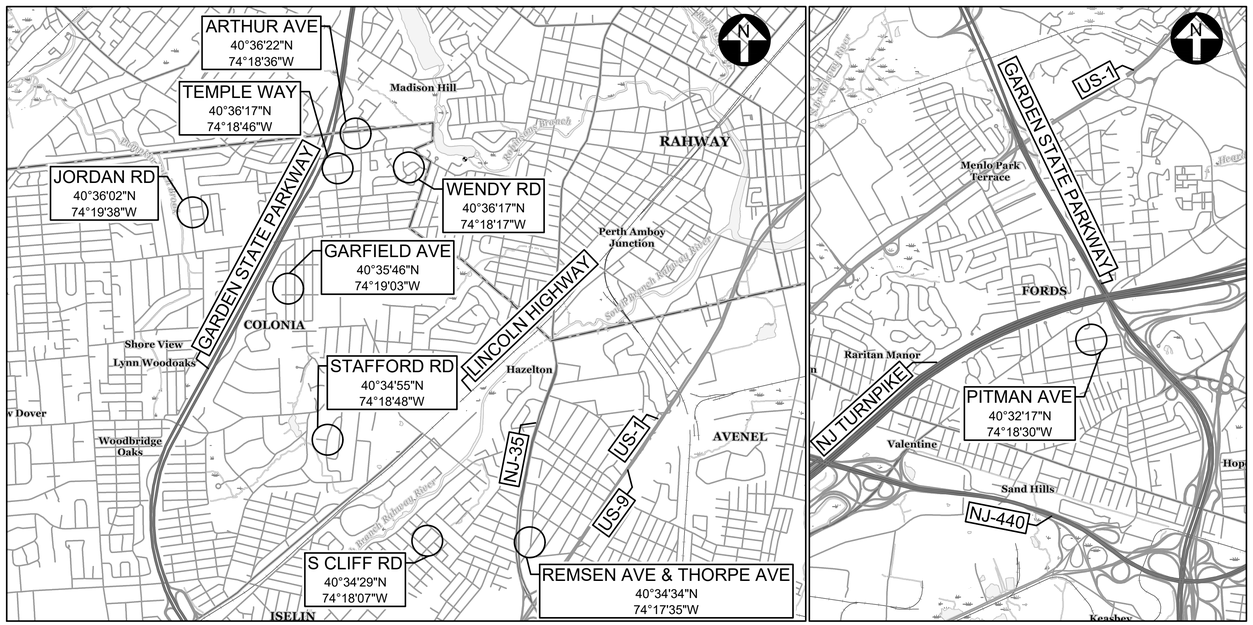
DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONTRACT NO. 2022-025
JANUARY 2024

UTILITIES
PSE&G-ELECTRIC
ELIZABETHTOWN GAS COMPANY - GAS
COMCAST XFINITY
VERIZON FIOS
MIDDLESEX WATER CO.
WOODBRIDGE TOWNSHIP SANITARY AND STORM SEWER
UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THEIR LOCATION AND COMPLETENESS. NO WORK SHALL BEGIN UNTIL THE CONTRACTOR PROVIDES THE ENGINEER THE CONFIRMATION NUMBER OBTAINED FROM THE NJ "ONE CALL" SYSTEM (1-800-272-1000), IN ACCORDANCE WITH THE UNDERGROUND FACILITY PROTECTION ACT. THE CONTRACTOR SHALL CALL THE "ONE CALL" SERVICE FOR UTILITY MARKOUT AT LEAST THREE FULL WORKING DAYS PRIOR TO EXCAVATING, BUT NO MORE THAN 10 WORKING DAYS.



KEY MAP
1"=2,000'

TOTAL LENGTH OF THE PROJECT = 5,476 LF OR 1.04 MILES

2019 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION TO GOVERN
STANDARD ROADWAY CONSTRUCTION-TRAFFIC CONTROL BRIDGE
CONSTRUCTION DETAILS BOOKLET 2016 AND STANDARD
ELECTRICAL DETAILS BOOKLET, 2007 ARE APPLICABLE TO THIS PROJECT
EXCEPT FOR THOSE DETAILS CONTAINED HEREIN

CHANGES MADE TO THESE PLANS SINCE SIGNATURE BY THE CONSULTANT
MAY BE DETERMINED BY COMPARISON OF THE PLANS FILED
AT THE DEPARTMENT WITH THOSE FILED AT THE OFFICE OF THE CONSULTANT

JOHN E. McCORMAC - MAYOR

TOWNSHIP COUNCIL

GREGG M. FICARRA	COUNCIL PRESIDENT
KYLE ANDERSON	COUNCIL VICE PRESIDENT
LIZBETH DEJESUS	COUNCIL MEMBER
SHARON MCAULIFFE	COUNCIL MEMBER
DEBBIE MEEHAN	COUNCIL MEMBER
VIRBHADRA N. PATEL	COUNCIL MEMBER
BRIAN SMALL	COUNCIL MEMBER
CORY SPILLAR	COUNCIL MEMBER
HOWIE BAUER	COUNCIL MEMBER
VITO CIMILLUCA	BUSINESS ADMINISTRATOR
JOHN M. MITCH	MUNICIPAL CLERK
JAMES P. NOLAN, JR., ESQ.	DIRECTOR OF LAW
GEORGE T. BREW	DIRECTOR OF PUBLIC WORKS
MICHAEL GELIN, P.E.	MUNICIPAL ENGINEER

NAIK CONSULTING GROUP, P.C.

METROPLEX PLAZA
200 METROPLEX DRIVE, SUITE 403
EDISON, NJ 08817
PHONE: 732-777-0030 FAX: 732-777-0040

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

1/05/2024
LINDSAY MAGUIRE, P.E. DATE
NEW JERSEY PROFESSIONAL ENGINEER LIC. NO. 24GE05895800

Z:\22\028 Woodbridge - Township Drainage - Five Locations\3.0 CAD (Prod)\Ver3\3.2 Contract Drawings (Naik Standard)\03 Sheets\01-9 Locations cover sheet.dwg, 1/4/2024 9:59 AM

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61	NJDOT CONSTRUCTION DETAILS

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

INDEX OF DRAWINGS

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LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
NTS	9/14/2023
DESIGNED:	CHECKED:
JE	LM

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY

PROPOSED

PROPERTY LINE
RIGHT OF WAY — Existing R.O.W. Line
EASEMENT LINE
FENCE
EDGE OF PAVEMENT — Edge of Pavement
GROUND CONTOUR — 250
CURB — Belgian Block Curb
BEAM GUIDE RAIL
DRAINAGE DITCH, UNPAVED — Top of Swale
STORM/ SANITARY PIPE — Top of Swale — 15" RCP

PROPOSED R.O.W. LINE
250
UP TO 36"
(Over 36" - Draw to Size)

TREE LINE
WETLAND LINE
CONSTRUCTION BASELINE — 100+00
SLOPES (CUT & FILL)
ELECTRIC LINE (UNDERGROUND) — (C) (F)
ELECTRIC LINE (OVERHEAD) — E
WATER LINE — Eo — W
GAS LINE — G
SILT FENCE
LIMIT OF DISTURBANCE

TOPOGRAPHICAL FEATURES

EXISTING	PROPOSED	
□	■	Inlets (Label Type)
◎	●	Manholes (Label Type or Utility)
		Reset (Inlets or Manholes)
		Reconstructed (Inlets or Manholes)
		R.C. End Section or C.M. Headwall
		Headwalls
		Headwalls & Aprons
W	●	Water Gate Valves
G	●	Gas Gate Valves
Hyd.		Hydrants
		Utility Pole (Type & Number)
		Traffic Signal
J.B.	J.B.	Junction Box
Ⓕ	Ⓕ	Fiber Optic Junction Box

EXISTING	PROPOSED	
J.B. & Light	J.B.	Junction Box Foundation
		Signs
		Vertical Panels
○	●	Guide Rail End Terminals
△	▲	Beam Guide Rail Anchorages
Mon. □	■	Monuments
	TEST PIT NUMBER	Test Pit
Boring Number	BORING NUMBER	Borings (Boring Number)
		Decidous Tree (Size, Kind)
		LOW POINT
		HIGH POINT

ABBREVIATIONS USED IN THIS CONTRACT

AWG	AMERICAN WIRE GAUGE	L.P.	LOW POINT	STN. STL.	STAINLESS STEEL
B.B	BELGIAN BLOCK	LOP	LIMIT OF PAVING	SY	SQUARE YARD
BC	BOTTOM OF CURB	LOM	LIMIT OF MILLING	TC	TOP OF CURB
BIT.	BITUMINOUS	MAX.	MAXIMUM	STA.	STATION
C.C.	CENTER TO CENTER	MB	MAIL BOX	TYP.	TYPICAL
CIP	CAST IRON PIPE	MIN.	MINIMUM	WD.	WOOD
CONC.	CONCRETE	MH	MANHOLE		
CY	CUBIC YARDS	MPH	MILES PER HOUR		
D, DIA.	DIAMETER	PGL	PROFILE GRADE LINE		
DC	DEPRESSED CURB	POB	POINT OF BEGINNING		
DWY	DRIVEWAY	POE	POINT OF END		
EL., ELEV.	ELEVATION	PSI	POUNDS PER SQUARE INCH		
GALV.	GALVANIZEDY	PVC	POINT OF VERTICAL CURVATURE, POLYVINYL CHLORIDE		
GPM	GALLONS PER MINUTE				
HDPE	HIGH DENSITY POLYETHYLENE	PVI	POINT OF VERTICAL INTERSECTION		
H.P.	HIGH POINT / HORSEPOWER	R	RIGHT		
HYD.	HYDRANT	RAD.	RADIUS		
INV.	INVERT	RCP	REINFORCED CONCRETE PIPE		
IP	IRON PIN / UTILITY POST	RMC	RIGID METAL CONDUIT		
L	LEFT, LENGTH	SAN	SANITARY SEWER		
LF	LINEAR FEET	SS	STAINLESS STEEL		

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE "2019 N.J.D.O.T STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", AS MODIFIED BY THE SUPPLEMENTARY SPECIFICATIONS.
2. MATERIAL FABRICATION: ALL MATERIAL FABRICATION SHALL BE IN ACCORDANCE WITH THE "2019 N.J.D.O.T STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", AS MODIFIED BY THE SUPPLEMENTARY SPECIFICATIONS.
3. HORIZONTAL DATUM IS NEW JERSEY PLANE COORDINATE SYSTEM NJ NAD83 (2011 ADJUSTMENT) AND VERTICAL DATUM IS NAVD 88.
4. FIELD SURVEY WAS PERFORMED BY NAIK CONSULTING GROUP, P.C. IN NOVEMBER OF 2018. ADDITIONAL SURVEY WAS OBTAINED IN AUGUST AND SEPTEMBER 2022.
5. LOT AND BLOCK NUMBERS SHOWN ON THESE PLANS ARE BASED UPON THE CURRENT TAX MAPS OF WOODBRIDGE TOWNSHIP.
6. ALL UTILITY CASTINGS, VALVE BOXES AND CURB BOXES SHALL BE RESET TO THE FINISHED GRADE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE FOR THE RESETTING BY THE RESPECTIVE UTILITY COMPANIES. THE COST OF RESETTING AND COORDINATION OF RESETTING EXISTING UTILITY CASTINGS, VALVE BOXES AND CURB BOXES SHALL BE INCLUDED IN THE PRICES BID FOR THE PAVEMENT ITEMS "HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK".
7. NO SEPARATE PAYMENT SHALL BE MADE FOR "REMOVE" OR "RELOCATE" ITEMS. ALL COSTS THEREOF ARE TO BE INCLUDED IN THE PRICE BID FOR THE ITEM "CLEARING SITE, MOBILIZATION, DEMOBILIZATION".
8. THE CONTRACTOR SHALL ENSURE THAT ALL REQUIRED PERMITS ARE IN HAND BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL SATISFY AND ADHERE TO ALL APPLICABLE REQUIREMENTS OR SPECIAL CONDITIONS STATED WITHIN SAID PERMITS REGARDING THE WORK AND MAINTENANCE OF IMPROVEMENTS PRIOR TO ACCEPTANCE BY THE OWNER.
9. IF ANY QUANTITY OF THE MATERIAL FROM EXCAVATION, UNCLASSIFIED IS DETERMINED UNSUITABLE BY THE ENGINEER, THE UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE TOWNSHIP.
10. SEE DETAILS ON PLAN SHEET FOR SURVEY CONTROL POINTS.
11. ACCESS SHALL BE PROVIDED TO ALL DRIVEWAYS, DWELLINGS, FIELD ENTRANCES AND MAIL BOXES AT ALL TIMES.
12. THE USE OF POLICE TRAFFIC DIRECTORS SHALL BE APPROVED BY THE ENGINEER PRIOR TO ENGAGEMENT.
13. CONTRACTOR SUPPLIED TRAFFIC DIRECTOR, FLAGGERS, ETC. WILL NOT BE PAID SEPARATELY, COST INCLUDED IN THE PRICE BID FOR MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL.
14. ALL DIMENSIONS SHOWN OF EXISTING FEATURES ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE. THE ENGINEER DOES NOT GUARANTEE THE CORRECTNESS OR COMPLETENESS OF ALL EXISTING INFORMATION SHOWN ON THE PLANS. THE CONTRACTOR SHALL VERIFY ALL FIELD DIMENSIONS. ANY DEVIATIONS ARE TO BE REPORTED TO THE ENGINEER.
15. WITHIN THE LIMITS OF DISTURBANCE, AS SHOWN ON THE CONSTRUCTION PLANS, ALL TREES AND VEGETATION SHALL BE REMOVED SUBJECT TO THE APPROVAL OF THE ENGINEER. NO TREES SHALL BE FELLED UNTIL VERIFIED IN THE FIELD BY THE ENGINEER. COST OF ALL TREE AND VEGETATION REMOVAL SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE ITEM "CLEARING SITE".
16. EXISTING PAVEMENT IS TO BE REMOVED IN ALL AREAS OF FULL DEPTH PAVEMENT RECONSTRUCTION. REMOVED PAVEMENT SHALL BE DISPOSED OF OFF-SITE AT NO ADDITIONAL COST TO THE TOWNSHIP. PAYMENT SHALL BE INCLUDED UNDER THE PRICE BID FOR ITEM "EXCAVATION, UNCLASSIFIED". LIMITS OF FULL DEPTH PAVEMENT MAY BE ADJUSTED BY THE ENGINEER IN THE FIELD. THE CONTRACTOR SHALL PROVIDE SMOOTH TRANSITIONS BETWEEN EXISTING AND NEW PAVEMENT IN DRIVEWAY AREAS AND WHERE CONSTRUCTION BEGINS AND ENDS AT ALL TIMES.
17. THE EXACT LIMITS OF CONSTRUCTION MAY BE ADJUSTED BY THE ENGINEER IN THE FIELD.
18. STORMWATER POLLUTION PREVENTION PLAN (SWPPP): IF THE TOTAL AREA TO BE CLEARED IS EQUAL TO, OR EXCEEDS ONE (1) ACRE, THEN THE CONTRACTOR WILL BE RESPONSIBLE FOR PREPARING A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH EPA'S NPDES REGULATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR SUBMITTING A NOTICE OF INTENT (NOI) AND APPLICABLE FEES TO THE NJDEP NO LESS THAN FORTY-EIGHT (48) HOURS PRIOR TO COMMENCING CONSTRUCTION. THE COST FOR THIS WILL BE IN THE CONTRACT UNIT PRICE FOR "CLEARING SITE, MOBILIZATION, DEMOBILIZATION, L.S."

STORM WATER (DRAINAGE) & CONSTRUCTION:

19. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS BASED ON AVAILABLE RECORDS AND SURVEYS BUT IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERE AND IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WITH THE UTILITY OWNER. PRIOR TO ORDERING DRAINAGE STRUCTURES, THE CONTRACTOR SHALL DETERMINE IF DRAINAGE/UTILITY CONFLICTS EXIST. INFORMATION ON CONFLICTS IS TO BE SUBMITTED TO THE ENGINEER FOR RESOLUTION, AS SOON AS POSSIBLE AFTER DISCOVERY.
20. ALL MANHOLES, INLETS, AND JUNCTION BOX STRUCTURES SHALL BE PRECAST AND IN ACCORDANCE WITH ASTM C-478 UNLESS OTHERWISE SPECIFIED.
21. ALL EXISTING AND INSTALLED STORM SEWER LINES AND INLETS SHALL BE CLEANED OF DEBRIS AND ERODED MATERIALS AT THE LAST STAGE OF CONSTRUCTION, THE COST OF WHICH SHALL BE INCIDENTAL TO THE PROJECT CONSTRUCTION. BEFORE COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL BRING TO THE ATTENTION OF THE ENGINEER ALL EXISTING DRAINAGE PROBLEMS OR DRAINAGE PROBLEMS THAT WILL BE CREATED BY THIS OPERATION.
22. ALL MANHOLES AND INLETS, SHALL HAVE TRAFFIC BEARING FRAMES AND COVERS OR GRATES MEETING HS-20 LOADING REQUIREMENTS, UNLESS OTHERWISE SPECIFIED WITHIN THE PLANS.
23. ALL DRAINAGE PIPE SHALL BE REINFORCED CONCRETE PIPE CLASS III, EXCEPT WHERE PAY ITEMS CALL FOR A HIGHER CLASS PIPE OR IF OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER.
24. ALL PIPE JOINT CONNECTIONS SHALL BE WRAPPED WITH A FILTER FABRIC MATERIAL IN ACCORDANCE WITH NJDOT STANDARD PLANS FOR ROAD CONSTRUCTION.
25. PRIOR TO CONSTRUCTION, EXISTING TOPSOIL AND STREAMBED MATERIAL IN AREAS OF WETLANDS OR STATE OPEN WATERS TO BE DISTURBED SHALL BE REMOVED AND STOCKPILED.
26. THE CONTRACTOR SHALL NOTIFY THE FREEHOLD SOIL CONSERVATION DISTRICT IN WRITING 48 HOURS PRIOR TO THE START OF ANY LAND DISTURBING ACTIVITY.
27. WHEN TREES TO BE REMOVED REQUIRE CERTIFIED AERIAL UTILITY LINE CLEARANCE TREE TRIMMERS, OVERALL RESPONSIBILITY REMAINS WITH THE CONTRACTOR.
28. ALL TREES TO REMAIN WITHIN OR ADJACENT TO THE PROJECT SITE SHALL BE PROTECTED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
29. A PRE-CONSTRUCTION MEETING WILL BE HELD WITH THE TOWNSHIP ENGINEER'S REPRESENTATIVES PRIOR TO CONSTRUCTION ON THE PROJECT.
30. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE AND INJURY TO PROPERTY OF ANY CHARACTER, DURING THE PROSECUTION OF THE WORK, RESULTING FROM ANY ACT, OMISSION, NEGLIGENCE, OR MISCONDUCT IN HIS MANNER OR METHOD OF EXECUTING THE WORK, OR AT ANY TIME DUE TO DEFECTIVE WORK OR MATERIALS.
31. THE CONTRACTOR SHALL CONFORM AND ADHERE TO THE POLICIES ESTABLISHED BY WOODBRIDGE TOWNSHIP FOR THE PRESERVATION OF ALL PUBLIC AND PRIVATE PROPERTY.
32. ABSOLUTELY NO WORK WILL BE ALLOWED WITHIN ANY CONSERVATION AREA FROM THE GOVERNMENTAL ENTITY HAVING JURISDICTION OVER SAID AREA UNLESS SPECIFICALLY DESCRIBED BY THE PLANS AND GRANTED BY REASON OF PERMIT BUFFER AREA, MITIGATION AREA, OR DESIGNATED WETLAND AREA UNLESS SPECIFICALLY DESCRIBED BY THE PLANS AND GRANTED BY REASON OF PERMIT FROM THE GOVERNMENTAL ENTITY HAVING JURISDICTION OVER SAID AREA.
33. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL NECESSARY EQUIPMENT AND METHODS TO KEEP EXCAVATIONS FREE OF WATER AND PROTECT WORK FROM DAMAGE BY WATER DURING ALL STAGES OF CONSTRUCTION. NO SEPARATE PAYMENT WILL BE MADE FOR PROVIDING AND MAINTAINING EQUIPMENT AND METHODS TO KEEP EXCAVATIONS DEWATERED. COSTS THEREOF ARE TO BE INCLUDED IN PRICE BID FOR "EXCAVATION UNCLASSIFIED".
34. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL FEDERAL, STATE, COUNTY AND MUNICIPAL LAWS, ORDINANCES AND REGULATIONS.
35. COMPACTION OF ALL FILL MATERIALS SHALL BE 95% MINIMUM OF STANDARD PROCTOR DENSITY (ASTM D-698). CONTRACTOR TO PERFORM THIS WORK AT NO ADDITIONAL COST TO THE TOWNSHIP.
36. ALL EARTH FILL SHALL BE FREE FROM BRUSH, ROOTS AND OTHER ORGANIC MATERIAL SUBJECT TO DECOMPOSITION.
37. ALL PIPES, STUBS, ETC. TO BE REMOVED SHALL BE BACKFILLED WITH DENSE GRADED AGGREGATE BASE COURSE. NO SEPARATE PAYMENT WILL BE MADE FOR REMOVAL OR BACKFILLING. ALL COSTS THEREOF SHALL BE INCLUDED IN THE PRICE BID FOR THE ITEM "CLEARING SITE".
38. ALL MAILBOXES LOCATED WITHIN THE CONSTRUCTION IMPROVEMENTS ARE TO REMAIN ACCESSIBLE AND MAINTAINED AT ALL TIMES. ANY MAILBOXES TO BE RESET/RELOCATED SHALL BE IN ACCORDANCE WITH THE OWNER OF THE MAILBOX AND THE POSTMASTER. ALL COSTS THEREOF SHALL BE INCLUDED IN THE PRICE BID FOR THE ITEM "CLEARING SITE".
39. NO SEPARATE PAYMENT WILL BE MADE FOR CLEARING AND GRUBBING. ALL COSTS THEREOF SHALL BE INCLUDED IN THE PRICE BID FOR THE ITEM "CLEARING SITE".
40. NO SEPARATE PAYMENT WILL BE MADE FOR WORK ASSOCIATED WITH ANY SIGNS THAT ARE TEMPORARILY REMOVED BY THE CONTRACTOR AND REINSTALLED AT THEIR SAME LOCATION WITH SQUARE POSTS OR AS DIRECTED BY THE ENGINEER, AFTER COMPLETION OF CONSTRUCTION.
41. ALL CONSTRUCTION SIGNS AND BARRICADES SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR AT LOCATIONS SHOWN ON THE PLANS OR AS DESIGNATED BY THE ENGINEER.
42. THE CONTRACTOR SHALL NOTIFY THE MUNICIPAL CLERK, THE POLICE DEPARTMENT, FIRE DEPARTMENT, AND RESCUE SQUAD ONE WEEK PRIOR TO THE START OF CONSTRUCTION AND 24 HOURS PRIOR TO THE IMPLEMENTATION OF ANY TRAFFIC DETOURS.
43. DETAILS AS SHOWN IN ANY SECTION SHALL APPLY TO ALL SIMILAR SECTIONS, UNLESS OTHERWISE NOTED.
44. THE COST OF INCIDENTAL WORK SHOWN IN THE PLANS FOR WHICH THERE IS NO SEPARATE PAY ITEM SHALL BE INCLUDED IN THE VARIOUS ITEMS OF THE CONTRACT.
45. ALL ITEMS WILL BE BASED UPON FIELD MEASURED QUANTITIES, EXCEPT FOR THOSE NOT MEASURED FOR PAYMENT PER THE SPECIFICATIONS.
46. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL INSPECTION CRITERIA AND SCHEDULES, AND FOR SIGNING FOR SAID INSPECTIONS.
47. LAYOUT AND MATERIALS:

    1) PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
    2) SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.

    3) CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.
48. THE PLANS SHOW KNOWN SUBSURFACE STRUCTURES, ABOVE-GROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA. THE CONTRACTOR IS WARNED THAT EXACT OR EVEN APPROXIMATE LOCATION OF SUCH UTILITIES MAY BE DIFFERENT FROM THAT SHOWN OR MAY NOT BE SHOWN AT ALL. THE CONTRACTOR SHALL COORDINATE WITH ALL PUBLIC AND PRIVATE UTILITY OWNERS TO ENSURE THAT ALL KNOWN UTILITIES HAVE BEEN MARKED PRIOR TO BEGINNING WORK AT THE SITE.
49. BEFORE COMMENCING WORK ON ANY PRIVATE LANDS, THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM THE LANDOWNER TO OCCUPY THE PROPERTY FOR THE SOLE PURPOSE OF PROSECUTING THE WORK. THE CONTRACTOR SHALL USE ALL DUE CAUTION, CARE TO ALWAYS PROTECT THE PROPERTY, IN ALL MANNER FROM HIS WORK AND TO LIMIT HIS ACTIVITIES AS NECESSARY TO PERFORM THE WORK AS DESCRIBED BY THE CONTRACT DOCUMENTS.
50. THE OWNER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
51. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER AND OWNER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE BY A SURVEYOR LICENSED IN THE STATE OF NEW JERSEY.
52. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK.
53. CONTRACTOR SHALL MAINTAIN FLOW OF ALL EXISTING UTILITIES, CULVERTS, AND DITCHES.
54. CONTRACTOR TO GRADE ALL AREAS ON THE SITE TO PROVIDE POSITIVE DRAINAGE, WHETHER TEMPORARY OR PERMANENT CONDITIONS.
55. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN OPERATING CONSTRUCTION EQUIPMENT OVER NEW UTILITY TRENCHES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A MINIMUM OF TWO FEET OR MORE OF COVER, IF REQUIRED, OVER ANY UTILITY LINE SUBJECT TO CONSTRUCTION TRAFFIC.
56. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK AND DISRUPTIONS WITH GOVERNING AGENCIES AND OWNERS.
57. UPON COMPLETION OF THE WORK, ALL DISTURBED AREAS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION.
58. TRENCHES SHALL NOT BE LEFT OPEN OVERNIGHT. TEMPORARY PATCHES SHALL BE PLACED AT THE END OF EACH WORKING DAY.
59. THE CONTRACTOR SHALL MAINTAIN A NEAT AND ORDERLY SITE.
60. **SEQUENCE OF CONSTRUCTION IS AS FOLLOWS:**

    1) CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS BEFORE COMMENCEMENT OF CONSTRUCTION.

    2) MOBILIZATION.

    3) ALL EROSION CONTROL STRUCTURAL MEASURES, INCLUDING BUT NOT LIMITED TO TREE PROTECTION AND SILT FENCE SHALL BE IN PLACE PRIOR TO THE BEGINNING OF DISTURBANCE. ALL MEASURES SHALL BE INSPECTED AT LEAST 14 DAYS AND AFTER ANY RUNOFF PRODUCING RAIN EVENT.

    4) SAWCUT EXISTING PAVEMENT AND REMOVE/ABANDON UNDERGROUND UTILITIES AS DIRECTED IN THE PLANS.

    5) PREPARE SOIL AND PIPE BEDDING FOR INSTALLATION OF NEW PIPE, MANHOLES AND INLETS.

    6) INSTALL PROPOSED HEADWALLS, OUTLET CONNECTIONS AS DIRECTED ON THE PLANS. CLEAR AND ADJUST GRADING AS NECESSARY.

    7) DISTURBED AREA SHALL BE GRADED AND RESTORED TO EXISTING CONDITIONS.

    8) VEGETATIVE EROSION CONTROL MEASURES SHALL BE INSTALLED WHENEVER NECESSARY.

    9) ALL STRUCTURAL EROSION CONTROL MEASURES SHALL BE REMOVED AT THE FINISH OF CONSTRUCTION.

    10) ALL CONSTRUCTION FOR THIS PROJECT SHALL BE PERFORMED BETWEEN THE HOURS OF 7:30 AM AND 3:30 PM.

MISCELLANEOUS SYMBOLS

- Mill & Overlay
- Sawcut & Full Depth Pavement
- Sidewalk and Driveway
- Detectable Warning Surface
- Depressed Curb
- B.M. — Bench Mark

NAD 83

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

LEGEND AND GENERAL NOTES

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY — LINDSAY A. MAGUIRE — No. GE58958 — LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
NTS	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 3 OF 62

z:\22\017 - woodbridge drainage design - arthur-kemple-jordan\3.0 cad (prod) (ver)\3.2 contract drawings (naik standard)\03 sheets\022-Legend and Notes.dwg, 9/12/2023 4:35 PM

TOWNSHIP OF WOODBRIDGE

SUMMARY OF QUANTITIES

MIDDLESEX COUNTY

PAY ITEM #	DESCRIPTION	UNIT	CONTRACT QUANTITY	IF AND WHERE DIRECTED	PLAN SHEET TOTAL	ARTHUR AVENUE	TEMPLE WAY	JORDAN ROAD	GARFIELD AVENUE	WENDY ROAD	STAFFORD ROAD	SOUTH CLIFF ROAD	PITMAN AVENUE	REMSEN AVENUE	TAPPEN STREET
1	MOBILIZATION	L.S.	1	1	0	-	-	-	-	-	-	-	-	-	-
2	HEAVY DUTY SILT FENCE, ORANGE	L.F.	2686	14	2672	-	121	652	668	-	300	-	362	-	569
3	INLET FILTER TYPE 2, 2'x4'	UNIT	113	7	106	11	9	13	13	20	11	1	8	18	2
4	FLOATING TURBIDITY BARRIER, TYPE 2	L.F.	40	0	40	-	-	40	-	-	-	-	-	-	-
5	MAINTENANCE AND PROTECTION OF TRAFFIC CONTROL	ALLOWANCE	1	1	0	-	-	-	-	-	-	-	-	-	-
6	TRAFFIC DIRECTOR, MUNICIPAL POLICE	ALLOWANCE	1	1	0	-	-	-	-	-	-	-	-	-	-
7	NO ITEM	----	----	0	----	----	----	----	----	----	----	----	----	----	----
8	FUEL PRICE ADJUSTMENT	ALLOWANCE	1	1	0	-	-	-	-	-	-	-	-	-	-
9	ASPHALT PRICE ADJUSTMENT	ALLOWANCE	1	1	0	-	-	-	-	-	-	-	-	-	-
10	CLEARING SITE	L.S.	1	1	0	-	-	-	-	-	-	-	-	-	-
11	EXCAVATION, TEST PIT	CY	160	160	0	-	-	-	-	-	-	-	-	-	-
12	EXCAVATION, UNCLASSIFIED	CY	3988	242	3746	301	115	490	620	180	200	1	257	297	1285
13	EXCAVATION, REGULATED MATERIAL	CY	365	365	0	-	-	-	-	-	-	-	-	-	-
14	DISPOSAL OF REGULATED MATERIAL	TON	513	513	0	-	-	-	-	-	-	-	-	-	-
15	DENSE GRADED AGGREGATE BASE COURSE, 6" THICK	SY	1822	86	1736	158	162	82	185	46	36	-	139	458	470
16	HMA MILLING, 3" OR LESS	SY	536	27	509	-	509	-	-	-	-	-	-	-	-
17	TACK COAT	GAL	246	13	233	17	69	10	19	5	5	-	14	46	48
18	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	265	15	250	18	70	10	21	5	5	-	16	52	53
19	HOT MIX ASPHALT 19M64 BASE COURSE, 5" THICK	TON	535	28	507	46	47	25	54	14	13	-	40	132	136
20	NO ITEM	----	----	0	----	----	----	----	----	----	----	----	----	----	----
21	12" REINFORCED CONCRETE PIPE, CLASS V	LF	10	10	0	-	-	-	-	-	-	-	-	-	-
22	15" REINFORCED CONCRETE PIPE, CLASS V	LF	614	52	562	-	27	4	-	184	20	-	-	327	-
23	18" REINFORCED CONCRETE PIPE, CLASS V	LF	1255	109	1146	92	-	-	-	-	125	-	514	415	-
24	24" REINFORCED CONCRETE PIPE, CLASS V	LF	1474	121	1353	-	36	-	-	-	-	-	-	522	795
25	30" REINFORCED CONCRETE PIPE, CLASS V	LF	311	20	291	-	-	-	-	-	-	-	-	-	291
26	36" REINFORCED CONCRETE PIPE, CLASS V	LF	145	8	137	-	-	-	-	-	137	-	-	-	-
27	12" PERFORATED HIGH DENSITY POLYETHYLENE PIPE	LF	340	17	323	-	-	-	323	-	-	-	-	-	-
28	43" X 68" REINFORCED CONCRETE ELLIPTICAL PIPE, CLASS V	LF	201	10	191	-	-	191	-	-	-	-	-	-	-
29	19" X 30" REINFORCED CONCRETE ELLIPTICAL PIPE, CLASS V	LF	106	6	100	44	-	-	-	-	-	-	-	-	56
30	14" X 23" REINFORCED CONCRETE ELLIPTICAL PIPE, CLASS V	LF	295	4	291	85	-	51	-	-	-	-	155	-	-
31	11" X 18" REINFORCED CONCRETE ELLIPTICAL PIPE, CLASS V	LF	356	0	356	-	36	320	-	-	-	-	-	-	-
32	CONCRETE HEADWALL	CY	14	0	14	-	-	10	-	-	4	-	-	-	-
33	INLET, TYPE A	UNIT	3	0	3	-	-	-	3	-	-	-	-	-	-
34	INLET, TYPE B	UNIT	27	0	27	-	3	4	2	5	6	-	2	5	-
35	MANHOLE, 4' DIAMETER	UNIT	5	0	5	1	1	-	-	-	-	-	-	-	3
36	MANHOLE, 8' DIAMETER	UNIT	2	0	2	-	-	2	-	-	-	-	-	-	-
37	36" CHECK VALVE, S35-1	UNIT	1	0	1	-	-	-	-	-	1	-	-	-	-
38	43" X 68" INLINE CHECK VALVE	UNIT	1	0	1	-	-	1	-	-	-	-	-	-	-
39	RECONSTRUCTED INLET, TYPE B, USING EXISTING CASTING	UNIT	15	0	15	4	-	3	2	1	2	-	1	2	-
40	RECONSTRUCTED INLET, TYPE E, USING EXISTING CASTING	UNIT	1	0	1	1	-	-	-	-	-	-	-	-	-
41	RECONSTRUCTED MANHOLE, USING EXISTING CASTING	UNIT	13	0	13	2	-	1	2	-	-	-	2	2	4
42	BICYCLE SAFE GRATE	UNIT	16	0	16	5	-	3	2	1	2	-	1	2	-
43	CURB PIECE	UNIT	15	0	15	4	-	3	2	1	2	-	1	2	-
44	INLET, NON-STANDARD	UNIT	1	0	1	-	-	-	-	-	-	1	-	-	-
45	RIPRAP STONE CHANNEL PROTECTION, 12" THICK (D50=6")	SY	27	0	27	-	-	-	-	-	13	-	-	-	14
46	NO ITEM	----	----	0	----	----	----	----	----	----	----	----	----	----	----
47	RIPRAP STONE CHANNEL PROTECTION, 26" THICK (D50=13")	SY	63	6	57	-	-	57	-	-	-	-	-	-	-
48	RESET FENCE	LF	134	6	128	-	-	-	5	-	-	-	112	-	11
49	NO ITEM	----	----	0	----	----	----	----	----	----	----	----	----	----	----
50	CONCRETE SIDEWALK, 4" THICK	SY	78	21	57	1	31	2	12	-	3	-	3	-	5
51	HOT MIX ASPHALT DRIVEWAY, VARIABLE THICKNESS	SY	74	26	48	-	-	16	-	3	9	-	20	-	-
52	CONCRETE DRIVEWAY, REINFORCED, 6" THICK	SY	25	4	21	3	-	-	4	-	-	-	-	14	-
53	DETECTABLE WARNING SURFACE	SY	3	1	2	-	2	-	-	-	-	-	-	-	-
54	9" X 18" CONCRETE VERTICAL CURB	LF	1882	83	1799	140	120	295	307	140	76	-	6	701	14
55	BELGIAN BLOCK CURB	LF	25	5	20	-	-	-	-	-	20	-	-	-	-
56	TRAFFIC STRIPES, LONG-LIFE, THERMOPLASTIC, 8" THICK	LF	110	0	110	-	100	-	-	-	10	-	-	-	-
57	TRAFFIC MARKING LINES, 24"	LF	0	0	0	-		-	-	-	-	-	-	-	-
58	TOPSOIL SPREADING, 5" THICK	SY	1175	152	1023	16	19	313	134	23	125	1	123	100	169
59	FERTILIZING AND SEEDING, TYPE A-3	SY	1175	152	1023	16	19	313	134	23	125	1	123	100	169
60	STRAW MULCHING	SY	1175	152	1023	16	19	313	134	23	125	1	123	100	169
61	8" DUCTILE IRON PIPE	LF			412	-	-	-	412	-	-	-	-	-	-
62	WORK NOT SPECIFIED	ALLOWANCE	100,000	-	-	-	-	-	-	-	-	-	-	-	-

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

ESTIMATE OF QUANTITIES

NAIK CONSULTING GROUP, PC
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LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

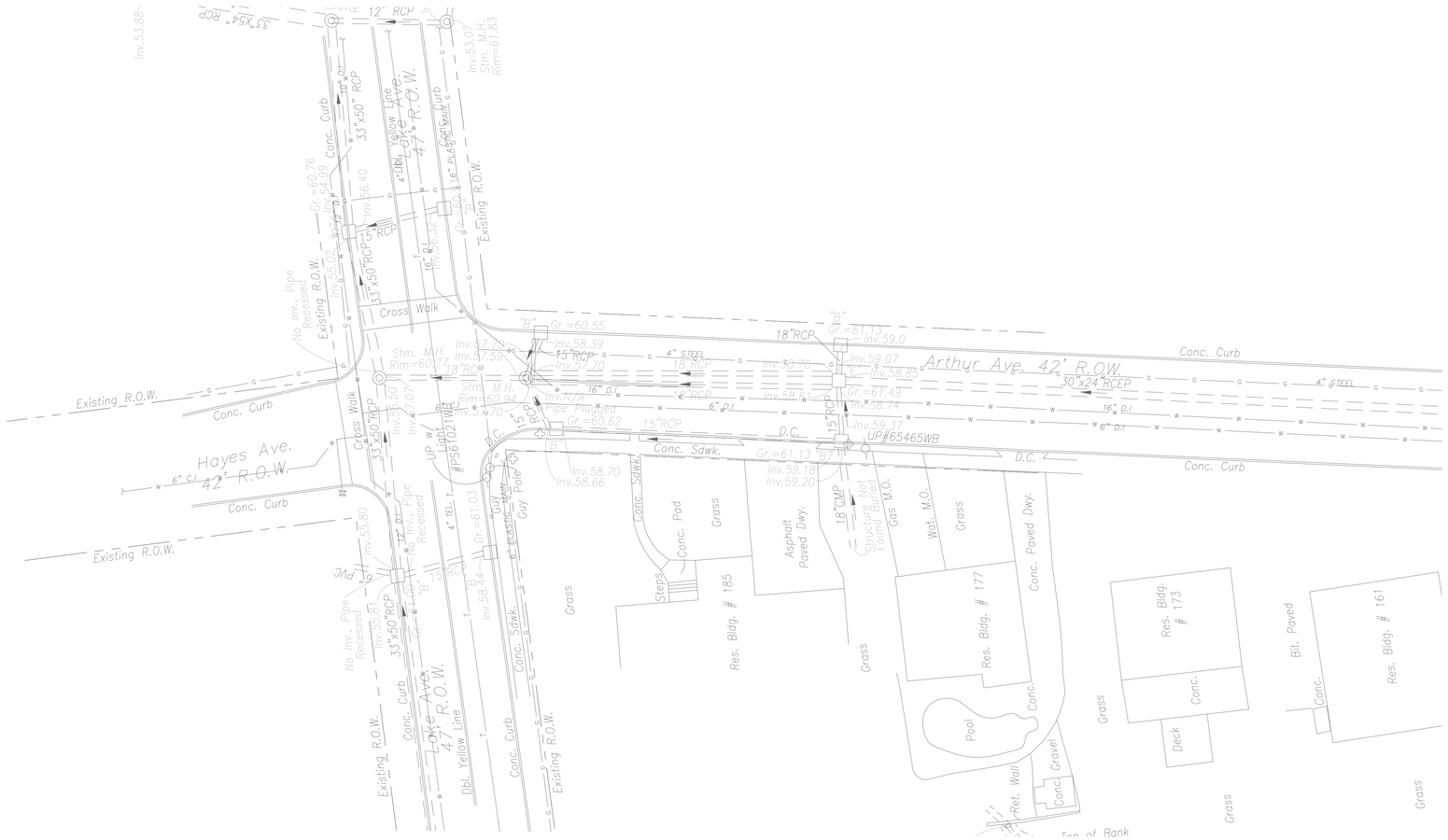
SCALE:	DATE:
NTS	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 4 OF 62

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TOWNSHIP OF WOODBRIDGE **MIDDLESEX COUNTY**

NAD 83



GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

EXISTING CONDITIONS PLAN ARTHUR AVENUE

NAIK CONSULTING GROUP, PC
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LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

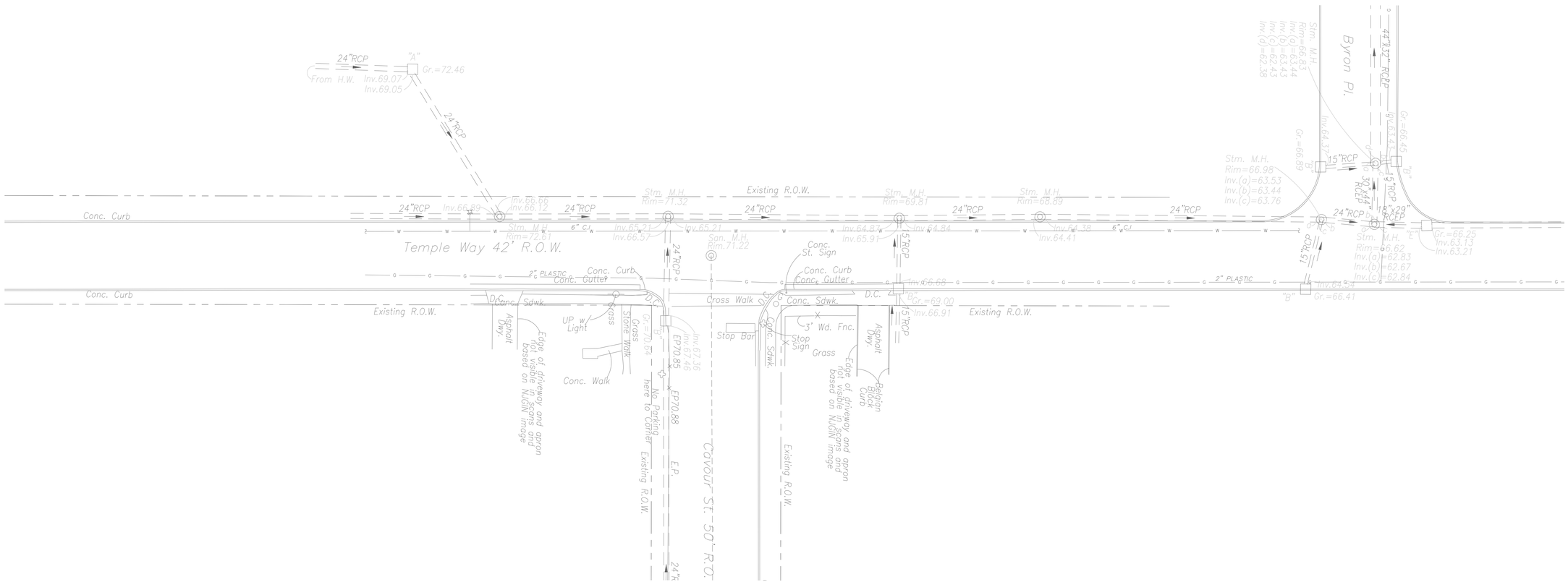
STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1" = 20'	9/14/2023
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SHEET NO. 5 OF 62

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TOWNSHIP OF WOODBRIDGE **MIDDLESEX COUNTY**



NAD 83

GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

EXISTING CONDITIONS PLAN TEMPLE WAY

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NO.	DATE	REVISIONS	BY

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

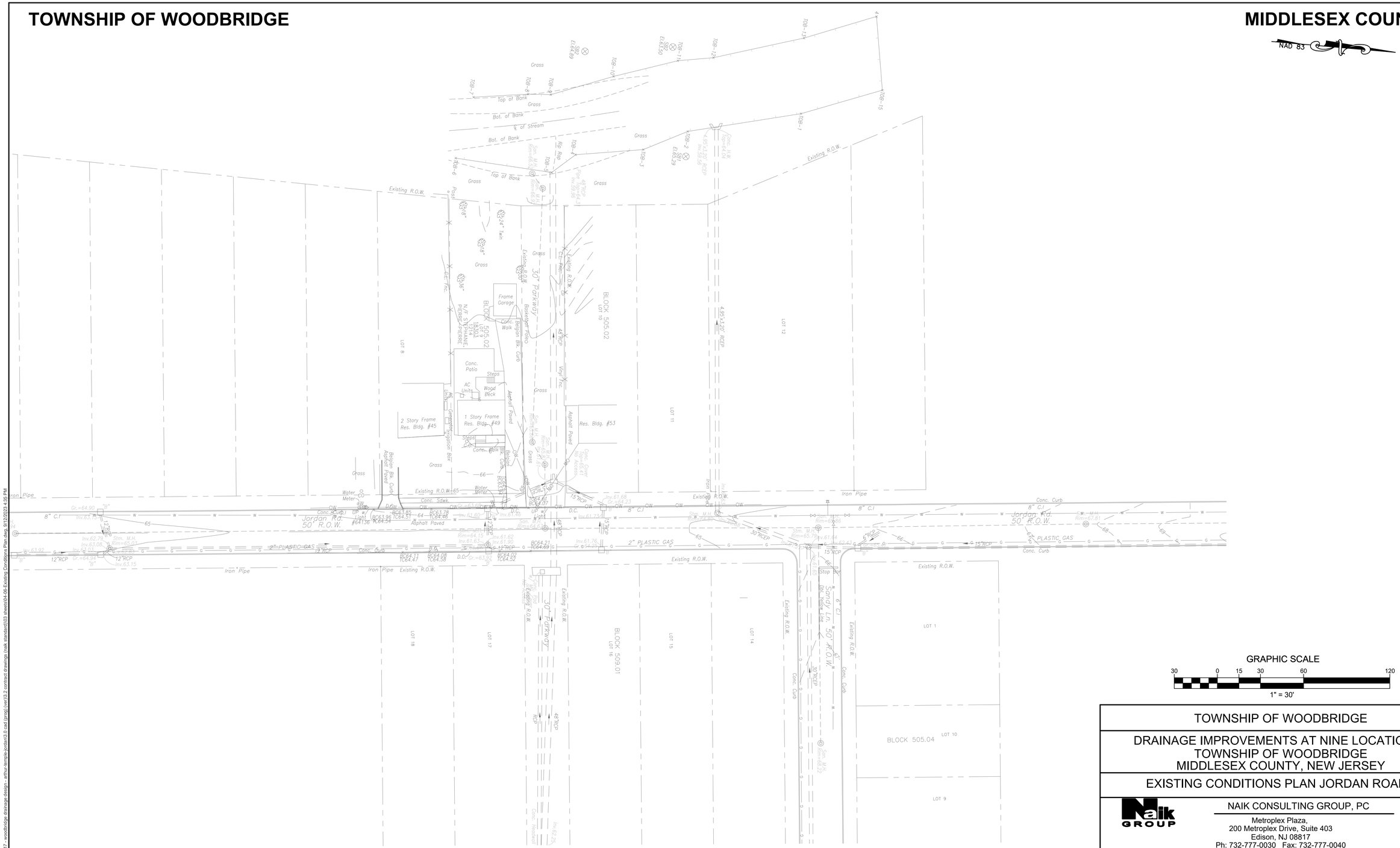
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SHEET NO. 6 OF 62	

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TOWNSHIP OF WOODBRIDGE

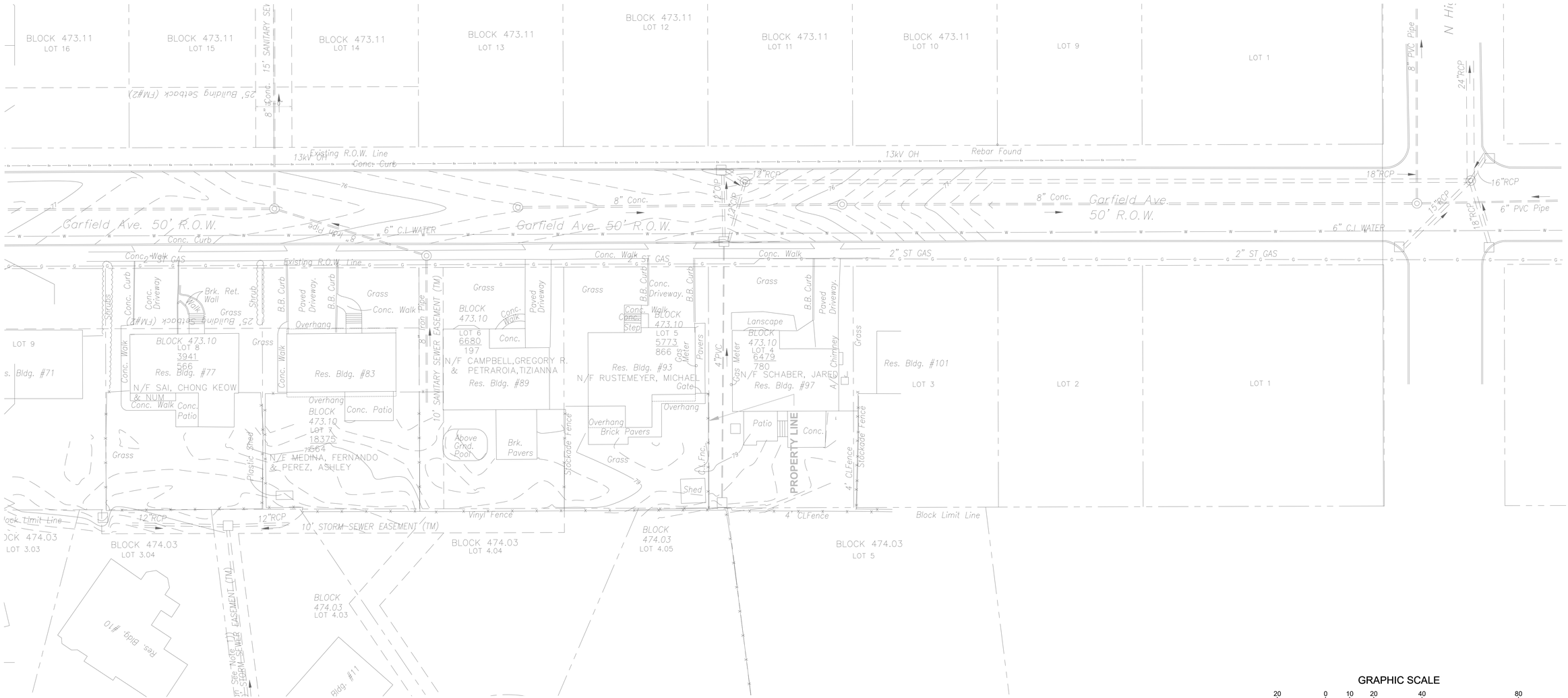
MIDDLESEX COUNTY

NAD 83


Jordan Rd.
50' R.O.W.
Existing R.O.W.
30' Parkway
Sandy Ln.
50' R.O.W.
BLOCK 505.02
LOT 10
BLOCK 505.04
LOT 10
BLOCK 509.01
LOT 16
LOT 1
LOT 8
LOT 9
LOT 11
LOT 12
LOT 14
LOT 15
LOT 17
LOT 18
Frame Garage
Conc. Walk
Conc. Patio
Steps
AC Units
Wood Deck
Asphalt Paved
2 Story Frame Res. Bldg. #45
1 Story Frame Res. Bldg. #49
Res. Bldg. #53
Grass
Top of Bank
Bot. of Bank
℄ of Stream
Existing R.O.W.
Iron Pipe
Conc. Curb
Stop
Water Meter
Stm. M.H.
San. M.H.
Conc. Cover
Inlet
Utility Pole
Light
Gas Valve
Gas Meter
Fire Hydrant
Post
Tree
Bollard
Fence
Vinyl Fnc.
Chain Link Fnc.
Basketball Poles
Existing R.O.W. Pipe
Sandy Ln. Water Line
Concrete Pad
Asphalt Box
Belgian Blk. Curb
Conc. Sdwk.
Conc. Curb
Conc. Cover
Inv=63.51
Rim=65.79
Inv=61.64
Rim=65.86
Rim=67.81
Rim=65.03
Rim=65.15
Rim=65.22
Rim=65.17
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TOWNSHIP OF WOODBRIDGE **MIDDLESEX COUNTY**

NAD 83



GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

EXISTING CONDITIONS PLAN GARFIELD AVENUE

NAIK CONSULTING GROUP, PC
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NO.	DATE	REVISIONS	BY

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1" = 20'	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 8 OF 62

Z:\22\2029 Woodbridge Township Drainage - Garfield Ave\3.0 CAD (Proj) \Ver\3.2 Contract Drawings (Naik Standard)\03 Sheets\07-Existing Conditions Plan.dwg, 9/12/2023 4:58 PM

TOWNSHIP OF WOODBRIDGE **MIDDLESEX COUNTY**



GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

EXISTING CONDITIONS WENDY ROAD

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NO.	DATE	REVISIONS	BY

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1" = 20'	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 9 OF 62

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TOWNSHIP OF WOODBRIDGE **MIDDLESEX COUNTY**



GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

EXISTING CONDITIONS STAFFORD ROAD

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LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1" = 20'	9/14/2023
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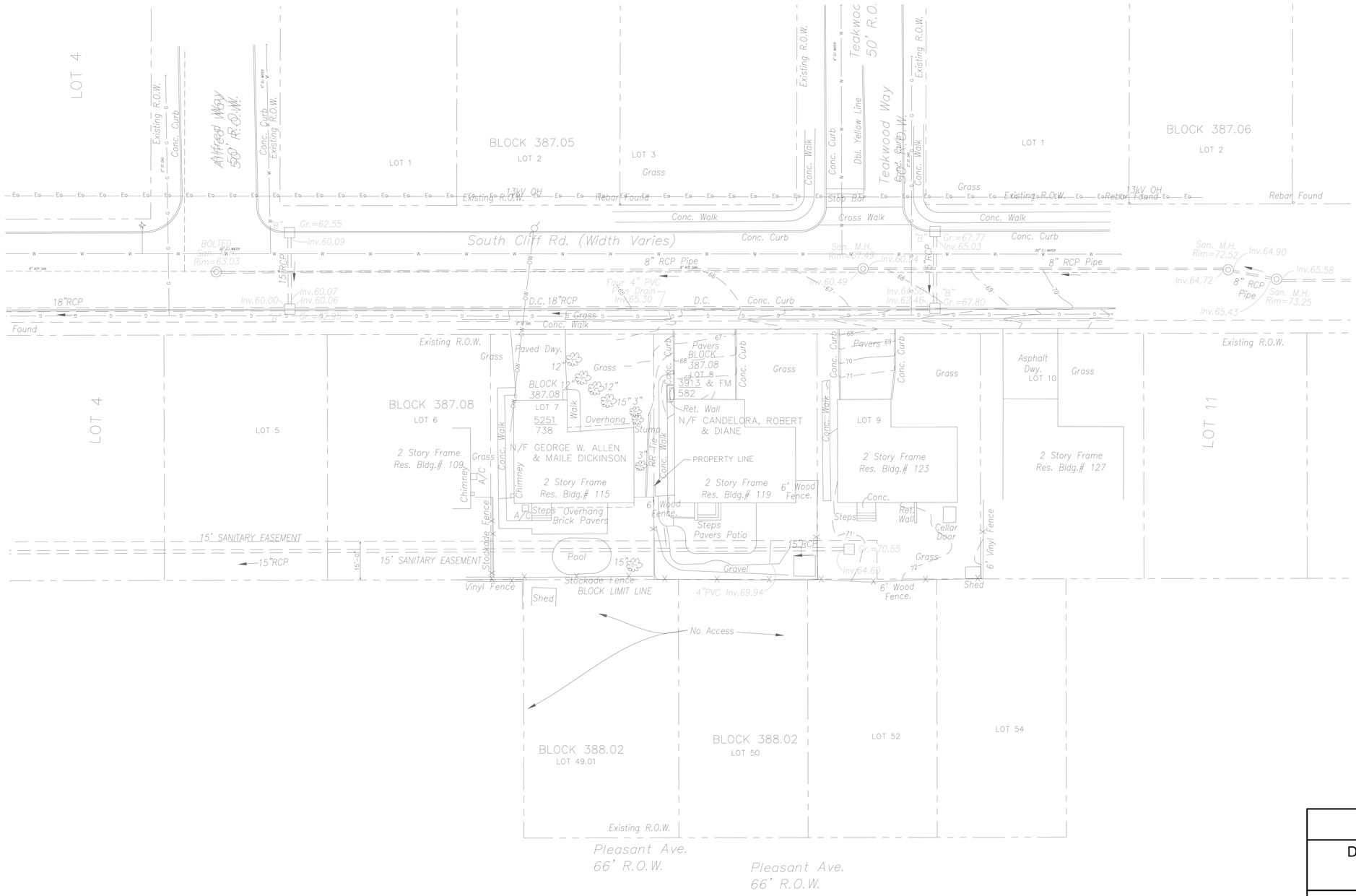
SHEET NO. 10 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY

NAD 83



GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

EXISTING CONDITIONS SOUTH CLIFF ROAD

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LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1" = 20'	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 11 OF 62

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TOWNSHIP OF WOODBRIDGE — **MIDDLESEX COUNTY**

N 40° 83'

Pitman Ave.
2" ISD CAST. O.W.
Conc. Curb
Conc. Gutter
6" C.I WATER
8" Clay Pipe
San. M.H. Rim=173.54 Inv.160.91 Inv.160.78
EP175.85 EP175.79 EP176.06 EP175.92 E.P.B. EP176.23
Inv.162.46 Gr.=164.21 Inv.162.34 Gr.=164.11
San. M.H. Rim=167.61 Inv.162.52 Start of line No Flow Inv.162.36 6" Clay Pipe Inv.163.07
2" ST GAS
Grass
Existing R.O.W.
13KV ELEC. OH
Iron Pipe Found
Rebar Found
Mon. Found
Paved Dwy.
166.64 Conc. Walk 166.65
Planter
PROPERTY LINE
Gas Meter
2 Story Frame Residential Bldg. #94
2 Story Frame Residential Bldg. #96
1 Story Frame Residential Bldg. #96
Gate
Wood Porch
Conc.
Steps
15" RCP
42"
C.I. Fnc.
30"
Belgian Blk. Curb
Shrubs
Planter
Gr.=163.04 No other pipes Visible Full of Water Wat El.162.41 Inv.161.24
No other pipes Visible
Shed
Soil
Conc. Wall
48"
54"
18"
12"
8"RCP
Vinyl Fence
Grass
Ret. Wall
Vinyl Fnc.
℄ of Ditch
Gr.=164.70 Inv.163.28
Iron Pipe
26"
Ret. Wall
28" Triplet
24"x18"x12"
Planter
16"
24"
Bot. of Bank
Top of Bank
22"
20"
Brick Garage
12"
8"
10"
6" Vinyl Fnc.
4" 6"
4' Vinyl Fnc.
12"RCP
36"
24"
Pavers
Conc.
1 Story Brick Residential Bldg. #149
10" Planter
Step
Edge Stone Wall
12"
Conc. Walk
Paved Dwy.
Shrubs 30"
PROPERTY LINE
2 Story Frame Residential Bldg. #157
Shrubs
13KV ELEC. OH
2" ST GAS
Edge of Pavt.
EP166.33
EP167.03
Inv.160.68
6" C.I WATER
Belgian Block Curb
8" Clay Pipe
START OF LINE San. M.H. Rim=168.80 Inv.158.34
Inv.162.13
Inv.160.18
12"RCP
Inv.159.65
Inv.159.65
12"RCP
Inv.159.75
8"Clay Pipe
15"RCP
Inv.156.65
Inv.156.63
San. M.H. Rim=164.95
Stm. M.H. Rim=167.22
Dunbar Ave.
50' R.O.W.
Conc. Curb

LOT 292 | LOT 293.01 | LOT 293.02 | BLOCK 175.06 LOT 295 | LOT 297.02 | LOT 298.02

BLOCK 175.06 LOT 296.01 6640 384 N/F MAYEROWITZ, JEFFREY

BLOCK 175.06 LOT 296.02 18453 1677 N/F DASKALOTHANASIS, P & MANTSIS, O

BLOCK 175.06 LOT 282 5568 719 N/F AGUIRRE, JORGE & NANCY

BLOCK 175.06 LOT 283.02 19066 1027 N/F FAROOQ, UMER & IDRIS, ALI ABBAS

LOT 279 | LOT 280 | LOT 281 | LOT 285.01

GRAPHIC SCALE
20 0 10 20 40 80
1" = 20'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

EXISTING CONDITIONS PITMAN AVENUE

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

NO.	DATE	REVISIONS	BY

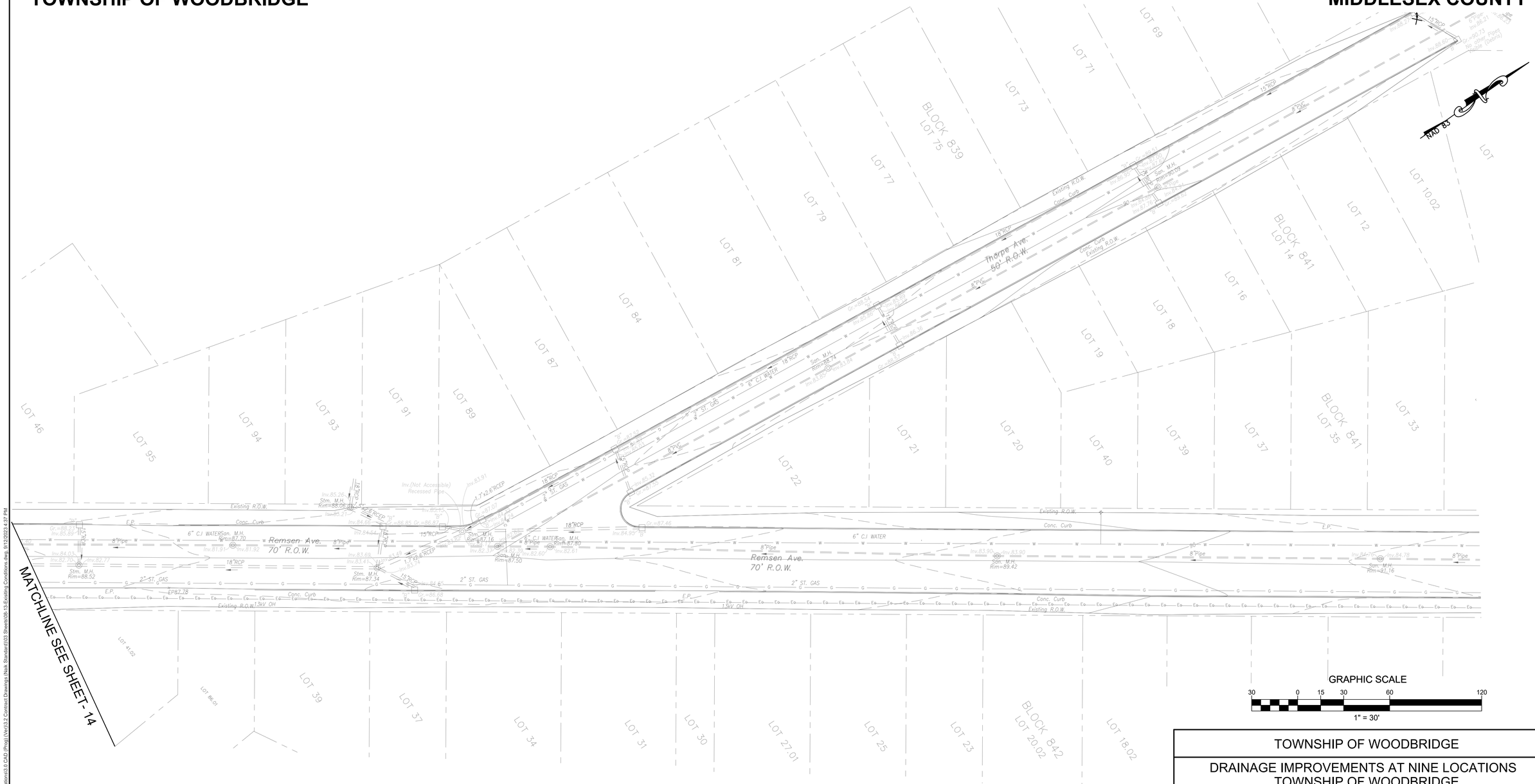
LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1" = 20'	9/14/2023
DESIGNED: JE	CHECKED: LM
SHEET NO. 12 OF 62	

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TOWNSHIP OF WOODBRIDGE **MIDDLESEX COUNTY**



GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

EXISTING CONDITIONS REMSEN & THORPE AVENUE

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1"=30	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 13 OF 62

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TOWNSHIP OF WOODBRIDGE | **MIDDLESEX COUNTY**



GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

EXISTING CONDITIONS TAPPEN STREET

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

NO.	DATE	REVISIONS	BY

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

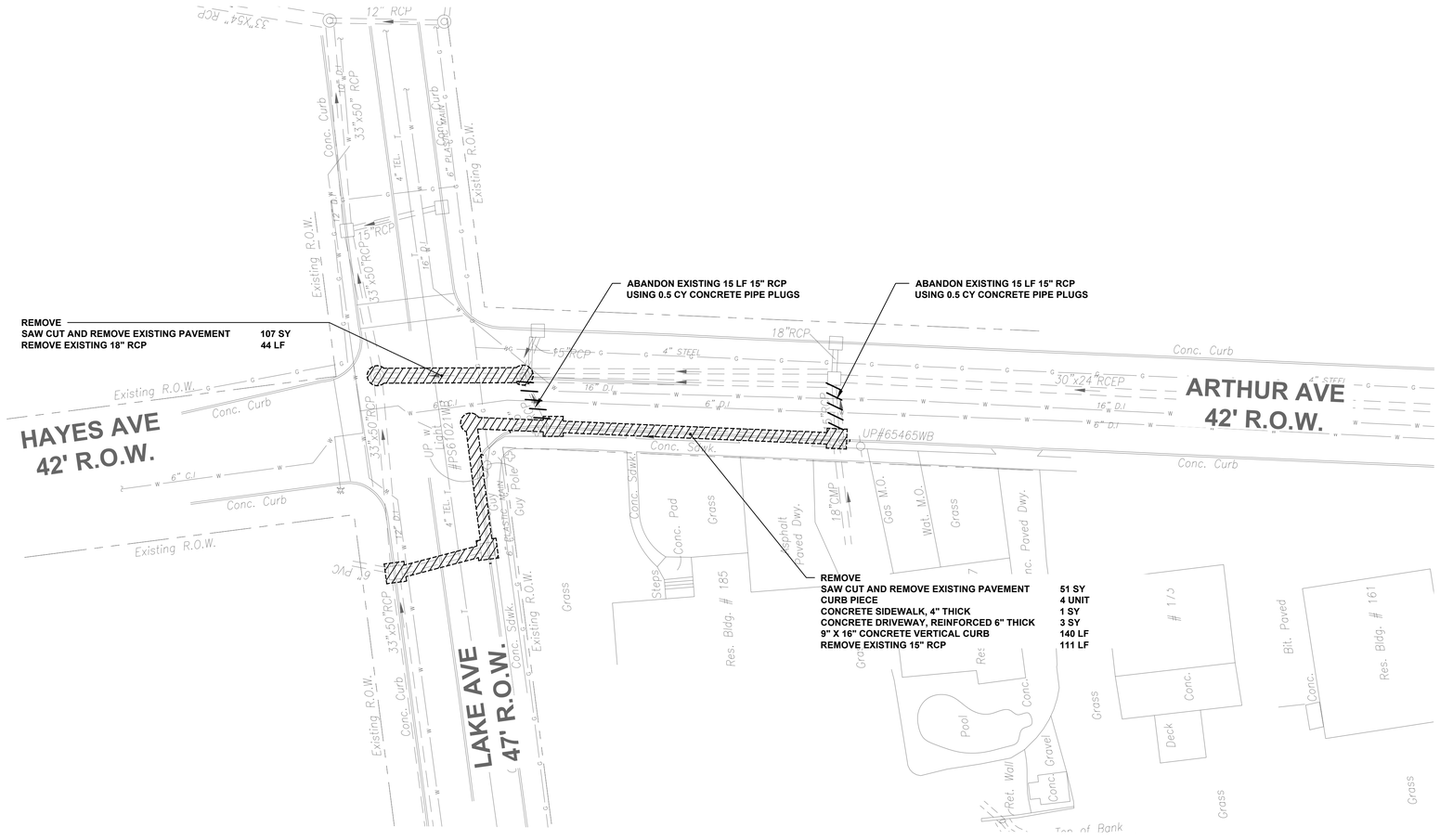
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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY

NAD 83



NOTES :

1. FOR LEGEND AND GENERAL NOTES, SEE SHEET 2.

GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

DEMOLITION PLAN ARTHUR AVENUE

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

NO.	DATE	REVISIONS	BY

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

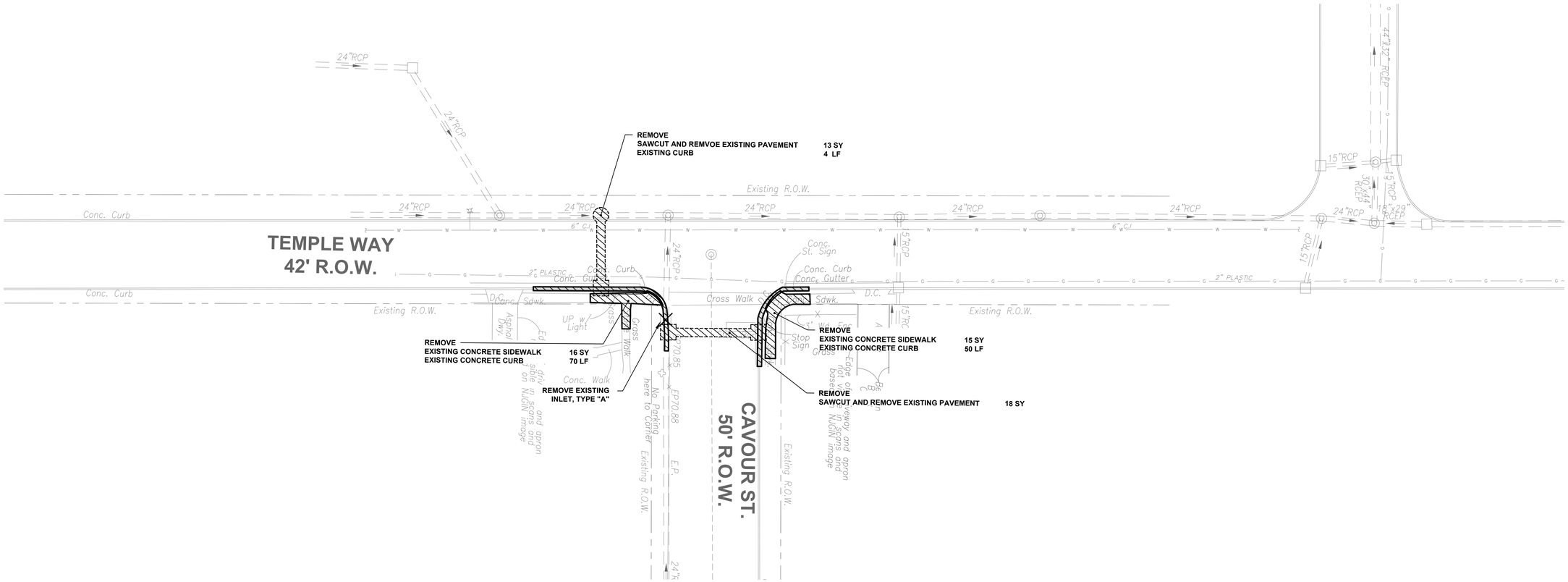
STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1" = 20'	9/14/2023
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JE	LM

SHEET NO. 15 OF 62

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TOWNSHIP OF WOODBRIDGE **MIDDLESEX COUNTY**



NOTES :

1. FOR LEGEND AND GENERAL NOTES, SEE SHEET 2.

GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

DEMOLITION PLAN TEMPLE WAY

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

NO.	DATE	REVISIONS	BY

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1" = 20'	9/14/2023
DESIGNED: JE	CHECKED: LM

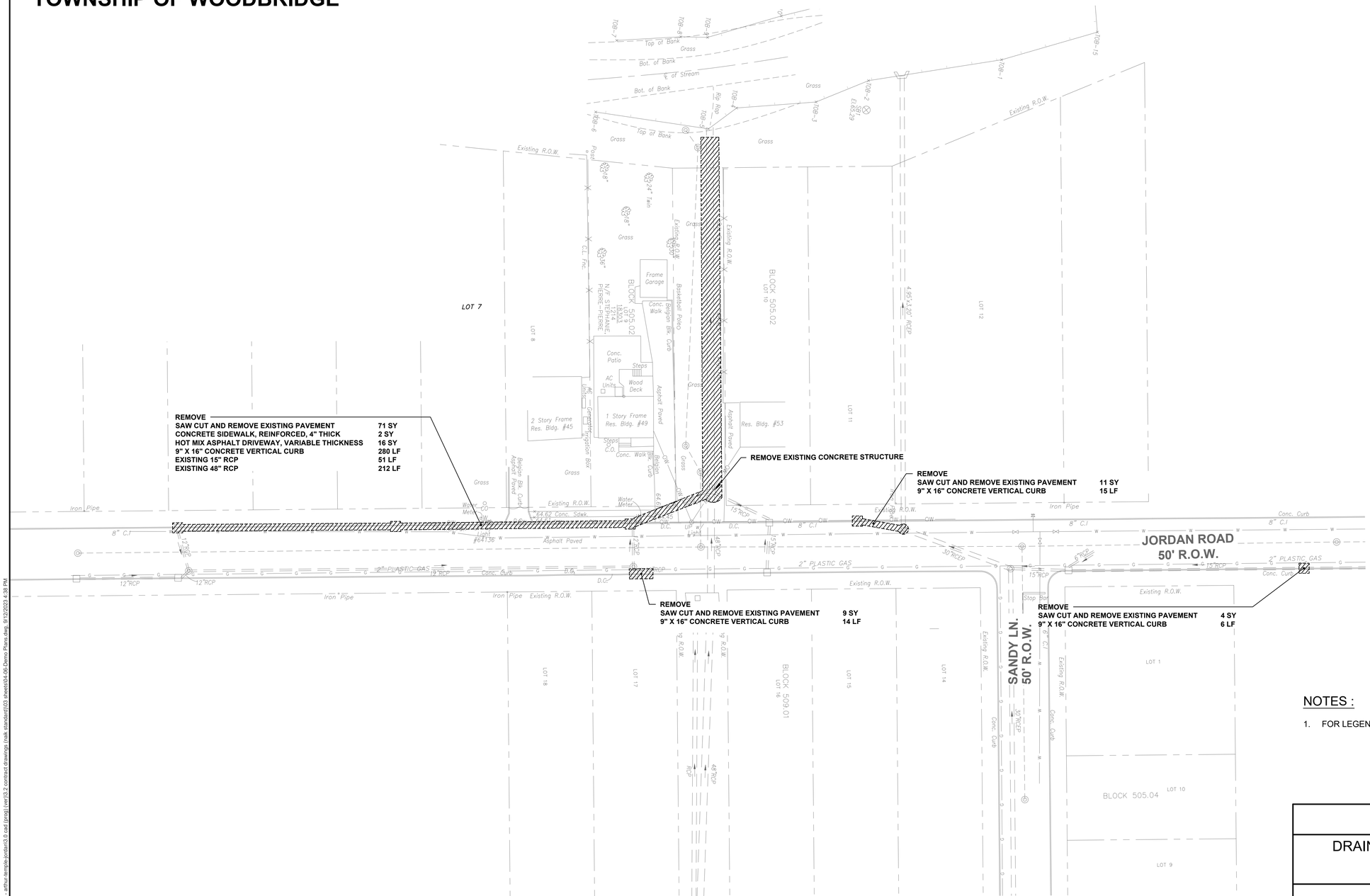
SHEET NO. 16 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY

NAD 83



NOTES :

1. FOR LEGEND AND GENERAL NOTES, SEE SHEET 2.

GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

DEMOLITION PLAN JORDAN AVENUE

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

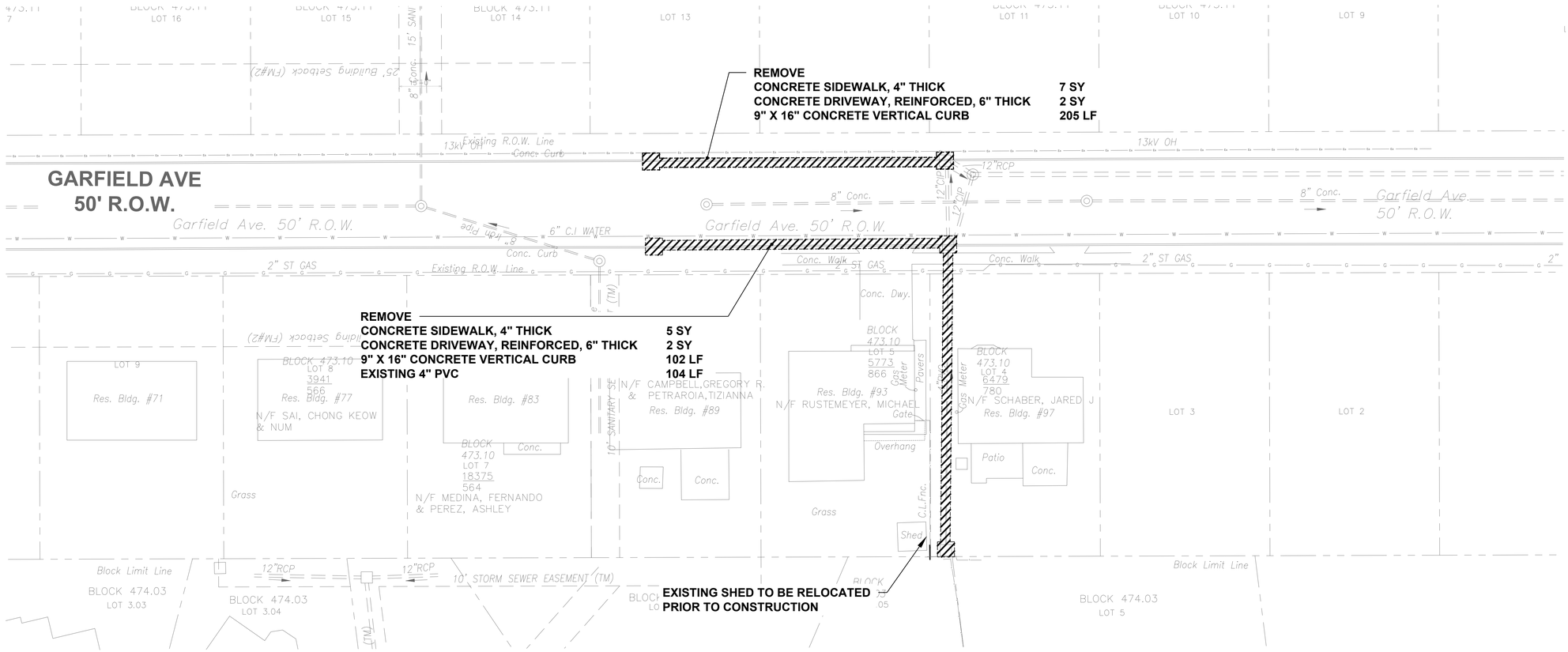
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JE	LM

SHEET NO. 17 OF 62

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TOWNSHIP OF WOODBRIDGE | **MIDDLESEX COUNTY**

NAD 83



GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

DEMOLITION PLAN GARFIELD AVENUE

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

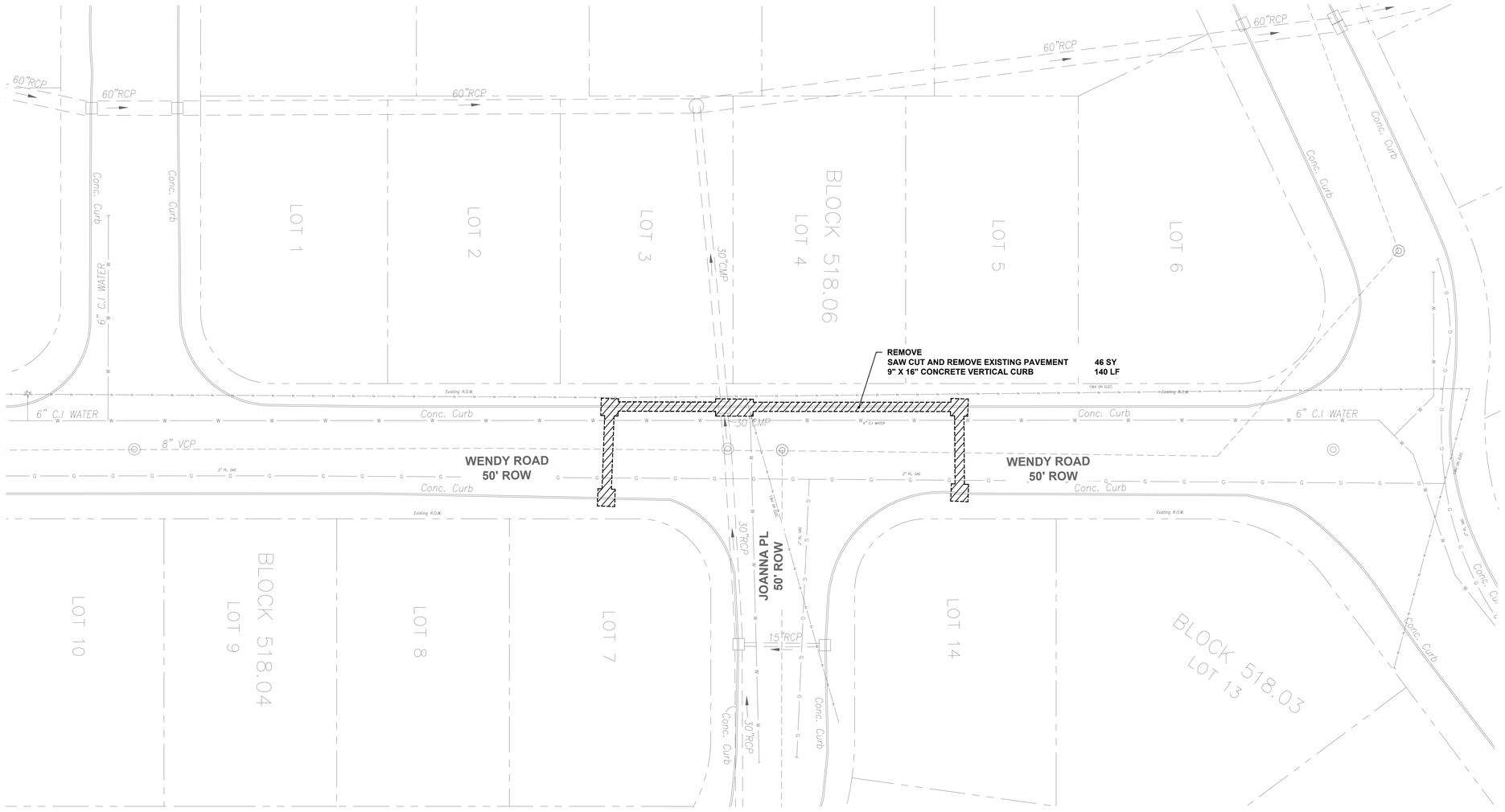
STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1" = 20'	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 18 OF 62

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TOWNSHIP OF WOODBRIDGE **MIDDLESEX COUNTY**



GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

DEMOLITION PLAN WENDY ROAD

NAIK CONSULTING GROUP, PC

Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

NO.	DATE	REVISIONS	BY

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

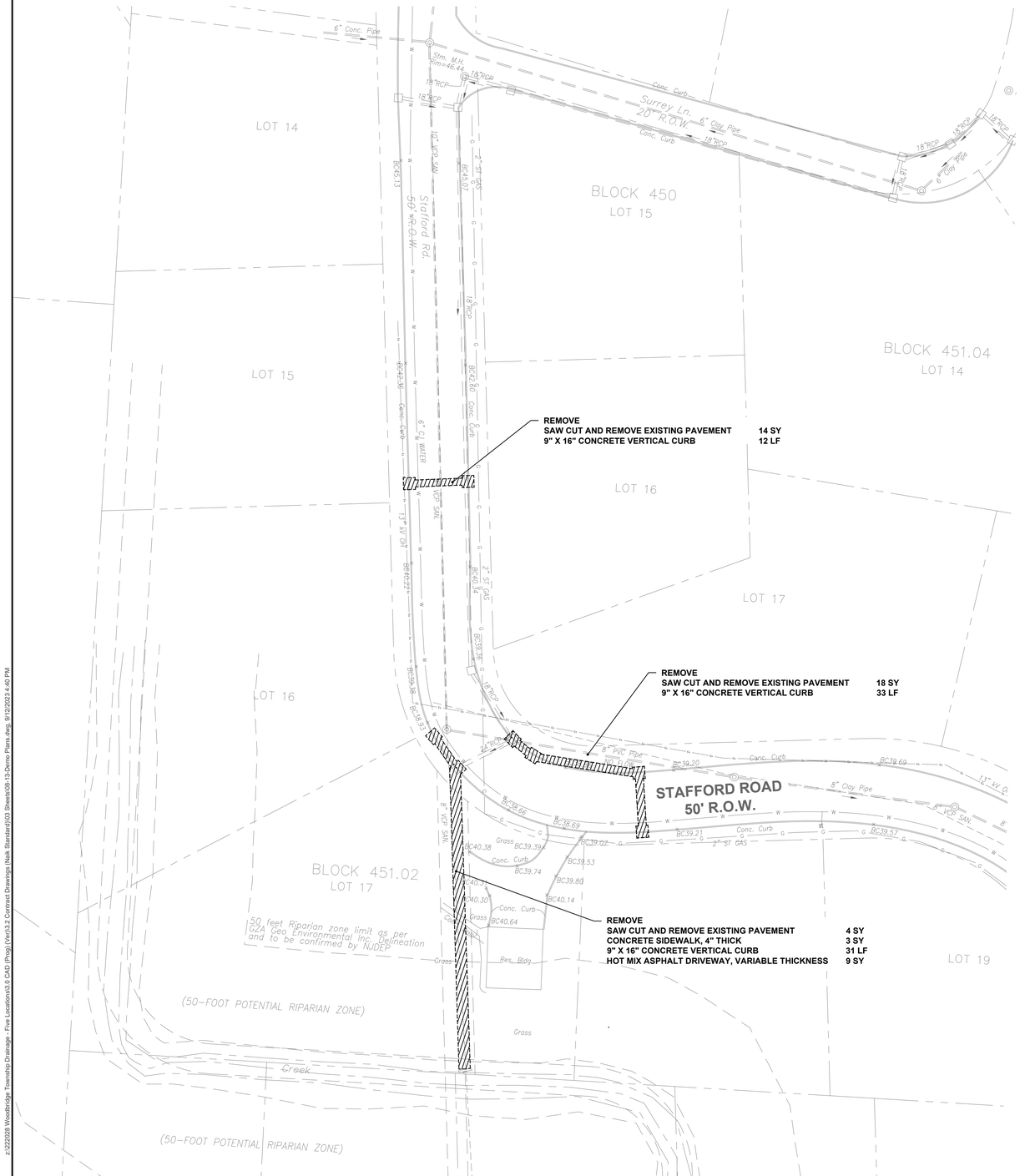
STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1" = 20'	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 19 OF 62

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TOWNSHIP OF WOODBRIDGE **MIDDLESEX COUNTY**



REMOVE
SAW CUT AND REMOVE EXISTING PAVEMENT **14 SY**
9" X 16" CONCRETE VERTICAL CURB **12 LF**

REMOVE
SAW CUT AND REMOVE EXISTING PAVEMENT **18 SY**
9" X 16" CONCRETE VERTICAL CURB **33 LF**

REMOVE
SAW CUT AND REMOVE EXISTING PAVEMENT **4 SY**
CONCRETE SIDEWALK, 4" THICK **3 SY**
9" X 16" CONCRETE VERTICAL CURB **31 LF**
HOT MIX ASPHALT DRIVEWAY, VARIABLE THICKNESS **9 SY**

NAD 83

GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

DEMOLITION PLAN STAFFORD ROAD

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

NO.	DATE	REVISIONS	BY

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

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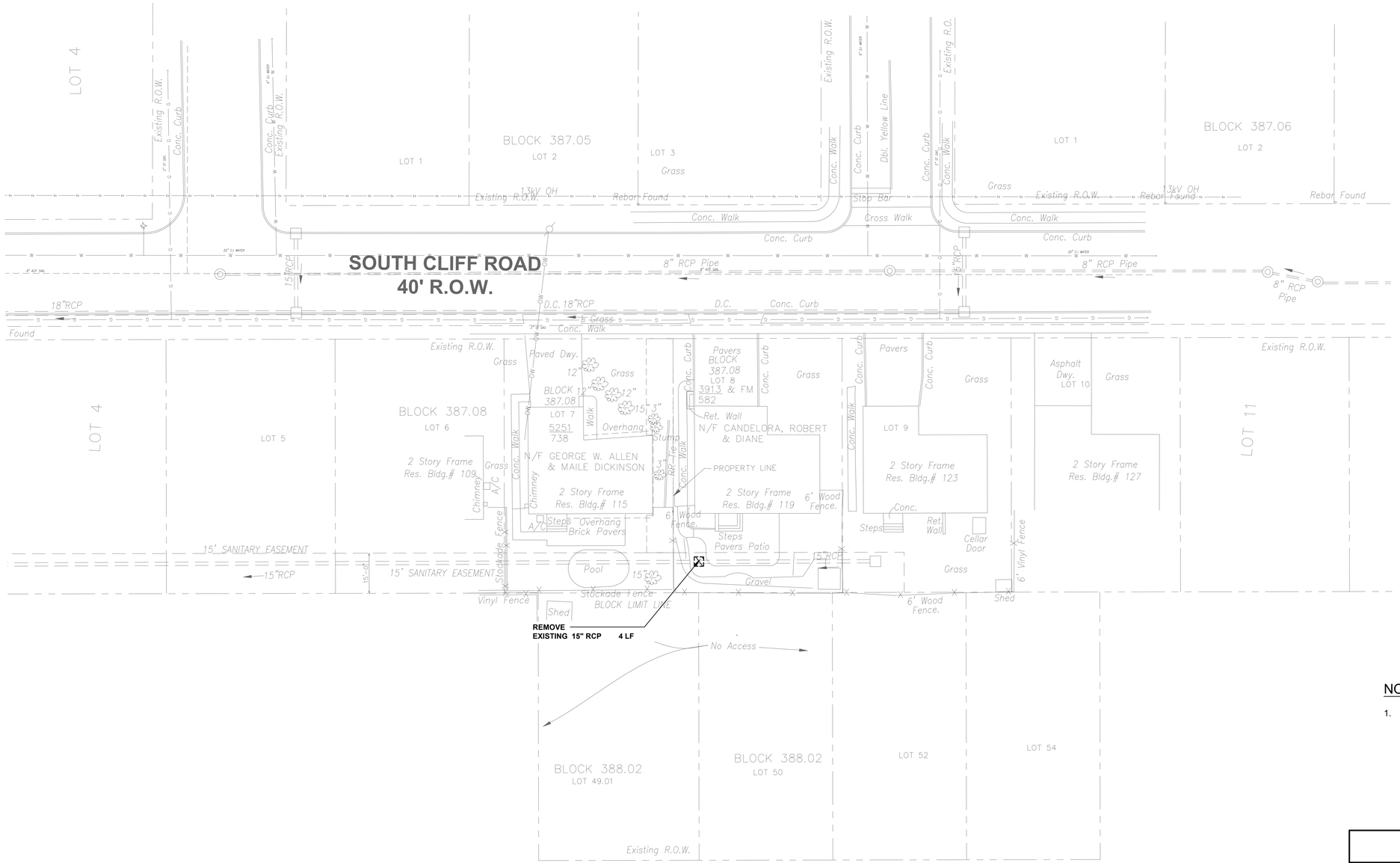
SHEET NO. 20 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY

NAD 83



NOTES:

1. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF PROPERTY ADJACENT TO A DEVELOPMENT OR OFFSITE IMPROVEMENTS 30 DAYS PRIOR TO COMMENCEMENT OF WORK UNLESS OTHERWISE DIRECTED BY THE TOWNSHIP.

GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

DEMOLITION PLAN SOUTH CLIFF ROAD

NAIK CONSULTING GROUP, PC
Metroplex Plaza.
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY
LINDSAY A. MAGUIRE
No. GE58958
LICENSED PROFESSIONAL ENGINEER

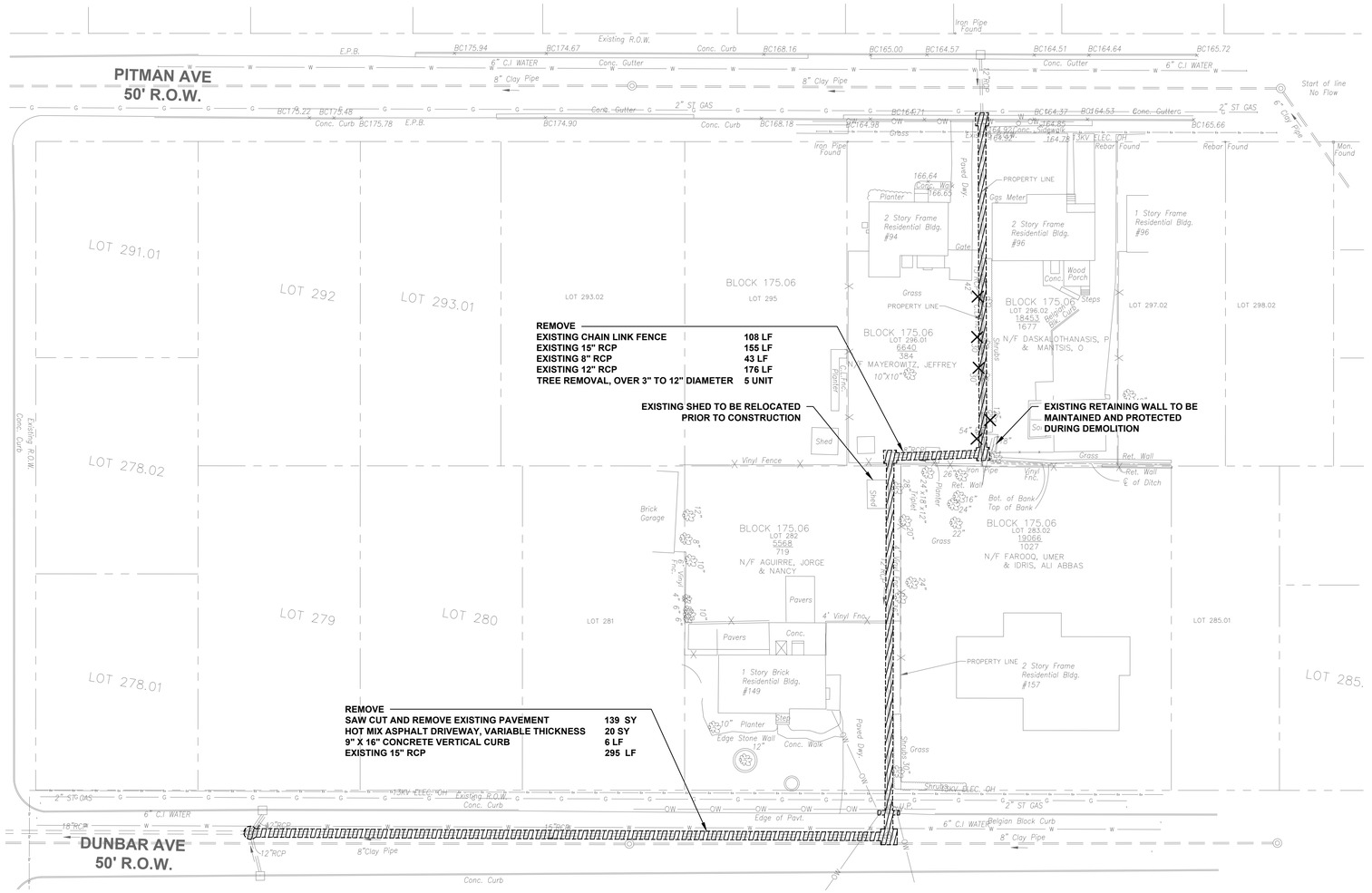
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SHEET NO. 21 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY



NAD 83

GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

DEMOLITION PLAN PITMAN AVENUE

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

NO.	DATE	REVISIONS	BY

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

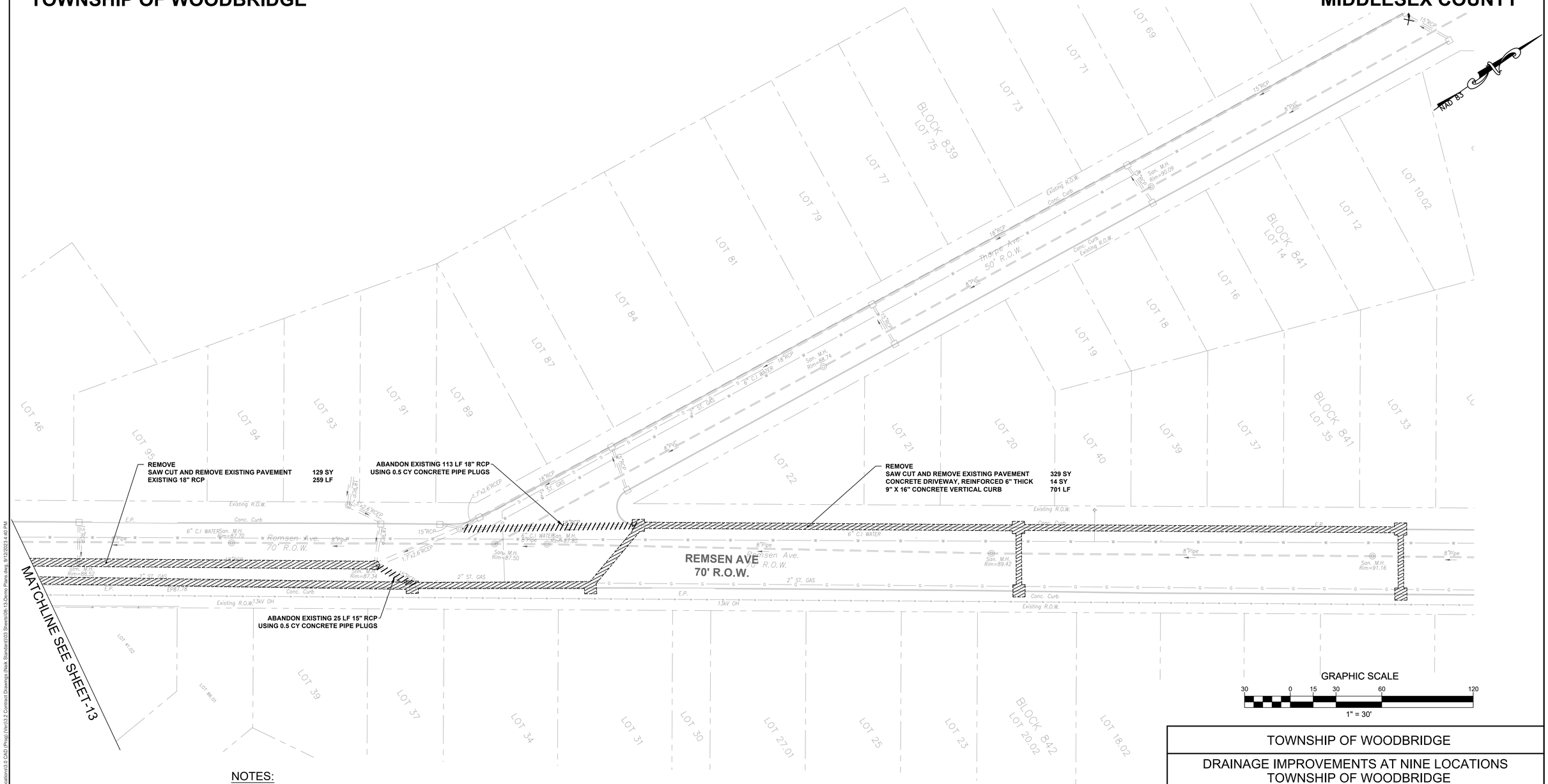
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JE	LM

SHEET NO. 22 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY



REMOVE
SAW CUT AND REMOVE EXISTING PAVEMENT 129 SY
EXISTING 18" RCP 259 LF

ABANDON EXISTING 113 LF 18" RCP
USING 0.5 CY CONCRETE PIPE PLUGS

ABANDON EXISTING 25 LF 15" RCP
USING 0.5 CY CONCRETE PIPE PLUGS

REMOVE
SAW CUT AND REMOVE EXISTING PAVEMENT 329 SY
CONCRETE DRIVEWAY, REINFORCED 6" THICK 14 SY
9" X 16" CONCRETE VERTICAL CURB 701 LF

GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

NOTES:

1. CONCRETE PIPE PLUGS TO BE PAID FOR UNDER CLEARING SITE.
2. CHANGES OF PIPE INVERTS NOT EXCEEDING PLUS OR MINUS ONE (1) FOOT WILL NOT BE CONSIDERED AS A BASIS FOR ADDITIONAL COMPENSATION FOR THE PERTINENT PIPE BID ITEM OR FOR MODIFICATION OF PRECAST STRUCTURES.
3. PIPE LENGTHS AND SLOPES DEPICTED ON THE PLAN AND PROFILE SHEETS ARE MEASURED FROM CENTERLINE OF STRUCTURE TO CENTERLINE OF STRUCTURE. MEASUREMENT OF DRAINAGE PAYMENT SHALL BE DETERMINED FROM ACTUAL LENGTHS INSTALLED.
4. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF PROPERTY ADJACENT TO A DEVELOPMENT OR OFFSITE IMPROVEMENTS 30 DAYS PRIOR TO COMMENCEMENT OF WORK UNLESS OTHERWISE DIRECTED BY THE TOWNSHIP.

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

DEMOLITION PLAN REMSEN AVENUE

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

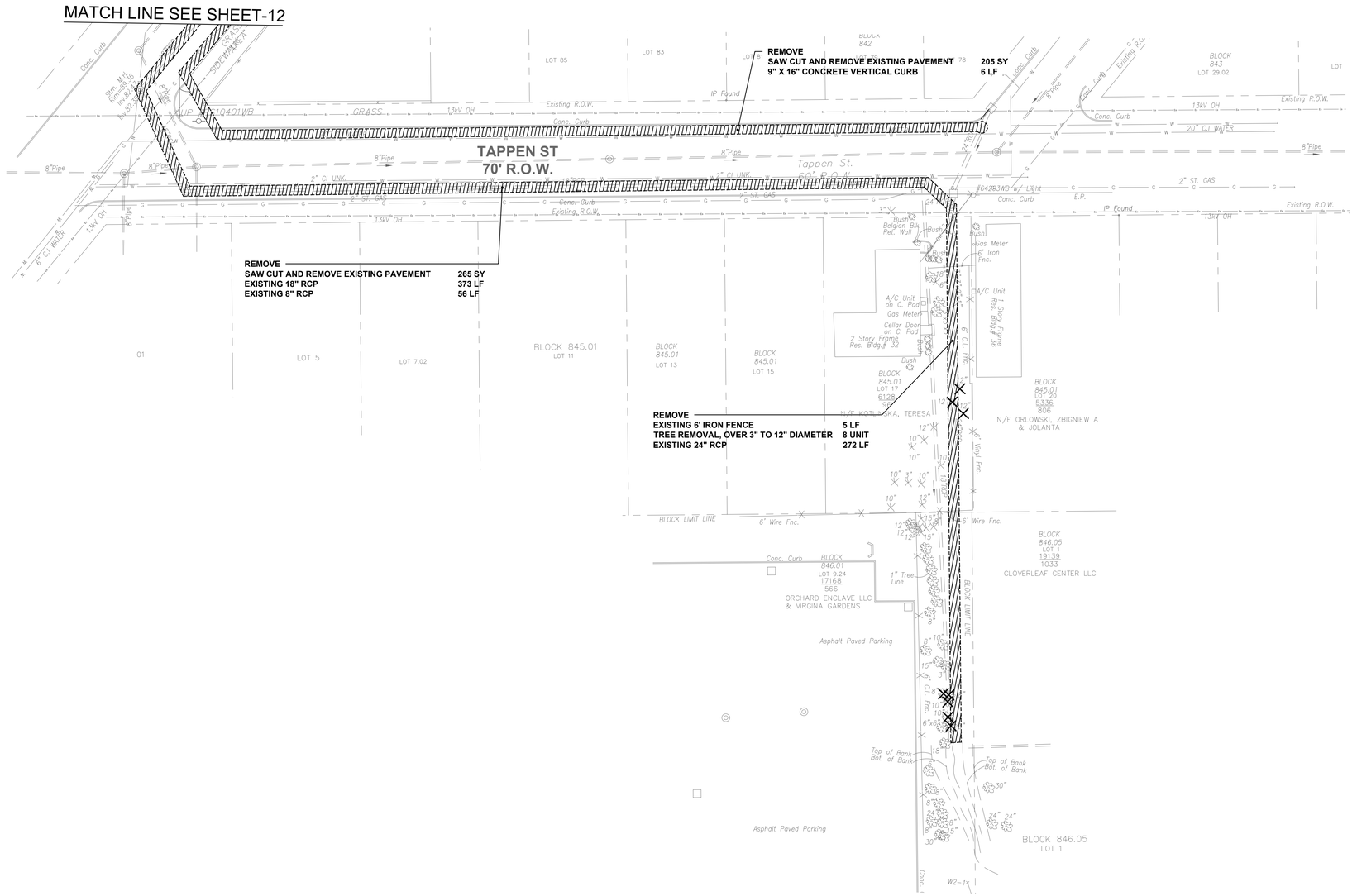
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JE	LM

SHEET NO. 23 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY



NOTES:

1. CHANGES OF PIPE INVERTS NOT EXCEEDING PLUS OR MINUS ONE (1) FOOT WILL NOT BE CONSIDERED AS A BASIS FOR ADDITIONAL COMPENSATION FOR THE PERTINENT PIPE BID ITEM OR FOR MODIFICATION OF PRECAST STRUCTURES.
2. PIPE LENGTHS AND SLOPES DEPICTED ON THE PLAN AND PROFILE SHEETS ARE MEASURED FROM CENTERLINE OF STRUCTURE TO CENTERLINE OF STRUCTURE. MEASUREMENT OF DRAINAGE PAYMENT SHALL BE DETERMINED FROM ACTUAL LENGTHS INSTALLED.
3. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF PROPERTY ADJACENT TO A DEVELOPMENT OR OFFSITE IMPROVEMENTS 30 DAYS PRIOR TO COMMENCEMENT OF WORK UNLESS OTHERWISE DIRECTED BY THE TOWNSHIP.

GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

UTILITY DEMOLITION PLAN TAPPEN STREET

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

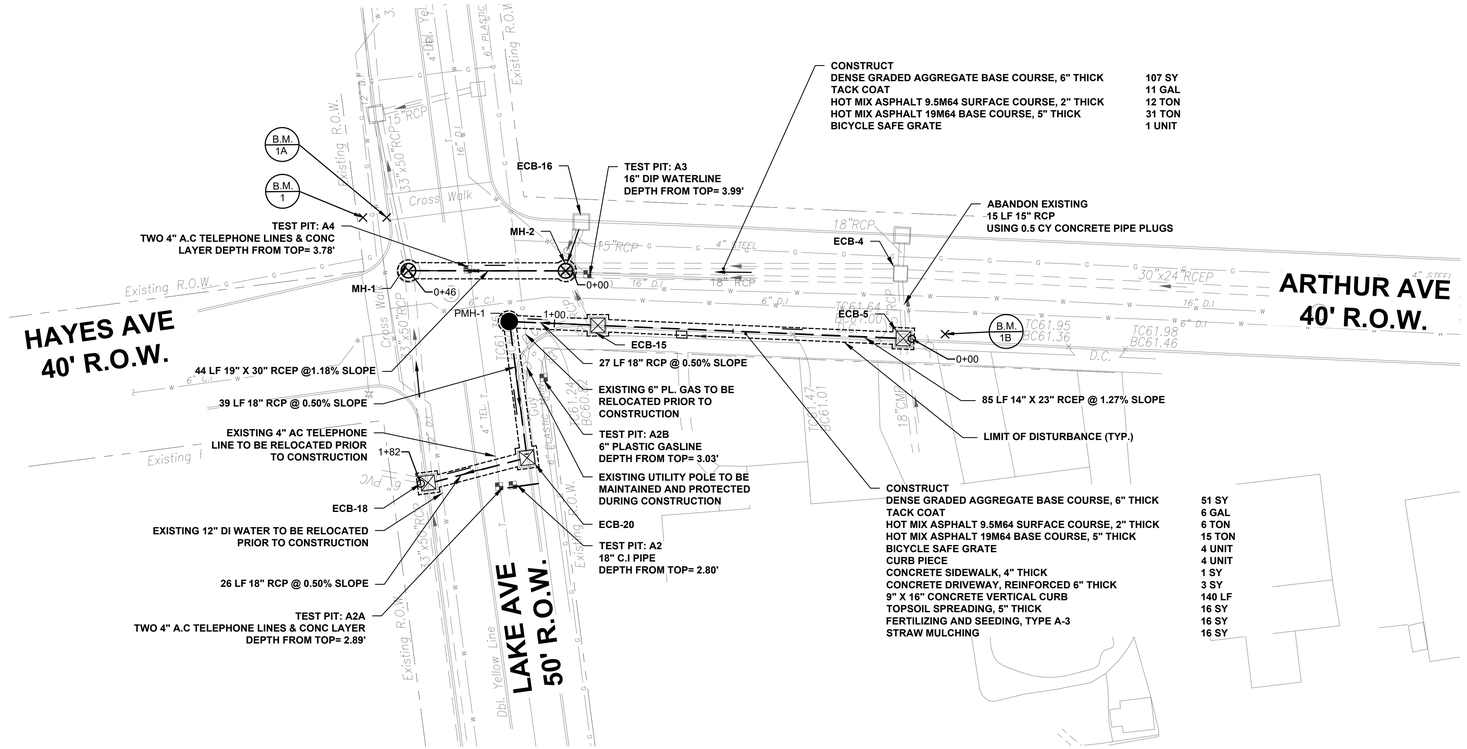
STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1" = 30'	9/14/2023
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SHEET NO. 24 OF 62	

Z:\22\2028 Woodbridge Township Drainage - Five Locations\5.0 CAD (Prog) (Ver)\3.2 Contract Drawings (Naik Standard)\03 Sheets\08-13-Demo Plans.dwg, 9/12/2023 4:40 PM

TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY



NAD 83

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
15	DENSE GRADED AGGREGATE BASE COURSE, 6" THICK	SY	158
17	TACK COAT	GAL	17
18	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	18
19	HOT MIX ASPHALT 19M64 BASE COURSE, 5" THICK	TON	46
23	18" REINFORCED CONCRETE PIPE, CLASS V	LF	92
29	19" X 30" REINFORCED CONCRETE ELLIPTICAL PIPE, CLASS V	LF	44
30	14" X 23" REINFORCED CONCRETE ELLIPTICAL PIPE, CLASS V	LF	85
35	MANHOLE, 4' DIAMETER	UNIT	1
39	RECONSTRUCTED INLET, TYPE B, USING EXISTING CASTING	UNIT	4
40	RECONSTRUCTED INLET, TYPE E, USING EXISTING CASTING	UNIT	1
41	RECONSTRUCTED MANHOLE, USING EXISTING CASTING	UNIT	2
42	BICYCLE SAFE GRATE	UNIT	5
43	CURB PIECE	UNIT	4
50	CONCRETE SIDEWALK, 4" THICK	SY	1
52	CONCRETE DRIVEWAY, REINFORCED, 6" THICK	SY	3
54	9" X 16" CONCRETE VERTICAL CURB	LF	140
58	TOPSOIL SPREADING, 5" THICK	SY	16
59	FERTILIZING AND SEEDING, TYPE A-3	SY	16
60	STRAW MULCHING	SY	16

BENCHMARKS:

B.M.1 - MAG. NAIL (MAGNETIC NAIL) ARTHUR AVENUE - Elev. 60.806
B.M.1A - MAG. NAIL (MAGNETIC NAIL) ARTHUR AVENUE - Elev. 60.837
B.M.1B - MAG. NAIL (MAGNETIC NAIL) ARTHUR AVENUE - Elev. 61.407

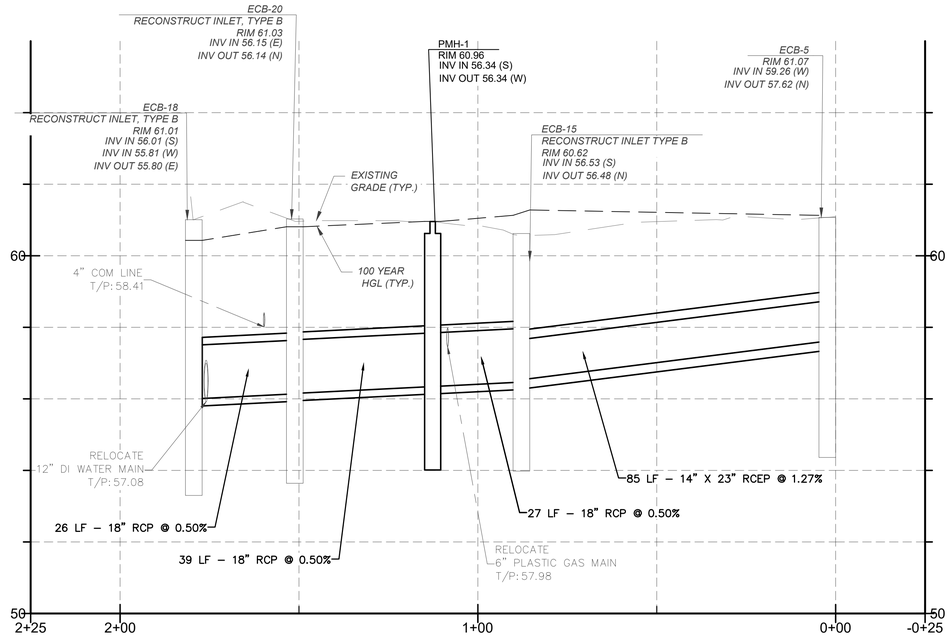
NOTES :

1. CONCRETE PIPE PLUGS TO BE PAID FOR UNDER CLEARING SITE.
2. CHANGES OF PIPE INVERTS NOT EXCEEDING PLUS OR MINUS ONE (1) FOOT WILL NOT BE CONSIDERED AS A BASIS FOR ADDITIONAL COMPENSATION FOR THE PERTINENT PIPE BID ITEM OR FOR MODIFICATION OF PRECAST STRUCTURES.
3. PIPE LENGTHS AND SLOPES DEPICTED ON THE PLAN AND PROFILE SHEETS ARE MEASURED FROM CENTERLINE OF STRUCTURE TO CENTERLINE OF STRUCTURE. MEASUREMENT OF DRAINAGE PAYMENT SHALL BE DETERMINED FROM ACTUAL LENGTHS INSTALLED.
4. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF PROPERTY ADJACENT TO A DEVELOPMENT OR OFFSITE IMPROVEMENTS 30 DAYS PRIOR TO COMMENCEMENT OF WORK UNLESS OTHERWISE DIRECTED BY THE TOWNSHIP.

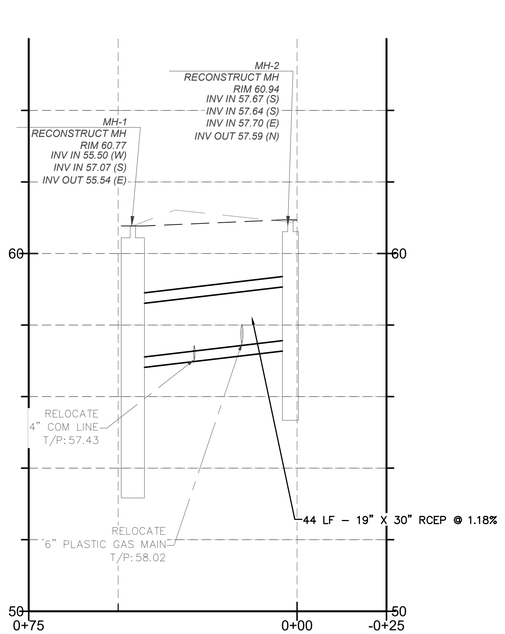
GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'



ECB-5 TO ECB-18
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'



MH-1 TO ECB-3
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION PLAN ARTHUR AVENUE

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

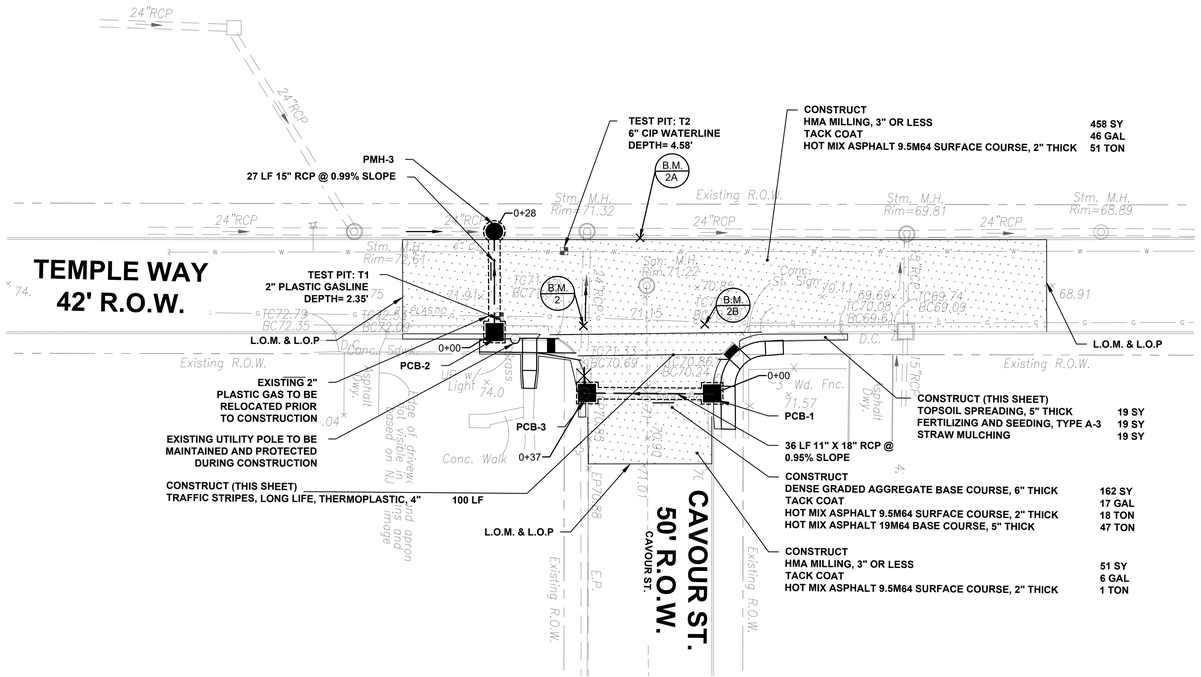
STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1" = 20'	9/14/2023
DESIGNED: JE	CHECKED: LM
SHEET NO. 25 OF 62	

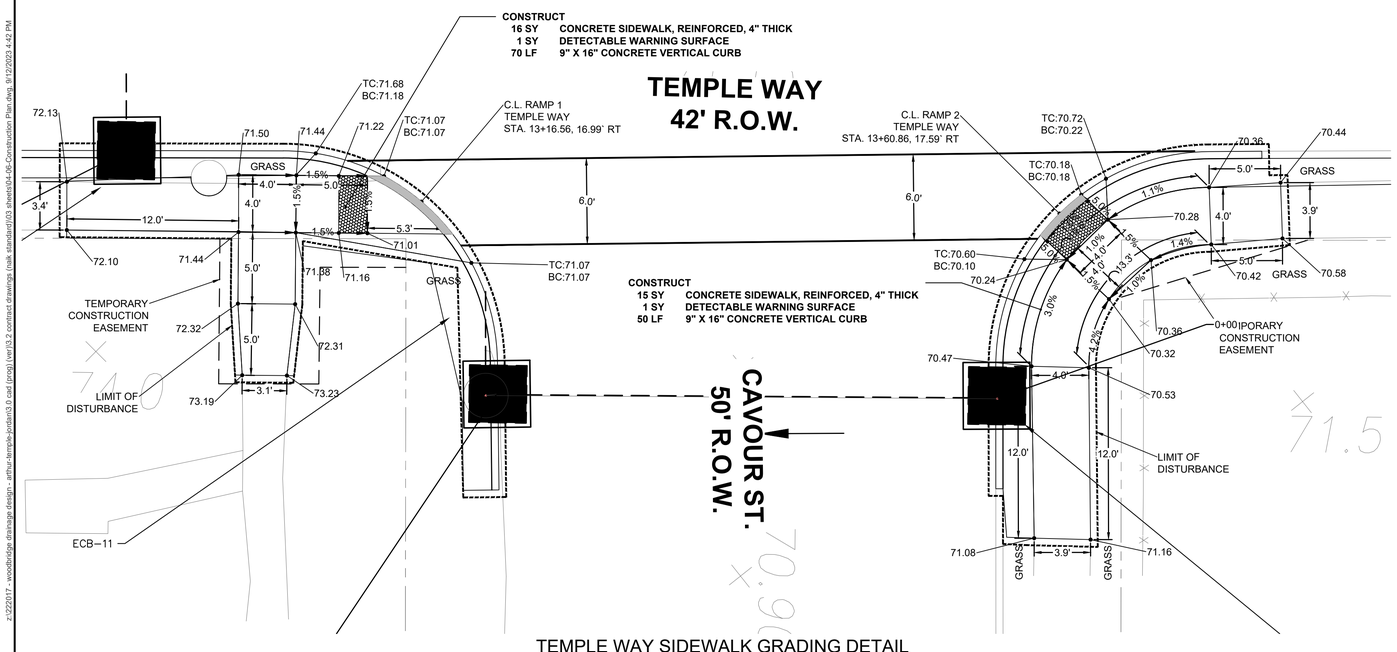
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TOWNSHIP OF WOODBRIDGE

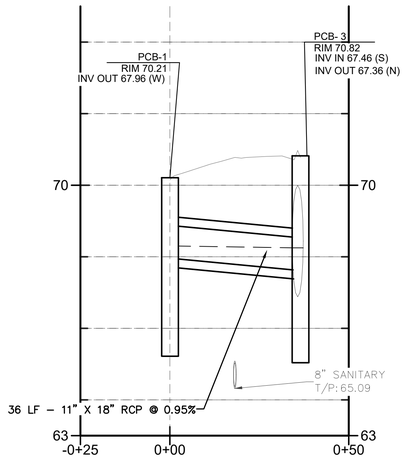
MIDDLESEX COUNTY



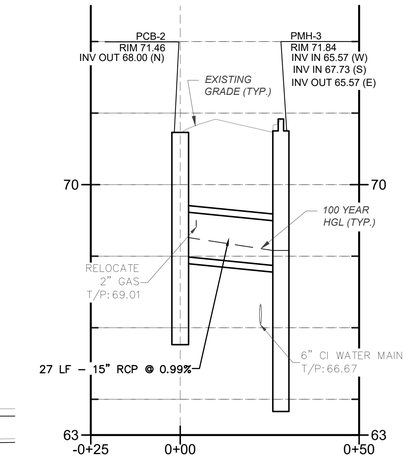
TEMPLE WAY CONSTRUCTION PLAN
SCALE 1" = 20'



TEMPLE WAY SIDEWALK GRADING DETAIL
SCALE 1" = 5'



PCB-1 TO PCB-3
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'



PCB-2 TO PMH-3
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
15	DENSE GRADED AGGREGATE BASE COURSE, 6" THICK	SY	162
16	HMA MILLING, 3" OR LESS	SY	509
17	TACK COAT	GAL	69
18	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	70
19	HOT MIX ASPHALT 19M64 BASE COURSE, 5" THICK	TON	47
22	15" REINFORCED CONCRETE PIPE, CLASS V	LF	27
31	11" X 18" REINFORCED CONCRETE ELLIPTICAL PIPE, CLASS V	LF	36
34	INLET, TYPE B	UNIT	3
35	MANHOLE, 4' DIAMETER	UNIT	1
50	CONCRETE SIDEWALK, 4" THICK	SY	31
53	DETECTABLE WARNING SURFACE	SY	2
54	9" X 16" CONCRETE VERTICAL CURB	LF	120
56	TRAFFIC STRIPES, LONG-LIFE, THERMOPLASTIC, 4" THICK	LF	100
58	TOPSOIL SPREADING, 5" THICK	SY	19
59	FERTILIZING AND SEEDING, TYPE A-3	SY	19
60	STRAW MULCHING	SY	19

NOTES:

1. CHANGES OF PIPE INVERTS NOT EXCEEDING PLUS OR MINUS ONE (1) FOOT WILL NOT BE CONSIDERED AS A BASIS FOR ADDITIONAL COMPENSATION FOR THE PERTINENT PIPE BID ITEM OR FOR MODIFICATION OF PRECAST STRUCTURES.
2. PIPE LENGTHS AND SLOPES DEPICTED ON THE PLAN AND PROFILE SHEETS ARE MEASURED FROM CENTERLINE OF STRUCTURE TO CENTERLINE OF STRUCTURE. MEASUREMENT OF DRAINAGE PAYMENT SHALL BE DETERMINED FROM ACTUAL LENGTHS INSTALLED.
3. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF PROPERTY ADJACENT TO A DEVELOPMENT OR OFFSITE IMPROVEMENTS 30 DAYS PRIOR TO COMMENCEMENT OF WORK UNLESS OTHERWISE DIRECTED BY THE TOWNSHIP.

BENCHMARKS:

B.M. 2 - MAG. NAIL (MAGNETIC NAIL) TEMPLE WAY BL. STA. 13 + 20.56', 11.503' Rt. - Elev. 71.062
B.M. 2A - MAG. NAIL (MAGNETIC NAIL) TEMPLE WAY BL. STA. 13 + 36.46', 13.031' Lt. - Elev. 71.058
B.M. 2B - MAG. NAIL (MAGNETIC NAIL) TEMPLE WAY BL. STA. 13 + 54.48', 11.077' Rt. - Elev. 70.472

GRAPHIC SCALE
20 0 10 20 40 80
1" = 20'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION PLAN TEMPLE WAY

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1" = 20'	9/14/2023
DESIGNED:	CHECKED:
JE	LM

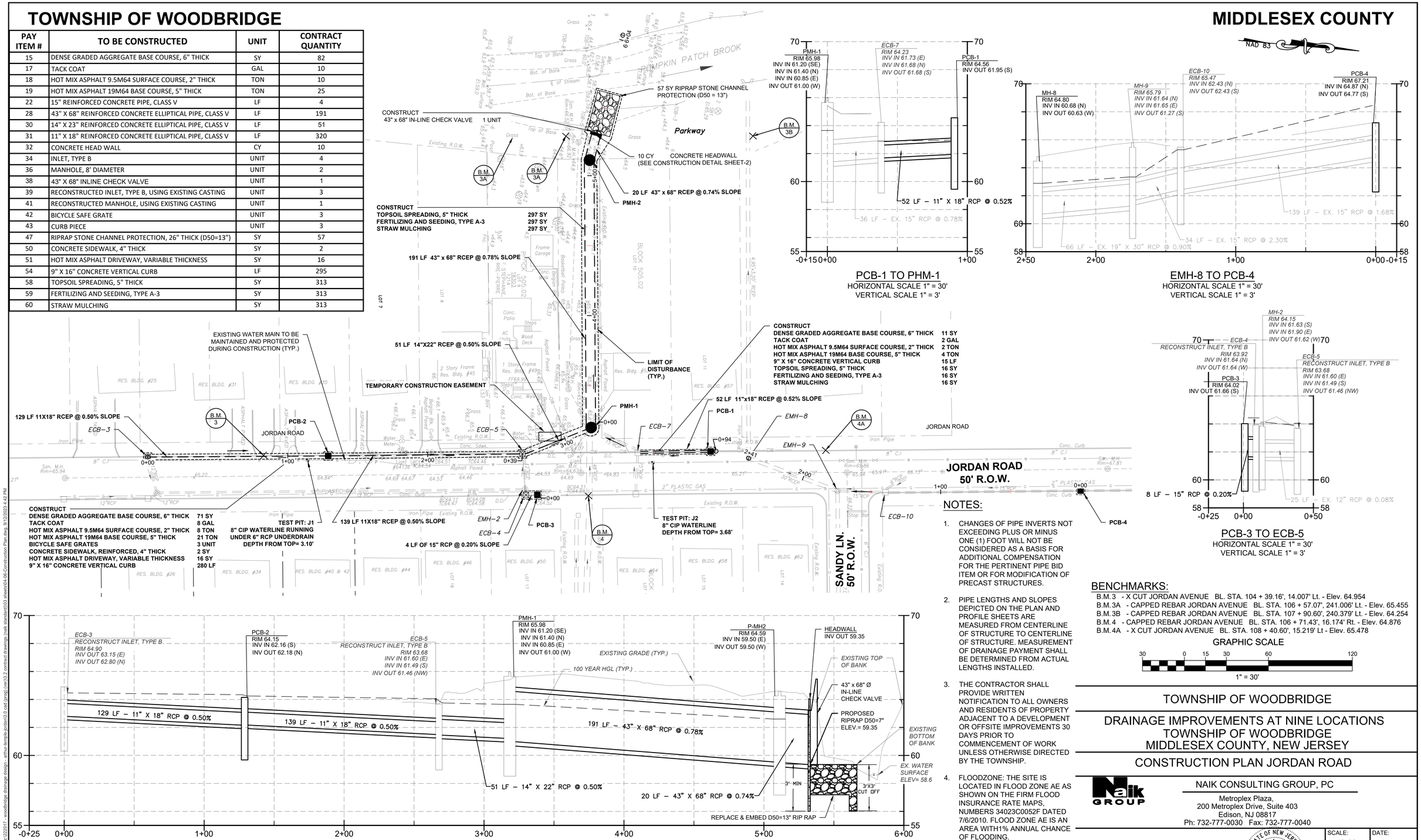
SHEET NO. 26 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
15	DENSE GRADED AGGREGATE BASE COURSE, 6" THICK	SY	82
17	TACK COAT	GAL	10
18	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	10
19	HOT MIX ASPHALT 19M64 BASE COURSE, 5" THICK	TON	25
22	15" REINFORCED CONCRETE PIPE, CLASS V	LF	4
28	43" X 68" REINFORCED CONCRETE ELLIPTICAL PIPE, CLASS V	LF	191
30	14" X 23" REINFORCED CONCRETE ELLIPTICAL PIPE, CLASS V	LF	51
31	11" X 18" REINFORCED CONCRETE ELLIPTICAL PIPE, CLASS V	LF	320
32	CONCRETE HEAD WALL	CY	10
34	INLET, TYPE B	UNIT	4
36	MANHOLE, 8' DIAMETER	UNIT	2
38	43" X 68" INLINE CHECK VALVE	UNIT	1
39	RECONSTRUCTED INLET, TYPE B, USING EXISTING CASTING	UNIT	3
41	RECONSTRUCTED MANHOLE, USING EXISTING CASTING	UNIT	1
42	BICYCLE SAFE GRATE	UNIT	3
43	CURB PIECE	UNIT	3
47	RIPRAP STONE CHANNEL PROTECTION, 26" THICK (D50=13")	SY	57
50	CONCRETE SIDEWALK, 4" THICK	SY	2
51	HOT MIX ASPHALT DRIVEWAY, VARIABLE THICKNESS	SY	16
54	9" X 16" CONCRETE VERTICAL CURB	LF	295
58	TOPSOIL SPREADING, 5" THICK	SY	313
59	FERTILIZING AND SEEDING, TYPE A-3	SY	313
60	STRAW MULCHING	SY	313



PCB-1 TO PHM-1
HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 3'

EMH-8 TO PCB-4
HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 3'

PCB-3 TO ECB-5
HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 3'

ECB-3 TO HEADWALL
HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 3'

NOTES:

1. CHANGES OF PIPE INVERTS NOT EXCEEDING PLUS OR MINUS ONE (1) FOOT WILL NOT BE CONSIDERED AS A BASIS FOR ADDITIONAL COMPENSATION FOR THE PERTINENT PIPE BID ITEM OR FOR MODIFICATION OF PRECAST STRUCTURES.
2. PIPE LENGTHS AND SLOPES DEPICTED ON THE PLAN AND PROFILE SHEETS ARE MEASURED FROM CENTERLINE OF STRUCTURE TO CENTERLINE OF STRUCTURE. MEASUREMENT OF DRAINAGE PAYMENT SHALL BE DETERMINED FROM ACTUAL LENGTHS INSTALLED.
3. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF PROPERTY ADJACENT TO A DEVELOPMENT OR OFFSITE IMPROVEMENTS 30 DAYS PRIOR TO COMMENCEMENT OF WORK UNLESS OTHERWISE DIRECTED BY THE TOWNSHIP.
4. FLOODZONE: THE SITE IS LOCATED IN FLOOD ZONE AE AS SHOWN ON THE FIRM FLOOD INSURANCE RATE MAPS, NUMBERS 34023C0052F DATED 7/6/2010. FLOOD ZONE AE IS AN AREA WITH1% ANNUAL CHANCE OF FLOODING.

BENCHMARKS:

B.M.3 - X CUT JORDAN AVENUE BL. STA. 104 + 39.16', 14.007' Lt. - Elev. 64.954
B.M.3A - CAPPED REBAR JORDAN AVENUE BL. STA. 106 + 57.07', 241.006' Lt. - Elev. 65.455
B.M.3B - CAPPED REBAR JORDAN AVENUE BL. STA. 107 + 90.60', 240.379' Lt. - Elev. 64.254
B.M.4 - CAPPED REBAR JORDAN AVENUE BL. STA. 106 + 71.43', 16.174' Rt. - Elev. 64.876
B.M.4A - X CUT JORDAN AVENUE BL. STA. 108 + 40.60', 15.219' Lt - Elev. 65.478

GRAPHIC SCALE

30 0 15 30 60 120
1" = 30'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION PLAN JORDAN ROAD

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

NO.	DATE	REVISIONS	BY

SCALE:	DATE:
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DESIGNED:	CHECKED:
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SHEET NO. 27 OF 62	

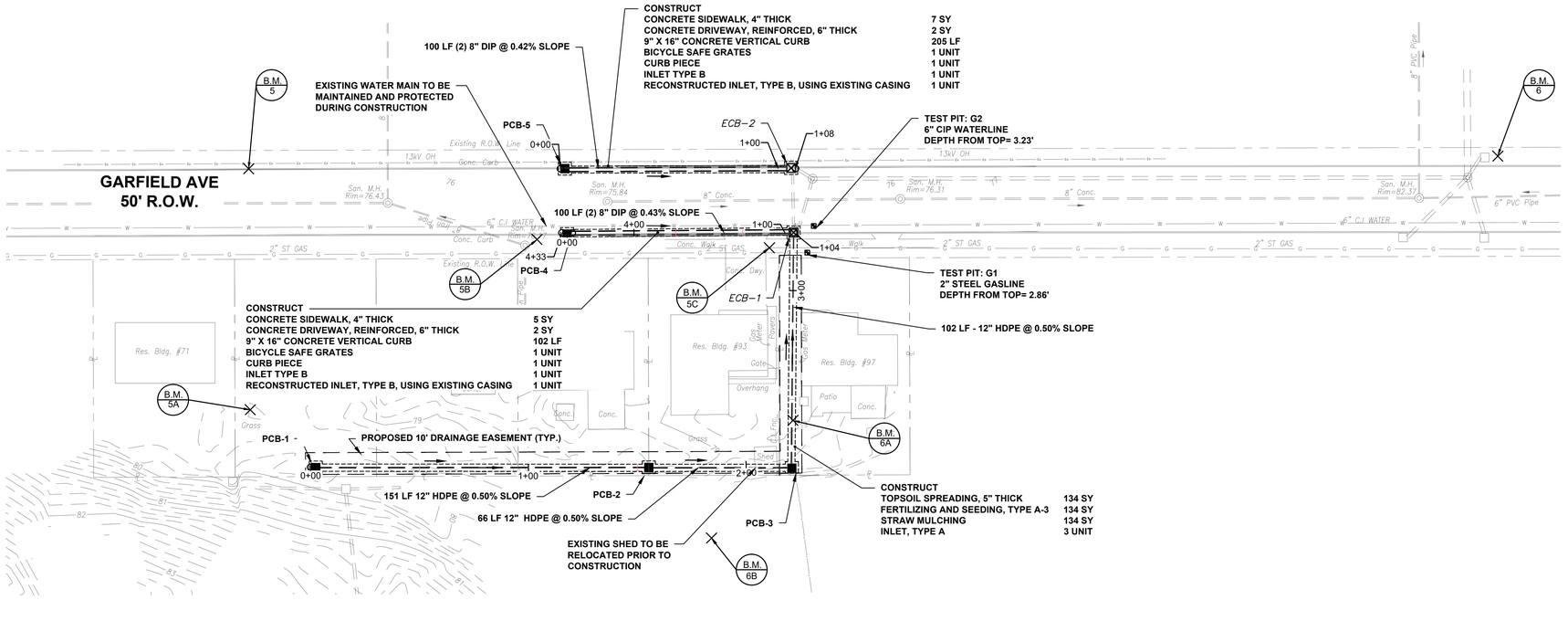
STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

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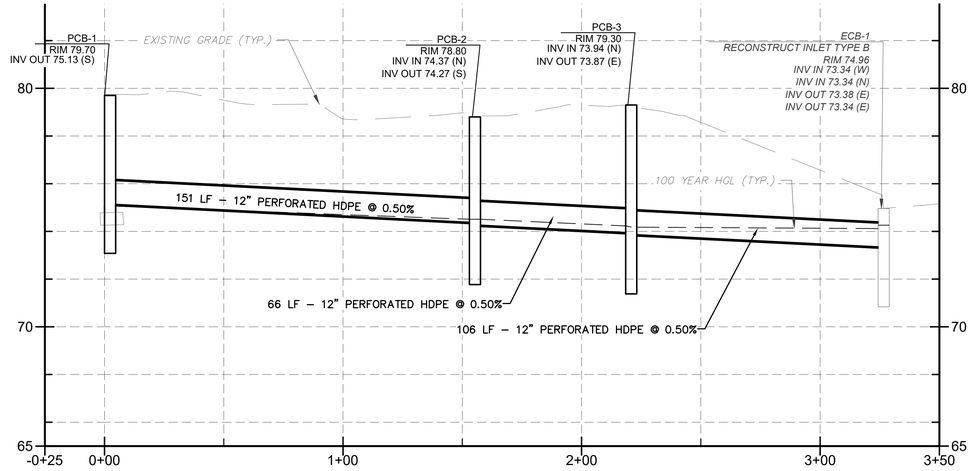
TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY

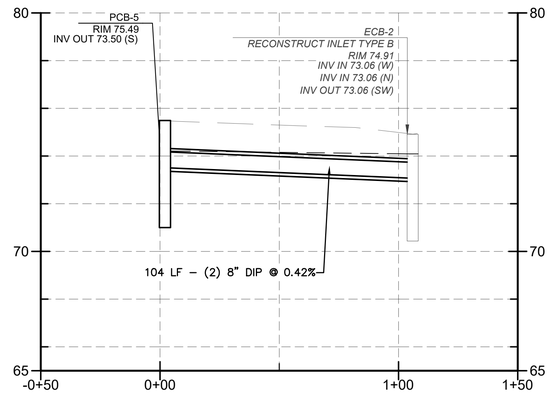
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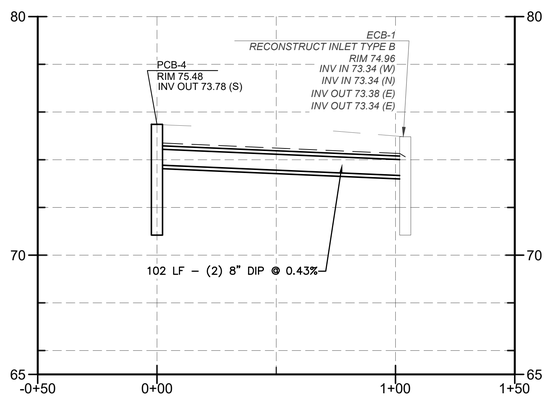
PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
15	DENSE GRADED AGGREGATE BASE COURSE, 6" THICK	SY	185
17	TACK COAT	GAL	19
18	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	21
19	HOT MIX ASPHALT 19M64 BASE COURSE, 5" THICK	TON	54
27	12" PERFORATED HIGH DENSITY POLYETHYLENE PIPE	LF	323
33	INLET, TYPE A	UNIT	3
34	INLET, TYPE B	UNIT	2
39	RECONSTRUCTED INLET, TYPE B, USING EXISTING CASTING	UNIT	2
41	RECONSTRUCTED MANHOLE, USING EXISTING CASTING	UNIT	2
42	BICYCLE SAFE GRATE	UNIT	2
43	CURB PIECE	UNIT	2
48	RESET FENCE	LF	5
50	CONCRETE SIDEWALK, 4" THICK	SY	12
52	CONCRETE DRIVEWAY, REINFORCED, 6" THICK	SY	4
54	9" X 16" CONCRETE VERTICAL CURB	LF	307
58	TOPSOIL SPREADING, 5" THICK	SY	134
59	FERTILIZING AND SEEDING, TYPE A-3	SY	134
60	STRAW MULCHING	SY	134
61	8" DUCTILE IRON PIPE	LF	412



PCB-1 TO ECB-1
HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 3'



PCB-5 TO ECB-2
HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 3'



PCB-4 TO ECB-1
HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 3'

GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

NOTES:

1. CHANGES OF PIPE INVERTS NOT EXCEEDING PLUS OR MINUS ONE (1) FOOT WILL NOT BE CONSIDERED AS A BASIS FOR ADDITIONAL COMPENSATION FOR THE PERTINENT PIPE BID ITEM OR FOR MODIFICATION OF PRECAST STRUCTURES.
2. PIPE LENGTHS AND SLOPES DEPICTED ON THE PLAN AND PROFILE SHEETS ARE MEASURED FROM CENTERLINE OF STRUCTURE TO CENTERLINE OF STRUCTURE. MEASUREMENT OF DRAINAGE PAYMENT SHALL BE DETERMINED FROM ACTUAL LENGTHS INSTALLED.
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BENCHMARKS:

B.M.5 - MAG. NAIL (MAGNETIC NAIL) GARFIELD AVENUE - Elev. 76.867
B.M.5A - CAPPED REBAR GARFIELD AVENUE - Elev. 79.631
B.M.5B - CAPPED REBAR GARFIELD AVENUE - Elev. 76.081
B.M.5C - MAG. NAIL (MAGNETIC NAIL) GARFIELD AVENUE - Elev. 76.027
B.M.6 - MAG. NAIL (MAGNETIC NAIL) GARFIELD AVENUE - Elev. 82.409
B.M.6A - HU WITH TAC. (WOOD STAKE,TEMPORARY) GARFIELD AVENUE - Elev. 79.180
B.M.6B - CAPPED REBAR GARFIELD AVENUE - Elev. 81.442
B.M.6C - X CUT GARFIELD AVENUE - Elev. 80.391

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION PLAN GARFIELD AVENUE

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

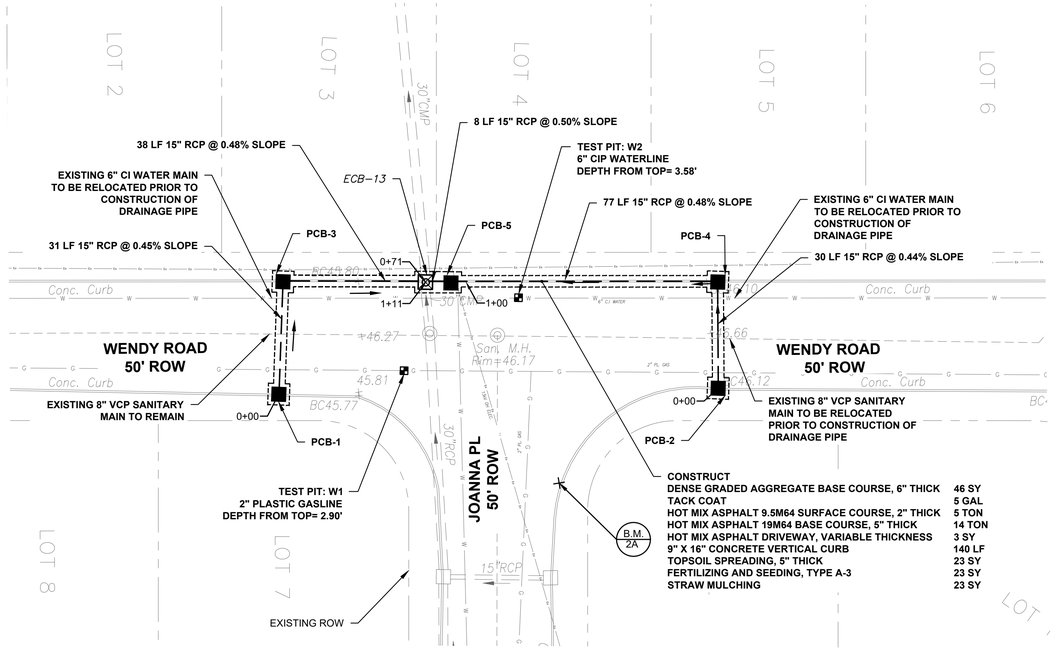
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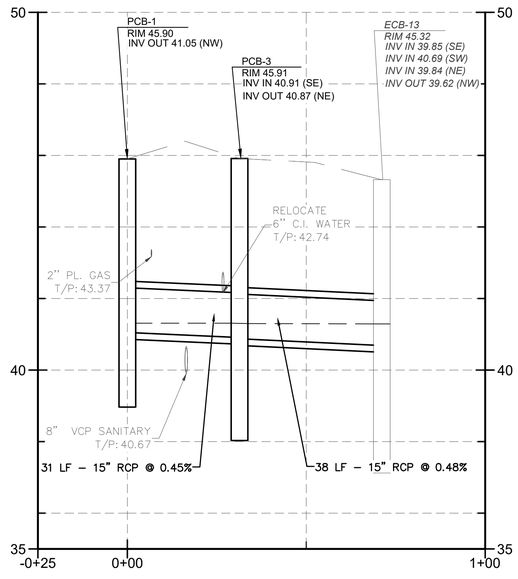
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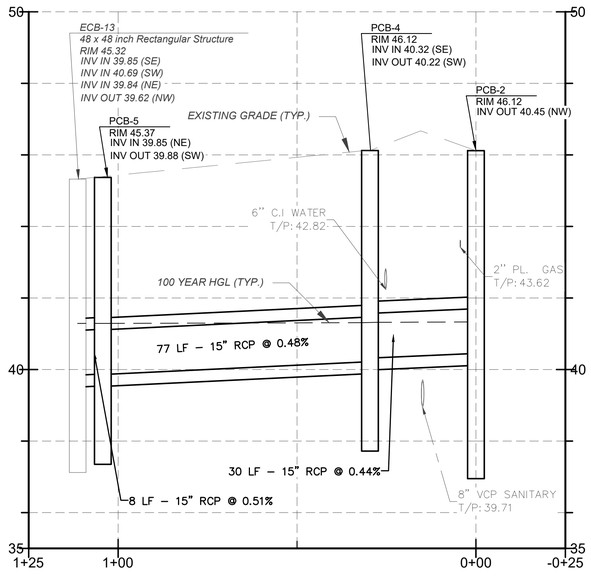
TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY





PCB-1 TO ECB-13
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'



ECB-13 TO PCB-2
HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

NOTES:

1. CHANGES OF PIPE INVERTS NOT EXCEEDING PLUS OR MINUS ONE (1) FOOT WILL NOT BE CONSIDERED AS A BASIS FOR ADDITIONAL COMPENSATION FOR THE PERTINENT PIPE BID ITEM OR FOR MODIFICATION OF PRECAST STRUCTURES.
2. PIPE LENGTHS AND SLOPES DEPICTED ON THE PLAN AND PROFILE SHEETS ARE MEASURED FROM CENTERLINE OF STRUCTURE TO CENTERLINE OF STRUCTURE. MEASUREMENT OF DRAINAGE PAYMENT SHALL BE DETERMINED FROM ACTUAL LENGTHS INSTALLED.
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BENCHMARKS:

B.M. 2A - HU WITH TAC. (WOOD STAKE, TEMPORARY) WENDY ROAD - Elev. 45.944

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
15	DENSE GRADED AGGREGATE BASE COURSE, 6" THICK	SY	46
17	TACK COAT	GAL	5
18	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	5
19	HOT MIX ASPHALT 19M64 BASE COURSE, 5" THICK	TON	14
22	15" REINFORCED CONCRETE PIPE, CLASS V	LF	184
34	INLET, TYPE B	UNIT	5
39	RECONSTRUCTED INLET, TYPE B, USING EXISTING CASTING	UNIT	1
42	BICYCLE SAFE GRATE	UNIT	1
43	CURB PIECE	UNIT	1
51	HOT MIX ASPHALT DRIVEWAY, VARIABLE THICKNESS	SY	3
54	9" X 16" CONCRETE VERTICAL CURB	LF	140
58	TOPSOIL SPREADING, 5" THICK	SY	23
59	FERTILIZING AND SEEDING, TYPE A-3	SY	23
60	STRAW MULCHING	SY	23

GRAPHIC SCALE
20 0 10 20 40 80
1" = 20'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION PLAN WENDY ROAD

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

NO.	DATE	REVISIONS	BY

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

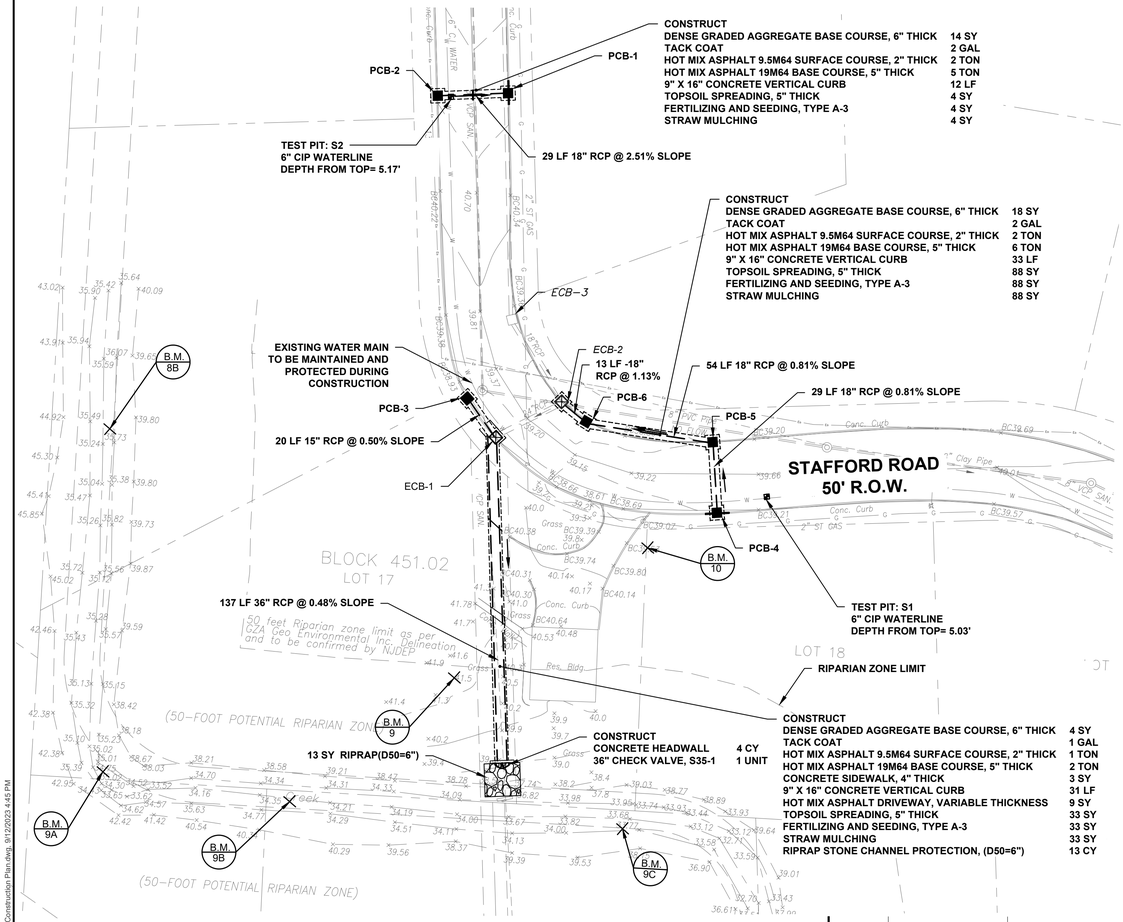
STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

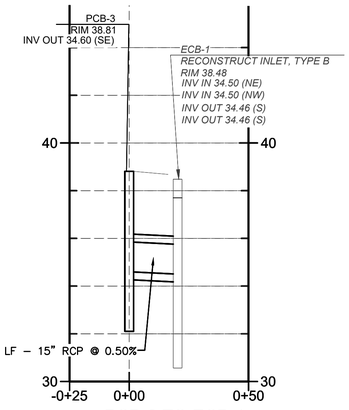
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TOWNSHIP OF WOODBRIDGE

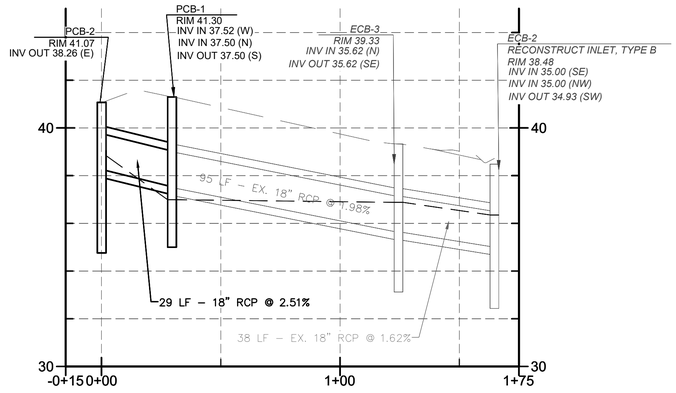
MIDDLESEX COUNTY





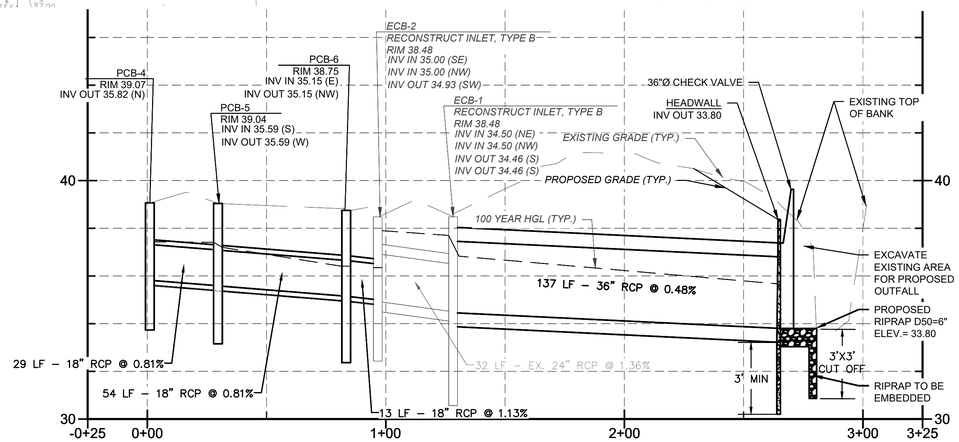
PCB-3 TO ECB-1

HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 3'



PCB-2 TO ECB-2

HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 3'



PCB-4 TO OUTFALL

HORIZONTAL SCALE 1" = 30'
VERTICAL SCALE 1" = 3'

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
15	DENSE GRADED AGGREGATE BASE COURSE, 6" THICK	SY	36
17	TACK COAT	GAL	5
18	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	5
19	HOT MIX ASPHALT 19M64 BASE COURSE, 5" THICK	TON	13
22	15" REINFORCED CONCRETE PIPE, CLASS V	LF	20
23	18" REINFORCED CONCRETE PIPE, CLASS V	LF	125
26	36" REINFORCED CONCRETE PIPE, CLASS V	LF	137
32	CONCRETE HEADWALL	CY	4
34	INLET, TYPE B	UNIT	6
37	36" CHECK VALVE, S35-1	UNIT	1
39	RECONSTRUCTED INLET, TYPE B, USING EXISTING CASTING	UNIT	2
42	BICYCLE SAFE GRATE	UNIT	2
43	CURB PIECE	UNIT	2
45	RIPRAP STONE CHANNEL PROTECTION, 12" THICK (D50=6")	CY	13
50	CONCRETE SIDEWALK, 4" THICK	SY	3
51	HOT MIX ASPHALT DRIVEWAY, VARIABLE THICKNESS	SY	9
54	9" X 16" CONCRETE VERTICAL CURB	LF	76
55	BELGIAN BLOCK CURB	LF	20
56	TRAFFIC STRIPES, LONG-LIFE, THERMOPLASTIC, 4" THICK	LF	10
58	TOPSOIL SPREADING, 5" THICK	SY	125
59	FERTILIZING AND SEEDING, TYPE A-3	SY	125
60	STRAW MULCHING	SY	125

BENCHMARKS:

B.M.8 - HU WITH TAC. (WOOD STAKE, TEMPORARY) STAFFORD ROAD - Elev. 46.503
B.M. 8A - MAG. NAIL (MAGNETIC NAIL) STAFFORD ROAD - Elev. 45.477
B.M. 8B - HU WITH TAC. (WOOD STAKE, TEMPORARY) STAFFORD ROAD - Elev. 35.705
B.M. 8C - MAG. NAIL (MAGNETIC NAIL) STAFFORD ROAD - Elev. 38.998
B.M. 9 - HU WITH TAC. (WOOD STAKE, TEMPORARY) STAFFORD ROAD - Elev. 41.485
B.M. 9A - HU WITH TAC. (WOOD STAKE, TEMPORARY) STAFFORD ROAD - Elev. 34.843
B.M. 9B - HU WITH TAC. (WOOD STAKE, TEMPORARY) STAFFORD ROAD - Elev. 34.663
B.M. 9C - HU WITH TAC. (WOOD STAKE, TEMPORARY) STAFFORD ROAD - Elev. 33.965
B.M. 10 - HU WITH TAC. (WOOD STAKE, TEMPORARY) STAFFORD ROAD - Elev. 39.896

NOTES:

1. CHANGES OF PIPE INVERTS NOT EXCEEDING PLUS OR MINUS ONE (1) FOOT WILL NOT BE CONSIDERED AS A BASIS FOR ADDITIONAL COMPENSATION FOR THE PERTINENT PIPE BID ITEM OR FOR MODIFICATION OF PRECAST STRUCTURES.
2. PIPE LENGTHS AND SLOPES DEPICTED ON THE PLAN AND PROFILE SHEETS ARE MEASURED FROM CENTERLINE OF STRUCTURE TO CENTERLINE OF STRUCTURE. MEASUREMENT OF DRAINAGE PAYMENT SHALL BE DETERMINED FROM ACTUAL LENGTHS INSTALLED.
3. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF PROPERTY ADJACENT TO A DEVELOPMENT OR OFFSITE IMPROVEMENTS 30 DAYS PRIOR TO COMMENCEMENT OF WORK UNLESS OTHERWISE DIRECTED BY THE TOWNSHIP.
4. FLOOD ZONE: THE SITE IS LOCATED IN FLOOD ZONE A AS SHOWN ON THE FIRM FLOOD INSURANCE RATE MAPS, NUMBERS 34023C0054F DATED 7/6/2010. FLOOD ZONE A IS AN AREA WITH 1% ANNUAL CHANCE OF FLOODING AND A 26% CHANCE OF FLOODING OVER THE LIFE OF A 30-YEAR MORTGAGE.

GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION PLAN STAFFORD ROAD

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

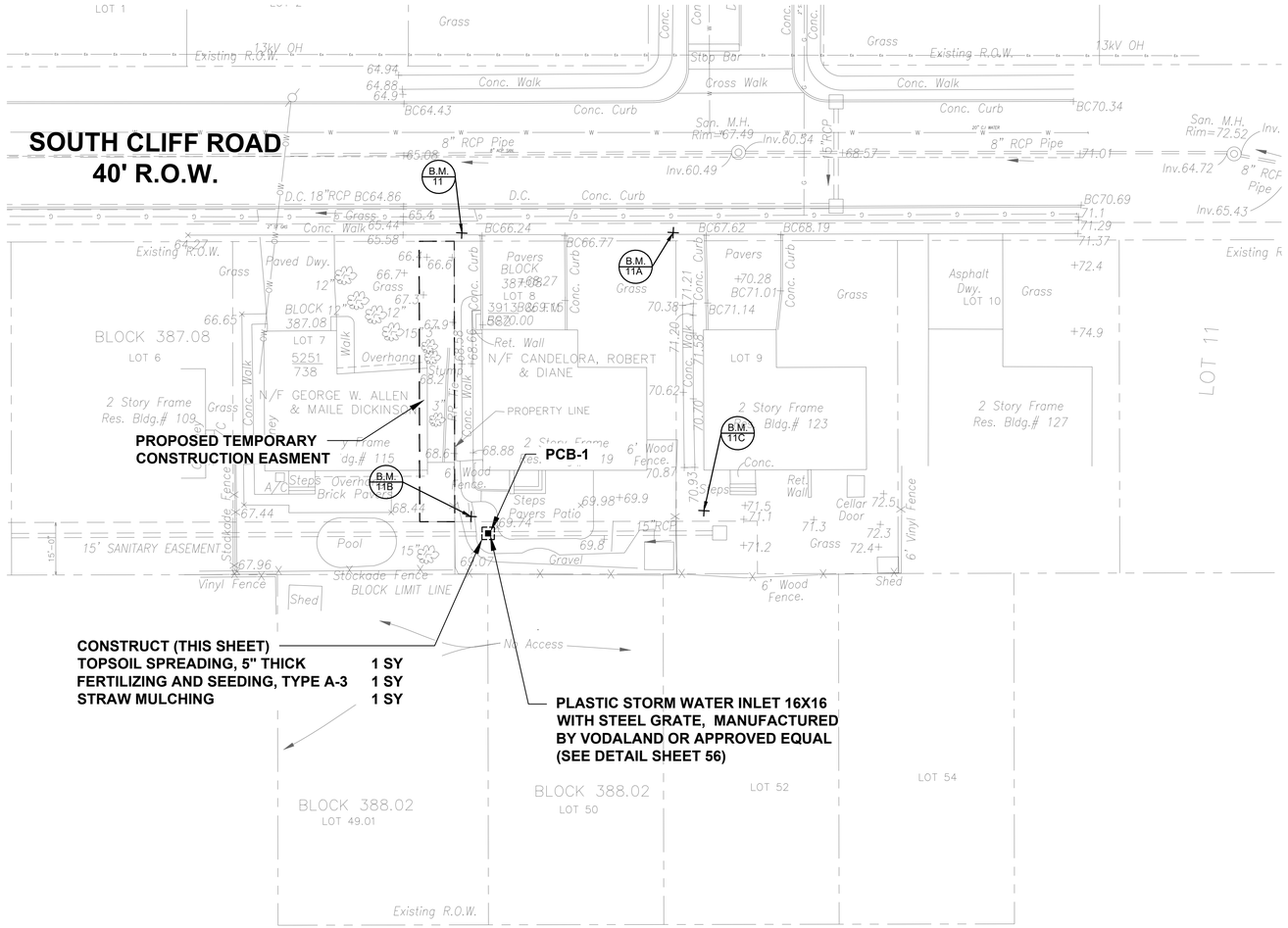
STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1"=30'	9/14/2023
DESIGNED: JE	CHECKED: LM

SHEET NO. 30 OF 62

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TOWNSHIP OF WOODBRIDGE **MIDDLESEX COUNTY**



CONSTRUCT (THIS SHEET)

TOPSOIL SPREADING, 5" THICK	**1 SY**
FERTILIZING AND SEEDING, TYPE A-3	**1 SY**
STRAW MULCHING	**1 SY**

PLASTIC STORM WATER INLET 16X16 WITH STEEL GRATE, MANUFACTURED BY VODALAND OR APPROVED EQUAL (SEE DETAIL SHEET 56)

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
12	EXCAVATION, UNCLASSIFIED	CY	1
44	INLET, NON-STANDARD	UNIT	1
58	TOPSOIL SPREADING, 5" THICK	SY	1
59	FERTILIZING AND SEEDING, TYPE A-3	SY	1
60	STRAW MULCHING	SY	1

BENCHMARKS:

B.M.11 - MAG. NAIL (MAGNETIC NAIL) SOUTH CLIFF ROAD - Elev. 66.014
B.M.11A - MAG. NAIL (MAGNETIC NAIL) SOUTH CLIFF ROAD - Elev. 67.308
B.M.11B - MAG. NAIL (MAGNETIC NAIL) SOUTH CLIFF ROAD - Elev. 68.958
B.M.11C - MAG. NAIL (MAGNETIC NAIL) SOUTH CLIFF ROAD - Elev. 71.077

NOTES:

1. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF PROPERTY ADJACENT TO A DEVELOPMENT OR OFFSITE IMPROVEMENTS 30 DAYS PRIOR TO COMMENCEMENT OF WORK UNLESS OTHERWISE DIRECTED BY THE TOWNSHIP.

GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION PLAN SOUTH CLIFF ROAD

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

NO.	DATE	REVISIONS	BY

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

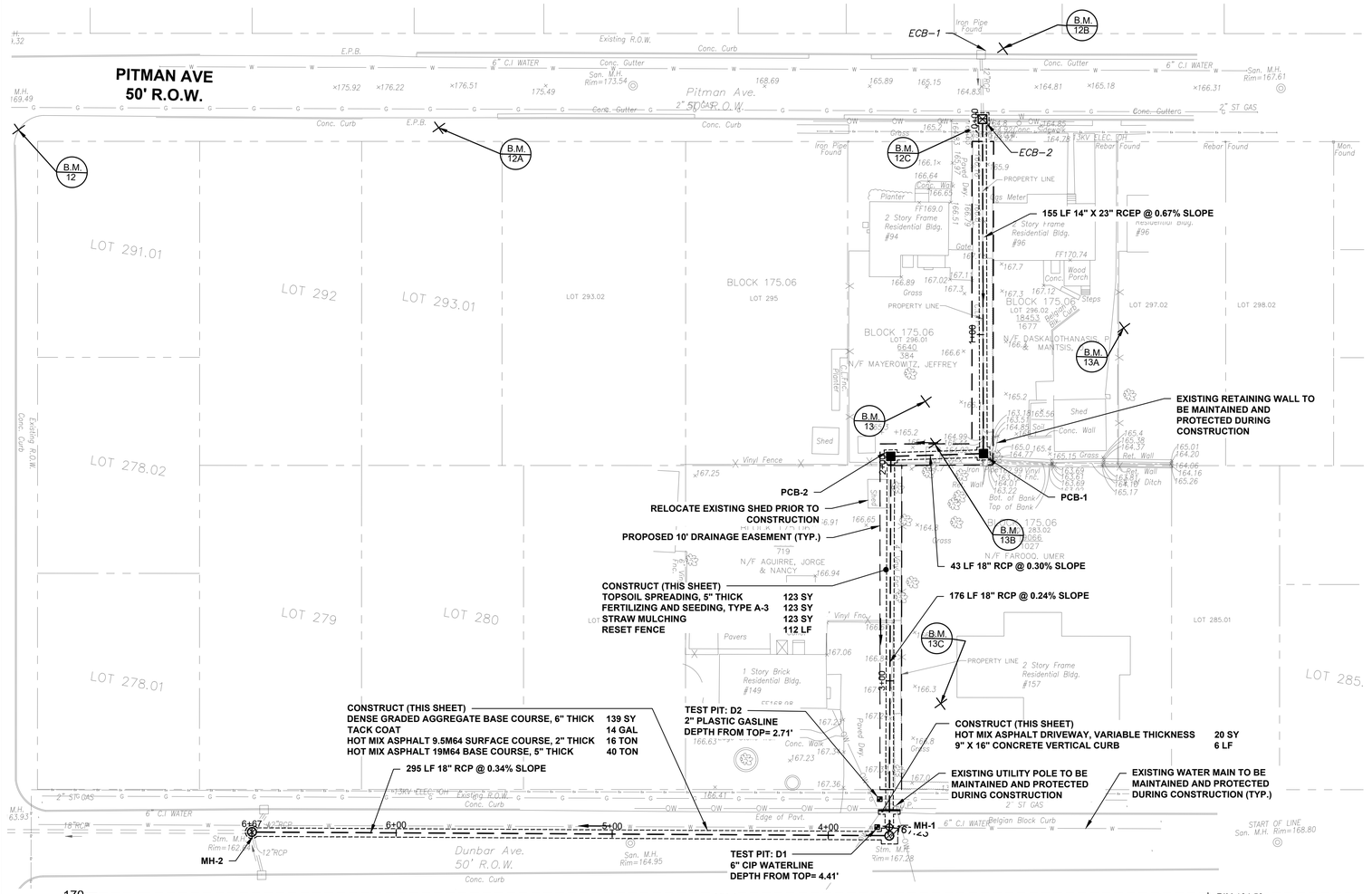
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DESIGNED: JE	CHECKED: LM

SHEET NO. 31 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY



PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
15	DENSE GRADED AGGREGATE BASE COURSE, 6" THICK	SY	139
17	TACK COAT	GAL	14
18	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	16
19	HOT MIX ASPHALT 19M64 BASE COURSE, 5" THICK	TON	40
23	18" REINFORCED CONCRETE PIPE, CLASS V	LF	514
30	14" X 23" REINFORCED CONCRETE ELLIPTICAL PIPE, CLASS V	LF	155
34	INLET, TYPE B	UNIT	2
39	RECONSTRUCTED INLET, TYPE B, USING EXISTING CASTING	UNIT	1
41	RECONSTRUCTED MANHOLE, USING EXISTING CASTING	UNIT	1
42	BICYCLE SAFE GRATE	UNIT	1
43	CURB PIECE	UNIT	1
48	RESET FENCE	LF	112
50	CONCRETE SIDEWALK, 4" THICK	LF	3
51	HOT MIX ASPHALT DRIVEWAY, VARIABLE THICKNESS	SY	20
54	9" X 16" CONCRETE VERTICAL CURB	LF	6
58	TOPSOIL SPREADING, 5" THICK	SY	123
59	FERTILIZING AND SEEDING, TYPE A-3	SY	123
60	STRAW MULCHING	SY	123

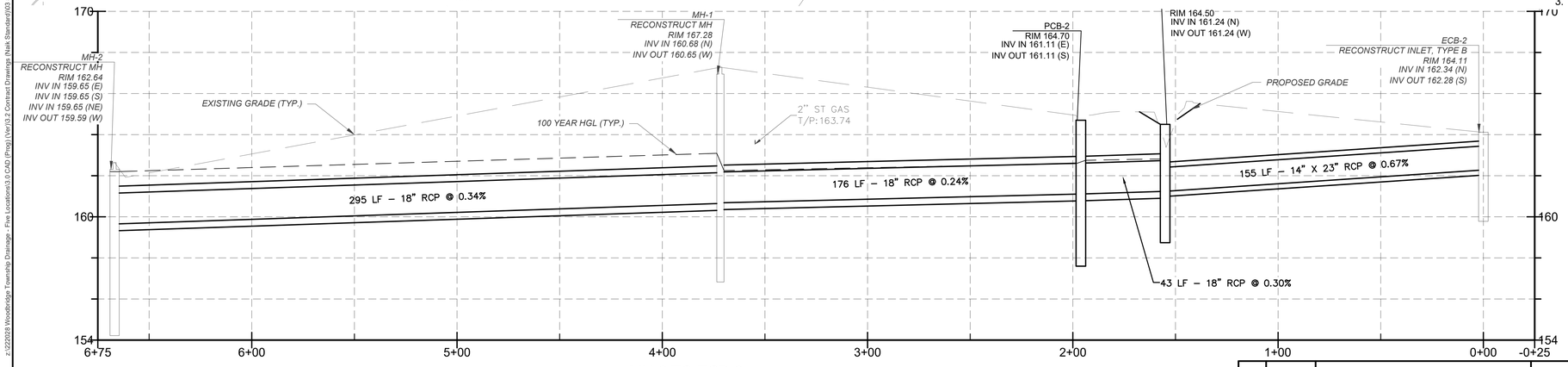
NOTES:

1. CHANGES OF PIPE INVERTS NOT EXCEEDING PLUS OR MINUS ONE (1) FOOT WILL NOT BE CONSIDERED AS A BASIS FOR ADDITIONAL COMPENSATION FOR THE PERTINENT PIPE BID ITEM OR FOR MODIFICATION OF PRECAST STRUCTURES.
2. PIPE LENGTHS AND SLOPES DEPICTED ON THE PLAN AND PROFILE SHEETS ARE MEASURED FROM CENTERLINE OF STRUCTURE TO CENTERLINE OF STRUCTURE. MEASUREMENT OF DRAINAGE PAYMENT SHALL BE DETERMINED FROM ACTUAL LENGTHS INSTALLED.
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GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'



MH-2 TO ECB-2

HORIZONTAL SCALE 1" = 30'

VERTICAL SCALE 1" = 3'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION PLAN PITMAN AVENUE

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

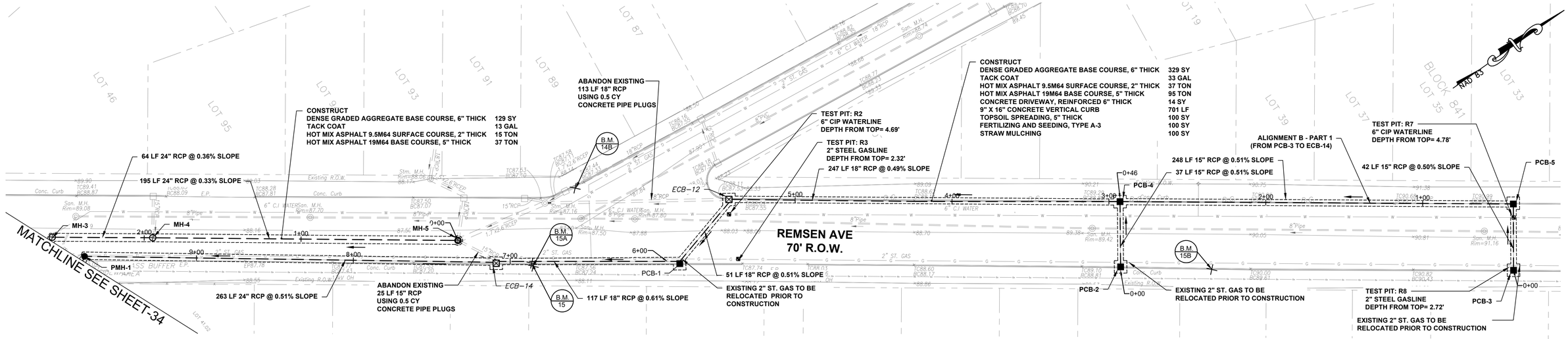
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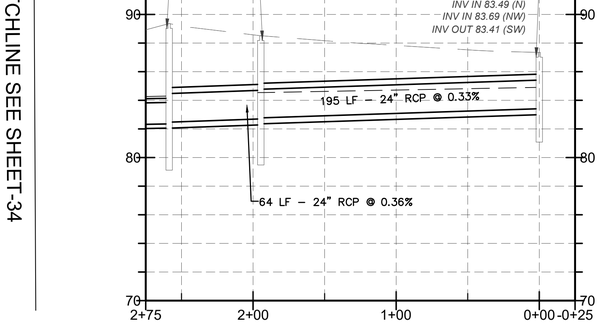
SHEET NO. 32 OF 62

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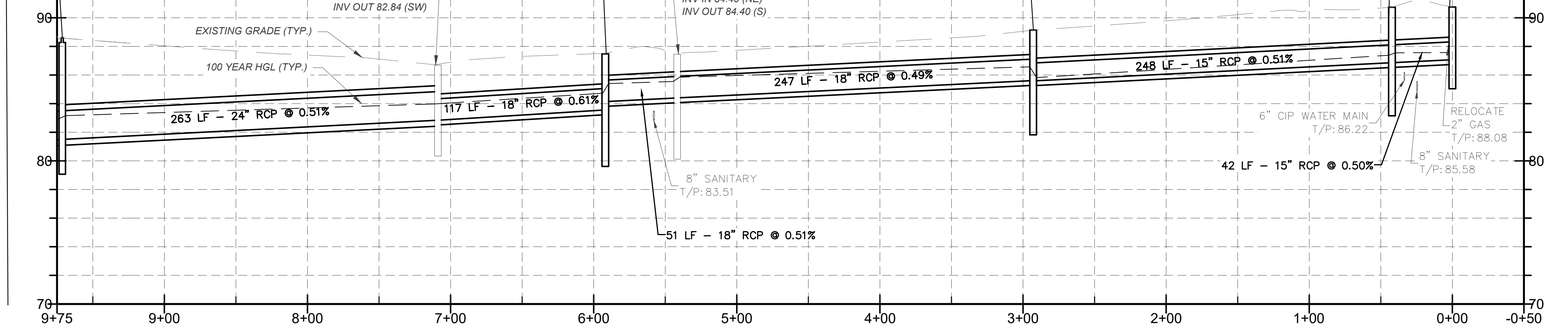
TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY



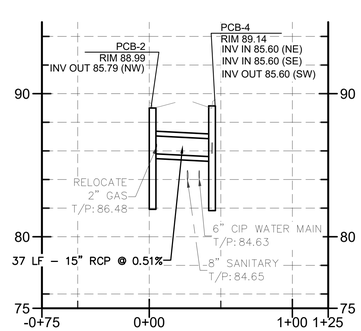


MH-5 TO MH-3
HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'



PCB-3 TO PMH-1
HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
15	DENSE GRADED AGGREGATE BASE COURSE, 6" THICK	SY	458
17	TACK COAT	GAL	46
18	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	52
19	HOT MIX ASPHALT 19M64 BASE COURSE, 5" THICK	TON	132
22	15" REINFORCED CONCRETE PIPE, CLASS V	LF	327
23	18" REINFORCED CONCRETE PIPE, CLASS V	LF	415
24	24" REINFORCED CONCRETE PIPE, CLASS V	LF	522
34	INLET, TYPE B	UNIT	5
39	RECONSTRUCTED INLET, TYPE B, USING EXISTING CASTING	UNIT	2
41	RECONSTRUCTED MANHOLE, USING EXISTING CASTING	UNIT	2
42	BICYCLE SAFE GRATE	UNIT	2
43	CURB PIECE	UNIT	2
52	CONCRETE DRIVEWAY, REINFORCED, 6" THICK	SY	14
54	9" X 16" CONCRETE VERTICAL CURB	LF	701
58	TOPSOIL SPREADING, 5" THICK	SY	100
59	FERTILIZING AND SEEDING, TYPE A-3	SY	100
60	STRAW MULCHING	SY	100



PCB-4 TO PCB-2
HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

NOTES:

1. CONCRETE PIPE PLUGS TO BE PAID FOR UNDER CLEARING SITE.
2. CHANGES OF PIPE INVERTS NOT EXCEEDING PLUS OR MINUS ONE (1) FOOT WILL NOT BE CONSIDERED AS A BASIS FOR ADDITIONAL COMPENSATION FOR THE PERTINENT PIPE BID ITEM OR FOR MODIFICATION OF PRECAST STRUCTURES.
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BENCHMARKS:

B.M.14 - MAG. NAIL (MAGNETIC NAIL) THORPE AVENUE - Elev. 90.957
B.M.14A - MAG. NAIL (MAGNETIC NAIL) THORPE AVENUE - Elev. 89.703
B.M.14B - MAG. NAIL (MAGNETIC NAIL) THORPE AVENUE - Elev. 87.215
B.M.15 - MAG. NAIL (MAGNETIC NAIL) REMSEN AVENUE - Elev. 87.057
B.M.15A - HU WITH TAC (WOOD STAKE, NOT VERY PERMANENT) REMSEN AVENUE - Elev. 87.338
B.M.15B - MAG. NAIL (MAGNETIC NAIL) REMSEN AVENUE - Elev. 89.900

NO.	DATE	REVISIONS	BY

GRAPHIC SCALE
30 0 15 30 60 120
1" = 30'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION PLAN REMSEN AVENUE

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY
LINDSAY A. MAGUIRE
No. GE58958
LICENSED PROFESSIONAL ENGINEER

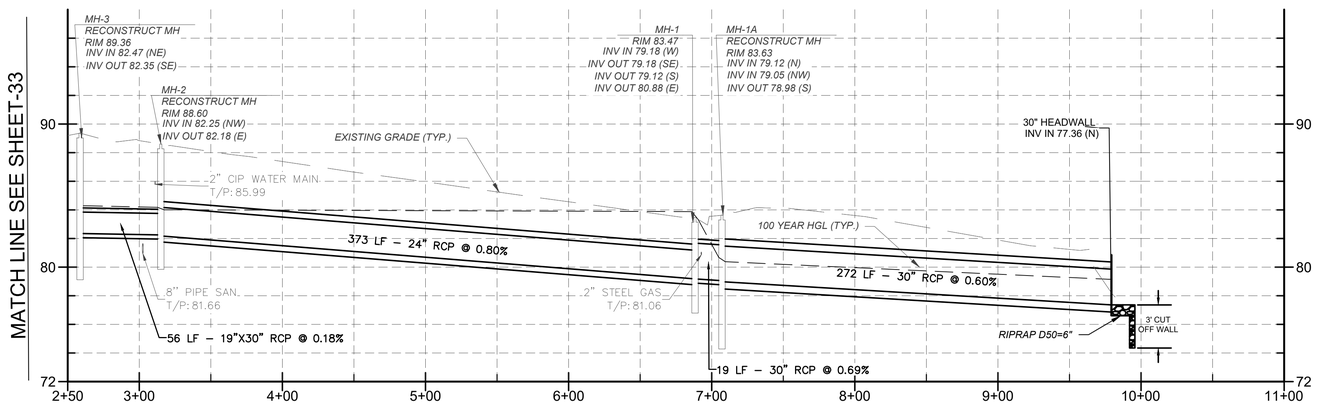
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1"=30	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 33 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY

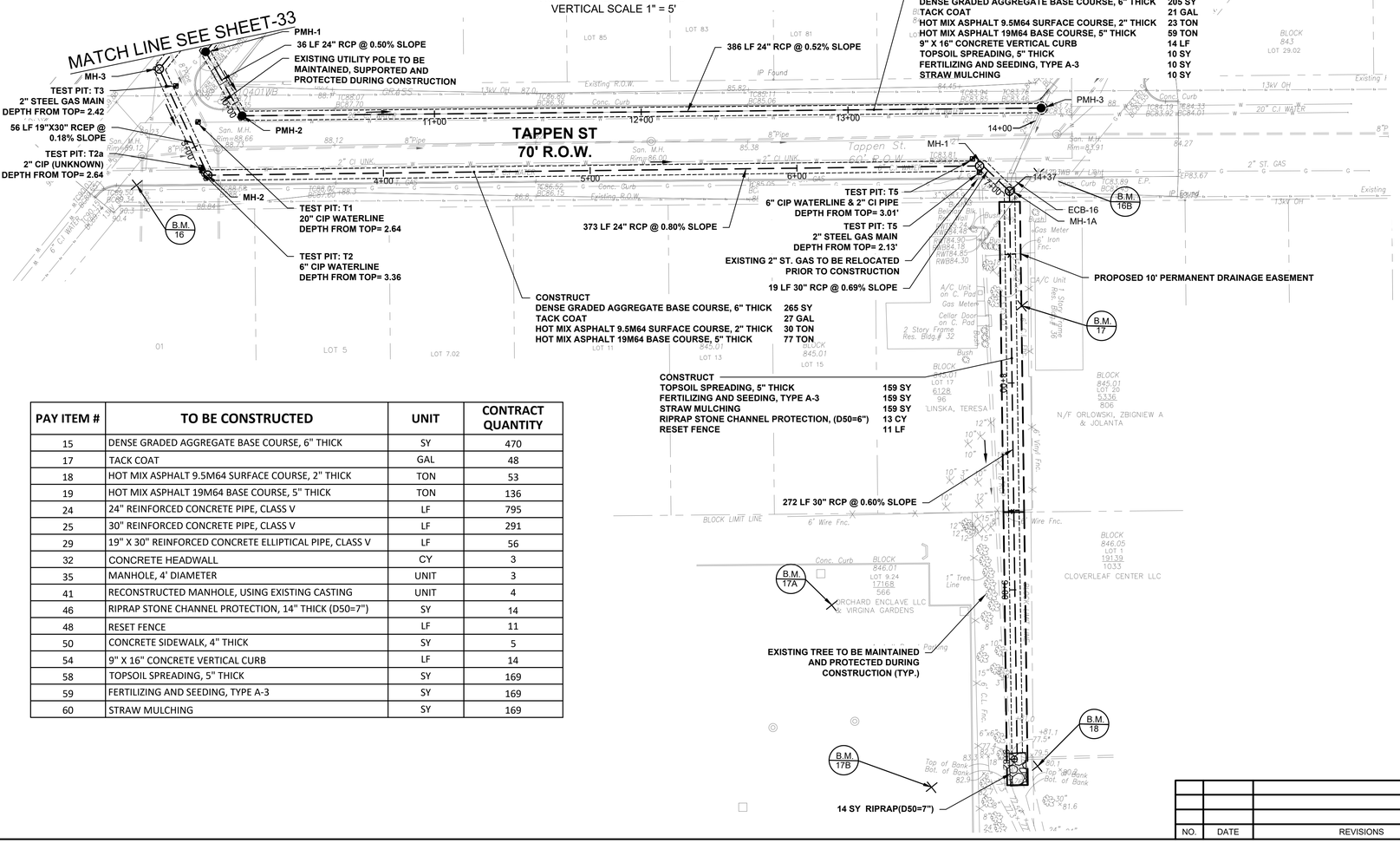


MH-3 TO HEADWALL

HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'

PMH-1 TO PMH-3

HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'



PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
15	DENSE GRADED AGGREGATE BASE COURSE, 6" THICK	SY	470
17	TACK COAT	GAL	48
18	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	53
19	HOT MIX ASPHALT 19M64 BASE COURSE, 5" THICK	TON	136
24	24" REINFORCED CONCRETE PIPE, CLASS V	LF	795
25	30" REINFORCED CONCRETE PIPE, CLASS V	LF	291
29	19" X 30" REINFORCED CONCRETE ELLIPTICAL PIPE, CLASS V	LF	56
32	CONCRETE HEADWALL	CY	3
35	MANHOLE, 4' DIAMETER	UNIT	3
41	RECONSTRUCTED MANHOLE, USING EXISTING CASTING	UNIT	4
46	RIPRAP STONE CHANNEL PROTECTION, 14" THICK (D50=7")	SY	14
48	RESET FENCE	LF	11
50	CONCRETE SIDEWALK, 4" THICK	SY	5
54	9" X 16" CONCRETE VERTICAL CURB	LF	14
58	TOPSOIL SPREADING, 5" THICK	SY	169
59	FERTILIZING AND SEEDING, TYPE A-3	SY	169
60	STRAW MULCHING	SY	169

NOTES:

1. CHANGES OF PIPE INVERTS NOT EXCEEDING PLUS OR MINUS ONE (1) FOOT WILL NOT BE CONSIDERED AS A BASIS FOR ADDITIONAL COMPENSATION FOR THE PERTINENT PIPE BID ITEM OR FOR MODIFICATION OF PRECAST STRUCTURES.
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BENCHMARKS:

B.M.16 - MAG. NAIL (MAGNETIC NAIL) TAPPEN STREET - Elev. 89.606
B.M.16A - HU WITH TAC. (WOOD STAKE, TEMPORARY) TAPPEN STREET - Elev. 85.225
B.M.16B - MAG. NAIL (MAGNETIC NAIL) TAPPEN STREET - Elev. 83.181
B.M.17 - DOCK SPIKE (LONG NAIL) TAPPEN STREET - Elev. 83.547
B.M.17A - MAG. NAIL (MAGNETIC NAIL) TAPPEN STREET - Elev. 84.365
B.M.17B - MAG. NAIL (MAGNETIC NAIL) TAPPEN STREET - Elev. 83.975
B.M.18 - CAPPED REBAR TAPPEN STREET - Elev. 79.932

GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION PLAN TAPPEN STREET

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY
LINDSAY A. MAGUIRE
No. GE58958
LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
1"=30'	9/14/2023
DESIGNED: JE	CHECKED: LM
SHEET NO. 34 OF 62	

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY

ARTHUR AVENUE DRAINAGE DATA TABLE

INLET/M.H. NO.	TYPE OF INLET/MH	NORTHING	EASTING	GRATE/RIM ELEV.	PIPE SIZE IN	PIPE SIZE OUT	INVERT IN (FEET)	INVERT OUT (FEET)	WORK TO BE PERFORMED BY CONTRACTOR
MH-1	*4' DIA.*	*645875.64*	544849.65	*60.77*	*33"x50" RCEP 19"X30" RCEP*	*33"x50" RCEP*	*55.50 57.07*	*55.54*	*RECONSTRUCT MANHOLE*
ECB-18	*B*	*645870.19*	544790.35	*61.01*	*33"x50" RCEP 18"*	*33"x50" RCEP*	*55.81 56.00*	*55.80*	*RECONSTRUCT INLET*
PMH-1	4' DIA.	645847.47	544835.44	60.96	18" 33"x50"	18"	56.01 55.81	55.8	CONSTRUCT NEW MANHOLE
ECB-20	*B*	*645842.50*	544797.35	*61.03*	18"	18"	56.15	56.14	*RECONSTRUCT INLET*
MH-2	*4' DIA.*	*645831.73*	544849.61	*60.94*	18" 18" 15"	19"x30" RCEP	57.67 57.64 57.70	57.59	*RECONSTRUCT MANHOLE*
ECB-15	*B*	*645822.68*	544834.40	*60.62*	14" X 23" RCEP	18"	56.63	56.48	*RECONSTRUCT INLET*
ECB-4	*E*	*645738.08*	544848.82	*61.49*	*30"x24" RCEP 15"*	18" 18"	*58.85 59.07*	*58.70 58.70*	*RECONSTRUCT INLET*
ECB-5	*B*	*645737.31*	544830.71	*61.13*	*18"*	14"x 23"	*59.26*	*57.62*	*RECONSTRUCT INLET*

TEMPLE WAY DRAINAGE DATA TABLE

INLET/M.H. NO.	TYPE OF INLET/MH	NORTHING	EASTING	GRATE/RIM ELEV.	PIPE SIZE IN	PIPE SIZE OUT	INVERT IN (FEET)	INVERT OUT (FEET)	WORK TO BE PERFORMED BY CONTRACTOR
PCB-2	B	645257.08	544049.57	71.46	N/A	15"	N/A	68.00	CONSTRUCT NEW INLET
PCB-3	*B*	645243.51	544077.71	*70.82*	*11"x18"*	*24"*	67.52 67.62	*67.33*	*CONSTRUCT NEW INLET*
PMH-3	4' DIA.	645284.99	544045.89	71.84	24" 15"	24"	65.57 67.73	65.57	CONSTRUCT NEW MANHOLE
PCB-1	B	645247.86	544112.18	70.21	N/A	11" x 18"	N/A	67.96	CONSTRUCT NEW INLET

JORDAN ROAD DRAINAGE DATA TABLE

INLET/M.H. NO.	TYPE OF INLET/MH	NORTHING	EASTING	GRATE/RIM ELEV.	PIPE SIZE IN	PIPE SIZE OUT	INVERT IN (FEET)	INVERT OUT (FEET)	WORK TO BE PERFORMED BY CONTRACTOR
ECB-3	B	643459.04	540131.87	64.90	N/A	12" 11"x18"	N/A	63.15 62.80	*RECONSTRUCT INLET*
PCB-2	B	643586.93	540115.33	64.15	11"x18"	11"x18"	62.16	62.18	CONSTRUCT NEW INLET
ECB-5	B	643724.51	540096.97	63.68	11"x18" 12"	14"x22"	61.60 61.49	61.46	*RECONSTRUCT INLET*
ECB-4	B	643730.61	540125.91	63.92	*12"*	61.64	*61.64*	61.65	RECONSTRUCT INLET
PCB-3	B	643734.82	540125.41	63.98	N/A	15"	N/A	61.65	CONSTRUCT NEW INLET
PMH-1	8' DIA.	643770.91	540072.28	65.98	14"x22" 15" 48"	43"X68"	61.20 61.40 60.85	61.00	CONSTRUCT NEW MANHOLE
PCB-1	B	643857.82	540078.92	64.56	N/A	11"x18"	N/A	61.95	CONSTRUCT NEW INLET
MH-8	4' DIA.	643885.33	540080.28	64.8	15" 30"	4.95'x3.20' RCEP	60.65 60.68	60.63	RECONSTRUCT MANHOLE
PCB-4	B	644123.58	540074.35	67.21	15"	15"	64.87	64.77	CONSTRUCT NEW INLET
PMH-2	N/A	643770.91	539880.77	64.59	43"x68"	43"x68"	59.5	59.5	CONSTRUCT NEW INLET

GARFIELD AVENUE DRAINAGE DATA TABLE

INLET/M.H. NO.	TYPE OF INLET/MH	NORTHING	EASTING	GRATE/RIM ELEV.	PIPE SIZE IN	PIPE SIZE OUT	INVERT IN (FEET)	INVERT OUT (FEET)	WORK TO BE PERFORMED BY CONTRACTOR
PCB-1	A	642392.36	542607.84	79.70	-----	12"	-----	75.13	CONSTRUCT NEW INLET
PCB-2	A	642239.39	542607.88	78.80	12"	12"	74.37	74.27	CONSTRUCT NEW INLET
PCB-3	A	642173.70	542607.58	79.30	12"	12"	73.94	73.87	CONSTRUCT NEW INLET
ECB-1	*B*	642172.89	542715.76	*74.96*	12" 12"	*8" 8"*	73.34 73.34	*73.34 73.38*	*RECONSTRUCT INLET*
MH-1	*4' DIA.*	642164.17	542740.48	*75.19*	*12" 12"*	18"	*N/A ASSUMED - 73.00*	*N/A ASSUMED - 73.00*	*NO ACCESS TO MANHOLE COVER, CONTRACTOR TO VERIFY PIPE INVERTS*
ECB-2	*B*	642174.02	542745.41	*74.91*	12" 12"	*12"*	73.06 73.06	*73.06*	*RECONSTRUCT INLET*
PCB-4	B	642276.96	542714.99	75.48	-----	8" 8"	-----	73.78	CONSTRUCT NEW INLET
PCB-5	B	642277.96	542745.10	75.49	-----	8" 8"	-----	73.50	CONSTRUCT NEW INLET
MH-2	*4' DIA.*	641863.25	542741.03	*82.54*	18" 15" 18" 16"	*24"*	72.45 75.05 75.03 76.65	*70.85*	*RECONSTRUCT INLET*

WENDY ROAD DRAINAGE DATA TABLE

INLET/M.H. NO.	TYPE OF INLET/MH	NORTHING	EASTING	GRATE/RIM ELEV.	PIPE SIZE IN	PIPE SIZE OUT	INVERT IN (FEET)	INVERT OUT (FEET)	WORK TO BE PERFORMED BY CONTRACTOR
PCB-1	B	645302.41	546271.78	45.90	*N/A*	15"	*N/A*	41.05	CONSTRUCT NEW INLET
PCB-3	B	645328.55	546254.27	45.91	15"	15"	40.91	40.87	CONSTRUCT NEW INLET
ECB-13	B	645351.85	546286.52	45.32	30" 15" 15"	*30"*	39.85 40.69 39.84	*39.75*	RECONSTRUCT NEW INLET
PCB-5	B	645354.19	546289.74	45.32	15"	*15"*	*39.85*	*39.88*	CONSTRUCT NEW INLET
PCB-2	B	645375.95	546370.21	46.12	N/A	15"	N/A	40.45	CONSTRUCT NEW INLET
PCB-4	B	645399.92	546352.63	46.12	15"	15"	40.32	40.22	CONSTRUCT NEW INLET

STAFFORD ROAD DRAINAGE DATA TABLE

INLET/M.H. NO.	TYPE OF INLET/MH	NORTHING	EASTING	GRATE/RIM ELEV.	PIPE SIZE IN	PIPE SIZE OUT	INVERT IN (FEET)	INVERT OUT (FEET)	WORK TO BE PERFORMED BY CONTRACTOR
PCB-2	B	637110.18	543887.55	41.07	N/A	18"	N/A	38.26	CONSTRUCT NEW INLET
PCB-1	B	637112.90	543916.91	41.30	18" 18"	18	37.52 37.50	37.50	CONSTRUCT NEW INLET
ECB-3	*E*	637018.19	543923.83	*39.33*	*18"*	*18"*	*35.62*	*35.62*	*0*
PCB-6	B	636977.20	543957.28	38.75	*18"*	18"	*35.15*	*35.15*	CONSTRUCT NEW INLET
PCB-4	B	636942.10	544014.10	39.07	N/A	18"	N/A	35.82	CONSTRUCT NEW INLET
PCB-5	B	636971.56	544010.69	39.04	18"	18"	35.59	35.59	CONSTRUCT NEW INLET
ECB-2	*B*	636984.93	543946.54	*38.48*	15" 18"	*24"*	35.00 35.00	*34.93*	*RECONSTRUCT INLET*
PCB-3	B	636984.12	543906.94	38.81	*N/A*	15"	N/A	*34.60*	CONSTRUCT NEW INLET
ECB-1	*B*	636968.53	543919.80	*38.48*	24" 15"	*36"*	34.50 34.50	*34.46*	*RECONSTRUCT INLET*
HEADWALL	N/A	636817.11	543931.70	36.82	36"	*N/A*	*N/A*	33.80	CONSTRUCT HEADWALL

PITMAN AVENUE DRAINAGE DATA TABLE

INLET/M.H. NO.	TYPE OF INLET/MH	NORTHING	EASTING	GRATE/RIM ELEV.	PIPE SIZE IN	PIPE SIZE OUT	INVERT IN (FEET)	INVERT OUT (FEET)	WORK TO BE PERFORMED BY CONTRACTOR
ECB-2	*B*	620976.56	545397.34	*164.11*	*12"*	14"x23"	*162.34*	162.28	*RECONSTRUCT INLET*
PCB-1	E	620815.73	545379.83	163.04	18"	18"	161.24	161.24	CONSTRUCT NEW INLET
PCB-2	E	635135.22	549814.21	164.70	18"	18"	161.11	161.11	CONSTRUCT NEW INLET
MH-1	*4' DIA.*	620642.16	545406.63	*167.28*	18"	*18"*	*160.68*	*160.65*	*RECONSTRUCT MANHOLE*
MH-2	*4' DIA.*	620597.71	545114.94	*162.64*	*18" 12" 12"*	*18"*	*159.65 159.65 159.65*	*159.59*	*RECONSTRUCT MANHOLE*

REMSON AVENUE DRAINAGE DATA TABLE

INLET/M.H. NO.	TYPE OF INLET/MH	NORTHING	EASTING	GRATE/RIM ELEV.	PIPE SIZE IN	PIPE SIZE OUT	INVERT IN (FEET)	INVERT OUT (FEET)	WORK TO BE PERFORMED BY CONTRACTOR
ECB-4	*B*	*634864.61*	549581.03	*87.07*	*18"*	*1.7'X2.6' RCEP*	*84.32*	*84.24*	*RECONSTRUCT INLET*
MH-6	*4' DIA.*	634849.61	549580.31	*87.16*	*1.7'X2.6' RCEP 15"*	*1.7'X2.6' RCEP*	*83.91 85.00*	*83.82*	*18" RCP (NE) TO BE ABANDONED*
MH-5	*4' DIA.*	634790.11	549570.06	*87.34*	*18" 1.7' x 2.6' RCEP*	24"	*83.69 83.49*	83.41	*RECONSTRUCT INLET 15" RCP (NE) TO BE ABANDONED*
ECB-12	*B*	634949.22	549642.22	*87.46*	18"	18"	84.40	84.40	*RECONSTRUCT INLET 18" RCP (SW) TO BE ABANDONED*
PCB-1	B	634900.65	549659.33	87.48	18"	18"	84.14	83.56	CONSTRUCT NEW INLET
ECB-14	*B*	634802.67	549595.52	*86.69*	18"	24"	82.84	82.84	*RECONSTRUCT INLET 15" RCP (SW) TO BE ABANDONED*
PCB-2	B	635135.22	549814.21	88.99	N/A	15"	N/A	85.79	CONSTRUCT NEW INLET
PCB-4	B	549779.1717'	635157.5296'	89.14	15" 15"	18"	85.60 85.60	85.60	CONSTRUCT NEW INLET
PCB-3	B	549952.4565'	635344.1384'	90.75	N/A	15"	N/A	87.07	CONSTRUCT NEW INLET
PCB-5	B	549916.9903'	635366.9900'	90.74	15"	15"	86.86	86.86	CONSTRUCT NEW INLET

TAPPEN STREET DRAINAGE DATA TABLE

INLET/M.H. NO.	TYPE OF INLET/MH	NORTHING	EASTING	GRATE/RIM ELEV.	PIPE SIZE IN	PIPE SIZE OUT	INVERT IN (FEET)	INVERT OUT (FEET)	WORK TO BE PERFORMED BY CONTRACTOR
PMH-1	4' DIA.	634864.61	549581.03	88.6	24"	24"	81.50	81.50	CONSTRUCT NEW MANHOLE
PMH-2	4' DIA.	634556.02	549469.68	88.31	24"	24"	81.32	81.32	CONSTRUCT NEW MANHOLE
ECB-15	B	634610.31	549857.51	*83.18*	N/A	24"	N/A	79.37	0
PMH-3	4' DIA.	634600.14	549853.60	83.46	24" 24"	*24"*	79.33 79.33	79.33	CONSTRUCT NEW MANHOLE
MH-4	*4' DIA.*	634627.88	549462.65	*88.52*	15" 24"	24"	84.03 82.77	82.70	*RECONSTRUCT MANHOLE*
MH-3	*4' DIA.*	634574.34	549427.49	*89.36*	24"	19"X30" RCEP	82.47	82.35	*RECONSTRUCT MANHOLE*
MH-2	*4' DIA.*	634525.73	549456.18	*88.60*	19"X30 RCEP	24"	82.25	82.18	*RECONSTRUCT MANHOLE*
MH-1	*4' DIA.*	634569.19	549826.94	*83.47*	24"	30" 18"	79.18	79.18 79.12	*RECONSTRUCT MANHOLE*
ECB-16	B	634565.31	549842.96	*82.77*	24"	*24"*	*79.18*	*79.15*	0
MH-1A	*4' DIA.*	634558.56	549842.59	83.63	24" 30"	30"	*79.12 79.05*	78.98	RECONSTRUCT MANHOLE
OUTFALL	*EXS. MH*	634288.59	549874.66	*N/A*	*30"*	*N/A*	*77.36*	*N/A*	*0*

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

DRAINAGE DATA TABLES

NAIK CONSULTING GROUP, PC
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200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY — LINDSAY A. MAGUIRE — No. GE58958 — LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
AS SHOWN	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 35 OF 62

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RIGHT OF WAY DATA TABLE

PARCEL NUMBER	LANDOWNER	PARCEL AREA (SF)	EASEMENT AREA (SF)	EASEMENT TYPE	REFERENCE PLAN
1225_505.02_9	STEPHANIE PIERRE-PIERRE	10,137	85	TEMPORARY CONSTRUCTION	SHEET 27 - CONSTRUCTION PLAN JORDAN ROAD
1225_473.10_5	MICHAEL RUSTEMEYER	5,985	600	PERMANENT DRAINAGE EASEMENT	SHEET 28 - CONSTRUCTION PLAN GARFIELD AVENUE
1225_473.10_6	GREGORY & PETRAROIA TIZIANNA CAMPBELL	5,985	602	PERMANENT DRAINAGE EASEMENT	SHEET 28 - CONSTRUCTION PLAN GARFIELD AVENUE
1225_473.10_7	FERNANDO PEREZ & ASHLEY MEDINA	6,485	650	PERMANENT DRAINAGE EASEMENT	SHEET 28 - CONSTRUCTION PLAN GARFIELD AVENUE
1225_473.10_8	CHONG KEOW & NUM SAI	6,485	330	PERMANENT DRAINAGE EASEMENT	SHEET 28 - CONSTRUCTION PLAN GARFIELD AVENUE
1225_473.10_4	JARED J SCHABER	5,981	1,000	PERMANENT DRAINAGE EASEMENT	SHEET 28 - CONSTRUCTION PLAN GARFIELD AVENUE
1225_387.08_7	GEORGE ALLEN & MAILE DICKINSON	5,986	800	TEMPORARY CONSTRUCTION	SHEET 31 - CONSTRUCTION PLAN SOUTH CLIFF ROAD
1225_175.06_296.02	P DASKALOTHANASIS & MANTIS O	9,375	897	PERMANENT DRAINAGE EASEMENT	SHEET 32 - CONSTRUCTION PLAN PITMAN AVENUE
1225_175.06_296.01	JEFFREY MAYEROWITZ	9,735	1,031	PERMANENT DRAINAGE EASEMENT	SHEET 32 - CONSTRUCTION PLAN PITMAN AVENUE
1225_175.06_282	JORGE & NANCY AGUIRRE	15,000	1,500	PERMANENT DRAINAGE EASEMENT	SHEET 32 - CONSTRUCTION PLAN PITMAN AVENUE
1225-845.01_17	TERESA KOTLINSKA	11,250	1,500	PERMANENT DRAINAGE EASEMENT	SHEET 32 - CONSTRUCTION PLAN PITMAN AVENUE
1225_846.01_9.24	ORCHARD ENCLAVE LLC $ VIRGINIA GARDENS	171,868	1,310	PERMANENT DRAINAGE EASEMENT	SHEET 32 - CONSTRUCTION PLAN PITMAN AVENUE

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

RIGHT-OF-WAY DATA TABLE

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LINDSAY MAGUIRE, PE
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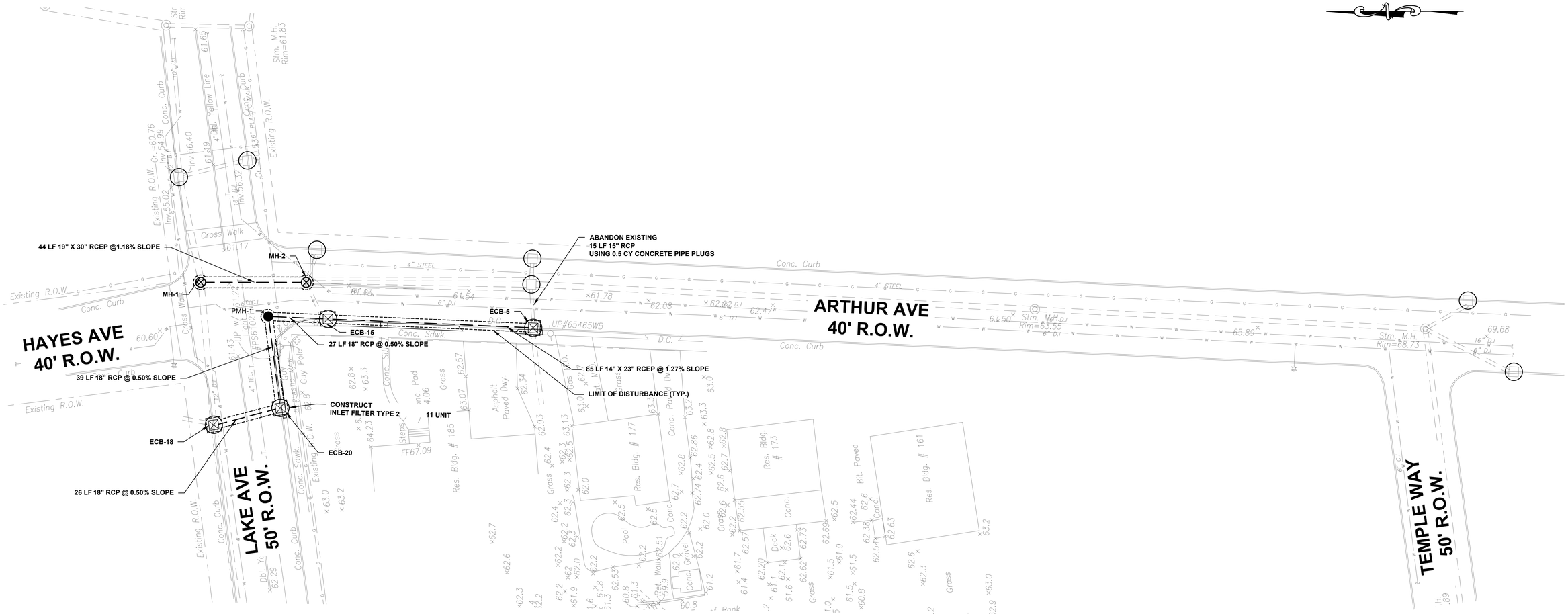
STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
AS SHOWN	9/14/2023
DESIGNED:	CHECKED:
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SHEET NO. 36 OF 62

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TOWNSHIP OF WOODBRIDGE **MIDDLESEX COUNTY**



PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
3	INLET FILTER TYPE 2, 2'x4'	UNIT	11

LEGEND	
◯	PROPOSED INLET FILTER TYPE 2, 2'x4'

NOTE :

1. STOCKPILE AREA TO BE DETERMINED BY CONTRACTOR.
2. TREE PROTECTION IS TO BE PROVIDED FOR ANY TREE WITHIN THE LIMIT OF DISTURBANCE.

GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

SEQUENCE OF CONSTRUCTION	
TASK	DURATION (DAYS)
MOBILIZATION AND INSTALLATION OF SESC MEASURES	2
REMOVAL OF EXISTING PIPE AND STRUCTURES	7
INSTALLATION OF STORM PIPE AND STRUCTURES	7
SOIL STABILIZATION AND PAVEMENT RESTORATION	3
REMOVAL OF SESC MEASURES	1

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

SOIL EROSION & SEDIMENT CONTROL PLAN ARTHUR AVENUE

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STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

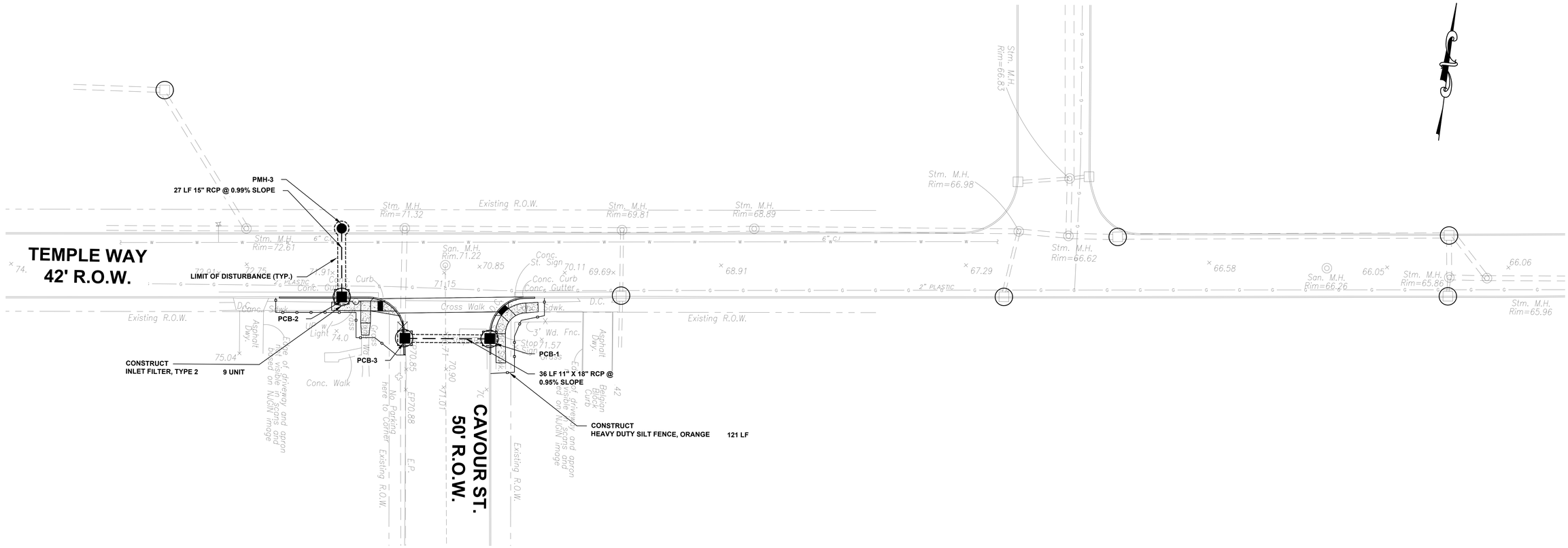
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SHEET NO. 37 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY



NOTE :

1. STOCKPILE AREA TO BE DETERMINED BY CONTRACTOR.
2. TREE PROTECTION IS TO BE PROVIDED FOR ANY TREE WITHIN THE LIMIT OF DISTURBANCE.

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
2	HEAVY DUTY SILT FENCE, ORANGE	L.F.	121
3	INLET FILTER TYPE 2, 2'x4'	UNIT	9

LEGEND	
◯	PROPOSED INLET FILTER TYPE 2, 2'x4'

SEQUENCE OF CONSTRUCTION	
TASK	DURATION (DAYS)
MOBILIZATION AND INSTALLATION OF SESC MEASURES	2
REMOVAL OF EXISTING PIPE AND STRUCTURES	7
INSTALLATION OF STORM PIPE AND STRUCTURES	7
SOIL STABILIZATION AND PAVEMENT RESTORATION	3
REMOVAL OF SESC MEASURES	1

GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

SOIL EROSION & SEDIMENT CONTROL PLAN TEMPLE WAY

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SCALE:	DATE:
1" = 20'	9/14/2023
DESIGNED:	CHECKED:
JE	LM

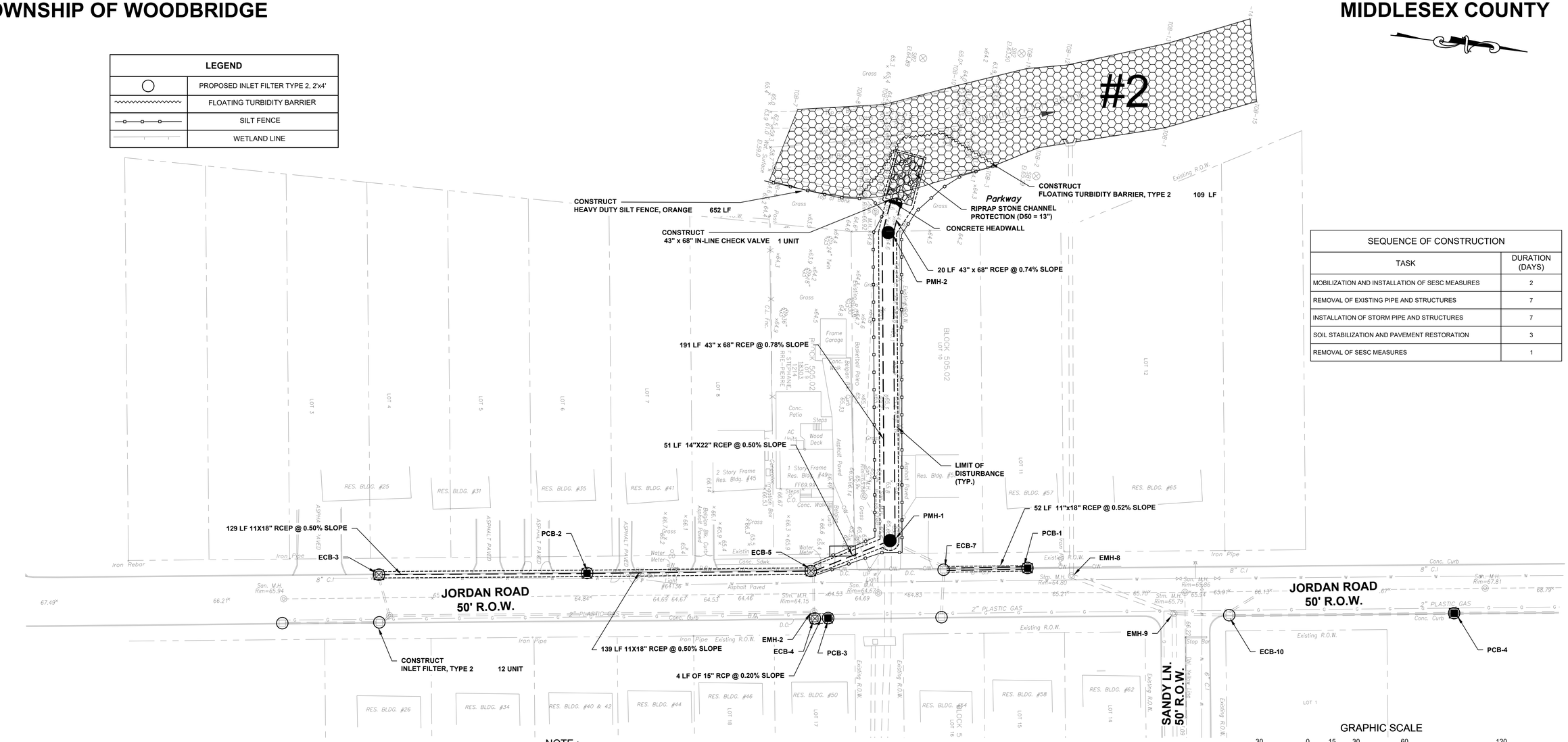
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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY

LEGEND	
○	PROPOSED INLET FILTER TYPE 2, 2'x4'
~~	FLOATING TURBIDITY BARRIER
—o—o—o—	SILT FENCE
— I — I —	WETLAND LINE



PERMITS			
PERMIT TYPE & FILE NO.	ISSUED	EXPIRES	SELECTED CONDITIONS (SEE ACTUAL PERMITS FOR ADDITIONAL CONDITIONS)
NJDEP FLOOD HAZARD AREA INDIVIDUAL PERMIT	08/08/2023	08/07/2028	In order to protect the fishery within Pumpkin Patch Brook and its tributaries, any proposed grading or construction activities(including the installation of cofferdams) within the banks of this or any other waterbody on site are prohibited between May 1 and June 30 of each year. In addition, any activity within the 100-year floodplain or flood hazard area draining to the waterbody (ies) that could introduce sediment into said waterbody (ies) or that could cause an increase in the natural level of turbidity is also prohibited during this period. The NJDEP reserves the right to suspend all regulated activities on site should it be determined that proper precautions have not been taken to ensure continuous compliance with these conditions. In addition, refer to the Soil Erosion and Sediment Control General Notes on Sheet Number 35.
NJDEP FRESHWATER WETLANDS INDIVIDUAL PERMIT	08/08/2023	08/07/2028	
SOIL EROSION AND SEDIMENT CONTROL PERMIT	XX/XX/XXXX	XX/XX/XXXX	

NOTE :

1. STOCKPILE AREA TO BE DETERMINED BY CONTRACTOR.
2. TREE PROTECTION IS TO BE PROVIDED FOR ANY TREE WITHIN THE LIMIT OF DISTURBANCE.

LEGEND	
▨	#1 SENSITIVE AREA - WETLANDS, SEE ENVIRONMENTALLY SENITIVE AREA A
⬡	#2 SENSITIVE AREA - STATE OPEN WATERS, SEE ENVIRONMENTALLY SENITIVE AREA B

ENVIRONMENTALLY SENSITIVE AREAS	
A	SENSITIVE AREA - WETLANDS
B	SENSITIVE AREA - STATE OPEN WATERS

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
2	HEAVY DUTY SILT FENCE, ORANGE	L.F.	652
3	INLET FILTER TYPE 2, 2'x4'	UNIT	12
4	FLOATING TURBIDITY BARRIER, TYPE 2	L.F.	109

SEQUENCE OF CONSTRUCTION	
TASK	DURATION (DAYS)
MOBILIZATION AND INSTALLATION OF SESC MEASURES	2
REMOVAL OF EXISTING PIPE AND STRUCTURES	7
INSTALLATION OF STORM PIPE AND STRUCTURES	7
SOIL STABILIZATION AND PAVEMENT RESTORATION	3
REMOVAL OF SESC MEASURES	1

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

SOIL EROSION & SEDIMENT CONTROL PLAN JORDAN ROAD

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NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

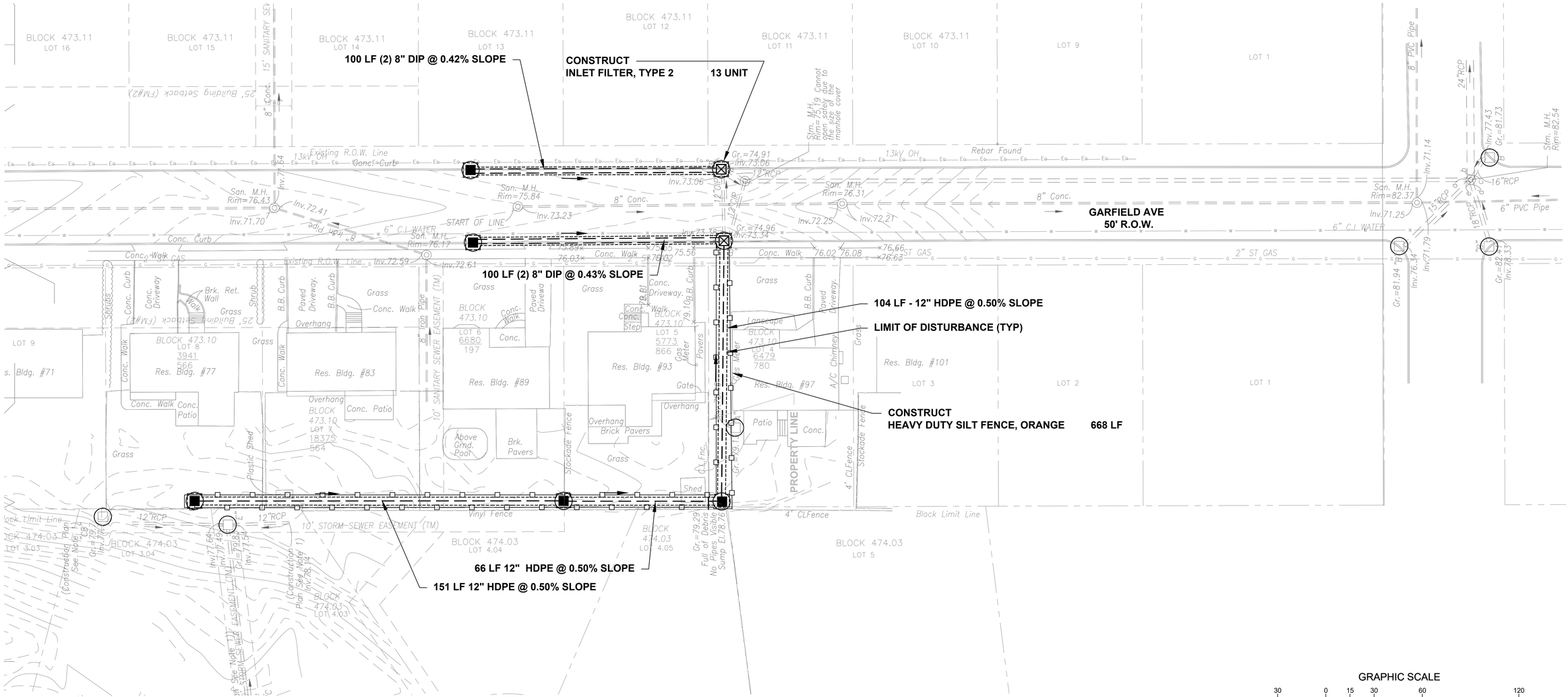
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SHEET NO. 39 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY



GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

NOTE :

1. STOCKPILE AREA TO BE DETERMINED BY CONTRACTOR.
2. TREE PROTECTION IS TO BE PROVIDED FOR ANY TREE WITHIN THE LIMIT OF DISTURBANCE.

SEQUENCE OF CONSTRUCTION	
TASK	DURATION (DAYS)
MOBILIZATION AND INSTALLATION OF SESC MEASURES	2
REMOVAL OF EXISTING PIPE AND STRUCTURES	7
INSTALLATION OF STORM PIPE AND STRUCTURES	7
SOIL STABILIZATION AND PAVEMENT RESTORATION	3
REMOVAL OF SESC MEASURES	1

LEGEND	
◯	PROPOSED INLET FILTER TYPE 2, 2'x4'

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
2	HEAVY DUTY SILT FENCE, ORANGE	LF	668
3	INLET FILTER TYPE 2, 2'x4'	UNIT	13

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

SOIL EROSION & SEDIMENT CONTROL PLAN GARFIELD AVENUE

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
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Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

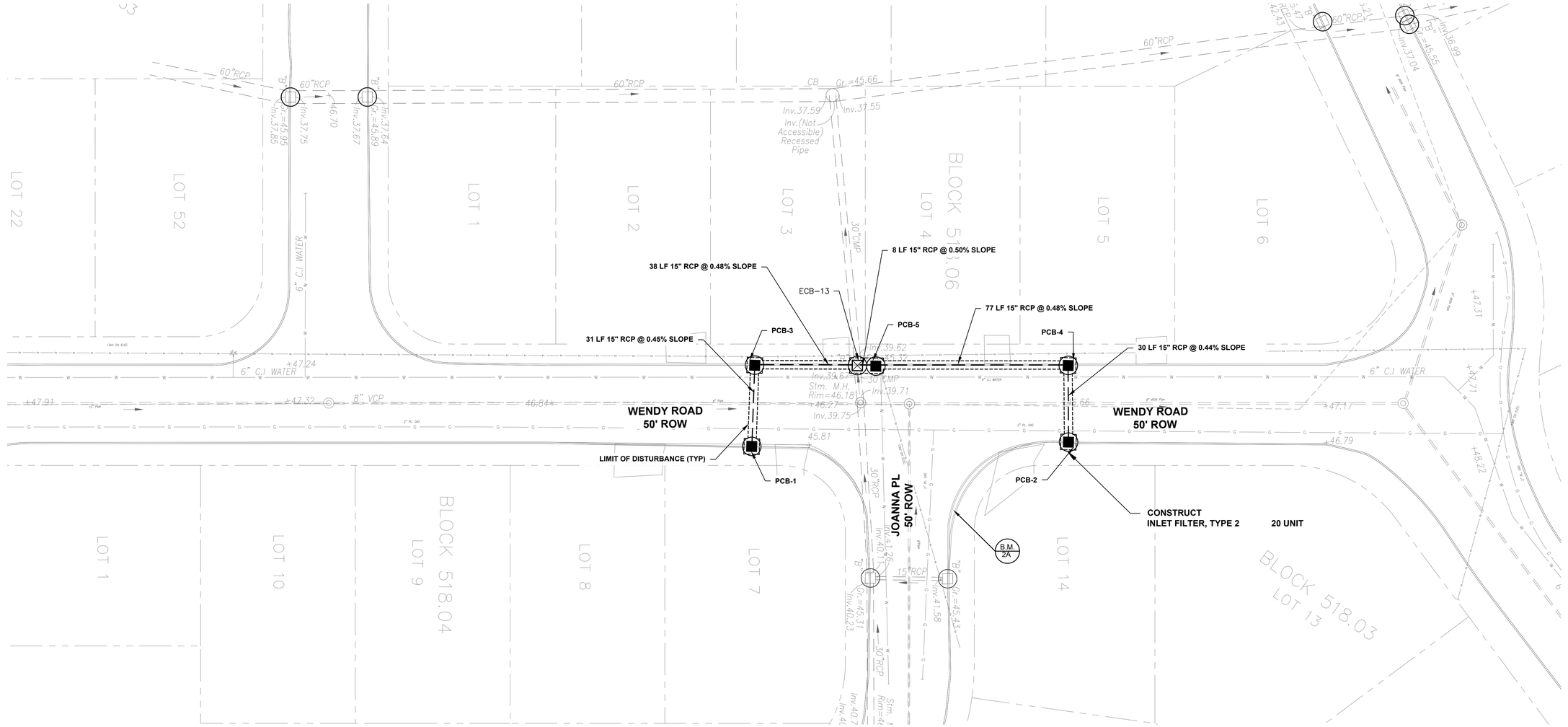
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JE	LM

SHEET NO. 40 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY



NOTE :

1. STOCKPILE AREA TO BE DETERMINED BY CONTRACTOR.
2. TREE PROTECTION IS TO BE PROVIDED FOR ANY TREE WITHIN THE LIMIT OF DISTURBANCE.

GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

SEQUENCE OF CONSTRUCTION	
TASK	DURATION (DAYS)
MOBILIZATION AND INSTALLATION OF SESC MEASURES	2
REMOVAL OF EXISTING PIPE AND STRUCTURES	7
INSTALLATION OF STORM PIPE AND STRUCTURES	7
SOIL STABILIZATION AND PAVEMENT RESTORATION	3
REMOVAL OF SESC MEASURES	1

LEGEND	
◯	PROPOSED INLET FILTER TYPE 2, 2'x4'

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
3	INLET FILTER TYPE 2, 2'x4'	UNIT	20

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

SOIL EROSION & SEDIMENT CONTROL PLAN WENDY ROAD

NAIK CONSULTING GROUP, PC
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NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY
LINDSAY A. MAGUIRE
No. GE58958
LICENSED PROFESSIONAL ENGINEER

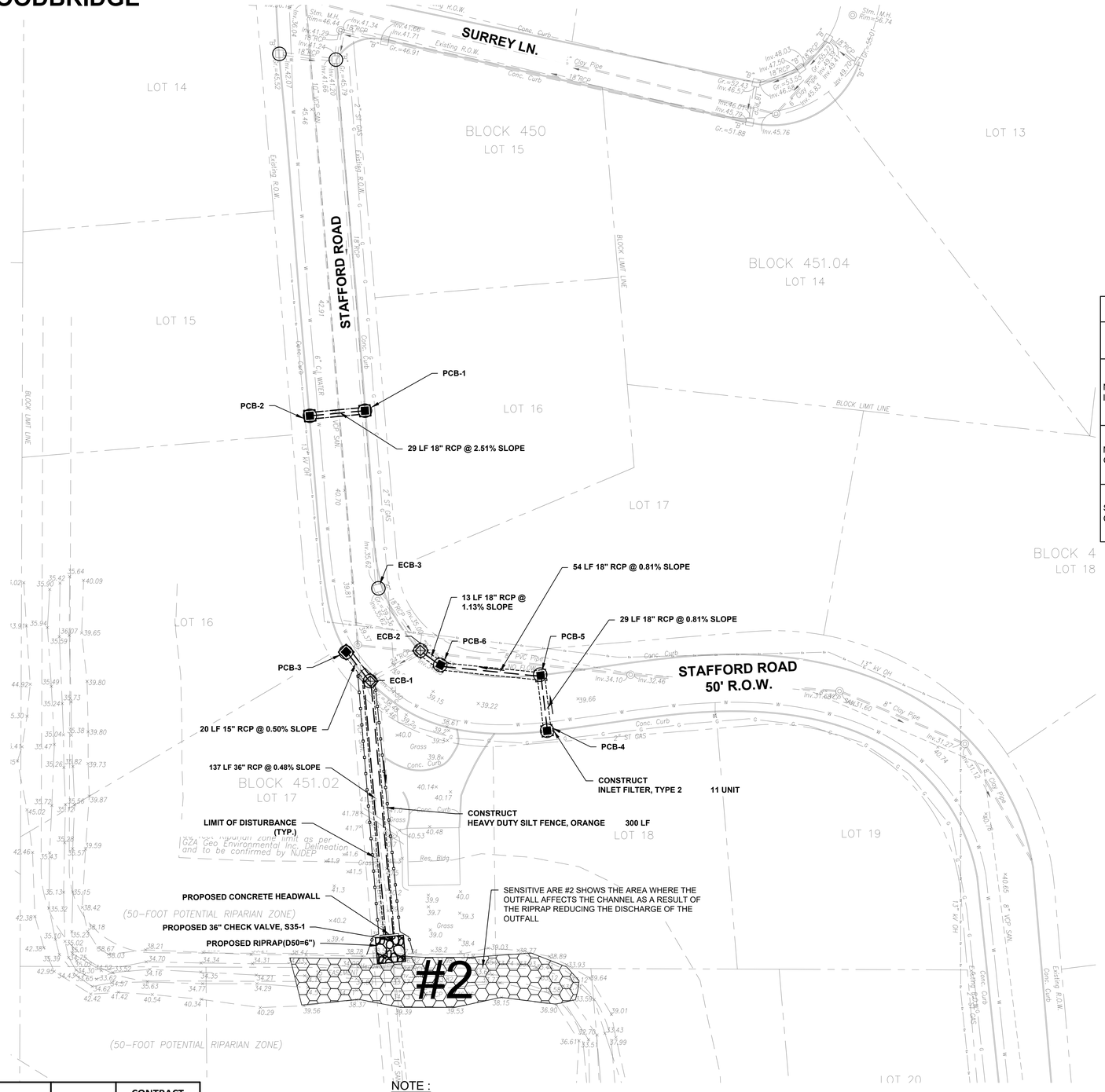
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SHEET NO. 41 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY



SEQUENCE OF CONSTRUCTION	
TASK	DURATION (DAYS)
MOBILIZATION AND INSTALLATION OF SESC MEASURES	2
REMOVAL OF EXISTING PIPE AND STRUCTURES	7
INSTALLATION OF STORM PIPE AND STRUCTURES	7
SOIL STABILIZATION AND PAVEMENT RESTORATION	3
REMOVAL OF SESC MEASURES	1

LEGEND	
◯	PROPOSED INLET FILTER TYPE 2, 2'x4'

PERMITS			
PERMIT TYPE & FILE NO.	ISSUED	EXPIRES	SELECTED CONDITIONS (SEE ACTUAL PERMITS FOR ADDITIONAL CONDITIONS)
NJDEP FLOOD HAZARD AREA INDIVIDUAL PERMIT	07/06/2023	07/05/2028	In order to protect the fishery within South Branch Rahway river and its tributaries, any proposed grading or construction activities(including the installation of cofferdams) within the banks of this or any other waterbody on site are prohibited between May 1 and June 30 of each year. In addition, any activity within the 100-year floodplain or flood hazard area draining to the waterbody (ies) that could introduce sediment into said waterbody (ies) or that could cause an increase in the natural level of turbidity is also prohibited during this period. The NJDEP reserves the right to suspend all regulated activities on site should it be determined that proper precautions have not been taken to ensure continuous compliance with these conditions. In addition, refer to the Soil Erosion and Sediment Control General Notes on Sheet Number 35.
NJDEP FRESHWATER WETLANDS GENERAL PERMIT 11	07/06/2023	07/05/2028	
SOIL EROSION AND SEDIMENT CONTROL PERMIT	XX/XX/XXXX	XX/XX/XXXX	

LEGEND	
▨	#1 SENSITIVE AREA - WETLANDS, SEE ENVIRONMENTALLY SENITIVE AREA A
▨	#2 SENSITIVE AREA - STATE OPEN WATERS, SEE ENVIRONMENTALLY SENITIVE AREA B

ENVIRONMENTALLY SENSITIVE AREAS
A SENSITIVE AREA - WETLANDS
B SENSITIVE AREA - STATE OPEN WATERS

GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
2	HEAVY DUTY SILT FENCE, ORANGE	LF	300
3	INLET FILTER TYPE 2, 2'x4'	UNIT	11

NOTE :

1. STOCKPILE AREA TO BE DETERMINED BY CONTRACTOR.
2. TREE PROTECTION IS TO BE PROVIDED FOR ANY TREE WITHIN THE LIMIT OF DISTURBANCE.

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

SOIL EROSION & SEDIMENT CONTROL PLAN STAFFORD ROAD

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Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

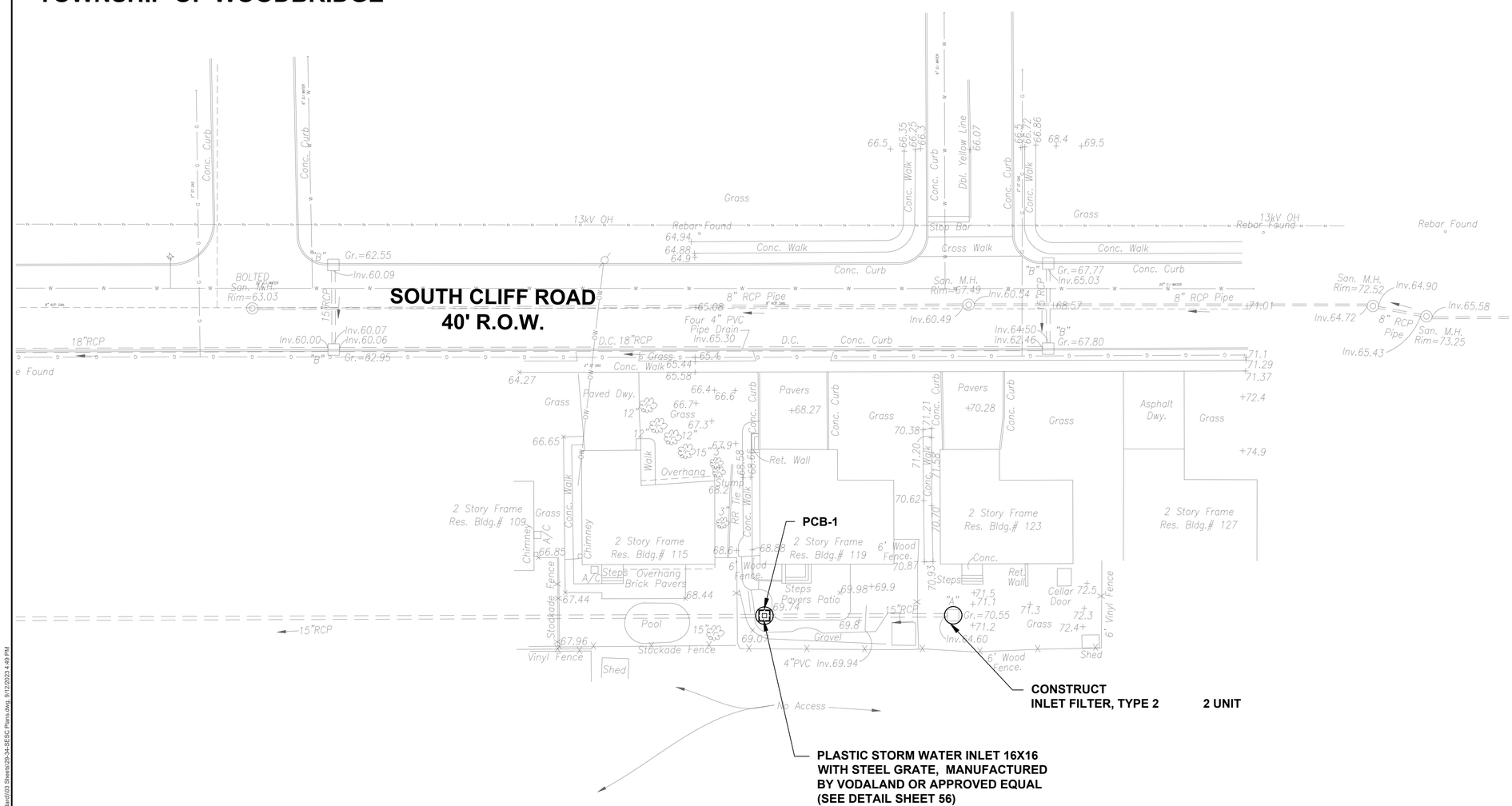
STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY



SEQUENCE OF CONSTRUCTION	
TASK	DURATION (DAYS)
MOBILIZATION AND INSTALLATION OF SESC MEASURES	1
REMOVAL OF EXISTING PIPE AND STRUCTURES	2
INSTALLATION OF STORM PIPE AND STRUCTURES	2
SOIL STABILIZATION AND PAVEMENT RESTORATION	1
REMOVAL OF SESC MEASURES	1

GRAPHIC SCALE

20 0 10 20 40 80

1" = 20'

NOTE :

1. STOCKPILE AREA TO BE DETERMINED BY CONTRACTOR.
2. TREE PROTECTION IS TO BE PROVIDED FOR ANY TREE WITHIN THE LIMIT OF DISTURBANCE.

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
3	INLET FILTER TYPE 2, 2'x4'	UNIT	2

LEGEND	
◯	PROPOSED INLET FILTER TYPE 2, 2'x4'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

SOIL EROSION & SEDIMENT CONTROL PLAN SOUTH CLIFF ROAD

NAIK CONSULTING GROUP, PC
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200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

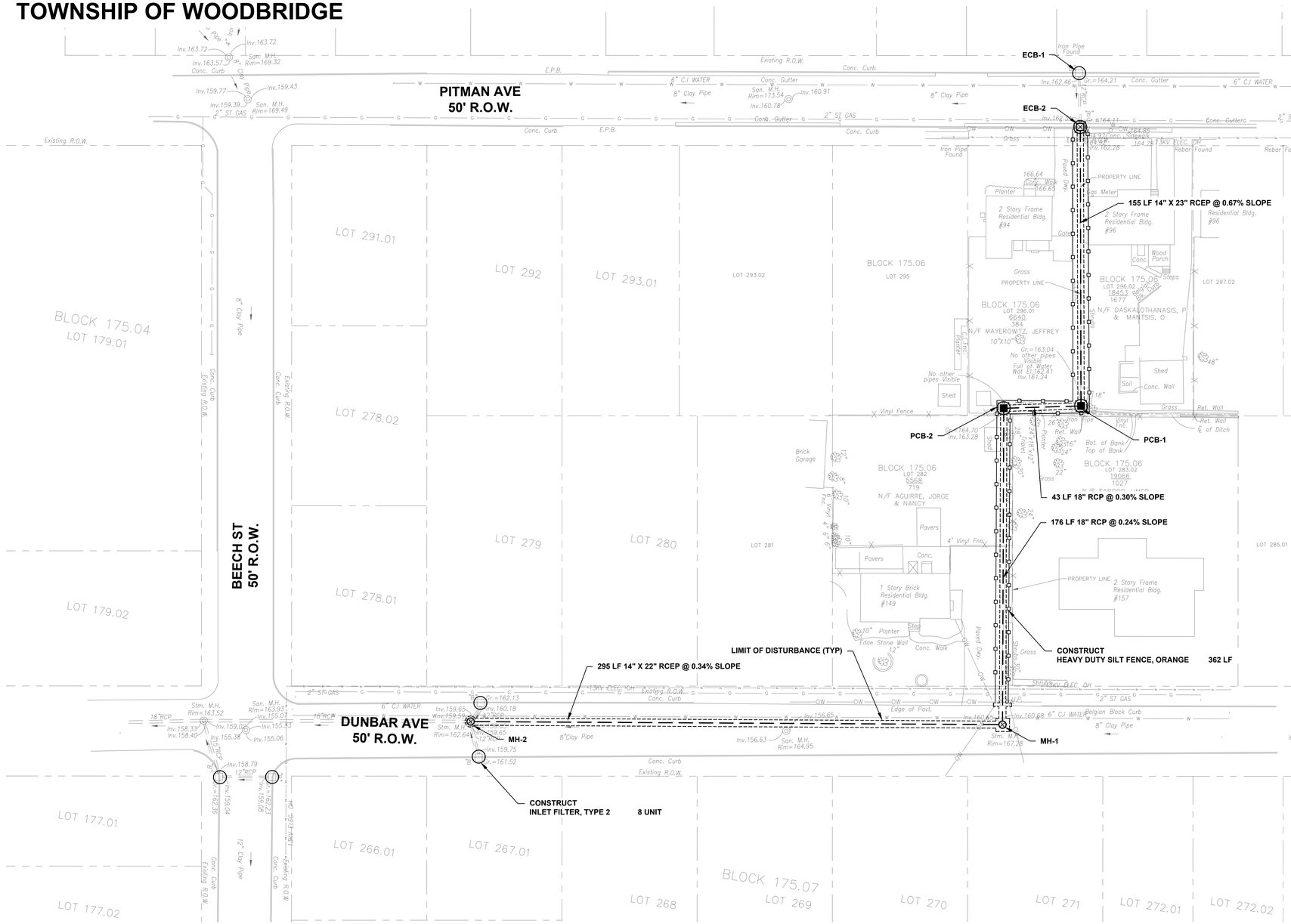
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SHEET NO. 43 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY



SEQUENCE OF CONSTRUCTION	
TASK	DURATION (DAYS)
MOBILIZATION AND INSTALLATION OF SESC MEASURES	2
REMOVAL OF EXISTING PIPE AND STRUCTURES	7
INSTALLATION OF STORM PIPE AND STRUCTURES	7
SOIL STABILIZATION AND PAVEMENT RESTORATION	3
REMOVAL OF SESC MEASURES	1

NOTE :

1. STOCKPILE AREA TO BE DETERMINED BY CONTRACTOR.
2. TREE PROTECTION IS TO BE PROVIDED FOR ANY TREE WITHIN THE LIMIT OF DISTURBANCE.

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
2	HEAVY DUTY SILT FENCE, ORANGE	LF	362
3	INLET FILTER TYPE 2, 2'x4'	UNIT	8

LEGEND	
◯	PROPOSED INLET FILTER TYPE 2, 2'x4'

GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

SOIL EROSION & SEDIMENT CONTROL PLAN PITMAN AVENUE

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

NO.	DATE	REVISIONS	BY

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

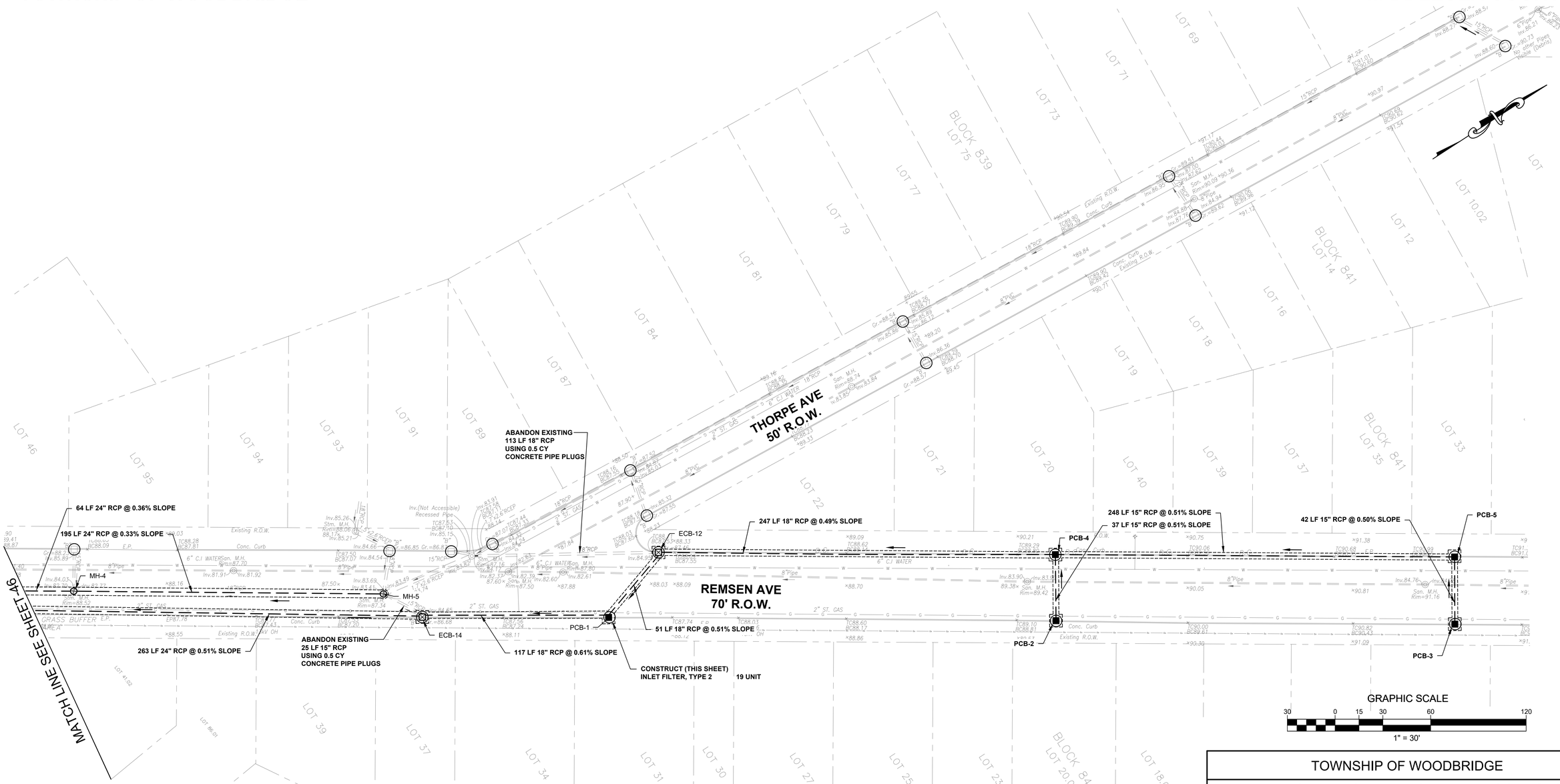
STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
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SHEET NO. 44 OF 62

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TOWNSHIP OF WOODBRIDGE **MIDDLESEX COUNTY**



NOTE :

1. STOCKPILE AREA TO BE DETERMINED BY CONTRACTOR.
2. TREE PROTECTION IS TO BE PROVIDED FOR ANY TREE WITHIN THE LIMIT OF DISTURBANCE.

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
2	INLET FILTER TYPE 2, 2'x4'	UNIT	19

LEGEND	
◯	PROPOSED INLET FILTER TYPE 2, 2'x4'

SEQUENCE OF CONSTRUCTION	
TASK	DURATION (DAYS)
MOBILIZATION AND INSTALLATION OF SESC MEASURES	2
REMOVAL OF EXISTING PIPE AND STRUCTURES	7
INSTALLATION OF STORM PIPE AND STRUCTURES	7
SOIL STABILIZATION AND PAVEMENT RESTORATION	3
REMOVAL OF SESC MEASURES	1

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS TOWNSHIP OF WOODBRIDGE MIDDLESEX COUNTY, NEW JERSEY

SOIL EROSION & SEDIMENT CONTROL PLAN REMSEN AVENUE

NAIK CONSULTING GROUP, PC
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LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

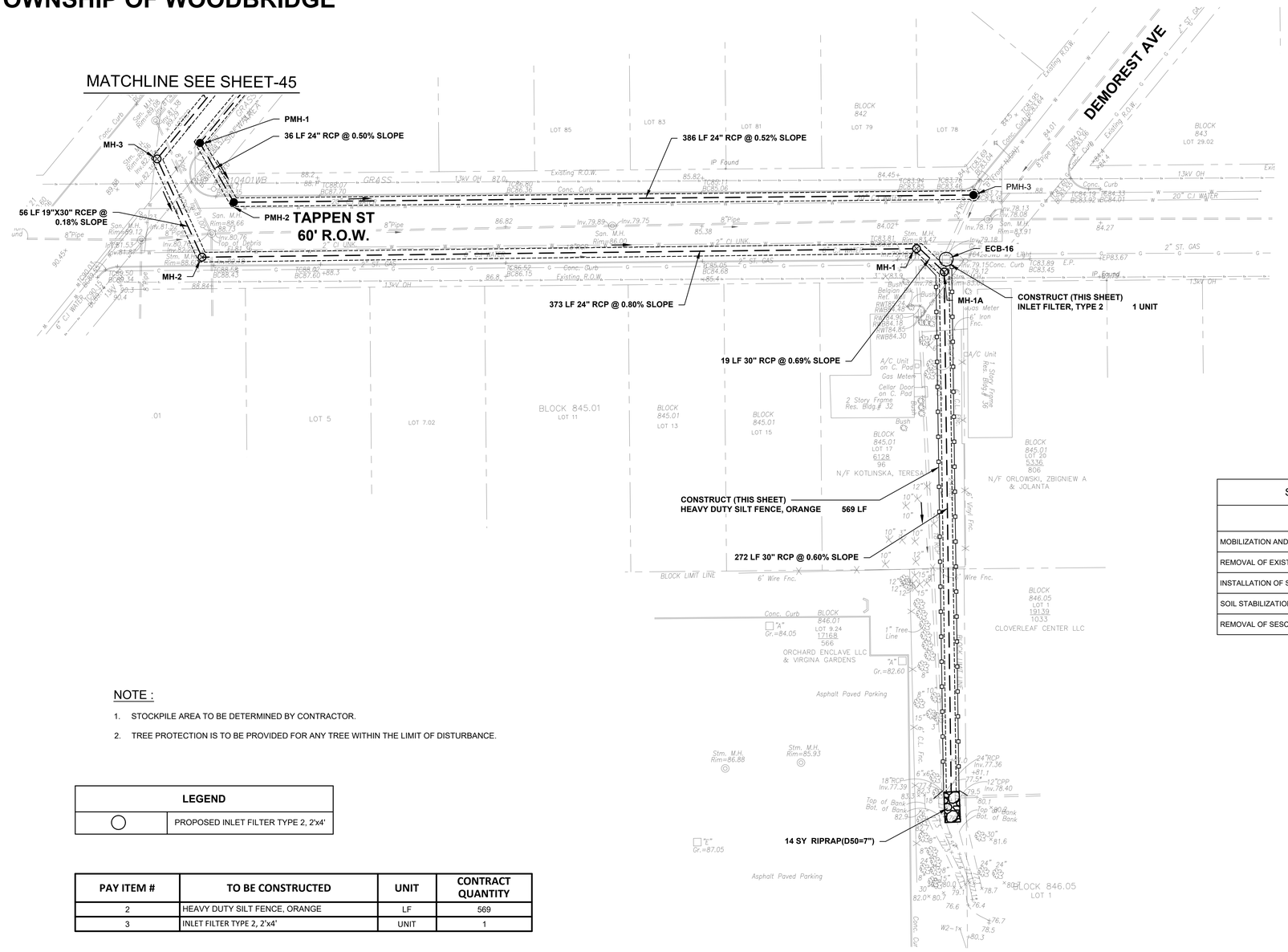
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SHEET NO. 45 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY



SEQUENCE OF CONSTRUCTION

TASK	DURATION (DAYS)
MOBILIZATION AND INSTALLATION OF SESC MEASURES	2
REMOVAL OF EXISTING PIPE AND STRUCTURES	7
INSTALLATION OF STORM PIPE AND STRUCTURES	7
SOIL STABILIZATION AND PAVEMENT RESTORATION	3
REMOVAL OF SESC MEASURES	1

NOTE :

1. STOCKPILE AREA TO BE DETERMINED BY CONTRACTOR.
2. TREE PROTECTION IS TO BE PROVIDED FOR ANY TREE WITHIN THE LIMIT OF DISTURBANCE.

LEGEND	
◯	PROPOSED INLET FILTER TYPE 2, 2'x4'

PAY ITEM #	TO BE CONSTRUCTED	UNIT	CONTRACT QUANTITY
2	HEAVY DUTY SILT FENCE, ORANGE	LF	569
3	INLET FILTER TYPE 2, 2'x4'	UNIT	1

GRAPHIC SCALE

30 0 15 30 60 120

1" = 30'

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

SOIL EROSION & SEDIMENT CONTROL PLAN TAPPEN STREET

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY LINDSAY A. MAGUIRE No. GE58958 LICENSED PROFESSIONAL ENGINEER

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DESIGNED: JE	CHECKED: LM

SHEET NO. 46 OF 62

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SOIL EROSION AND SEDIMENT CONTROL NOTES:

1. Freehold Soil Conservation District shall be notified forty-eight (48) hours in advance of any soil disturbing activity.
2. 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.
3. 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.
4. 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 lot-by-lot or section-by-section basis, provided that the project or portion thereof is in satisfactory compliance with the sequence of development and temporary measures for soil erosion and sediment control have been implemented, including provisions for stabilization and site work.
5. 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 ½ tons per acre, according to the Standard for Stabilization with Mulch Only.
6. 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.
7. 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.
8. The Standard for Stabilized Construction Access requires the installation of a pad of clean crushed stone at points where traffic will be accessing the construction site. After interior roadways are paved, individual lots require a stabilized construction access consisting of one inch to two inch (1" – 2") stone for a minimum length of ten feet (10') equal to the lot entrance width. All other access points shall be blocked off.
9. All soil washed, dropped, spilled, or tracked outside the limit of disturbance or onto public right-of-ways will be removed immediately.
10. Permanent vegetation is to be seeded or sodded on all exposed areas within ten (10) days after final grading.
11. At the time that site preparation for permanent vegetative stabilization is going to be accomplished, any soil that will not provide a suitable environment to support adequate vegetative ground cover shall be removed or treated in such a way that it will permanently adjust the soil conditions and render it suitable for vegetative ground cover. If the removal or treatment of the soil will not provide suitable conditions, non-vegetative means of permanent ground stabilization will have to be employed.
12. 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 surface area) and covered with a minimum of 12" of settled soil with a pH of 5 or more, or 24" where trees or shrubs are to be planted.
13. Conduit Outlet Protection must be installed at all required outfalls prior to the drainage system becoming operational.
14. 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.
15. Should the control of dust at the site be necessary, the site will be sprinkled until the surface is wet, temporary vegetative cover shall be established or mulch shall be applied as required by the Standard for Dust Control.
16. Stockpile and staging locations established in the field shall be placed within the limit of disturbance according to the certified plan. Staging and stockpiles not located within the limit of disturbance will require certification of a revised Soil Erosion and Sediment Control Plan. Certification of a new Soil Erosion and Sediment Control Plan may be required for these activities if an area greater than 5,000 square feet is disturbed.
17. All soil stockpiles are to be temporarily stabilized in accordance with Soil Erosion and Sediment Control note #5.
18. 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.

STANDARD FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

Methods and Materials

1. Site Preparation
   A. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standard for Land Grading.
   B. Immediately prior to seeding and topsoil application, the subsoil shall be evaluated for compaction in accordance with the Standard for Land Grading.
   C. 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 needed, in accordance with the Standard for Topsoiling.
   D. Install needed erosion control practices or facilities such as diversions, grade-stabilization structures, channel stabilization measures, sediment basins, and waterways.
2. Seedbed Preparation
   A. 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/county/). Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10-10-10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise and incorporated into the surface 4 inches. If fertilizer is not incorporated, apply one-half the rate described above during seedbed preparation and repeat another one-half rate application of the same fertilizer within 3 to 5 weeks after seeding.
   B. Work lime and fertilizer into the topsoil as nearly as practical to a depth of 4 inches with a disc, spring-tooth harrow, or other suitable equipment. The final harrowing or disking operation should be on the general contour. Continue tillage until a reasonable uniform seedbed is prepared.
   C. High acid producing soil. Soils having a pH of 4 or less or containing iron sulfide shall be covered with a minimum of 12 inches of soil having a pH of 5 or more before initiating seedbed reparation. See Standard for Management of High Acid-Producing Soils for specific requirements.
3. Seeding
   A. Select a mixture from Table 4-3 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.
      1. 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 prior to a report of compliance inspection. These rates apply to all methods of seeding. Establishing permanent vegetation means 80% vegetative coverage with the specified seed mixture for the seeded area and mowed once.
      2. Warm-season mixtures are grasses and legumes which maximize growth at high temperatures, generally 85°F and above. Planting rates for warm-season grasses shall be the amount of Pure Live Seed (PLS) as determined by germination testing results.
      3. Cool-season mixtures are grasses and legumes which maximize growth at temperatures below 85°F. Many grasses become active at 65°F. See Table 4-3, mixtures 7&14. Adjustment of planting rates to compensate for the amount of PLS is not required for cool season grasses.
   B. Conventional Seeding is performed by applying seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked seedings, seed shall be incorporated into the soil within 24 hours of seedbed preparation to a depth of 1/4 to 1/2 inch, by raking or dragging. Depth of seed placement may be 1/4 inch deeper on coarse-textured soil.
   C. After seeding, firming the soil with a corrugated roller will assure good seed-to-soil contact, restore capillarity, and improve seedling emergence. This is the preferred method. When performed on the contour, sheet erosion will be minimized and water conservation on site will be maximized.
   D. Hydroseeding is a broadcast seeding method usually involving a truck, or trailer-mounted tank, with an agitation system and hydraulic pump for mixing seed, water and fertilizer and spraying the mix onto the prepared seedbed. Mulch shall not be included in the tank with seed. Short-fibered mulch may be applied with a hydroseeder following seeding. (also see Section 4-Mulching below). Hydroseeding is not a preferred seeding method because seed and fertilizer 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.
4. Mulching

   (See Mulching Specification for Permanent and Temporary Vegetative Cover for Soil Stabilization)
5. Irrigation (where feasible)

   If soil moisture is deficient supply new seeding with adequate water (a minimum of 1/4 inch applied up to twice a day until vegetation is well established). This is especially true when seedings are made in abnormally dry or hot weather or on droughty sites.
6. Topdressing

   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 7 pounds per 1,000 square feet every 3 to 5 weeks until the gross nitrogen deficiency in the turf is ameliorated.
7. Establishing Permanent Vegetative Stabilization

   The quality of permanent vegetation rests with the contractor. The timing of seeding, preparing the seedbed, applying nutrients, mulch and other management are essential. The seed application rates in Table 4-3 are required when a Report of Compliance is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in application rates may be used when permanent vegetation is established prior to requesting a Report of Compliance from the district. These rates apply to all methods of seeding. Establishing permanent vegetation means 80% vegetative cover (of the seeded species) and mowed once. Note this designation of mowed once does not guarantee the permanency of the turf should other maintenance factors be neglected or otherwise mismanaged. 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.

TABLE 4-3 (SELECTIONS AND RECOMMENDATIONS FROM TABLE 4-3)

PERMANENT SEED IN DETENTION BASIN MIXTURE:	PERMANENT SEED MIXTURE:
1. CONSISTING OF:	
(COOL SEASON SEED MIXTURE #7)	(COOL SEASON SEED MIXTURE #14)
130 LBS/ACRE STRONG CREEPING RED FESCUE	265 LBS/ACRE TALL FESCUE
50 LBS/ACRE KENTUCKY BLUEGRASS	20 LBS/ACRE KENTUCKY BLUEGRASS (BLEND)
20 LBS/ACRE PERENNIAL RYE GRASS OR	20 LBS/ACRE PERENNIAL RYE GRASS (BLEND)
10 LBS/ACRE REDTOP	305 LBS/ACRE
5 LBS/ACRE PLUS WHITE CLOVER	
215 LBS/ACRE	

2. SEED MIX SHALL BE FRESH, CLEAN, NEW-CROP SEED WITH A GUARANTEED STATEMENT OF COMPOSITION.
3. SEED TO BE PLANTED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
4. SEED TO BE PLANTED TO ITS OPTIMUM DEPTH OF 1/2".
5. SEEDING DATES: MARCH 1 - NOVEMBER 15.

STANDARD FOR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

Methods and Materials

1. Site Preparation
   A. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with Standards for Land Grading.
   B. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways.
   C. Immediately prior to seeding, the surface should be scarified 6" to 12" where there has been soil compaction. This practice is permissible only where there is no danger to underground utilities (cables, irrigation systems, etc.).
2. Seedbed Preparation
   A. Apply ground limestone and fertilizer according to soil test recommendations such as offered by Rutgers Co-operative Extension. Soil sample mailers are available from the local Rutgers Cooperative Extension offices. Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10-20-10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise. 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.
   B. 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.
   C. Inspect seedbed just before seeding. If traffic has left the soil compacted, the area must be retilled in accordance with the above.
   D. Soils high in sulfides or having a pH of 4 or less refer to Standard for Management of High Acid Producing Soils.
3. Seeding
   A. Select seed from recommendations in Table 7-2.
   B. Conventional Seeding. Apply seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked seedings, seed shall be incorporated into the soil, 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.
   C. Hydroseeding is a broadcast seeding method usually involving a truck or trailer mounted tank, with an agitation system and hydraulic pump for mixing seed, water and fertilizer and spraying the mix onto the prepared seedbed. Mulch shall not be included in the tank with seed. Short fibered mulch may be applied with a hydroseeder following seeding. (also see Section IV Mulching) Hydroseeding is not a preferred seeding method because seed and fertilizer are applied to the surface and not incorporated into the soil. Poor seed to soil contact occurs reducing seed germination and growth. Hydroseeding may be used for areas too steep for conventional equipment to traverse or too obstructed with rocks, stumps, etc.
   D. After seeding, firming the soil with a corrugated roller will assure good seed-to-soil contact, restore capillarity, and improve seedling emergence. This is the preferred method. When performed on the contour, sheet erosion will be minimized and water conservation on site will be maximized.
4. Mulching
   (See Mulching Specification for Permanent and Temporary Vegetative Cover for Soil Stabilization)

TABLE 7-2 (SELECTION AND RECOMMENDATIONS FROM TABLE 7-2)

TEMPORARY SEED MIXTURE:
1. CONSISTING OF PERENNIAL RYEGRASS (COOL SEASON GRASS #1) AT A RATE OF 1 LB/1000 S.F.
2. SEED MIX SHALL BE FRESH, CLEAN, NEW-CROP SEED WITH A GUARANTEED STATEMENT OF COMPOSITION.
3. SEED TO BE PLANTED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
4. SEED TO BE PLANTED TO ITS OPTIMUM DEPTH OF 1/2".
5. SEEDING DATES: MARCH 1 - MAY 15 AND AUGUST 15 - OCTOBER 1.

MULCHING SPECIFICATION FOR PERMANENT AND TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

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 deemed compliance with this mulching requirement.

A. Straw or Hay. Unnrotted small grain 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 85%-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.

1. 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 cris-cross and a square pattern. Secure twine around each peg with two or more round turns.
2. Mulch Nettings. Staple paper, jute, cotton, or plastic nettings to the soil surface. Use a degradable netting in areas to be mowed.
3. Crimper (mulch anchoring tool). A tractor-drawn implement, somewhat like a disc harrow, especially designed to push or cut some of the broadcast long fiber mulch 3 to 4 inches into the soil so as to anchor it and leave part standing upright. This technique is limited to areas traversable by a tractor, which must operate on the contour of slopes. Straw mulch rate must be 3 tons per acre. No tackifying or adhesive agent is required.
4.
5. Liquid Mulch-Binders - May be used to anchor 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.
   b. Use one of the following:
      (1) Organic and Vegetable Based Binders - Naturally occurring, powder based, hydrophilic materials when mixed with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membraned networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turfgrass. 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.
      (2) Synthetic Binders - High polymer synthetic emulsion, miscible with water when diluted and following application to mulch, drying and curing shall no longer be soluble or dispersible in water. It shall be applied at rates recommended by the manufacturer and remain tacky until germination of grass.

      Note: All names give above are registered trade names. This does not constitute a commendation of these products to the exclusion of other products.
6. 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 ponds per acre (or as recommended by the project manufacturer) and may be applied by a hydroseeder. This 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.
7. Pelletized mulch. Compressed and extruded paper and/or wood fiber product, which may contain co-polymers, tackifiers, fertilizers and coloring agents. The dry pellets, when applied to a seeded area and watered, forma mulch mat. Pelletized mulch shall be applies in accordance with the manufacturers 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 bee found to be beneficial for use on small lawn or renovation areas, seeded areas where weed-seed free mulch is desired or on sites where straw mulch and tackifier agent are not practical or desirable. Applying the full 0.2 to 0.4 inches of water after spreading pelletized mulch on the seed bed is extremely Important for sufficient activation and expansion of the mulch to provide soil coverage.

STANDARD FOR STABILIZATION WITH MULCH ONLY

Methods and Materials:

1. Site Preparation
   A. Grade as needed and feasible to permit the use of conventional equipment for speedbed prepraration, seeding, mulch application, and mulch anchoring. All grading should be done in accordance with standards for land grading.
   B. Install needed erosion control practices or facilities such as diversions, grade stabilization measures, sediment basins, and waterways.
2. Protective Materials
   A. Unrotted small-grain straw, or salt hay at 2.0 to 2.5 tons per acre spread uniformly at 90 to 115 pounds per 1000 square feet and anchored with a mulch anchoring tool, liquid mulch binders, or netting tie down. Other suitable materials may be used if approved by the Soil Conversation District.
   B. Asphalt emulsion is recommended at the rate of 600 to 1,200 gallons per acre. This is suitable for a limited period of time w here travel by people, animals, or machines is not a problem.
   C. Synthetic or organic soil stabilizers may be used under suitable conditions and in quantities as recommended by the manufacturer.
   D. Wood-fiber or paper fiber mulch at the rate of 1,500 pounds per acre (or according to the manufacturer's requirements) may be applied by a hydroseeder.
   E. Mulch-netting, such as paper jute, excelsior, cotton, or plastic, may be used.
   F. Woodchips applied uniformly to a minimum depth of 2 inches may be used. Woodchips will not be used on areas where flowing water could wash them into an inlet and plug it.
   G. Gravel, crushed stone, or slag at the rate of 9 cubic yards per 1,000 SF applied uniformly to a minimum depth of 3 inches may be used. Size 2 or 3 (ASTM-C-33) is recommended.
3. Mulch Anchoring - should be accomplished immediately after placement of hay or straw mulch to minimize loss by wind and water. This may be done by one of the following methods, depending upon the size of the area and the steepness of slopes.
   A. Peg and twine - drive 8 to 10 inche 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 crisscross and a square pattern.
   B. Mulch nettings - staple paper, cotton, or plastic netting over mulch. Use a degradable netting in areas to be mowed. Netting is usually available in rolls 4 feet wide and up to 300 feet long.
   C. Crimper mulch anchoring coulter tool - a tractor-drawn implement especially designed to punch and anchor mulch into the soil surface. This practice affords maximum erosion control. But its use is limited to those slopes upon which the tractor can operate safely. Soil penetration should be about 3 to 4 inches. On sloping land, the operation should be on contour.
   D. Liquid Mulch Binders

   Applications should be heavier at edges where wind catches the mulch, in valley, and at crests of banks. Remainder of area should be in uniform in appearance.
   1. Use One of the Following:
      a. Organic and vegetable based binders - naturally occuring, powder based, hydrophillic materials that mixed with water formulates a gel and when applied to a mulch under satisfactory curing conditions will form membraned networks of insoluble polymers. The vegetable gel shall be physiologically harmless and not result in a phytotoxic effect or impede growth of turfgrass. Vegetable based gels shall be applied at rates and weather conditions recommended by the manufacturer.
      b. Synthetic binders - high polymer synthetic emulsion, miscible with water when diluted and following application to mulch, drying and curing shall no longer be soluble or dispersible in water. It shall be applied at rates and weather conditions recommended by the manufacturer and remain tacky until germination of grass.

STANDARD FOR PERMANENT STABILIZATION WITH SOD

Methods and Materials

1. High quality cultivated sod is preferred over native or pasture sod.
2. Sod should be free of broadleaf weeds and undesirable coarse and fine weed grasses.
3. Sod should be of uniform thickness, typically 5/8 inch, plus or minus 1/4 inch, at time of cutting (excludes top growth.).
4. 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 ends will not be acceptable.
5. For droughty sites, a sod of turf-type tall fescue or turf-type tall fescue mixed with Kentucky bluegrass is preferred over a 100% Kentucky bluegrass sod. Although not widely available, a sod of fine fescue is also acceptable for droughty sites.
6. 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.

1. Site Preparation
   A. 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.
   B. Topsoil should be handled only when it is dry enough to work without damaging the soil structure. A uniform application to a depth of 6 inches (unsettled) is required on all sites. See the Standard for Topsoiling for topsoil and amendment requirements.
   C. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways.
2. Soil Preparation
   A. 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 500 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 ½ the rate described above during seedbed preparation and repeat another ½ 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.
   B.
   C. 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.
   D. 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.
   E. Inspect site just before sodding. If traffic has left the soil compacted, the area must be retilled and firmed in accordance with the above.
3. Sod Placement
   A. 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.
   B. Place sod strips with snug, even joints (seams) that are staggered. Open spaces invite erosion.
   C. Lightly roll or tamp sod immediately following placement to insure solid contact of root mat and soil surface. Do not overlap sod. All joints should be butted tightly to prevent voids which would cause drying of the roots and invasion of weeds.
   D. 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).
   E. Surface water cannot always be diverted from flowing over the face of the slope, but a capping strip of heavy jute or plastic netting, properly secured, along the crown of the slope and edges 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.
   F. 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.
4. 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.

REVEGATATION MATTING INSTALLATION

All areas so designated will be covered with miramat or approved equivalent. Revegetation mattting, before hydroseeding or planting. The mat shall be installed using the following method:

1. Unroll revegetation mat from top of slope to the base without stretching mat.
2. Bury edges of mat with 3" of soil to prevent undercutting of the soil.
3. Overlap by a minimum of 3" with the literally adjacent strip of matting.
4. Overlap by a minimum of 3' with the end of any roll. The terminal ends of each strip shall be buried in a looped fashion, 6" below the finished grade.
5. Peg all overlapped areas with 1" x 3" nominal wood pegs cut to 8" long triangular sections, or 8" long metal pins with 1-1/2" washers retained at the to of the pins.

JUTE MATTING SPECIFICATION

1. Jute mat shall be of cloth of a uniform plain weave with undyed and unbleached single jute yarn, 48 inches in width plus or minus 1 inch and weighing an average of 1.2 LBS/LINEAR YD. of cloth with a tolerance of plus or minus 5% with approximately 78 wrap ends per width of cloth and 41 weft ends per linear yard of cloth. The yarn shall be of a loosely twisted construction having an average twist of not less than 1.6 turns/in. and shall not vary in thickness by more than one half of its normal diameter.
2. Excelsior mat shall be wood excelsior, 48 inches in width plus or minus 1 inch and weighting 0.8 LBS/SY YD. plus or minus 10%. The excelsior material shall be covered with a netting to facilitate handing and to increase strength.
3. Staples - staples for anchoring soil stabilization matting shall be made of 12 to 20 inches in length of no. 8 plain iron wire.

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

SOIL EROSION AND SEDIMENT CONTROL NOTES

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

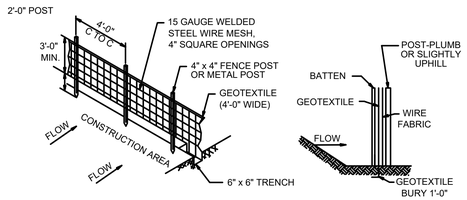
LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY — LINDSAY A. MAGUIRE — No. GE58958 — LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
NTS	9/14/2023
DESIGNED: JE	CHECKED: LM

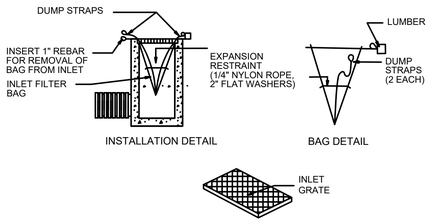
SHEET NO. 47 OF 62

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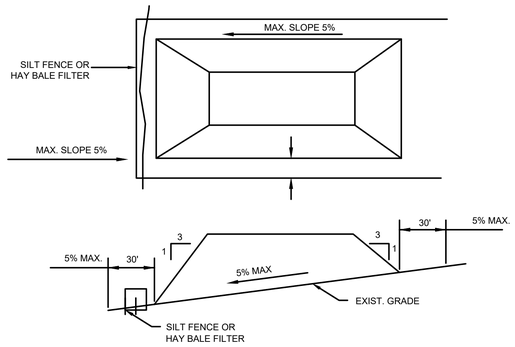


NOTES:
1. SECURELY FASTEN GEOTEXTILE TO WIRE FABRIC BY USE OF WIRE TIES OR HOG RINGS, THEN SANDWICH BETWEEN A 1" x 3" x 3' BATTEN AND THE POSTS PLACING SCREWS AT 6 INCH INTERVALS STARTING 3 INCHES FROM TOP.
2. BURY 4" X 4" FENCE POST 2'-0" BELOW GROUND.
3. BURY BOTTOM 1 FOOT OF GEOTEXTILE AS PER SILT FENCE AND TAMP IN PLACE.
4. SECURELY FASTEN ENDS OF INDIVIDUAL ROLLS OF GEOTEXTILE TO A COMMON POST BY WRAPPING EACH END OF THE GEOTEXTILE AROUND A BATTEN TWICE AND ATTACHING THE BATTEN TO POST WITH SCREWS AT 6 INCH INTERVALS STARTING 3 INCHES FROM THE TOP. SPLICING OF INDIVIDUAL ROLLS SHALL NOT OCCUR AT LOW POINTS.
5. BURY 6" OF WIRE FABRIC IN TIDAL AREAS.

HEAVY DUTY SILT FENCE
N.T.S.



INLET FILTERS, TYPE 2
N.T.S.



NOTES

1. STOCKPILE LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
2. ALL SIDE SLOPES SHALL BE 3 TO 1 OR FLATTER.
3. STOCKPILE SHALL RECEIVE A VEGETATIVE COVER IN ACCORDANCE WITH MINIMUM STABILIZATION BED.
4. SILT FENCE OR HAY BALE FILTER SHALL BE INSTALLED AS DETAILED HEREON.
5. SOIL STOCKPILE AREAS ARE NOT ANTICIPATED FOR THIS PROJECT BUT SHALL ADHERE TO THE DETAILS SHOWN IF UTILIZED.

STOCKPILE DETAIL
N.T.S.

DUST CONTROL NOTES:

1) PERFORM DUST MITIGATION IN ACCORDANCE WITH THE PERIMETER AIR MONITORING AND ACTION PLAN INCLUDED WITHIN THE REMEDIAL ACTION WORKPLAN, NEW JERSEY DEPARTMENT OF AGRICULTURE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY(REV. JULY 2017, EFF DEC. 2017). DUST CONTROL ENGINEERING STANDARD, AND THE CONTRACTOR SITE-SPECIFIC HEALTH AND SAFETY PLAN.

2) PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES.

3) CONTROL DUST THROUGH MITIGATION METHODS, INCLUDING SPRINKLING WATER OR AMENDED WATER UNTIL SURFACE IS WET, APPLICATION OF SPRAY [1] ON ADHESIVES, PLACEMENT OF BARRIERS OVER OR AROUND DISTURBED SURFACES, APPLICATION OF CALCIUM CHLORIDE, COVERING DISTURBED SURFACES WITH CRUSHED STONE OR COARSE GRAVEL, OR APPROVED ALTERNATIVE METHOD.

SOIL EROSION AND SEDIMENT CONTROL PLAN CONTRACTOR NOTES:

1) THE CONTRACTOR SHALL PERFORM ALL WORK, FURNISH ALL MATERIALS AND INSTALL ALL MEASURES REQUIRED TO REASONABLY CONTROL SOIL EROSION RESULTING FROM CONSTRUCTION OPERATIONS AND MINIMIZE LOSS OF SEDIMENT FROM THE CONSTRUCTION SITE. THE CONTRACTOR SHALL ADHERE TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN SHOWING THE METHODS TO BE USED FOR CONTROLLING EROSION DURING CONSTRUCTION, WHICH INCLUDES SEQUENCE OF CONSTRUCTION OPERATIONS. WHEN NO WORK WILL BE PERFORMED ON CRITICAL AREAS FOR MORE THAN 14 DAYS, THEY SHALL BE REDUCED BY THE INSTALLATION OF DIVERSIONS OR OTHER MEANS.

2) THE CONTRACTOR SHALL INSTALL EROSION CONTROLS ON ALL DISTURBED CRITICAL AREAS OR DISTURBANCES ADJACENT TO CRITICAL AREAS. CRITICAL AREAS ARE ANY AREA SUBJECT TO EXCESSIVE EROSION DUE TO HIGHLY ERODIBLE SOILS, SLOPE LENGTH, STEEPNESS, WATER CONCENTRATION, OR OTHER FACTORS. AREAS MAY BECOME CRITICAL WHEN THE VEGETATION OR OTHER SOIL SURFACE PROTECTION IS REMOVED.

3) EXPOSED SOIL HAVING A PH VALUE LESS THAN 4 SHALL BE TREATED IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGHLY ACIDIC SOIL.

4) EXCAVATED SOIL MATERIAL SHALL NOT BE PLACED ADJACENT TO RIVERS, STREAMS, OR BODIES OF WATER IN A MANNER THAT WILL CAUSE IT TO BE WASHED AWAY BY HIGH WATER OR RUNOFF.

5) THE CONTRACTOR SHALL COMPLY WITH APPLICABLE STATE AND LOCAL REGULATIONS FOR PREVENTION AND ABATEMENT OF POLLUTION.

SEQUENCE OF CONSTRUCTION

1) CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS BEFORE COMMENCEMENT OF CONSTRUCTION.

2) MOBILIZATION.

3) ALL EROSION CONTROL STRUCTURAL MEASURES, INCLUDING BUT NOT LIMITED TO TREE PROTECTION AND SILT FENCE SHALL BE IN PLACE PRIOR TO THE BEGINNING OF DISTURBANCE. ALL MEASURES SHALL BE INSPECTED AT LEAST 14 DAYS AND AFTER ANY RUNOFF PRODUCING RAIN EVENT.

4) SAWCUT EXISTING PAVEMENT AND REMOVE/ABANDON UNDERGROUND UTILITIES AS DIRECTED IN THE PLANS.

5) PREPARE SOIL AND PIPE BEDDING FOR INSTALLATION OF NEW PIPE, MANHOLES AND INLETS.

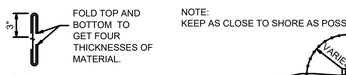
6) INSTALL PROPOSED HEADWALLS, OUTLET CONNECTIONS AS DIRECTED ON THE PLANS. CLEAR AND ADJUST GRADING AS NECESSARY.

7) DISTURBED AREA SHALL BE GRADED AND RESTORED TO EXISTING CONDITIONS.

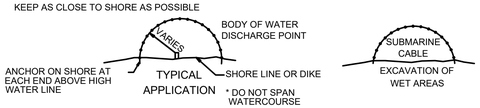
8) VEGETATIVE EROSION CONTROL MEASURES SHALL BE INSTALLED WHENEVER NECESSARY.

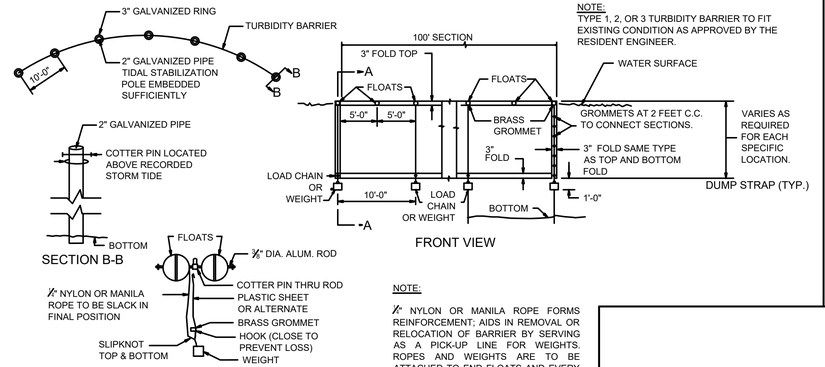
9) ALL STRUCTURAL EROSION CONTROL MEASURES SHALL BE REMOVED AT THE FINISH OF CONSTRUCTION.

10) ALL CONSTRUCTION FOR THIS PROJECT SHALL BE PERFORMED BETWEEN THE HOURS OF 7:30 AM AND 3:30 PM.



NOTE:
KEEP AS CLOSE TO SHORE AS POSSIBLE





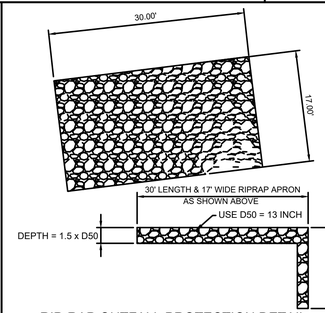
NOTE:
TYPE 1, 2, OR 3 TURBIDITY BARRIER TO FIT EXISTING CONDITION AS APPROVED BY THE RESIDENT ENGINEER.

NOTE:
⅜" NYLON OR MANILA ROPE FORMS REINFORCEMENT; AIDS IN REMOVAL OR RELOCATION OF BARRIER BY SERVING AS A PICK-UP LINE FOR WEIGHTS. ROPES AND WEIGHTS ARE TO BE ATTACHED TO END FLOATS AND EVERY SECOND FLOAT BETWEEN END FLOATS.

NOTE:
SUITABLE ALTERNATE MAY BE FASTENED TO STAKES DRIVEN INTO THE BOTTOM IN LIEU OF FLOATS AND WEIGHTS

NOTES:
1. INSTALL TURBIDITY BARRIER TO PREVENT DRIFTING OF SILT CAUSED BY DISCHARGE OF STORM SEWERS, DEWATERING BASINS, CONSTRUCTION, DREDGING OR FILLING OPERATIONS, OR OTHER ACTIVITIES THAT COULD CAUSE TURBIDITY.
2. EXACT PLACEMENT OF TURBIDITY BARRIER SHALL BE SO AS TO EFFECTIVELY CONTROL SILT DISPERSION UNDER THE CONDITIONS PRESENT ON A PARTICULAR PROJECT.
3. THE DETAILS SHOWN ON THIS SHEET ARE SUGGESTED METHODS ONLY. ALTERNATE SOLUTION AND USAGE OF MATERIALS MAY BE USED AS APPROVED.
4. USE APPROPRIATE NAVIGATIONAL WARNING LIGHTS WHEN USED NEXT TO NAVIGATIONAL CHANNEL.
5. TYPE 1 IS FOR PONDS, SHALLOW LAKES, SMALL STREAMS AND MARSHES WITH CURRENT VELOCITIES LESS THAN 1 FT./SEC AND SHELTERED FROM WINDS.
6. TYPE 2 IS FOR LAKES, STREAMS, INTERCOASTAL & TIDAL AREAS WITH CURRENT VELOCITIES UP TO 5 FT./SEC.
7. TYPE 3 IS FOR LAKES, STREAMS, INTERCOASTAL AND TIDAL AREAS WITH CONSIDERABLE CURRENT VELOCITIES UP TO 5FT./SEC., TIDAL ACTION AND SUBJECT TO WIND AND WAVES.

FLOATING TURBIDITY BARRIER
N.T.S.



RIP-RAP OUTFALL PROTECTION DETAIL (JORDAN ROAD)
N.T.S.

RIP RAP CALCULATIONS:
Design discharge from the culvert = 92.23 cfs
Max. inside height of culvert, Do =3.58 ft
Max. inside width of culvert, Wo =5.67 ft
Tail water Elevation =58.60 ft
Outfall Invert =59.35 ft
Tw = OF - TwE =0.75' (Assumed)

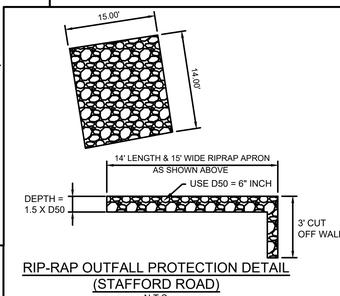
La = 1.8*q/((Do^⅔) + 7*Do (Tw<=¼*Do)
La =(1.8*16)/(3.58^⅔) + 7*3.58 = 29.53' , Say 30' Min.

Min Width of apron, W = 3*Do
=3*5.67=17.01', say = 17' Min.

Median rip-rap stone size, D50 = 0.02 * Q^1.33 / Tw=0.2*Do = (0.02/3.58)*(92/3.58)^(⅓) / 0.716'

=1.09'=13.05", say = 13"min
D50=13"
For safety purposes the proposed apron size will be:
The proposed apron length will be 30'
The proposed apron width will be 17'

RIP RAP NOTES:
FILTER FABRIC SHALL CONSIST OF EITHER WOVEN OR NON-WOVEN FABRIC. WOVEN FABRIC SHALL HAVE AN APPARENT OPENING SIZE (AOS) BETWEEN US STANDARD SIEVE NO. 70 AND NO. 100. NON-WOVEN GEOTEXTILE FABRIC SHALL HAVE AN AOS LESS THAN US STANDARD SIEVE NO. 40. THE RIPRAP BLANKET THICKNESS SHALL BE TWO TIMES THE MEDIAN STONE DIAMETER (2 X D50) AND HALL HAVE A MINIMUM THICKNESS OF SIX INCHES.



RIP-RAP OUTFALL PROTECTION DETAIL (STAFFORD ROAD)
N.T.S.

RIP RAP CALCULATIONS:
DESIGN DISCHARGE FROM THE CULVERT = 18.03 CFS
MAX. INSIDE HEIGHT OF CULVERT, DO =3 FT
MAX. INSIDE WIDTH OF CULVERT, WO =3FT
Tw =OF - TwE = 78.91 - 77.39 = 1.52' (ASSUMED)

LA = 3*Q/(DO)^1/2 (TW>=½*DO)

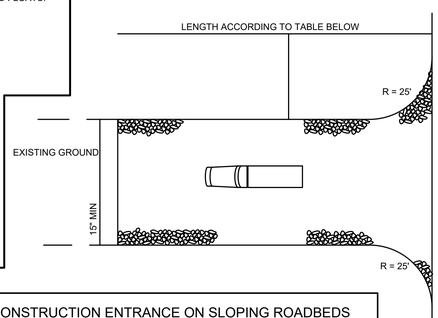
LA = 3*8.16/(3)^½ = 13.58, SAY 14 MIN

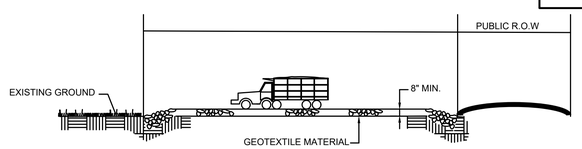
WIDTH OF APRON, W = 3*DO + 0.4*LA (TW>=½*DO)
=3*(3) + 0.4*(14) = 14.60, SAY=15 MIN

MEDIAN RIP-RAP STONE SIZE, D50 = 0.016 * q^1.33 / Tw =Do*0.2 =
(0.016/0.4)*(6.01/0.4)^(⅓)

=0.52'=6.26", SAY = 6"MIN
D50=6"
FOR SAFETY PURPOSES THE PROPOSED APRON SIZE WILL BE:
THE PROPOSED APRON LENGTH WILL BE 15'
THE PROPOSED APRON WIDTH WILL BE 14'

RIP RAP NOTES:
FILTER FABRIC SHALL CONSIST OF EEITHER WOVEN OR NON-WOVEN FABRIC. WOVEN FABRIC SHALL HAVE AN APPARENT OPENING SIZE (AOS) BETWEEN US STANDARD SIEVE NO. 70 AND NO. 100. NON-WOVEN GEOTEXTILE FABRIC SHALL HAVE AN AOS LESS THAN US STANDARD SIEVE NO. 40. THE RIPRAP BLANKET THICKNESS SHALL BE TWO TIMES THE MEDIAN STONE DIAMETER (2 X D50) AND HALL HAVE A MINIMUM THICKNESS OF SIX INCHES.





* NOTE: INDIVIDUAL LOT ACCESS POINTS MAY REQUIRE STABILIZATION THICKNESS SHOWN IS CONSTRUCTION ENTRANCE ONLY 1-1/2" TO 2" CRUSHED STONE, UNDERLAIN WITH FILTER FABRIC

STABILIZED CONSTRUCTION ENTRANCE
N.T.S.

LENGTH OF CONSTRUCTION ENTRANCE ON SLOPING ROADBEDS		
PERCENT SLOPE OF ROAD WAY	LENGTH OF STONE REQUIRED	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0% TO 2%	50 FT	100 FT
2% TO 5%	100 FT	200 FT
> 5%	ENTIRE SURFACE STABILIZED WITH FABRIC BASE COARSE	

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS TOWNSHIP OF WOODBRIDGE MIDDLESEX COUNTY, NEW JERSEY

SOIL EROSION AND SEDIMENT CONTROL DETAILS - 1

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

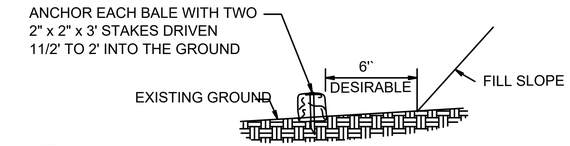
LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY — LINDSAY A. MAGUIRE — No. GE58958 — LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
NTS	9/14/2023
DESIGNED: JE	CHECKED: LM

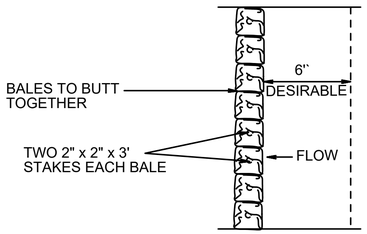
SHEET NO. 48 OF 62

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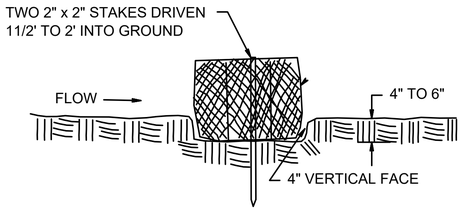


NOTE:
EMBED BALES 4 INCHES TO 6 INCHES AND ANGLE FIRST STAKE TOWARD PREVIOUSLY LAID BALE.

ELEVATION

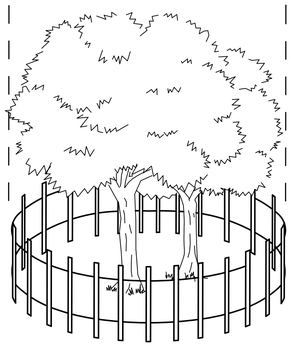


PLAN

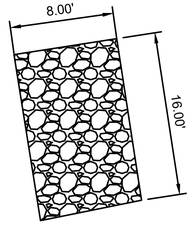


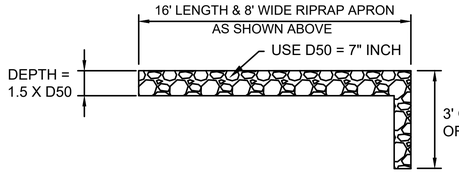
EMBEDDING DETAIL
N.T.S.

HAYBALE
N.T.S.



TREE PROTECTION DURING CONSTRUCTION
N.T.S.





RIP-RAP OUTFALL PROTECTION DETAIL (TAPPEN STREET)
N.T.S.

RIP RAP CALCULATIONS:
DESIGN DISCHARGE FROM THE CULVERT = 20.91CFS
MAX. INSIDE HEIGHT OF CULVERT, Do =2.5 FT
MAX. INSIDE WIDTH OF CULVERT, Wo =2.5 FT
Tw =OF - TwE = 77.37 - 76.08 = 1.29' (ASSUMED)

q= Q/Wo=20.91/2.5 = 8.364

LA = 3*q/(DO)^1/2 (TW>=½*DO)

LA = 3*8.364/(2.5)^½ = 15.87, SAY 16' MIN

WIDTH OF APRON, W = 3*Wo = 3*2.5 = 7.5, SAY 8' MIN

MEDIAN RIP-RAP STONE SIZE, D50 = $\frac{0.016 * Q^{1.33}}{Tw = Do*2}$ = $(0.016/0.5)*(20.91/0.5)^{(⅔)}$

=0.54'=6.47", SAY = 7" MIN
D50=7"
FOR SAFETY PURPOSES THE PROPOSED APRON SIZE WILL BE:
THE PROPOSED APRON LENGTH WILL BE 16'
THE PROPOSED APRON WIDTH WILL BE 8'

RIP RAP NOTES:
FILTER FABRIC SHALL CONSIST OF EITHER WOVEN OR NON-WOVEN FABRIC. WOVEN FABRIC SHALL HAVE AN APPARENT OPENING SIZE (AOS) BETWEEN US STANDARD SIEVE NO. 70 AND NO. 100. NON-WOVEN GEOTEXTILE FABRIC SHALL HAVE AN AOS LESS THAN US STANDARD SIEVE NO. 40. THE RIPRAP BLANKET THICKNESS SHALL BE TWO TIMES THE MEDIAN STONE DIAMETER (2 X D50) AND HALL HAVE A MINIMUM THICKNESS OF SIX INCHES.

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

SOIL EROSION AND SEDIMENT CONTROL DETAILS - 2

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
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Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
NTS	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 49 OF 62

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TOWNSHIP OF WOODBRIDGE

MIDDLESEX COUNTY

1. PRIOR TO ANY STAGE ROAD CONSTRUCTION, ALL REQUIRED TRAFFIC CONTROL SIGNS, AND TRAFFIC CONTROL DEVICES SHALL BE IN PLACE. CONTRACTOR SHALL CONTACT THE "ONE-CALL" SERVICE (800-272-1000) FOR UTILITY MARKOUT AT LEAST THREE FULL WORKING DAYS PRIOR TO EXCAVATING, BUT NO MORE THAN 10 WORKING DAYS.
2. ADVANCE WARNING SIGNS, DISTANCES, AND TAPER LENGTHS MAY BE EXTENDED, AT DIRECTION OF THE ENGINEER, TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY.
3. THE APPROXIMATE LOCATIONS OF THE ILLUMINATED FLASHING ARROW BOARDS ARE SHOWN ON THE TRAFFIC CONTROL PLANS. THESE LOCATIONS MAY BE MODIFIED TO ADJUST FOR VISIBILITY DUE TO HORIZONTAL OR VERTICAL CURVATURE OF THE ROADWAY OR TO POSITION AT A SAFER LOCATION. ILLUMINATED FLASHING ARROW BOARDS ARE TO BE USED FOR TEMPORARY LANE CLOSINGS AND AT LOCATIONS SHOWN ON THE TRAFFIC CONTROL PLANS.
4. RAMPS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN SHALL BE PROVIDED WITH AT LEAST ONE W20-IF SIGN (ROAD WORK AHEAD) AS A MINIMUM.
5. ALL EXISTING ROAD SIGNS, PAVEMENT MARKINGS AND/OR PLOWABLE PAVEMENT REFLECTORS WHICH CONFLICT WITH THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE COVERED, REMOVED OR RELOCATED AS DIRECTED BY THE ENGINEER.
6. CONFLICTING OR NON-OPERATING SIGNAL HEADS INDICATIONS ON EITHER THE EXISTING, TEMPORARY, INTERIM OR PROPOSED TRAFFIC SIGNAL SYSTEMS SHALL BE BAGGED OR COVERED.
7. MAINTENANCE AND PROTECTION OF TRAFFIC TO BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART VI "STANDARDS AND GUIDES FOR TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS", UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS, AND SHALL BE APPROVED BY THE ENGINEER.
8. CONSTRUCTION SIGN W99-2 (GIVE US A BRAKE) SHALL BE LOCATED 200 FEET IN ADVANCE OF PROJECT LIMITS.
9. A W1-6 (ARROW) SIGN MOUNTED ON A BREAKAWAY BARRICADE AND CENTERED ON THE CLOSED WIDTH SHALL BE LOCATED 100 FEET BEYOND EACH INTERSECTION OR MAIN ACCESS POINT WITHIN THE AREA OF A LANE OR SHOULDER CLOSURE.
10. CONSTRUCTION SIGNS W8-9A (SYMBOL FOR UNEVEN PAVEMENT) AND W8-14A (GROOVED PAVEMENT) TO BE USED WHEN SUCH PAVEMENT CONDITIONS EXIST. THE PLACEMENT OF THESE SIGNS SHALL BE AS DIRECTED BY THE ENGINEER.
11. MOVING WORK AREAS IN A LANE CLOSURE REQUIRE A TRAILER MOUNTED ILLUMINATED FLASHING ARROW TO REMAIN AT THE END OF THE TAPER, THE TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION THAT IS TO MOVE WITH THE WORK AREAS TO KEEP A 70 FEET MIN. AND 150 FEET MAX. BUFFER IN ADVANCE OF EACH WORK AREA.
12. THE CONTRACTOR SHALL SUBMIT A PLAN FOR THE SAFE ACCESS OF CONSTRUCTION VEHICLES THROUGHOUT THE WORK SITE WHERE SPACE CONSTRAINTS PREVENT THE USE OF LANE CLOSURES. THE PLAN TO BE SUBMITTED TO THE ENGINEER IN AS SPECIFIED IN THE SPECIFICATIONS.
13. TRAFFIC SAFETY SERVICES SHALL BE USED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL, SECTION 159.
14. ALL EXCAVATED AREAS FOR PROPOSED PAVEMENT BOX ADJACENT TO TRAVEL AREA SHALL BE BACKFILLED WITH DENSE GRADED AGGREGATE BASE COURSE. DENSE GRADED AGGREGATE SHALL BE GRADED ON A MINIMUM 1:6 SLOPE PRIOR TO THE END OF EACH WORKDAY. DENSE GRADED AGGREGATE SHALL BE FINE GRADED, CONTOURED AND COMPACTED TO THE PRESCRIBED PROFILE AND CROSS SLOPE NEXT DAY MORNING AND THEN PAVED WITH HOT MIX ASPHALT 19M64 BASE COURSE AND SHALL BE TRANSITIONED TO MEET THE ADJACENT EXISTING PAVEMENT GRADE AT THE LONGITUDINAL AND TRANSVERSE LIMITS OF EACH STAGE OF CONSTRUCTION.
15. WHERE REQUIRED, THE CONTRACTOR SHALL MAKE PROVISIONS FOR MAINTAINING PEDESTRIAN CROSSING LOCATIONS AND TYPE AS DIRECTED BY THE ENGINEER AND AS INDICATED IN THE PLANS, WHILE BEING COMPLIANT WITH THE ADA.
16. HMA PLACED DURING THE VARIOUS CONSTRUCTION STAGES SHALL BE TRANSITIONED ON A MINIMUM 20H : 1V SLOPE TO MEET THE ADJACENT EXISTING GRADE AT THE LONGITUDINAL AND TRANSVERSE LIMITS OF THE STAGE CONSTRUCTION AREAS UNLESS OTHERWISE NOTED ON THE STAGE CONSTRUCTION PLANS.
17. THE PLACEMENT AND OR RELOCATION OF PRECAST CONCRETE CURB, CONSTRUCTION BARRIER SHALL BE DONE DURING APPROVED OFF-PEAK HOURS WHEN TRAFFIC MAY BE REDUCED TO ONE LANE IN EACH DIRECTION.
18. CONSTRUCTION ZONE SPEED LIMIT WILL BE DETERMINED BY THE BUREAU OF TRAFFIC ENGINEERING - WORK ZONE AT THE TIME OF CONSTRUCTION.
19. THE SPEED LIMIT SIGN, R2-1 (BLACK ON WHITE) WITH ADDED WORK ZONE PLATE (BLACK ON ORANGE) SIGNS TO BE LOCATED THROUGH WORK AREAS AS DIRECTED BY THE ENGINEER.
20. THE REDUCED SPEED AHEAD SIGN, W3-5(S) (BLACK ON ORANGE) SHALL BE LOCATED IN ADVANCE OF SPEED LIMIT R2-1 SIGNS WHICH REDUCE THE NORMAL POSTED SPEED LIMIT THROUGH THE CONSTRUCTION ZONE.
21. TRAFFIC FINES DOUBLED IN WORK AREA R(NJ)5-17(S) , 4 FEET BY 2.5 FEET SIGN SHALL BE LOCATED 500 FEET AFTER THE FIRST ADVANCE WARNING SIGN, (W20 SERIES) AT EACH WORK AREA LOCATED WITHIN URBAN AREAS. THIS SIGN TO ALSO BE USED ON PROJECTS REQUIRING MOVING OPERATIONS IN WHICH CASE THE SIGN IS TO BE MOUNTED ON A SLOW MOVING CONSTRUCTION VEHICLE.
22. DO NOT CONSTRUCT THE FINAL HMA SURFACE PAVEMENT UNTIL THE FINAL STAGE OF THE PROJECT UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR INDICATED ON THE PLANS. SET MANHOLES AND INLETS TO FINISHED GRADE AND CONSTRUCT TEMPORARY PAVEMENT RAMPS AROUND THEM WITH MINIMUM 20H:1V SLOPE IN ALL DIRECTIONS USING HOT MIX ASPHALT PAVEMENT. THIS TEMPORARY MATERIAL WILL BE REMOVED IMMEDIATELY PRIOR TO PLACING THE SURFACE COURSE.
23. PLACE TRAFFIC CONTROL DEVICES FOR LANE CLOSURE INCLUDING SIGNS, CONES, BARRICADES, ETC. AS SHOWN ON PLANS. NO SIGNS ARE TO BE PLACED WITHOUT ACTUAL LANE CLOSURES AND REMOVE IMMEDIATELY UPON REMOVAL OF THE CLOSURES.
24. CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE ENGINEER.
25. ALL TRAFFIC RESTRICTIONS, INCLUDING LANE WIDTH REDUCTIONS, LANE CLOSURES AND DETOURS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.
26. VARIOUS SOIL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING RELOCATING THEM AS REQUIRED FOR STAGE CONSTRUCTION SHALL BE INSTALLED AND MAINTAINED DURING THE ENTIRE STAGE OF CONSTRUCTION.
27. CONTRACTOR MUST MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES DURING THE CONSTRUCTION OF DRAINAGE ITEMS AND VARIOUS PAVEMENT COURSES. CONTRACTOR MUST PERFORM WORK IN SUCH A MANNER THAT THE GRADE OF THESE PAVEMENT COURSES IS KEPT WELL DRAINED AT ALL TIMES TO AVOID THE CREATION OF SATURATED AND UNSTABLE AREA WITHIN FULL DEPTH PAVEMENT BOX.
28. THE CONTRACTOR SHALL CONTACT AND COORDINATED WITH THE VARIOUS UTILITY COMPANIES TO INTEGRATE, AS NEEDED, THE RELOCATION OF THEIR FACILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN ACCESS SUCH THAT THE UTILITY COMPANIES CAN PERFORM THEIR WORK UNENCUMBERED.
29. THERE IS NO SEPARATE PAYMENT FOR THE REMOVAL OF THE TRAFFIC STRIPES AND THE COST THEREOF SHALL BE INCLUDED IN THE VARIOUS ITEMS THROUGHOUT THE CONTRACT. THE METHOD OF REMOVAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY WORK.
30. TWO-WAY TRAFFIC ON BEEKMAN ROAD IS TO BE MAINTAINED AT ALL TIMES, UNLESS OTHERWISE SPECIFIED.
31. ALL TRAFFIC CONTROL DEVICES SHALL REMAIN ON SITE AND IN OPERATIONAL CONDITION FOR THE DURATION OF THE PROJECT.
32. CONSTRUCTION SIGNS MAY BE RELOCATED IF REQUIRED BY THE STAGING OF THE PROJECT OR IF DIRECTED BY THE ENGINEER, AT NO COST TO THE TOWNSHIP. PAYMENT FOR CONSTRUCTION SIGNS WILL BE IN ACCORDANCE WITH SECTION 159.
33. SIGN "A" SHALL BE PLACED TWO WEEKS PRIOR TO START OF CONSTRUCTION 500' IN ADVANCE OF PROJECT LIMITS ALONG BEEKMAN ROAD. PRIOR TO ORDERING THIS SIGN, CONTRACTOR TO COORDINATE SIGN PLACEMENT WITH SOUTH BRUNSWICK TOWNSHIP TRAFFIC POLICE DEPARTMENT.
34. TRAFFIC POLICE DIRECTORS SHALL BE EMPLOYED AS REQUIRED BY LOCAL AUTHORITIES.
35. MINIMUM LANE WIDTH OF 11' WILL BE PROVIDED DURING EACH STAGE OF CONSTRUCTION.

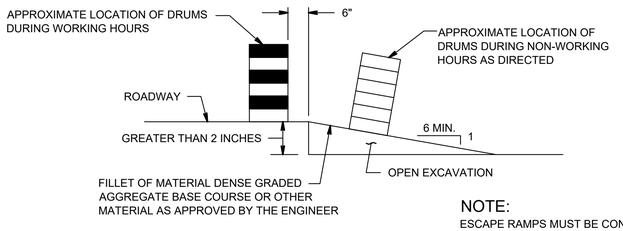
    DURING CONSTRUCTION IF IT IS REQUIRED TO CLOSE ONE LANE FOR SHORT PERIODS OF TIME, NOT EXCEEDING AN HOUR, REFER TO NJDOT STANDARD DRAWINGS TCD-3 & TCD-4 FOR SIGNAGE & FLAGGING PROCEDURE REQUIRED FOR LANE & SHOULDER CLOSURE WITH FLAGGING. COORDINATE AND OBTAIN APPROVALS FROM TOWNSHIP ENGINEER.
36. THE CONTRACTOR SHALL PROVIDE UNINTERRUPTED ACCESS TO ALL INTERSECTIONS FOR VEHICULAR AND EMERGENCY VEHICLES.
37. ALL TEMPORARY & PERMANENT WORK MUST BE ADA COMPLIANT.
38. CONTRACTOR IS NOT TO WORK AT ALL CORNERS OF THE INTERSECTION AT ONE TIME.

REGULATORY APPROACH SPEED OF TRAFFIC MILES/HOUR	RECOMMENDED SIGHT DISTANCE TO BEGINNING OF CHANNELIZING TAPERS		
	DESIRABLE		MINIMUM
	RURAL FEET	URBAN FEET	RURAL AND URBAN FEET
25	375	525	150
30	450	625	200
35	525	725	250
40	600	825	325
45	675	925	400
50	750	1025	475
55	875	1150	550
60	1000	1275	650
65	1050		725

RECOMMENDED TAPER LENGTH AND SPACING FOR CHANNELIZING TAPERS						RECOMMENDED SPACING ALONG TANGENTS
REGULATORY APPROACH SPEED OF TRAFFIC MILES/HOUR	MINIMUM TAPER RATIO IN LENGTH PER FOOT OF WIDTH	MINIMUM TAPER LENGTH L - FOR LANE WIDTHS			MAXIMUM DEVICE (B) SPACING ALONG TAPERS IN FEET	MAXIMUM DEVICE (D) SPACING ALONG TANGENTS IN FEET
		10'	11'	12'		
25	10.5:1	105	115	125	25	50
30	15:1	150	165	180	30	60
35	20.5:1	205	225	245	35	70
40	27:1	270	300	325	40	80
45	45:1	450	495	540	45	90
50	50:1	500	550	600	50	100
55	55:1	550	605	660	55	110
60	60:1	600	660	720	60	120
65	65:1	650	715	780	65	130

NOTE:

THE MAXIMUM DEVICE SPACING ALONG CURVES SHALL BE AS DEFINED FOR TAPERS (B) IN THE ABOVE TABLE.



ESCAPE RAMP DETAIL

NOTE:

ESCAPE RAMPS MUST BE CONSTRUCTED AND MAINTAINED DURING NON-WORKING HOURS WHERE A VERTICAL DROP GREATER THAN 2 INCHES EXISTS ADJACENT TO TRAVELED LANE.

ON OR ABOUT (DATE)
THIS ROAD TO BE
RECONSTRUCTED
EXPECT DELAYS

(84"x42")
SIGN "A"

NOTES:

1. AVOIDANCE MANEUVER IS FOR A SPEED, PATH, AND/OR DIRECTION CHANGE PRIOR TO THE BEGINNING OF CHANNELIZING TAPERS.
2. RECOMMENDED DISTANCES BETWEEN TWO SEPARATE LANE CLOSURES SHALL BE DOUBLE THE VALUES SHOWN.
3. RURAL AND URBAN ROAD DESIGNATIONS SHALL BE AS DEFINED IN THE NJDOT STATE HIGHWAY STRAIGHT LINE DIAGRAMS.
4. DESIRABLE VALUES SHALL BE PROVIDED WHEREVER POSSIBLE. IF IT IS NOT FEASIBLE OR PRACTICAL TO PROVIDE DESIRABLE VALUES BECAUSE OF HORIZONTAL OR VERTICAL CURVATURE OR IF RELOCATION OF THE TAPER IS NOT POSSIBLE, THEN MINIMUM VALUES CAN BE APPLIED. WHEN MINIMUM VALUES ARE USED, SPECIAL ATTENTION SHOULD BE GIVEN TO THE USE OF SUITABLE TRAFFIC CONTROL DEVICES FOR PROVIDING ADVANCED WARNING OF THE CONDITIONS THAT ARE LIKELY TO BE ENCOUNTERED.
5. TAPERS SHALL BE LOCATED TO MAXIMIZE THE VISIBILITY OF THEIR TOTAL LENGTH.

NOTES:

1. THE HORIZONTAL DATUM IS BASED ON NAD-1983.
2. THE CONTRACTOR SHALL NOTIFY ALL RESIDENTS AND/OR PROPERTY OWNERS AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF PERFORMING WORK IN THE VICINITY OF THEIR PROPERTY.
3. THE CONTRACTOR SHALL RESEARCH, OBTAIN, PAY FOR, ABIDE BY AND SCHEDULE ROAD OPENING PERMITS AND ANY OTHER PERMITS REQUIRED TO BE OBTAINED ON THE FEDERAL, STATE, COUNTY, AND MUNICIPAL LEVELS THAT MAY BE REQUIRED AS A RESULT OF WORK ON THIS PROJECT.
4. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND SCHEDULE AND COORDINATE ALL WORK INVOLVED WITH UTILITIES.
5. ALL ROADWAYS SHALL REMAIN OPEN TO THROUGH TRAFFIC DURING CONSTRUCTION UNLESS OTHERWISE APPROVED BY THE AUTHORITY HAVING JURISDICTION.
6. THE CONTRACTOR MUST MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES DURING THE CONSTRUCTION.

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

TRAFFIC CONTROL AND STAGING NOTES

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

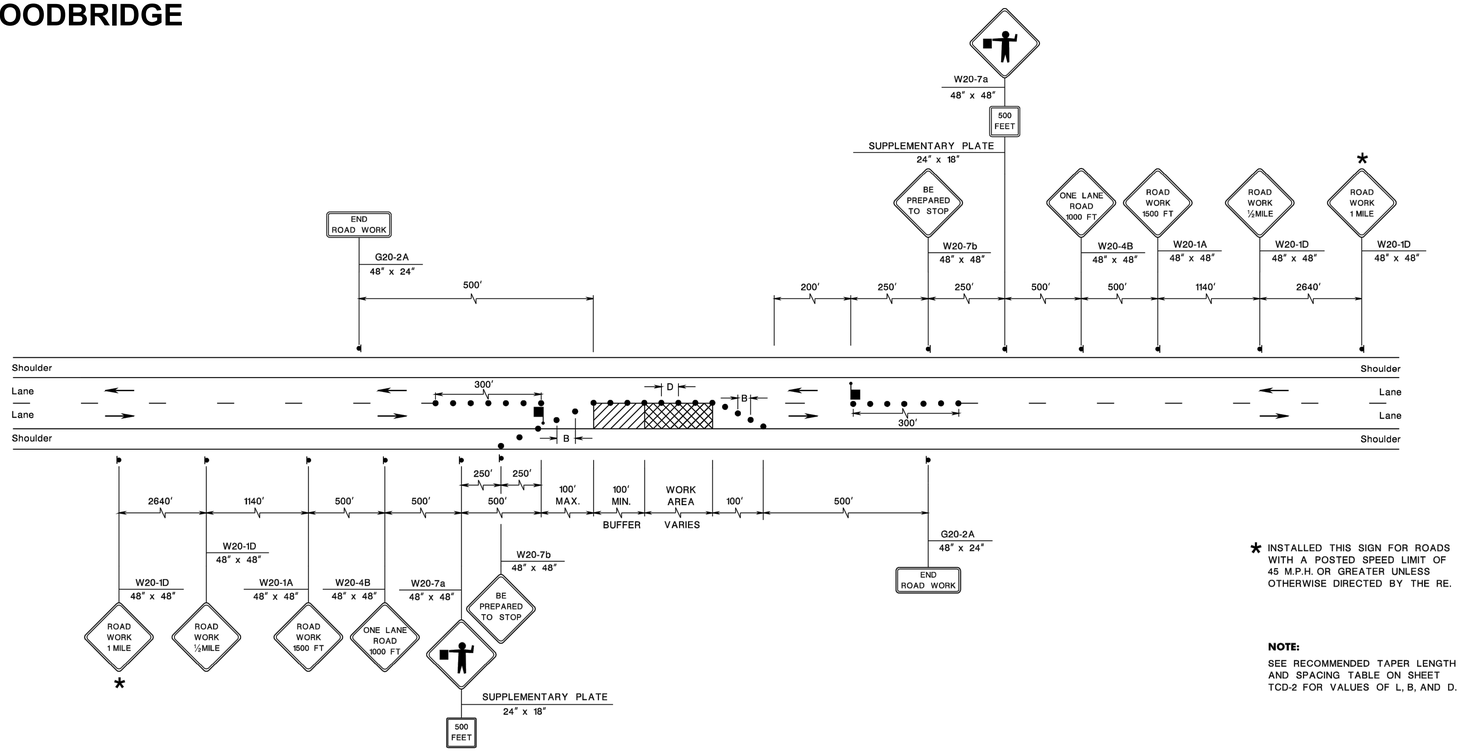
LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY — LINDSAY A. MAGUIRE — No. GE58958 — LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
NTS	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 50 OF 62

z:\22\2017 - woodbridge drainage design - arthur-temple-portion\3.0 cad (prog) (ver)\3.2 contract drawings (naik standard)\03 sheets\37-39-Staging Notes and Plan.dwg, 9/12/2023 4:50 PM

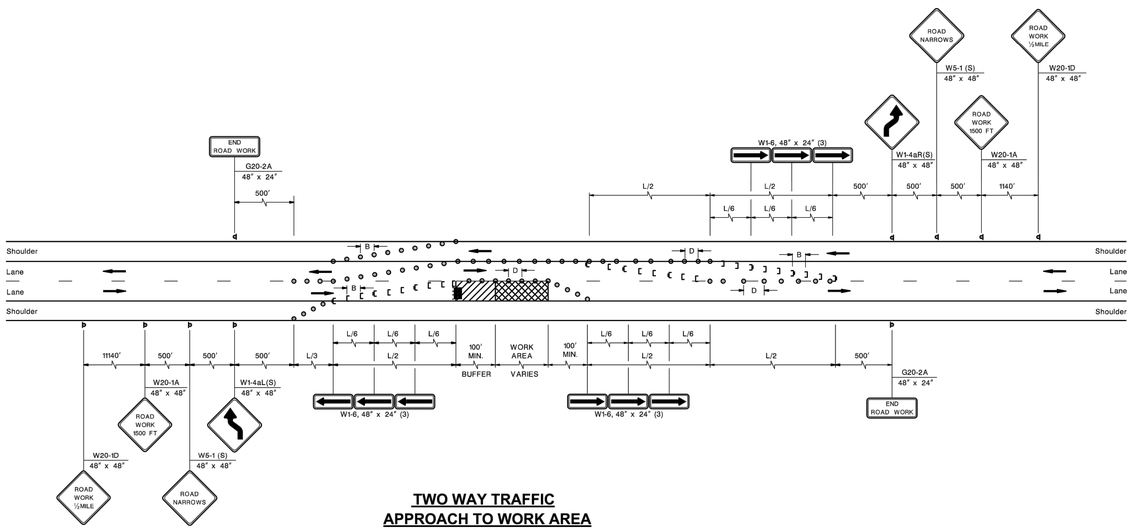


* INSTALLED THIS SIGN FOR ROADS WITH A POSTED SPEED LIMIT OF 45 M.P.H. OR GREATER UNLESS OTHERWISE DIRECTED BY THE RE.

NOTE:

SEE RECOMMENDED TAPER LENGTH AND SPACING TABLE ON SHEET TCD-2 FOR VALUES OF L, B, AND D.

2 LANES, UNDIVIDED, LANE AND SHOULDER CLOSING WITH FLAGGING



TWO WAY TRAFFIC APPROACH TO WORK AREA N.T.S.

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

TRAFFIC CONTROL AND STAGING PLAN - 1

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

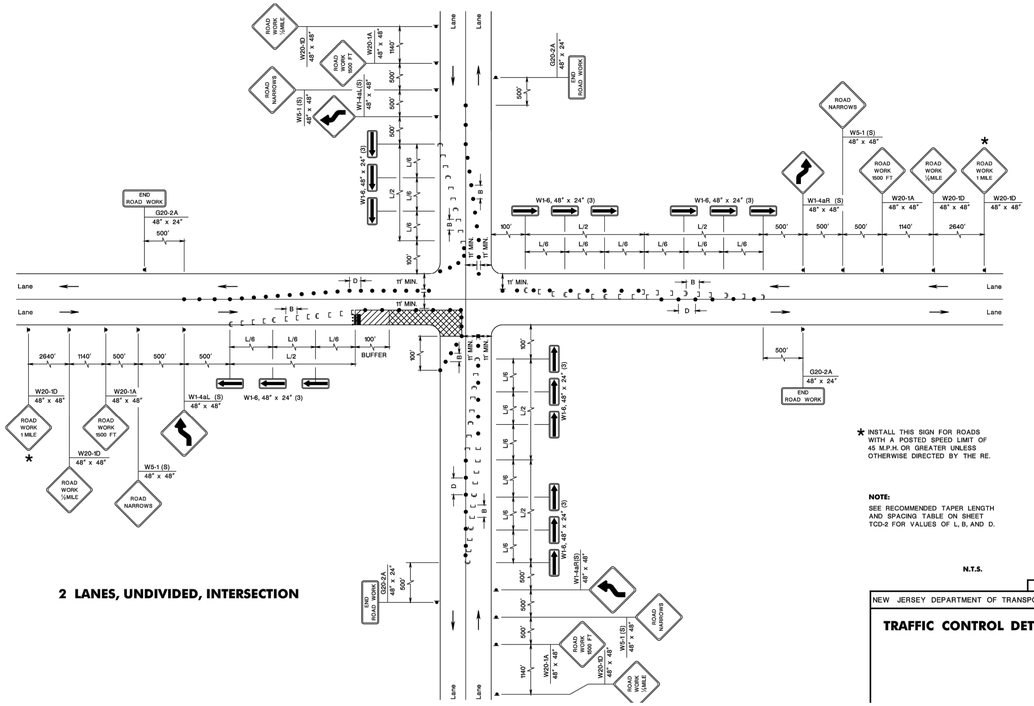
LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY — LINDSAY A. MAGUIRE — No. GE58958 — LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
NTS	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 51 OF 62

Z:\222017 - woodbridge drainage design - arthur-kill-terrace-jordan\3.0 cad (prog) (ver)\3.2 contract drawings (naik standard)\03 sheets\3.7-3B-Staging Notes and Plan.dwg, 9/12/2023 4:51 PM



2 LANES, UNDIVIDED, INTERSECTION

* INSTALL THIS SIGN FOR ROADS WITH A POSTED SPEED LIMIT OF 45 M.P.H. OR GREATER UNLESS OTHERWISE DIRECTED BY THE RE.

NOTE:
SEE RECOMMENDED TAPER LENGTH AND SPACING TABLE ON SHEET TCD-2 FOR VALUES OF L, B, AND D.

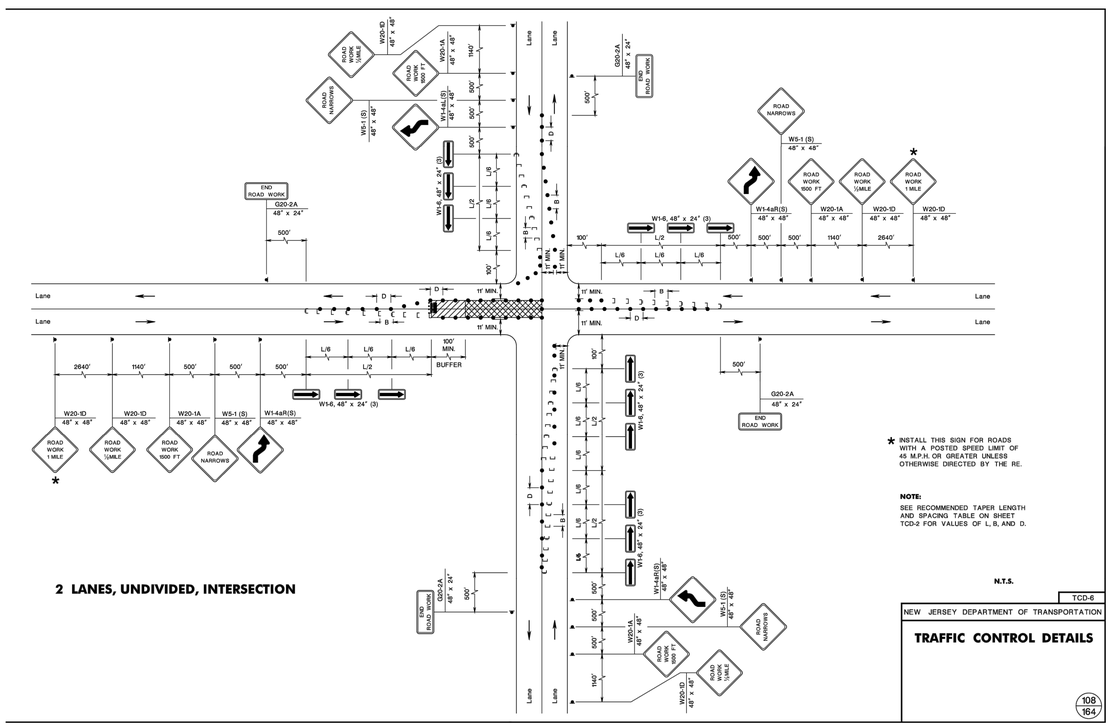
N.T.S.

TCD-5

NEW JERSEY DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS

107
164



2 LANES, UNDIVIDED, INTERSECTION

* INSTALL THIS SIGN FOR ROADS WITH A POSTED SPEED LIMIT OF 45 M.P.H. OR GREATER UNLESS OTHERWISE DIRECTED BY THE RE.

NOTE:
SEE RECOMMENDED TAPER LENGTH AND SPACING TABLE ON SHEET TCD-2 FOR VALUES OF L, B, AND D.

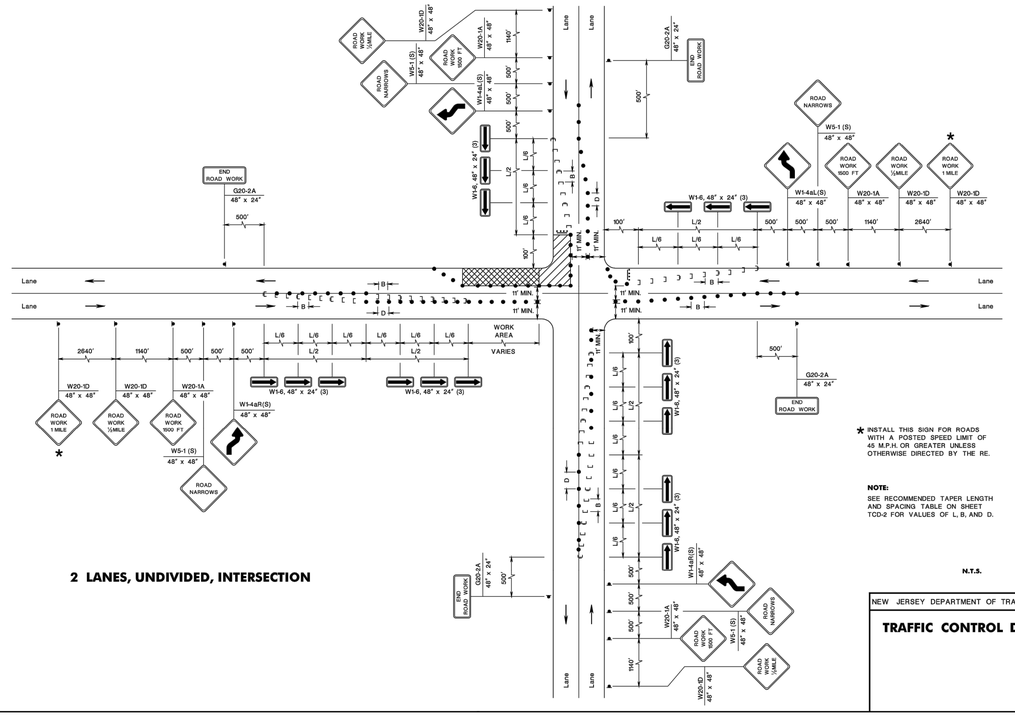
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TCD-6

NEW JERSEY DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS

108
164



2 LANES, UNDIVIDED, INTERSECTION

* INSTALL THIS SIGN FOR ROADS WITH A POSTED SPEED LIMIT OF 45 M.P.H. OR GREATER UNLESS OTHERWISE DIRECTED BY THE RE.

NOTE:
SEE RECOMMENDED TAPER LENGTH AND SPACING TABLE ON SHEET TCD-2 FOR VALUES OF L, B, AND D.

N.T.S.

TCD-7

NEW JERSEY DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS

109
164

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

TRAFFIC CONTROL AND STAGING PLAN - 2

NAIK CONSULTING GROUP, PC
Metroplex Plaza.
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

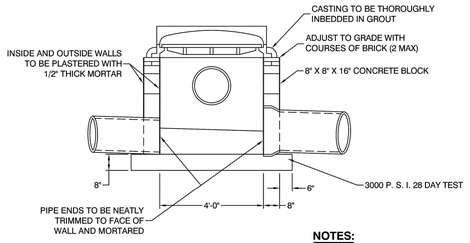
LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

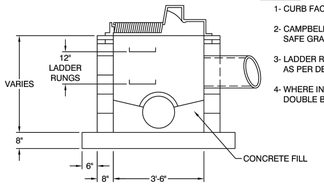
STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
NTS	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 52 OF 62

z:\22\2017 - woodbridge drainage design - arthur-temple-potash\3.0 cad (prog)\ver\3.2 contract drawings (naik standard)\03 sheets\37-39-Staging Notes and Plan.dwg, 9/12/2023 4:51 PM





INLET TYPE "B"

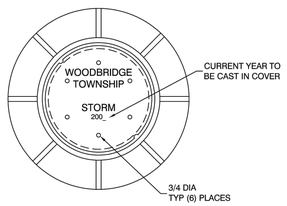
NOTES:

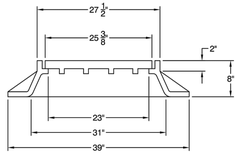
1- CURB FACE TO BE 8" UNLESS OTHERWISE INDICATED.

2- CAMPBELL CASTING PATTERN NO. 2618, "BICYCLE SAFE GRATE" OR APPROVED EQUIVALENT.

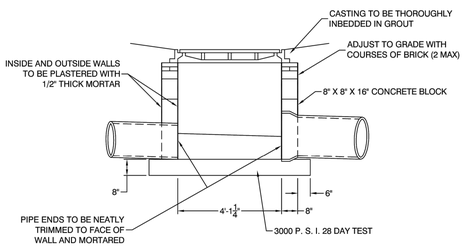
3- LADDER RUNGS SHALL BE POLYPROPYLENE AS PER DETAIL.

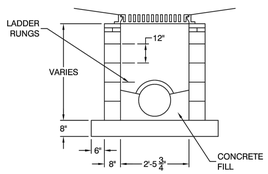
4- WHERE INLETS ARE GREATER THAN 8' DEEP, DOUBLE BLOCK WALLS ARE REQUIRED.





TYP. STORM SEWER MANHOLE FRAME & COVER





INLET TYPE "A"

NOTES:

1- IF WATERTIGHT MANHOLE FRAMES & COVERS ARE REQUIRED, THEY SHALL BE AS MFG. BY "CAMPBELL FOUNDRY CO.", PATTERN NO. 1536, TYPE "A" OR APPROVED EQUIVALENT.

2- WHERE WATERTIGHT MANHOLE FRAME & COVER ARE NOT REQUIRED, THE MANHOLE COVER AND FRAME SHALL BE OF THE HEAVY HIGHWAY TYPE, WITH THE CIRCULAR FLARED TYPE FRAME AND ROUND FLANGE. THE COVER SHALL BE PERFORATED WITH A MINIMUM OF SIX 3/4" HOLES.

3- TO BE USED ON STREETS "CAMPBELL FOUNDRY CO." PATTERN NO. 1202 OR EQUIVALENT.

4- TO BE USED OUTSIDE OF STREET R. O. W. "CAMPBELL FOUNDRY CO." PATTERN NO. 1486 OR EQUIVALENT.

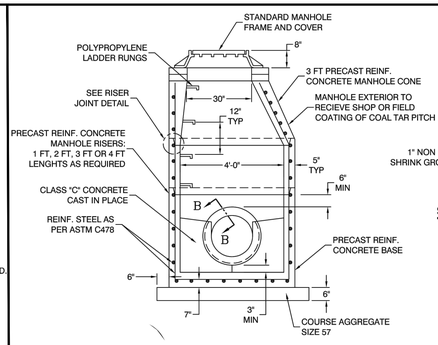
NOTES:

1- CAMPBELL CASTING PATTERN NO. 3433 FOR "STREAM FLOW GRATING" AND NO. 3408 FOR "BICYCLE SAFE GRATING" OR APPROVED EQUIVALENT.

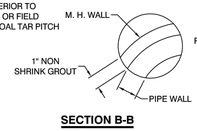
2- LADDER RUNGS SHALL BE POLYPROPYLENE AS PER DETAIL.

3- SPECIAL DESIGNS SHALL BE PROVIDED FOR INLETS WITH PIPE SIZES GREATER THAN 21" DIAMETER.

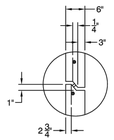
4- WHERE INLETS ARE GREATER THAN 8' DEEP, DOUBLE BLOCK WALLS ARE REQUIRED.



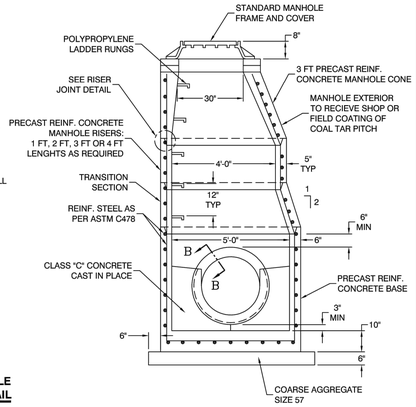
MANHOLE, 4' DIAMETER



SECTION B-B

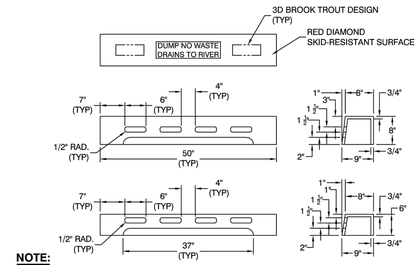


PRECAST MANHOLE RISER JOINT DETAIL



MANHOLE, 5' DIAMETER

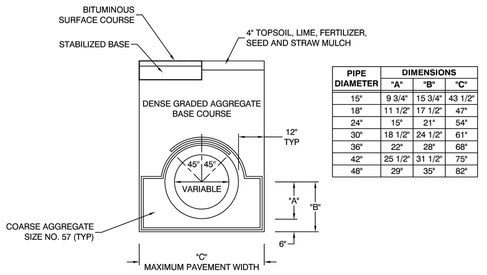
STORM SEWER MANHOLES



NOTE:

CAMPBELL CASTING PATTERN No. 2618, TYPE N-ECO, BICYCLE SAFE GRATE OR APPROVED EQUIVALENT.

CURB PIECE TYPE "N-ECO"

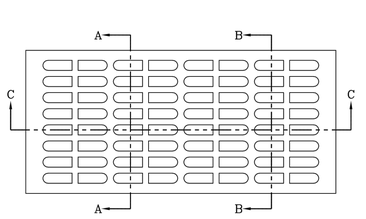


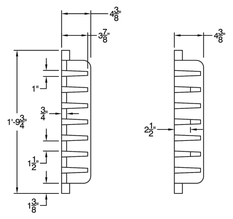
PIPE DIAMETER	DIMENSIONS "A"	"B"	"C"
15"	9 3/4"	15 3/4"	43 1/2"
18"	11 1/2"	17 1/2"	47"
24"	15"	21"	54"
30"	18 1/2"	24 1/2"	61"
36"	22"	28"	68"
42"	25 1/2"	31 1/2"	75"
48"	29"	35"	82"

NOTE:

UNDERDRAIN SHALL BE CONNECTED TO EACH DOWN STREAM DRAINAGE STRUCTURE AND SHALL BE CAPPED AT THE UPSTREAM END

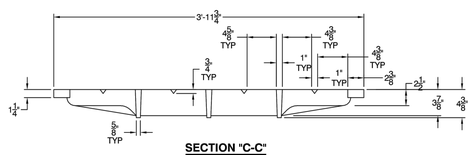
TYP PIPE BEDDING STORM SEWER





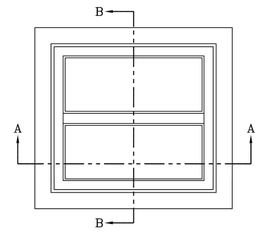
SECTION "A-A"

SECTION "B-B"



SECTION "C-C"

BICYCLE SAFE GRATE



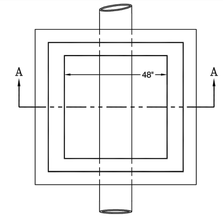
PLAN

NOTES:

1- CASTING SHALL BE "CAMPBELL FOUNDRY CO.", PATTERN NO. 3425 "BICYCLE SAFE GRATE" OR EQUIVALENT.

2- LADDER RUNGS SHALL BE POLYPROPYLENE.

3- WHERE INLETS ARE GREATER THAN 8' DEEP, DOUBLE BLOCK WALLS ARE REQUIRED.

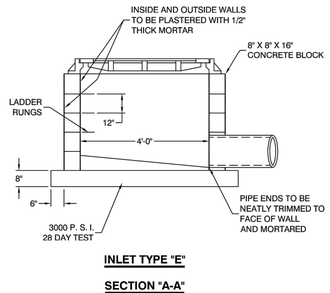


PLAN

NOTES:

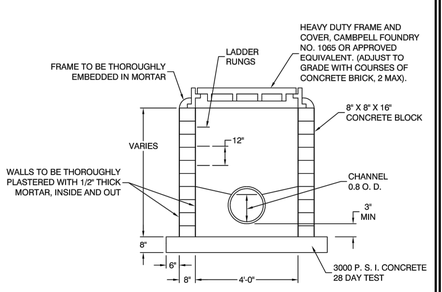
1- LADDER RUNGS SHALL BE POLYPROPYLENE.

2- WHERE MANHOLE IS GREATER THAN 8' DEEP, DOUBLE BLOCK WALLS ARE REQUIRED.



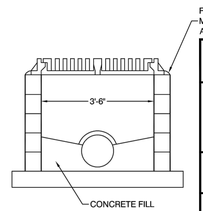
INLET TYPE "E"

SECTION "A-A"



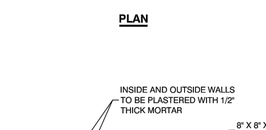
SECTION "A-A"

4' SQUARE MANHOLE DETAIL



INLET TYPE "E"

SECTION "B-B"



NOTE:
THE CROWN OF ALL PAVEMENT SHALL MATCH EXISTING

TYPICAL PAVEMENT DETAIL
N.T.S.

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS TOWNSHIP OF WOODBRIDGE MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION DETAILS - 1

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

NO.	DATE	REVISIONS	BY

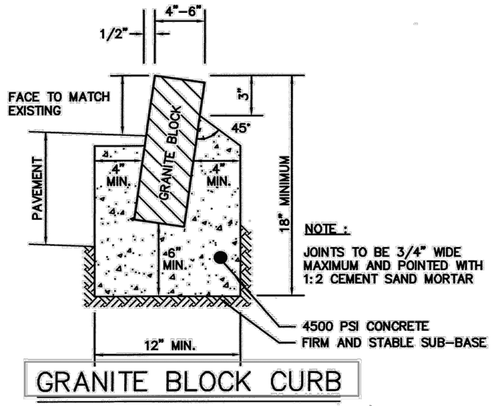
LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
NTS	9/14/2023
DESIGNED: JE	CHECKED: LM

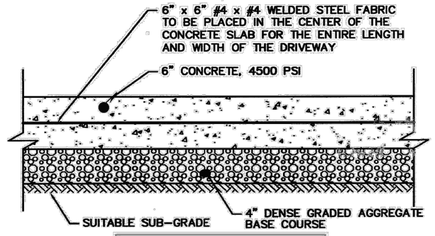
SHEET NO. 53 OF 62

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GRANITE BLOCK CURB

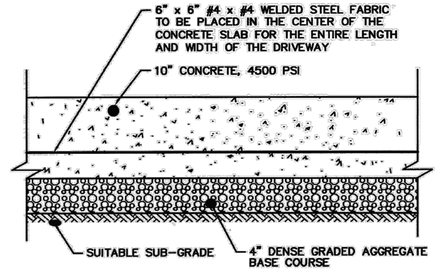
N.T.S.



= CONCRETE DRIVEWAY =

DRIVEWAY REPLACEMENT DETAIL

N.T.S.

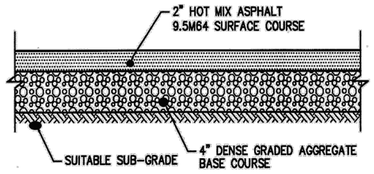


= CONCRETE DRIVEWAY = (COMMERCIAL DRIVEWAY & PARKING LOT)

DRIVEWAY REPLACEMENT DETAIL

N.T.S.

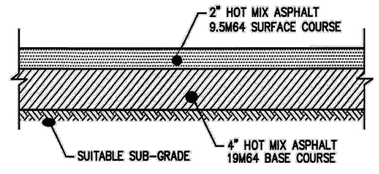
CONCRETE DRIVEWAY



= HMA DRIVEWAY = (SINGLE & 2–FAMILY DRIVEWAYS)

DRIVEWAY REPLACEMENT DETAIL

N.T.S.

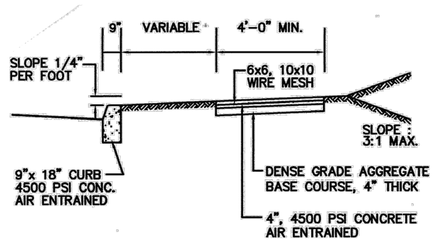


= HMA DRIVEWAY = (COMMERCIAL DRIVEWAY & PARKING LOT)

DRIVEWAY REPLACEMENT DETAIL

N.T.S.

ASHPHALT DRIVEWAY



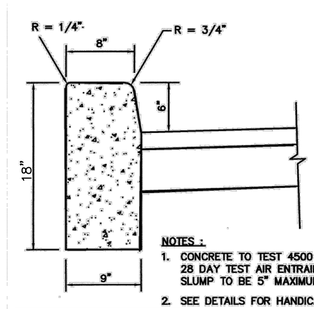
NOTE:

1. HANDICAP RAMPS SHALL BE REINFORCED WITH WIRE MESH. REFER TO DETAILS FOR HANDICAP RAMP CONSTRUCTION.
2. TRANSVERSE EXPANSION JOINTS 1/2" WIDE SHALL BE PROVIDED AT INTERVALS OF NOT MORE THAN 20' AND FILLED WITH PREFORMED BITUMINOUS CELLULAR TYPE JOINT FILLER. LONGITUDINAL JOINTS, 1/2" WIDE, SHALL BE PROVIDED BETWEEN CURBS AND ABUTTING SIDEWALKS, AND SHALL BE FILLED WITH PREFORMED BITUMINOUS TYPE JOINT FILLER. THE TOP OF ALL JOINT FILLER SHALL BE 1/2" BELOW THE TOP OF THE SIDEWALK AND FILLED WITH JOINT SEALER (SIKAFLEX 1A, OR APPROVED EQUAL). NO SEPARATE PAYMENT WILL BE MADE FOR JOINT CAP, REMOVABLE JOINT STRIP, JOINT SEALER AND WELDED STEEL WIRE FABRIC PROVIDED IN CONCRETE SIDEWALKS. NO SEPARATE PAYMENT WILL BE MADE FOR DENSE GRADED AGGREGATE BASE COURSE.

SIDEWALK DETAIL

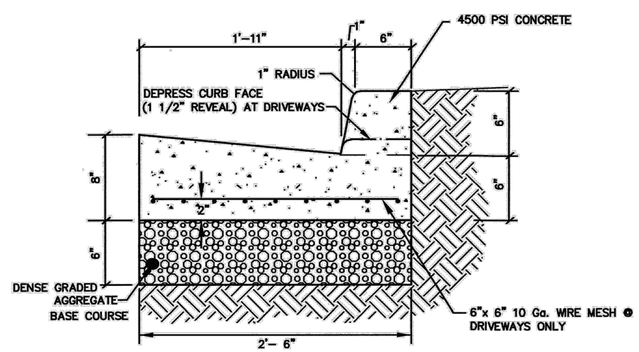
REINFORCED COUNTY CONCRETE

N.T.S.



TYPICAL 9"x 18" CURB DETAIL

N.T.S.



CONCRETE CURB & GUTTER

N.T.S.

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION DETAILS - 2

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

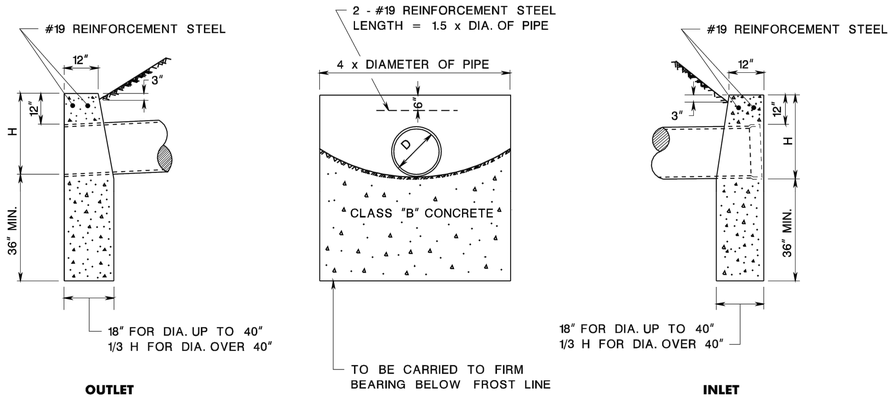
LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
NTS	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 54 OF 62

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CONCRETE HEADWALL

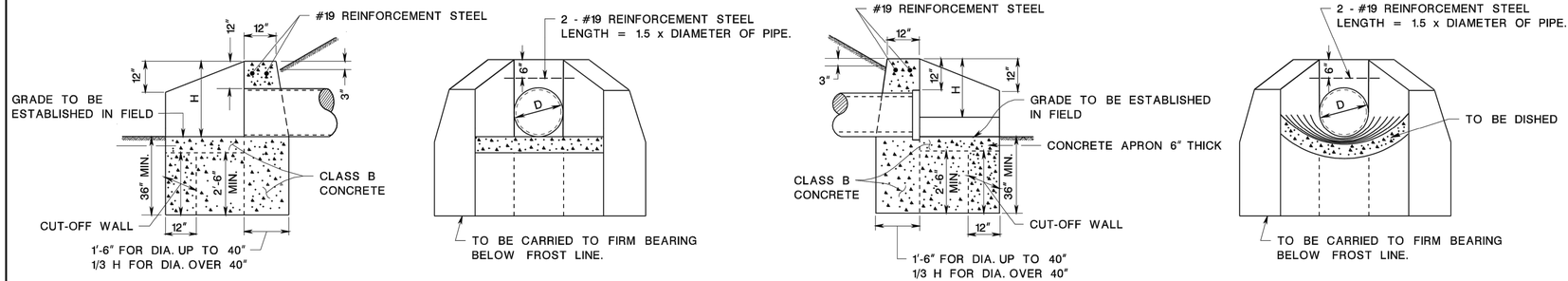
HEADWALL QUANTITY IN CUBIC YARDS

PIPE DIA.	CORR. STEEL PIPE	REINF. CONC. PIPE
12"	1.0	1.1
15"	1.3	1.4
18"	1.7	1.7
21"	2.0	2.1
24"	2.3	2.5
27"	2.7	2.8
30"	3.1	3.3
36"	3.9	4.2
42"	4.8	5.8
48"	6.3	7.6
54"	8.1	9.7
60"	10.1	12.1
66"	12.3	14.9
72"	14.5	18.0

GENERAL NOTES:

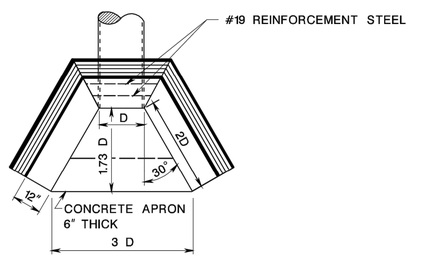
1. THE RUBBING OF HEADWALLS TO REMOVE FORM MARKS AS REQUIRED IN THE NJDOT SPECIFICATIONS FOR CONCRETE STRUCTURES, WILL NOT BE REQUIRED FOR HEADWALLS AT THE BOTTOM OF EMBANKMENT IN RURAL AREAS.
2. ALL EDGES TO BE CHAMFERED 1 INCH.
3. FOR ARCH PIPE USE LENGTH OF HEADWALL AS 3H + SPAN.
4. FOR MORE THAN ONE PIPE, SET THE PIPE A MINIMUM OF ONE FOOT APART (OUTSIDE BARREL TO OUTSIDE BARREL); THE ENDS OF THE HEADWALL SHALL BE SET 2 x DIAMETER OFF THE CENTERLINE OF THE CONTROLLING PIPE.

CD-602-10.1



VOLUME OF CONCRETE IN HEADWALLS AND APRONS IN CUBIC YARDS

PIPE DIA.	CORR. STEEL PIPE	REIN. CONC. PIPE	APRONS
12"	1.6	1.7	0.4
15"	2.0	2.1	0.5
18"	2.4	2.5	0.6
21"	2.8	3.0	0.8
24"	3.3	3.4	0.9
27"	3.7	4.0	1.1
30"	4.2	4.5	1.2
36"	5.3	5.6	1.5
42"	7.2	7.9	1.9
48"	9.4	10.4	2.3
54"	12.0	13.3	2.7
60"	15.0	16.6	3.2
66"	18.5	20.5	3.7
72"	22.4	24.8	4.2



CONCRETE HEADWALL AND APRON

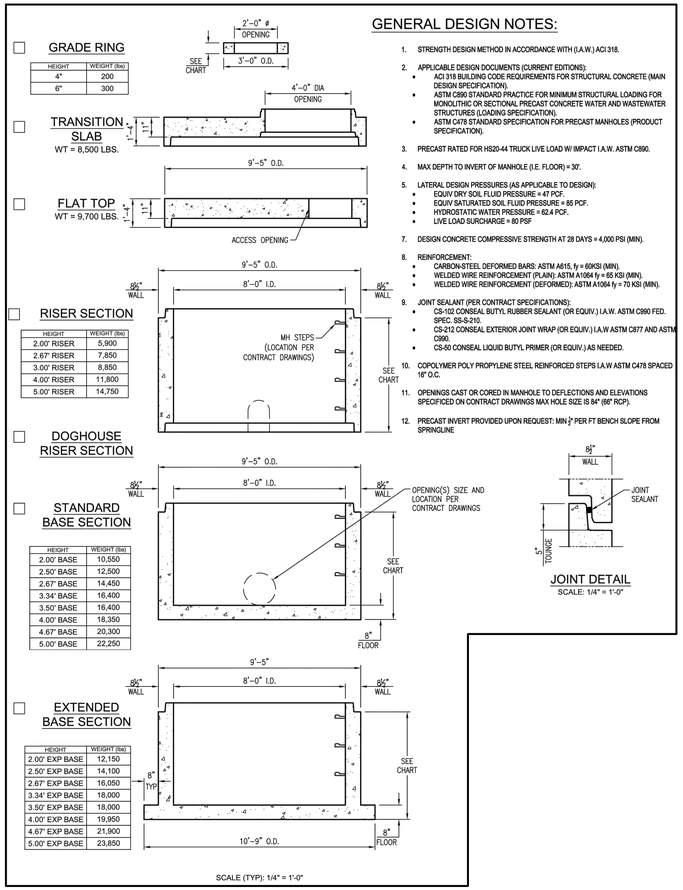
GENERAL NOTES:

1. ALL EDGES TO BE CHAMFERED 1 INCH.
2. THE RUBBING OF HEADWALLS TO REMOVE FORM MARKS AS REQUIRED IN THE NJDOT SPECIFICATIONS FOR CONCRETE STRUCTURES, WILL NOT BE REQUIRED FOR HEADWALLS AT THE BOTTOM OF EMBANKMENTS IN RURAL AREAS.
3. FOR SLOPE DRAIN HEADWALLS, DIMENSIONS AND APRON GRADES SHALL BE SET BY THE DEPARTMENT.
4. FOR MORE THAN ONE PIPE, SET THE PIPES A MINIMUM OF ONE FOOT APART (OUTSIDE BARREL TO OUTSIDE BARREL); THERE SHALL BE 12 INCHES ABOVE THE TOP OF A PIPE IN A WING-WALL: THE TERMINUS OF THE WINGWALL SHALL BE 2 X DIAMETER FROM THE CENTERLINE OF THE PIPE IN A WINGWALL.
5. THE TERMINUS FOR OUTLET AND INLET APRONS SHALL BE SET BY EXTENDING THE PIPE GRADE AHEAD AND BACK, RESPECTIVELY.
6. FOR ARCH PIPE, THE SPAN SHALL BE SUBSTITUTED FOR D.

CD-602-10.2

GENERAL DESIGN NOTES:

1. STRENGTH DESIGN METHOD IN ACCORDANCE WITH (I.A.W.) ACI 318.
2. APPLICABLE DESIGN DOCUMENTS (CURRENT EDITIONS):
   - ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (MAIN DESIGN SPECIFICATION).
   - ASTM C890 STANDARD PRACTICE FOR MINIMUM STRUCTURAL LOADING FOR MONOLITHIC OR SECTIONAL PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES (LOADING SPECIFICATION).
   - ASTM C478 STANDARD SPECIFICATION FOR PRECAST MANHOLES (PRODUCT SPECIFICATION).
3. PRECAST RATED FOR HS20-44 TRUCK LIVE LOAD W/ IMPACT I.A.W. ASTM C890.
4. MAX DEPTH TO INVERT OF MANHOLE (I.E. FLOOR) = 30'.
5. LATERAL DESIGN PRESSURES (AS APPLICABLE TO DESIGN):
   - EQUIV DRY SOIL FLUID PRESSURE = 47 PCF.
   - EQUIV SATURATED SOIL FLUID PRESSURE = 85 PCF.
   - HYDROSTATIC WATER PRESSURE = 62.4 PCF.
   - LIVE LOAD SURCHARGE = 80 PSF
7. DESIGN CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS = 4,000 PSI (MIN).
8. REINFORCEMENT:
   - CARBON-STEEL DEFORMED BARS: ASTM A615, fy = 60KSI (MIN).
   - WELDED WIRE REINFORCEMENT (PLAIN): ASTM A1064 fy = 65 KSI (MIN).
   - WELDED WIRE REINFORCEMENT (DEFORMED): ASTM A1064 fy = 70 KSI (MIN).
9. JOINT SEALANT (PER CONTRACT SPECIFICATIONS):
   - CS-102 CONSEAL BUTYL RUBBER SEALANT (OR EQUIV.) I.A.W. ASTM C990 FED. SPEC. SS-S-210.
   - CS-212 CONSEAL EXTERIOR JOINT WRAP (OR EQUIV.) I.A.W ASTM C877 AND ASTM C990.
   - CS-50 CONSEAL LIQUID BUTYL PRIMER (OR EQUIV.) AS NEEDED.
10. COPOLYMER POLY PROPYLENE STEEL REINFORCED STEPS I.A.W ASTM C478 SPACED 16" O.C.
11. OPENINGS CAST OR CORED IN MANHOLE TO DEFLECTIONS AND ELEVATIONS SPECIFICED ON CONTRACT DRAWINGS MAX HOLE SIZE IS 84" (66" RCP).
12. PRECAST INVERT PROVIDED UPON REQUEST: MIN $\frac{1}{2}$" PER FT BENCH SLOPE FROM SPRINGLINE



8' DIAMETER MANHOLE
N.T.S.

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION DETAILS - 3

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

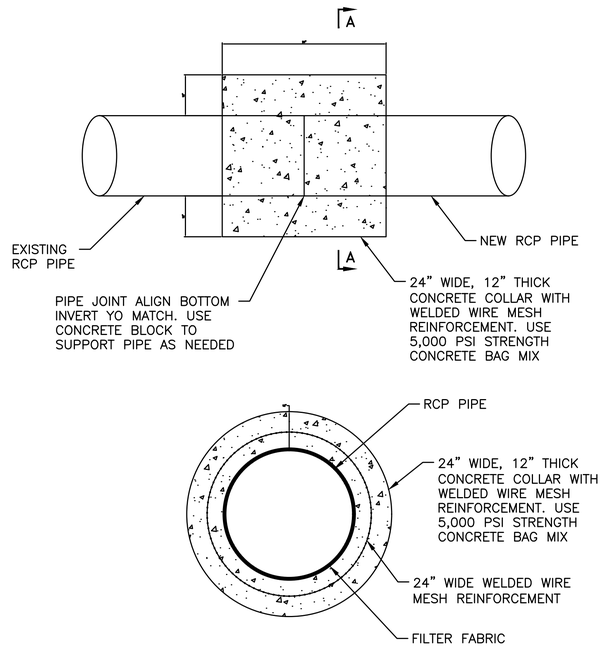
LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

SCALE:	DATE:
NTS	9/14/2023
DESIGNED:	CHECKED:
JE	LM

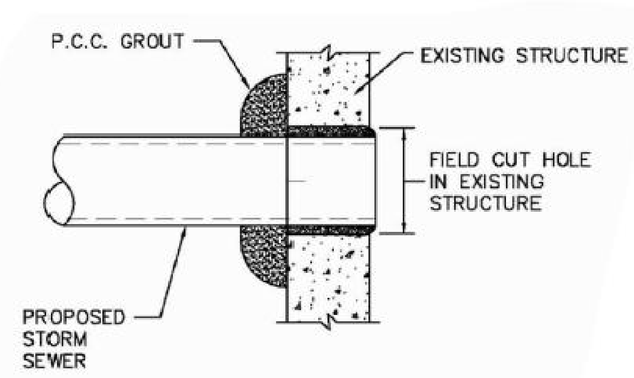
SHEET NO. 55 OF 62

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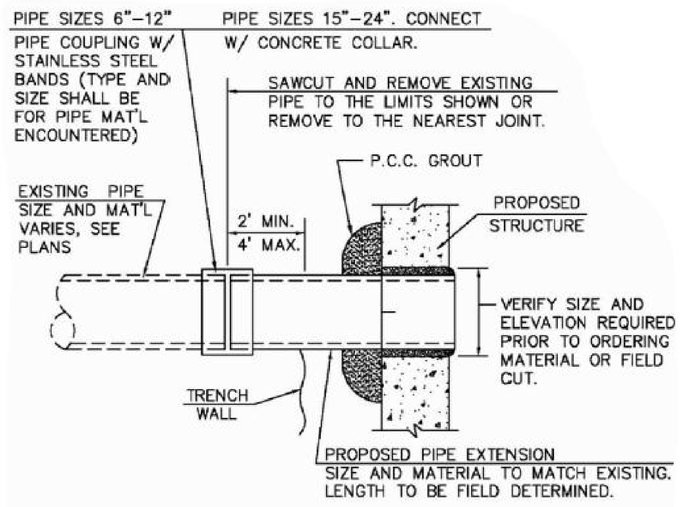
SECTION A-A

RCP PIPE CONCRETE COLLAR
N.T.S.



NOTE:
THE COST OF ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT NECESSARY TO PLACE PIPE INTO EXISTING STUCTURE AS SHOWN SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR STORM SEWER BEING INSTALLED.

NEW PIPE CONNECTION TO EXISTING STRUCTURE



NOTE:
THE COST OF ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT NECESSARY TO INCORPORATE EXISTING PIPE INTO PROPOSED STRUCTURE, INCLUDING THE PIPE EXTENSION, PIPE REMOVAL, GROUT AND COUPLING OR COLLAR AS DETAILED SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER EACH OF THE SIZE ENCOUNTERED.

EXISTING PIPE CONNECTION TO PROPOSED STRUCTURE

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION DETAILS - 4

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

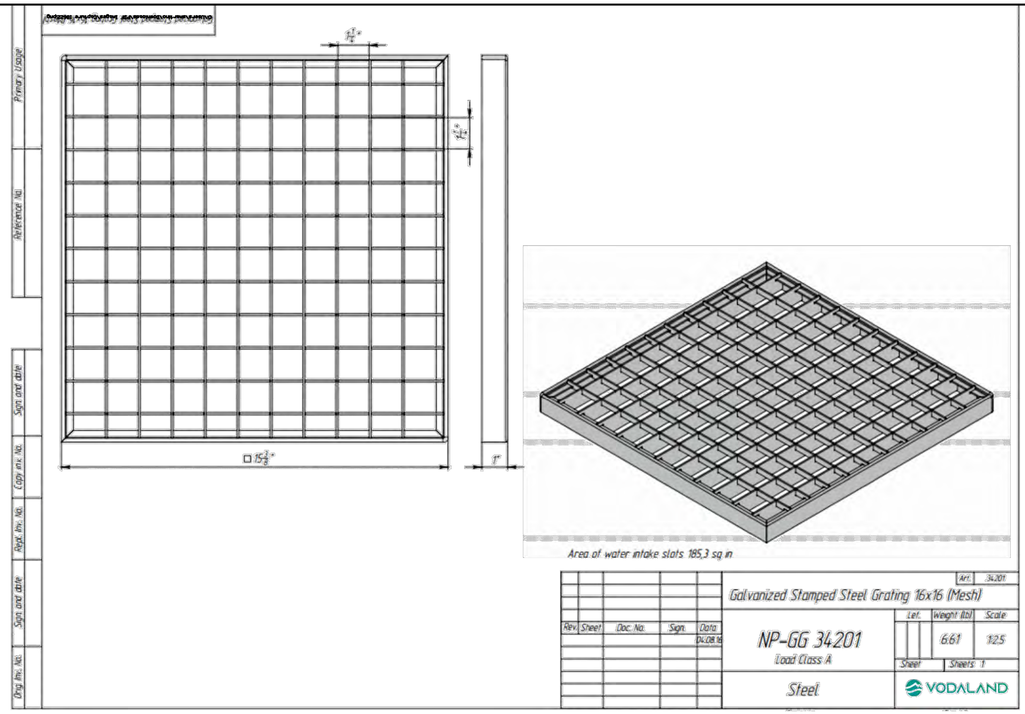
LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

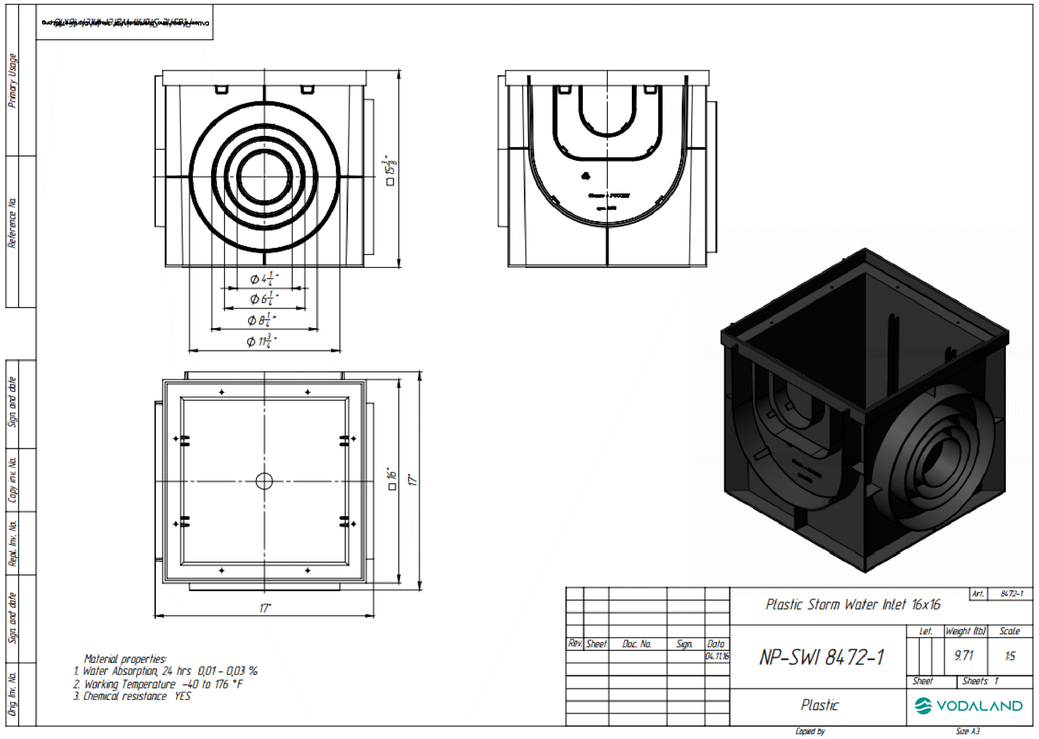
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NTS	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 56 OF 62

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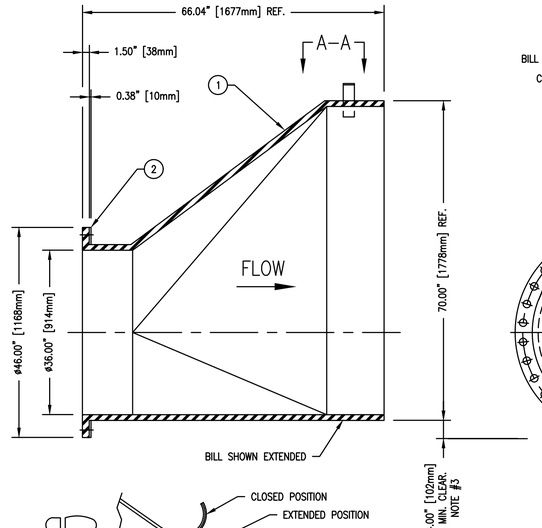


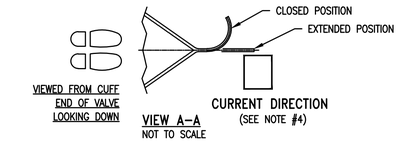
16 X16 Steel Grate



16 X16 Plastic Catch Basin

ITEM	QTY.	DESCRIPTION	MAT'L
1	1	CHECK VALVE SLEEVE	MUST BE SUPPLIED
2	1	RETAINING RING	MUST BE SUPPLIED





VIEWED FROM CUFF END OF VALVE LOOKING DOWN

VIEW A–A
NOT TO SCALE

CURRENT DIRECTION
(SEE NOTE #4)

NOTES:
1. MAXIMUM BACK PRESSURE: MUST BE SUPPLIED
   LINE PRESSURE: MUST BE SUPPLIED
2. TIDEFLEX IS TO BE MOUNTED WITH THE OUTLET IN THE VERTICAL POSITION
3. BECAUSE OF SAND, ROCK AND OTHER DEBRIS ACCUMULATION BY BACKFLOW OF WATER THE SUGGESTED BOTTOM CLEARANCE SHOULD BE PROVIDED
4. CUSTOMER TO SHOW DIRECTION OF PREDOMINANT CURRENT FLOW WITH ARROW IN VIEW 'A–A'. (IF NO CURRENT CUSTOMER TO WRITE NO IN BOX.)

PRELIMINARY DRAWING
NOT FOR APPROVAL PURPOSES

CUSTOMER: XXX
ORDER No: XXX

PROPRIETARY NOTICE

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF TIDEFLEX TECHNOLOGIES. IT IS LOANED BY TIDEFLEX TECHNOLOGIES, SUBJECT TO THE CONDITIONS THAT IT AND THE INFORMATION EMBODIED THEREIN SHALL BE USED ONLY FOR RECORD AND REFERENCE PURPOSES. IT SHALL NOT BE USED OR CAUSED TO BE USED IN ANY WAY PREJUDICIAL TO THE INTERESTS OF TIDEFLEX TECHNOLOGIES. IT SHALL NOT BE REPRODUCED OR COPIED IN WHOLE OR PART, OR DISCLOSED TO ANYONE WITHOUT THE DIRECT WRITTEN PERMISSION OF TIDEFLEX TECHNOLOGIES AND SHALL BE RETURNED UPON REQUEST.

OPPORTUNITY No: XXXXX | SALES ORDER No: TXX–XXXX

Tideflex® Technologies
A Division of Red Valve Company, Inc.

450 HOLIDAY DR. STE.400
PITTSBURGH, PA. 15220
info@redvalve.com
412.279.0044
fax 412.279.5410

TT PRODUCT: 36" SERIES 35–1 CHECK VALVE
TT PART No: 351–360–APPROVAL
DR. BY: TLM DATE: 9–2–16 | CHKD. BY: DATE:
CAD SCALE: FULL
PLOT SCALE: 1 = 1
DWG No: TTS–DWG | REV —

S-35 CHECK VALVE

NO.	DATE	REVISIONS	BY

TOWNSHIP OF WOODBRIDGE

DRAINAGE IMPROVEMENTS AT NINE LOCATIONS
TOWNSHIP OF WOODBRIDGE
MIDDLESEX COUNTY, NEW JERSEY

CONSTRUCTION DETAILS - 5

NAIK CONSULTING GROUP, PC
Metroplex Plaza,
200 Metroplex Drive, Suite 403
Edison, NJ 08817
Ph: 732-777-0030 Fax: 732-777-0040

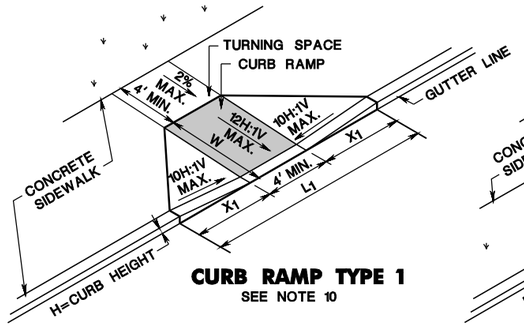
LINDSAY MAGUIRE, PE
NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE05895800

STATE OF NEW JERSEY · LINDSAY A. MAGUIRE · No. GE58958 · LICENSED PROFESSIONAL ENGINEER

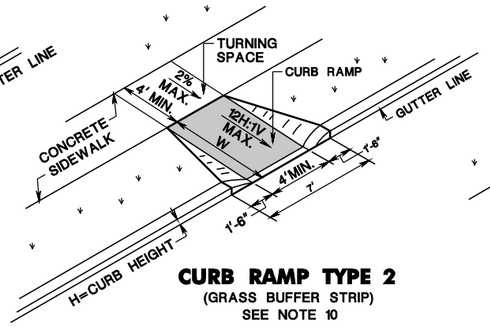
SCALE:	DATE:
NTS	9/14/2023
DESIGNED:	CHECKED:
JE	LM

SHEET NO. 57 OF 62

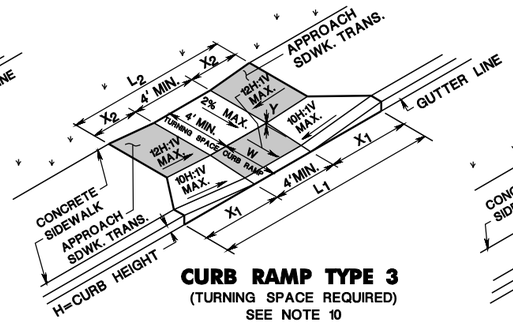
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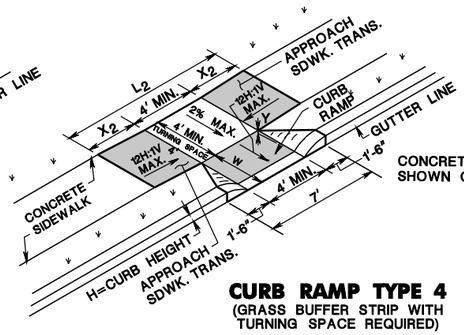
CURB RAMP TYPE 1
SEE NOTE 10



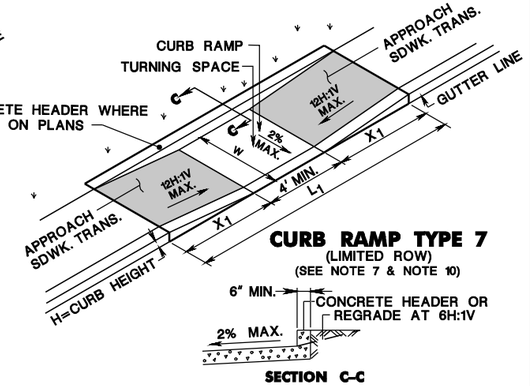
CURB RAMP TYPE 2
(GRASS BUFFER STRIP)
SEE NOTE 10



CURB RAMP TYPE 3
(TURNING SPACE REQUIRED)
SEE NOTE 10

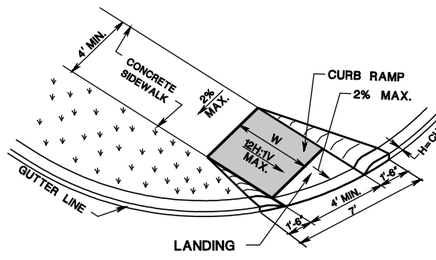


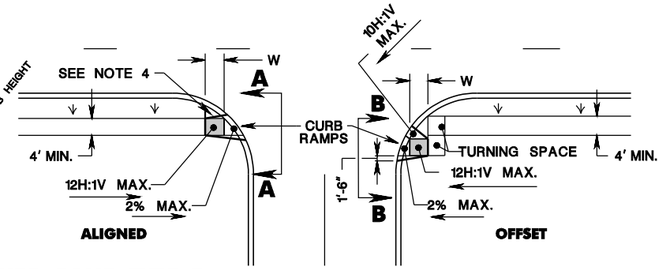
CURB RAMP TYPE 4
(GRASS BUFFER STRIP WITH TURNING SPACE REQUIRED)
SEE NOTE 10



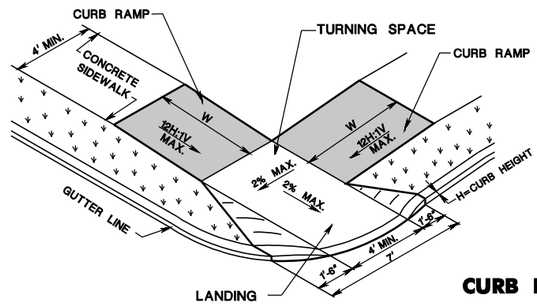
CURB RAMP TYPE 7
(LIMITED ROW)
(SEE NOTE 7 & NOTE 10)

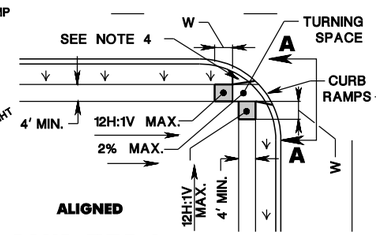
SECTION C–C

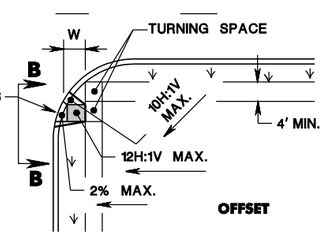




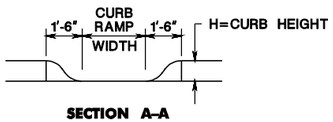
CURB RAMP TYPE 5



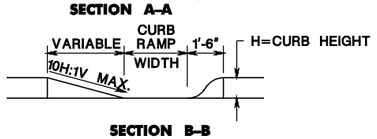




CURB RAMP TYPE 6

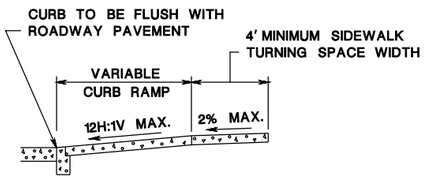


SECTION A–A

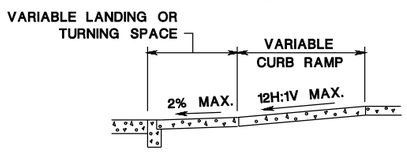


SECTION B–B

NOTE:
CURB RAMP OPENING TO BE FLUSH WITH ROADWAY PAVEMENT (CURB RAMP TYPES 5 & 6).



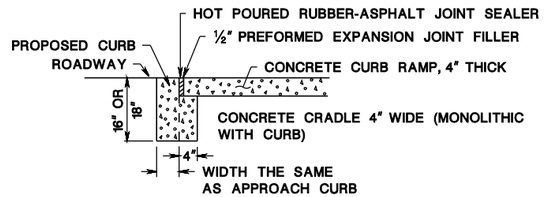
SECTION THROUGH CURB RAMPS 1 THROUGH 4



SECTION THROUGH CURB RAMPS 5 AND 6

NOTES:

1. KEEP TURNING SPACE, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP CLEAR OF OBSTRUCTIONS THAT PROTRUDE ABOVE THE SURFACE.
2. FOR DIMENSIONS SEE CD-606-3 AND CD-606-4
3. CURB (DROPPED CURB) GUTTERLINE TO BE FLUSH WITH ROADWAY PAVEMENT THE ENTIRE WIDTH OF THE RAMP (4 FEET MIN.) AT ALL CURB RAMPS.
4. FOR CURB RAMP TYPES 5 AND 6, IF A GRASS BUFFER DOES NOT EXIST, SLOPE CURB TO EQUAL SLOPE OF ADJACENT CURB RAMP.
5. SIDEWALK AND CURB RAMP WITHIN AREA ENCLOSED BY HEAVY LINES INDICATES THE PAY LIMIT FOR CONCRETE SIDEWALK OF THE APPROPRIATE ADJACENT THICKNESS.
6. CURB AND HEADER WITHIN AREA ENCLOSED BY HEAVY LINES INDICATES THE PAY LIMIT FOR VERTICAL CURB OR SLOPING CURB OF THE APPROPRIATE ADJACENT SIZE AND KIND.
7. WHERE THE DISTANCE FROM THE GUTTER LINE TO THE OUTSIDE EDGE OF SIDEWALK IS 6 FEET OR LESS, USE CURB RAMP TYPE 7, INSTEAD OF CURB RAMP TYPE 1 THROUGH 4.
8. CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED. SEE PLANS.
9. THE 12H:1V MAX SLOPE IS THE RUNNING SLOPE FOR CURB RAMPS, BUT ONLY THE 12H:1V SLOPE MEASURED AS X_2 IS THE RUNNING SLOPE FOR TYPE 3 AND TYPE 4 CURB RAMPS. ENSURE THE RUNNING SLOPE OF CURB RAMPS DOES NOT REQUIRE ITS LENGTH TO EXCEED 15 FEET. THE RUNNING SLOPE MAY EXCEED THE 12H:1V MAX SLOPE SO AS NOT TO EXCEED THE 15 FEET MAXIMUM LENGTH.
10. CURB RAMP TYPE 1 THROUGH 7 ARE NORMALLY PLACED ON THE RADIUS RETURN AT THE INTERSECTION AND ON A TANGENT SECTION AS DRAWN.



DROPPED CURB AND CRADLE

CONCRETE SIDEWALK
(PUBLIC SIDEWALK CURB RAMP)
N.T.S.

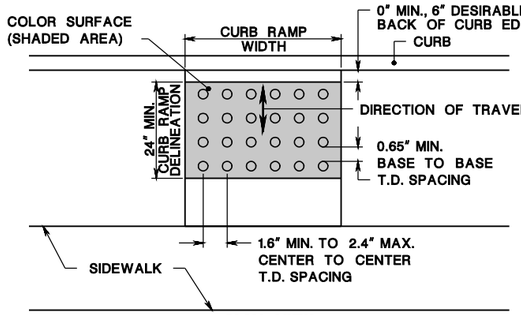
CD-606-1

NEW JERSEY DEPARTMENT OF TRANSPORTATION

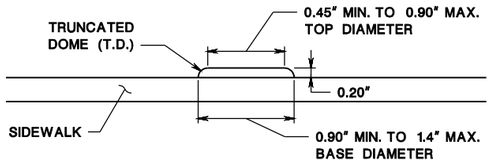
CONSTRUCTION DETAILS

CURB RAMPS
CD-606-1.1

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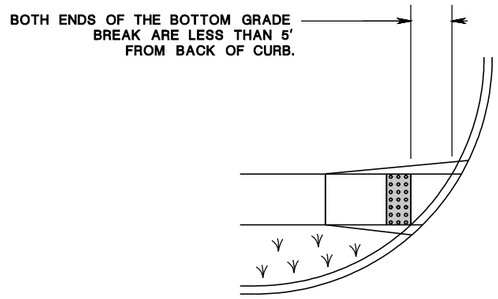


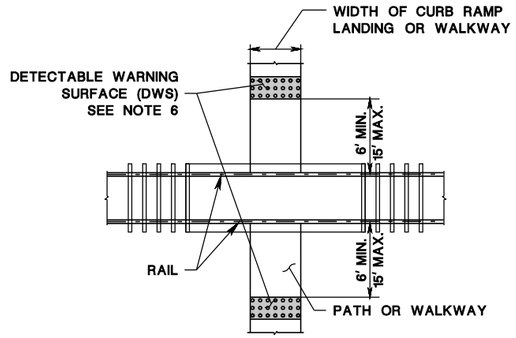
PLAN VIEW



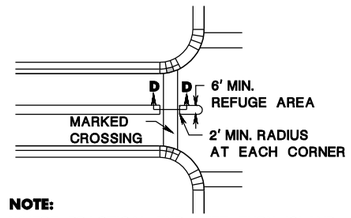
ELEVATION

DETECTABLE WARNING SURFACE

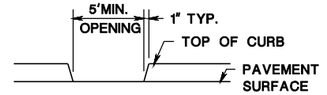




PEDESTRIAN RAILROAD CROSSING



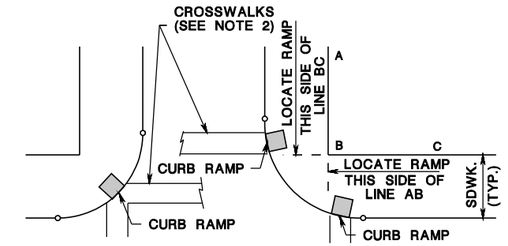
NOTE:
WHERE PRACTICAL, END LEFT TURN ISLAND OR DIVISIONAL ISLAND BEFORE CROSSWALK TO ELIMINATE CUT-THROUGH



SECTION D–D

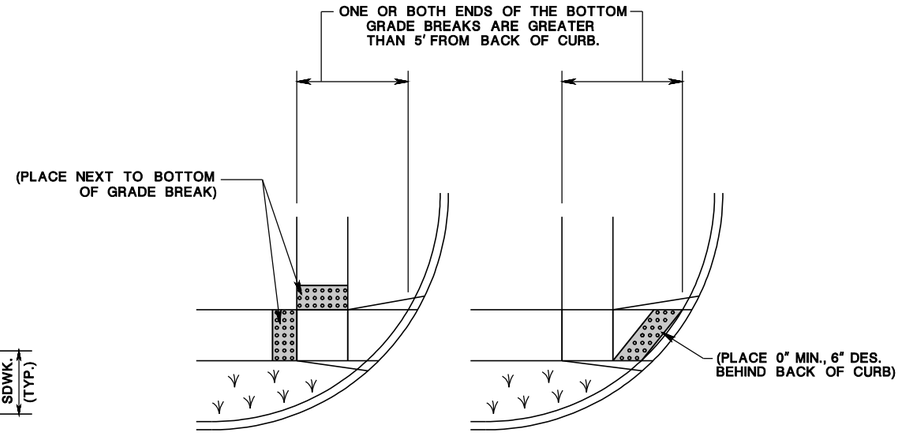
NOTE:
5'MIN. WIDE OPENING TO BE FLUSH WITH ROADWAY PAVEMENT

PEDESTRIAN REFUGE ISLAND WALKWAY OPENING AT INTERSECTIONS



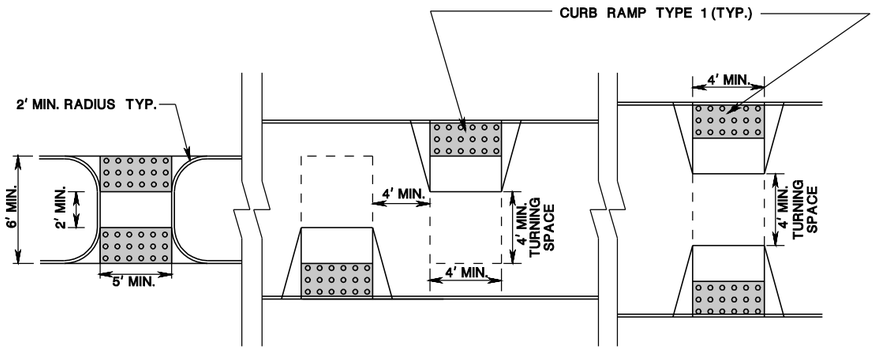
ALTERNATE TREATMENT (SEE NOTE 5) **PREFERRED TREATMENT** (SEE NOTE 5)

LOCATION OF CURB RAMP TYPES 1, 2, 3, 4, & 7 FOR CROSSING PARALLEL AND PERPENDICULAR TO HIGHWAY



PREFERRED TREATMENT **ALTERNATE TREATMENT** (SEE NOTE 7)

PLACEMENT OF DETECTABLE WARNING SURFACE FOR CURB RAMP TYPE 5 AND 6



NARROW ISLAND WIDTH (SEE NOTE 3) **MEDIUM ISLAND WIDTH** (SEE NOTE 4) **LARGE ISLAND WIDTH** (SEE NOTE 4)

PEDESTRIAN REFUGE ISLAND

NOTES:

1. KEEP TURNING SPACE, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP CLEAR OF OBSTRUCTIONS THAT PROTRUDE ABOVE THE SURFACE.
2. CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED, SEE PLANS.
3. FOR NARROW ISLAND WIDTH, SEE PEDESTRIAN REFUGE ISLAND WALKWAY OPENING AT INTERSECTIONS DETAIL.
4. FOR MEDIUM AND LARGE ISLAND WIDTH, SEE CURB RAMP TYPE 1 ON CD-606-1.
5. CONSTRUCT CURB RAMP TYPES 1, 2, 3, 4, & 7 PERPENDICULAR TO CURBLINE, AS SHOWN.
6. IF A CURB RAMP IS REQUIRED, THE LOCATION OF THE DETECTABLE WARNING SURFACE MUST BE AT THE BOTTOM OF THE RAMP AND WITHIN THE REQUIRED DISTANCE FROM THE RAIL.
7. A STANDARD DETECTABLE WARNING (DWS) SURFACE IS NOT AVAILABLE TO FIT THIS APPLICATION, AND THEREFORE ONE WILL NEED TO BE CUSTOMIZED. THE DWS SHOULD COVER THE ENTIRE WIDTH OF THE RAMP. THE ROWS OF DOMES ON THE DWS SHOULD FOLLOW THE DIRECTION OF TRAVEL OF THE RAMP, SO PEDESTRIANS WHO USE MOBILE DEVICES CAN TRACK BETWEEN THE DOMES.

DETECTABLE WARNING SURFACE

N.T.S.

CD-606-2

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

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CURB RAMP TYPE 1

0.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET
3	3	2.50	2.50	9.00
4	4	3.33	3.33	10.67
5	5	4.17	4.17	12.33
6	6	5.00	5.00	14.00
7	7	5.83	5.83	15.67
8	8	6.67	6.67	17.33
9	9	7.50	7.50	19.00

1.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET
3	3	2.78	2.27	9.05
4	4	3.70	3.03	10.73
5	5	4.63	3.79	12.42
6	6	5.56	4.55	14.10
7	7	6.48	5.30	15.78
8	8	7.41	6.06	17.47
9	9	8.33	6.82	19.15

2.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET
3	3	3.13	2.08	9.21
4	4	4.17	2.78	10.94
5	5	5.21	3.47	12.68
6	6	6.25	4.17	14.42
7	7	7.29	4.86	16.15
8	8	8.33	5.56	17.89
9	9	9.38	6.25	19.63

3.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET
3	3	3.57	1.92	9.49
4	4	4.76	2.56	11.33
5	5	5.95	3.21	13.16
6	6	7.14	3.85	14.99
7	7	8.33	4.49	16.82
8	8	9.52	5.13	18.65
9	9	10.71	5.77	20.48

4.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET
3	3	4.17	1.79	9.95
4	4	5.56	2.38	11.94
5	5	6.94	2.98	13.92
6	6	8.33	3.57	15.90
7	7	9.72	4.17	17.89
8	8	11.11	4.76	19.87
9	9	12.50	5.36	21.86

5.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET
3	3	5.00	1.67	10.67
4	4	6.67	2.22	12.89
5	5	8.33	2.78	15.11
6	6	10.00	3.33	17.33
7	7	11.67	3.89	19.56
8	8	13.33	4.44	21.78
9	9	15.00	5.00	24.00

6.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET
3	3	6.25	1.56	11.81
4	4	8.33	2.08	14.42
5	5	10.42	2.60	17.02
6	6	12.50	3.13	19.63
7	7	14.58	3.65	22.23
8	8	15.00	4.17	23.17
9	9	15.00	4.69	23.69

7.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET
3	3	8.33	1.47	13.80
4	4	11.11	1.96	17.07
5	5	13.89	2.45	20.34
6	6	15.00	2.94	21.94
7	7	15.00	3.43	22.43
8	8	15.00	3.92	22.92
9	9	15.00	4.41	23.41

CURB RAMP TYPE 3

0.0 % GUTTER LINE PROFILE									
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3		2.50	2.50	9.00		0.91	0.91	5.82
4		3.33	3.33	10.67		1.91	1.91	7.82
5		4.17	4.17	12.33		2.91	2.91	9.82
6	2.75	5.00	5.00	14.00	2.75	3.91	3.91	11.83
7		5.83	5.83	15.67		4.91	4.91	13.83
8		6.67	6.67	17.33		5.91	5.91	15.83
9		7.50	7.50	19.00		6.91	6.91	17.83
3		*	*	*		*	*	*
4		3.33	3.33	10.67		1.72	1.72	7.44
5		4.17	4.17	12.33		2.72	2.72	9.44
6	3.0	5.00	5.00	14.00	3.0	3.72	3.72	11.45
7		5.83	5.83	15.67		4.72	4.72	13.45
8		6.67	6.67	17.33		5.72	5.72	15.45
9		7.50	7.50	19.00		6.72	6.72	17.45
3		*	*	*		*	*	*
4		3.33	3.33	10.67		1.34	1.34	6.68
5		4.17	4.17	12.33		2.34	2.34	8.68
6	3.5	5.00	5.00	14.00	3.5	3.34	3.34	10.69
7		5.83	5.83	15.67		4.34	4.34	12.69
8		6.67	6.67	17.33		5.34	5.34	14.69
9		7.50	7.50	19.00		6.34	6.34	16.69
3		*	*	*		*	*	*
4		*	*	*		*	*	*
5		4.17	4.17	12.33		1.96	1.96	7.92
6	4.0	5.00	5.00	14.00	4.0	2.96	2.96	9.93
7		5.83	5.83	15.67		3.96	3.96	11.93
8		6.67	6.67	17.33		4.96	4.96	13.93
9		7.50	7.50	19.00		5.96	5.96	15.93

1.0 % GUTTER LINE PROFILE									
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3		2.78	2.27	9.05		1.04	0.81	5.85
4		3.70	3.03	10.73		2.17	1.71	7.88
5		4.63	3.79	12.42		3.31	2.60	9.91
6	2.75	5.56	4.55	14.10	2.75	4.45	3.49	11.94
7		6.48	5.30	15.78		5.58	4.39	13.97
8		7.41	6.06	17.47		6.72	5.28	16.00
9		8.33	6.82	19.15		7.86	6.17	18.03
3		2.78	2.27	9.05		0.82	0.64	5.46
4		3.70	3.03	10.73		1.96	1.54	7.49
5		4.63	3.79	12.42		3.09	2.43	9.52
6	3.0	5.56	4.55	14.10	3.0	4.23	3.32	11.55
7		6.48	5.30	15.78		5.37	4.22	13.58
8		7.41	6.06	17.47		6.50	5.11	15.61
9		8.33	6.82	19.15		7.64	6.00	17.64
3		2.78	2.27	9.05		0.39	0.30	4.69
4		3.70	3.03	10.73		1.53	1.20	6.72
5		4.63	3.79	12.42		2.66	2.09	8.75
6	3.5	5.56	4.55	14.10	3.5	3.80	2.98	10.78
7		6.48	5.30	15.78		4.94	3.88	12.81
8		7.41	6.06	17.47		6.07	4.77	14.84
9		8.33	6.82	19.15		7.21	5.66	16.87
3		*	*	*		*	*	*
4		3.70	3.03	10.73		1.09	0.86	5.95
5		4.63	3.79	12.42		2.23	1.75	7.98
6	4.0	5.56	4.55	14.10	4.0	3.37	2.65	10.01
7		6.48	5.30	15.78		4.50	3.54	12.04
8		7.41	6.06	17.47		5.64	4.43	14.07
9		8.33	6.82	19.15		6.78	5.32	16.10

2.0 % GUTTER LINE PROFILE									
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3		3.13	2.08	9.21		1.20	0.73	5.93
4		4.17	2.78	10.94		2.52	1.54	8.06
5		5.21	3.47	12.68		3.83	2.35	10.18
6	2.75	6.25	4.17	14.42	2.75	5.15	3.16	12.30
7		7.29	4.86	16.15		6.47	3.96	14.43
8		8.33	5.56	17.89		7.78	4.77	16.55
9		9.38	6.25	19.63		9.10	5.58	18.67
3		3.13	2.08	9.21		0.95	0.58	5.53
4		4.17	2.78	10.94		2.27	1.39	7.65
5		5.21	3.47	12.68		3.58	2.20	9.78
6	3.0	6.25	4.17	14.42	3.0	4.90	3.00	11.90
7		7.29	4.86	16.15		6.22	3.81	14.02
8		8.33	5.56	17.89		7.53	4.62	16.15
9		9.38	6.25	19.63		8.85	5.42	18.27
3		3.13	2.08	9.21		0.45	0.28	4.72
4		4.17	2.78	10.94		1.77	1.08	6.85
5		5.21	3.47	12.68		3.08	1.89	8.97
6	3.5	6.25	4.17	14.42	3.5	4.40	2.70	11.09
7		7.29	4.86	16.15		5.72	3.50	13.22
8		8.33	5.56	17.89		7.03	4.31	15.34
9		9.38	6.25	19.63		8.35	5.12	17.46
3		*	*	*		*	*	*
4		4.17	2.78	10.94		1.27	0.78	6.04
5		5.21	3.47	12.68		2.58	1.58	8.16
6	4.0	6.25	4.17	14.42	4.0	3.90	2.39	10.29
7		7.29	4.86	16.15		5.22	3.20	12.41
8		8.33	5.56	17.89		6.53	4.00	14.53
9		9.38	6.25	19.63		7.85	4.81	16.66

3.0 % GUTTER LINE PROFILE									
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3		3.57	1.92	9.49		1.42	0.67	6.09
4		4.76	2.56	11.33		2.99	1.41	8.39
5		5.95	3.21	13.16		4.55	2.14	10.69
6	2.75	7.14	3.85	14.99	2.75	6.11	2.88	12.99
7		8.33	4.49	16.82		7.68	3.61	15.29
8		9.52	5.13	18.65		9.24	4.35	17.59
9		10.71	5.77	20.48		10.81	5.08	19.89
3		3.57	1.92	9.49		1.13	0.53	5.66
4		4.76	2.56	11.33		2.69	1.27	7.96
5		5.95	3.21	13.16		4.25	2.00	10.26
6	3.0	7.14	3.85	14.99	3.0	5.82	2.74	12.55
7		8.33	4.49	16.82		7.38	3.47	14.85
8		9.52	5.13	18.65		8.94	4.21	17.15
9		10.71	5.77	20.48		10.51	4.94	19.45
3		3.57	1.92	9.49		0.53	0.25	4.78
4		4.76	2.56	11.33		2.10	0.99	7.08
5		5.95	3.21	13.16		3.66	1.72	9.38
6	3.5	7.14	3.85	14.99	3.5	5.22	2.46	11.68
7		8.33	4.49	16.82		6.79	3.19	13.98
8		9.52	5.13	18.65		8.35	3.93	16.28
9		10.71	5.77	20.48		9.91	4.66	18.58
3		*	*	*		*	*	*
4		4.76	2.56	11.33		1.50	0.71	6.21
5		5.95	3.21	13.16		3.07	1.44	8.51
6	4.0	7.14	3.85	14.99	4.0	4.63	2.18	10.81
7		8.33	4.49	16.82		6.19	2.91	13.11
8		9.52	5.13	18.65		7.76	3.65	15.41
9		10.71	5.77	20.48		9.32	4.38	17.71

4.0 % GUTTER LINE PROFILE									
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3		4.17	1.79	9.95		1.75	0.62	6.37
4		5.56	2.38	11.94		3.68	1.29	8.97
5		6.94	2.98	13.92		5.60	1.97	11.57
6	2.75	8.33	3.57	15.90	2.75	7.53	2.64	14.17
7		9.72	4.17	17.89		9.45	3.32	16.77
8		11.11	4.76	19.87		11.38	4.00	19.37
9		12.50	5.36	21.86		13.30	4.67	21.97
3		4.17	1.79	9.95		1.39	0.49	5.88
4		5.56	2.38	11.94		3.31	1.16	8.48
5		6.94	2.98	13.92		5.24	1.84	11.08
6	3.0	8.33	3.57	15.90	3.0	7.16	2.52	13.68
7		9.72	4.17	17.89		9.09	3.19	16.28
8		11.11	4.76	19.87		11.01	3.87	18.88
9		12.50	5.36	21.86		12.94	4.54	21.48
3		4.17	1.79	9.95		0.66	0.23	4.89
4		5.56	2.38	11.94		2.58	0.91	7.49
5		6.94	2.98	13.92		4.51	1.58	10.09
6	3.5	8.33	3.57	15.90	3.5	6.43	2.26	12.69
7		9.72	4.17	17.89		8.36	2.93	15.29
8		11.11	4.76	19.87		10.28	3.61	17.89
9		12.50	5.36	21.86		12.20	4.29	20.49
3		*	*	*		*	*	*
4		5.56	2.38	11.94		1.85	0.65	6.50
5		6.94	2.98	13.92		3.78	1.33	9.10
6	4.0	8.33	3.57	15.90	4.0	5.70	2.00	11.70
7		9.72	4.17	17.89		7.62	2.68	14.30
8		11.11	4.76	19.87		9.55	3.35	16.90
9		12.50	5.36	21.86		11.47	4.03	19.50

5.0 % GUTTER LINE PROFILE									
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3		5.00	1.67	10.67		2.28	0.57	6.85
4		6.67	2.22	12.89		4.78	1.19	9.98
5		8.33	2.78	15.11		7.29	1.82	13.10
6	2.75	10.00	3.33	17.33	2.75	9.79	2.45	16.23
7		11.67	3.89	19.56		12.29	3.07	19.36
8		13.33	4.44	21.78		14.79	3.70	22.49
9		15.00	5.00	24.00		15.00	4.32	23.32
3		5.00	1.67	10.67		1.80	0.45	6.26
4		6.67	2.22	12.89		4.31	1.08	9.38
5		8.33	2.78	15.11		6.81	1.70	12.51
6	3.0	10.00	3.33	17.33	3.0	9.31	2.33	15.64
7		11.67	3.89	19.56		11.81	2.95	18.77
8		13.33	4.44	21.78		14.32	3.58	21.89
9		15.00	5.00	24.00		15.00	4.20	23.20
3		5.00	1.67	10.67		0.85	0.21	5.07
4		6.67	2.22	12.89		3.36	0.84	8.20
5		8.33	2.78	15.11		5.86	1.46	11.32
6	3.5	10.00	3.33	17.33	3.5	8.36	2.09	14.45
7		11.67	3.89	19.56		10.86	2.71	17.58
8		13.33	4.44	21.78		13.37	3.34	20.71
9		15.00	5.00	24.00		15.00	3.96	22.96
3		*	*	*		*	*	*
4		6.67	2.22	12.89		2.41	0.60	7.01
5		8.33	2.78	15.11		4.91	1.23	10.14
6	4.0	10.00	3.33	17.33	4.0	7.41	1.85	13.26
7		11.67	3.89	19.56		9.91	2.48	16.39
8		13.33	4.44	21.78		12.42	3.10	19.52
9		15.00	5.00	24.00		14.92	3.73	22.65

6.0 % GUTTER LINE PROFILE									
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3		6.25	1.56	11.81		3.26	0.53	7.79
4		8.33	2.08	14.42		6.84	1.11	11.95
5		10.42	2.60	17.02		10.41	1.69	16.10
6	2.75	12.50	3.13	19.63	2.75	13.99	2.27	20.26
7		14.58	3.65	22.23		15.00	2.86	21.86
8		15.00	4.17	23.17		15.00	3.44	22.44
9		15.00	4.69	23.69		15.00	4.02	23.02
3		6.25	1.56	11.81		2.58	0.42	7.00
4		8.33	2.08	14.42		6.16	1.00	11.16
5		10.42	2.60	17.02		9.73	1.58	15.31
6	3.0	12.50	3.13	19.63	3.0	13.31	2.16	19.47
7		14.58	3.65	22.23		15.00	2.75	21.75
8		15.00	4.17	23.17		15.00	3.33	22.33
9		15.00	4.69	23.69		15.00	3.91	22.91
3		6.25	1.56	11.81		1.22	0.20	5.42
4		8.33	2.08	14.42		4.80	0.78	9.58
5		10.42	2.60	17.02		8.37	1.36	13.74
6	3.5	12.50	3.13	19.63	3.5	11.95	1.94	17.89
7		14.58	3.65	22.23		15.00	2.52	21.52
8		15.00	4.17	23.17		15.00	3.11	22.11
9		15.00	4.69	23.69		15.00	3.69	22.69
3		*	*	*		*	*	*
4		8.33	2.08	14.42		3.44	0.56	8.00
5		10.42	2.60	17.02		7.02	1.14	12.16
6	4.0	12.50	3.13	19.63	4.0	10.59	1.72	16.31
7		14.58	3.65	22.23		14.17	2.30	20.47
8		15.00	4.17	23.17		15.00	2.89	21.89
9		15.00	4.69	23.69		15.00	3.47	22.47

7.0 % GUTTER LINE PROFILE									
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3		8.33	1.47	13.80		5.71	0.50	10.20
4		11.11	1.96	17.07		11.97	1.04	17.01
5		13.89	2.45	20.34		15.00	1.58	20.58
6	2.75	15.00	2.94	21.94	2.75	15.00	2.13	21.13
7		15.00	3.43	22.43		15.00	2.67	21.67
8		15.00	3.92	22.92		15.00	3.21	22.21
9		15.00	4.41	23.41		15.00	3.76	22.76
3		8.33	1.47	13.80		4.52	0.39	8.91
4		11.11	1.96	17.07		10.78	0.94	15.72
5		13.89	2.45	20.34		15.00	1.48	20.48
6	3.0	15.00	2.94	21.94	3.0	15.00	2.02	21.02
7		15.00	3.43	22.43		15.00	2.57	21.57
8		15.00	3.92	22.92		15.00	3.11	22.11
9		15.00	4.41	23.41		15.00	3.65	22.65
3		8.33	1.47	13.80		2.14	0.19	6.32
4		11.11	1.96	17.07		8.40	0.73	13.13
5		13.89	2.45	20.34		14.67	1.27	19.94
6	3.5	15.00	2.94	21.94	3.5	15.00	1.82	20.82
7		15.00	3.43	22.43		15.00	2.36	21.36
8		15.00	3.92	22.92		15.00	2.90	21.90
9		15.00	4.41	23.41		15.00	3.45	22.45
3		*	*	*		*	*	*
4		11.11	1.96	17.07		6.03	0.52	10.55
5		13.89	2.45	20.34		12.29	1.07	17.36
6	4.0	15.00	2.94	21.94	4.0	15.00	1.61	20.61
7		15.00	3.43	22.43		15.00	2.15	21.15
8		15.00	3.92	22.92		15.00	2.70	21.70
9		15.00	4.41	23.41		15.00	3.24	22.24

CURB RAMP TYPE 2

0-8 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET
3	3	1.50	1.50	7.00
4	4	1.50	1.50	7.00
5	5	1.50	1.50	7.00
6	6	1.50	1.50	7.00
7	7	1.50	1.50	7.00
8	8	1.50	1.50	7.00
9	9	1.50	1.50	7.00

NOTES:

1. FOR CURB RAMP TYPES, SEE CD-606-1.
2. THE ABOVE TABLES ARE BASED ON THE SPECIFIC GUTTER PROFILE REFERENCED. THEY DO NOT TAKE INTO ACCOUNT VARIATIONS IN THE GUTTER PROFILE. THE ABOVE TABLES TO BE USED BY THE DESIGNERS AND CONTRACTORS TO GET APPROXIMATE DIMENSIONS OF THE CURB RAMP AT EACH LOCATION. FINAL DIMENSIONS WILL BE DETERMINED BY ACTUAL MEASUREMENTS IN THE FIELD DURING CONSTRUCTION.
3. THE 12H:1V MAX SLOPE IS THE RUNNING SLOPE FOR CURB RAMPS, BUT ONLY THE 12H:1V SLOPE MEASURED AS X IS THE RUNNING SLOPE FOR TYPE 3 AND TYPE 4 CURB RAMPS. ENSURE THE RUNNING SLOPE OF CURB RAMPS DOES NOT REQUIRE ITS LENGTH TO EXCEED 15 FEET. THE RUNNING SLOPE MAY EXCEED THE 12H:1V MAX SLOPE SO AS NOT TO EXCEED THE 15 FEET MAXIMUM LENGTH. THE TABLES ALREADY APPLY THE 15 FEET RULE FOR THOSE CALCULATED LENGTHS WHICH EXCEED 15 FEET.
4. DIMENSIONS SHOWN IN TABLES ARE FOR 3 INCH TO 9 INCH CURB HEIGHTS. WHERE THE CURB HEIGHTS ARE OTHER THAN WHAT IS PROVIDED IN THE TABLES, THE DIMENSIONS OF THE RAMPS WILL HAVE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.

LEGEND

U = UPPER SIDE OF GUTTER LINE PROFILE

L = LOWER SIDE OF GUTTER LINE PROFILE

FOR THE OTHER ABBREVIATIONS - REFER TO CD-606-1

* TYPE 3 RAMP IS NOT APPLICABLE, USE TYPE 1

** TYPE 4 RAMP IS NOT APPLICABLE, USE TYPE 2

CONCRETE SIDEWALK

(PUBLIC SIDEWALK CURB RAMP TABLES)

N.T.S.

CD-606-3

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

CD-606-3.1

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CURB RAMP TYPE 4

0.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3	2.75	2.75	0.91	0.91	5.82
4			1.91	1.91	7.82
5			2.91	2.91	9.82
6			3.91	3.91	11.82
7			4.91	4.91	13.83
8			5.91	5.91	15.83
9			6.91	6.91	17.83
3	3.0	3.0	**	**	**
4			1.72	1.72	7.44
5			2.72	2.72	9.44
6			3.72	3.72	11.45
7			4.72	4.72	13.45
8			5.72	5.72	15.45
9			6.72	6.72	17.45
3	3.5	3.5	**	**	**
4			1.34	1.34	6.68
5			2.34	2.34	8.68
6			3.34	3.34	10.69
7			4.34	4.34	12.69
8			5.34	5.34	14.69
9			6.34	6.34	16.69
3	4.0	4.0	**	**	**
4			**	**	**
5			1.96	1.96	7.92
6			2.96	2.96	9.93
7			3.96	3.96	11.93
8			4.96	4.96	13.93
9			5.96	5.96	15.93

1.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3	2.75	2.75	1.04	0.81	5.85
4			2.17	1.71	7.88
5			3.31	2.60	9.91
6			4.45	3.49	11.94
7			5.58	4.39	13.97
8			6.72	5.28	16.00
9			7.86	6.17	18.03
3	3.0	3.0	0.82	0.64	5.46
4			1.96	1.54	7.49
5			3.09	2.43	9.52
6			4.23	3.32	11.55
7			5.37	4.22	13.58
8			6.50	5.11	15.61
9			7.64	6.00	17.64
3	3.5	3.5	0.39	0.30	4.69
4			1.53	1.20	6.72
5			2.66	2.09	8.75
6			3.80	2.98	10.78
7			4.94	3.88	12.81
8			6.07	4.77	14.84
9			7.21	5.66	16.87
3	4.0	4.0	**	**	**
4			1.09	0.86	5.95
5			2.23	1.75	7.98
6			3.37	2.65	10.01
7			4.50	3.54	12.04
8			5.64	4.43	14.07
9			6.78	5.32	16.10

2.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3	2.75	2.75	1.20	0.73	5.93
4			2.52	1.54	8.06
5			3.83	2.35	10.18
6			5.15	3.16	12.30
7			6.47	3.96	14.43
8			7.78	4.77	16.55
9			9.10	5.58	18.67
3	3.0	3.0	0.95	0.58	5.53
4			2.27	1.39	7.65
5			3.58	2.20	9.78
6			4.90	3.00	11.90
7			6.22	3.81	14.02
8			7.53	4.62	16.15
9			8.85	5.42	18.27
3	3.5	3.5	0.45	0.28	4.72
4			1.77	1.08	6.85
5			3.08	1.89	8.97
6			4.40	2.70	11.09
7			5.72	3.50	13.22
8			7.03	4.31	15.34
9			8.35	5.12	17.46
3	4.0	4.0	**	**	**
4			1.27	0.78	6.04
5			2.58	1.58	8.16
6			3.90	2.39	10.29
7			5.22	3.20	12.41
8			6.53	4.00	14.53
9			7.85	4.81	16.66

3.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3	2.75	2.75	1.42	0.67	6.09
4			2.99	1.41	8.39
5			4.55	2.14	10.69
6			6.11	2.88	12.99
7			7.68	3.61	15.29
8			9.24	4.35	17.59
9			10.81	5.08	19.89
3	3.0	3.0	1.13	0.53	5.66
4			2.69	1.27	7.96
5			4.25	2.00	10.26
6			5.82	2.74	12.55
7			7.38	3.47	14.85
8			8.94	4.21	17.15
9			10.51	4.94	19.45
3	3.5	3.5	0.53	0.25	4.78
4			2.10	0.99	7.08
5			3.66	1.72	9.38
6			5.22	2.46	11.68
7			6.79	3.19	13.98
8			8.35	3.93	16.28
9			9.91	4.66	18.58
3	4.0	4.0	**	**	**
4			1.50	0.71	6.21
5			3.07	1.44	8.51
6			4.63	2.18	10.81
7			6.19	2.91	13.11
8			7.76	3.65	15.41
9			9.32	4.38	17.71

4.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3	2.75	2.75	1.75	0.62	6.37
4			3.68	1.29	8.97
5			5.60	1.97	11.57
6			7.53	2.64	14.17
7			9.45	3.32	16.77
8			11.38	4.00	19.37
9			13.30	4.67	21.97
3	3.0	3.0	1.39	0.49	5.88
4			3.31	1.16	8.48
5			5.24	1.84	11.08
6			7.16	2.52	13.68
7			9.09	3.19	16.28
8			11.01	3.87	18.88
9			12.94	4.54	21.48
3	3.5	3.5	0.66	0.23	4.89
4			2.58	0.91	7.49
5			4.51	1.58	10.09
6			6.43	2.26	12.69
7			8.36	2.93	15.29
8			10.28	3.61	17.89
9			12.20	4.29	20.49
3	4.0	4.0	**	**	**
4			1.85	0.65	6.50
5			3.78	1.33	9.10
6			5.70	2.00	11.70
7			7.62	2.68	14.30
8			9.55	3.35	16.90
9			11.47	4.03	19.50

5.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3	2.75	2.75	2.28	0.57	6.85
4			4.78	1.19	9.98
5			7.29	1.82	13.10
6			9.79	2.45	16.23
7			12.29	3.07	19.36
8			14.79	3.70	22.49
9			15.00	4.32	23.32
3	3.0	3.0	1.80	0.45	6.26
4			4.31	1.08	9.38
5			6.81	1.70	12.51
6			9.31	2.33	15.64
7			11.81	2.95	18.77
8			14.32	3.58	21.89
9			15.00	4.20	23.20
3	3.5	3.5	0.85	0.21	5.07
4			3.36	0.84	8.20
5			5.86	1.46	11.32
6			8.36	2.09	14.45
7			10.86	2.71	17.58
8			13.37	3.34	20.71
9			15.00	3.96	22.96
3	4.0	4.0	**	**	**
4			2.41	0.60	7.01
5			4.91	1.23	10.14
6			7.41	1.85	13.26
7			9.91	2.48	16.39
8			12.42	3.10	19.52
9			14.92	3.73	22.65

6.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3	2.75	2.75	3.26	0.53	7.79
4			6.84	1.11	11.95
5			10.41	1.69	16.10
6			13.99	2.27	20.26
7			15.00	2.86	21.86
8			15.00	3.44	22.44
9			15.00	4.02	23.02
3	3.0	3.0	2.58	0.42	7.00
4			6.16	1.00	11.16
5			9.73	1.58	15.31
6			13.31	2.16	19.47
7			15.00	2.75	21.75
8			15.00	3.33	22.33
9			15.00	3.91	22.91
3	3.5	3.5	1.22	0.20	5.42
4			4.80	0.78	9.58
5			8.37	1.36	13.74
6			11.95	1.94	17.89
7			15.00	2.52	21.52
8			15.00	3.11	22.11
9			15.00	3.69	22.69
3	4.0	4.0	**	**	**
4			3.44	0.56	8.00
5			7.02	1.14	12.16
6			10.59	1.72	16.31
7			14.17	2.30	20.47
8			15.00	2.89	21.89
9			15.00	3.47	22.47

7.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X_{2U} FEET	X_{2L} FEET	L_2 FEET
3	2.75	2.75	5.71	0.50	10.20
4			11.97	1.04	17.01
5			15.00	1.58	20.58
6			15.00	2.13	21.13
7			15.00	2.67	21.67
8			15.00	3.21	22.21
9			15.00	3.76	22.76
3	3.0	3.0	4.52	0.39	8.91
4			10.78	0.94	15.72
5			15.00	1.48	20.48
6			15.00	2.02	21.02
7			15.00	2.57	21.57
8			15.00	3.11	22.11
9			15.00	3.65	22.65
3	3.5	3.5	2.14	0.19	6.32
4			8.40	0.73	13.13
5			14.67	1.27	19.94
6			15.00	1.82	20.82
7			15.00	2.36	21.36
8			15.00	2.90	21.90
9			15.00	3.45	22.45
3	4.0	4.0	**	**	**
4			6.03	0.52	10.55
5			12.29	1.07	17.36
6			15.00	1.61	20.61
7			15.00	2.15	21.15
8			15.00	2.70	21.70
9			15.00	3.24	22.24

NOTES:

1. FOR CURB RAMP TYPES, SEE CD-606-1.
2. THE ABOVE TABLES ARE BASED ON THE SPECIFIC GUTTER PROFILE REFERENCED. THEY DO NOT TAKE INTO ACCOUNT VARIATIONS IN THE GUTTER PROFILE. THE ABOVE TABLES TO BE USED BY THE DESIGNERS AND CONTRACTORS TO GET APPROXIMATE DIMENSIONS OF THE CURB RAMP AT EACH LOCATION. FINAL DIMENSIONS WILL BE DETERMINED BY ACTUAL MEASUREMENTS IN THE FIELD DURING CONSTRUCTION.
3. THE 12H:1V MAX SLOPE IS THE RUNNING SLOPE FOR CURB RAMPS, BUT ONLY THE 12H:1V SLOPE MEASURED AS X IS THE RUNNING SLOPE FOR TYPE 3 AND TYPE 4 CURB RAMPS. ENSURE THE RUNNING SLOPE OF CURB RAMPS DOES NOT REQUIRE ITS LENGTH TO EXCEED 15 FEET. THE RUNNING SLOPE MAY EXCEED THE 12H:1V MAX SLOPE SO AS NOT TO EXCEED THE 15 FEET MAXIMUM LENGTH. THE TABLES ALREADY APPLY THE 15 FEET RULE FOR THOSE CALCULATED LENGTHS WHICH EXCEED 15 FEET.
4. DIMENSIONS SHOWN IN TABLES ARE FOR 3 INCH TO 9 INCH CURB HEIGHTS. WHERE THE CURB HEIGHTS ARE OTHER THAN WHAT IS PROVIDED IN THE TABLES, THE DIMENSIONS OF THE RAMPS WILL HAVE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.

LEGEND

U = UPPER SIDE OF GUTTER LINE PROFILE

L = LOWER SIDE OF GUTTER LINE PROFILE

FOR THE OTHER ABBREVIATIONS - REFER TO CD-606-1

* TYPE 3 RAMP IS NOT APPLICABLE, USE TYPE 1

** TYPE 4 RAMP IS NOT APPLICABLE, USE TYPE 2

CD-606-4.1

CURB RAMP TYPE 7

0.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET
3	4' MIN, 7' MAX.	3.00	3.00	10.00
4		4.00	4.00	12.00
5		5.00	5.00	14.00
6		6.00	6.00	16.00
7		7.00	7.00	18.01
8		8.00	8.00	20.01
9		9.00	9.00	22.01

1.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET
3	4' MIN, 7' MAX.	3.41	2.68	10.09
4		4.55	3.57	12.12
5		5.68	4.47	14.15
6		6.82	5.36	16.18
7		7.96	6.25	18.21
8		9.10	7.15	20.24
9		10.23	8.04	22.27

2.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET
3	4' MIN, 7' MAX.	3.95	2.42	10.37
4		5.27	3.23	12.49
5		6.58	4.03	14.62
6		7.90	4.84	16.74
7		9.22	5.65	18.86
8		10.53	6.45	20.99
9		11.85	7.26	23.11

3.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L_1 FEET
3	4' MIN, 7' MAX.	4.69	2.21	10.90
4		6.25	2.94	13.20
5		7.82	3.68	15.49
6		9.38	4.41	17.79
7		10.94	5.15	20.09
8		12.51	5.88	22.39
9		14.07	6.62	24.69

4.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L1 FEET
3	4' MIN, 7' MAX.	5.77	2.03	11.80
4		7.70	2.70	14.40
5		9.62	3.38	17.00
6		11.55	4.06	19.60
7		13.47	4.73	22.20
8		15.40	5.41	24.80
9		17.32	6.08	27.40

5.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L1 FEET
3	4' MIN, 7' MAX.	7.51	1.88	13.38
4		10.01	2.50	16.51
5		12.51	3.13	19.64
6		15.00	3.75	22.75
7		15.00	4.38	23.38
8		15.00	5.00	24.00
9		15.00	5.63	24.63

6.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L1 FEET
3	4' MIN, 7' MAX.	10.73	1.74	16.47
4		14.31	2.33	20.63
5		15.00	2.91	21.91
6		15.00	3.49	22.49
7		15.00	4.07	23.07
8		15.00	4.65	23.65
9		15.00	5.23	24.23

7.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X_{1U} FEET	X_{1L} FEET	L1 FEET
3	4' MIN, 7' MAX.	15.00	1.63	20.63
4		15.00	2.17	21.17
5		15.00	2.72	21.72
6		15.00	3.26	22.26
7		15.00	3.81	22.81
8		15.00	4.35	23.35
9		15.00	4.89	23.89

CONCRETE SIDEWALK

(PUBLIC SIDEWALK CURB RAMP TABLES)

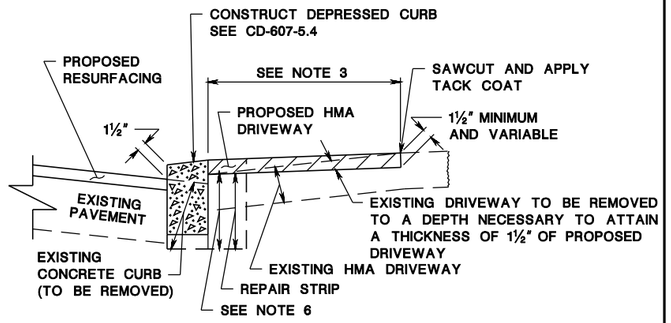
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CD-606-4

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

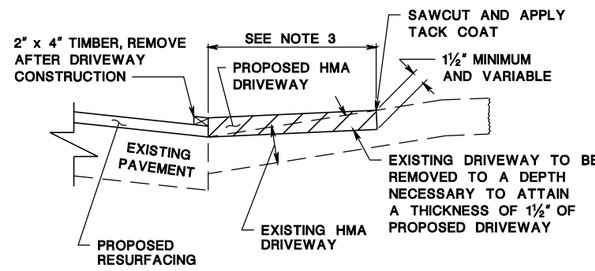
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TYPE A

RESURFACING OF EXISTING HMA DRIVEWAY
(WITH DEPRESSED CURB)

CD-606-5.1



TYPE B

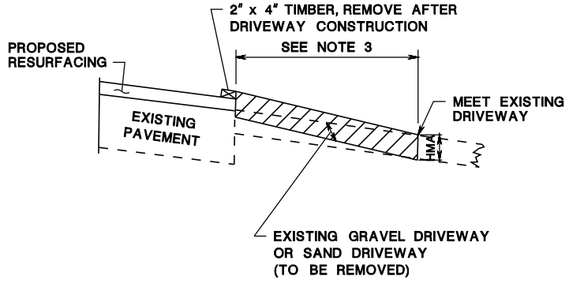
RESURFACING OF EXISTING HMA DRIVEWAY
(WITHOUT DEPRESSED CURB)

CD-606-5.2

TYPE C

CONSTRUCTION OF HMA DRIVEWAY
OR CONVERSION OF EXISTING GRAVEL DRIVEWAY
(WITH DEPRESSED CURB)

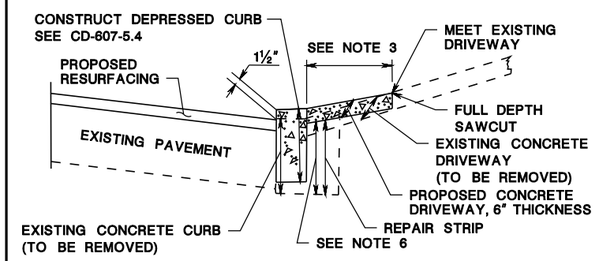
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TYPE D

CONSTRUCTION OF HMA DRIVEWAY
OR CONVERSION OF EXISTING GRAVEL DRIVEWAY
(WITHOUT DEPRESSED CURB)

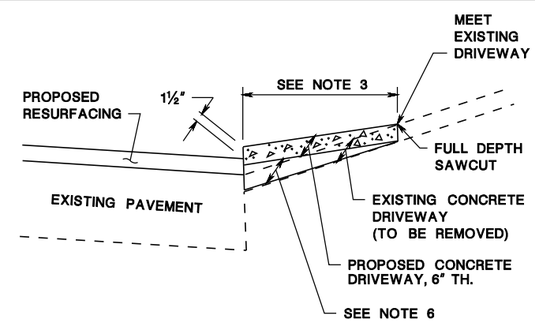
CD-606-5.4



TYPE E

RECONSTRUCTION OF CONCRETE DRIVEWAY
(WITH DEPRESSED CURB)

CD-606-5.5



TYPE F

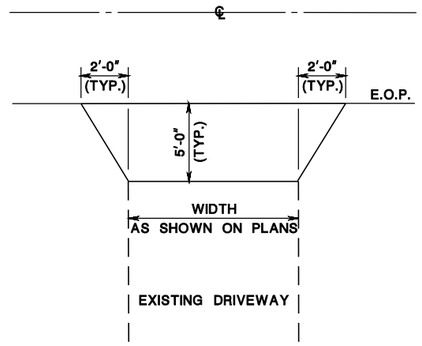
RECONSTRUCTION OF CONCRETE DRIVEWAY
(WITHOUT DEPRESSED CURB)

CD-606-5.6

GENERAL NOTES:

1. ALL MATERIAL, REPAIR STRIPS, AND EXCAVATION FOR DRIVEWAY CONSTRUCTION TO BE INCLUDED IN THE BID PRICE FOR HMA DRIVEWAY, CONCRETE DRIVEWAY, OR CONCRETE CURB.
2. USE HMA SURFACE COURSE FOR HMA DRIVEWAY.
3. CONSTRUCT 5 FEET LONG DRIVEWAY UNLESS OTHERWISE SHOWN ON PLANS OR AS DIRECTED.
4. MAINTAIN EXISTING DIRECTION OF FLOW ON DRIVEWAY.
5. USE DENSE GRADED AGGREGATE BASE COURSE TO PROVIDE TEMPORARY ACCESS DURING DRIVEWAY CONSTRUCTION.
6. DENSE GRADED AGGREGATE BASE COURSE.
7. WHERE SIDEWALK CROSSES DRIVEWAY PROVIDE A 2% MAXIMUM SIDEWALK CROSS SLOPE WITHIN DRIVEWAY AREA.

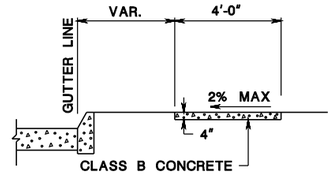
CD-606-5.7



TYPICAL DRIVEWAY TREATMENT

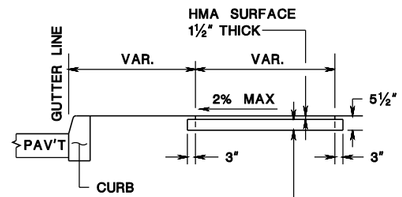
PLAN VIEW

CD-606-5.8



CONCRETE SIDEWALK, 4" THICK

CD-606-5.9



DENSE GRADED AGGREGATE BASE COURSE,
4" THICK OR AGGREGATE BASE COURSE.
4" THICK AGGREGATE BASE COURSE IS
SOIL AGGREGATE, DESIGNATION I-5.

HMA SIDEWALK, 5 1/2" THICK

CD-606-5.10

CONCRETE AND HMA, DRIVEWAY AND SIDEWALK

N.T.S.

HMA = HOT MIX ASPHALT

CD-606-5

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

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