PRELIMINARY AND FINAL SITE PLAN APPLICATION

KING ARTHUR COURT WAREHOUSE

TOWNSHIP OF NORTH BRUNSWICK, MIDDLESEX COUNTY, NEW JERSEY

BLOCK 252, LOT 5.03

PROJECT CONTACTS

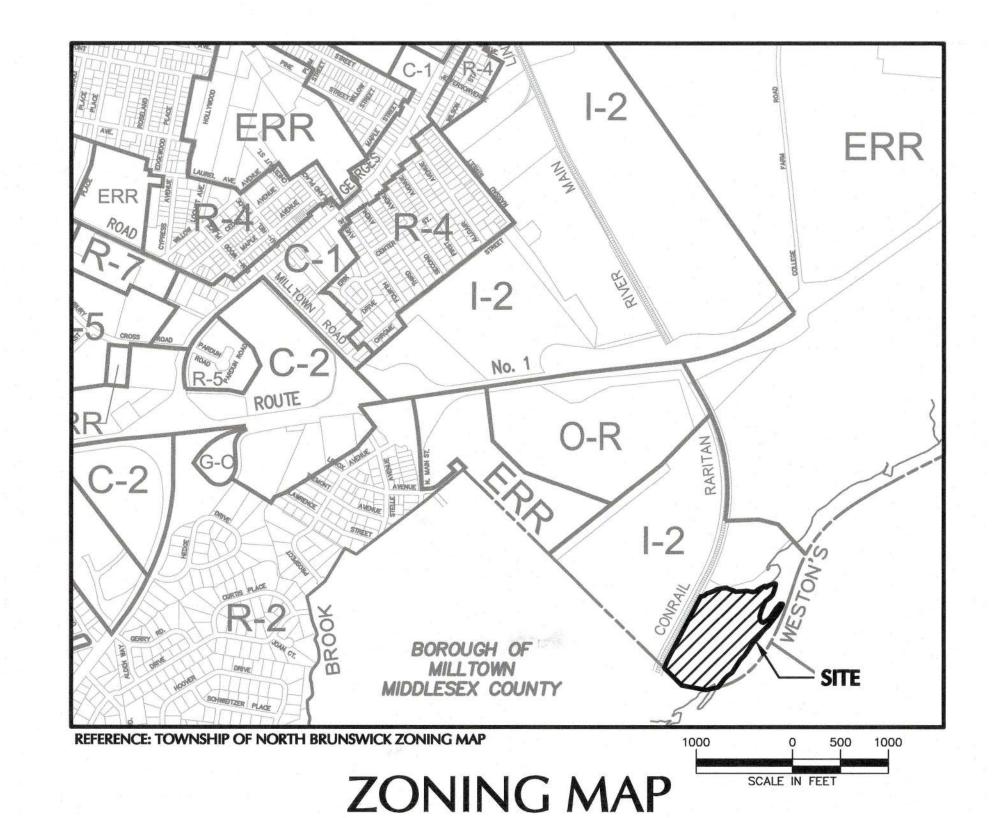
OWNER/APPLICANT: NORTH BRUNSWICK II, LLC 195 MORRISTOWN ROAD **BASKING RIDGE, NI 07920**

IRVINE, CA 92618

CIVIL ENGINEER/SURVEYOR:

LANGAN 300 KIMBALL DRIVE

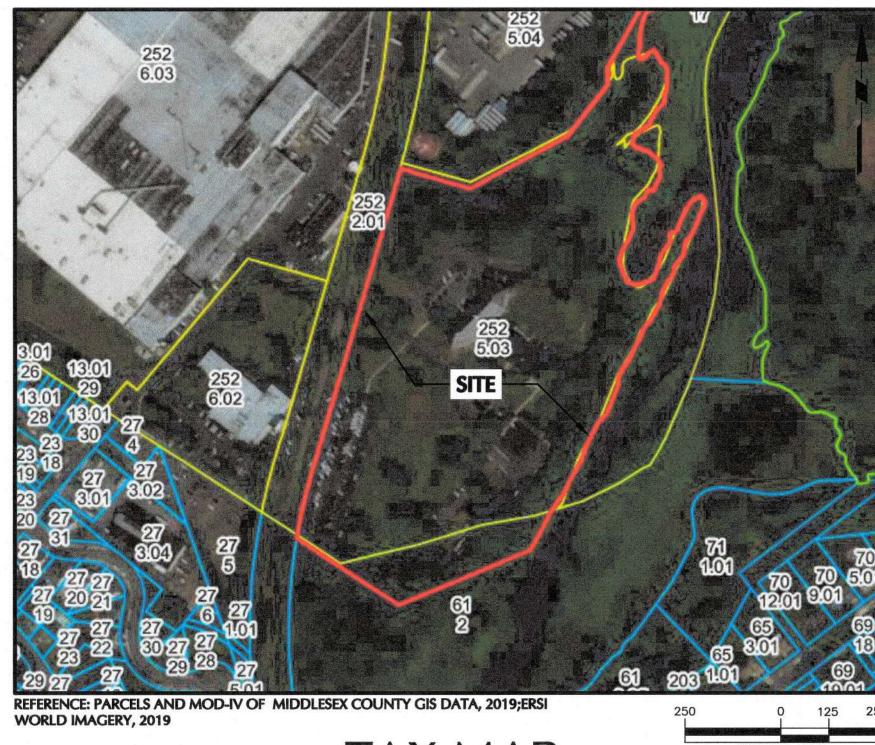
PARSIPPANY, NJ 07054 (973) 560-4900



SCALE: 1"=1000'

REFERENCE: USGS TOPOGRAPHIC QUADRANGLE NEW BRUNSWICK KEY MAP

SCALE: 1"=1000"



TAX MAP

SCALE: 1"=500'

GENERAL NOTES

- BOUNDARY, TOPOGRAPHIC AND UTILITY INFORMATION SHOWN HEREON ARE BASED ON "BOUNDARY AND TOPOGRAPHIC SURVEY", PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES INC., DATED 15 DECEMBER 2022.
- 2. THE OWNER AND CONTRACTOR ARE HEREBY NOTIFIED THAT THIS INFORMATION IS NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. THE CONTRACTOR SHALL REVIEW ALL INFORMATION TO HIS SATISFACTION PRIOR TO THE EXECUTION OF CONTRACTS OR COMMENCING WORK. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER OF RECORD.
- 4. ELEVATIONS SHOWN ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- 5. LANGAN ENGINEERING & ENVIRONMENTAL SERVICES, INC, WETLAND SCIENTISTS DELINEATED WETLANDS AND THE TOP OF BANK ONSITE ON 03/30/2020 AND

3. THE HORIZONTAL DATUM SHOWN IS REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83) NEW JERSEY STATE PLANE, U.S. FOOT.

- 6. ALL PROPOSED CONSTRUCTION WORK SHALL NOT DISTURB THE TOP OF BANK WITHIN 25 FEET OF THE RIPARIAN ZONE.
- 7. CONTRACTOR SHALL CONTRACT OUT SOLID WASTE DISPOSAL WITH PRIVATE CONTRACTOR. 8. ALL CONSTRUCTION AND MATERIALS SHOWN HEREON SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE TOWN OF NORTH BRUNSWICK EXCEPT WHERE NOTED.
- EXISTING UTILITIES: A. OWNER AND CONTRACTOR ARE HERBY NOTIFIED THAT EXISTING UTILITIES ARE PRESENT IN THE VICINITY OF THE PROJECT. 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.
 - THE CONTRACTOR SHALL NOTIFY AND COOPERATE WITH ALL UTILITIES ALONG THE LINE OF THE PROPOSED WORK THREE (3) WORKING DAYS PRIOR TO CONSTRUCTION. CONTRACTORS SHALL NOT PROCEED WITH WORK IN STREETS WHERE UTILITIES HAVE NOT BEEN LOCATED. C. WHERE EXISTING UTILITIES ARE TO BE CROSSED BY PROPOSED CONSTRUCTION, TEST PITS SHALL BE DUG BY THE CONTRACTOR PRIOR TO CONSTRUCTION TO ASCERTAIN EXISTING INVERTS, MATERIALS AND SIZES, SUCH THAT CONFLICTS MAY BE AVOIDED. THESE TEST PITS SHALL BE XCAVATED AT THE START OF CONSTRUCTION, PRIOR TO THE CONSTRUCTION OF ANY UTILITIES. THE CONTRACTOR WILL NOTIFY LANGAN 48 HOURS PRIOR
- 10. LOCATION AND SIZE OF WATER, ELECTRIC, AND TELEPHONE SERVICES INTO BUILDING ARE APPROXIMATE AND MUST BE COORDINATED WITH RESPECTIVE UTILITY COMPANIES. 11. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT REQUIRED PERMITS AND APPROVALS HAVE BEEN

TO THE TEST PIT EXCAVATION AND WILL PROVIDE LANGAN WITH THE RESULTS OF THESE EXPLORATIONS WITHIN 24 HOURS OF THEIR COMPLETION.

- OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER 12. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS, AND THE REQUIREMENTS AND STANDARDS OF APPLICABLE
- ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE
- ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. 14. THESE PLANS REPRESENT THE OVERALL SITEWORK IMPROVEMENTS REQUIRED FOR PROJECT CONSTRUCTION. THE CONTRACTOR SHALL FURNISH, INSTALL TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION; AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITEWORK CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF
- THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER AND ENGINEER MAKE NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY INFORMATION THAT WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL: MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS; CORRELATE CONDITIONS WITH THE DRAWINGS; AND, RESOLVE ANY POSSIBLE CONSTRUCTION CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL PERFORM ADDITIONAL TOPOGRAPHIC SURVEYS HE/SHE DEEMS NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DETERMINED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR
- 16. THE CONTRACTOR SHALL, WHEN HE/SHE DEEMS NECESSARY, PROVIDE A WRITTEN REQUEST FOR INFORMATION (RFI) TO THE OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM. THE (RFI) SHALL BE IN A FORM ACCEPTABLE TO OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF THREE WORK DAYS FOR A WRITTEN REPLY. RFIS SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITEWORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR DEPICTED ON THE PLANS.
- 17. INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GRATE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUFFICIENTLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO BID. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO BID.
- 18. THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW, AND ADHERE TO ALL
- 19. CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ALL CONSTRUCTION STAKEOUT FOR THIS PROJECT MUST BE COMPLETED FROM THE SITE SPECIFIC SURVEY CONTROL (HORIZONTAL AND VERTICAL) UPON WHICH THE DESIGN IS BASED. THE CONTRACTOR SHOULD NOT RELY ON OR RE-ESTABLISH SURVEY CONTROL BY GPS OR OTHER METHODS FOR USE IN CONSTRUCTION STAKEOUT OR ANY OTHER PURPOSE FOR THIS PROJECT. ANY DISCREPANCIES BETWEEN THE EXISTING HORIZONTAL OR VERTICAL DATA SHOWN ON THESE DRAWINGS AND THAT ENCOUNTERED IN THE FIELD MUST BE REPORTED TO THE DESIGN TEAM PRIOR TO CONSTRUCTION FOR RESOLUTION.
- 20. CONTRACTOR SHALL BACKFILL OR PLACE STEEL PLATES ON ANY OPEN TRENCH AT THE END OF EACH WORKDAY.

CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.

ZONING STATISTICS NORTH BRUNSWICK, NJ INDUSTRIAL DISTRICT (I-2) ZONE

	REQUIRED ¹	EXISTING	PROPOSED	COMPLIES
BULK REGULATIONS	-			10
MIN. LOT AREA	3 AC	15.56 AC	15.56 AC	YES
MIN. LOT WIDTH	350 FT	990.0 FT	990.0 FT	YES
MIN. LOT DEPTH	350 FT	592.4 FT	592.4 FT	YES
MAX. LOT COVERAGE (PRINCIPAL BUILDING)	40%	3.0%	24.1%	YES
MAX. IMPERVIOUS COVERAGE	80%	25.8%	50.7%	YES
MOTOR VEHICLE SURFACE AREA	N/A	3.3 AC	3.8 AC	_
MAX. HEIGHT (PRINCIPAL BUILDING)	3 STORIES/40 FT	N/A	43.8 FT ²	NO
FRONT YARD SETBACK	60 FT	220.2 FT	98.3 FT	YES
SIDE YARD SETBACK (PRINCIPAL/ACCESSORY)	40 FT/20 FT	229.6 FT/363.4 FT	158.7 FT/363.4 FT	YES
REAR YARD SETBACK (PRINCIPAL/ACCESSORY)	75 FT/20 FT	122.8 FT/0 FT	195.11 FT/0 FT	YES
PERMITTED USE	WAREHOUSES	MEDICAL, ADMINISTRATIVE & GENERAL OFFICES	WAREHOUSES	YES
PARKING REQUIREMENTS				
MIN. CAR PARKING STALL DIMENSION	9 FT x 18 FT	9 FT x 18 FT	9 FT x 18 FT	YES
CAR PARKING SPACES	WAREHOUSES = 1 SPACE PER 2,500 SF OF GFA: 1 SPACE X (155,610 SF/2,500 SF) = 63 SPACES OFFICE ³ = 1 SPACE PER 250 SF OF GFA PLUS 1 VISITOR SPACE PER 5 EXECUTIVE OFFICES: 1 SPACE X (8,000 SF / 250 SF) + 1 SPACE X (15 EXECUTIVE OFICE / 5)= 35 TOTAL SPACES REQUIRED = 98 SPACES	N/A	98 SPACES	YES
ADA ACCESSIBLE PARKING SPACES ⁴	4 SPACES	N/A	5 SPACES	YES
VIN. LOADING BERTH SIZE	12 FT x 35 FT	N/A	13.5 FT x 60 FT	YES
OADING SPACES	1 SPACE	0 SPACES	30 SPACES	YES

- 1. TOWNSHIP OF NORTH BRUNSWICK ZONING ORDINANCE §205-74 THROUGH § 205-76, PARKING AND LOADING §205-96 THROUGH §205-100.
- 2. BUILDING HEIGHT IS DEFINED AS THE MEAN HEIGHT OF THE BUILDING ROOF. THE MEDIAN HEIGHT OF THE ROOF IS CALCULATED TO BE (38.46+41.083)/2 + 4 = 43.77. WHERE THE AVERAGE EAVE IS ELEVATION 38.46, THE RIDGE IS ELEVATION 41.083, AND THE ADDITIONAL 4 FEET IS THE GRADE DIFFERENTIAL AT THE LOADING DOCK SIDE OF THE BUILDING.
- 3. THIS PROJECT IS SPECULATIVE AND TENANT OFFICE REQUIREMENTS MAY VARY. TOTAL OFFICE OPTIONS PROPOSED EQUAL 8,000 SF OF OFFICE.
- 4. ADA STANDARDS FOR ACCESSIBLE DESIGN TABLE 208.2.

		CIVIL SHEET INDEX
SHEET NUMBER	DRAWING NUMBER	DRAWING TITLE
1	CS001	COVER SHEET
2	CB101	OVERALL PROPERTY PLAN
3	CS101	SITE PLAN
4	CD101	DEMOLITION PLAN
5	CG101	GRADING PLAN
6	CG102	DRAINAGE PLAN
7	CG201	STORM PROFILES 1
8	CG202	STORM PROFILES 2
9	CU101	UTILITY PLAN
10	CE101	SOIL EROSION & SEDIMENT CONTROL PLAN
11	CE501	SOIL EROSION & SEDIMENT CONTROL PLAN DETAILS
12	KT100	OVERALL CIRCULATION PLAN
13	KT101	FIRE DEPARTMENT PLAN
14	KT102	VEHICLE CIRCULATION PLAN
15	LA101	LANDSCAPE PLAN
16	LA501	LANDSCAPE NOTES & DETAILS
17	LL101	LIGHTING PLAN
18	LL501	LIGHTING NOTES & DETAILS
19	CS501	SITE PLAN DETAILS 1
20	CS502	SITE PLAN DETAILS 2
21	CS502	SITE PLAN DETAILS 3
22	CS503	SITE PLAN DETAILS 4

2 7 2		SURVEY SHEET INDEX	
SHEET NUMBER	DRAWING NUMBER	DRAWING TITLE	
1	VT101	BOUNDARY AND TOPOGRAPHIC SURVEY	

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SIGNATURE	DANIEL I	MIOLA	DATE SIG
PROFESS	IONAL ENGI 24GE046		Lic. No.

PLANNING BOARD SUBMISSION

NJDEP APPLICATION

Description

REVISIONS

06/15/2023

06/01/2023

LANGAN
Langan Engineering and Environmental Services, Inc.

300 Kimball Drive Parsippany, NJ 07054

T: 973.560.4900 F: 973.560.4901 www.langan.com NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400

KING ARTHUR **COURT WAREHOUSE**

BLOCK No. 252, LOT No. 5.03 NORTH BRUNSWICK MIDDLESEX COUNTY

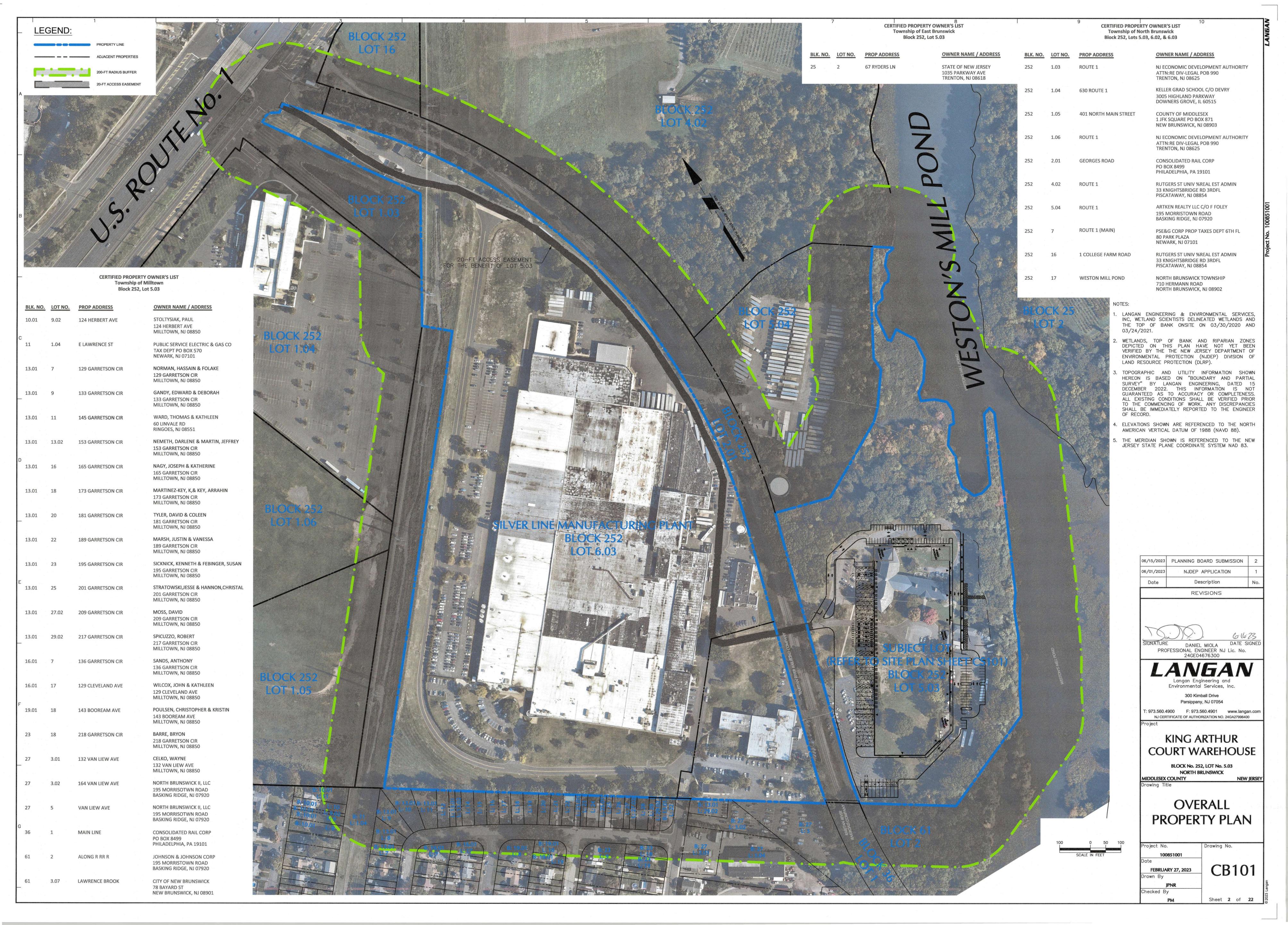
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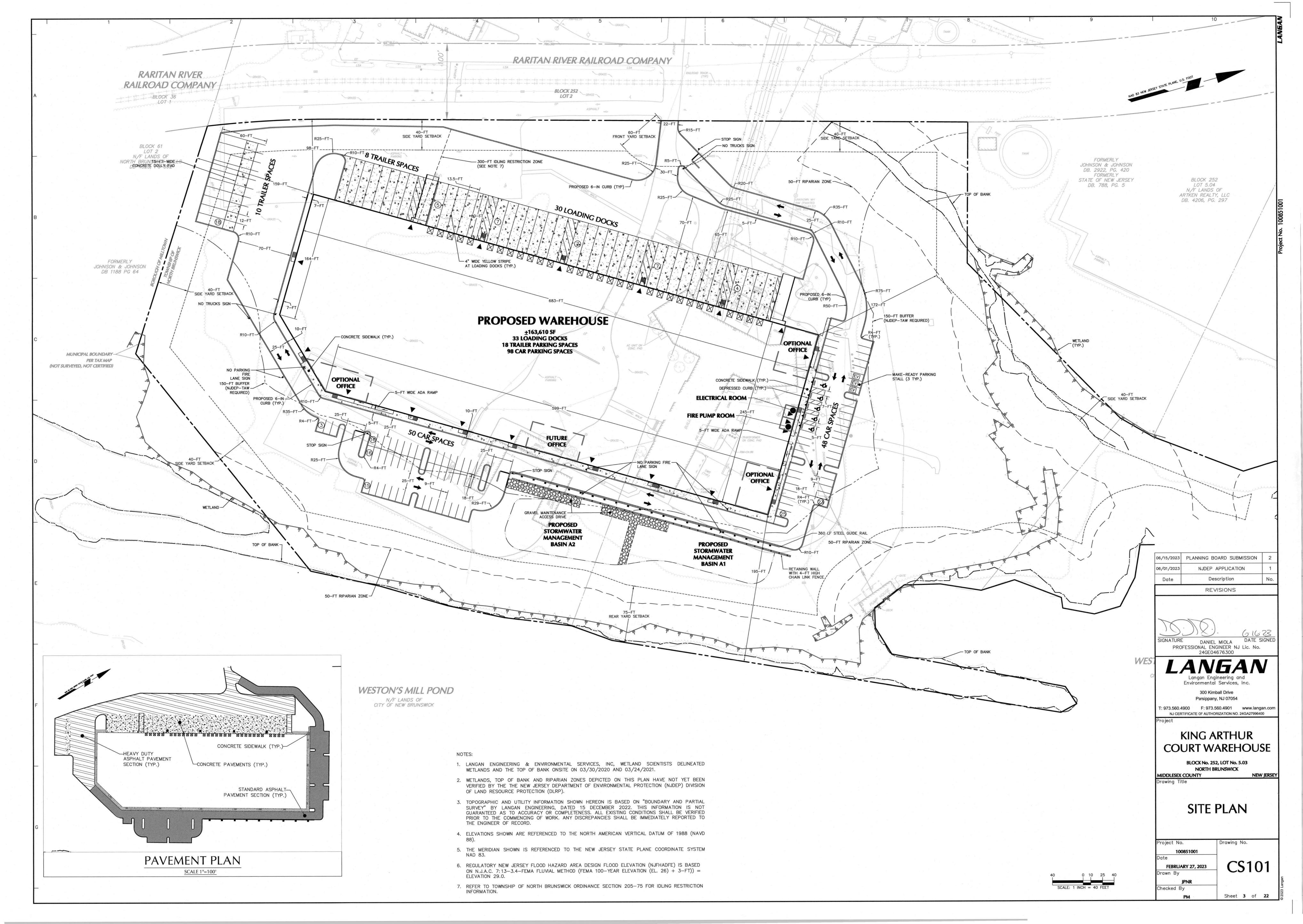
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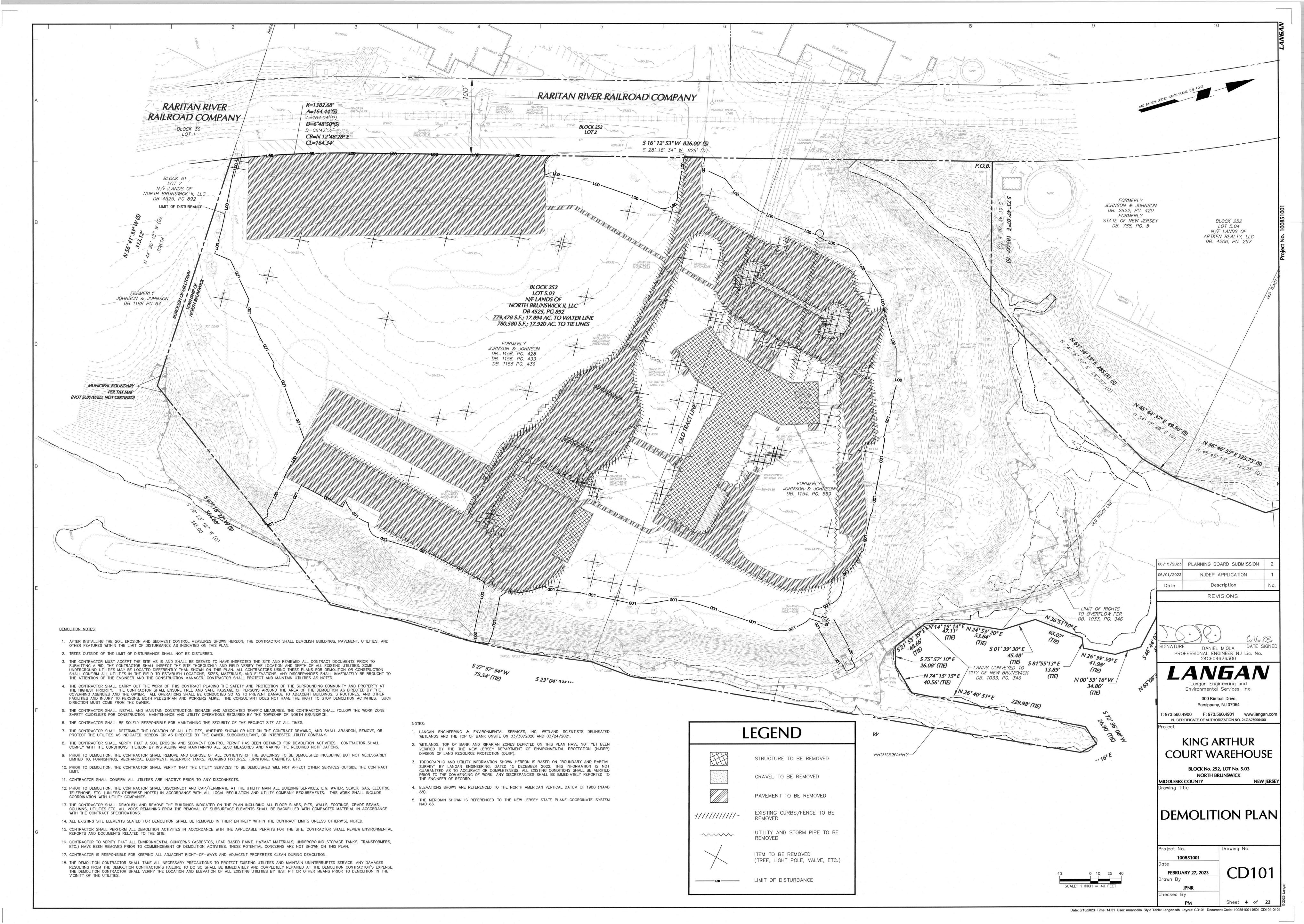
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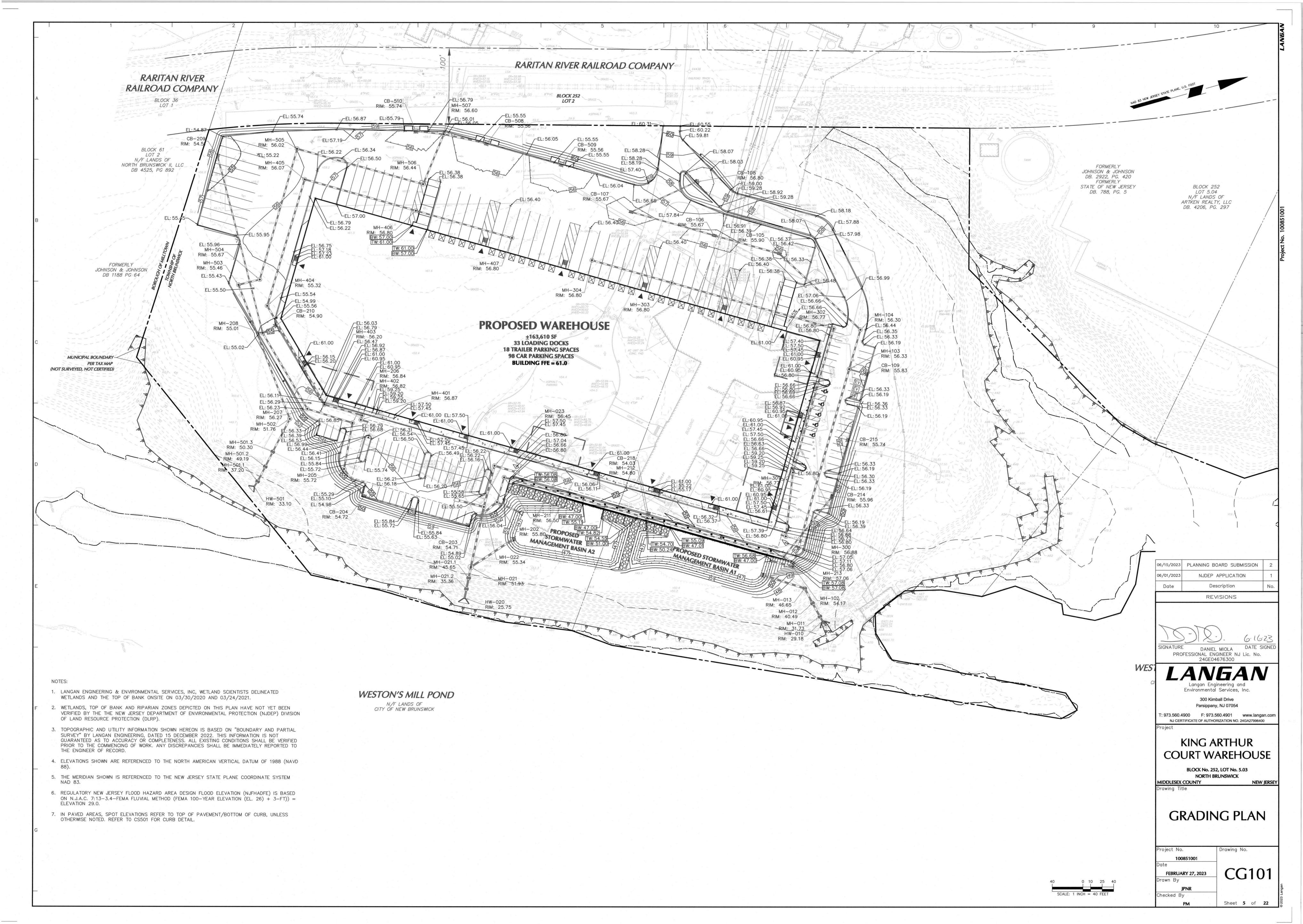
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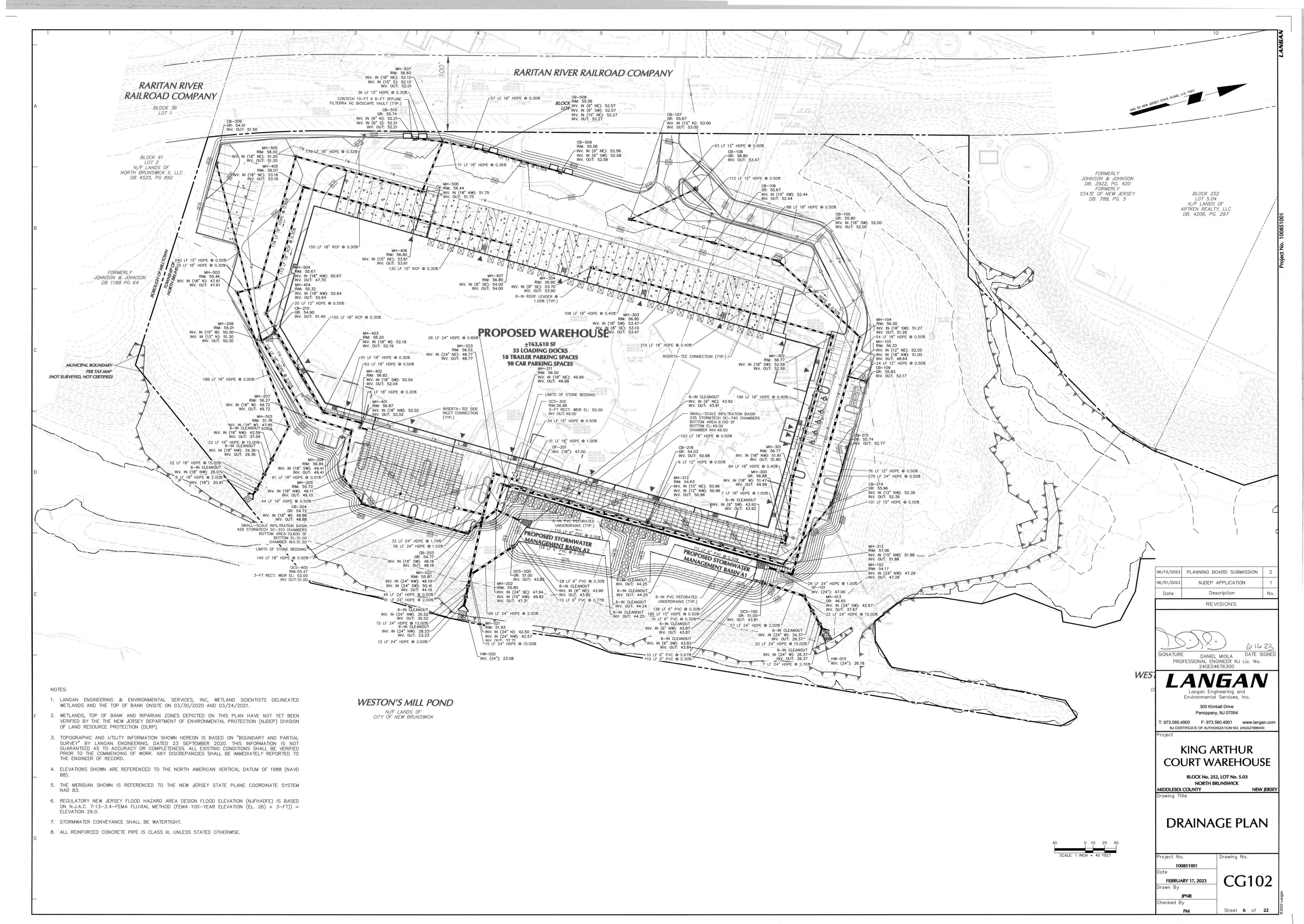
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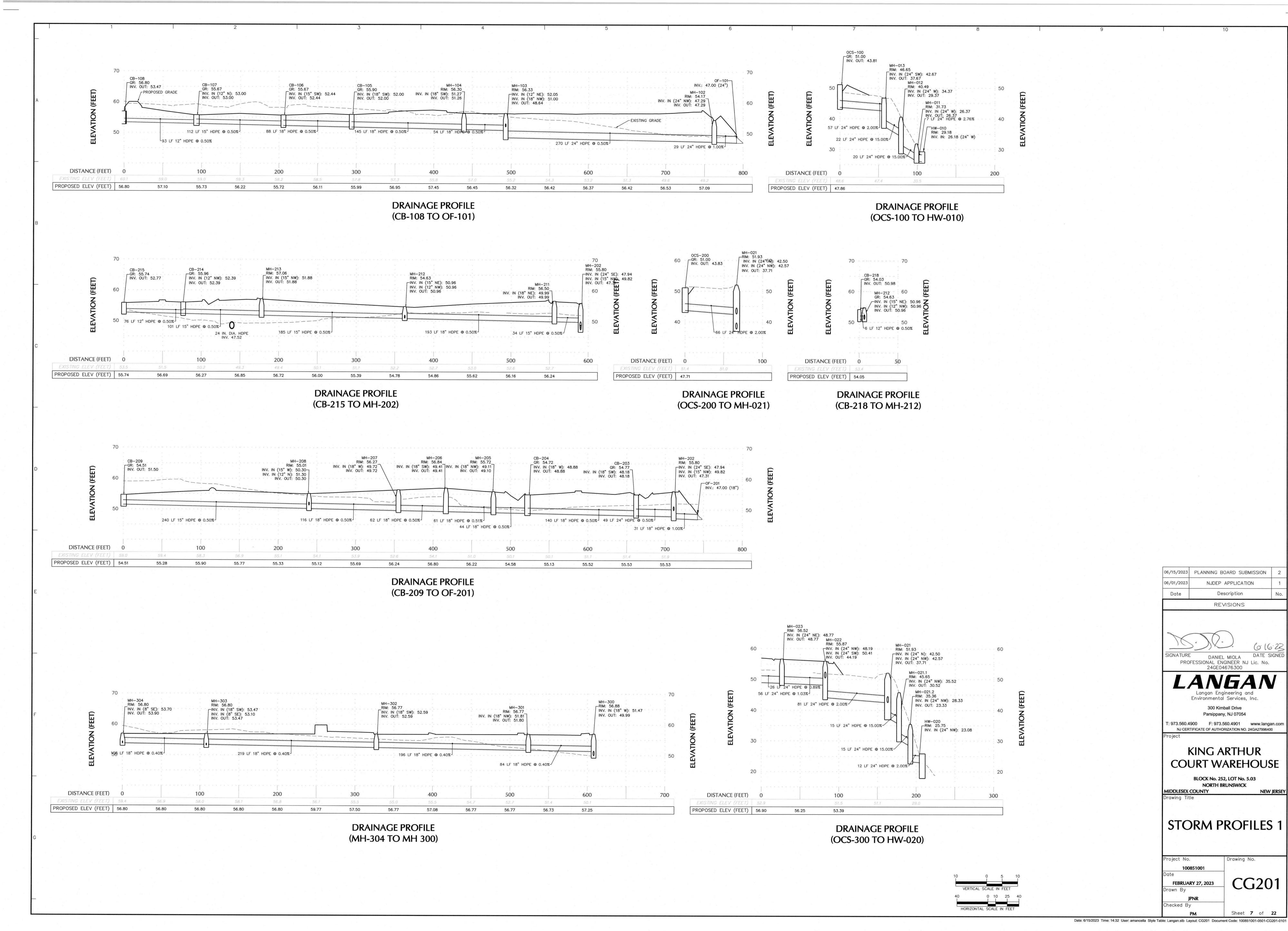












PLANNING BOARD SUBMISSION NJDEP APPLICATION NATURE DANIEL MIOLA DATE SI PROFESSIONAL ENGINEER NJ Lic. No. 24GE04676300 Drawing Title

Langan Engineering and Environmental Services, Inc. 300 Kimball Drive Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901 www.langan.com NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400 KING ARTHUR **COURT WAREHOUSE** BLOCK No. 252, LOT No. 5.03 **NORTH BRUNSWICK** MIDDLESEX COUNTY **NEW JERSEY**

Description

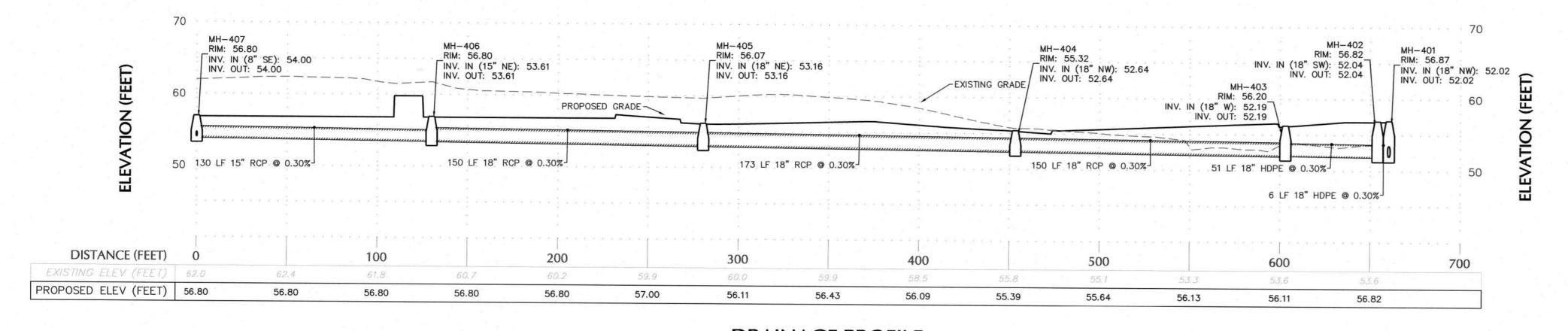
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DATE SIGNED

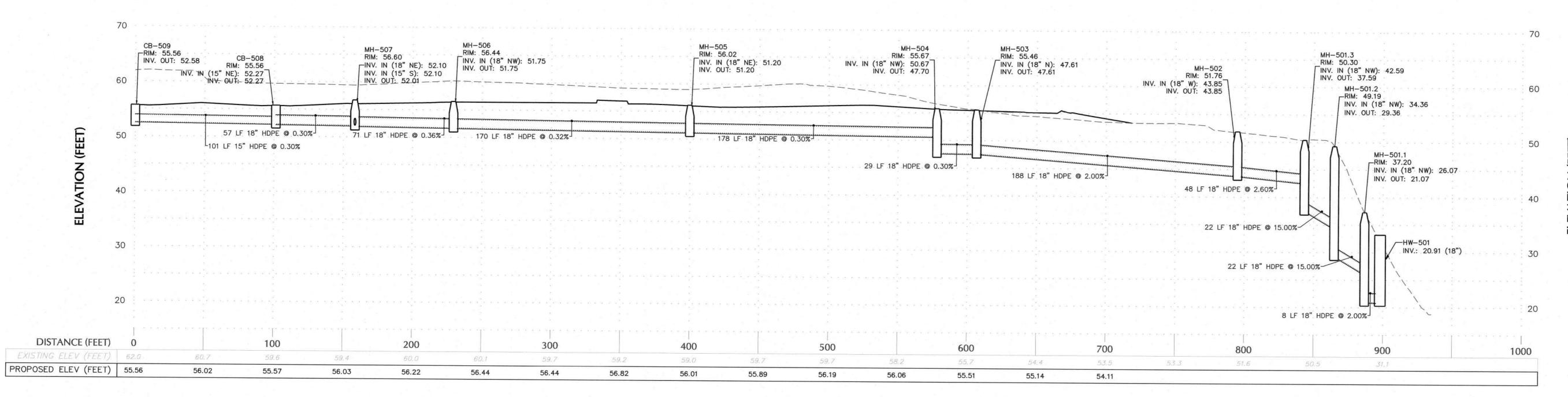
STORM PROFILES 1

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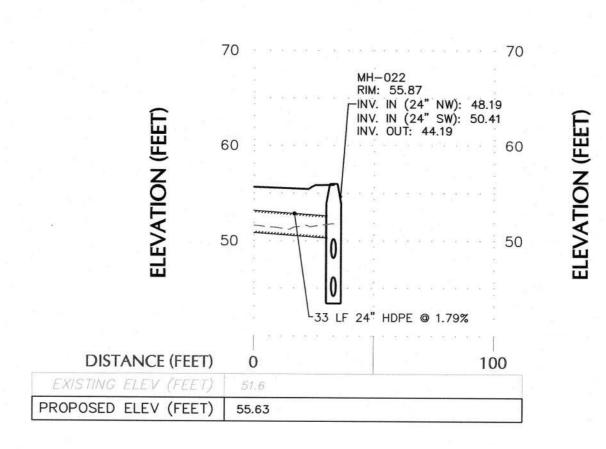
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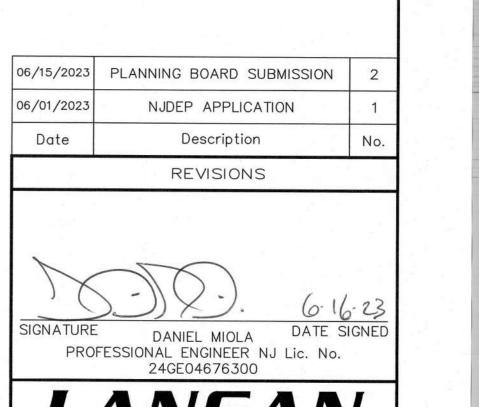
DRAINAGE PROFILE (MH-407 TO MH-401)



DRAINAGE PROFILE (MH-509 TO HW-501)



DRAINAGE PROFILE (OCS-400 TO MH-022)



Langan Engineering and
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Project

KING ARTHUR
COURT WAREHOUSE

BLOCK No. 252, LOT No. 5.03 NORTH BRUNSWICK MIDDLESEX COUNTY

STORM PROFILES 2

NEW JERSEY

Project No.

100851001

Date

FEBRUARY 27, 2023

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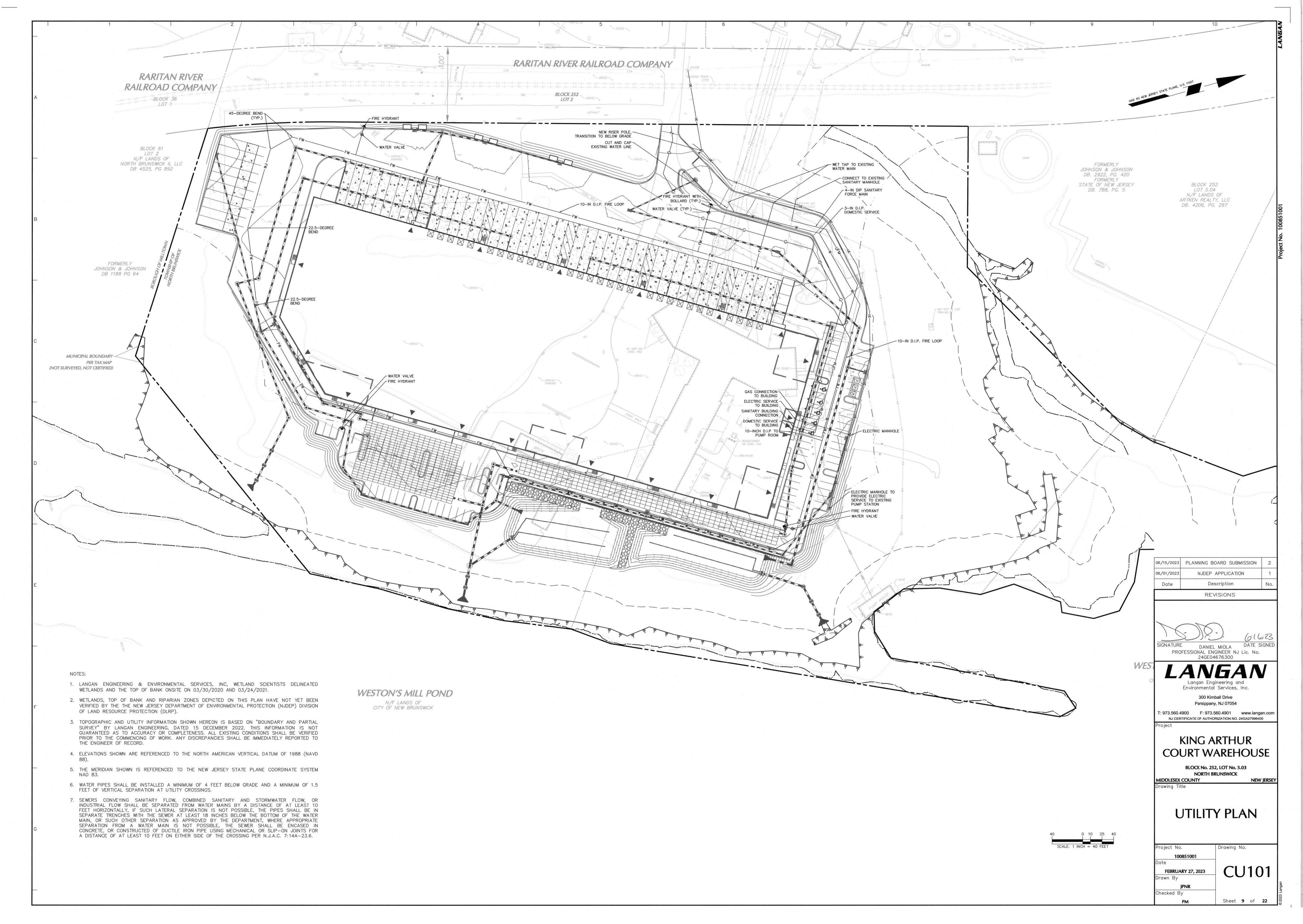
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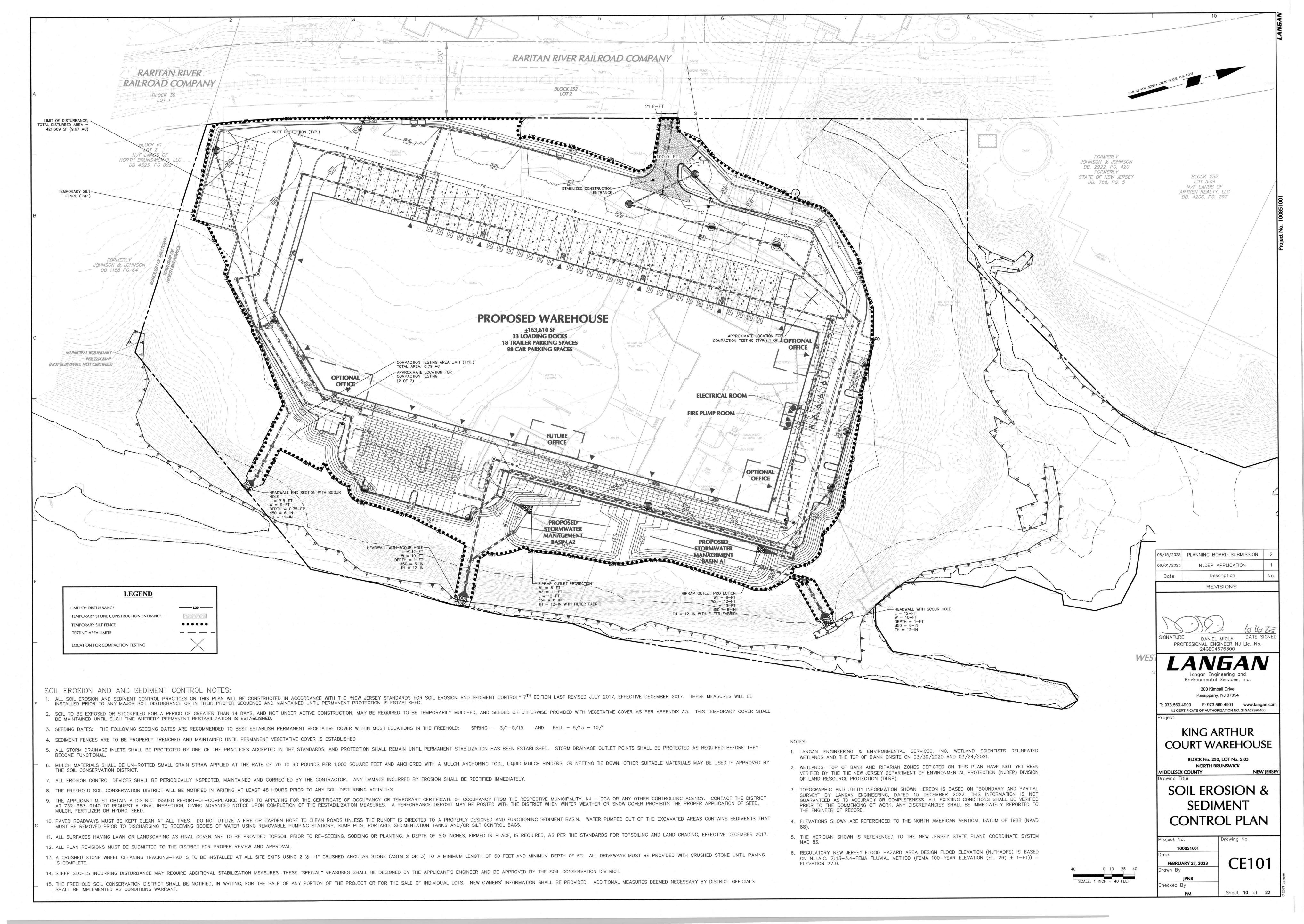
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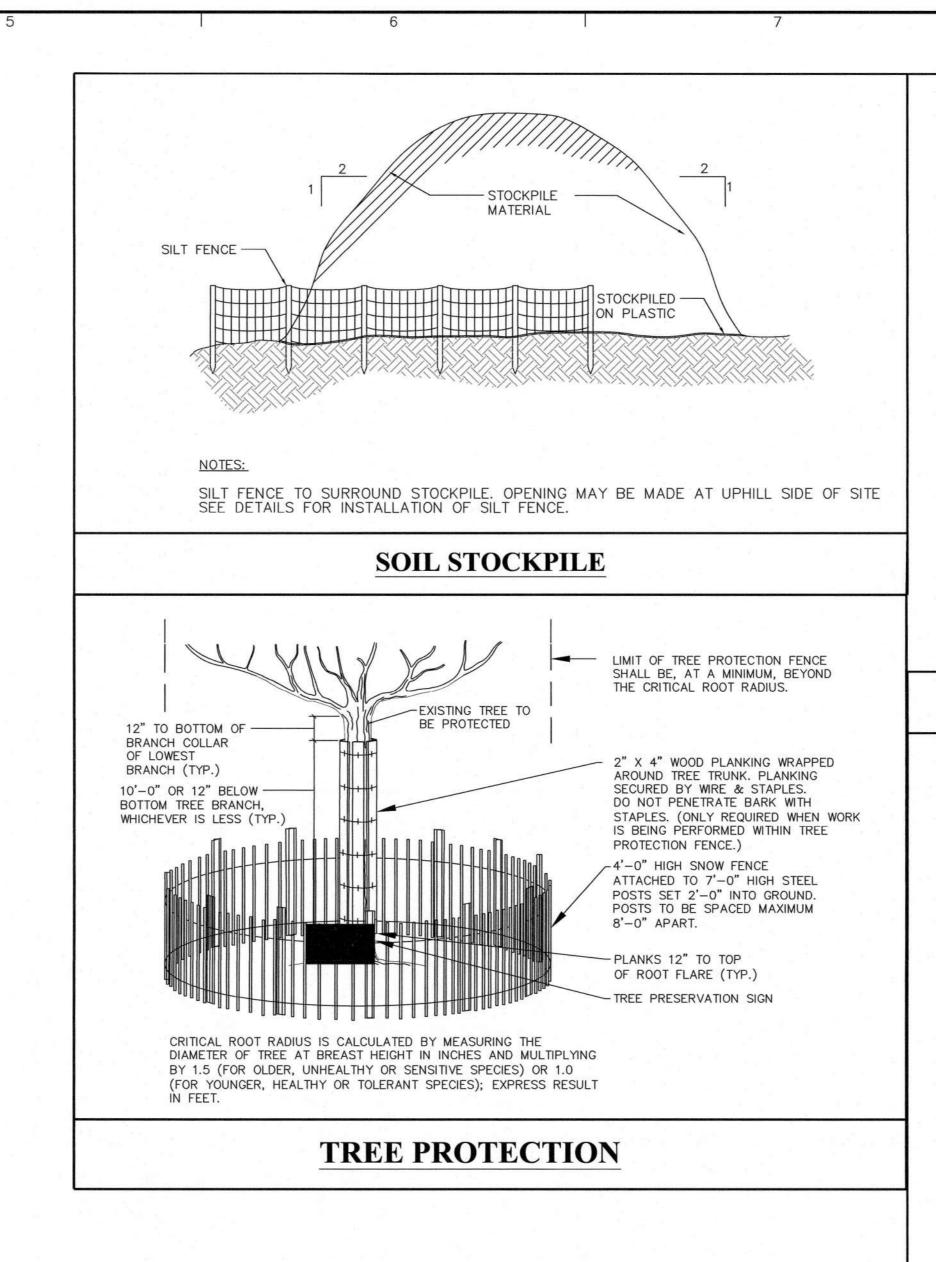
HORIZONTAL SCALE IN FEET

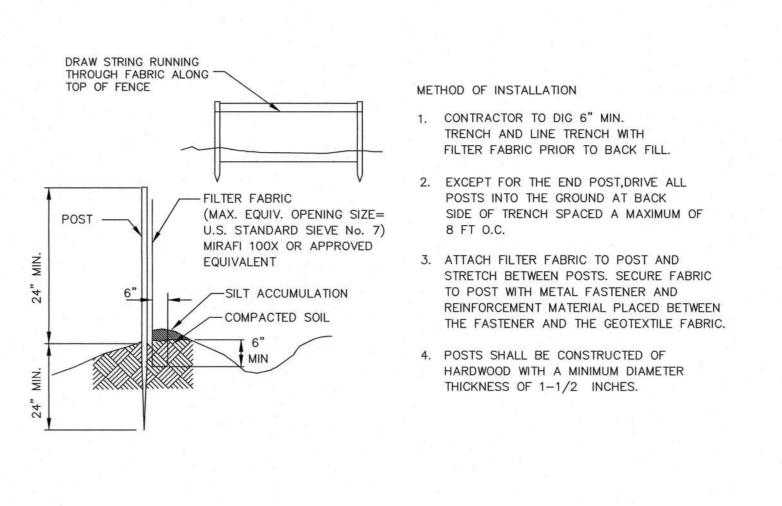
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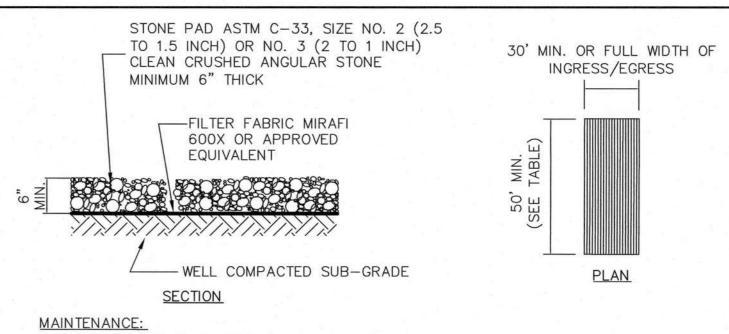








SILT FENCE (PERVIOUS AREAS)



THE STRUCTURES THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL WILL BE MAINTAINED ON THE SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS, WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. WASHING OF THE ROADWAY WITH WATER IS NOT PERMITTED.

PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED		
	SAND / GRAVEL AREAS	CLAY / SILT AREAS	
0 - 2%	50'	100'	
2 - 5%	100'	200'	
> 5%	ENTIRE SURFACE STABILIZE	D WITH FABC* BASE COURSE	

STABILIZED CONSTRUCTION PAD

SOIL COMPACTION TESTING REQUIREMENTS

- SUBGRADE SOILS <u>PRIOR TO THE APPLICATION OF TOPSOIL</u> (SEE PERMANENT SEEDING AND STABILIZATION NOTES FOR TOPSOIL REQUIREMENTS) SHALL BE FREE OF EXCESSIVE COMPACTION TO A DEPTH OF 6.0 INCHES TO ENHANCE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.
- 2. AREAS OF THE SITE WHICH ARE SUBJECT TO COMPACTION TESTING AND/OR MITIGATION ARE GRAPHICALLY DENOTED ON THE CERTIFIED SOIL EROSION CONTROL PLAN.
- 3. COMPACTION TESTING LOCATIONS ARE DENOTED ON THE PLAN. A COPY OF THE PLAN OR PORTION OF THE PLAN SHALL BE USED TO MARK LOCATIONS OF TESTS, AND ATTACHED TO THE COMPACTION REMEDIATION FORM, AVAILABLE FROM THE LOCAL SOIL CONSERVATION DISTRICT. THIS FORM MUST BE FILLED OUT AND SUBMITTED PRIOR TO RECEIVING A CERTIFICATE OF COMPLIANCE FROM THE DISTRICT.
- 4. IN THE EVENT THAT TESTING INDICATES COMPACTION IN EXCESS OF THE MAXIMUM THRESHOLDS INDICATED FOR THE SIMPLIFIED TESTING METHODS (SEE DETAILS BELOW), THE CONTRACTOR/OWNER SHALL HAVE THE OPTION TO PERFORM EITHER (1) COMPACTION MITIGATION OVER THE ENTIRE MITIGATION AREA DENOTED ON THE PLAN (EXCLUDING EXEMPT AREAS), OR (2) PERFORM ADDITIONAL MORE DETAILED TESTING TO ESTABLISH THE LIMITS OF EXCESSIVE COMPACTION WHEREUPON ONLY THE EXCESSIVELY COMPACTED AREAS WOULD REQUIRE COMPACTION MITIGATION. ADDITIONAL DETAILED TESTING SHALL BE PERFORMED BY A TRAINED, LICENSED PROFESSIONAL.

COMPACTION TESTING METHODS

- A. PROBING WIRE TEST (SEE DETAIL)

 B. HAND-HELD PENETROMETER TEST (SEE)
- B. HAND-HELD PENETROMETER TEST (SEE DETAIL)
 C. TUBE BULK DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)
 D. NUCLEAR DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)
- NOTE: ADDITIONAL TESTING METHODS WHICH CONFORM TO ASTM STANDARDS AND SPECIFICATION, AND WHICH PRODUCE A DRY WEIGHT, SOIL BULK DENSITY MEASUREMENT MAY BE ALLOWED SUBJECT TO DISTRICT APPROVAL.

 SOIL COMPACTION TESTING IS NOT REQUIRED IF/WHEN SUBSOIL COMPACTION REMEDIATION (SCARIFICATION/TILLAGE 6" MINIMUM DEPTH OR SIMILAR) IS PROPOSED AS PART OF THE SEQUENCE OF CONSTRUCTION.
- PROCEDURES FOR SOIL COMPACTION MITIGATION

 PROCEDURES SHALL BE USED TO MITIGATE EXCESSIVE SOIL COMPACTION PRIOR TO PLACEMENT OF TOPSOIL AND
- ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.

 RESTORATION OF COMPACTED SOILS SHALL BE THROUGH DEEP SCARIFICATION/TILLATE (6" MINIMUM DEPTH) WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.). IN THE ALTERNATIVE, ANOTHER METHOD AS SPECIFIED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER MAY BE SUBSTITUTED SUBJECT TO DISTRICT APPROVAL.

06/15/2023	PLANNING BOARD SUBMISSION	2
06/01/2023	NJDEP APPLICATION	1
Date	Description	No.
	REVISIONS	



LANGAN

Langan Engineering and

Environmental Services, Inc.

300 Kimball Drive

300 Kimball Drive Parsippany, NJ 07054

T: 973.560.4900 F: 973.560.4901 www.langan.com
NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400
Project

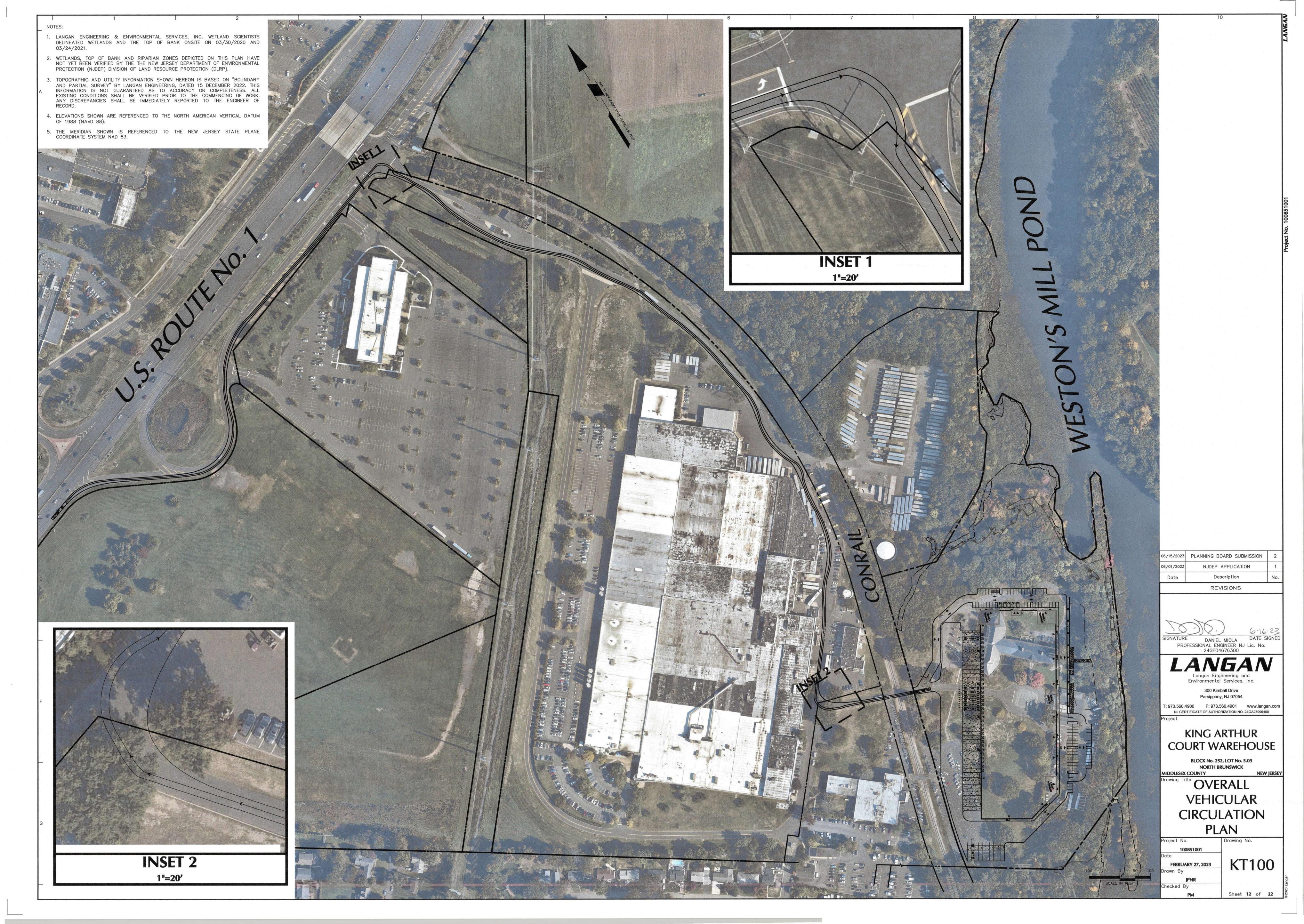
KING ARTHUR COURT WAREHOUSE

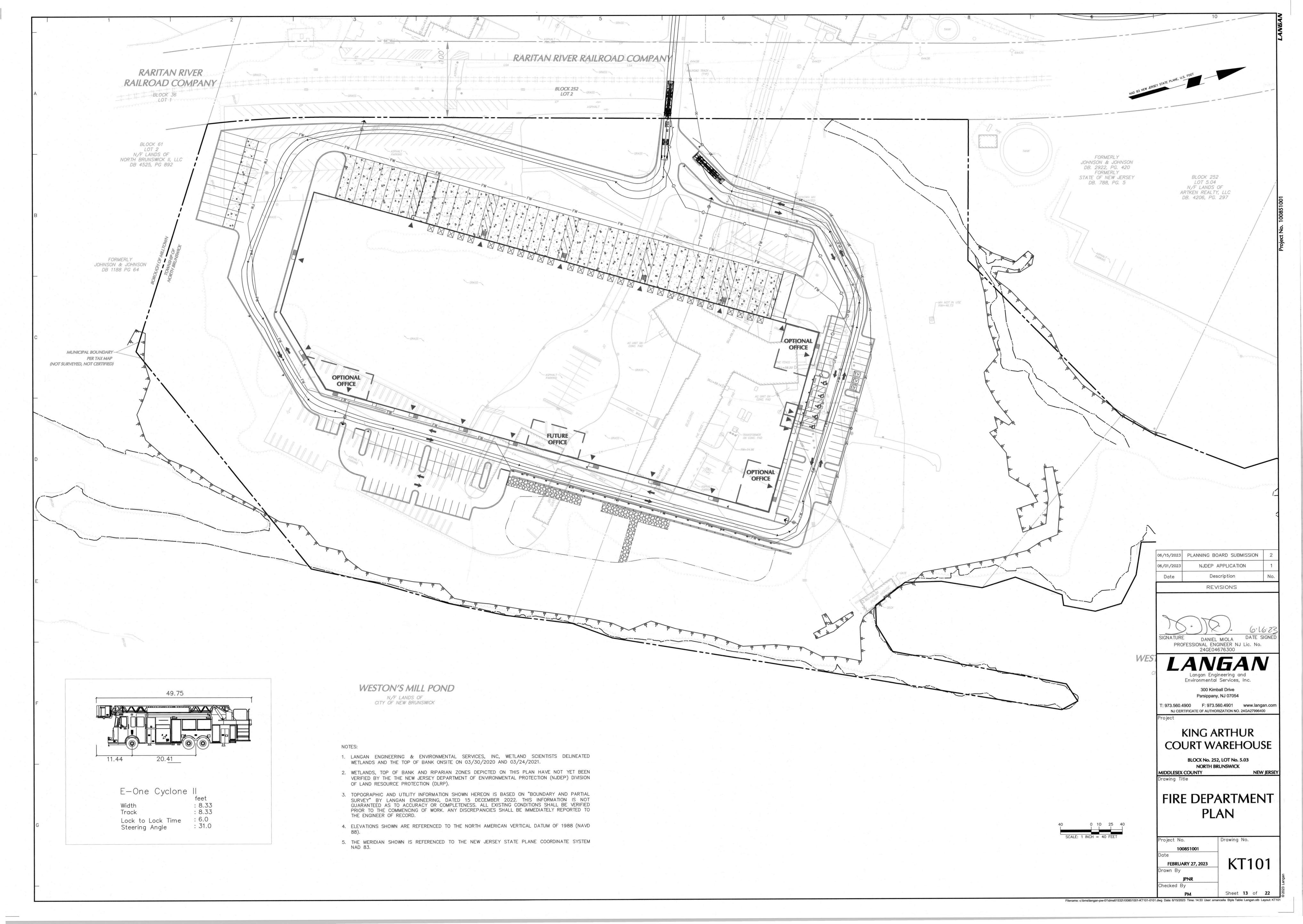
BLOCK No. 252, LOT No. 5.03 NORTH BRUNSWICK

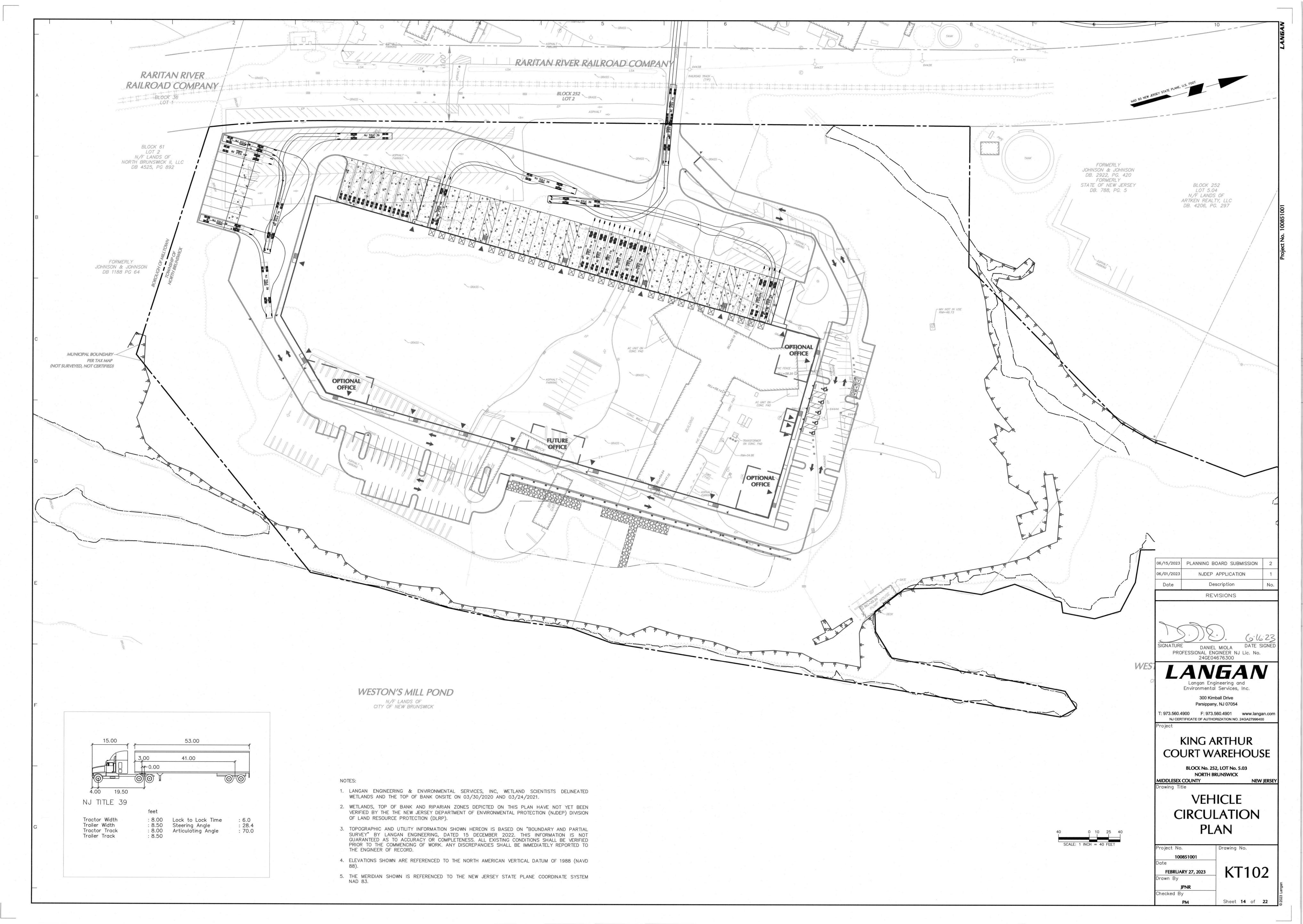
SOIL EROSION AND
SEDIMENT
CONTROL DETAILS

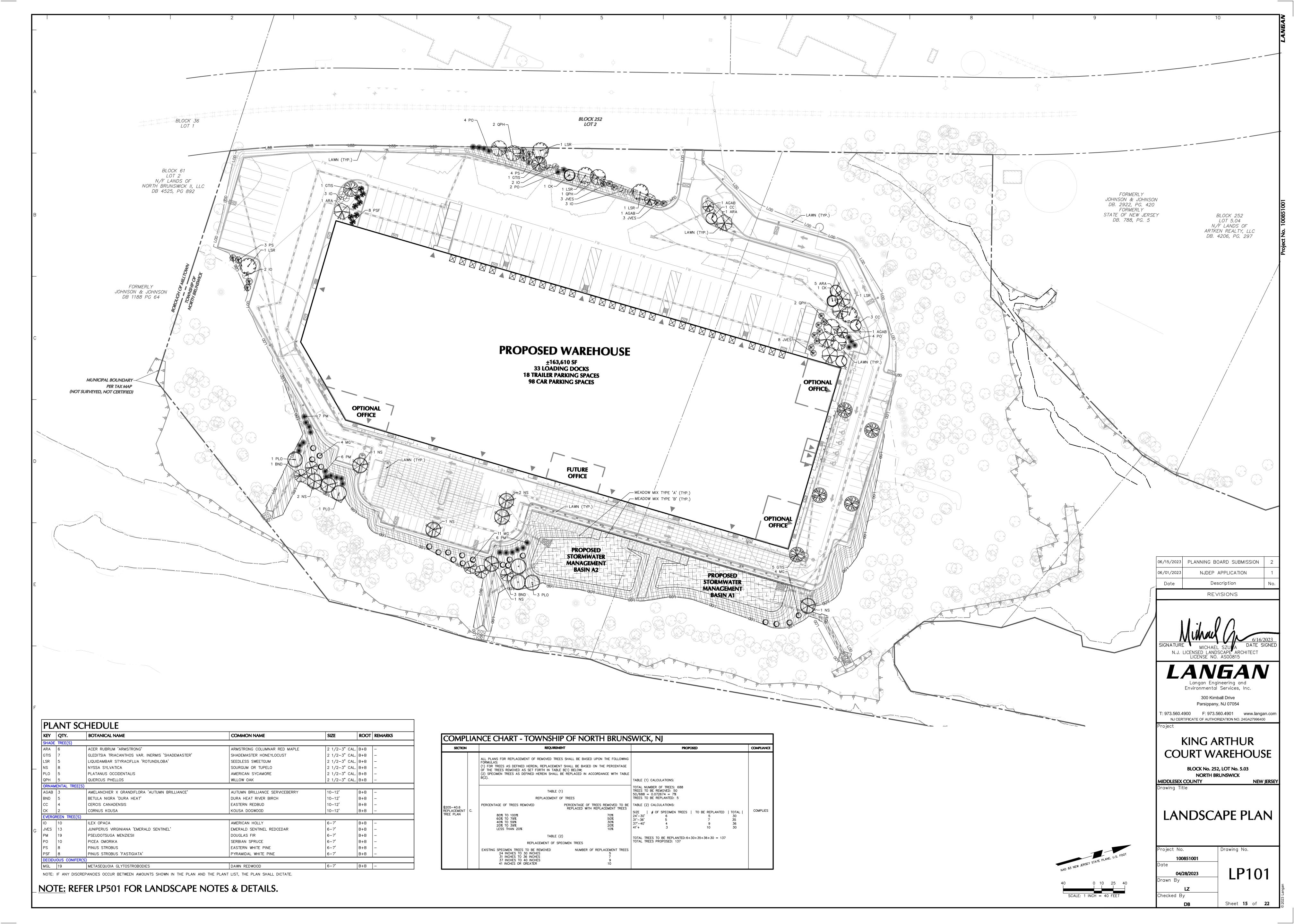
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NURSERY TRADE. 2. STANDARDS FOR TYPE, SPREAD, HEIGHT, ROOT BALL AND QUALITY OF NEW PLANT MATERIAL SHALL BE IN ACCORDANCE WITH GUIDELINES AS SET FORTH IN THE "AMERICAN STANDARD FOR NURSERY STOCK", PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION. PLANT MATERIAL SHALL HAVE NORMAL HABIT OF GROWTH AND BE HEALTHY, VIGOROUS, AND FREE FROM DISEASES AND INSECT

NEW PLANT MATERIAL SHALL BE NURSERY GROWN UNLESS SPECIFIED OTHERWISE. ALL PLANTS SHALL BE SET PLUMB AND SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANT'S ORIGINAL GRADE BEFORE DIGGING. PLANT MATERIAL OF THE SAME SPECIES AND SPECIFIED AS THE SAME SIZE SHOULD BE SIMILAR IN SHAPE, COLOR AND HABIT. THE LANDSCAPE ARCHITECT HAS THE RIGHT TO REJECT PLANT MATERIAL THAT DOES NOT CONFORM TO THE TYPICAL OR SPECIFIED HABIT OF THAT SPECIES. ALL TREES SHALL HAVE A STRAIGHT TRUNK AND FULL HEAD AND MEET ALL REQUIREMENTS SPECIFIED. ANY

TREE THAT LOSES THE MAIN LEADER SHALL BE REPLACED. 4. THE BACKFILL MIXTURE AND SOIL MIXES TO BE INSTALLED PER THE SPECIFICATIONS.

5. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE SITE AND SUBGRADE DRAINAGE OR PERCOLATION CHARACTERISTICS, WHETHER THE SUBGRADE SOILS ARE EXISTING TO REMAIN OR IMPORTED AND PLACED. CONTRACTOR TO ENSURE POSITIVE VERTICAL DRAINAGE THROUGHOUT PLANTED AREAS. DISCREPANCIES SHALL BE ADDRESSED WITH THE PROJECT LANDSCAPE ARCHITECT PRIOR TO PURCHASING PLANT MATERIALS.

6. NO PLANT SHALL BE PUT INTO THE GROUND BEFORE FINISH GRADING HAS BEEN COMPLETED AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT OR PROJECT ENGINEER. 7. ALL PLANT INSTALLATIONS SHALL BE COMPLETED EITHER BETWEEN APRIL 1 - JUNE 15 OR AUGUST 15 -NOVEMBER 1, UNLESS OTHERWISE DIRECTED BY THE PROJECT LANDSCAPE ARCHITECT. SEE LAWN SEEDING DATES IN SEEDING NOTES.

8. ALL FENCE AND GUIDE RAIL INSTALLATIONS SHALL BE COMPLETED PRIOR TO COMMENCEMENT OF ANY LANDSCAPE PLANTING, LAWN AND GRASSES, OR IRRIGATION WORK.

9. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITY AND SEWER LINES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF CONSTRUCTION. NOTIFY THE PROJECT ENGINEER AND OWNER IMMEDIATELY OF ANY CONFLICTS WITH PROPOSED PLANTING LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE.

10. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR 1) TO VERIFY THE LOCATIONS OF UTILITY LINES AND ADJACENT TO THE WORK AREA 2) TO PROTECT OF ALL UTILITY LINES DURING THE CONSTRUCTION PERIOD 3) TO REPAIR ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE

11. THE CONTRACTOR SHALL NOT MAKE SUBSTITUTIONS. IF THE SPECIFIED LANDSCAPE MATERIAL IS NOT OBTAINABLE, THE CONTRACTOR SHALL SUBMIT PROOF OF NON-AVAILABILITY TO THE LANDSCAPE ARCHITECT AND OWNER, TOGETHER WITH A WRITTEN PROPOSAL FOR USE OF AN EQUIVALENT MATERIAL. 12. LANDSCAPE CONTRACTOR TO STAKE OUT PLANTING LOCATIONS, FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT AND OR OWNER BEFORE PLANTING WORK BEGINS. THE LANDSCAPE ARCHITECT AND/OR OWNER SHALL DIRECT THE CONTRACTOR IN THE FINAL PLACEMENT OF ALL PLANT MATERIAL AND LOCATION OF PLANTING BEDS TO ENSURE COMPLIANCE WITH DESIGN INTENT UNLESS OTHERWISE

13. ALL MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE, DURING, AND AFTER INSTALLATION. THE LANDSCAPE ARCHITECT MAY REVIEW PLANT MATERIALS AT THE SITE FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, SIZE, AND QUALITY. THE LANDSCAPE ARCHITECT RETAINS THE RIGHT TO FURTHER REVIEW PLANT MATERIALS FOR SIZE AND CONDITION OF BALLS AND ROOT SYSTEM, INSECTS, INJURIES, AND LATENT DEFECTS, AND TO REJECT UNSATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. THE CONTRACTOR SHALL REMOVE REJECTED PLANT MATERIALS IMMEDIATELY FROM PROJECT SITE AS DIRECTED BY THE LANDSCAPE

14. ALL PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE OF PESTS AND DISEASE. ANY PLANT MATERIAL WHICH IS DISEASED, DISTRESSED, MISSING, 25% OR MORE DEAD, WHICH DO NOT DEVELOP FROM PLANTING STOCK, THAT APPEAR UNHEALTHY OR UNSIGHTLY AND/OR HAVE LOST THEIR NATURAL SHAPE DUE TO DEAD BRANCHES DEAD, OR REJECTED FOR ANY OTHER REASON (PRIOR TO SUBSTANTIAL COMPLETION) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE AND MEETING ALL PLANT LIST SPECIFICATIONS.

15. CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERY SCHEDULE AND PROTECTION BETWEEN DELIVERY AND PLANTING PER SPECIFICATIONS TO MAINTAIN HEALTHY PLANT CONDITIONS.

A. PACKAGED MATERIALS: PACKAGED MATERIALS SHALL BE DELIVERED IN CONTAINERS SHOWING WEIGHT, ANALYSIS, AND NAME OF MANUFACTURER. MATERIALS SHALL BE PROTECTED FROM DETERIORATION DURING DELIVERY, AND WHILE STORED AT SITE.

B. TREES AND SHRUBS: THE CONTRACTOR SHALL PROVIDE TREES AND SHRUBS DUG FOR THE GROWING SEASON FOR WHICH THEY WILL BE PLANTED. DO NOT PRUNE PRIOR TO DELIVERY UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DAMAGE BARK, BREAK BRANCHES, OR DESTROY NATURAL SHAPE. PROVIDE PROTECTIVE COVERING DURING TRANSIT. DO NOT DROP BALLED AND BURLAPPED STOCK DURING DELIVERY OR HANDLING.

C. ALL PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN AS SPECIFIED. NO CONTAINER GROWN STOCK WILL BE ACCEPTED IF IT IS ROOT BOUND. ALL ROOTBALL WRAPPING AND BINDING MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED FROM THE TOP OF THE BALL AT THE TIME OF PLANTING. IF THE PLANT IS SHIPPED WITH A WIRE BASKET AROUND THE ROOT BALL, THE WIRE BASKET SHALL BE CUT AND FOLDED DOWN 8 INCHES INTO THE PLANTING HOLE. WITH CONTAINER GROWN STOCK, THE CONTAINER SHALL BE REMOVED AND THE ROOT BALL SHALL BE CUT THROUGH THE

D. THE CONTRACTOR SHALL HAVE TREES AND SHRUBS DELIVERED TO SITE AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND PLANT IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN 6 HOURS AFTER DELIVERY. THE CONTRACTOR SHALL SET TREES AND SHRUBS IN SHADE. PROTECT FROM WEATHER AND MECHANICAL DAMAGE AND KEEP ROOTS MOIST BY COVERING WITH MULCH, BURLAP OR

17. ALL LANDSCAPED AREAS TO BE CLEARED OF ROCKS, STUMPS, TRASH AND OTHER UNSIGHTLY DEBRIS. ALL FINE GRADED AREAS SHOULD BE HAND RAKED SMOOTH ELIMINATING ANY CLUMPS AND UNEVEN SURFACES PRIOR TO PLANTING OR MULCHING.

18. ALL PLANT MATERIAL SHALL BE INSTALLED AS PER DETAILS, NOTES AND CONTRACT SPECIFICATIONS. THE LANDSCAPE ARCHITECT MAY REVIEW INSTALLATION AND MAINTENANCE PROCEDURES.

19. CONTRACTOR'S GUARANTEE: ALL PLANTINGS AND PLANTING AREAS SHALL BE PERMANENTLY MAINTAINED. NEW PLANT MATERIAL SHALL BE GUARANTEED TO BE ALIVE AND IN VIGOROUS GROWING CONDITION FOR A PERIOD OF TWO YEARS FOLLOWING ACCEPTANCE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULLY MAINTAINING (INCLUDING BUT NOT LIMITED TO: WATERING, PRUNING, SPRAYING, MULCHING, FERTILIZING, ETC.) ALL OF THE PLANT MATERIALS AND LAWN FOR THE DURATION OF THE GUARANTEED PERIOD. PLANT MATERIAL FOUND TO BE UNHEALTHY, DYING OR DEAD DURING THIS PERIOD, SHALL BE REMOVED AND REPLACED IN KIND BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

20. THE CONTRACTOR SHALL KEEP AREA CLEAN DURING DELIVERY AND INSTALLATION OF PLANT MATERIALS REMOVE AND DISPOSE OF OFF-SITE ANY ACCUMULATED DEBRIS OR UNUSED MATERIALS. REPAIR DAMAGE TO ADJACENT AREAS CAUSED BY LANDSCAPE INSTALLATION OPERATIONS.

21. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24- HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL THEN BE WATERED WEEKLY OR AS REQUIRED BY SITE AND WEATHER CONDITIONS TO MAINTAIN VIGOROUS AND HEALTHY PLANT GROWTH.

22. AFTER PLANT IS PLACED IN TREE PIT LOCATION, ALL TWINE HOLDING ROOT BALL TOGETHER SHOULD BE COMPLETELY REMOVED AND THE BURLAP SHOULD BE PULLED DOWN SO 1/3 OF THE ROOT BALL IS EXPOSED. SYNTHETIC BURLAP SHOULD BE COMPLETELY REMOVED AFTER INSTALLATION.

23. ALL EXPOSED GROUND SURFACES THAT ARE NOT PAVED WITHIN THE CONTRACT LIMIT LINE, AND THAT ARE COVERED BY LANDSCAPE PLANTING OR SEEDING AS SPECIFIED, SHALL BE COVERED BY A NATURAL MULCH FROM A LOCAL SOURCE HARVESTED IN A SUSTAINABLE MANNER THAT WILL PREVENT SOIL EROSION AND THE EMANATION OF DUST. MULCH SHALL BE A FIBROUS SHREDDED HARDWOOD MULCH. MULCH SHOULD NOT BE PILED UP AROUND THE TRUNK OF ANY PLANT MATERIAL. NO MULCH OR TOPSOIL SHOULD BE TOUCHING THE BASE OF THE TRUNK ABOVE THE ROOT COLLAR.

24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WORK. FOR ANY DISCREPANCIES BETWEEN THE PLANT SCHEDULE AND PLANTING PLAN THE GRAPHIC QUANTITY SHOWN SHALL GOVERN. 25. LANDSCAPE PUNCH LIST SITE VISITS TO BE PERFORMED BY THE PROJECT LANDSCAPE ARCHITECT, IF UNDER

CONTRACT FOR SUCH WORK, WILL NOT BE SCHEDULED UNTIL CONFIRMATION IS RECEIVED THAT ALL PROPOSED LANDSCAPE ITEMS HAVE BEEN INSTALLED, OR DEFICIENCIES NOTED IN THE PRIOR PUNCH LIST REPORT HAVE BEEN CORRECTED. THE PUNCH LIST SITE VISIT WILL THEN BE PERFORMED WITHIN 10 26. CONTRACTOR SHALL ASSESS THE NEED FOR DEER PROTECTION ON SITE. IF DEEMED NECESSARY, SHADE

AND ORNAMENTAL TREES SHALL BE PROTECTED THROUGH WINTER WITH SPIRAL WRAP TREE GUARDS, O APPROVED EQUAL. PROTECTION LENGTH TO BE FROM BELOW THE LOWEST BRANCH AND DOWN TO WITHIN A

FEW INCHES OF THE GROUND. THE GUARDS CAN BE REMOVED IN SPRING AND SAVED FOR RE-INSTALLATION DURING FOLLOWING WINTERS AS PART OF A MAINTENANCE PROGRAM. ANY TREE REPLACEMENT REQUIRED BASED ON ANIMAL DAMAGE WILL BE COMPLETED AT NO ADDITIONAL COST TO THE OWNER 27. CONTRACTOR SHALL ASSESS THE NEED FOR DEER PROTECTION ON SITE. IF DEEMED NECESSARY, SHADE AND ORNAMENTAL TREES SHALL BE PROTECTED THROUGH WINTER WITH BREATHABLE SPIRAL WRAP TREE GUARDS, OR APPROVED EQUAL. PROTECTION LENGTH TO BE FROM BELOW THE LOWEST BRANCH AND DOWN

TO WITHIN A FEW INCHES OF THE GROUND. THE GUARDS CAN BE REMOVED IN SPRING AND SAVED FOR RE-INSTALLATION DURING FOLLOWING WINTERS AS PART OF A MAINTENANCE PROGRAM. 28. ALL SLOPES 3:1 OR GREATER AND ALL SIDE SLOPES OF BASINS SHALL REQUIRE AN EROSION CONTROL BLANKET: ERONET SC150 BY NORTH AMERICAN GREEN, OR APPROVED EQUAL.

LANDSCAPE MAINTENANCE NOTES

SURFACE IN TWO LOCATIONS.

OTHER ACCEPTABLE MEANS OF RETAINING MOISTURE.

. MAINTENANCE OPERATIONS BEFORE APPROVAL:

A. PLANT CARE SHALL BEGIN IMMEDIATELY AFTER EACH PLANT IS SATISFACTORILY INSTALLED AND SHALL CONTINUE THROUGHOUT THE LIFE OF THE CONTRACT UNTIL FINAL ACCEPTANCE OF THE PROJECT.

B. CARE SHALL INCLUDE, BUT NOT BE LIMITED TO, REPLACING MULCH THAT HAS BEEN DISPLACED BY EROSION OR OTHER MEANS, REPAIRING AND RESHAPING WATER RINGS OR SAUCERS, MAINTAINING STAKES AND GUYS AS ORIGINALLY INSTALLED, WATERING WHEN NEEDED OR DIRECTED, AND PERFORMING ANY OTHER WORK REQUIRED TO KEEP THE PLANTS IN A HEALTHY CONDITION.

C. CONTRACTOR SHALL REMOVE AND REPLACE ALL DEAD, DEFECTIVE AND/OR REJECTED PLANTS AS REQUIRED BEFORE FINAL ACCEPTANCE. MAINTENANCE DURING CONSTRUCTION:

A. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING. PLANTS SHALL BE WATERED, MULCHED, WEEDED, PRUNED, SPRAYED, FERTILIZED, CULTIVATED, AND OTHERWISE MAINTAINED AND PROTECTED UNTIL PROVISIONAL ACCEPTANCE. SETTLED PLANTS SHALL BE RESET TO PROPER GRADE AND POSITION, PLANTING SAUCER RESTOREI AND DEAD MATERIAL REMOVED. STAKES AND WIRES SHALL BE TIGHTENED AND REPAIRED. DEFECTIVE WORK SHALL BE CORRECTED AS SOON AS POSSIBLE AFTER IT BECOMES APPARENT AND WEATHER AND SEASON

B. IF A SUBSTANTIAL NUMBER OF PLANTS ARE SICKLY OR DEAD AT THE TIME OF INSPECTION, ACCEPTANCE SHALL NOT BE GRANTED AND THE CONTRACTOR'S RESPONSIBILITY FOR MAINTENANCE OF ALL PLANTS SHALL BE EXTENDED FROM THE TIME REPLACEMENTS ARE MADE OR EXISTING PLANTS ARE DEEMED ACCEPTABLE BY THE LANDSCAPE ARCHITECT

C. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE SPECIFIED ON THE PLANT LIST OR THAT WHICH WAS TO REMAIN OR BE RELOCATED. THEY SHALL BE FURNISHED AND PLANTED AS SPECIFIED. THE COST SHALL BE BORNE BY THE CONTRACTOR. REPLACEMENTS RESULTING FROM REMOVAL LOSS. OR DAMAGE DUE TO OCCUPANCY OF THE PROJECT IN ANY PART, VANDALISM, PHYSICAL DAMAGE BY ANIMALS, VEHICLES, ETC., AND LOSSES DUE TO CURTAILMENT OF WATER BY LOCAL AUTHORITIES SHALL BE APPROVED AND PAID FOR BY THE

D. PLANTS SHALL BE GUARANTEED FOR A PERIOD OF TWO YEARS AFTER INSPECTION AND PROVISIONAL

E. AT THE END OF THE ESTABLISHMENT PERIOD, INSPECTION SHALL BE MADE AGAIN. ANY PLANT REQUIRED UNDER THIS CONTRACT THAT IS DEAD OR UNSATISFACTORY TO THE LANDSCAPE ARCHITECT OR OWNER SHALL BE REMOVED FROM THE SITE AND REPLACED DURING THE NORMAL PLANTING SEASON. S. LAWN MAINTENANCE:

A. BEGIN MAINTENANCE IMMEDIATELY AFTER EACH PORTION OF LAWN IS PLANTED AND CONTINUE FOR 8 WEEKS AFTER ALL LAWN PLANTING IS COMPLETED.

B. WATER TO KEEP SURFACE SOIL MOIST, REPAIR WASHED OUT AREAS BY FILLING WITH TOPSOIL, LIMING. FERTILIZING AND RE-SEEDING; MOW TO 2 1/2 - 3 INCHES AFTER GRASS REACHES 3 1/2 INCHES IN HEIGHT, AND MOW FREQUENTLY ENOUGH TO KEEP GRASS FROM EXCEEDING 3 1/2 INCHES. WEED BY LOCAL SPOT APPLICATION OF SELECTIVE HERBICIDE ONLY AFTER GRASS IS WELL-ESTABLISHED.

PLANTING SOIL SPECIFICATIONS

MARSHES OR CONTAMINATED SITES.

e. TOXIC SUBSTANCE ANALYSIS

1. PLANTING SOIL, ALTERNATELY MAY BE REFERRED TO AS TOPSOIL, SHOULD BE FRIABLE, FERTILE, WELL DRAINED, FREE OF DEBRIS, TOXINS, TRASH AND STONES OVER 1" DIA., IT SHOULD HAVE A HIGH ORGANIC CONTENT SUITABLE TO SUSTAIN HEALTHY PLANT GROWTH AND SHOULD LOOK AESTHETICALLY PLEASING HAVING NO NOXIOUS ODORS. 2. PLANTING SOIL:

REUSE SURFACE SOILS STOCKPILED ON SITE, VERIFYING COMPLIANCE WITH PLANTING SOIL AND TOPSOIL CRITERIA IN THIS SPECIFICATION THROUGH TESTING. CLEAN SURFACE SOIL OF ALL ROOTS, PLANTS, SOD, AND GRAVEL OVER 1" IN DIAMETER AND DELETERIOUS MATERIALS. IF ON-SITE SOILS ARE TO BE USED FOR PROPOSED PLANTING, THE CONTRACTOR SHALL DEMONSTRATE, THROUGH SOIL TESTING, THAT ON-SITE SOILS MEET THE SAME CRITERIA AS INDICATED IN NOTES PLANS AND SPECIFICATIONS. SUPPLEMENT WITH IMPORTED OR MANUFACTURED TOPSOIL FROM OFF SITE SOURCES WHEN TOPSOIL AND PLANTING SOIL QUANTITIES ARE INSUFFICIENT. OBTAIN SOIL DISPLACED FROM NATURALLY WELL-DRAINED SITES WHERE TOPSOIL OCCURS AT LEAST 4" DEEP. DO NOT OBTAIN FROM AGRICULTURAL LAND, BOGS,

AT A MINIMUM, PLANTING SOILS MEETING THESE SPECIFICATIONS MAY BE OBTAINED FROM WECARE DENALI, P:888-325-1522, OR APPROVED EQUAL. CONTRACTOR SHALL TEST SOILS AND FURNISH SAMPLES UPON REQUEST. PACKAGED MATERIALS SHALL BE UNOPENED BAGS OR CONTAINERS, EACH BEARING A NAME, GUARANTEE, AND TRADEMARK OF THE PRODUCER, MATERIAL COMPOSITION, MANUFACTURER'S CERTIFIED ANALYSIS, AND THE WEIGHT OF THE MATERIALS. SOIL OR AMENDMENT MATERIALS SHALL BE STORED ON SITE TEMPORARILY IN STOCKPILES PRIOR TO PLACEMENT AND SHALL BE PROTECTED FROM INTRUSION OF CONTAMINANTS AND EROSION.

AFTER MIXING, SOIL MATERIALS SHALL BE COVERED WITH A TARPAULIN UNTIL TIME OF ACTUAL USE. ALL PLANTING SOILS SHALL BE SUBMITTED FOR TESTING TO THE STATE COOPERATIVE EXTENSION SERVICE, OR APPROVED EQUAL, PRIOR TO DELIVERY TO THE SITE. CONTRACTOR SHALL FURNISH SOIL SAMPLES AND SOIL TEST RESULTS TO LANDSCAPE ARCHITECT OR OWNER AT A RATE OF ONE SAMPLE PER 500 CUBIC YARDS TO ENSURE CONSISTENCY ACROSS THE TOTAL VOLUME OF PLANTING SOIL REQUIRED. TEST RESULT: SHALL EVALUATE FOR ALL CRITERIA LISTED IN THIS SPECIFICATION. IF TESTING AGENCY DETERMINES THAT THE SOILS ARE DEFICIENT IN ANY MANNER AND MAY BE CORRECTED BY ADDING AMENDMENTS. THE CONTRACTOR SHALL FOLLOW STATED RECOMMENDATIONS FOR SOIL IMPROVEMENT AND FURNISH

SUBMITTALS FOR ALL AMENDMENTS PRIOR TO DELIVERY OF SOIL TO THE PROJECT SITE. THE FOLLOWING TESTING SHOULD BE PERFORMED AND RESULTS GIVEN TO THE LANDSCAPE ARCHITECT FOR APPROVAL REFORE INSTALLATION: A. WHERE A PERMANENT IRRIGATION SYSTEM IS PLANNED:

a. PARTICLE SIZE ANALYSIS - LOAMY SAND: 60-75% SAND, 25-40% SILT, AND 5-15% CLAY. b. GRAVEL CONTENT (2mm): LESS THAN 10% c. FERTILITY ANALYSIS: pH (5.5-6.5), SOLUBLE SALTS (0.2 to 1.5 MMHO/CM), NITRATE, PHOSPHATE, POTASSIUM, CALCIUM AND MAGNESIUM d. ORGANIC MATTER CONTENT: 2.5-5% IN NATIVE SOILS; UP TO 10% IN AMENDED SOILS e. TOXIC SUBSTANCE ANALYSIS

g. NOT MORE THAN 1% OF MATERIAL SHALL BE RETAINED BY A #4 SIEVE B. WHERE NO PERMANENT IRRIGATION IS PLANNED: a. PARTICLE SIZE ANALYSIS - LOAM: 40-65% SAND, 25-60% SILT, AND 5-20% CLAY. b. GRAVEL CONTENT (2mm): LESS THAN 10% c. FERTILITY ANALYSIS: pH (5.5-6.5), SOLUBLE SALTS (0.2 to 1.5 MMHO/CM), NITRATE, PHOSPHATE, POTASSIUM, CALCIUM AND MAGNESIUM d. ORGANIC MATTER CONTENT: 2.5-5% IN NATIVE SOILS; UP TO 10% IN AMENDED SOILS

f. MATERIAL DRAINAGE RATE: 60% PASSING IN 2 MINUTES, 40% RETAINED

f. MATERIAL DRAINAGE RATE: 60% PASSING IN 2 MINUTES, 40% RETAINED

g. NOT MORE THAN 1% OF MATERIAL SHALL BE RETAINED BY A #4 SIEVE C. SOILS FOR BASINS (BIO-RETENTION, INFILTRATION, ETC.) AND BIOSWALES SHALL BE TESTED FOR COMPLIANCE WITH THE CIVIL ENGINEERING SPECIFICATIONS, OR OTHERWISE THE BEST MANAGEMENT

PRACTICES MANUAL FOR THE RESPECTIVE STATE IN WHICH THE PROJECT IS LOCATED. 3. <u>SOIL AMENDMENT FOR PLANT MATERIAL:</u>
IF SOIL ORGANIC CONTENT IS INADEQUATE, SOIL SHALL BE AMENDED WITH COMPOST OR ACCEPTABLE WEED FREE, ORGANIC MATTER. ORGANIC AMENDMENT SHALL BE WELL COMPOSTED. PH RANGE OF 6-8:

THAN 0.5 MM HOS/CM; MEETING ALL APPLICABLE ENVIRONMENTAL CRITERIA FOR CLEAN FILL. A. ORGANIC MATTER AS A SOIL AMENDMENT: LEAF MOLD WITH 60-90% ORGANIC CONTENT BY WEIGHT. SHREDDED LEAF LITTER, COMPOSTED FOR A MINIMUM OF 1 YR. SHOULD BE FREE OF DEBRIS,

MOISTURE CONTENT 35-55% BY WEIGHT 100% PASSING THROUGH 1" SIEVE; SOLUBLE SALT CONTENT LESS

STONES OVER 1/2". WOOD CHIPS OVER 1". B. SOIL IN BEDS AND PLANTING ISLANDS OTHER THAN BACKFILL MATERIAL AND TOPSOIL, SHOULD BE FRIABLE, WELL DRAINED, AND FREE OF DEBRIS, INCLUDING STONES AND TRASH.

C. AMENDMENTS FOR BACK FILL IN TREE AND SHRUB PITS: a. GROUND LIMESTONE (WITH A MIN. OF 88% OF CALCIUM AND MAGNESIUM CARBONATES) USED PENDING RESULTS OF SOIL ANALYSIS. - BRING pH LEVELS TO 5.5 MIN. TO 6.5 FOR NON-ERICACEOUS PLANTS - BRING pH LEVELS TO 4.5 MIN. TO 5.5 FOR ERICACEOUS PLANTS

b. TERRA-SORB BY 'PLANT HEALTH CARE' 800-421-9051 (SEE MANUFACTURER RECOMMENDATIONS) USED IN PLANTER BACKFILL MIXTURE WITH TREES AND SHRUBS. c. MYCOR-ROOT SAVER BY 'PLANT HEALTH CARE' 800-421-9051 (SEE MANUFACTURER RECOMMENDATIONS) USED IN BACKFILL MIXTURE WITH TREES.

4. WHERE PLANTING AREAS ARE PROPOSED FOR FORMER PAVED OR GRAVEL AREAS, BEDS SHALL BE EXCAVATED TO A MINIMUM 30" DEPTH AND, AT A MINIMUM, BE BACKFILLED WITH BOTTOM LAYER OF SANDY LOAM (ORGANIC CONTENT LESS THAN 2%) OVER WHICH TOPSOIL AND PLANTING SOILS WILL BE PLACED AT DEPTHS INDICATED IN PLANS, DETAILS AND NOTES.

5. <u>CLEAN SOIL FILL IN LANDSCAPE AREAS:</u>
LANDSCAPE FILL MATERIAL, BELOW PLANTING SOILS, SHALL HAVE THE PHYSICAL PROPERTIES OF A SANDY LOAM WITH AN ORGANIC CONTENT OF LESS THAN 2% AND A PH BETWEEN 5 - 7.

A. CONTRACTOR TO PROVIDE SIX INCHES (6") MINIMUM DEPTH PLANTING SOIL LAYER IN LAWN AREAS, TWELVE INCHES (12") MINIMUM DEPTH PLANTING SOIL LAYER IN GROUNDCOVER AND PERENNIAL AREAS, EIGHTEEN INCHES (18") MINIMUM DEPTH PLANTING SOIL LAYER IN SHRUB AREAS, AND THIRTY-SIX INCHES (36") MINIMUM DEPTH PLANTING SOIL LAYER IN TREE PLANTING AREAS.

B. SCARIFY AND/OR TILL COMPACTED SUBSOILS TO A MINIMUM DEPTH OF 6 INCHES. THOROUGHLY MIX A 6 INCH DEPTH LAYER OF PLANTING SOIL INTO THE SUBSOIL PRIOR TO PLACING PLANTING SOIL AT THE DEPTHS INDICATED ABOVE. PLANTING SOIL SHALL BE PLACED IN 12-18" LIFTS AND WATER THOROUGHLY BEFORE INSTALLING NEXT LIFT. REPEAT UNTIL DEPTHS AND FINISH GRADES HAVE BEEN ACHIEVED. NO SOILS SHALL BE PLACED IN A FROZEN OR MUDDY CONDITION. C. PLANTING SOIL PRESENT AT THE SITE, IF ANY, MAY BE USED TO SUPPLEMENT TOTAL AMOUNT

REQUIRED. CONTRACTOR TO FURNISH AN ANALYSIS OF ON-SITE PLANTING SOIL UTILIZED IN ALL SOIL CONDITIONING:

 A. ADJUST pH AND NUTRIENT LEVELS AS REQUIRED TO ENSURE AN ACCEPTABLE GROWING MEDIUM.

LOWER PH USING ELEMENTAL SULFUR ONLY. PEAT MOSS OR COPPER SULFATE MAY NOT BE USED. GROUND LIMESTONE AS A SOIL AMENDMENT MATERIAL WILL ONLY BE USED PENDING RESULTS OF SOIL ANALYSIS. PROVIDE WITH MINIMUM 88% CALCIUM AND MAGNESIUM CARBONATES AND SHALL HAVE TOTAL 100% PASSING THE 10 MESH SIEVE, MINIMUM 90% PASSING 20 MESH SIEVE, AND MINIMUM 60% PASSING 100 MESH SIEVE.

B. ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

C. SOIL MODIFICATIONS (PENDING RESULTS OF SOIL ANALYSIS): a. THOROUGHLY TILL ORGANIC MATTER (LEAF COMPOST) INTO THE TOP 6 TO 12 IN. OF MOST PLANTING SOILS TO IMPROVE THE SOIL'S ABILITY TO RETAIN WATER AND NUTRIENTS. ALL PRODUCTS SHOULD BE COMPOSTED TO A DARK COLOR AND BE FREE OF PIECES WITH IDENTIFIABLE LEAF OR WOOD STRUCTURE. AVOID MATERIAL WITH A PH HIGHER THAN 7.0. PEAT MOSS MAY NOT BE USED AS ORGANIC MATTER AMENDMENT.

b. MODIFY HEAVY CLAY OR SILT (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) AND/OR GYPSUM. COARSE SAND MAY BE USED IF ENOUGH IS ADDED TO BRING THE SAND CONTENT TO MORE THAN 60% OF THE TOTAL MIX. IMPROVE DRAINAGE IN HEAVY SOILS BY PLANTING ON RAISED MOUNDS OR BEDS AND INCLUDING SUBSURFACE DRAINAGE LINES.

c. MODIFY EXTREMELY SANDY SOILS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.

SEEDING NOTES

<u>LAWN AREAS</u> 1. PRIOR TO SEEDING, AREA IS TO BE TOPSOILED, FINE GRADED, AND RAKED OF ALL DEBRIS LARGER

2. PRIOR TO SEEDING, CONSULT MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.

3. SCD SEED MIX #14 SEEDING RATE AT 305 POUNDS PER ACRE: 10% DEEPBLUE KENTUCKY BLUEGRASS 40% DAKOTA TALL FESCUE

40% TAOS TALL FESCUE 10% FRONTIER PERENNIAL RYEGRASS

USE, USDA ZONE, AND SEEDING DATES.

4. SEEDING DATES FOR THIS MIXTURE SHALL BE BETWEEN APRIL 1ST TO JUNE 1ST OR SEPTEMBER 1ST TO

GERMINATION RATES WILL VARY AS TO TIME OF YEAR FOR SOWING. CONTRACTOR TO IRRIGATE SEEDED AREA UNTIL A STAND OF COVER IS ESTABLISHED AND FOUND ACCEPTABLE TO THE OWNER. SEE LAWN WATERING SCHEDULE NOTES.

MEADOW SEED MIX A ERNST SEED MIX ERNMX-177 "EASTERN ECOTYPE NATIVE GRASS MIX" 30.00% ELYMUS VILLOSUS 26.00% ANDROPOGON GERARDII

BIG BLUESTEM, NIAGARA 14.00% ANDROPOGON SCOPARIUS LITTLE BLUESTEM, INDIANTOWN GAP 14.00% SORGHASTRUM NUTANS INDIAN GRASS, LAKE ERIE 10.00% AGROSTIS PERENNANS AUTUMN BENTGRASS 6.00% PANICUM VIRGATUM SWITCH GRASS, SHELTER, VA ECOTYPE

APPLY SEED AT THE RATES RECOMMENDED BY THE SEED SUPPLIER. 2. SEED WITH NURSE CROP(S) SPECIES AS RECOMMENDED BY THE SEED SUPPLIER FOR THE INTENDED **SEEDING NOTES (CONT.)**

ASTER PUNICEUS, PA ECOTYPE

ASTER UMBELLATUS. PA ECOTYPE

LOBELIA SIPHILITICA, PA ECOTYPE

EUPATORIUM PERFOLIATUM, PA ECOTYPE

MEADOW SEED MIX B ERNST SEED MIX ERNMX-127 "RETENTION BASIN WILDLIFE MIX" PANICUM CLANDESTINUM, TIOGA CAREX VUI PINOIDEA. PA ECOTYPE FOX SEDGE, PA ECOTYPE VIRGINIA WILDRYE, MADISON-NY ECOTYPE ELYMUS VIRGINICUS. MADISON-NY ECOTYPE CAREX LURIDA PA ECOTYPE LURID SEDGE, PA ECOTYPE BLUNT BROOM SEDGE, PA ECOTYPE CAREX SCOPARIA PA ECOTYPE VERBENA HASTATA, PA ECOTYPE BLUE VERVAIN, PA ECOTYPE JUNCUS FFFUSUS SOFT RUSH AGROSTIS PERENNANS, ALBANY PINE BUSH-NY ECOTYPE AUTUMN BENTGRASS, ALBANY PINE BUSH-NY ECOTYPE ASCLEPIAS INCARNATA, PA ECOTYPE SWAMP MILKWEED. PA ECOTYPE SCIRPUS CYPERINUS, PA ECOTYPE WOOLGRASS, PA ECOTYPE HELENIUM AUTUMNALE, PA ECOTYPE COMMON SNEEZEWEED, PA ECOTYPE ASTER NOVAE-ANGLIAE, PA ECOTYPE NEW ENGLAND ASTER, PA ECOTYPE

APPLY SEED AT THE RATES RECOMMENDED BY THE SEED SUPPLIER. SEED WITH NURSE CROP(S) SPECIES AS RECOMMENDED BY THE SEED SUPPLIER FOR THE INTENDED USE, USDA ZONE, AND SEEDING DATES

PURPLESTEM ASTER, PA ECOTYPE

GREAT BLUE LOBELIA, PA ECOTYPE

BONESET, PA ECOTYPE

FLAT TOPPED WHITE ASTER, PA ECOTYPE

1. MOWING MEADOW AREAS SHALL BE DONE VIA STRING TRIMMER, WHERE LARGER MACHINES CANNOT REASONABLY BE USED AND WHERE DAMAGE OR RUTTING COULD OCCUR. 2. DURING THE ESTABLISHMENT YEAR, CONTRACTOR SHALL MOW SEEDING IF WEED HEIGHT EXCEEDS MEADOW MIX HEIGHT. MOW AT A HEIGHT OF 8"-10". DO NOT MOW CLOSE, AS SOME OF THE MEADOW MIX MAY BE DAMAGED. 3. AFTER THE FIRST GROWING SEASON, AND IF MEADOW MIX IS WELL ESTABLISHED, THE MEADOW MIX SHALL BE MOWED ONLY ONCE ANNUALLY. ANNUAL MAINTENANCE MOWING SHALL BE DONE IN LATE WINTER DURING THE MONTH OF MARCH. 4. MOW IN BASINS, WETLAND AND WETLAND TRANSITION AREAS DURING DRIER SITE CONDITIONS WHEN SOIL DISTURBANCE WILL NOT OCCUR. MAINTENANCE FOR WETLAND AND WETLAND TRANSITION AREAS SHALL OCCUR DURING LATE SUMMER (JULY 15 -AUGUST 15) WHEN THE WATER TABLE IS USUALLY AT ITS LOWEST POINT OF THE YEAR. DO NOT MOW IN WETLAND OR WETLAND TRANSITION AREAS AFTER ESTABLISHMENT OF MEADOW MIX.

5. DURING THE FIRST 2—4 YEARS OF ESTABLISHMENT, AND AFTER ESTABLISHMENT DEPENDING ON THE LOOK DESIRED, SELECTIVE WEEDING WITH A BROADLEAF WEED-CONTROL HERBICIDE, OVER-SEEDING BARE SPOTS AND WATERING TO PROMOTE A UNIFORM DROUGHT-TOLERANT STAND OF PLANTS MAY BE NECESSARY. 6. FERTILIZERS ARE NOT GENERALLY NEEDED OR RECOMMENDED FOR NATIVE MEADOWS UNLESS SOIL TEST RESULTS SHOW A SIGNIFICANT LACK OF NUTRIENTS. USE ONLY SLOW-RELEASE FERTILIZERS WITH LITTLE TO NO NITROGEN IN APRIL OR SEPTEMBER.

GENERAL SEEDING NOTES:

1. FINAL SEED MIXTURES, RATES & SPECIES TO BE DETERMINED BASED ON SCD REVIEW. 2. ALL SEEDING RATES ARE BASED ON PURE LIVE SEED (PLS.) CONTRACTOR SHALL ADJUST ANY SUPPLIER BULK SEEDING RATES

(BSR) TO PROVIDE PLS EQUIVALENTS. SEEDING SHALL TAKE PLACE IN THE SPRING (APRIL 1 TO JUNE 1) OR THE FALL (SEPTEMBER 1 TO OCTOBER 1). 4. ELIMINATE UNWANTED VEGETATION PRIOR TO SEEDING USING A BROAD-SPECTRUM NON-SELECTIVE HERBICIDE PER

5. IT IS RECOMMENDED THAT CONTRACTOR INSTALL SEED MIXTURE USING A NO-TILL TRUAX-TYPE DRILL WHERE APPLICABLE. MULCHING/TACKING IS REQUIRED ON ALL SEEDING IN ACCORDANCE WITH THE STANDARDS. AN EROSION CONTROL BLANKET WITH A MINIMUM 12-MONTH DEGRADABLE LIFE SPAN MAY BE USED IN LIEU OF STANDARD

MULCHING/TACKING. PERMANENT BLANKETS WILL NOT BE ACCEPTED UNLESS OTHERWISE NOTED. 7. CONTRACTÓR SHALL USE ANIMAL CONTROL MEASURES AS NECESSARY FOR BASIN SEEDING, INCLUDING BUT NOT LIMITED TO GOOSE NETTING, TO PROTECT PLANTS DURING ESTABLISHMENT. 8. CONTINUOUS MOISTURE MUST BE INSURED DURING ESTABLISHMENT TO ALLOW PROPER GERMINATION. SOIL WILL REMAIN

CONTINUOUSLY MOIST FOR THE TOP 4 INCHES OF TOPSOIL. DO NOT SATURATE OR WATER TO THE POINT OF RUNOFF OR THE

9. DEPENDING ON SOIL TEMPERATURES, IT MAY TAKE SEVERAL WEEKS FOR GERMINATION TO OCCUR. DIFFERENT SPECIES WITHIN THE MIX GERMINATE AT DIFFERENT TIMES AND THEREFORE CONTRACTOR SHOULD CONTINUE THE LIGHT WATERING, AS DESCRIBED ABOVE, UNTIL THERE IS AT LEAST 2 INCHES OF GROWTH THROUGHOUT.

10. AT THIS POINT, WATERING FREQUENCY MAY BE REDUCED TO EVERY 3 TO 5 DAYS. WATER SHALL BE APPLIED TO WET A 6 INCH MINIMUM SOIL DEPTH TO PROMOTE HEALTHY DEEP ROOTS.

LAWN WATERING SCHEDULE (seed)

MANUFACTURER'S SPECIFICATIONS.

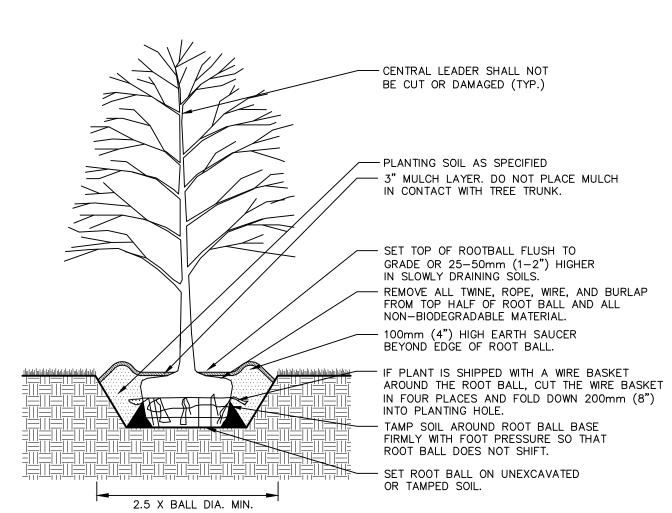
THE FOLLOWING WATERING SCHEDULE COVERS ROUGHLY 8 WEEKS TO ESTABLISH A HEALTHY STAND OF GRASS FROM SEED. THE CONTRACTOR SHALL BE OBLIGATED TO ENSURE A HEALTHY STAND OF GRASS AT THE END OF THE MAINTENANCE/BOND PERIOD. ANY BARE OR DEAD AREAS IN THE LAWN SHALL BE PREPARED, RESEEDED AND REESTABLISHED PRIOR TO THE END OF THE MAINTENANCE/BOND PERIOD AND TO THE SATISFACTION OF THE PROJECT LANDSCAPE ARCHITECT AND THE OWNER. IMPORTANT ASPECTS TO ATTAINING AND SUSTAINING A HEALTHY STAND OF GRASS ARE THE INSTALLATION OF TOPSOIL, SEED BED PREPARATION, ATTAINING OPTIMAL PH FOR THE INTENDED PLANT SPECIES, FERTILIZING, MULCH COVERING, AND SUFFICIENT WATERING PER THESE NOTES AND/OR PROJECT SPECIFICATIONS.

1. SEEDING SHALL BE DONE DURING THE SEASONS SPECIFIED IN THE LAWN SEED MIX NOTES AND/OR PROJECT SPECIFICATIONS. 2. AFTER THE SEEDBED IS PREPARED, SEED IS INSTALLED, AND MULCH IS APPLIED, WATER LIGHTLY TO KEEP THE TOP 2 INCHES OF SOIL CONSISTENTLY MOIST, NOT SATURATED. AT NO TIME SHOULD WATER BE APPLIED TO THE POINT OF RUNOFF OR THE

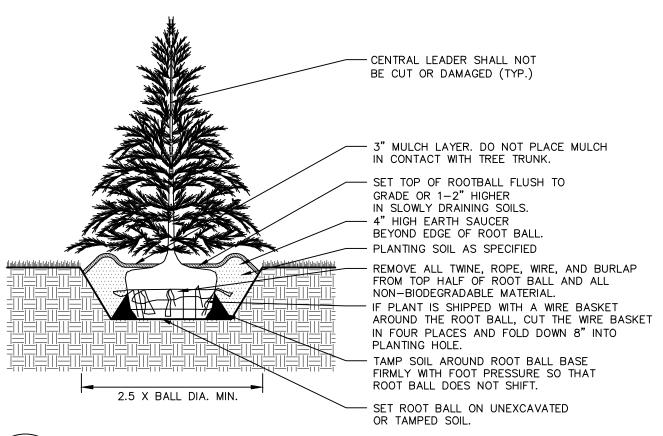
3. DEPENDING ON SOIL TEMPERATURES, IT MAY TAKE SEVERAL WEEKS FOR GERMINATION TO OCCUR. DIFFERENT SPECIES WITHIN THE MIX GERMINATE AT DIFFERENT TIMES AND THEREFORE CONTRACTOR SHOULD CONTINUE THE LIGHT WATERING, AS DESCRIBED

ABOVE, UNTIL THERE IS AT LEAST 2 INCHES OF GROWTH THROUGHOUT. 4. AT THIS POINT, WATERING FREQUENCY MAY BE REDUCED TO EVERY 3 TO 5 DAYS. WATER SHALL BE APPLIED TO WET A 6 INCH MINIMUM SOIL DEPTH TO PROMOTE HEALTHY DEEP ROOTS.

5. BEGIN MOWING ONCE PER WEEK AFTER THE GRASS HAS REACHED 3 INCHES HEIGHT. MOW TO A HEIGHT OF NO LESS THAN 2-1/2 INCHES. AFTER 2 TO 3 WEEKS OF MOWING, CONTINUE TO WATER TO A 6 INCH MINIMUM SOIL DEPTH AS NECESSARY PER WEATHER CONDITIONS, AND SOIL MOISTURE SENSORS IF APPLICABLE.







EVERGREEN TREE PLANTING

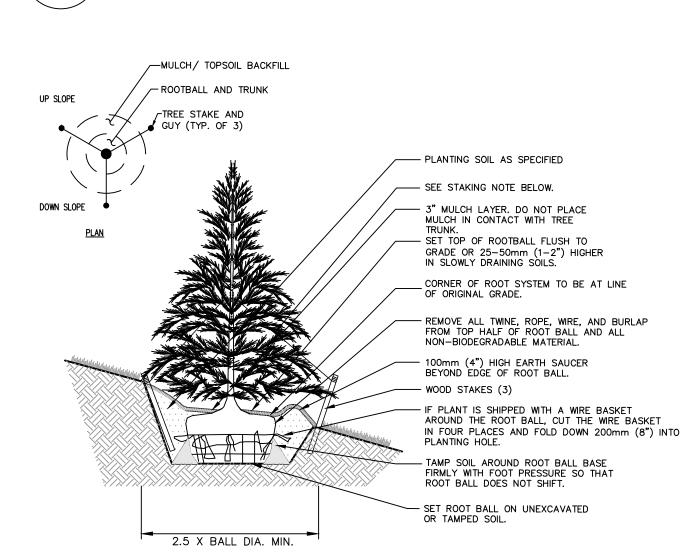
NTS

LARGE SHRUB (B&B) SMALL SHRUB (CONTAINER) -REMOVE ALL TWINE, ROPE AND WIRE, AND BURLAP FROM TOP HALF OF ROOT BALL AND ALL NON-BIODEGRADABLE MATERIAL. - IF PLANT IS SHIPPED WITH A WIRE BASKET AROUND THE ROOT BALL, CUT THE WIRE BASKET IN FOUR PLACES AND FOLD DOWN 8" INTO PLANTING HOLE. 3" MULCH LAYER. KEEP MULCH AWAY FROM SHRUB BASE AND TOP OF ROOTBALL (TYP.). -4" HIGH EARTH SAUCER BEYOND EDGE OF ROOT BALL TO DIRECT WATER INTO ROOTBALL (TYP.). -REMOVE PLASTIC CONTAINER -PLANTING SOIL AS SPECIFIED. TAMP SOIL AROUND ROOT BALL BASE 3 TIMES ROOTBALL DIA. FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT (TYP.). —SET ROOT BALL ON UNEXCAVATED 3 TIMES ROOTBALL DIA. OR TAMPED SOIL. - COMPACTED SUBGRADE NOTES: 1. ALL SHRUBS TO BE SET PLUMB. . REFER TO LANDSCAPE PLAN FOR SPACING OF INDIVIDUAL PLANTS. 3. REMOVE ALL WIRE, PLASTIC, TAGS OR SYNTHETIC MATERIAL FROM PLANTS PRIOR TO PLANTING. SHRUB PLANTING

-MULCH/ TOPSOIL BACKFILL -ROOTBALL AND TRUNK TREE STAKE AND — PLANTING SOIL AS SPECIFIED -SEE STAKING NOTE BELOW. -3" MULCH LAYER. DO NOT PLACE MULCH IN CONTACT WITH TREE - SET TOP OF ROOTBALL FLUSH TO GRADE OR 25-50mm (1-2") HIGHER IN SLOWLY DRAINING SOILS - CORNER OF ROOT SYSTEM TO BE AT LINE OF ORIGINAL GRADE. - REMOVE ALL TWINE, ROPE, WIRE, ANI BURLAP FROM TOP HALF OF ROOT BAI AND ALL NON-BIODEGRADABLE MATERIAL. 100mm (4") HIGH EARTH SAUCER BEYOND EDGE OF ROOT BALL. - WOOD STAKES (3) - IF PLANT IS SHIPPED WITH A WIRE BASKET AROUND THE ROOT BALL, CUT THE WIRE BASKET IN FOUR PLACES AND FOLD DOWN 200mm (8") INTO PLANTING HOLE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT 2.5 X BALL DIA. MIN. — SET ROOT BALL ON UNEXCAVATED

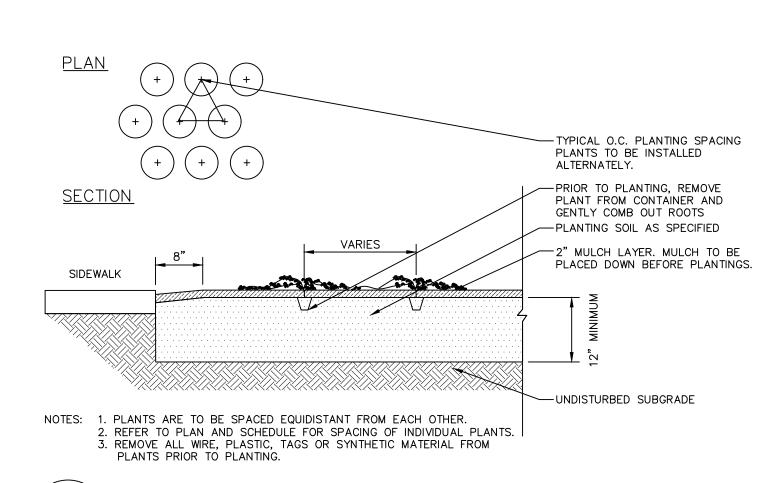
TREE STAKING SHOULD BE CONSIDERED FOR TREES PLANTED ON SLOPES GREATER THAN 3:1 AND/OR ON WINDY SITES PER THE FOLLOWING: STAKE TREES WITH 2.5" X 2.5" CEDAR OR PRESSURE TREATED STAKES TALL ENOUGH TO REACH ABOVE THE FIRST SET OF BRANCHES (3 PER TREE). STAKES SHALL BE PLACED ON EITHER SIDE OF THE TREE PERPENDICULAR TO THE SLOPE AND ARE TO BE DRIVEN AT LEAST 12 INCHES INTO THE GROUND OUTSIDE OF THE TREE PIT AND ANGLED SLIGHTLY AWAY FROM THE TREE. SECURE STAKES TO TREE USING ARBORTIES BY LOOSELY LOOPING THE TIES AROUND TREE ABOVE THE FIRST SET OF BRANCHES AND ALLOWING ENOUGH SLACK FOR TREE MOVEMENT IN THE WIND, AND NAIL TO STAKES. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR ARBORTIES, OR APPROVED EQUAL, AT GEMPLERS 1-800-332-6744 OR GEMPLERS.COM. ALL STAKING MATERIALS SHALL BE REMOVED FOLLOWING THE PLANT GUARANTEE PERIOD.

DECIDUOUS TREE PLANTING ON SLOPE > 3:1



TREE STAKING SHOULD BE CONSIDERED FOR TREES PLANTED ON SLOPES GREATER THAN 3:1 AND/OR ON WINDY SITES PER THE FOLLOWING: STAKE TREES WITH 2.5" X 2.5" CEDAR OR PRESSURE TREATED STAKES TALL ENOUGH TO REACH ABOVE THE FIRST SET OF BRANCHES (3 PER TREE). STAKES SHALL BE PLACED ON EITHER SIDE OF THE TREE PERPENDICULAR TO THE SLOPE AND ARE TO BE DRIVEN AT LEAST 12 INCHES INTO THE GROUND OUTSIDE OF THE TREE PIT AND ANGLED SLIGHTLY AWAY FROM THE TREE. SECURE STAKES TO TREE USING ARBORTIES BY LOOSELY LOOPING THE TIES AROUND TREE ABOVE THE FIRST SET OF BRANCHES AND ALLOWING ENOUGH SLACK FOR TREE MOVEMENT IN THE WIND, AND NAIL TO STAKES. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR ARBORTIES, OR APPROVED EQUAL, AT GEMPLERS 1-800-332-6744 OR GEMPLERS.COM. ALL STAKING MATERIALS SHALL BE REMOVED FOLLOWING THE PLANT GUARANTEE PERIOD.

EVERGREEN TREE PLANTING ON SLOPE > 3:1



GROUNDCOVER/ PERENNIAL PLANTING

GENERAL NOTES:

1. WHERE PLANTING AREAS ARE PROPOSED AT FORMER PAVED OR GRAVEL AREAS, BEDS SHALL BE EXCAVATED TO A MINIMUM 30" DEPTH AND, AT A MINIMUM, BE BACKFILLED WITH BOTTOM LAYER OF SANDY LOAM (ORGANIC CONTENT LESS THAN 2%) OVER WHICH TOPSOIL AND PLANTING SOILS WILL BE PLACED AT DEPTHS INDICATED IN PLANS, DETAILS AND NOTES.

2. SIMILARLY, DUE TO GENERAL CONSTRUCTION ACTIVITIES AND ADJACENT SITE COMPACTION REQUIREMENTS, SUBGRADE SOILS WITHIN PROPOSED PLANTING AREAS TEND TO BECOME HIGHLY COMPACTED. IN ORDER TO CREATE A HEALTHY GROWTH MEDIUM TO ALLOW PROPOSED PLANTINGS TO ESTABLISH A VIGOROUS ROOT MASS. THIS SUBGRADE SOIL MUST UNDERGO A RESTORATION PROCESS. IN ADDITION, IMPORTED OR AMMENDED EXISTING SOILS SHALL BE MIXED WITH SUBGRADE SOILS WHERE THEY MEET IN ORDER TO CREATE A TRANSITIONAL GRADIENT TO ALLOW FOR PROPER DRAINAGE — 6" IMPORTED PLANTING SOIL (OR AMENDED

ו הואנה בנולה ווויל ווויל בה נה בנוליה ווויל ווויל בה וויל ווילול ווויל ווילול בה

PRIOR TO PLACEMENT OF 6" DEPTH PLANTING SOIL LAYER, THE CONTRACTOR SHALL APPLY 3" OF COMPOST AND ROTO-TILL INTO SUBGRADE TO A MIN. DEPTH OF SUBGRADE WITHIN 2'-6" OF FINISH GRADE IN PLANTING AREAS SHALL CONSIST OF FREE DRAINING SANDY SOIL FILL

*EXISTING SOIL PREVIOUSLY STRIPPED FROM FORMER

UPON APPROVAL BY THE PROJECT LANDSCAPE

SOIL SPECIFICATIONS FOR REQUIRED SUBMITTALS.

LANDSCAPE AREAS CAN BE USED FOR PLANTING SOIL

ARCHITECT. CONTRACTOR SHALL REFER TO PLANTING

EXISTING PLANTING SOIL) SHALL BE ROTO-TILLED

INTO SUBGRADE TO A DEPTH OF 12".

IMPORTED OR AMENDED EXISTING PLANTING SOIL WITHIN AREAS OF RAISED GRADE

EXISTING SOIL IN ALL PROPOSED PLANTING AREAS SHALL BE ROTO-TILLED TO A DEPTH OF 12" (EXCLUDING TREE PROTECTION AREAS) AND AMENDED IN ACCORDANCE WITH PLANTING SOIL SPECIFICATIONS. EXISTING SOIL WITHIN TREE PROTECTION AREAS SHALL BE LOOSENED AND AMENDED BY NON-MECHANICAL METHODS, PROTECTING ROOT MASS AGAINST DAMAGE. SUBGRADE

AMENDED EXISTING PLANTING SOIL WITHIN AREAS OF UNCHANGED OR CUT GRADE

1. CONTRACTOR IS RESPONSIBLE TO SEND SAMPLES OF EXISTING SOILS INTENDED FOR USE IN PLANTING AREAS (1 PER 500 CY.) TO TESTING LABORATORY OR UNIVERSITY COOPERATIVE EXTENSION FOR TESTING. ALL TESTING COSTS ARE AT THE CONTRACTOR'S EXPENSE. 2. RECYCLED CRUSHED CONCRETE AND ASPHALT MILLINGS SHALL NOT BE PLACED WITHIN 2'-6" OF FINISH GRADE IN PROPOSED LANDSCAPE AREAS.

3. IMPORTED FILL SHALL CONTAIN NO CONTAMINATION IN EXCEEDENCE OF THE PROJECT STATE ENVIRONMENTAL REVIEW AGENCY STANDARDS AND MEET THE ENVIRONMENTAL REQUIREMENTS FOR THE PROJECT. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION OF COMPLIANCE PRIOR TO DELIVERY OF ANY FILL TO THE SITE.

4. CONTRACTOR TO LIGHTLY COMPACT ALL PLACED PLANTING SOILS AND RAISE GRADES ACCORDINGLY TO ALLOW FOR FUTURE SETTLEMENT OF PLANTING SOILS (TYP.) 5. NO STONES, WOOD CHIPS, OR DEBRIS LARGER THAN 1/2" SHALL BE ACCEPTABLE WITHIN PLANTING AREAS.



NTS

06/15/2023 PLANNING BOARD SUBMISSION NJDEP APPLICATION 06/01/2023 Description Date REVISIONS



Environmental Services, Inc. 300 Kimball Drive

Parsippany, NJ 07054 : 973.560.4900 F: 973.560.4901 www.langan.com NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400

KING ARTHUR **COURT WAREHOUSE**

MIDDLESEX COUNTY **NEW JERSEY** rawing Title LANDSCAPE

NOTES & DETAILS

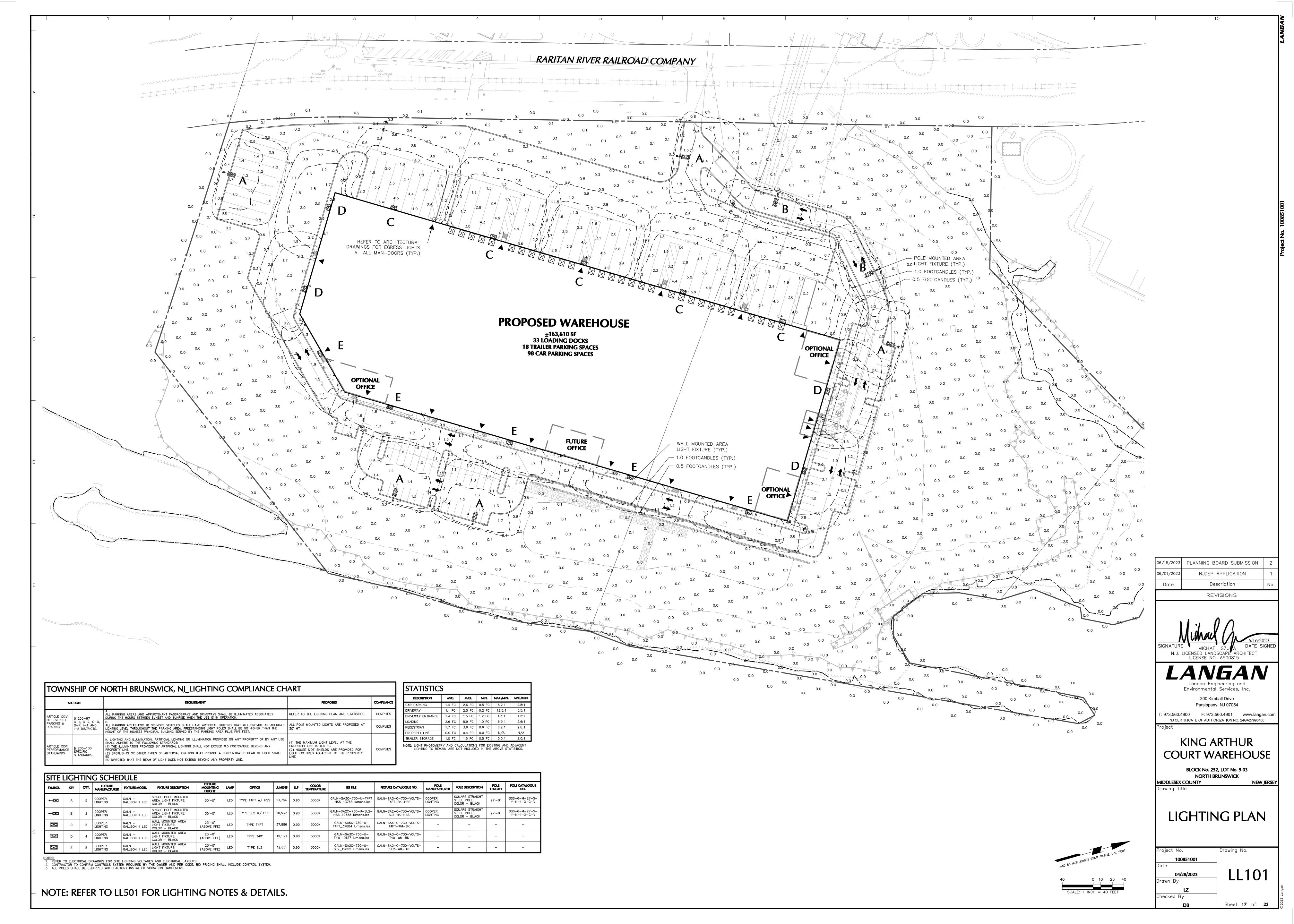
BLOCK No. 252, LOT No. 5.03

NORTH BRUNSWICK

roject No. Drawing No. 100851001 04/28/2023 awn Bv

Sheet **16** of **22**

Checked By



LIGHTING NOTES:

1. POINT-BY-POINT CALCULATIONS PROVIDED WITHIN HAVE BEEN PREPARED IN ACCORDANCE TO IESNA STANDARDS AND IN CONSIDERATION OF THE VARIABLES WITHIN THESE NOTES AND SITE LIGHTING SCHEDULE THE VALUES SHOWN ON THE PLANS ARE NOT AN INDICATION OF THE INITIAL LIGHT INTENSITIES OF THE LAMPS. THESE VALUES ARE AN APPROXIMATION OF THE MAINTAINED INTENSITIES DELIVERED TO THE GROUND PLANE USING INDUSTRY STANDARD LIGHT LOSS FACTORS (LLF) WHICH COVER LAMP DEGRADATION AND NATURAL BUILDUP/ DIRT DEGRADATION ON THE FIXTURE LENS. THE LIGHTING PLAN IS DESIGNED WITH AN INDUSTRY STANDARD LLF IN ACCORDANCE WITH GUIDANCE AS PROVIDED BY IESNA. MINOR VARIATIONS IN TOPOGRAPHY, PHYSICAL OBSTRUCTIONS, AMBIENT OR ADJACENT LIGHT SOURCES AND/OR OTHER POTENTIAL IMPACTS HAVE NOT BEEN INCLUDED IN THESE CALCULATIONS. THEREFORE, AS-BUILT LIGHT INTENSITIES MAY VARY, IN EITHER DIRECTION, FROM WHAT IS EXPLICITLY PORTRAYED WITHIN THESE DRAWINGS.NO GUARANTEE OF LIGHT LEVELS IS EXPRESSED OR IMPLIED BY THE POINT BY POINT CALCULATIONS SHOWN ON THESE

2. LIGHT LEVEL POINT SPACING IS 20 FT. LEFT TO RIGHT AND 20 FT. TOP TO BOTTOM. POINT BY POINT CALCULATIONS ARE BASED ON THE LIGHT LOSS FACTOR AS STATED IN THE LIGHTING SCHEDULE.

3. ALL SITE LIGHTING RELATED WORK AND MATERIALS SHALL COMPLY WITH CITY, COUNTY, AND OTHER APPLICABLE GOVERNING AUTHORITY REQUIREMENTS.

4. LIGHTING LAYOUT COMPLIES WITH THE ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA) SAFETY STANDARDS FOR LIGHT LEVELS.

- 5. CONTRACTOR TO COORDINATE POWER SOURCE WITH LIGHT FIXTURES TO ENSURE ALL SITE LIGHTING IS OPERATING EFFECTIVELY, EFFICIENTLY AND SAFELY.
- 6. REFER TO ELECTRIFICATION PLAN FOR PROVIDING ADEQUATE POWER FOR SITE LIGHTING.
- 7. CONTRACTOR TO COORDINATE LOCATION OF EASEMENTS, UNDERGROUND UTILITIES AND DRAINAGE BEFORE
- 8. INSTALLATION OF ALL LIGHTING FIXTURES, POLES, FOOTINGS, AND FEEDER CABLE TO BE COORDINATED WITH ALL SITE WORK TRADES TO AVOID CONFLICT WITH FINISHED AND PROPOSED WORK.
- 9. CONTRACTOR TO COORDINATE INSTALLATION OF UNDERGROUND FEEDER CABLE FOR EXTERIOR LIGHTING WITH EXISTING AND PROPOSED UTILITIES, SITE DRAINAGE SYSTEMS, AND PAVING. CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER'S REPRESENTATIVE SHOULD ANY UTILITIES, NOT SHOWN ON THE PLANS, BE FOUND DURING EXCAVATIONS.

POLES AND FOOTINGS

- 10. PROVIDE A CONCRETE BASE FOR EACH LIGHT POLE AT THE LOCATIONS INDICATED ON THE CONSTRUCTION DRAWINGS AND/OR IN ACCORDANCE WITH PROJECT PLANS AND SPECIFICATIONS RELATING DIRECTLY TO CAST-IN-PLACE CONCRETE. THE USE OF ALTERNATE LIGHTING FOUNDATIONS, SUCH AS PRECAST, MAY CHANGE THE SIZING AND REINFORCEMENT REQUIREMENTS FROM THOSE SHOWN ON THESE PLANS. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO ORDERING ANY SUBSTITUTED PRODUCTS.
- 11. CONTRACTOR SHALL EXAMINE AND VERIFY THAT SOIL CONDITIONS ARE SUITABLE TO SUPPORT LOADS EXERTED UPON THE FOUNDATIONS DURING EXCAVATION. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY
- 12. POLE FOUNDATIONS SHALL NOT BE POURED IF FREE STANDING WATER IS PRESENT IN EXCAVATED AREA. 13. ALL POLES 25 FT. OR GREATER SHALL BE EQUIPPED WITH FACTORY INSTALLED VIBRATION DAMPENERS.

- 14. CONTRACTOR TO COORDINATE INSTALLATION OF ALL THE WALL MOUNTED FIXTURES AND ELECTRICAL CONNECTIONS TO SITE STRUCTURE(S) WITH BUILDING MEP, ARCHITECT, AND/OR OWNER.
- 15. INSTALLATION AND ELECTRICAL CONNECTIONS FOR WALL MOUNTED FIXTURES TO BE COORDINATED WITH ARCHITECTURAL, STRUCTURAL, UTILITY AND SITE PLANS AND TO BE IN ACCORDANCE WITH ALL APPLICABLE CODES.

- 16. CONTRACTOR TO OPERATE EACH LUMINAIRE AFTER INSTALLATION AND CONNECTION. INSPECT FOR IMPROPER CONNECTIONS AND OPERATION.
- 17. CONTRACTOR TO AIM AND ADJUST ALL LUMINAIRES TO PROVIDE ILLUMINATION LEVELS AND DISTRIBUTION AS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE LANDSCAPE ARCHITECT AND/OR OWNER.

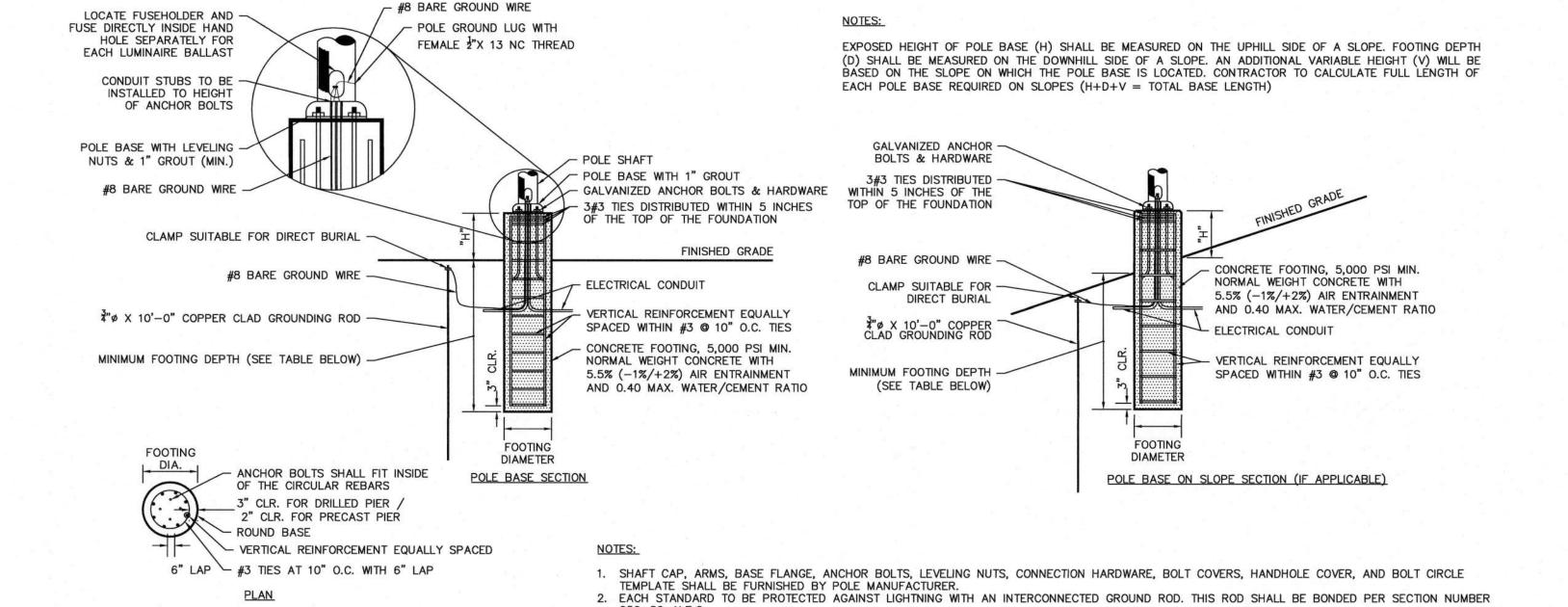
18. CONTRACTOR TO CONFIRM THAT LIGHT FIXTURES, TILT ANGLE AND AIMING MATCH SPECIFICATIONS ON THE REQUIREMENTS FOR ALTERNATES

BE ENTIRELY BORNE BY THE CONTRACTOR

FIXTURE'S COLOR, FINISH, AND PHYSICAL CHARACTERISTICS.

- 19. ALL LIGHTING SUBSTITUTIONS MUST BE MADE WITHIN 14 DAYS PRIOR TO THE BID DATE TO PROVIDE AMPLE TIME FOR REVIEW AND TO ISSUE AN ADDENDUM INCORPORATING THE SUBSTITUTION WITH THE FOLLOWING REQUIREMENTS: A. ANY SUBSTITUTION TO LIGHTING FIXTURES, POLES, ETC. MUST BE APPROVED BY THE OWNER, ENGINEER AND TENANTS. ANY COST ASSOCIATED WITH REVIEW AND/OR APPROVAL OF THE SUBSTITUTIONS SHALL
- B. COMPUTER PREPARED PHOTOMETRIC LAYOUT OF THE PROPOSED LIGHTED AREA WHICH INDICATES, BY ISOFOOTCANDLE, THE SYSTEM'S PERFORMANCE.
- C. A PHOTOMETRIC REPORT FROM A NATIONAL INDEPENDENT TESTING LABORATORY WITH REPORT NUMBER, DATE, FIXTURE CATALOG NUMBER, LUMINAIRE AND LAMP SPECIFICATIONS; IES CALCULATIONS, POINT BY POINT FOOT CANDLE PLAN, STATISTIC ZONES SHOWING AVERAGE, MAXIMUM, MINIMUM AND UNIFORMITY RATIOS, SUMMARY, ISOLUX PLOT, AND CATALOGUE CUTS. CATALOGUE CUTS MUST IDENTIFY
- OPTICS, LAMP TYPE, DISTRIBUTION TYPE, REFLECTOR, LENS, BALLASTS, WATTAGE, VOLTAGE, FINISH HOUSING DESCRIPTION AND ALL OTHER PERTINENT INFORMATION. D. POLE MANUFACTURER AASHTO CALCULATIONS INDICATING THE POLE AND ANCHOR BOLTS BEING SUBMITTED ARE CAPABLE OF SUPPORTING THE POLE AND FIXTURE SYSTEMS BEING UTILIZED IN
- ACCORDANCE WITH THE CONTRACT DOCUMENTS. E. THE UNDERWRITERS LABORATORY LISTING AND FILE NUMBER FOR THE SPECIFIC FIXTURE(S) TO BE

F. A COLOR PHOTOGRAPH THAT CLEARLY SHOWS THE REPLACEMENT FIXTURE POLE MOUNTED, THE



LIGHT POLE BASE NTS

LOCAL DESIGN STANDARDS AND MANUFACTURERS RECOMMENDATIONS.

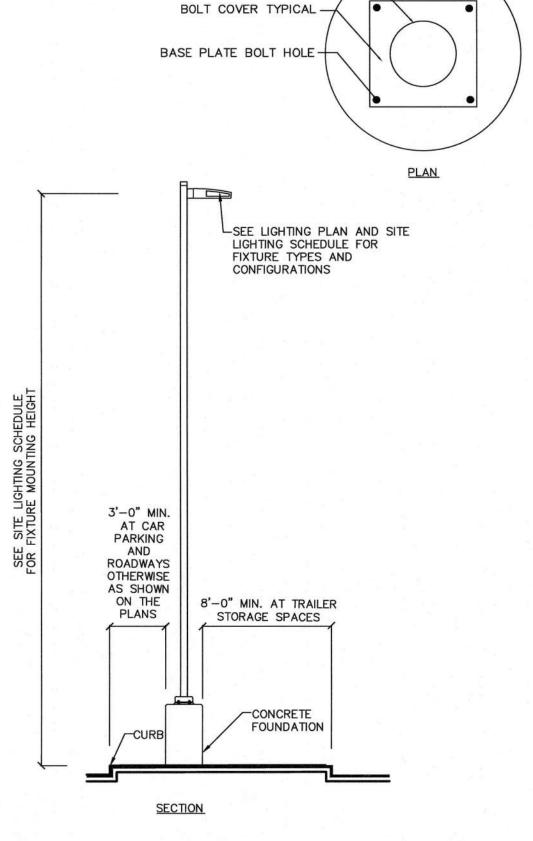
CONTRACTOR TO CONFIRM GROUNDING DESIGN WITH MEP.

MOUNTING FOOTING FOOTING EXPOSED VERTICAL

5'-7" 2'-0"

DEPTH DIAMETER HEIGHT "H" REINFORCEMENT

3'-0"



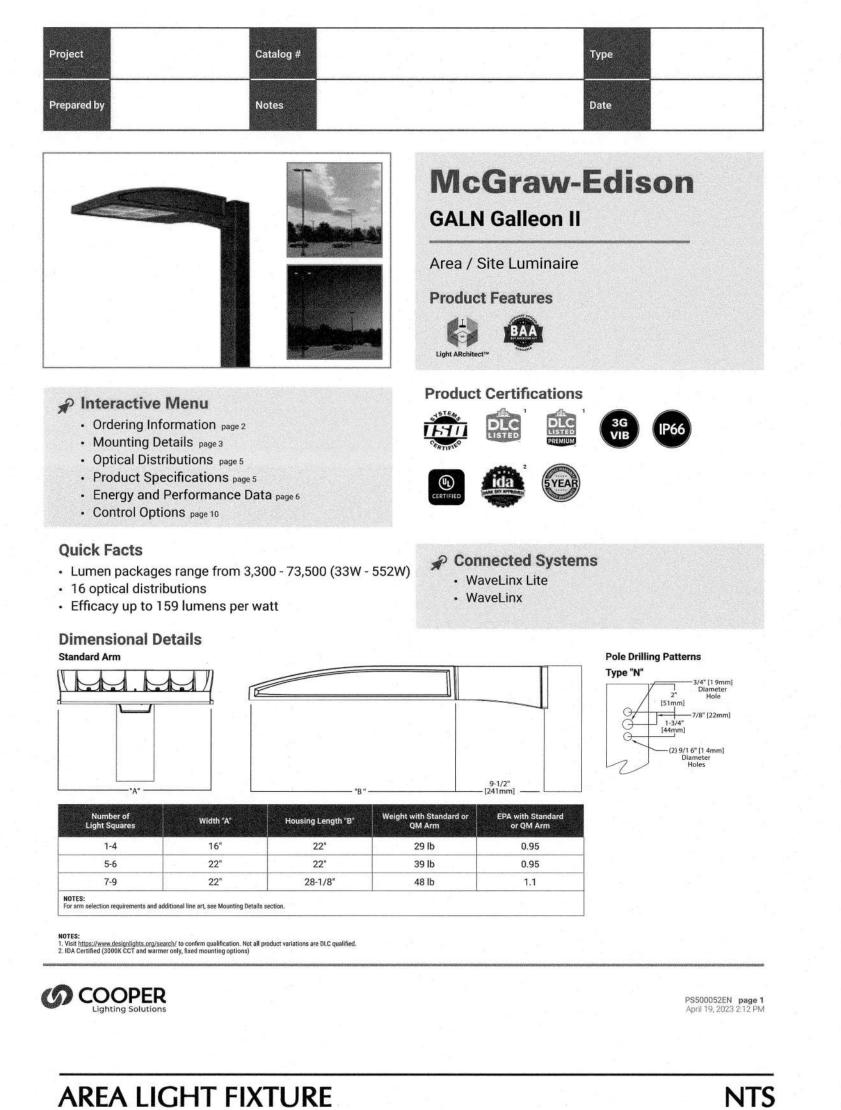
POLE-TO-BASE PLATE WELD -SHALL COMPLY WITH AWS

SPECS. AT TOP AND BOTTOM

OF BASE PLATE

- 1. LIGHT POLES 25 FEET OR GREATER SHALL BE EQUIPPED WITH FACTORY INSTALLED
- 2. CURB LOCATION IS SHOWN FOR SCHEMATIC PURPOSE. LIGHT POLES SHALL BE LOCATED PER THE LIGHTING PLANS IF THERE IS A CONFLICT.

LIGHT POLE FIXTURE



3. CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENT OF ACI 318. CAST-IN-PLACE SHALL HAVE UNCONFINED COMPRESSIVE STRENGTH OF AT

5. IF POLE BASE IS CAST-IN-PLACE, POLE BASE SHALL BE ONE CONTINUOUS POUR. EXPOSED PORTION OF BASE SHALL BE HAND-RUBBED SMOOTH.

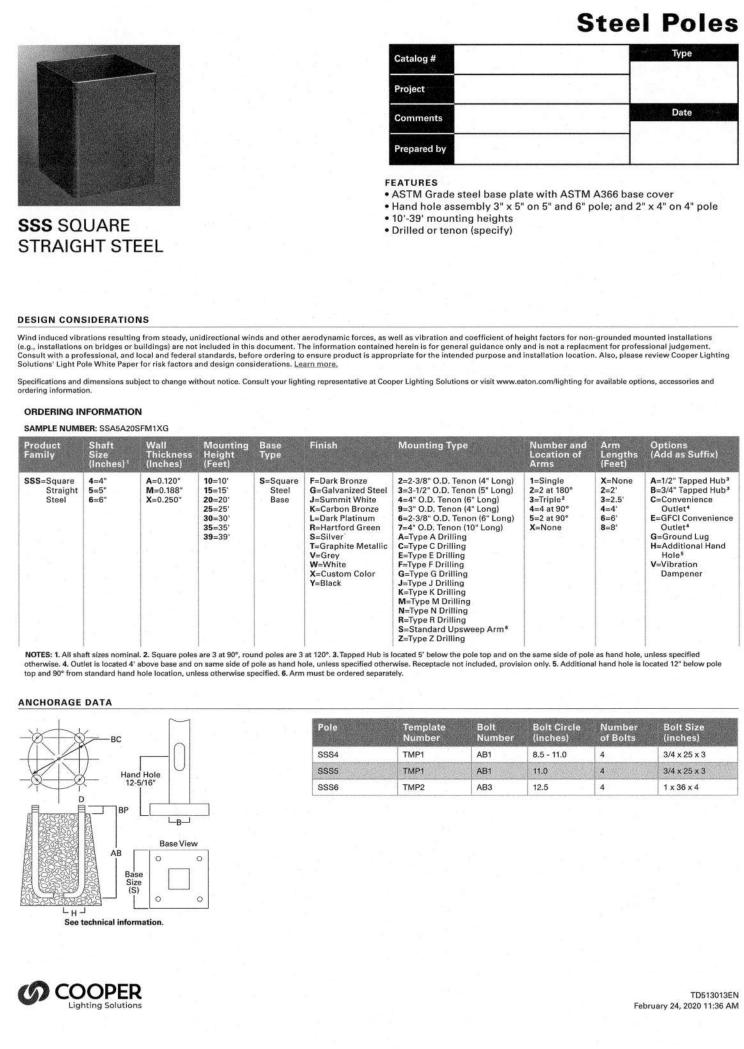
THE INFORMATION ILLUSTRATED IN THE LIGHT POLE FOUNDATION DETAIL HAS BEEN PROVIDED FOR GENERAL REFERENCE AND PRELIMINARY COST ESTIMATE

PURPOSES. LIGHT POLE FOUNDATIONS SHOULD BE DESIGNED AND DETAILED BY A LICENSED STRUCTURAL ENGINEER BASED ON EXISTING SOIL CONDITIONS,

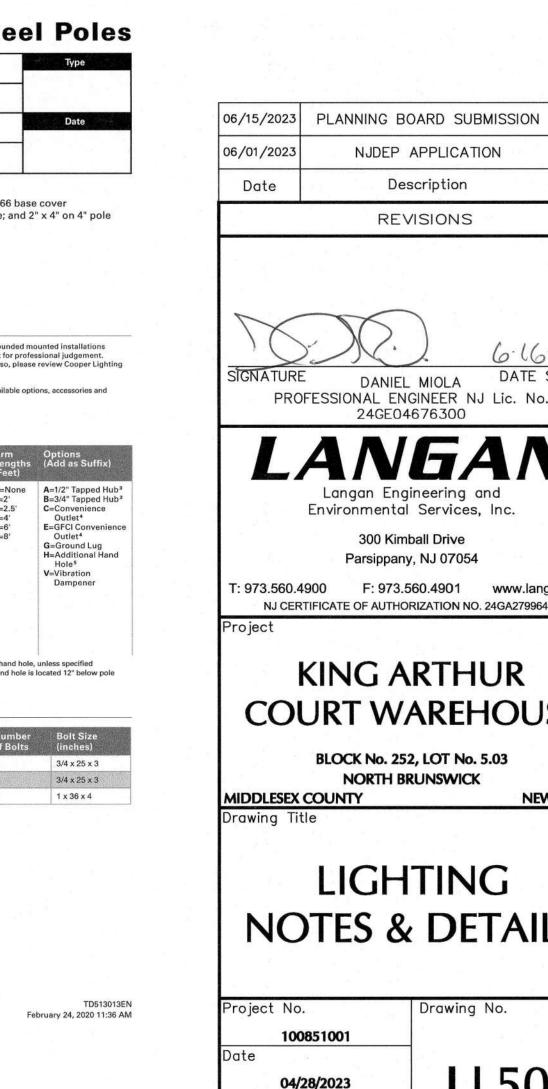
LEAST 5,000 PSI AT 28-DAYS. DEFORMED REINFORCEMENT BARS SHALL CONFORM TO ASTM A615, GRADE 60.

CONTRACTOR TO COMPACT SUBGRADE AROUND POLE BASE PER EARTHWORK SPECIFICATIONS / GEOTECH REPORT.

I. CONTRACTOR TO ENSURE CONCRETE POLE BASES ARE POURED / PLACED ABSOLUTELY VERTICAL & LEVEL.



AREA LIGHT POLE



NTS



04/28/2023

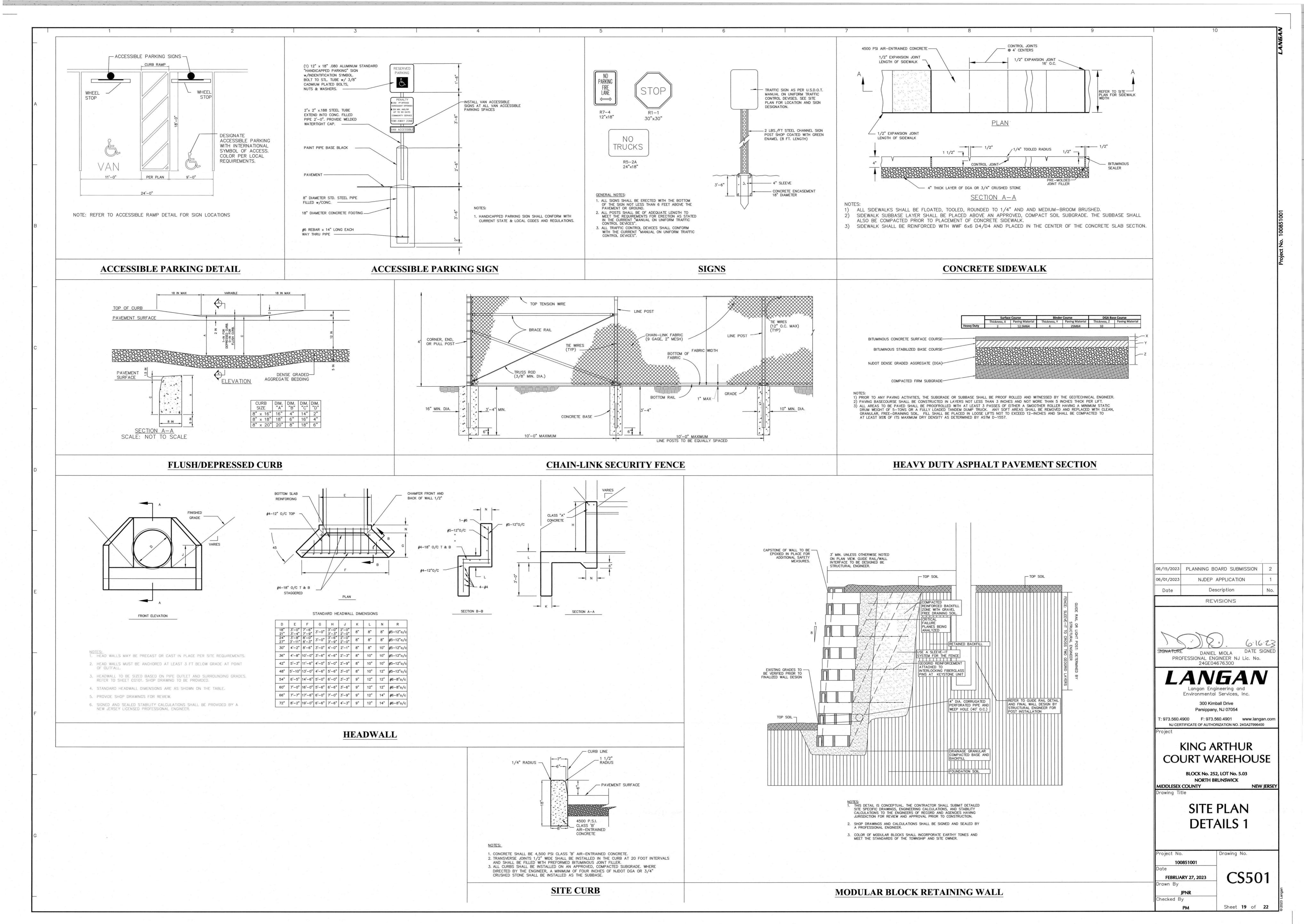
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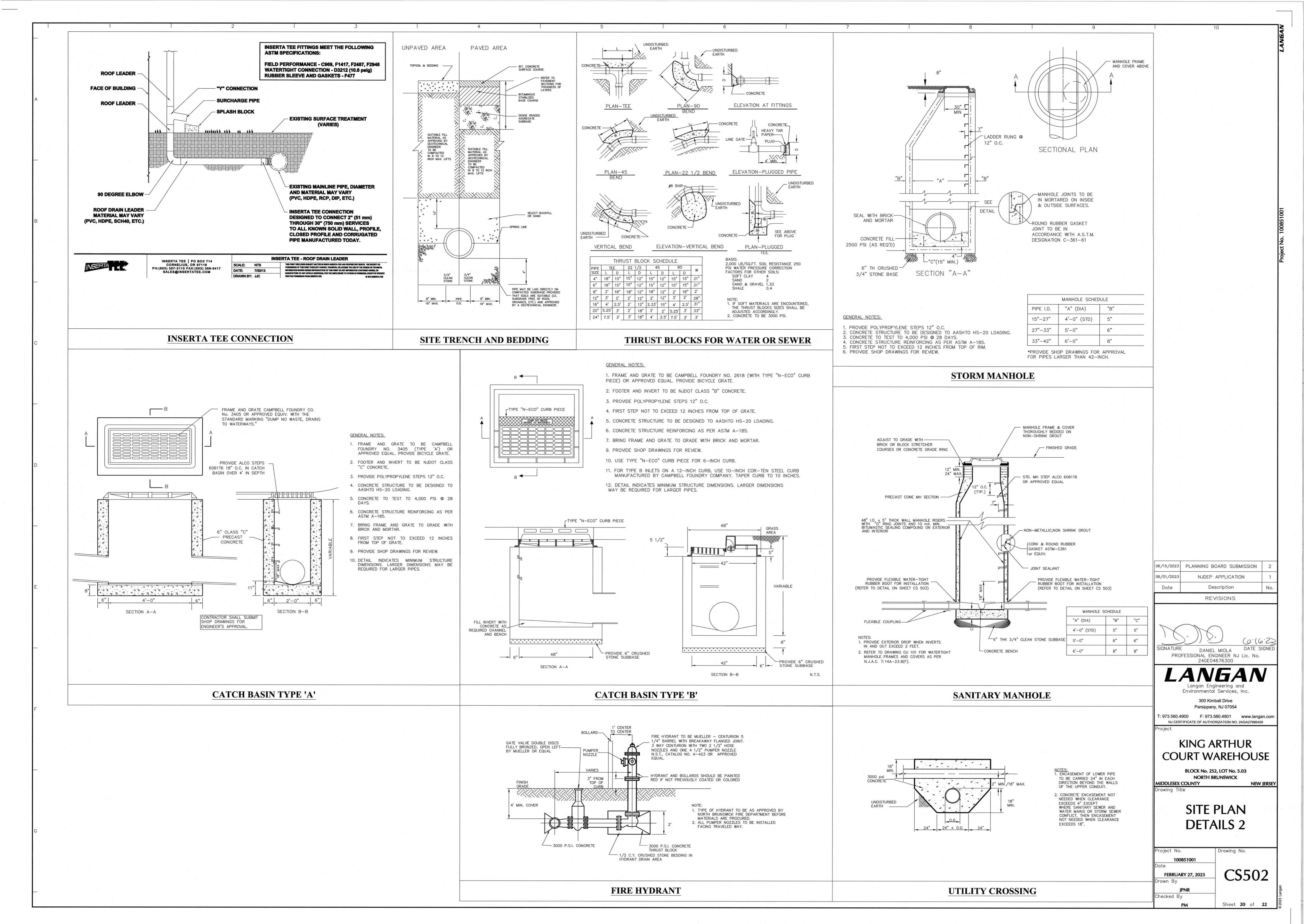
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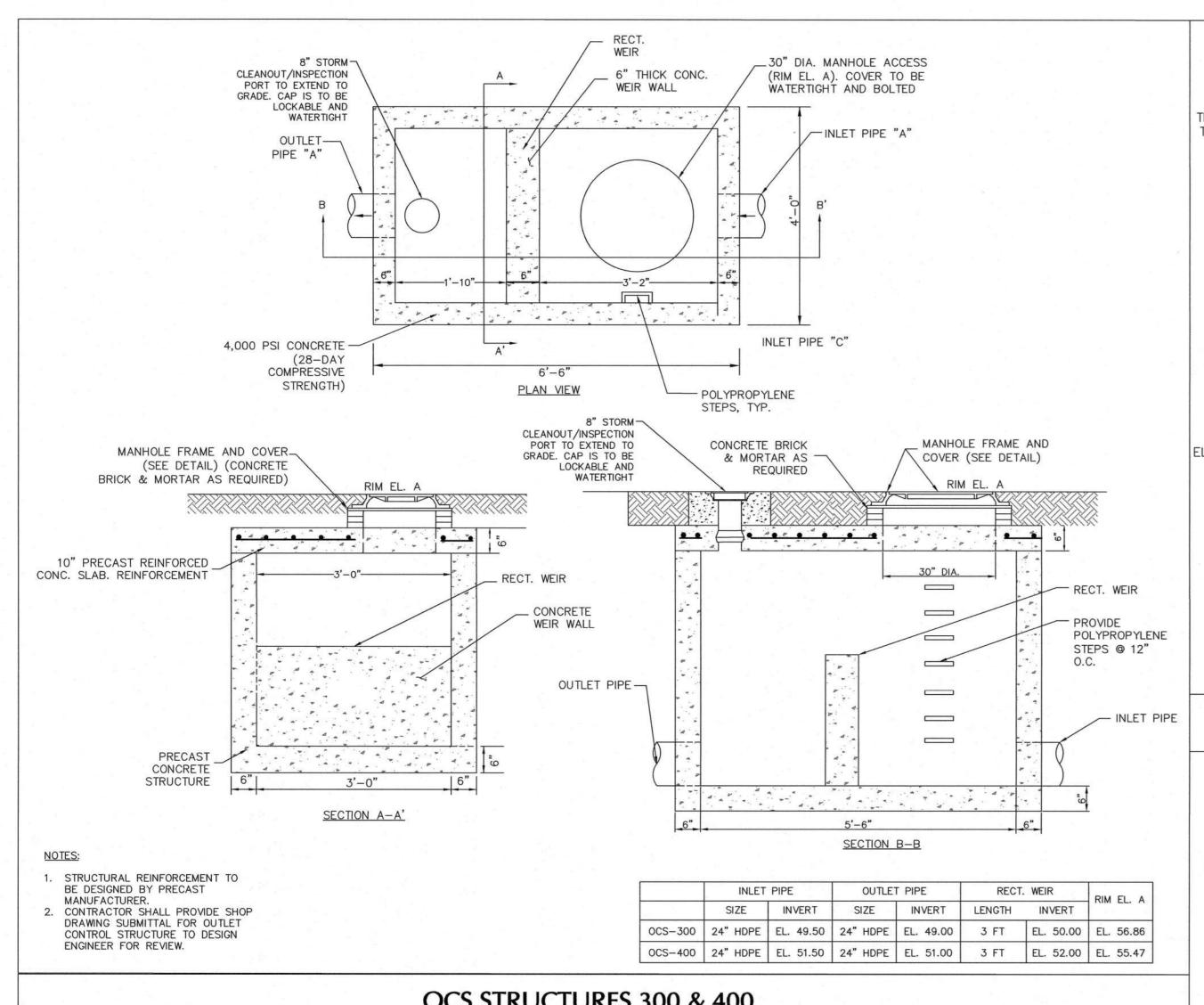
NJDEP APPLICATION

Description

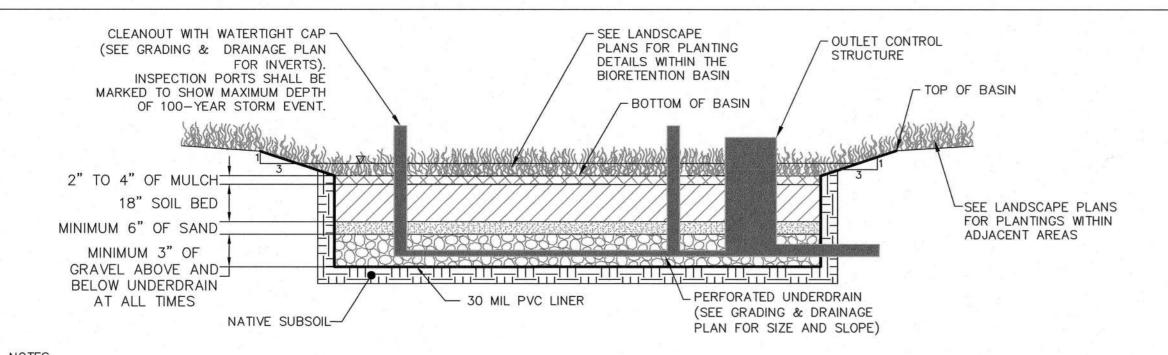
Date







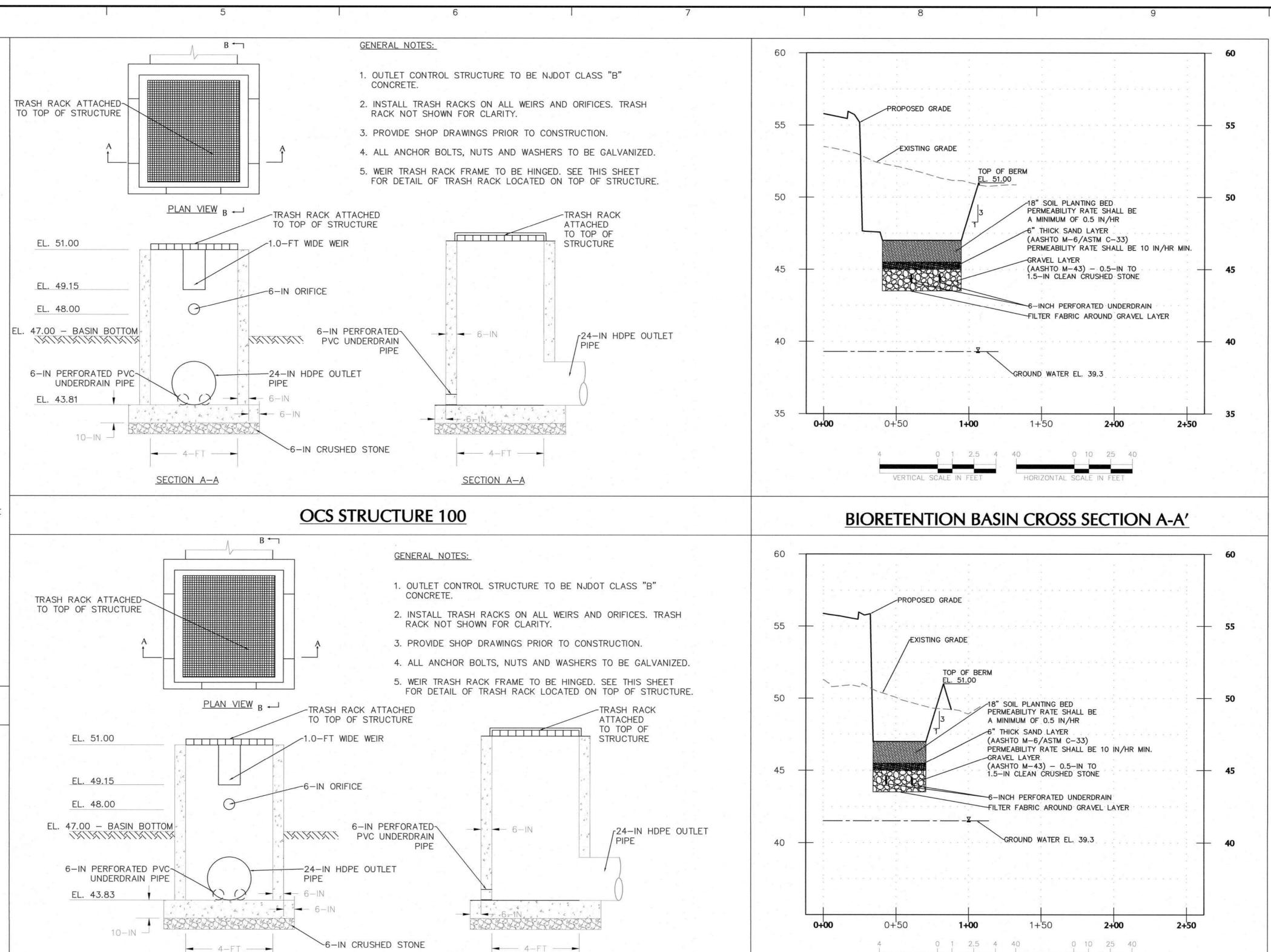
OCS STRUCTURES 300 & 400



NOTES:

- 1. BIORETENTION BASINS (INCLUDING THE MULCH, SOIL BED, SAND AND GRAVEL LAYER) SHALL BE CONSTRUCTED IN CONFORMANCE WITH NEW JERSEY STORMWATER BEST MANAGEMENT PRACTICES MANUAL SECTION 9.7 FOR SMALL-SCALE BIORETENTION SYSTEMS AND SECTION 10.1 FOR LARGE-SCALE BIORETENTION SYSTEMS.
- 2. LINER SHALL BE INSTALLED DURING TIME OF LOW GROUNDWATER. DEWATERING MAY BE NECESSARY TO INSTALL LINER.
- 3. LINER SHALL BE A MINIMUM 30 MIL GEOMEMBRANE OR 60 MIL HDPE WITH A MAXIMUM PERMEABILITY OF 1X10^-7 CM/SEC AND A MINIMUM 30-YEAR DESIGN LIFE.
- 4. LINER SHALL BE INSTALLED WHOLLY BELOW THE AVERAGE DEPTH OF FROST PENETRATION IN THE AREA AS DETERMINED BY UNITED STATES DEPARTMENT OF AGRICULTURE.
- 5. AT LEAST ONE (1) INSPECTION PORT, WITH A REMOVABLE CAP, MUST BE PROVIDED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE PERFORATED SECTION OF THE NETWORK OF PIPES. INSPECTION PORTS SHALL BE MARKED TO SHOW MAXIMUM DEPTH OF 100-YEAR STORM EVENT - SEE CROSS SECTION DETAILS THIS SHEET.

BIORETENTION BASIN TYPICAL CROSS SECTION



SECTION A-A

OCS STRUCTURE 200

SECTION A-A

06/15/2023	PLANNING BOARD SUBMISSION	2
06/01/2023	NJDEP APPLICATION	1
Date	Description	No.

HORIZONTAL SCALE IN F

BIORETENTION BASIN CROSS SECTION B-B'

6.16.23 DATE SIGNED DANIEL MIOLA PROFESSIONAL ENGINEER NJ Lic. No. 24GE04676300

Environmental Services, Inc. 300 Kimball Drive Parsippany, NJ 07054

T: 973.560.4900 F: 973.560.4901 www.langan.com NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400

KING ARTHUR **COURT WAREHOUSE**

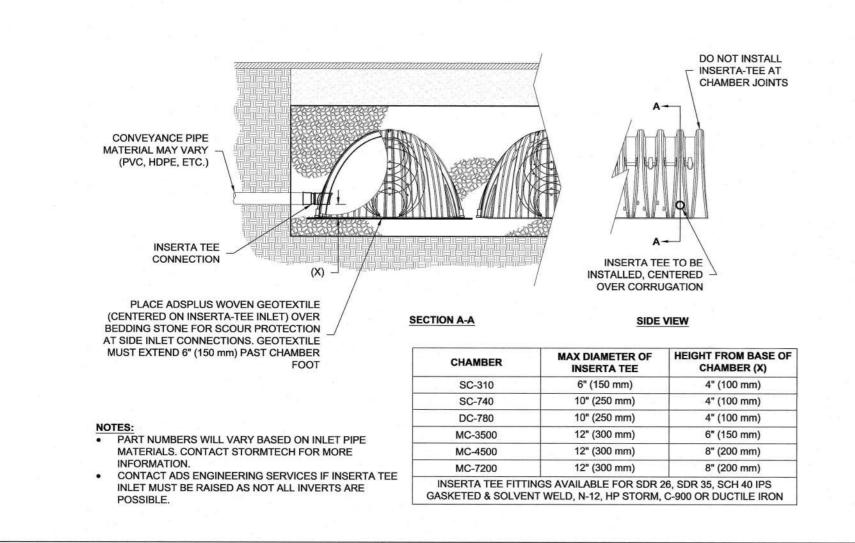
BLOCK No. 252, LOT No. 5.03

SITE PLAN **DETAILS 3**

NEW JERSEY

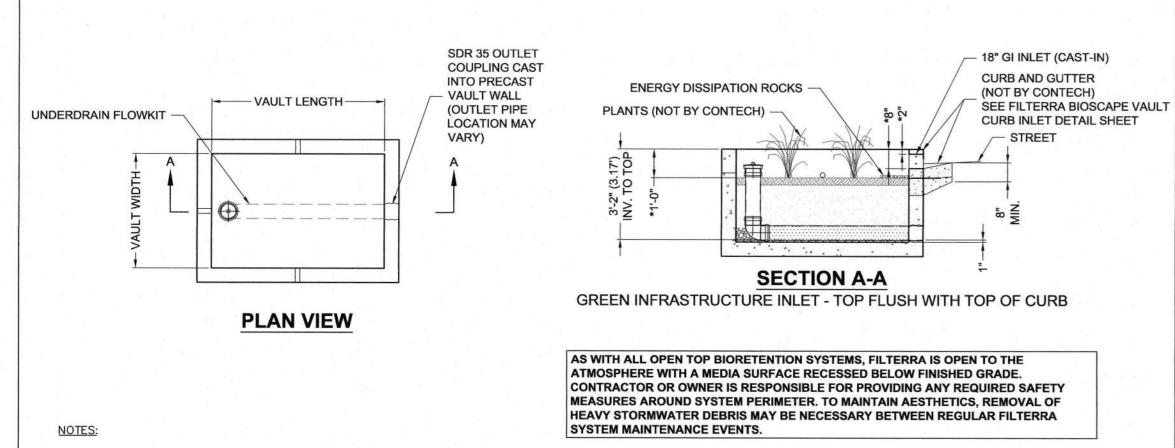
Sheet **21** of **22**

CS503 FEBRUARY 27, 2023 Checked By



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ADS STORMTECH INSERTA-TEE SIDE INLET



1. THE CONTECH FILTERRA HC BIOSCAPE VAULT STANDARD OFFLINE (FTBSV-HC) WITH A MEDIA BAY SIZE OF 10' x 6' HAS A MAXIMUM TREATMENT FLOW RATE OF 0.417 CFS.

2. REFER TO MANUFACTURER FOR INSTALLATION REQUIREMENTS AND RECOMMENDATIONS.

CONTECH OFFLINE HC BIOSCAPE VAULT

SC-310 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-310.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE

CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418 (POLYPROPYLENE),
- "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:

DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.

- TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS. TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL
- TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER. THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY
 - SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE. THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2922 SHALL BE USED FOR PERMANENT DEAD LOAD. DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- 9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

NOTES FOR CONSTRUCTION EQUIPMENT:

- STORMTECH SC-310 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
- NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS. NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE
- REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE". WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- 3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

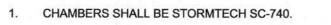
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE ALL AROUND CLEAN CRUSHED, ANGULAR STONE IN A & B LAYERS PAVEMENT LAYER *TO BOTTOM OF FLEXIBLE PAVEMENT. FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 24*. PERIMETER STONE (SEE NOTE 5) **EXCAVATION WALL** **THIS CROSS SECTION DETAIL REPRESENTS (CAN BE SLOPED OR VERTICAL) MINIMUM REQUIREMENTS FOR INSTALLATION. SUBGRADE SOILS COMPACTION /DENSITY REQUIREMENT FINAL FILL: FILL MATERIAL FOR LAYER 'D' 90.7" (2304 mm) ACTUAL LENGTH ——— ■ 85.4" (2169 mm) INSTALLED LENGTH — ■ STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR ENVIRONMENTALL' UNPAVED FINISHED GRADE ABOVE, NOTE CLEAN FIL <>> BUILD ROW IN THIS DIRECTION THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER. BEGIN COMPACTIONS AFTER 12" OF MATERIAL OVER THE INITIAL FILL: FILL MATERIAL FOR LAYER 'C HAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" STARTS FROM THE TOP OF THE EMBEDMENT MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL STONE ('B' LAYER) TO 18" (450 mm) ABOVE GRADED MATERIAL AND 95% RELATIVE DENSITY FOR THE TOP OF THE CHAMBER. NOTE THAT STRUCTURAL FILL PROCESSED AGGREGATE MATERIALS. ROLLER GROSS PAVEMENT SUBBASE MAY BE A PART OF VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs. DYNAMIC THE 'C' LAYER. FORCE NOT TO EXCEED 20,000 lbs. EMBEDMENT STONE: FILL SURROUNDING NUDOT COARSE - OVERLAP NEXT CHAMBER HERE NO COMPCATION REQUIRED THE CHAMBERS FROM THE FOUNDATION | AGGREGATE SIZE #57 (OVER SMALL CORRUGATION) STONE ('A' LAYER) TO THE 'C' LAYER ABOVE. FOUNDATION STONE: FILL BELOW NUDOT COARSE CHAMBERS FROM THE SUBGRADE UP TO AGGREGATE SIZE #57 PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE THE FOOT (BOTTOM) OF THE CHAMBER. STONE NOMINAL CHAMBER SPECIFICATIONS SIZE (W X H X INSTALLED LENGTH) 34.0" X 16.0" X 85.4" (864 mm X 406 mm X 2169 mm) 14.7 CUBIC FEET CHAMBER STORAGE (0 42 m³) MINIMUM INSTALLED STORAGE* 31.0 CUBIC FEET 35.0 lbs. (16.8 kg) *ASSUMES 6" (152 mm) ABOVE, BELOW, AND BETWEEN CHAMBERS

- 1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2922 (POLETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER
- 2. SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER
- COLLECTION CHAMBERS" 3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION
- STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- 4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
- TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS. TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
- TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2922 SHALL BE GREATER THAN
- OR EQUAL TO 400 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

ADS STORMTECH SC-310 CHAMBERS





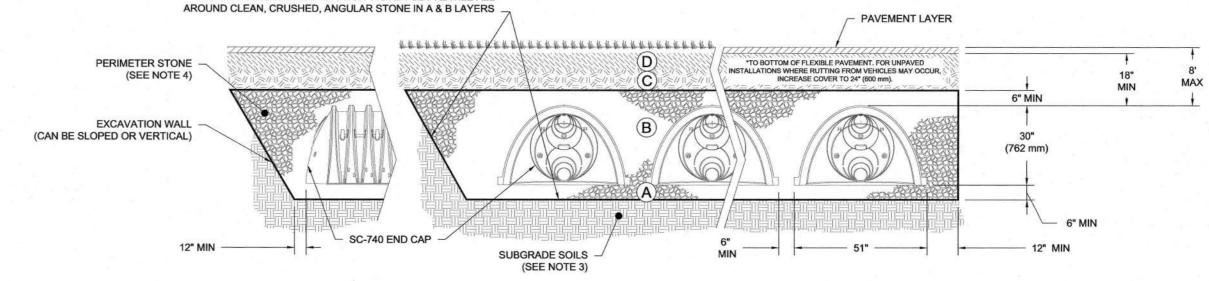
- 2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
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- STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED: NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.

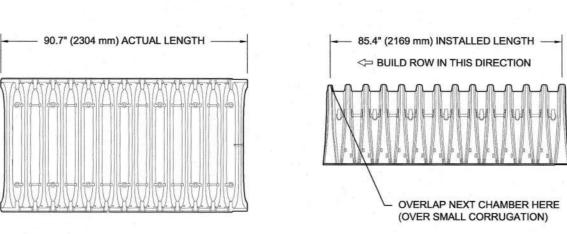
CONSTRUCTION GUIDE".

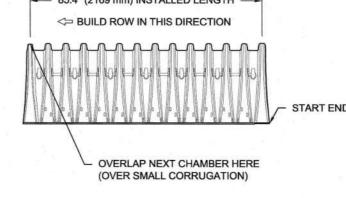
- NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE". WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780
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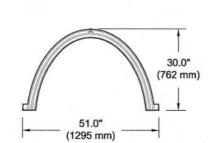






74.9 CUBIC FEET

(310 mm)



NOMINAL CHAMBER SPECIFICATIONS SIZE (W X H X INSTALLED LENGTH) CHAMBER STORAGE MINIMUM INSTALLED STORAGE*

51.0" X 30.0" X 85.4" (1295 mm X 762 mm X 2169 mm) 45.9 CUBIC FEET (1.30 m³)

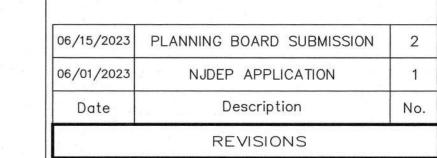
(2.12 m³)

75.0 lbs. (33.6 kg)*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS

 CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". 2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL

- 3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
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- TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE
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ADS STORMTECH SC-740 CHAMBERS





6-16-23 DATE SIGNED DANIEL MIOLA PROFESSIONAL ENGINEER NJ Lic. No. 24GE04676300

Environmental Services, Inc.

300 Kimball Drive Parsippany, NJ 07054

T: 973.560.4900 F: 973.560.4901 www.langan.com NJ CERTIFICATE OF AUTHORIZATION NO. 24GA27996400

KING ARTHUR

COURT WAREHOUSE

BLOCK No. 252, LOT No. 5.03 MIDDLESEX COUNTY

> SITE PLAN **DETAILS 4**

NEW JERSE

Sheet 22 of 22

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