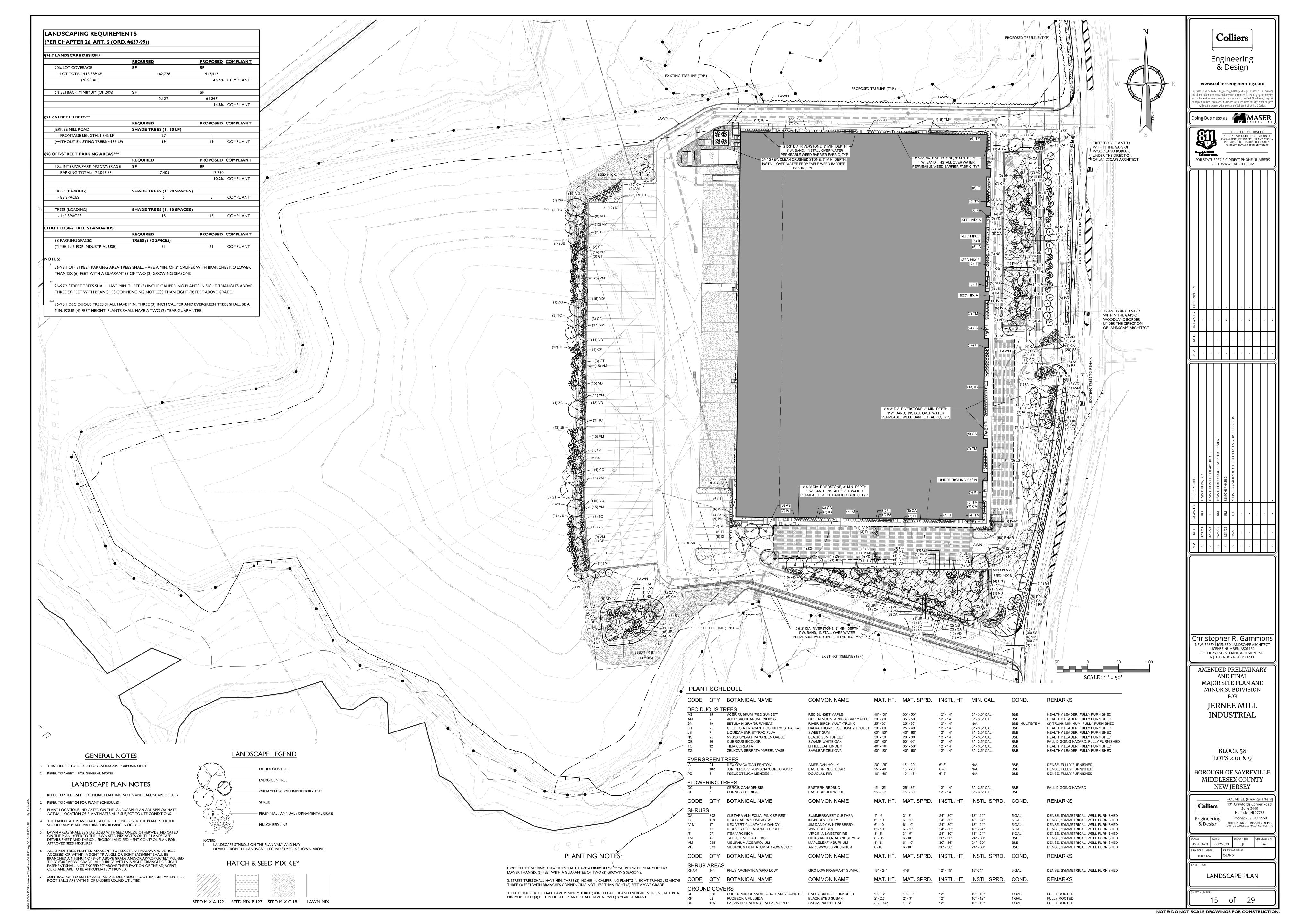
**SOIL EROSION &** SEDIMENT CONTROL PLAN

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

13 of 29

COLLIERS ENGINEERING & DESIGN, INC. N.J. C.O.A. #: 24GA27986500 JERNEE MILL **INDUSTRIAL** LOTS 2.01 & 9 & Design 10000657C





DISCREPANCIES OR LOCATION CONFLICTS PRIOR TO PLANTING INSTALLATION.

### **B. PLANT MATERIAL**

PLANT MATERIAL:

- I.I. PLANT MATERIAL SHALL CONFORM WITH THE ANSI Z60.I-2014 'AMERICAN STANDARD FOR NURSERY STOCK' AS PUBLISHED BY AMERICANHORT IN REGARD TO QUALITY, SIZE OF PLANTING, SPREAD OF ROOTS, SIZE OF ROOTBALL, AND BRANCHING
- 1.2. PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY, HAVE NORMAL GROWTH HABITS, WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS, AND FREE FROM DEFECTS, INJURY, DISEASE, AND/OR INFESTATION, WITH
- I.3. ALL PLANT MATERIAL SHALL BEAR THE SAME RELATION TO FINISHED GRADE AT THE NURSERY. THE PLANT MATERIAL SHALL BE PLANTED AT THE SAME LEVEL WHEN PLANTED
- I.4. PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY TO THE SITE. IN THE EVENT THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO PROTECT THE PLANT MATERIAL FROM DAMAGE PRIOR TO
- INSTALLATION. 1.5. THE LANDSCAPE ARCHITECT OR OWNER SHALL HAVE THE RIGHT, AT ANY STAGE OF THE OPERATION, TO REJECT ANY
- AND ALL PLANT MATERIAL WHICH IN THEIR OPINION DOES NOT MEET THE REQUIREMENTS OF THESE PLANS. <u>PLANT QUANTITIES:</u> THE LANDSCAPE PLAN SHOULD TAKE PRECEDENCE OVER THE PLANT SCHEDULE IF ANY PLANT DISCREPANCIES OCCUR.
- PLANT SIZE: THE CONTRACTOR SHALL FURNISH PLANT MATERIAL IN THE CALIPER, HEIGHT, SIZE OR SPREAD INDICATED IN THE
- SUBSTITUTIONS: NO PLANT SUBSTITUTIONS SHALL BE PERMITTED WITH REGARD TO SIZE, SPECIES, OR VARIETY WITHOUT WRITTEN PERMISSIONS OF THE MUNICIPALITY, LANDSCAPE ARCHITECT, OR OWNER. WRITTEN PROOF OF THE PLANT MATERIAL
- GUARANTEE: PLANT MATERIAL SHALL BE GUARANTEED FOR TWO (2) YEARS AFTER THE DATE OF FINAL ACCEPTANCE. ANY PLANT MATERIAL THAT IS DEAD WITHIN THAT TIME PERIOD SHALL BE REMOVED, INCLUDING STUMP, AND REPLACED WITH A SIMILAR SIZE AND SPECIES AT THE EXPENSE OF THE CONTRACTOR WITHIN TWO YEARS OR TWO GROWING SEASONS. TREE STAKES AND ARBOR TIES SHALL BE REMOVED AT THE END OF THE GUARANTEE PERIOD.
- C. TOPSOIL REQUIREMENTS:

UNAVAILABILITY MUST BY DOCUMENTED BY THE CONTRACTOR.

- TOPSOIL REQUIREMENTS: SEE NJDOT SECTION 917 FOR REFERENCE AND SOIL ADDITIVES UNACCEPTABLE TOPSOIL SOURCES: DO NOT OBTAIN TOPSOIL FROM THE FOLLOWING SOURCES: AREAS CONTAINING CHEMICALLY CONTAMINATED SOILS. AREAS FROM WHICH THE ORIGINAL SURFACE HAS BEEN STRIPPED OR COVERED OVER.
- TOPSOIL SHALL BE UNIFORM QUALITY, FREE FROM HARD CLODS, STIFF CLAY, HARD PAN, SODS, LARGE STONE, CEMENT, ASH, SLAG, CONCRETE, TAR, BOARDS, CHIPS, MULCH, OR ANY OTHER UNDESIRABLE MATERIALS. NO TOPSOIL SHALL BE DELIVERED IN A FROZEN OR MUDDY CONDITION.

SUCH AS BORROW PITS, OPEN MINES, DEMOLITION SITES, DUMPS, LANDFILLS. NO TOPSOIL FROM WET EXCAVATION OR

- I.3. TOPSOIL PH REQUIREMENTS ARE AS FOLLOWS: PH < 4.1 TOPSOIL IS UNACCEPTABLE. 4.1 ≤ PH < 5.8 ADD PULVERIZED LIME TO INCREASE THE PH TO 6.5 BEFORE USE. 5.8 ≤ PH < 7.0 TOPSOIL IS ACCEPTABLE. NO REMEDIATION NEEDED. 7.0 ≤ PH < 7.2
- DECREASE PH TO AT LEAST 6.8 BEFORE USE. PH ≥ 7.2 TOPSOIL IS UNACCEPTABLE. ORGANIC CONTENT. ENSURE THAT TOPSOIL HAS A MINIMUM ORGANIC CONTENT OF 2.75% BY WEIGHT. IF THE ORGANIC CONTENT IS LESS THAN 2.75%, INCREASE THE ORGANIC CONTENT BY ADDING SOIL ADDITIVES AT A RATE NECESSARY TO ATTAIN THE MINIMUM ORGANIC CONTENT. THE ORGANIC CONTENT SHALL NOT EXCEED 8% BY WEIGHT AND SHALL BE
- SAMPLED IN ACCORDANCE WITH THE ASSOCIATION OF AGRICULTURAL CHEMISTS. GRADATION/PARTICLE SIZE. PROVIDE TOPSOIL CONFORMING TO THE PARTICLE SIZE REQUIREMENTS IN TABLE 917.01-2 AND THAT HAS NO MORE THAN 20 PERCENT RETAINED ON A NO. 10 SIEVE WHEN MECHANICALLY GRADED. THE DEPARTMENT WILL DETERMINE THE PARTICLE SIZE DISTRIBUTION FOR THE PORTION OF THE TOPSOIL PASSING THE NO. 10 SIEVE USING HYDROMETER ANALYSIS ACCORDING TO AASHTO T 88. SAND (2.0 MM TO 0.05 MM) 40 - 80% COMPOSITION. SILT (0.05 MM TO 0.005 MM) 0 - 30% COMPOSITION. CLAY (0.005 MM AND SMALLER) 10 - 30% COMPOSITION.
- PREPARATION OF SUBGRADE:
- 2.1. HOLLOWS, DEPRESSIONS, AND GULLIES SHALL BE FILLED WITH ACCEPTABLE SANDY LOAM AS OUTLINED ABOVE OR SOIL AS DESCRIBED HEREON: SOIL TO BE ONE PART EACH OF TOPSOIL, MOISTENED PEAT MOSS, AND PARENT MATERIAL
- 2.2. LOOSEN SUBSOIL BY SCARIFYING, RIPPING OR TILLING USING DISKS, HARROWS OR OTHER SUITABLE EQUIPMENT TO A DEPTH OF 4"-6" IMMEDIATELY BEFORE PLACING ANY TOPSOIL. REPEAT IN AREAS WHERE SEED OR PLANTINGS ARE PROPOSED AND THERE HAS BEEN COMPACTED SOIL.
- TESTING AND APPROVAL OF SOILS:

سرس

NOTES:

THE CONTRACTOR SHALL SUBMIT A CERTIFIED REPORT SHOWING THE ANALYSIS OF REPRESENTATIVE SAMPLES OF TOPSOIL. TESTING SHALL BE PERFORMED BY RUTGERS COOPERATIVE RESEARCH & EXTENSION TESTING LABORATORIES OR EQUIVALENT AS APPROVED BY STATE AND LOCAL REGULATIONS, PRICE BID SHALL INCLUDE ALL INSPECTION AND

PRUNE FOR VIGOR, MAINTAIN

PLASTIC MESH TREE GUARD

' DIA. HARDWOOD STAKES 🧣

TREE HEIGHT, 3 PER TREE LOCATED

OUTSIDE OF PLANTING PIT, ALL TREE

STAKES TO BE REMOVED AFTER ONE

REMOVE ALL ROPE FROM TRUNK AND

TOP OF ROOT BALL. FOLD BURLAP

BACK  $\frac{1}{3}$  FROM TOP OF ROOT BALL.

4" SHREDDED HARDWOOD BARK

WIRE BASKET TO BE REMOVED

PRUNE FOR VIGOR, MAINTAIN

2" DIA. HARDWOOD STAKES 3

TREE HEIGHT, 3 PER TREE LOCATED

STAKES TO BE REMOVED AFTER ONE

REMOVE ALL ROPE FROM TRUNK AND

TOP OF ROOT BALL. FOLD BURLAP

BACK \{ FROM TOP OF ROOT BALL.

4" SHREDDED HARDWOOD BARK

WIRE BASKET TO BE REMOVED.

PREPARED BACKFILL MIX; SEE GENERAL

PLANTING NOTE C.I(I). SOAK BACKFILL

- PLACE ROOT BALL ON UNEXCAVATED

ARBOR TIE

6" SAUCER RIM

AFTER PLANTING

OR TAMPED SOIL.

NATURAL GROWTH HABIT: NEVER

CUT CENTRAL LEADER OR TRUNK.

PREPARED BACKFILL MIX; SEE GENERAL

PLACE ROOT BALL ON UNEXCAVATED

PLANTING NOTE C. I (I). SOAK BACKFILL

- 6" SAUCER RIM

AFTER PLANTING

OR TAMPED SOIL

NO SOIL OR MULCH SHALL BE PLACED AGAINST ROOT COLLAR OF PLANT.

STAKES AND GUIDE WIRES SHALL ONLY BE USED IF CONDITIONS MERIT.

6. MULCH SHALL BE A CONTINUOUS BED FOR MASS LANDSCAPE PLANTINGS.

NO SOIL OR MULCH SHALL BE PLACED AGAINST ROOT COLLAR OF PLANT.

PLANTING DEPTH SHALL BE THE SAME OR HIGHER AS GROWN IN NURSERY

ALL NON-BIODEGRADABLE MATERIAL SHALL BE REMOVED FROM THE ROOTBALL.

EVERGREEN TREE PLANTING DETAIL

TRUNK FLARE SHOULD BE VISIBLE AT TIME OF PLANTING AND SHOULD NOT COME IN

STAKES AND GUIDE WIRES SHALL ONLY BE USED IF CONDITIONS MERIT

. MULCH SHALL BE A CONTINUOUS BED FOR MASS LANDSCAPE PLANTINGS.

PLANTING DEPTH SHALL BE THE SAME OR HIGHER AS GROWN IN NURSERY

ALL NON-BIODEGRADABLE MATERIAL SHALL BE REMOVED FROM THE ROOTBALL

DECIDUOUS TREE PLANTING DETAIL

TRUNK FLARE SHOULD BE VISIBLE AT TIME OF PLANTING AND SHOULD NOT COME IN

NATURAL GROWTH HABIT; NEVER

CUT CENTRAL LEADER OR TRUNK.

#### D. PLANTING PROCEDURES I. PLANTING BEDS:

MATERIAL.

E. MAINTENANCE

www

ORIGINAL -

GRADE

18" MIN.

**←** 

ORIGINAL +

GRADE

STATE TO SEE

CONTACT WITH MULCH.

ONTACT WITH MULCH.

NO SOIL OR MULCH SHALL BE PLACED AGAINST ROOT COLLAR OF PLANT

STAKES AND GUIDE WIRES SHALL ONLY BE USED IF CONDITIONS MERIT.

6. MULCH SHALL BE A CONTINUOUS BED FOR MASS LANDSCAPE PLANTINGS.

NO SOIL OR MULCH SHALL BE PLACED AGAINST ROOT COLLAR OF PLANT

PLANTING DEPTH SHALL BE THE SAME OR HIGHER AS GROWN IN NURSER'

ALL NON-BIODEGRADABLE MATERIAL SHALL BE REMOVED FROM THE ROOTBALL.

TRUNK FLARE SHOULD BE VISIBLE AT TIME OF PLANTING AND SHOULD NOT COME IN

STAKES AND GUIDE WIRES SHALL ONLY BE USED IF CONDITIONS MERIT

PLANTING DEPTH SHALL BE THE SAME OR HIGHER AS GROWN IN NURSERY

ALL NON-BIODEGRADABLE MATERIAL SHALL BE REMOVED FROM THE ROOTBALL

TRUNK FLARE SHOULD BE VISIBLE AT TIME OF PLANTING AND SHOULD NOT COME IN

DECIDUOUS TREE SLOPE PLANTING DETAIL

- I.I. PROVIDE PLANTING PITS AS INDICATED ON PLANTING DETAILS. BACKFILL PLANTING PITS WITH SOILS AS OUTLINED IN SECTION C PRIOR. BACKFILL SOIL TO BE AT MINIMUM ONE PART EACH OF TOPSOIL, MOISTENED PEAT MOSS, AND PARENT
- PLANTING BEDS SHALL RECEIVE FOUR (4) INCHES OF DOUBLE SHREDDED HARDWOOD MULCH AND TREATED WITH A PRE-EMERGENT HERBICIDE. NO MULCH SHALL COME IN DIRECT CONTACT WITH ROOT FLARE/COLLAR; UNDER NO CIRCUMSTANCES SHALL THE ROOT CROWN BE BURIED.
- 1.3. SHRUB MASSES SHALL BE PLANTED IN CONTINUOUS MULCHED BEDS.
- 2. PLANT LOCATIONS: THE LOCATION OF ALL PLANT MATERIAL INDICATED ON THE LANDSCAPE PLANS ARE APPROXIMATE. THE FINAL LOCATION OF ALL PLANT MATERIAL AND PLANTING BEDLINES SHALL BE DETERMINED IN THE FIELD AT THE TIME OF INSTALLATION FOLLOWING THE BASIC INTENT OF THE APPROVED PLANS, UNLESS THERE IS A SPECIFIC DIMENSION OR LOCATION SHOWN. PLANTING DATES: PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN
- WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICES. PLANTING SEASONS ARE DEFINED AS MARCH IS THROUGH MAY IS AND SEPT IS THROUGH NOV IS. PLANTING IS ACCEPTABLE DURING THE WINTER MONTHS IF WEATHER PERMITS AND THE GROUND IS NOT FROZEN, AND IN THE SUMMER IF SUPPLEMENTAL WATERING IS PROVIDED. SOIL MUST BE FROST FREE, FRIABLE, AND NOT MUDDY AT TIME OF PLANTING. 4. PLANTING METHODS:
- 4.1. TREES SHALL BE SUPPORTED IMMEDIATELY AFTER PLANTING. PLANT MATERIAL SHALL BE PROPERLY GUYED, STAKED, AND PLANTED IN CONFORMANCE WITH THE TYPICAL PLANTING DETAILS
- STAKES SHALL BE EIGHT TO TEN FEET LONG, OF SOUND, DURABLE UNFINISHED LUMBER CAPABLE OF WITHSTANDING ABOVEGROUND AND UNDERGROUND CONDITIONS DURING THE PERIOD OF GUARANTEE WITH TOP AND BOTTOM DIMENSIONS OF TWO INCHES BY TWO INCHES IN DIAMETER
- 4.1.2. THREE STAKES SHALL BE EQUALLY SPACED ABOUT THE TREE IN A TRIANGULAR FASHION AND SHALL BE DRIVEN VERTICALLY INTO THE GROUND 2  $\frac{1}{2}$  TO 3 FEET IN A MANNER THAT DOES NOT INJURE THE ROOT BALL.
- 4.1.3. TREES SHALL BE FASTENED TO EACH STAKE AT A HEIGHT OF FIVE FEET BY MEANS OF ARBOR TIE TREE TIE  $\frac{G}{16}$ " WIDE RECOMMENDED FOR TREES UP TO  $2\frac{1}{2}$  INCHES IN CALIPER).
- 4.2. SET PLANTS PLUMB AND STRAIGHT. SET AT SUCH LEVEL THAT AFTER SETTLEMENT A NORMAL OR NATURAL RELATIONSHIP TO THE CROWN OF THE PLANT WITH THE GROUND SURFACE WILL BE ESTABLISHED. LOCATE PLANTS IN CENTER OF PIT.
- 4.3. AT TIME OF INSTALLATION, THE CONTRACTOR SHALL WATER NEWLY INSTALLED PLANT MATERIAL. THE CONTRACTOR SHALL PROVIDE REGULAR WATERING TO ENSURE THE ESTABLISHMENT, GROWTH, AND SURVIVAL OF ALL PLANTS.
- 4.4. B&B PLANTS SHALL BE HANDLED FROM THE BOTTOM OF THE ROOTBALL ONLY. PLANTS WITH BROKEN, SPLIT, OR DAMAGED ROOTBALLS SHALL BE REIECTED.
- 4.5. CORD BINDING OF ALL B&B PLANTS SHALL BE CUT AND REMOVED, ALONG WITH THE BURLAP OF THE UPPER 1/2 OF THE ROOT BALL. ALL WIRE BASKETS ARE TO BE REMOVED PRIOR TO BACKFILLING PLANTING PIT.
- I. <u>PRUNING:</u> EACH TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH AMERICAN STANDARD FOR NURSERY STOCK TO PRESERVE THE NATURAL CHARACTER OF THE PLANT. ALL DEAD WOOD OR SUCKERS AND ALL BROKEN OR BADLY BRUISED BRANCHES SHALL BE REMOVED. PRUNING SHALL BE DONE WITH CLEAN, SHARP TOOLS.
- SHADE TREES PLANTED NEAR PEDESTRIAN OR VEHICULAR ACCESS SHOULD NOT BE BRANCHED LOWER THAN 7'-0" ABOVE GRADE. PLANT MATERIAL LOCATED WITHIN SIGHT TRIANGLE EASEMENTS SHALL NOT EXCEED A MATURE HEIGHT OF 30" ABOVE THE ELEVATION OF THE ADJACENT CURB. STREET TREES PLANTED IN SIGHT TRIANGLE EASEMENTS SHALL BE PRUNED TO NOT TO HAVE BRANCHES BELOW 7'-0".
- I.3. THE CENTRAL LEADER SHALL NOT BE CUT OR DAMAGED.
- THE LANDSCAPE CONTRACTOR SHALL TEST THE SOIL TO CONFIRM SUITABILITY FOR THE PROPOSED SEED MIX AND SUPPLEMENT AS REQUIRED TO MEET THE REQUIRED PH & NUTRIENT LEVELS.
- ALL DISTURBED AREAS SHALL BE STABILIZED WITH SEED UNLESS OTHERWISE INDICATED ON THE LANDSCAPE PLANS. SEED SHALL BE IN ACCORDANCE WITH THE LAWN SEED MIX NOTES AND THE SOIL EROSION AND SEDIMENT CONTROL
- DISTRICT'S SEED SPECIFICATIONS AS NOTED ON THE SOIL EROSION AND SEDIMENT CONTROL DETAILS SHEET. 2.3. SOD, IF SPECIFIED, SHALL CONSIST OF A STATE CERTIFIED MIXTURE. ALL DISTURBED AREAS INDICATED AS LAWN OR SOD
- EXISTING VEGETATION: EXISTING TREES AND SHRUBS TO BE PRESERVED ON SITE SHALL BE PROTECTED AGAINST CONSTRUCTION DAMAGE BY SNOW FENCING. FENCING SHALL BE PLACED OUTSIDE THE INDIVIDUAL TREE CANOPY. TREES TO REMAIN SHALL BE IDENTIFIED IN THE FIELD PRIOR TO COMMENCEMENT OF CONSTRUCTION. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF CONSTRUCTION, GRADING, OR CLEARING. EXISTING VEGETATION BEING PRESERVED AND LOCATED AT THE EDGE OF THE NEW TREELINE SHALL BE PRUNED AND TRIMMED TO REMOVE ALL DEAD, DAMAGED, OR DISEASED BRANCHES.
- SITE CLEANUP: PLANTING DEBRIS (WIRE, TWINE, RUBBERHOSE, BACKFILL, ETC.) SHALL BE REMOVED FROM THE SITE AFTER PLANTING IS COMPLETE. THE PROPERTY IS TO BE LEFT IN A NEAT, ORDERLY CONDITION IN ACCORDANCE WITH ACCEPTED

PRUNE FOR VIGOR, MAINTAIN

- PLASTIC MESH TREE GUARD

" DIA. HARDWOOD STAKES 4

TREE HEIGHT. 3 PER TREE LOCATED

OUTSIDE OF PLANTING PIT, ALL TREE

STAKES TO BE REMOVED AFTER ONE

REMOVE ALL ROPE FROM TRUNK AND

TOP OF ROOT BALL. FOLD BURLAP

BACK  $\frac{1}{3}$  FROM TOP OF ROOT BALL.

4" SHREDDED HARDWOOD BARK

WIRE BASKET TO BE REMOVED.

PRUNE FOR VIGOR, MAINTAIN

2" DIA. HARDWOOD STAKES <sup>2</sup>/<sub>7</sub>

TREE HEIGHT, 3 PER TREE LOCATED

STAKES TO BE REMOVED AFTER ONE

REMOVE ALL ROPE FROM TRUNK AND

TOP OF ROOT BALL. FOLD BURLAP

BACK  $\frac{1}{3}$  FROM TOP OF ROOT BALL.

4" SHREDDED HARDWOOD BARK

WIRE BASKET TO BE REMOVED.

PREPARED BACKFILL MIX; SEE GENERAL

PLANTING NOTE C.I(I). SOAK BACKFILL

PLACE ROOT BALL ON UNEXCAVATED

ARBOR TIE

6" SAUCER RIM

AFTER PLANTING.

OR TAMPED SOIL.

NATURAL GROWTH HABIT: NEVER

CUT CENTRAL LEADER OR TRUNK.

PREPARED BACKFILL MIX; SEE GENERAL

PLANTING NOTE C.I(I). SOAK BACKFILL

PLACE ROOT BALL ON UNEXCAVATED

- 6" SAUCER RIM

AFTER PLANTING

OR TAMPED SOIL

TOPSOIL

NATURAL GROWTH HABIT; NEVER

CUT CENTRAL LEADER OR TRUNK.

#### ERNMX-122 - MIX 'A FACW WETLAND MEADOW MIX BY FRNST CONSERVATION SEEDS HEIGHT: 0.3 - 7.0 FEET SEEDING RATE: 20-30 LBS PER ACRE

10/14/2021

MIX COMPOSITION 33.0% CAREX VIJI PINOIDEA PA ECOTYPE (FOX SEDGE PA ECOTYPE) 20.0% ELYMUS VIRGINICUS, PA ECOTYPE (VIRGINIA WILDRYE, PA ECOTYPE)

- 16.8% CAREX SCOPARIA. PA ECOTYPE (BLUNT BROOM SEDGE, PA ECOTYPE 6.4% CAREX LURIDA, PA ECOTYPE (LURID SEDGE, PA ECOTYPE) 5.2% CINNA ARUNDINACEA, PA ECOTYPE (WOOD REEDGRASS, PA ECOTYPE) 4.0% VERBENA HASTATA, PA ECOTYPE (BLUE VERVAIN, PA ECOTYPE) 3.0% JUNCUS EFFUSUS (SOFT RUSH) 2.0% ASCLEPIAS INCARNATA, PA ECOTYPE (SWAMP MILKWEED, PA ECOTYPE)
- 2.0% BIDENS CERNUA, PA ECOTYPE (NODDING BUR MARIGOLD, PA ECOTYPE) 2.0% HELIOPSIS HELIANTHOIDES, PA ECOTYPE (OXEYE SUNFLOWER, PA ECOTYPE I.0% HELENIUM AUTUMNALE, PA ECOTYPE (COMMON SNEEZEWEED, PA ECOTYPE) I.0% ZIZIA AUREA (GOLDEN ALEXANDERS) 0.6% ASTER PUNICEUS, PA ECOTYPE (PURPLESTEM ASTER, PA ECOTYPE) 0.5% ALISMA SUBCORDATUM, PA ECOTYPE (MUD PLANTAIN, PA ECOTYPE) 0.4% ASTER NOVAE-ANGLIAE PA ECOTYPE (NEW ENGLAND ASTER PA ECOTYPE)
- 0.4% ASTER PRENANTHOIDES, PA ECOTYPE (ZIGZAG ASTER, PA ECOTYPE) 0.4% ASTER UMBELLATUS, PA ECOTYPE (FLAT TOPPED WHITE ASTER, PA ECOTYPE) 0.4% EUPATORIUM FISTULOSUM, PA ECOTYPE (JOE PYE WEED, PA ECOTYPE) 0.3% LOBELIA SIPHILITICA. PA ECOTYPE (GREAT BLUE LOBELIA. PA ECOTYPÉ) 0.3% SCIRPUS CYPERINUS, PA ECOTYPE (WOOLGRASS, PA ECOTYPE) 0.2% PENTHORUM SEDOIDES, PA ECOTYPE (DITCH STONECROP, PA ECOTYPE)

0.1% SOLIDAGO RUGOSA, PA ECOTYPE (WRINKLELEAF GOLDENROD, PA ECOTYPE)

#### ERNMX-122 -SEED MIX 'A' MEADOW NOTES

SCHEDULE: MEADOW SEEDING SHOULD BE CONDUCTED ONLY BETWEEN MARCH I AND MAY 15 NLESS SPECIFICALLY AUTHORIZED BY THE TOWNSHIP LANDSCAPE ARCHITECT. OUTSIDE OF THIS PLANTING SEASON A TEMPORARY SEEDING MAY BE REQUIRED FOR STABILIZATION PURPOSES AND SHOULD BE COORDINATED WITH THE SOIL CONSERVATION DISTRICT, TEMPORARY SEEDING SHOULD BE DONE WITH ANNUAL SPECIES ONLY. PERENNIAL SPECIES MUST BE REMOVED PRIOR TO FINAL

SUBMITTALS: CONTRACTOR SHALL SUPPLY SEED TAGS OR OTHER EVIDENCE OF SPECIES AND OUANTITIES OF SEED INSTALLED. CONTRACTOR SHALL NOTIFY TOWNSHIP LANDSCAPE ARCHITECT WHEN SEEDING IS TO OCCUR FOR INSPECTION AS REQUIRED AND PROVIDE A WRITTEN SUMMARY OF

SITE PREPARATION: ERADICATE EXISTING VEGETATION BY HAVING A LICENSED SPRAY TECHNICIAN APPLY AN APPROVED HERBICIDE OR AOUATIC HERBICIDE FORMULATION. TO CONTROL UNDESIRABLE VEGETATION SUCH AS MULTIFLORA ROSE, HONEYSUCKLE AND WOODY SPECIES, SOME PERSISTENT SPECIES SUCH AS PURPLE LOOSESTRIFE, PHAGMITES, JAPANESE KNOTWEED, OR REED CANARYGRASS MAY REQUIRE MULTIPLE APPLICATIONS. PERENNIAL WEEDS NOT ADDRESSED BEFORE ESTABLISHMENT WILL BE MORE DIFFICULT TO REMOVE LATER NEWLY CONSTRUCTED WETLANDS RETENTION BASINS AND WET CONSTRUCTION SITES SHOULD BE SEEDED AS SOON AFTER CONSTRUCTION AS POSSIBLE LEAVING THE SURFACE ROUGH BY CREATING MOUNDS AND KETTLES FOR AN UNDULATING MICROTOPOGRAPHY CAN BE VERY BENEFICIAL IN OBLIGATE WETLANDS.

IMPLEMENTATION: A SOIL TEST SHOULD BE PERFORMED PRIOR TO IMPLEMENTATION AND SUPPLIED TO the Landscape architect. Seeding and Planting Should Begin Immediately while the soil is STILL FRIABLE AND BEFORE WEEDS EMERGE. IF HERBICIDES WERE USED TO REMOVE EXISTING VEGETATION TIME SHOULD BE GIVEN FOR THE REMAINING HERBICIDE TO BREAKDOWN BEFORE SEEDING. BROADCAST SEED EVENLY OVER EACH AREA BY HAND SEEDING OR HYDROSEEDING. SEEDING RATE AS SPECIFIED. SEEDED AREAS SHOULD BE IRRIGATED UNTIL SEEDLINGS BECOME ESTABLISHED.

ROWING SEASON MAINTENANCE: WHEN FEASIBLE, POST PLANTING MAINTENANCE WILL PROVIDE THE BEST RESULTS FOR WET MEADOWS AND WETLANDS. WHENEVER THE CANOPY HEIGHT (OVERALL VEGETATION) REACHES 18"-24" TRIM THE MEADOW TO 8" USING A STRING TRIMMER TRIMMING REDUCES COMPETITION BY FAST GROWING WEEDS FOR SUNLIGHT AND NUTRIENTS NEEDED BY SLOWER GROWING PERENNIAL NATIVES. TRIMMING SHOULD CEASE BY MID-SEPTEMBER. PROBLEM WEEDS SHOULD BE HAND PULLED OR SPOT SPRAYED WITH AN APPROVED AQUATIC HERBICIDE.

SECOND AND SUBSEQUENT GROWING SEASONS MAINTENANCE: PROBLEM WEEDS SHOULD BE HAND PULLED OR SPOT SPRAYED WITH AN APPROVED AQUATIC HERBICIDE. ACCEPTANCE: MEADOW SEEDING MAY BE DEEMED COMPLETE WHEN GERMINATION IS EVIDENT FOR GREATER THAN 50% OF THE SPECIES IN THE MIX AND THE SOIL IS SUFFICIENTLY STABILIZED TO PREVENT FROSION, AS MANY MEADOW SPECIES ARE SLOW TO GERMINATE AND ESTABLISH, THE CONTRACTOR IS URGED TO INSTALL THE MEADOW SEEDING AS SOON AS POSSIBLE SO AS NOT TO DELAY FINAL ACCEPTANCE.

# AM LEONARD 4IN DIA X 36IN PREMIUM RIGID



#### STOCKPILED UNTIL THE FINAL GRADE HAS BEEN ESTABLISHED. THE INFILTRATION AND PLANT GROWTH AREAS SHOULD BE LOOSE AND FRIABLE, HIGH IN ORGANIC

ERNMX-127 - MIX 'B

RETENTION BASIN WILDLIFE MIX

BY ERNST CONSERVATION SEEDS

SEEDING RATE: 20-30 LBS PER ACRE

1.5% IUNCUS EFFUSUS (SOFT RUSH)

ALBANY PINE BUSH-NY ECOTYPE)

30.0% PANICUM CLANDESTINUM, TIOGA (DEERTONGUE, TIOGA)

7.0% CAREX LURIDA, PA ECOTYPE (LURID SEDGE, PA ECOTYPE)

29.5% CAREX VULPINOIDEA, PA ECOTYPE (FOX SEDGE, PA ECOTYPE)

3.0% VERBENA HASTATA, PA ECOTYPE (BLUE VERVAIN, PA ECOTYPE)

0.3% SCIRPUS CYPERINUS, PA ECOTYPE (WOOLGRASS, PA ECOTYPE)

0.1% ASTER PUNICEUS PA ECOTYPE (PURPLESTEM ASTER PA ECOTYPE

0.1% EUPATORIUM PERFOLIATUM, PA ECOTYPE (BONESET, PA ECOTYPE)

0.1% LOBELIA SIPHILITICA, PA ECOTYPE (GREAT BLUE LOBELIA, PA ECOTYPE)

20.0% ELYMUS VIRGINICUS, 'MADISON' (VIRGINIA WILDRYE, 'MADISON')

7.0% CAREX SCOPARIA, PA ECOTYPE (BLUNT BROOM SEDGE, PA ECOTYPE)

0.5% ASCLEPIAS INCARNATA, PA ECOTYPE (SWAMP MILKWEED, PA ECOTYPE)

0.5% AGROSTIS PERENNANS, ALBANY PINE BUSH-NY ECOTYPE (AUTUMN BENTGRASS,

0.2% HELENIUM AUTUMNALE, PA ECOTYPE (COMMON SNEEZEWEED, PA ECOTYPE)

0.1% ASTER NOVAE-ANGLIAE PA ECOTYPE (NEW ENGLAND ASTER PA ECOTYPE

0.1% ASTER UMBELLATUS, PA ECOTYPE (FLAT TOPPED WHITE ASTER, PA ECOTYPE

ERNMX-127 -SEED MIX 'B' MEADOW NOTES

SCHEDULE: MEADOW SEEDING SHOULD BE CONDUCTED ONLY BETWEEN MARCH I AND MAY 15,

UNLESS SPECIFICALLY AUTHORIZED BY THE TOWNSHIP LANDSCAPE ARCHITECT. OUTSIDE OF THIS

PLANTING SEASON A TEMPORARY SEEDING MAY BE REQUIRED FOR STABILIZATION PURPOSES AND

SHOULD BE COORDINATED WITH THE SOIL CONSERVATION DISTRICT. TEMPORARY SEEDING SHOULD

BE DONE WITH ANNUAL SPECIES ONLY. PERENNIAL SPECIES MUST BE REMOVED PRIOR TO FINAL

SUBMITTALS: CONTRACTOR SHALL SUPPLY SEED TAGS OR OTHER EVIDENCE OF SPECIES AND

OUANTITIES OF SEED INSTALLED. CONTRACTOR SHALL NOTIFY TOWNSHIP LANDSCAPE ARCHITECT

WHEN SEEDING IS TO OCCUR FOR INSPECTION AS REQUIRED AND PROVIDE A WRITTEN SUMMARY OF

SITE PREPARATION: PRIOR TO PLANTING THE SITE INVASIVE SPECIES PARTICULARLY ADAPTED TO WET

CONDITIONS SHOULD BE REMOVED OR SPRAYED USING AN APPROVED HERBICIDE BY A LICENSED

SPRAY TECHNICIAN. PERENNIAL WEEDS NOT ADDRESSED BEFORE ESTABLISHMENT WILL BE DIFFICULT

TO REMOVE LATER. NORMAL VEGETATION CAN BE WORKED INTO THE TOPSOIL WHICH SHOULD BE

HEIGHT: I.0 - 8.0 FEET

MIX COMPOSITION

MATTER, AND COMPLETED WITHOUT COMPACTION BY HEAVY EQUIPMENT. AN EXCAVATOR MAY BE USED TO DIG AND DROP EACH AREA OF THE BOTTOM SOIL IN A LOOSE MANNER. LIME OR COMPOST CAN THEN BE INCORPORATED. THE EXCAVATION MACHINE DOES NOT MOVE OVER THE FINISHED. SURFACE THEREBY AVOIDING UNNECESSARY COMPACTION. NATIVE VEGETATION CAN BE PLANTED OR SEEDED OVER THIS UNEVEN ABSORBENT SURFACE.

IMPLEMENTATION: A SOIL TEST SHOULD BE PERFORMED PRIOR TO IMPLEMENTATION AND SUPPLIED TO THE LANDSCAPE ARCHITECT SEEDING AND PLANTING SHOULD BEGIN IMMEDIATELY UPON COMPLETION OF THE STRUCTURE WHILE THE SOIL IS STILL FRIABLE AND BEFORE WEEDS EMERGE. PLAN SEEDING AND PLANTING BEFORE THE BASIN IS FLOODED OR ALLOW THE BASIN TO DRAIN BEFORE SEEDING. BROADCAST SEED EVENLY OVER EACH UNIT BY HAND SEEDING OR HYDROSEEDING. SEEDING RATE AS SPECIFIED. STRAW MULCH OR STRAW COCONUT MATS SHOULD BE USED TO CONTROL EROSION AND PROTECT EMERGING SEEDLINGS FROM EXTREME TEMPERATURES AND DRYING OUT MULCH SHOULD BE USED SPARINGLY AND ALLOW SUNLIGHT TO REACH THE GROUND. SEEDED AREAS SHOULD BE IRRIGATED UNTIL SEEDLINGS BECOME ESTABLISHED.

T GROWING SEASON MAINTENANCE: WHEN MEADOW HEIGHT REACHES 18"-24". USE A STRING TRIMMER TO TRIM THE MEADOW TO 8". IF BIOENGINEERING OR CONTAINERIZED WOODY MATERIALS WERE USED IN THE PLANTING OR SEED OF SHRUBS/TREES WERE PART OF THE MIIX, THE SITE SHOULD NOT BE TRIMMED AFTER THE ESTABLISHMENT YEAR. PROBLEM WEEDS SHOULD BE HAND PULLED OR SPOT SPRAYED WITH AN APPROVED HERBICIDE BY A LICENSED SPRAY TECHNICIAN.

SECOND & SUBSEQUENT GROWING SEASONS MAINTENANCE: PRIOR TO NEW SPRING GROWTH REACHING 2", TRIM ANY MATERIAL STANDING FROM THE PREVIOUS YEAR TO THE SAME HEIGHT (2"). IF BIOENGINEERING OR CONTAINERIZED WOODY MATERIALS WERE USED ON THE SITE OR SEED OF SHRUBS/TREES WERE PART OF THE MIX. THE SITE SHOULD NOT TRIMMED AFTER THE FIRST establishment year. Problem weeds should be hand pulled or spot sprayed with an APPROVED HERBICIDE BY A LICENSED SPRAY TECHNICIAN. SPECIAL CIRCUMSTANCES - SECOND GROWING SEASON: IF THERE IS A HEAVY INFESTATION OF

RAGWEED OR FOXTAIL IN THE SECOND GROWING SEASON, TRIM THE MEADOW TO 8". IF BIOENGINEERING OR CONTAINERIZED WOODY MATERIALS WERE USED. TRIMMING SHOULD BE ABOVE OR AROUND NEW GROWTH OF THE PLANTS. TRIMMING OPERATIONS SHOULD CEASE AFTER GENERAL MAINTENANCE: IN ADDITION TO STRUCTURAL MAINTENANCE, SILTATION SHOULD BE

REMOVED AS REQUIRED. CLOSE MOWING THROUGHOUT THE GROWING SEASON OR EXTENSIVE

CCEPTANCE: MEADOW SEEDING MAY BE DEEMED COMPLETE WHEN GERMINATION IS EVIDENT FOR GREATER THAN 50% OF THE SPECIES IN THE MIX AND THE SOIL IS SUFFICIENTLY STABILIZED TO PREVENT EROSION. AS MANY MEADOW SPECIES ARE SLOW TO GERMINATE AND ESTABLISH, THE CONTRACTOR IS URGED TO INSTALL THE MEADOW SEEDING AS SOON AS POSSIBLE SO AS NOT TO DELAY FINAL

#### ERNMX-181 - MIX 'C'

NATIVE STEEP SLOPE MIX WITH ANNUAL RYEGRASS BY ERNST CONSERVATION SEEDS HEIGHT: LO - 6.3 FEFT

SEEDING RATE: 60 LBS PER ACRE OR 1.5 LBS PER 1,000 SQ. FT

31.10% SORGHASTRUM NUTANS, NEW ENGLAND 2 ECOTYPE (INDIANGRASS, NEW ENGLAND 2 20.0% LOLIUM MULTIFLORUM (ANNUAL RYEGRASS) 14.0% ANDROPOGON GERARDII, 'NIAGARA' (BIG BLUESTEM, 'NIAGARA') 10.0% ELYMUS VIRGINICUS, MADISON-NY ECOTYPE (VIRGINIA WILDRYE, MADISON-NY ECOTYPE)

7.0% ELYMUS CANADENSIS (CANADA WILDRYE) 4.0% AGROSTIS PERENNANS, ALBANY PINE BUSH-NY ECOTYPE AUTUMN BENTGRASS (ALBANY PINE BUSH-NY ECOTYPE) 4.0% PANICUM VIRGATUM, 'CARTHAGE', NC ECOTYPE SWITCHGRASS ('CARTHAGE', NC ECOTYPE) 3.0% PANICUM CLANDESTINUM, TIOGA (DEERTONGUE, TIOGA)

L5% FCHINACEA PURPUREA (PURPI E CONFEI OWER) L3% CHAMAECRISTA FASCICULATA, PA FCOTYPE (PARTRIDGE PFA, PA FCOTYPE) 1.2% HELIOPSIS HELIANTHOIDES, PA ECOTYPE (OXEYE SUNFLOWER, PA ECOTYPE) I.0% COREOPSIS LANCEOLATA (LANCELEAF COREOPSIS) I.0% RUDBECKIA HIRTA (BLACKEYED SUSAN)

0.3% MONARDA FISTULOSA, FORT INDIANTOWN GAP-PA ECOTYPE (WILD BERGAMOT, FORT INDIANTOWN GAP-PA ECOTYPE 0.2% ASCLEPIAS SYRIACA (COMMON MILKWEED) 0.2% SOLIDAGO RUGOSA, PA ECOTYPE (WRINKLELEAF GOLDENROD, PA ECOTYPE) 0.1% ASTER LATERIELORUS (CALICO ASTER) 0.1% ASTER PILOSUS, PA ECOTYPE (HEATH ASTER, PA ECOTYPE)

#### ERNMX-181 -SEED MIX 'C' MEADOW NOTES

SCHEDULE: MEADOW SEEDING SHOULD BE CONDUCTED ONLY BETWEEN MARCH I AND MAY 15, JNLESS SPECIFICALLY AUTHORIZED BY THE TOWNSHIP LANDSCAPE ARCHITECT. OUTSIDE OF THIS PLANTING SEASON A TEMPORARY SEEDING MAY BE REQUIRED FOR STABILIZATION PURPOSES AND SHOULD BE COORDINATED WITH THE SOIL CONSERVATION DISTRICT. TEMPORARY SEEDING SHOULD BE DONE WITH ANNUAL SPECIES ONLY. PERENNIAL SPECIES MUST BE REMOVED PRIOR TO FINAL

SITE PREPARATION: FRADICATE EXISTING VEGETATION BY HAVING A LICENSED SPRAY TECHNICIAN

SUBMITTALS: CONTRACTOR SHALL SUPPLY SEED TAGS OR OTHER EVIDENCE OF SPECIES AND ouantities of seed installed. Contractor shall notify township landscape architect WHEN SEEDING IS TO OCCUR FOR INSPECTION AS REQUIRED AND PROVIDE A WRITTEN SUMMARY OF

APPLY AN APPROVED HERBICIDE PERENNIAL WEEDS NOT ADDRESSED BEFORE ESTABLISHMENT WILL BE DIFFICULT TO REMOVE LATER. FOR AREAS WITH SLOPE GREATER THAN 3:1, FINAL TRACKING SHOULD BE PERPENDICULAR TO THE SLOPE. THE TRACKS WILL AID IN REDUCING EROSION AND REATIANING SEED AND MOISTURE. MULCHING WITH STRAW, HYDROMULCH, OR STRAW/COCONUT FIBER MATS IS RECOMMENDED ON THESE SITES TO PROTECT THE SEED FROM DRYING OUT OR WASHING AWAY FOR AREAS STEEPER THAN 3:1, THE USE OF EROSION CONTROL BLANKETS OR FLEXIBLE GROWTH MEDIUM IS RECOMMENDED. WHEN USING EROSION CONTROL BLANKETS, BE SURE THEY ARE TOED IN AT THE TOP OF THE SLOPE.

IMPLEMENTATION: A SOIL TEST SHOULD BE PERFORMED PRIOR TO IMPLEMENTATION AND SUPPLIED TO LANDSCAPE ARCHITECT. SEEDING AND PLANTING SHOULD BEGIN IMMEDIATELY UPON COMPLETION OF THE STRUCTURE WHILE THE SOIL IS STILL FRIABLE AND BEFORE WEEDS EMERGE. PLAN SEEDING AND PLANTING BEFORE THE BASIN IS FLOODED OR ALLOW THE BASIN TO DRAIN BEFORE SEEDING. BROADCAST SEED EVENLY OVER EACH UNIT BY HAND SEEDING OR HYDROSEEDING. SEEDING RATE AS SPECIFIED. STRAW MULCH OR STRAW COCONUT MATS SHOULD BE USED TO CONTROL EROSION AND PROTECT EMERGING SEEDLINGS FROM EXTREME TEMPERATURES AND DRYING OUT. MULCH SHOULD BE USED SPARINGLY AND ALLOW SUNLIGHT TO REACH THE GROUND. SEEDED AREAS SHOULD BE IRRIGATED UNTIL SEEDLINGS BECOME ESTABLISHED.

first growing season maintenance: post planting maintenance will provide improved results if the ground is not too rough or steep. Whenever canopy height (overall VEGETATION) REACHES 18"-24", USE A BRUSH HOG MOWER OR STRING TRIMMER TO TRIM THE MEADOW TO 8". TRIMMING REDUCES COMPETITION BY FAST GROWING WEEDS FOR SUNLIGHT, WATER AND NUTRIENTS NEEDED BY SLOWER GROWING PERENNIAL NATIVES. A LAWN MOWER IS NOT RECOMMENDED AS THE MOWER HEIGHT WILL BE TOO LOW AND THE NATIVE SEEDLINGS WILL BE KILLED. TRIMMING SHOULD CEASE BY MID-SEPTEMBER. PROBLEM WEEDS SHOULD BE HAND PULLED OR SPOT SPRAYED WITH AN APPROVED HERBICIDE.

SECOND & SUBSEQUENT GROWING SEASONS MAINTENANCE: PRIOR TO NEW SPRING GROWTH REACHING 2". TRIM ANY MATERIAL STANDING FROM THE PREVIOUS YEAR TO THE SAME HEIGHT (2"). IF BIOENGINEERING OR CONTAINERIZED WOODY MATERIALS WERE USED ON THE SITE OR SEED OF SHRUBS/TREES WERE PART OF THE MIX. THE SITE SHOULD NOT TRIMMED AFTER THE FIRST ESTABLISHMENT YEAR. PROBLEM WEEDS SHOULD BE HAND PULLED OR SPOT SPRAYED WITH AN APPROVED HERBICIDE BY A LICENSED SPRAY TECHNICIAN. SPECIAL CIRCUMSTANCES - SECOND GROWING SEASON: IF THERE IS A HEAVY INFESTATION OF

RAGWEED OR FOXTAIL IN THE SECOND GROWING SEASON, TRIM THE MEADOW TO 8". IF BIOENGINEERING OR CONTAINERIZED WOODY MATERIALS WERE USED. TRIMMING SHOULD BE ABOVE OR AROUND NEW GROWTH OF THE PLANTS. TRIMMING OPERATIONS SHOULD CEASE AFTER

ACCEPTANCE: MEADOW SEEDING MAY BE DEEMED COMPLETE WHEN GERMINATION IS EVIDENT FOR GREATER THAN 50% OF THE SPECIES IN THE MIX AND THE SOIL IS SUFFICIENTLY STABILIZED TO PREVENT EROSION. AS MANY MEADOW SPECIES ARE SLOW TO GERMINATE AND ESTABLISH, THE CONTRACTOR IS URGED TO INSTALL THE MEADOW SEEDING AS SOON AS POSSIBLE SO AS NOT TO DELAY FINAL ACCEPTANCE.

OUTLET CONTROI

(SEE DETAIL SHEET)

STABILIZATION -

**STRUCTURE** 

TERRESTRIAL FORESTER

COMMUNITY VEGETATION

(BIORETENTION PLANTINGS

ON SLOPES SUCH AS:

SUMMERSWEET CLETHRA

WINTERBERRY HOLLY.

INKBERRY HOLLY. ARROWOOD VIBURNUM, SERVICEBERRY)

3" MIN. GRAVEL ABOVE PIPE

ARABA

 $7\,\mathrm{SHWT}$  or top of Landfill cap elev.

MINIMUM PERMEABILITY RATE 0.5 IN/HF

BIORETENTION BASIN CROSS SECTION DETAIL

NOT TO SCALE

PRIOR TO INSTALLATION OF THE SAND LAYER THE PERMEABILITY RATE OF THE UNDERLYING OR REPLACEMENT SOILS SHALL BE CONFIRMED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER TO MEET THE MINIMUM DESIGN PERMEABILITY RATE. THE BASIN INFILTRATION RATE SHALL BE CERTIFIED BY A NEW JERSEY

I. ALL EARTHWORK OPERATIONS, INCLUDING EXCAVATION, PROOFROLLING, GRADING AND BACKFILL OPERATIONS SHALL BE CONDUCTED UNDER THE

INSPECTION PORT

W/WATERTIGHT CAP

#### MATERIAL: HDPE **DIAMETER (INCHES): 4**

PRODUCT SPECS

LENGTH (INCHES): 36 COLOR: BLACK

CONTACT INFORMATION A.M. LEONARD P: I (800)-543-8955

PRUNE FOR VIGOR, MAINTAIN

RUBBER GUARD TO PREVENT

2" DIA. HARDWOOD STAKES 🖁

BARK DAMAGE

LEADER

MULCH

— 6" SAUCER RIM

AFTER PLANTING.

OR TAMPED SOIL

PRUNE FOR VIGOR, MAINTAIN

NATURAL GROWTH HABIT; NEVER

CUT CENTRAL LEADER OR TRUNK.

REMOVE ALL ROPE FROM TRUNK AND

TOP OF ROOT BALL. FOLD BURLAP

BACK FROM TOP OF ROOT BALL

- 4" SHREDDED HARDWOOD BARK

WIRE BASKET TO BE REMOVED.

PREPARED BACKFILL MIX; SEE GENERAL

PLACE ROOT BALL ON UNEXCAVATED

PLANTING NOTE C.I(I). SOAK BACKFILL

– 6" SAUCER RIM

AFTER PLANTING.

OR TAMPED SOIL.

18" MIN.

CONTACT WITH MUI CH

NO SOIL OR MULCH SHALL BE PLACED AGAINST ROOT COLLAR OF PLANT. PLANTING DEPTH SHALL BE THE SAME OR HIGHER AS GROWN IN NURSERY.

ALL NON-BIODEGRADABLE MATERIAL SHALL BE REMOVED FROM THE ROOTBAL

TRUNK FLARE SHOULD BE VISIBLE AT TIME OF PLANTING AND SHOULD NOT COME IN

MULTI-LEADER TREE PLANTING DETAIL

STAKES AND GUIDE WIRES SHALL ONLY BE USED IF CONDITIONS MERIT.

6. MULCH SHALL BE A CONTINUOUS BED FOR MASS LANDSCAPE PLANTINGS.

NO SOIL OR MULCH SHALL BE PLACED AGAINST ROOT COLLAR OF PLANT.

PLANTING DEPTH SHALL BE THE SAME OR HIGHER AS GROWN IN NURSERY

MULCH SHALL BE A CONTINUOUS BED FOR MASS LANDSCAPE PLANTINGS.

NATURAL GROWTH HABIT: NEVER

CUT CENTRAL LEADER OR TRUNK.

PLASTIC CHAIN TO MAIN CENTRAL

TREE HEIGHT, 3 PER TREE LOCATED

OUTSIDE OF PLANTING PIT. ALL TREE

STAKES TO BE REMOVED AFTER ONE

REMOVE ALL ROPE FROM TRUNK AND

TOP OF ROOT BALL. FOLD BURLAP

BACK & FROM TOP OF ROOT BALL

4" SHREDDED HARDWOOD BARK

WIRE BASKET TO BE REMOVED.

PREPARED BACKFILL MIX: SEE GENERA

PLANTING NOTE CI(I), SOAK BACKFILI

PLACE ROOT BALL ON UNEXCAVATED



MIX #14 (EXCESSIVELY TO MODERATELY DRAINED SOIL): TALL FESCUE 265 LBS/ACRE KENTUCKY BLUE GRASS (BLEND) 20 LBS/ACRE PERENNIAL RYE GRASS (BLEND) 20 LBS/ACRE

MIX #13 (WELL TO MODERATELY DRAINED SOIL):

HARD FESCUE AND/OR

PERENNIAL RYEGRASS

CHEWING FESCUE AND/OR

STRONG CREEPING RED FESCUE

KENTUCKY BLUE GRASS (BLEND)

**OPTIMUM SEEDING DATES:** 8/I - 10/I (ZONE 5b, 6a); 8/I5 - 10/I5 (ZONE 6b); 8/I5 - 10/30 (ZONE 7a, 7b) **SUMMER SEEDING DATES \*:** 6/I - 7/3 I (ZONE 5b, 6a); 5/I - 8/I4 (ZONE 6b, 7a, 7b)

175 LBS/ACRE

45 LBS/ACRE

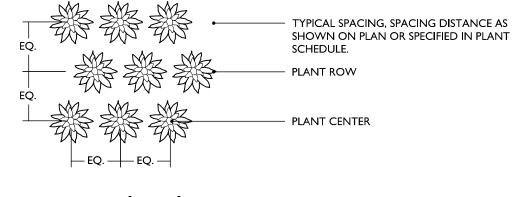
45 LBS/ACRE

\* NOTE: SUMMER SEEDING SHOULD ONLY BE CONDUCTED WHEN THE SITE IS IRRIGATED. MIXES INCLUDING WHITE CLOVER REQUIRE THAT AT LEAST SIX WEEKS OF GROWING SEASON REMAIN AFTER SEEDING TO ENDURE ESTABLISHMENT BEFORE FREEZING CONDITIONS.

#### - DO NOT CUT GRASSES IN FALL 4" SHREDDED HARDWOOD BARK 6" SAUCER RIM TOPSOIL REMOVE CONTAINER AND LOOSEN ROOTS BY SCORING OR PULLING. PREPARED BACKFILL MIX; SEE GENERAL PLANTING NOTE C.I(I). SOAK BACKFILL AFTER PLANTING PLACE ROOT BALL ON UNEXCAVATED OR TAMPED SOIL.

NO SOIL OR MULCH SHALL BE PLACED AGAINST ROOT COLLAR OF PLANT. PLANTING DEPTH SHALL BE THE SAME OR HIGHER AS GROWN IN NURSERY MULCH SHALL BE A CONTINUOUS BED FOR MASS LANDSCAPE PLANTINGS.

# ORNAMENTAL GRASS PLANTING DETAIL



GROUNDCOVER/PERENNIA 4" SHREDDED HARDWOOD BARK PLANTING MEDIUM

PLANTING DEPTH SHALL BE THE SAME OR HIGHER AS GROWN IN NURSERY MULCH SHALL BE A CONTINUOUS BED FOR MASS LANDSCAPE PLANTINGS.

# LAWN SEED MIX NOTES

MIX #15 (WELL TO MODERATELY DRAINED SOIL): HARD FESCUE CHEWING FESCUE 45 LBS/ACRE STRONG CREEPING RED FESCUE 45 LBS/ACRE PERENNIAL RYEGRASS 10 LBS/ACRE

MIX #16 (POORLY DRAINED SOIL) ROUGH BLUEGRASS 90 LBS/ACRE STRONG CREEPING RED FESCUE 130 LBS/ACRE

**ACCEPTABLE SEEDING DATES:** 3/15 - 5/31 (ZONE 5b, 6a); 3/1 - 4/30 ZONE 6b); 2/1 - 4/30 (ZONE 7a, 7b)

LICENSED PROFESSIONAL ENGINEER, THAT IT MEETS THE MINIMUM DESIGN PERMEABILITY RATE. EXCAVATIONS TO REMOVE HYDRAULICALLY RESTRICTIVE MATERIAL SHALL EXTEND A MINIMUM OF I' BELOW THE IMPERMEABLE LAYER AND SHALL BE CERTIFIED BY A PROFESSIONAL ENGINEER. ALL BASIN EXCAVATION MUST BE PERFORMED BY EQUIPMENT PLACED OUTSIDE. THE BASIN WHENEVER POSSIBLE TO PREVENT THE COMPACTION OF THE BASIN SUBGRADE SOILS. DO NOT STOCKPILE MATERIAL OR DRIVE EQUIPMENT WITHIN THE AREA OF THE BASIN. ONCE THE FINAL GRADING PHASE OF THE BASIN IS REACHED, THE BOTTOM OF THE BASIN SHALL BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW AND THEN SMOOTHED OUT WITH A LEVELING DRAG OR EQUIVALENT GRADING EQUIPMENT. THESE PROCEDURES SHOULD PREFERABLY BE PERFORMED WITH EQUIPMENT LOCATED OUTSIDE THE BASIN BOTTOM. IF THIS IS NOT POSSIBLE, IT SHOULD BE PERFORMED WITH LIGHT-WEIGHT 6. THE BOTTOM SOIL LAYER MUST MEET THE FOLLOWING SPECIFICATIONS: 85 TO 95% SAND, WITH NO MORE THAN 25% OF THE SAND AS FINE OR VERY FINE

JPERVISION OF A NEW IERSEY LICENSED PROFESSIONAL ENGINEER

SANDS; NO MORE THAN 15% SILT AND CLAY WITH 2% TO 5% CLAY CONTENT. THE ENTIRE MIX MUST THEN BE AMENDED WITH 3 TO 7% ORGANICS, BY WEIGHT. THE PH OF THE SOIL BED MATERIAL IS TO RANGE FROM 5.5 TO 6.5. THE NATIVE SOIL BELOW THE BASIN MUST TEST AT A MINIMUM OF 20 INCHES/HOUR PERMEABILITY RATE. THIS MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY. DO NOT PLACE THE BASIN INTO OPERATION UNTIL THE CONTRIBUTARY DRAINAGE AREA(S) ARE COMPLETELY STABILIZED.

THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF SOIL CONDITIONS ENCOUNTERED IN THE FIELD DIFFER FROM WHAT IS SHOWN HEREON. SUCH CONDITIONS COULD RENDER THE DESIGN HEREON INAPPROPRIATE OR INEFFECTIVE. DURING CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE THE BASIN TO WITHIN 18" OF THE BASIN FINISHED GRADE. WHEN UPSTREAM AREAS ARE STABILIZED, THE BASIN BOTTOM SHALL BE CLEARED OF SEDIMENT AND SCARIFIED AND/OR UNSUITABLE MATERIALS SHALL BE REMOVED AND THE PERMEABLE ATERIALS AND SAND LAYER CAN BE INSTALLED. SAFETY LEDGES WERE DESIGNED FOR BASIN A USING THE 100 YEAR WATER SURFACE ELEVATION WITHOUT INFILTRATION. COUNTING INFILTRATION THE 100 YR WATER SURFACE ELEVATION IS LESS THAN 2 FT ABOVE THE BASIN BOTTOM.

# GENERAL PLANT MAINTENANCE RECOMMENDATIONS:

# TREES, SHRUBS, PERENNIALS

# **FERTILIZATION:**

**WEED CONTROL:** 

NECESSARY)

TREES AND SHRUBS: ONCE PER YEAR (USUALLY LATE FALL-EARLY WINTER. PERENNIALS: TWICE PER YEAR (USUALLY EARLY SPRING AND LATE SPRING/EARLY SUMMER). EVERGREENS: ONCE PER YEAR, AS NEEDED.

MULCHED TREE RINGS, MULCHED SHRUB AND PERENNIAL BEDS: WEED ENTIRE SITE ONCE

#### ONCE PER YEAR FROM AT LEAST (3) AREAS ACROSS SITE, USUALLY IN EARLY SPRING DURING THE ESTABLISHMENT PERIOD (2 GROWING SEASONS). SOIL TESTS AFTER THE ESTABLISHMENT PERIOD AS NECESSARY

UNCOMPACTED PERMEABLE

AROUND PERIMETER

**BIORETENTION LAYER** 

24" DEPTH FOR BASIN 2)

SAND LAYER (6" DEPTH)

STONE OR PEA GRAVEL)

PERMEABLE SUBGRADE ESTIMATED SEASONAL HIGH -

BIORETENTION BASIN NOTES

**GROUNDWATER ELEVATION** 

UNCOMPACTED —

(18" DEPTH FOR BASINS 1, 3, 4 & 5

GRAVEL & UNDERDRAIN LAYER

(STONE TO BE 0.5" TO 1.5" CLEAN, BROKEN

4" PERFORATED HDPE @ 0.50 % SLOPE

EVERY (2) WEEKS. WEEDING SHOULD BE DONE ALL AT ONCE. PEST/DISEASE CONTROL: MONITOR THE SITE MONTHLY FOR DISEASE AND PEST INFESTATIONS.

ANY TREATMENTS SHOULD BE CONSIDERED AN ALTERNATE (ONLY NEEDED AS

#### ANY TREE OR SHRUB PRUNING SHOULD BE IN ACCORDANCE WITH THE PRUNING SECTION OF THE GENERAL NOTES.

MULCH BEDS TO 4" IN DEPTH AS NOTED IN THE PLANTING DETAILS. INSTALL NEW MULCH AS NECESSARY TO MAINTAIN A 4" DEPTH MULCHING SHOULD TAKE PLACE IN SPRING, ONCE A YEAR. PULL MULCH AWAY FROM SHRUB, PERENNIAL, AND GRASS CROWNS AS WELL AS AWAY FROM TREE TRUNKS PER PLANTING DETAILS.

ORNAMENTAL GRASSES SHOULD BE CUT BACK IN LATE WINTER/EARLY SPRING.

#### **BED EDGING:** BEDS AND TREE MULCH RINGS SHOULD BE EDGED AT THE TIME OF SPRING MULCHING.

**WINTER PROTECTION:** APPLY ANTI DESICCANT TO EVERGREENS MONTHLY DURING WINTER - UP TO 4

# APPLICATIONS (PER RUTGERS COOPERATIVE EXTENSION).

#### **EARLY SPRING START UP** CLEAN UP MISCELLANEOUS PLANT DEBRIS. PRUNE DEAD WOOD OUT OF PLANT MATERIAL

DEADHEAD ANY PERENNIALS LEFT STANDING OVER WINTER. REMOVE ANY PLANT THAT APPEAR DISEASED OR UNHEALTHY AND REPLACE WITH SAME SPECIES, PER PLANTING SCHEDULE. REPLACE PLANTS THAT HAVE DIED OVER WINTER; FILL SPOTS IN PLANT BEDS APPEARING BARE, PER PLANTING SCHEDULE.

# LAWN CARE

**FERTILIZATION:** • (2) TIMES A YEAR; GENERALLY SPRING AND FALL (PER THE PENN STATE EXTENSION

 MOW WHEN TURF REACHES 2"-3" TALL IN SPRING AND FALL, 3" TALL IN SUMMER; MOWING SHOULD TYPICALLY TAKE PLACE FROM MARCH THROUGH EARLY NOVEMBER

#### (PER THE PENN STATE EXTENSION OFFICE). WEED CONTROL: • (I) PRE-EMERGENT HERBICIDE APPLICATION IN MARCH TO MID-APRIL FOR CRABGRASS

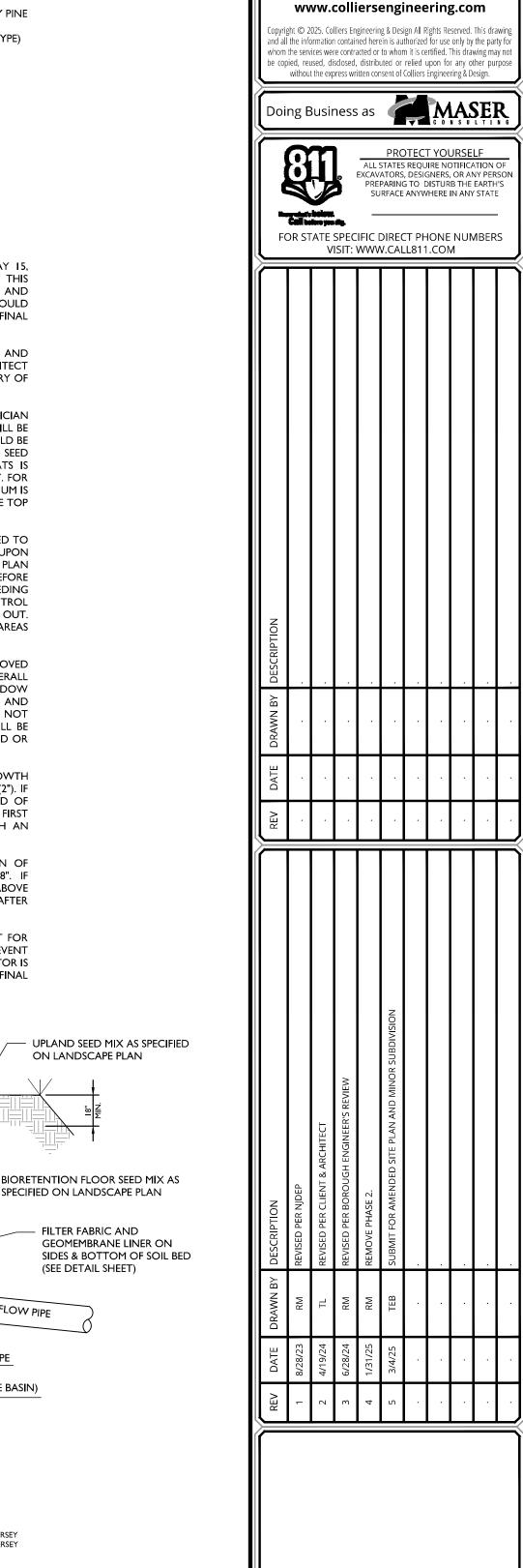
AND OTHER ANNUAL GRASS WEED CONTROL. AND (I) PRE-EMERGENT APPLICATION IN APRIL FOR ANNUAL BROADLEAF WEED CONTROL (PER THE PENN STATE EXTENSION (2) POST-EMERGENT BROADLEAF HERBICIDE APPLICATIONS: IN SPRING (MID-MARCH THROUGH MID-MAY) AND AGAIN IN FALL (LATE AUGUST THROUGH OCTOBER) FOR BROADLEAF WEEDS (PER THE PENN STATE EXTENSION OFFICE).

#### PEST/DISEASE CONTROL MONITOR THE SITE MONTHLY FOR DISEASE AND PEST INFESTATIONS

ANY TREATMENTS SHOULD BE CONSIDERED AN ALTERNATE (ONLY NEEDED AS

# MISCELLANEOUS LAWN CARE:

RESEED: RESEED ANY BARE LAWN AREAS IN SEPTEMBER THROUGH EARLY OCTOBER. DETHATCH: DETHATCH LAWN EVERY (2) YEARS IN EITHER EARLY SPRING OR FALL. AERATE: AERATE LAWNS EVERY (2) YEARS IN BOTH SPRING AND FALL LIME: APPLY LIME ANY TIME OF THE YEAR BUT ONLY IF A SOIL TEST SHOW PH IS LOWER THAN 6.0; SOIL TESTS WILL GIVE SPECIFIC RECOMMENDATIONS FOR AMOUNT OF LIME



ON LANDSCAPE PLAN

SPECIFIED ON LANDSCAPE PLAN

FILTER FABRIC AND

(SEE DETAIL SHEET)

OUTFLOW PIPE

3" MIN. GRAVEL BELOW PIPE

' MIN. (UNDERDRAINED TYPE BASIN)

**Colliers** 

Engineering

& Design

Christopher R. Gammon: NEW JERSEY LICENSED LANDSCAPE ARCHITECT LICENSE NUMBER: AS01132 COLLIERS ENGINEERING & DESIGN, INC.

N.J. C.O.A. #: 24GA27986500

JERNEE MILI

**INDUSTRIAL** 

AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN AND MINOR SUBDIVISION

BLOCK 58

LOTS 2.01 & 9 **BOROUGH OF SAYREVILLI** MIDDLESEX COUNTY

HOLMDEL (Headquarte 01 Crawfords Corner Road Suite 3400 Holmdel, NJ 07733 Phone: 732.383.1950 Engineering OLLIERS ENGINEERING & DESIGN, INC & Design DOING BUSINESS AS MASER CONSULTIN

**NEW JERSEY** 

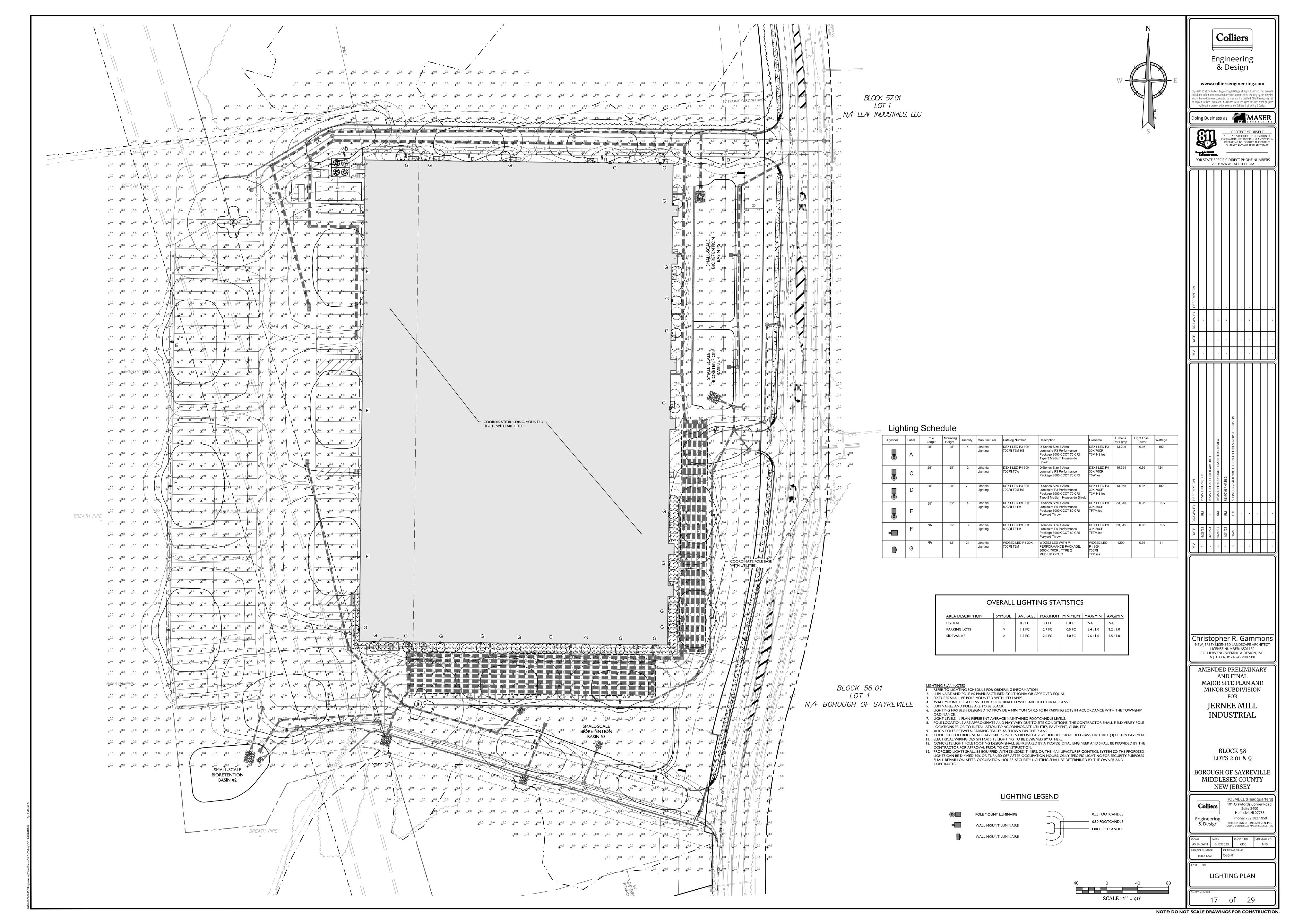
100006570

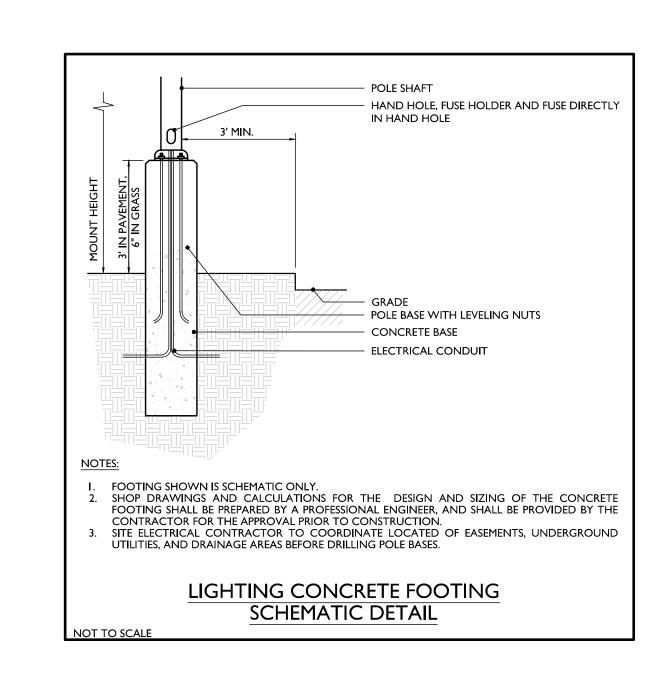
LANDSCAPE PLAN

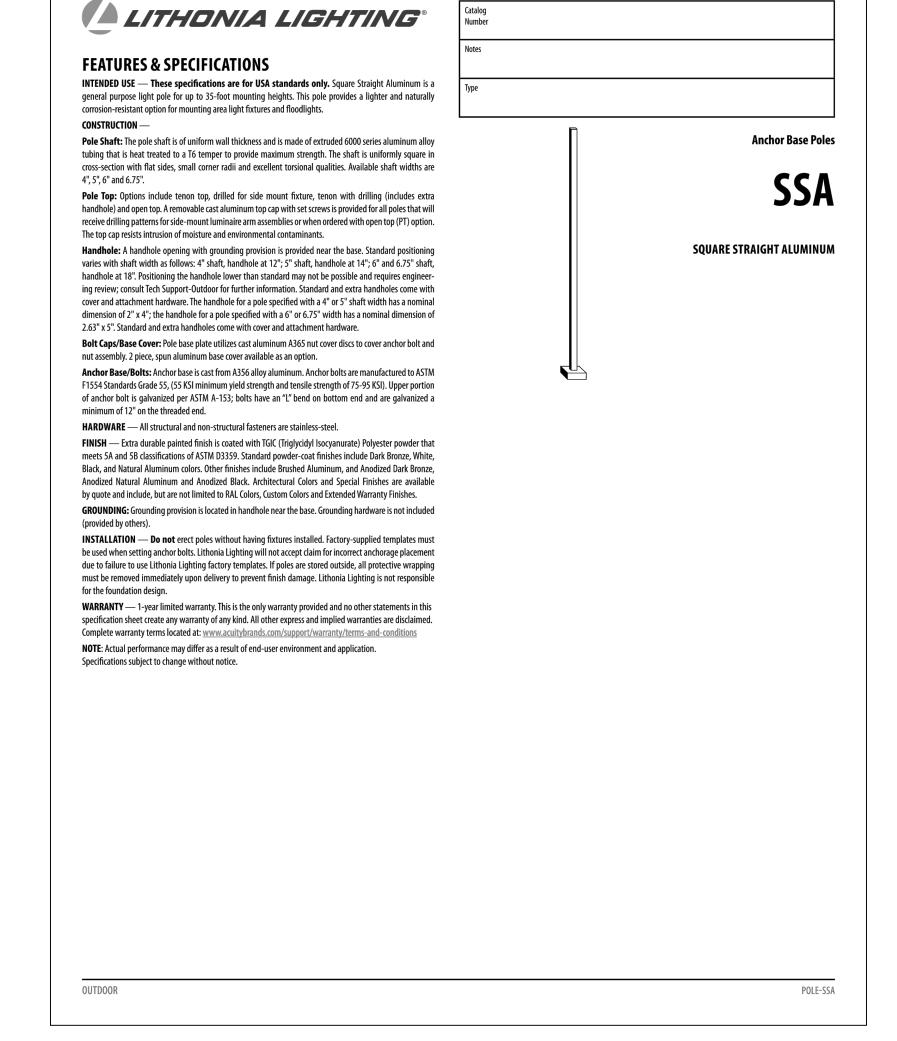
NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

6. MULCH SHALL BE A CONTINUOUS BED FOR MASS LANDSCAPE PLANTINGS. SHRUB PLANTING DETAIL GROUNDCOVER/PERENNIAL PLANTING DETAIL EVERGREEN TREE SLOPE PLANTING DETAIL

NOTES:



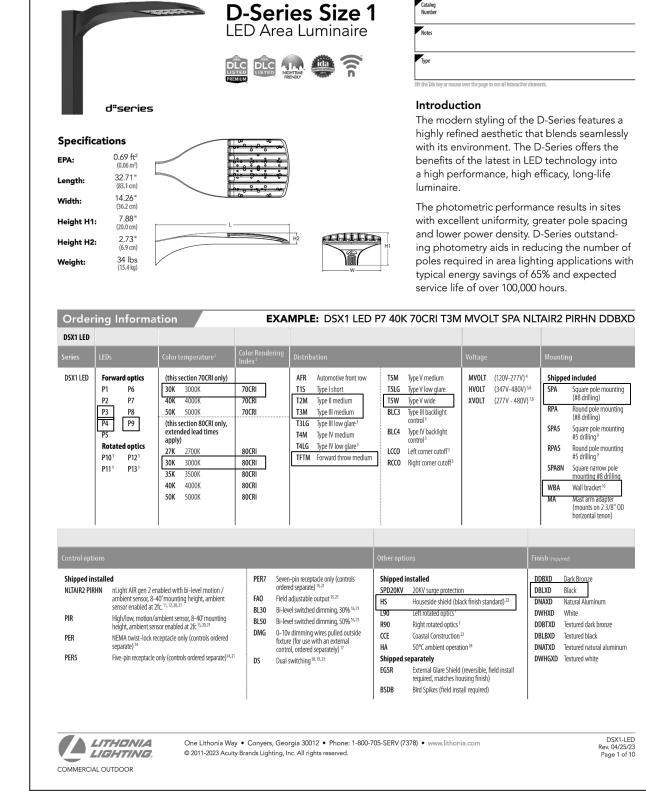




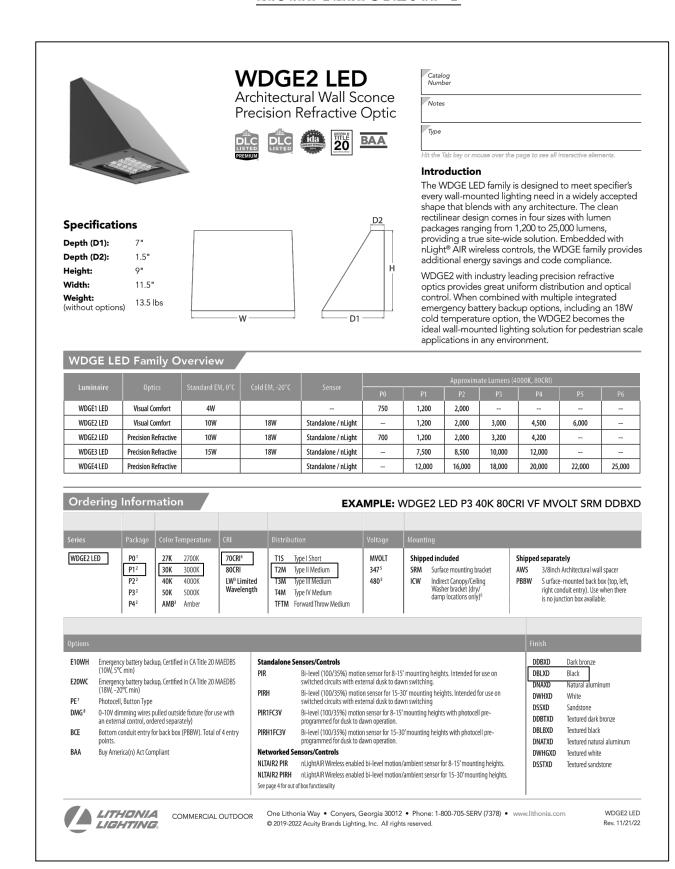
LIGHT POLE (FIXTURES A-E)

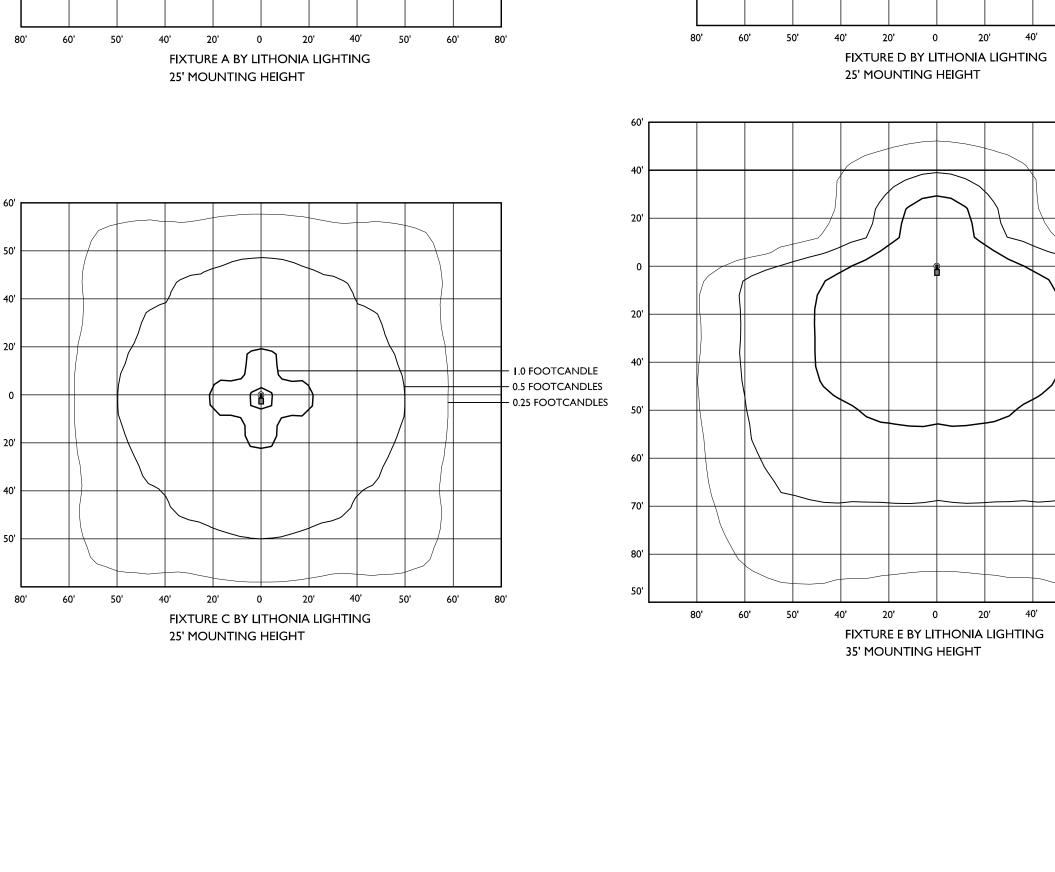
— 1.0 ∯OOTCANDLE

0.5 FOOTCANDLES 0.25 FOOTCANDLES



# LIGHT FIXTURES A - F

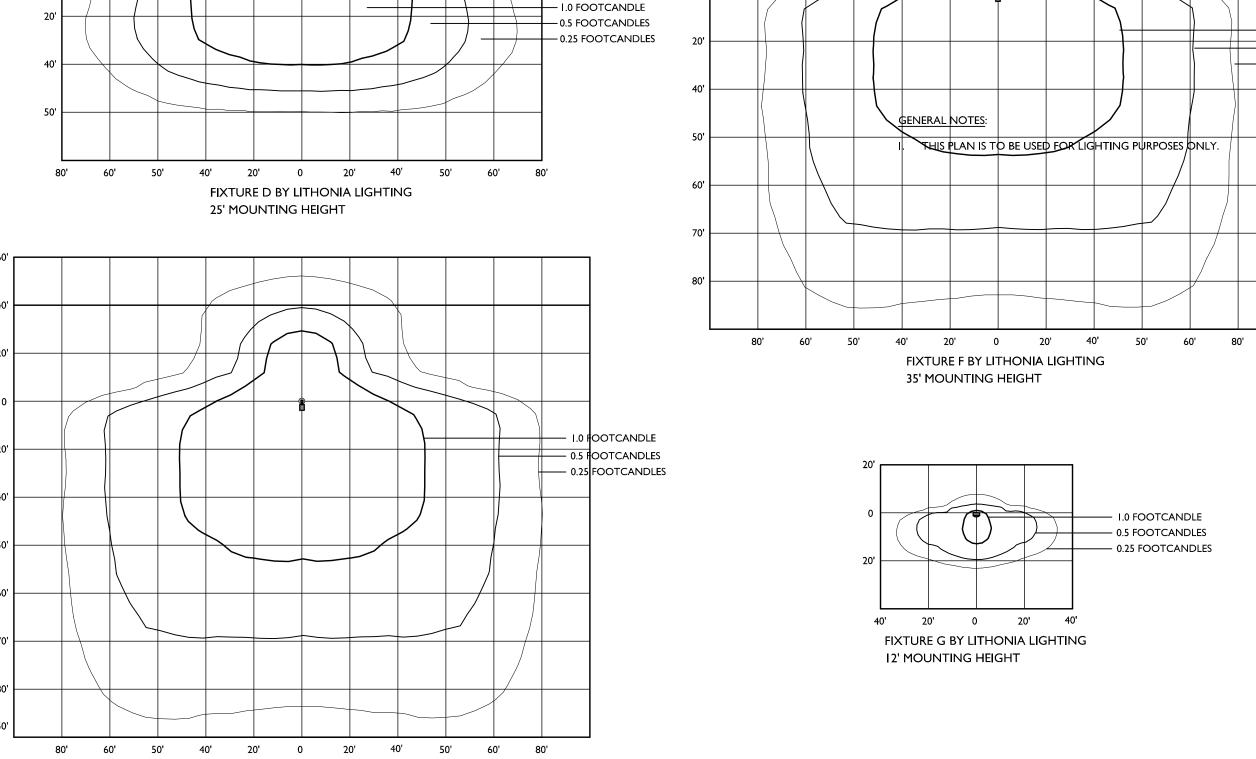


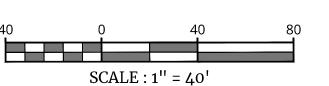


I.0 FOOTCANDLE

0.5 FOOTCANDLES

0.25 FOOTCANDLES





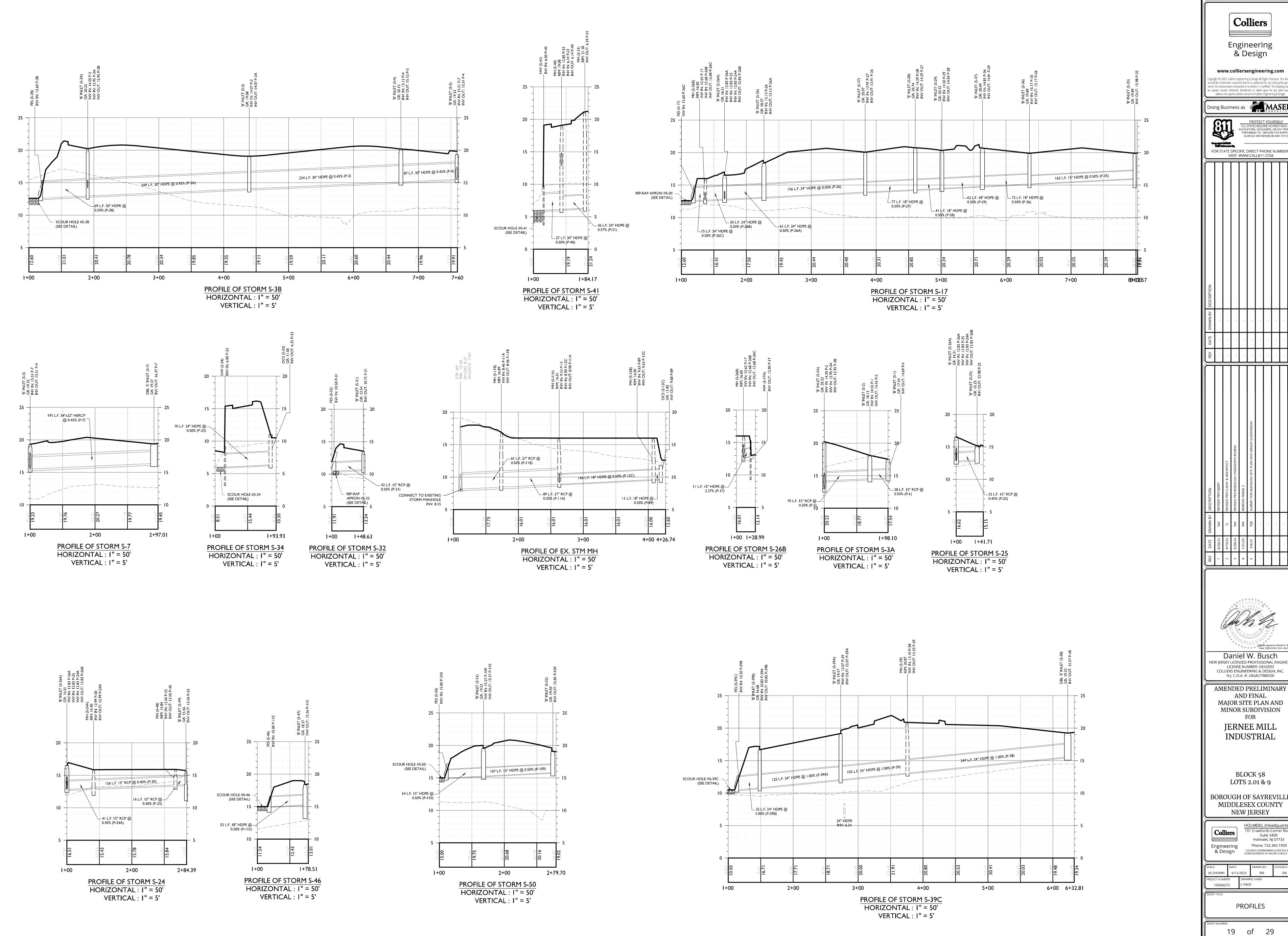
**Colliers** Engineering & Design www.colliersengineering.com opyright © 2025. Colliers Engineering & Design All Rights Reserved. This drawing hom the services were contracted or to whom it is certified. This drawing may r e copied, reused, disclosed, distributed or relied upon for any other purp without the express written consent of Colliers Engineering & Design. PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF
XCAVATORS, DESIGNERS, OR ANY PERSO PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW CALL811 COM Christopher R. Gammons NEW JERSEY LICENSED LANDSCAPE ARCHITECT LICENSE NUMBER: AS01132 COLLIERS ENGINEERING & DESIGN, INC. N.J. C.O.A. #: 24GA27986500 AMENDED PRELIMINARY AND FINAL MAJOR SITE PLAN AND MINOR SUBDIVISION FOR JERNEE MILL INDUSTRIAL BLOCK 58 LOTS 2.01 & 9 BOROUGH OF SAYREVILLE MIDDLESEX COUNTY **NEW JERSEY** HOLMDEL (Headquarters) 101 Crawfords Corner Road, Colliers Suite 3400 Holmdel, NJ 07733 Engineering Phone: 732.383.1950 & Design COLLIERS ENGINEERING & DESIGN, INC. DOING BUSINESS AS MASER CONSULTING

10000657C

LIGHTING DETAILS

18 of 29

LIGHT FIXTURE G



**Colliers** 

Engineering & Design

www.colliersengineering.com

whom the services were contracted or to whom it is certified. This drawing may be copied, reused, disclosed, distributed or relied upon for any other purpo without the express written consent of Colliers Engineering & Design. Doing Business as 

A SER

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF
EXCAVATORS, DESIGNERS, OR ANY PERSO
PREPARING TO DISTURB THE EARTH'S
SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS
VISIT: WWW.CALL811.COM



Daniel W. Busch LICENSE NUMBER: GE42093

COLLIERS ENGINEERING & DESIGN, INC. N.J. C.O.A. #: 24GA27986500

> AND FINAL MAJOR SITE PLAN AND MINOR SUBDIVISION FOR JERNEE MILL INDUSTRIAL

> > BLOCK 58 LOTS 2.01 & 9

BOROUGH OF SAYREVILLE MIDDLESEX COUNTY **NEW JERSEY** 

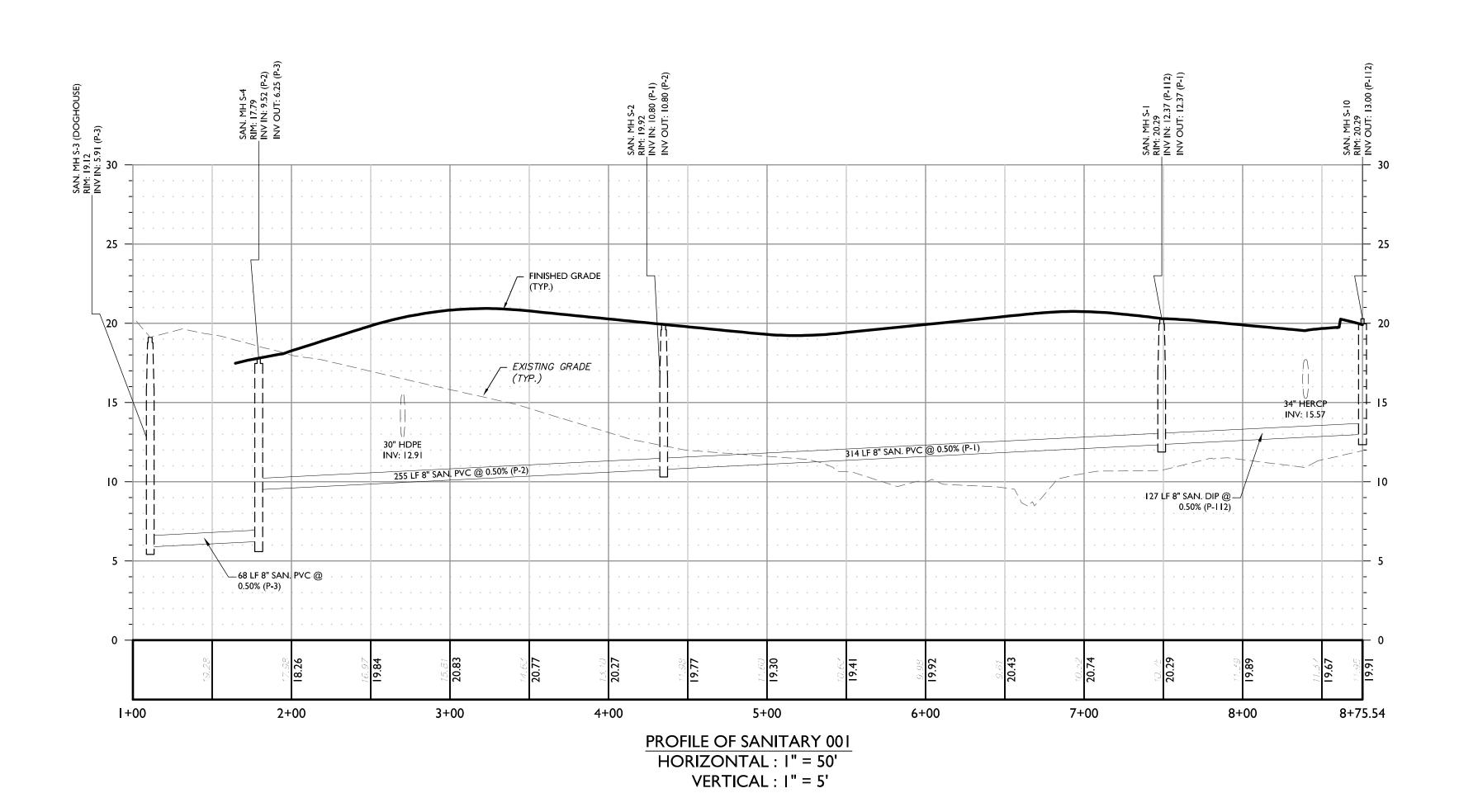
HOLMDEL (Headquarters) 101 Crawfords Corner Road, Colliers Suite 3400 Holmdel, NJ 07733 Phone: 732.383.1950 Engineering COLLIERS ENGINEERING & DESIGN, INC. DOING BUSINESS AS MASER CONSULTING & Design

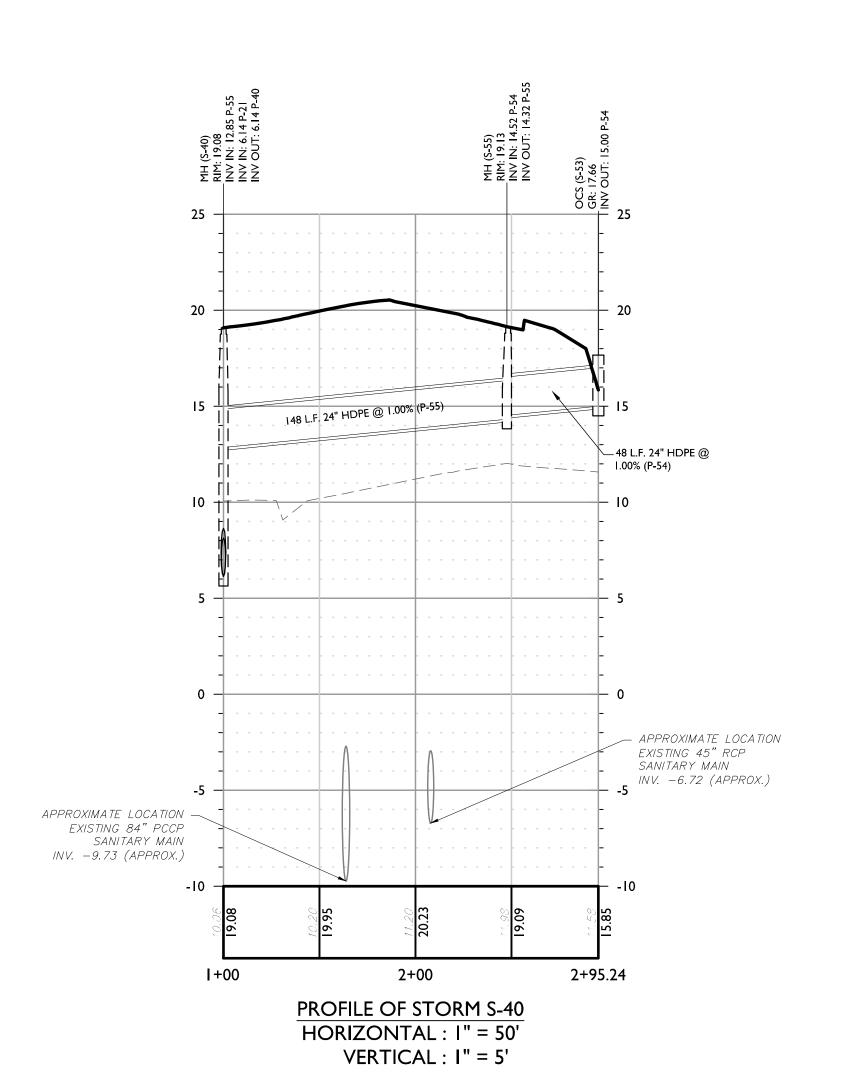
10000657C

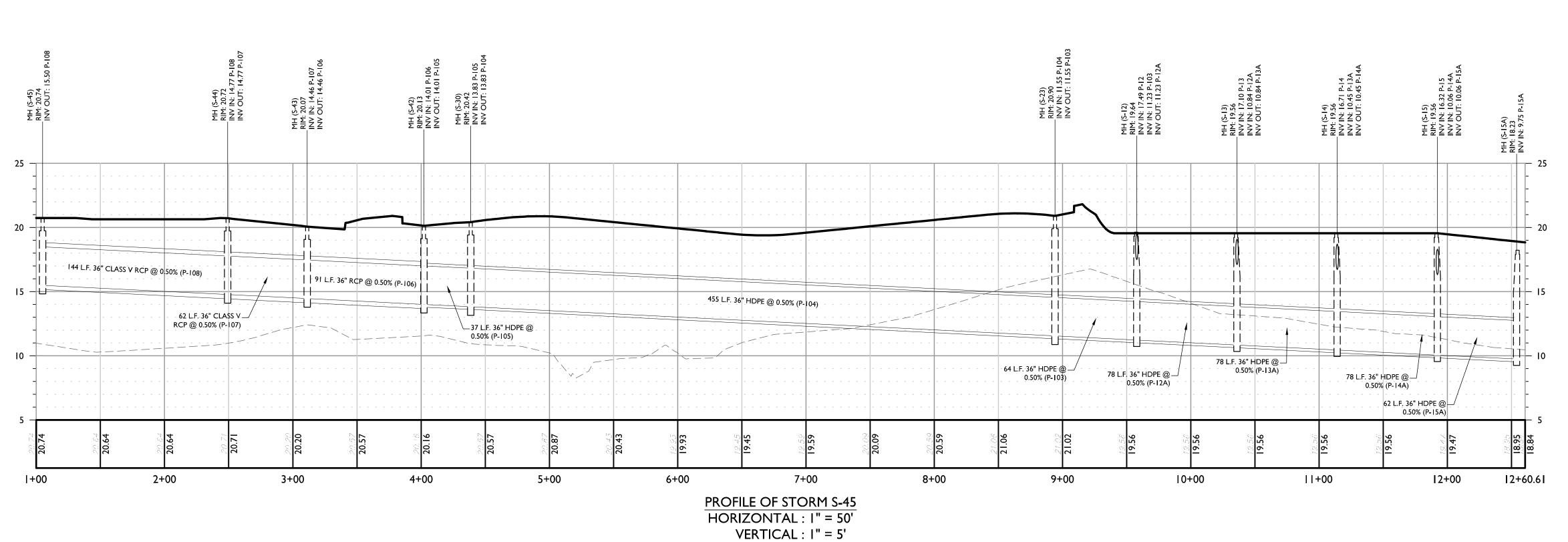
PROFILES

19 of 29

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION







Colliers	

Engineering & Design

www.colliersengineering.com

and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS
VISIT: WWW.CALL811.COM

E DRAWN BY DESCRIPTION
23 RM REVISED PER NJDEP
24 TL REVISED PER CLIENT & ARCHITECT
25 RM REMOVE PHASE 2.
26 TEB SUBMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
27 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
28 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
29 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
20 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
21 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
22 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
3 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
4 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
5 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
6 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
7 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
8 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION
9 TEB COMMIT FOR AMENDED SITE PLAN AND M



Daniel W. Busch

NEW JERSEY LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: GE42093
COLLIERS ENGINEERING & DESIGN, INC.
N.J. C.O.A. #: 24GA27986500

AMENDED PRELIMINARY

AND FINAL
MAJOR SITE PLAN AND
MINOR SUBDIVISION
FOR
JERNEE MILL
INDUSTRIAL

BLOCK 58 LOTS 2.01 & 9

BOROUGH OF SAYREVILLE
MIDDLESEX COUNTY

NEW JERSEY

HOLMDEL (Headquarters)
101 Crawfords Corner Road,
Suite 3400

Suite 3400
Holmdel, NJ 07733

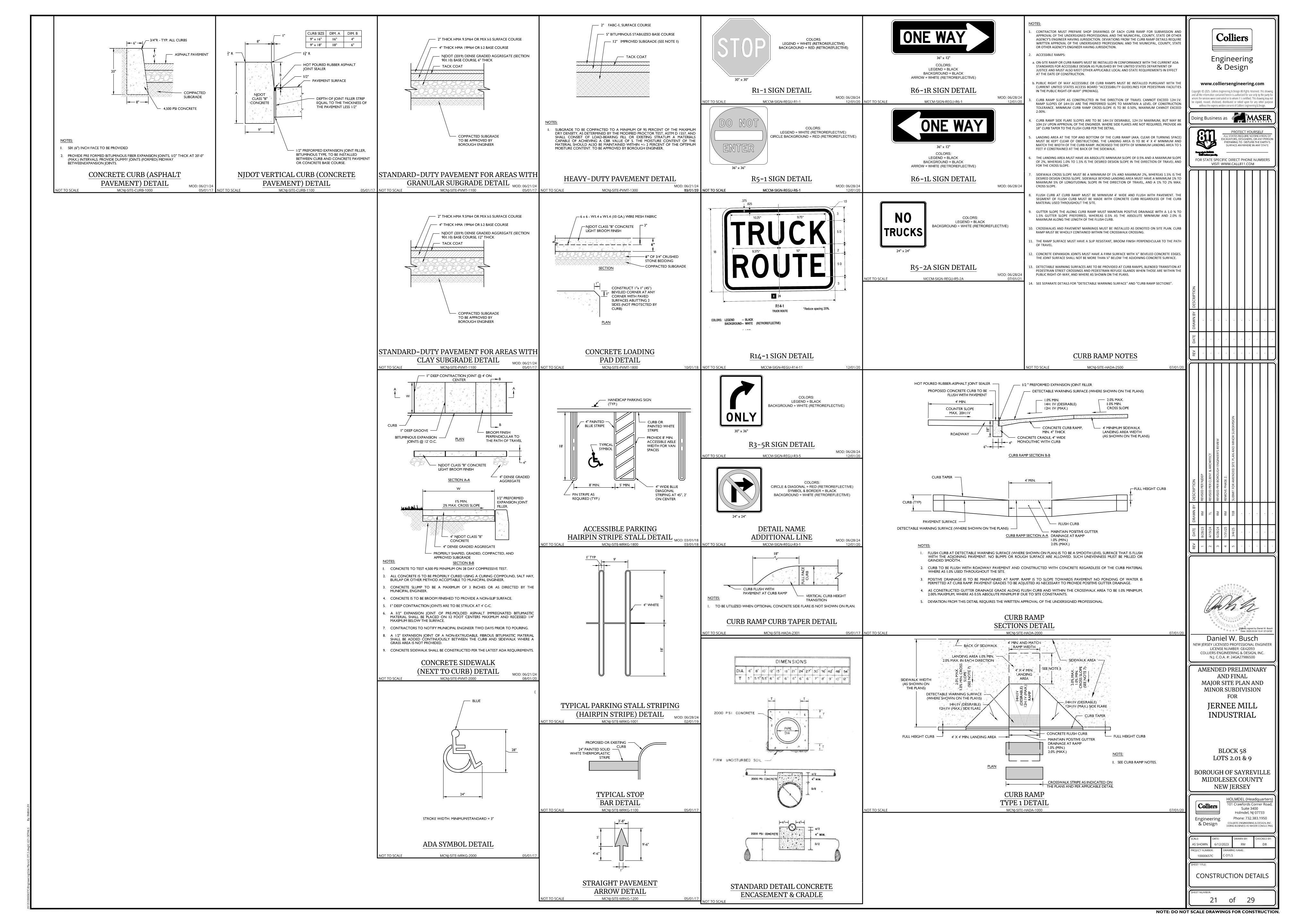
Engineering Phone: 732.383.1950
COLLIERS ENGINEERING & DESIGN, INC. DOING BUSINESS AS MASER CONSULTING

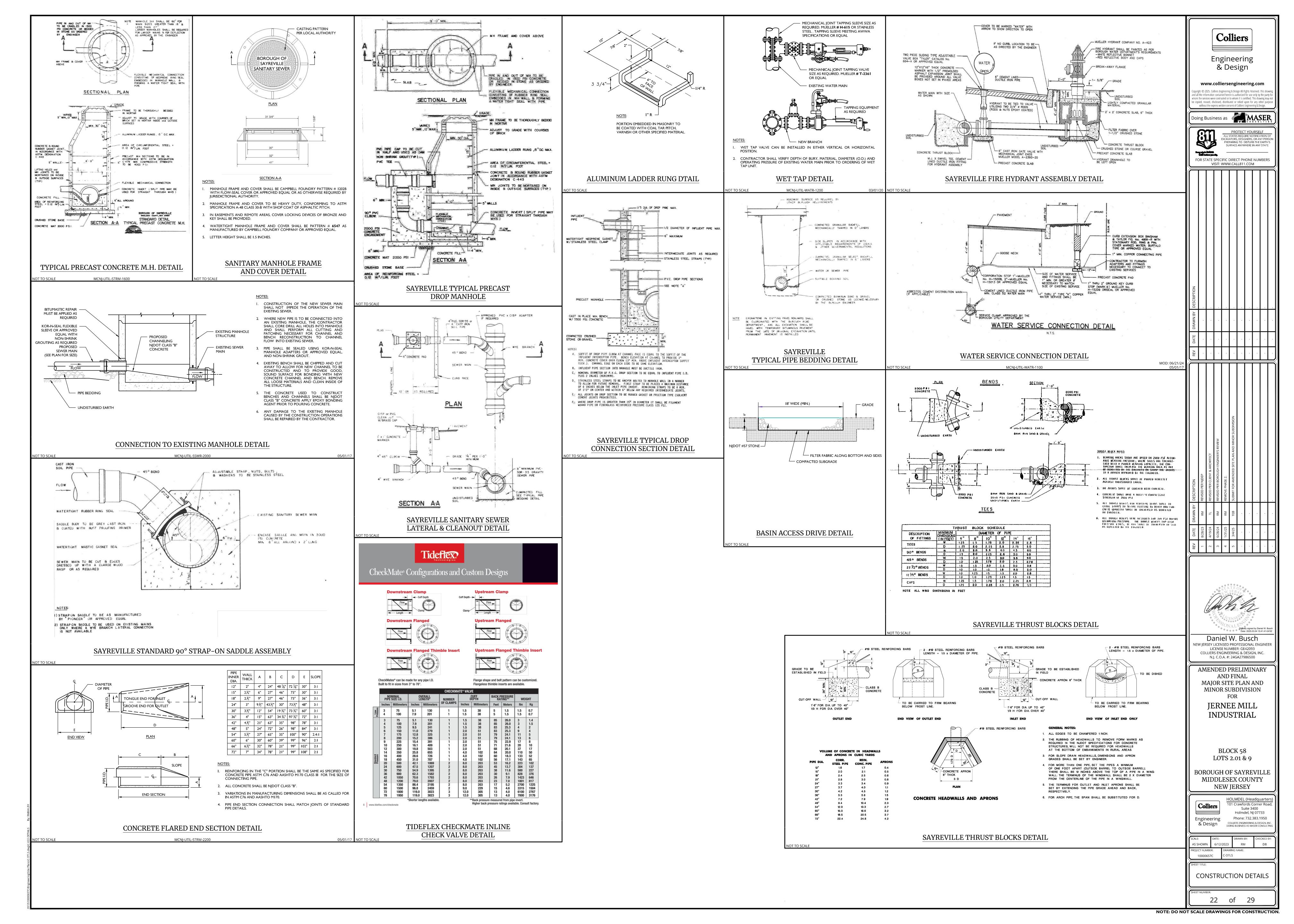
SCALE: DATE: DRAWN BY: CHECKED BY
AS SHOWN 6/12/2023 RM DB
PROJECT NUMBER: DRAWING NAME:
10000657C C-PROF

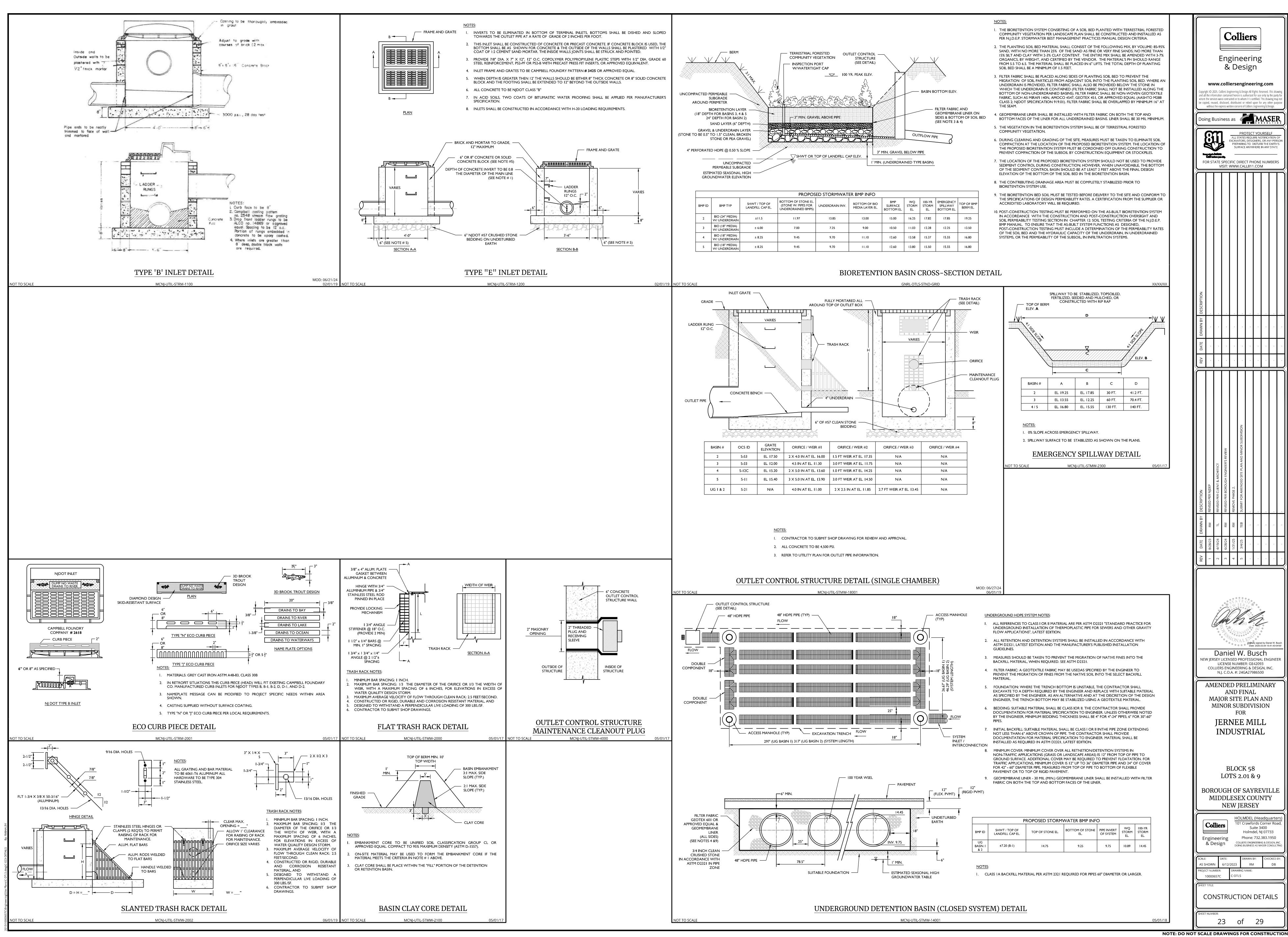
PROFILES

T NUMBER: 20 of 29

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.







www.colliersengineering.com

m the services were contracted or to whom it is certified. This drawing may e copied, reused, disclosed, distributed or relied upon for any other pure

MASEL PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF
CAVATORS, DESIGNERS, OR ANY PERSO PREPARING TO DISTURB THE EARTH

VISIT: WWW CALL811 COM

SURFACE ANYWHERE IN ANY STATE FOR STATE SPECIFIC DIRECT PHONE NUMBERS

Daniel W. Busch IEW JERSEY LICENSED PROFESSIONAL ENGINEER LICENSE NUMBER: GE42093 COLLIERS ENGINEERING & DESIGN, INC. N.J. C.O.A. #: 24GA27986500

MAJOR SITE PLAN AND MINOR SUBDIVISION JERNEE MILL

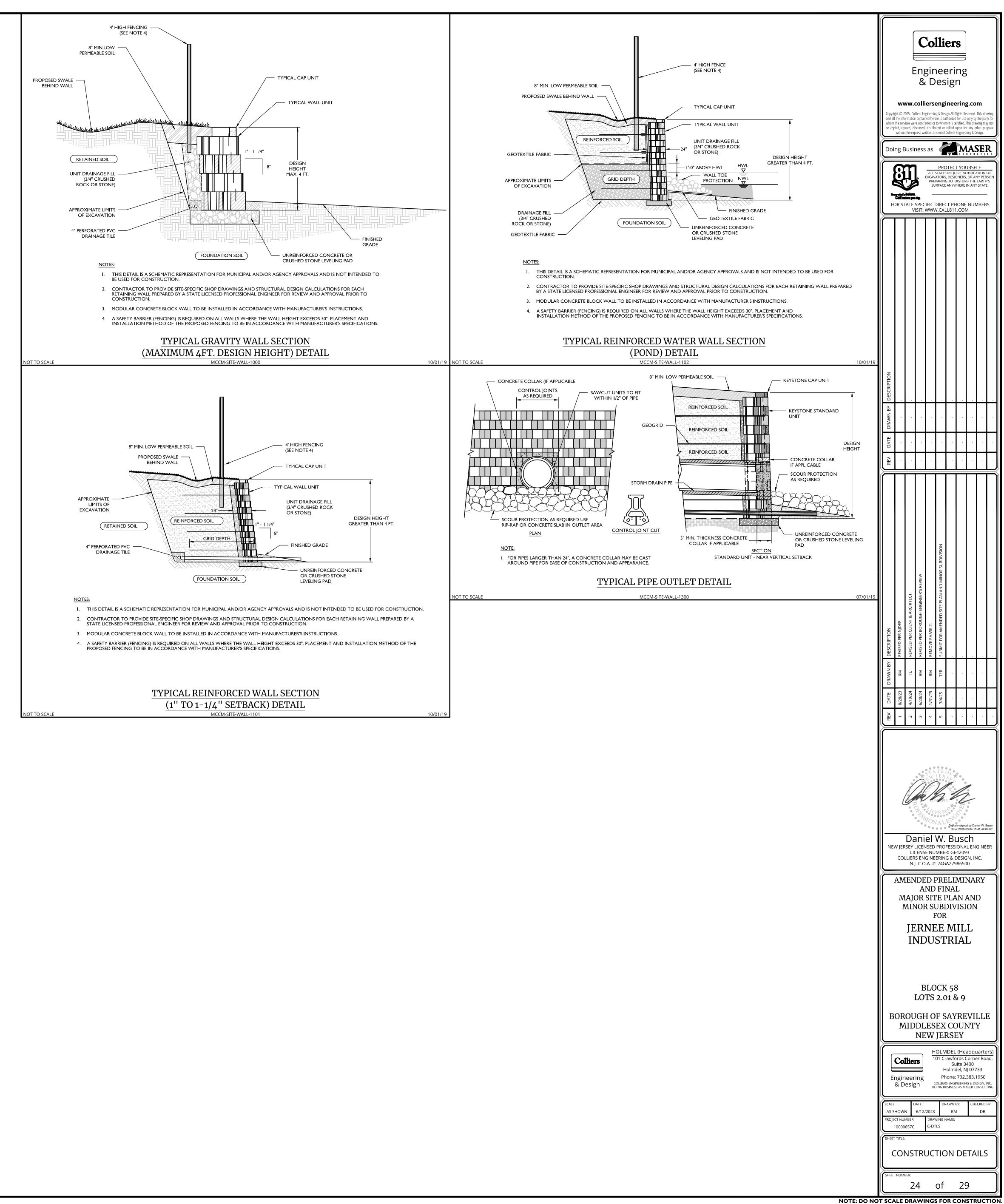
**INDUSTRIAL** 

MIDDLESEX COUNTY **NEW JERSEY** 

HOLMDEL (Headquarter) 101 Crawfords Corner Road Suite 3400 Holmdel, NJ 07733 Phone: 732.383.1950

COLLIERS ENGINEERING & DESIGN, INC DOING BUSINESS AS MASER CONSULTIN

CONSTRUCTION DETAILS



**Colliers** 

Engineering & Design

www.colliersengineering.com

om the services were contracted or to whom it is certified. This drawing may e copied, reused, disclosed, distributed or relied upon for any other purp without the express written consent of Colliers Engineering & Design.

PROTECT YOURSELF

ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Daniel W. Busch NEW JERSEY LICENSED PROFESSIONAL ENGINEER LICENSE NUMBER: GE42093 COLLIERS ENGINEERING & DESIGN, INC. N.J. C.O.A. #: 24GA27986500

AND FINAL MAJOR SITE PLAN AND MINOR SUBDIVISION JERNEE MILL INDUSTRIAL

> BLOCK 58 LOTS 2.01 & 9

BOROUGH OF SAYREVILLE MIDDLESEX COUNTY **NEW JERSEY** 

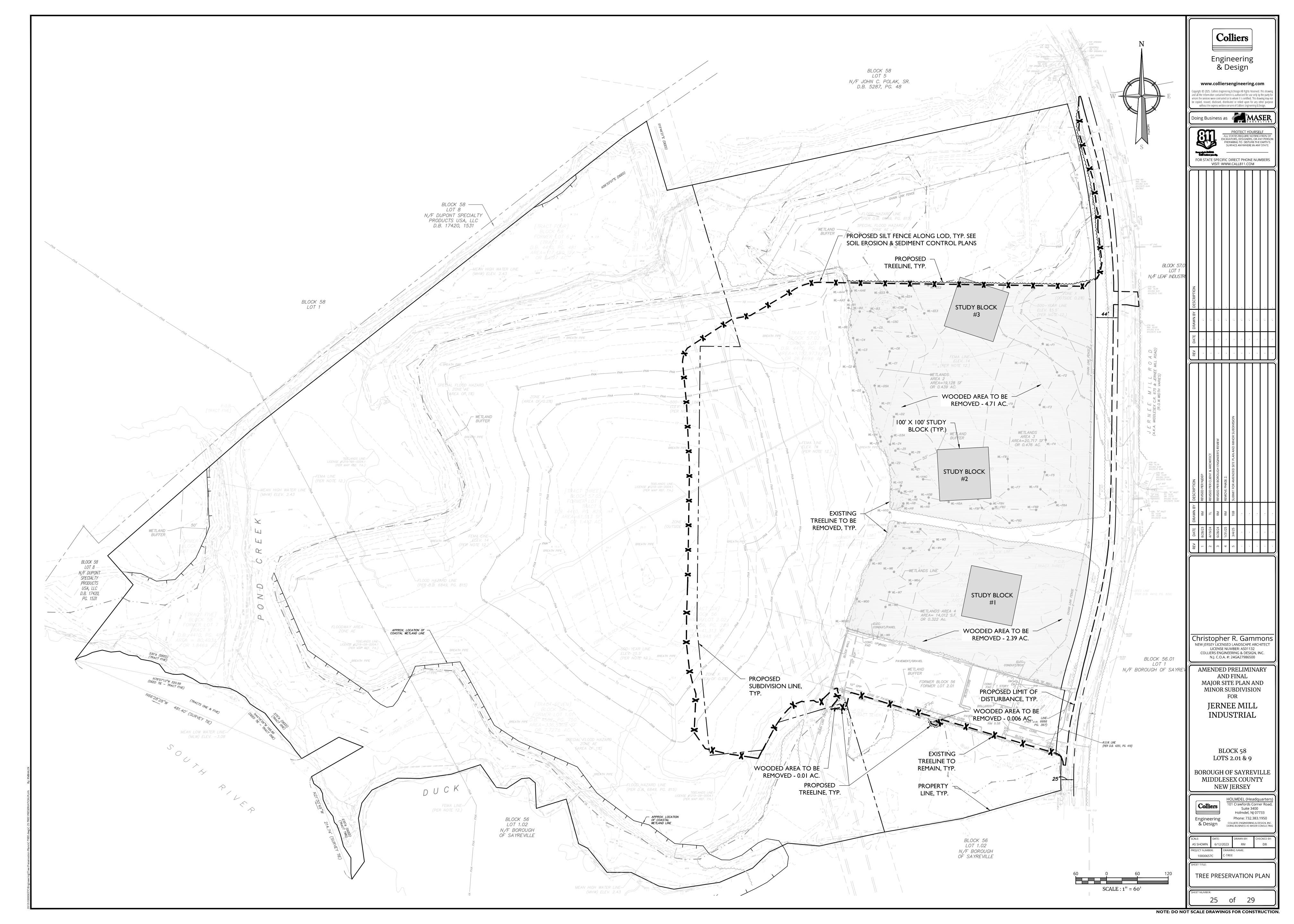
Colliers

Suite 3400 Holmdel, NJ 07733 Engineering Phone: 732.383.1950 & Design COLLIERS ENGINEERING & DESIGN, INC. DOING BUSINESS AS MASER CONSULTING

HOLMDEL (Headquarters)
101 Crawfords Corner Road,

CONSTRUCTION DETAILS

24 of 29



	STUDY BLOCK 1							
No.	Common Name	Botanical Name	Total Caliper	Condition	Comments			
1	Red Oak	Quercus Rubra	Inches 18	OK	Broken Branches, Co- Dominant Leader, Unbalanced Canopy			
2	Red Maple	Acer Rubrum	10	Poor	Vine Covered, Broken Branches			
3	Sweet Gum	Liquidambar Styraciflua	10	Poor	Contorted Form, Co- Dominant Leader			
5	White Oak Black Cherry	Quercus Alba Prunus Serotina	5	Poor Very Poor	Leaning, Contorted Form, Co-Dominant Leader, Broken Leader, Contorted Form, Co-Dominant Leader			
6	Red Maple	Acer Rubrum	4	OK	Unbalanced Canopy, Contorted Form			
7	Red Oak	Quercus Rubra	10	OK	Co-Dominant Leader, Unbalanced Canopy, Contorted Form			
8	Red Maple Black Gum	Acer Rubrum	7	OK OK	Contorted Form, Some Vines Vine Covered, Broken			
10	Black Gum	Nyssa Sylvatica Nyssa Sylvatica	4	Poor	Branches, Contorted Form Contorted Form, Vine			
11	Black Locust	Robinia	7	Poor	Covered, Broken Branches Contorted Form, Broken			
12	Sweet Gum	Pseudoacacia Liquidambar Styraciflua	6	Poor	Leader, Leaning Contorted Form, Unbalanced Canopy, Vine			
13	Black Cherry	Prunus Serotina	12	Poor	Covered Co-Dominant Leader,			
14	Sweet Gum	Liquidambar Styraciflua	7	Poor	Broken Branches Vine Covered, Broken Branches, Unbalanced			
15	Sweet Gum	Liquidambar	6	Poor	Canopy Unbalanced Canopy,			
16	Sweet Gum	Styraciflua Liquidambar Styraciflua	12	OK	Contorted Form  No Lower Branches, Unbalanced Canopy,			
17	Black Gum	Nyssa Sylvatica	7	Poor	Contorted Form Co-Dominant Leader, Contorted Form, Vine			
18	Black Gum	Nyssa Sylvatica	16	OK	Covered Co-Dominant Leader,			
19	Sweet Gum	Liquidambar	14	OK	Contorted Form, Unbalanced Canopy Broken Branches, Co-			
	Black Gum	Styraciflua			Dominant Leader, Contorted Form			
20	Black Gum Black Gum	Nyssa Sylvatica Nyssa Sylvatica	5	Poor Poor	Broken Leader, Co- Dominant Leader Contorted Form,			
22	Sweet Gum	Liquidambar	4	Poor	Unbalanced Canopy Contorted Form, Vine			
23	Sweet Gum	Styraciflua Liquidambar Styraciflua	6	Poor	Covered Vine Covered, Contorted Form			
24	Sweet Gum	Liquidambar Styraciflua	6	Poor	Sparse Canopy, No Lower Branches, Contorted Form			
25	Black Cherry	Prunus Serotina	7	Poor	Contorted Form, Unbalanced Canopy, Vine Covered			
26	Black Cherry Sweet Gum	Prunus Serotina Liquidambar	6	Poor Poor	Leaning, Co-Dominant Leader, Broken Branches Vine Covered, Contorted			
28	Black Locust	Styraciflua Robinia	4	Very Poor	Form, Broken Branches Leaning, Broken Branches,			
29	Black Locust Sweet Gum	Pseudoacacia Robinia Pseudoacacia Liquidambar	7	Very Poor OK	Broken Leader Vine Covered, Leaning, Co-Dominant Leader Broken Branches, No			
31	Black Cherry	Styraciflua Prunus Serotina	4	Very Poor	Lower Branches  Broken Leader, Contorted Form, Broken Branches			
32	Sweet Gum	Liquidambar Styraciflua	9	Poor	Vine Covered, No Lower Branches			
33	Black Locust  Red Maple	Robinia Pseudoacacia Acer Rubrum	12	Poor OK	Vine Covered, Broken Branches, Contorted Form Co-Dominant Leader,			
35	Red Maple	Acer Rubrum	ML 6, 5	ОК	Broken Branches Co-Dominant Leader, Contorted Form, Broken Branches			
36	Red Maple	Acer Rubrum	20	OK	Leaning, Co-Dominant Leader, Some Vines			
37	Red Maple	Acer Rubrum	7	OK	Contorted Form, Some Vines			
38	Sweet Gum  Black Cherry	Liquidambar Styraciflua Prunus Serotina	6	Poor Poor	Vine Covered, Contorted Form, Unbalanced Canopy Co-Dominant Leader, Vine Covered, Broken Branches			
40	Black Cherry Black Cherry	Prunus Serotina	ML 7, 6	Poor Poor	Co-Dominant Leader, Vine Covered, Broken Branches			
41	Red Maple	Prunus Serotina Acer Rubrum	7	Poor	Leaning, Contorted Form, Unbalanced Canopy Co-Dominant Leader,			
43	Sweet Gum	Liquidambar	ML 12,	Poor	Contorted Form, Vine Covered Vine Covered, Co-			
43	Black Gum	Styraciflua	12, 9	OK	Dominant Leader, Broken Branches Contorted Form, Co-			
		Nyssa Sylvatica	ML 12, 12, 9		Dominant Leader, No Lower Branches			
45	Black Gum Black Cherry	Nyssa Sylvatica  Prunus Serotina	6	OK Poor	Co-Dominant Leader, Contorted Form Contorted Form, Sparse			
47	Red Maple	Acer Rubrum	11	OK OK	Canopy Co-Dominant Leader,			
48	Red Maple	Acer Rubrum	10	OK	Contorted Form Co-Dominant Leader, Contorted Form,			
49	Black Locust	Robinia Pseudoacacia	10	Poor	Unbalanced Canopy Vine Covered, Leaning, Unbalanced Canopy			
50	Black Cherry	Prunus Serotina	5	Poor	Leaning, Contorted Form, Co-Dominant Leader			
51	Black Cherry	Prunus Serotina	9	Poor	Contorted Form, Broken Branches, Co-Dominant			
52	Black Locust	Robinia Pseudoacacia	8	Poor	Leader Contorted Form, Broken Leader, Broken Branches			
53	Red Maple	Acer Rubrum	10	Poor	Leaning, Co-Dominant Leader, Contorted Form			
54	Black Locust	Robinia Pseudoacacia	8	Poor	Unbalanced Canopy, Leaning, Contorted Form			

ML=Multi-Leader	

No.	Common	Botanical	Total	Condition	Comments
10.	Name	Name	Caliper	Condition	Comments
1	White Oak	Quercus Alba	7	Poor	Broken Branches, Sparse Canopy, Unbalanced
2	White Oak	Quercus Alba	6	Poor	Canopy Leaning, Unbalanced
3	Red Maple	Acer Rubrum	ML 10,	OK	Canopy Co-Dominant Leader,
4	White Oak	Quercus Alba	8, 6	OK	Unbalanced Canopy Broken Branches, No Lower Branches, Co-
5	Pin Oak White Oak	Quercus Palustris Quercus Alba	13 14	OK Poor	Dominant Leader Vine Covered Broken Branches, Co- Dominant Leader,
7	Pitch Pine	Pinus Rigida	14	Poor	Unbalanced Canopy No Lower Branches, Sparse Canopy
8	Pin Oak	Quercus Palustris	11	Poor	Broken Branches, Dead Branches
9	Pin Oak	Quercus Palustris	4	OK	Leaning, Unbalanced
10 11	Black Gum Red Maple	Nyssa Sylvatica Acer Rubrum	4 4	OK Poor	Canopy Broken Branches Contorted Form, Broken Branches, Unbalanced
12	Black Gum	Nyssa Sylvatica	6	OK	Canopy Broken Branches
13	Pin Oak	Quercus Palustris	10	Poor	Broken Branches, Vine Covered, Contorted Form
14	Pin Oak	Quercus Palustris	20	Poor	Broken Branches, Dead Branches, Contorted Form
15	Pin Oak	Quercus Palustris	7	Poor	Unbalanced Canopy, Broken Branches
16	White Oak	Quercus Alba	7	Poor	Contorted Form, Broken Branches, Co-Dominant Leader
17	White Oak	Quercus Alba	8	Very Poor	Co-Dominant Leader, Broken Branches, Unbalanced Canopy
18	Sweet Gum	Liquidambar Styraciflua	9	Poor	No Lower Branches, Unbalanced Canopy, Broken Branches
19	Sweet Gum	Liquidambar Styraciflua	4	OK	Leaning, Contorted Form
20	White Oak	Quercus Alba	7	OK	Contorted Form, Unbalanced Canopy, No Lower Branches
21	Pin Oak	Quercus Palustris	10	OK	Contorted Form, Unbalanced Canopy
22	Black Gum	Nyssa Sylvatica	5	Poor	Leaning, Contorted Form, Unbalanced Canopy
23	Black Gum	Nyssa Sylvatica	14	OK	No Lower Branches, Broken Branches
24	Sweet Gum	Liquidambar Styraciflua	7	OK	No Lower Branches, Broken Branches
25	Red Maple	Acer Rubrum	5	OK	Co-Dominant Leader, Unbalanced Canopy
26 27	Scarlet Oak Scarlet Oak	Quercus Coccinea Quercus Coccinea	7 10	OK OK	Broken Branches No Lower Branches, Broken Branches,
28	Sweet Gum	Liquidambar	7	OK	Unbalanced Canopy No Lower Branches,
29	Red Maple	Styraciflua Acer Rubrum	6	OK	Unbalanced Canopy Contorted Form,
30	Red Maple	Acer Rubrum	5	Poor	Unbalanced Canopy  Co-Dominant Leader, Leaning, Contorted Form, Unbalanced Canopy
31	Scarlet Oak	Quercus Coccinea	10	OK	Vine Covered, No Lower Branches
32	Sweet Gum	Liquidambar Styraciflua	5	Poor	Contorted Form, Unbalanced Canopy,
33	Pin Oak	Quercus Palustris	7	Poor	Broken Branches Co-Dominant Leader, Leaning, Unbalanced
34	White Oak	Quercus Alba	6	Poor	Canopy Co-Dominant Leader,
35	White Oak	Quercus Alba	11	Poor	Broken Branches Broken Branches, Co- Dominant Leader,
36	White Birch	Betula Papyrifera	5	Very Poor	Unbalanced Canopy Leaning, Broken Leader,
37	Pin Oak	Quercus Palustris	5	Poor	Co-Dominant Leader Leaning, Contorted Form,
38	Pin Oak	Quercus Palustris Liquidambar	6 7	Poor	Unbalanced Canopy Unbalanced Canopy
39	Sweet Gum	Styraciflua	ŕ	Poor	No Lower Branches, Unbalanced Canopy, Sparse Canopy
40	Red Maple Red Maple	Acer Rubrum  Acer Rubrum	6	OK OK	Co-Dominant Leader, Unbalanced Canopy Co-Dominant Leader, No
42	Red Maple	Acer Rubrum	10	OK	Lower Branches, Unbalanced Canopy Co-Dominant Leader, Contented Form
43	Red Maple	Acer Rubrum	4	Poor	Contorted Form, Unbalanced Canopy Leaning, Contorted Form,
44	Scarlet Oak	Quercus Coccinea	13	Very Poor	Unbalanced Canopy Co-Dominant Leader, Broken Branches, Dead
45	Scarlet Oak	Quercus Coccinea	7	Poor	Branches Leaning, Contorted Form,
46	Red Maple	Acer Rubrum	8	Poor	Unbalanced Canopy Unbalanced Canopy, Co- Dominant Leader,
47	White Oak	Quercus Alba	4	Poor	Contorted Form Co-Dominant Leader, Contorted Form
48	Black Gum	Nyssa Sylvatica	4	Poor	Contorted Form, No Lower Branches, Leaning
49	White Oak	Quercus Alba	5	Poor	Contorted Form, Broken Branches
50	Hickory	Carya	5	OK	Leaning, Unbalanced Canopy
51	Pin Oak	Quercus Palustris	19	OK	Contorted Form, Broken Branches
52	White Birch	Betula Papyrifera	4	Poor	Leaning, Broken Branches, Contorted Form
53	Black Gum	Nyssa Sylvatica	4	Poor	Leaning, Contorted Form, Sparse Canopy
54	Sweet Gum	Liquidambar Styraciflua	4	Poor	Contorted Form, No Lower Branches, Unbalanced
55	White Oak	Quercus Alba	5	Poor	Canopy Unbalanced Canopy, Co- Dominant Leader,
		O A11	11	OK	Contorted Form  No Lower Branches,
56	White Oak White Oak	Quercus Alba  Quercus Alba	ML 9, 9		Unbalanced Canopy No Lower Branches,

ML=Multi-Leader

#### STUDY BLOCK 3 STUDY BLOCK 3 (CONT.)

Comments

No Lower Branches, Co-

No Lower Branches, Sparse

Co-Dominant Leader, No Lower Branches,

Dominant Leader, Jnbalanced Canopy

Canopy, Unbalanced

Jnbalanced Canopy

Co-Dominant Leader,

Contorted Form, Broken Leader, Unbalanced

Jnbalanced Canopy

Contorted Form, Sparse

No Lower Branches, Co-

Dominant Leader, Sparse

No Lower Branches, Co-

Dominant Leader

Leaning, Unbalanced

No Lower Branches,

Leaning, Unbalanced

Canopy, Contorted Form

Leaning, Contorted Form, Jnbalanced Canopy

Open Wounds, Contorted

Broken Branches,

Unbalanced Canopy

Broken Branches, No

Leaning, Unbalanced

Contorted Form, Co-Dominant Leader, Jnbalanced Canopy

Unbalanced Canopy,

Broken Leader, Contorted

No Lower Branches, Co-

Dominant Leader, Sparse

Co-Dominant Leader, Unbalanced Canopy, Contorted Form

Contorted Form, Co-Dominant Leader, Sparse

Sucker Growth, Sparse Canopy, Unbalanced

Contorted Form, Leaning, No Lower Branches

Sucker Growth, Sparse Canopy, No Lower

Leaning, Contorted Form, Dead Branches

No Lower Branches, Co-Dominant Leader, Broken

No Lower Branches, Sparse Canopy, Unbalanced

No Lower Branches, Sparse Canopy, Broken Branches

Unbalanced Canopy,

Sucker Growth

Broken Branches, Unbalanced Canopy, No Lower Branches

Contorted Form, Jnbalanced Canopy

No Lower Branches,

Leaning, Unbalanced

Jnbalanced Canopy, No Lower Branches No Lower Branches,

Contorted Form, No Lower

Contorted Form, Jnbalanced Canopy

Broken Branches,

Contorted Form,

Jnbalanced Canopy

Branches, Unbalanced

Open Wounds, Contorted

Leaning, Contorted Form,

Broken Branches

Jnbalanced Canopy

Contorted Form, Co-

Contorted Form, Sucker

Dominant Leader

Sucker Growth, Open Wounds, Unbalanced

Form, Unbalanced Canopy

Leaning, Sparse Canopy

Contorted Form, No Lower

Contorted Form, Open

Co-Dominant Leader, Contorted Form

Co-Dominant Leader, Contorted Form

Co-Dominant Leader,

Open Wounds, Co-Dominant Leader, Contorted Form

Contorted Form, Co-

Co-Dominant Leader,

Canopy

Contorted Form, Sparse

No Lower Branches, Co-Dominant Leader

Contorted Form, No Lower

Branches, Co-Dominant

Contorted Form, Co-

Open Wounds, Sucker Growth, No Lower

Open Wounds, Contorted

Contorted Form, Sparse

No Lower Branches, Sparse

No Lower Branches, Dead

No Lower Branches, Co-Dominant Leader,

Unbalanced Canopy

Dead Branches, Sucker

Co-Dominant Leader,

Unbalanced Canopy, Sucker Growth

Co-Dominant Leader,

Unbalanced Canopy, Sucker Growth

Sucker Growth, Sparse

Growth

Canopy

Contorted Form, Jnbalanced Canopy

Dominant Leader, Open

Dominant Leader, Sparse

Growth

Open Wounds, Contorted

Contorted Form,

Leaning, Unbalanced Canopy, Broken Branches

Canopy

Canopy, Sucker Growth

Form, Co-Dominant Leader

Lower Branches, Contorted

No Lower Branches,

Dominant Leader, Jnbalanced Canopy

Contorted Form. Jnbalanced Canopy

Contorted Form,

No Lower Branches, Co-

Common

Name

Red Maple

2 Red Maple

3 Red Maple

4 Red Maple

5 Red Maple

6 Red Maple

Black Gum

8 Sweet Gum

9 Sweet Gum

) Sweet Gum

Sweet Gum

2 Sweet Gum

13 Black Gum

14 Black Gum

15 White Oak

16 Scarlet Oak

17 | Scarlet Oak

18 Red Maple

19 Red Maple

20 Red Maple

21 Red Maple

22 Red Maple

23 Red Maple

24 Red Maple

25 Red Maple

26 Red Maple

7 Red Oak

28 White Oak

30 Pitch Pine

1 Scarlet Oak

32 Black Gum

33 Black Gum

34 Sweet Gum

35 White Oak

36 Sweet Gum

38 Sweet Gum

39 Sweet Gum

40 Sweet Gum

41 Sweet Gum

42 Sweet Gum

43 Sweet Gum

44 Sweet Gum

45 Red Maple

46 Red Maple

47 Red Maple

48 Red Maple

50 Black Gum

51 Sweet Gum

52 Red Maple

53 Black Gum

54 Black Gum

55 Black Gum

56 Black Gum

57 Black Gum

58 Black Gum

59 Black Gum

61 White Oak

62 White Oak

63 Red Maple

64 Red Maple

65 Red Maple

66 Black Gum

67 Black Gum

68 Black Gum

Botanical

Caliper

Name

Acer Rubrum

Acer Rubrum

Acer Rubrum

Acer Rubrum

Acer Rubrum

Acer Rubrum

Nyssa Sylvatica

Styraciflua

Styraciflua

Styraciflua

Styraciflua

Styraciflua

Nyssa Sylvatica

Nyssa Sylvatica

Quercus Coccinea

Quercus Coccinea

Acer Rubrum

Quercus Alba

Pinus Rigida

Quercus Coccinea

Nyssa Sylvatica

Nyssa Sylvatica

Styraciflua

Styraciflua

Styraciflua

Styraciflua

Styraciflua

Styraciflua

Styraciflua

Styraciflua

Styraciflua

Liquidambar Styraciflua

Acer Rubrum

Acer Rubrum

Acer Rubrum

Acer Rubrum

Nyssa Sylvatica

Styraciflua

Acer Rubrum

Nyssa Sylvatica

8, 8, 5

Liquidambar

ML 5, 7 OK

ML 6, 8 Poor

ML 8, 7 OK

69	Black Gum	Nyssa Sylvatica	10	OK	Co-Dominant Leader,
					Unbalanced Canopy, No
					Lower Branches
70	Black Gum	Nyssa Sylvatica	7	OK	Contorted Form, Sparse
					Canopy
71	Red Maple	Acer Rubrum	7	Poor	Dead Branches, No Lower
					Branches, Co-Dominant
					Leader
72	Red Maple	Acer Rubrum	15	OK	Co-Dominant Leader, No
					Lower Branches
73	Black Gum	Nyssa Sylvatica	13	Poor	Co-Dominant Leader, No
					Lower Branches
74	Black Gum	Nyssa Sylvatica	11	Poor	Contorted Form, Co-
					Dominant Leader,
					Unbalanced Canopy
75	Red Maple	Acer Rubrum	10	Poor	No Lower Branches,
					Unbalanced Canopy
76	Red Maple	Acer Rubrum	11	Poor	Co-Dominant Leader, No
					Lower Branches
77	Red Maple	Acer Rubrum	ML 8, 8	OK	Contorted Form, Broken
					Leader
78	White Oak	Quercus Alba	5	OK	Unbalanced Canopy, Vine
					Covered

ML=Multi-Leader

TREE REPLACEMENT CALCULATIONS

Study Block Size = 100' x 100' = 10,000 SF

EXISTING WOODLAND AREA = 13.80 AC

PROPOSOSED WOODLAND REMOVAL = 7.12 AC

PERCENTAGE OF WOODLAND REMOVAL = 52%

TREES BETWEEN FOUR (4") AND SIXTEEN (16") INCHES DIAMETER AT BREAST HEIGHT (DBH)

STUDY BLOCK 1 = 47 TREES = 205 TREES PER ACRE STUDY BLOCK 2 = 54 TREES = 235 TREES PER ACRE STUDY BLOCK 3 = 69 TREES = 301 TREES PER ACRE AVERAGE TREES PER ACRE = 247 4"-16" DBH TREES PER ACRE

PERCENTAGE OF TREES TO BE REPLACED PER ORDINANCE SECTION 30-7 = 40%

TREE REMOVAL = 247 TREES PER ACRE \* 7.12 ACRES REMOVED = 1,759 TREES REMOVED

TREE REPLACEMENT = 1,759 TREES REMOVED \* 40% = **704 REPLACEMENT TREES** 

TREES OF SIXTEEN (16") INCHES OR GREATER DIAMETER AT BREAST HEIGHT (DBH)

	LESS THAN 18"	LESS THAN 21"	LESS THAN 24"	LESS THAN 27"	LESS THAN 30"	LESS THAN 33"	LESS THAN 36"	LESS THAN 39"	LESS THAN 41"	41" AND GREATER
STUDY BLOCK 1	2	2	1	0	0	0	2	0	0	0
STUDY BLOCK 2	0	3	0	1	0	0	0	0	0	0
STUDY BLOCK 3	3	1	1	0	0	2	1	0	1	0
AVG. PER STUDY BLOCK	1.67	2.00	0.67	0.33	0.00	0.67	1.00	0.00	0.33	0.00
AVERAGE PER ACRE	7.26	8.712	2.904	1.452	0	2.904	4.356	0	1.452	0
TOTAL REMOVED	52	62	21	10	0	21	31	0	10	0
REPLACEMENT TREES REQ.	3	4	5	6	7	8	10	12	14	15
TOTAL TREES REQ.	156	248	105	60	0	168	310	0	140	0

REPLACEMENT TREES REQUIRED (16" OR GREATER) = 1,187 REPLACEMENT TREES

SUBTOTAL TREES REQUIRED (FOR TREE PLOTS, 4"-16" & 16" AND GREATER COMBINED) = 704 + 1,187 = 1,891 SUBTOTAL TREES

INDUSTRIAL USE REQUIREMENT MULTIPLIER (FOR TREE PLOTS) = 15% MORE TREES = 1.15\*1,891 = **2,175 TREES** 

AIR POLLUTION TREES REQUIRED = ONE (1) TREE PER EVERY TWO (2) PARKING SPACES = 88 PARKING SPACES / 2 = 44 TREES

INDUSTRIAL USE REQUIREMENT MULTIPLIER (PARKING AREA AIR POLLUTION TREES) = 15% MORE TREES = 1.15\*44 = **51 TREES** 

TOTAL REPLACEMENT TREES REQUIRED = 2,175 (TREE PLOTS) + 51 (PARKING AREA AIR POLLUTION) = 2,226 REPLACEMENT TREES

TOTAL REPLACEMENT TREE PROVIDED = 241 TREES (91 SHADE TREES + 131 EVERGREEN TREES + 19 FLOWERING TREES, EXCLUDES 39 TREE PLANTINGS PROVIDED FOR OTHER LANDSCAPE DESIGN REQUIREMENTS; SEE LANDSCAPE PLAN) CONTRIBUTION TO THE BOROUGH TREE BANK REQUIRED FOR 1,985 TREES

**Colliers** 

Engineering & Design

www.colliersengineering.com opyright © 2025. Colliers Engineering & Design All Rights Reserved. This drawing

whom the services were contracted or to whom it is certified. This drawing may n e copied, reused, disclosed, distributed or relied upon for any other purp without the express written consent of Colliers Engineering & Design. Doing Business as

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS

VISIT: WWW.CALL811.COM

SCRIPTION										
DRAWN BY DESCRIPTION								•	•	
DATE										
REV										
DRAWN BY DESCRIPTION	REVISED PER NJDEP	REVISED PER CLIENT & ARCHITECT	REVISED PER BOROUGH ENGINEER'S REVIEW	REMOVE PHASE 2.	SUBMIT FOR AMENDED SITE PLAN AND MINOR SUBDIVISION					
	RM	TL	RM	RM	TEB					
DATE	8/28/23	4/19/24	6/28/24	1/31/25	3/4/25					·
REV	-	2	3	4	5	·	·			

Christopher R. Gammons NEW JERSEY LICENSED LANDSCAPE ARCHITECT LICENSE NUMBER: AS01132 COLLIERS ENGINEERING & DESIGN, INC. N.J. C.O.A. #: 24GA27986500

AMENDED PRELIMINARY

AND FINAL MAJOR SITE PLAN AND MINOR SUBDIVISION JERNEE MILL INDUSTRIAL

> BLOCK 58 LOTS 2.01 & 9

BOROUGH OF SAYREVILLE MIDDLESEX COUNTY **NEW JERSEY** 

HOLMDEL (Headquarters) 101 Crawfords Corner Road, Suite 3400 Holmdel, NJ 07733 Engineering Phone: 732.383.1950 & Design COLLIERS ENGINEERING & DESIGN, INC. DOING BUSINESS AS MASER CONSULTING

10000657C

TREE PRESERVATION PLAN

26 of 29

