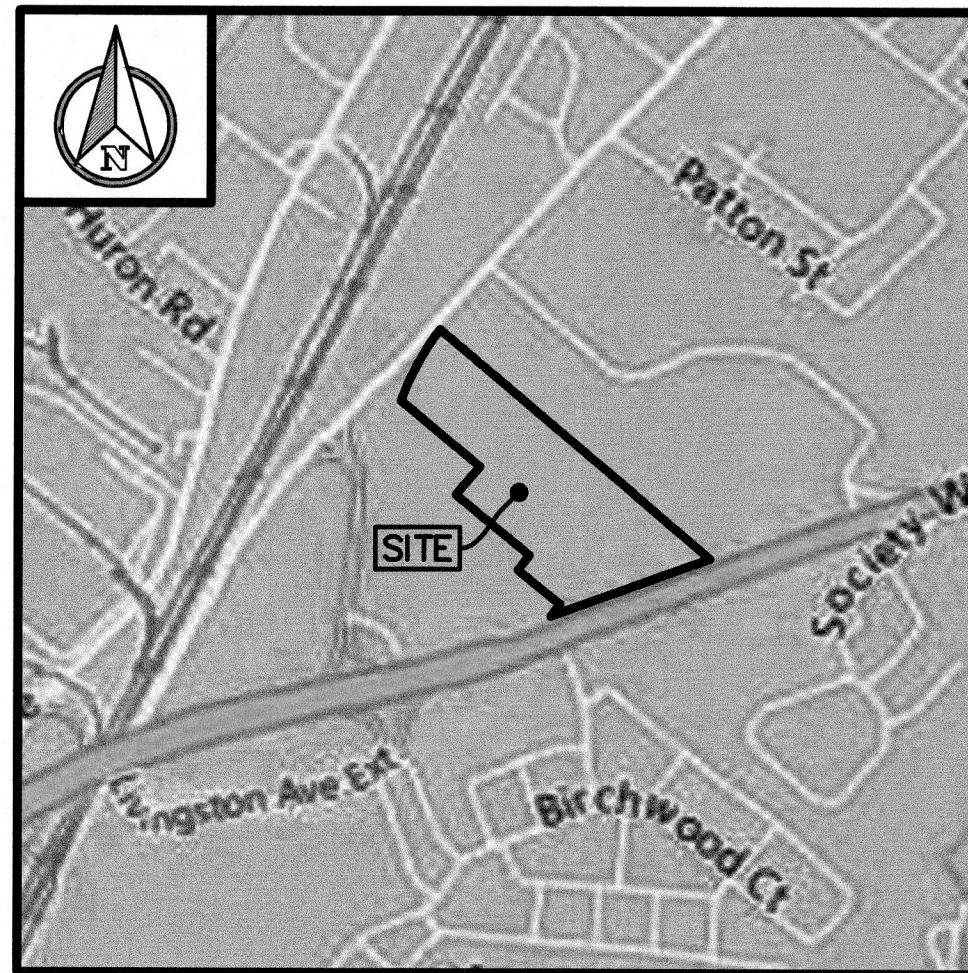


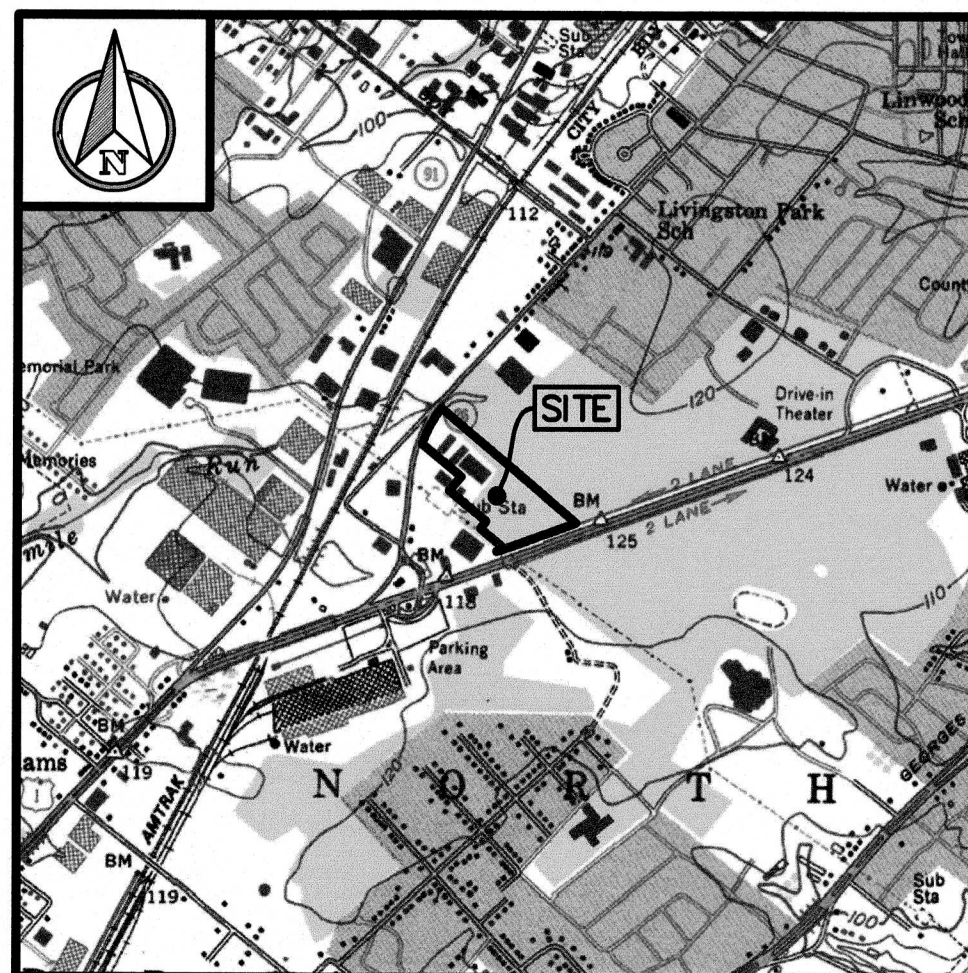
PRELIMINARY/FINAL SITE PLAN for

LIVINGSTON WAREHOUSE

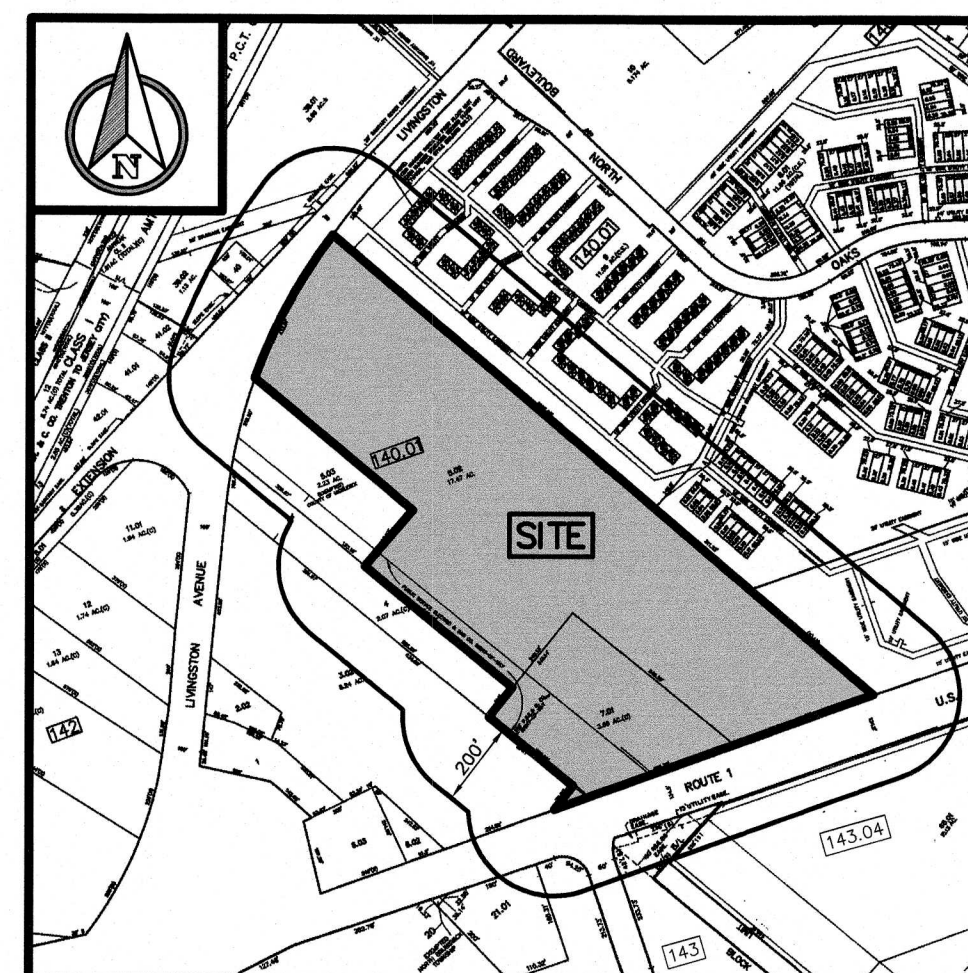
TOWNSHIP OF NORTH BRUNSWICK
MIDDLESEX COUNTY, NEW JERSEY
BLOCK 140.01, LOTS 5.02 & 7.01



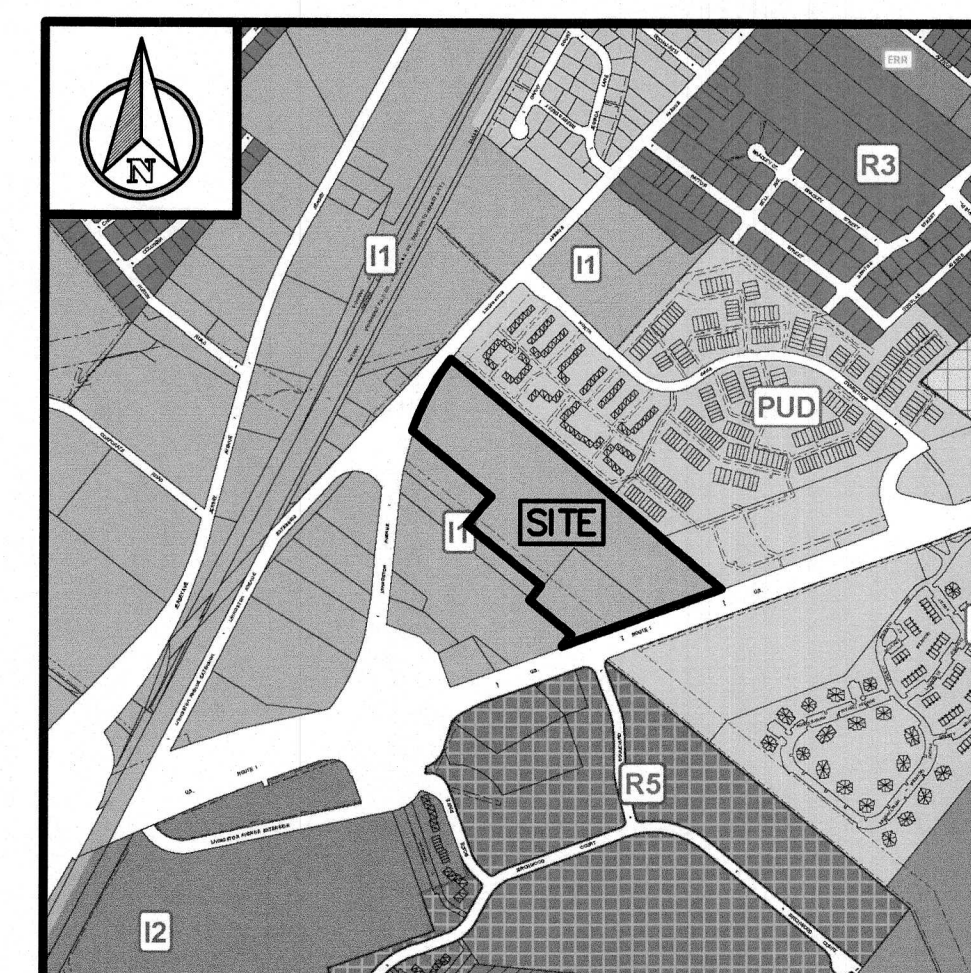
ROAD MAP
1"=1,000'



U.S.G.S. MAP
1"=2,000'



TAX MAP
1"=500'



ZONE MAP
1"=1,000'

200' OWNERS LIST

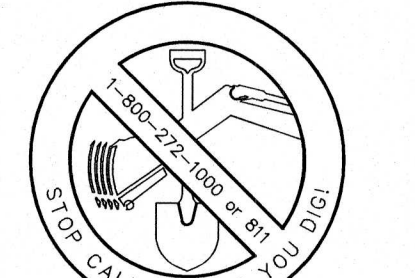
BLOCK	LOT	NAME & ADDRESS
140.01	3.03, 4	PSEG Prop. Taxes Dept. 6th Floor 80 Park Plaza Newark, NJ 07101
140.01	9.189	George Majeddy 1311 North Oaks Blvd North Brunswick, NJ 08902
140.01	8.09	Sheryl Design Living Trust - Trustee 2601 North Oaks Blvd North Brunswick, NJ 08902
140.01	8.08	Kathy Martin 2601 North Oaks Blvd North Brunswick, NJ 08902
140.01	8.07	Bhupendra Singh 49 Zeller Drive Somerset, NJ 08873
140.01	8.24	Karl Mease & Ruth Rosen 2805 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.04	Sarinder Singh 600 Rossmore Ranges Road Segonsville, NJ 08517
140.01	9.039	Montreia Wilson & Jeremy Franklin 1055 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.134	Gene Ng & Susan Lee-Ling 20 Burr Avenue Monmouth, NJ 07711
140.01	9.133	Robert & Patricia Walker 1211 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.194	Rajinder & Sandeep Chawla 1545 Hawthorne-Radwain Lambertville, NJ 08530
140.01	9.193	Jennifer Pellegrino 74 Brimley Avenue Port Monmouth, NJ 07759
140.01	9.132	Jim Ai Chen & Huijin Zhang 1214 North Oaks Blvd North Brunswick, NJ 08902
143.05	18.06, 18.12	No. Bruns Manor LLC % Middlesex Manag 90 Woodridge Cir Dr, 600 Woodbridge, NJ 07095
140.01	9.144	Asina Gupta 4 Harvesting Drive Monroe, NJ 08851
140.01	5.02, 7.01	1460 Livingston Avenue Associates PO Box 626 Lakewood, NJ 08701
140.01	9.014	Lisette A. Reyes 914 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.013	Linda Trifunovic & Maria Gonzalez 513 North Oaks Blvd North Brunswick, NJ 08902
143.05	21.01	BAP, LLC 1400 US Route 1 North Brunswick, NJ 08902
140.01	9.127	Yuk Wing Chan & Pak Ho Ng 1215 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.128	Nicholas Palco 1475 Livingston Avenue North Brunswick, NJ 08902
140.01	8.1	Ronald Bhambhani & Jennifer Bruce 2602 North Oaks Blvd North Brunswick, NJ 08902
140.01	8.16	Jared & Sara Jodal 2705 North Oaks Blvd North Brunswick, NJ 08902
140.01	8.15	Tracy V. Cavallo 2704 North Oaks Blvd North Brunswick, NJ 08902
140.01	8.14	Margaret Underwood 2703 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.192	Madhavi Kapkar & C Rajaykumar 17 Silver Lane Plainboro, NJ 08536
140.01	9.082	Zain & Zahara Faraj 1104 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.081	Kinal & Ruchita Gupta 1103 North Oaks Blvd North Brunswick, NJ 08902
90	39.02, 40	PLM LLC 1515 Livingston Avenue North Brunswick, NJ 08902
140.01	9.012	Konios Kariatras 86 Viburnum Drive Skillman, NJ 08553
140.01	9.011	Julie E. Calogris 3700 Capital Circle SE Tallahassee, FL 32311
140.01	9.129	Nadine Todor 1213 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.143	Odein & Dieder S. Beckley 1201 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.136	Shrik & Devyani Bhanji 1213 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.135	Wilmington FSH %Rubenore Loan Mana 1540 Laguna Canyon Rd 100 Irvine, CA 92618
140.01	9.016, 9.074	Danley Yoshin 1009 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.015	Irene Karpura 1009 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.014	Oak @ NB Condo Assoc % Glamo & Assoc 97 River Road Ramon, NJ 07769
140.01	9.033	Alexis R. Bradshaw 1011 North Oaks Blvd North Brunswick, NJ 08902
140.01	10.01	Graciele Cavallari 101 Harvestford Street North Brunswick, NJ 08902
140.01	9.184	Diana M. Wasielewski 136 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.183	Lula Middleton 1305 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.016	Maroun Maroun 58 Hill Street Milltown, NJ 08850
140.01	9.015	Barrett Road Corp. P.O. Box 242 Milltown, NJ 08850
140.01	8.01	Oak Hollow HOA - United Property Mgmt 71 Bransford Woods Drive East Brunswick, NJ 08816
140.01	9.01	Sharon Hoak 910 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.009	Patrick Cain 909 North Oaks Blvd North Brunswick, NJ 08902
90	39.01	OHM Laboratories Inc. PO Box 7827 Princeton, NJ 08543
140.01	9.08	Antonette M. Marro 1106 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.123	Parul & Dolly Datta 5 Golden Valley Drive North Brunswick, NJ 08902
140.01	9.178	Florence T. & Todd H. Raion 1332 Osprey Drive Palm Beach, FL 33450
140.01	9.177	Mahesh Choudhary 1301 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.078	Vanesha Michele 1108 North Oaks Blvd North Brunswick, NJ 08902
140.01	8.11	Phenella M. Lee 2601 North Oaks Blvd North Brunswick, NJ 08902
140.01	9	The Oaks & No. Brunswick Condo Assn North Oaks Blvd North Brunswick, NJ 08902
140.01	9.202	Bhaskara Group LLC 4inding Way Woodland Park, NJ 07424
140.01	9.199	Sema Jayaram 8 Murphy Drive Bridgewater, NJ 08807
140.01	9.079	Ana Maria DeLaRosa 1105 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.073	Matthew & Salina Yam 111 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.084	Thangjai Madala 15 Quincey Dayton, NJ 08101
140.01	9.083	Leonard Boas 1101 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.077	Lynn Tang & Ziyang Li 354 Stavoren Drive Union, NJ 07083
140.01	9.124	Liza Guo & Nim Kong 1220 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.006	Melissa Lato 906 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.005	Graciele Cavallari 101 Harvestford Street North Brunswick, NJ 08902
140.01	9.137	James W. Maloney, Jr 1207 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.138	Suzi Hill 14 Chase Drive Monmouth, NJ 07731
140.01	8.06	Eyal Nahonovitch 2601 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.198	Maki R. & Paul J. Kulkids 213 Geneva Terrace Dealton, NJ 08812
140.01	9.197	Kenneth G. & Stephan A. Amara 7 Stone Meadow Court Plainboro, NJ 08536
140.01	9.188	SBC Bank % PNH Mortgage Corporation One Mortgage Way Mt. Laurel, NJ 08054
140.01	8.23	Kristopher Kala Cherry 2804 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.142	Israel & Elzavira 1206 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.139	Jayvee & Hina Narwal 1201 North Oaks Blvd North Brunswick, NJ 08902
140.01	8.03	Pui-Fon Lin & Pui-Lin Song 26-21 116 Street Bayville, NY 11960
140.01	9.182	Joan Fu 23 Penton Path West Windsor, NJ 08550
140.01	9.179	Zo-Shach & Rosemary Fu 23 Penton Path West Windsor, NJ 08550
140.01	8.12	Joseph Scudlo 2701 North Oaks Blvd North Brunswick, NJ 08902
140.01	8.02	Damon C. & Alida J. Blue 2504 North Oaks Blvd North Brunswick, NJ 08902
140.01	8.19	Tod A. & Lori Abate 2701 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.044	Louise Graziosi 1002 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.043	Dorothy M. Lewis 1501 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.038	Ahmed Uddin 4210 Birchwood Court North Brunswick, NJ 08902
140.01	9.037	Glenn Spradley 1007 North Oaks Blvd North Brunswick, NJ 08902
140.01	8.13	Krishna Madan YB Primsa Kasetty 2702 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.126	SM Real Property LLC 1308 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.125	M. Vora & C. Trivedi & K. Bhanani 4 Eagle Court Monmouth Junction, NJ 08852
140.01	9.146	Suki Bahi 271 Lytle Place Edison, NJ 08817
140.01	9.145	Valerie Epstein & P. Verderame 1201 North Oaks Blvd North Brunswick, NJ 08902
143.04	65.01	R. & M. Shein and M. & S. Sennoff 14 Wide Horizons Drive Colts Neck, NJ 07722
140.01	9.187	Ramachandra & Rupa Swamy 1309 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.196	Sarah & Joel Elmer 18 Vivian Drive Newark, NJ 07101
140.01	9.195	Vijay N. & Nilaya V. Nishani 1135 Central Avenue, CN 08015 Princeton, NJ 08552-6802 Attn: Margaret Prenderville
140.01	9.185	Raghunandan Nair & Diane Coddington 5 Concord Drive East Brunswick, NJ 08902
140.01	9.186	Stefan Bittner 1308 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.042	Tong Yi 1004 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.041	Bartosz Sobot 1002 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.008	John T. & Gail E. Scanlon III 908 North Oaks Blvd North Brunswick, NJ 08902
140.01	9.007	Maria Finocch 722 S. Middlesex Avenue Colonia, NJ 07077
140.01	9.122	Momna Upendra Pranjani 1222 North Oaks Blvd North Brunswick, NJ 08902

OWNER
1460 LIVINGSTON AVE INVESTORS LP
920 E COUNTY LINE, SUITE 103
LAKEWOOD, NJ 08701

APPLICANT
1460 LIVINGSTON AVE LLC
1189 LAKEWOOD FARMINGDALE ROAD
HOWELL, NJ 07731

SHEET INDEX		
SHEET #	DWG. #	TITLE
SHEET 1	CV-1	COVER SHEET
SHEET 2	EC-1	EXISTING CONDITIONS & DEMOLITION PLAN
SHEET 3	OP-1	OVERALL PLAN
SHEET 4	GE-1	GEOMETRY PLAN
SHEET 5	GU-1	GRADING & UTILITY PLAN
SHEET 6	LT-1	LIGHTING PLAN
SHEET 7	LA-1	LANDSCAPE PLAN
SHEET 8	TR-1	TREE REPLACEMENT PLAN
SHEET 9	SE-1	SOIL EROSION & SEDIMENT CONTROL PLAN
SHEET 10	SED-1	SOIL EROSION & SEDIMENT CONTROL DETAILS (1)
SHEET 11	SED-2	SOIL EROSION & SEDIMENT CONTROL DETAILS (2)
SHEET 12	DE-1	CONSTRUCTION DETAILS (1)
SHEET 13	DE-2	CONSTRUCTION DETAILS (2)
SHEET 14	DE-3	CONSTRUCTION DETAILS (3)
SHEET 15	DE-4	CONSTRUCTION DETAILS (4)
SHEET 16	DE-5	CONSTRUCTION DETAILS (5)

APPROVED BY	
CHAIRMAN	DATE
SECRETARY	DATE
ENGINEER	DATE



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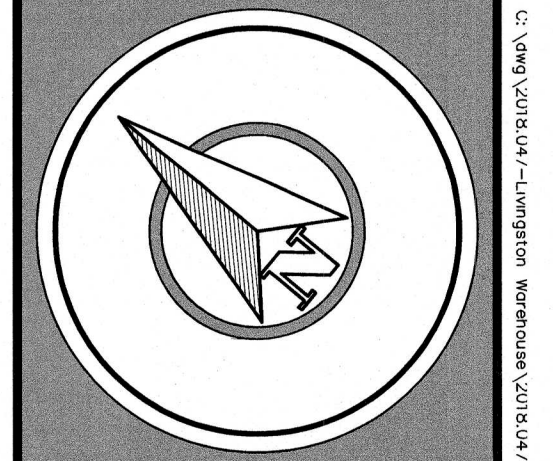
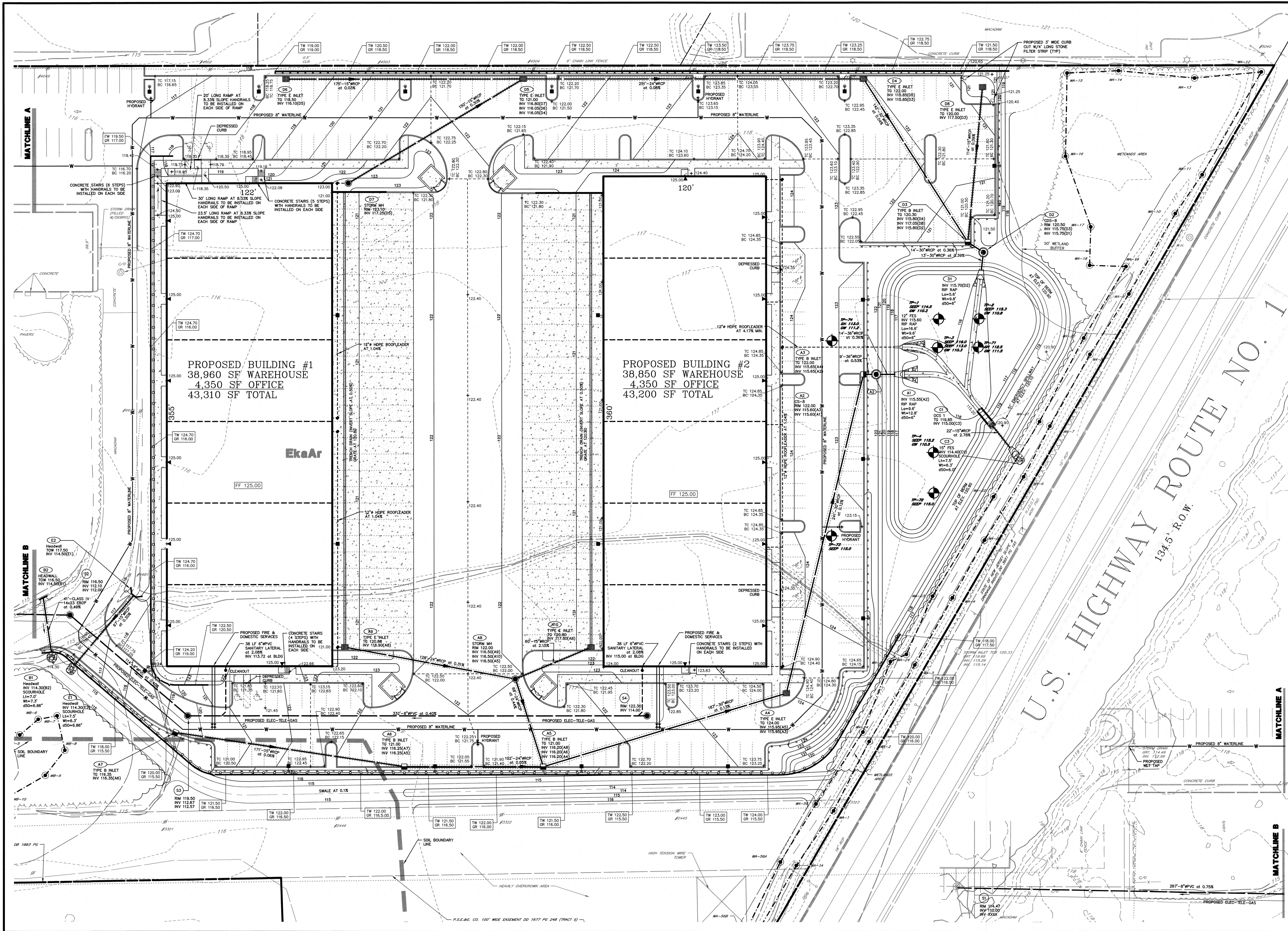
LIVINGSTON WAREHOUSE
TOWNSHIP OF NORTH BRUNSWICK
MIDDLESEX COUNTY
NEW JERSEY

BLOCK 140.01
LOTS 5.02 & 7.01
TAX MAP SHEET 30
21.03 ACRES

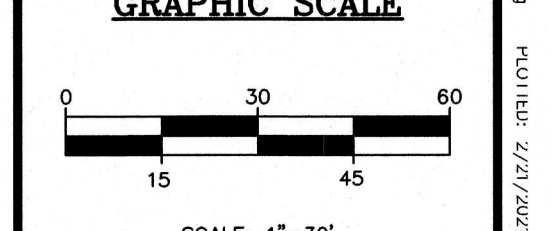
COVER SHEET

DRAWN BY PJ
DESIGNED BY PJ
APPROVED BY GSO
THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION...
GREGORY S. OMAN
PROFESSIONAL ENGINEER
NJPE# 43441

PROJECT NUMBER	2018.047.01	CV-1
DATE OF ISSUE	FEBRUARY 12, 2021	PJ
REVISION THROUGH		1



HORIZONTAL DATUM : NAD 1983



REVISIONS

NO.	DATE	DESCRIPTION

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•• CHKD BY: _____ DATE: _____



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engineering
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Civil Engineering Consultants
Landscape Architects
Professional Planners

261 Cleveland Avenue
Highland Park, NJ 08904

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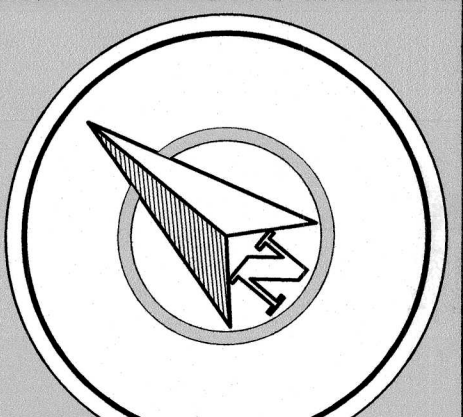
LIVINGSTON WAREHOUSE

TOWNSHIP OF NORTH BRUNSWICK
MIDDLESEX COUNTY
NEW JERSEY

BLOCK 140.01,
LOT 5.02 & 7.01
TAX MAP SHEET 30
21.03 ACRES

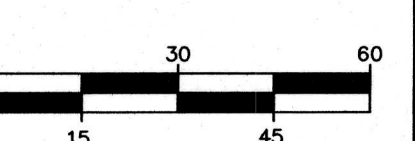
GRADING & UTILITY PLAN

DRAWN BY	RM
DESIGNED BY	RUG
APPROVED BY	GSO
THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION...	
GREGORY S. OMAN PROFESSIONAL ENGINEER NJPE# 43441	
PROJECT NUMBER	2018.047.02 GU-1
DATE OF ISSUE	FEBRUARY 12, 2021
REVISION	5



HORIZONTAL DATUM : NAD 1983

GRAPHIC SCALE



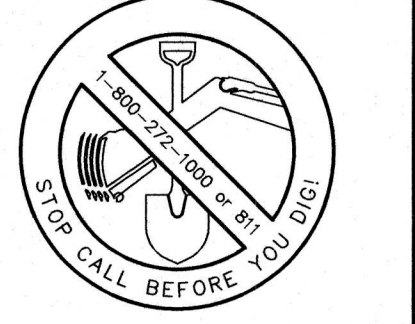
SCALE: 1"=30'

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LIVINGSTON WAREHOUSE

TOWNSHIP OF NORTH BRUNSWICK MIDDLESEX COUNTY NEW JERSEY

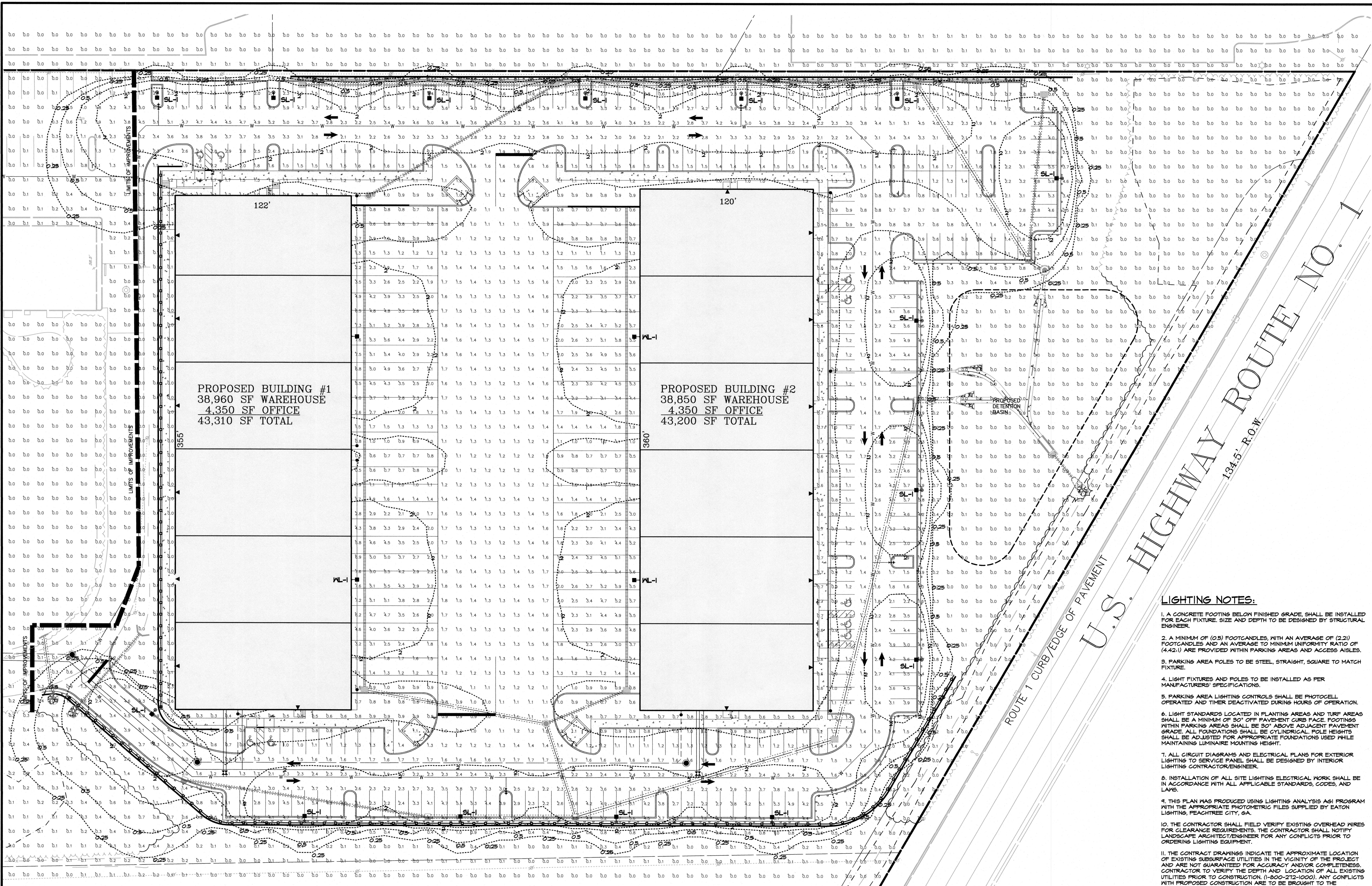
BLOCK 140.01, LOT 5.02 & 7.01 TAX MAP SHEET 30 21.03 ACRES

LIGHTING PLAN

DRAWN BY: LKH DESIGNED BY: LKH APPROVED BY: GSD

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION. KENNETH R. GRISEWOOD LANDSCAPE ARCHITECT NJ LICENSE #AS000071

PROJECT NUMBER: 2018.047.02 U-1 DATE OF ISSUE: FEBRUARY 12, 2021 REVISION: 6



PROPOSED BUILDING #1
38,960 SF WAREHOUSE
4,350 SF OFFICE
43,310 SF TOTAL

PROPOSED BUILDING #2
38,850 SF WAREHOUSE
4,350 SF OFFICE
43,200 SF TOTAL

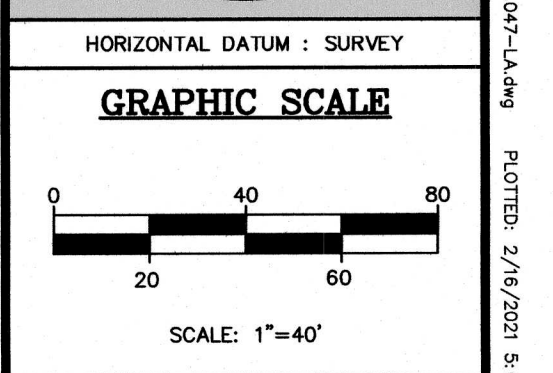
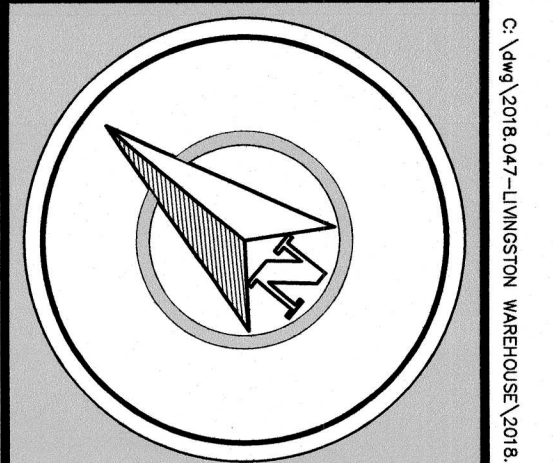
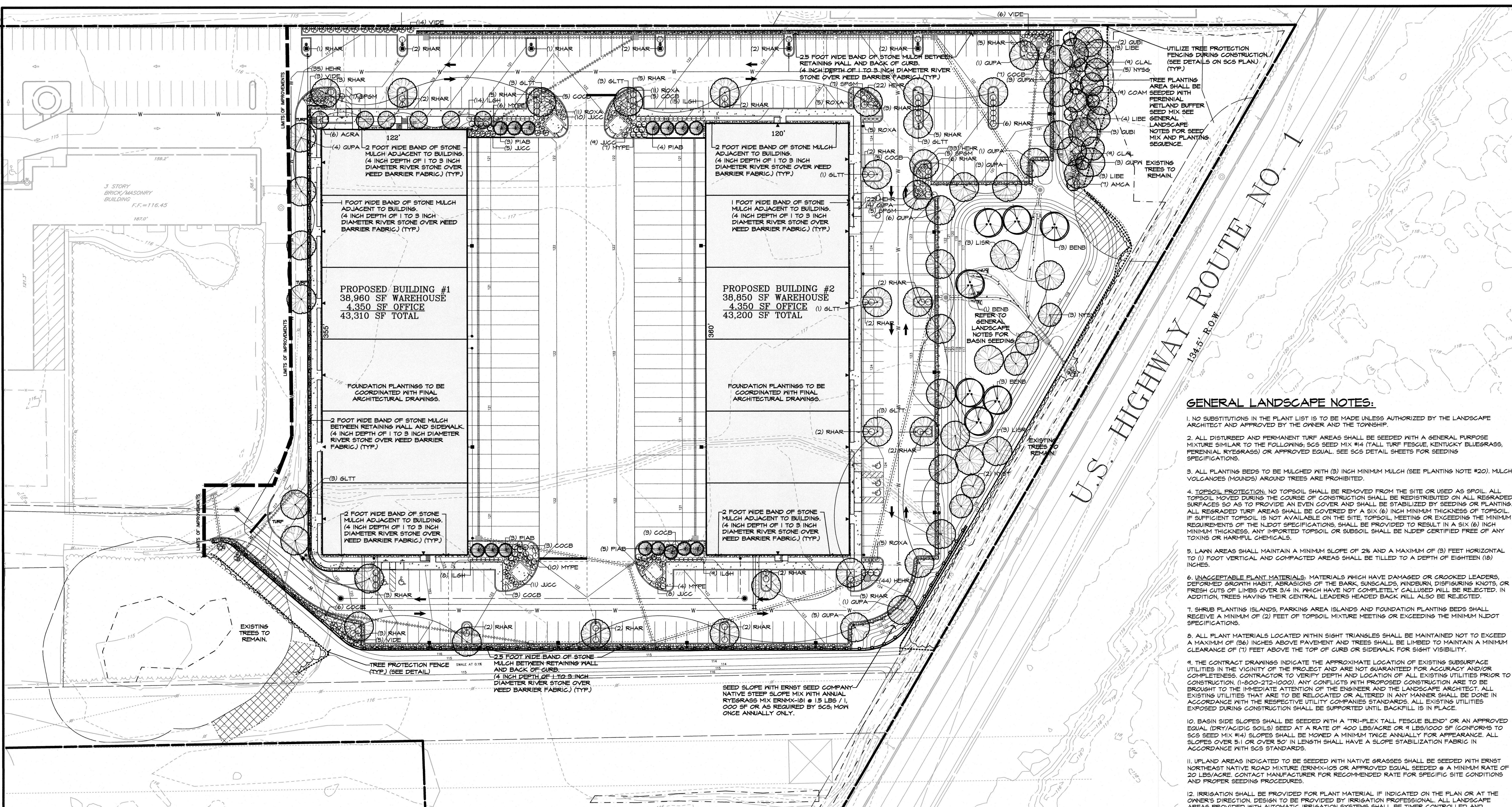
LIGHTING NOTES:

1. A CONCRETE FOOTING BELOW FINISHED GRADE SHALL BE INSTALLED FOR EACH FIXTURE. SIZE AND DEPTH TO BE DESIGNED BY STRUCTURAL ENGINEER.
2. A MINIMUM OF (0.5) FOOTCANDLES, WITH AN AVERAGE OF (2.21) FOOTCANDLES AND AN AVERAGE TO MINIMUM UNIFORMITY RATIO OF (4.42:1) ARE PROVIDED WITHIN PARKING AREAS AND ACCESS AISLES.
3. PARKING AREA POLES TO BE STEEL, STRAIGHT, SQUARE TO MATCH FIXTURE.
4. LIGHT FIXTURES AND POLES TO BE INSTALLED AS PER MANUFACTURERS' SPECIFICATIONS.
5. PARKING AREA LIGHTINGS CONTROLS SHALL BE PHOTOCELL OPERATED AND TIMER DEACTIVATED DURING HOURS OF OPERATION.
6. LIGHT STANDARDS LOCATED IN PLANTING AREAS AND TURF AREAS SHALL BE A MINIMUM OF 30' OFF PAVEMENT CURB FACE FOOTINGS WITHIN PARKING AREAS SHALL BE 30' ABOVE ADJACENT PAVEMENT GRADE. ALL FOUNDATIONS SHALL BE CYLINDRICAL. POLE HEIGHTS SHALL BE ADJUSTED FOR APPROPRIATE FOUNDATIONS USED WHILE MAINTAINING LUMINAIRE MOUNTING HEIGHT.
7. ALL CIRCUIT DIAGRAMS AND ELECTRICAL PLANS FOR EXTERIOR LIGHTING TO SERVICE PANEL SHALL BE DESIGNED BY INTERIOR LIGHTING CONTRACTOR/ENGINEER.
8. INSTALLATION OF ALL SITE LIGHTING ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STANDARDS, CODES, AND LAWS.
9. THIS PLAN WAS PRODUCED USING LIGHTING ANALYSIS A61 PROGRAM WITH THE APPROPRIATE PHOTOMETRIC FILES SUPPLIED BY EATON LIGHTING, PEACHTREE CITY, GA.
10. THE CONTRACTOR SHALL FIELD VERIFY EXISTING OVERHEAD WIRES FOR CLEARANCE REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT/ENGINEER FOR ANY CONFLICTS PRIOR TO ORDERING LIGHTING EQUIPMENT.
11. THE CONTRACT DRAWINGS INDICATE THE APPROXIMATE LOCATION OF EXISTING SUBSURFACE UTILITIES IN THE VICINITY OF THE PROJECT AND ARE NOT GUARANTEED FOR ACCURACY AND/OR COMPLETENESS. CONTRACTOR TO VERIFY THE DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. (1-800-272-1000). ANY CONFLICTS WITH PROPOSED CONSTRUCTION ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER, AND LANDSCAPE ARCHITECT. ALL EXISTING UTILITIES THAT ARE TO BE RELOCATED OR ALTERED IN ANY MANNER SHALL BE DONE IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANIES STANDARDS. ALL EXISTING UTILITIES EXPOSED DURING CONSTRUCTION ARE TO BE SUPPORTED UNTIL BACKFILL IS IN PLACE.
12. ANY LIGHT FIXTURE SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE ACCOMPANIED BY A POINT BY POINT CALCULATION VERIFYING THE SUBSTITUTED FIXTURES PERFORMANCE AND DEMONSTRATING THAT THE REVISED LIGHT LEVELS MATCH THE APPROVED PLANS. MENLO ENGINEERING WILL NOT PERFORM REVISED LIGHTING CALCULATIONS UNLESS AUTHORIZED BY THE OWNER. THE REVISED LIGHT LEVELS MUST BE RESUBMITTED TO THE MUNICIPAL REVISIONS ENGINEER FOR APPROVAL.
13. BUILDING MEP OR ELECTRICAL CONTRACTOR TO DETERMINE REQUIRED VOLTAGES FOR ALL SITE LIGHTING.

LIGHTING SCHEDULE

LABEL	QUANTITY	TYPE OF MOUNT	WATTAGE / COLOR TEMP	MOUNTING HEIGHT	POLE HEIGHT	DISTRIBUTION	CATALOG NUMBER	POLE CATALOG NUMBER
ML-1	7	WALL MOUNTED	325 WATTS LED / 4000 K / 600mA	24.5' AFF	N/A	TYPE TFF	EATON-MCGRAW-EDISON LIGHTING GALLEON-SLEON-S40-A-740--T4FF-BK (OR APPROVED EQUAL)	N/A
SL-1	5	SINGLE SQUARE POLE	143 WATTS LED / 4000 K / 600mA	24.5' *	22.0'	TYPE SL4 WITH H56	EATON-MCGRAW-EDISON LIGHTING GALLEON-SLEON-S46-A-740--SL4-H56-BK (OR APPROVED EQUAL)	EATON LIGHT POLE 996-5-A-22-S-Y--1 (OR APPROVED EQUAL)

* ABOVE PAVEMENT AFF = ABOVE FINISHED FLOOR (CONTACT MANUFACTURER FOR EXACT LIGHT FIXTURE AND LIGHT POLE SPECIFICATIONS)

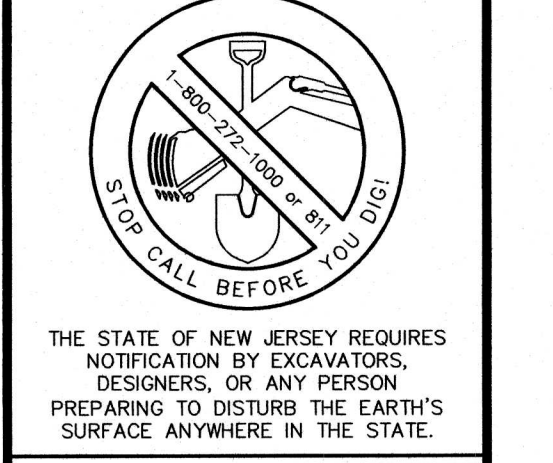


REVISIONS

NO.	DATE	DESCRIPTION

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CHKD BY: _____ DATE: _____



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 Civil Engineering Consultants
 Landscape Architects
 Professional Planners
 261 Cleveland Avenue
 Highland Park, NJ 08904
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 Certificate of Authorization: 246AZ7951900

LIVINGSTON WAREHOUSE

TOWNSHIP OF NORTH BRUNSWICK
 MIDDLESEX COUNTY
 NEW JERSEY

BLOCK 140.01,
 LOTS 5.02 & 7.01
 TAX MAP SHEET 30
 21.03 ACRES

LANDSCAPE PLAN

DRAWN BY	LKH
DESIGNED BY	LKH
APPROVED BY	GSD
THIS WORK PREPARED UNDER IMMEDIATE SUPERVISION	
KENNETH R. GRISEWOOD LANDSCAPE ARCHITECT NJ LICENSE #AS000071	
PROJECT NUMBER	2018.047
DATE OF ISSUE	FEBRUARY 12, 2021
REVISION	7

LIVINGSTON AVENUE PLANT SCHEDULE

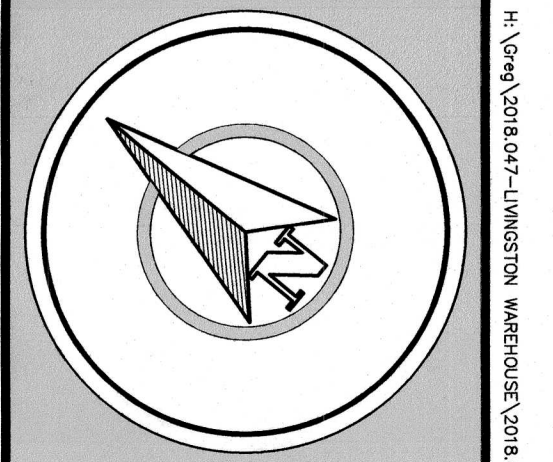
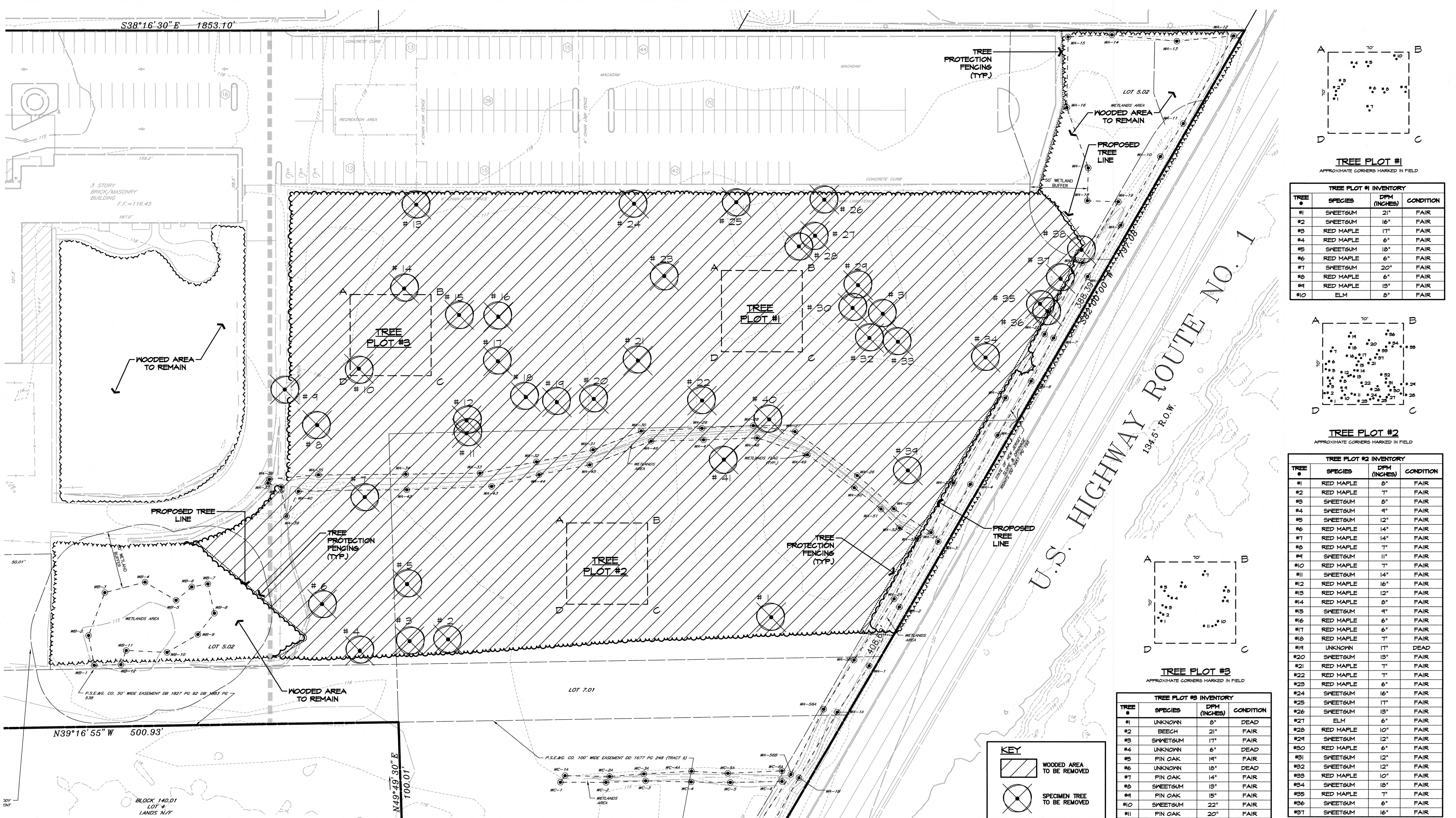
QUANTITY	QTY	BOTANICAL NAME	COMMON NAME	MATURE SPREAD	MATURE HT.	CALIPER	PLANTING HT.	TYPE	REMARKS
DECIDUOUS TREES	6	ACRA	ACER RUBRUM 'ARM-STRONG'	15'	25'	2.5"-3"	12-14'	B4B	STRAIGHT, SYMMETRICAL, FULL CROWN, HEAD TO T
DECIDUOUS TREES	7	BENS	BETULA NIGRA	15'	30'	2.5"-3"	12-14'	B4B	(3) STEMS, SYMMETRICAL, LOW BRANCHED, HEAVY
DECIDUOUS TREES	11	ILGR	GLADIOLIA TRICANTHOS VAR. NERES 'TRUE SHADE'	15'	40'	2.5"-3"	12-14'	B4B	STRAIGHT, SYMMETRICAL, FULL CROWN, HEAD TO T
DECIDUOUS TREES	6	LIGR	LIQUIDAMBAR STYRACIFLUA 'ROTDILOB'	15'	10'	2.5"-3"	12-14'	B4B	STRAIGHT, SYMMETRICAL, FULL CROWN, HEAD TO T
DECIDUOUS TREES	25	NYSA	NYSSA SYLVATICA	15'	30'	2.5"-3"	12-14'	B4B	STRAIGHT, SYMMETRICAL, FULL CROWN, HEAD TO T
DECIDUOUS TREES	25	OUFA	QUERCUS PALustris	15'	15'	2.5"-3"	12-14'	B4B	STRAIGHT, SYMMETRICAL, FULL CROWN, HEAD TO T
EVERGREEN TREES	15	PIAB	PIEDMONT PIN OAK	15'	40'	2.5"-3"	12-14'	B4B	STRAIGHT, SYMMETRICAL, DENSE, LOW BRANCHED
EVERGREEN TREES	15	PIAB	PIEDMONT PIN OAK	15'	40'	2.5"-3"	12-14'	B4B	STRAIGHT, SYMMETRICAL, DENSE, LOW BRANCHED
SHRUBS	5	ST	SPYRACIA BALSAMIFERA 'REDTIPS'	15'	4'	1"	3-5'	B4B	PILL FURNISHED, DENSE, SPACE EVENLY
SHRUBS	46	ILGH	ILEX ALABAMA 'CHAZIN TM'	15'	4'	1"	3-5'	B4B	PILL FURNISHED, DENSE, SPACE EVENLY
SHRUBS	21	MYPE	MYRTLE PENNSYLVANICA	15'	4'	1"	3-5'	B4B	DENSE, PILL FURNISHED, SYMMETRICAL, LOW BRANCHED
SHRUBS	81	RHAR	RHODODENDRON 'GRO-LOW'	15'	4'	1"	3-5'	B4B	DENSE, PILL FURNISHED, SYMMETRICAL, LOW BRANCHED
SHRUBS	51	ROXA	ROSA 'NOVARE'	15'	4'	1"	3-5'	B4B	DENSE, PILL FURNISHED, SYMMETRICAL, LOW BRANCHED
SHRUBS	24	SPFH	SPYRACIA JAPONICA 'SOLID HOUND'	15'	4'	1"	3-5'	B4B	DENSE, PILL FURNISHED, SYMMETRICAL, LOW BRANCHED
SHRUBS	28	VIDE	VIBURNUM DENTATUM 'AUTUMN JAZZ'	15'	12'	1.5"	5-6'	B4B	DENSE, PILL FURNISHED, SYMMETRICAL, LOW BRANCHED
GROUND COVERS	156	HEHR	HEDERA HELIX 'HAPPY RETURN'	15'	15'	1.5"	5-6'	B4B	(3) FAN CLUMP, PILL ROOTED

WETLAND TRANSITION ZONE PLANT SCHEDULE (QUANTITIES ARE NOT INCLUDED IN ABOVE TABLE)

QUANTITY	QTY	BOTANICAL NAME	COMMON NAME	MATURE SPREAD	MATURE HT.	CALIPER	PLANTING HT.	TYPE	REMARKS
DECIDUOUS TREES	5	QUBI	QUERCUS BICOLOR	50'	60'	1"	6-8'	BARE ROOT	STRAIGHT, SYMMETRICAL, PLANT AT APPROXIMATE 10 FOOT CENTERS
DECIDUOUS TREES	6	OUFA	QUERCUS PHellos	40'	60'	1"	6-8'	BARE ROOT	STRAIGHT, SYMMETRICAL, PLANT AT APPROXIMATE 10 FOOT CENTERS
FLOWERING TREES	7	AMCA	AMELANCHIER CANADENSIS	15'	20'	3"	9-14'	BARE ROOT	(3) STEMS CLUMP, SYMMETRICAL
SHRUBS	15	GLAL	GLADIOLIA ALABAMA	15'	3'	1"	24-30"	B4B	(3) CANES HILL, SYMMETRICAL, DENSE
SHRUBS	4	COAM	CORNUS AMOMI	10'	10'	1"	3-5'	B4B	DENSE, PILL FURNISHED, SYMMETRICAL, LOW BRANCHED
SHRUBS	10	LIBE	LINDERA BENZOIN	10'	10'	1"	24-30"	B4B	DENSE, PILL FURNISHED, SYMMETRICAL, LOW BRANCHED

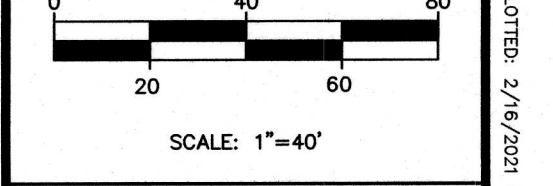
GENERAL LANDSCAPE NOTES:

- NO SUBSTITUTIONS IN THE PLANT LIST IS TO BE MADE UNLESS AUTHORIZED BY THE LANDSCAPE ARCHITECT AND APPROVED BY THE OWNER AND THE TOWNSHIP.
- ALL DISTURBED AND PERMANENT TURF AREAS SHALL BE SEEDDED WITH A GENERAL PURPOSE MIXTURE SIMILAR TO THE FOLLOWING: SCS SEED MIX #4 (TALL TURF FESCUE, KENTUCKY BLUEGRASS, PERENNIAL RYEGRASS) OR APPROVED EQUAL. SEE SCS DETAIL SHEETS FOR SEEDING SPECIFICATIONS.
- ALL PLANTING BEDS TO BE MULCHED WITH (3) INCH MINIMUM MULCH (SEE PLANTING NOTE #20). MULCH VOLCANOES (MOUNDS) AROUND TREES ARE PROHIBITED.
- TOPSOIL PROTECTION: NO TOPSOIL SHALL BE REMOVED FROM THE SITE OR USED AS SPOIL. ALL TOPSOIL MOVED DURING THE COURSE OF CONSTRUCTION SHALL BE REDISTRIBUTED ON ALL REGRADED SURFACES SO AS TO PROVIDE AN EVEN COVER AND SHALL BE STABILIZED BY SEEDING OR PLANTING. ALL REGRADED TURF AREAS SHALL BE COVERED BY A SIX (6) INCH MINIMUM THICKNESS OF TOPSOIL. IF INSUFFICIENT TOPSOIL IS AVAILABLE ON THE SITE, TOPSOIL MEETINGS OR EXCEEDING THE MINIMUM REQUIREMENTS OF THE NDOT SPECIFICATIONS, SHALL BE PROVIDED TO RESULT IN A SIX (6) INCH MINIMUM THICKNESS. ANY IMPORTED TOPSOIL OR SUBSOIL SHALL BE NDEP CERTIFIED FREE OF ANY TOXINS OR HARMFUL CHEMICALS.
- LAWN AREAS SHALL MAINTAIN A MINIMUM SLOPE OF 2% AND A MAXIMUM OF (3) FEET HORIZONTAL TO (1) FOOT VERTICAL AND COMPACTED AREAS SHALL BE TILLED TO A DEPTH OF EIGHTEEN (18) INCHES.
- UNACCEPTABLE PLANT MATERIALS: MATERIALS WHICH HAVE DAMAGED OR CROOKED LEADERS, DEFORMED GROWTH HABIT, ABRASIONS OF THE BARK, SUNSCALDS, WINDBURN, DISFIGURING KNOTS, OR FRESH CUTS OF LIMBS OVER 3/4 IN. WHICH HAVE NOT COMPLETELY CALLOSED WILL BE REJECTED. IN ADDITION, TREES HAVING THEIR CENTRAL LEADERS HEADED BACK WILL ALSO BE REJECTED.
- SHRUB PLANTINGS ISLANDS, PARKING AREA ISLANDS AND FOUNDATION PLANTING BEDS SHALL RECEIVE A MINIMUM OF (2) FEET OF TOPSOIL MIXTURE MEETING OR EXCEEDING THE MINIMUM NDOT SPECIFICATIONS.
- ALL PLANT MATERIALS LOCATED WITHIN SIGHT TRIANGLES SHALL BE MAINTAINED NOT TO EXCEED A MAXIMUM OF (36) INCHES ABOVE PAVEMENT AND TREES SHALL BE LIMBED TO MAINTAIN A MINIMUM CLEARANCE OF (7) FEET ABOVE THE TOP OF CURB OR SIDEWALK FOR SIGHT VISIBILITY.
- THE CONTRACT DRAWINGS INDICATE THE APPROXIMATE LOCATION OF EXISTING SUBSURFACE UTILITIES IN THE VICINITY OF THE PROJECT AND ARE NOT GUARANTEED FOR ACCURACY AND/OR COMPLETENESS. CONTRACTOR TO VERIFY DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. (1-800-273-1000). ANY CONFLICTS WITH PROPOSED CONSTRUCTION ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER AND THE LANDSCAPE ARCHITECT. ALL EXISTING UTILITIES THAT ARE TO BE RELOCATED OR ALTERED IN ANY MANNER SHALL BE DONE IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANIES STANDARDS. ALL EXISTING UTILITIES EXPOSED DURING CONSTRUCTION SHALL BE SUPPORTED UNTIL BACKFILL IS IN PLACE.
- BASIN SIDE SLOPES SHALL BE SEEDDED WITH A 'TRI-PLEX TALL FESCUE BLEND' OR AN APPROVED EQUAL (DRY/ACIDIC SOILS) SEED AT A RATE OF 400 LBS/ACRE OR 4 LBS/1000 SF (CONFORMS TO SCS SEED MIX #4) SLOPES SHALL BE MOWED A MINIMUM TWICE ANNUALLY FOR APPEARANCE. ALL SLOPES OVER 5:1 OR OVER 50' IN LENGTH SHALL HAVE A SLOPE STABILIZATION FABRIC IN ACCORDANCE WITH SCS STANDARDS.
- UPLAND AREAS INDICATED TO BE SEEDDED WITH NATIVE GRASSES SHALL BE SEEDDED WITH ERNST NORTHEAST NATIVE ROAD MIXTURE (ERNM-103 OR APPROVED EQUAL) SEED @ A MINIMUM RATE OF 20 LBS/ACRE. CONTACT MANUFACTURER FOR RECOMMENDED RATE FOR SPECIFIC SITE CONDITIONS AND PROPER SEEDING PROCEDURES.
- IRRIGATION SHALL BE PROVIDED FOR PLANT MATERIAL IF INDICATED ON THE PLAN OR AT THE OWNER'S DIRECTION. DESIGN TO BE PROVIDED BY IRRIGATION PROFESSIONAL. ALL LANDSCAPE AREAS PROVIDED WITH AUTOMATIC IRRIGATION SYSTEMS SHALL BE TIMER CONTROLLED AND PROVIDED WITH AN AUTOMATIC RAINFALL SHUTOFF DETECTION DEVICE.
- FINAL LOCATIONS OF BUFFER PLANTINGS (IF REQUIRED) LOCATED WITHIN EXISTING TREE CANOPY AREAS SHALL BE PLACED BASED ON EXISTING TREE LOCATIONS IDENTIFIED IN THE FIELD. EVERGREENS SHALL BE PLACED WHERE GAPS APPEAR IN THE TREE CANOPY. FINAL LOCATIONS TO BE APPROVED BY TOWNSHIP ENGINEER OR TOWNSHIP LANDSCAPE ARCHITECT.
- SEE DETAIL SHEETS FOR ADDITIONAL PLANTING NOTES AND DETAILS.
- ALL SHADE TREES, EVERGREENS, AND FLOWERING TREES SHALL BE PROVIDED WITH 'TREGATOR ORIGINAL OR JR. PRO-TM' WATERING BAGS, RINGS OR APPROVED EQUAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING WATER TO ALL PLANTINGS AND LAWN AREAS UNTIL FINAL ACCEPTANCE.
- PRIOR TO THE INSTALLATION OF ANY PLANT MATERIAL, SEEDING OR SODDINGS OF LAWN AREAS, THE CONTRACTOR SHALL OBTAIN PHYSICAL, CHEMICAL, AND SOIL FERTILITY TESTING AT AN APPROVED LAB TO DETERMINE SOIL SUITABILITY. THE TESTING SHALL BE AT A RATE OF EITHER ONE TEST PER 500 CUBIC YARDS OF PLANTING MIX OR ONE TEST PER 15,000 SF OF LANDSCAPE SURFACE AREA. THE SOILS SHALL BE AMENDED IN ACCORDANCE WITH THE TEST RESULTS FOR OPTIMAL PLANT AND LAWN GROWTH. THE RESULTS OF ALL TESTS SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR REVIEW.
- DETENTION BASIN BOTTOMS SHALL BE SEEDDED WITH ERNST NATIVE DETENTION AREA MIXTURE (ERNM-103 OR APPROVED EQUAL) SEED @ A MINIMUM RATE OF 20 LBS/ACRE OR 0.5 LBS/1000 SF. - SEE MORE AT: [HTTP://WWW.ERNSTSEED.COM](http://www.ernstseed.com)
CONTACT MANUFACTURER FOR RECOMMENDED RATE FOR SPECIFIC SITE CONDITIONS AND PROPER SEEDING PROCEDURES.
- THE TOWNSHIP OF NORTH BRUNSWICK LAND USE ORDINANCE REQUIRES THE FOLLOWING TREE REPLACEMENT:
SECTION 205-40.6.c.
-TOTAL REPLACEMENT TREES REQUIRED = (603) TREES.
(REFER TO TREE REPLACEMENT PLAN (TR-1) FOR TREE REPLACEMENT CALCULATIONS.)
-THE LANDSCAPE PLAN PROVIDES (124) REPLACEMENT TREES.
- (66) SHADE TREES @ 2.5"-3" CALIPER.
- (58) EVERGREEN TREES @ 8'-10' PLANTING HEIGHT.
- TOTAL REPLACEMENT TREE DEFICIT = (484) TREES.
* MONETARY CONTRIBUTION TO THE TOWNSHIP TREE FUND IS REQUIRED.



HORIZONTAL DATUM : NAD 1983

GRAPHIC SCALE



REVISIONS

NO.	DATE	DESCRIPTION

THIS DRAWING IS FOR PERMIT PURPOSES ONLY
NOT FOR CONSTRUCTION UNTIL THIS BOX HAS BEEN CHECKED AND DATED

CHKD BY: _____ DATE: _____



THE STATE OF NEW JERSEY REQUIRES NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE.

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LIVINGSTON WAREHOUSE
TOWNSHIP OF NORTH BRUNSWICK
MIDDLESEX COUNTY
NEW JERSEY

BLOCK 140.01,
LOT 5.02 & 7.01
TAX MAP SHEET 30
21.03 ACRES

TREE REPLACEMENT PLAN

DRAWN BY	JT
DESIGNED BY	JT
APPROVED BY	KRG
THIS WORK PREPARED UNDER IMMEDIATE SUPERVISION	
KENNETH R. GRISEWOOD LANDSCAPE ARCHITECT NJ LICENSE #AS000071	
PROJECT NUMBER	2018.047.02 TR-1
DATE OF ISSUE	FEBRUARY 12, 2021
REVISION	8

TREE #	SPECIES	DPM (INCHES)	CONDITION
#1	PIN OAK	24"	FAIR
#2	PIN OAK	28"	FAIR
#3	SHAGBARK HICKORY	25"	FAIR
#4	PIN OAK	34"	FAIR
#5	PIN OAK	32"	FAIR
#6	RED MAPLE	38"	FAIR
#7	PIN OAK	24"	FAIR
#8	PIN OAK	38"	FAIR
#9	PIN OAK	41"	FAIR
#10	PIN OAK	24"	FAIR
#11	SWEETGUM	24"	FAIR
#12	SWEETGUM	26"	FAIR
#13	PIN OAK	33"	FAIR
#14	PIN OAK	25"	FAIR
#15	SWEETGUM	28"	FAIR
#16	SWEETGUM	24"	FAIR
#17	SWEETGUM	26"	FAIR
#18	PIN OAK	27"	FAIR
#19	RED MAPLE	27"	FAIR
#20	SWEETGUM	42"	FAIR
#21	RED MAPLE	24"	FAIR

TREE #	SPECIES	DPM (INCHES)	CONDITION
#22	SWEETGUM	24"	FAIR
#23	SWEETGUM	35"	FAIR
#24	PIN OAK	32"	FAIR
#25	PIN OAK	27"	FAIR
#26	PIN OAK	40"	FAIR
#27	UNKNOWN	31"	DEAD
#28	UNKNOWN	31"	DEAD
#29	SWEETGUM	38"	FAIR
#30	PIN OAK	24"	FAIR
#31	UNKNOWN	31"	DEAD
#32	SWEETGUM	32"	FAIR
#33	SWEETGUM	35"	FAIR
#34	PIN OAK	30"	FAIR
#35	SWEETGUM	25"	FAIR
#36	SWEETGUM	26"	FAIR
#37	SWEETGUM	24"	FAIR
#38	SWEETGUM	24"	FAIR
#39	PIN OAK	24"	FAIR
#40	SWEETGUM	26"	FAIR
#41	PIN OAK	25"	FAIR

TREE REMOVAL AND REPLACEMENT CALCULATIONS (SPECIMEN)
TOWNSHIP ORDINANCE SECTION 205-40.6(G) TABLE B(2) REQUIRES THE FOLLOWING REPLACEMENT FOR SPECIMEN TREES REMOVED:

SIZE OF EXISTING SPECIMEN TREES TO BE REMOVED (DPM)	NUMBER OF EXISTING SPECIMEN TREES TO BE REMOVED	REQUIRED REPLACEMENT TREES PER SPECIMEN TREE REMOVED
24" TO 30"	25 TREES	5 X 25 TREES = 125
31" TO 36"	10 TREES (9 DEAD)*	7 X 7 TREES = 49
37" TO 40"	4 TREES	4 X 4 TREES = 16
40" OR GREATER	2 TREES	10 X 2 TREES = 20

*TREES NOT INCLUDED FOR TOWARD REPLACEMENT (DEAD, DYING, DISEASED)

TOTAL REQUIRED TREE REPLACEMENT FOR SPECIMEN TREES = 230 REPLACEMENT TREES

TREE REMOVAL AND REPLACEMENT CALCULATIONS (6" TO 23" DPM)
TOWNSHIP ORDINANCE SECTION 205-40.6(G) TABLE B(1) REQUIRES THE FOLLOWING REPLACEMENT FOR TREES 6" TO 23" TO BE REMOVED:

INVENTORIED AREA = (B) TREE PLOTS (10' X 10') = 14,100 SF (0.33 ACRES) OR 6.1% OF TOTAL WOODED AREA	WOODED AREA TO BE REMOVED = 322,825 SF (7.4 ACRES) OR 14.4% OF TOTAL WOODED AREA	WOODED AREA TO REMAIN = 240,442 SF (5.5 ACRES) OR 74.4% OF TOTAL WOODED AREA
60% TO 74% OF TREES REMOVED REQUIRES 50% TREE REPLACEMENT		
AVERAGE WOODED ACRE = 49,560 SF/14,100 SF = 2.96 FACTOR		
NUMBER OF TREES 6" TO 23" (DPM) TO BE REMOVED WITHIN INVENTORIED AREA	58 TREES	58 X (2.96 FACTOR) = 171.68 TREES/ACRES
NUMBER OF TREES 6" TO 23" (DPM) TO BE REMOVED PER ACRE		171.68 TREES/ACRES X 5.5 ACRES = 945

TOTAL REQUIRED TREE REPLACEMENT FOR 6" TO 23" TREES = 176 TREES X 50% = 978 REPLACEMENT TREES

- SUMMARY**
- TOTAL REQUIRED TREE REPLACEMENT:
 - 378 REPLACEMENT TREES FOR 6" TO 23" TREES
 - 290 REPLACEMENT TREES FOR SPECIMEN TREES
 - REPLACEMENT TREE SIZE REQUIRED TO BE 2-1/2" DPM*
 - *DIAMETER AT POINT OF MEASURE (DPM) OF REPLACEMENT TREES 4" CALIPER OR LESS TO BE MEASURED 6" ABOVE THE GROUND
 - TOTAL PROVIDED TREE REPLACEMENT:
 - 66 SHADE TREES (2.5"-3" CALIPER)
 - 58 EVERGREEN TREES (8'-10' PLANTING HEIGHT)
 - DEFICIT OF 484 REQUIRED TREES
 - TOWNSHIP ORDINANCE SECTION 205-40.6(G) ALLOWS FOR CONTRIBUTION FOR REQUIRED REPLACEMENT TREES NOT PROVIDED.
 - SEE LANDSCAPE PLAN (LA-1) FOR LANDSCAPE PLANTINGS.
 - TOWNSHIP ORDINANCE SECTION 205-40.5(A) REQUIRES A TREE REMOVAL PERMIT SHALL BE OBTAINED PRIOR TO ANY SITE DISTURBANCE.
 - TREES SHOWN TO BE REMOVED, ANY TOPPING AND OR SLASH, SHALL BE DISPOSED OF IN ACCORDANCE WITH THE LAI
 - TREE PROTECTION FENCING SHALL BE CONSTRUCTED AROUND THE LIMIT OF DISTURBANCE AS SHOWN ON PLANS AND/OR AS FIELD CONDITIONS WARRANT. TREES TO BE PRESERVED ARE TO FLAGGED PRIOR TO CLEARING AND PROTECTED WITH TREE PROTECTION FENCING DURING CONSTRUCTION (SEE DETAIL).
 - SPECIMEN TREES HAVE NOT BEEN SURVEYED, LOCATIONS BASED ON VISUAL INSPECTION.

STANDARD FOR PERMANENT VEGETATIVE COVER

- SITE PREPARATION**
 - GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING.
 - IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.
 - TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES. TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER, AS REQUIRED, IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.
 - INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE-STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.
- SEEDBED PREPARATION**
 - UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED, ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES (HTTP://NJAES.RUTGERS.EDU/COUNTIES). FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 10 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE AND INCORPORATED INTO THE SURFACE 4 INCHES. IF FERTILIZER IS NOT INCORPORATED, 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.
 - 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 PREPARED.
 - HIGH ACID PRODUCING 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 6 OR MORE BEFORE INITIATING SEEDBED REPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH ACID-PRODUCING SOILS FOR SPECIFIC REQUIREMENTS.
- SEEDING**
 - SELECT A MIXTURE FROM TABLE 4-2 OR USE A MIXTURE RECOMMENDED BY RUTGERS COOPERATIVE EXTENSION OR NATURAL RESOURCES CONSERVATION SERVICE WHICH IS APPROVED BY THE SOIL CONSERVATION DISTRICT. SEED GERMINATION SHALL HAVE BEEN TESTED WITHIN 12 MONTHS OF THE PLANTING DATE. NO SEED SHALL BE ACCEPTED WITH A GERMINATION TEST DATE MORE THAN 12 MONTHS OLD UNLESS RETESTED.
 - SEEDING RATES SPECIFIED ARE REQUIRED WHEN A REPORT OF COMPLIANCE IS REQUESTED PRIOR TO ACTUAL ESTABLISHMENT OF PERMANENT VEGETATION. UP TO 50% REDUCTION IN RATES MAY BE USED WHEN PERMANENT VEGETATION IS ESTABLISHED TO A REPORT OF COMPLIANCE INSPECTION. SEEDING RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVERAGE WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDBED AREA AND MOVED ONE.
 - WARM-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT HIGH TEMPERATURES, GENERALLY 85°F AND ABOVE. SEE TABLE 4-2 MIXTURES 1 TO 7. PLANTING RATES FOR WARM-SEASON GRASSES SHALL BE THE AMOUNT OF PURE LIVE SEED (PLS) AS DETERMINED BY GERMINATION TESTING RESULTS.
 - COOL-SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT TEMPERATURES BELOW 85°F. MANY GRASSES BECOME ACTIVE AT 65°F. SEE TABLE 4-2 MIXTURES 8-20. ADJUSTMENT OF PLANTING RATES TO COMPENSATE FOR THE AMOUNT OF PLS IS NOT REQUIRED FOR COOL-SEASON GRASSES.
- MULCHING**
 - CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE-TEXTURED SOIL.
 - AFTER SEEDING, FIRING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.
 - HYDROSEEDING IS A BROADCAST SEEDING METHOD INVOLVING A TRUCK, OR TRAILER-MOUNTED TANK, WITH AN IRRIGATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT-FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4-MULCHING BELOW). HYDROSEEDING IS NOT A REFERRED 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 DEMONSTRATED WITH THIS MULCHING REQUIREMENT.

- STRAW OR HAY. UNROTTED SMALL GRASS STRAW, HAY FREE OF SEEDS, TO BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE 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 HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 80 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:
 - PEG AND TWINE. DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CROSS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
 - MULCH NETTINGS - STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOVED.
 - 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-FIBERED 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 MAY BE LIMITED BY SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.
 - LIQUID MULCH-BINDERS - MAY BE USED TO ANCHOR SALT HAY, HAY OR STRAW MULCH.

(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 SHOULD BE UNIFORM IN APPEARANCE.

- NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION OF THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.
 - 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 DURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTO-TOXIC EFFECT OR IMPIDE GROWTH OF TURFGRASSES. USE AT RATES AND WEATHER CONDITIONS AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE, SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.
 - SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND, FOLLOWING APPLICATION OF MULCH, DRYING AND CURING, SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. BINDER SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

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

APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

IF SOIL MOISTURE IS DEFICIENT SUPPLY NEW SEEDING WITH ADEQUATE WATER (A MINIMUM OF 1/4 INCH APPLIED UP TO TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR ON DROUGHTY SITES.

SINCE SOIL ORGANIC MATTER CONTENT AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PRESCRIBED IN SECTION 2A - SEEDBED PREPARATION IN THIS STANDARD, NO FOLLOW-UP OF TOPDRESSING IS MANDATORY. AN EXCEPTION MAY BE MADE WHERE GROSS NITROGEN DEFICIENCY EXISTS IN THE SOIL TO THE EXTENT THAT TURF FAILURE MAY DEVELOP. IN THAT INSTANCE, TOPDRESS WITH 10-10-10 OR EQUIVALENT AT 300 POUNDS PER ACRE OR 3 POUNDS PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF IS AMELIORATED.

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 ESTABLISH PERMANENT VEGETATION TO A REPORT OF COMPLIANCE INSPECTION. SEEDING RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVERAGE WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDBED AREA AND MOVED ONE. OTHER DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD OTHER MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

STANDARD FOR TEMPORARY VEGETATIVE COVER

- SITE PREPARATION**
 - GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING, PG. 10-11.
 - INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE-STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.
 - IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS OPERATION IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).
- SEEDBED PREPARATION**
 - 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://NJAES.RUTGERS.EDU/COUNTIES). FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 10 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST 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.
 - WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
 - INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN ACCORDANCE WITH THE ABOVE.
 - SOILS HIGH IN SULFIDES OR HAVING A PH OF 4 OR LESS REFER TO STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, PG. 1-1.
- SEEDING**
 - SELECT SEED FROM RECOMMENDATIONS IN TABLE 7-2.
 - CONVENTIONAL SEEDING. APPLY SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL, TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE TEXTURED SOIL.
 - HYDROSEEDING IS A BROADCAST SEEDING METHOD INVOLVING A TRUCK OR TRAILER MOUNTED TANK, WITH AN IRRIGATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT-FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4-MULCHING BELOW). HYDROSEEDING IS NOT A REFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. POOR SEED TO SOIL CONTACT OCCURS DURING SEED GERMINATION AND GROWTH. HYDROSEEDING MAY BE USED FOR AREAS TOO STEEP FOR CONVENTIONAL EQUIPMENT TO TRAVEL OR TOO OBSTRUCTED WITH ROCKS, STUMPS, ETC.
 - AFTER SEEDING, FIRING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.
- MULCHING**
 - MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEMONSTRATED WITH THIS MULCHING REQUIREMENT.
 - STRAW OR HAY. UNROTTED SMALL GRASS STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED.
 - APPLICATION - SPREAD MULCH UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 95% OF THE SOIL SURFACE WILL BE COVERED. FOR UNIFORM DISTRIBUTION OF 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:

- PEG AND TWINE. DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE MULCH TO SOIL SURFACE BY STRETCHING TWINE BETWEEN PEGS IN A CROSS-CROSS AND A SQUARE PATTERN. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
- MULCH NETTINGS - STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOVED.
- 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-FIBERED 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 MAY BE LIMITED BY SLOPES. STRAW MULCH RATE MUST BE 3 TONS PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.
- LIQUID MULCH-BINDERS - MAY BE USED TO ANCHOR SALT HAY, HAY OR STRAW MULCH.

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 - 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 AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

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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 SEEDBED 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/1,000 SQUARE FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS, SEEDBED AREAS WHERE WEED-SEED FREE MULCH IS DESIRED, OR ON SITES WHERE STRAW MULCH AND TACKIFYING AGENT ARE NOT PRACTICAL OR DESIRABLE. APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

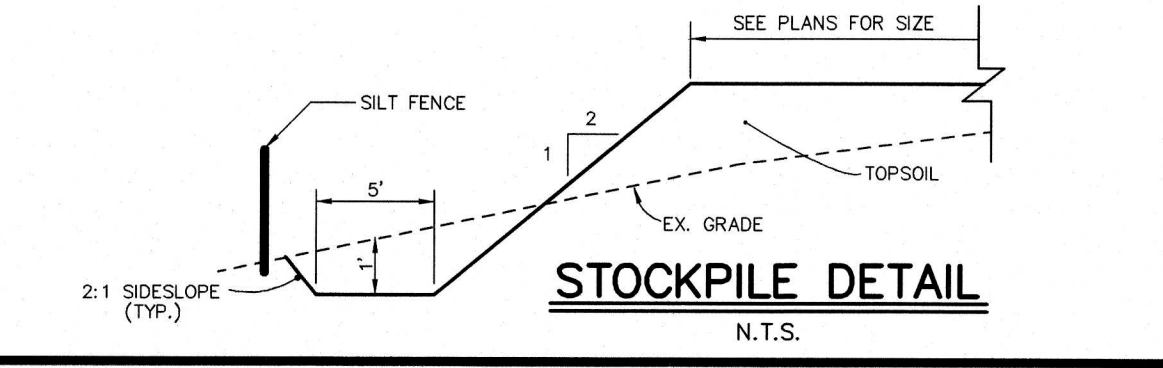
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IF SOIL MOISTURE IS DEFICIENT SUPPLY NEW SEEDING WITH ADEQUATE WATER (A MINIMUM OF 1/4 INCH APPLIED UP TO TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR ON DROUGHTY SITES.

SINCE SOIL ORGANIC MATTER CONTENT AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PRESCRIBED IN SECTION 2A - SEEDBED PREPARATION IN THIS STANDARD, NO FOLLOW-UP OF TOPDRESSING IS MANDATORY. AN EXCEPTION MAY BE MADE WHERE GROSS NITROGEN DEFICIENCY EXISTS IN THE SOIL TO THE EXTENT THAT TURF FAILURE MAY DEVELOP. IN THAT INSTANCE, TOPDRESS WITH 10-10-10 OR EQUIVALENT AT 300 POUNDS PER ACRE OR 3 POUNDS PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF IS AMELIORATED.

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 ESTABLISH PERMANENT VEGETATION TO A REPORT OF COMPLIANCE INSPECTION. SEEDING RATES APPLY TO ALL METHODS OF SEEDING. ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATIVE COVERAGE WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDBED AREA AND MOVED ONE. OTHER DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD OTHER MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

SEED SELECTIONS	SEEDING RATE 1 (pounds)	OPTIMUM SEEDING DATE 2			OPTIMUM SEED DEPTH 4 (inches)
		Per Acre	Per 100 Sq. Ft.	Zone	
COOL SEASON GRASSES					
1. PERENNIAL RYEGRASS	100	1.0	3/15- 6/1 3/1- 5/15 10/1- 10/15	2/15- 5/1 5/1- 10/15	0.5
2. SPRING OATS	86	2.0	3/15- 6/1 6/1- 8/15 9/15- 10/15	3/1- 5/1 5/1- 8/15 10/1- 10/15	1.0
3. WINTER BARLEY	96	2.2	8/1- 9/15 8/15- 10/15	8/15- 10/15	1.0
4. ANNUAL RYEGRASS	100	1.0	3/15- 6/1 6/1- 8/15 9/15- 10/15	3/15- 5/1 5/1- 8/15 10/1- 10/15	0.5
5. WINTER CEREAL RYE	112	2.8	8/1- 11/1 8/15- 11/15	8/15- 12/15	1.0
WARM SEASON GRASSES					
6. PEARL MILLET	20	0.5	6/1- 8/1 8/1- 8/15 8/15- 9/1	5/1- 9/1	1.0
7. MILLET (GERMAN OR HUNGARIAN)	30	0.7	6/1- 8/1 8/1- 8/15 8/15- 9/1	5/1- 9/1	1.0



SOIL EROSION AND SEDIMENT CONTROL NOTES

- THE FRESHLOD SOIL CONSERVATION DISTRICT SHALL 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 WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
- N.J.S.A. 4:24-39 ET. SEQ. REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THE DISTRICT 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 OF COMPLIANCE HAS BEEN ISSUED. UPON WRITTEN REQUEST FROM THE APPLICANT, THE DISTRICT MAY ISSUE A REPORT OF COMPLIANCE WITH CONDITIONS ON A 60-DAY-OUT OF OCCUPANCY BASIS. PROVIDED THAT THE PROJECT OR PORTION THEREOF IS IN SATISFACTORY COMPLIANCE WITH THE SEQUENCE OF DEVELOPMENT AND PRIOR TO CONSTRUCTION FOR SOIL EROSION AND SEDIMENT CONTROL. HAVE BEEN IMPLEMENTED, INCLUDING PROVISIONS FOR STABILIZATION AND SITE WORK.
- ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN SIXTY (60) 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 1/2 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 CLAY 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 (1) TO TWO INCH (1"-2") CRUSHED STONE TO A MINIMUM LENGTH OF TEN FEET (10') 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 SODED ON ALL EXPOSED AREAS WITHIN TEN (10) 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 PERMIT THE SUITABLE VEGETATIVE GROUND COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.
- IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, ANY SOIL HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDES SHALL BE ULTIMATELY PLACED OR BURIED WITH LIMESTONE APPLIED AT THE RATE OF 10 TONS/ACRE (OR 450 LBS/1,000 SQ FT OF SQUARE 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 QUALITY PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING DUST CONTROL.
- UNFILTERED Dewatering IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL Dewatering OPERATIONS TO MINIMIZE SEDIMENT TRANSFER. ANY Dewatering Methods Used MUST BE IN ACCORDANCE WITH THE STANDARD FOR Dewatering.
- THE CONTROL OF DUST AT THE SITE IS 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 CONTROL.
- STOCKPILE AND STAGNO 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 IS DISTURBED.
- 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.

"WET TOLERANT" SEEDING SPECIFICATION

SEEDBED PREPARATION: FERTILIZER (10-10-10) 500 LB/AC
LIMESTONE 6,000 LB/AC

FOR UNMAINTAINED AREAS

SEEDING DATES: ZONE 5b,6a (3/15-5/31); ZONE 6b (3/1-4/30); ZONE 7a,7b (2/1-4/30) (IF DISTURBANCE IS OUTSIDE OF PLANTING DATES THEN SEED AREA WITH TEMPORARY SEEDING MIX. THE TARGET AREA MUST THEN BE RESEED WITH REQUIRED MIX WITHIN THE REQUIRED PLANTING DATES.)	SCS SEED MIX #6	DEERTONGUE REDTOP WLD RYE (ELYMUS) SWITCHGRASS	20 LB/AC 15 LB/AC 30 LB/AC
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FOR MAINTAINED AREAS (ROAD AND CHANNEL BANKS, BERMS AND DAMS)

SEEDING DATES: (OPTIMAL) ZONE 5b,6a (8/1-10/1); ZONE 6b (8/15-10/15); ZONE 7a,7b (8/15-10/30) (SEE TABLE 4-2 OF THE SCS STANDARDS FOR ADDITIONAL PLANTING DATES)	SCS SEED MIX #7	STRONG GREeping RED FESCUE KENTUCKY BLUEGRASS PERENNIAL RYEGRASS OR REDTOP W/ WHITE CLOVER	130 LB/AC 50 LB/AC 30 LB/AC 10 LB/AC 5 LB/AC
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FOR MAINTAINED AREAS (DETENTION BASINS AND SWALES)

SEEDING DATES: (OPTIMAL) ZONE 5b,6a (8/1-10/1); ZONE 6b (8/15-10/15); ZONE 7a,7b (8/15-10/30) (SEE TABLE 4-2 OF THE SCS STANDARDS FOR ADDITIONAL PLANTING DATES)	SCS SEED MIX #14	TURF-TYPE TALL FESCUE (3 CULTIVAR BLEND) KENTUCKY BLUEGRASS (BLEND) PERENNIAL RYEGRASS (BLEND)	350 LB/AC 30 LB/AC 30 LB/AC
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MULCHING:
HYDROMULCH OR APPROVED EQUAL (USE RATES AS RECOMMENDED BY MANUFACTURER)

MULCH ANCHORING:
HYDROMULCH OR APPROVED EQUAL (USE RATES AS RECOMMENDED BY MANUFACTURER)

NOTES:
1) FOR ADDITIONAL REQUIREMENTS REFER TO THE SCS STANDARD FOR PERMANENT VEGETATIVE COVER.
2) THE FERTILIZER AND LIMESTONE RATES REPRESENT THE UNTESTED SCS REQUIRED RATES. FINAL RATES SUBJECT TO SOIL FERTILITY, PH ANALYSIS AND LAB RECOMMENDATIONS.

CONDITION OF ACCEPTANCE:
1) NO EROSION SHALL EXIST.
2) THE FERTILIZER AND LIMESTONE RATES REPRESENT THE UNTESTED SCS REQUIRED RATES. FINAL RATES SUBJECT TO SOIL FERTILITY, PH ANALYSIS AND LAB RECOMMENDATIONS.
3) ESTABLISHING PERMANENT VEGETATIVE COVER MEANS 80% VEGETATED COVER (OF THE SEEDBED SPECIES) AND MOVED ONE.

STANDARD FOR STABILIZATION WITH MULCH ONLY

DEFINITION:
STABILIZING EXPOSED SOILS WITH NON-VEGETATIVE MATERIALS EXPOSED FOR PERIODS LONGER THAN 14 DAYS

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

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

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

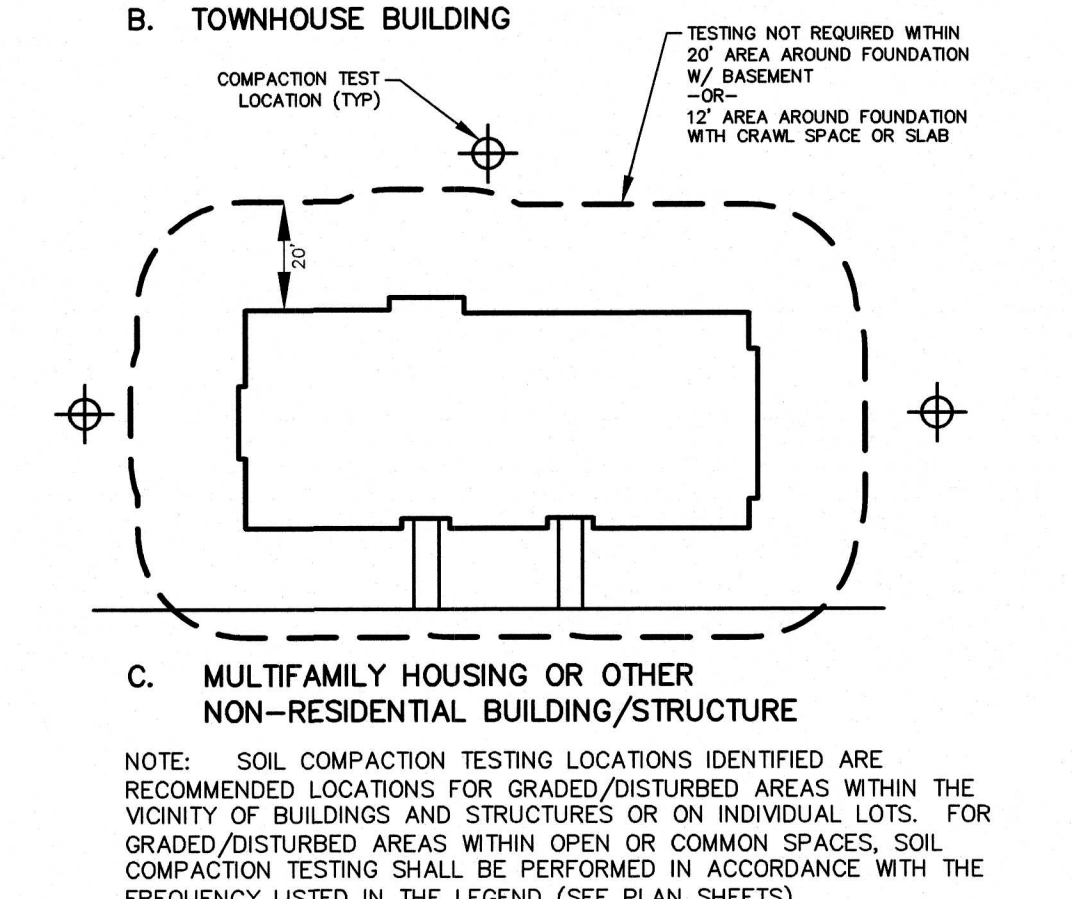
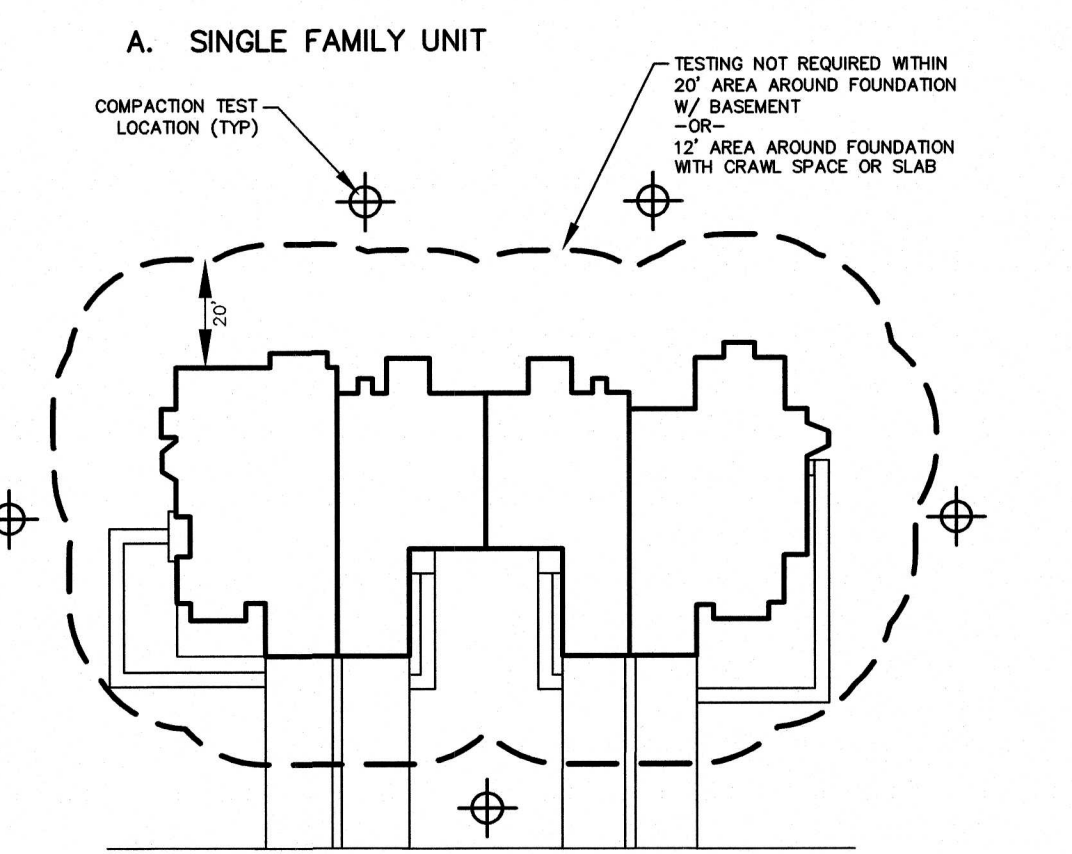
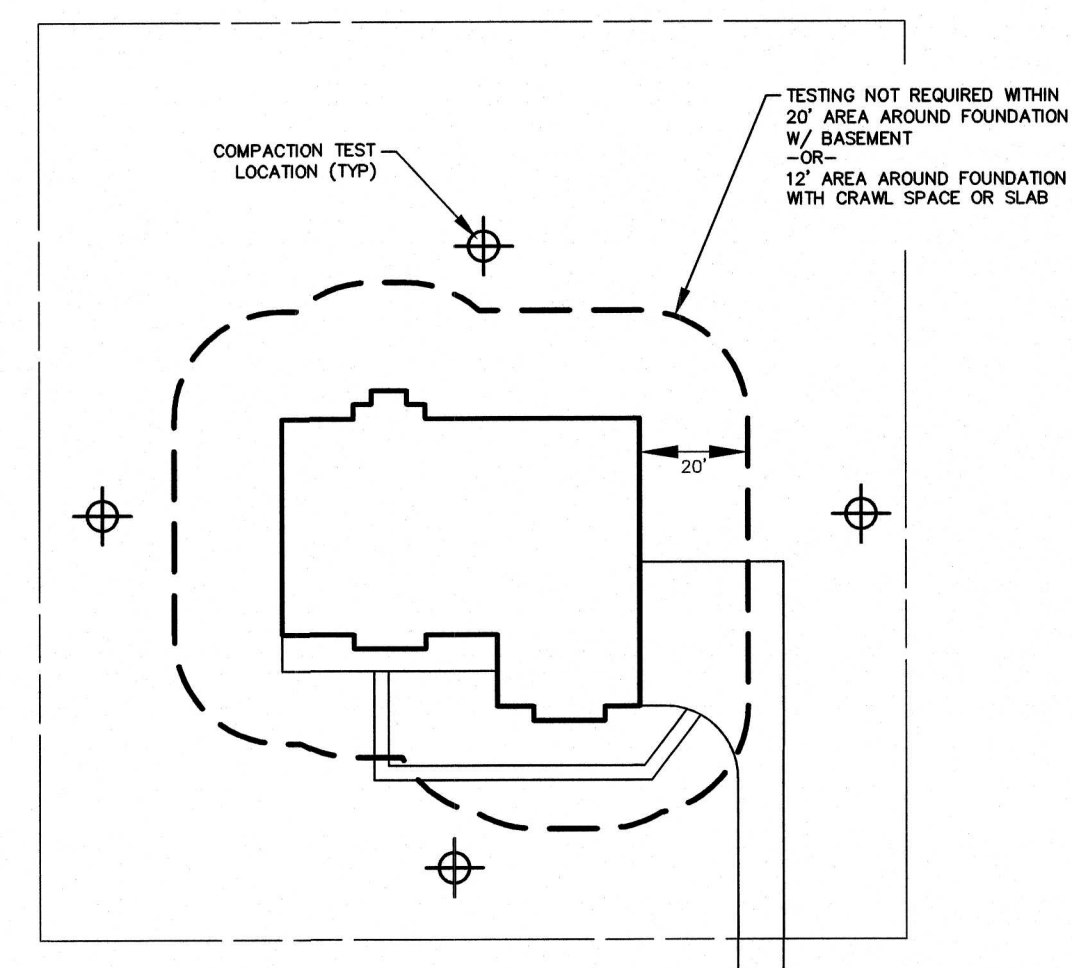
METHODS AND MATERIALS

- SITE PREPARATION
 - GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING.
 - INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE-STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.

PROTECTIVE MATERIALS

- UNROTTED SMALL-GRAN STRAW, AT 2.0 TO 2.5 TONS PER A

SOIL DE-COMPACTION AND TESTING REQUIREMENTS



SOIL COMPACTION TESTING REQUIREMENTS

- SUBGRADE SOILS PRIOR TO THE APPLICATION OF TOPSOIL (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.
- AREAS OF THE SITE WHICH ARE SUBJECT TO COMPACTION TESTING AND/OR MITIGATION ARE GRAPHICALLY DENOTED ON THE CERTIFIED SOIL EROSION CONTROL PLAN.
- 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.
- 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

- PROBING WIRE TEST (SEE DETAIL)
- HAND-HELD PENETROMETER TEST (SEE DETAIL)
- TUBE BULK DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)
- NUCLEAR DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)

NOTE: ADDITIONAL TESTING METHODS WHICH CONFORM TO ASTM STANDARDS AND SPECIFICATIONS, AND WHICH PRODUCE A HIGH WEIGHT, SOIL BULK DENSITY MEASUREMENT MAY BE ALLOWED SUBJECT TO DISTRICT APPROVAL.

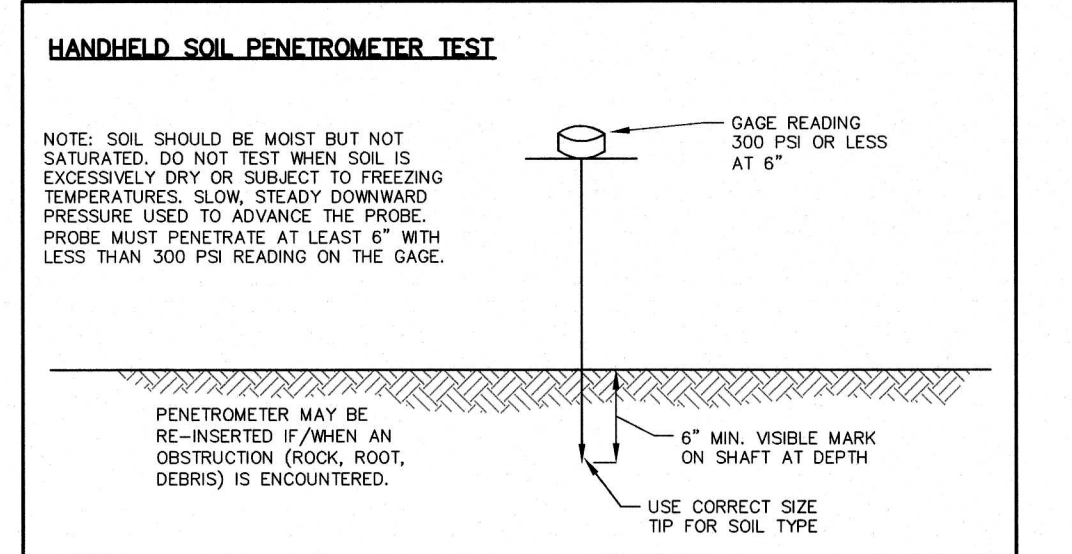
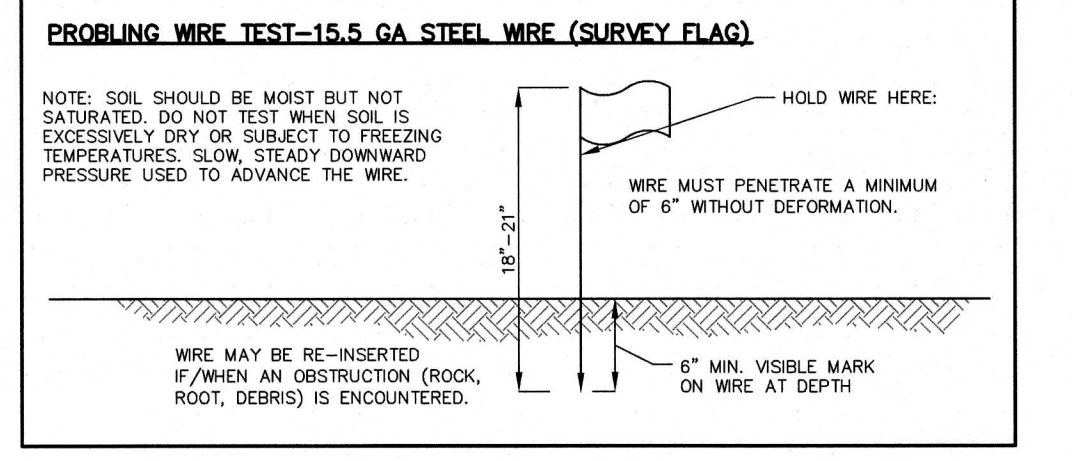
SOIL COMPACTION TESTING IS NOT REQUIRED IF/WHEN SUBSOIL COMPACTION REMEDIATION (SCARIFICATION/TILLAGE (6" MINIMUM DEPTH) OR SIMILAR) IS PROPOSED AS PART OF THE SEQUENCE OF CONSTRUCTION.

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/TILLAGE (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.

SIMPLIFIED TESTING METHODS



NOTE: "SOIL COMPACTION TESTING LOCATIONS IDENTIFIED ARE RECOMMENDED LOCATIONS FOR GRADED/DISTURBED AREAS WITHIN THE VICINITY OF BUILDINGS AND STRUCTURES OR ON INDIVIDUAL LOTS. FOR GRADED/DISTURBED AREAS WITHIN OPEN OR COMMON SPACES, SOIL COMPACTION TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE FREQUENCY LISTED IN THE LEGEND (SEE PLAN SHEETS).

TYPICAL SOIL COMPACTION TESTING LOCATIONS

N.T.S.

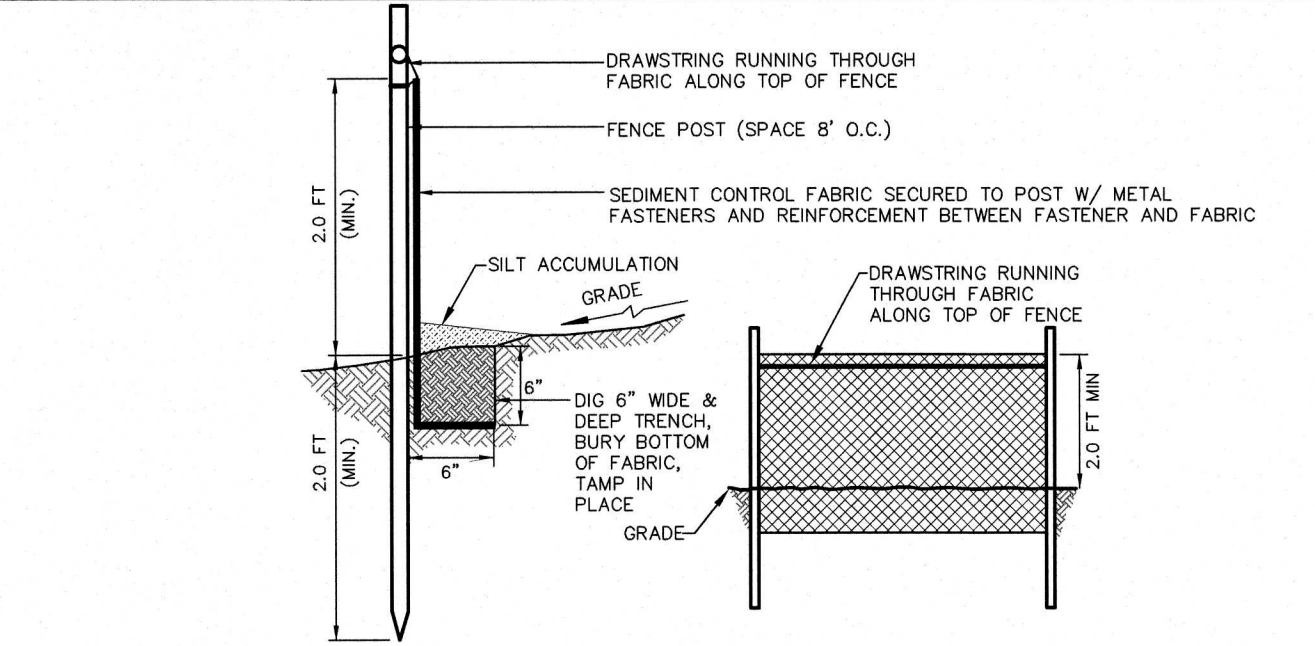
CONSTRUCTION SEQUENCE

CONSTRUCTION COMMENCEMENT DATE: SUMMER 2021

1. INSTALLATION OF SILT FENCE ALONG LIMIT OF DISTURBANCE LINE AT SECTION DELINEATED ON "SOIL EROSION CONTROL PLANS" -	DAY(S)
2. CLEARING AND GRUBBING -	DAY(S)
3. ROUGH GRADING AND TEMPORARY SEEDING -	WEEK(S)
4. INSTALLATION OF UTILITIES AND FOUNDATIONS WITH EROSION CONTROL DEVICES (RIP-RAP OUTFALL, TEMPORARY SEEDING, INLET PROTECTION AND TEMPORARY STABILIZATION). -	WEEK(S)
5. CURBING -	WEEK(S)
6. PAVEMENT SUB-BASE -	WEEK(S)
7. FINISHED GRADING AND LIGHTING -	WEEK(S)
8. FINAL PAVEMENT -	WEEK(S)
9. LANDSCAPING WITH PERMANENT SEEDING -	WEEK(S)

NOTE: AS C.O.'S FOR INDIVIDUAL BUILDING ARE APPLIED FOR, ALL SITE WORK AROUND THE BUILDING TO BE COMPLETED (NO. 10 SUBJECT TO WEATHER CONDITIONS AND TO BE COMPLETED WITHIN 6 MONTHS).

THE ABOVE SCHEDULE SUBJECT TO WEATHER CONDITIONS AND MATERIAL AVAILABILITY.

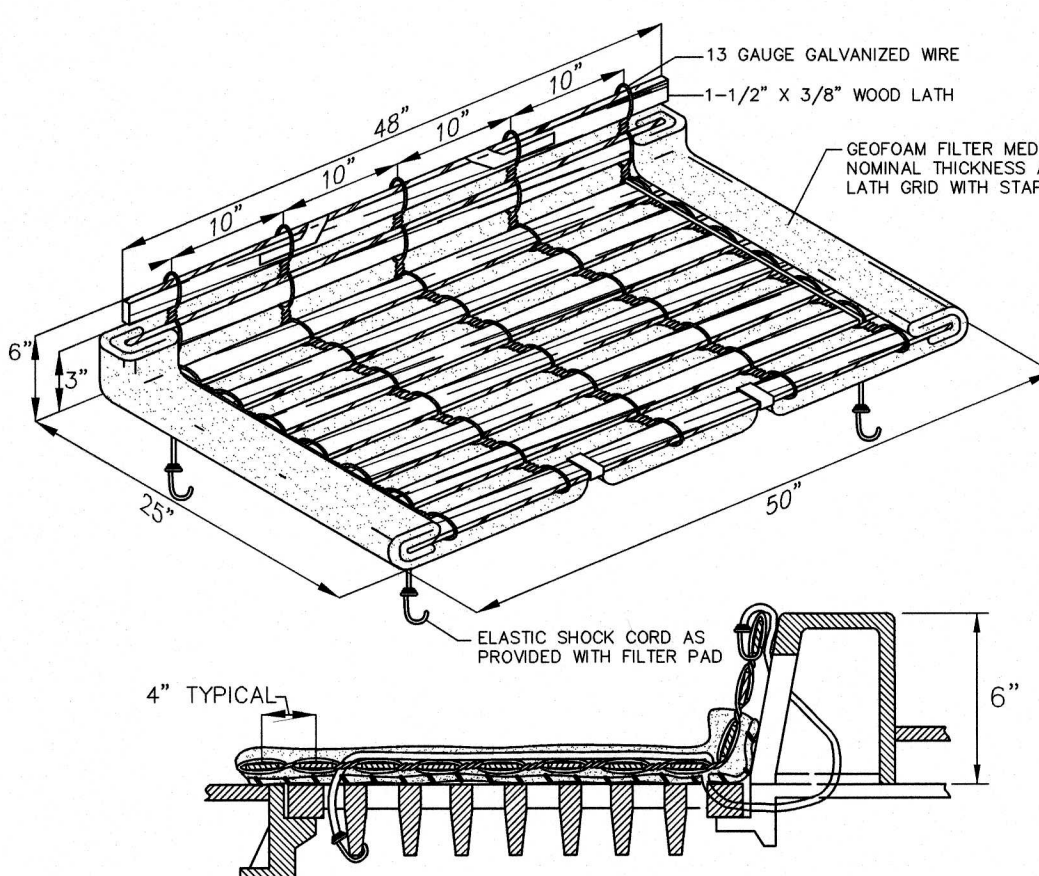


NOTES:

- FENCE POSTS SHALL BE SPACED 8 FEET CENTER-TO-CENTER OR CLOSER. THEY SHALL EXTEND AT LEAST TWO (2) FEET INTO THE GROUND AND EXTEND AT LEAST TWO (2) FEET ABOVE GROUND. POSTS SHALL BE CONSTRUCTED OF HARDWOOD WITH A MINIMUM DIAMETER THICKNESS OF 1 1/2 INCHES.
- A METAL FENCE WITH 6-INCH OR SMALLER OPENINGS AND AT LEAST TWO (2) FEET HIGH MAY BE UTILIZED, FASTENED TO THE FENCE POSTS, TO PROVIDE REINFORCEMENT AND SUPPORT TO THE GEO-TEXTILE FABRIC WHERE SPACE FOR OTHER PRACTICES IS LIMITED AND HEAVY SEDIMENT LOADING IS EXPECTED.
- A GEO-TEXTILE FABRIC RECOMMENDED FOR SUCH USE BY THE MANUFACTURER, SHALL BE BURIED AT LEAST 6-INCHES DEEP IN THE GROUND. THE FABRIC SHALL EXTEND AT LEAST TWO (2) FEET ABOVE THE GROUND. THE FABRIC MUST BE SECURELY FASTENED TO THE POSTS USING A SYSTEM CONSISTING OF METAL FASTENERS (NAILS OR STAPLES) AND A HIGH STRENGTH REINFORCEMENT MATERIAL (NYLON WEBBING, GROMMETS, WASHERS ETC.) PLACED BETWEEN THE FASTENER AND THE GEO-TEXTILE FABRIC. THE FASTENING SYSTEM SHALL RESIST TEARING AWAY FROM THE POST. THE FABRIC SHALL INCORPORATE A DRAWSTRING IN THE TOP PORTION OF THE FENCE FOR ADDED STRENGTH.

SILT FENCE

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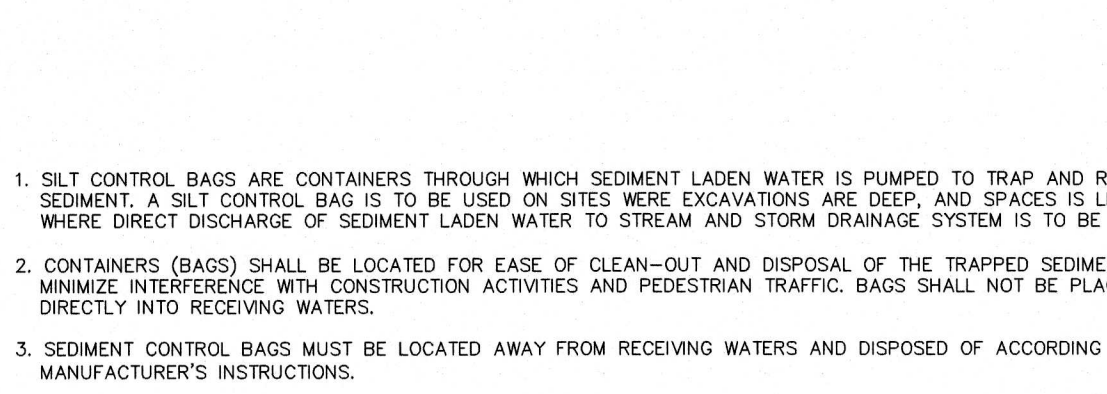


NOTES:

- FURNISH AND INSTALL INLET FILTER PADS AS MANUFACTURED BY R.B.S. ENTERPRISES, OR APPROVED EQUAL, INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PAD SHALL CONSIST OF 3/8" NOMINAL THICKNESS GEOFAM FILTER MEDIA ATTACHED TO FRAMEWORK FRAMEWORK SHALL BE COMPOSED OF 1-1/2" x 3/8" x 48" WOOD LATH ON 4" CENTERS FOR A 5' WIDE GRID. FOAM SHALL BE ATTACHED TO LATH GRID WITH STAPLES. PAD SHALL BE ATTACHED TO GRATE WITH THE ELASTIC SHOCK CORD AND HOOKS.
- THE PROTECTION DEVICE WILL BE DESIGNED TO CAPTURE OR FILTER RUNOFF FROM THE 1 YEAR, 24 HOUR STORM EVENT AND SHALL SAFELY CONVEY HIGHER FLOWS DIRECTLY INTO THE STORM SEWER SYSTEM.

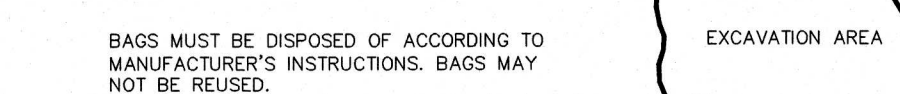
INLET PROTECTION DETAIL

N.T.S.



NOTES:

- SILT CONTROL BAGS ARE CONTAINERS THROUGH WHICH SEDIMENT LADEN WATER IS PUMPED TO TRAP AND RETAIN THE SEDIMENT. A SILT CONTROL BAG IS TO BE USED ON SITES WHERE EXCAVATIONS ARE DEEP, AND SPACES IS LIMITED AND WHERE DIRECT DISCHARGE OF SEDIMENT LADEN WATER TO STREAM AND STORM DRAINAGE SYSTEM IS TO BE AVOIDED.
- CONTAINERS (BAGS) SHALL BE LOCATED FOR EASE OF CLEAN-OUT AND DISPOSAL OF THE TRAPPED SEDIMENT AND TO MINIMIZE INTERFERENCE WITH CONSTRUCTION ACTIVITIES AND PEDESTRIAN TRAFFIC. BAGS SHALL NOT BE PLACED DIRECTLY INTO RECEIVING WATERS.
- SEDIMENT CONTROL BAGS MUST BE LOCATED AWAY FROM RECEIVING WATERS AND DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS.



SEDIMENT CONTROL BAG FOR DEWATERING

N.T.S.

SEEDING RATES

SEEDBED PREPARATION: FERTILIZER (10-10-10) 500 LB/AC
LIMESTONE 6,000 LB/AC

TEMPORARY SEEDING (NOT FOR ACIDIC SOILS HAVING A PH OF 4 OR LESS)
SEED MIX: PERENNIAL RYEGRASS 200 LB/AC

PERMANENT SEEDING (NOT FOR ACIDIC SOILS HAVING A PH OF 4 OR LESS)

SCS SEED MIX #14	350 LB/AC
TURF-TYPE TALL FESCUE (3 CULTIVAR BLEND)	30 LB/AC
KENTUCKY BLUEGRASS (BLEND)	30 LB/AC
PERENNIAL RYEGRASS (BLEND)	30 LB/AC

MULCHING:
UNROTTED SALT HAY OR APPROVED EQUAL 1 1/2 TO 2 TONS/AC

MULCH ANCHORING:
HYDROMULCH OR APPROVED EQUAL (USE RATES AS RECOMMENDED BY MANUFACTURER)

NOTES:

- FOR ADDITIONAL REQUIREMENTS REFER TO THE SCS STANDARD FOR PERMANENT VEGETATIVE COVER.
- THE FERTILIZER AND LIMESTONE RATES REPRESENT THE UNTESTED SCS REQUIRED RATES. FINAL RATES SUBJECT TO SOIL FERTILITY, PH ANALYSIS AND LAB RECOMMENDATIONS.

CONDITION OF ACCEPTANCE:

- NO EROSION SHALL EXIST.
- BARE OR THIN SPOTS IN EXCESS OF 5 PERCENT OF ANY AREA WILL NOT BE ACCEPTABLE.
- ESTABLISHING PERMANENT VEGETATION MEANS 80% VEGETATED COVER (OF THE SEEDING SPECIES) AND MOWED ONCE.

STANDARD FOR TOPSOILING

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

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

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

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

METHODS AND MATERIALS:

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

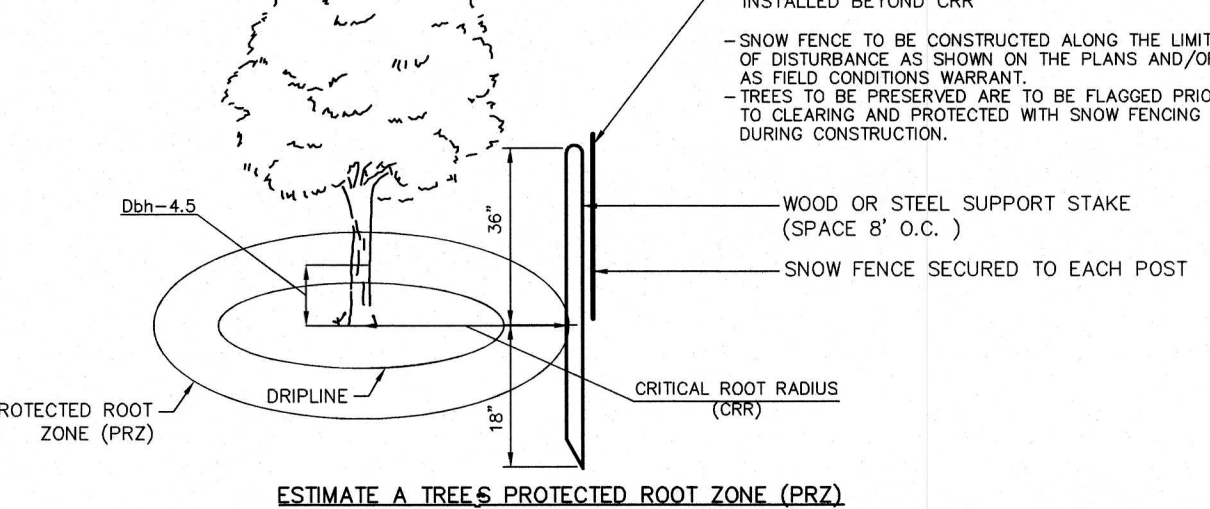
- SITE PREPARATION**
 - AREA AT THE ONSET OF THE OPTIMAL SEEDING PERIOD SO AS TO MINIMIZE THE DURATION AND AREA OF EXPOSURE OF DISTURBED SOIL TO EROSION. IMMEDIATELY PROCEED TO ESTABLISH VEGETATIVE COVER IN ACCORDANCE WITH THE SPECIFIED SEED MIXTURE. TIME IS OF THE ESSENCE.
 - GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE. SEE THE STANDARD FOR LAND GRADING, PG. 19-1.
 - AS GUIDANCE FOR IDEAL CONDITIONS, SUBSOIL SHOULD BE TESTED FOR LIME REQUIREMENT LIMESTONE. IF NEEDED, SHOULD BE APPLIED TO BRING SOIL TO A PH OF APPROXIMATELY 6.5 AND INCORPORATED INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES.
 - PRIOR TO TOPSOILING, THE SUBSOIL SHALL BE IN COMPLIANCE WITH THE STANDARD FOR LAND GRADING, PG. 19-1.
 - EMPLOY NEEDED EROSION CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENTATION BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.
- APPLYING TOPSOIL**
 - TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING SOIL STRUCTURE; I.E., LESS THAN FIELD CAPACITY (SEE GLOSSARY).
 - A UNIFORM APPLICATION TO AN AVERAGE DEPTH OF 5.0 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. SOILS WITH A PH OF 4.0 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM DEPTH OF 12 INCHES OF SOIL HAVING A PH OF 5.0 OR MORE, IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOIL (PG. 1-1).
 - PURSUANT TO THE REQUIREMENTS IN SECTION 7 OF THE STANDARD FOR PERMANENT VEGETATIVE STABILIZATION, THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT PERMANENT VEGETATIVE COVER BECOMES ESTABLISHED ON AT LEAST 80% OF THE SOILS TO BE STABILIZED WITH VEGETATION. FAILURE TO ACHIEVE THE MINIMUM COVERAGE MAY REQUIRE ADDITIONAL WORK TO BE PERFORMED BY THE CONTRACTOR TO INCLUDE SOME OR ALL OF THE FOLLOWING: SUPPLEMENTAL SEEDING, RE-APPLICATION OF LIME AND FERTILIZERS, AND/OR THE ADDITION OF ORGANIC MATTER (I.E. COMPOST) AS A TOP DRESSING. SUCH ADDITIONAL MEASURES SHALL BE BASED ON SOIL TESTS SUCH AS THOSE OFFERED BY RUTGERS COOPERATIVE EXTENSION SERVICE OR OTHER APPROVED LABORATORY FACILITIES QUALIFIED TO TEST SOIL SAMPLES FOR AGRONOMIC PROPERTIES.

1 FRIABLE MEANS EASILY CRUMBLES IN THE FINGERS, AS DEFINED IN MOST SOILS TEXTS.

2 LOAMY MEANS TEXTURE GROUPS CONSISTING OF COARSE LOAMY SANDS, SANDY LOAM, FINE AND VERY FINE SANDY LOAM, LOAM, SILT LOAM, CLAY LOAM, SANDY CLAY LOAM AND SILTY CLAY LOAM TEXTURES AND HAVING LESS THAN 35% COARSE FRAGMENTS (PARTICLES LESS THAN 2MM IN SIZE) AS DEFINED IN THE GLOSSARY OF SOIL SCIENCE TERMS, 1996, SOIL SCIENCE SOCIETY OF AMERICA.

- CRITERIA FOR PROTECTING REMAINING TREES:**
- GENERAL MECHANICAL DAMAGE - SEE BELOW FOR CORRECT ROOT ZONE CALCULATION AND PLACEMENT OF TREE PROTECTION.
 - BOX TREES WITHIN 25 FEET OF A BUILDING SITE TO PREVENT MECHANICAL INJURY. FENCING OR OTHER BARRIER SHOULD BE INSTALLED BEYOND THE CRITICAL ROOT RADIUS. TREE ROOT SYSTEMS COMMONLY EXTEND WELL BEYOND THE DRIP LINE.
 - BOARDS WILL NOT BE NAILED TO TREES DURING BUILDING OPERATIONS.
 - FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA INSIDE THE PROTECTED ROOT ZONE (PRZ).
 - DAMAGED TRUNKS OR EXPOSED ROOTS SHOULD HAVE DAMAGED BARK REMOVED IMMEDIATELY AND NO PAINT SHALL BE APPLIED. EXPOSED ROOTS SHOULD BE COVERED WITH TOPSOIL IMMEDIATELY AFTER EXCAVATION IS COMPLETE. ROOTS SHALL BE PRUNED TO GIVE A CLEAN, SHARP SURFACE AMENABLE TO HEALING. ROOTS EXPOSED DURING HOT WEATHER SHOULD BE IRRIGATED TO PREVENT PERMANENT TREE INJURY. CARE FOR SERIOUS INJURY SHOULD BE PRESCRIBED BY A PROFESSIONAL FORESTER OR LICENSED TREE EXPERT.

NOTE: FOR MORE SPECIFIC TREE CHARACTERISTICS AND TREE LIMB REMOVAL, SEE THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY PUBLISHED BY THE NEW JERSEY DEPARTMENT OF AGRICULTURE AND FORESTRY, SOIL CONSERVATION COMMITTEE OR CONSULT WITH A LICENSED PROFESSIONAL TREE EXPERT, SOIL CONSERVATION DISTRICT OR RUTGERS COOPERATIVE EXTENSION.



- ESTIMATE A TREE'S PROTECTED ROOT ZONE (PRZ) BY CALCULATING THE CRITICAL ROOT RADIUS (CRR).**
- MEASURE THE DBH (DIAMETER OF TREE AT BREAST HEIGHT, 4.5 FEET ABOVE GROUND ON THE UPHILL SIDE OF TREE) IN INCHES.
 - MULTIPLY MEASURED DBH BY 1.5 OR 1.0. EXPRESS THE RESULT IN FEET.
 - DBH X 1.5: CRITICAL ROOT RADIUS FOR OLDER, UNHEALTHY, OR SENSITIVE SPECIES.
 - DBH X 1.0: CRITICAL ROOT RADIUS FOR YOUNGER, HEALTHY OR TOLERANT SPECIES

TREE PROTECTION

STANDARD FOR PERMANENT STABILIZATION WITH SOD

DEFINITION:
ESTABLISHING PERMANENT VEGETATION USING SOD.

PURPOSE:
TO PERMANENTLY STABILIZE TOPSOIL WITH AN IMMEDIATE AESTHETIC COVERING, THUS ASSURING CONSERVATION OF SOIL AND WATER, AND TO ENHANCE THE ENVIRONMENT.

WATER QUALITY ENHANCEMENT:
PROVIDES AN IMMEDIATE, PERMANENT VEGETATIVE COVER TO THE SOIL FROM THE IMPACTS OF WIND OR RAIN AND PREVENTS SOIL AND NUTRIENT LOSSES TO STREAMS AND OTHER STORMWATER CONVEYANCES FROM STORMWATER RUNOFF.

WHERE APPLICABLE:
ON EXPOSED SOILS THAT HAVE A POTENTIAL FOR CAUSING OFF-SITE ENVIRONMENTAL DAMAGE WHERE AN IMMEDIATE, PERMANENT, VEGETATIVE COVER IS DESIRED. WATER (RAIN OR IRRIGATION) IS REQUIRED FOR SUCCESS; ACCESS TO IRRIGATION IS ESSENTIAL DURING DROUGHT.

METHODS AND MATERIALS:

- HIGH QUALITY CULTIVATED SOD IS PREFERRED OVER NATIVE OR PASTURE SOD.
- SOD SHOULD BE FREE OF BROADLEAF WEEDS AND UNDESIRABLE COARSE AND FINE WEED GRASSES.
- SOD SHOULD BE OF UNIFORM THICKNESS, TYPICALLY 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 AND WEIGHT WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP FROM THE UPPER 10 PERCENT OF THE STRIP. BROKEN PADS AND ROLLS OR TORN AND UNEVEN EDGES WILL NOT BE ACCEPTABLE.
- FOR DROUGHTY SITES, A SOD OF TURF-TYPE TALL FESCUE OR TURF-TYPE TALL FESCUE 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 MONTHS.

- SITE PREPARATION**
 - GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR LIMING, FERTILIZING, INCORPORATION OF ORGANIC MATTER, AND OTHER SOIL PREPARATION PROCEDURES. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING.
 - TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES.
- SEE THE STANDARD FOR TOPSOILING FOR TOPSOIL AND AMENDMENT REQUIREMENTS.**
- INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS**
- SOIL PREPARATION**
 - UNIFORMLY 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://NJAES.RUTGERS.EDU/COUNTY/). FERTILIZER SHALL BE APPLIED AT THE RATE OF 800 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE 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 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.
 - 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 EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED.
 - REMOVE FROM THE SURFACE ALL OBJECTS THAT WOULD PREVENT GOOD SOD TO TOPSOIL CONTACT AND REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS, OR OTHER UNSUITABLE MATERIAL.
 - INSPECT SITE JUST BEFORE SODDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED AND FIRMED IN ACCORDANCE WITH THE ABOVE.
- SOD PLACEMENT**
 - SOD STRIPS SHOULD BE LAID ON THE CONTOUR, NEVER UP AND DOWN THE SLOPE, STARTING AT THE BOTTOM OF THE SLOPE AND WORKING UP. ON STEEP SLOPES, THE USE OF LADDERS WILL FACILITATE THE WORK AND PREVENT DAMAGE TO THE SOD. DURING PERIODS OF HIGH TEMPERATURE, LIGHTLY IRRIGATE THE SOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
 - PLACE SOD STRIPS WITH SNUG, EVEN JOINTS (SEAMS) THAT ARE STAGGERED. OPEN SPACES INVITE EROSION.
 - LIGHTLY ROLL OR TAMP SOD IMMEDIATELY FOLLOWING PLACEMENT TO INSURE SOLID CONTACT OF ROOT MAT AND SOIL SURFACE. DO NOT OVERLAP SOD. ALL JOINTS SHOULD BE BUTTED TIGHTLY TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS AND INVASION OF WEEDS.
 - ON SLOPES GREATER THAN 3 TO 1, 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).
 - 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 WILL PROVIDE EXTRA PROTECTION AGAINST LIFTING AND UNDERCUTTING OF SOD. THE SAME TECHNIQUE CAN BE USED TO ANCHOR SOD IN WATER-CARRYING CHANNELS AND OTHER CRITICAL AREAS. WIRE STAPLES MUST BE USED TO ANCHOR NETTING IN CHANNEL WORK.
 - IMMEDIATELY FOLLOWING INSTALLATION, SOD SHOULD BE WATERED UNTIL WATER PENETRATES THE SOIL LAYER BENEATH SOD TO A DEPTH OF 1 INCH. MAINTAIN OPTIMUM WATER FOR AT LEAST TWO WEEKS.
 - TOPDRESSING - SINCE SOIL ORGANIC MATTER AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PRESCRIBED IN SECTIONS 1 AND 2IN THIS STANDARD, A FOLLOW-UP TOPDRESSING IS NOT MANDATORY, EXCEPT WHERE GROSS NITROGEN DEFICIENCY EXISTS IN THE SOIL TO THE EXTENT THAT TURF FAILURE MAY DEVELOP. TOPDRESSING SHALL THEN BE APPLIED. TOPDRESS WITH 10-0-10 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 IN THE TURF IS AMELIORATED.

CONSTRUCTION DETAIL NOTES

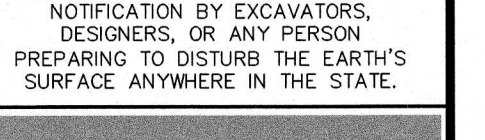
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- SHOP DRAWINGS SHALL BE PROVIDED FOR ALL PRECAST STRUCTURES PRIOR TO THE ORDERING OF MATERIALS.
- DETAILS ASSUME APPROPRIATE LOAD BEARING CAPACITY AND COMPACTION OF SOILS. ACTUAL FIELD CONDITIONS SHALL BE CONFIRMED BY ON-SITE GEOTECHNICAL ENGINEER.
- RESIDENTIAL DEVELOPMENTS SHALL CONFORM TO DETAILS WITHIN THE CURRENT EDITION OF THE RESIDENTIAL SITE IMPROVEMENT STANDARDS (R.S.I.S).
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REVISIONS	
NO.	DESCRIPTION

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•• CHKD BY: _____ DATE: _____



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menlo engineering associates

Civil Engineering Consultants
Landscape Architects
Professional Planners

261 Cleveland Avenue
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732-846-8585 732-846-9439

Certificate of Authorization: 24627951900

LIVINGSTON WAREHOUSE

TOWNSHIP OF NORTH BRUNSWICK
MIDDLESEX COUNTY
NEW JERSEY

BLOCK 140.1
LOTS 5.02 & 7.01
TAX MAP SHEET 30
21.03 ACRES

SOIL EROSION & SEDIMENT CONTROL DETAILS (2)

DRAWN BY	RM
DESIGNED BY	RJG
APPROVED BY	GSO
THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION...	
Gregory S. Oman PROFESSIONAL ENGINEER NJPE# 43441	
PROJECT NUMBER	2018.047.02
DATE OF ISSUE	FEBRUARY 12, 2021
REVISION	11

FOR CLARIFICATIONS AND ADDITIONAL INFORMATION SEE THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY, 7TH EDITION, JANUARY 2014, REVISED JULY 2017

CASCADE SEPARATOR DESIGN NOTES

THE STANDARD CS-8 CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION	
GRATED INLET ONLY (NO INLET PIPE)	
GRATED INLET WITH INLET PIPE OR PIPES	
CURB INLET ONLY (NO INLET PIPE)	
CURB INLET WITH INLET PIPE OR PIPES	

PLAN VIEW B-B
NOT TO SCALE

FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

SITE SPECIFIC DATA REQUIREMENTS	
STRUCTURE ID	A2
WATER QUALITY FLOW RATE (cfs (L/s))	6.39
PEAK FLOW RATE (cfs (L/s))	10.55
RETURN PERIOD OF PEAK FLOW (yrs)	25
RIM ELEVATION	121.25
PIPE DATA:	
INLET PIPE 1	115.60 RCP 36"
INLET PIPE 2	- - - - -
OUTLET PIPE	115.60 RCP 36"

GENERAL NOTES:

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
- CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
- CASCADE SEPARATOR STRUCTURE SHALL MEET AASHTO H20D LOAD RATING, ASSUMING EARTH COVER OF 0'-2" (R10), AND GROUNDWATER ELEVATION AT OR BELOW THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M318 AND BE CAST WITH THE CONTECH LOGO.
- CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
- ALTERNATE UNITS ARE SHOWN IN MILLIMETERS (mm).

INSTALLATION NOTES:

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
- CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLY STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH
ENGINEERED SOLUTIONS LLC
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45399
800-338-1122 513-645-7000 513-645-7993 FAX

CS-8
CASCADE SEPARATOR
STANDARD DETAIL

WATER QUALITY STRUCTURE A2

N.T.S.

CDS4030-8-C DESIGN NOTES

THE STANDARD CDS4030-8-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION	
GRATED INLET ONLY (NO INLET PIPE)	
GRATED INLET WITH INLET PIPE OR PIPES	
CURB INLET ONLY (NO INLET PIPE)	
CURB INLET WITH INLET PIPE OR PIPES	
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)	
SEDIMENT WEIR FOR RLEDP/ N/CAT CONFORMING UNITS	

PLAN VIEW B-B
N.T.S.

FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS	
STRUCTURE ID	D2
WATER QUALITY FLOW RATE (CFS OR L/s)	2.67
PEAK FLOW RATE (CFS OR L/s)	7.43
RETURN PERIOD OF PEAK FLOW (YRS)	25
SCREEN APERTURE (2000 OR 4700)	-
PIPE DATA:	
INLET PIPE 1	115.75 RCP 30"
INLET PIPE 2	- - - - -
OUTLET PIPE	115.75 RCP 30"
RIM ELEVATION	121.00
ANTI-FLOTATION BALLAST	WIDTH HEIGHT
NOTES/SPECIAL REQUIREMENTS:	
* PER ENGINEER OF RECORD	

GENERAL NOTES:

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- DIMENSIONS MARKED WITH * ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
- FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
- CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
- STRUCTURE SHALL MEET AASHTO H20D AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT OR BELOW THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
- PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES:

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- CONTRACTOR TO ASO JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLY STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH
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9025 Centre Pointe Dr., Suite 400, West Chester, OH 45399
800-338-1122 513-645-7000 513-645-7993 FAX

CDS4030-8-C
INLINE CDS
STANDARD DETAIL

WATER QUALITY STRUCTURE D2

N.T.S.

CONCRETE LOW FLOW CHANNEL

N.T.S.

GENERAL NOTES:

- 1" THICK 3000PSI CONCRETE (TROWEL FINISH)
- EXPANSION JOINTS TO BE LOCATED A MAXIMUM OF 20' O.C.
- EXPANSION MATERIAL TO BE PREMOULDED, ASPHALT IMPREGNATED, 1/2" THICK.

CONCRETE TRENCH DETAIL 'A'

N.T.S.

GENERAL NOTES:

- ALL CONSTRUCTION SHALL MEET STANDARD DOT SPECIFICATIONS, THE LATEST EDITION.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.

PIPE DIAMETER	TRENCH WIDTH
4"	2'-0"
6"	2'-0"
8"	3'-0"
10"	3'-0"
12"	3'-6"
15"	3'-6"
18"	4'-0"
21"	4'-0"
24"	4'-0"
27"	4'-6"
30"	4'-6"
36"	5'-0"
42"	5'-0"
48"	6'-0"
54"	6'-0"

CONCRETE TRENCH DETAIL 'A' (SANITARY SEWER)

N.T.S.

GENERAL NOTES:

- ALL CONSTRUCTION SHALL MEET STANDARD DOT SPECIFICATIONS, THE LATEST EDITION.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.

PIPE DIAMETER	TRENCH WIDTH
4"	2'-0"
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24"	4'-0"
27"	4'-6"
30"	4'-6"
36"	5'-0"
42"	5'-0"
48"	6'-0"
54"	6'-0"

CONCRETE TRENCH DETAIL 'C' (WATER MAIN)

N.T.S.

GENERAL NOTES:

- ALL CONSTRUCTION SHALL MEET STANDARD DOT SPECIFICATIONS, THE LATEST EDITION.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST OSHA STANDARDS.

DUMPSTER/RECYCLABLE PAD DETAIL

N.T.S.

GENERAL NOTES:

- INLETS MAY BE CONSTRUCTED OF BRICK, CONCRETE, CONCRETE BLOCK OR PRECAST CONCRETE. WALLS SHALL BE 8" THICK IF BRICK AND 6" THICK IF CONCRETE. FOOTING SHALL BE 3000PSI CONCRETE. WALLS SHALL BE 4000PSI CONCRETE. INVERT (BENCHING) SHALL BE 2500 PSI CONCRETE. TROWELED TO A SMOOTH FINISH.
- IF WALL CONSTRUCTION IS BRICK OR BLOCK, THE WALLS SHALL BE PLASTERED BOTH INSIDE AND OUTSIDE WITH 1/2" THICK CEMENT PLASTER TROWELED TO A SMOOTH FINISH.
- WHEN THE DEPTH OF AN INLET THAT IS NOT PRECAST EXCEEDS 8' AS MEASURED FROM THE GRATE TO THE INVERT, THE WALL THICKNESS BELOW A DEPTH OF 8' SHALL BE INCREASED TO 12" THICK. THE FOUNDATION OVERHANG DIMENSION SHALL BE INCREASED TO 12" AND THE FOUNDATION THICKNESS SHALL BE INCREASED TO 12". MAXIMUM DEPTH FOR NON- PRECAST CONSTRUCTION SHALL BE 13'.
- INLET FOUNDATIONS WHICH ARE PRECAST SHALL BE PLACED ON A 6" THICK BED OF COMPACTED COURSE AGGREGATE SIZE NO.57 (3/4" CRUSHED STONE). THE COURSE AGGREGATE SHALL EXTEND 6" BEYOND THE HORIZONTAL LIMITS OF THE INLET FOUNDATION.
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ASTM DESIGNATION C478 AND ALL OTHER APPLICABLE STANDARDS.
- DETAILED SHOP DRAWINGS TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO ORDERING.
- FRAME AND GRATE TO BE CAMPBELL FOUNDRY - #2618 CURB INLET - NJ TYPE B - WITH BICYCLE SAFE GRATE AND TYPE "N" ECO CURB PIECE (UNLESS OTHERWISE NOTED). ADJUST TO GRADE WITH CONCRETE BRICK (MAX 12") OR CONCRETE GRADE RING AS REQUIRED. FRAMES TO BE SET IN FULL BED OF STIFF MORTAR.

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•• CHKD BY: _____ DATE: _____

GREGORY S. OMAN
PROFESSIONAL ENGINEER
NJPE# 43441

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Landscape Architects
Professional Planners
261 Cleveland Avenue
Highland Park, NJ 08904
menloeng.com [in](https://www.linkedin.com/company/menlo-engineering-associates) [f](https://www.facebook.com/menloeng.com)
732-846-8585 732-846-9439
Certificate of Authorization: 24GA27951900

LIVINGSTON WAREHOUSE

TOWNSHIP OF NORTH BRUNSWICK
MIDDLESEX COUNTY
NEW JERSEY

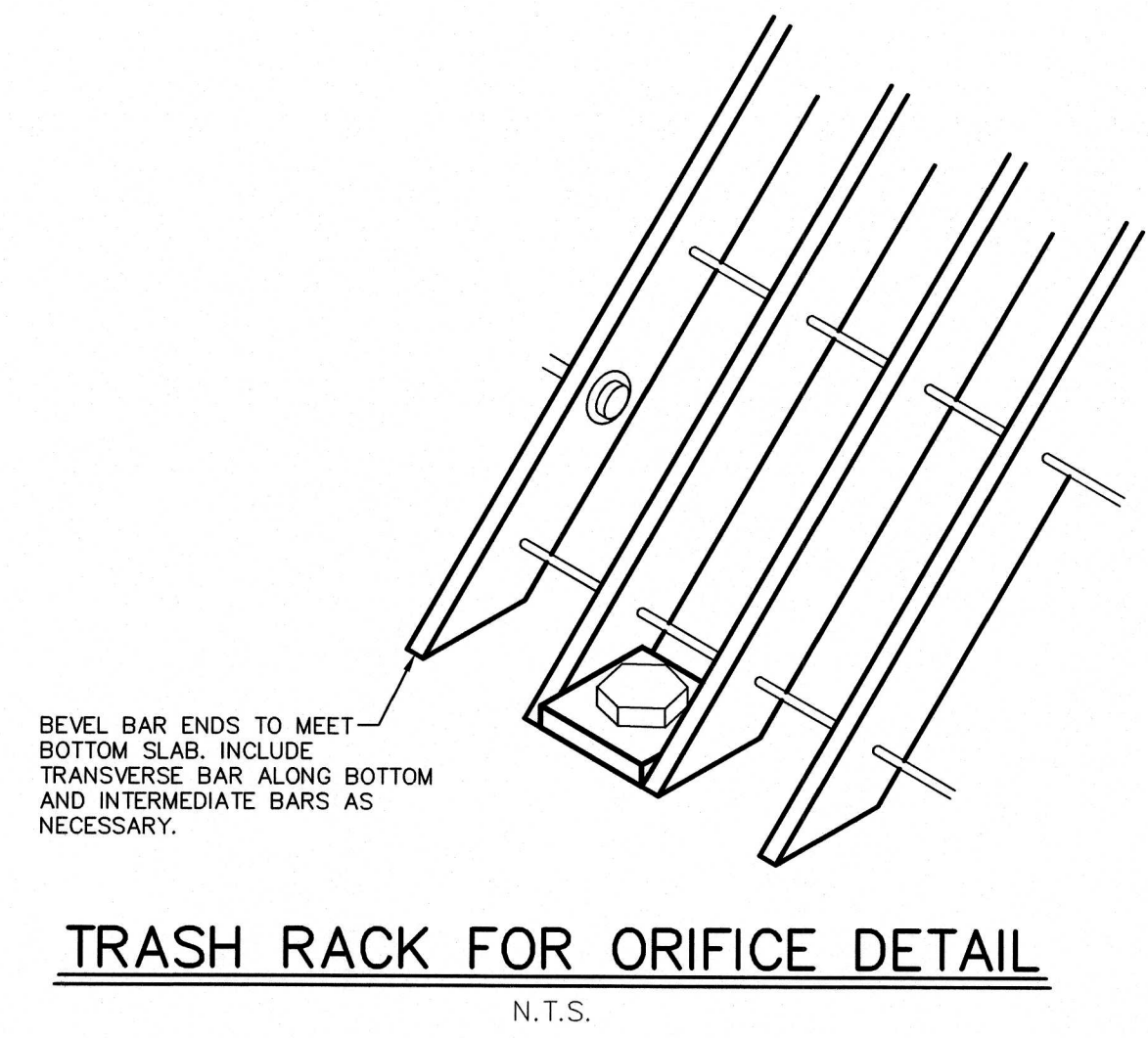
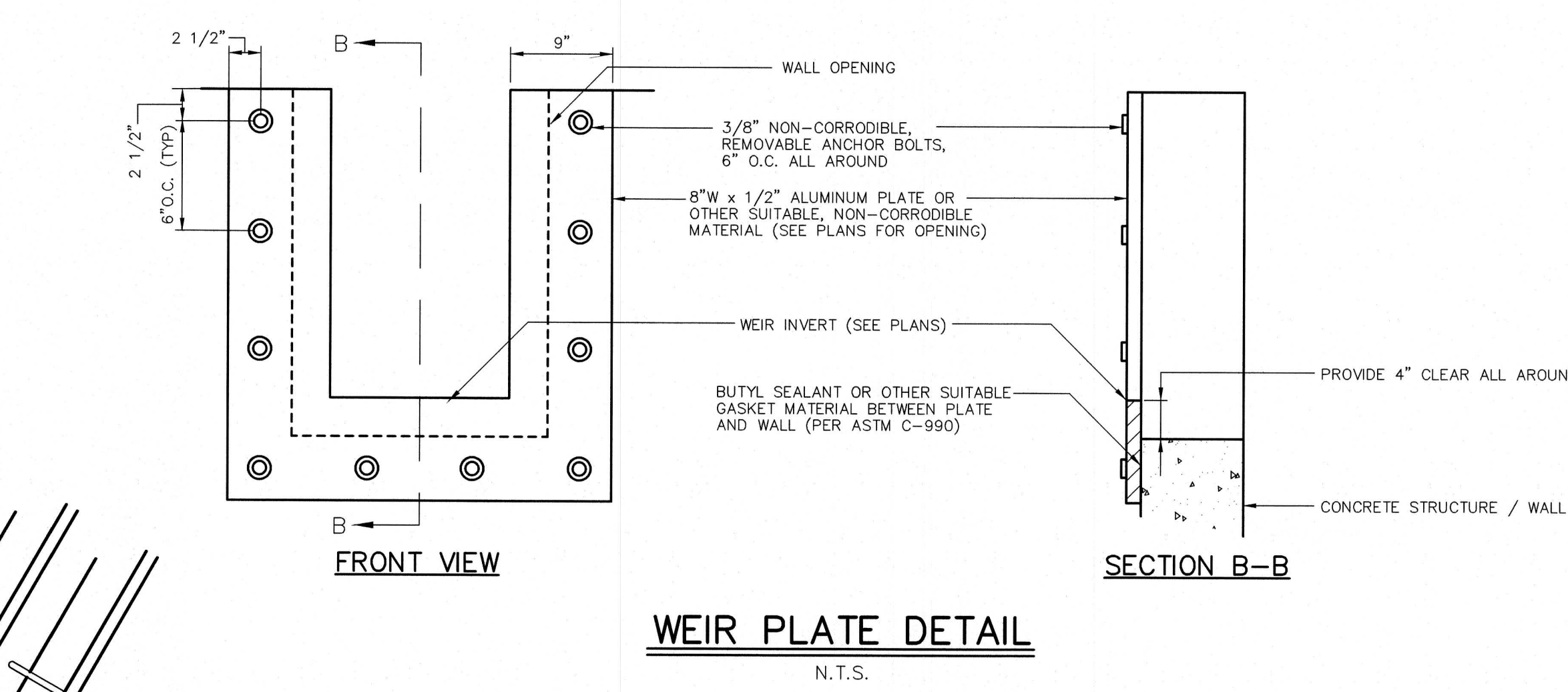
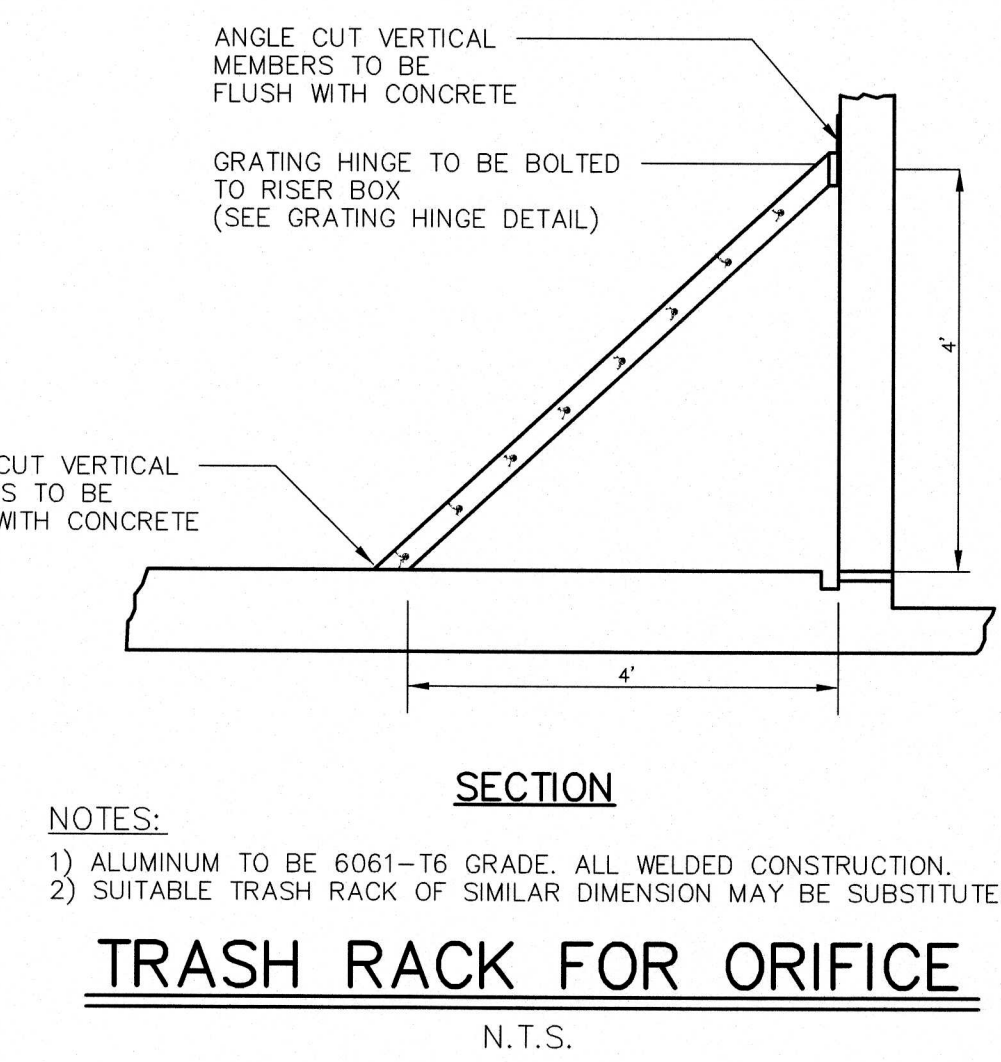
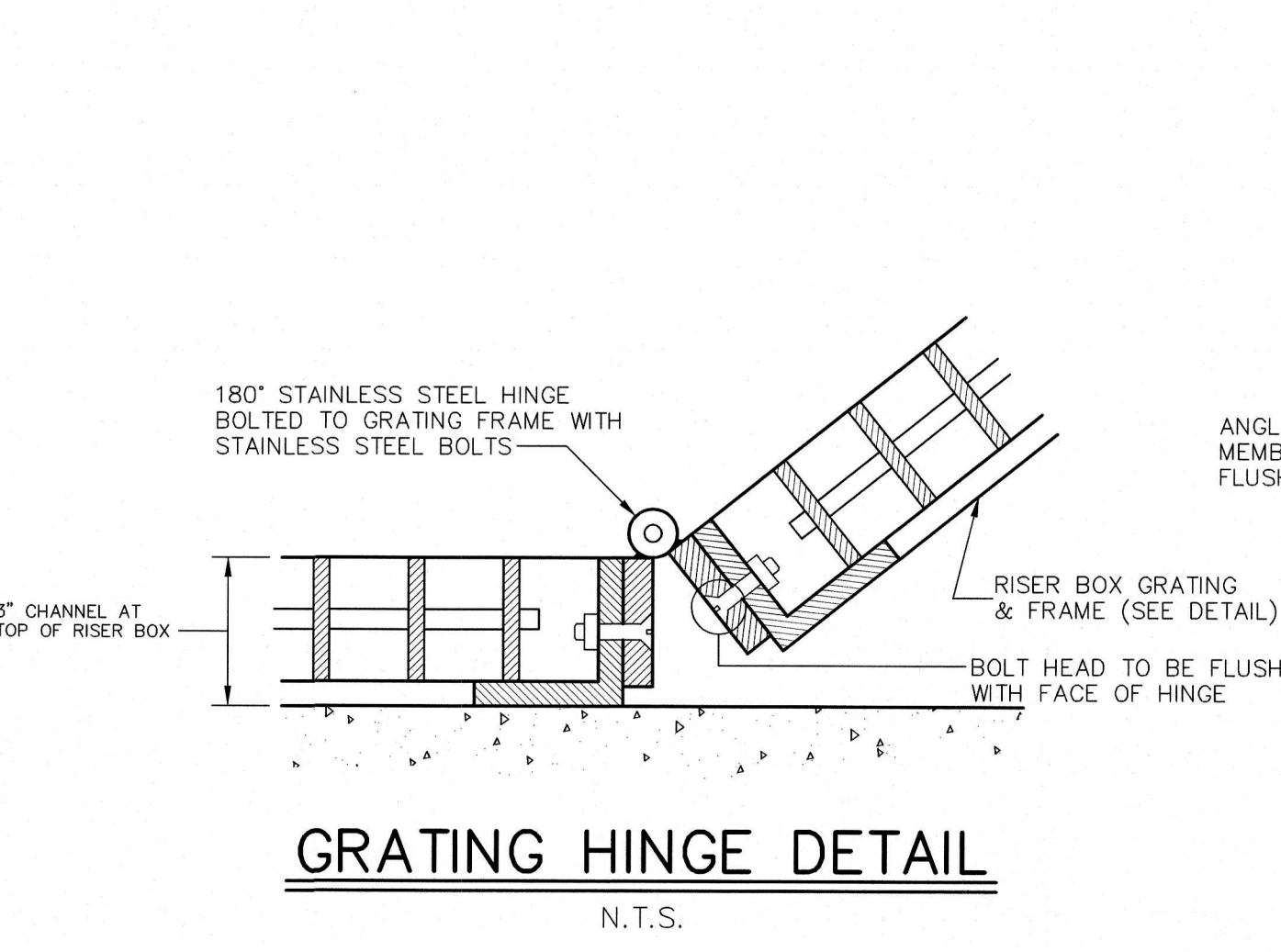
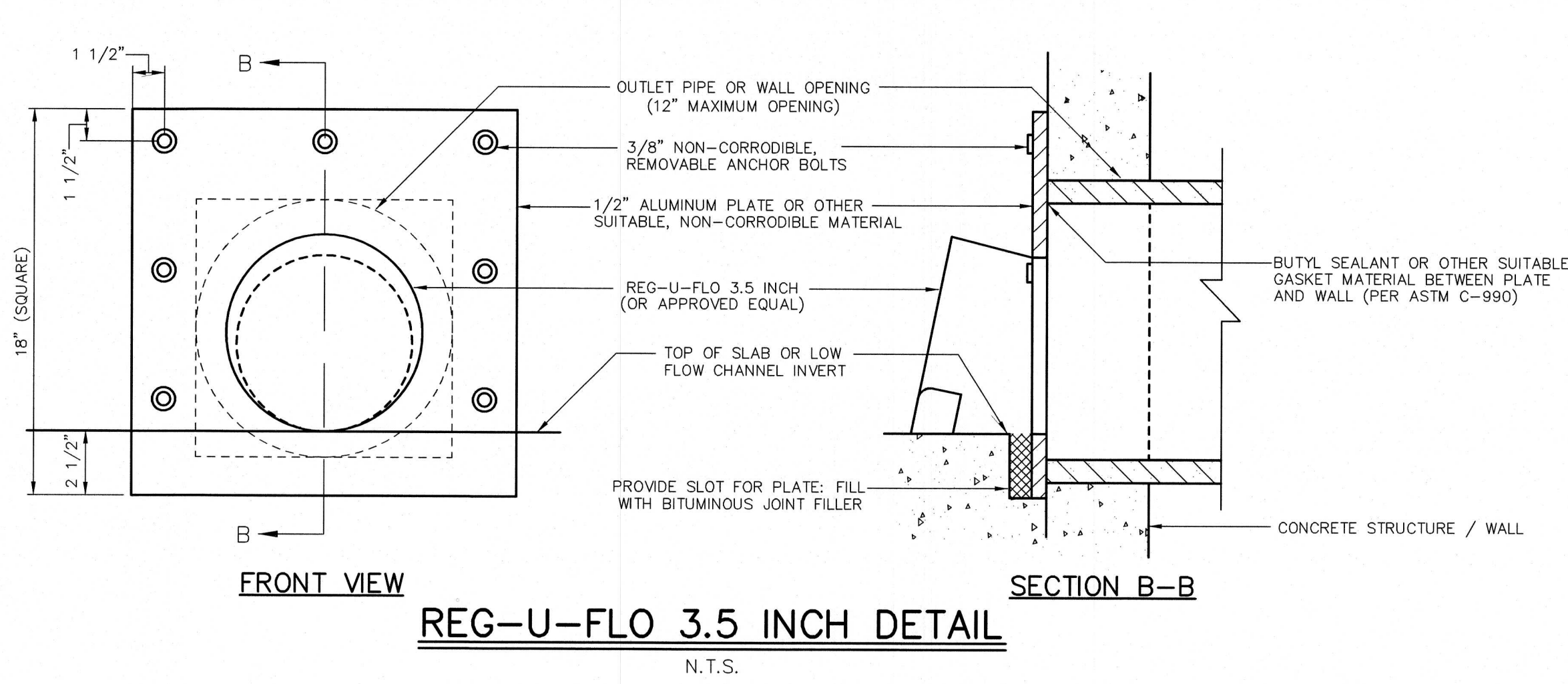
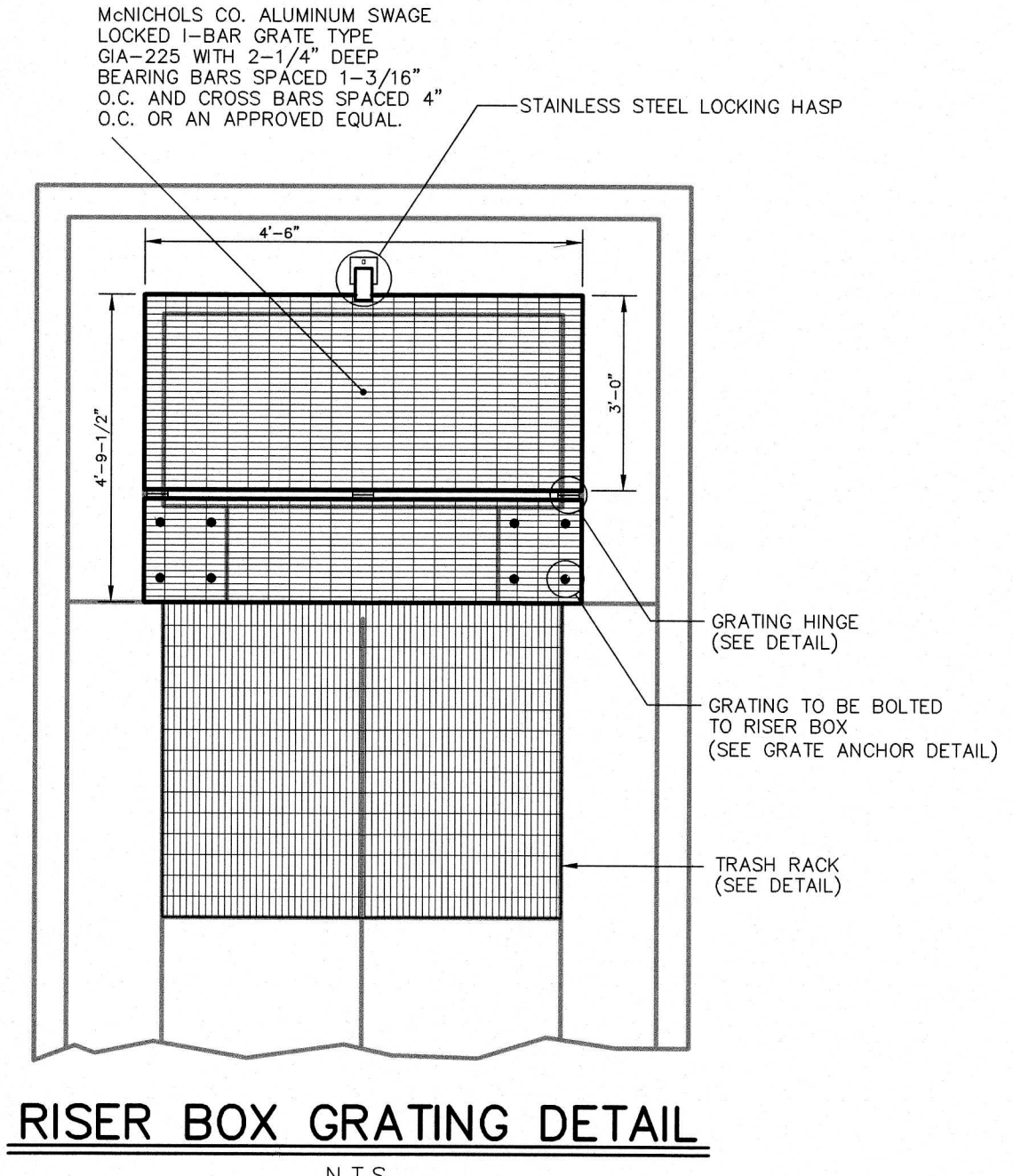
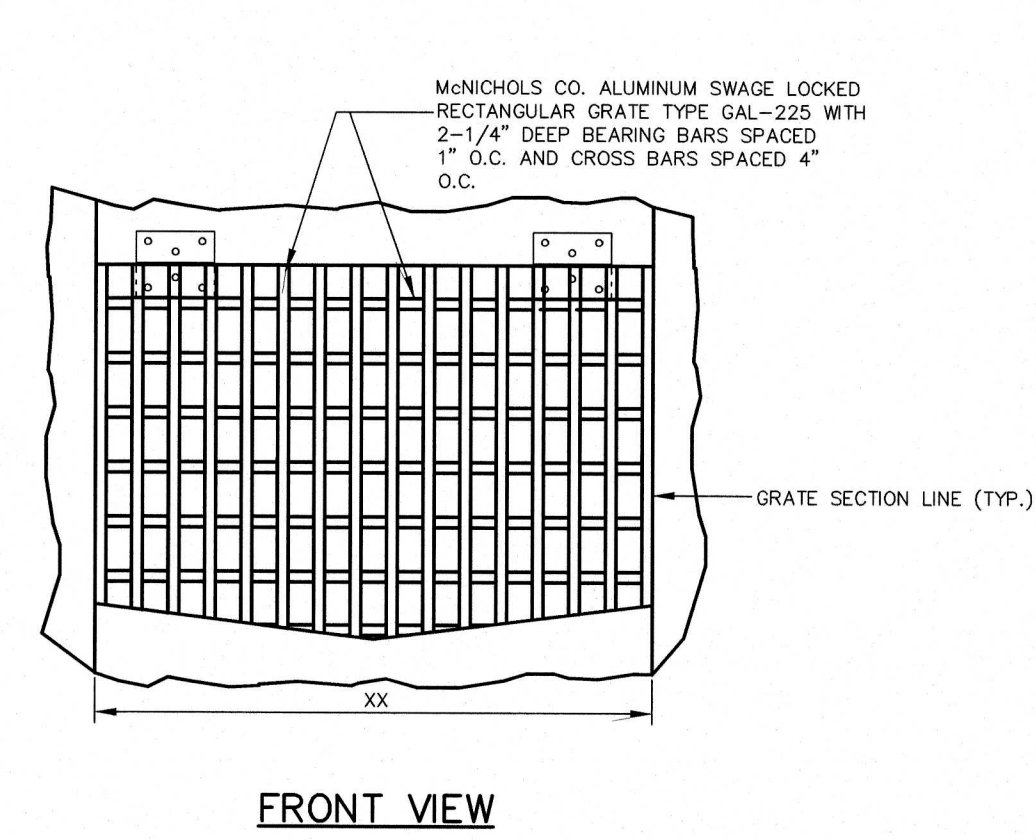
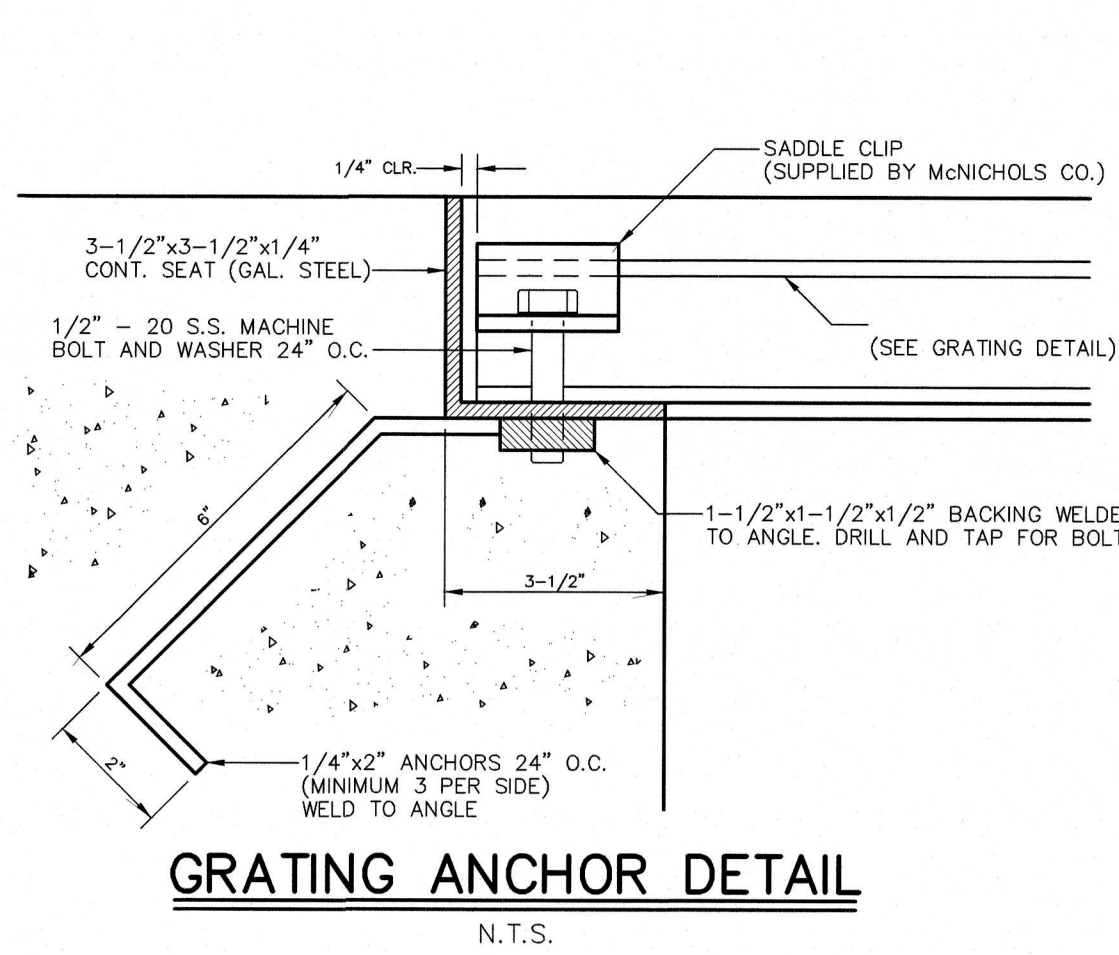
BLOCK 140.01
LOTS 5.02 & 7.01
TAX MAP SHEET 30
21.03 ACRES

CONSTRUCTION DETAILS (2)

DESIGNED BY: _____ RJD
APPROVED BY: _____ GSO

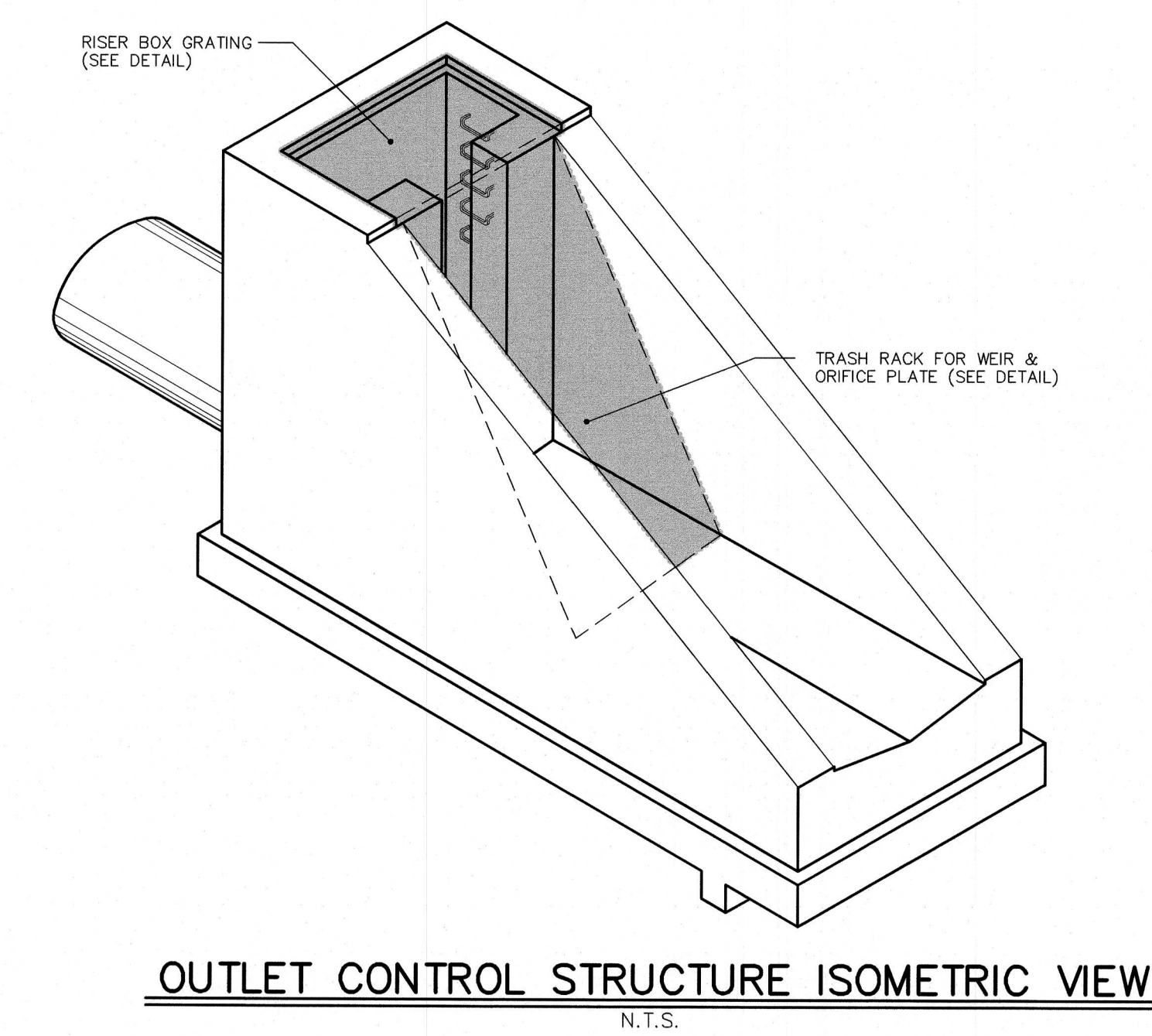
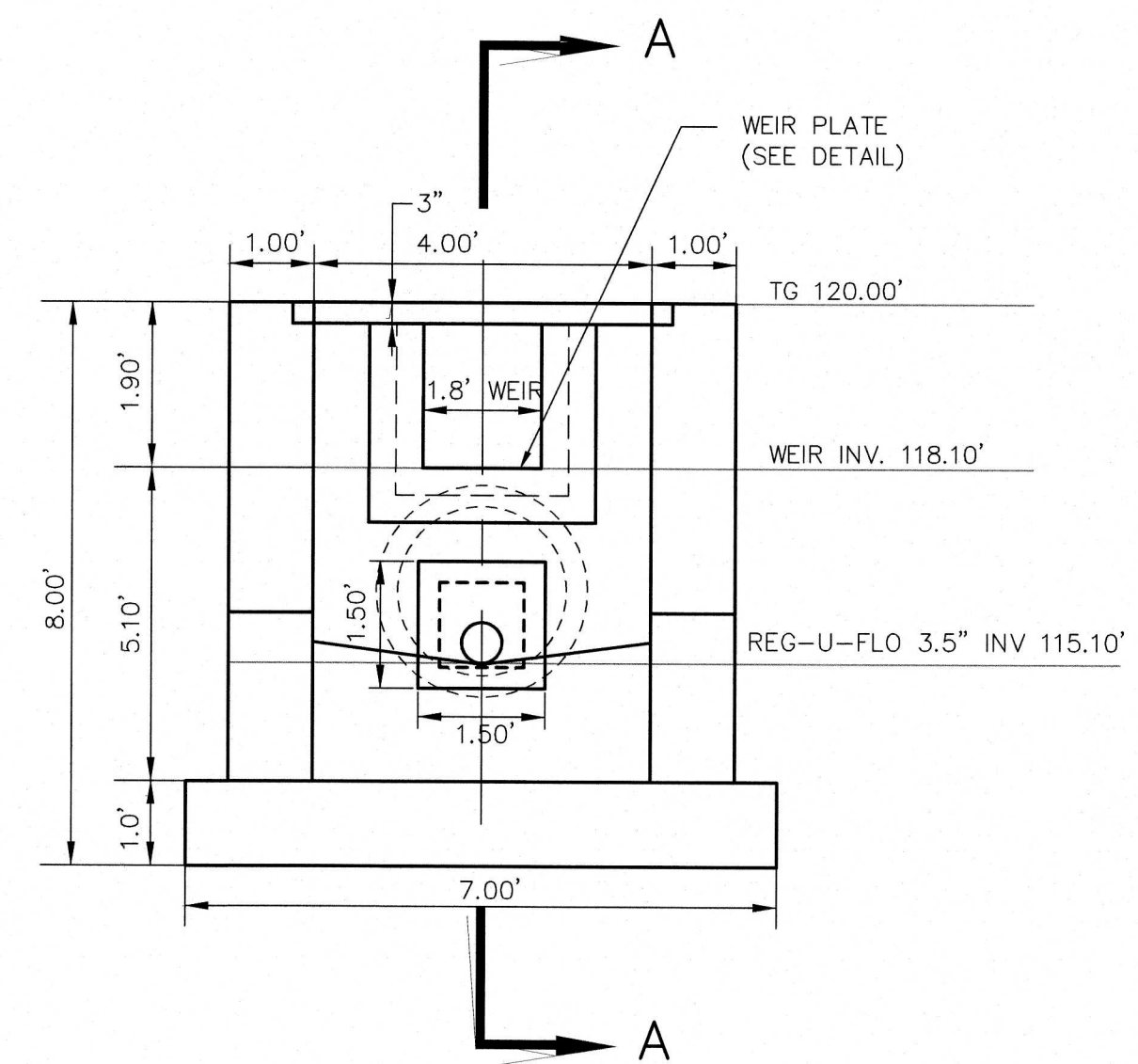
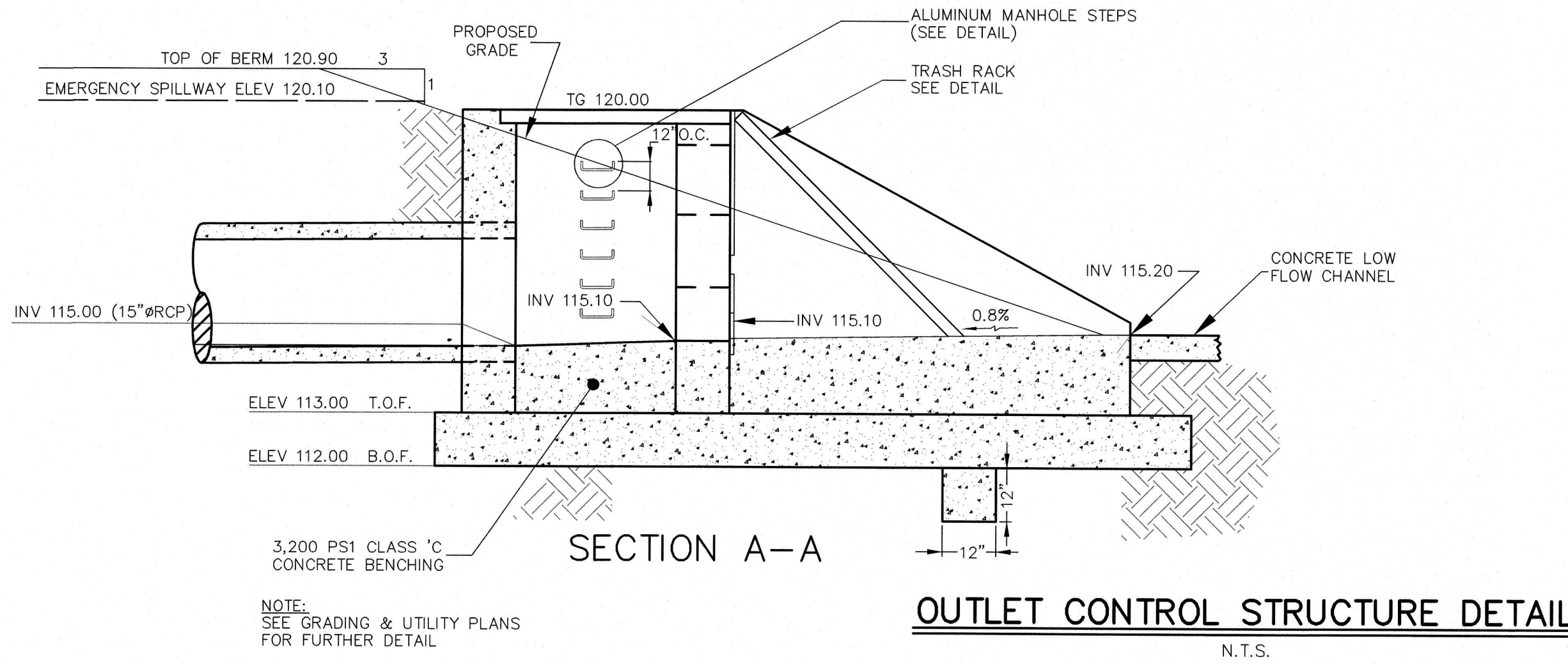
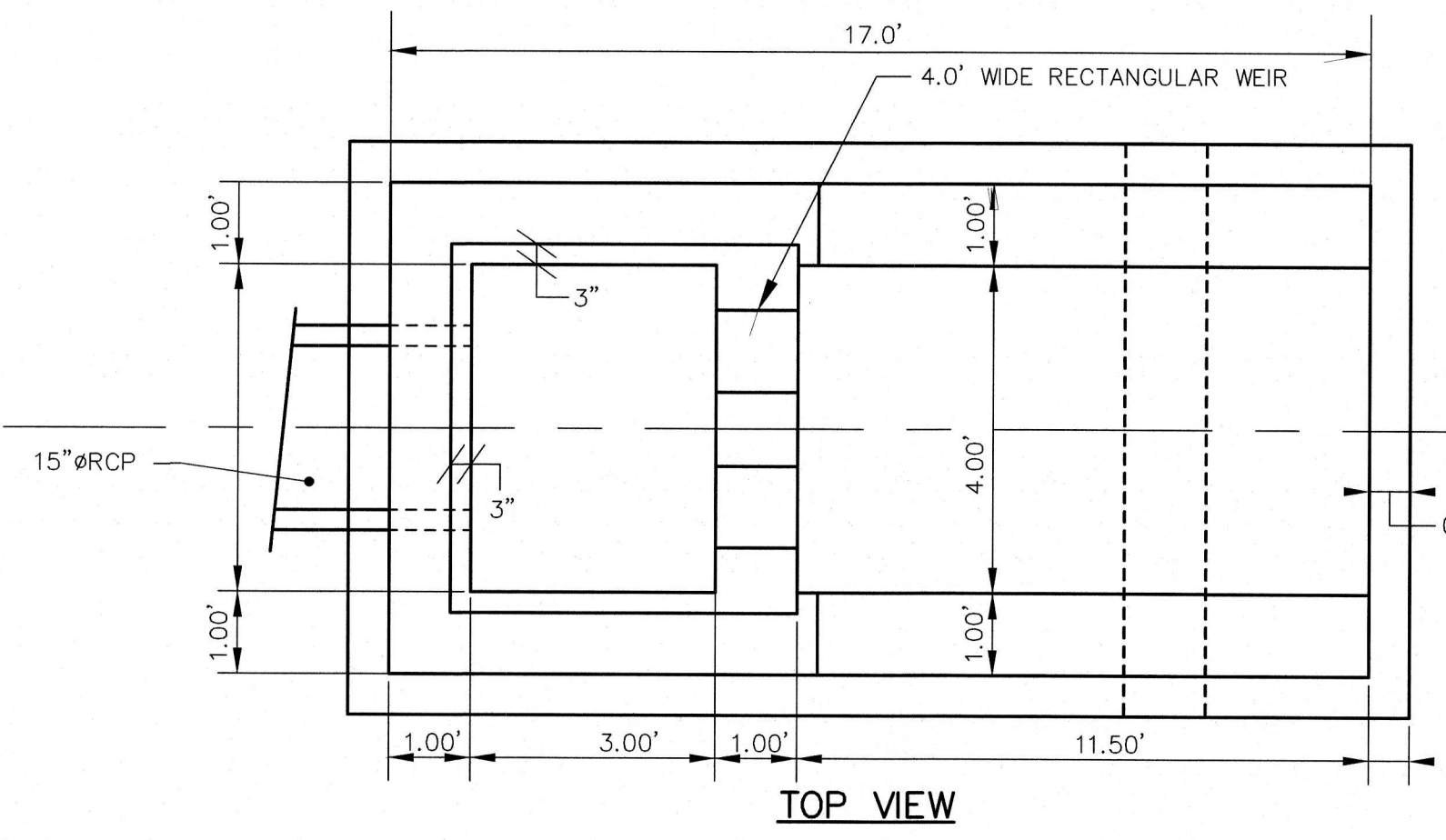
THIS DRAWING PREPARED UNDER MY IMMEDIATE SUPERVISION...

PROJECT NUMBER	DATE OF ISSUE	REVISION	DATE	BY
2018.047.02	FEBRUARY 12, 2021			



NOTES:
1) ALUMINUM TO BE 6061-T6 GRADE. ALL WELDED CONSTRUCTION.
2) SUITABLE TRASH RACK OF SIMILAR DIMENSION MAY BE SUBSTITUTED.

GENERAL NOTES:
1) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MOST RECENT N.J. DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND SUPPLEMENTS.
2) ALL CONCRETE SHALL HAVE A MIN. 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI. ALLOWABLE EXTREME FIBER STRESS IN COMPRESSION SHALL BE 1,200 PSI.
3) ALL CONCRETE SHALL BE PLACED ON FIRM UNDISTURBED SOIL.
4) ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1 INCH, 45 DEGREE CHAMFER UNLESS OTHERWISE APPROVED.
5) ALL REINFORCING STEEL SHALL BE INTERMEDIATE GRADE, NEW DEFORMED BILLET-STEEL CONFORMING TO ASTM A615 (LATEST EDITION), GRADE 40 MIN. ALLOWABLE STRESS IN TENSION SHALL BE 20,000 PSI.
6) ALL REINFORCEMENT STEEL SPLICES SHALL BE MIN. 30 BAR DIAMETERS UNLESS OTHERWISE APPROVED.
7) FINAL REINFORCEMENT STEEL BAR LIST SHALL BE SUBMITTED PRIOR TO FINAL APPROVAL. ALL REINFORCEMENT SHALL BE SUITABLY SUPPORTED AND SECURELY HELD IN PLACE WHILE PLACING CONCRETE.
8) CONCRETE PLACING OPERATIONS SHALL NOT COMMENCE UNTIL FINAL INSPECTION AND APPROVAL OF ALL REINFORCEMENT HAS BEEN PERFORMED. ALL LOW FLOW CHANNELS SHALL BE CONSTRUCTED AS REQUIRED IN DETAILS.



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261 Cleveland Avenue
Highland Park, NJ 08904

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732-846-8885 | 732-846-9439

Certificate of Authorization: 24G27951900

LIVINGSTON WAREHOUSE

TOWNSHIP OF NORTH BRUNSWICK
MIDDLESEX COUNTY
NEW JERSEY

BLOCK 140.01
LOTS 5.02 & 7.01
TAX MAP SHEET 30
21.03 ACRES

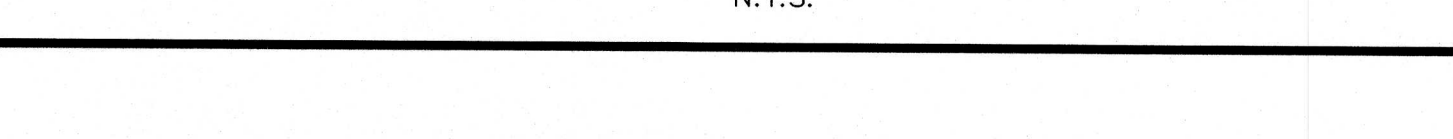
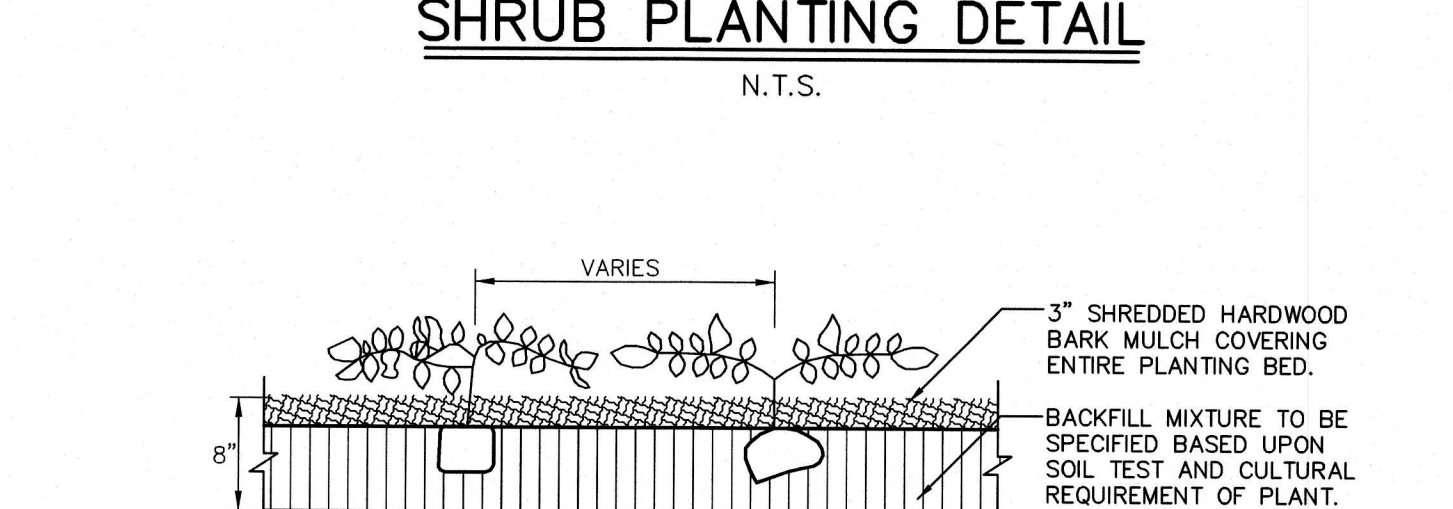
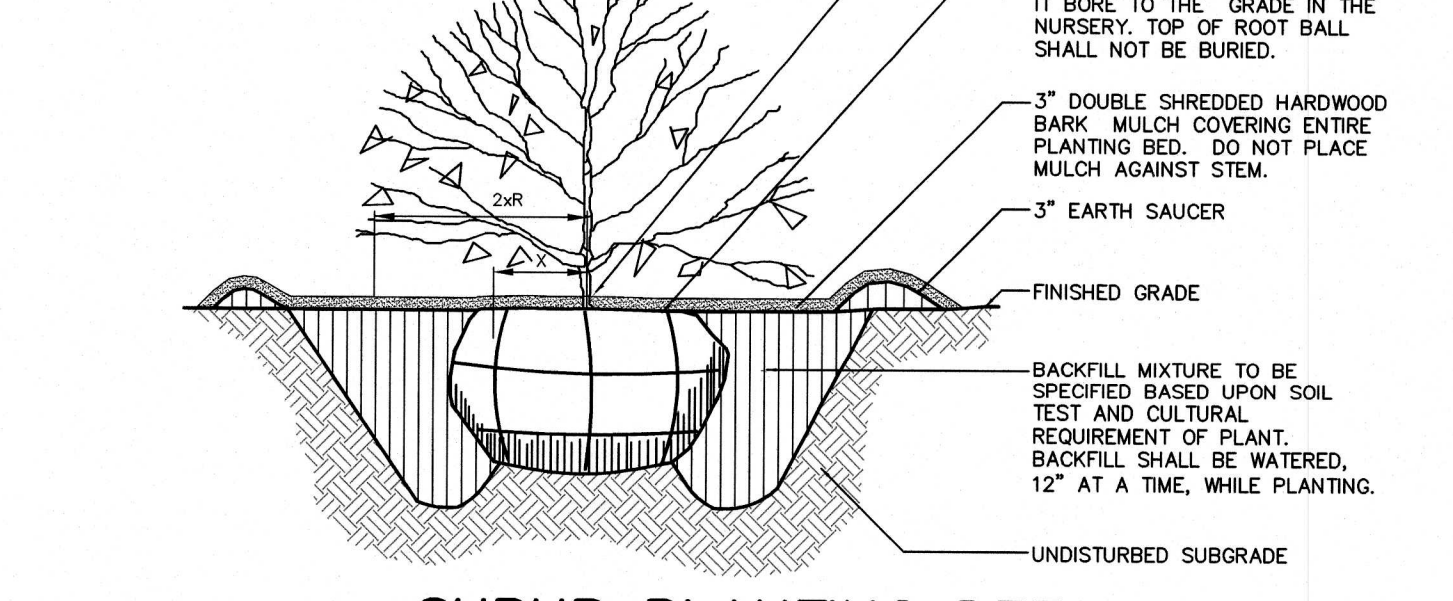
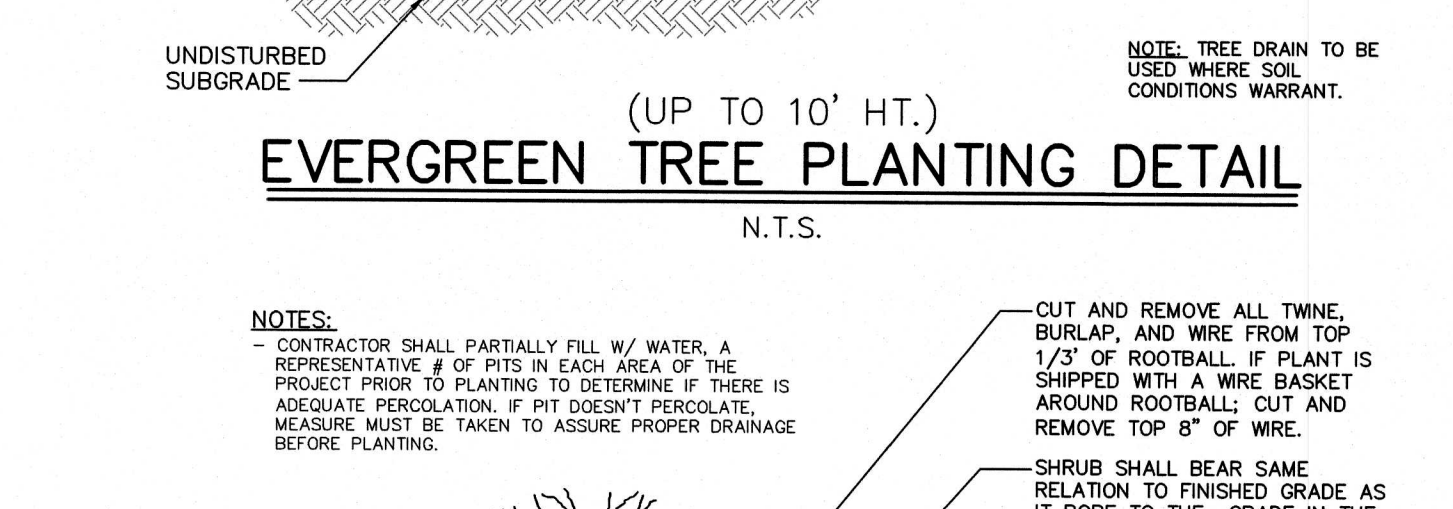
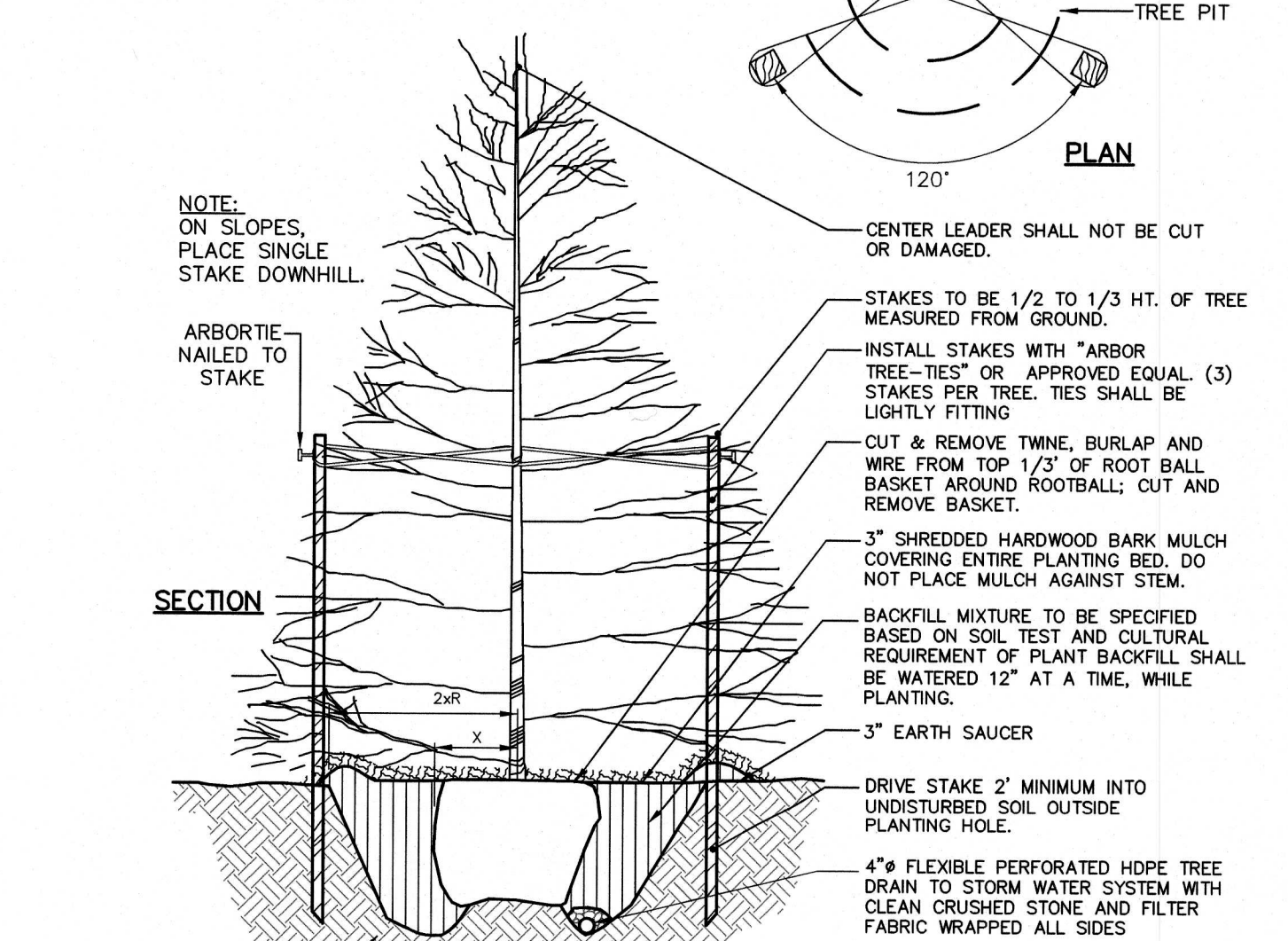
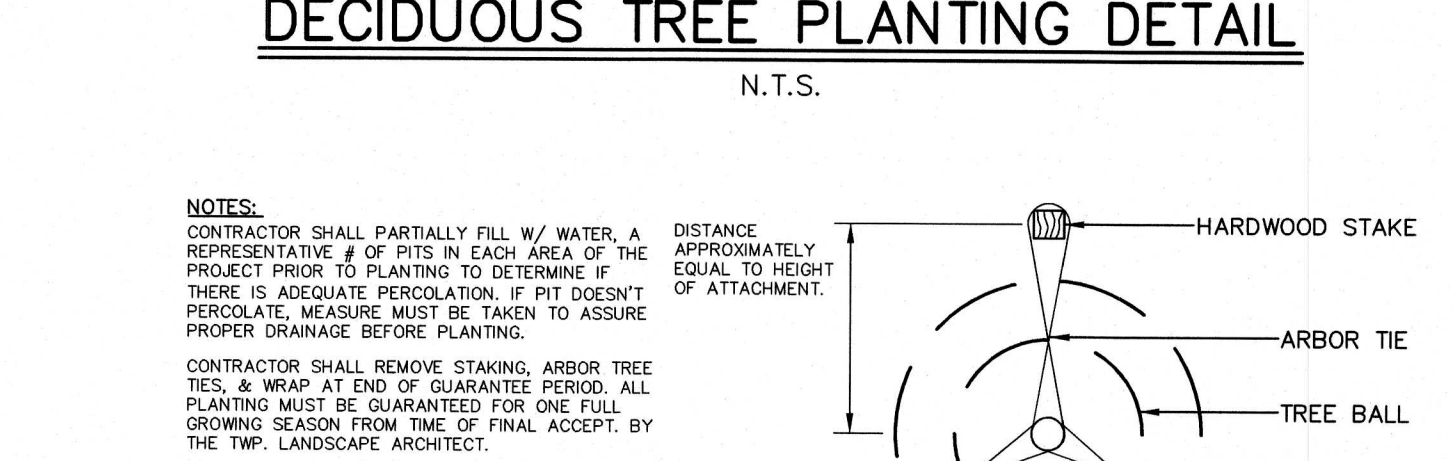
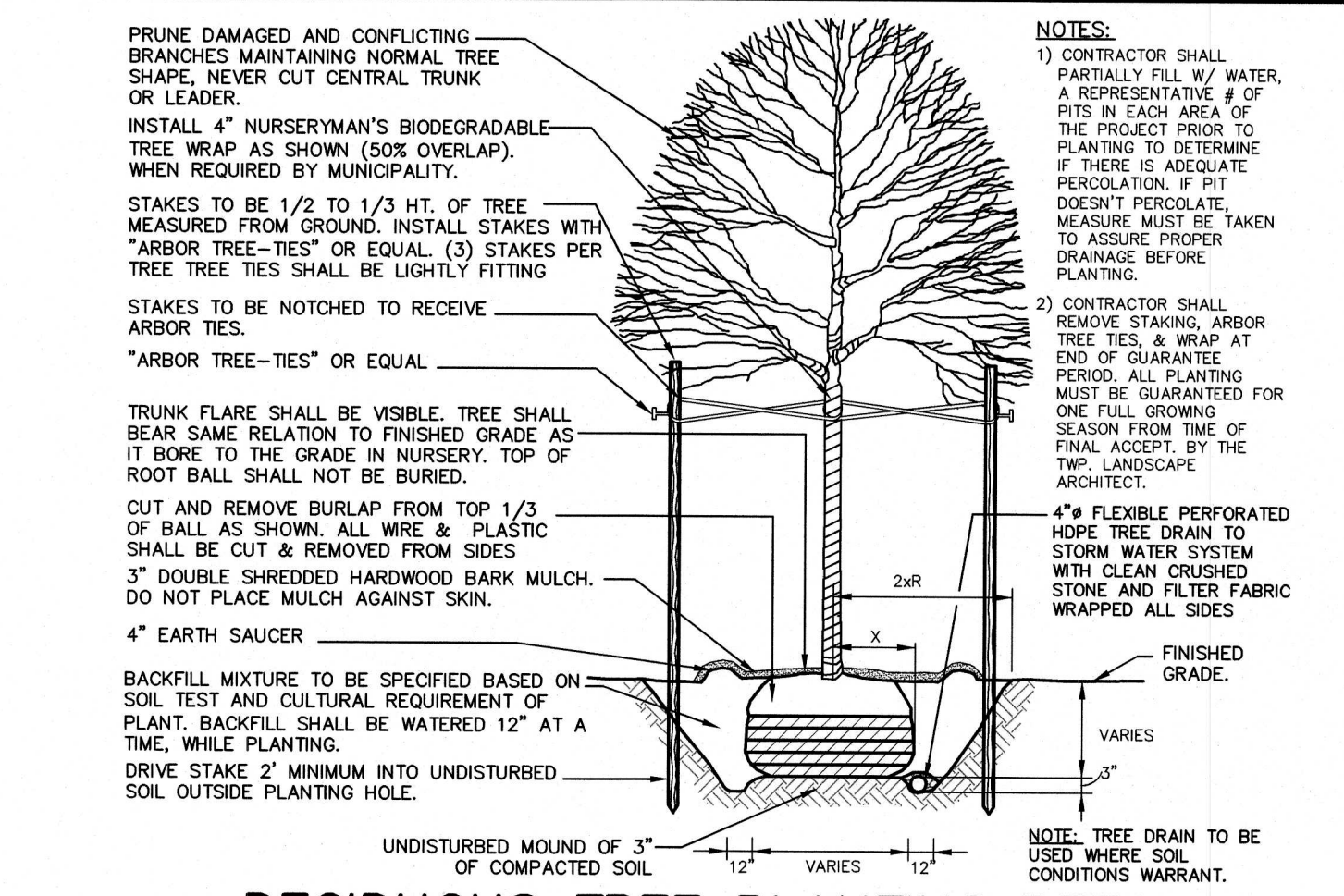
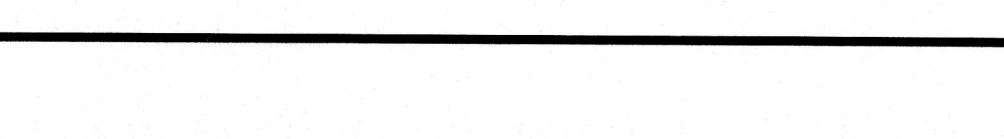
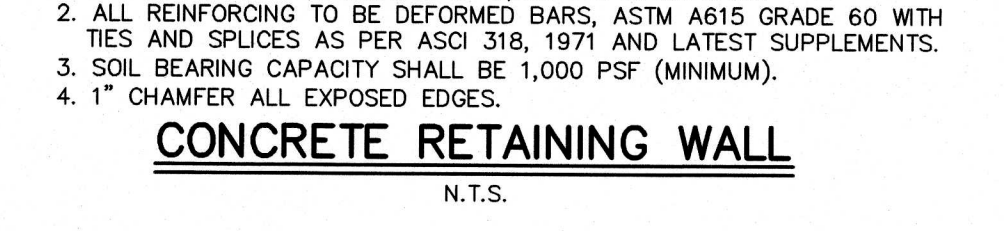
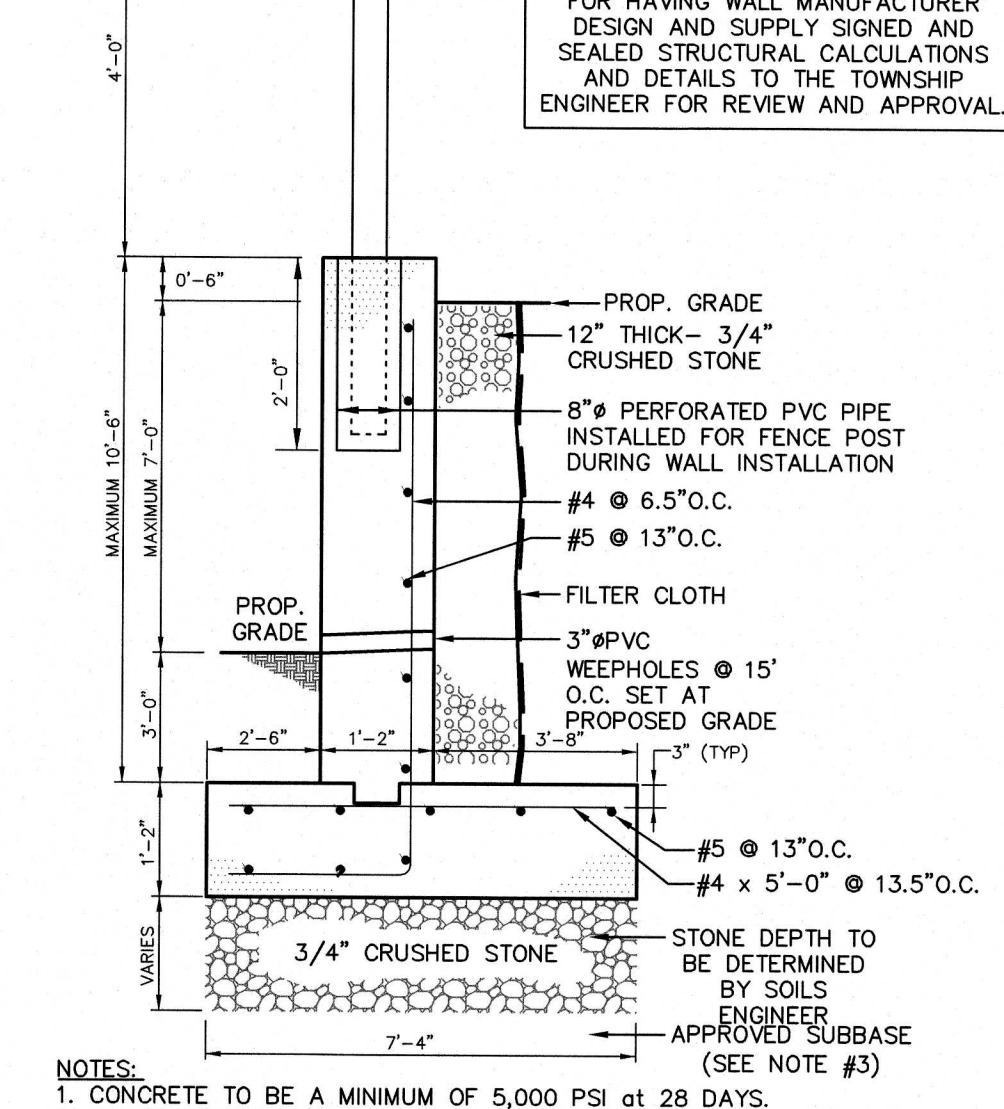
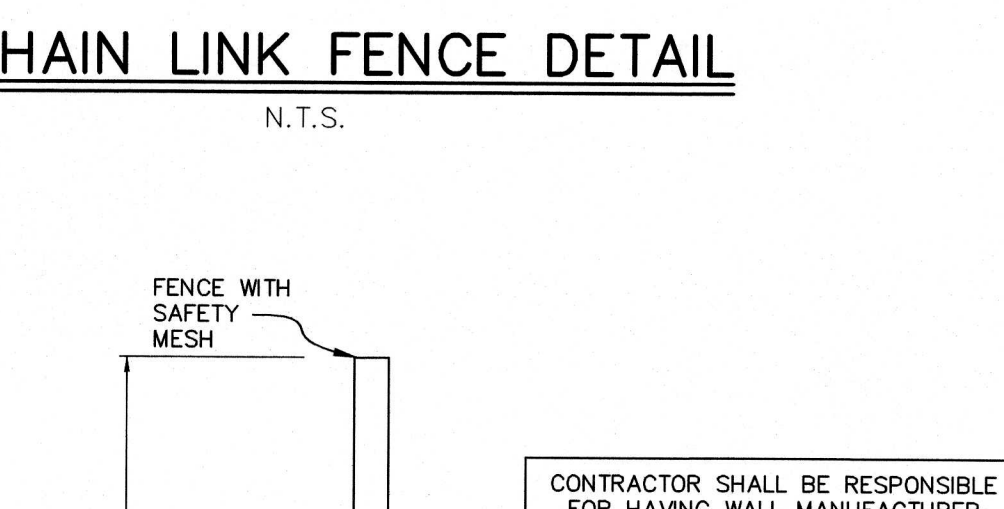
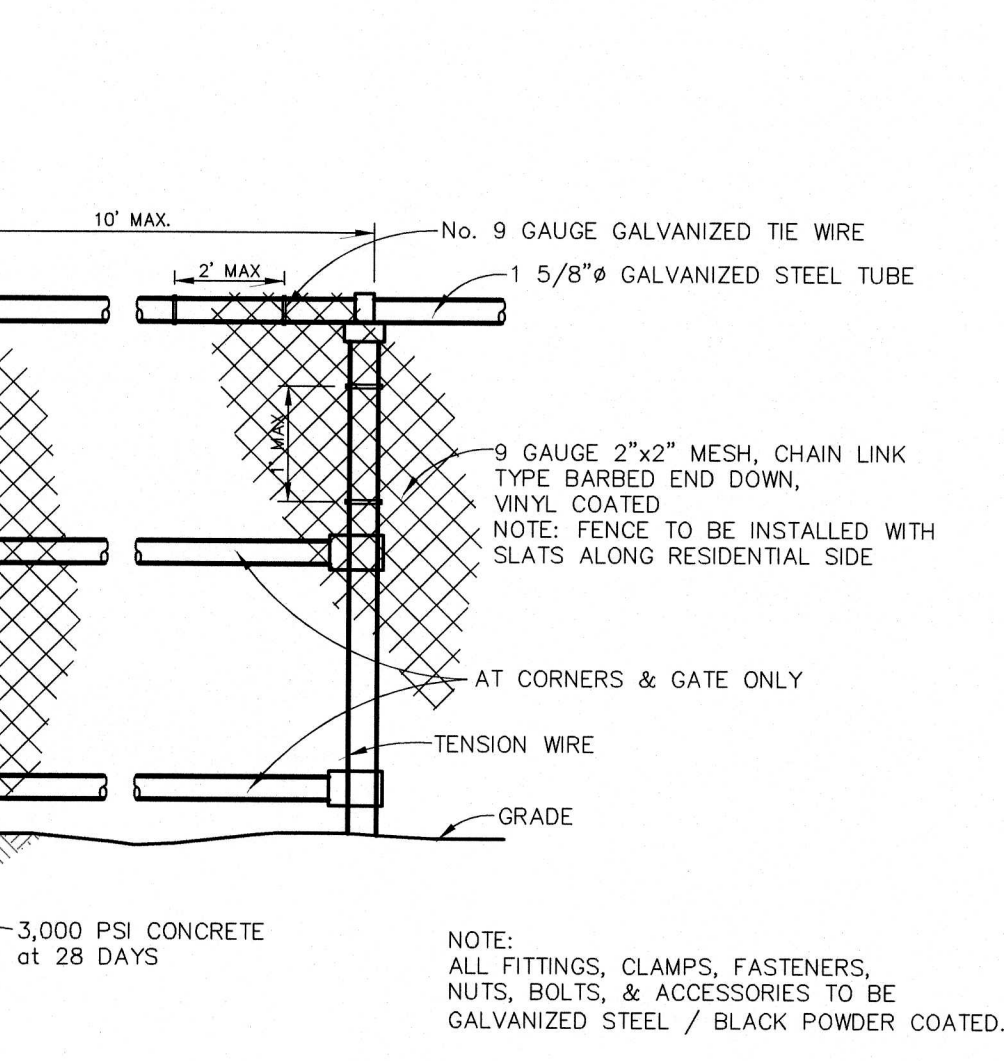
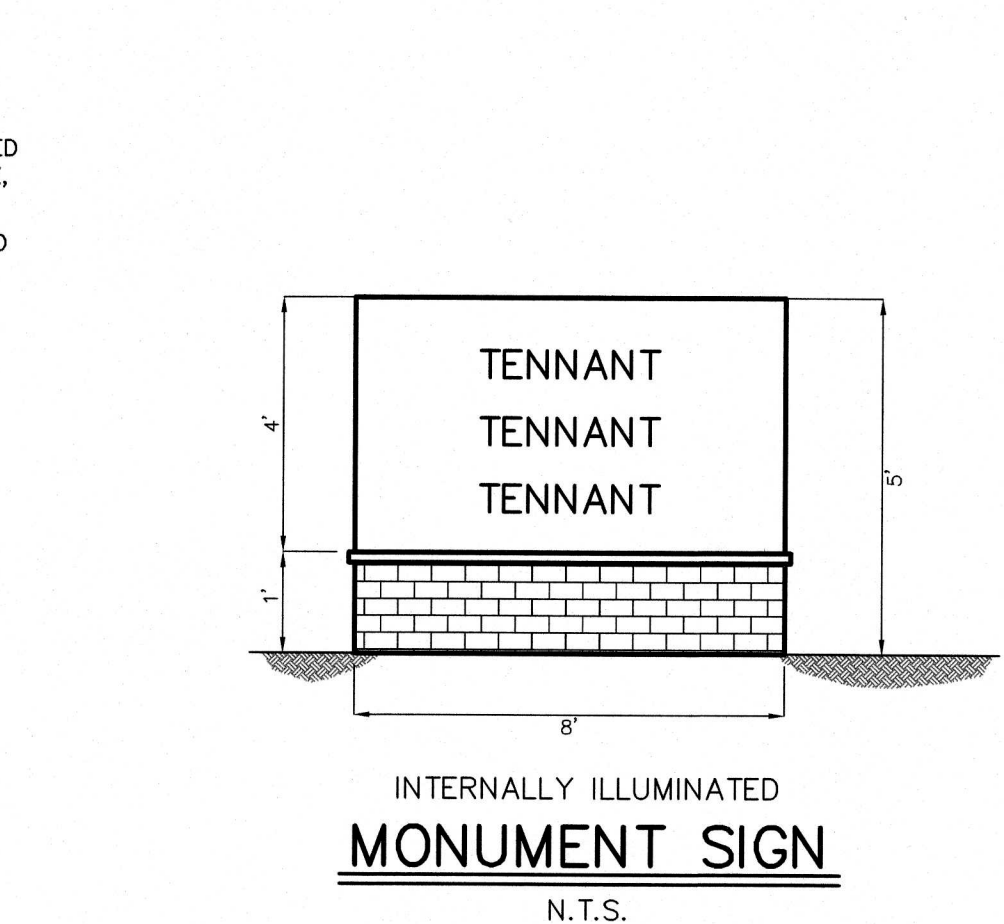
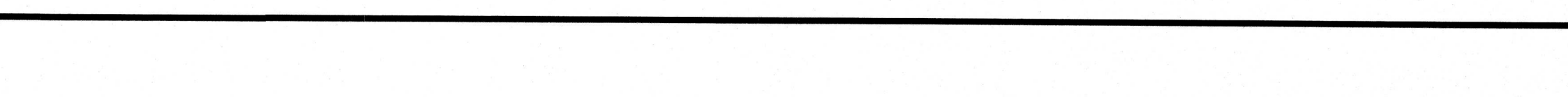
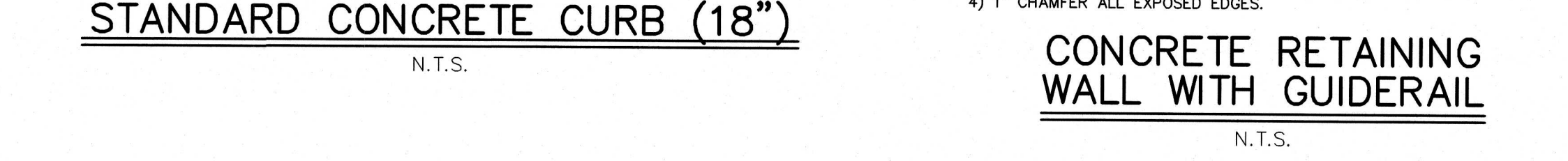
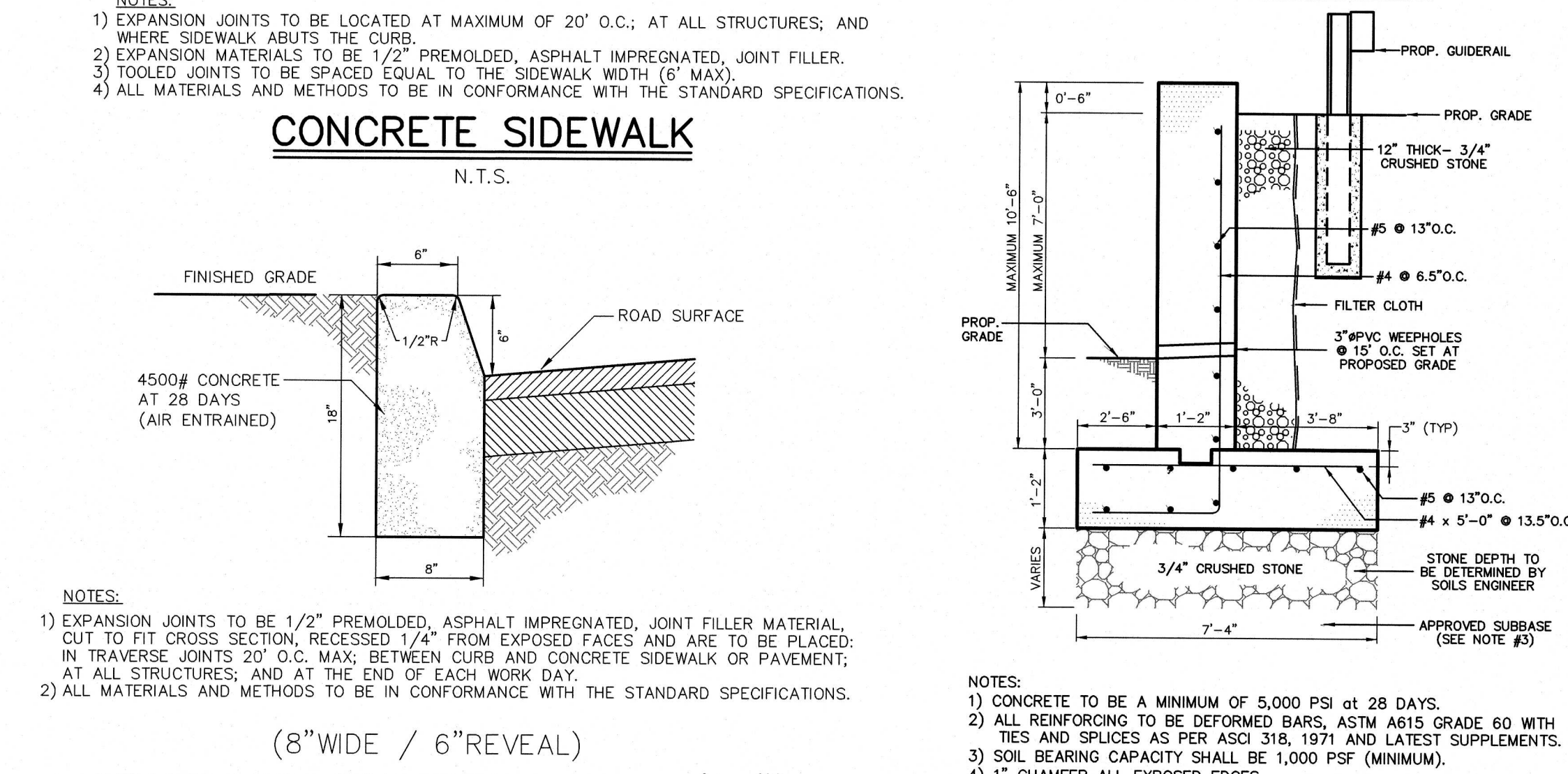
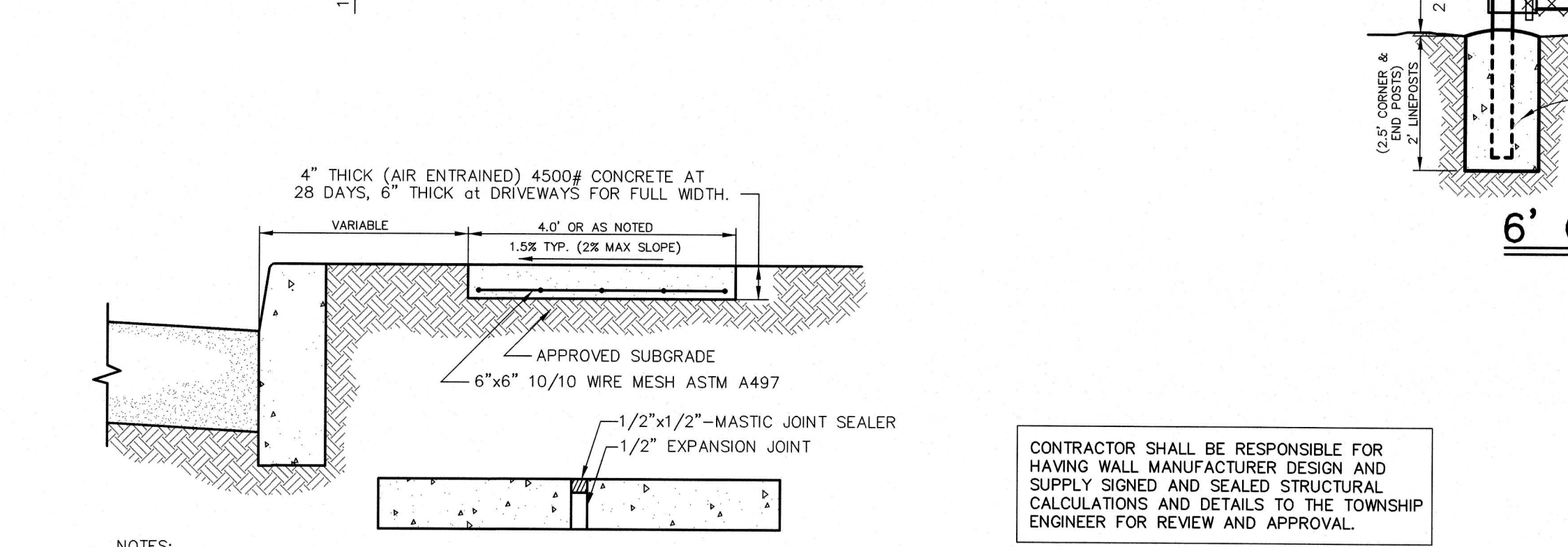
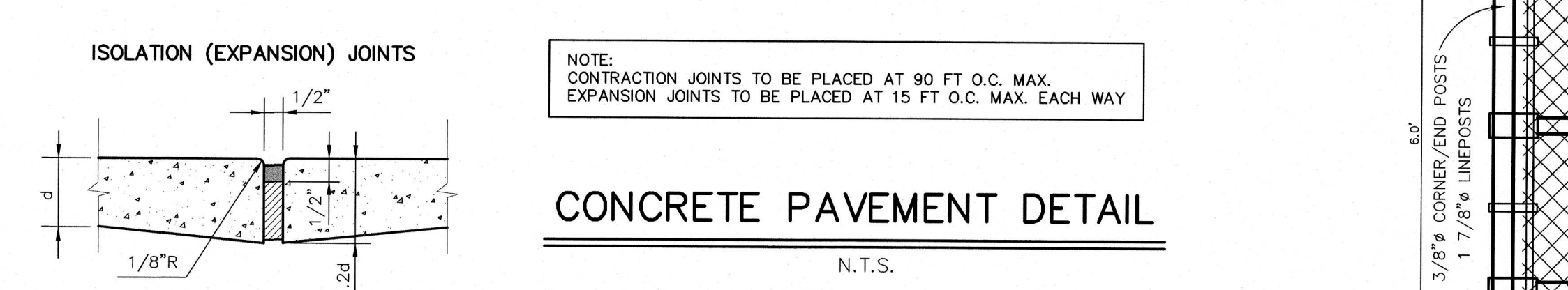
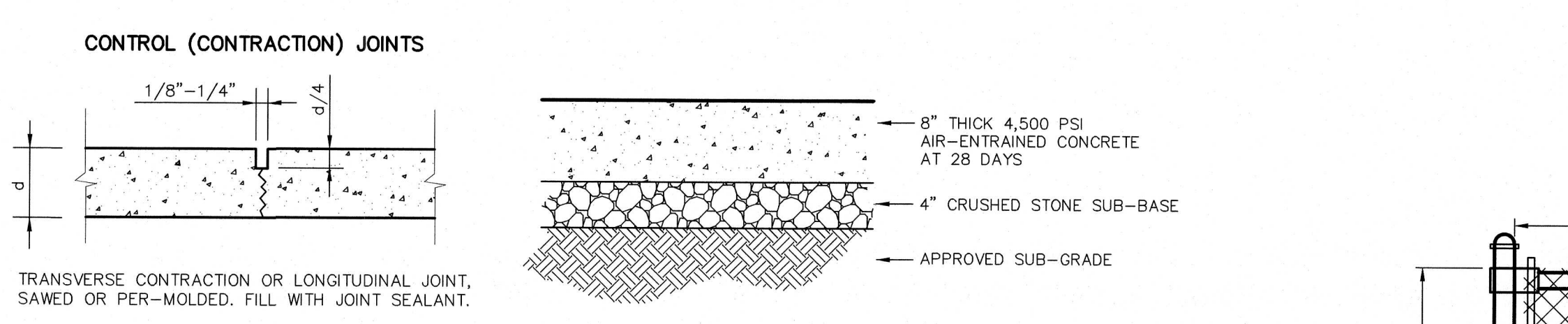
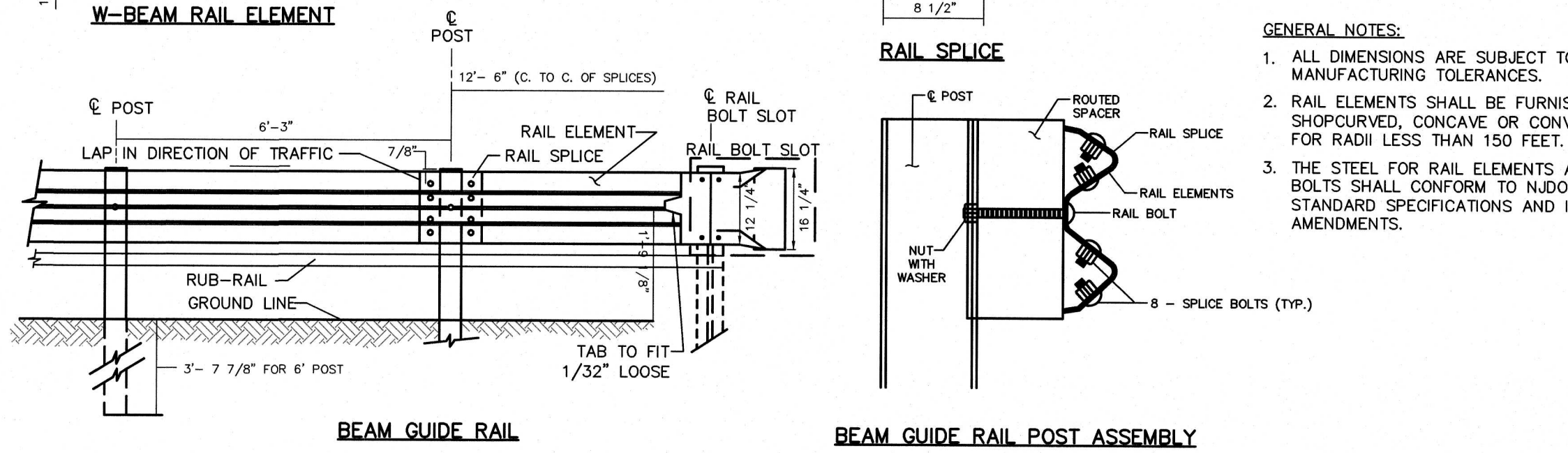
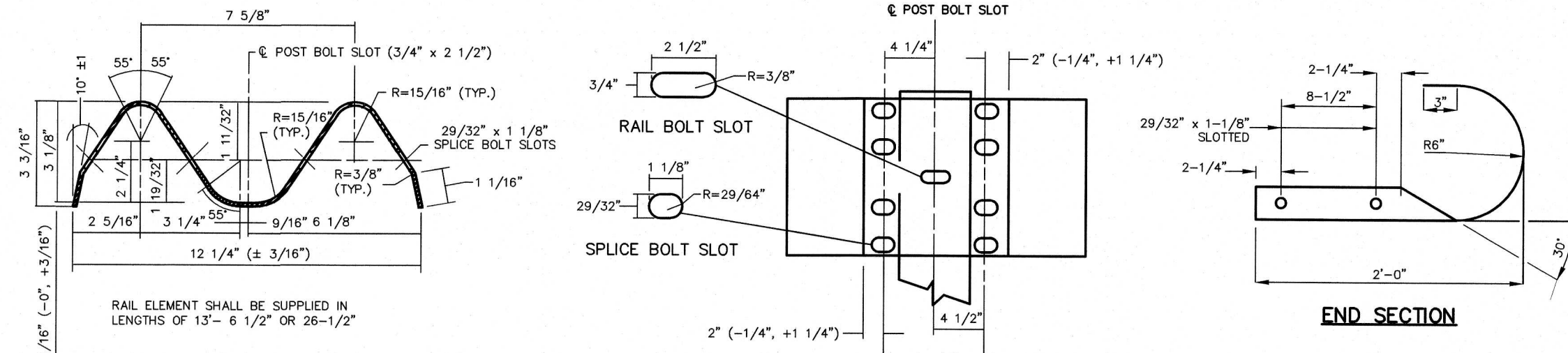
CONSTRUCTION DETAILS (3)

DRAWN BY: _____ RM
DESIGNED BY: _____ RJG
APPROVED BY: _____ GSO

THIS WORK PREPARED UNDER MY IMMEDIATE SUPERVISION.

GREGORY S. OMAN
PROFESSIONAL ENGINEER
N.J.P.E.# 43441

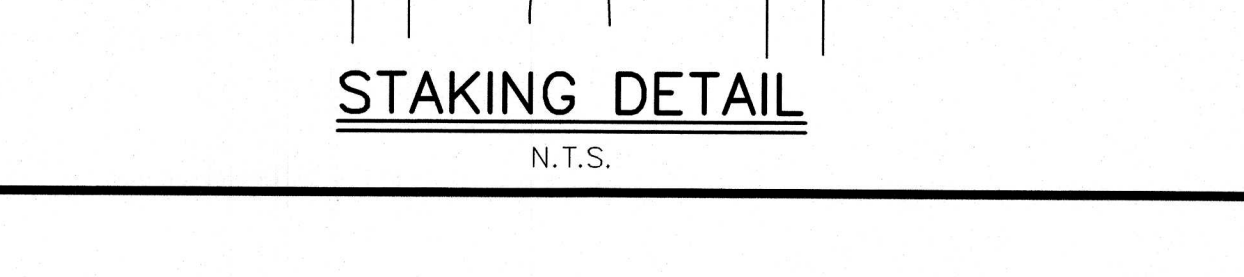
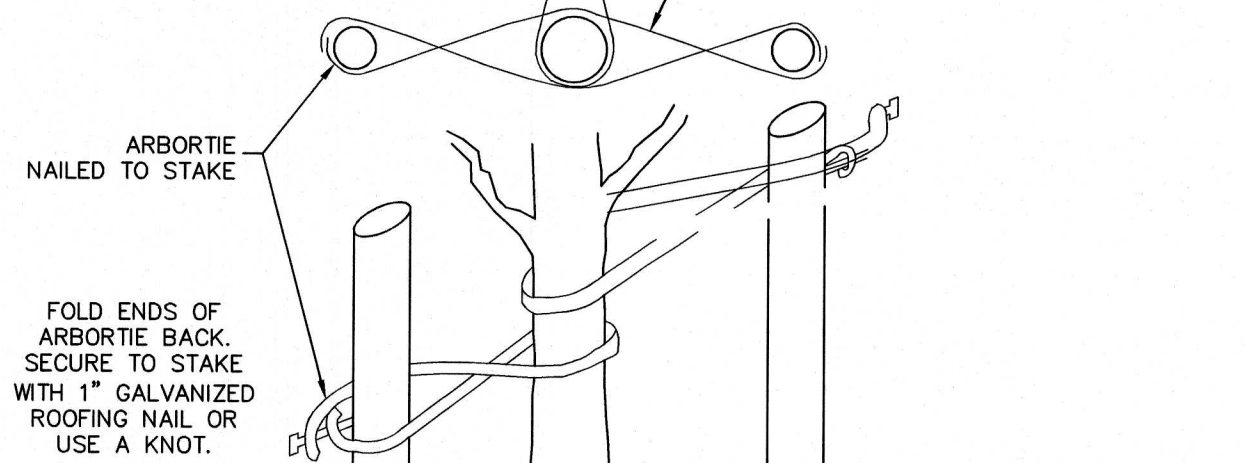
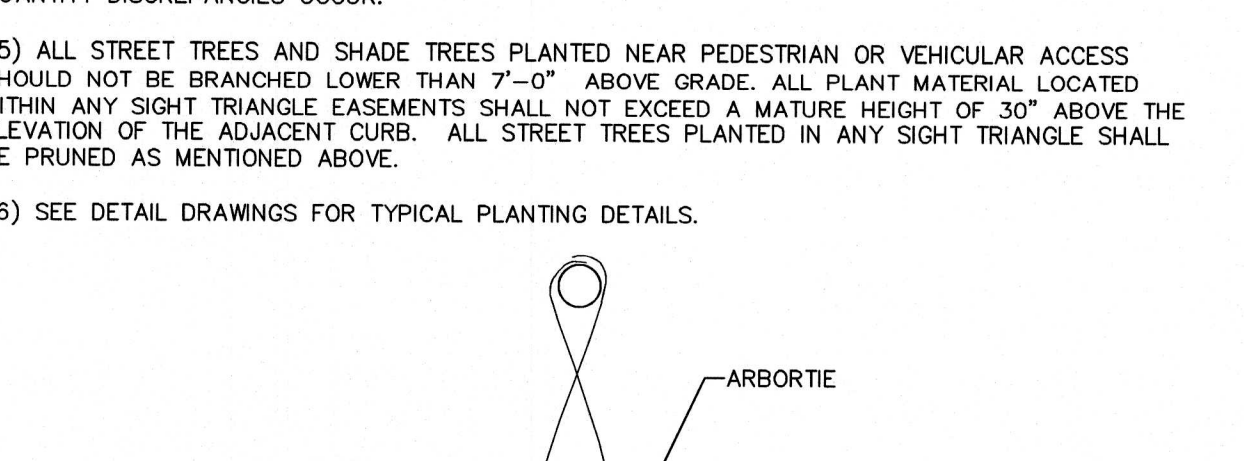
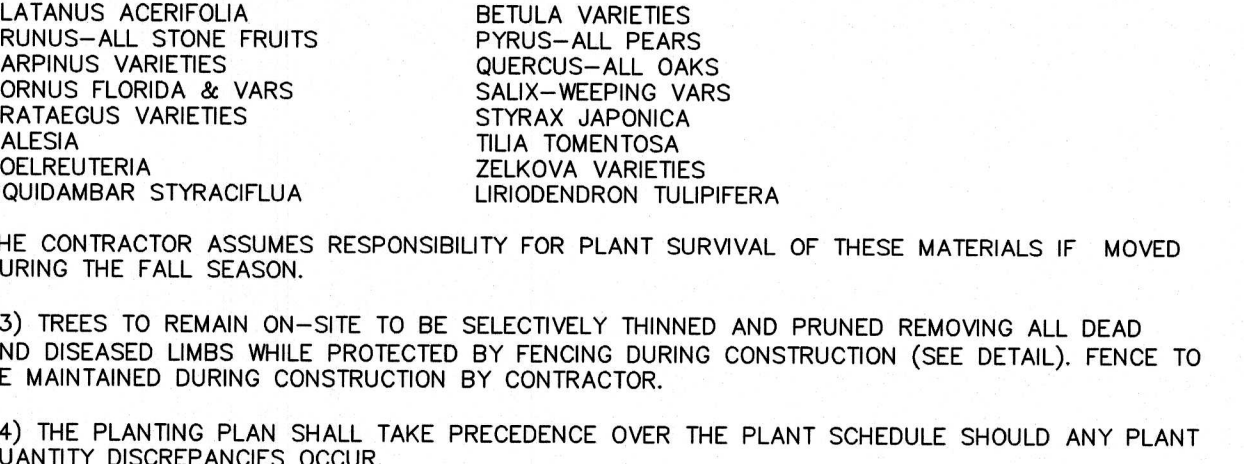
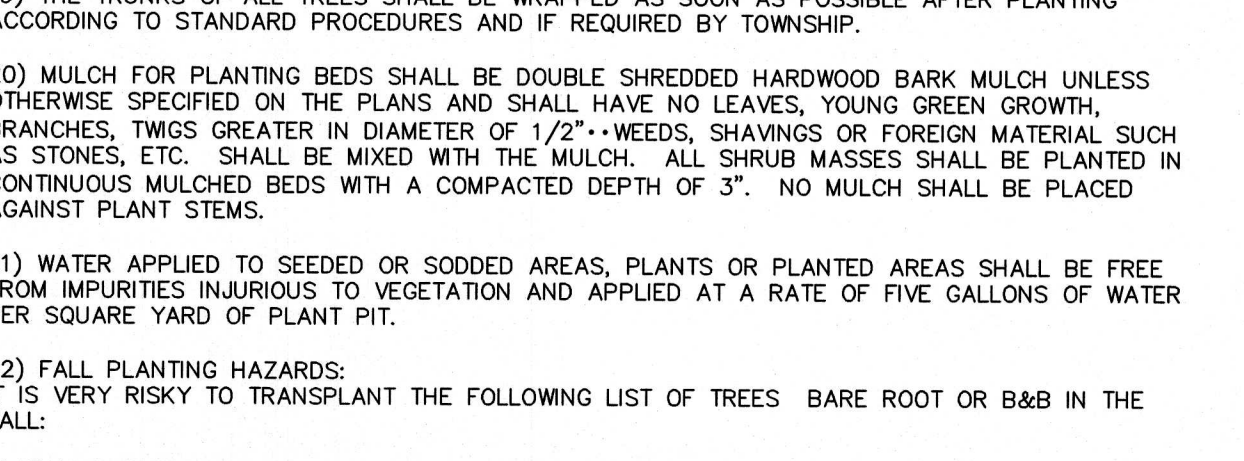
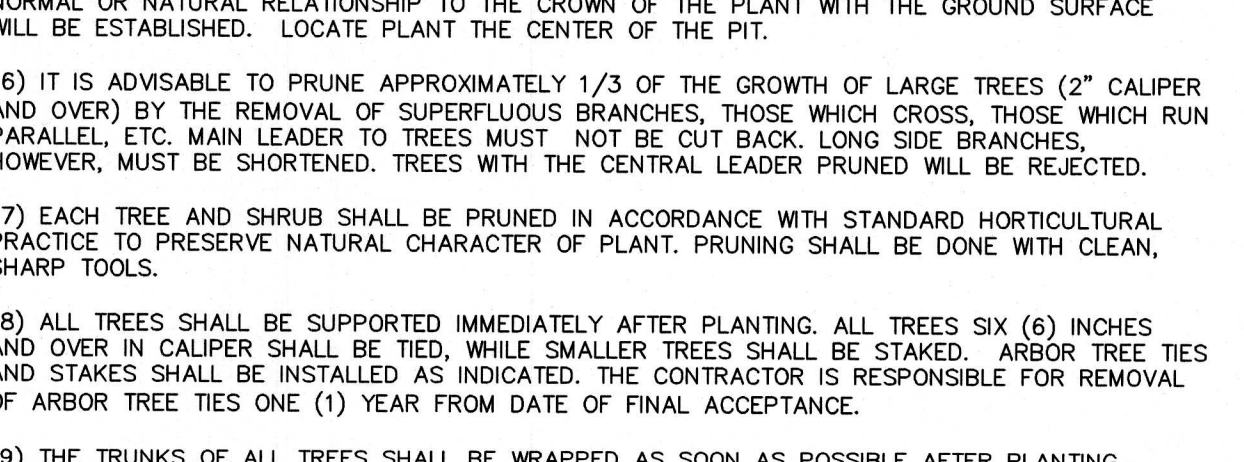
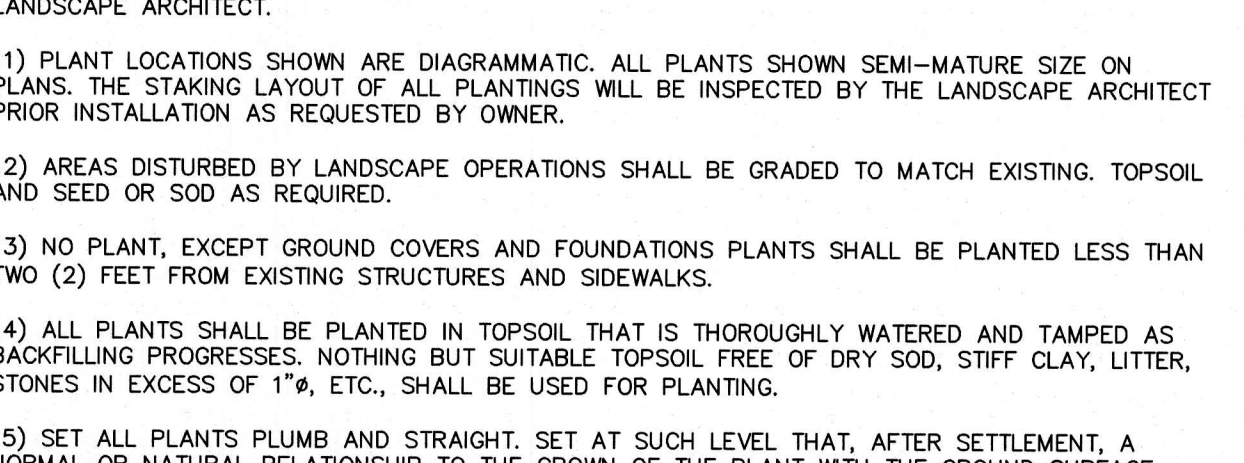
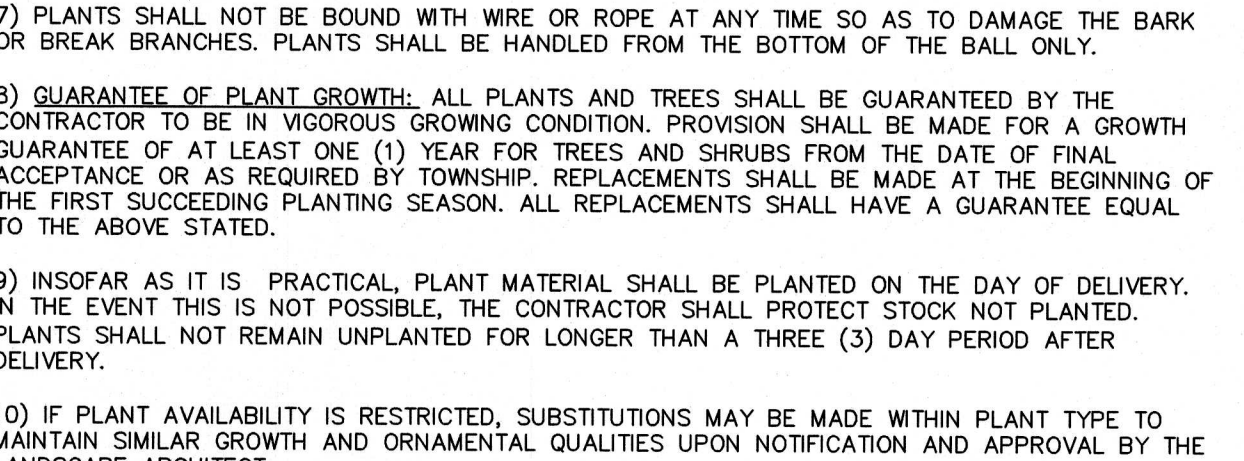
PROJECT NUMBER	2018.047.02	DE-3
DATE OF ISSUE	FEBRUARY 12, 2021	14
REVISION	-	-



PLANTING NOTES

- THE FOLLOWING RECOMMENDED PLANTING PERIODS SHOULD BE ADHERED TO WHENEVER POSSIBLE:
 - BROADLEAF AND CONIFEROUS EVERGREEN TREES, SHRUBS, VINES AND GROUND COVERS SHALL BE PLANTED BETWEEN AUGUST 15th AND SEPTEMBER 15th AND BETWEEN APRIL 15th AND MAY 15th.
 - DECIDUOUS TREES, SHRUBS, VINES, GROUND COVERS AND PERENNIALS SHALL BE PLANTED BETWEEN OCTOBER 15th AND NOVEMBER 15th AND BETWEEN MARCH 15th AND MAY 15th. THESE PLANTING SEASONS MAY BE EXTENDED OR SHORTENED ACCORDING TO PREVAILING WEATHER CONDITIONS, SOIL CONDITIONS, AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE.
- THE PLANTING OPERATION INCLUDES ALL LABOR, MATERIALS, PLANTS, EQUIPMENT, SHIPPING, INCIDENTALS AND CLEAN-UP BY THE CONTRACTOR FOR THE INSTALLATION OF THE ENTIRE LANDSCAPE PLAN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT.
- THE CONTRACTOR WILL EXAMINE ALL FIELD CONDITIONS FOR EXACT LOCATIONS OF UTILITIES, DRAINAGE SYSTEMS AND IRRIGATION SYSTEMS AND ADJUST PROPOSED PLANTINGS ACCORDINGLY. THE LANDSCAPE CONTRACTOR WILL BE RESPONSIBLE FOR THE PROPER DEPTH OF TOPSOIL IN ALL AREAS AND THE PROVISION OF POSITIVE DRAINAGE. THE CONTRACTOR SHALL NOTIFY THE CLIENT, ENGINEER, AND/OR LANDSCAPE ARCHITECT OF ANY DETRIMENTAL DRAINAGE HAZARD, INCLUDING BUT NOT LIMITED TO INSUFFICIENT TOPSOIL, ETC. PRIOR TO THE INSTALLATION OF ANY MATERIALS, INCLUDING LAWN AREAS.
- THE CONTRACTOR WILL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OF ALL SOIL OR DRAINAGE CONDITIONS WHICH THE CONTRACTOR CONSIDERS DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL. STATE CONDITION AND SUBMIT A PROPOSAL FOR CORRECTION IF FEASIBLE.
- PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY; HAVE NORMAL GROWTH HABITS; WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE FROM DEFECTS AND INJURIES. QUALITY AND SIZE OF PLANTS, SPREAD OR ROOTS, AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH THE MOST RECENT ANSI 760 "AMERICAN STANDARD FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
- PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES. PLANTS SHALL BE HANDLED FROM THE BOTTOM OF THE BALL ONLY.
- GUARANTEE OF PLANT GROWTH: ALL PLANTS AND TREES SHALL BE GUARANTEED BY THE CONTRACTOR TO BE IN VIGOROUS GROWING CONDITION. PROVISION SHALL BE MADE FOR A GROWTH GUARANTEE OF AT LEAST ONE (1) YEAR FOR TREES AND SHRUBS FROM THE DATE OF FINAL ACCEPTANCE AND NOVEMBER 15th OR AS REQUIRED BY TOWNSHIP. REPLACEMENTS SHALL BE MADE AT THE BEGINNING OF THE FIRST SUCCEEDING PLANTING SEASON. ALL REPLACEMENTS SHALL HAVE A GUARANTEE EQUAL TO THE ABOVE STATED.
- INSO FAR AS IT IS PRACTICAL, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THIS IS NOT POSSIBLE, THE CONTRACTOR SHALL PROTECT STOCK NOT PLANTED. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE (3) DAY PERIOD AFTER DELIVERY.
- IF PLANT AVAILABILITY IS RESTRICTED, SUBSTITUTIONS MAY BE MADE WITHIN PLANT TYPE TO MAINTAIN SIMILAR GROWTH AND ORNAMENTAL QUALITIES UPON NOTIFICATION AND APPROVAL BY THE LANDSCAPE ARCHITECT.
- PLANT LOCATIONS SHOWN ARE DIAGRAMMATIC. ALL PLANTS SHOWN SEMI-MATURE SIZE ON PLANS. THE STAKING LAYOUT OF ALL PLANTINGS WILL BE INSPECTED BY THE LANDSCAPE ARCHITECT PRIOR INSTALLATION AS REQUESTED BY OWNER.
- AREAS DISTURBED BY LANDSCAPE OPERATIONS SHALL BE GRADED TO MATCH EXISTING. TOPSOIL AND SEED OR SOD AS REQUIRED.
- NO PLANT, EXCEPT GROUND COVERS AND FOUNDATIONS PLANTS SHALL BE PLANTED LESS THAN TWO (2) FEET FROM EXISTING STRUCTURES AND SIDEWALKS.
- ALL TREES SHALL BE PLANTED IN TOPSOIL THAT IS THOROUGHLY WATERED AND TAMPED AS BACKFILLING PROGRESSES. NOTHING BUT SUITABLE TOPSOIL FREE OF DRY SOIL, STIFF CLAY, LITTER, STONES IN EXCESS OF 1", ETC., SHALL BE USED FOR PLANTING.
- SET ALL 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 PLANT THE CENTER OF THE PIT.
- IT IS ADVISABLE TO PRUNE APPROXIMATELY 1/3 OF THE GROWTH OF LARGE TREES (2" CALIPER AND OVER) BY THE REMOVAL OF SUPERLUOUS BRANCHES, THOSE WHICH CROSS, THOSE WHICH RUN PARALLEL, ETC. MAIN LEADER TO TREES MUST NOT BE CUT BACK. LONG SIDE BRANCHES, HOWEVER, MUST BE SHORTENED. TREES WITH THE CENTRAL LEADER PRUNED WILL BE REJECTED.
- EACH TREE AND SHRUB SHALL BE PRUNED IN ACCORDANCE WITH STANDARD HORTICULTURAL PRACTICE TO PRESERVE NATURAL CHARACTER OF PLANT. PRUNING SHALL BE DONE WITH CLEAN, SHARP TOOLS.
- ALL TREES SHALL BE SUPPORTED IMMEDIATELY AFTER PLANTING. ALL TREES SIX (6) INCHES AND OVER IN CALIPER SHALL BE TIED, WHILE SMALLER TREES SHALL BE STAKED. ARBOR TREE TIES AND STAKES SHALL BE INSTALLED BY AS INDICATED. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ARBOR TREE TIES ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE.
- THE TRUNKS OF ALL TREES SHALL BE WRAPPED AS SOON AS POSSIBLE AFTER PLANTING ACCORDING TO STANDARD PROCEDURES AND IF REQUIRED BY TOWNSHIP.
- MULCH FOR PLANTING BEDS SHALL BE DOUBLE SHREDDED HARDWOOD BARK MULCH UNLESS OTHERWISE SPECIFIED ON THE PLANS AND SHALL HAVE NO LEAVES, YOUNG GREEN GROWTH, BRANCHES, TWIGS GREATER IN DIAMETER OF 1/2" - WEEDS, SHAVINGS OR FOREIGN MATERIAL SUCH AS STONES, ETC. SHALL BE MIXED WITH THE MULCH. ALL SHRUB MASSES SHALL BE PLANTED IN CONTINUOUS MULCHED BEDS WITH A COMPACTED DEPTH OF 3". NO MULCH SHALL BE PLACED AGAINST PLANT STEMS.
- WATER APPLIED TO SEEDS OR SODDED AREAS, PLANTS OR PLANTED AREAS SHALL BE FREE FROM IMPURITIES INJURIOUS TO VEGETATION AND APPLIED AT A RATE OF FIVE GALLONS OF WATER PER SQUARE YARD OF PLANT PIT.
- FALL PLANTING HAZARDS: IT IS VERY RISKY TO TRANSPORT THE FOLLOWING LIST OF TREES BARE ROOT OR B&B IN THE FALL:

PLATANUS ACERIFOLIA	BETULA VARIETIES
PRUNUS-ALL STONE FRUITS	PYRUS-ALL PEARS
CARPINUS VARIETIES	QUERCUS-ALL OAKS
CORNUS FLORIDA & VARS	SALIX-WEeping VARS
CRATAEGUS VARIETIES	STYRAX JAPONICA
HALESIA	TILIA TOMENTOSA
KOELERIA	ZELEKOYA VARIETIES
LIQUIDAMBAR STYRACIFLUA	LIRIODENDRON TULPIFERA
- THE CONTRACTOR ASSUMES RESPONSIBILITY FOR PLANT SURVIVAL OF THESE MATERIALS IF MOVED DURING THE FALL SEASON.
- TREES TO REMAIN ON-SITE TO BE SELECTIVELY THINNED AND PRUNED REMOVING ALL DEAD AND DISEASED LIMBS WHILE IN PROTECTED BY FENCING DURING CONSTRUCTION (SEE DETAIL). FENCE TO BE MAINTAINED DURING CONSTRUCTION BY CONTRACTOR.
- THE PLANTING PLAN SHALL TAKE PRECEDENCE OVER THE PLANT SCHEDULE SHOULD ANY PLANT QUANTITY DISCREPANCIES OCCUR.
- ALL STREET TREES AND SHADE TREES PLANTED NEAR PEDESTRIAN OR VEHICULAR ACCESS SHOULD NOT BE BRANCHED LOWER THAN 7'-0" ABOVE GRADE. ALL PLANT MATERIAL LOCATED WITHIN ANY SIGHT TRIANGLE PROTECTED BY FENCING DURING CONSTRUCTION (SEE DETAIL). FENCE TO BE MAINTAINED DURING CONSTRUCTION BY CONTRACTOR. ALL STREET TREES PLANTED IN ANY SIGHT TRIANGLE SHALL BE PRUNED AS MENTIONED ABOVE.
- SEE DETAIL DRAWINGS FOR TYPICAL PLANTING DETAILS.



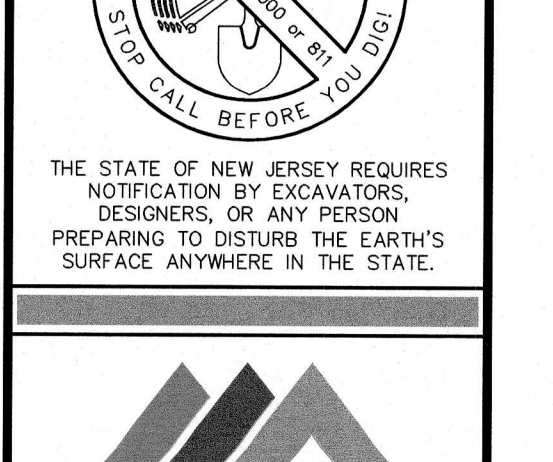
CONSTRUCTION DETAIL NOTES

- ALL TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL CONSTRUCTION DETAILS SHALL BE SUCCEDED BY APPLICABLE MUNICIPAL, COUNTY OR STATE DETAILS UNLESS OTHERWISE NOTED.
- STRUCTURAL DETAILS ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. SHOP DRAWINGS SHALL BE PROVIDED TO THE TOWNSHIP ENGINEER FOR ALL WALLS AND STRUCTURAL ELEMENTS PRIOR TO CONSTRUCTION.
- SHOP DRAWINGS SHALL BE PROVIDED FOR ALL PRECAST STRUCTURES PRIOR TO THE ORDERING OF MATERIALS.
- DETAILS ASSUME APPROPRIATE LOAD BEARING CAPACITY AND COMPACTON OF SOILS. ACTUAL FIELD CONDITIONS SHALL BE CONFIRMED BY ON-SITE GEOTECHNICAL ENGINEER.
- RESIDENTIAL DEVELOPMENTS SHALL CONFORM TO DETAILS WITHIN THE CURRENT EDITION OF THE RESIDENTIAL SITE IMPROVEMENT STANDARDS (R.S.I.S.).
- ALL CONSTRUCTION DETAILS ARE NOT TO SCALE (N.T.S.) UNLESS OTHERWISE NOTED.

THIS DRAWING IS FOR PERMIT PURPOSES ONLY.

NOT FOR CONSTRUCTION UNTIL THIS BOX HAS BEEN CHECKED AND DATED.

CHKD BY: _____ DATE: _____



menlo engineering associates
Civil Engineering Consultants
Landscape Architects
Professional Planners

251 Cleveland Avenue
Highland Park, NJ 08904

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732-846-8585 | 732-846-9439

Certificate of Authorization: 246A27951900

LIVINGSTON WAREHOUSE

TOWNSHIP OF NORTH BRUNSWICK
MIDDLESEX COUNTY
NEW JERSEY

BLOCK 140.01
LOTS 5.02 & 7.01
TAX MAP SHEET 30
21.03 ACRES

CONSTRUCTION DETAILS (4)

DRAWN BY	DESIGNED BY	APPROVED BY	THIS WORK IS PREPARED UNDER MY OWN SUPERVISION
PROJECT NUMBER	2018.047.02	DE-4	
DATE OF ISSUE	FEBRUARY 12, 2021		
REVISION			15

Project: _____ Catalog #: _____ Type: _____

Prepared by: _____ Notes: _____ Date: _____



McGraw-Edison GLEON Galleon

Area / Site Luminaire

Typical Applications
Outdoor - Parking Lots - Walkways - Roadways - Building Areas

Product Certifications
UL, DLC, 30 VOLT, IP66, UL188, IESNA, VOLTAGE

Product Features
COOPER Lighting Solutions

Interactive Menu

- Ordering Information page 2
- Mounting Details page 3
- Optical Distributions page 4
- Product Specifications page 4
- Energy and Performance Data page 4
- Control Options page 5

Quick Facts

- Lumen packages range from 4,200 - 80,800 (34W - 640W)
- Efficacy up to 156 lumens per watt

Dimensional Details



Number of Light Squares	'x' Width	'y' Depth	'z' Mounting Arm Length	'z' Extended Arm Length	'z' Quick Mount Arm Length
1-6	15.1/2"	7"	10"	10.5/8"	16.9/16"
5-6	21.5/4"	7"	10"	10.5/8"	16.9/16"
7-8	27.5/8"	7"	13"	10.5/8"	-
9-10	33.3/4"	7"	16"	-	-

COOPER Lighting Solutions P5500028N page 1 October 30, 2020 11:02 AM

McGraw-Edison GLEON Galleon

Ordering Information
SAMPLE NUMBER: GLEON-SAC-740-U-T4FT-GM

Product Family	Light Engine Configuration	Color Temperature	Wattage	Distribution	Mounting	Finish
GLEON Galleon	SAC-1 Squares	A-1000mA	720-720/2700K	11-120/27V	T2 Type II	AP-Dray
	SAC-2 Squares	C-1000mA	720-720/2700K	11-120/27V	T2 Type II	Black
	SAC-3 Squares	A-1000mA	720-720/2700K	11-120/27V	T2 Type II	Black
	SAC-4 Squares	A-1000mA	720-720/2700K	11-120/27V	T2 Type II	Black
	SAC-5 Squares	A-1000mA	720-720/2700K	11-120/27V	T2 Type II	Black
	SAC-6 Squares	A-1000mA	720-720/2700K	11-120/27V	T2 Type II	Black
	SAC-7 Squares	A-1000mA	720-720/2700K	11-120/27V	T2 Type II	Black
	SAC-8 Squares	A-1000mA	720-720/2700K	11-120/27V	T2 Type II	Black
	SAC-9 Squares	A-1000mA	720-720/2700K	11-120/27V	T2 Type II	Black
	SAC-10 Squares	A-1000mA	720-720/2700K	11-120/27V	T2 Type II	Black

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McGraw-Edison GLEON Galleon

Mounting Details

Standard Arm (Drilling Pattern)

Quick Mount Arm (Includes fixture adapter)

QME Quick Mount Arm (Standard)

QME Quick Mount Arm (Extended)

Standard Wall Mount

Maat Arm Mount

Arm Mounting Requirements

Number of Light Squares	Standard Arm @ 90° Apert	Standard Arm @ 120° Apert	Quick Mount Arm @ 90° Apert	Quick Mount Arm @ 120° Apert
1	Standard	Standard	QM Extended	Quick Mount
2	Standard	Standard	QM Extended	Quick Mount
3	Standard	Standard	QM Extended	Quick Mount
4	Standard	Standard	QM Extended	Quick Mount
5	Extended	Standard	QM Extended	Quick Mount
6	Extended	Standard	QM Extended	Quick Mount
7	Extended	Extended	Quick Mount	Quick Mount
8	Extended	Extended	Quick Mount	Quick Mount
9	Extended	Extended	Quick Mount	Quick Mount
10	Extended	Extended	Quick Mount	Quick Mount

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McGraw-Edison GLEON Galleon

Optical Distributions

Asymmetric Area Distributions

Asymmetric Roadway Distributions

Specialized Distributions

Rotated Optics

Product Specifications

Construction

- Extruded aluminum driver enclosure
- Heavy wall, die-cast aluminum and caps
- Die-cast aluminum heat sinks
- Patent pending interlocking housing and heat sink

Electrical

- Patented, high-efficiency injection-molded AccuLED Optics technology
- 16 optical distributions
- 3 shielding options including HSA, GRS and PFS
- IDA Certified (3000K CCT and warmer only)
- LED drivers are mounted to removable tray

Energy and Performance Data

Lumen Maintenance (LM-79)

Drive Current	Ambient Temperature	25,000 hours*	50,000 hours*	65,000 hours*	100,000 hours*	Theoretical L70 hours**
Up to 1A	25°C	99.4%	99.0%	98.9%	98.3%	> 2.4M
	40°C	98.7%	98.3%	98.1%	97.4%	> 1.9M
	50°C	98.2%	97.2%	96.8%	95.2%	> 851,000
1.2A	25°C	99.4%	99.0%	98.9%	98.3%	> 2.4M
	40°C	98.5%	97.9%	97.7%	96.7%	> 1.3M

COOPER Lighting Solutions P5500028N page 4 October 30, 2020 11:02 AM

WL-1 & SL-1 LIGHT FIXTURE DETAIL-1

N.T.S.

WL-1 & SL-1 LIGHT FIXTURE DETAIL-2

N.T.S.

WL-1 & SL-1 LIGHT FIXTURE DETAIL-3

N.T.S.

WL-1 & SL-1 LIGHT FIXTURE DETAIL-4

N.T.S.

Steel Poles

Catalog #: _____ Type: _____

Project: _____ Date: _____

Prepared by: _____

SSS SQUARE STRAIGHT STEEL

DESIGN CONSIDERATIONS

Wood induced vibrations resulting from steady, unidirectional winds and other aerodynamic forces, as well as vibration and coefficient of height factors for non-grounded mounted installations (e.g., installations on bridges or buildings) are not included in this document. The information contained herein is for general guidance only and is not a replacement for professional judgment. Consult with a professional and local and federal authorities before ordering to ensure product is appropriate for the intended purpose and installation location. Also, please review Cooper Lighting Solutions Light Pole White Paper for risk factors and design considerations. [L500-100](#)

ORDERING INFORMATION

SAMPLE NUMBER: SSSA035FM1XG

Product Family	Shaft Size (Inches)	Wall Thickness (Inches)	Mounting Height (Feet)	Base Type	Finish	Mounting Type	Number and Location of Arms	Arm Length (Feet)	Options (Add as Suffix)
SSS-Square Straight Steel	4+1/2"	3/16"	10-10'	S-Square	F-Dark Bronze	2x-3/8" O.D. Temon (1" Long)	3-Straight	2-2' at 180°	X-None
			15-15'	Steel	G-Galvanized Steel	2x-3/8" O.D. Temon (1" Long)	3-Straight	2-2' at 180°	Z-Zinc
			20-20'	Base	J-Jacqueline White	4x-7/8" O.D. Temon (1" Long)	3-Tripod	4x-4' at 90°	O-Outlet
			25-25'	Base	K-Charcoal Bronze	4x-7/8" O.D. Temon (1" Long)	4x-4' at 90°	4x-4' at 90°	C-Compliance
			30-30'	Base	L-Lark Fractal	4x-7/8" O.D. Temon (1" Long)	4x-4' at 90°	4x-4' at 90°	W-Weather
			35-35'	Base	M-Meridian Green	7x-4" O.D. Temon (1" Long)	4x-4' at 90°	4x-4' at 90°	Xi-Xioma
			35-35'	Base	N-Natural	7x-4" O.D. Temon (1" Long)	4x-4' at 90°	4x-4' at 90°	O-Outlet
			35-35'	Base	P-Pearl	7x-4" O.D. Temon (1" Long)	4x-4' at 90°	4x-4' at 90°	Q-Quick
			35-35'	Base	R-Rose Gold	7x-4" O.D. Temon (1" Long)	4x-4' at 90°	4x-4' at 90°	R-Resistant
			35-35'	Base	S-Silver	7x-4" O.D. Temon (1" Long)	4x-4' at 90°	4x-4' at 90°	S-Standard

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SSS SQUARE STRAIGHT STEEL

Effective Projected Area (All Pole Top)

Mounting Height (Feet)	Catalog Number	Wall Thickness (Inches)	Base Square (Inches)	Bolt Circle (Inches)	Anchor Bolt Projection (Inches)	Shaft Size (Inches)	Anchor Bolt Diameter (Inches)	Net Weight (Pounds)	Maximum Effective Projected Area (Square Feet)	Max. Fixture Load - Includes Bracket (Pounds)
10	SSSA10S	0.120	10-12	11	4-1/2	4	3/4 x 25 x 3	85	30.0	22.0
15	SSSA15S	0.120	10-12	11	4-1/2	4	3/4 x 25 x 3	118	15.0	11.5
20	SSSA20S	0.120	10-12	11	4-1/2	4	3/4 x 25 x 3	150	8.7	5.9
25	SSSA25S	0.120	10-12	11	4-1/2	5	3/4 x 25 x 3	183	15.4	11.1
30	SSSA30S	0.120	10-12	11	4-1/2	4	3/4 x 25 x 3	181	3.7	1.7
35	SSSA35S	0.120	12-12	12	5	6	1 x 36 x 4	222	9.3	6.0
40	SSSA40S	0.120	12-12	12	5	6	1 x 36 x 4	264	9.3	6.1
45	SSSA45S	0.120	12-12	12	5	6	1 x 36 x 4	302	10.4	6.4
50	SSSA50S	0.120	12-12	12	5	6	1 x 36 x 4	330	4.3	1.4
55	SSSA55S	0.188	12-12	12	5	6	1 x 36 x 4	409	19.0	13.0
60	SSSA60S	0.188	12-12	12	5	6	1 x 36 x 4	437	5.9	2.9
65	SSSA65S	0.188	12-12	12	5	6	1 x 36 x 4	564	12.8	7.2
70	SSSA70S	0.250	12-12	12	5	6	1 x 36 x 4	738	16.5	11.0
75	SSSA75S	0.188	12-12	12	5	6	1 x 36 x 4	818	7.3	3.0
80	SSSA80S	0.250	12-12	12	5	6	1 x 36 x 4	818	13.0	3.7

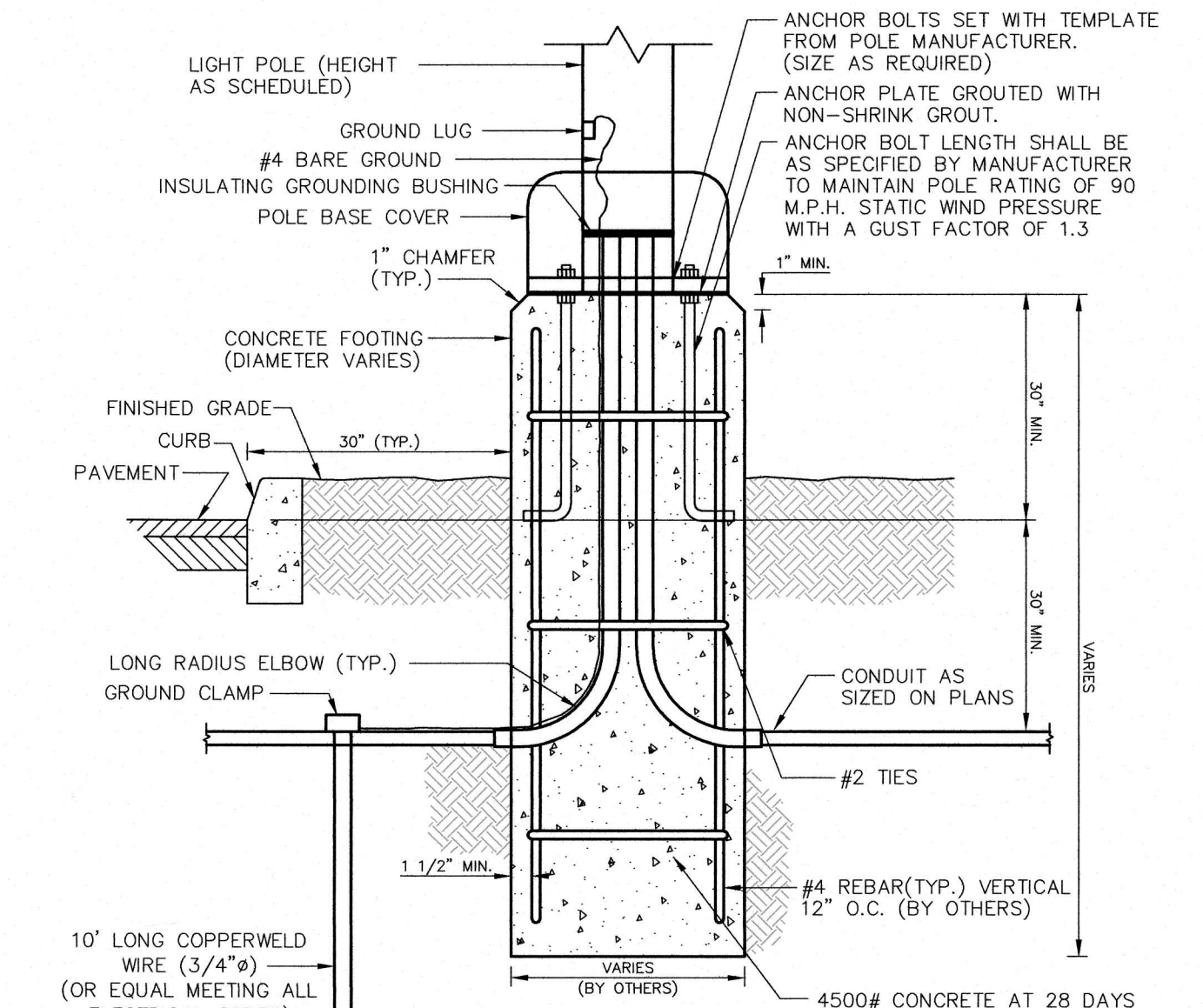
Effective Projected Area (Two Feet Above Pole Top)

Mounting Height (Feet)	Catalog Number	Wall Thickness (Inches)	Base Square (Inches)	Bolt Circle (Inches)	Anchor Bolt Projection (Inches)	Shaft Size (Inches)	Anchor Bolt Diameter (Inches)	Net Weight (Pounds)	Maximum Effective Projected Area (Square Feet)	Max. Fixture Load - Includes Bracket (Pounds)
10	SSSA10S	0.120	10-12	11	4-1/2	4	3/4 x 25 x 3	85	23.0	17.0
15	SSSA15S	0.120	10-12	11	4-1/2	4	3/4 x 25 x 3	118	13.4	10.0
20	SSSA20S	0.120	10-12	11	4-1/2	4	3/4 x 25 x 3	150	7.6	5.2
25	SSSA25S	0.120	10-12	11	4-1/2	5	3/4 x 25 x 3	183	13.8	9.9
30	SSSA30S	0.120	10-12	11	4-1/2	4	3/4 x 25 x 3	181	3.1	1.6
35	SSSA35S	0.120	12-12	12	5	6	1 x 36 x 4	222	8.5	5.2
40	SSSA40S	0.120	12-12	12	5	6	1 x 36 x 4	264	9.1	5.3
45	SSSA45S	0.120	12-12	12	5	6	1 x 36 x 4	302	1.8	0.9
50	SSSA50S	0.120	12-12	12	5	6	1 x 36 x 4	330	4.1	1.3
55	SSSA55S	0.188	12-12	12	5	6	1 x 36 x 4	409	12.5	8.4
60	SSSA60S	0.188	10-12	11	4-1/2	5	3/4 x 25 x 3	437	5.5	2.4
65	SSSA65S	0.188	12-12	12	5	6	1 x 36 x 4	564	11.8	7.0
70	SSSA70S	0.250	12-12	12	5	6	1 x 36 x 4	738	16.0	10.5
75	SSSA75S	0.188	12-12	12	5	6	1 x 36 x 4	818	7.0	2.4
80	SSSA80S	0.250	12-12	12	5	6	1 x 36 x 4	818	12.0	6.7

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RAISED SITE LIGHT POLE FOUNDATION DETAIL (IN GRASSED AREAS)

N.T.S.



ANCHOR BOLTS SET WITH TEMPLATE FROM POLE MANUFACTURER (SIZE AS REQUIRED)

ANCHOR PLATE GROUDED WITH NON-SHRINK GROUT.

ANCHOR BOLT LENGTH SHALL BE AS SPECIFIED BY MANUFACTURER TO MAINTAIN POLE RATING OF 90 M.P.H. STATIC WIND PRESSURE WITH A GUST FACTOR OF 1.3

CONCRETE FOOTING (DIAMETER VARIES)

FINISHED GRADE

PAVEMENT

LONG RADIUS ELBOW (TYP.)

GROUND CLAMP

CONDUIT AS SIZED ON PLANS

UNDISTURBED SUBSURFACE

4500# CONCRETE AT 28 DAYS (AIR ENTRAINED)

10' LONG COPPERWELD WIRE (3/4") (OR EQUAL MEETING ALL ELECTRICAL CODES)

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SITE LIGHT POLE DETAIL-2

N.T.S.

SITE LIGHT POLE DETAIL-1

N.T.S.

CONSTRUCTION DETAIL NOTES

- ALL TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL CONSTRUCTION DETAILS SHALL BE SUPERVISED BY APPLICABLE MUNICIPAL, COUNTY OR STATE DETAIL UNLESS OTHERWISE NOTED.
- STRUCTURAL DETAILS ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. SHOP DRAWINGS SHALL BE PROVIDED TO THE TOWNSHIP ENGINEER FOR ALL WALLS AND STRUCTURAL ELEMENTS PRIOR TO CONSTRUCTION.
- SHOP DRAWINGS SHALL BE PROVIDED FOR ALL PRECAST STRUCTURES PRIOR TO CONSTRUCTION.
- DETAILED ASSUME APPROPRIATE LOAD BEARING CAPACITY AND COMPACTATION OF SOILS. ACTUAL FIELD CONDITIONS SHALL BE CONFIRMED BY ON-SITE GEOTECHNICAL ENGINEER.
- RESIDENTIAL DEVELOPMENTS SHALL CONFORM TO DETAILS WITHIN THE CURRENT EDITION OF THE RESIDENTIAL SITE IMPROVEMENT STANDARDS (R.S.I.S.).
- ALL CONSTRUCTION DETAILS ARE NOT TO SCALE (N.T.S.) UNLESS OTHERWISE NOTED.

REVISIONS

NO.	DESCRIPTION	DATE

THIS DRAWING IS FOR PERMIT PURPOSES ONLY. NOT FOR CONSTRUCTION UNTIL THIS BOX HAS BEEN CHECKED AND DATED.

CHKD BY: _____ DATE: _____

menlo engineering associates

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Professional Planners

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Certificate of Authorization: 246247951900

LIVINGSTON WAREHOUSE

TOWNSHIP OF NORTH BRUNSWICK
MIDDLESEX COUNTY
NEW JERSEY

BLOCK 140.01
LOTS 5.02 & 7.01
TAX MAP SHEET 30
21.03 ACRES

CONSTRUCTION DETAILS (5)

DRAWN BY: _____ LKH
DESIGNED BY: _____ LKH
APPROVED BY: _____ GSO

THIS WAS PREPARED UNDER MY IMMEDIATE SUPERVISION.

GREGORY S. OMAN
PROFESSIONAL ENGINEER
NJPE# 43441

PROJECT NUMBER: 2018.047.02 DE-5
DATE OF ISSUE: FEBRUARY 12, 2021
REVISION: 16