

CRANFORD TOWNSHIP
UNION COUNTY, NEW JERSEY

KENSINGTON AVENUE AND EDGAR AVENUE
DRAINAGE IMPROVEMENTS

AUGUST 2022

MAYOR

KATHLEEN MILLER PRUNTY

DEPUTY MAYOR

JASON GAREIS

TOWNSHIP COUNCIL

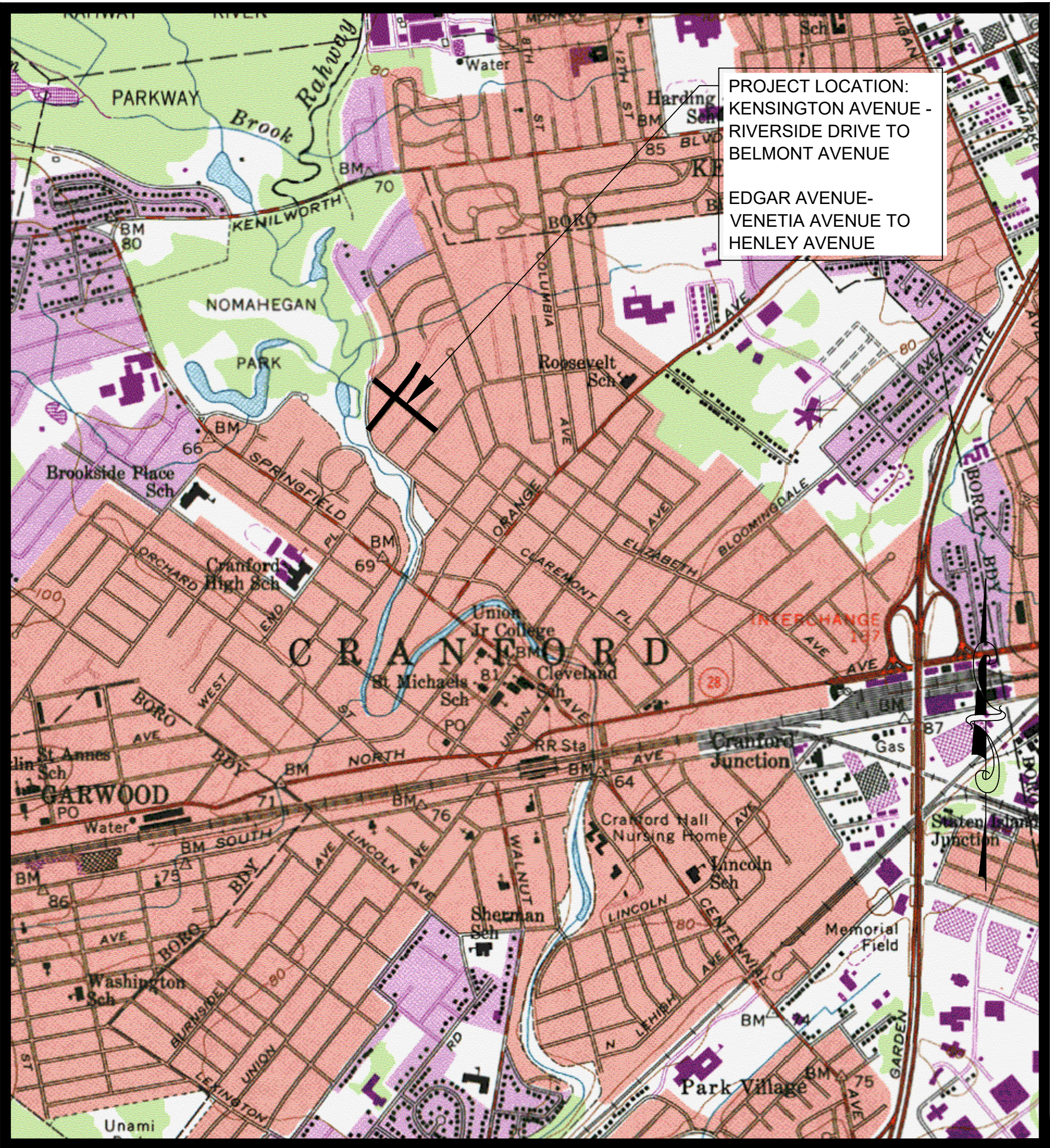
BRIAN ANDREWS, COMMISSIONER OF PUBLIC
WORKS AND ENGINEERING

GINA BLACK, COMMISSIONER OF PUBLIC
AFFAIRS

MARY O'CONNOR, COMMISSIONER OF
FINANCE

TOWNSHIP ADMINISTRATOR

JAMIE CRYAN



LOCATION MAP
NOT TO SCALE

M M
MOTT MACDONALD
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PUBLIC UTILITIES
PSE&G 472 WESTON CANAL ROAD SOMERSET, NJ 08873 JONATHAN HALLENBECK (973) 764-3243
VERIZON FIOS ENGINEERING 290 WEST MOUNT PLEASANT AVE, FLR G., BLDG 4 LIVINGSTON, NJ 07083 CARLOS DIAS (732) 577-7414
COMCAST 800 RAHWAY AVE UNION, NJ 07083 ROBERT KNOEPFEL (732) 604-744 EXT 6202293
ELIZABETHTOWN GAS 520 GREEN LANE UNION, NJ 07083 GREG BALINT (908) 662-8321
NEW JERSEY AMERICAN WATER 1341 NORTH AVE PLAINFIELD, NJ 07062 SCOTT SCHREIBER (908) 791-3464
JOINT MEETINGS 500 SOUTH FIRST STREET ELIZABETH, NJ 07202 JOSEPH BONACCOROS, SUPERINTENDENT
RAHWAY VALLEY SEWERAGE AUTHORITY 1050 EAST HAZELWOOD AVE RAHWAY, NJ 07065 ROBERT L. VALENT (732) 388-0868

NOTE:
PRIOR TO ANY EXCAVATION, CONTRACTOR MUST HAVE ALL
UTILITIES MARKED OUT BY THE APPROPRIATE UTILITY
COMPANIES BY CALLING 1-800-272-1000 OR 811.

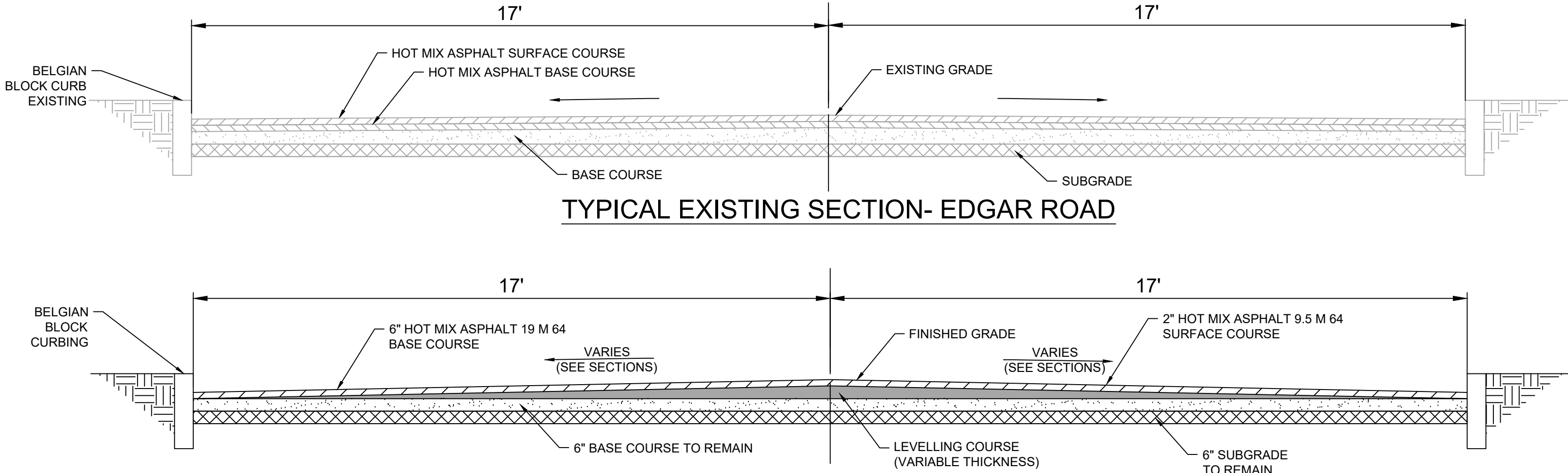
INDEX OF DRAWINGS

INDEX OF DRAWINGS			
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Keri Nollstadt 08/26/2022
KEVIN K. NOLLSTADT
Professional Engineer - N.J. Lic. No. 24GE04519700

GENERAL NOTES

EDGAR AVENUE - 6' ALIGNMENT DATA				
Number	Length	Line/Chord Direction	Start Station	End Station
L1	231.50	S51° 40' 16.80"E	0+00.00	2+31.50
L2	106.51	S51° 22' 08.79"E	2+31.50	3+38.01
L3	547.38	S51° 31' 59.20"E	3+38.01	8+85.39
L4	19.38	S51° 31' 59.20"E	8+85.39	9+04.77



TYPICAL PROPOSED SECTION- EDGAR ROAD

1. ALL ELEVATIONS SHOWN ON THE DRAWINGS ARE BASED UPON NAVD 1988 UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT IN AN APPROVED MANNER ALL EXISTING THRUST BLOCKS WHICH ARE RESTRAINING EXISTING UTILITIES. EXISTING THRUST BLOCKS SHALL NOT BE UNDERMINED.
3. THE CONTRACTOR SHALL ADEQUATELY PROTECT ALL EXISTING STRUCTURES AND UTILITIES. ANY DAMAGE TO EXISTING STRUCTURES OR UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND ALL COSTS FOR REPAIRS SHALL BE BORNE BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN ACCORDANCE WITH THE "UNDERGROUND FACILITY PROTECTION ACT" (P.L. 1994 CH. 118) AND PROVIDE THE ENGINEER WITH THE NOTIFICATION CONFIRMATION NUMBER PRIOR TO ANY EXCAVATION.
4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL UTILITY MARKOUTS AND FORWARDING CONFIRMATION NUMBERS TO THE OWNER AND ENGINEER.
5. AVAILABLE INFORMATION AS TO THE LOCATION OF EXISTING SUBSTRUCTURES AND UTILITIES HAS BEEN COLLECTED FROM VARIOUS SOURCES. THE RESULTS OF SUCH INVESTIGATIONS AS MAY BE SHOWN ON THE CONTRACT DRAWINGS, ARE NOT GUARANTEED AS TO ACCURACY OR COMPLETENESS. ALL EXISTING UTILITIES ARE SHOWN FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL DIG TEST PITS TO VERIFY TRUE AND EXACT LOCATIONS OF UNDERGROUND LINES, AS HE DEEMS NECESSARY TO COMPLETE THE CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
6. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES A MINIMUM OF 72 HOURS PRIOR TO EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ANY AND ALL NECESSARY PERMITS FROM THE AFFECTED UTILITY COMPANIES AND FOR SCHEDULING OF INSPECTIONS BY UTILITY COMPANY PERSONNEL, IF REQUIRED, DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ROAD OPENING PERMITS FROM THE MUNICIPALITY AND/OR COUNTY AND COMPLY WITH THE REQUIREMENTS OF THE MUNICIPALITY AND/OR COUNTY.
8. THE CONTRACTOR SHALL ABIDE BY ALL LOCAL, STATE AND FEDERAL LAWS, ORDINANCES, ETC. IN THE EXECUTION OF THIS WORK.
9. THE CONTRACTOR SHALL ABIDE BY ALL REQUIREMENTS OF THE "HIGH VOLTAGE PROXIMITY ACT" OR TRENCING WITHIN CLOSE PROXIMITY TO UNDERGROUND FACILITIES OR UTILITY POLES WILL REQUIRE PROTECTION IN AN APPROVED MANNER TO PREVENT DAMAGE OR INTERRUPTION OF SERVICE TO OVERHEAD OR UNDERGROUND FACILITIES. THE COST TO PROVIDE THIS PROTECTION WILL BE BORNE BY THE CONTRACTOR.
10. PRIOR TO THE START OF ANY CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A WORK SCHEDULE, AND CERTIFICATES OF INSURANCE (FOR GENERAL AND SUBCONTRACTORS) TO THE OWNER AND ENGINEER FOR APPROVAL.
11. ALL EXCESS RECYCLABLE DEMOLITION MATERIAL SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED RECYCLING FACILITY AT NO ADDITIONAL COST TO THE OWNER.
12. ALL RUN-OFF SHALL BE SCREENED BY APPROPRIATE SILT FENCING, HAY BALES, ETC., IN ACCORDANCE WITH SOIL EROSION PLANS TO PREVENT DISRUPTION OF MUNICIPAL FACILITIES AND STREETS.
13. THE CONTRACTOR IS ADVISED THAT ALL MUNICIPAL PUBLIC NUISANCE LAWS AND NOISE ORDINANCES SHALL BE OBSERVED DURING THE COURSE OF CONSTRUCTION.
14. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN APPROPRIATE SIGNAGE FOR TRAFFIC CONTROL AND PEDESTRIAN SAFETY DURING CONSTRUCTION.
15. CONTRACTOR ACKNOWLEDGES THAT HE HAS UNDERTAKEN WHATEVER PRE-BID INVESTIGATIONS HE DEEMS NECESSARY TO ASCERTAIN THE COMPOSITION, SIZE, SHAPE, LOCATION, AND DEPTH OF MATERIALS THAT WILL BE DEMOLISHED AND REMOVED THAT PRESENTLY EXIST ABOVE OR BELOW GRADE, WITHIN THE LIMIT OF CONSTRUCTION.
16. WITHIN THE LIMIT OF CONSTRUCTION THE CONTRACTOR SHALL REMOVE, REPLACE, RESET EXISTING VALVE BOX COVERS AND CASTINGS AS REQUIRED AND DIRECTED BY THE ENGINEER.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES DURING THE CONSTRUCTION PERIOD.
18. TIME IS OF THE ESSENCE FOR FINAL COMPLETION OF ALL WORK WITHIN THE TIME LIMIT ESTABLISHED AND FOR INTERMEDIATE COMPLETION OF THE WORK COVERED BY THE INTERMEDIATE TIMES ESTABLISHED IN SECTION 0.21 - "TIME LIMIT" OF THE INFORMATION FOR BIDDERS SECTION OF THE CONTRACT DOCUMENTS.
19. THE CONTRACTOR SHALL MAINTAIN THE FLOW OF ALL STREAMS, DRAINAGE DITCHES, STORM SEWERS AND SANITARY SEWERS AT ALL TIMES BY A MEANS ACCEPTABLE TO THE ENGINEER AND ALL RESPONSIBLE AGENCIES.
20. ALL AREAS ADJACENT TO NEWLY INSTALLED GRANITE CURBING, SIDEWALK, ETC. SHALL BE BACKFILLED TO FINISHED GRADE PRIOR TO THE END OF THE DAY TO ELIMINATE ANY POTENTIAL HAZARDS. ALL AREAS OF DISTURBANCE SHALL BE GRADED SO AS TO ELIMINATE ANY MOUNDS AND/OR DEPRESSIONS PRIOR TO THE END OF EACH DAY TO ELIMINATE ANY POTENTIAL HAZARDS.
21. ALL SHOP DRAWINGS, MATERIALS AND EQUIPMENT TO BE INSTALLED AND ALL OTHER REQUIRED SUBMITTALS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
22. CONTRACTOR SHALL REPLACE ALL LANDSCAPE STONE IN AREAS REQUIRED TO BE DISTURBED OR DESTROYED DURING CONSTRUCTION OF CONCRETE UTILIZING CURB, CONCRETE GUTTER, CONCRETE SIDEWALK, AND CONCRETE DRIVEWAY APRONS WITH LANDSCAPE STONE OF SAME SIZE, SHAPE, DEPTH, TEXTURE AND COLOR. CONTRACTOR SHALL NOT BE COMPENSATED FOR REPLACEMENT OF LANDSCAPE STONE DESTROYED OR DESTROYED OUTSIDE OF THOSE AREAS WHERE DISTURBANCE OF EXISTING STONE IS NECESSARY.
23. THE CONTRACTOR OR HIS REPRESENTATIVE IS TO DESIGNATE AN INDIVIDUAL FOR CONSTRUCTION SITE SAFETY DURING THE COURSE OF SITE IMPROVEMENTS PURSUANT TO N.J.A.C. 5:23-2.21(E) OF THE NEW JERSEY UNIFORM CONSTRUCTION CODE AND C.F.R. 1926.32(F) (OSHA COMPETENT PERSON).
24. THE CONTRACTOR SHALL MAINTAIN ALL UTILITY SERVICES, FLOW AND PRESSURES UNLESS WRITTEN APPROVAL BY THE RESPONSIBLE UTILITY PERMITS HIM TO DO OTHERWISE.
25. ALL WORK WHICH MAY HAVE AN INFLUENCE, OR EFFECT THE OPERATIONS OF THE UTILITY FACILITIES SHALL BE SCHEDULED IN CONJUNCTION WITH THE UTILITY SUPERINTENDENT AND THE CONTRACTOR SHALL COOPERATE AT ALL TIMES TO MAINTAIN SATISFACTORY OPERATION OF THE UTILITIES.
26. PRIOR TO ANY CONNECTION TO EXISTING FACILITIES, THE CONTRACTOR SHALL NOTIFY THE OWNER. ALL CONNECTIONS TO EXISTING FACILITIES WILL BE DONE AT THE CONVENIENCE OF THE OWNER.
27. EXCAVATIONS OR TRENCING WITHIN CLOSE PROXIMITY TO UNDERGROUND FACILITIES OR UTILITY POLES WILL REQUIRE PROTECTION IN AN APPROVED MANNER TO PREVENT DAMAGE OR INTERRUPTION OF SERVICE TO UNDERGROUND FACILITIES. THE COST TO PROVIDE THIS PROTECTION WILL BE BORNE BY THE CONTRACTOR.
28. THE CONTRACTOR SHALL BROOM SWEEP STREETS, USE APPROVED METHOD TO CONTROL DUST AND HOSE DOWN THE PAVEMENT TO KEEP SURFACE CLEAN.
29. DETOURING OF TRAFFIC, SHALL BE COORDINATED WITH LOCAL OFFICIALS (FIRE, POLICE, FIRST AID, BOARD OF EDUCATION BUS COORDINATOR, ETC.) REFER TO SPECIFICATIONS AND TRAFFIC CONTROL PLAN FOR SPECIFIC REQUIREMENTS.
30. ALL TRENCHES SHALL BE BACKFILLED WITHOUT DELAY. OPEN TRENCHES SHALL BE KEPT TO A MINIMUM. OPEN TRENCHES SHALL BE STEEL PLATED WHEN WORK IS NOT IN PROGRESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL UTILITY TRENCHES FOR SAFETY AND RIDEABILITY THROUGHOUT THE COURSE OF THE PROJECT.
31. UNLESS OTHERWISE PERMITTED, NO WORK SHALL BE DONE BETWEEN THE HOURS OF 6:00 PM AND 7:00 AM PREVAILING TIME. NO EQUIPMENT SHALL BE STARTED PRIOR TO 7:30 AM, PREVAILING TIME, IF IT SHALL BECOME ABSOLUTELY NECESSARY TO PERFORM WORK AT NIGHT, THE ENGINEER SHALL BE INFORMED IN ADVANCE. GOOD LIGHTING AND ALL OTHER NECESSARY FACILITIES FOR PROPER CARRYING OUT AND INSPECTING THE WORK SHALL BE PROVIDED.
32. PAYING LIMITS SHALL BE SAW-CUT. VERTICAL FACES OF SAW-CUT SHALL BE MAINTAINED IN GOOD CONDITION DURING THE PERIOD OF TIME PRIOR TO APPLICATION OF SURFACE COURSE, IN ORDER TO PROVIDE A CLEAN, SMOOTH JOINT WHEN SURFACE COURSE IS APPLIED. ALL NEW TO EXISTING PAVEMENT CONNECTIONS SHALL INCLUDE THE LIBERAL APPLICATION OF AN APPROVED BINDING AGENT AT THE JOINT AREA.
33. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING THE AREAS OF DISTURBANCE TO THEIR ORIGINAL CONDITIONS. MATERIALS AND EQUIPMENT NEEDED TO BE PAID FOR ITEM FOR SITE RESTORATION.
34. RIGHT OF WAY LINES AND PROPERTY LINES HAVE BEEN SHOWN UTILIZING FOUND MONUMENTS AND TAX MAP INFORMATION ONLY.
35. NJDOT STANDARDS SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2019 EDITION TO GOVERN. NJDOT STANDARD CONSTRUCTION DETAILS TO GOVERN OVER ALL

MATERIALS, EQUIPMENT AND PROCEDURES.

ALL SHOP DRAWINGS FOR PRECAST STRUCTURES SHALL BE SIGNED AND SEALED BY A LICENSED ENGINEER IN THE STATE OF NEW JERSEY.

TEST PIT LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED AFTER CONDUCTING THE UTILITY MARK OUTS.

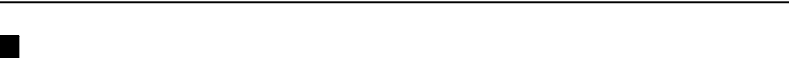
ALL MISCELLANEOUS ITEMS SHALL BE PAID FOR UNDER ITEM 3 - CLEARING SITE AND COORDINATION WITH UTILITY COMPANIES

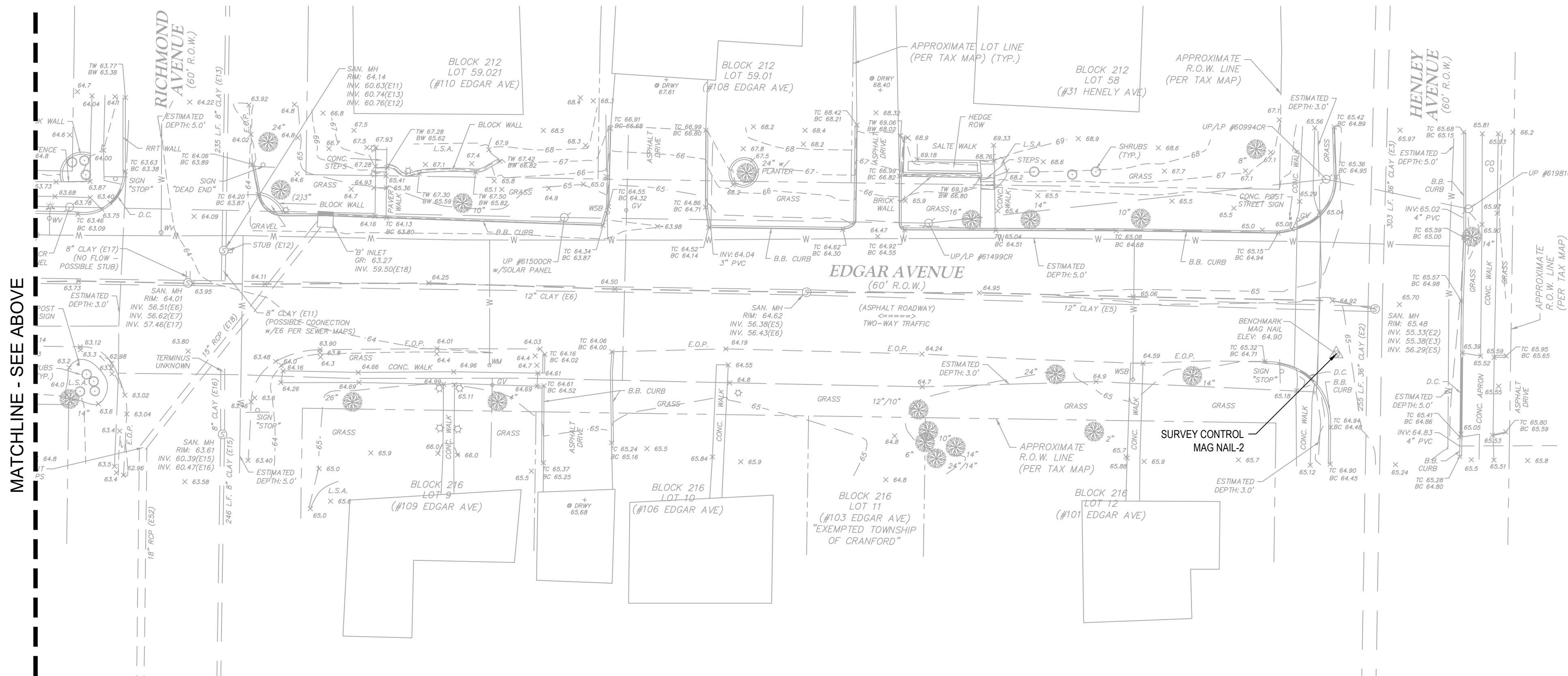
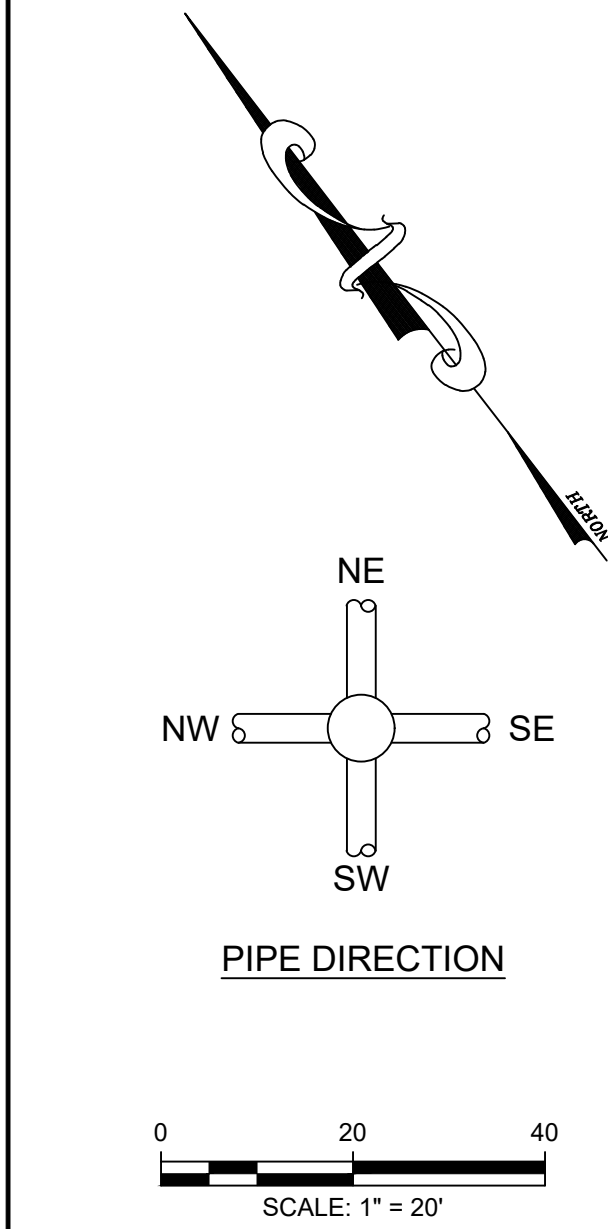
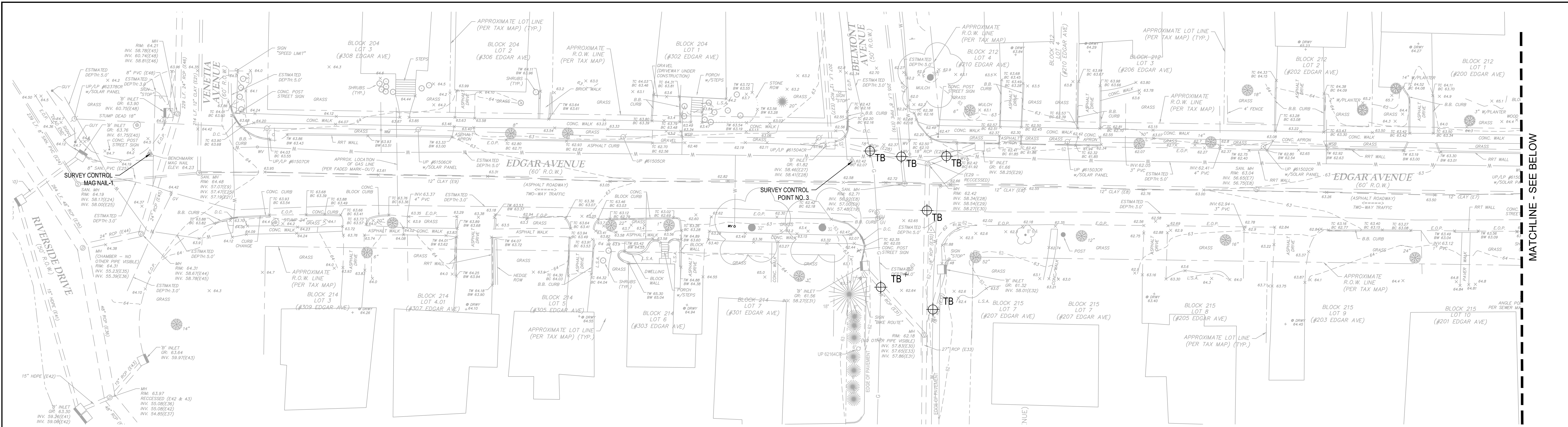
IF UTILITY RELOCATION IS REQUIRED, CONTRACTOR TO COORDINATE WITH UTILITY COMPANY AT NO ADDITIONAL COST. PAYMENT UNDER LUMP SUM FOR CLEARING SITE.

SCHEDULE OF CONSTRUCTION ITEMS			
NJDOT SPECIFICATION NO.	ITEM DESCRIPTION	UNITS	ESTIMATED QUANTITY
151	PERFORMANCE BOND AND PAYMENT BOND	LUMP SUM	1
157	CONSTRUCTION LAYOUT	LUMP SUM	1
158	INLET FILTER TYPE 1	SF	100
159	DRUM	UNITS	10
159	TRAFFIC CONE	UNITS	50
159	CONSTRUCTION SIGNS	SF	500
159	TRAFFIC DIRECTOR, FLAGGER	HOUR	80
201	CLEARING SITE	LUMP SUM	1
202	EXCAVATION, TEST PIT	CY	50
202	EXCAVATION, UNCLASSIFIED	CY	750
202	DISPOSAL OF REGULATED MATERIAL (IF AND WHERE DIRECTED)	TON.	60
302	DENSE-GRADED AGGREGATE SUBGRADE	CY	250
302	COARSE AGGREGATE, SIZE NO. 57	CY	300
401	HMA MILLING, 3" OR LESS	SY	4000
401	TACK COAT	GALL.	500
401	HOT MIX ASPHALT 9.5 M 64 SURFACE COURSE/LEVELING COURSE	TON.	650
401	HOT MIX ASPHALT 19 M 64 BASE COURSE	TON.	75
159	TRAFFIC STRIPES, LATEX 4"	LF	100
601	15" REINFORCED CONCRETE PIPE, CLASS IV	LF	60
601	18" REINFORCED CONCRETE PIPE, CLASS IV	LF	250
601	24" REINFORCED CONCRETE PIPE, CLASS IV	LF	210
601	27" REINFORCED CONCRETE PIPE, CLASS IV	LF	310
601	36" REINFORCED CONCRETE PIPE, CLASS IV (IF AND WHERE DIRECTED)	LF	20
601	24" X 36" REINFORCED CONCRETE BOX CULVERT	LF	30
602	INLET, TYPE B	UNITS	11
602	MANHOLE, 5' DIAMETER	UNITS	1
602	SET MANHOLE CASTING (IF AND WHERE DIRECTED)	UNITS	6
602	RECONSTRUCTED INLET, TYPE B, USING NEW CASTING	UNITS	3
602	4' x 6' JUNCTION BOX	UNITS	1
602	INLET, TYPE E	UNITS	1
602	BICYCLE SAFE GRATE	UNITS	14
602	CURB PIECE, TYPE 'N-ECO'	UNITS	14
606	CONCRETE SIDEWALK, 4"THICK	SY	100
606	HOT MIX ASPHALT DRIVEWAY, 2" THICK	SY	180
606	CONCRETE DRIVEWAY, REINFORCED, 6" THICK	SY	35
606	DETECTABLE WARNING SURFACE	SY	10
607	GRANITE CURB	LF	1870
651	RESET WATER VALVE BOX	UNITS	1
653	RESET GAS VALVE BOX	UNITS	1
805	TURF REPAIR STRIP	LF	2200

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MOTT
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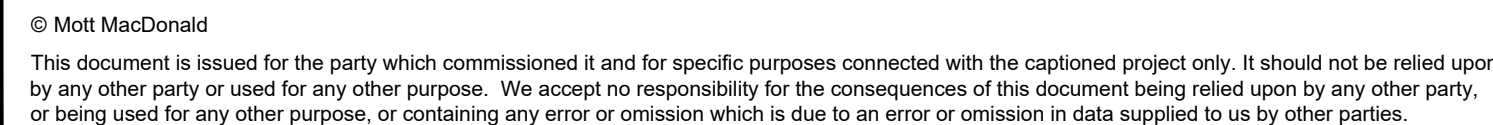
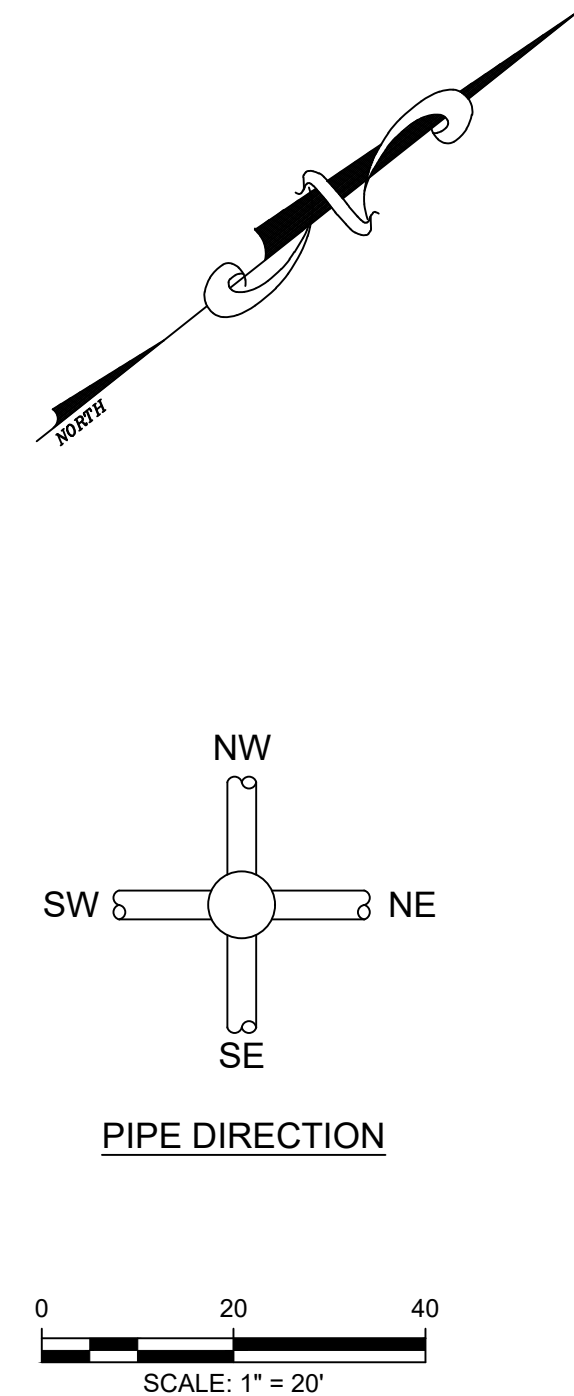
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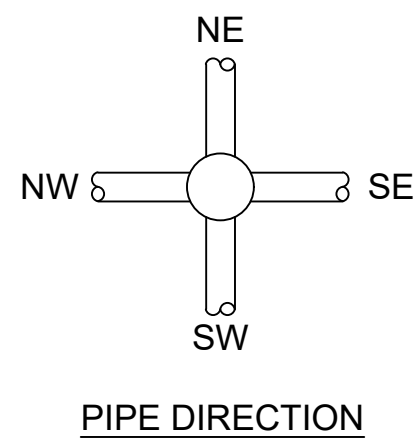
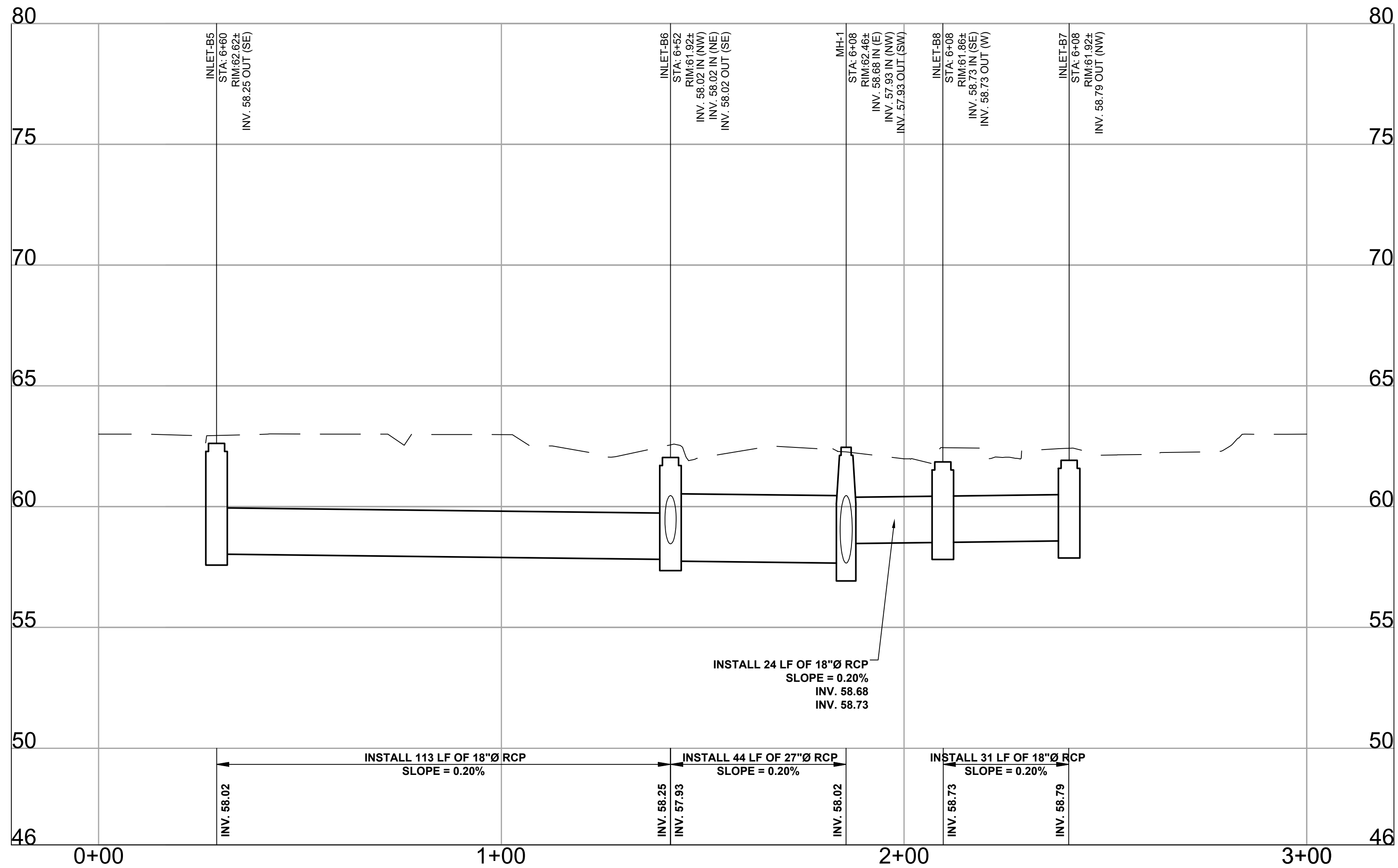
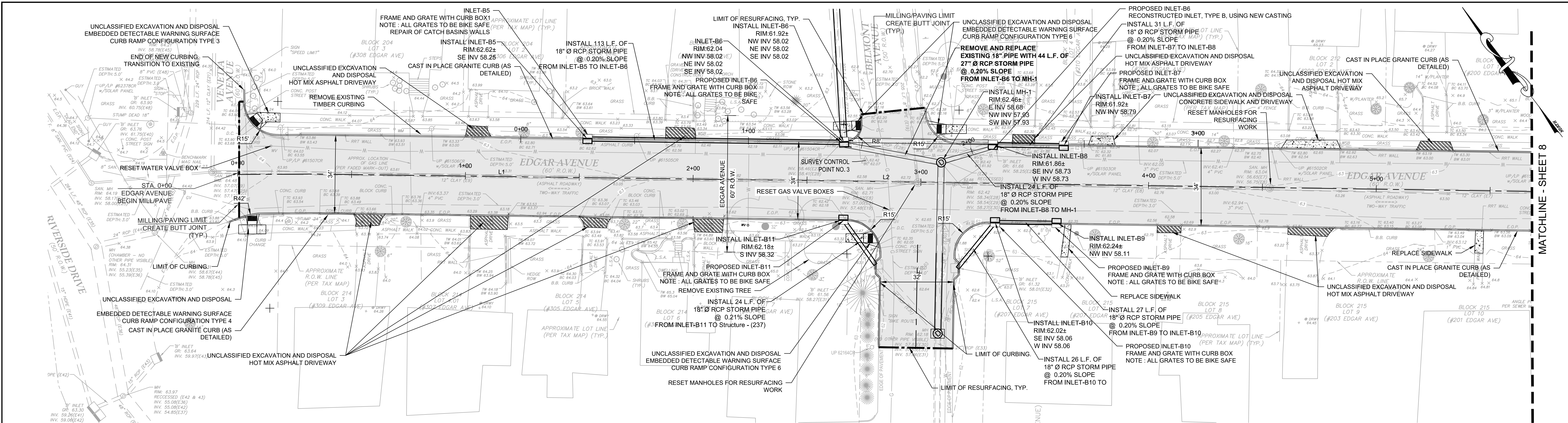
Keri Hollstadt Date 08/24/2022

Total	16
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KENSINGTON AVENUE- PLAN & PROFILE



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UNION COUNTY, NEW JERSEY

Client

KEVIN K. NOLLSTADT
Professional Engineer - N.J. Lic. No. 24GE04519700

Kevin K. Nollstadt
Date 08/24/2022

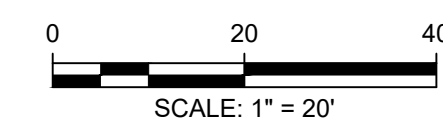
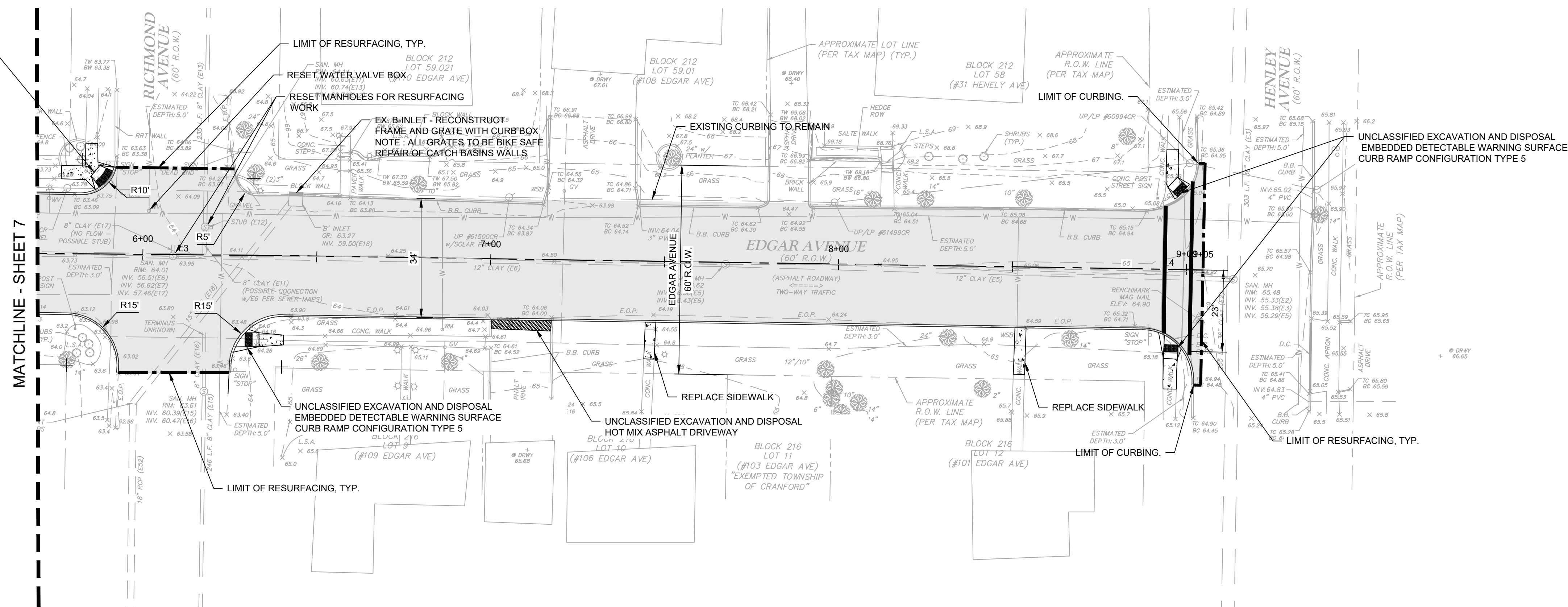
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Total
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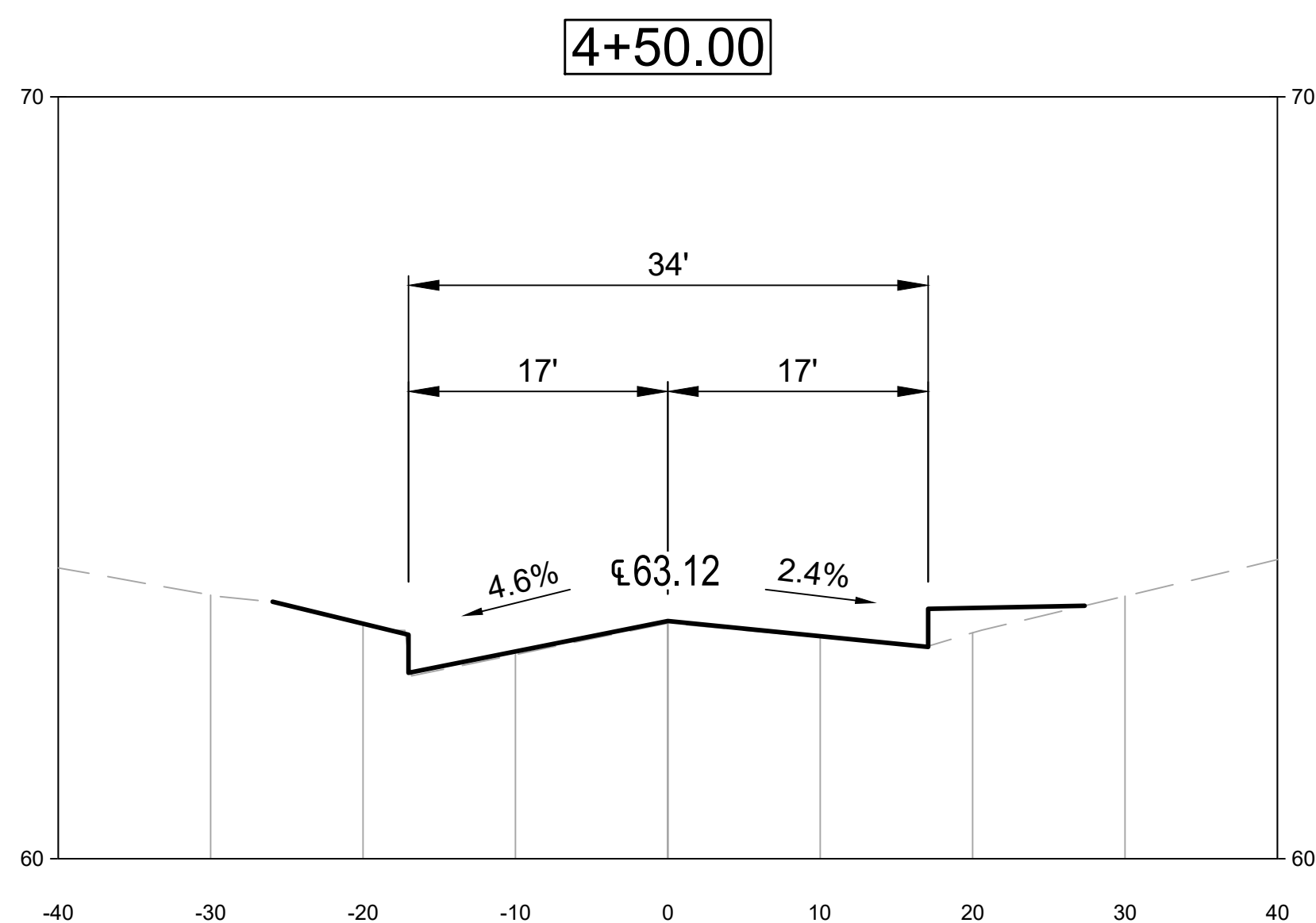
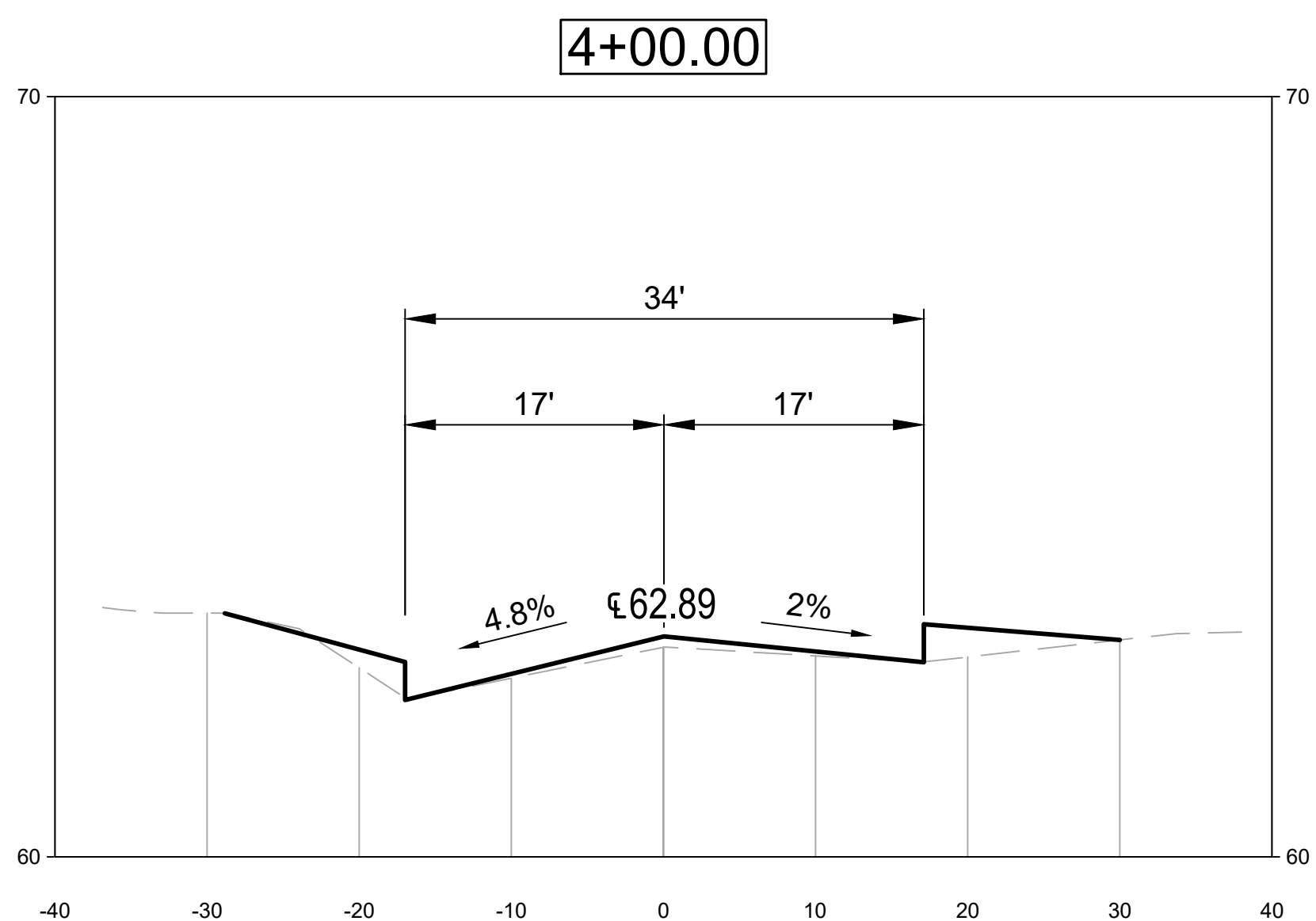
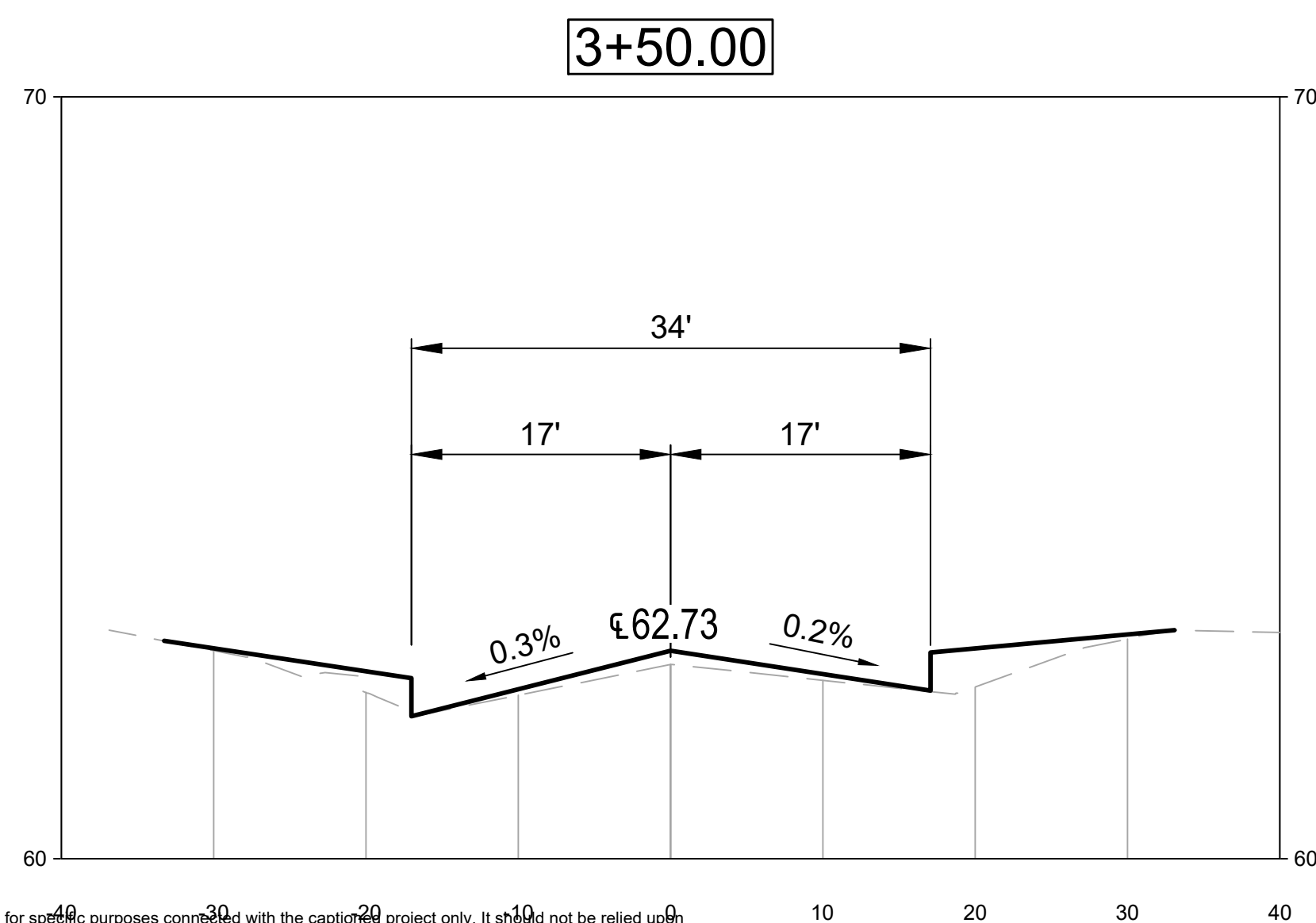
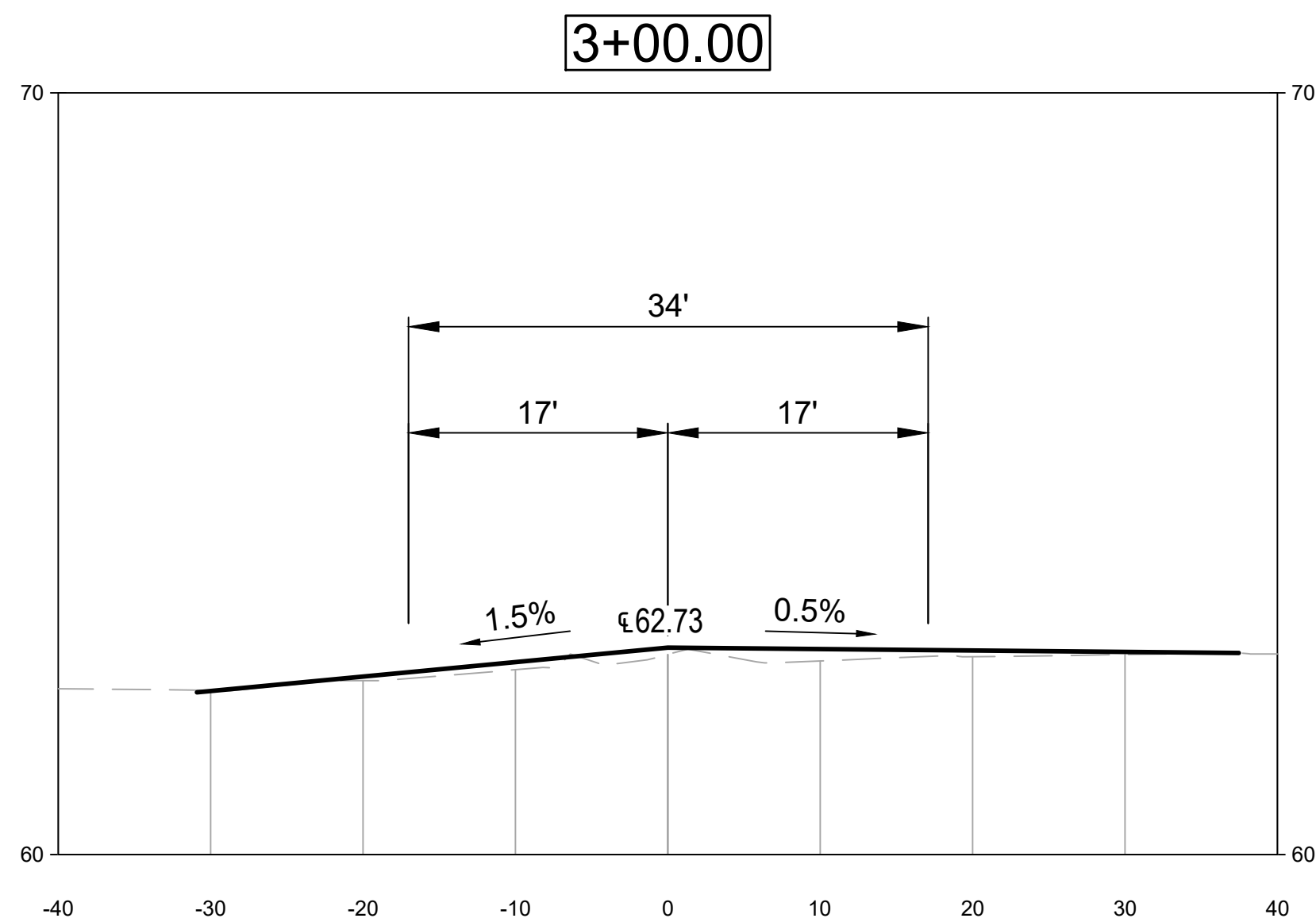
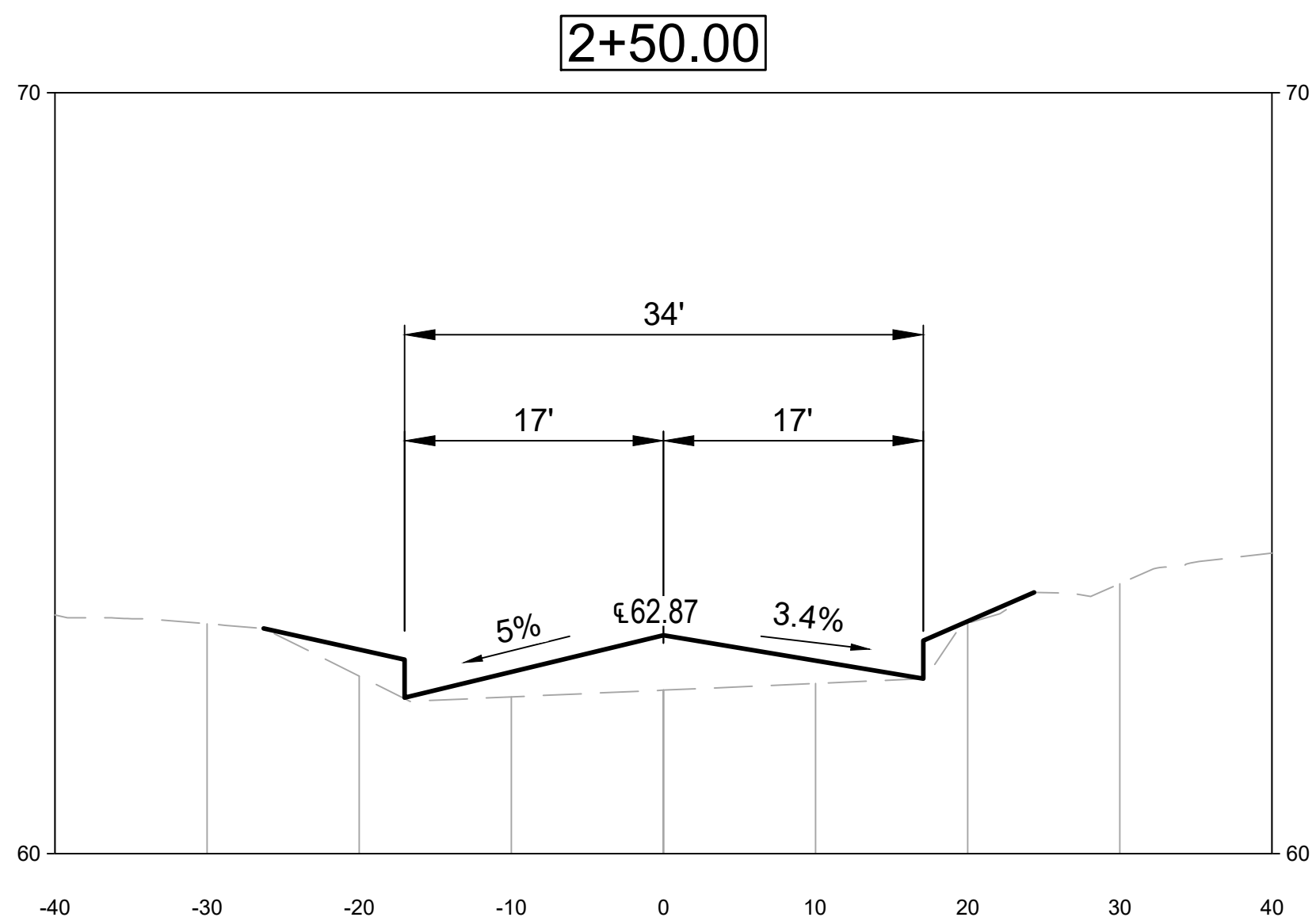
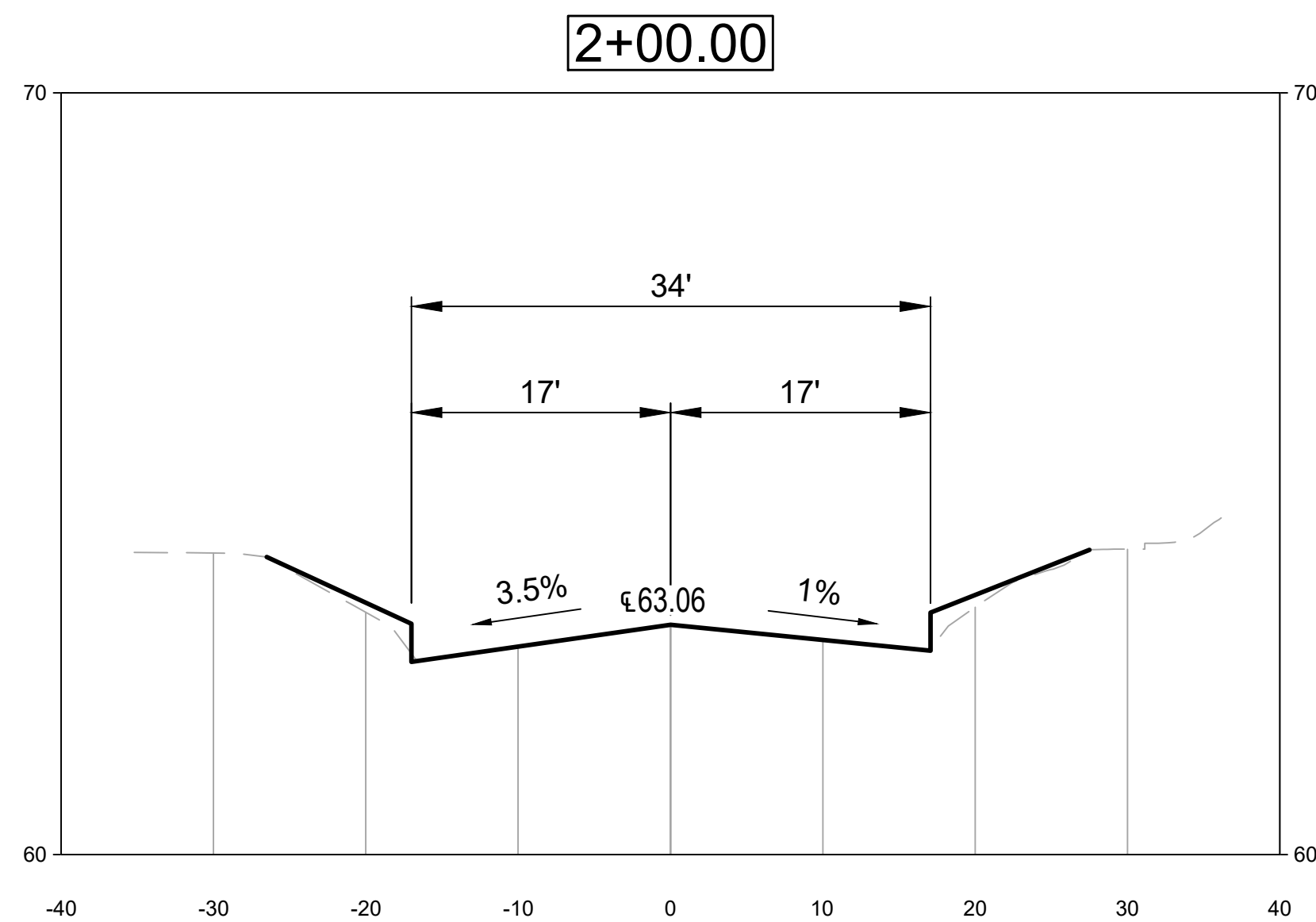
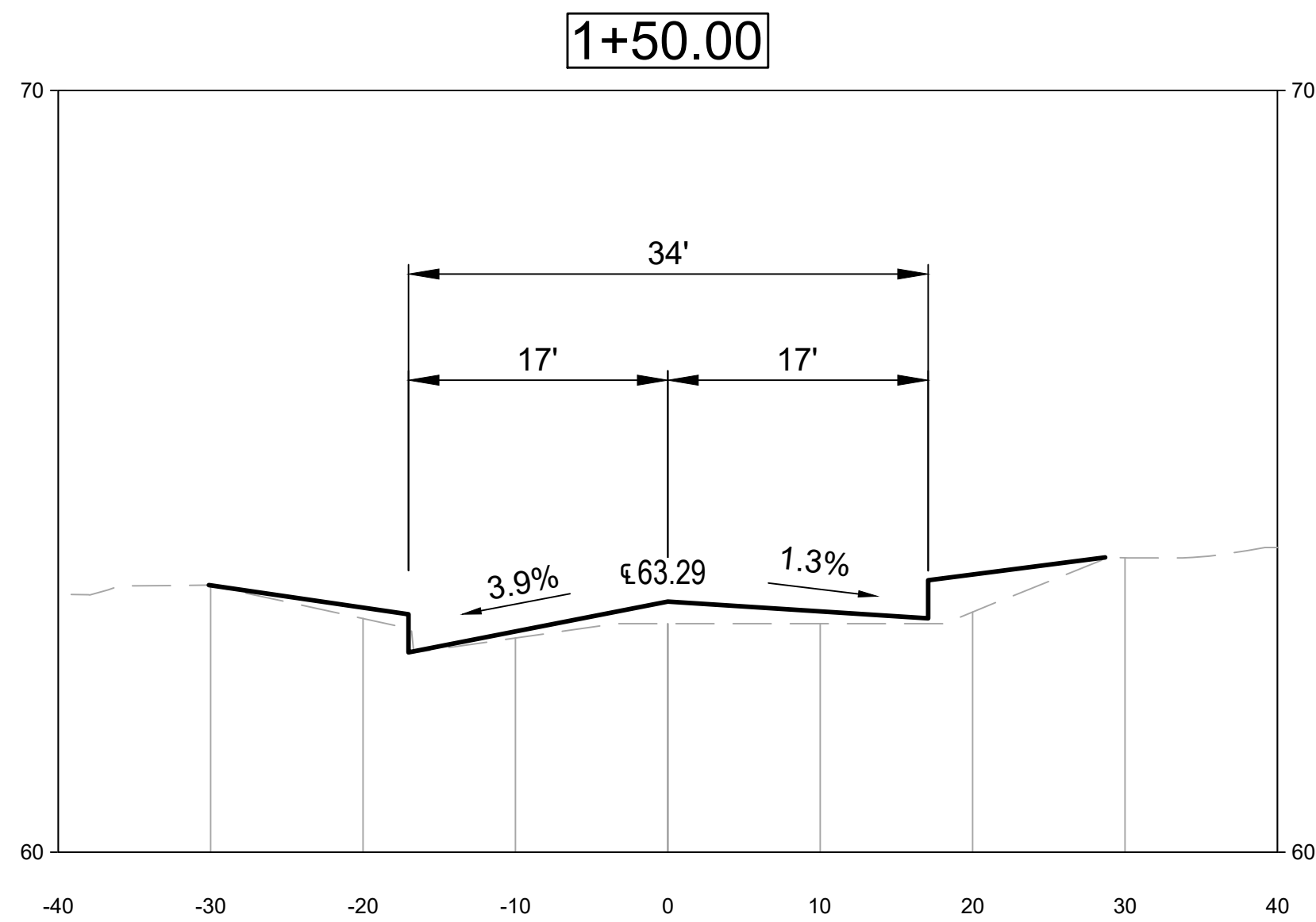
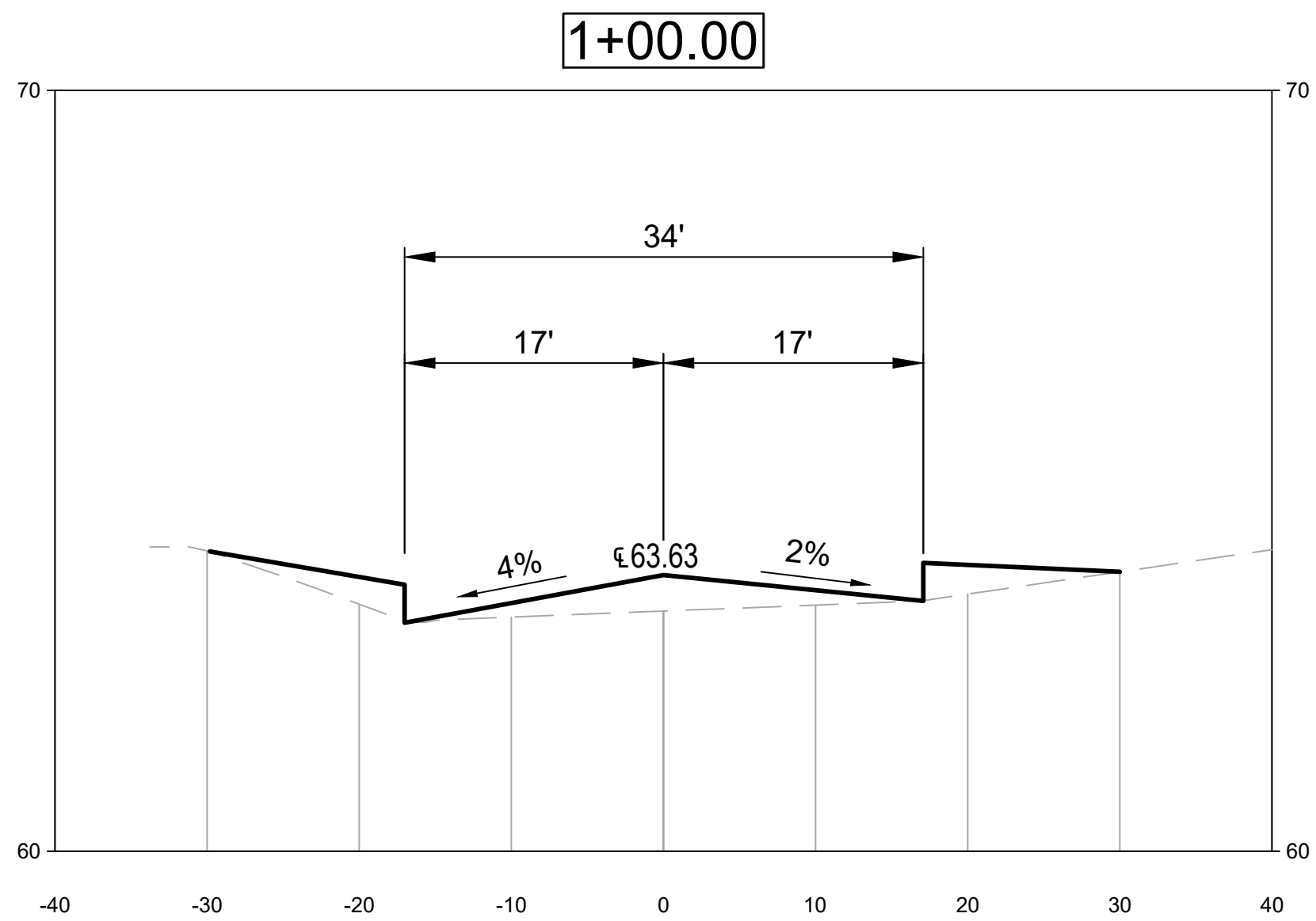
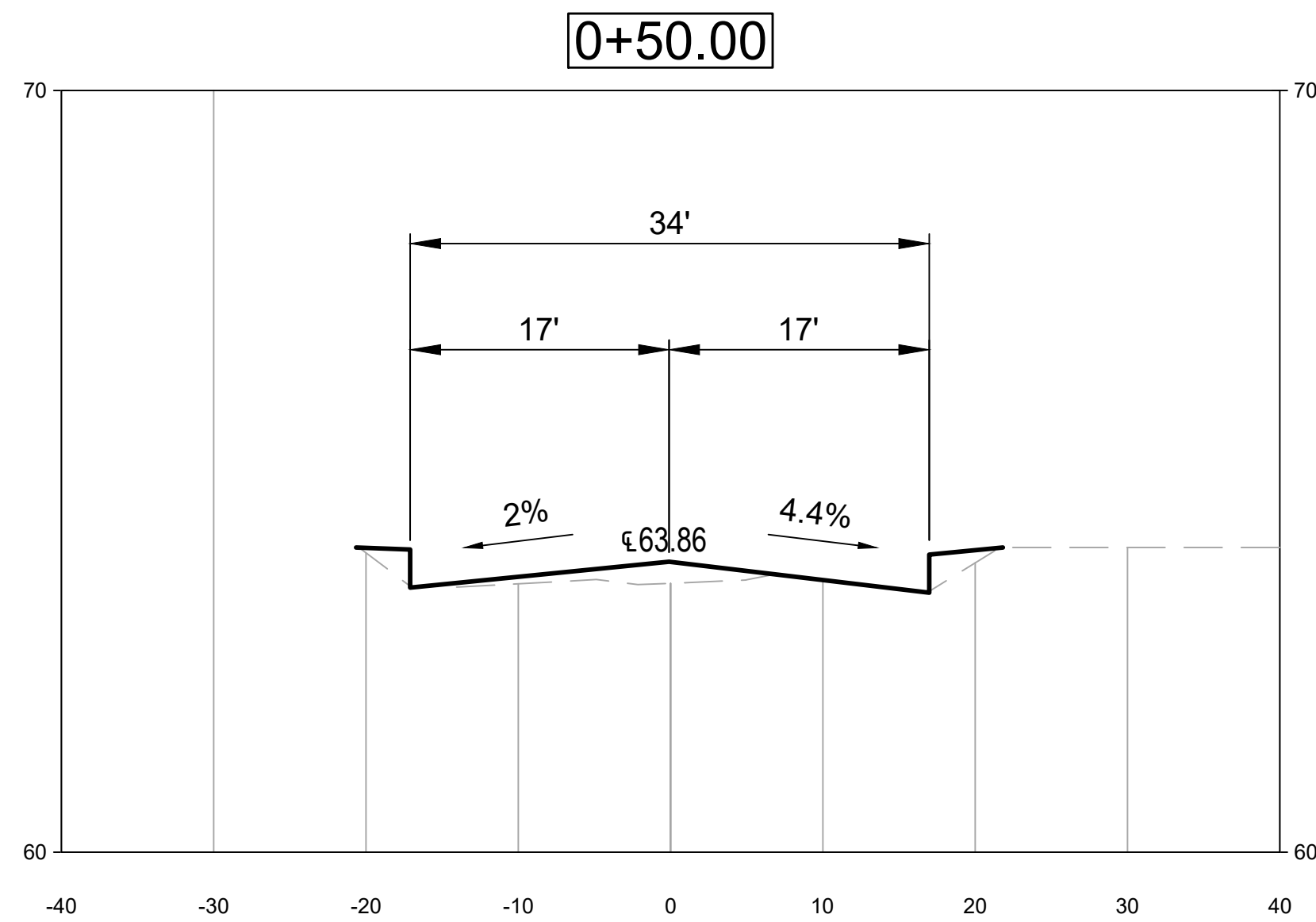
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Dwg check	SJA	08/24	Approved	KKN	08/24
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Drawing Number					

Title
KENSINGTON AVENUE
AND EDGAR AVENUE
DRAINAGE IMPROVEMENTS

EDGAR AVENUE- PLAN & PROFILE



	Title	KENSINGTON AVENUE AND EDGAR AVENUE DRAINAGE IMPROVEMENTS
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4		
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Rev	Date	Drawn	Description	Ch'k'd	App'd

KEVIN K. NOLLSTADT
Professional Engineer - N.J. Lic. No. 24GE04519700

Kevin Nollstadt Date 08/24/2022

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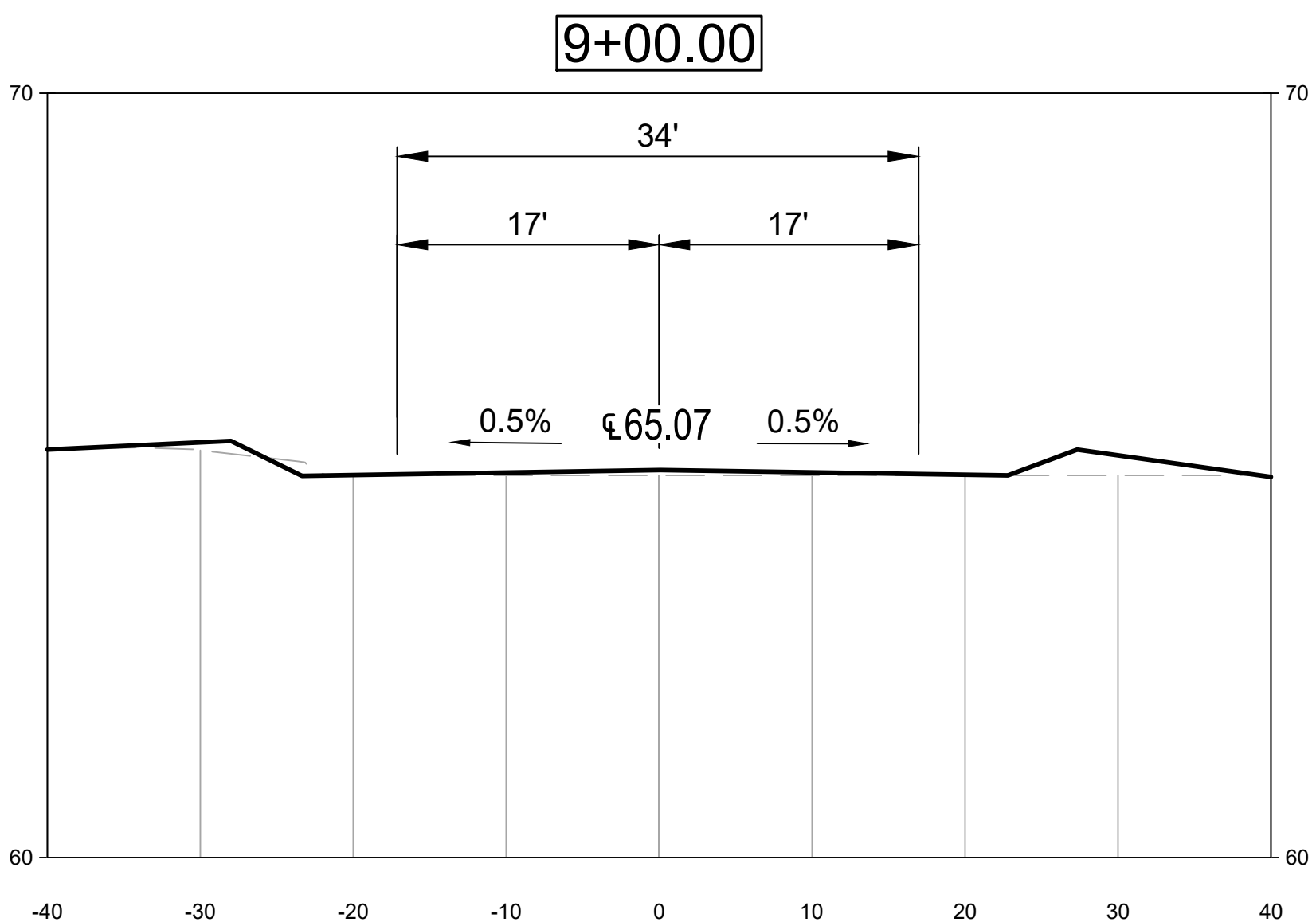
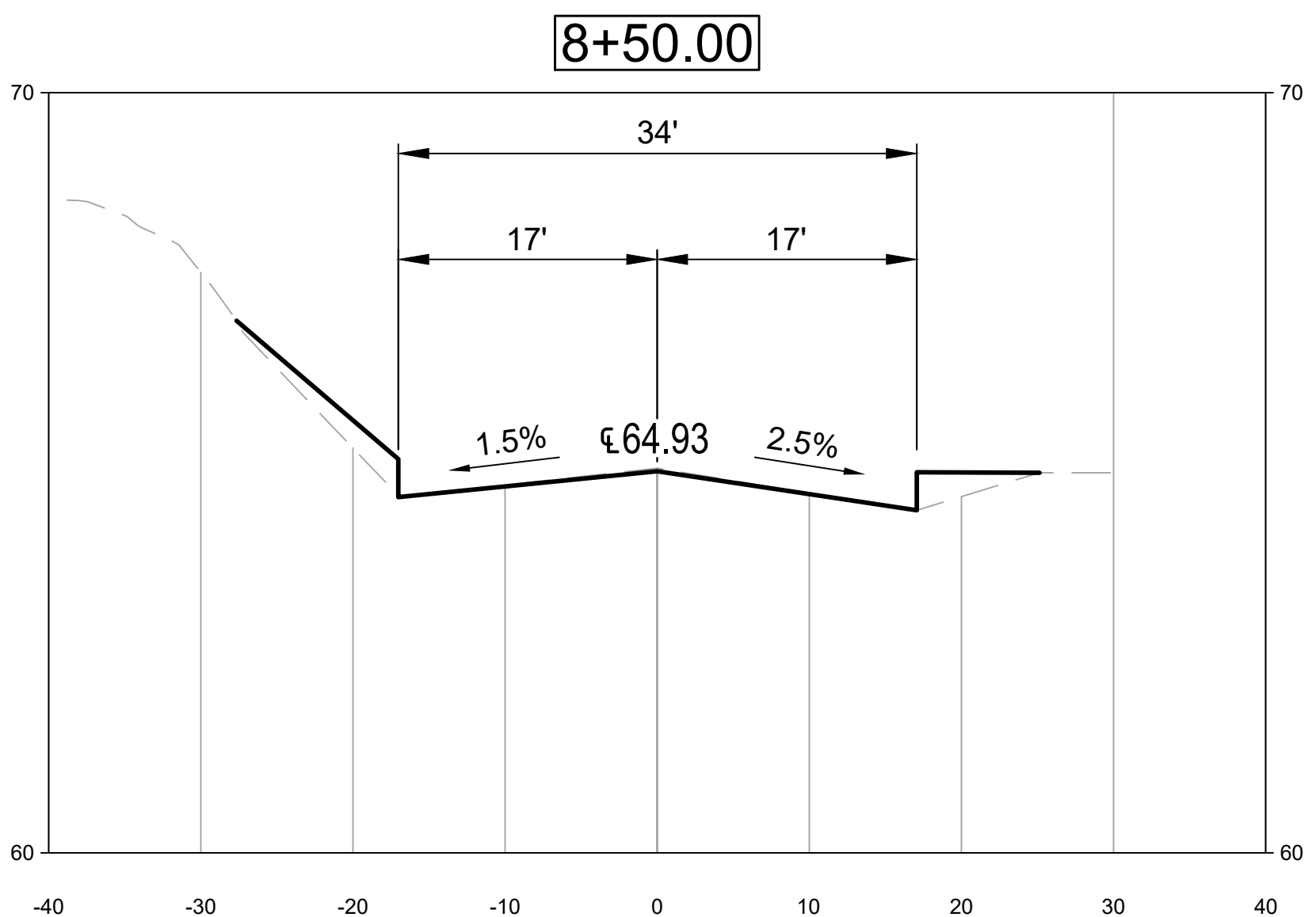
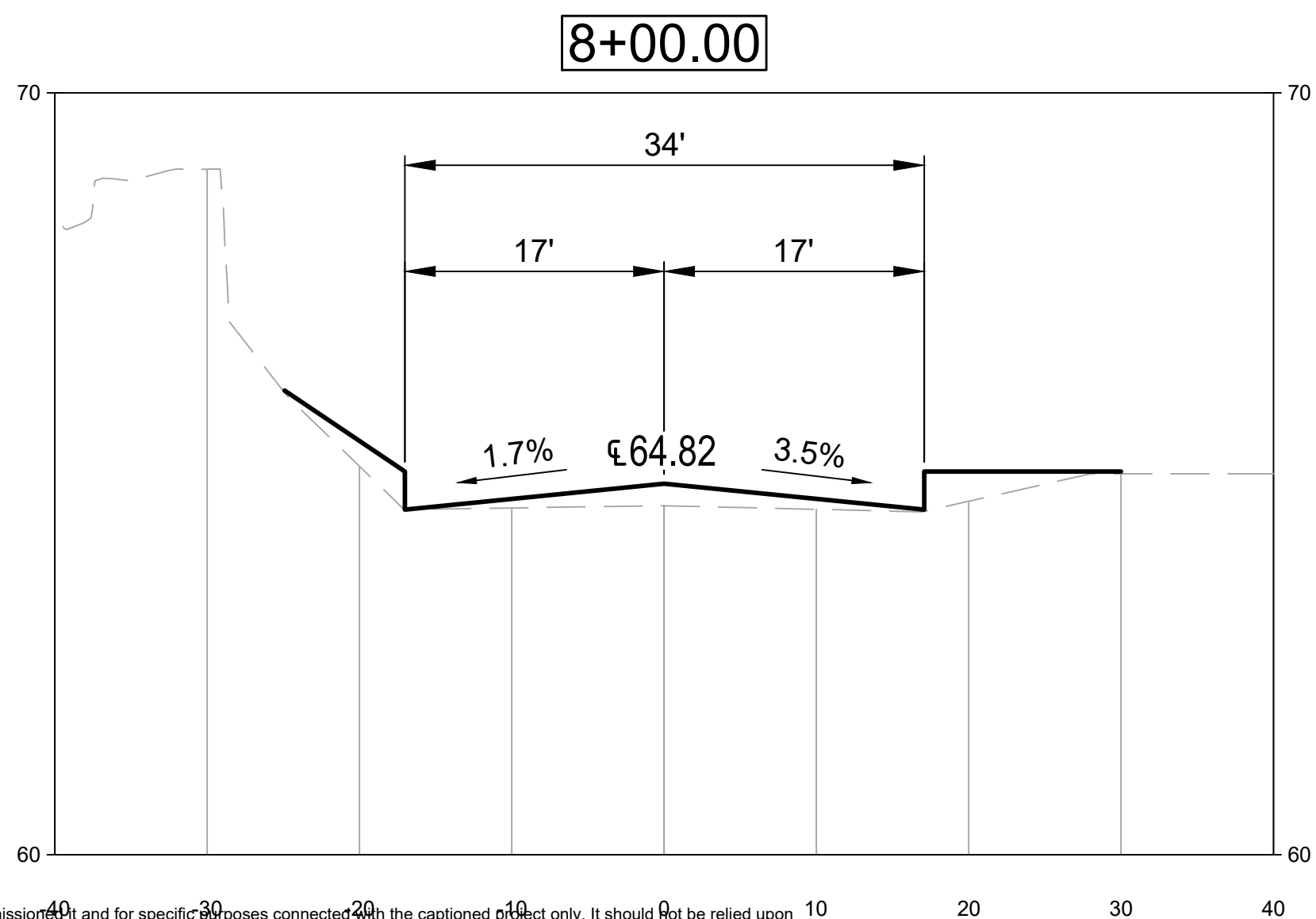
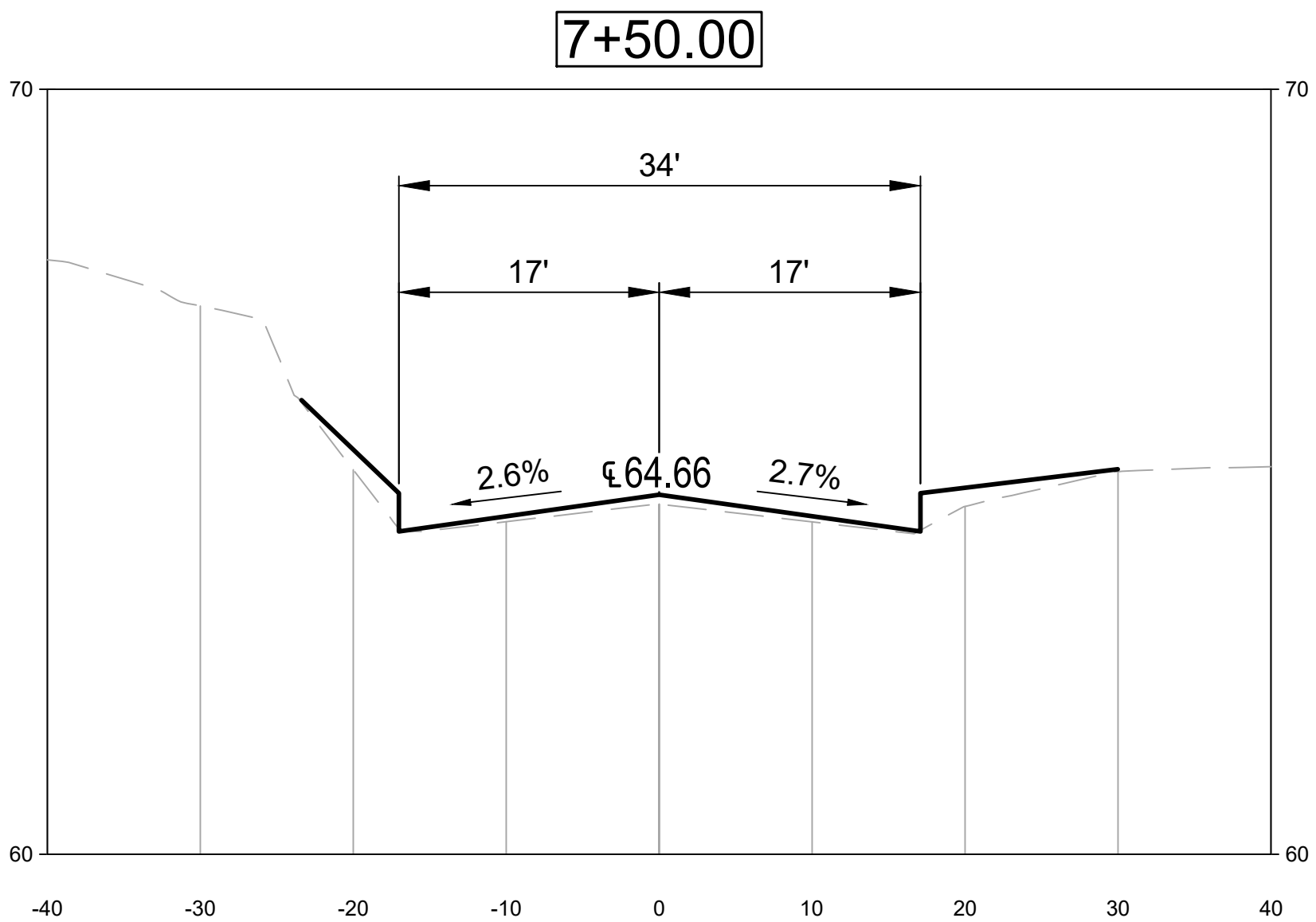
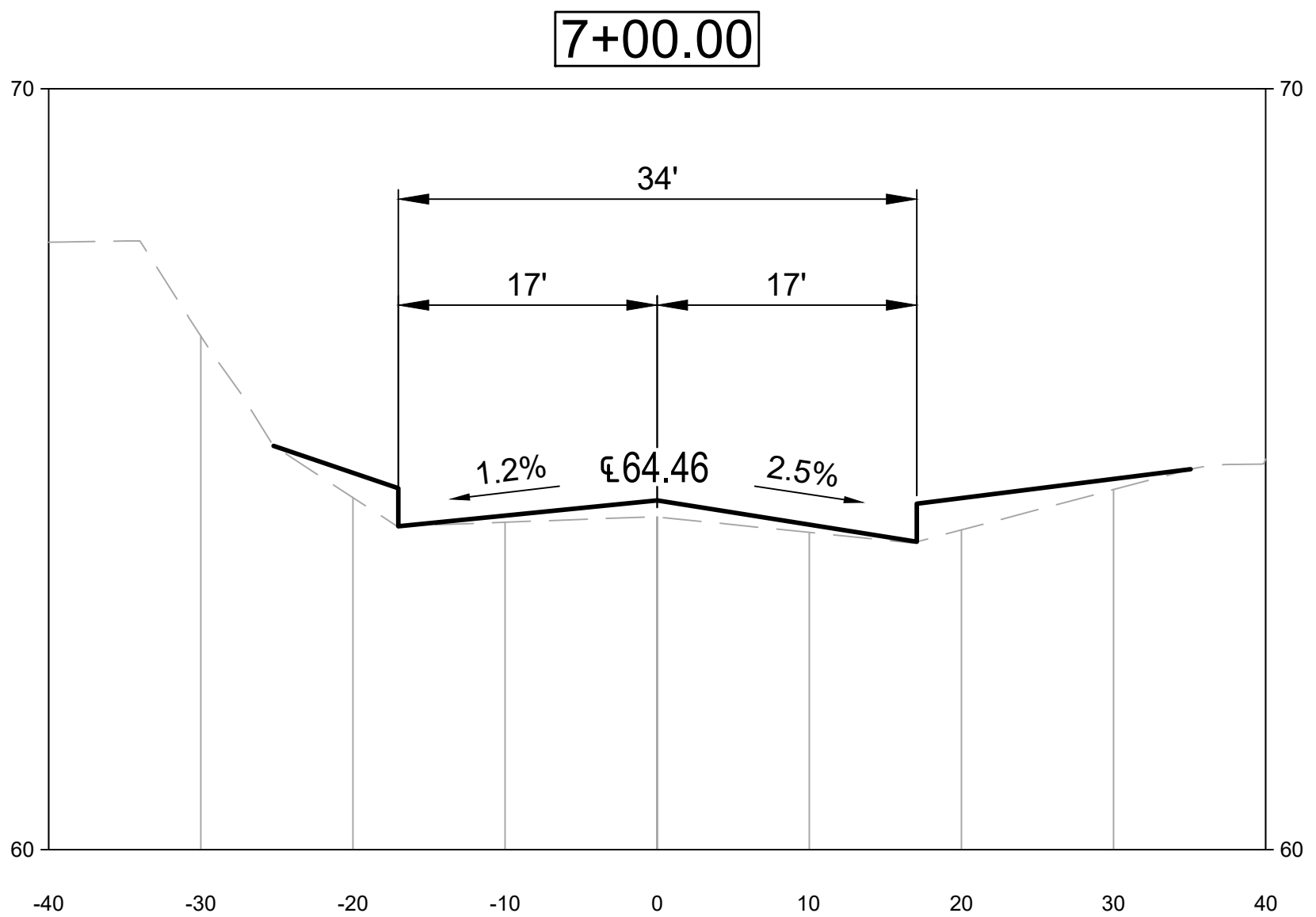
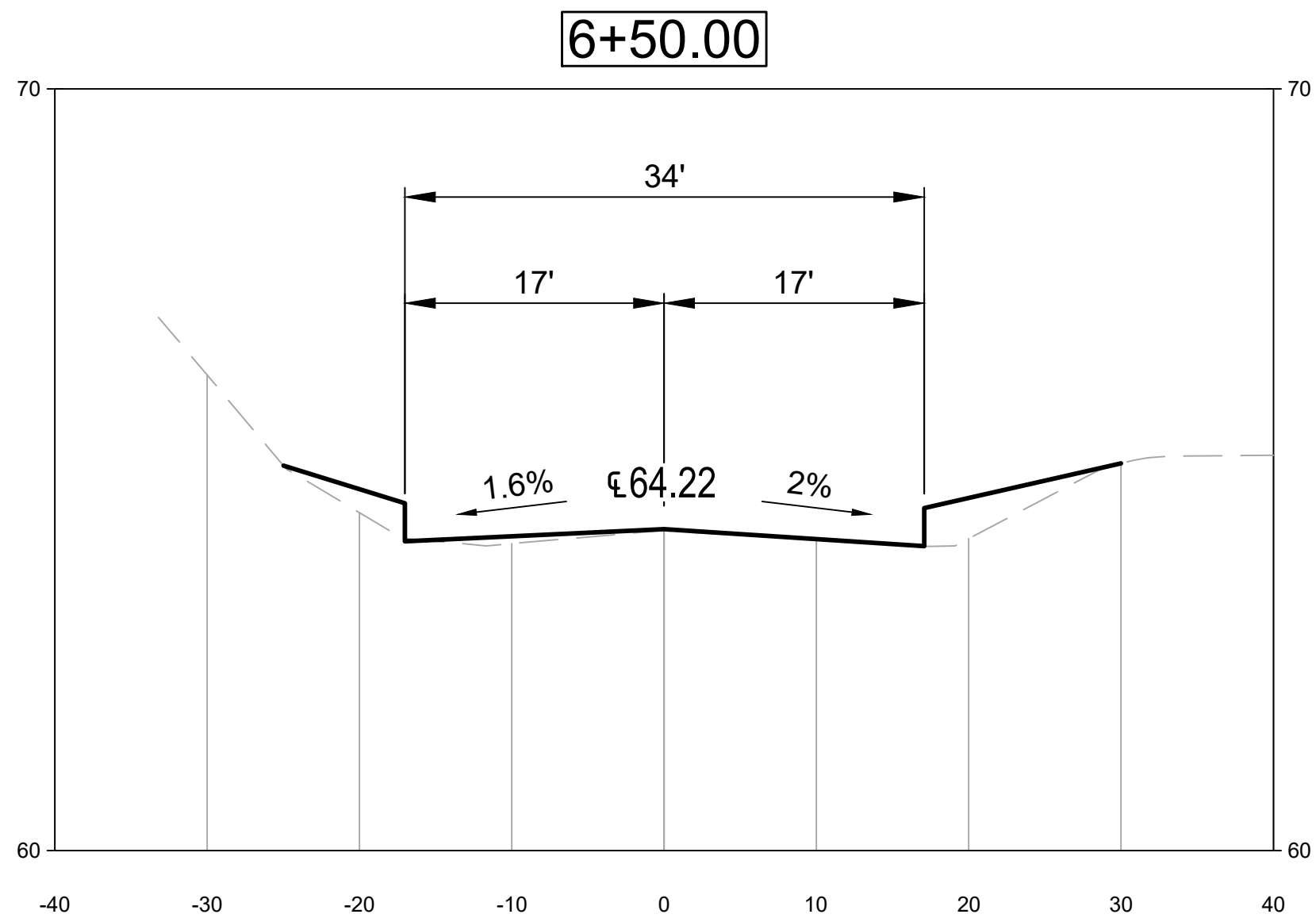
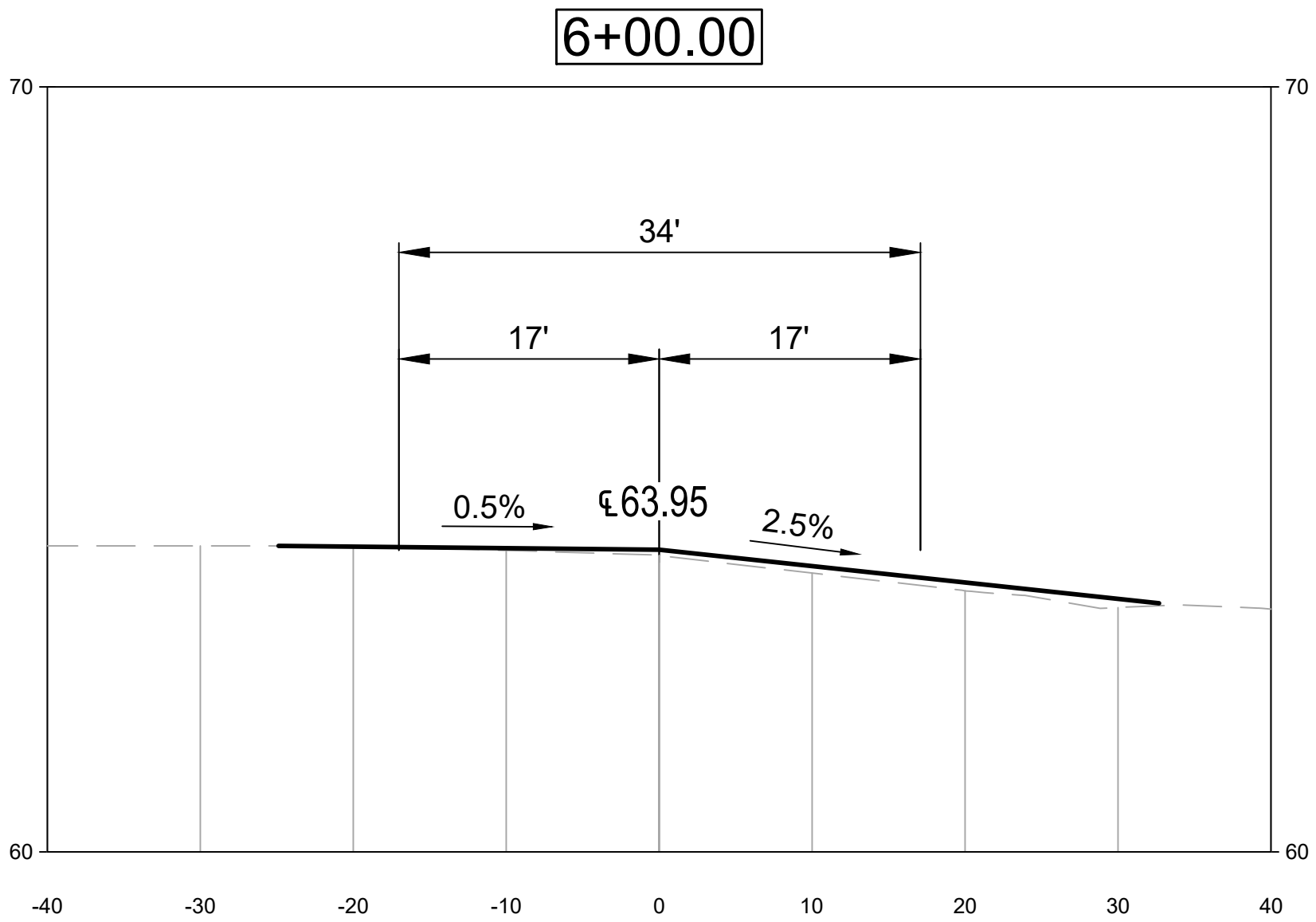
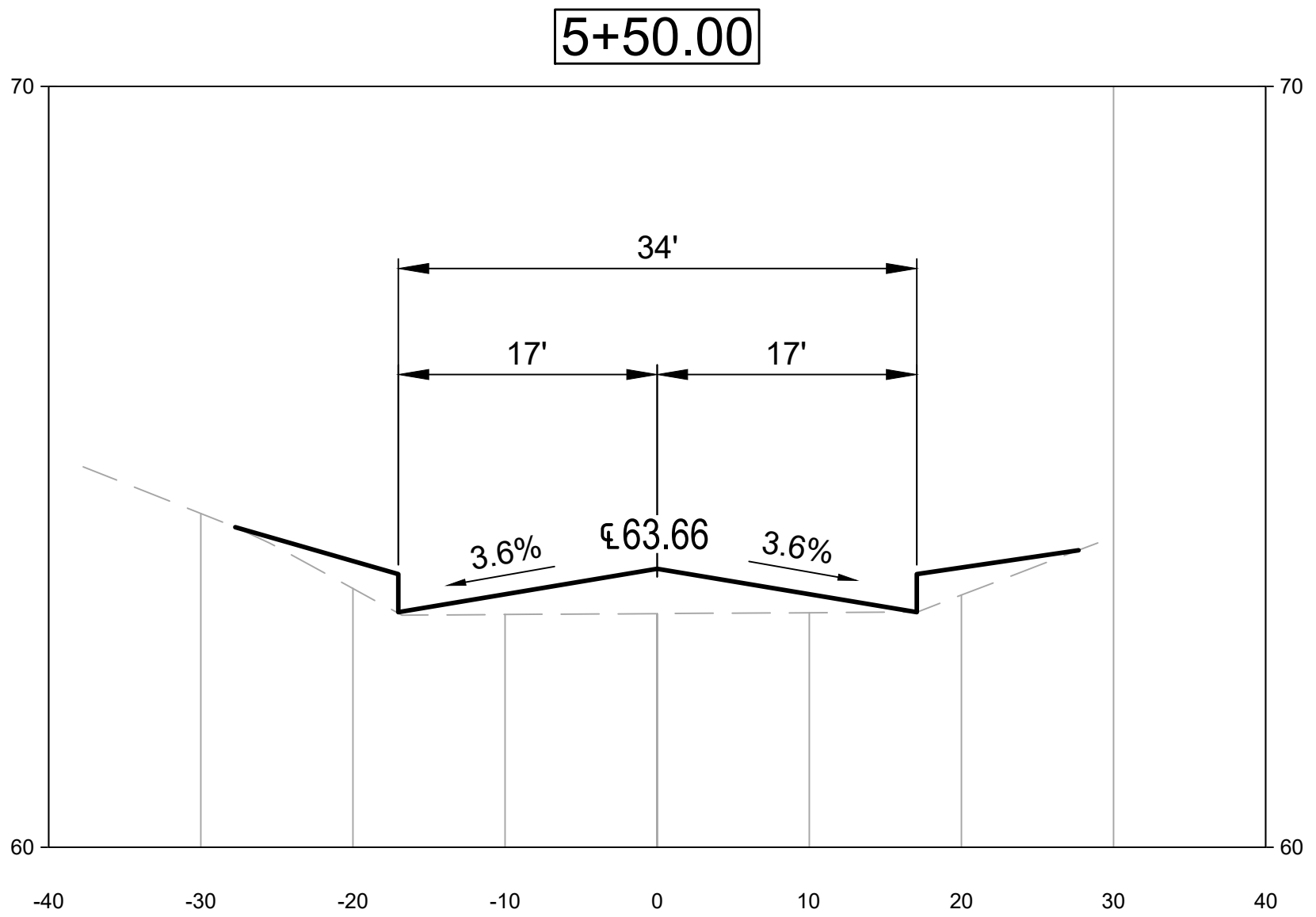
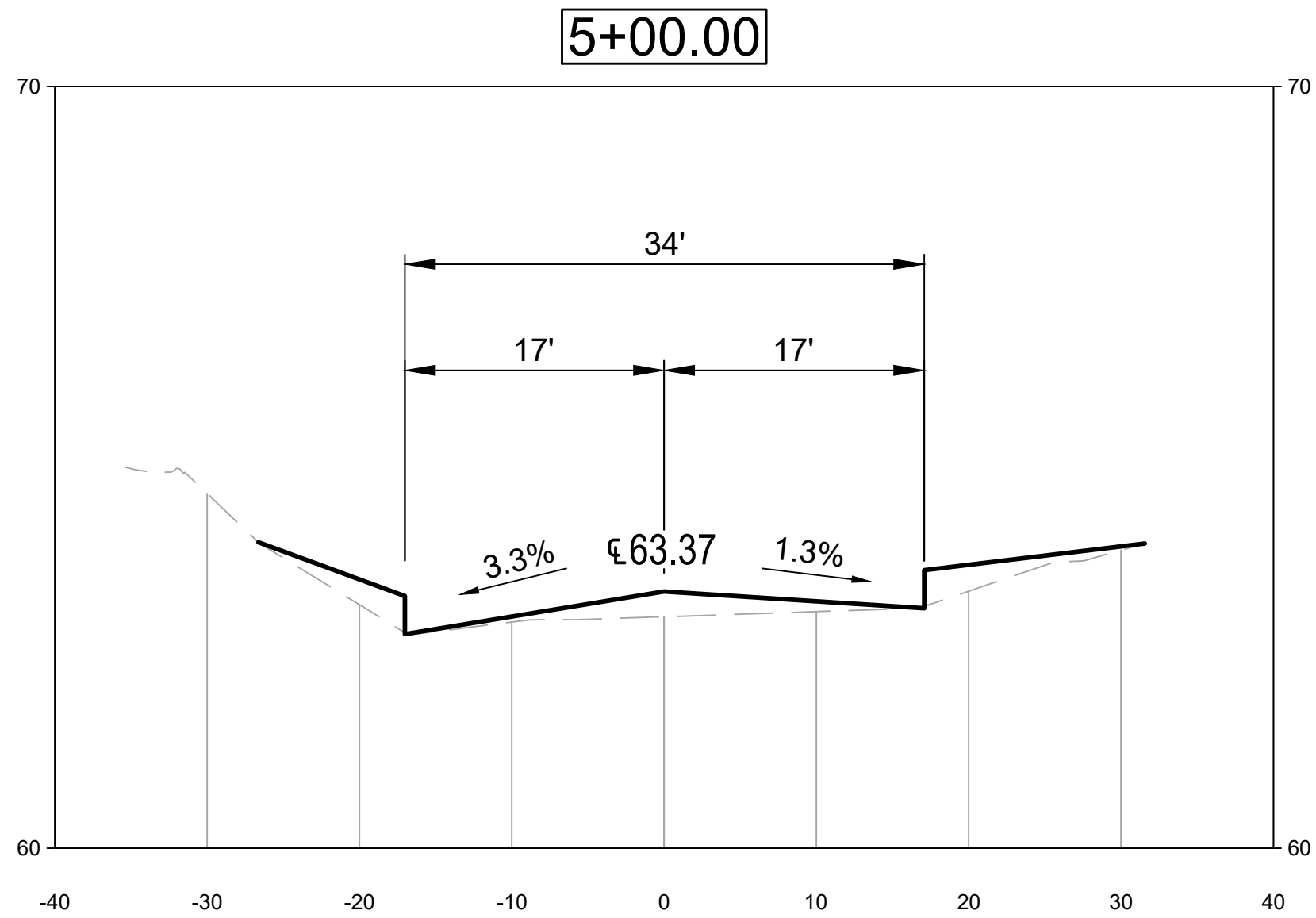
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DRAINAGE IMPROVEMENTS

ROADWAY CROSS SECTIONS



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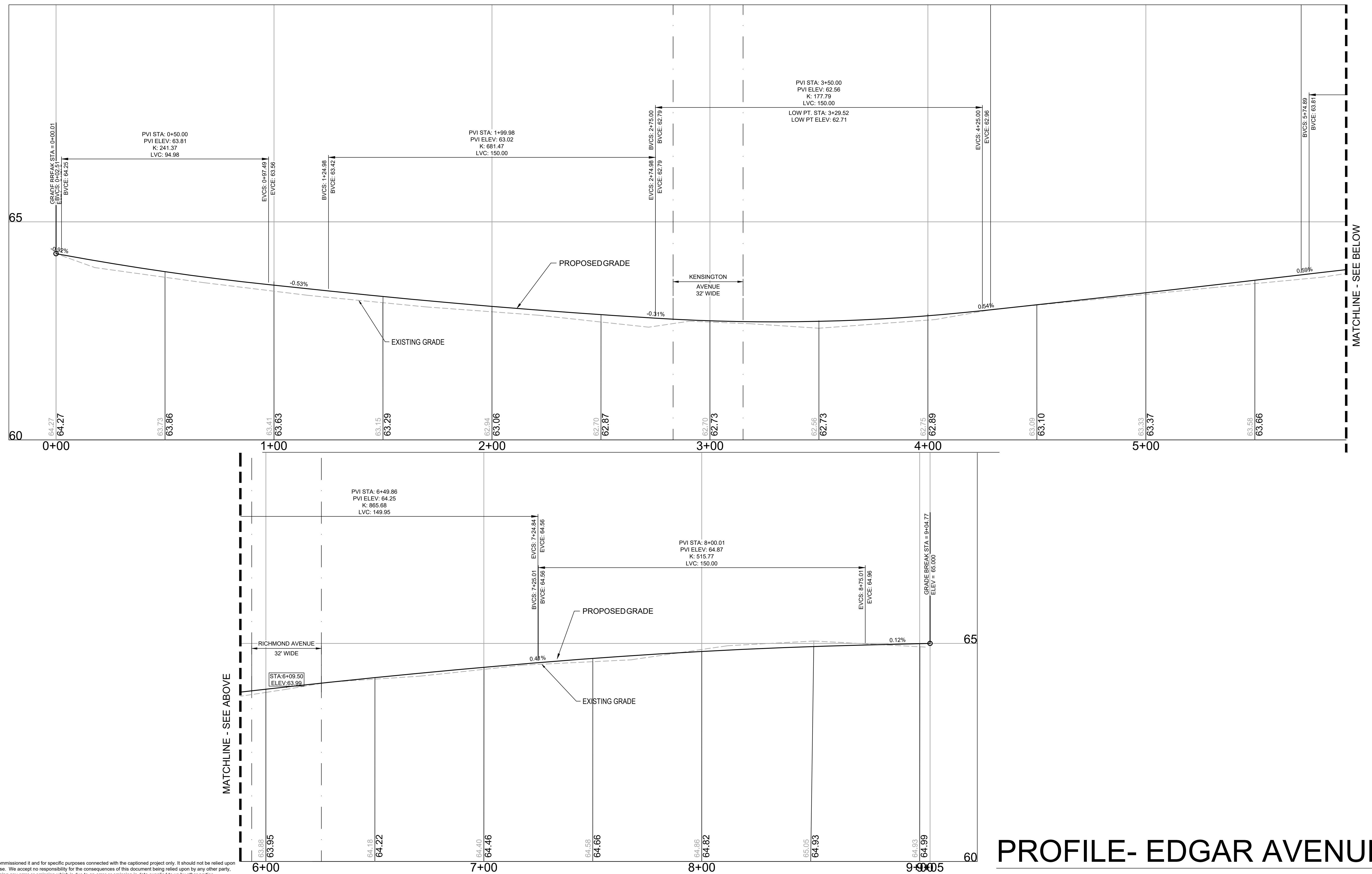
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UNION COUNTY, NEW JERSEY

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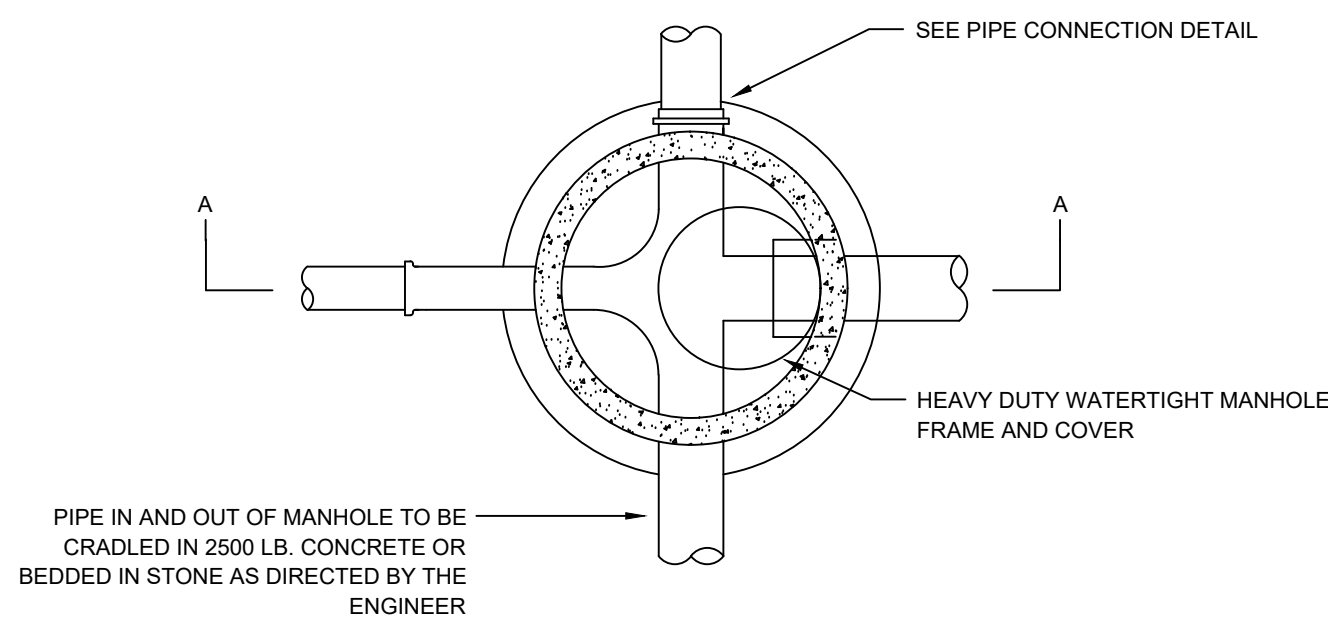
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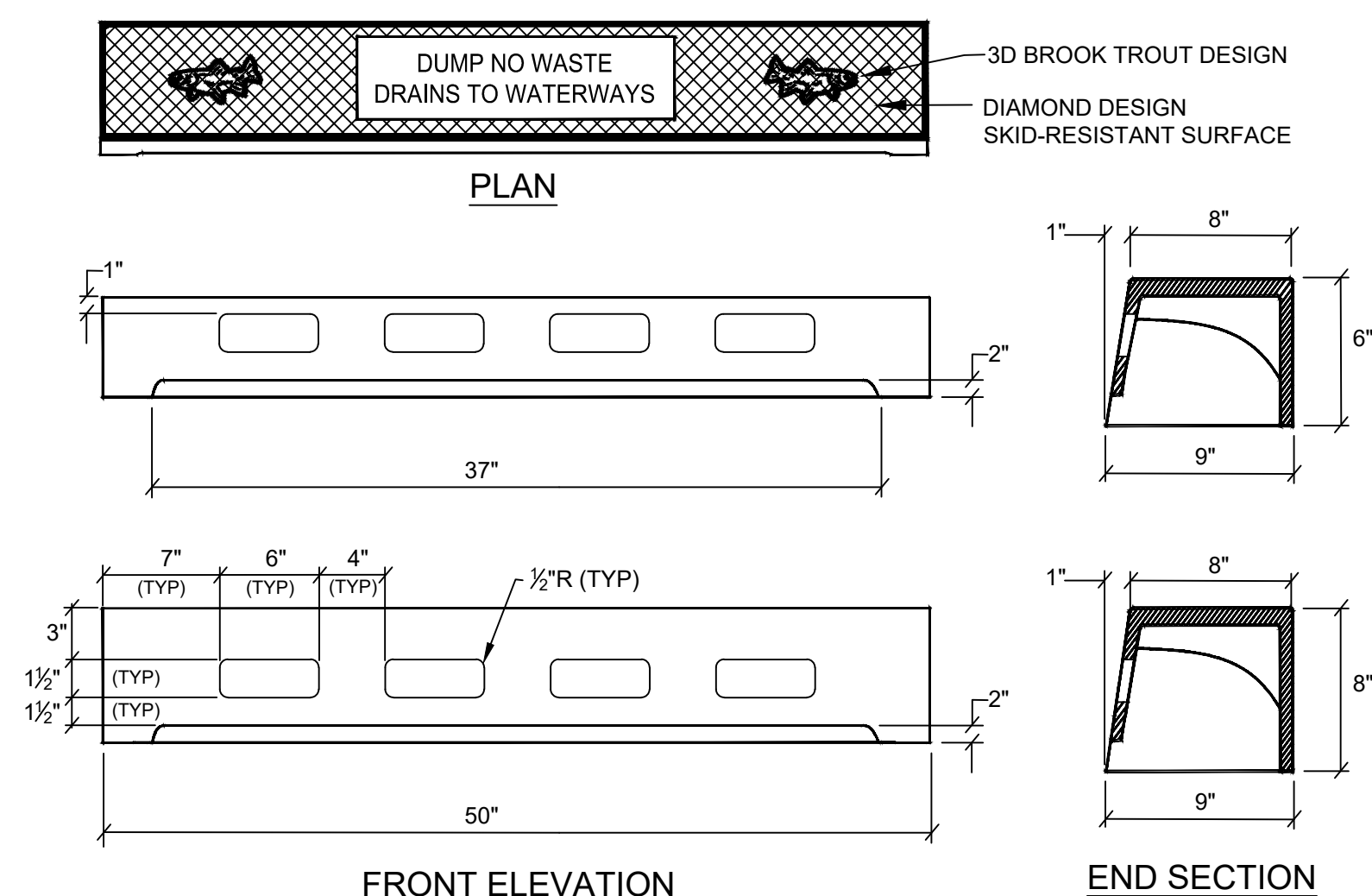
1. DRIVEWAY APRON - UNREINFORCED DRIVEWAY APRONS SHALL BE 6" THICK, A PREFORMED, BITUMINOUS EXPANSION JOINT 1/2" THICK, 6" WIDE, AND EXTENDING UNBROKEN THE FULL WIDTH OF THE WALK SHALL BE INSTALLED BETWEEN THE APRON. CONTRACTION JOINTS SHALL BE INSTALLED EVERY 4 FEET THE FULL WALK WIDTH. THERE SHALL BE A BROOM FINISH WITH EDGES FINISHED WITH A SUITABLE TOOL.
2. SIDEWALKS - SIDEWALKS SHALL BE 4" THICK, CONSTRUCTED IN EIGHT FOOT SECTIONS WITH CLEAR SPACE OF 3/16 INCH BETWEEN ADJACENT SECTIONS AND A FALSE JOINT ACROSS THE MIDDLE OF EACH SECTION. EXPANSION JOINT 1/2" THICK, 4" WIDE, AND EXTENDING UNBROKEN THE FULL WIDTH OF THE WALK SHALL BE PROVIDED AT EQUAL DISTANCES OF NOT MORE THAN 20'. CONTRACTION JOINTS SHALL BE INSTALLED EVERY 4 FEET THE FULL WALK WIDTH.

3. ALL APRON SHALL BE CURED IN ACCORDANCE WITH SECTION 606.03.02. CONTRACTOR SHALL SUBMIT A CURING COMPOUND TO THE ENGINEER FOR APPROVAL.
4. APRON SHALL BE CLASS "B", 4500 PSI AND CONSTRUCTED IN ACCORDANCE WITH SECTION 606.

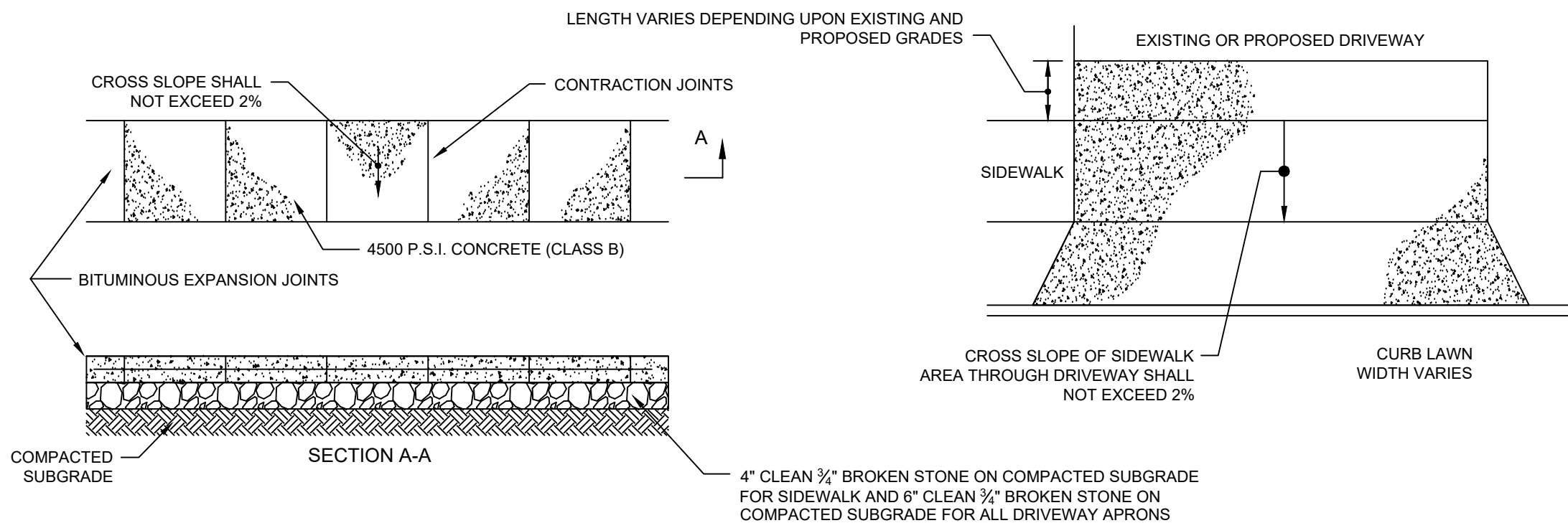


NOTES:

1. DROP CONNECTION TO BE USED IN ALL CASES WHERE DIFFERENCE IN INLET & OUTLET INVERTS IS GREATER THAN 2 FEET.
2. ENTIRE EXTERIOR TO RECEIVE COATING OF BITUMENOUS SEALER.
3. FLAT TOP TO BE USED ONLY WHERE SHALLOW CONDITIONS DO NOT PERMIT USE OF CONE SECTION.
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST O.S.H.A. STANDARDS.
5. WHEN A MANHOLE BASE I.D. OF GREATER THAN 48" IS REQUIRED, THE CONTRACTOR SHALL PROVIDE TRANSITION SECTIONS¹, STARTING AT A MINIMUM 6" ABOVE THE INLET PIPE O.D., BEFORE TRANSITION TO THE 30" MANHOLE OPENING.

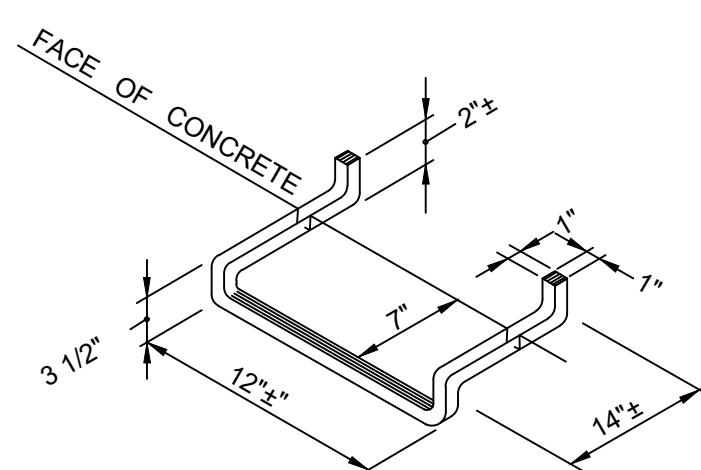


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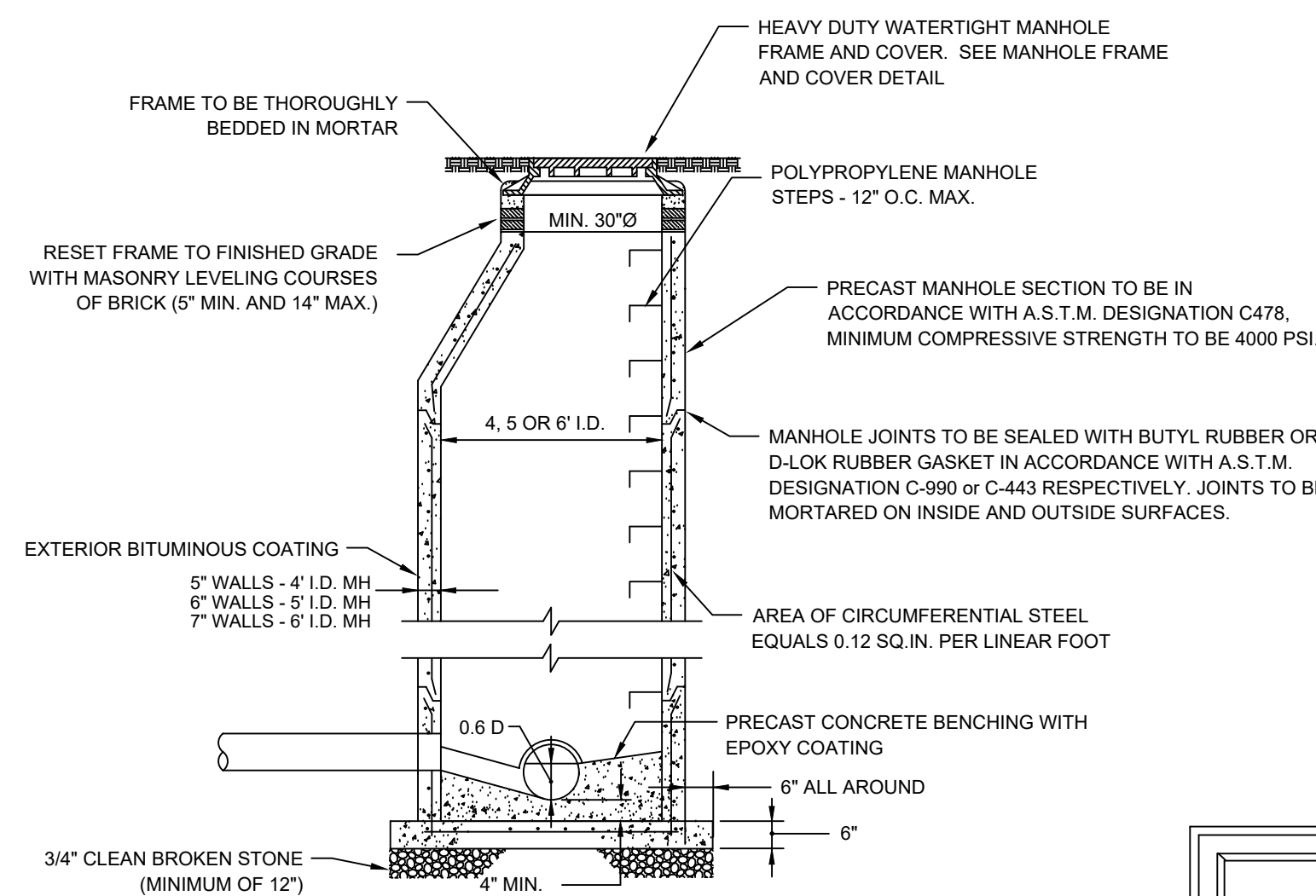


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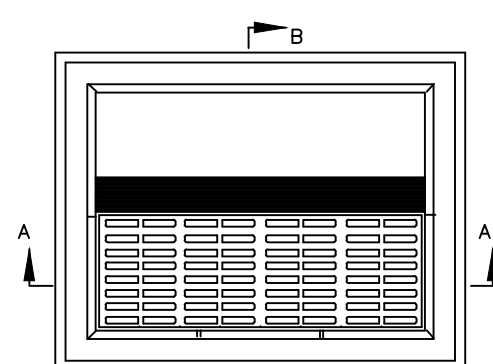
MH BASE I.D. 16"	MAXIMUM NOMINAL PIPE SIZE (REGARDLESS OF MATERIAL)		MH WALL THICKNESS"
	STRAIGHT THRU TO 45° DEFLECTION	90° DEFLECTION	
4-FT	24"	18"	5"
5-FT	36"	27"	6"
6-FT	42"	30"	7"
7-FT	48"	36"	8"
8-FT	60"	42"	9"



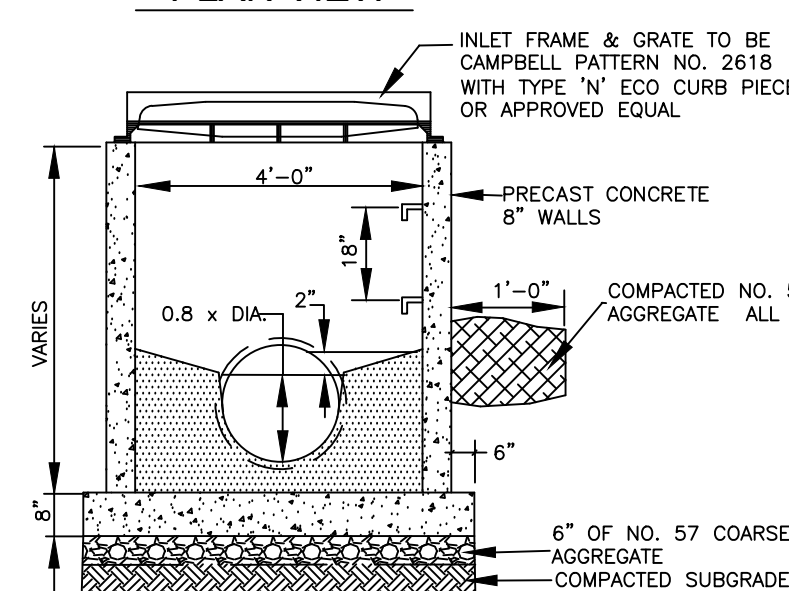
MANHOLE STEPS



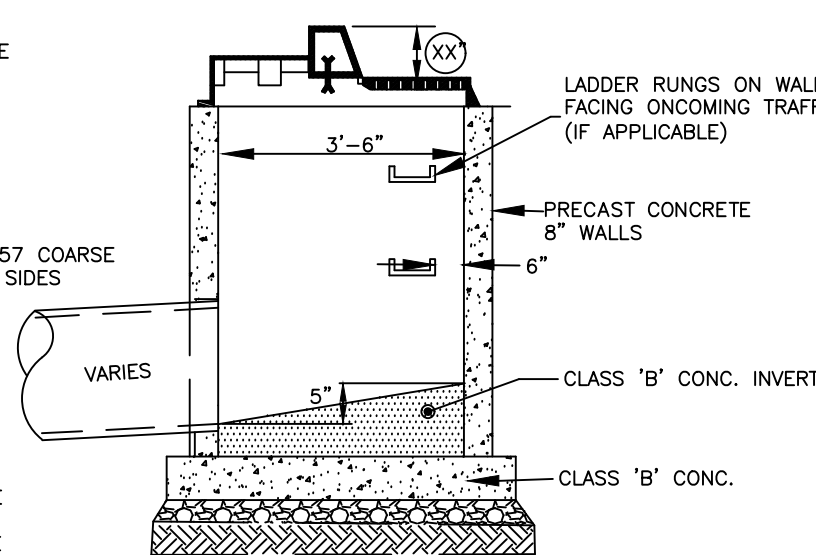
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PLAN VIEW



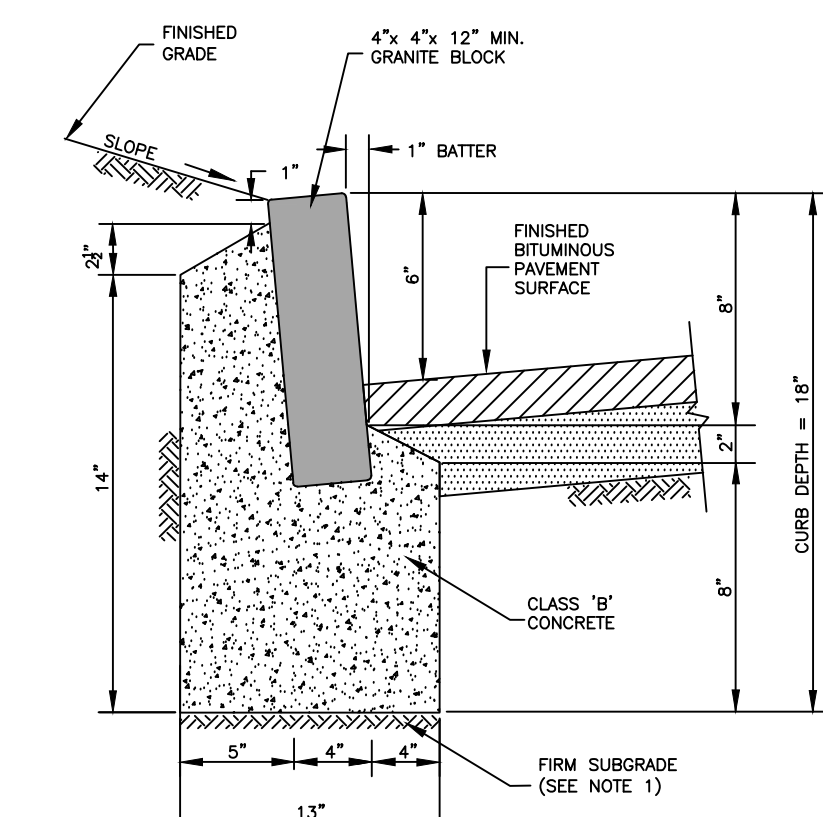
SECTION "B-B"



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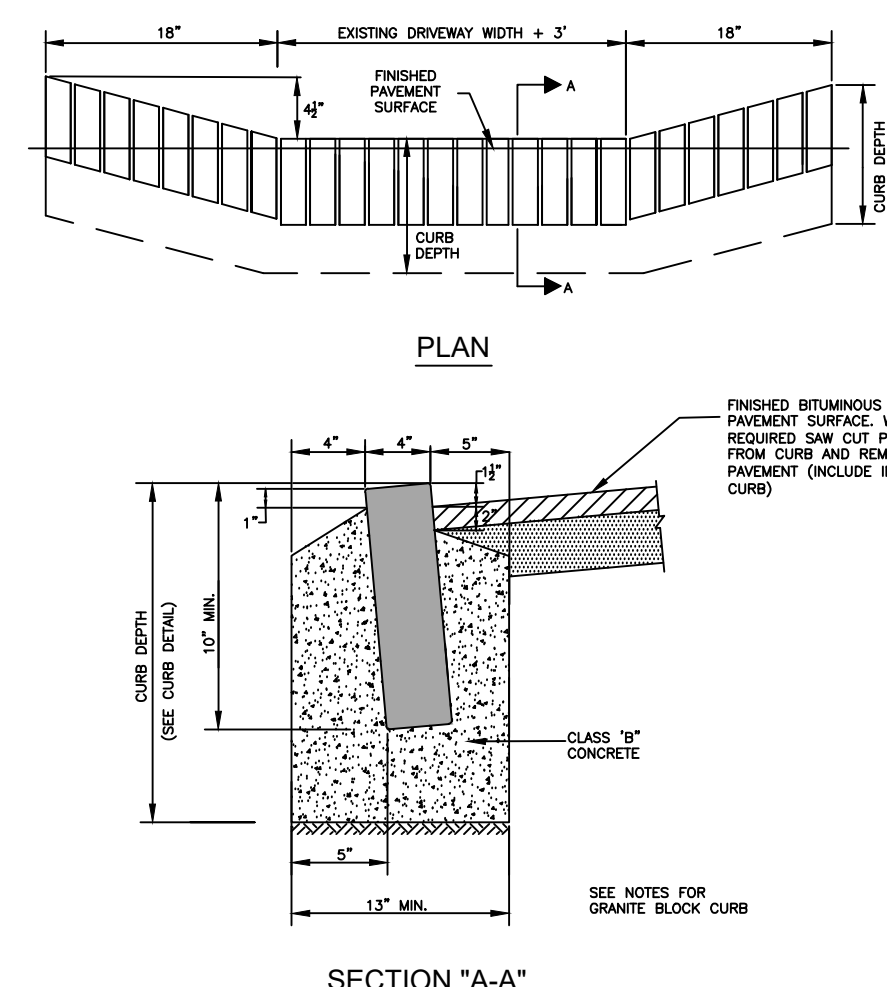
NOTES:

1. ANY EXCAVATION BELOW DESIRED GRADE DUE TO OVER EXCAVATION OR UNSUITABLE SOIL CONDITIONS SHALL BE BACKFILLED WITH No. 57 COARSE AGGREGATE. ALL SUBGRADES SHALL BE APPROVED BY THE MUNICIPAL ENGINEER PRIOR TO PLACING CONCRETE.

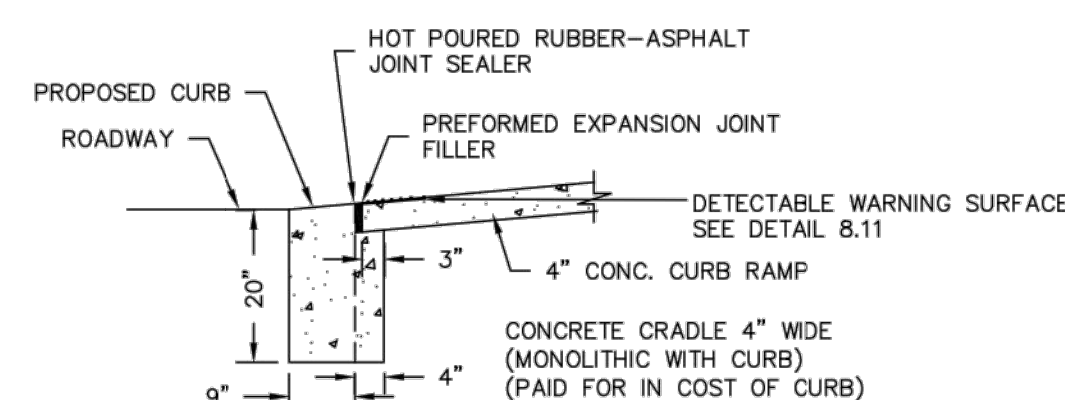
2. JOINTS SHALL NOT BE MORE THAN 1" WIDE FOR DRESSED BLOCK AND 3/4" WIDE FOR QUARRY SPLIT BLOCK. THE JOINTS SHALL BE POINTED WITH 1:1 CEMENT-SAND MORTAR.

3. WHERE REQUIRED SAW CUT PAVEMENT 2' FROM CURB AND REMOVE EXISTING PAVEMENT (INCLUDE INCREASE OF CURB).

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N.T.S.

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Keri Hollstadt Date 08/24/2022

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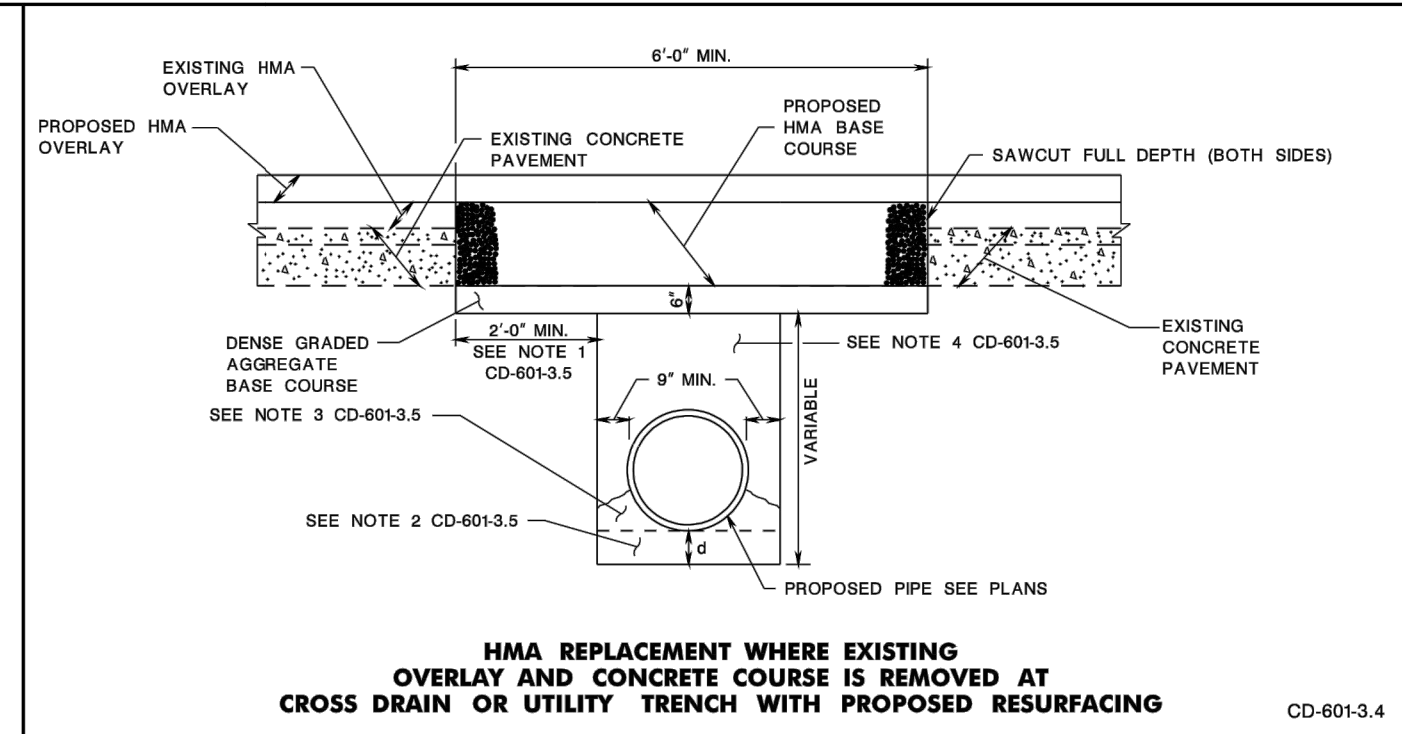
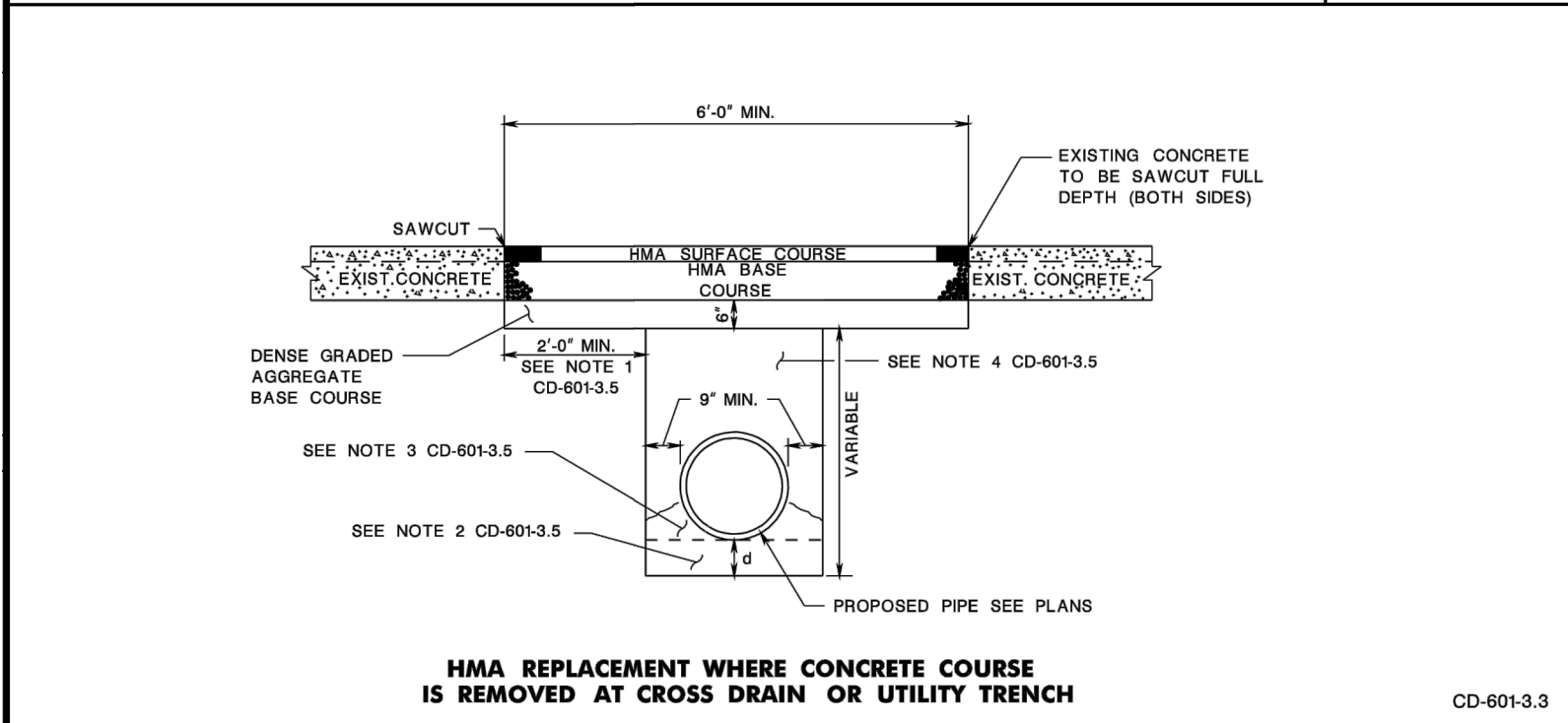
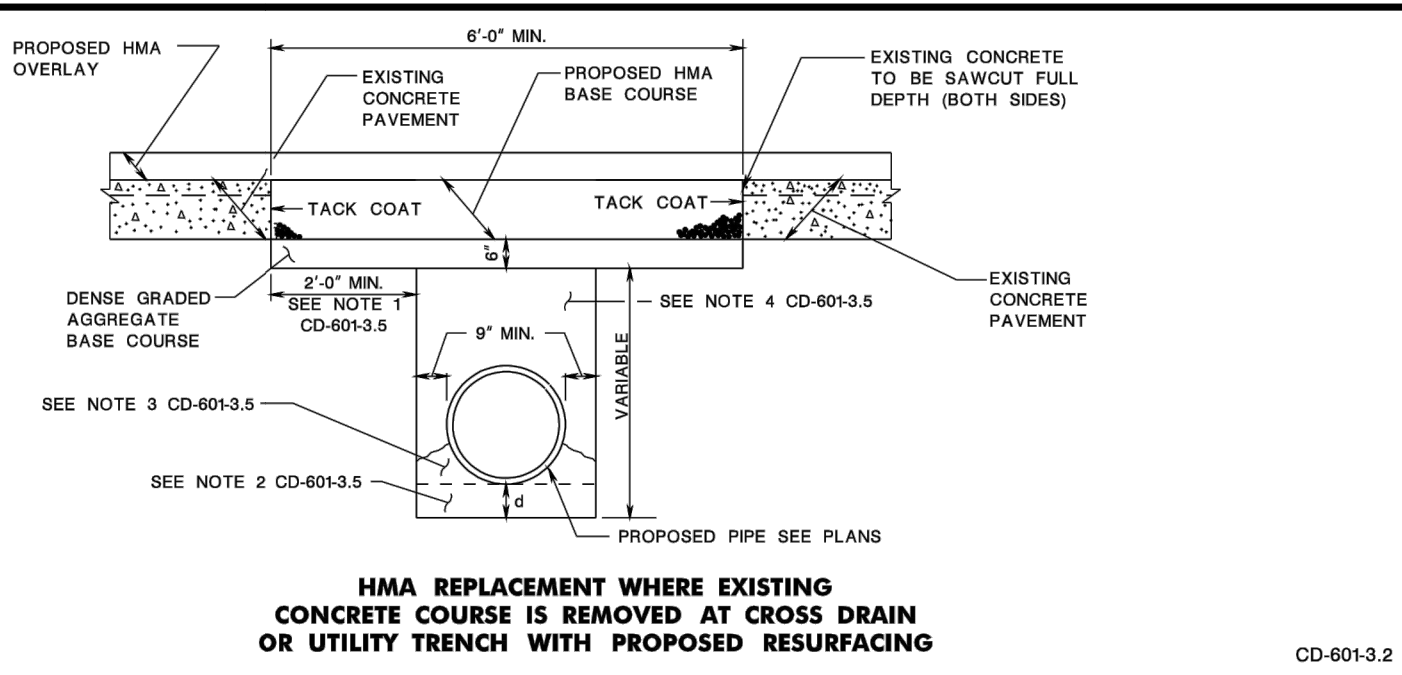
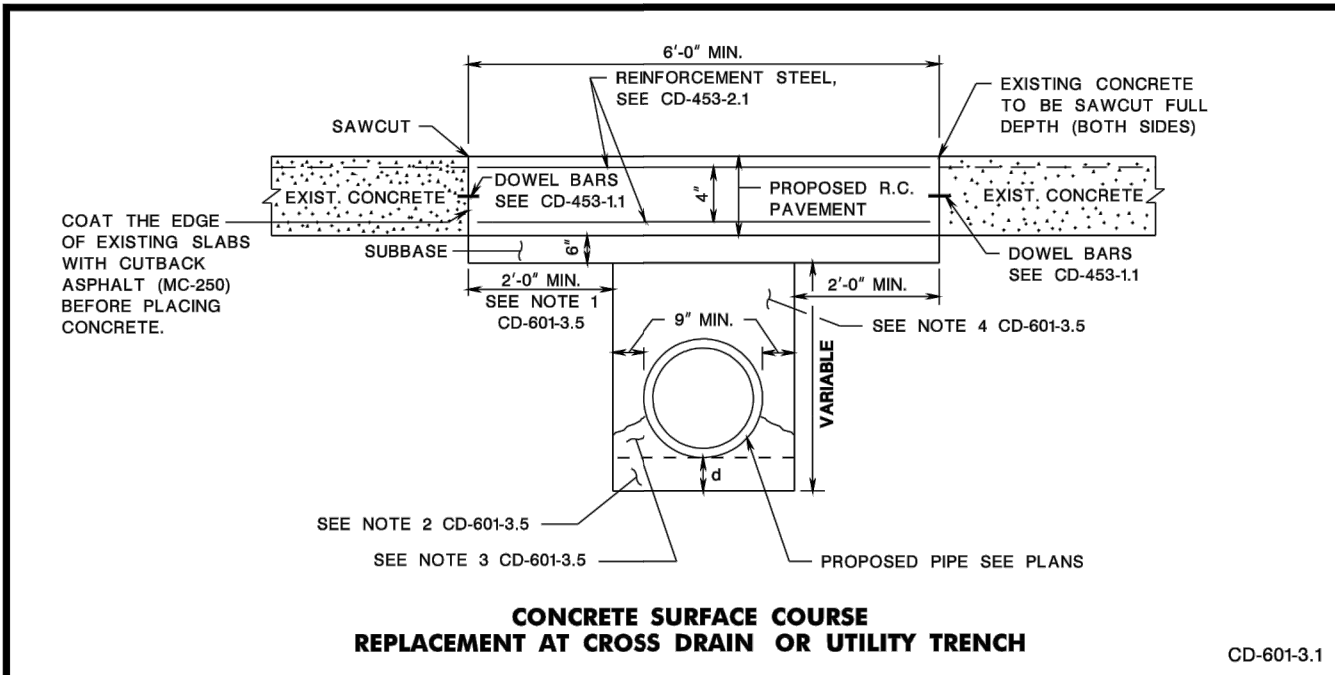
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Dwg check	SJA	08/24	Approved	KKN	08/24
Scale at ARCH D	Status	Rev	Security	STD	
Drawing Number					

Title

KENSINGTON AVENUE AND EDGAR AVENUE DRAINAGE IMPROVEMENTS

CONSTRUCTION DETAILS



NOTES:

1. SAWCUT THE EXISTING PAVEMENT A MINIMUM OF 2'-0" FROM THE SIDES OF THE PROPOSED CROSS DRAIN OR UTILITY TRENCH EXCAVATION ON BOTH SIDES.
2. ADDITIONAL EXCAVATION REQUIRED WHEN PIPE BEDDING IS DESIGNATED, OR WHEN ROCK OR OTHER HARD MATERIAL IS ENCOUNTERED.
3. BACKFILL TO BE PLACED SO AS TO ENSURE SUFFICIENT COMPACTION UNDER PIPE HAUNCHES.
4. THE PIPE OR UTILITY TRENCH TO BE BACKFILLED IN ACCORDANCE WITH THE SPECIFICATIONS FOR BACKFILLING OR WITH AGGREGATE DESIGNATION 1-1.2, 1.3, OR 1-5.2. ENSURE THE WIDTH IS 30" MINIMUM OR THE OUTSIDE DIAMETER OF THE PIPE PLUS 18".

UNDERLYING SOIL	4 MIN.	
	CONC. PIPE	ALUMINUM PIPE OR HDPE PIPE
ROCK OR HARD MATERIAL	8"	12"
OTHER MATERIAL	6"	6"

CD-601-3.5

CROSS DRAIN OR UTILITY TRENCH CONSTRUCTION

N.T.S.

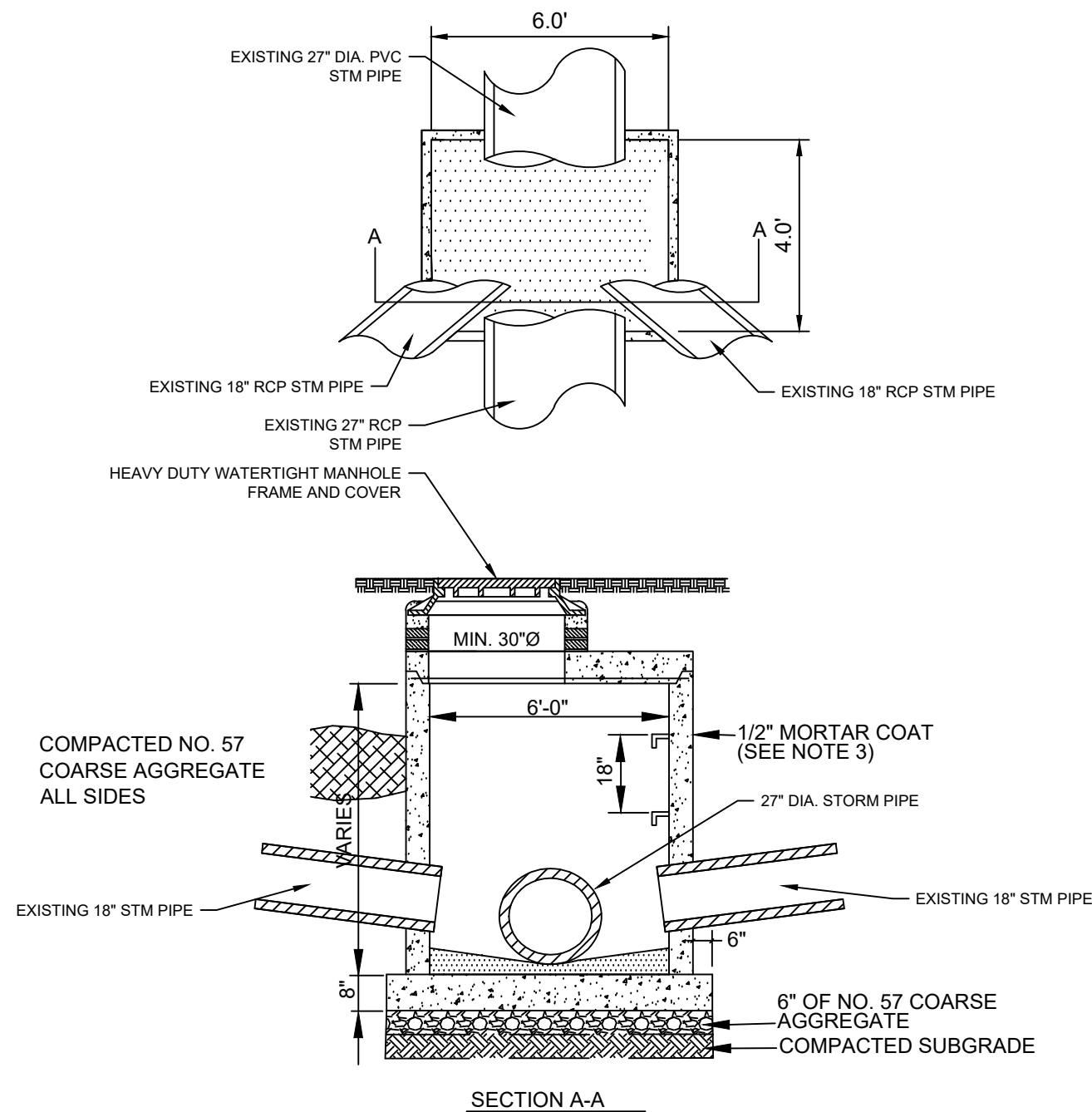
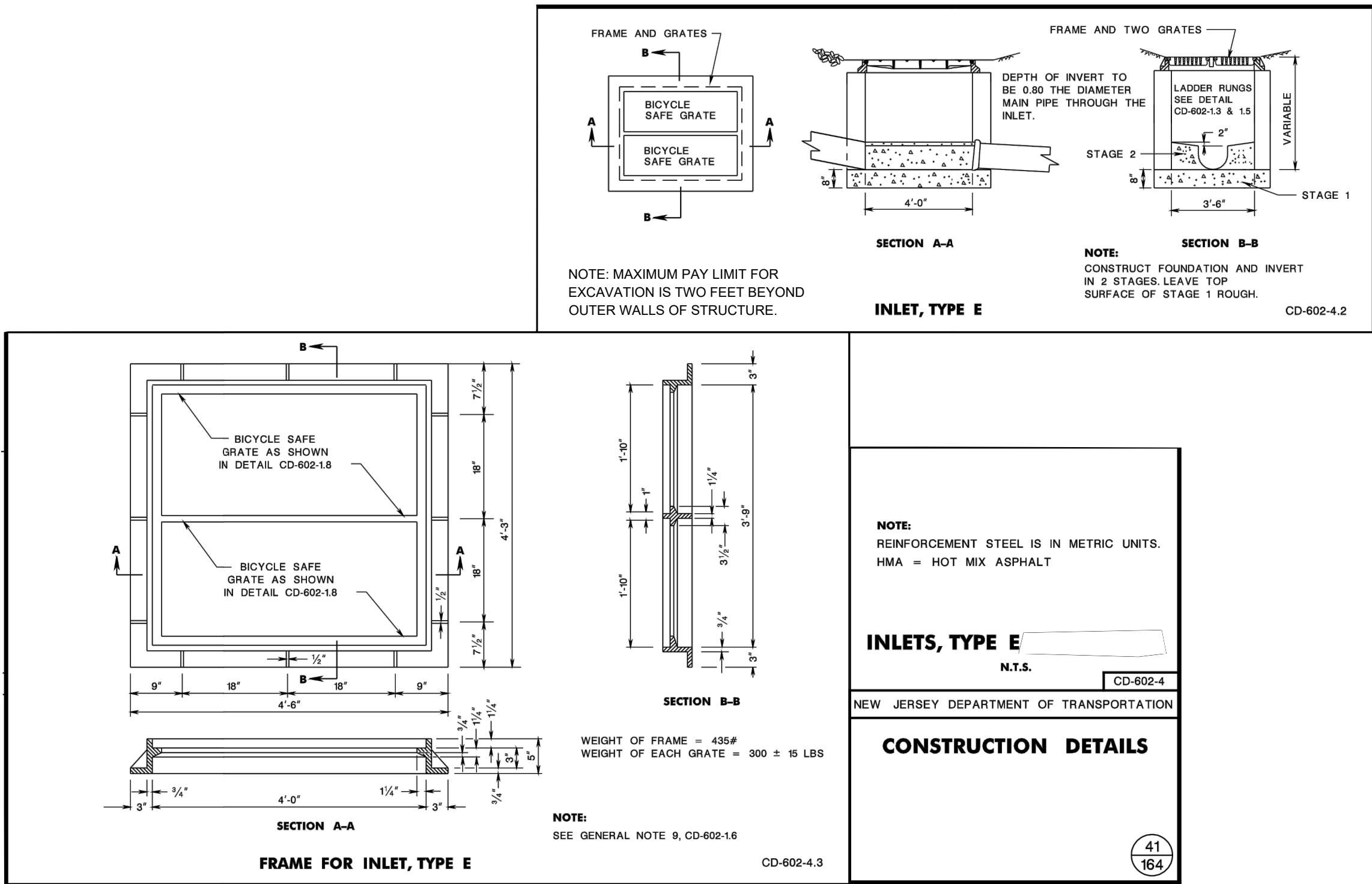
CD-601-3

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

NOTE: REINFORCEMENT STEEL IS IN METRIC UNITS. HMA = HOT MIX ASPHALT.

37
164



4' x 8' STRUCTURE DETAIL

NOT TO SCALE

412 Mt Kemble Avenue
Suite G22
Morristown, New Jersey 07960
Certificate No. 24GA28016600

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F +1 (973) 376 1072
www.mottmacamericas.com

Client

**TOWNSHIP OF CRANFORD
UNION COUNTY, NEW JERSEY**

Rev	Date	Drawn	Description	Ch'k'd	App'd

KEVIN K. NOLLSTADT
Professional Engineer - N.J. Lic. No. 24GE04519700

Kevin K. Nollstadt Date 08/24/2022

Project Number	B/O	Total
507351416	13	16

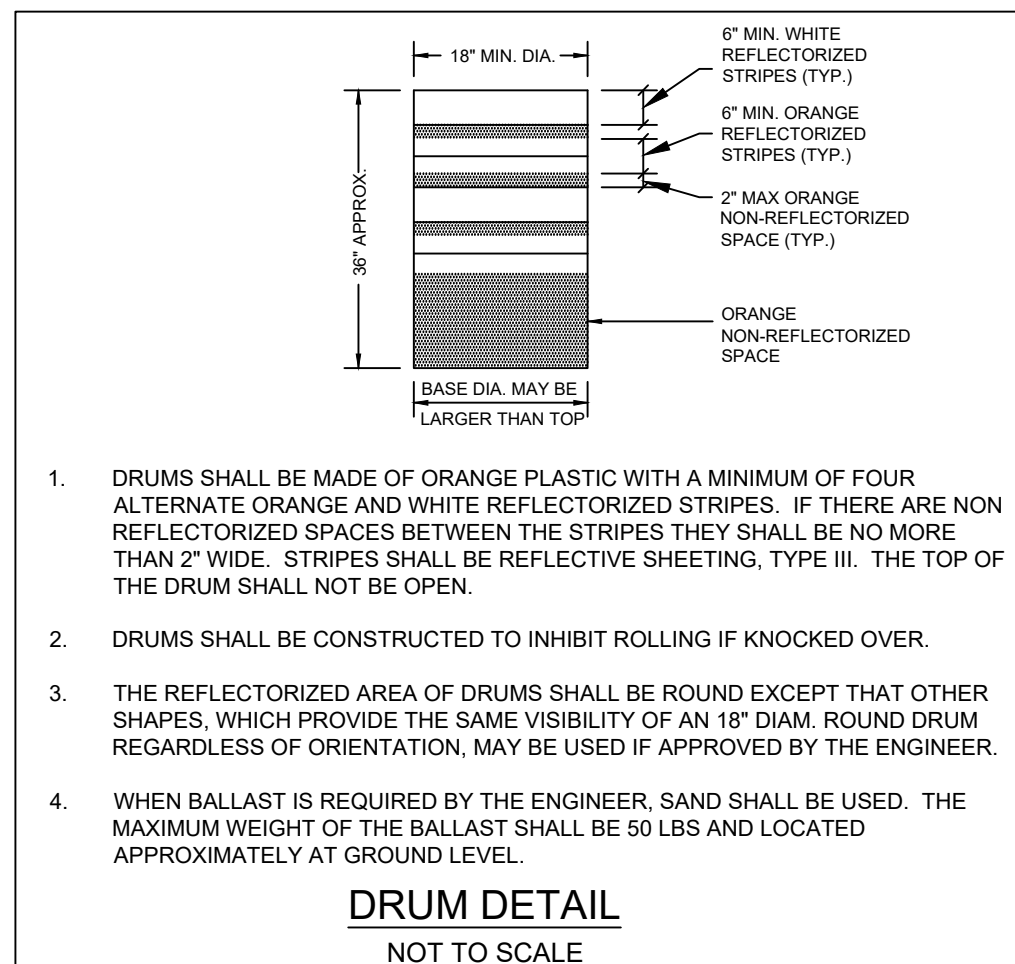
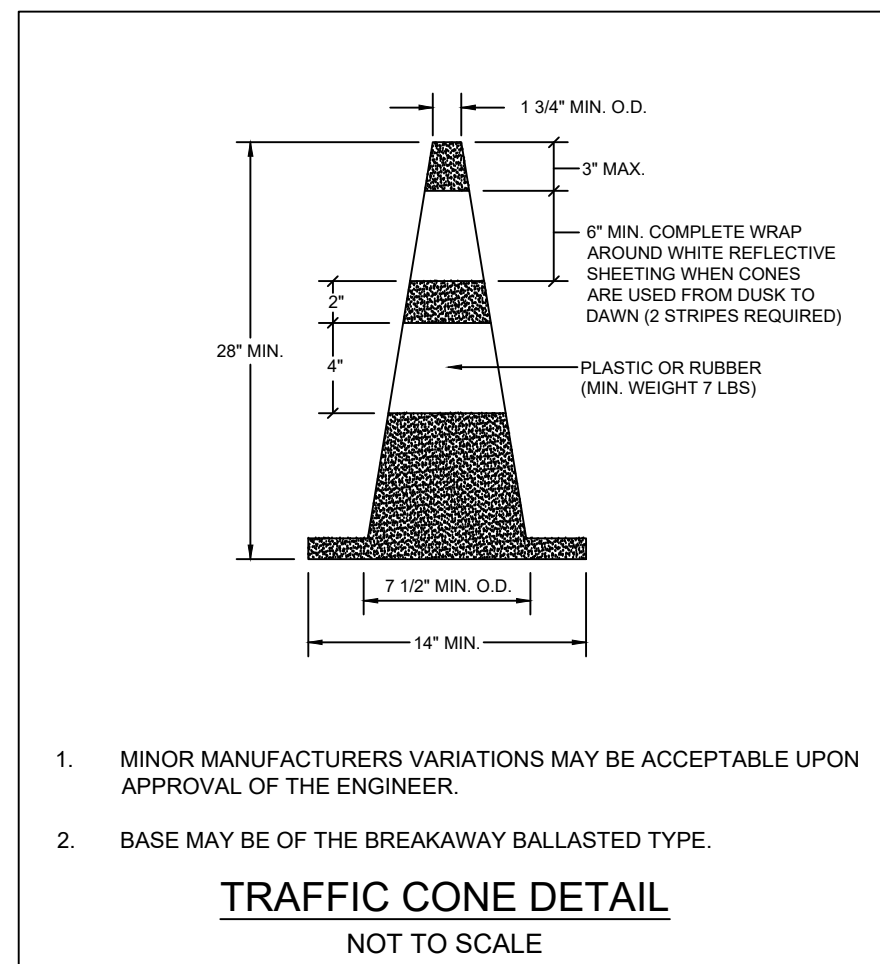
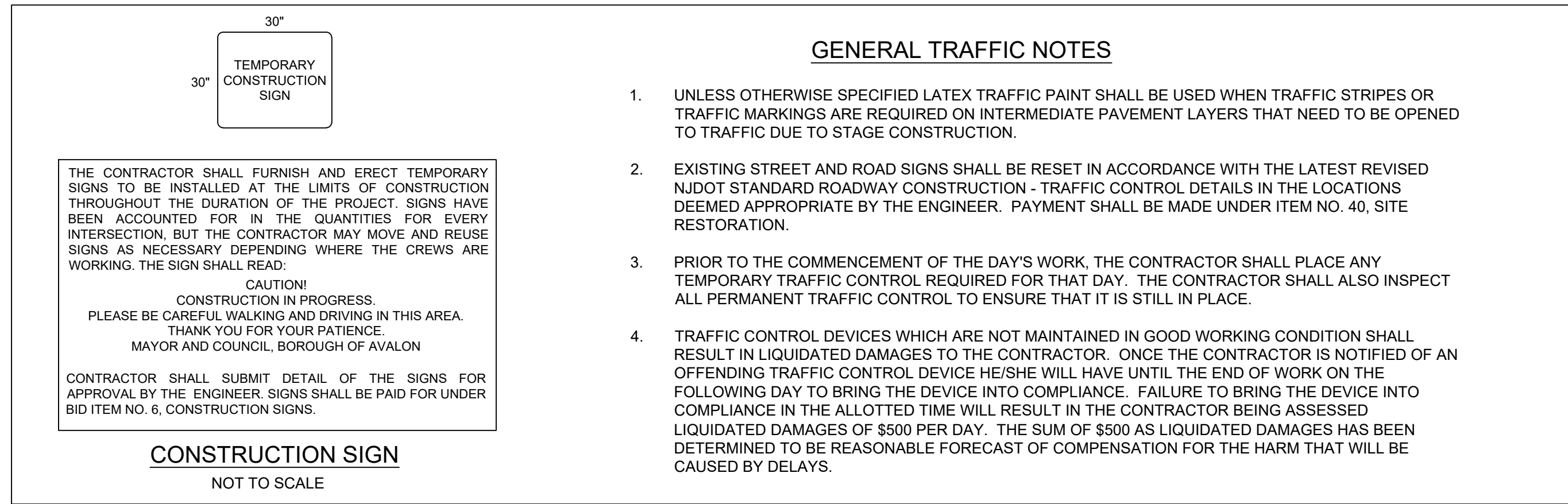
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Scale at ARCH D	Status	Rev	Security	STD	
Drawing Number					

Title

**KENSINGTON AVENUE
AND EDGAR AVENUE
DRAINAGE IMPROVEMENTS**

CONSTRUCTION DETAILS

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1. INSTALLATION, DIMENSIONS, COLORS AND DETAILS OF VARIOUS SIZE SIGNS AND ACCESSORY PANELS TO FOLLOW STANDARDS IN THE CURRENT "STANDARD HIGHWAY SIGN PUBLICATION" AND THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" (M.U.T.C.D.)
2. LETTERS AND NUMERALS SHALL CONFORM TO THE CURRENT MANUAL - "STANDARD ALPHABETS FOR HIGHWAY SIGNS" US DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.
3. BACKING MATERIAL:

ALUMINUM SHALL BE FLAT SHEET OF 6061-T6 ALLOW, 0.100" GAUGE.
4. TEMPORARY SIGN SUPPORT:

SIGN SUPPORTS SHALL BE WELL SEASONED LUMBER, S4S, FREE OF SPLITS, KNOTS AND WARPS OR, OF STEEL OR ALUMINUM COMPONENTS.

WOOD POSTS SHALL HAVE A UNIFORM CROSS SECTION AND SHALL NOT EXCEED THE FOLLOWING DIMENSIONS FOR:

SINGLE POST: 4" x 6"
TWO POST: 3" x 6" OR 4" x 5"
THREE POSTS: 3" x 5" OR 4" x 4"

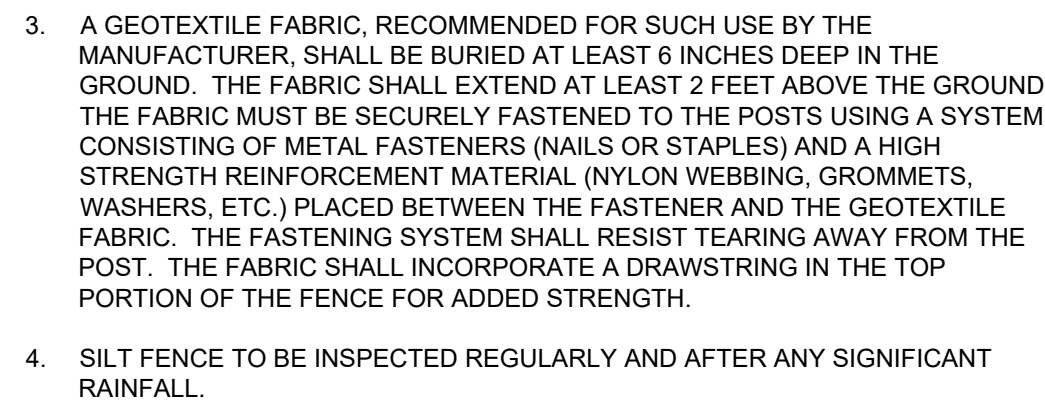
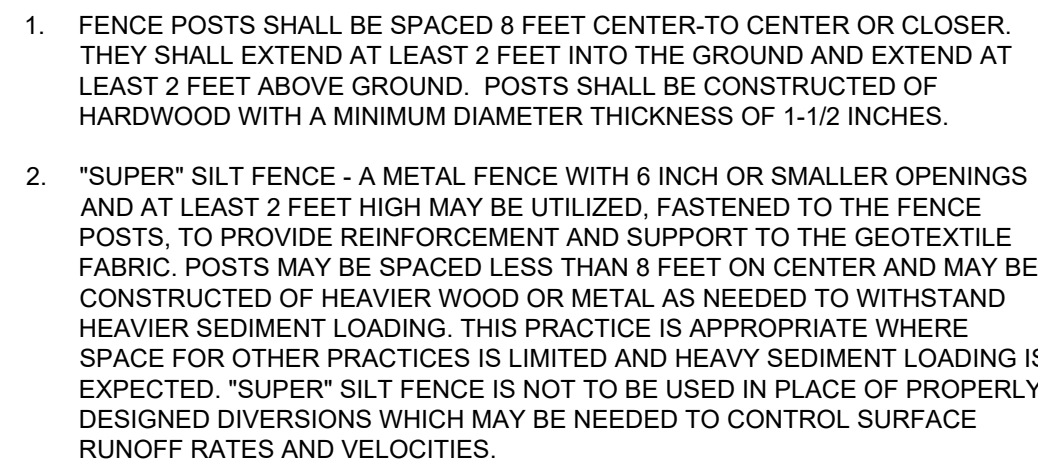
NO BRACING IS PERMITTED. VERTICAL CLEARANCE FOR SIGNS MOUNTED ON WOOD SUPPORTS SHALL BE 7'-0" DESIRABLE, 6'-0" MINIMUM. EMBEDMENT DEPTH FOR THE WOOD POST SHALL NOT EXCEED 3'-6".

STEEL OR ALUMINUM POSTS SHALL BE IN ACCORDANCE WITH THE STANDARD DETAIL FOR SELECTIVE DIRECTIONAL SIGNS, CONSTRUCTION AND "M", "W" AND "R" BENDWAY SIGN SUPPORTS.

TEMPORARY SIGN SUPPORTS NOT MEETING CRITERIA SHALL BE SHIELDED BY A LONGITUDINAL BARRIER OR CRASH CUSHION.
5. SIGN NOTES:



1. FILTER BAGS WILL BE USED AS AN EFFECTIVE FILTER MEDIUM TO CONTAIN SAND, SILT AND FINES WHEN TRENCH DEWATERING. THE WETLAND FILTER BAG CONTAINS THESE MATERIALS WHILE ALLOWING THE WATER TO FLOW THROUGH THE FABRIC.
2. WETLAND FILTER BAGS MAY REPLACE HAY BALE CORRALS DURING TRENCH DEWATERING. AT THE DISCRETION OF THE ENVIRONMENTAL INSPECTOR, TO INSURE, PROPER INSTALLATION, FILTER BAGS WILL BE PLACED ON RELATIVELY FLAT TERRAIN FREE OF BRUSH AND STUMPS TO AVOID RUPTURES AND PUNCTURES. PROPER INSTALLATION REQUIRES CUTTING A SMALL HOLE IN THE CORRAL AND THE BAG, INSERTING THE PUMP DISCHARGE HOSE, AND THEN SECURING THE DISCHARGE HOSE TO THE BAG WITH A HOSE CLAMP. FILTER BAGS WILL BE PLACED AS FAR AWAY FROM FLOWING STREAMS AND WETLANDS AS POSSIBLE.
3. PRIOR TO REMOVING A BAG FROM THE HOSE, THE BAG WILL BE TIED OFF BELOW THE END OF THE HOSE ALLOWING THE BAG TO DRAIN. DRAINAGE WILL NOT BE ALLOWED THROUGH THE INLET HOLE. TO AVOID RUPTURE, THE BAGS WILL BE ATTENDED AND PUMPING RATES MONITORED. ONCE THE BAG IS INFLATED TO A HEIGHT OF 4 FEET, PUMPING WILL STOP TO AVOID RUPTURE. FILTER BAGS USED DURING CONSTRUCTION WILL BE BUNDLED AND REMOVED FOR PROPER DISPOSAL.
4. FILTER BAGS ARE CONSTRUCTED OF NON-WOVEN GEOTEXTILE FABRIC. A MAXIMUM OF ONE SIX INCH DISCHARGE HOSE WILL BE ALLOWED PER FILTER BAG. BAG CAPACITY WILL BE EXCEEDED BEYOND 2,000 GALLONS PER MINUTE. TYPICAL BAG DIMENSIONS ARE 15 FEET BY 13.25 FEET. TO HELP PREVENT PUNCTURES, GEOTEXTILE FABRIC WILL BE PLACED BENEATH THE FILTER BAG WHEN USED IN WOODED LOCATIONS. UNATTENDED FILTER BAGS WILL BE ENCIRCLED WITH A HAYBALE OR SILT FENCE CORRAL. HOSE CLAMPS WILL BE USED TO SECURE THE DISCHARGE HOSE, WIRE OR STRING WILL NOT BE USED.

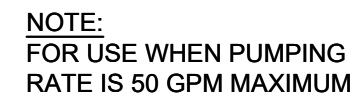


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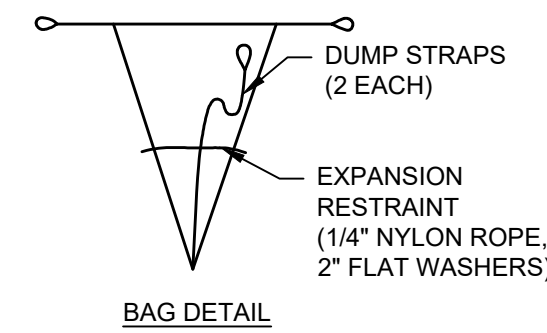
5. DAMAGED TRUNKS OR EXPOSED ROOTS SHOULD HAVE DAMAGED BARK REMOVED IMMEDIATELY AND NO PAINT SHALL BE APPLIED. EXPOSED ROOTS SHOULD BE COVERED WITH TOPSOIL IMMEDIATELY AFTER EXCAVATION IS COMPLETE. ROOTS SHALL BE PRUNED TO GIVE A CLEAN, SHARP SURFACE AMENABLE TO HEALING. ROOTS EXPOSED DURING HOT WEATHER SHOULD BE IRRIGATED TO PREVENT PERMANENT TREE INJURY. CARE FOR SERIOUS INJURY SHOULD BE PRESCRIBED BY A PROFESSIONAL FORESTER OR LICENSED TREE EXPERT.



(SEE PAGES 9-1 THROUGH 9-9 FOR COMPLETE STANDARD FOR TREE PROTECTION DURING CONSTRUCTION)

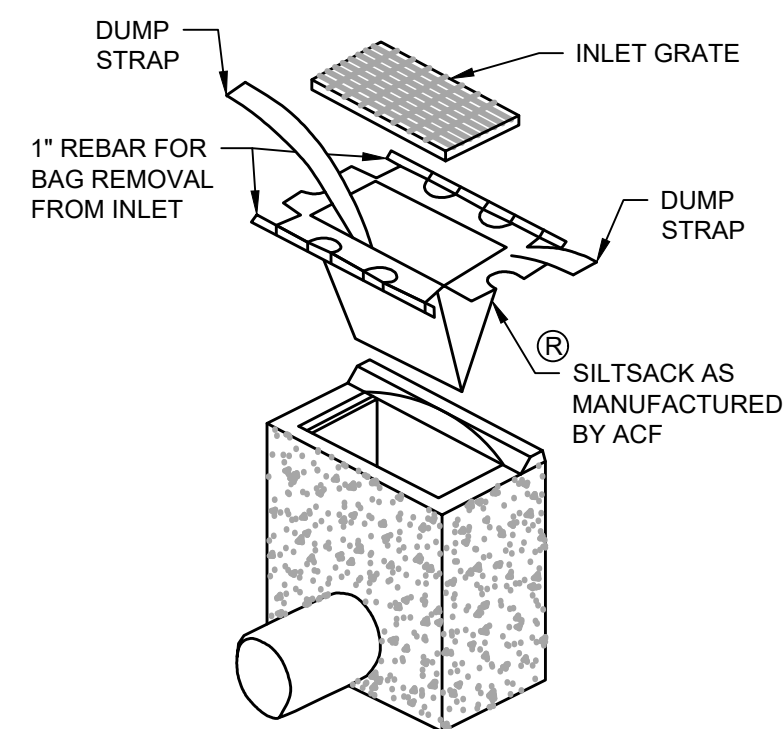


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DESIGN CRITERIA OF STORM SEWER INLET PROTECTION:

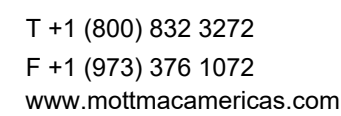
1. MUST STOP THE STORM WATER TO PROVIDE THE COARSE SEDIMENT PARTICLES A CHANCE TO SETTLE, AND PROVIDE AN AREA TO RETAIN THE PARTICLES THAT HAVE SETTLED.
2. IN ALL CASES, INLET PROTECTION SHOULD NOT COMPLETELY CLOSE OFF THE INLET, PROVISION MUST BE MADE TO ALLOW STORM WATER TO OVERFLOW OR BYPASS FILTER.
3. THE PROTECTION DEVICE WILL BE DESIGNED TO CAPTURE OR FILTER RUNOFF FOR THE 1 YEAR, 24 HOUR STORM EVENT AND SHALL SAFELY CONVEY HIGHER FLOWS DIRECTLY INTO THE STORM SEWER SYSTEM.
4. OTHER METHODS THAT ACCOMPLISH THE PURPOSE OF STORM SEWER INLET PROTECTION MAY BE USED IF APPROVED BY THE SOIL CONSERVATION DISTRICT.
5. INSPECTIONS SHALL BE FREQUENT. MAINTENANCE, REPAIR, AND REPLACEMENT SHALL BE MADE PROMPTLY, AS NEEDED. THE BARRIER SHALL BE REMOVED WHEN THE AREA DRAINING TOWARD THE INLET HAS BEEN STABILIZED.
6. THE CONTRACTOR SHALL INSTALL STORM SEWER INLET PROTECTION IN ACCORDANCE WITH THE SE&SC IN NJ, #28-1, JANUARY 2014.



NTS

HUDSON-ESSEX & PASSAIC SOIL CONSERVATION DISTRICT

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TOWNSHIP OF CRANFORD
UNION COUNTY, NEW JERSEY

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Project Number
507351416

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Total	16
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Drawn	RS	08/24	Coordination		
Dwg check	SJA	08/24	Approved	KKN	08/24
Scale at ARCH D	Status		Rev	Security	STD
Drawing Number					

Title	KENSINGTON AVENUE AND EDGAR AVENUE DRAINAGE IMPROVEMENTS
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SESC DETAILS

STANDARD FOR 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, ASSURING CONSERVATION OF SOIL AND WATER, AND TO ENHANCE THE ENVIRONMENT.

WHERE APPLICABLE

ON EXPOSED SOILS THAT HAVE A POTENTIAL FOR CAUSING OFF-SITE ENVIRONMENTAL DAMAGE.

METHODS AND MATERIALS

A. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MAINTENANCE. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING, P. 4.11.

B. INSTALL NEEDED EROSION CONTROL PRACTICES AND FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 4.2 THROUGH 4.16.

II. SEEDBED PREPARATION

A. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS THOSE OFFERED BY RUTGERS UNIVERSITY SOIL TESTING LABORATORY. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL COOPERATIVE EXTENSION SERVICE OFFICE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT. IN ADDITION, 300 POUNDS 38-0-0 PER ACRE OR EQUIVALENT OF SLOW RELEASE NITROGEN MAY BE USED IN LIEU OF TOPDRESSING (SEE PAGE 3.2.7, SECTION IV). APPLY LIMESTONE EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDES) AS FOLLOWS:

SOIL TEXTURE	TONS/ACRE	lbs./1,000 SQ. FT.
CLAY, CLAY LOAM, AND HIGH ORGANIC SOIL	4	180
SANDY LOAM, LOAM, SILT LOAM	3	135
LOAMY SAND, SAND	2	90

PULVERIZED DOLOMITIC LIMESTONE IS PREFERRED FOR MOST SOILS SOUTH OF THE NEW BRUNSWICK-TRENTON LINE.

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 DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.

C. REMOVE FROM THE SURFACE ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLOUDS, LUMPS, OR OTHER UNSUITABLE MATERIAL.

D. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED AND FIRMED AS ABOVE.

III. SEEDING

A. SELECT A MIXTURE FROM TABLE 3.1-1 OR USE MIXTURE RECOMMENDED BY THE COOPERATIVE EXTENSION SERVICE OR SOIL CONSERVATION SERVICE WHICH IS APPROVED BY THE SOIL CONSERVATION DISTRICT.

B. APPLY SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DRILL SEEDER, CULTIPACKER SEEDER, OR HYDROSEEDER. THE LATTER MAY BE JUSTIFIABLE FOR LARGE, STEEP AREAS WHERE CONVENTIONAL VEHICLES CANNOT TRAVEL. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH THE SEED. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL, TO A DEPTH OF 3/4 TO 1 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE TEXTURED SOIL.

C. AFTER SEEDING, FIRING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD. WHEN PREFERRED METHOD CANNOT BE USED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

IV. 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 SATISFACTORY PERMANENT VEGETATION AT THE TIME OF THE PROJECT OR UNIT COMPLETION SHALL BE DEEMED AS COMPLIANCE WITH THE MULCHING REQUIREMENT.)

A. MULCH MATERIALS SHOULD BE UNROTTED SMALL GRASS STRAW, HAY FREE OF SEEDS, OR SALT HAY TO BE APPLIED AT THE RATE OF 1-12 TONS PER ACRE (75 LBS. PER 1,000 SQ. FT.) EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION MUST BE DOUBLE THE LOWER RATE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MATERIAL.

B. SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 75% TO 95% OF THE SOIL SURFACE WILL BE COVERED. FOR UNIFORM DISTRIBUTION OF MULCH, DIVIDE AREA INTO APPROXIMATELY 1,000 SQ. FT. SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITH EACH SECTION.

C. MULCH ANCHORING SHOULD 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 CRISS-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 DISCHARROW, 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. LIQUID MULCH-BINDERS - MAY BE USED TO ANCHOR SALT HAY, HAY, OR STRAW MULCHES.

A. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH, IN VALLEYS, AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.

B. USE ONE OF THE FOLLOWING:

1. EMULSIFIED ASPHALT - (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, AND CRS-2). APPLY 0.04 GAL./SQ. YD. OR 194 GAL./ACRE ON FLAT SLOPES LESS THAN 8 FEET HIGH. ON SLOPES 8 FEET OR MORE HIGH, USE 0.075 GAL./SQ. YD. OR 363 GAL./ACRE.

2. CUTBACK ASPHALT - RAPID CURING (RC-70, RC-250, AND RC-800) OR MEDIUM CURING (MC-250 OR MC-800). APPLY 0.04 GAL./SQ. YD. OR 194 GAL./ACRE ON FLAT AREAS AND ON SLOPES LESS THAN 8 FEET HIGH. ON SLOPES 8 FEET OR MORE HIGH, USE 0.075 GAL./SQ. YD. OR 363 GAL./ACRE.

3. SYNTHETIC OR ORGANIC BINDERS - BINDERS SUCH AS CURASOL, DCA-70, PETRO-SET, AND TERRA-TACK MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS.

NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION OF THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.

C. WOOD-FIBER OR PAPER-FIBER MULCH AT THE RATE OF 1,500 POUNDS PER ACRE MAY BE APPLIED BY A HYDROSEEDER. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

V. IRRIGATION (WHERE FEASIBLE)

IF SOIL MOISTURE IS DEFICIENT, AND MULCH IS NOT USED, SUPPLY NEW SEEDLINGS WITH ADEQUATE WATER (A MINIMUM OF 1/2 INCH TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED). THIS IS ESPECIALLY TRUE WHEN SEEDLINGS ARE MADE IN ABNORMALLY DRY OR HOT WEATHER OR DROUGHTY SITES.

VI. TOPDRESSING

A. SPRING SEEDLINGS WILL REQUIRE AN APPLICATION OF FERTILIZER SUCH AS 10-10-10 OR EQUIVALENT AT 400 POUNDS PER ACRE OR 10 POUNDS PER 1,000 SQ. FT. BETWEEN SEPTEMBER 1 AND OCTOBER 15.

B. FALL SEEDINGS WILL REQUIRE THE ABOVE BETWEEN MARCH AND MAY 1.

C. MIXTURES DOMINATED BY WEEPING LOVEGRASS OR LEGUMES MAY NOT NEED TOPDRESSING.

D. BERMUDAGRASS SHOULD BE TOPDRESSED BEFORE AUGUST 15.

*IF SLOW RELEASE NITROGEN (300 POUNDS 38-0-0 PER ACRE OR EQUIVALENT) IS USED IN ADDITION TO SUGGESTED FERTILIZER, THIS FOLLOW-UP OF TOPDRESSING IS NOT MANDATORY.

NOTE: 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 SEEDBED PREPARATION. THE ADDED SOIL SHALL BE LIMED AS ABOVE.

SEQUENCE OF CONSTRUCTION

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, SOIL EROSION AND SEDIMENT CONTROL MEASURES, ESTABLISH STAGING AND STOCKPILE AREAS.

2. INSTALL EROSION CONTROL MEASURES TO THE WORK AREA AS REQUIRED FOR CONSTRUCTION.

3. INSTALL TEMPORARY AND/OR PERMANENT SEEDING AS REQUIRED ALONG AREAS DISTURBED BY CONSTRUCTION.

4. PROCEED WITH PROJECT AND REMOVE TREES

5. UPON COMPLETION OF SEDIMENT REMOVAL, REMOVE SOIL EROSION AND SEDIMENT CONTROL MEASURES, AND RESTORE STAGING AND STOCKPILE AREAS.

6. DURATION OF THE PROJECT CONSTRUCTION WILL BE APPROXIMATELY 2 MONTHS.

NOTES FOR SOIL EROSION AND SEDIMENT CONTROL:

ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ON THIS PLAN WILL BE CONSTRUCTED, AND MAINTAINED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL, (LATEST REVISION), PREPARED BY THE NEW JERSEY STATE SOIL CONSERVATION COMMITTEE. THESE MEASURES WILL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED. AFTER RESTORATION IS COMPLETE, TEMPORARY CONTROL MEASURES SHALL BE REMOVED AND DISPOSED OF PROPERLY.

ALL SOIL TO BE STOCKPILED FOR A PERIOD OF GREATER THAN 30 DAYS WILL BE TEMPORARILY SEEDDED AND HAY MULCHED (OR HYDROSEEDED).

DISTURBED AREAS THAT WILL BE EXPOSED IN EXCESS OF 14 DAYS SHALL BE TEMPORARILY SEEDDED AND/OR MULCHED UNTIL PROPER WEATHER CONDITIONS EXIST FOR ESTABLISHMENT OF A PERMANENT VEGETATIVE COVER EXCEPT IN AREAS WHERE FINAL RESTORATION IS EXPECTED TO BE COMPLETED WITHIN SEVEN DAYS AFTER THE COMPLETION OF CONSTRUCTION, IN WHICH CASE NO TEMPORARY PROTECTIVE MEASURES WILL BE REQUIRED. IF FINAL RESTORATION IS EXPECTED TO BEGIN MORE THAN SEVEN DAYS AND COMPLETED MORE THAN 30 DAYS AFTER THE START OF CONSTRUCTION, SEEDING SHALL BE REQUIRED FOR TEMPORARY PROTECTION, EXCEPT WHERE SEASONAL CONDITIONS ARE NOT SUITABLE FOR GROWING VEGETATION. IN THIS CASE, MULCH WILL BE APPLIED UNTIL CONDITIONS ARE SUITABLE FOR ESTABLISHING VEGETATIVE COVER OR UNTIL FINAL RESTORATION IS IMPLEMENTED.

4. SEEDING DATES: THE FOLLOWING ARE RECOMMENDED SEEDING DATES FOR THE ESTABLISHMENT OF TEMPORARY OR PERMANENT VEGETATION.

SPRING: (MARCH 15 - MAY 30)
FALL: (AUGUST 15 - OCTOBER 15)

5. SEDIMENT FENCES ARE TO REMAIN IN PLACE AND MAINTAINED PROPERLY UNTIL PERMANENT VEGETATIVE COVER HAS BEEN ESTABLISHED.

6. ALL STORM DRAINAGE INLETS SHALL BE PROTECTED WITH GRAVEL FILTERS, FABRIC FILTER OR HAY BALES UNTIL VEGETATION AND/OR PAVING IS ESTABLISHED.

7. MULCH MATERIALS SHALL BE UNROTTED SALT HAY OR SMALL GRASS STRAW AT THE RATE OF AT LEAST 1.5 TONS PER ACRE OR 75 POUNDS PER 1000 SQUARE FEET. IN NO CASE SHALL MORE THAN FIVE DAYS ELAPSE BETWEEN MULCHING OR BY HYDROSEEDING AS PER THE MANUFACTURERS SPECIFICATIONS.

8. ANY DAMAGE INCURRED BY EROSION SHALL BE RECTIFIED IMMEDIATELY.

9. ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSPECTED AND MAINTAINED PERIODICALLY.

10. ALL STORM DRAINAGE OUTLET POINTS WILL BE PROTECTED AS REQUIRED BEFORE THEY BECOME OPERATIONAL.

11. THE CONTRACTOR MUST OBTAIN A DISTRICT ISSUED "REPORT OF COMPLIANCE" PRIOR TO APPLYING FOR THE MUNICIPAL CERTIFICATE OF OCCUPANCY. PLEASE GIVE THE DISTRICT ONE WEEK NOTICE TO SCHEDULE THIS INSPECTION.

12. A BOND WILL BE ACCEPTED BY THE DISTRICT TO ISSUE A TEMPORARY REPORT OF COMPLIANCE WHEN SNOW COVER PROHIBITS THE PROPER SEED, MULCH OR HYDROSEED APPLICATION.

13. ALL PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. DO NOT USE A FIRE OR GARDEN HOSE TO CLEAN ROADS UNLESS RUNOFF IS DIRECTED TO A PROPER SEDIMENT BASIN.

14. ALL SURFACES SHALL BE TREATED WITH 6" OF TOPSOIL, PRIOR TO SEEDING.

15. ALL PLAN REVISIONS MUST BE SUBMITTED TO THE DISTRICT FOR THE PROPER REVIEW.

16. A CRUSHED STONE WHEEL CLEANING "TRACKING PAD" IS TO BE INSTALLED AT ALL SITE EXITS USING 2 1/2 INCH STONE, TO A LENGTH OF AT LEAST 50 FEET. ALL DRIVEWAYS MUST EXHIBIT THIS ITEM IN THE DRIVE DURING CONSTRUCTION.

17. MAXIMUM SIDE SLOPES SHALL NOT EXCEED 2:1 UNLESS OTHERWISE APPROVED BY THE DISTRICT.

18. ALL DEWATERING OPERATIONS SHALL DISCHARGE INTO AN APPROVED SEDIMENT BASIN.

19. THE SOMERSET-UNION SOIL CONSERVATION DISTRICT MUST BE NOTIFIED, IN WRITING, FOR THE SALE OF ANY PORTION OF THE PROJECT OR FOR THE SALE OF ANY BUILDING LOTS, NEW OWNER NAME(S), ADDRESS, AND PHONE NUMBER SHALL BE PROVIDED TO THE DISTRICT.

20. FINAL RESTORATION SHALL BE UNDERTAKEN AS SOON AS AN AREA IS NO LONGER NEEDED FOR CONSTRUCTION, STOCKPILING, OR ACCESS.

21. ALL EXCAVATED MATERIAL SHALL BE STOCKPILED WITHIN THE STOCK PILE AREA FOR DEWATERING PRIOR TO BEING REGRADED ON SITE.

22. WRITTEN NOTIFICATION SHALL BE PROVIDED TO THE SOMERSET-UNION SOIL DISTRICT 48 HRS. PRIOR TO THE START OF ANY LAND DISTURBANCE.

23. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH REQUIREMENTS OF N.J.A.C. 7:22-10.11(C).

NOTE:

SOMERSET-UNION SOIL CONSERVATION DISTRICT MUST BE NOTIFIED IN WRITING PRIOR TO ANY DISTURBANCE

SOILS, SEED MIXTURES, AND DATES FOR PERMANENT SEEDINGS FOR SOIL STABILIZATION

TABLE 3.1-1

SOILS & SITES	SEED MIXTURE 1/	MINIMUM SEEDING RATES 2/ (pounds)		OPTIMUM SEEDING DATES Based on Plant Hardiness Zone 3/		
		Per Acre	Per 1,000 Sq. Ft.	ZONE 5	ZONE 6	ZONE 7
A. Well to Excessively Well Drained	Normal Seeding Depth is from 1/4-1/2 inch except A-3, A-4, A-7					
1. Unmowed areas, e.g., landfills, rights of way, wildlife areas	Weeping lovegrass Sericea lespedeza	20	0.1 0.5	--	--	3/1-8/1
2. Unmowed, coarse textured soils, wildlife areas; make good forage	Switchgrass	25	0.6	5/1-7/1	4/1-6/1	4/1-6/1
3. Unmowed areas	Weeping lovegrass 1/2-1", Crownvetch	3 12	0.1 0.3	--	--	3/1-8/1
4. Best for coarse textured soils; suppresses woody growth; unmowed areas	Weeping lovegrass 1/2-1", flatpea	3 30	0.1 0.7	--	--	3/1-8/1
5. Unmowed areas, e.g., road banks, gravel pits, etc.	Perennial ryegrass Crownvetch Spreading fescue	25 12 25	0.6 0.3 0.6	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15
6. Landfills, coarse textured soils; unmowed areas	Hard fescue/or Sheep fescue Perennial ryegrass	45 10 2	1.0 0.2	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15
7. Mowed areas, e.g., lawns, recreation areas	Bermudagrass Zoysiagrass	12 Bushel sprigs spaced at 21 - 31 centars		--	--	5/1-7/15
B. Moderately to Well Drained	Mixtures A-1 through A-7 and the following:					
1. Low maintenance areas, e.g., detention basins, landfills, dikes, diversions (sun to open shade)	Tall fescue Spreading fescue Kentucky bluegrass	30 30 30	0.7 0.7 0.7	3/15-5/15 8/1-9/1	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15
2. Unmowed areas (aesthetics not important)	Tall fescue Sericea lespedeza	25 20	0.6 0.4	3/15-6/1 --	3/1-5/15 --	2/15-5/1 8/15-10/15
3. Low maintenance areas, occasional mowing only	Tall fescue Birdsfoot trefoil	45 10	1.0 0.2	3/15-6/1	3/1-5/15	--
4. Mowed areas, e.g., recreation areas, lawns, etc. (sun and shade)	Spreading fescue Red fescue Kentucky bluegrass Perennial ryegrass	15 15 25 10	0.3 0.3 0.6 0.2	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15 (shade and cool sites only)
5. Mowed areas, e.g., lawns (sunny sites) (high maintenance, aesthetic areas)	Kentucky bluegrass (three cultivar blend) Hard fescue Perennial ryegrass	60 20 10	1.4 0.4 0.2	3/15-6/1	3/1-5/15	--
C. Poorly to Somewhat Poorly Drained	Mixtures B-1, B-3, B-4 and B-5 and the following:					
1. Mowed and unmowed sunny wet areas, e.g., ditch banks, waterways	Reed canarygrass Redtop Perennial ryegrass	20 4 20	0.4 0.1 0.4	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	1/15-5/1 8/15-10/15
(Be sure that Reed canarygrass seed is from new seed crop)						

NOTES:

1/ Seeding mixtures and/or rates not listed above may be used if recommended by the local Soil Conservation District, Soil Conservation Service, recommendations of the Cooperative Extension Service may be used if approved by the Soil Conservation District. Legumes (flatpeas, crownvetch, trefoil, lespedeza) should be mixed with proper inoculant prior to planting.

2/ Grass seed mixture checked by the Chief of the Bureau of Seed Certification, New Jersey Department of Agriculture, Trenton, New Jersey, will assure the purchaser that the mixture obtained is the mixture ordered.

3/ Plant Hardiness Zone (see map, p. 3.2,6)

Zone 5 - Portions of Sussex and Warren Counties

Zone 6 - Portions of Bergen, Camden, Essex and Gloucester, all of Hunterdon, portions of Mercer and Middlesex, all of Morris and Passaic, portions of Somerset, Sussex, Union and Warren Counties

Zone 6 - Portions of Bergen, Camden, Essex and Gloucester, all of Hunterdon, portions of Mercer and Middlesex, all of Morris and Passaic, portions of Somerset, Sussex, Union and Warren Counties

Zone 7 - Atlantic, portion of Bergen, all of Burlington, Cape May and Cumberland, portions of Essex and Gloucester, all of Hudson, portion of Middlesex, all of Monmouth, Ocean and Salem and portion of Union County

B. Apply seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill, cultipacker seeder, or hydroseeder. The latter may be justifiable for large, steep areas where conventional vehicles cannot travel. Mulch shall not be included in the tank with the seed. 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. 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.

SOILS AND SEED MIXTURES

40% PERENNIAL RYE GRASS

30% CREEPING RED FESCUE

20% KENTUCKY BLUE GRASS

10% LAIRE PERENNIAL RYE GRASS

NOTES:

THE TABLES 3.1-1 AND 3.2-1 WERE DIRECTLY TAKEN FROM SOIL EROSION & SEDIMENT CONTROL STANDARDS FOR NEW JERSEY

TABLE 3.2-1

TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

Definition

Establishment of temporary vegetative cover on soils exposed for periods of two to 12 months.

Purpose

To temporarily stabilize the soil and reduce damage from wind and water erosion until permanent stabilization is accomplished.

Where Applicable

On exposed soils that have the potential for causing off-site environmental damage.

Methods and Materials

I. 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, p. 4.11.

B. Install needed erosion control practices or facilities such as diversions, grade stabilization structures, channel stabilization measures, sediment basins, and waterways. See Standards 4.2 through 4.16.

II. Seedbed Preparation

A. Apply limestone and fertilizer according to soil test recommendations such as those offered by Rutgers University Soil Testing Laboratory. Soil sample mailers are available from the local Cooperative Extension Service office. If soil testing is not feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10-20-10 or equivalent. If seed is drilled over banded fertilizer, the rate of fertilizer is reduced 50 percent. Apply limestone (equivalent to 50 percent calcium plus magnesium oxides) as follows:

SOIL TEXTURE	TONS/ACRE	lbs./1,000 SQ. FT.
Clay, clay loam, and high organic soil	3	135
Sandy loam, loam, silt loam	2	90
Loamy sand, sand	1	45

Pulverized dolomitic limestone is preferred for most soils south of the New Brunswick-Trenton line.

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 discing operation should be on the general contour. Continue tillage until a reasonably uniform seedbed is prepared.

C. Inspect seedbed just before seeding. If traffic has left the soil compacted, the area must be retilled as above.

D. Soils high on sulfides or having a pH of 4 or less should be mulched only. See Standards for Stabilization with Mulch Only, p. 3.3.1.

III. Seeding

A. Select seed from recommendations in Table 3.1-1.

TEMPORARY SEEDING RATES AND DATES

SPECIES	SEEDING RATES (pounds)		OPTIMUM SEEDING DATE 1/ Based on Plant Hardiness Zone 3/			OPTIMUM SEED DEPTH 2/ (inches)
	Per Acre	Per 1,000 Sq. Ft.	ZONE 5	ZONE 6	ZONE 7	
Annual ryegrass	40	1.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	0.5
Perennial ryegrass	40	1.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	0.5
Oats	85	2.0	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	1.0
Barley	96	2.2	3/15-6/1 8/1-9/15	3/1-5/15 8/15-10/1	2/15-5/1 8/15-10/15	1.0
Pearl millet	20	0.5	6/1-7/1	5/15-7/15	5/1-8/1	1.0
Sudangrass	30	0.7	6/1-7/1	5/15-7/15	5/1-8/1	1.0
Millet (German or Hungarian)	30	0.7	6/1-7/1	5/15-7/15	5/1-8/1	1.0
Weeping lovegrass	5	0.2	6/1-7/1	5/15-7/15	5/1-8/1	0.25

1/ May be planted throughout summer if soil moisture is adequate or can be irrigated

2/ Twice the depth for sandy soils

3/ Plant Hardiness Zone (see map, p. 3.2,6)

Zone 5 - Portions of Sussex and Warren Counties

Zone 6 - Portions of Bergen, Camden, Essex and Gloucester, all of Hunterdon, portions of Mercer and Middlesex, all of Morris and Passaic, portions of Somerset, Sussex, Union and Warren Counties

Zone 7 - Atlantic, portion of Bergen, all of Burlington, Cape May and Cumberland, portions of Essex and Gloucester, all of Hudson, portion of Middlesex, all of Monmouth, Ocean and Salem and portion of Union County

B. Apply seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill, cultipacker seeder, or hydroseeder. The latter may be justifiable for large, steep areas where conventional vehicles cannot travel. Mulch shall not be included in the tank with the seed. 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. 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.

Rev

Date

Drawn

Description

Ch'k'd

App'd

Project Number

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B/O

16

Total

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Drawing Number

Designated

RS

08/26

Eng check

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Drawn

RS

08/26

Coordination

Dwg check

SJA

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Approved

KKN

08/26

Scale at ARCH D

Status

Rev

Security

STD

Drawing Number

Client

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Professional Engineer - N.J. Lic. No. 24GE04519700

Kevin K. Nollstadt

Date 08/26/2022

Desiged

RS

08/26

Eng check

KKN

08/26

Drawn

RS

08/26

Coordination

Dwg check

SJA

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Approved

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Scale at ARCH D

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KENSINGTON AVENUE
AND EDGAR AVENUE
DRAINAGE IMPROVEMENTS

SESC NOTES