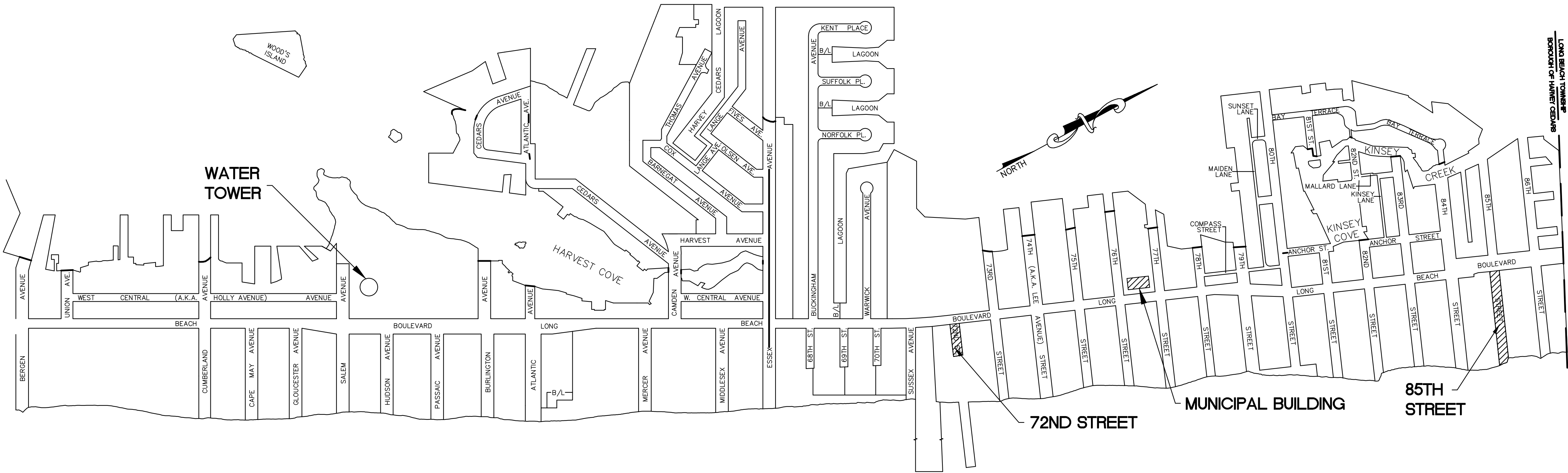


2020 NJDOT ROAD RECONSTRUCTION PROJECT  
EAST 72ND STREET AND EAST 85TH STREET  
BOROUGH OF HARVEY CEDARS  
OCEAN COUNTY, NEW JERSEY

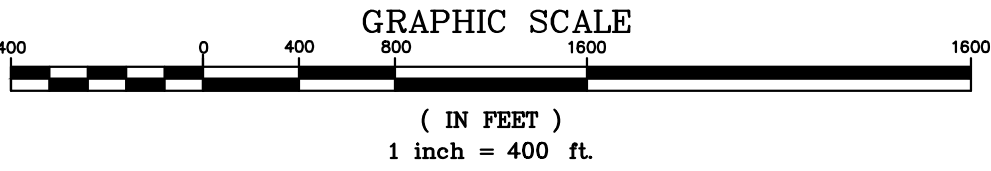
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ESTIMATE OF QUANTITIES					
Item No.	Description	Plan Quantity	If and Where Directed	Contract Amount	Unit
1	PERFORMANCE BOND	-			DOLL
2	PAYMENT BOND	-			DOLL
3	CONSTRUCTION LAYOUT	-			DOLL
4	INLET FILTER TYPE 1	70		70	SF
5	BREAKAWAY BARRICADE	2		2	U
6	DRUM	10		10	U
7	TRAFFIC CONE	12		12	U
8	CONSTRUCTION SIGNS	133		133	SF
9	TRAFFIC DIRECTOR, FLAGGER				HR
10	FUEL PRICE ADJUSTMENTS				DOLL
11	ASPHALT PRICE ADJUSTMENTS				DOLL
12	EXCAVATION TEST PITS (IF & WHERE DIRECTED)	0	6	6	CY
13	REMOVAL OF PAVEMENT 4 INCHES-6 INCHES THICK	2200		2200	SY
14	HOT MIX ASPHALT 9.5 M 64 SURFACE COURSE	350		350	T
15	TACK COAT	220		220	GAL
16	CORE SAMPLES, HOT MIX ASPHALT	4		4	U
17	8" PERFORATED HIGH DENSITY POLYETHYLENE PIPE	100		100	LF
18	INLET, TYPE A	4		4	U
19	12"x13" CONCRETE SLOPING CURB	1201		1201	LF
20	RESET PRECAST CONCRETE PAVERS (IF & WHERE DIRECTED)	56	6	62	SY
21	TRAFFIC MARKINGS, SYMBOLS, LONG LIFE, EPOXY RESIN, THERMOPLASTIC WHITE 24-INCH WIDE	33		33	LF
22	TRAFFIC STRIPES, LONG LIFE EPOXY RESIN, WHITE AND YELLOW 4-INCH WIDE	260		260	LF
23	TRAFFIC STRIPES, LONG LIFE EPOXY RESIN, BLUE 6-INCH WIDE	72		72	LF
24	REGULATORY AND WARNING SIGN	12		12	SF
25	RESET WATER VALVE BOX	5		5	U
26	RESET MANHOLE, SANITARY SEWER, USING EXISTING CASTING	2		2	U
27	EDGE RESTORATION	905		905	LF
28	BRICK PAVES (IF & WHERE DIRECTED)	1	1	2	SY
29	TRAFFIC MARKING, SYMBOLS, LONG LIFE, EPOXY RESIN	12		12	LF
30	RECONSTRUCTED INLET, TYPE E, USING NEW CASTING	1		1	U
31	HOT MIX ASPHALT 19 M 64 BASE COURSE	400		400	T
32	DENSE-GRADED AGGREGATE BASE COURSE, 6" THICK	2200		2200	SY
33	EXCAVATION UNCLASSIFIED	60		60	CY
34	RESET GAS VALVE BOX	5		5	U
35	CLEARING SITE				LS



EXISTING UTILITY OWNERS

<b>Gas</b> New Jersey Natural Gas 1420 Wycoff Road Wall, NJ 07719 (732)938-1203	<b>Electric</b> Atlantic City Electric 2542 Fire Road Egg Harbor Twp., NJ 08234-5661 (609)294-6727
<b>Telephone</b> Verizon - New Jersey 148 Old South Broadway Road Manahawkin, NJ 08050 (609)597-9970	<b>Water</b> Harvey Cedars Water/Sewer Dept. 7606 Long Beach Blvd. Harvey Cedars, NJ 08008 (609) 361-6000
<b>Sanitary Sewer</b> Harvey Cedars Water/Sewer Dept. 7606 Long Beach Blvd. Harvey Cedars, NJ 08008 (609) 361-6000	<b>Cable TV</b> Comcast Cable 1202 Long Beach Boulevard Ship Bottom, NJ 08008 (609)492-2749
<b>Ocean County Utilities Authority</b> Central Water Pollution Control Facility Hickory Lane-Segal Street Bayville, New Jersey 08721 (732)269-4500	

PROTECT YOURSELF  
CALL BEFORE YOU DIG

THE STATE OF NEW JERSEY REQUIRES NOTIFICATION OF EXCAVATOR, DESIGNER OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE. ALL CONTRACTORS ARE REQUIRED TO CALL 1(800)272-1000 (IN NEW JERSEY) OR CALL 811 (NATIONWIDE) BEFORE YOU DIG.

**NOTE:**  
ALL EXISTING UTILITIES LOCATED HEREON ARE APPROXIMATE. CONTRACTOR TO VERIFY ALL LOCATIONS, SIZES, MATERIALS AND DEPTHS PRIOR TO START OF CONSTRUCTION.

SHEET INDEX	
NO.	TITLE
1 OF 9	COVER SHEET
2 OF 9	EXISTING CONDITIONS MAP AND CONTROL PLAN
3 OF 9	EAST 72ND STREET PLAN AND PROFILE
4 OF 9	EAST 85TH STREET PLAN AND PROFILE
5 OF 9	EAST 85TH STREET PLAN AND PROFILE
6 OF 9	STRIPING PLAN
7 OF 9	TRAFFIC CONTROL PLAN AND DETAILS
8 OF 9	SOIL EROSION PLAN
9 OF 9	SOIL EROSION NOTES

**NOTE:**  
THE 2019 U.S. CUSTOMARY ENGLISH STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION OF THE NEW JERSEY DEPARTMENT OF TRANSPORTATION, LATEST EDITION, INCLUDING ALL BASELINE DOCUMENT CHANGE (BDC) ANNOUNCEMENTS SHALL COVER THE CONSTRUCTION OF THIS PROJECT.

REFER TO NJDOT SPECIAL PROVISIONS FOR STATE AID PROJECTS FY2019 EDITION WITH LATEST REVISION.

THE NJDOT STANDARD CONSTRUCTION DETAILS FOR ROADWAY, TRAFFIC CONTROL, AND BRIDGE BOOKLET (2016); AND THE NJDOT STANDARD ELECTRICAL DETAIL BOOKLET (2007), INCLUDING ALL BASELINE DOCUMENT CHANGE (BDC) ANNOUNCEMENTS ARE APPLICABLE TO THIS PROJECT EXCEPT FOR THOSE DETAILS CONTAINED HEREIN.

1

07/19/21

REVISED PER NJDOT COMMENTS DATED 07/07/21.

JSM

FUL

NO.

DATE

REVISION DESCRIPTION

DRAWN

CHK'D

**OWEN, LITTLE & ASSOCIATES, INC.**  
246A27965700  
Engineers, Planners, Surveyors  
& Architects  
443 Atlantic City Blvd.  
Bridgeton, NJ 08302  
Tel: (732)244-1000  
Fax: (732)341-3412

**FRANK J. LITTLE, JR.**  
**P.E., P.P.**

**PROFESSIONAL ENGINEER**  
N.J. LIC. NO. 24602708500  
**PROFESSIONAL PLANNER**  
N.J. LIC. NO. 03096

**2020 NJDOT ROAD RECONSTRUCTION**  
**EAST 72ND STREET AND EAST 85TH STREET**  
**COVER SHEET**

**BOROUGH OF HARVEY CEDARS**  
**NEW JERSEY**

OCEAN COUNTY		NEW JERSEY	
SCALE	DATE	DRAWN	CHK'D
1"=400'	5/26/21	JSM	AM JR.
APPROVED FOR CONSTRUCTION		APPR.	
SURVEY & BILLING NO.		DRAWING NO.	
21-034191		1	
HC 20RDS		9	



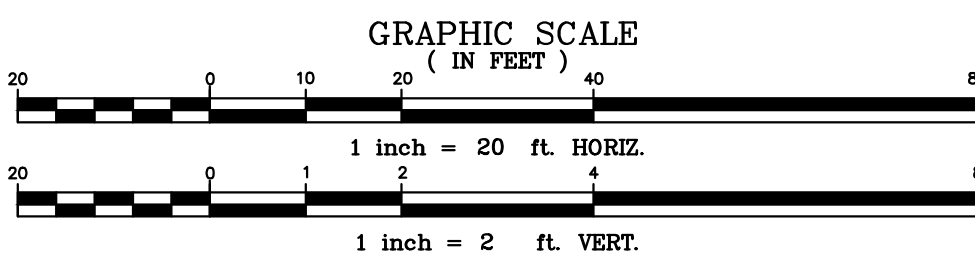
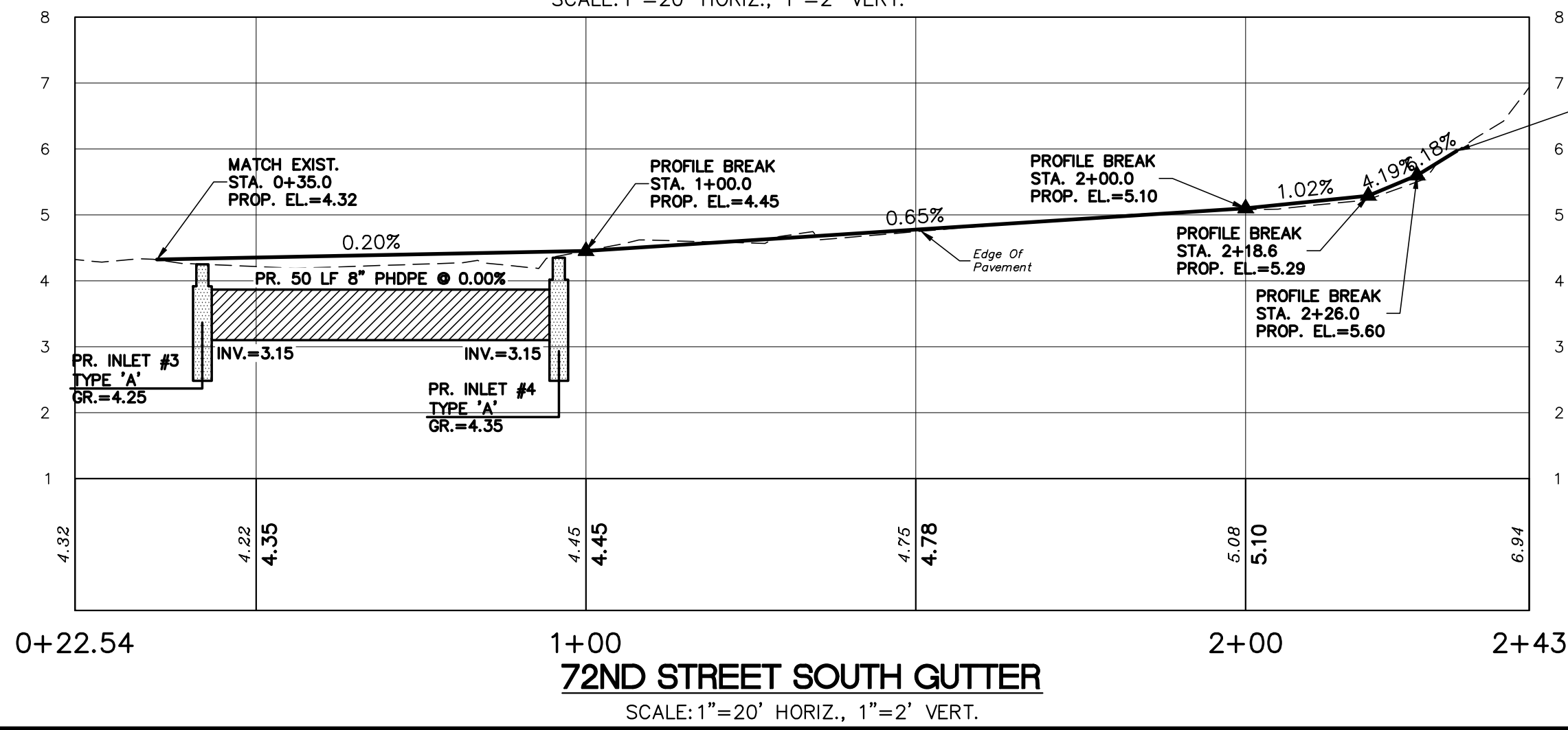
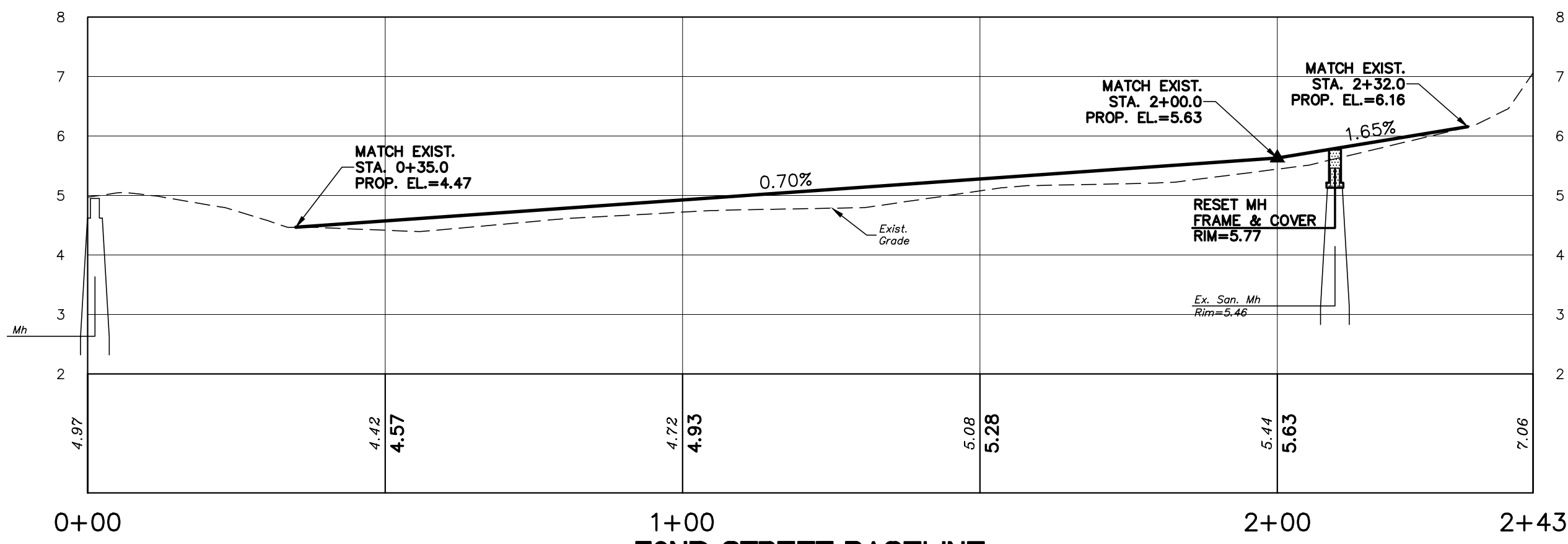
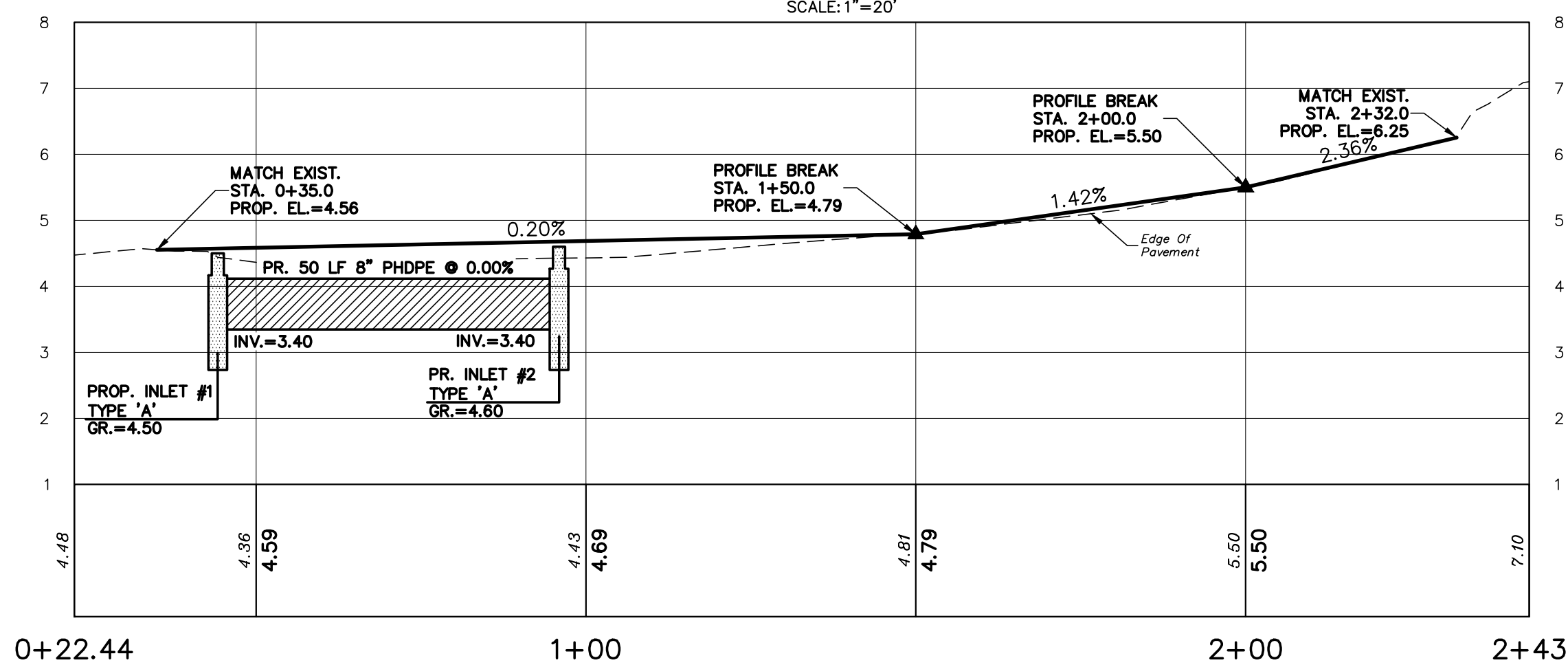
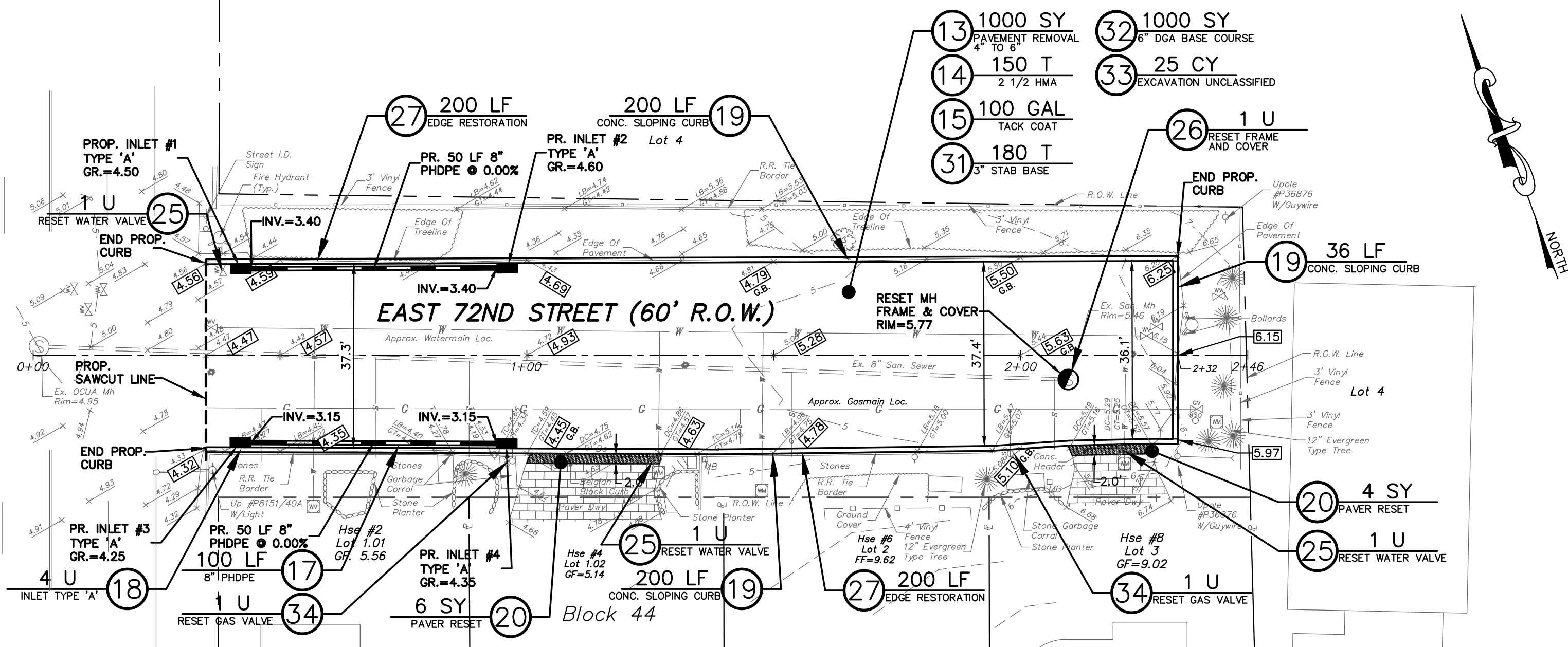




Z:\VCD\0403\2020\_0514\_72ND\0403\_72ND SOUTH ST. 81.dwg - 5013

Lot 1  
Block 41.05

LONG BEACH BOULEVARD (60' R.O.W.)



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### ESTIMATE OF QUANTITIES

Item No.	Description	Plan Quantity	If and Where Directed	Contract Amount	Unit
1	PERFORMANCE BOND				DOLL
2	PAYMENT BOND				DOLL
3	CONSTRUCTION LAYOUT				DOLL
4	INLET FILTER TYPE 1				SF
5	BREAKAWAY BARRICADE				U
6	DRUM				U
7	TRAFFIC CONE				U
8	CONSTRUCTION SIGNS				SF
9	TRAFFIC DIRECTOR, FLAGGER				HR
10	FUEL PRICE ADJUSTMENTS				DOLL
11	ASPHALT PRICE ADJUSTMENTS				DOLL
12	EXCAVATION TEST PITS (IF & WHERE DIRECTED)	0	6	6	CY
13	REMOVAL OF PAVEMENT 4 INCHES-6 INCHES THICK	1000		1000	SY
14	HOT MIX ASPHALT 9.5 M 64 SURFACE COURSE	150		150	T
15	TACK COAT	100		100	GAL
16	CORE SAMPLES, HOT MIX ASPHALT	2		2	U
17	6" PERFORATED HIGH DENSITY POLYETHYLENE PIPE	100		100	LF
18	INLET, TYPE A	4		4	U
19	12"x13" CONCRETE SLOPING CURB	436		436	LF
20	RESET PRECAST CONCRETE PAVERS (IF & WHERE DIRECTED)	10		10	SY
21	TRAFFIC MARKINGS, SYMBOLS, LONG LIFE, EPOXY RESIN, THERMOPLASTIC WHITE 24-INCH WIDE				LF
22	TRAFFIC STRIPES, LONG LIFE EPOXY RESIN, WHITE AND YELLOW 4-INCH WIDE				LF
23	TRAFFIC STRIPES, LONG LIFE EPOXY RESIN, BLUE 6-INCH WIDE				LF
24	REGULATORY AND WARNING SIGN				SF
25	RESET WATER VALVE BOX	2		2	U
26	RESET MANHOLE, SANITARY SEWER, USING EXISTING CASTING	1		1	U
27	EDGE RESTORATION	400		400	LF
28	BRICK PAVEMENT (IF & WHERE DIRECTED)				SY
29	TRAFFIC MARKING, SYMBOLS, LONG LIFE, EPOXY RESIN				LF
30	RECONSTRUCTED INLET, TYPE E, USING NEW CASTING				U
31	HOT MIX ASPHALT 19 M 64 BASE COURSE	180		180	T
32	DENSE-GRADED AGGREGATE BASE COURSE, 6" THICK	1000		1000	SY
33	EXCAVATION UNCLASSIFIED	25		25	CY
34	RESET GAS VALVE BOX	2		2	U
35	CLEARING SITE				LS

1	07/19/21	REVISED PER NJDOT COMMENTS DATED 07/07/21.	JSM	F.J.L.
NO.	DATE	REVISION DESCRIPTION	DRAWN	CHK'D
<b>OWEN, LITTLE &amp; ASSOCIATES, INC.</b>				
<b>FRANK J. LITTLE, JR. P.E., P.P.</b>				
<b>2020 NJDOT ROAD RECONSTRUCTION</b>				
<b>EAST 72ND STREET</b>				
<b>PLAN AND PROFILE</b>				
BOROUGH OF HARVEY CEDARS				
NEW JERSEY				
OCEAN COUNTY				
SCALE	DATE	DRAWN	CHK'D	APPROVED FOR CONSTRUCTION
AS NOTED	6/2/21	JSM	AM JR.	APPR.
SURVEY & BILLING NO.				DRAWING NO.
21-034191				3
HC 20RDS				9



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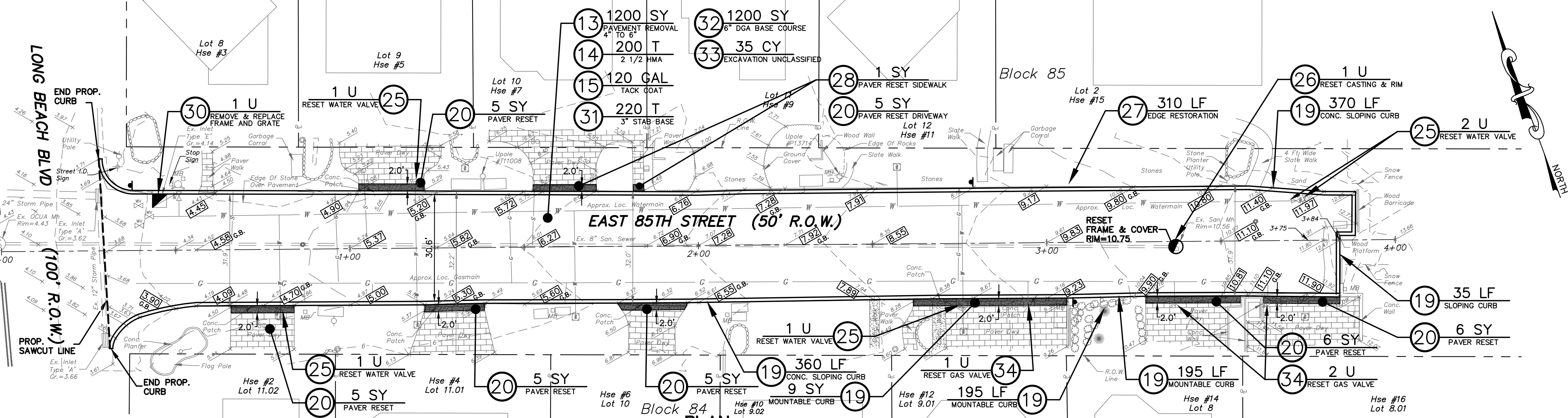
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### ESTIMATE OF QUANTITIES

Item No.	Description	Plan Quantity	If and Where Directed	Contract Amount	Unit
1	PERFORMANCE BOND				DOLL
2	PAYMENT BOND				DOLL
3	CONSTRUCTION LAYOUT				DOLL
4	INLET FILTER TYPE 1				SF
5	BREAKAWAY BARRICADE				U
6	DRUM				U
7	TRAFFIC CONE				U
8	CONSTRUCTION SIGNS				SF
9	TRAFFIC DIRECTOR, FLAGGER				HR
10	FUEL PRICE ADJUSTMENTS				DOLL
11	ASPHALT PRICE ADJUSTMENTS				DOLL
12	EXCAVATION TEST PITS (IF & WHERE DIRECTED)				CY
13	REMOVAL OF PAVEMENT 4 INCHES-6 INCHES THICK	1200		1200	SY
14	HOT MIX ASPHALT 9.5 M 64 SURFACE COURSE	200		200	T
15	TACK COAT	120		120	GAL
16	CORE SAMPLES, HOT MIX ASPHALT	2		2	U
17	8" PERFORATED HIGH DENSITY POLYETHYLENE PIPE				LF
18	INLET, TYPE A				U
19	12"x13" CONCRETE SLOPING CURB	765		765	LF
20	RESET PRECAST CONCRETE PAVERS (F & WHERE DIRECTED)	46	6	52	SY
21	TRAFFIC MARKINGS, SYMBOLS, LONG LIFE, EPOXY RESIN, THERMOPLASTIC WHITE 24-INCH WIDE				LF
22	TRAFFIC STRIPES, LONG LIFE EPOXY RESIN, WHITE AND YELLOW 4-INCH WIDE				LF
23	TRAFFIC STRIPES, LONG LIFE EPOXY RESIN, BLUE 6-INCH WIDE				SF
24	REGULATORY AND WARNING SIGN				SF
25	RESET WATER VALVE BOX	3		3	U
26	RESET MANHOLE, SANITARY SEWER, USING EXISTING CASTING	1		1	U
27	EDGE RESTORATION	505		505	LF
28	BRICK PAVEMENT (F & WHERE DIRECTED)	1	1	2	SY
29	TRAFFIC MARKING, SYMBOLS, LONG LIFE, EPOXY RESIN				LF
30	RECONSTRUCTED INLET, TYPE E, USING NEW CASTING	1		1	U
31	HOT MIX ASPHALT 19 M 64 BASE COURSE	220		220	T
32	DENSE-GRADED AGGREGATE BASE COURSE, 6" THICK	220		220	SY
33	EXCAVATION UNCLASSIFIED	35		35	CY
34	RESET GAS VALVE BOX	3		3	U
35	CLEARING SITE				LS









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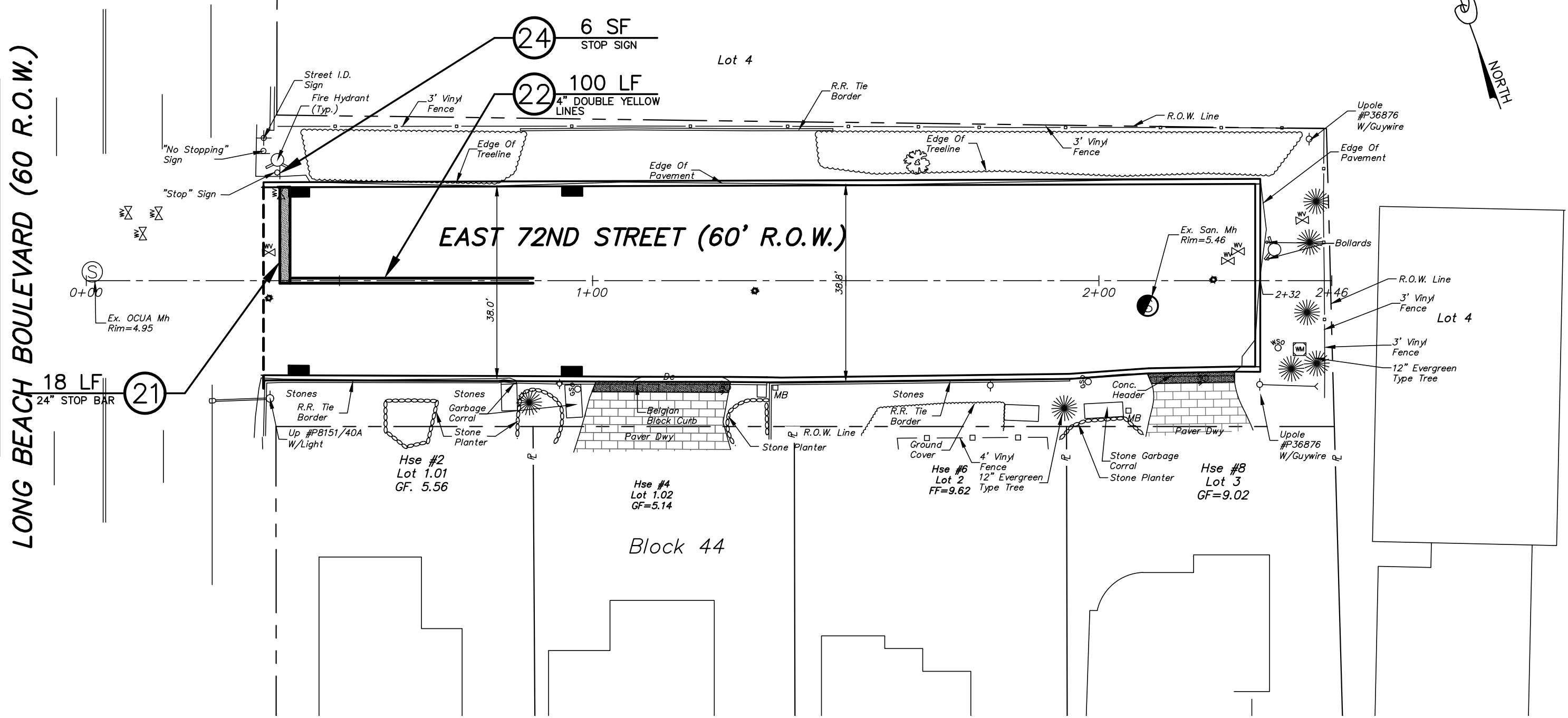
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### ESTIMATE OF QUANTITIES

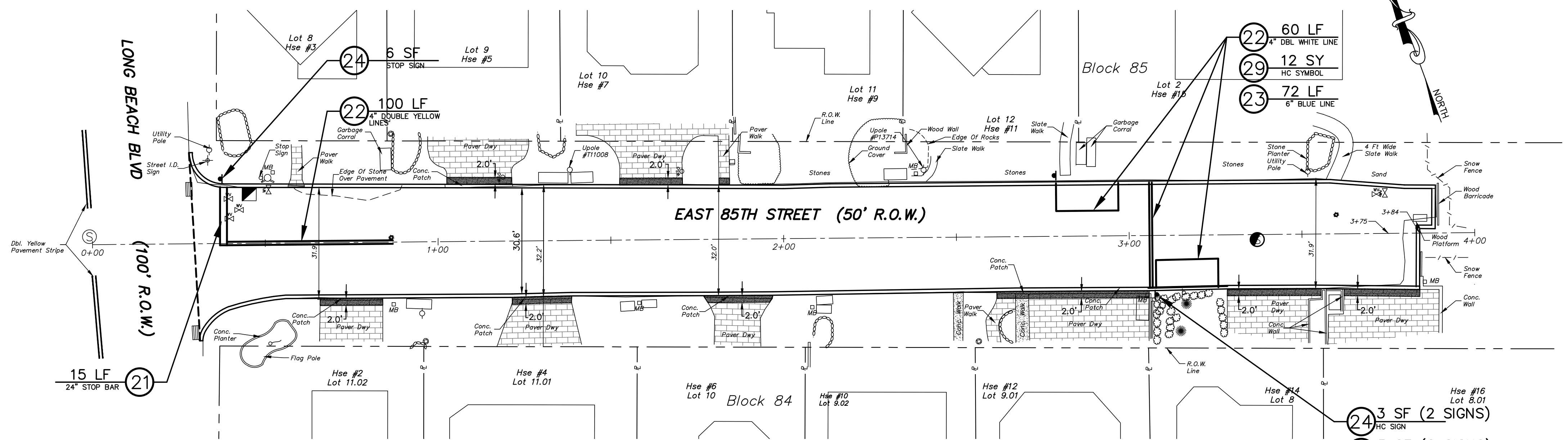
Item No.	Description	Plan Quantity	If and Where Directed	Contract Amount	Unit
1	PERFORMANCE BOND				DOLL
2	PAYMENT BOND				DOLL
3	CONSTRUCTION LAYOUT				DOLL
4	INLET FILTER TYPE 1				SF
5	BREAKAWAY BARRICADE				U
6	DRUM				U
7	TRAFFIC CONE				U
8	CONSTRUCTION SIGNS				SF
9	TRAFFIC DIRECTOR, FLAGGER				HR
10	FUEL PRICE ADJUSTMENTS				DOLL
11	ASPHALT PRICE ADJUSTMENTS				DOLL
12	EXCAVATION TEST PITS (IF & WHERE DIRECTED)				CY
13	REMOVAL OF PAVEMENT 4 INCHES-6 INCHES THICK				SY
14	HOT MIX ASPHALT 9.5 M 64 SURFACE COURSE				T
15	TACK COAT				GAL
16	CORE SAMPLES, HOT MIX ASPHALT				U
17	8" PERFORATED HIGH DENSITY POLYETHYLENE PIPE				LF
18	INLET, TYPE A				U
19	12"x13" CONCRETE SLOPING CURB				LF
20	RESET PRECAST CONCRETE PAVERS (IF & WHERE DIRECTED)				SY
21	TRAFFIC MARKINGS, SYMBOLS, LONG LIFE, EPOXY RESIN, THERMOPLASTIC WHITE 24-INCH WIDE	33		33	LF
22	TRAFFIC STRIPES, LONG LIFE EPOXY RESIN, WHITE AND YELLOW 4-INCH WIDE	260		260	LF
23	TRAFFIC STRIPES, LONG LIFE EPOXY RESIN, BLUE 6-INCH WIDE	72		72	LF
24	REGULATORY AND WARNING SIGN	12		12	SF
25	RESET WATER VALVE BOX				U
26	RESET MANHOLE, SANITARY SEWER, USING EXISTING CASTING				U
27	EDGE RESTORATION				LF
28	BRICK PAVEMENT (IF & WHERE DIRECTED)				SY
29	TRAFFIC MARKING, SYMBOLS, LONG LIFE, EPOXY RESIN	12		12	LF
30	RECONSTRUCTED INLET, TYPE E, USING NEW CASTING				U
31	HOT MIX ASPHALT 19 M 64 BASE COURSE				T
32	DENSE-GRADED AGGREGATE BASE COURSE, 6" THICK				SY
33	EXCAVATION UNCLASSIFIED				CY
34	RESET GAS VALVE BOX				U
35	CLEARING SITE				LS

LONG BEACH BOULEVARD (60' R.O.W.)

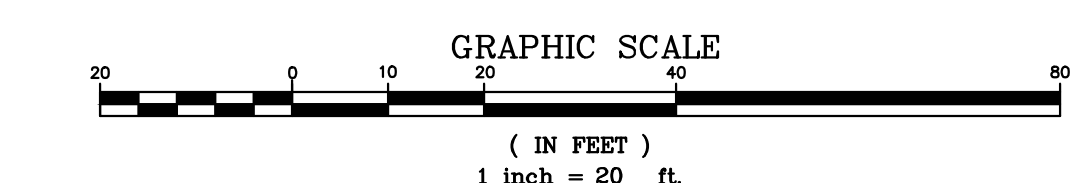


PLAN  
SCALE: 1"=20'

LONG BEACH BLVD  
(100' R.O.W.)



PLAN  
SCALE: 1"=20'



1	07/19/21	REVISED PER NJDOT COMMENTS DATED 07/07/21.	JSM	F.J.L.
NO.	DATE	REVISION DESCRIPTION	DRAWN	CHK'D
<b>2020 NJDOT ROAD RECONSTRUCTION EAST 72ND STREET AND 85TH STREET SIGNING AND STRIPING PLAN</b>				
BOROUGH OF HARVEY CEDARS NEW JERSEY				
OCEAN COUNTY				
SCALE	DATE	DRAWN	CHK'D	APPROVED FOR CONSTRUCTION
1"=20'	6/2/21	JSM	AM JR.	APPR.
SURVEY & BILLING NO.				DRAWING NO.
21-034191				6
HC 20RDS				9

**OWEN, LITTLE & ASSOCIATES, INC.**  
443 Atlantic City Blvd.  
Beverly, NJ 08722  
Tel: (732) 244-1190  
Fax: (732) 341-3412

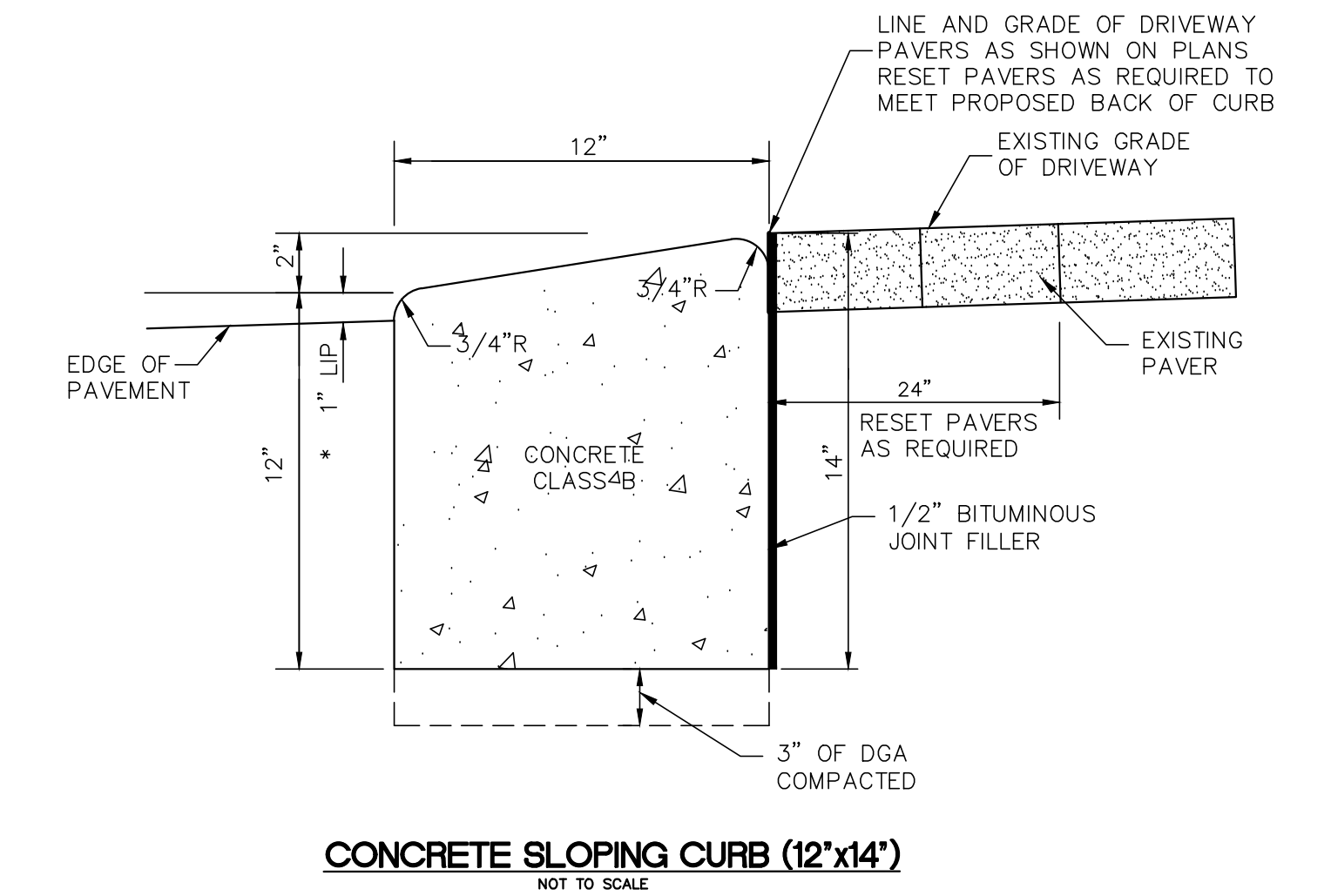
**FRANK J. LITTLE, JR.**  
P.E., P.P.

**PROFESSIONAL ENGINEER**  
N.J. LIC. NO. 24602708500  
**PROFESSIONAL PLANNER**  
N.J. LIC. NO. 03096



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**\* NOTE:**  
1. DIMENSIONS AND MATERIALS SHOWN ARE FOR REFERENCE ONLY.  
FOLLOW NJDOT STANDARD DETAIL AND SPECIFICATIONS EXCEPT FOR  
PAVEMENT LIP OF 1" IN PLACE OF 2".





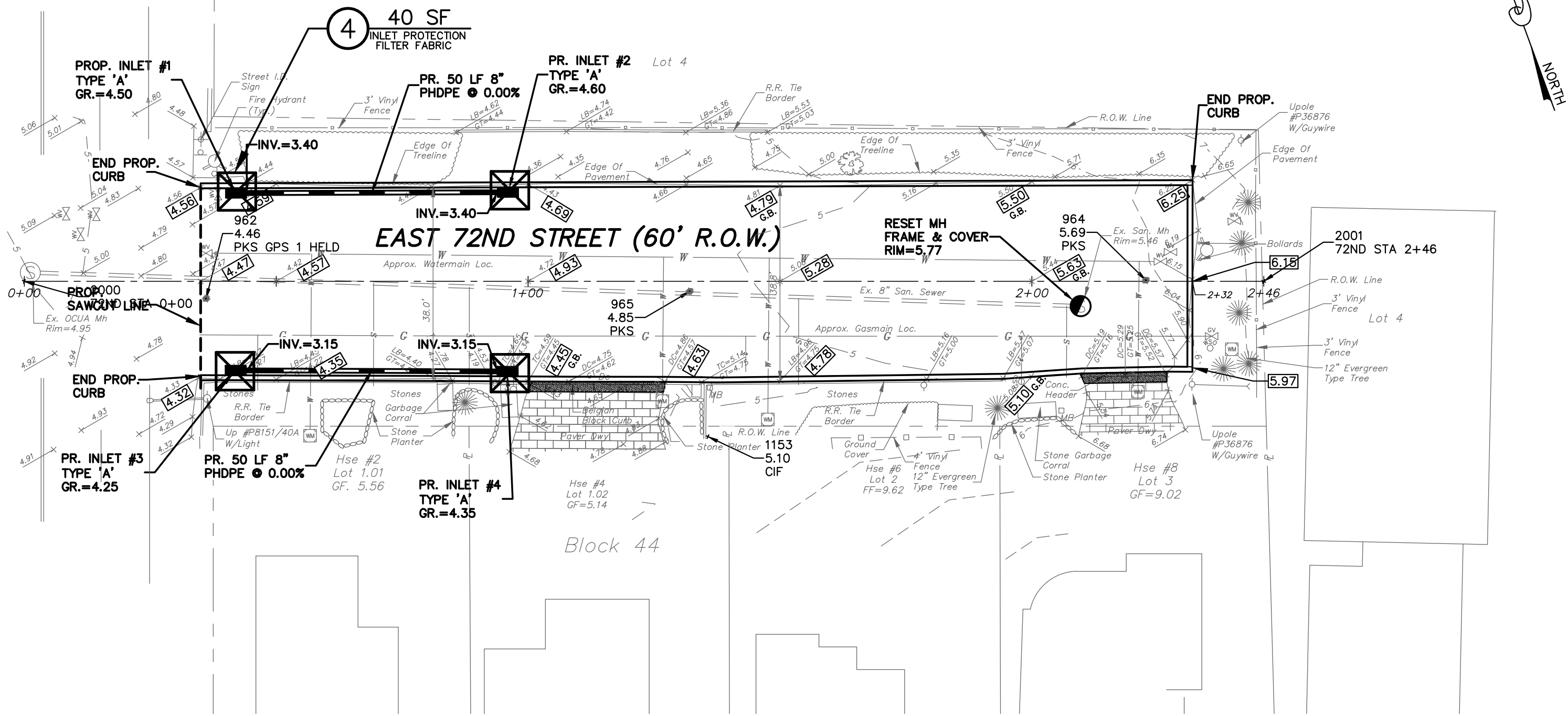
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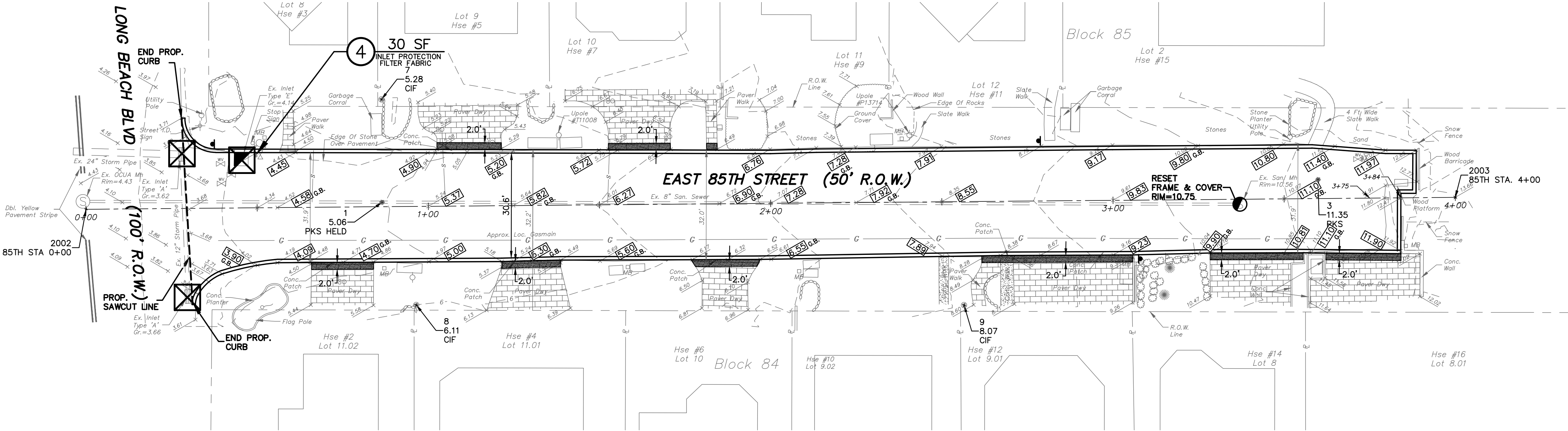
THIS DRAWING HAS BEEN PREPARED FOR THE PURPOSE OF MUNICIPAL AND REGULATORY AGENCY REVIEW AND APPROVAL AND SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND THE DRAWINGS HAVE BEEN INITIALED TO INDICATE "APPROVED FOR CONSTRUCTION."

Lot 1  
Block 41.05

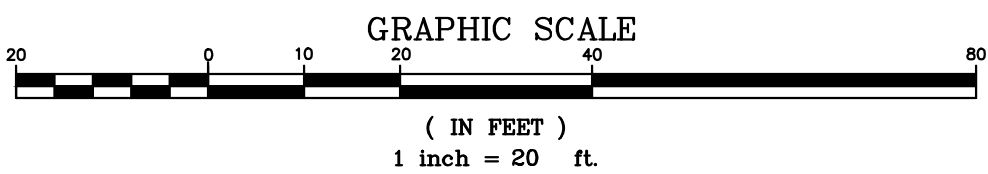
LONG BEACH BOULEVARD (60' R.O.W.)



PLAN  
SCALE: 1"=20'



PLAN  
SCALE: 1"=20'



1	07/19/21	REVISED PER NJDOT COMMENTS DATED 07/07/21.	JSM	F.J.L.
NO.	DATE	REVISION DESCRIPTION	DRAWN	CHK'D
2020 NJDOT ROAD RECONSTRUCTION				
EAST 72ND STREET AND EAST 85TH STREET				
SOIL EROSION PLAN				
BOROUGH OF HARVEY CEDARS				
OCEAN COUNTY				
SCALE	DATE	DRAWN	CHK'D	APPROVED FOR CONSTRUCTION
1"=20'	6/2/21	JSM	AM JR.	APPR.
SURVEY & BILLING NO.				DRAWING NO.
21-034191				8
HC 20RDS				9



2. N:\DWG\DWG\2020\85TH\_72ND\CAVE\_72ND\_85TH\_ST\_21.dwg - 2019

GENERAL NOTES:

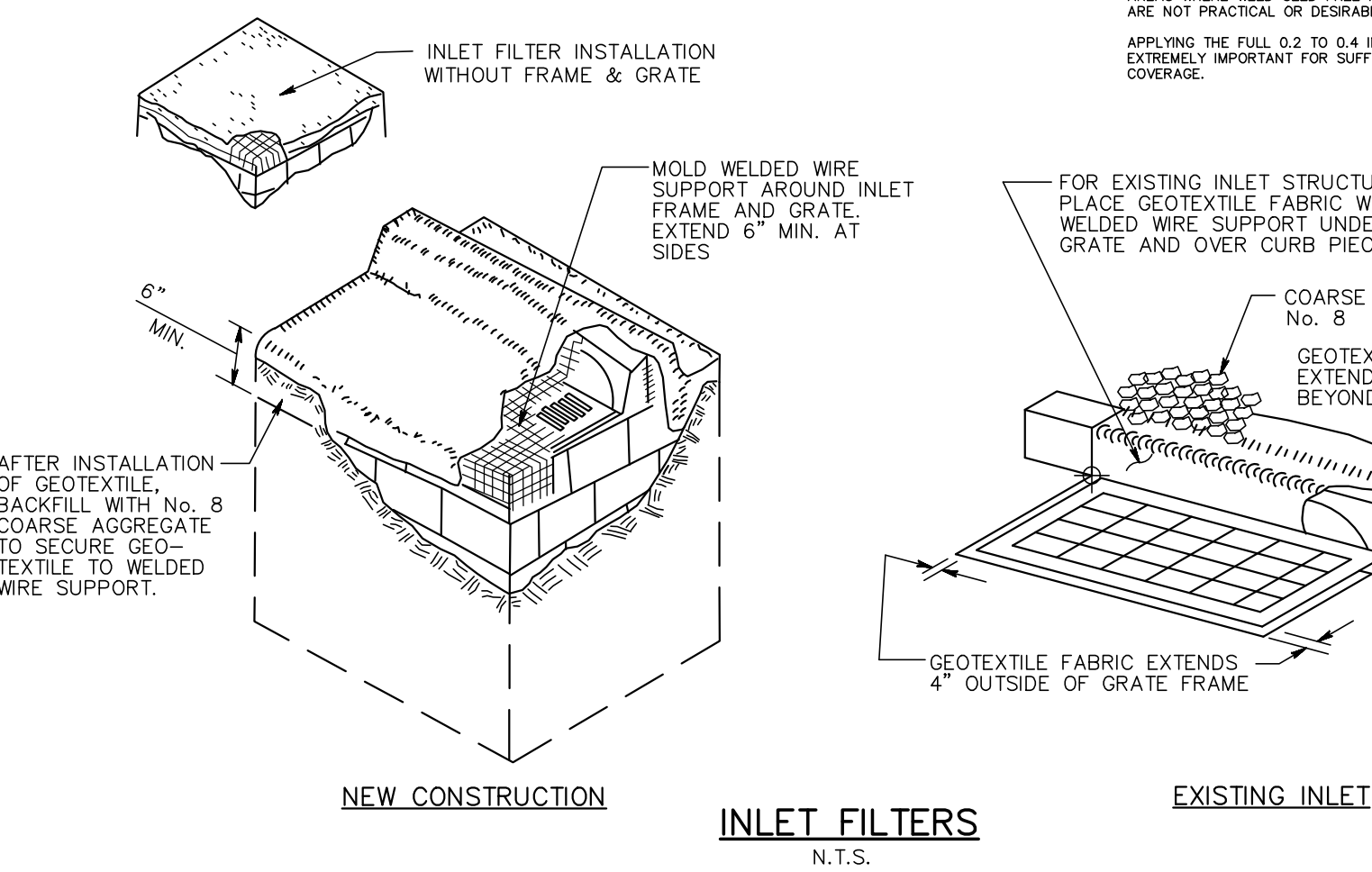
- TRACT AREA = 0.70 ACRES.
- AREA OF DISTURBANCE = 0.75 ACRES.
- SITE SOILS: PS4MMENTS.
- ALL TRENCHES THAT WILL BE CROSSED BY VEHICULAR TRAFFIC WILL BE TEMPORARILY STABILIZED WITH A 2" LAYER OF STONE OR ASPHALT IMMEDIATELY AFTER TRENCH IS BACKFILLED.
- NO SEDIMENT LADEN WATER WILL BE DISCHARGED TO THE EXISTING DRAINAGE SYSTEM. THE USE OF THE PUMPED-SILT CONTROL SYSTEM "DIRTBAG" MANUFACTURED BY AGF ENVIRONMENTAL OR APPROVED EQUAL.
- CONTRACTOR WILL SUBMIT A PLAN SHOWING THE LOCATION OF ANY CONSTRUCTION YARD OR STOCKPILE AREAS THAT WILL BE USED DURING CONSTRUCTION.

SEQUENCE OF CONSTRUCTION:

- INSTALL TEMPORARY SOIL EROSION CONTROL MEASURES. 1 DAY
- INSTALL DRAINAGE & SANITARY SEWER CONNECTION. 10 DAYS
- INSTALL DRIVEWAY APRONS AND SIDEWALK. 2 DAYS
- RAISE MANHOLE RIMS. 1 DAYS
- MILL ROADWAY. 1 DAY
- PAVE ROADWAY. 5 DAY
- CONSTRUCT PAVEMENT MARKINGS. 1 DAY
- REMOVE ALL EROSION CONTROL MEASURES. 1 DAY

SOIL EROSION AND SEDIMENT CONTROL NOTES:

- THE OCEAN COUNTY SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY LAND DISTURBANCE.
- ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE STATE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTIONS IS ESTABLISHED.
- ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLANS WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL STANDARDS.
- N.J.S.A. 4:24-39 ET SEQ. REQUIRES THAT NO CERTIFICATES OF OCCUPANCY BE ISSUED BEFORE THERE HAS BEEN COMPLIANCE WITH THE PROVISIONS OF A CERTIFIED PLAN FOR PERMANENT VEGETATION. THE DISTRICT ISSUING A REPORT OF COMPLIANCE FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE MUNICIPALITY.
- ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN THIRTY (30) DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF 2 TO 2 1/2 T PER ACRE, ACCORDING TO STATE STANDARD FOR STABILIZATION WITH MULCH ONLY.
- IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF 1 1/2 TO 2 T PER ACRE, ACCORDING TO STATE STANDARDS.
- A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS TO STABILIZE STREETS, ROADS, DRIVEWAYS, AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN FIFTEEN (15) DAYS OF THE PRELIMINARY GRADING.
- ANY STEEP SLOPES (3:1 OR GREATER) OR ANY EXISTING ROADWAYS RECEIVING PIPELINE INSTALLATIONS WILL BE BACKFILLED AND STABILIZED DAILY, AS THE INSTALLATION CONTINUES.
- THE STANDARD STABILIZED CONSTRUCTION ACCESS REQUIRES THE INSTALLATION OF A STONE PAD AT ALL CONSTRUCTION DRIVEWAYS WHERE VEHICLES WILL ACCESS PAVED ROADWAYS FROM UNPAVED AREAS OF THE SITE.
- ALL SEDIMENT WASHED, DROPPED, SPILLED, OR TRACKED ONTO ROADWAYS (PUBLIC OR PRIVATE) OR OTHER IMPERVIOUS SURFACES WILL BE REMOVED IMMEDIATELY.
- PERMANENT VEGETATION IS TO BE SEED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. AT THE TIME OF THE FINAL INSPECTION, YOU ARE REQUIRED TO PROVIDE CONFIRMATION THAT THE PROPER TYPE AND AMOUNT OF SEED, LIME AND FERTILIZER HAVE BEEN USED FOR PERMANENT STABILIZATION WORK. STRAW MULCH IS REQUIRED ON ALL SEEDING.
- 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.
- IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, ANY SOIL HAVING A PH OF 4 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM OF TWELVE (12) INCHES OF SOIL HAVING A PH OF 5 OR MORE PRIOR TO SEEDING PREPARATION. AREAS WHERE TREES OR SHRUBS ARE TO BE PLANTED SHALL BE COVERED WITH A MINIMUM OF TWENTY-FOUR (24) INCHES OF SOIL HAVING A PH OF 5 OR MORE.
- CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
- UNFILTERED DOWATERING IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DOWATERING OPERATIONS TO MINIMIZE NUTRIENT TRANSFER. ANY DOWATERING METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR DOWATERING.
- SHOUL 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.
- 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. THE DISTRICT RESERVES THE RIGHT TO DETERMINE WHEN CERTIFICATIONS OF A NEW AND SEPARATE SOIL EROSION AND SEDIMENT CONTROL PLAN ARE REQUIRED FOR THESE ACTIVITIES.
- ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE #6.
- THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS RESULT OF CONSTRUCTION OF THE PROJECT.



TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

**DEFINITION:**  
ESTABLISHMENT OF TEMPORARY VEGETATIVE COVER ON SOILS EXPOSED FOR PERIODS OF TWO TO SIX MONTHS WHICH ARE NOT BEING GRADED, NOT UNDER ACTIVE CONSTRUCTION OR NOT SCHEDULED FOR PERMANENT SEEDING WITHIN 60 DAYS.

**PURPOSE:**  
TO TEMPORARILY STABILIZE THE SOIL AND REDUCE DAMAGE FROM WIND AND WATER EROSION UNTIL PERMANENT STABILIZATION IS ACCOMPLISHED.

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

**WHERE APPLICABLE:**  
ON EXPOSED SOILS THAT HAVE THE POTENTIAL FOR CAUSING OFF SITE ENVIRONMENTAL DAMAGE.

**METHODS AND MATERIALS:**

- SITE PREPARATION
  - GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING, PG. 19-1.
  - INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11-42.
  - IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCAMPED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (GASLINES, IRRIGATION SYSTEMS, ETC.).
- SEEDING PREPARATION
  - APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS SPRINGTOWN HARBOR, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
  - INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN ACCORDANCE WITH THE ABOVE.
  - SOILS HIGH IN SULFIDES OR HAVING A PH OF 4 OR LESS REFER TO STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, PG. 1-1.
- SEEDING
  - SELECT SEED FROM RECOMMENDATIONS IN TABLE 7-2.

TABLE 7-2  
TEMPORARY VEGETATIVE STABILIZATION GRASSES, SEEDING RATES, DATES + DEPTHS

SEED SELECTIONS	SEEDING RATE <sup>1</sup>		OPTIMUM SEEDING DATE <sup>2</sup>			OPTIMUM SEED DEPTH <sup>4</sup>
	(POUNDS)	PER ACRE	BASED ON PLANT HARDINESS ZONE <sup>3</sup>			
			PER 1,000 SQ. FT.	ZONE 5a, 6a	ZONE 6a	
COOL SEASON GRASSES						
1. PERENNIAL RYEGRASS	100	1.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/1	0.5
2. SPRING OATS	86	2.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/1	1.0
3. WINTER BARLEY	96	2.2	8/1-9/15	8/15-10/1	8/15-10/15	1.0
4. ANNUAL RYEGRASS	100	1.0	3/15-6/1 8/1-9/15	3/1-5/15 8/1-9/15	2/15-5/1 8/15-10/1	0.5
5. WINTER CEREAL RYE	112	2.8	8/1-11/1	8/1-11/15	8/1-12/15	1.0
WARM SEASON GRASSES						
6. PEARL MILLET	20	0.5	6/1-8/1	5/15-8/15	5/1-9/1	1.0
7. MILLET (GERMAN OR HUNGARIAN)	30	0.7	6/1-8/1	5/15-8/15	5/1-9/1	1.0

TABLE 7-3 FOOTNOTES:

- SEEDING RATE FOR WARM SEASON GRASS SELECTIONS 6-7 SHALL BE ADJUSTED TO REFLECT THE AMOUNT OF PLANT LIVE SEED (PLS) AS DETERMINED BY A GERMINATION TEST RESULT. NO ADJUSTMENT IS REQUIRED FOR COOL SEASON GRASSES.
- MAY BE PLANTED THROUGHOUT SUMMER IF SOIL MOISTURE IS ADEQUATE OR SEEDBED AREA CAN BE IRRIGATED.
- PLANT HARDINESS ZONE (SEE FIGURE 7-1, PG. 7-4)
- THICK THE DEPTH FOR SANDY SOILS.

- CONVENTIONAL SEEDING: APPLY SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL, OR CULPARKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDING OR CULPARKER SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL TO A DEPTH OF 1 TO 2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 2 INCH DEEPER ON COARSE TEXTURED SOIL.
- 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 SPAYING 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 EQUIPMENT TO TRAVERSE OR TOO OBSTRUCTED WITH ROCKS, STUMPS, ETC.
- AFTER SEEDING, FIRING THE SOIL WITH CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDING EFFICIENCY. THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAINTAINED.

**MULCHING**  
MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED. MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED. MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL INSURE AGAINST EROSION BEFORE GRASS IS ESTABLISHED.

- STRAW OR HAY: UNROOTED SMALL GRASS STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1-1/2 TO 2 T PER ACRE. UNROOTED SMALL GRASS STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1-1/2 TO 2 T PER ACRE. UNROOTED SMALL GRASS STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1-1/2 TO 2 T PER ACRE. UNROOTED SMALL GRASS STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1-1/2 TO 2 T PER ACRE.
- 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 THE SLOPES. STRAW MULCH RATE MUST BE 3 T PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.
- LIQUID MULCH BINDERS: MAY BE USED TO ANCHOR HAY OR STRAW MULCH.

- APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT THE CREST OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPLICATION.
- USE ONE OF THE FOLLOWING:
  - ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANES OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHOTO TOXIC EFFECT OR IMPROVE 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.
  - SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISIBLE 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.

- 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 1,000 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT 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.
- PELLETIZED MULCH: COMPRESSED AND EXTRUDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO-POLYMERS, TACKIFIERS, FERTILIZERS AND COLORING AGENTS. WHEN APPLIED TO A SEEDBED AREA AND WATERED, FORM A MULCH MAT. PELLETIZED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60-75 LBS. / 1,000 SQUARE FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS. SEEDING AREAS WHERE WOOD FIBER MULCH IS DESIRED OR ON SITES WHERE STRAW MULCH AND TACKIFIER AGENT ARE NOT PRACTICAL OR DESIRABLE. APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

- IRRIGATION (WHERE FEASIBLE)  
IF SOIL MOISTURE IS DEFICIENT, AND MULCH IS NOT USED, SUPPLY NEW SEEDING WITH ADEQUATE WATER (A MINIMUM OF 1 INCH) APPLIED UP TO TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED. THIS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR ON DROUGHTY SITES.
- TOPDRESSING  
SINCE SOIL ORGANIC MATTER CONTENT AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE INCORPORATED INTO THE SEEDBED WITH 0.4 TO 0.6 INCHES OF WATER, THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS. SEEDING AREAS WHERE WOOD FIBER 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.

- 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 4-1 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 BOX VEGETATIVE COVER OF THE SEEDBED (VEGETABLE AND LIVING COVER). NOTE THIS DESIGNATION OF BOXES DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD BE MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

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

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

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

**WHERE APPLICABLE:**  
ON EXPOSED SOILS THAT HAVE THE POTENTIAL FOR CAUSING OFF SITE ENVIRONMENTAL DAMAGE.

**METHODS AND MATERIALS:**

- SITE PREPARATION
  - GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING.
  - IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.
  - TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 6 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES. TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER, AS NEEDED, IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING.
  - INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS.
- SEEDING PREPARATION
  - UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER WHICH HAS BEEN SPREAD AND FIRMED, ACCORDING TO STANDARDS FOR LAND GRADING, PG. 19-1. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS SPRINGTOWN HARBOR, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
  - WORK LIME AND FERTILIZER INTO THE TOPSOIL, AS NEARLY AS PRACTICAL, TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOWN HARBOR, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLE UNIFORM SEEDBED IS PREPARED.
  - HIGH ACID PRODUCING SOIL.
- SEEDING
  - SELECT A MIXTURE FROM TABLE 4-3 OR USED MIXTURE RECOMMENDED BY RUTGERS COOPERATIVE EXTENSION OR NATURAL RESOURCES CONSERVATION SERVICE. BOTH IS APPROVED BY THE SOIL CONSERVATION DISTRICT. SEED SELECTION SHOULD BE BASED ON THE 12 MONTHS PLANTING DATE. NO SEED SHALL BE ACCEPTED WITH A GERMINATION TEST DATE MORE THAN 12 MONTHS OLD UNLESS REQUESTED.
  - 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. ESTABLISHING PERMANENT VEGETATION MEANS BOX VEGETATIVE COVERAGE WITH THE SPECIFIED SEED MIXTURE FOR THE SEEDBED AREA AND MONIED ONCE.
  - WARM SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT HIGH TEMPERATURES, GENERALLY 80°F AND ABOVE. SEED RATES AND UTILITY RATES FOR WARM SEASON GRASSES SHALL BE THE AMOUNT OF PURE LIVE SEED (PLS) AS DETERMINED BY GERMINATION TESTING RESULTS.
  - COOL SEASON MIXTURES ARE GRASSES AND LEGUMES WHICH MAXIMIZE GROWTH AT TEMPERATURES BELOW 80°F. MANY GRASSES BECOME ACTIVE AT 65°F. SEE TABLE 4-3.

SEEDS 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 SEEDING PREPARATION. SEE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS FOR SPECIFIC RECOMMENDATIONS.

- CONVENTIONAL SEEDING: APPLY SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULPARKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDING OR CULPARKER SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDING PREPARATION, TO A DEPTH OF 1 TO 2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 2 INCH DEEPER ON COARSE TEXTURED SOIL.
- 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 SPAYING 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.

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

- STRAW OR HAY: UNROOTED SMALL GRASS STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1-1/2 TO 2 T 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 T PER ACRE. UNROOTED SMALL GRASS STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1-1/2 TO 2 T PER ACRE. UNROOTED SMALL GRASS STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1-1/2 TO 2 T PER ACRE. UNROOTED SMALL GRASS STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1-1/2 TO 2 T PER ACRE.
- 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 THE SLOPES. STRAW MULCH RATE MUST BE 3 T PER ACRE. NO TACKIFYING OR ADHESIVE AGENT IS REQUIRED.
- LIQUID MULCH BINDERS: MAY BE USED TO ANCHOR HAY OR STRAW MULCH.

- APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH, IN VALLEYS, AND AT THE CREST OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPLICATION.
- USE ONE OF THE FOLLOWING:
  - ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANES OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHOTO TOXIC EFFECT OR IMPROVE 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.
  - SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISIBLE 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.

- 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 1,000 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT 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.
- PELLETIZED MULCH: COMPRESSED AND EXTRUDED PAPER AND/OR WOOD FIBER PRODUCT, WHICH MAY CONTAIN CO-POLYMERS, TACKIFIERS, FERTILIZERS AND COLORING AGENTS. WHEN APPLIED TO A SEEDBED AREA AND WATERED, FORM A MULCH MAT. PELLETIZED MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MULCH MAY BE APPLIED BY HAND OR MECHANICAL SPREADER AT THE RATE OF 60-75 LBS. / 1,000 SQUARE FEET AND ACTIVATED WITH 0.2 TO 0.4 INCHES OF WATER. THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS. SEEDING AREAS WHERE WOOD FIBER MULCH IS DESIRED OR ON SITES WHERE STRAW MULCH AND TACKIFIER AGENT ARE NOT PRACTICAL OR DESIRABLE. APPLYING THE FULL 0.2 TO 0.4 INCHES OF WATER AFTER SPREADING PELLETIZED MULCH ON THE SEED BED IS EXTREMELY IMPORTANT FOR SUFFICIENT ACTIVATION AND EXPANSION OF THE MULCH TO PROVIDE SOIL COVERAGE.

- IRRIGATION (WHERE FEASIBLE)  
IF SOIL MOISTURE IS DEFICIENT, AND MULCH IS NOT USED, SUPPLY NEW SEEDING WITH ADEQUATE WATER (A MINIMUM OF 1 INCH) APPLIED UP TO TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED. THIS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR ON DROUGHTY SITES.
- TOPDRESSING  
SINCE SOIL ORGANIC MATTER CONTENT AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE INCORPORATED INTO THE SEEDBED WITH 0.4 TO 0.6 INCHES OF WATER, THIS MATERIAL HAS BEEN FOUND TO BE BENEFICIAL FOR USE ON SMALL LAWN OR RENOVATION AREAS. SEEDING AREAS WHERE WOOD FIBER 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.

- 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 4-1 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 BOX VEGETATIVE COVER OF THE SEEDBED (VEGETABLE AND LIVING COVER). NOTE THIS DESIGNATION OF BOXES DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD BE MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

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