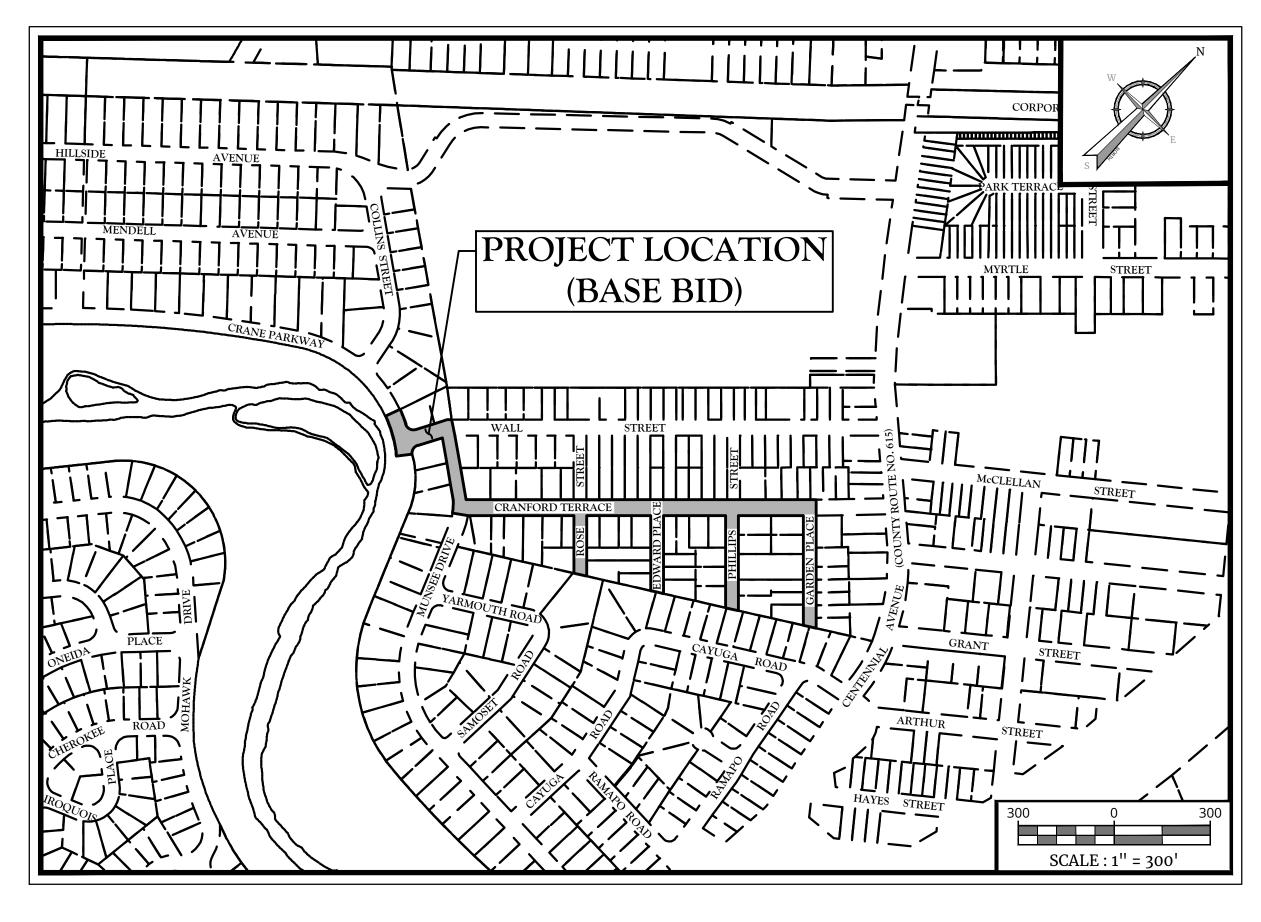
	UTILITIES/AUTHORITIES	
CRANFORD DF	OF PUBLIC WORKS W E, 364 NORTH AVENUE	
PHONE: (908) CONTACT: ERI	709-7217	
	BLEVISION OF NJ AVENUE, UNION, NJ 07083 851-2258	
520 GREEN LA PHONE: (908) (VN GAS COMPANY NE, UNION. NJ 07083 562-8321 EGORY J. BALINT	
472 WESTON (PHONE: (732) 7	E ELECTRIC AND GAS COMPANY CANAL ROAD, SOMERSET, NJ 08873	
WATER SERVICE NEW JERSEY AMERICAN WATER COMPANY 1341 NORTH AVENUE, PLAINFIELD, NJ 07061 PHONE: (908) 791-3456 CONTACT: MICHAEL F. BANGE		
290 WEST MO	MUNICATIONS UNT PLEASANT AVENUE, FLOOR G, VINGSTON, NJ 07039 422-5156	
	TOWNSHIP OF CRANFORD	
	WS, MAYOR	
GINA BLACK, C TERRENCE CU	, DEPUTY MAYOR/COMMISSIONER COMMISSIONER RRAN, COMMISSIONER LLER PRUNTY, COMMISSIONER	
	AHUE, TOWNSHIP CLERK INTERIM ADMINISTRATOR	
KIN UKECO,		
	INDEX OF SHEETS	
SHEET #	DESCRIPTION	
1	COVER	
2	GENERAL NOTES & QUANTITIES	
3 - 6	EXISTING CONDITIONS PLAN	
7 - 11	DIMENSION PLAN	
12 - 18	CROSS SECTIONS	
19 - 20	CURB RAMP GRADING PLAN	
21	SOIL EROSION & SEDIMENT CONTROL DETAILS	
22 - 24	CONSTRUCTION DETAILS	
25 - 28	NJDOT TRAFFIC CONTROL DETAILS	

CONSTRUCTION PLANS FOR INFLOW AND INFILTRATION -PHASE 2 TOWNSHIP OF CRANFORD UNION COUNTY, NEW JERSEY



KEY MAP

NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS 2019 WITH AMENDMENTS THERETO SHALL GOVERN

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	CONSTRUCTION PLANS FOR INFLOW AND INFILTRATION - PHASE 2									
Т	TOWNSHIP OF CRANFORD UNION COUNTY NEW JERSEY									
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SURVEY NOTES:

- ALL EXISTING DEPICTED ON THIS PLAN (EXCLUDING THE BELOW NOTE) ARE BASED ON INFORMATION FROM THE SURVEY ENTITLED, "PARTIAL BOUNDARY AND TOPOGRAPHIC SURVEY FOR PORTION O BLOCK 551, LOTS 10, 11 & 12, BLOCK 544, LOT I - CRANFORD TERRACE; MUNSEE DRIVE; EDWARD PLACE; PHILLIPS STREET; GARDEN PLACE" FOR THE TOWNSHIP OF CRANFORD, PREPARED BY COLLIERS EN DATED 04/25/22, LAST REVISED 08/03/22.
- EXISTING STORMWATER FEATURES (INLETS, MANHOLES, PIPING) ON CRANE PARKWAY, WALL STREET, MUNSEE DRIVE, CRANFORD TERRACE, ROSE STREET, EDWARD PLACE, PHILLIP STREET AND GARDEN I INFORMATION FROM THE PLAN ENTITLED "CONSTRUCTION PLANS FOR INFLOW AND INFILTRATION 2022" FOR THE TOWNSHIP OF CRANFORD, PREPARED BY COLLIERS ENGINEERING & DESIGN, DATED 2/22/23
- THE HORIZONTAL POSITION OF THIS SURVEY IS BASED ON GPS OBSERVATION AND IS RELATIVE TO NAD 1983 ADJUSTMENT.
- 4. THE ELEVATIONS SHOWN HERON ARE RELATIVE TO N.A.V.D. 1988 ADJUSTMENT

GENERAL NOTES:

- ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION RELATED TO THE PROPOSED IMPROVEMENTS SHOWN HEREIN SHALL BE IN ACCORDANCE WITH THE FOLLOWING, UNLESS SPECIFICALLY AMENDED BY CONTRACT DOCUMENTS:
- A. N.J. DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2019", AS CURRENTLY AMENDED;
- B. N.J. DEPARTMENT OF TRANSPORTATION "STANDARD ROADWAY CONSTRUCTION TRAFFIC CONTROL BRIDGE CONSTRUCTION DETAILS, 2016", AS CURRENTLY AMENDED;
- C. "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS CURRENTLY AMENDED; D. CURRENT PREVAILING MUNICIPAL, COUNTY AND/OR STATE AGENCY SPECIFICATIONS, STANDARDS, CONDITIONS AND REQUIREMENTS;
- E. CURRENT PREVAILING UTILITY COMPANY/AUTHORITY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS;
- F. CURRENT MANUFACTURER'S SPECIFICATIONS, STANDARDS AND REQUIREMENTS;
- THE CONTRACTOR IS RESPONSIBLE FOR PROJECT SAFETY INCLUDING PROVISION OF ALL SAFETY DEVICES AND TRAINING REQUIRED.
- THE CONTRACTOR IS RESPONSIBLE FOR EXAMINING THE PROJECT PLANS, SPECIFICATIONS, DETAILS, AND SITE. THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF ANY DIFFER MATERIALLY FROM THOSE REPRESENTED HEREIN.
- THE CONTRACTOR SHALL OBTAIN PERMITS REQUIRED FOR THE PROPOSED IMPROVEMENTS.
- ALL MATERIALS MUST BE AMERICAN MADE. THE CONTRACTOR MUST PROVIDE THE ENGINEER WITH SHIPPING AND DELIVERY TICKETS/RECEIPTS FOR ALL MATERIALS TO USED FOR CONSTRUCTION OF THE **IMPROVEMENTS**
- THE CONTRACTOR SHALL OBTAIN SHOP DRAWING APPROVAL PRIOR TO THE INSTALLATION OF EACH ITEM. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL AT LEAST TO ORDERING MATERIALS.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL STAKEOUT AND LAYOUT, AS NECESSARY, TO CONSTRUCT THE PROPOSED IMPROVEMENTS IN STRICT CONFORMANCE WITH THE PROJECT PLANS, SPECIFICAT
- ACTUAL FIELD LIMITS OF MILLING, PAVING, CURB AND SIDEWALK WORK WILL BE DETERMINED IN THE FIELD BY THE ENGINEER
- 9. NO "SIDE PROJECTS" FOR RESIDENTS, UTILITIES OR BUSINESS MAY BE CONSTRUCTED WITH MATERIAL PURCHASED FOR THE COMPLETION OF THE PROPOSED IMPROVEMENTS SHOWN HEREIN. 10. THE CONTRACTOR MUST REVIEW AND AGREE TO AS-BUILT QUANTITIES WITH THE ENGINEER ON A WEEKLY BASIS.
- 11. THE ENGINEER MUST BE CONTACTED IMMEDIATELY UPON THE CONTRACTOR RECEIVING A COMPLAINT FROM ANY PERSON WITHIN THE PROJECT AREA OR MUNICIPAL OFFICIAL.
- 12. FLUSH CONCRETE CURB SHALL BE INSTALLED IN FRONT OF CURB RAMPS.
- 13. ALL EXISTING FEATURES SHOWN ON THIS PLAN ARE APPROXIMATE AND BASED ON AERIAL IMAGERY AND UTILITY MARKOUTS OBSERVED IN THE FIELD. ALL INFORMATION DEPICTED ON THE PLAN SHOU FIELD BY THE CONTRACTOR. THE LOCATION OF ALL UNDERGROUND UTILITIES AS SHOWN HEREON ARE APPROXIMATE AND ARE BASED ON VISIBLE ABOVE GROUND STRUCTURES AND UTILITY MARK C EXCAVATIONS WERE MADE. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. THE CONTRACTOR SHALL HAVE ALL UNDERGROUND UTILITIES FIELD VERIFIED BY THE PROPER UTILITY ANY CONSTRUCTION BEGINS.

UTILITY NOTES:

- UNDERGROUND UTILITIES WITHIN OFF-SITE STREETS AND FEATURES WERE MAPPED USING RADIO FREQUENCY PIPE AND CABLE LOCATORS (RFL) AND GROUND PENETRATING RADAR (GPR). OTHER BURI PRESENT BUT WERE NOT DETECTED DUE TO LIMITATIONS OF THE RFL AND GPR SYSTEMS, UNFAVORABLE SOIL CONDITIONS, SITE ACCESS, AND/OR DENSE UTILITY INFRASTRUCTURE; THEREFORE, 100% DE GUARANTEED. CAUTION SHOULD BE USED WHEN EXCAVATING IN THE VICINITY OF MAPPED FEATURES.
- POSITION OF GEOPHYSICAL FEATURES CANNOT BE GUARANTEED WITHOUT EXPOSURE.
- TARGETS WITH LATERAL EXTENTS OF LESS THAN 3 FEET AS OBSERVED IN GEOPHYSICAL DATA WERE NOT MAPPED.
- PLOTTED UTILITY POSITIONS AND DEPTHS REPRESENT LOCATION OF MOST APPROPRIATE INTERPRETED GEOPHYSICAL RESPONSE. THIS RESPONSE IS GENERALLY PRESENT OVER THE TOP CENTER OF THE T LOCATED OFF-CENTER DEPENDING ON SIGNAL QUALITY AND THE EFFECTS OF LOCAL INTERFERENCE. FEATURE MAY BE WIDER THAN PLOTTED LINE (E.G. DUCT BANKS, LARGE CONDUIT).
- UTILITIES MAY BE INSTALLED WITHIN A DUCT BANK. DUE TO THE LIMITATIONS OF GEOPHYSICAL EQUIPMENT AND THE LOCATION OF FEATURES WITHIN THE DUCT BANK, THE ACTUAL HORIZONTAL AI DIMENSIONS OF THE DUCT BANK SYSTEM (AS OBSERVED IN GEOPHYSICAL DATA) MAY VARY. DUE TO LIMITATIONS OF GEOPHYSICAL METHODS, IT IS NOT ALWAYS POSSIBLE TO DISCRIMINATE BETWEEN UTILITIES AND OTHER BURIED FEATURES; THEREFORE IT IS POSSIBLE THAT SOME PLOTTED FEA
- OBJECTS OTHER THAN UTILITIES.
- DUE TO VARYING SOIL CONDITIONS, POSSIBLE CHANGES IN UTILITY MATERIAL, AND OTHER FACTORS, SOME UNDERGROUND UTILITIES COULD NOT BE TRACED ENTIRELY WITHIN THE PROJECT LIMITS CONTINUE, BUT SINCE IT WAS NOT OBSERVED IN THE GEOPHYSICAL DATA BEYOND THESE POINTS, IT COULD NOT BE MAPPED. DEPTHS SHOWN FOR UTILITIES ARE IN FEET BELOW EXISTING GROUND SURFACE AT TIME OF SURVEY. AS RFLS CANNOT PROVIDE RELIABLE DETPH INFORMATION, DEPTHS ARE NOT PROVIDED FOR UTILITIES LOCATED WITH
- RFLS, BUT NOT DETECTED IN THE GPR DATA. DUE TO THE SITE SPECIFIC CONDITIONS, GPR SIGNAL PENETRATION DEPTH IS APPROXIMATELY 4 FEET. UTILITIES BELOW THIS DEPTH WERE NOT CONSISTENTLY DETECTED WITH GPR. THERE MAY BE OTHER UTILITIES PRESENT
- AT THE SITE BELOW THIS DEPTH THAT WERE NOT DETECTED AND THEREFORE ARE NOT PLOTTED ON THESE MAPS. 10. ONLY THOSE AREAS DENOTED WITHIN THE PROJECT SITE LIMITS WERE INVESTIGATED WITH GEOPHYSICAL METHODS. NO CLAIMS TO UTILITY POSITION ARE MADE OUTSIDE OF THESE BOUNDARIES.
- 11. SURFACE OBSTRUCTIONS SUCH AS UTILITY POLES AND HEAVY VEGETATION MAY HAVE LIMITED THE DATA COLLECTION AREA.
- 12. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ONE-CALL SERVICES AS REQUIRED BY STATE AND/OR LOCAL ORDINANCES PRIOR TO ANY EXCAVATION ACTIVITIES.
- 13. NOT ALL UTILITY POLES, UTILITY VALVES AND UTILITY LINES ARE SHOWN ON THE PLAN. THE CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
- 14. THE CONTRACTOR SHALL CALL FOR A UTILITY MARK-OUT PRIOR TO THE START OF CONSTRUCTION (CALL I-800-272-1000).
- 15. UTILITY RELOCATIONS SHOWN ON THE PLAN, IF ANY, ARE FOR INFORMATIONAL PURPOSES ONLY AND MAY NOT REPRESENT ALL REQUIRED WORK. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH ALL UTILITY COMPANIES/AUTHORITIES IMPACTED BY THE PROPOSED WORK AND PERFORMING UTILITY RELOCATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERTINENT UTILITY COMPANIES/AUTHORITIES. NO SEPARATE PAYMENT SHALL BE MADE FOR COORDINATING AND PERFORMING UTILITY RELOCATIONS.
- 16. ALL UTILITY MANHOLES, VALVE BOXES, CLEANOUTS, METERS, ETC. SHALL BE RESET BY THE CONTRACTOR TO MEET PROPOSED ROAD, SIDEWALK AND DRIVEWAY GRADES. THE CONTRACTOR SHALL CO IMPACTED UTILITY COMPANIES/AUTHORITIES AS NECESSARY.
- WATER VALVE BOXES GAS VALVE BOXES WITHIN THE ROADWAY SHALL BE RESET TO MEET PROPOSED GRADES.
- 18. MISCELLANEOUS UTILITY EQUIPMENT WITHIN THE DRIVEWAYS SHALL BE RESET TO MEET PROPOSED GRADES DURING THE PROGRESS OF CURB, SIDEWALK AND DRIVEWAY CONSTRUCTION. NO SEPAR MADE FOR THE RESETTING OF MISCELLANEOUS UTILITY EQUIPMENT, INCLUDING VALVE BOXES, CLEANOUTS, METERS, ETC. WITHIN SIDEWALK AND DRIVEWAY AREAS.
- 19. THE CONTRACTOR SHALL TAKE PRECAUTION WHEN WORKING ADJACENT TO UTILITIES AND TEMPORARILY SUPPORT UTILITY POLES, IF REQUIRED, DURING THE PROGRESS OF WORK.
- 20. THE CONTRACTOR SHALL CLEAN AND MAINTAIN ALL STORM SEWER STRUCTURES, AS NECESSARY, FOR THE DURATION OF THE PROJECT

WORKING HOURS:

- I. THE CONTRACTOR SHALL WORK ON WEEKDAYS ONLY. APPROVAL TO WORK ON WEEKENDS MUST BE GRANTED BY THE LOCAL POLICE DEPARTMENT AND OWNER.
- THE CONTRACTOR SHALL NOT COMMENCE ANY CONSTRUCTION RELATED ACTIVITIES BEFORE 7 AM ON WEEKDAYS. ALL CONSTRUCTION RELATED ACTIVITIES MUST BE FINISHED AND THE SITE SHALL SECURED BY 5 PM DAILY.

SIGNS, STRIPING AND MARKING NOTES:

- I. ALL SIGNAGE, TRAFFIC STRIPING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.), AS CURRENTLY AMENDED.
- 2. ALL EXISTING SIGNS SHALL BE RESET/RELOCATED WITH NEW POSTS. SIGNS SHALL BE RESET USING EXISTING SIGN BLADES WITH NEW SIGN POSTS PLACED IN SLEEVES. SLEEVES FOR NEW SIGN POSTS SHALL

MILLING AND PAVING NOTES:

- I. THE CONTRACTOR MUST PROVIDE A SMOOTH SAWCUT EDGE WHERE PROPOSED PAVEMENT ABUTS EXISTING PAVEMENT
- AFTER MILLING OPERATIONS AND PRIOR TO PAVING, THE CONTRACTOR MUST ALLOW ADEQUATE TIME FOR THE ENGINEER TO INSPECT THE MILLED SURFACE TO EVALUATE THE NEED FOR REPAIRS IN IF REPAIRS IN THE PAVEMENT BASE ARE NECESSARY AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL NOT SCHEDULE OR COMMENCING PAVING OPERATIONS UNTIL SUCH TIME THAT ALL
- PAVEMENT BASE ARE COMPLETE.
- THE CONTRACTOR SHALL MARK ALL RAISED UTILITY MANHOLES, INLETS AND VALVE BOXES THAT ARE EXPOSED AS A RESULT OF MILLING. IN ADDITION, THE CONTRACTOR SHALL INSTALL TEMPORAR AROUND RAISED UTILITIES AS DIRECTED BY THE ENGINEER WHERE SUCH UTILITIES MAY BE IN CONFLICT WITH VEHICULAR AND PEDESTRIAN TRAFFIC. ALL JOINTS BETWEEN EXISTING AND PROPOSED ASPHALT SHALL BE SEALED WITHIN 48 HOURS OF PAVING.

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES:

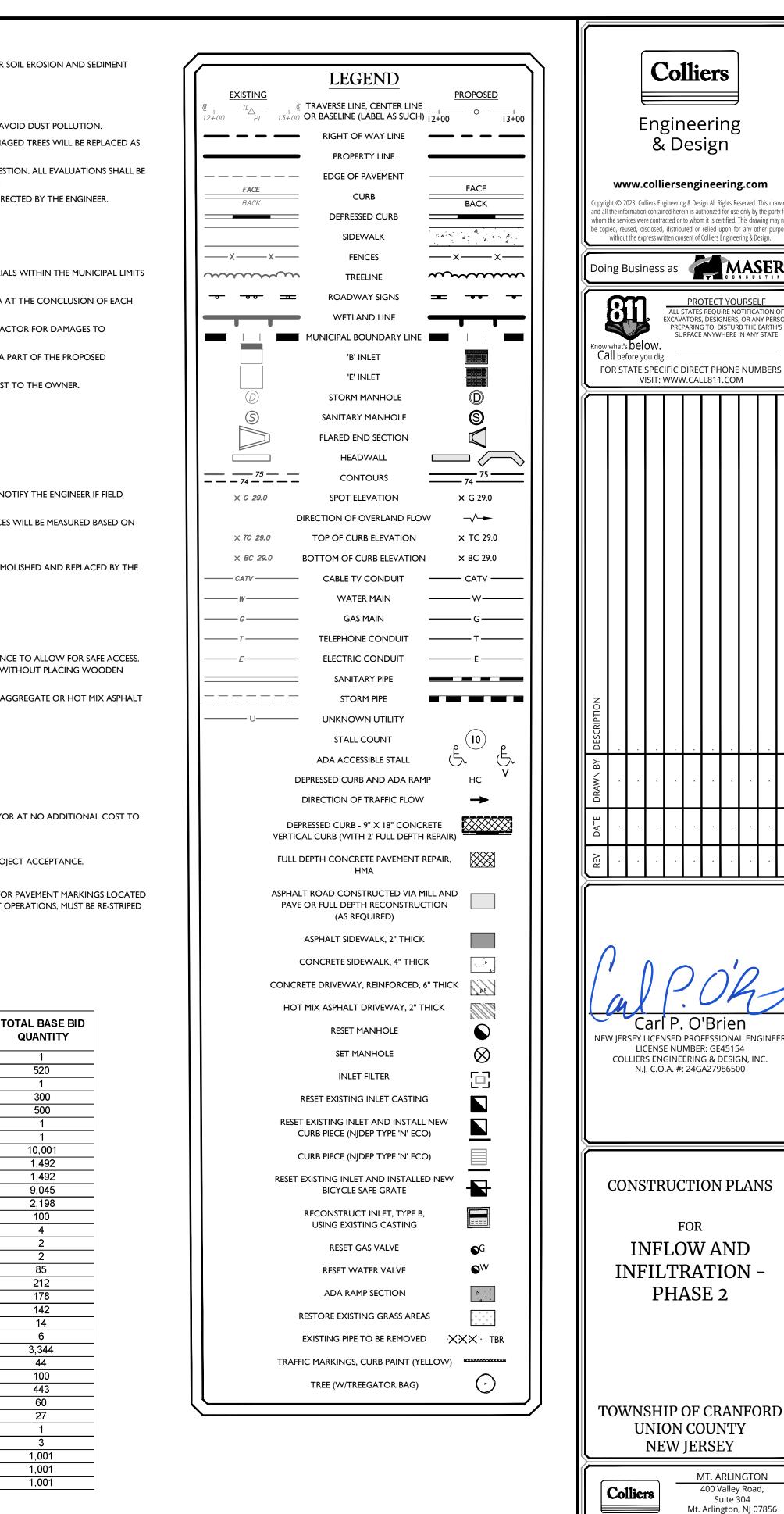
- THE CONTRACTOR SHALL COORDINATE ALL TRAFFIC CONTROL MEASURES WITH THE LOCAL POLICE DEPARTMENT AND OWNER. TRAFFIC CONTROL DETAILS PROVIDED HEREIN ARE TYPICAL AND SU
- BY THE LOCAL POLICE DEPARTMENT AND OWNER.
- THE CONTRACTOR SHALL MAKE PROVISIONS FOR MATERIAL AND EQUIPMENT STORAGE. NO EQUIPMENT OR MATERIALS SHALL BE STORED WITHIN THE R.O.W. WITHOUT EXPRESS WRITTEN CONSENT FROM THE LOCAL POLICE DEPARTMENT AND OWNER.
- THE CONTRACTOR SHALL PREPARE AND SUBMIT A TRAFFIC CONTROL SCHEDULE AND STAGING PLAN TO THE LOCAL POLICE DEPARTMENT AND OWNER FOR REVIEW AND APPROVAL. THE PLAN MUST BE APPROVED BY THE LOCAL POLICE DEPARTMENT AND OWNER PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE OWNER AND LOCAL POLICE DEPARTMENT SEVENTY-TWO (72) HOURS PRIOR TO THE START OF ANY WORK.
- THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL POLICE DEPARTMENT TO DETERMINE THE NEED FOR POLICE TRAFFIC DIRECTORS. THE CONTRACTOR SHALL PROVIDE THE LOCAL POLICE DEPARTMENT WITHIN AT LEAST ONE (1) WEEK NOTICE PRIOR TO REQUESTING POLICE TRAFFIC DIRECTORS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PLACING TEMPORARY NO PARKING SIGNS. SIGNS MUST BE OBTAINED FROM THE LOCAL POLICE DEPARTMENT. TEMPORARY NO PARKING SIGNS MUST BE POSTED AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE CONSTRUCTION.

PF BLOCK 598, LOT 1, IGINEERING & DESIGN,	I. THE CONTRACTOR SHALL INSTALL AND MAINTAIN SOIL EROSION AND SEDIMENT CONTROL MEASURES FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH THE STANDARDS FOR S CONTROL MEASURES IN NEW JERSEY.
	2. INLET FILTERS ARE TO BE INSTALLED ON ALL EXISTING AND NEW INLETS WITHIN THE PROJECT LIMITS AND IMMEDIATELY ADJACENT TO PROJECT LIMITS.
PLACE ARE BASE ON 06/24/22. LAST REVISED	3. SILT FENCE SHALL BE INSTALLED AS DIRECTED IN THE FIELD BY THE ENGINEER, AS NECESSARY.
	4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING DUST CONTROL MEASURES, AS NECESSARY. ALL VEHICLES SHALL BE CLEAN AND ALL ROADWAYS SHALL BE MAINTAINED TO AV
	5. THE CONTRACTOR SHALL PROTECT ALL TREES SCHEDULED TO REMAIN DURING CONSTRUCTION. DAMAGE TO EXISTING TREES WILL BE EVALUATED BY THE OWNER AND ENGINEER. DAMAGE REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
	6. WHERE EXISTING TREES AND ROOT SYSTEMS MAY CONFLICT WITH THE PROPOSED IMPROVEMENTS, THE CONTRACTOR MUST RETAIN A CERTIFIED TREE EXPERT TO EVALUATE TREES IN QUEST IN WRITING AND SHALL ACCURATELY IDENTIFY THE TREE IN QUESTION BY STATION AND OFFSET (LEFT OR RIGHT). ALL EVALUATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
	7. TREES THAT ARE TO REMAIN, WHERE IT IS DETERMINED THAT ROOT CUTTING MAY SEVERELY DAMAGE THE TREE, SHALL HAVE A CURB BREAK AND STEEL CURB FACE PLATE INSTALLED AS DIRE
d or supplemented	8. ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF OFF-SITE. NO EXCAVATED MATERIAL SHALL BE STOCKPILED AND STORED WITHIN THE PROJECT LIMITS.
	DEMOLITION AND CONSTRUCTION NOTES:
	I. ALL EXCAVATED MATERIALS ARE TO BE DISPOSED OF IN ACCORDANCE WITH APPROVED NJDOT AND NJDEP MEANS AND METHODS. THE CONTRACTOR MUST NOT DEPOSIT EXCESS MATERIA WITHOUT EXPRESS PERMISSION OF THE OWNER.
	2. ALL EXCAVATED AND DEMOLISHED MATERIALS, DEBRIS, AND EQUIPMENT, INCLUDING STONE, TOPSOIL, TREES, BLOCK AND CONCRETE FORMS, MUST BE REMOVED FROM THE PROJECT AREA A DAY, UNLESS OTHERWISE APPROVED BY THE ENGINEER AND LOCAL POLICE DEPARTMENT.
	3. THE CONTRACTOR SHALL NOTE THAT ROADWAY BASE MATERIAL MAY CONSIST OF COBBLESTONES, CONCRETE AND/OR ASPHALT. NO ADDITIONAL PAYMENTS WILL BE MADE TO CONTRAC EQUIPMENT OR ADDITIONAL LABOR REQUIRED TO MAKE IMPROVEMENTS AS DESCRIBED ON PLANS DUE TO VARIATIONS IN ROADWAY BASE MATERIALS.
y site conditions	4. ALL EXISTING GRATES AND CASTINGS ARE THE PROPERTY OF THE MUNICIPALITY OR RESPECTIVE UTILITY AUTHORITY. ALL EXISTING GRATES AND CASTINGS THAT ARE TO BE REPLACED AS A I IMPROVEMENTS SHALL BE RETURNED TO THE MUNICIPALITY OR RESPECTIVE UTILITY AUTHORITY.
	5. THE CONTRACTOR MUST PROTECT CONCRETE UNTIL CONCRETE IS CURED. DAMAGED AND VANDALIZED CONCRETE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST
	6. RECYCLED AGGREGATE (CONCRETE OR ASPHALT) MUST BE NJDOT APPROVED. CONTRACTOR MUST PROVIDE DOCUMENTATION FOR APPROVED MATERIAL PRIOR TO PLACEMENT.
HE PROPOSED	7. THE CONTRACTOR SHALL RESET ALL RAILINGS, GATES AND FENCES AS REQUIRED TO COMPLETE THE PROPOSED IMPROVEMENTS.
TWO (2) WEEKS PRIOR	8. THE CONTRACTOR IS RESPONSIBLE TO REPLACE/RESET ANY SPRINKLERS DAMAGED/DISTURBED DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
tions and details.	ACCESSIBLE CURB RAMP NOTES:
	I. THE CONTRACTOR IS RESPONSIBLE FOR LAYING OUT FORMS, POURING CONCRETE AND CONSTRUCTING ACCESSIBLE CURB RAMPS TO MEET ADA STANDARDS. THE CONTRACTOR SHALL NO CONDITIONS CONFLICT WITH INDICATED ACCESSIBLE CURB RAMP TYPES AND DETAILS PROVIDED HEREIN.
	2. THIS PROJECT MAY REQUIRE THE USE OF RECTANGULAR, RADIAL AND A COMBINATION OF RADIAL/RECTANGULAR DETECTABLE WARNING SURFACES. THE DETECTABLE WARNING SURFACES ACTUAL FINISHED PRODUCT AND NOT INCLUDE SECTIONS THAT ARE CUT AND DISCARDED.
	3. DETECTABLE WARNING SURFACES SHALL BE CAST-IN-PLACE AND THE COLOR SHALL CONTRAST FROM THE SURROUNDING MATERIAL.
JLD BE VERIFIED IN THE DUTS. NO COMPANIES BEFORE	4. THE ENGINEER WILL INSPECT AND MEASURE THE FINAL CONDITION OF EACH CONSTRUCTED CURB RAMP. ALL CURB RAMPS FOUND NOT TO COMPLY WITH ADA STANDARDS SHALL BE DEMO CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
	ACCESS TO RESIDENCES AND BUSINESSES:
	I. THE CONTRACTOR SHALL MAINTAIN SAFE PEDESTRIAN AND VEHICULAR ACCESS TO ALL RESIDENCES AND BUSINESSES FOR THE DURATION OF THE PROJECT.
ied utilities may be etection is not	2. DURING DEMOLITION AND IMMEDIATELY AFTER POURING CONCRETE, THE CONTRACTOR MUST PLACE WOOD PLANKS, AT LEAST TWO (2) FT. WIDE, AT EACH ADJACENT BUILDING ENTRANG PEDESTRIANS CANNOT BE EXPECTED TO CROSS OVER STONE, DIRT OR OTHER DEMOLISHED MATERIAL WITHOUT PLANKS. THE CONTRACTOR WILL NOT BE PERMITTED TO LEAVE THE SITE W ACCESS PLANKS TO PROVIDE SAFE ACCESS TO RESIDENCES AND BUSINESSES.
	3. THE CONTRACTOR SHALL MAINTAIN VEHICULAR ACCESS TO ALL DRIVEWAYS DURING CONSTRUCTION. THE CONTRACTOR SHALL TEMPORARILY INSTALL AND MAINTAIN DENSE GRADED AG TO PROVIDE A RIDING SURFACE FOR VEHICLE ACCESS TO EACH PROPERTY DURING CONSTRUCTION.
	4. THE CONTRACTOR MUST ASSURE ACCESS FOR EMERGENCY VEHICLES AND GARBAGE COLLECTION VENDORS FOR THE DURATION OF THE PROJECT.
TARGET BUT MAY BE	5. THE CONTRACTOR SHALL PROVIDE TEMPORARY ACCESSIBLE CURB RAMPS WITH HAND RAILS WHEN EXISTING ACCESSIBLE ACCESS IS REMOVED OR LIMITED DUE TO CONSTRUCTION.
ND VERTICAL	6. NO SEPARATE PAYMENT SHALL BE MADE FOR THE PROVISION OF SAFE PEDESTRIAN AND VEHICULAR ACCESS AS DESCRIBED ABOVE AND AS DIRECTED IN THE FIELD BY THE ENGINEER
TURES MAY REPRESENT	FINAL CLEAN UP AND PROJECT ACCEPTANCE:
THE UTILITY MAY	I. PRIOR TO FINAL ACCEPTANCE, ALL PROPERTY CORNERS OR MONUMENTS REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY A NEW JERSEY LICENSED LAND SURVEYO THE OWNER.

SOIL FROSION AND TREE PROTECTION NOTES.

- THE CONTRACTOR MUST REPLACE ANY DAMAGED CONCRETE CURB AND SIDEWALK BEFORE ACCEPTANCE OF THE PROJECT BY THE OWNER.
- ALL AREAS OUTSIDE OF THE PROJECT LIMITS THAT ARE DISTURBED AS RESULT OF CONSTRUCTION ACTIVITIES SHALL BE RESTORED AT NO ADDITIONAL COST TO THE OWNER PRIOR TO PROJECT ACCEPTANCE. ALL GRASSED AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED BY TOPSOILING, SEEDING, FERTILIZING AND MULCHING. 4.
- THE CONTRACTOR SHALL NOT TACK COAT OR ANY OTHER CONSTRUCTION MATERIAL OR DEBRIS ONTO ADIOINING ROADS OUTSIDE THE PROJECT LIMITS, ANY EXISTING STRIPING AND/OR PAVEMENT MARKINGS LOCATED OUTSIDE THE PROJECT LIMITS THAT ARE IMPACTED, MARKED OR DAMAGED AS A RESULT OF THE CONTRACTOR'S CONSTRUCTION ACTIVITIES, INCLUDING BUT NOT LIMITED TO PAVEMENT OPERATIONS, MUST BE RE-STRIPED BY THE CONTRACTOR AT THE END OF CONSTRUCTION AT NO ADDITIONAL COST TO THE BOROUGH

COORDINATE WITH PAY ITEM NO		BASE BID - INFLOW AND INFILTRATION - PHASE II	UNIT	тот
	1	SOIL EROSION AND SEDIMENT CONTROL	LS	
ARATE PAYMENT SHALL BE	2	POLICE TRAFFIC DIRECTORS	MAN HOUR	
	3	TRAFFIC CONTROL MEASURES AND DEVICES	LS	
	4	FUEL PRICE ADJUSTMENT	DOLLAR	
	5	ASPHALT PRICE ADJUSTMENT	DOLLAR	
	6	CLEARING SITE	LS	
	7	EXCAVATION, BORROW EXCAVATION AND GRADING, UNCLASSIFIED	LS	
	8	HMA MILLING, 3" OR LESS	SY	
	9	TACK COAT	GALLON	
	10	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	
ALL BE CLEANED AND	11	SEALING OF CRACKS IN CONCRETE BASE COURSE	LF	
	12	FULL DEPTH CONCRETE PAVEMENT REPAIR, HMA	SY	
	13	LEADER DRAIN, 4" POLYVINYL CHLORIDE PIPE	LF	
	14	RESET EXISTING CASTING	UNIT	
	15	BICYCLE SAFE GRATE (PHASE II STORMWATER COMPLIANT GRATE)	UNIT	
	16	CURB PIECE (NJDEP TYPE 'N' ECO)	UNIT	
	17	TIMBER GUIDE RAIL	LF	
HALL BE FILLED.	18	CONCRETE SIDEWALK, 4" THICK	SY	
	19	HOT MIX ASPHALT DRIVEWAY, 2" THICK	SY	
	20	CONCRETE DRIVEWAY, REINFORCED, 6" THICK	SY	
	21	DETECTABLE WARNING SURFACE	SY	
	22	RESET PAVER DRIVEWAY	SY	
	23	9" X 18" CONCRETE VERTICAL CURB	LF	
S IN THE PAVEMENT BASE.	24	9" X 24" CONCRETE VERTICAL CURB	LF	
LL REPAIRS IN THE	25	GRANITE BLOCK CURB	LF	
	26	TRAFFIC MARKING LINES, 6"	LF	
ARY PAVEMENT RAMPS	27	TRAFFIC MARKING LINES, 12"	LF	
	28	REGULATORY AND WARNING SIGN	SF	
	29	RECONSTRUCTED MANHOLE, SANITARY SEWER, USING EXISTING CASTING	UNIT	
	30	RESET MANHOLE, SANITARY SEWER, USING EXISTING CASTING	UNIT	
	31	TOPSOIL SPREADING, 6" THICK	SY	
	32	FERTILIZING AND SEEDING, TYPE ERNMX-106	SY	
SUBJECT TO MODIFICATION	33	STRAW MULCHING	SY	



Engineering

& Design

01/30/23

AS SHOWN

IFCT NUMBER

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Phone: 973.398.3110

DLLIERS ENGINEERING & DESIGN, IN

DOING BUSINESS AS MASER CONSULT

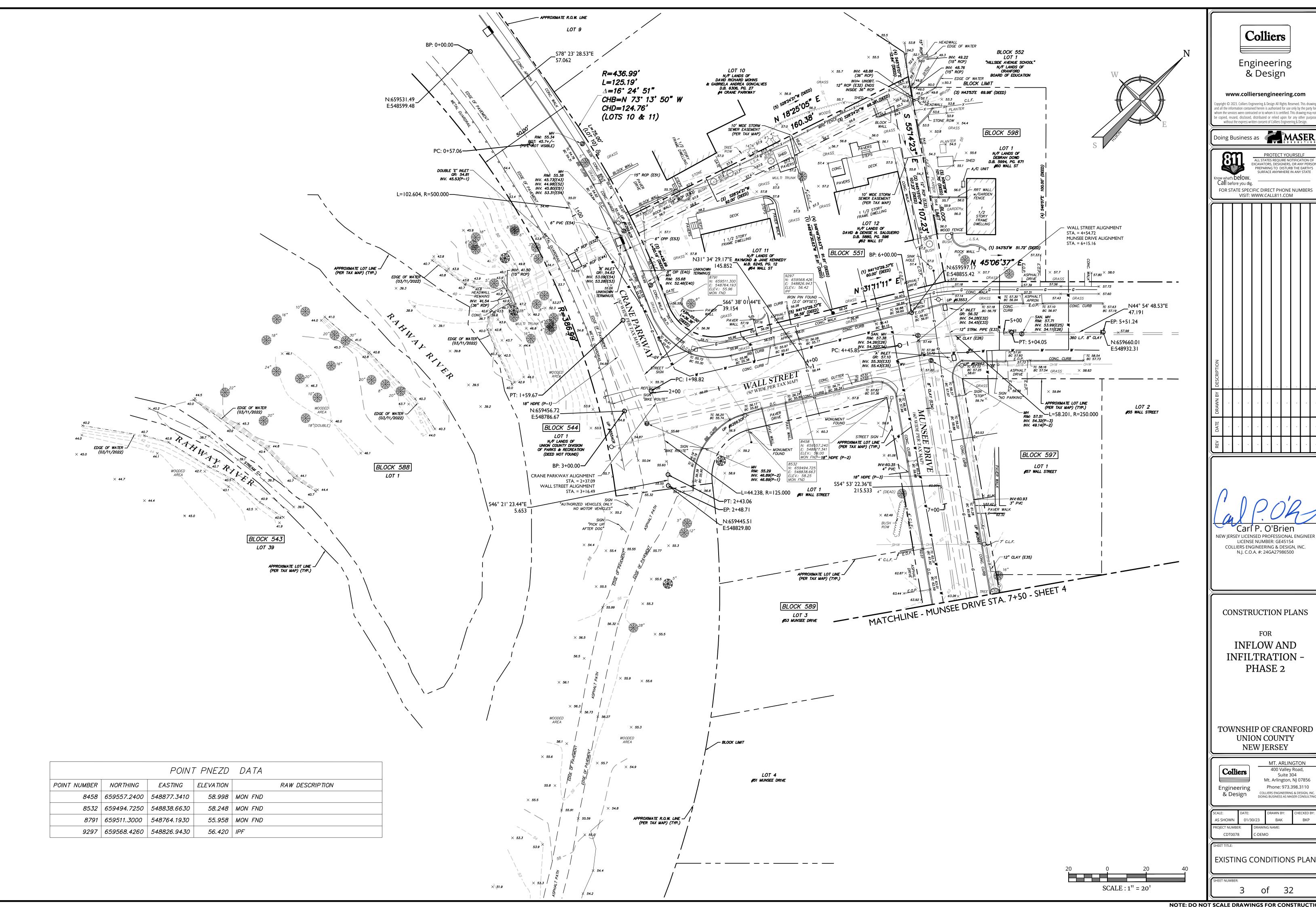
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GENERAL NOTES & QUANTITIES



		POINT	T PNEZD	DATA	
POINT NUMBER	NORTHING	EASTING	ELEVATION		RAW DESCRIPTION
8458	659557.2400	548877.3410	58.998	MON FND	
8532	659494.7250	548838.6630	58.248	MON FND	
8791	659511.3000	548764.1930	55.958	MON FND	
9297	659568.4260	548826.9430	56.420	IPF	

Suite 304

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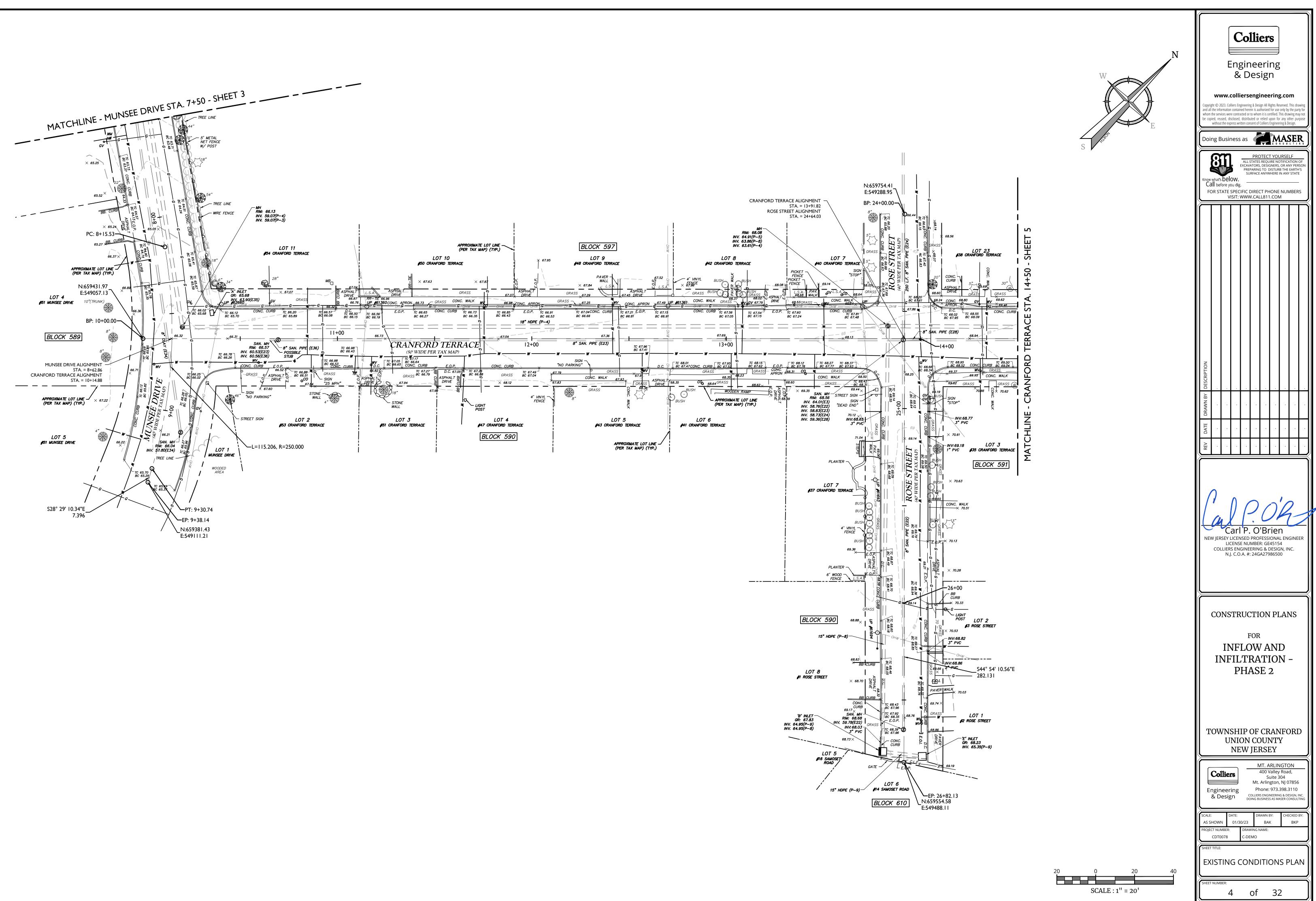
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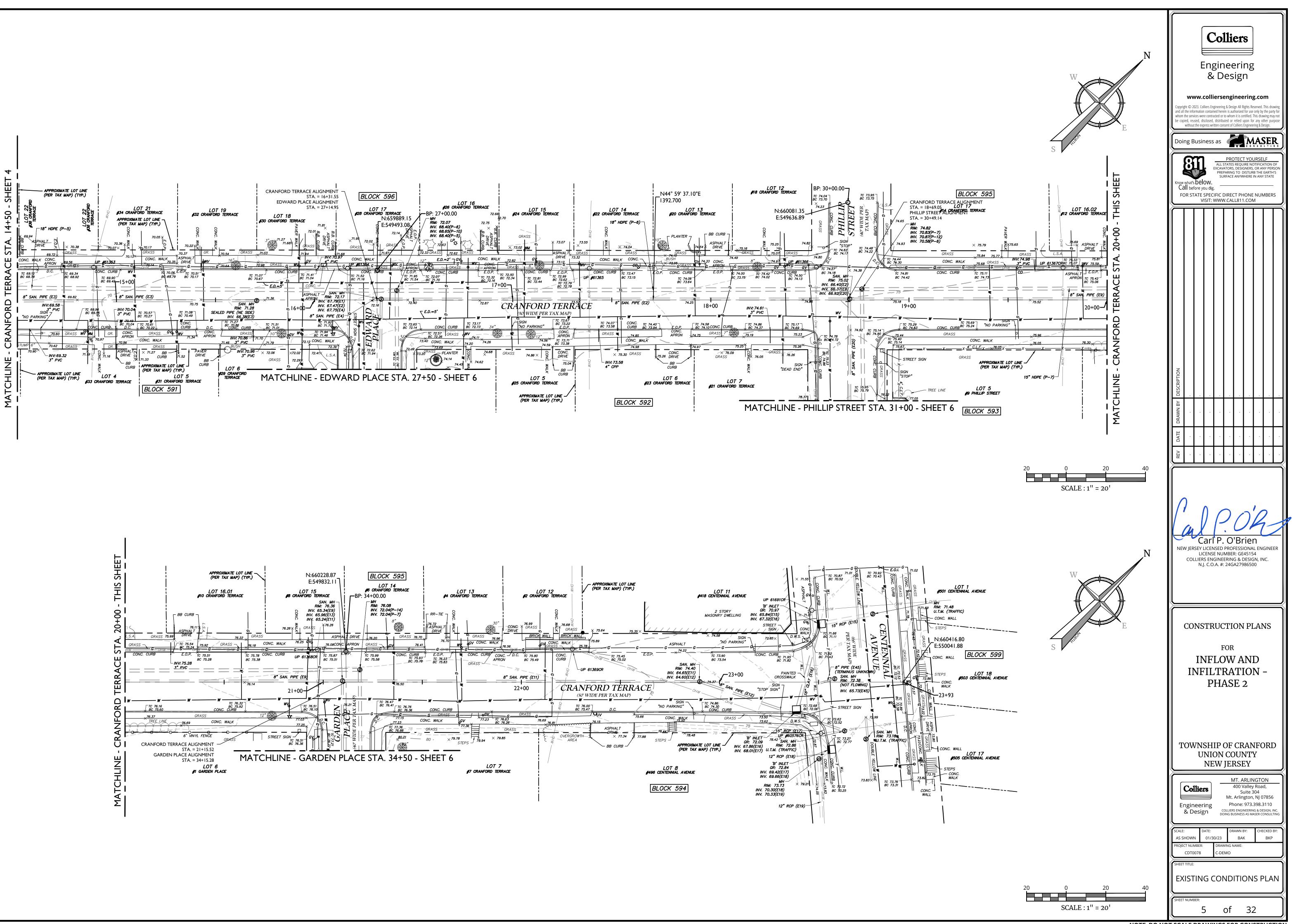
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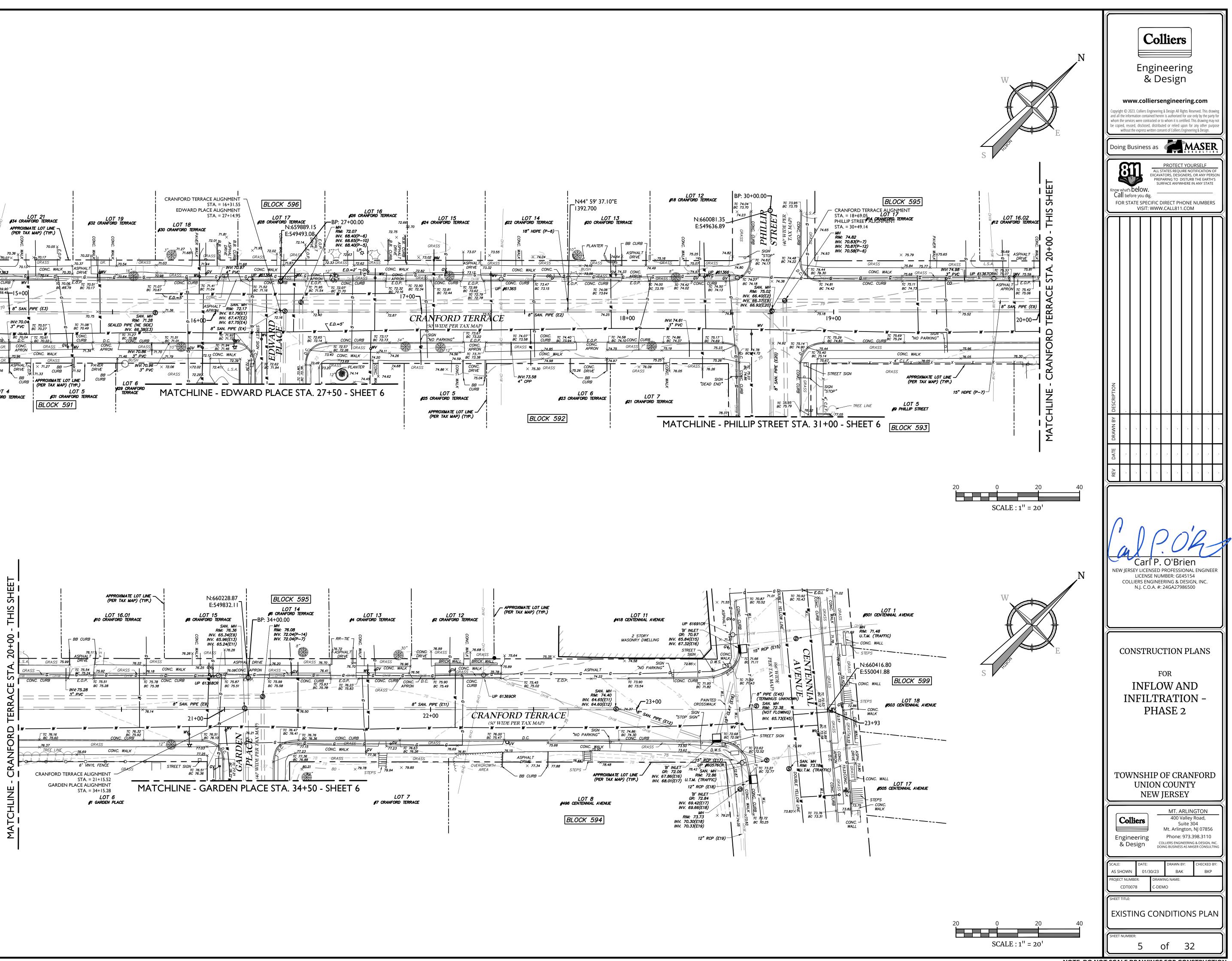
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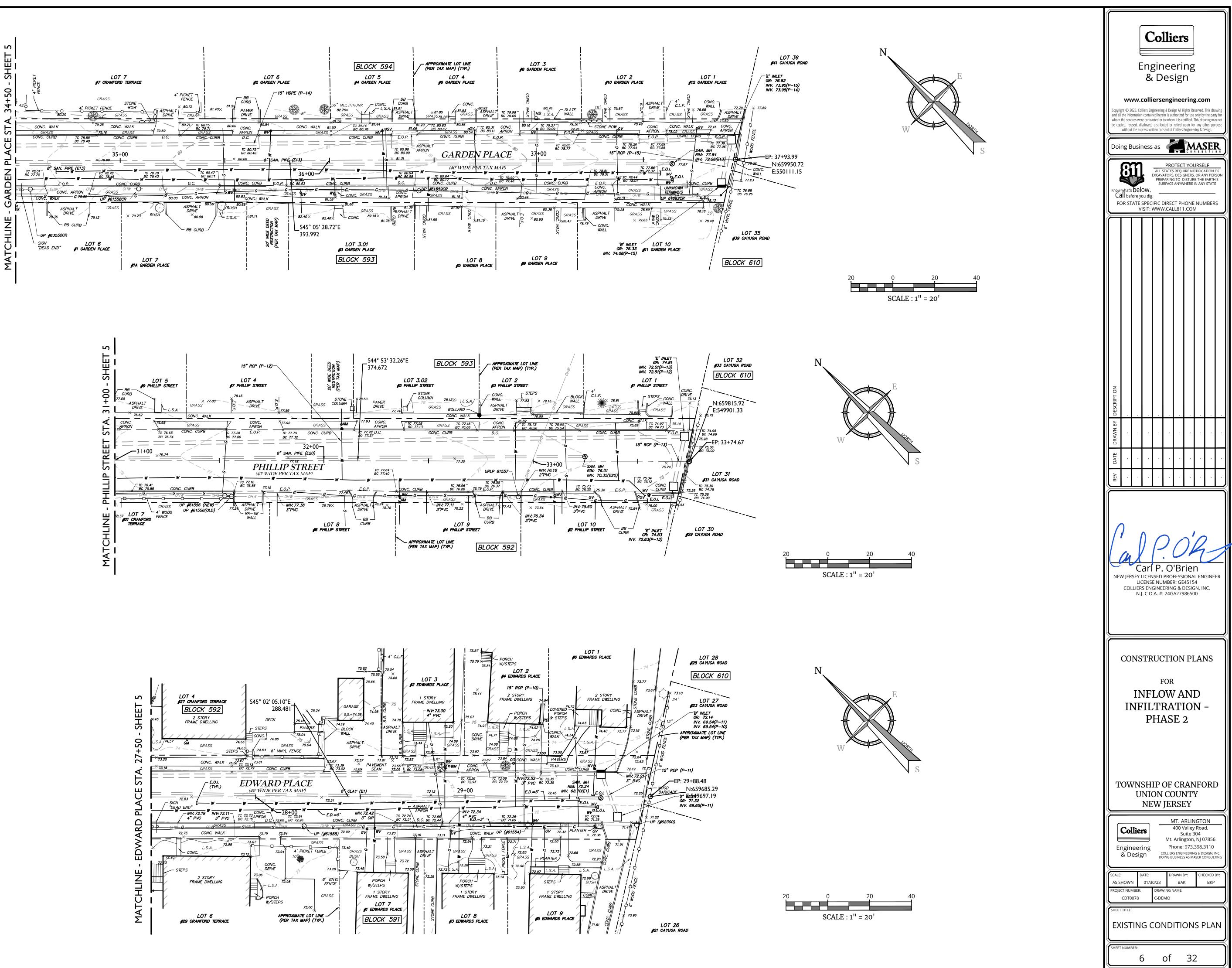
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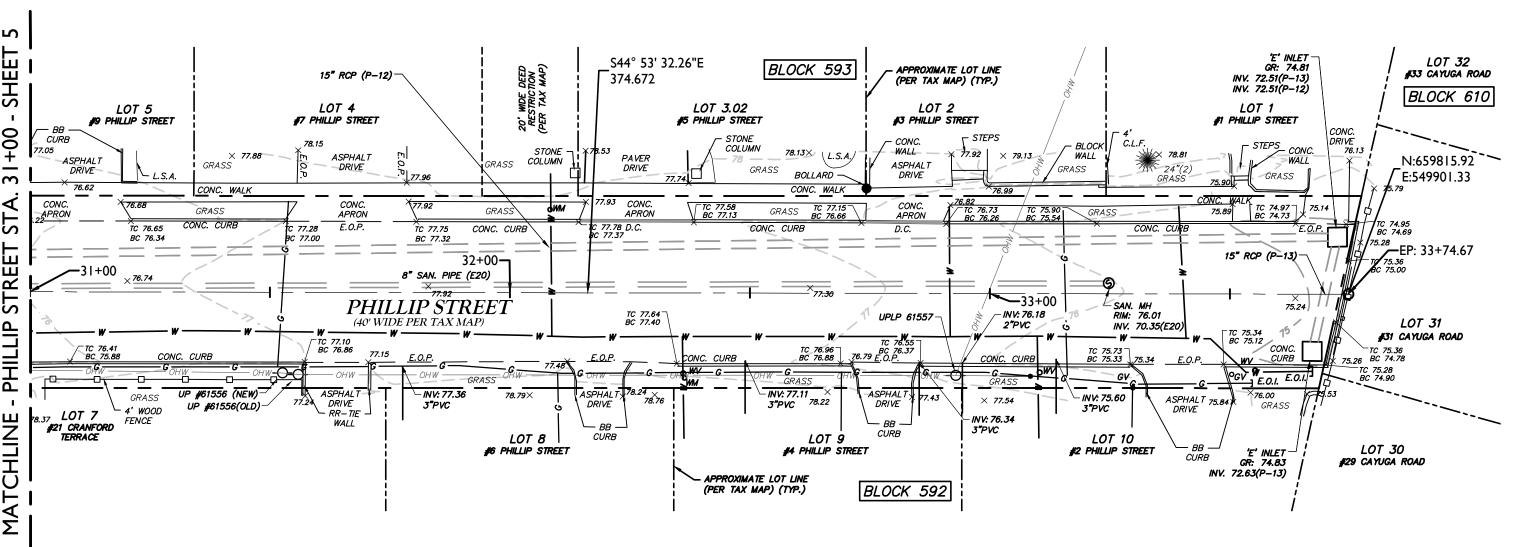


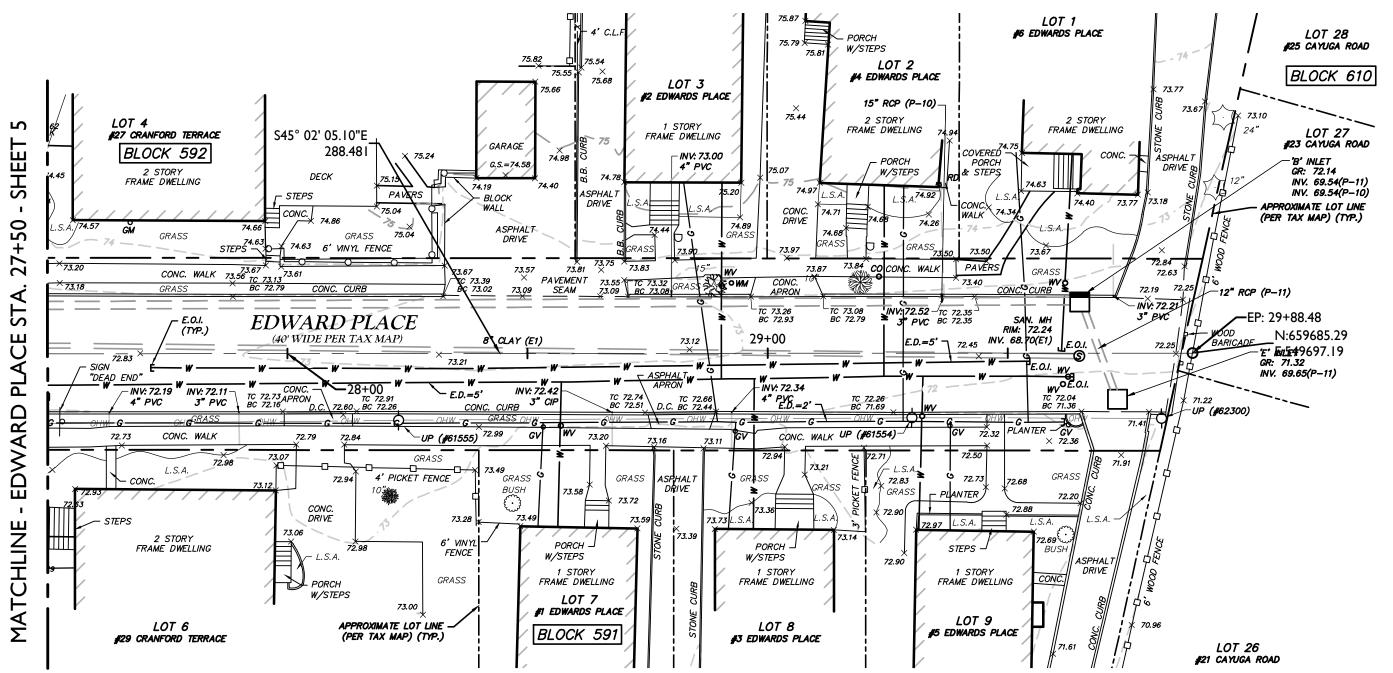
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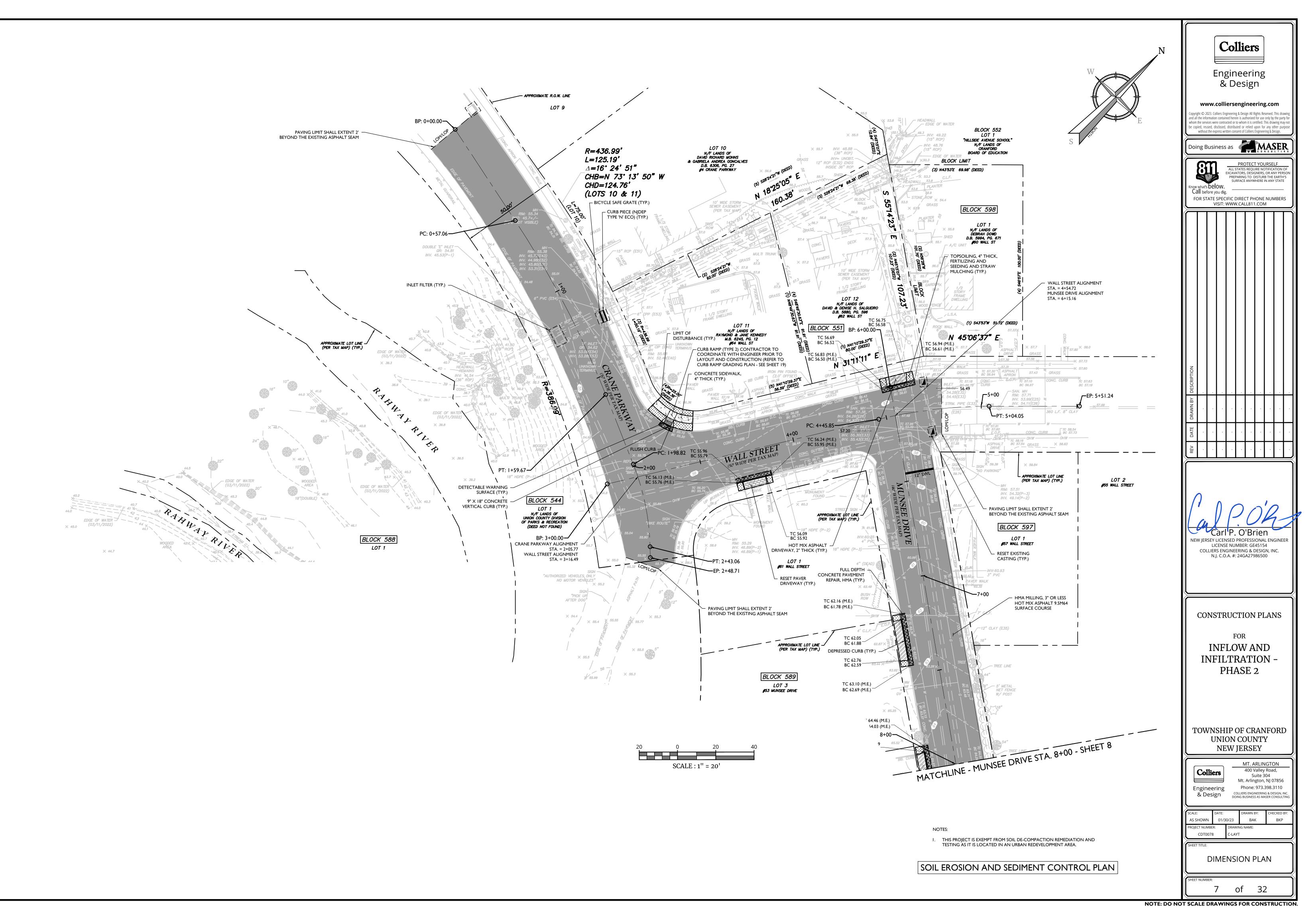




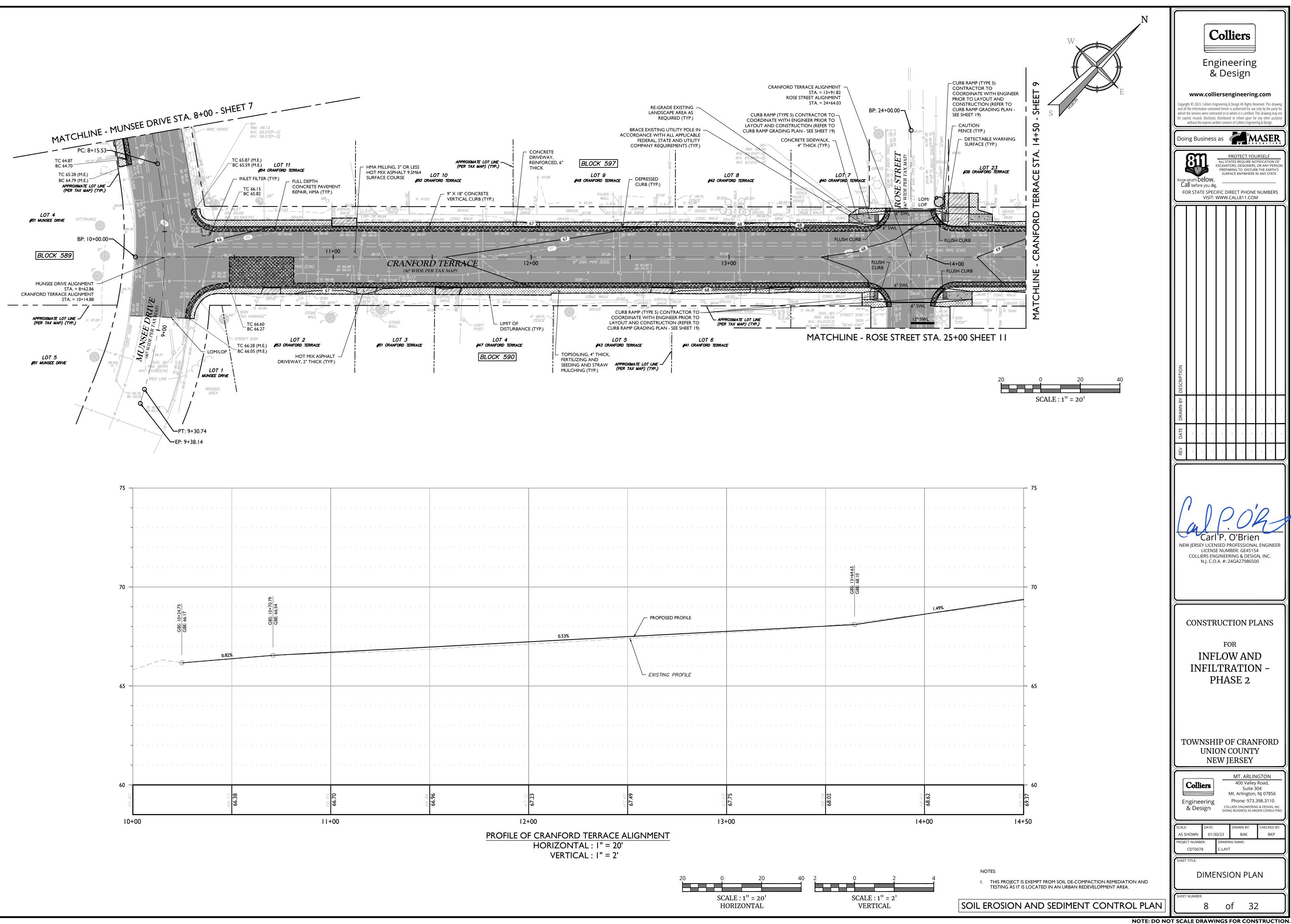


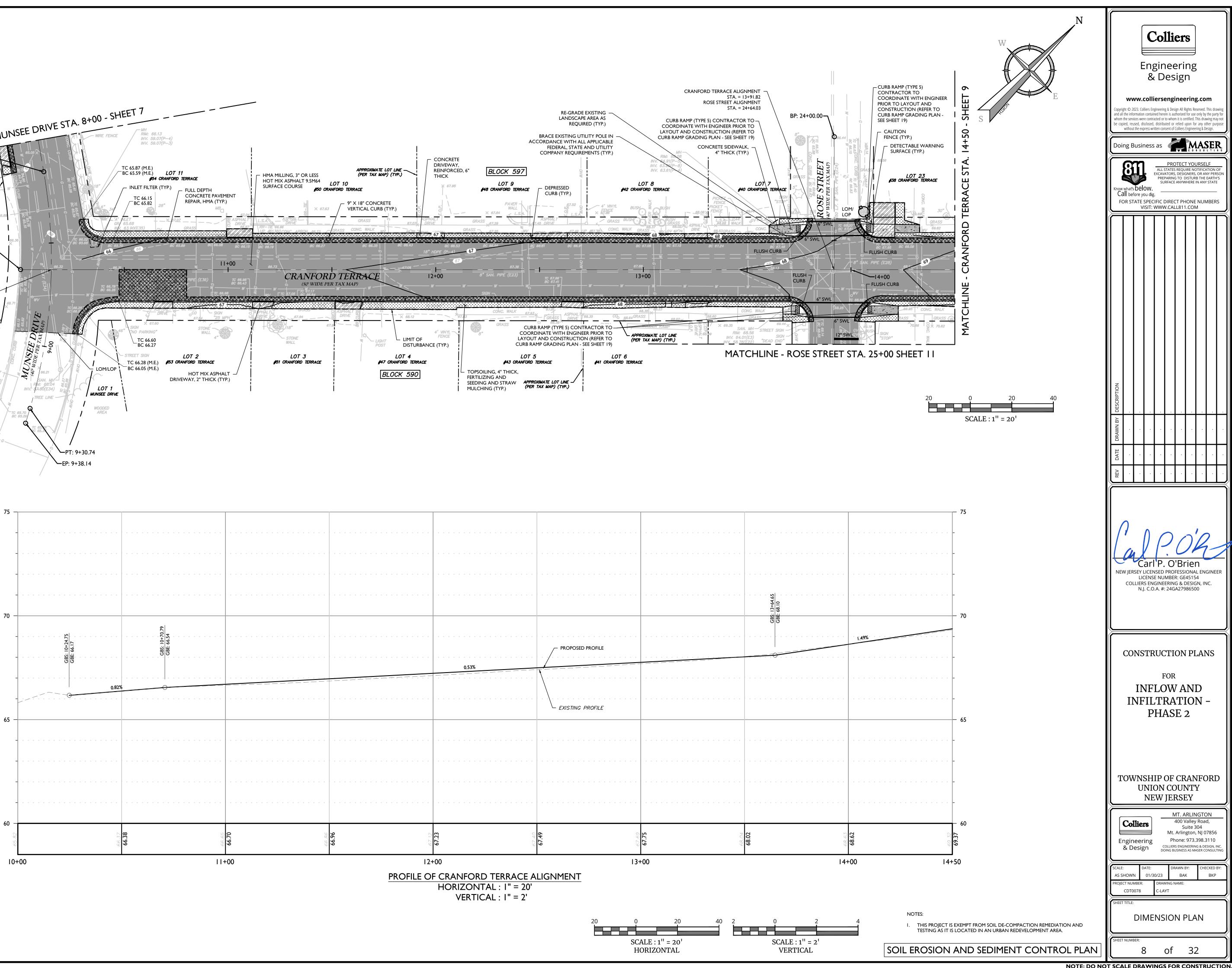


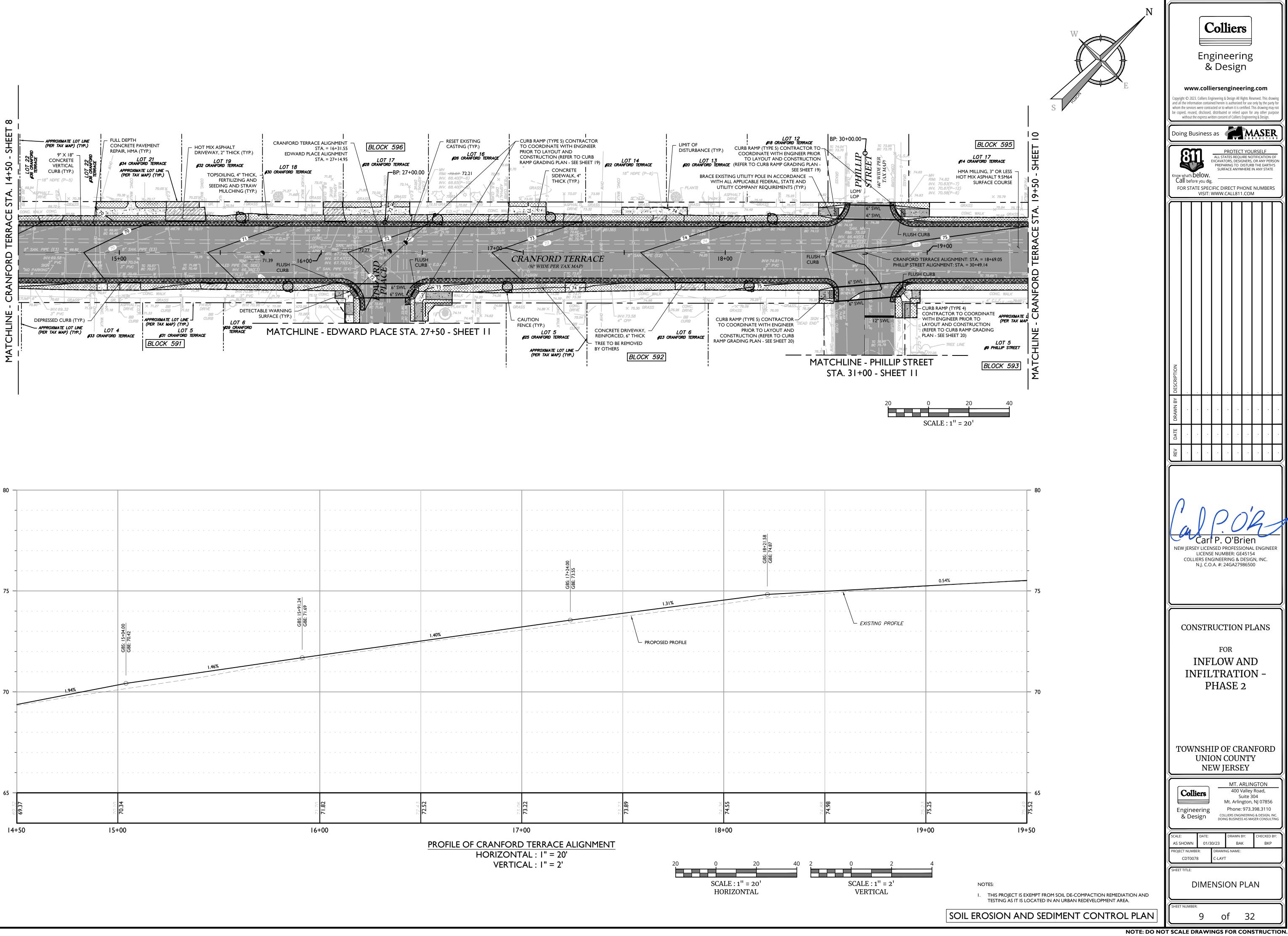
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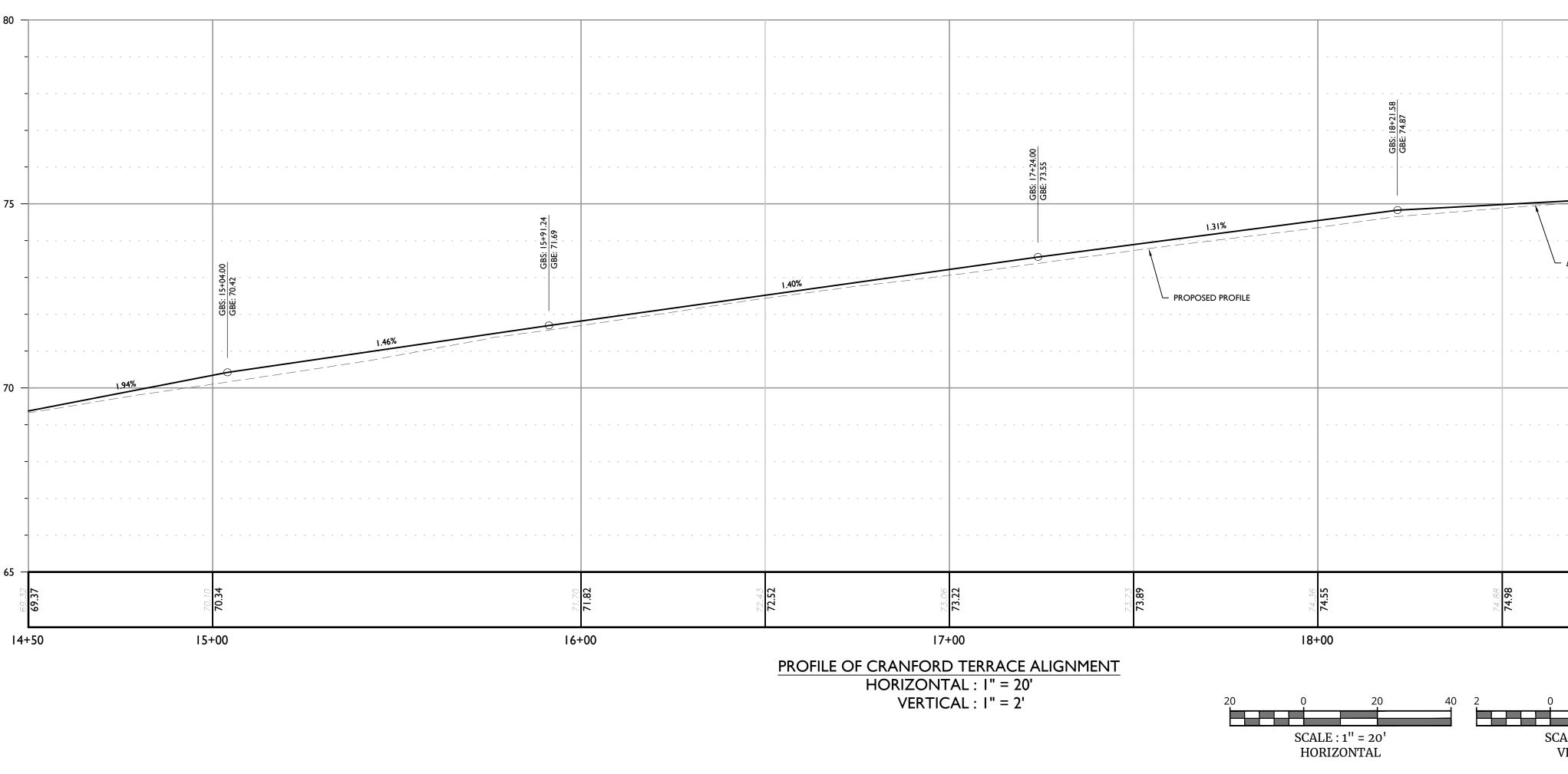


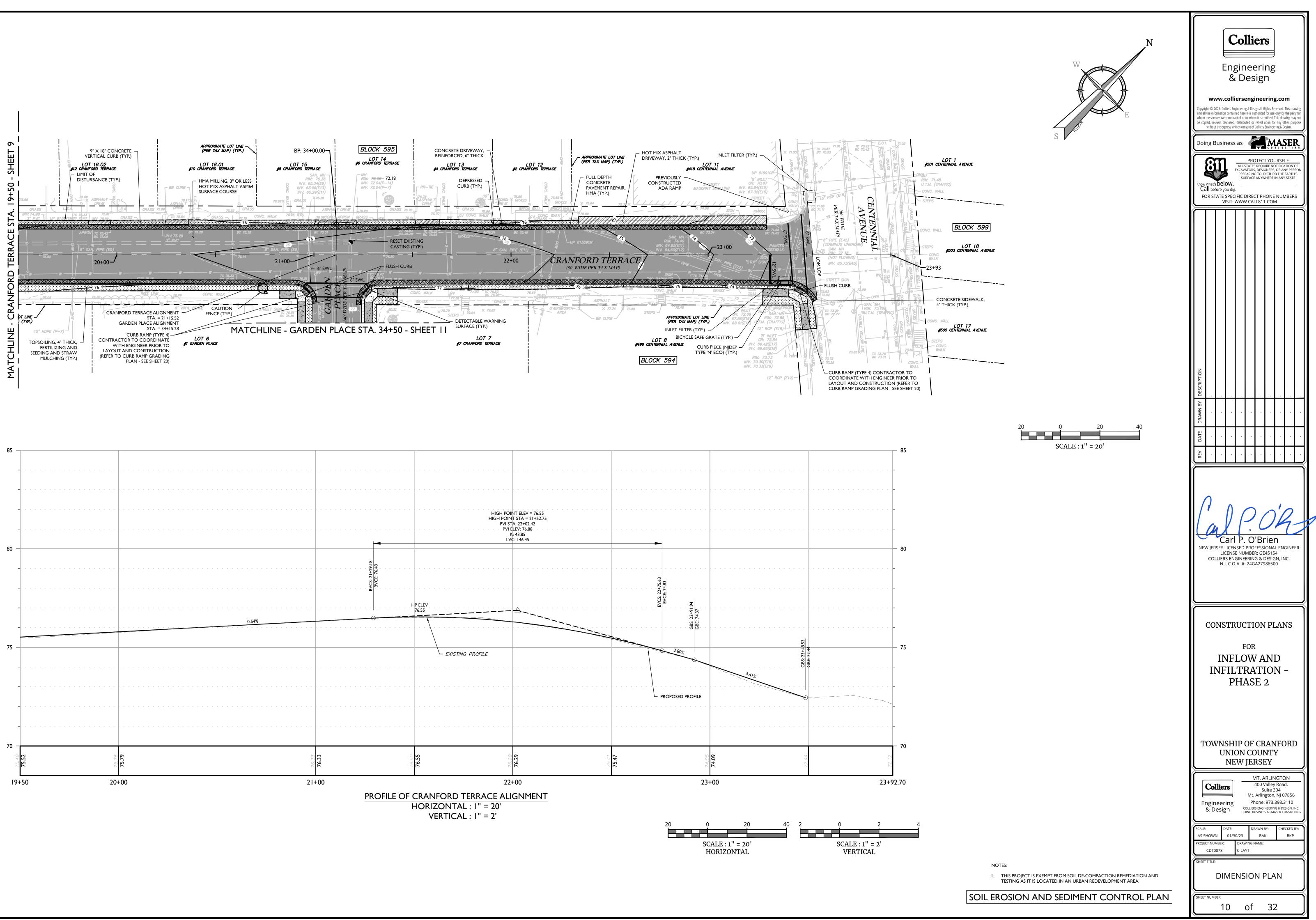
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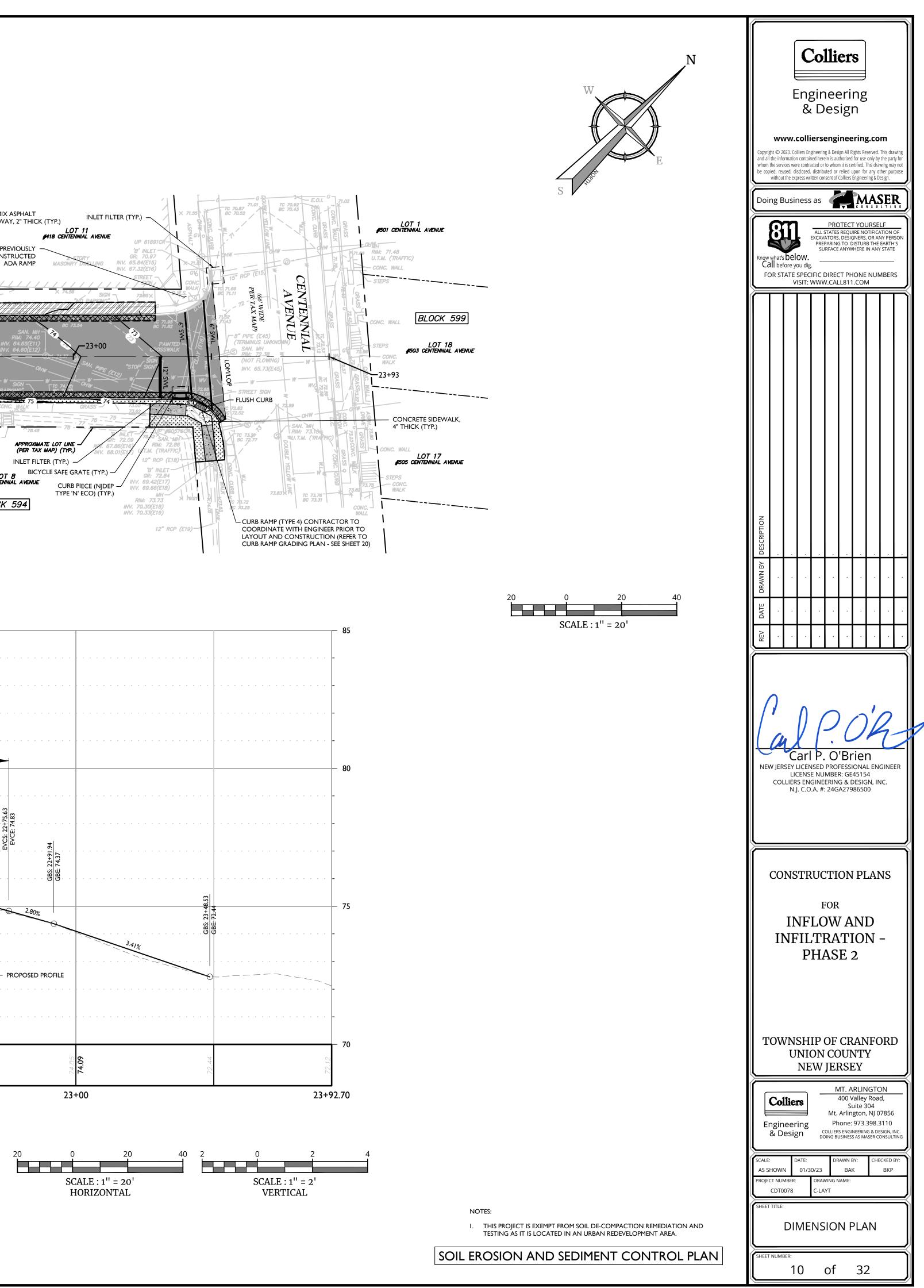


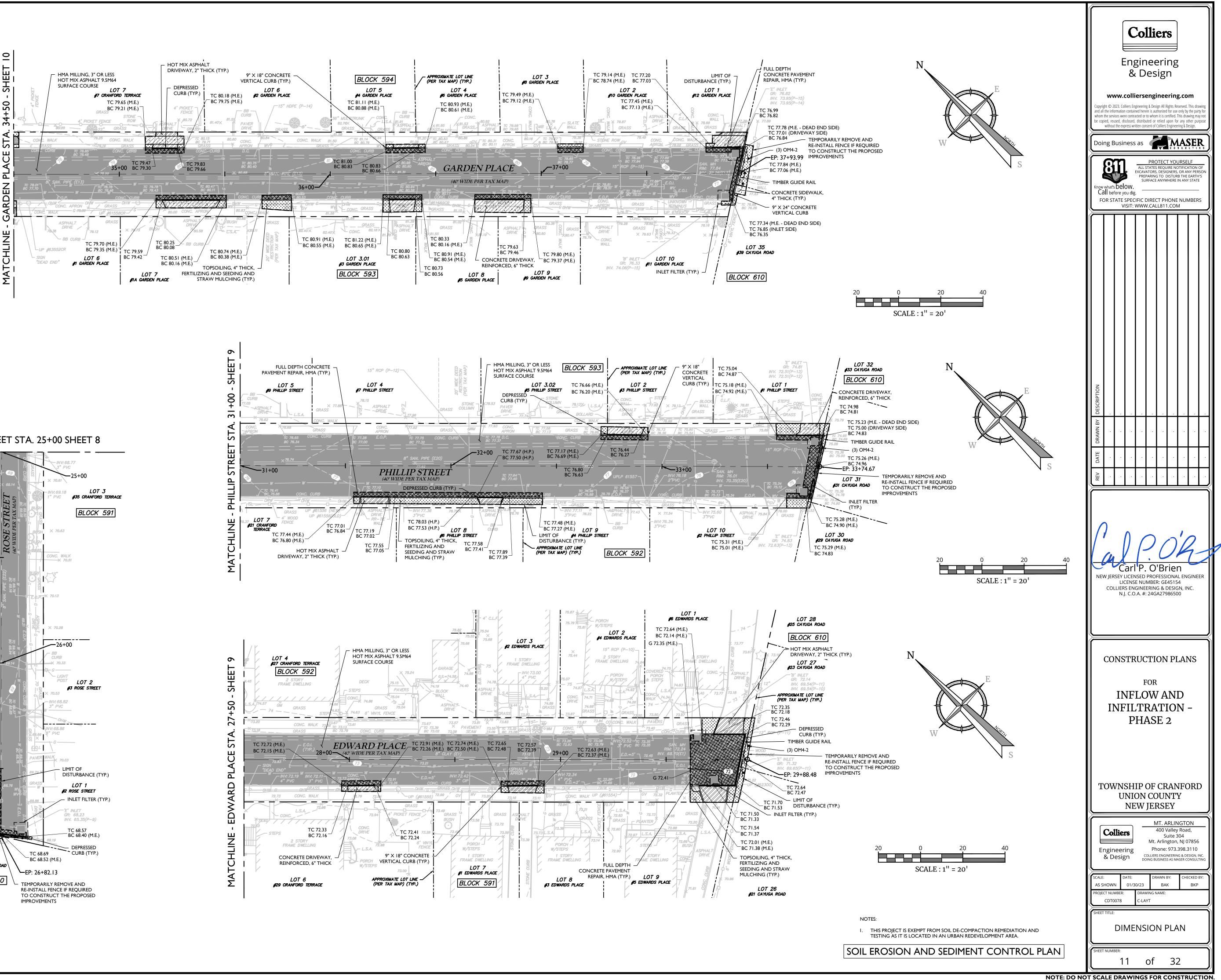


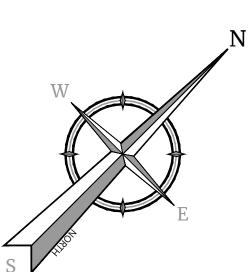




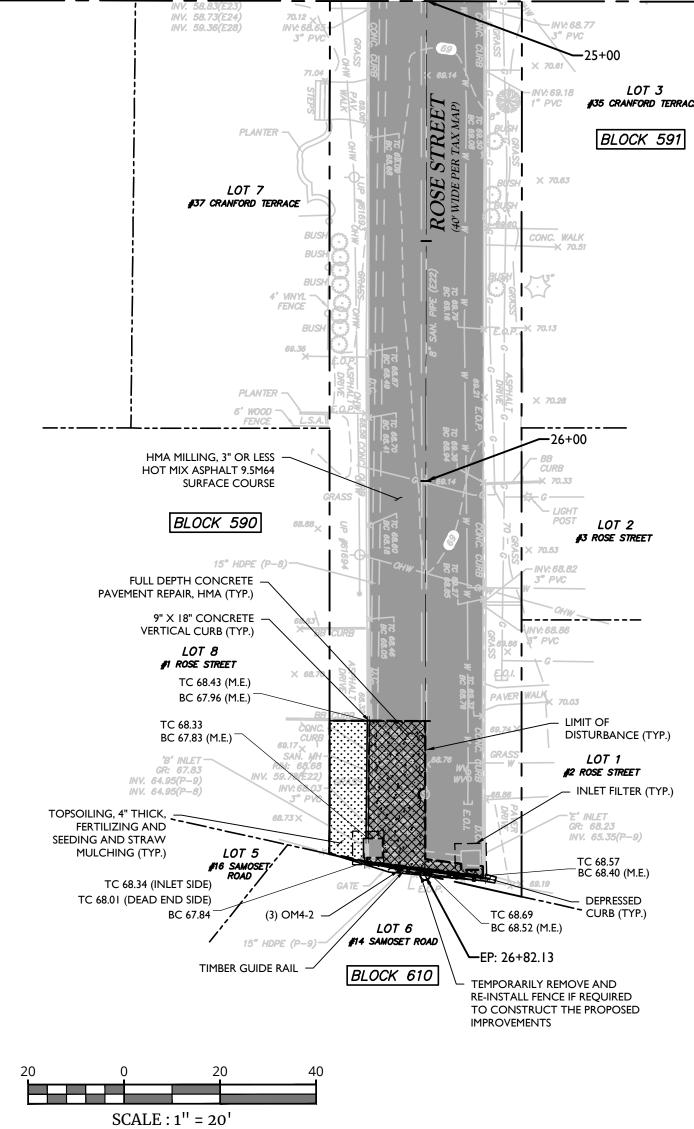


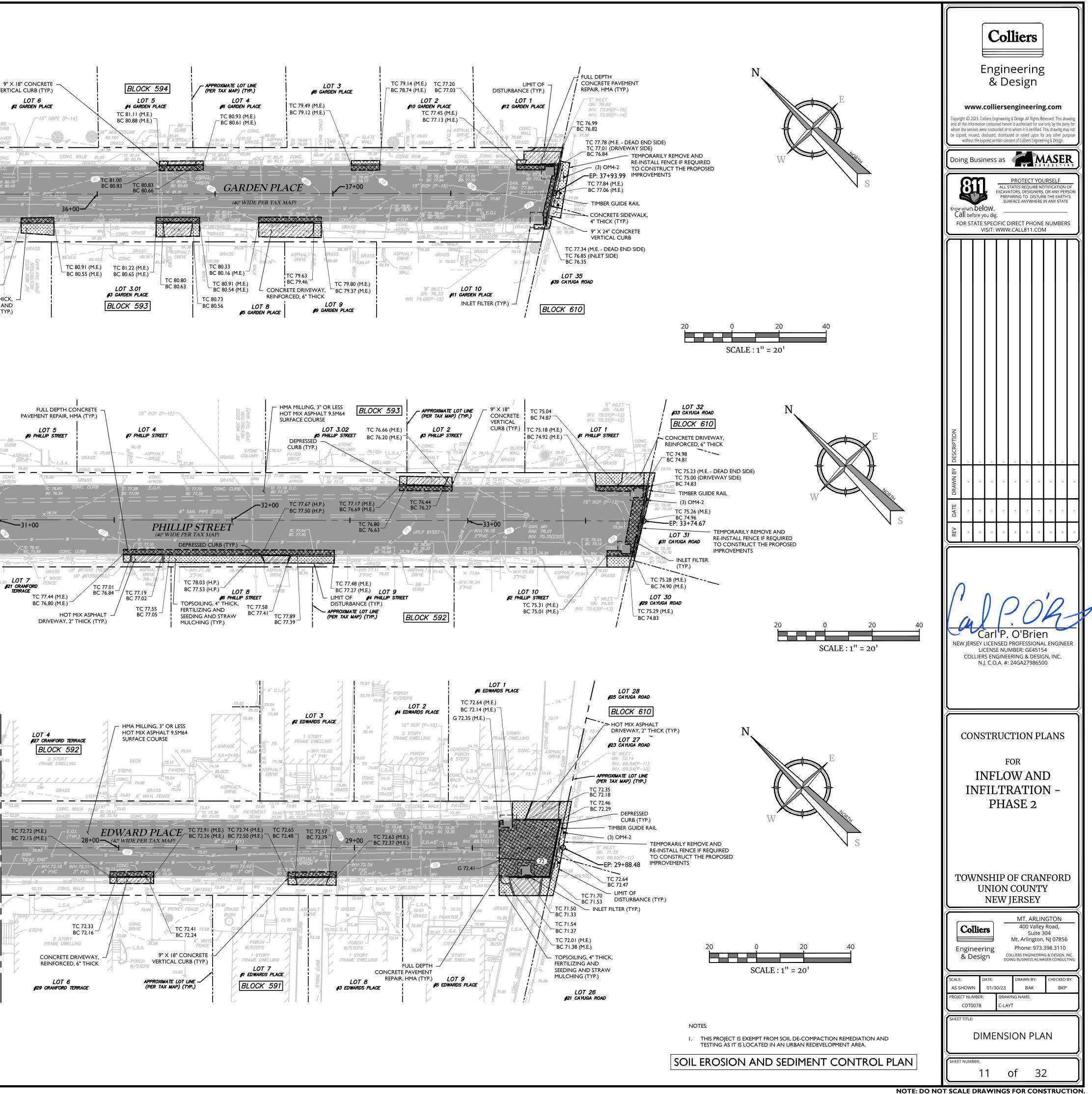


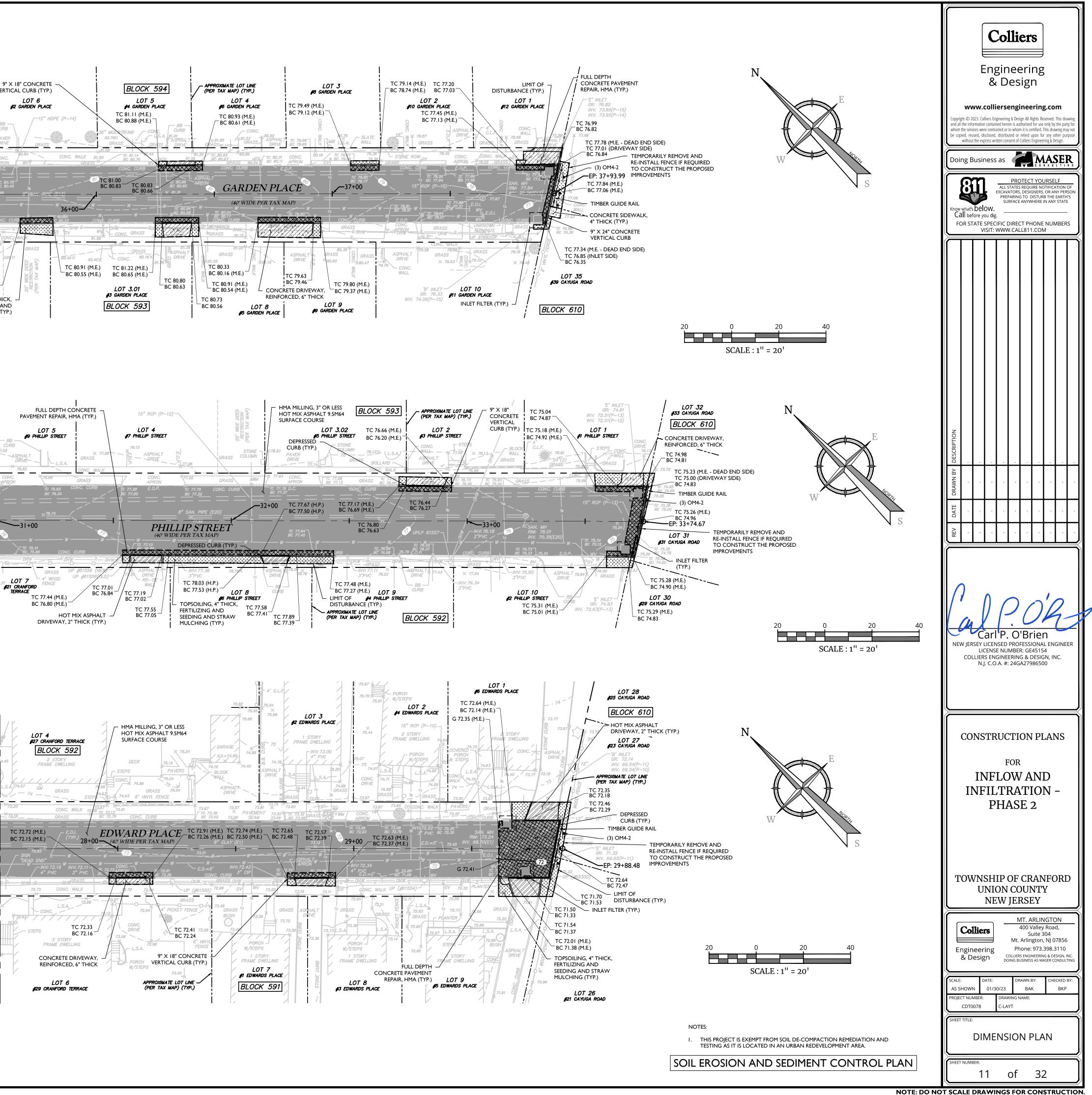


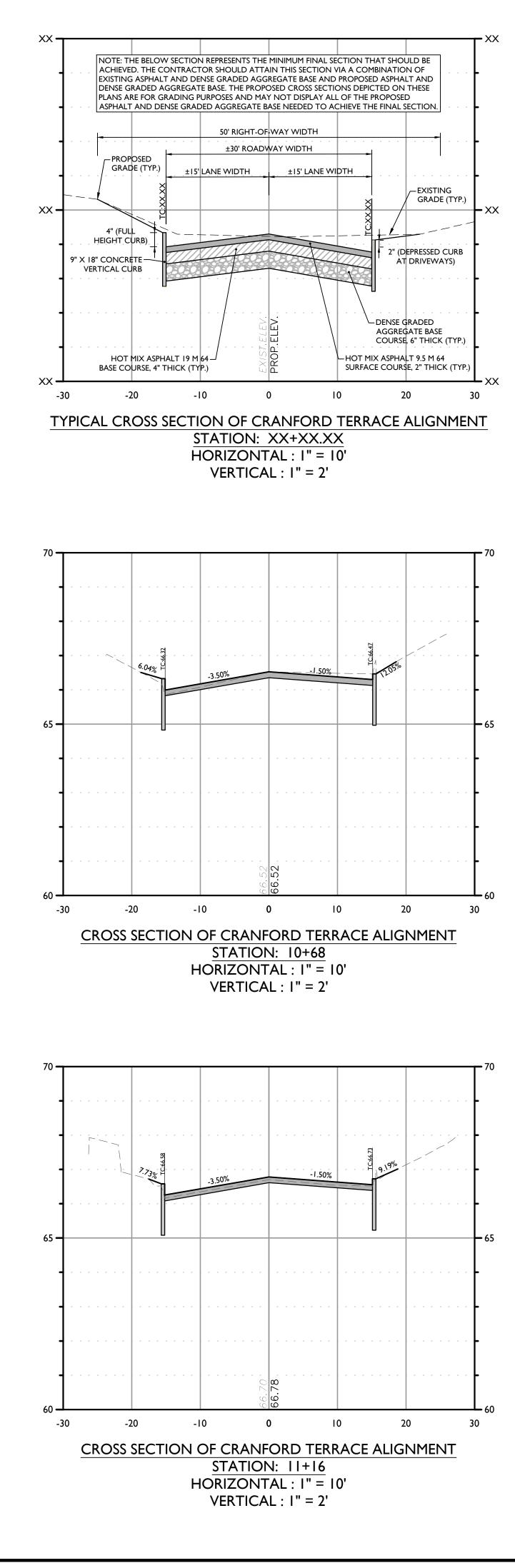


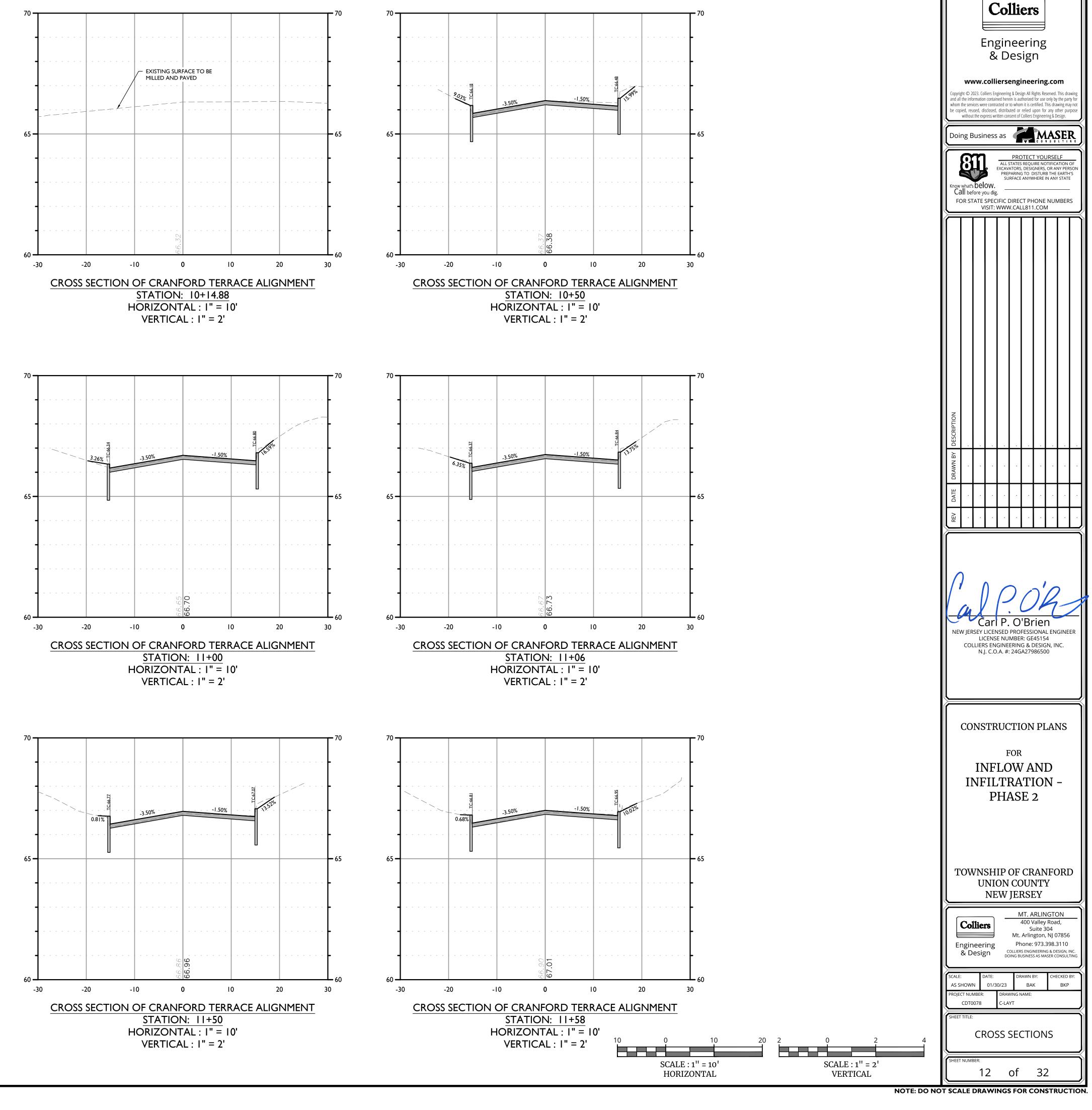
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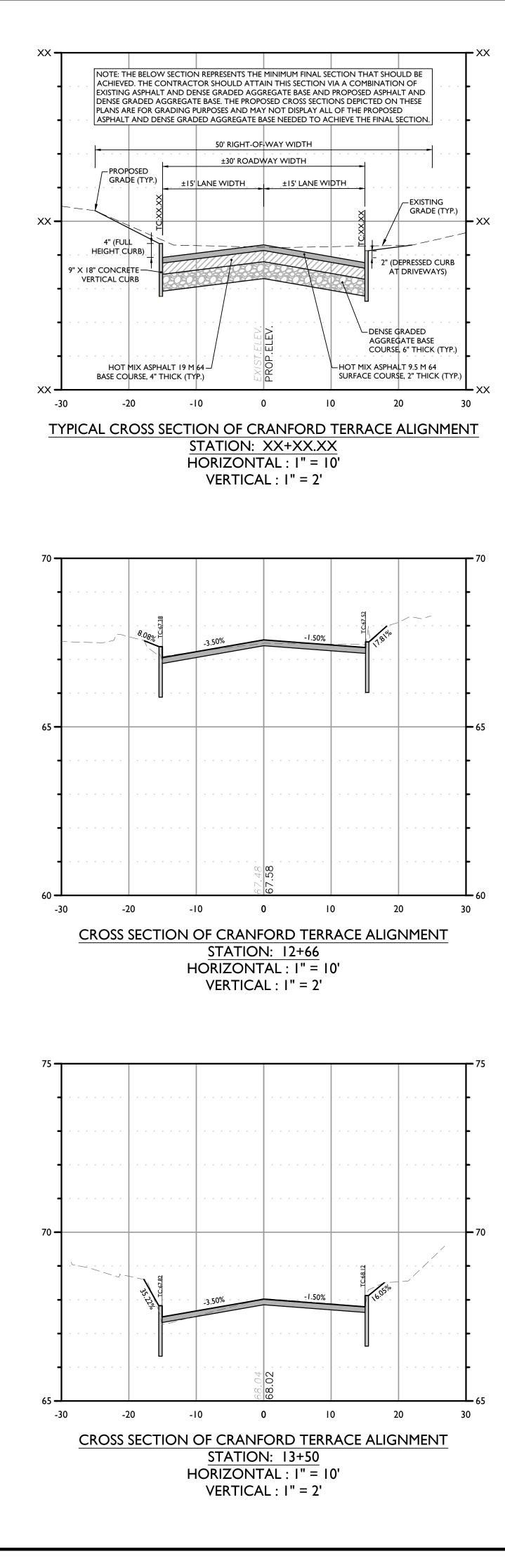


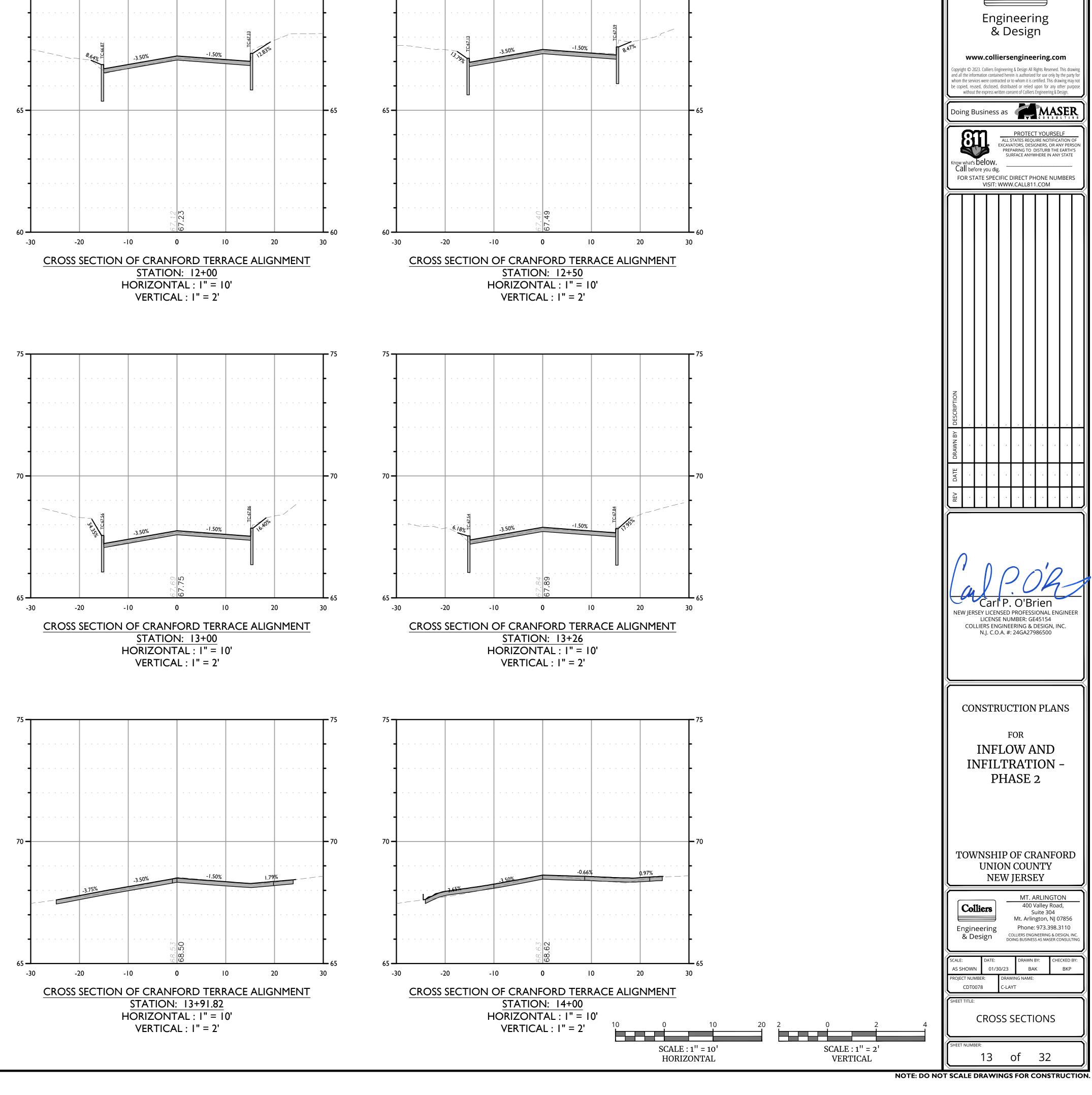






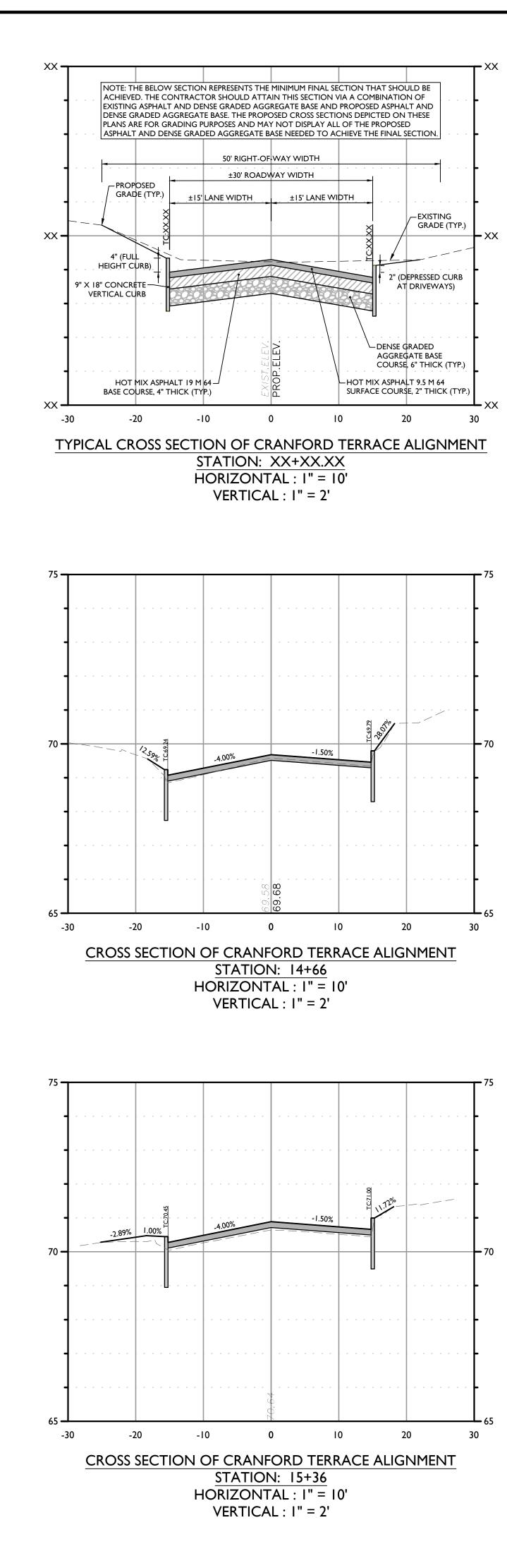


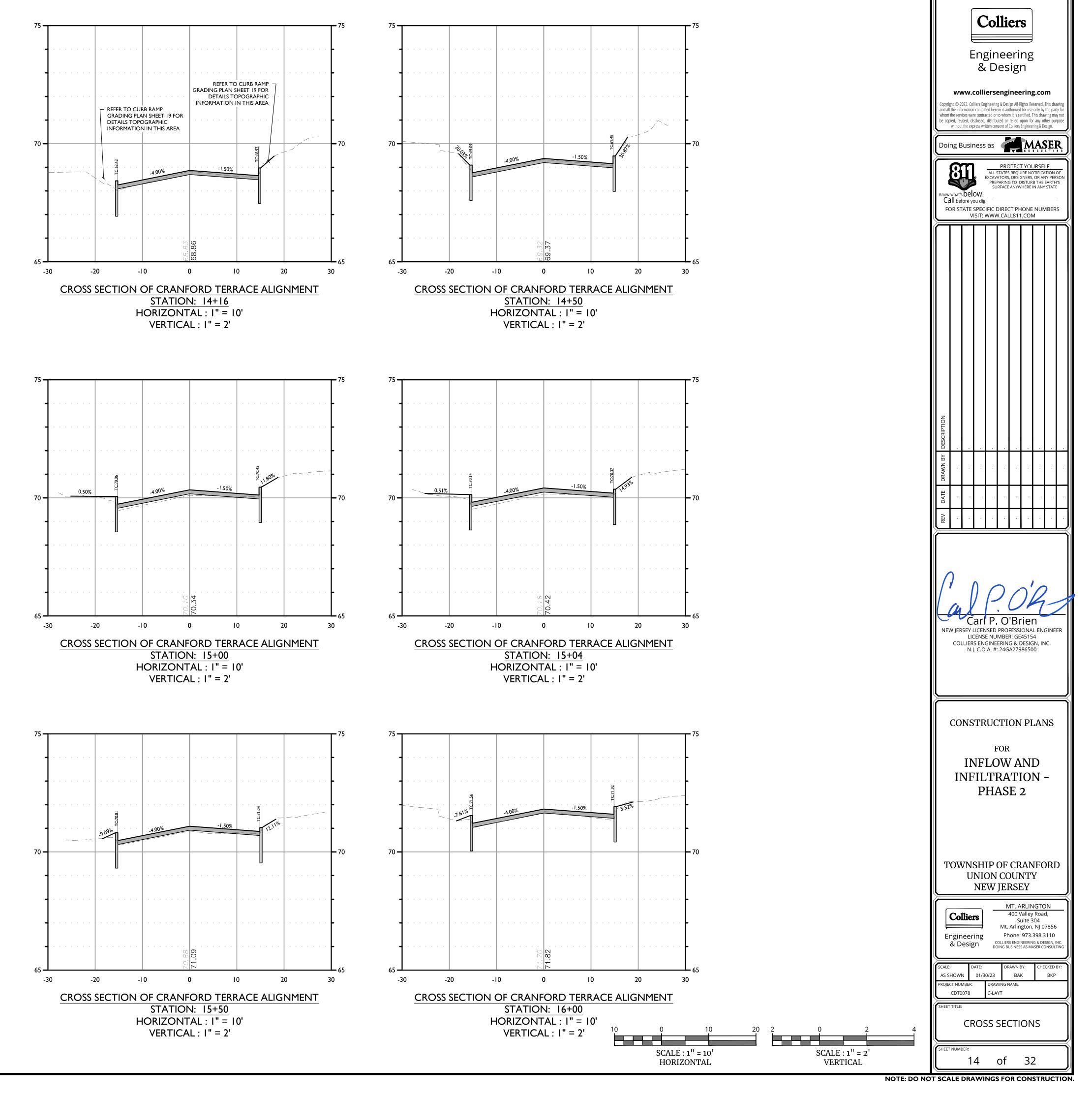


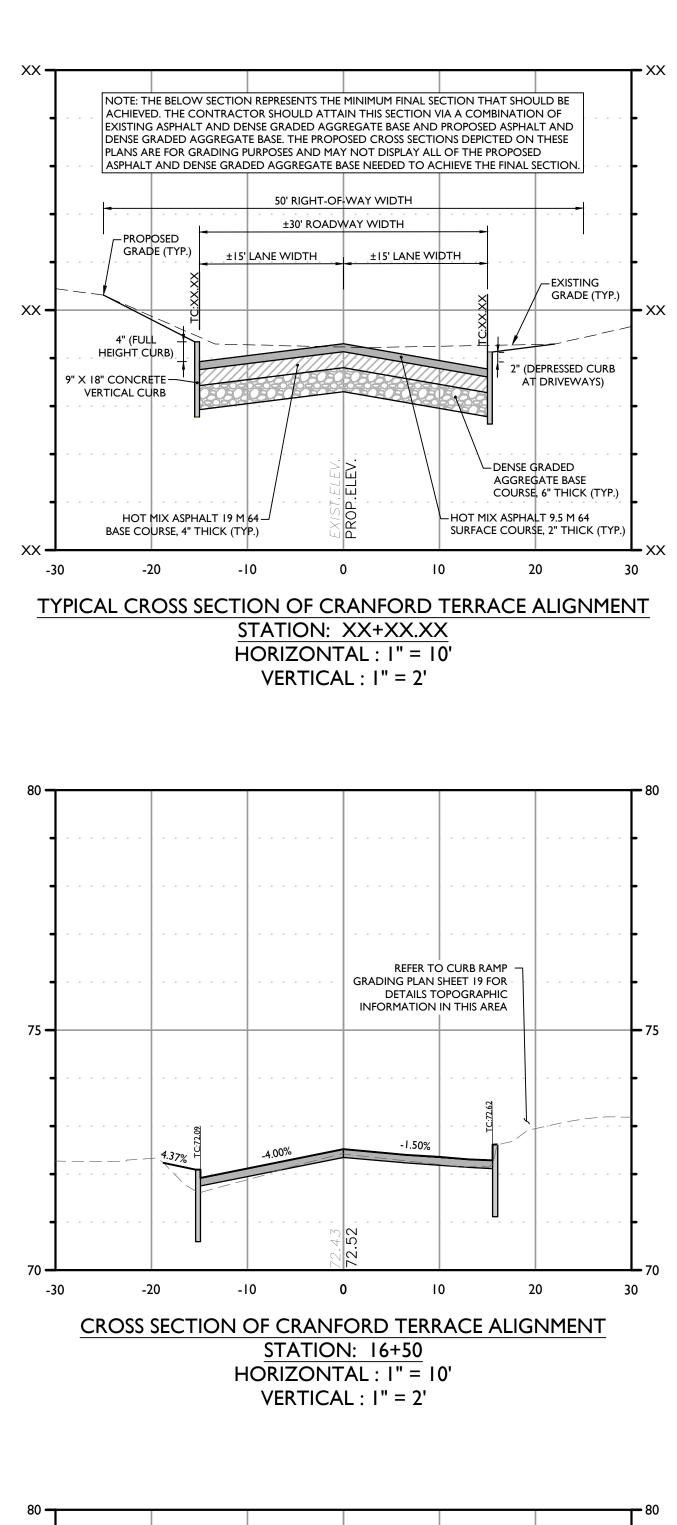


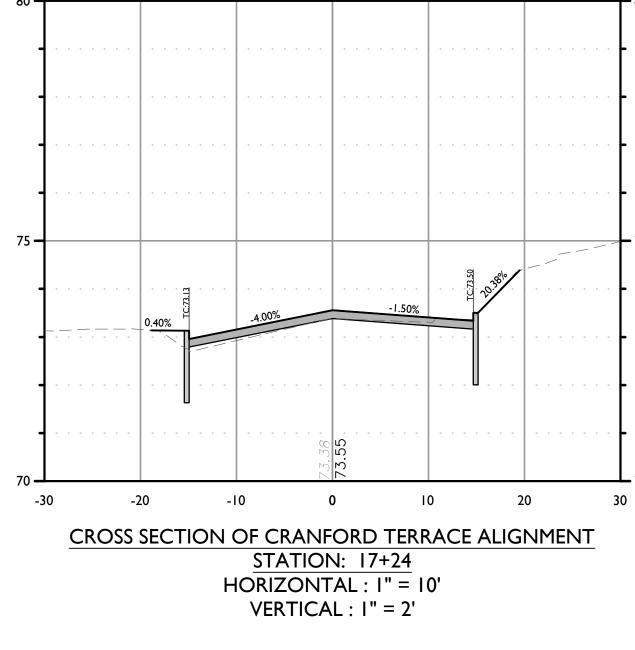


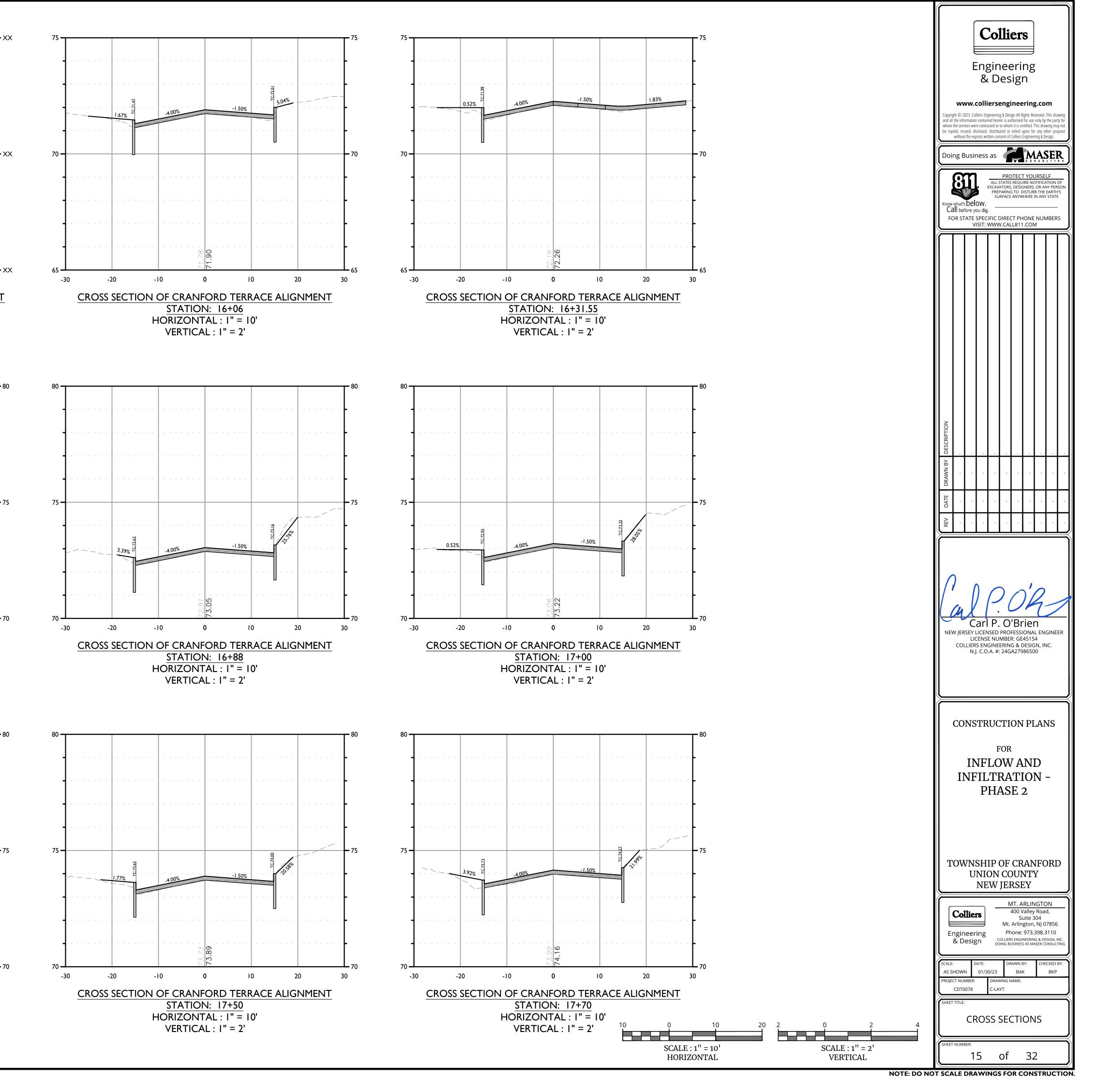
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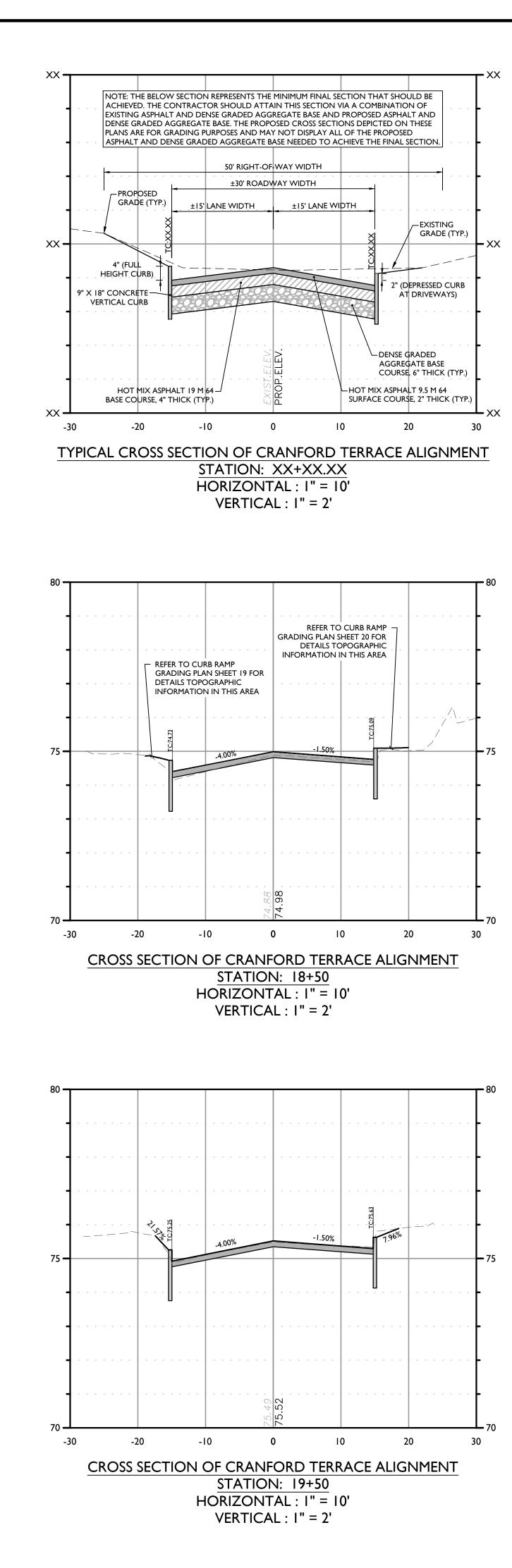


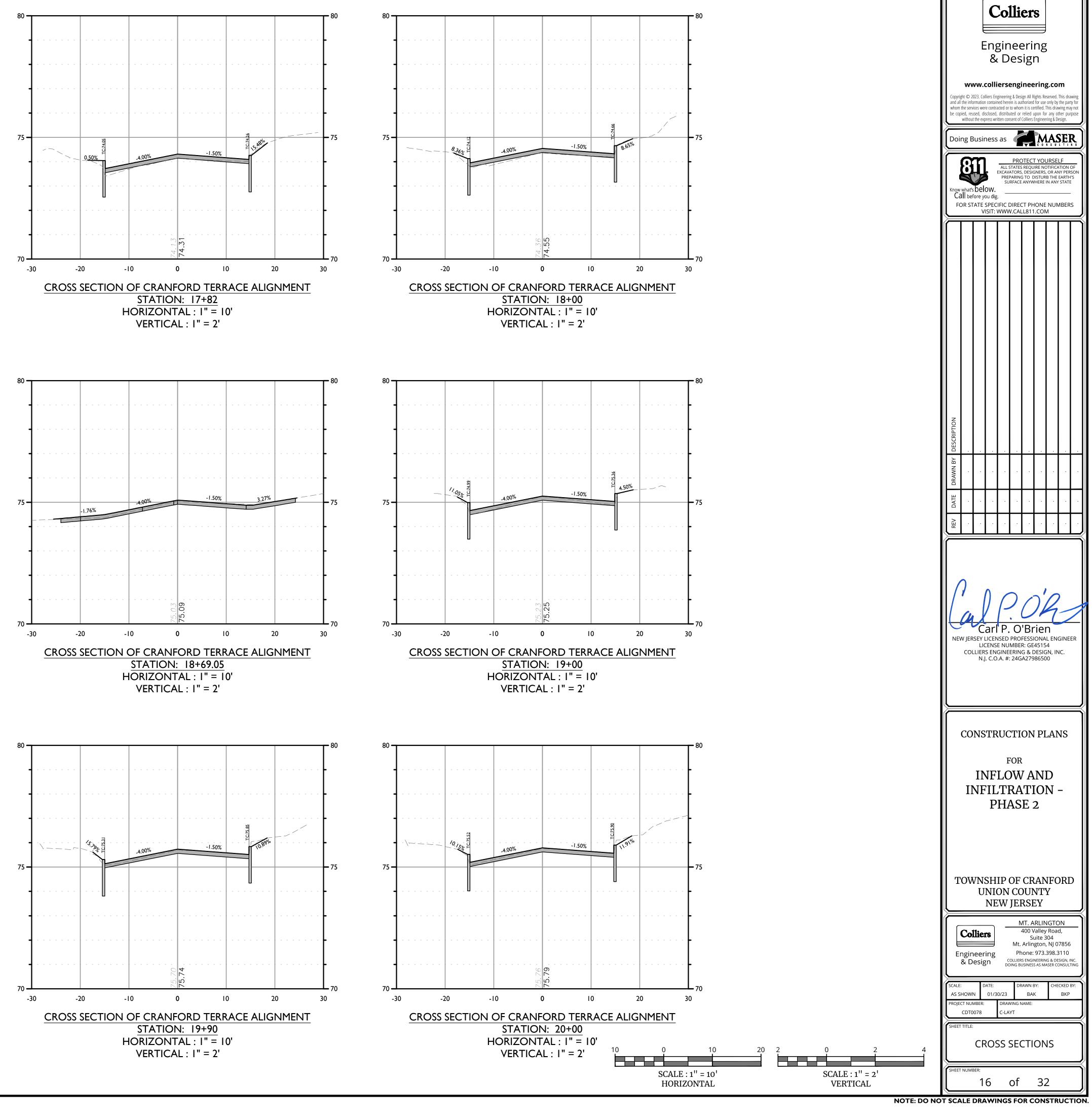




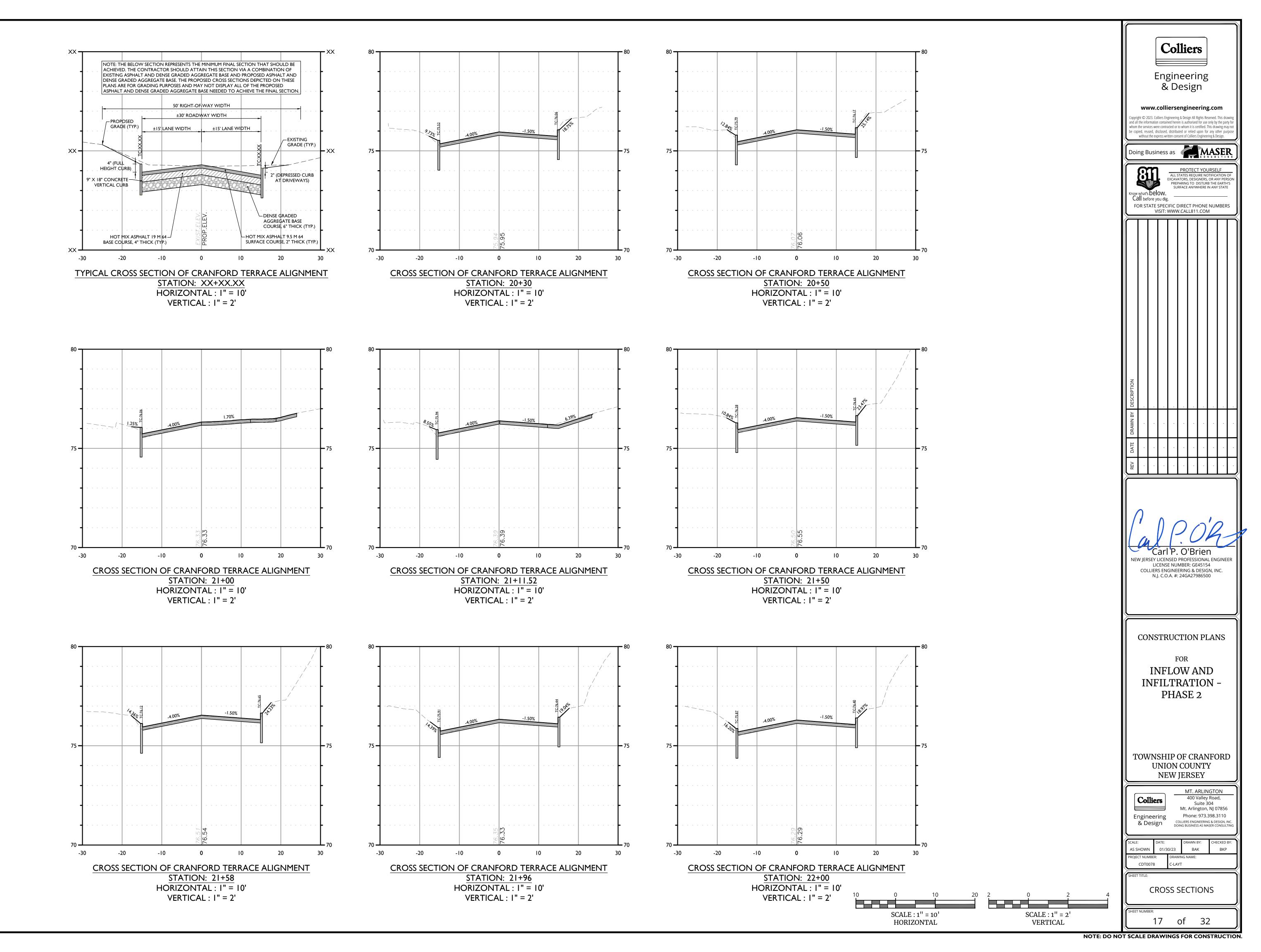


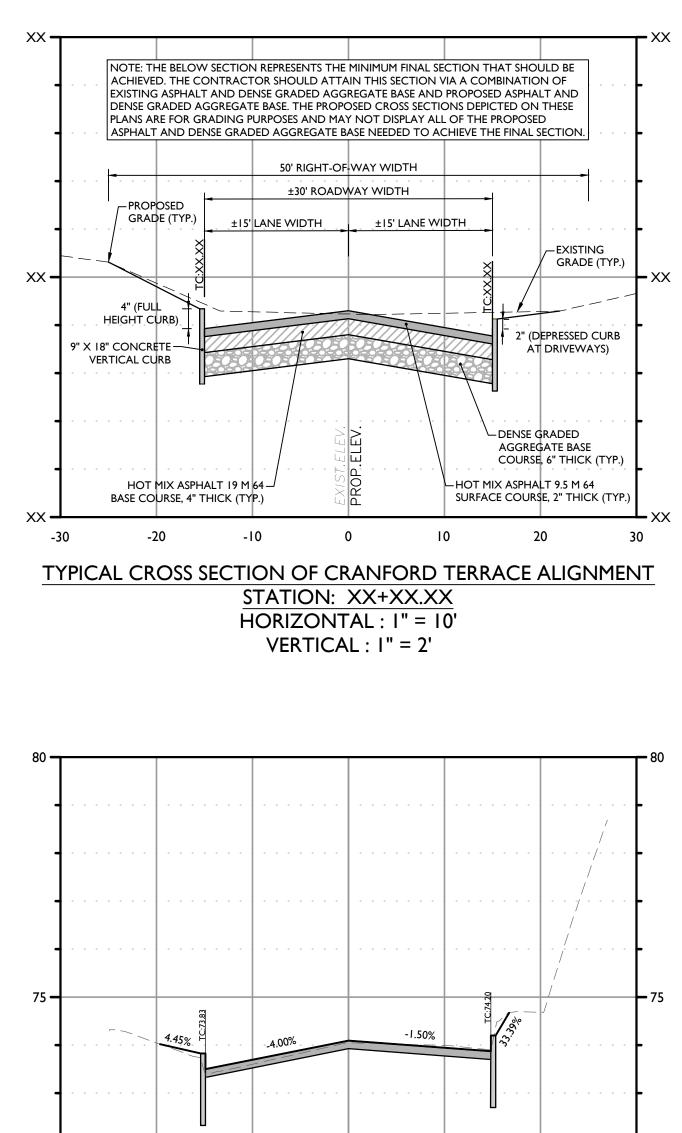












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CROSS SECTION OF CRANFORD TERRACE ALIGNMENT STATION: 23+00

HORIZONTAL : I" = 10'

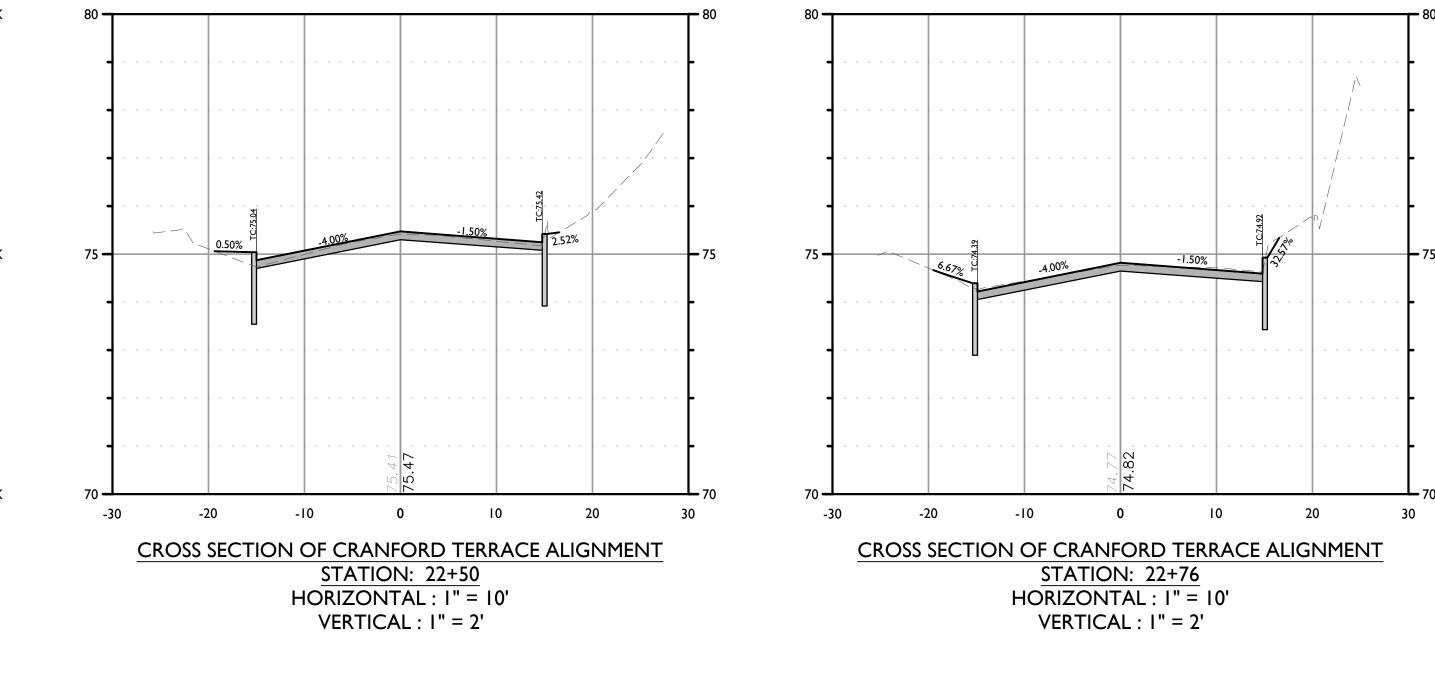
VERTICAL : I" = 2'

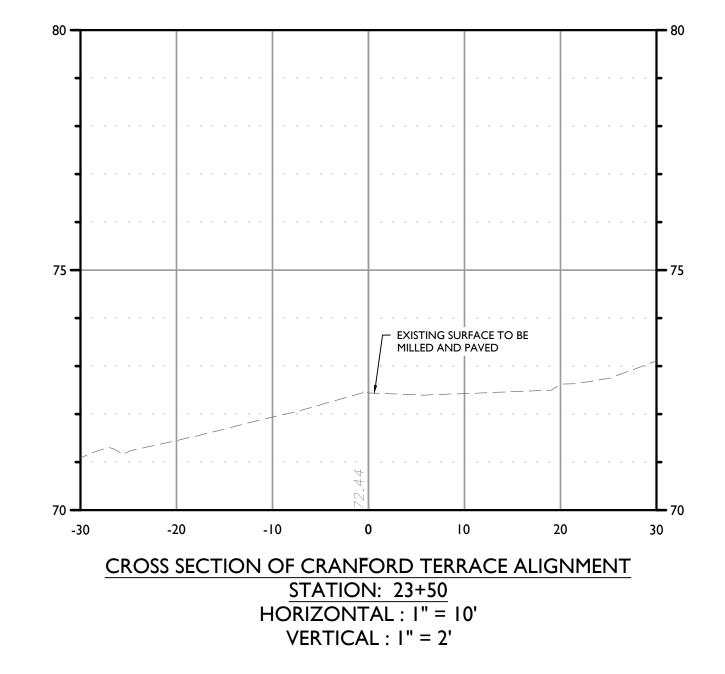
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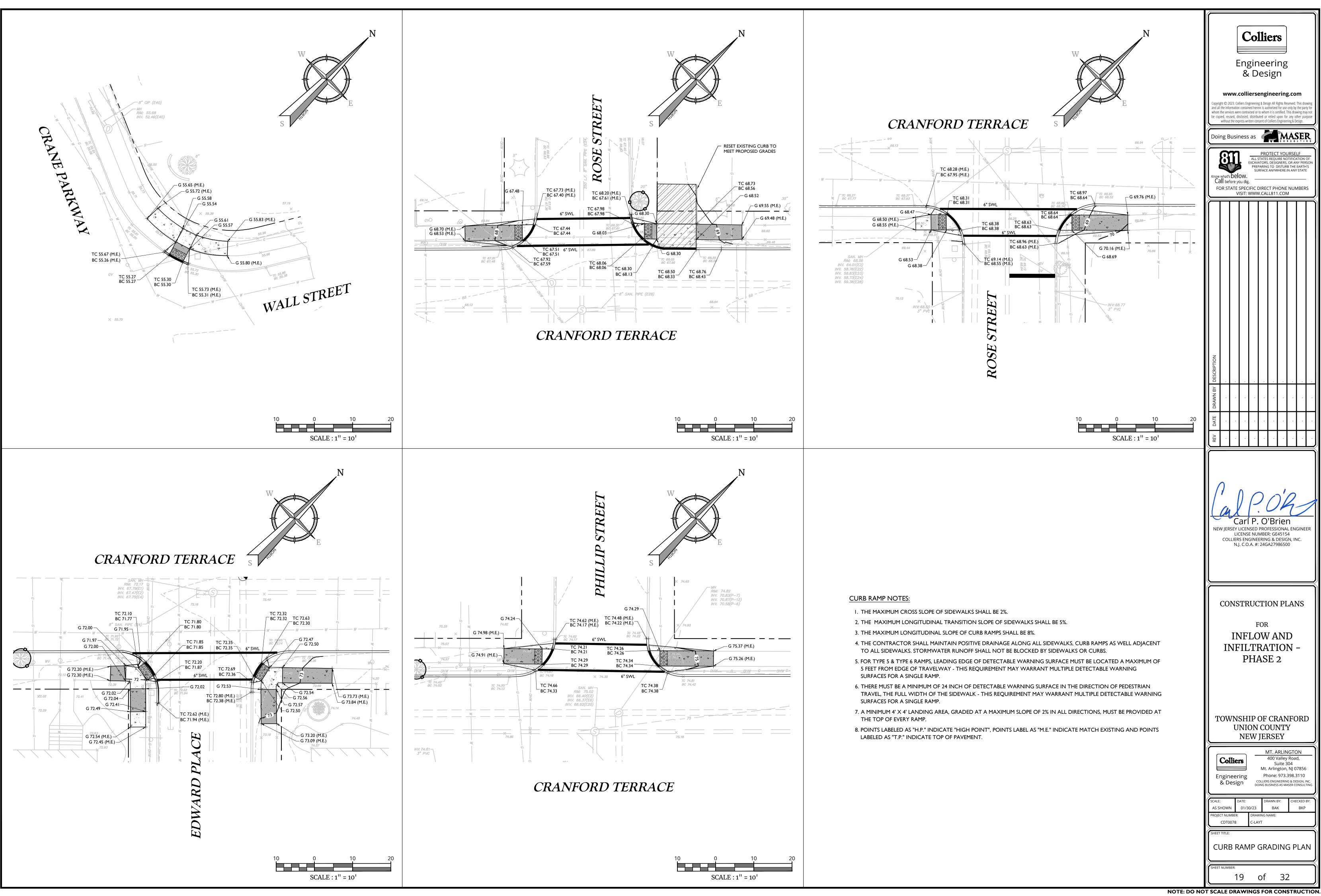


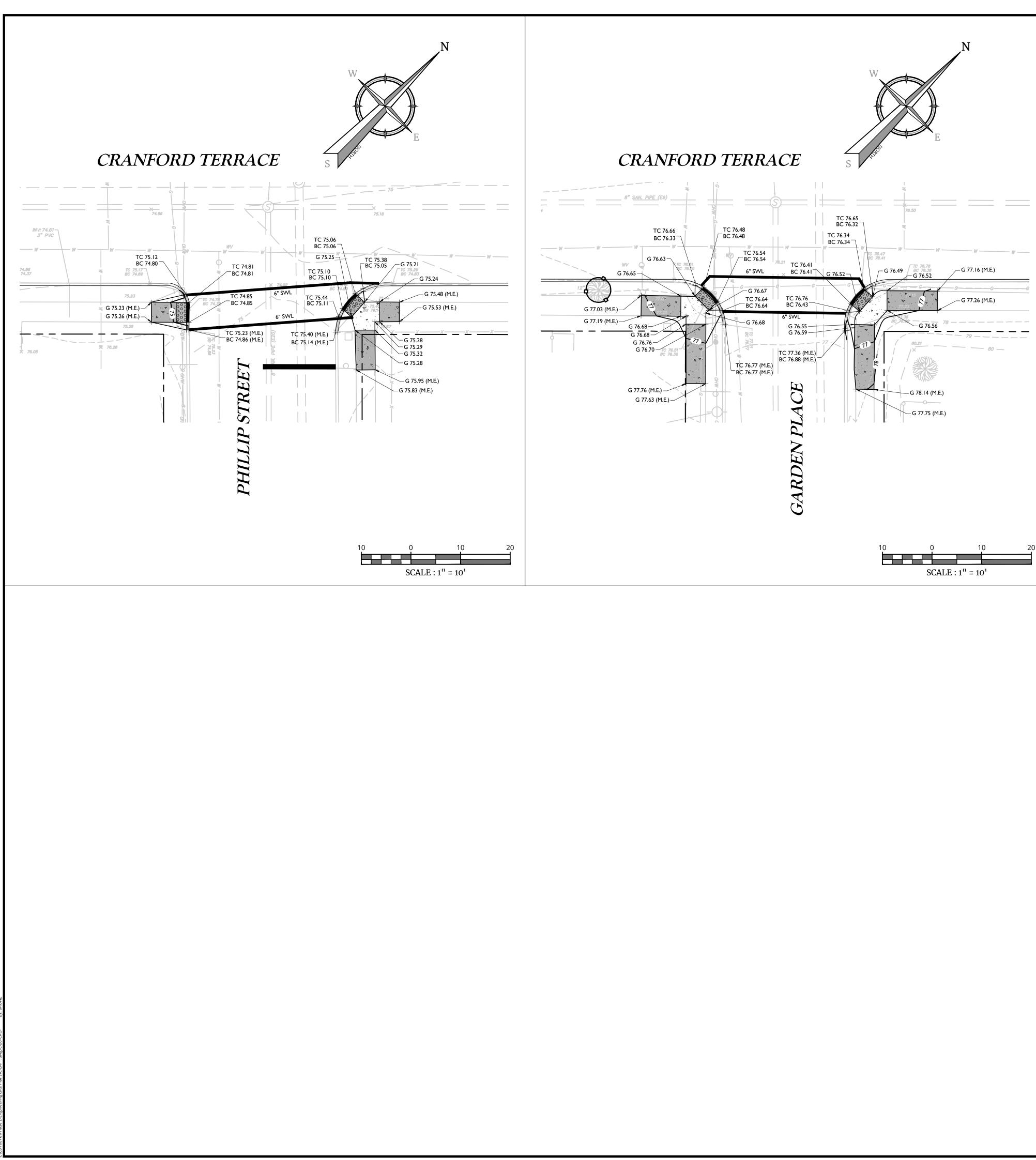
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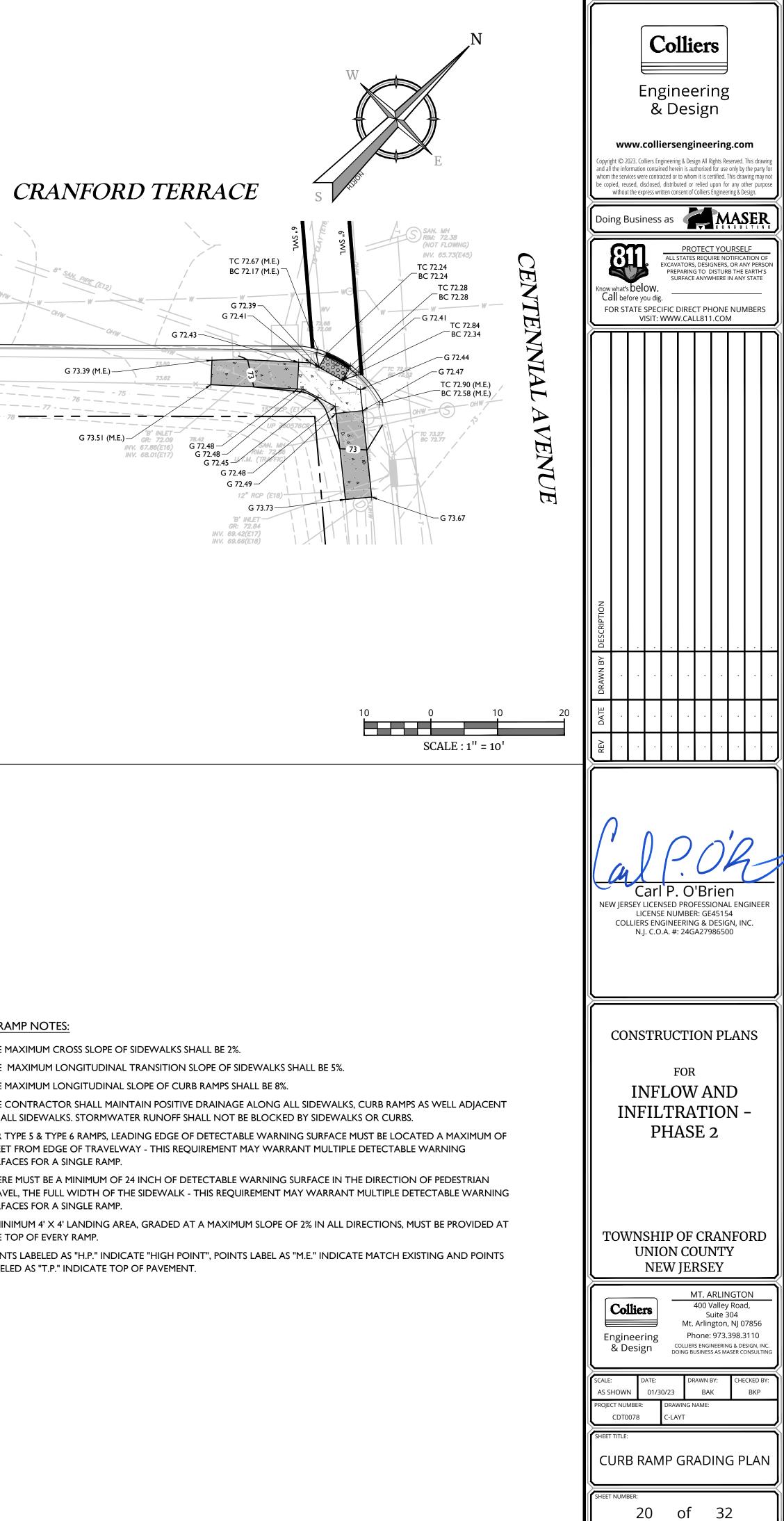
SCALE : 1" = 10'

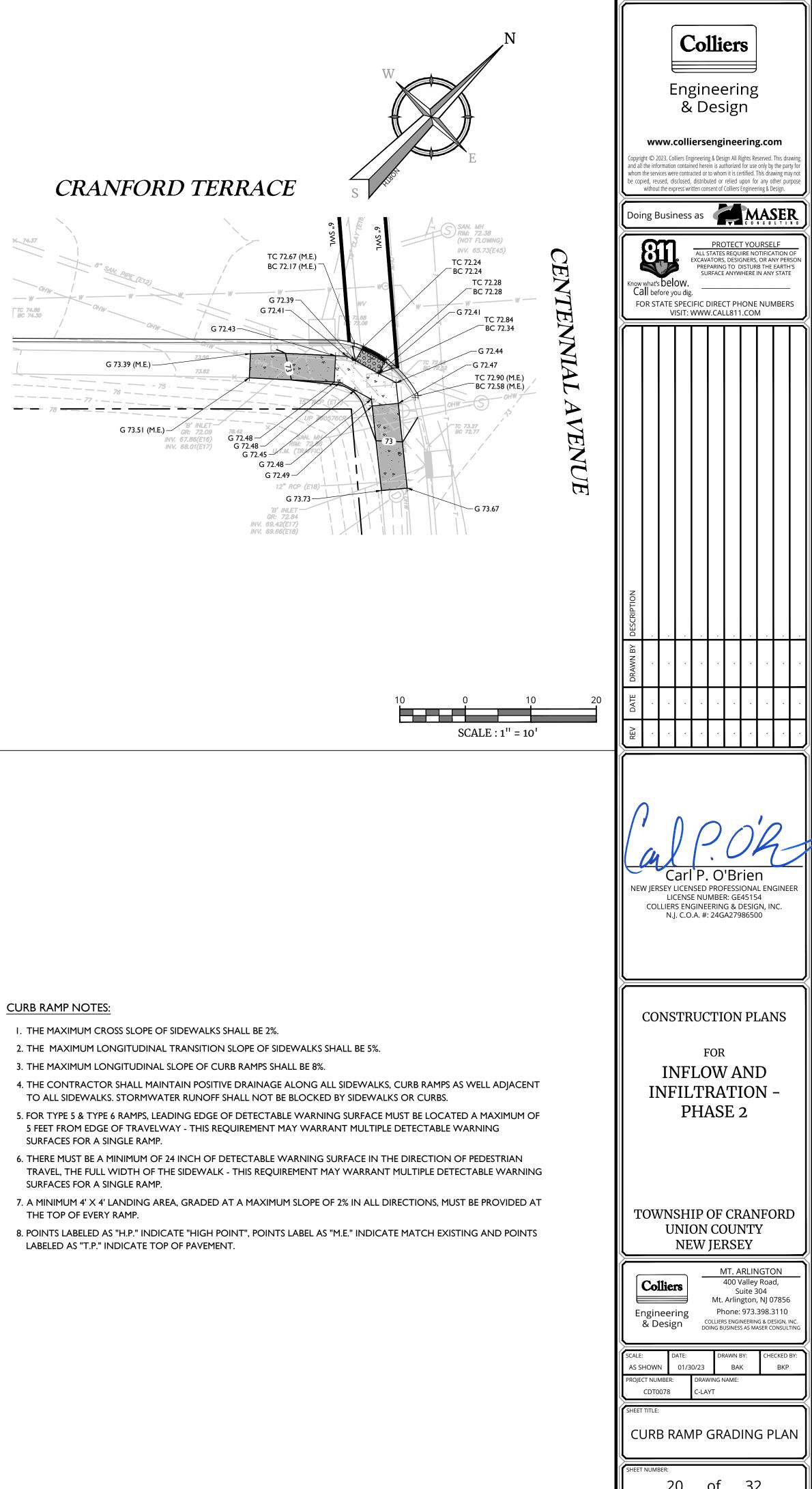
HORIZONTAL

SCALE : 1" = 2' VERTICAL









	SOMERSET-UNION SOIL CONSERVATION	P	ERMANENT SEEDING SPECIFICATIONS		
	DISTRICT NOTES	<u> </u>	SITE PREPARATION		
	MCNJ-SOIL-NOTE-1013 05/01/17 ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED PRIOR TO		A. INSTALL EROSION CONTROL MEASURES AND FACILITIES SUCH AS SILT FENCE, DIVERSIONS, SEDIMENT BASINS, CHANNEL STABILIZATION, ETC. SEE STANDARDS 11	EXIS GRO	
1.	ALL SOIL EROSION AND SEDIMENT CONTROL FRACTICES SHALL BE INSTALLED FRICK TO ANY MAJOR SOIL DISTURBANCES, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.		THROUGH 42. B. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, MULCH		- NKK
2.	ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 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 TWO (2) TONS PER ACRE, ACCORDING TO NJ STATE STANDARDS.	2.	ANCHORING AND MAINTENANCE. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING. SEEDBED PREPARATION		
3.			A. APPLY A UNIFORM 5 INCHES (UNSETTLED) OF TOPSOIL IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING OVER ALL DISTURBED AREAS. SOILS WITH A PH OF 4.0 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM DEPTH OF 12 INCHES OF SOIL HAVING PH OF 5.0 OR MORE IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOIL.		
4.	ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NJ STATE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY, 7TH EDITION LAST REVISED JANUARY 2014.		B. TOPSOIL SHOULD BE HANDLED ONLY WHEN DRY ENOUGH TO WORK WITHOUT DAMAGING SOIL STRUCTURE.	-	g ground Note I
5.	A SUB-BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS IN ORDER TO STABILIZE STREETS, ROADS, DRIVEWAYS AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE SUB-BASE SHALL BE INSTALLED WITHIN 15 DAYS OR PRELIMINARY GRADING.		C. APPLY GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-20-10 OR EQUIVALENT WITH 50%		
6.	IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING ALL CRITICAL AREAS SUBJECT TO EROSION (I.E.: STEEP SLOPES, ROADWAY EMBANKMENTS) WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO THE NJ STATE STANDARDS.		WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. APPLY LIMESTONE IN ACCORDANCE WITH THE TABLE BELOW AND THE RESULTS OF SOIL TESTING. CALCIUM CARBONATE IS THE EQUIVALENT AND STANDARD FOR MEASURING THE ABILITY OF LIMING MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES. THE TABLE BELOW IS A GENERAL GUIDELINE FOR LIMESTONE APPLICATION RATES.		7
	ANY STEEP SLOPES RECEIVING PIPELINE INSTALLATION WILL BE BACKFILLED AND STABILIZED DAILY, AS THE INSTALLATION PROCEEDS (I.E.: SLOPES GREATER THAT 3:1) TRAFFIC CONTROL STANDARDS REQUIRE THE INSTALLATION OF A 50'X30'X6''PAD OF I		LIMESTONE APPLICATION RATE BY SOIL TEXTURETONS/ACRELBS/1,000 SQ. FT.SOIL TEXTURETONS/ACRELBS/1,000 SQ. FT.CLAY, CLAY LOAM, AND HIGH ORGANIC SOIL3135SANDY LOAM, LOAM, SILT LOAM290	1	NOT TO S
9	I/2" OR 2" STONE, AT ALL CONSTRUCTION DRIVEWAYS, IMMEDIATELY AFTER INITIAL SITE DISTURBANCE. THE SOMERSET-UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING		LOAMY SAND, SAND I 45 D. IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS		
	48 HOURS IN ADVANCE OF NAY LAND DISTURBING ACTIVITY.		PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.) E. WORK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF APPROXIMATELY 4		
	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 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		E. WORK LIME AND FER TILIZER INTO THE SOIL TO A DEPTH OF APPROXIMATELY 4 INCHES. THE FINAL HARROWING OR DISC OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM SEEDBED IS PREPARED. F. REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION AND OTHER DEBRIS SUCH AS WIRE, TREE ROOTS, PIECES OF CONCRETE,		
	EMPLOYED. TOP SOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES.	3.	CLODS LUMPS OR OTHER UNSUITABLE MATERIAL. SEEDING		
П	. IN THAT NJSA 4:24-39 ET SEQ., REQUIRES THAT NO CERTIFICATE OF OCCUPANCY BE ISSUED BEFORE THE PROVISIONS OF THE CERTIFIED PLAN FOR SOIL EROSION AND SEDIMENT CONTROL HAVE BEEN COMPLIED WITH FOR PERMANENT MEASURES, ALL SITE		A. SELECT THE SEED MIXTURE AS SPECIFIED ON THIS SHEET AND APPLY AS NOTED WITHIN THE DATES SPECIFIED IN THE STANDARD.		-11/
	WORK FOR SITE PLANS AND ALL WORK AROUND INDIVIDUAL LOTS IN SUBDIVISIONS, WILL HAVE TO BE COMPLETED PRIOR TO THE DISTRICT ISSUING A REPORT OF COMPLIANCE FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE MUNICIPALITY.		B. <u>CONVENTIONAL SEEDING</u> IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH		
12	. CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.		OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE TEXTURED SOIL. C. <u>HYDROSEEDING</u> IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK OR TRAILER MOUNTED TANK, WITH AN AGITATION SYSTEM AND MOUNTED	↓	
13	ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN WILL REQUIRE THE SUBMISSION OF REVISED SOIL EROSION AND SEDIMENT CONTROL PLANS TO THE DISTRICT FOR RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT NJ STATE SOIL EROSION & SEDIMENT CONTROL STANDARDS.		TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING <u>SEED</u> , <u>WATER</u> AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4 MULCHING BELOW) HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD		TOCKPILES S
	. THE SOMERSET-UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED OF ANY CHANGES IN OWNERSHIP.		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	2. ALL E	XCAVATED OIL STOCKF
15	. MULCHING TO THE NJ STANDARDS IS REQUIRED FOR OBTAINING A CONDITIONAL REPORT OF COMPLIANCE. CONDITIONALS ARE ONLY ISSUED WHEN THE SEASON PROHIBITS SEEDING.		STEEP FOR CONVENTIONAL EQUIPMENT TO TRAVERSE OR TOO OBSTRUCTED WITH ROCKS, STUMPS, ETC. D. AFTER SEEDING, FIRMING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE	3	
	. CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL ADJACENT ROADS CLEAN DURING LIFE OF CONSTRUCTION PROJECT.		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.		NOT TO S
17	. THE DEVELOPER SHALL BE RESPONSIBLE FOR REMEDIATING ANY EROSION OR SEDIMENT PROBLEMS THAT ARISE AS A RESULT OF ONGOING CONSTRUCTION AT THE REQUEST OF THE SOMERSET-UNION SOIL CONSERVATION DISTRICT.	4.	MULCHING		
18	. HYDRO SEEDING IS A TWO- STEP PROCESS. THE FIRST STEP INCLUDES SEED, FERTILIZER, LIME, ETC., ALONG WITH MINIMAL AMOUNTS OF MULCH TO PROMOTE CONSISTENCY,		A. MULCHING IS REQUIRED ON ALL SEEDING. B. STRAW OR HAY - UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, OR OR		
	GOOD SEED TO SOIL CONTACT, AND GIVE A VISUAL INDICATION OF COVERAGE. UPON COMPLETION OF SEEDING OPERATION, HYDRO-MULCH SHOULD BE APPLIED AT A RATE OF 1500 LBS. PER ACRE IN SECOND STEP. THE USE OF HYDRO-MULCH, AS OPPOSED TO STRAW, IS LIMITED TO OPTIMUM SEEDING DATES AS LISTED IN THE NJ STANDARDS.		SALT HAY TO BE APPLIED AT THE RATE OF I-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER I,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED. STRAW OR HAY MULCH MUST BE ANCHORED IMMEDIATELY AFTER PLACEMENT USING PEG AND TWINE, MULCH NETTING, MECHANICAL CRIMPER OR LIQUID MULCH BINDERS IN ACCORDANCE		
			WITH THE STANDARD. C. <u>WOOD-FIBER OR PAPER-FIBER MULCH</u> - SHALL BE MADE FROM WOOD, PLANT		
	<u>CONSTRUCTION SEQUENCE</u> IMPLEMENTATION OF SOIL EROSION & SEDIMENT CONTROL MEASURES INCLUDING:		FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS, USED AT THE RATE OF 1,500 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER. THIS MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. USE IS LIMITED TO FLATTER		
	- INLET FILTERS I DAY - SILT FENCE I DAY		SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.		
	CONSTRUCT IMPROVEMENTS: - SITE CLEARING I WEEK - COMPLETE MILLING OPERATIONS 2 WEEKS				
	- INSTALL CURB RAMPS AND CURBING 2 WEEK - COMPLETE PAVING OPERATIONS 2 WEEK		DUST CONTROL NOTES		
	- UNIFORMLY APPLY TOPSOIL TO AN AVERAGE DEPTH OF 5", MINIMUM OF 4", FIRMED IN PLACE I DAY		THE FOLLOWING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST:		
1	- FERTILIZING, SEEDING AND STRAW MULCHING 2 DAYS				

OF 5", MINIMUM OF 4", FIRMED IN PLACE - FERTILIZING, SEEDING AND STRAW MULCHING I DAY 2 DAYS I DAY - REMOVAL OF SOIL EROSION & SEDIMENT CONTROL MEASURES

NOTE: TOTAL ESTIMATED PROJECT DURATION: 8 WEEKS

THIS SCHEDULE IS FOR SOIL EROSION AND SEDIMENT CONTROL PURPOSES ONLY.

STOCKPILE

I. ALL EXCAVATED MATERIAL, INCLUDING TOPSOIL, SHALL BE DISPOSED OF OFF-SITE. ALL TOPSOIL STOCKPILES SHALL BE REMOVED ON A DAILY BASIS.

AREA OF DISTURBANCE = 21,453 SF OR 0.49 ACRES

TABLE 16-1: DUST CONTROL MATERIALS WATER TYPE OF NOZZLE MATERIAL DILUTION ANIAONIC ASPHALT EMULSION COARSE SPRAY 7:I LATEX EMULSION 12.5:1 FINE SPRAY RESIN IN WATER 4:I FINE SPRAY APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS. MAY POLYACRYLAMIDE (PAM) - SPRAY ON ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS. (SEE SEDIMENT BASIN STANDARD (PAGE 26-1 OF "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY", POLYACRYLAMIDE (PAM) - DRY SPRAY LATEST EDITION) NONE COARSE SPRAY

SITE IS SPRINKLED UNTIL THE SURFACE IS WET.

ACIDULATED SOY BEAN SOAP STICK

TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS A TEMPORARY EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, AND SPRING-TOOTHED HARROWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

<u>SPRINKLING</u>

BARRIERS

TILLAGE

MULCHES

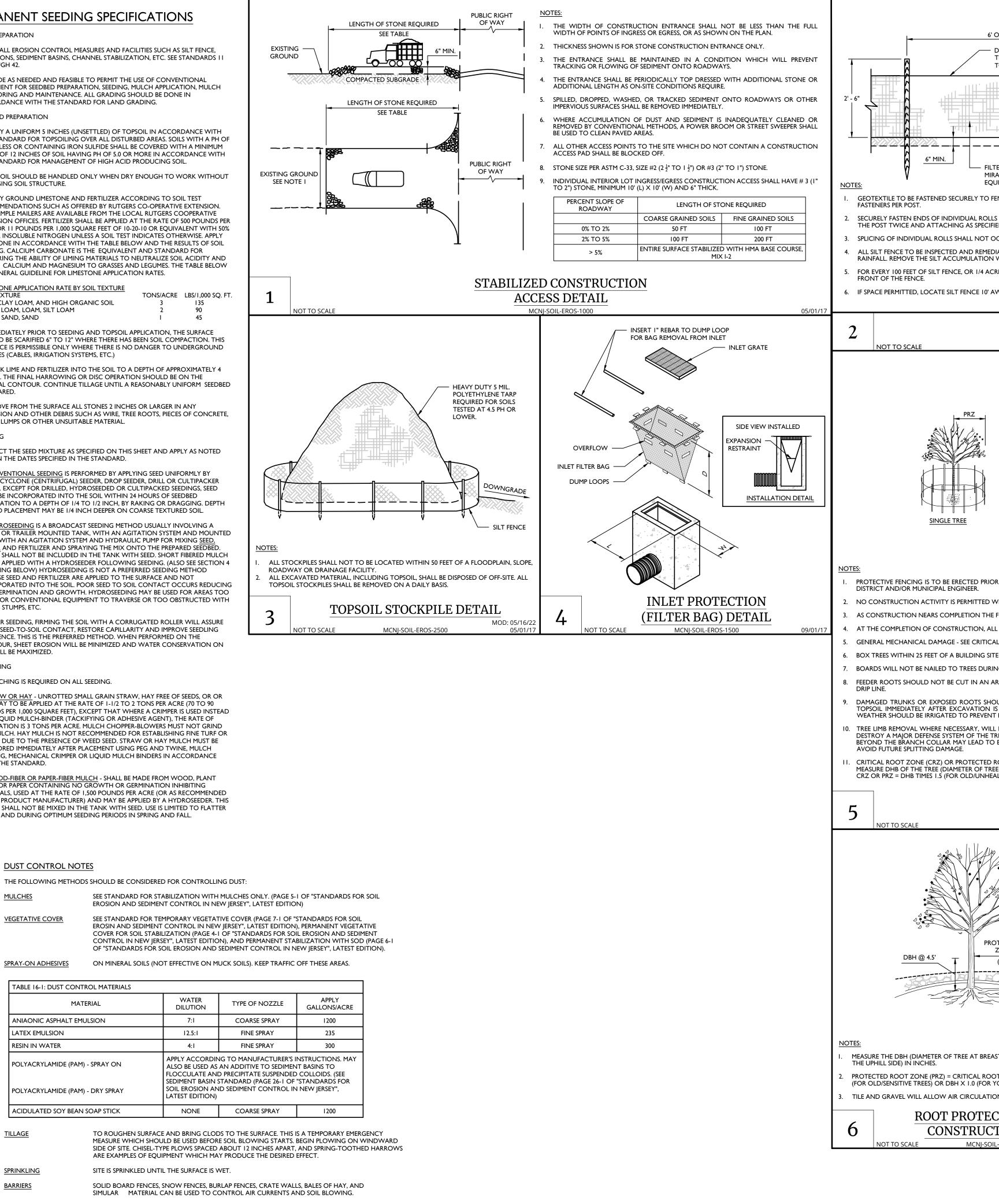
VEGETATIVE COVER

CALCIUM CHLORIDE

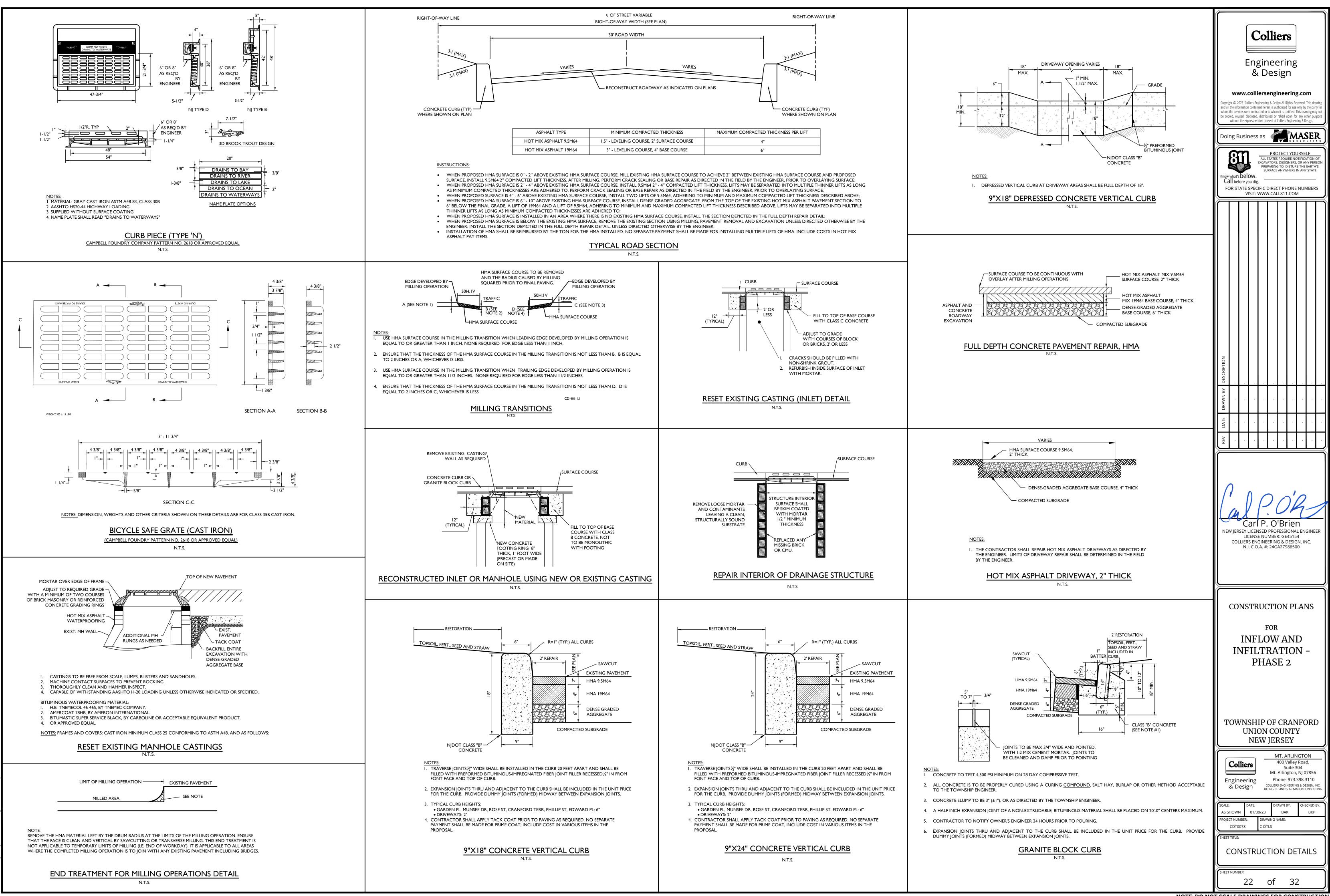
SIMULAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. SHALL BE IN THE FORM OF LOOSE, DRY GRANULATES OF FLAKES FINE ENOUGH TO FEED THROUGH COMMONLY USED SPREADERS AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE. IF USED ON STEEPER SLOPES, THEN USE OTHER PRACTICES TO PREVENT WASHING INTO STREAMS OR ACCUMULATION AROUND PLANTS.

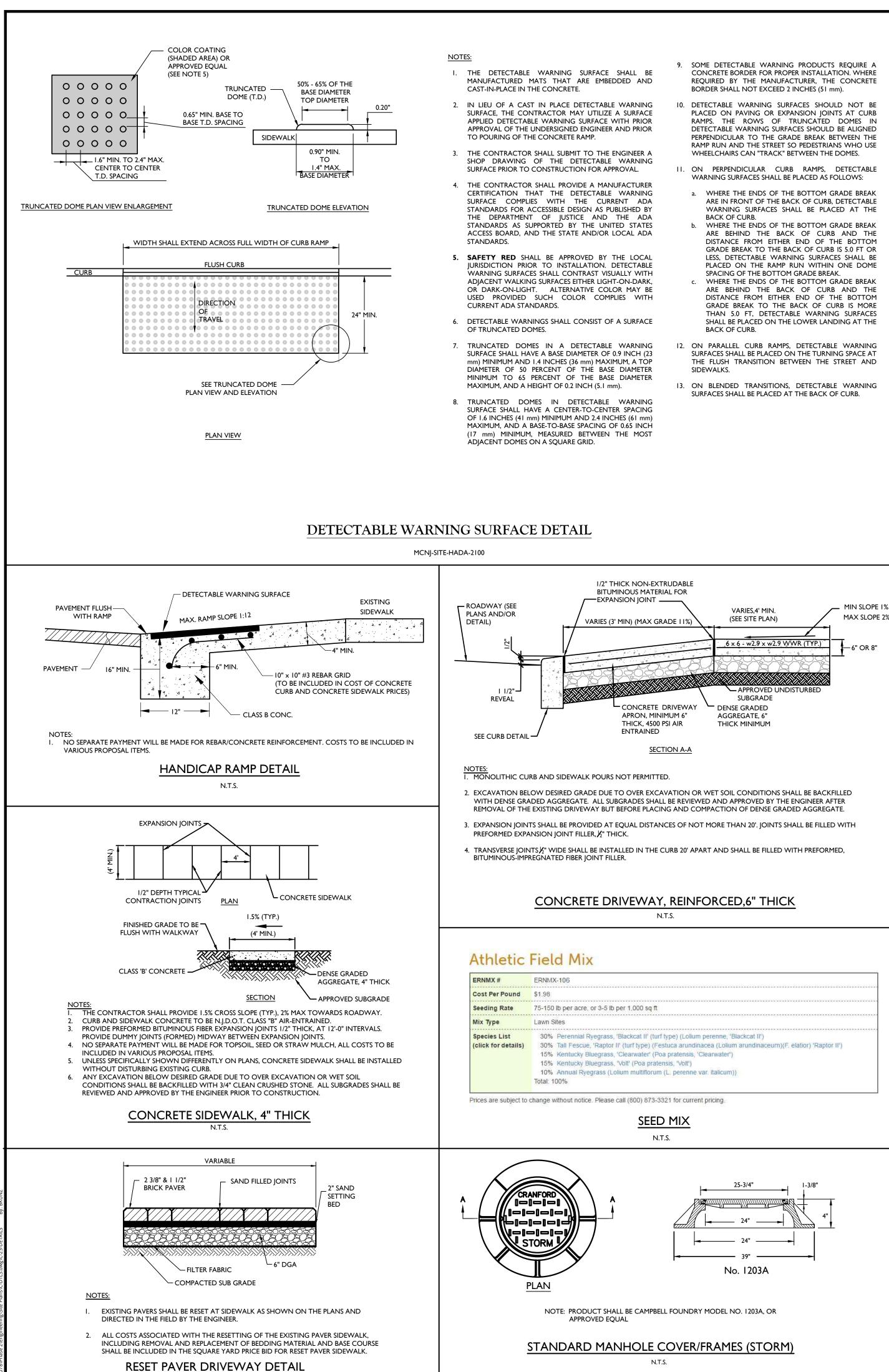
<u>STONE</u>

COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

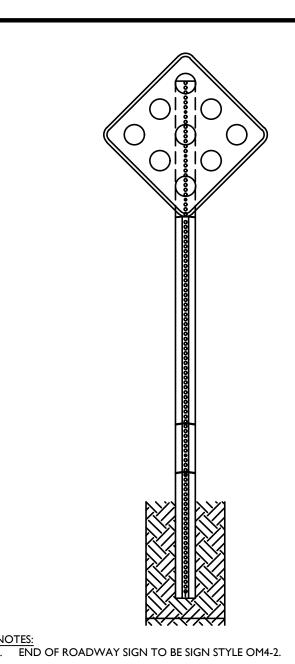


2"x2"x4'-6" OAK OR OTHER HARDWOOD POSTS (TYP.) (SPACING 6' ON CENTER) DRIVE POST PLUMB OR SLIGHTLY	
FILTER FABRIC SECURED TO POST UPHILL FILTER FABRIC SECURED TO POST UPHILL WITH METAL FASTENERS AND REINFORCEMENT BETWEEN FASTENER	Colliers
AND FABRIC (3'-0" WIDE) I0' (SEE NOTE 5) FLOW SILT QRADE	Engineering & Design www.colliersengineering.com Copyright © 2023. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for
TOE OF SLOPE	whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.
AFI 100X OR <u>I</u> 2' MIN. IVALENT FABRIC, TAMP IN PLACE 2' MIN.	Doing Business as
COF GEOTEXTILE TO A POST BY WRAPPING EACH END OF THE GEOTEXTILE AROUND ED IN NOTE I ABOVE. CCUR AT LOW POINTS. AL MAINTENANCE PERFORMED BY THE CONTRACTOR WITHIN 24 HOURS AFTER EACH WHEN IT REACHES I/3 OF THE FENCE FABRIC HEIGHT. RE OF DRAINAGE AREA, PROVIDE AN OVERFLOW POINT TO REDUCE PONDING IN	PROTECT YOURSELF ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE Know what's below. Call before you dig. FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM
WAY FROM TOE OF SLOPE IF THE SLOPE IS STEEPER THAN 1:1.	
SILT FENCE DETAIL	
MCNISOLEROS-1100 III/10 IIIII/10 II	Image: Normal State of the
TEMPORARY TREE PROTECTION DETAIL MCNJ-SOIL-EROS-2100 05/01/17	
TECTED ROOT ZONE (PRZ) (IN FEET)	CONSTRUCTION PLANS FOR INFLOW AND INFILTRATION – PHASE 2
NOTES: I. MEASURE THE DBH (DIAMETER OF TREE AT BREAST HEIGHT, 4.5' ABOVE GROUND ON THE UPHILL SIDE) IN INCHES.	TOWNSHIP OF CRANFORD UNION COUNTY NEW JERSEY
T ZONE IN FEET = DBH (INCHES) X 1.5' 2. PROTECTED ROOT ZONE (PRZ) = CRITICAL ROOT ZONE IN FEET = DBH (INCHES) X 1.5' OUNG/TOLERANT TREES 2. PROTECTED ROOT ZONE (PRZ) = CRITICAL ROOT ZONE IN FEET = DBH (INCHES) X 1.5' IN TO ROOT ZONE UNDER A FILL. CTION DURING CTION DURING TREE PROTECTION IN CUT ION DETAIL 07/01/21 OUNG/TOLERANT 07/01/21	Colliers MT. ARLINGTON 400 Valley Road, Suite 304 Suite 304 Mt. Arlington, NJ 07856 Engineering Phone: 973.398.3110 Colliers Engineering Colliers Engineering & Design Scale: Date: Drawn By: CHECKED BY:
	AS SHOWN 01/30/23 BAK BKP PROJECT NUMBER: DRAWING NAME: CDT0078 C-DTLS
	SOIL EROSION & SEDIMENT CONTROL DETAILS
	SHEET NUMBER: 21 Of 32



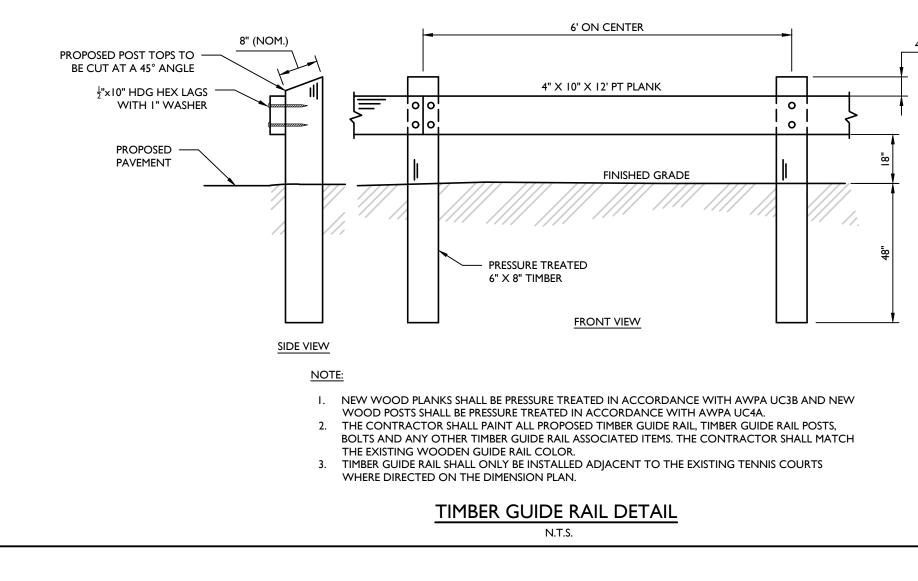


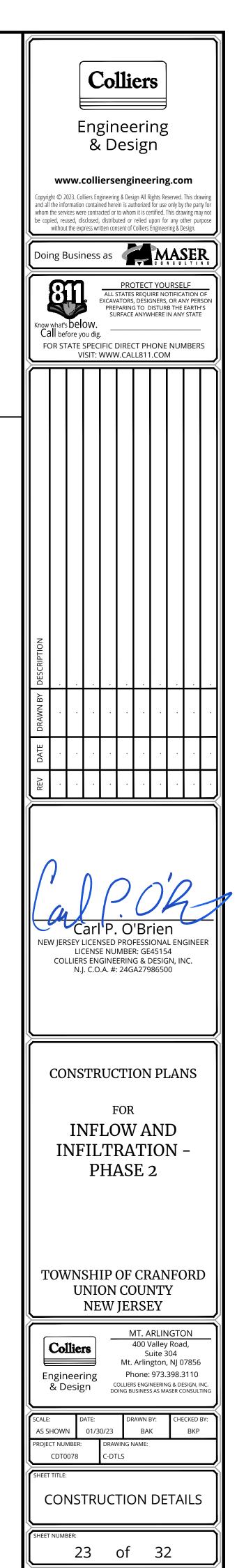
N.T.S.

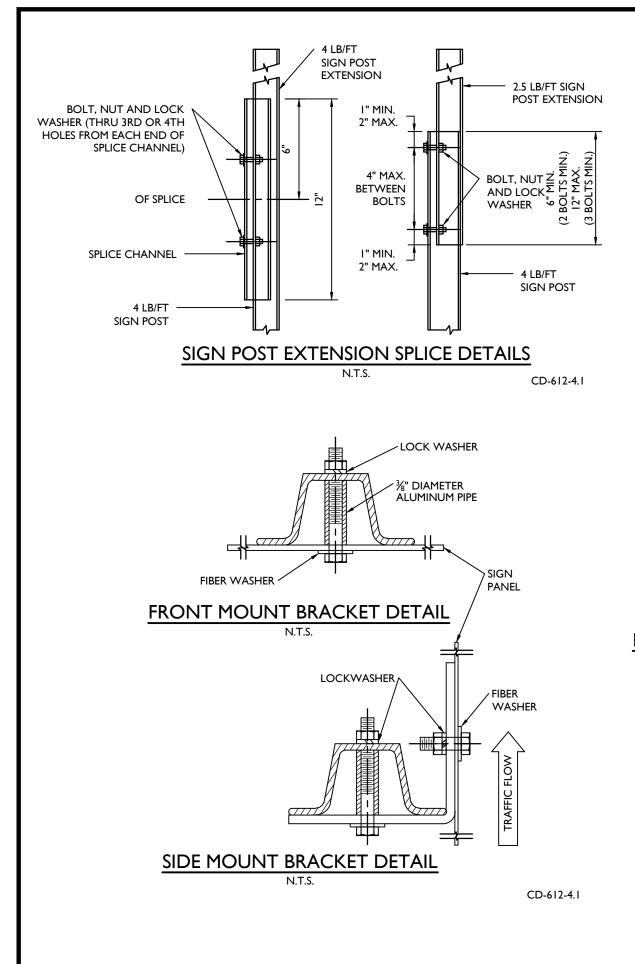


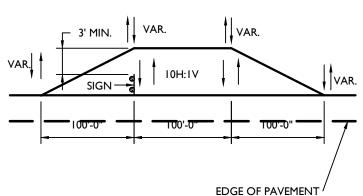


END OF ROADWAY MARKER SIGN (OM4-2)

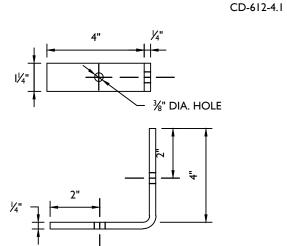




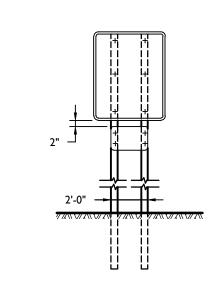




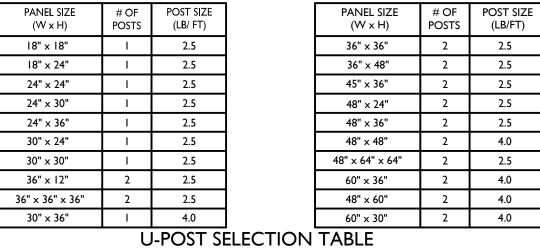
STEEL U-POST GRADING DETAIL N.T.S.



BRACKET FOR SIDE MOUNT SIGNS DETAIL



36" x 36" OR LARGER MOUNTING DETAIL N.T.S



BREAKAWAY SIGN SUPPORT

CD-612-4.1

SIGN POST NOTES:

- ALL POSTS SHALL BE OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS FOR ERECTION AS STATED IN THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AND AS INDICATED BELOW.
- ALL SMALL SIGN SUPPORTS SHALL BE OF THE BREAKAWAY TYPE WITH EXCEPTION OF THOSE INSTALLED BEHIND GUIDE RAIL OR OTHER ROADSIDE BARRIER.
- ALL STEEL POSTS AND BRACKETS SHALL BE CUT, BENT, AND HOLES PUNCHED AND DRILLED BEFORE GALVANIZING. GALVINIZING SHALL BE IN CONFORMANCE WITH ASTM A123.
- 4. ALL STEEL U-POST SIGN SUPPORTS MUST BE INSTALLED FACING THE PREDOMINANT TRAFFIC FLOW. A MOUNTING BRACKET SHOULD BE USED ON SIDE MOUNTED SIGNS SUCH AS "ONE WAY" SIGNS INSTALLED IN MEDIANS.
- 5. SIGN PANEL SIZES SHALL DETERMINE POST TYPE AND NUMBER AS SHOWN ON THIS DETAIL.
- 6. BOLTS SHALL NOT PROTRUDE MORE THAN ¹/⁴" BEYOND THE NUT WHEN TIGHT, BUT SHALL ENGAGE ALL THREADS IN THE NUT.

7.	WHEN SIGNS ARE INSTALLED ON SLOPES 10H: IV OR FLATTER, THE MINIMUM VERTICAL CLEARANCE REQUIRE	EMENTS FOR SIGNS ARE:
	FOR SINGLE POST INSTALLATIONS - THE MINIMUM DISTANCE BETWEEN THE EDGE OF THE PAVEMENT AND T PANEL MUST BE 7 FEET, AND THE MINIMUM DISTANCE FROM EDGE OF PAVEMENT TO THE TOP OF ANY SIG	
	FOR MULTI-POST INSTALLATIONS - THE MINIMUM DISTANCE BETWEEN THE EDGE OF PAVEMENT AND THE SIGN PANEL MUST BE 7 FEET.	BOTTOM OF A MAJOR
	SECONDARY SIGN PANELS (LAND SERVICE HIGHWAYS) - THE MINIMUM DISTANCE BETWEEN THE EDGE OF BOTTOM OF A SECONDARY SIGN PANEL IS 6 FEET.	PAVEMENT AND THE

SECONDARY SIGN PANELS (INTERSTATE AND FREEWAYS) - THE BOTTOM OF THE MAJOR SIGN SHALL BE A MINIMUM OF 8 FEET AND THE SECONDARY SIGN PANEL A MINIMUM OF 5 FEET ABOVE THE EDGE OF PAVEMENT.

WHERE GRADING OF 10H: IV OR FLATTER CANNOT BE OBTAINED, OR WHERE CURB OR BERM IS GREATER THAN 4 INCHES, THE MINIMUM VERTICAL CLEARANCE WILL BE MEASURED FROM THE GROUND LINE TO THE BOTTOM OF THE SIGN. THE HORIZONTAL OFFSET FROM EDGE OF PAVEMENT TO EDGE OF SIGN IS DERIVED FROM SECTION 2A. 19 OF THE MUTCD AS

FOLLOWS: FOR URBAN INSTALLATION - IN AREAS WHERE LATERAL OFFSETS ARE LIMITED, A MINIMUM LATERAL OFFSET OF 2 FEET IS DESIRABLE. A MINIMUM OFFSET OF I FOOT FROM THE FACE OF THE CURB MAY BE USED IN AREAS WHERE THE SIDEWALK WIDTH IS LIMITED OR WHERE EXISTING POLES ARE CLOSE TO THE CURB. FOR RURAL INSTALLATION - 6 FEET MINIMUM DESIRABLE FROM EDGE OR SHOULDER, BUT 12 FEET MINIMUM DESIRABLE FROM EDGE OF

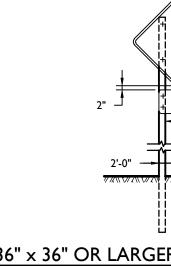
TRAFFIC OR AUXILIARY LANE. FOR INTERSTATE AND FREEWAY INSTALLATION - 6 FEET MINIMUM DESIRABLE FROM EDGE OF SHOULDER, BUT NOT LESS THAN 12 FEET FROM THE EDGE OF TRAFFIC OR AUXILIARY LANE.

FOR RAMP INSTALLATIONS - 6 FEET MINIMUM FROM EDGE OF ROAD.

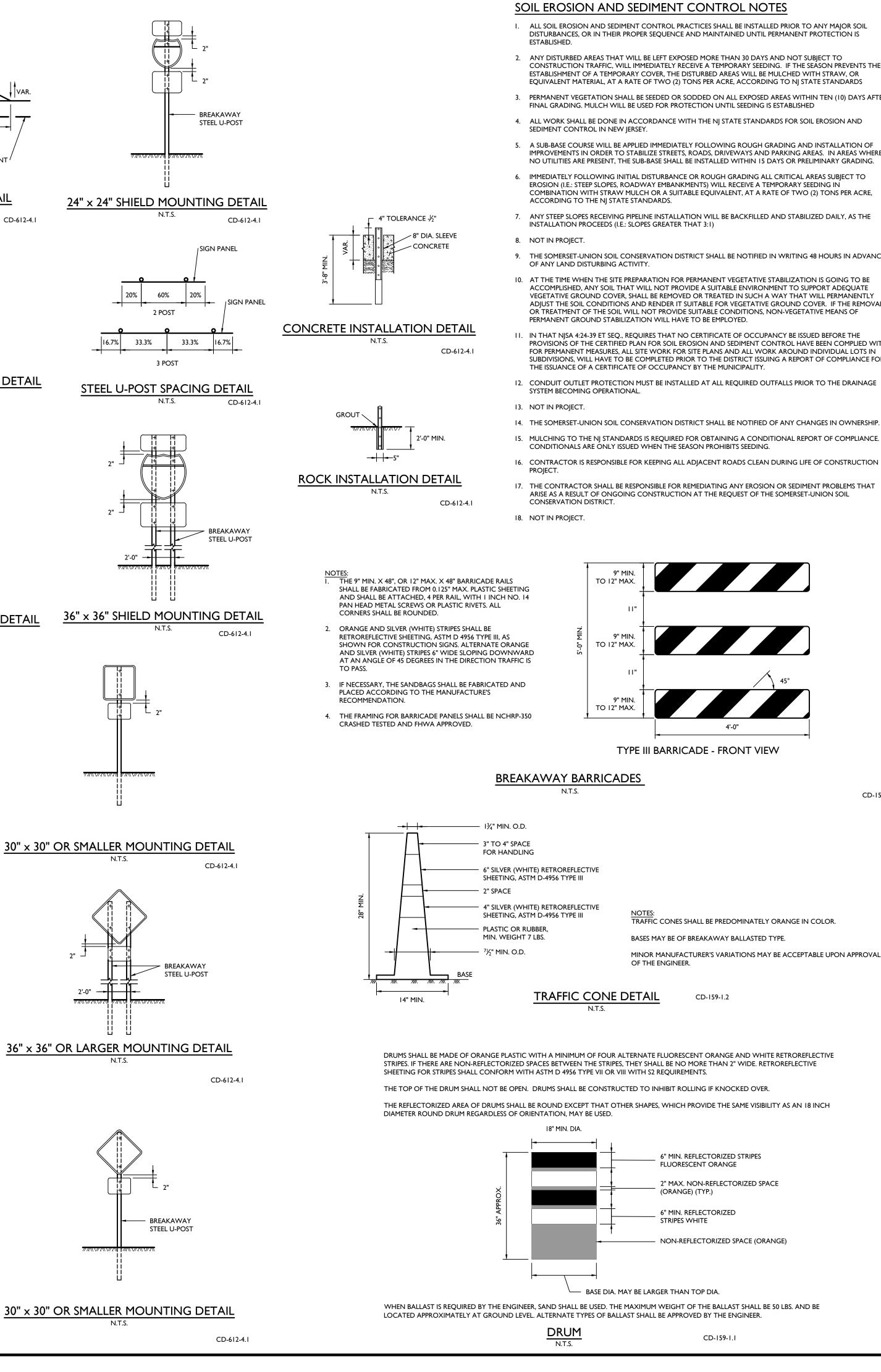
- WHERE BEHIND GUIDE RAIL 4 FEET MINIMUM FROM BACK OF BEAM GUIDE RAIL ELEMENT TO SIGN POST.
- PERMANENT SIGN SUPPORTS SHOULD NOT BE INSTALLED ON SLOPES GREATER THAN 10H:1V, EXCEPT WHERE GRADING OF 10H:1V CANNOT BE OBTAINED OR THE SIGN SUPPORTS WILL BE BEHIND A TRAFFIC BARRIER.
- 10. EXTRUDED ALUMINUM SIGN PANELS ARE NOT PERMITTED FOR USE WITH STEEL U-POST SIGN SUPPORTS. 11. STEEL U-POST SIGN SUPPORTS SHALL NOT BE PLACED IN FRONT OF GUIDE RAIL AND THE POSTS MUST NOT STRADDLE GUIDE RAIL.

12. TO EXTEND THE HEIGHT OF A SIGN POST, A MAXIMUM OF ONE SPLICE MAY BE MADE AND MUST BE A MINIMUM OF 9 FEET FROM THE GROUND LINE TO CENTER LINE OF SPLICE.

THE NEW JERSEY DEPARTMENT OF TRANSPORTATION "STANDARD ROADWAY CONSTRUCTION/TRAFFIC CONTROL/BRIDGE CONSTRUCTION DETAILS" BOOKLET DATED (2016) AND "ELECTRICAL BUREAU STANDARD DETAILS" (2007) TO GOVERN, EXCEPT FOR THOSE DETAILS CONTAINED HEREIN.



CD-612-4.1



<u>SI</u>	<u>GN NOTES</u> :								_		
Ι.	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".				C	o	[]i	er	5		
2.	(S) REPRESENTS A SPECIAL SIZE SIGN.			Ę					\exists		
3.	LETTERS AND NUMERALS SHALL CONFORM TO THE CURRENT MANUAL, "STANDARD ALPHABETS FOR HIGHWAY SIGNS" U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.			E				eriı igr	-		
4.	THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE ENGINEER FOR THE DISTANCE TO BE USED ON THE ADVANCE WARNING SIGNS, AND FOR THE SPEED LIMIT TO BE USED ON THE R2-1 SIGN.				0		es	ıgı	I		
5.	DISTANCE LEGEND: SIGN NUMBER FOLLOWED BY LETTER & DISTANCE		w	ww.	colli	ierse	engi	nee	ring	.cor	n
	LETTER DISTANCE A 1500' B 1000' C 500' D MILE E MILES AHEAD	and a whon	ll the inf 1 the sen pied, re	ormatior vices we used, di	n contain re contra sclosed,	ned here acted or , distribu	ein is aut to whon uted or	horized n it is cer relied u	for use o tified. Th	nly by t is draw any oth	iis drawir ie party fo ng may no er purpos ign.
	F AHEAD	Do	ing E	Busir	ness	sas			M		ĘŖ
В/	ACKING MATERIAL:						ppc		YOU	BCEI	
١.	ALUMINUM SHALL BE FLAT SHEET OF ALLOY AND TEMPER 5052-H38 OR 6061-T6:		6		0	EXCAV	STATES ATORS,	REQUI DESIG	RE NOT NERS, (TIFICAT OR AN	ION OF ' PERSO
	A. 0.10" THICK FOR ALL CONSTRUCTION SIGNS EXCEPT SIGNS SHOWN MOUNTED ON BREAKAWAY BARRICADES.	Knov	what ⁴	sbel) ow.	PREI SU	PARINO	TO D	ISTURB HERE IN	THE E	ARTH'S
	B. 0.024" THICK FOR ALL CONSTRUCTION SIGNS SHOWN MOUNTED ON BREAKAWAY BARRICADES.	C C	all be	fore y	ou dig		DIREC	TPH	ONEI	NUM	BERS
<u>T</u>	EMPORARY SIGN SUPPORTS:					-			.COM		
١.	SIGN SUPPORTS SHALL BE OF WELL SEASONED LUMBER, S4S, FREE OF SPLITS, KNOTS AND WARPS, OR OF STEEL COMPONENTS.									Τ	Τ
2.	WOOD POSTS SHALL HAVE A UNIFORM CROSS-SECTION AND SHALL NOT EXCEED THE FOLLOWING DIMENSIONS FOR:										
	SINGLE POST = 4" × 6"										
	TWO POSTS = 3" x 6" OR 4" x 5"										
	THREE POSTS = 3" x 5" OR 4" x 4"										
	4" X 6" WOOD POSTS SHALL BE MODIFIED BY DRILLING $1\!\!\!/$ INCH DIAMETER HOLES 4 INCHES AND 18 INCHES ABOVE THE GROUND LINE AND PERPENDICULAR TO THE ROADWAY CENTERLINE.										
8.	NO BRACING IS PERMITTED. VERTICAL CLEARANCES FOR SIGNS MOUNTED ON WOOD SUPPORTS SHALL BE 7 FOOT MINIMUM. EMBEDMENT DEPTH FOR THE WOOD POST SHALL NOT EXCEED 3.5 FEET.										
4.	STEEL POSTS SHALL BE IN ACCORDANCE WITH THE STANDARD DETAIL FOR U-POST SIGN SUPPORT.										
5.	TEMPORARY SIGN SUPPORTS NOT MEETING THIS CRITERIA SHALL BE SHIELDED BY A LONGITUDINAL BARRIER OR CRASH CUSHIONS.										
6.	WOOD POSTS TO BE USED ONLY ON TEMPORARY SIGN SUPPORT.										
SI	<u>GN FACES</u> :										
١.	SIGN FACES SHALL BE ASTM D 4956 TYPE VII OR VIII FLUORESCENT ORANGE SHEETING.										
<u>F/</u>	ASTENING:	NOL									
١.	ALL SIGNS SHALL BE SECURELY FASTENED TO THEIR SUPPORTS WITH BOLTS, NUTS AND WASHERS IN ACCORDANCE WITH THE SPECIFICATIONS.	DESCRIPTION									
		ΒY	Ĺ							╡	
		DRAWN	·			•		·	·	·	·
Μ	AINTENANCE AND PROTECTION OF TRAFFIC NOTES:		\vdash			\square			+	+	+
Ι.	ALL DEVICES AND PROCEDURES FOR THE MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR STREETS AND HIGHWAYS, THE CONTRACTOR SHALL PLAN AND CARRY OUT HIS WORK TO PROVIDE FOR THE CONVENIENT AND SAFE PASSAGE OF ALL VEHICULAR AND PEDESTRIAN TRAFFIC.	REV DATE		· ·	•		•	•	· ·	· 	·
2.	CONVENIENT AND SALE PASSAGE OF ALL VEHICOLAR AND PEDESTRIAN TRAINC. CONTRACTOR TO DEVELOP DETAILED MAINTENANCE AND PROTECTION OF TRAFFIC PLAN FOR REVIEW BY THE ENGINEER PRIOR TO CONSTRUCTION.			<u> </u>							
3	THE ENGINEER FRICK TO CONSTRUCTION.										
э.	CONTRACTOR SHALL FOLLOW THE RECOMMENDED TRAFFIC CONTROL PROCEDURES. IF THE CONTRACTOR DESIRES TO CHANGE THE PROCEDURE, HE SHALL PRESENT HIS CHANGES IN WRITING TO THE ENGINEER FOR REVIEW AND APPROVAL. THERE MAY BE UTILITY RELOCATIONS, ADJUSTMENTS AND IMPROVEMENTS WHICH ARE NECESSITATED BY THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH EACH OF THE UTILITY COMPANIES LOCATED WITHIN THE PROJECT.		?		\cap	(つ		ר')
4.	THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING MAINTENANCE AND PROTECTION OF TRAFFIC THROUGHOUT THE DURATION OF CONSTRUCTION. THE COSTS FOR THE INDIVIDUAL DEVICES USED TO				/	-	ノ	C) /	4	

MAINTAIN AND PROTECT TRAFFIC SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE SPECIFIC TRAFFIC CONTROL DEVICES IN THE PROPOSAL. NO ADDITIONAL PAYMENT WILL BE MADE FOR RELOCATING THE DEVICES AS REQUIRED, OR AS DIRECTED BY THE ENGINEER, DURING THE COURSE OF CONSTRUCTION.

THE CONTRACTOR WILL NOT BE PERMITTED TO CLOSE DOWN THE ENTIRE STREET. THE CONTRACTOR SHALL PROVIDE MEANS OF ACCESS AT ALL TIMES FOR PEDESTRIANS AND VEHICULAR TRAFFIC AT ALL PRIVATE DRIVEWAYS AND OCCUPIED BUILDINGS AFFECTED BY THE WORK OF THIS CONTRACT. DURING CONSTRUCTION, IN THE VICINITY OF A DRIVEWAY, THE ACCESS WIDTH AT THE DRIVEWAY ENTRANCE SHALL BE PLAINLY MARKED BY LIGHTS, BARRICADES OR OTHER SUCH DEVICES APPROVED BY THE ENGINEER.

6. DURING CONSTRUCTION, ALL ROADS SHALL BE PROPERLY MAINTAINED TO ACCOMMODATE EMERGENCY VEHICLES AT ALL TIMES.

7. ALL BARRICADES SHALL BE TYPE III BREAKAWAY BARRICADES.

CD-159-1.3

8. FILL MATERIAL FOR ESCAPE RAMPS SHALL BE ON-SITE MATERIAL. ALL COSTS FOR STORING, PLACING, MOVING, AND REMOVING FILLET MATERIAL SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS ITEMS IN THE PROPOSAL.

Carl P. O'Brien NEW JERSEY LICENSED PROFESSIONAL ENGINEER LICENSE NUMBER: GE45154 COLLIERS ENGINEERING & DESIGN, INC. N.J. C.O.A. #: 24GA27986500
<u> </u>
CONSTRUCTION PLANS
FOR
INFLOW AND
INFILTRATION -
PHASE 2
TOWNSHIP OF CRANFORD UNION COUNTY NEW JERSEY
ColliersEngineering & Design& DesignMT. ARLINGTON400 Valley Road, Suite 304 Mt. Arlington, NJ 07856 Phone: 973.398.3110 COLLIERS ENGINEERING & DESIGN, INC. DOING BUSINESS AS MASER CONSULTING
SCALE: DATE: DRAWN BY: CHECKED BY:
AS SHOWN 01/30/23 BAK BKP PROJECT NUMBER: DRAWING NAME:
CDT0078 C-DTLS
SHEET TITLE:
CONSTRUCTION DETAILS
SHEET NUMBER:
24 of 32 I

LEGEND

- BREAKAWAY BARRICADES
- BREAKAWAY BARRICADES WITH SIGN
- CONSTRUCTION SIGNS
- DRUMS
- CONE

PRECAST CONCRETE CURB CONSTRUCTION BARRIER (TYPE SPECIFIED) DIRECTION OF TRAFFIC FLOW

TRAFFIC DIRECTOR, FLAGGER

TRAILER MOUNTED MOUNTED ARROW BOARD SHOWING CAUTION MODE

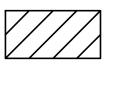
ILLUMINATED FLASHING ARROW MOUNTED ON TOWING VEHICLE SHOWING ARROW PATTERN (Left, Right, Both)

TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING CAUTION MODE

TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING ARROW PATTERN (Left, Right, Both)

TEMPORARY CRASH CUSHION, INERTIAL BARRIER SYSTEM

TEMPORARY CRASH CUSHION, (all other approved)

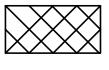


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LEFT RIGHT BOTH

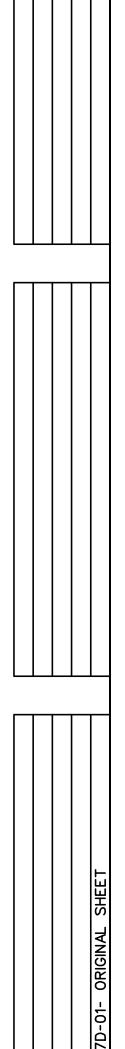
LEFT RIGHT BOTH

BUFFER ZONE



WORK AREA

PAINT STRIPING TRUCK OR OTHER OPERATING VEHICLE



GENERAL NOTES:

- 1. ADVANCE WARNING SIGNS DISTANCES, AND TAPER LENGTHS MAY BE EXTENDED, AT DIRECTION OF THE DEPARTMENT. TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY.
- 2. THE APPROXIMATE LOCATIONS OF THE ILLUMINATED FLASHING ARROW BOARDS ARE SHOWN ON THE TRAFFIC CONTROL PLANS. THESE LOCATIONS MAY BE MODIFIED AS APPROVED BY RE TO ADJUST FOR VISIBILITY DUE TO HORIZONTAL OR VERTICAL CURVATURE OF THE ROADWAY OR TO POSITION AT A SAFER LOCATION. ILLUMINATED FLASHING ARROW BOARDS ARE TO BE USED FOR TEMPORARY LANE CLOSINGS AND AT LOCATIONS SHOWN ON THE TRAFFIC CONTROL PLANS.
- 3. PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.
- 4. RAMPS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN SHALL BE PROVIDED WITH AT LEAST ONE W20-IF SIGN (ROAD WORK AHEAD) AS A MINIMUM.
- 5. ALL EXISTING ROAD SIGNS, PAVEMENT MARKINGS AND/OR PLOWABLE PAVEMENT REFLECTORS WHICH CONFLICT WITH THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE COVERED, REMOVED OR RELOCATED AS DIRECTED BY THE RE.
- 6. CONFLICTING OR NON-OPERATING SIGNAL INDICATIONS ON EITHER THE EXISTING. TEMPORARY, OR PROPOSED TRAFFIC SIGNAL SYSTEMS SHALL BE BAGGED OR COVERED.
- 7. MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART VI "STANDARDS AND GUIDES FOR TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS", UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS.
- 8. CONSTRUCTION SIGN W99-2 (GIVE US A BRAKE) SHALL BE LOCATED 200 FEET IN ADVANCE OF PROJECT LIMITS.
- 9. A W1-6 (ARROW) SIGN MOUNTED ON A BREAKAWAY BARRICADE AND CENTERED ON THE CLOSED WIDTH SHALL BE LOCATED 100 FEET BEYOND EACH INTERSECTION OR MAIN ACCESS POINT WITHIN THE AREA OF A LANE OR SHOULDER CLOSURE.
- 10. CONSTRUCTION SIGNS R11-4 (ROAD CLOSED TO THRU TRAFFIC) SHALL BE PLACED AT THE INTERSECTING STREETS WHICH ARE CLOSED TO TRAFFIC BECAUSE OF CONSTRUCTION.
- 11. CONSTRUCTION SIGNS W8-9A (SYMBOL FOR UNEVEN PAVEMENT) AND W8-14A (GROOVED PAVEMENT) SHALL BE USED WHEN SUCH PAVEMENT CONDITIONS EXIST. THE PLACEMENT OF THESE SIGNS SHALL BE AS DIRECTED BY THE RE.
- 12. MOVING WORK AREAS IN A LANE CLOSURE REQUIRE A TRAILER MOUNTED ILLUMINATED FLASHING ARROW TO REMAIN AT THE END OF THE TAPER. THE TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION THAT SHALL MOVE WITH THE WORK AREAS TO KEEP A 70 FEET MIN. AND 150 FEET MAX. BUFFER IN ADVANCE OF EACH WORK AREA.
- 13. THE CONTRACTOR SHALL SUBMIT A PLAN FOR THE SAFE ACCESS OF CONSTRUCTION VEHICLES THROUGHOUT THE WORK SITE WHERE SPACE CONSTRAINTS PREVENT THE USE OF LANE CLOSURES. THE PLAN SHALL BE SUBMITTED TO THE RE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- 14. TRAFFIC SAFETY SERVICES SHALL BE USED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL.
- 15. ALL EXCAVATED AREAS WITHIN OR ADJACENT TO THE ROADWAY SHALL BE BACKFILLED AND PLACED ON AT LEAST 6H : 1V SLOPE BEFORE THE END OF EACH WORK DAY. OTHER EXCAVATED AREA WITHIN THE CLEAR ZONE SHALL BE BACKFILLED.
- 16. WHERE REQUIRED, THE CONTRACTOR SHALL MAKE PROVISIONS FOR MAINTAINING PEDESTRIAN CROSSING LOCATIONS AND TYPE AS DIRECTED BY THE RE.
- 17. BITUMINOUS CONCRETE PLACED DURING THE VARIOUS CONSTRUCTION STAGES SHALL BE TRANSITIONED ON A MINIMUM 20H : 1V SLOPE TO MEET THE ADJACENT EXISTING GRADE AT THE LONGITUDINAL AND TRANSVERSE LIMITS OF THE STAGE CONSTRUCTION AREAS UNLESS OTHERWISE NOTED ON THE STAGE CONSTRUCTION PLANS.
- 18. THE PLACEMENT AND OR RELOCATION OF PRECAST CONCRETE CURB, CONSTRUCTION BARRIER SHALL BE DONE DURING APPROVED OFF-PEAK HOURS WHEN TRAFFIC MAY BE REDUCED TO ONE LANE IN EACH DIRECTION.
- 19. CONSTRUCTION ZONE SPEED LIMIT WILL BE DETERMINED BY THE TRAFFIC SIGNAL & SAFETY ENGINEERING, REGIONAL TRAFFIC ENGINEER - WORK ZONE, AT THE TIME OF OR DURING CONSTRUCTION, AS REQUESTED BY THE R.E..
- 20. THE SPEED LIMIT, R2-1 (BLACK ON WHITE) WITH ADDED WORK ZONE PLATE (BLACK ON ORANGE) SIGNS SHALL BE LOCATED THROUGH WORK AREAS AS DIRECTED BY THE TRAFFIC SIGNAL & SAFETY ENGINEERING REGIONAL TRAFFIC ENGINEER - WORK ZONE.
- 21. THE REDUCED SPEED AHEAD SIGN, W3-5(S) (BLACK ON ORANGE) SHALL BE LOCATED IN ADVANCE OF SPEED LIMIT R2-1 SIGNS WHICH REDUCE THE NORMAL POSTED SPEED LIMIT THROUGH THE CONSTRUCTION ZONE.
- 22. TRAFFIC FINES DOUBLED IN WORK AREA R(NJ)5-17(S), 4 FEET BY 2.5 FEET SIGN SHALL BE LOCATED 500 FEET AFTER THE FIRST ADVANCE WARNING SIGN, (W20 SERIES) AT EACH WORK AREA LOCATED WITHIN URBAN AREAS. THIS SIGN SHALL ALSO BE USED ON PROJECTS REQUIRING MOVING OPERATIONS IN WHICH CASE THE SIGN SHALL BE MOUNTED ON A SLOW MOVING CONSTRUCTION VEHICLE.
- 23. THE FINAL HMA SURFACE PAVEMENT SHALL NOT BE CONSTRUCTED UNTIL THE FINAL STAGE OF THE PROJECT UNLESS OTHERWWISE DIRECTED BY THE RE OR INDICATED ON THE PLANS. MANHOLES AND INLETS SHALL BE SET TO FINISHED GRADE AND TEMPORARY PAVEMENT RAMPS ARE TO BE CONSTRUCTED AROUND THEM WITH A MINIMUM 20H : 1V SLOPE IN ALL DIRECTIONS USING HOT MIX ASPHALT PAVEMENT. THIS TEMPORARY MATERIAL WILL BE REMOVED IMMEDIATELY PRIOR TO PLACING THE SURFACE COURSE.

24. TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, ETC. SHALL BE PLACED AS SHOWN ON PLANS. SIGNS SHALL NOT BE PLACED WITHOUT ACTUAL LANE CLOSURES AND SHALL BE IMMEDIATELY REMOVED UPON REMOVAL OF THE CLOSURES.

26. TRAFFIC IMPACT NOTICES AND CHANGES

A. TERMS:

i. IMPACTS TO NORMAL TRAFFIC FLOW - WORK THAT REQUIRES A PORTION OF THE PAVED ROADWAY BEING BLOCKED OR CLOSED WITH SAFETY DEVICES OR VEHICLES, INCLUDING, BUT NOT LIMITED TO, FULL OR PARTIAL LANE CLOSURES, FULL OR PARTIAL RAMP CLOSURES, SHOULDER CLOSURES, MOVING OPERATIONS SUCH AS TRAFFIC STRIPING OR SWEEPING, LANE SHIFTS, OR ALTERNATING TRAFFIC. THIS APPLIES EVEN WHEN DETOURS ARE PROVIDED.

FOR THE INITIAL START OF WORK THAT REQUIRES "IMPACTS TO NORMAL TRAFFIC FLOW", THE FOR THE INITIAL START OF WORK THAT REQUIRES "IMPACTS TO NORMAL TRAFFIC FLOW", THE CONTRACTOR SHALL NOTIFY THE RE IN WRITING, ON THE ADVANCE FORM TO-103 PROVIDED BY THE DEPARTMENT, OF THE PROPOSED DATE. THE NOTICE SHALL BE SUBMITTED AT LEAST TWENTY-EIGHT CALENDAR DAYS, BUT NOT MORE THAN SIXTY CALENDAR DAYS, BEFORE THE PROPOSED DATE. START OF WORK THAT IMPACTS NORMAL TRAFFIC FLOW WILL NOT BE PERMITTED PRIOR TO THE DATE STATED IN THE NOTICE. THE CONTRACTOR SHALL CONFIRM, IN WRITING TO THE RE, THE PROPOSED DATE SEVEN (AND/OR FOURTEEN) CALENDAR DAYS BEFORE STARTING THE ESTABLISHMENT OF THE TRAFFIC CONTROL MEASURES FOR THE TRAFFIC IMPACT. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE RE IF THE PROPOSED ESTABLISHMENT CAN NOT BE COMPLETED ON THE PROPOSED DATE.

FOR A "PERMANENT LANE CLOSURE", THE CONTRACTOR SHALL NOTIFY THE RE IN WRITING, ON ADVANCE FORM TO-103, OF THE PROPOSED DATE A NEW TRAFFIC PATTERN WILL BE ESTABLISHED. THE NOTICE SHALL BE SUBMITTED AT LEAST TWENTY-EIGHT CALENDAR DAYS, BUT NOT MORE THAN SIXTY CALENDAR DAYS, IN ADVANCE OF THE PROPOSED DATE. START OF A NEW TRAFFIC PATTERN WILL NOT BE PERMITTED PRIOR TO THE DATE STATED IN THE NOTICE. THE CONTRACTOR SHALL CONFIRM, IN WRITING TO THE RE, THE PROPOSED DATE OF THE NEW TRAFFIC PATTERN SEVEN (AND/OR FOURTEEN) DAYS BEFORE STARTING TRAFFIC CONTROL MEASURES FOR THE ESTABLISHMENT OF THE NEW PATTERN. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE RE IF THE PROPOSED ESTABLISHMENT CAN NOT BE COMPLETED ON THE PROPOSED DATE.

STARTING THE ESTABLISHMENT OF A NEW PERMANENT TRAFFIC PATTERN SHALL BEGIN NO EARLIER THAN 11:00 PM FRIDAY AND SHALL BE COMPLETED AND READY FOR OPERATIONS BY 6:00 PM THE FOLLOWING SUNDAY. THE ESTABLISHMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE LANE CLOSURE HOURS SPECIFIED IN THE CONTRACT

ADVANCE NOTICES SENT PRIOR TO THE PRE-CONSTRUCTION MEETING SHALL BE ADDRESSED TO THE CONTACT PERSON AS SPECIFIED IN SUBSECTION 101.04 OF THE SPECIAL PROVISIONS. C. PROGRESS NOTICES

ALL "IMPACTS TO NORMAL TRAFFIC FLOW" SCHEDULED FOR THE SEVEN DAY PERIOD STARTING ON THE FOLLOWING MONDAY SHALL BE SUBMITTED TO THE RE BY 9:00 AM OF EACH FRIDAY ON WEEKLY FORM TO-101 PROVIDED BY THE DEPARTMENT.

DEPARTMENT

"TEMPORARY LANE CLOSURES" FOR WEEKENDS SHALL BE SUBMITTED TO THE RE BY 9:00 AM ON THE MMEDIATELY PRECEDING FRIDAY ON THE DAILY FORM TO-102 PROVIDED BY THE DEPARTMENT. D. CHANGES TO THE SCHEDULED CLOSURES

CHANGES TO THE SCHEDULED HOURS FOR "TEMPORARY LANE CLOSURES" SHALL BE SUBMITTED TO THE R.E. AT LEAST EIGHT CALENDAR DAYS IN ADVANCE OF WHEN THE CHANGE IS PROPOSED TO START. OTHER PROPOSED CHANGES TO "TEMPORARY LANE CLOSURES" AND ALL CHANGES TO "PERMANENT LANE CLOSURES" SHALL BE SUBMITTED TO THE RE AS SPECIFIED IN THE SPECIFICATIONS.

25. CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE RE.

WHEN THE FOLLOWING TERMS ARE USED, THE INTENT AND MEANING SHALL BE AS FOLLOWS:

iI. TEMPORARY LANE CLOSURES - WORK DESCRIBED UNDER "IMPACTS TO NORMAL TRAFFIC FLOW" WHICH IS ROUTINELY SET UP AND REMOVED ON A DAILY BASIS.

iII. PERMANENT LANE CLOSURES - WORK DESCRIBED UNDER "IMPACTS TO NORMAL TRAFFIC FLOW" WHICH REMAINS IN PLACE CONTINUOUSLY FOR 24 HOURS OR MORE.

B. ADVANCE NOTICES

EACH DAY OF "TEMPORARY LANE CLOSURES" SHALL BE SUBMITTED TO THE RE BY 9:00 AM THE DAY IN ADVANCE OF THE START OF THOSE OPERATIONS ON DAILY FORM TO-102 PROVIDED BY THE

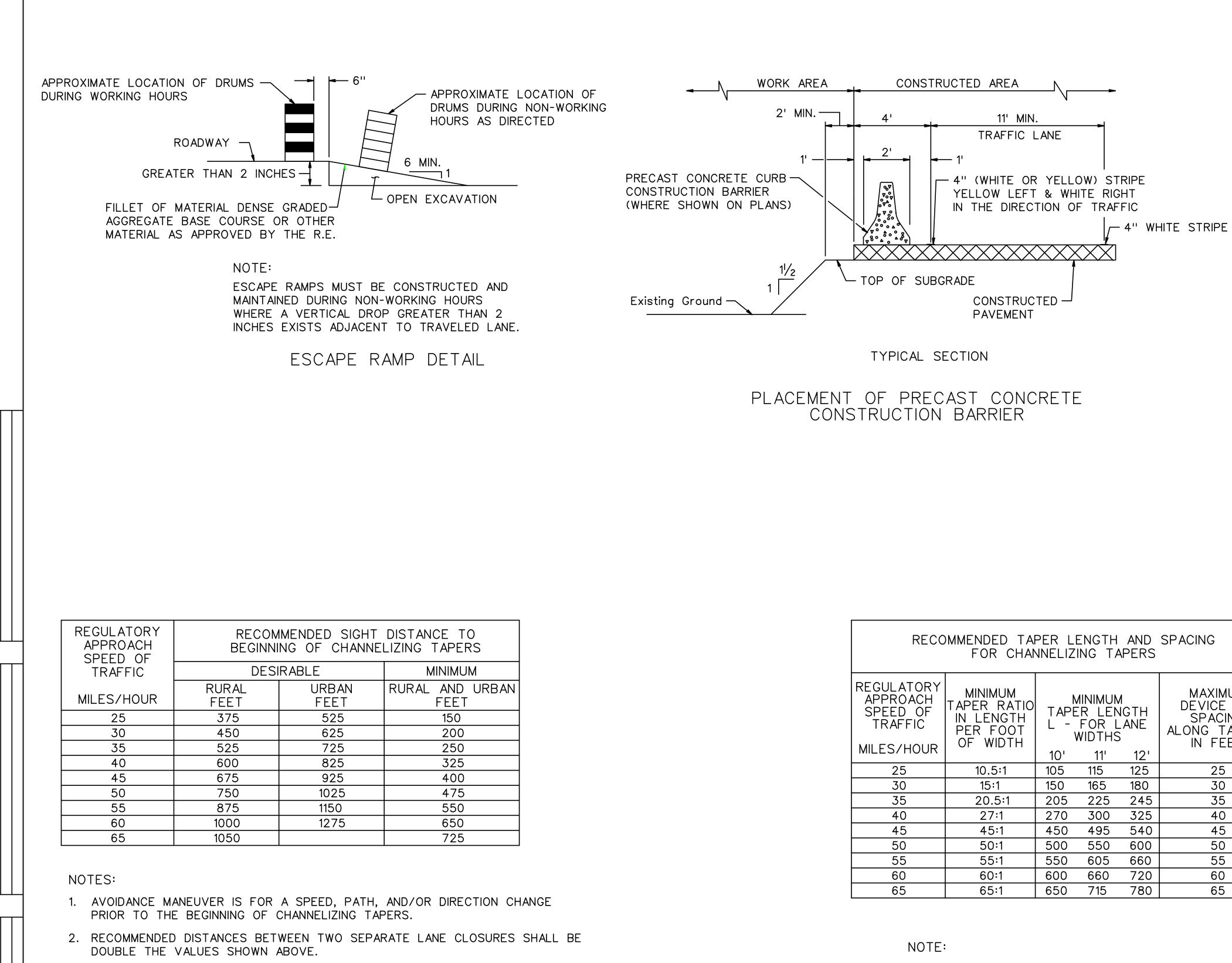
REQUEST FOR A CHANGE TO THE TRAFFIC CONTROL REQUIREMENTS IN THE CONTRACT DOCUMENTS SHALL BE SUBMITTED IN WRITING TO THE RE AS FOLLOWS:

TCD-1

INEW JERSEY DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS





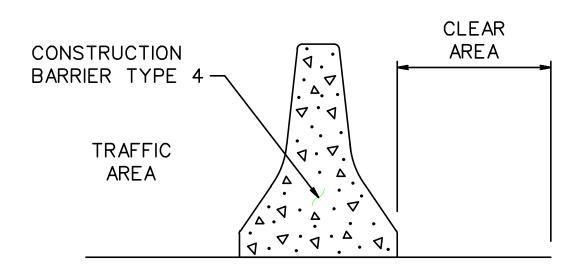
3. RURAL AND URBAN ROAD DESIGNATIONS SHALL BE AS DEFINED IN THE NJDOT STATE HIGHWAY STRAIGHT LINE DIAGRAMS.

4. DESIRABLE VALUES SHALL BE PROVIDED WHEREVER POSSIBLE. IF IT IS NOT FEASIBLE OR PRACTICAL TO PROVIDE DESIRABLE VALUES BECAUSE OF HORIZONTAL OR VERTICAL CURVATURE OR IF RELOCATION OF THE TAPER IS NOT POSSIBLE, THEN MINIMUM VALUES CAN BE APPLIED. WHEN MINIMUM VALUES ARE USED, SPECIAL ATTENTION SHOULD BE GIVEN TO THE USE OF SUITABLE TRAFFIC CONTROL DEVICES FOR PROVIDING ADVANCED WARNING OF THE CONDITIONS THAT ARE LIKELY TO BE ENCOUNTERED.

5. TAPERS SHALL BE LOCATED TO MAXIMIZE THE VISIBILITY OF THEIR TOTAL LENGTH.

RECC	MMENDED TAN FOR CHAN	SPACING	RECOMMENDED SPACING ALONG TANGENTS			
REGULATORY APPROACH SPEED OF TRAFFIC MILES/HOUR	MINIMUM TAPER RATIO IN LENGTH PER FOOT OF WIDTH	TAPE L - \	AINIMUN ER LEN FOR L WIDTHS	IGTH ANE	MAXIMUM DEVICE (B) SPACING ALONG TAPERS IN FEET	MAXIMUM DEVICE (D) SPACING ALONG TANGENTS IN FEET
25	10.5:1	<u> 10' </u> 105	<u> </u>	<u>12'</u> 125	25	50
30	15:1	150	165	120	30	60
35	20.5:1	205	225	245	35	70
40	27:1	270	300	325	40	80
45	45:1	450	495	540	45	90
50	50:1	500	550	600	50	100
55	55:1	550	605	660	55	110
60	60:1	600	660	720	60	120
65	65:1	650	715	780	65	130

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



NOTES:

- 1. CHANGES TO THE PROPOSED JOINT CLASS AT ANY LOCATION MUST BE APPROVED BY THE DEPT.
- 2. NO ROADWAY DROP OFFS, OBSTRUCTIONS, STORAGE OF MATERIALS OR WORK WILL BE PERMITTED IN THE CLEAR AREA UNLESS APPROVED BY THE R.E.

STAGE		LOCATION		JOINT CLASS
	RTE.	STA. STA.	ТО	

JOINT CLASS	CLEAR AREA
А	20 INCHES
В	16 INCHES
С	11 INCHES

CONSTRUCTION BARRIER, TYPE 4 JOINT CLASS AND CLEAR AREA

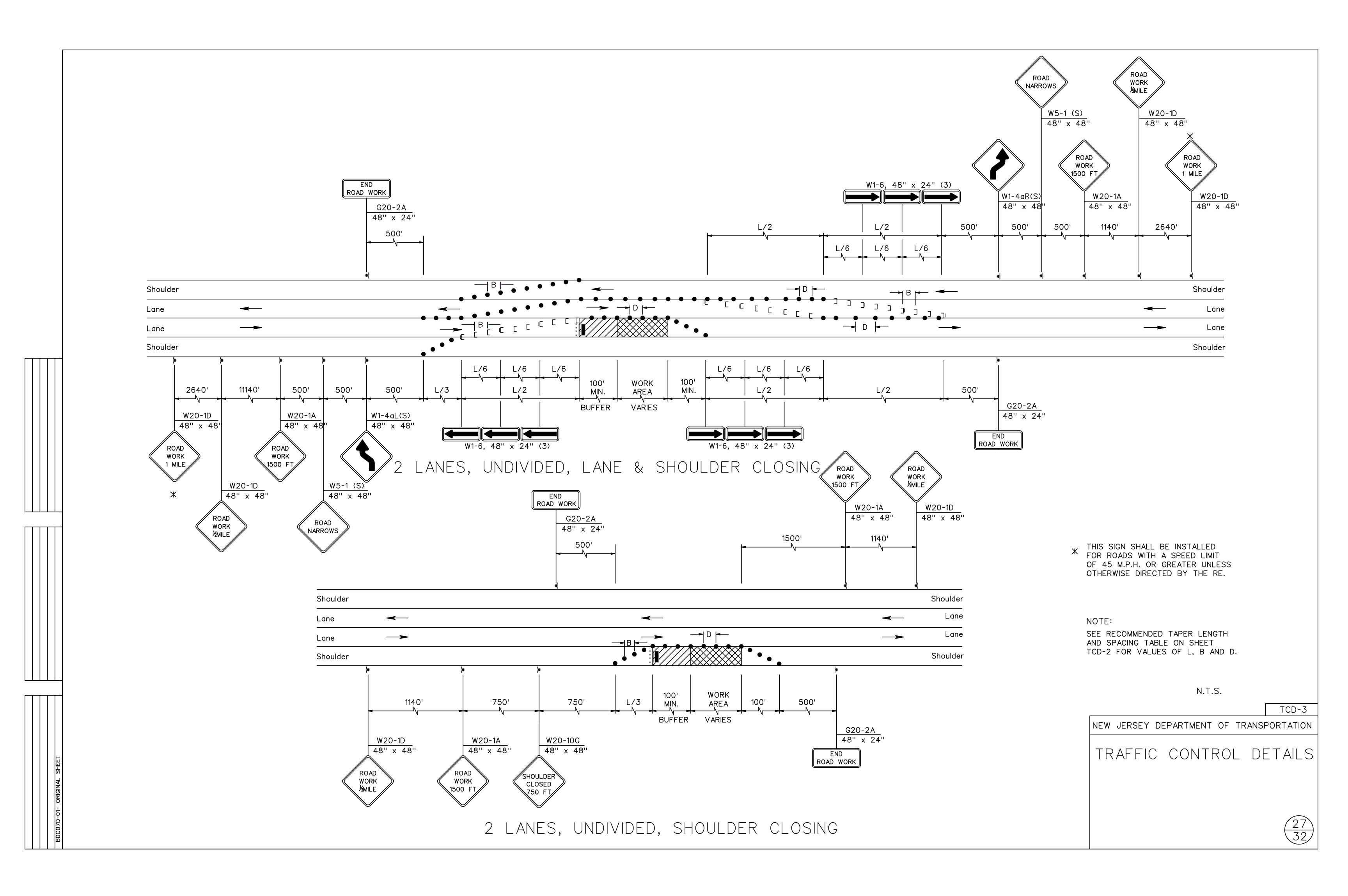
N.T.S.

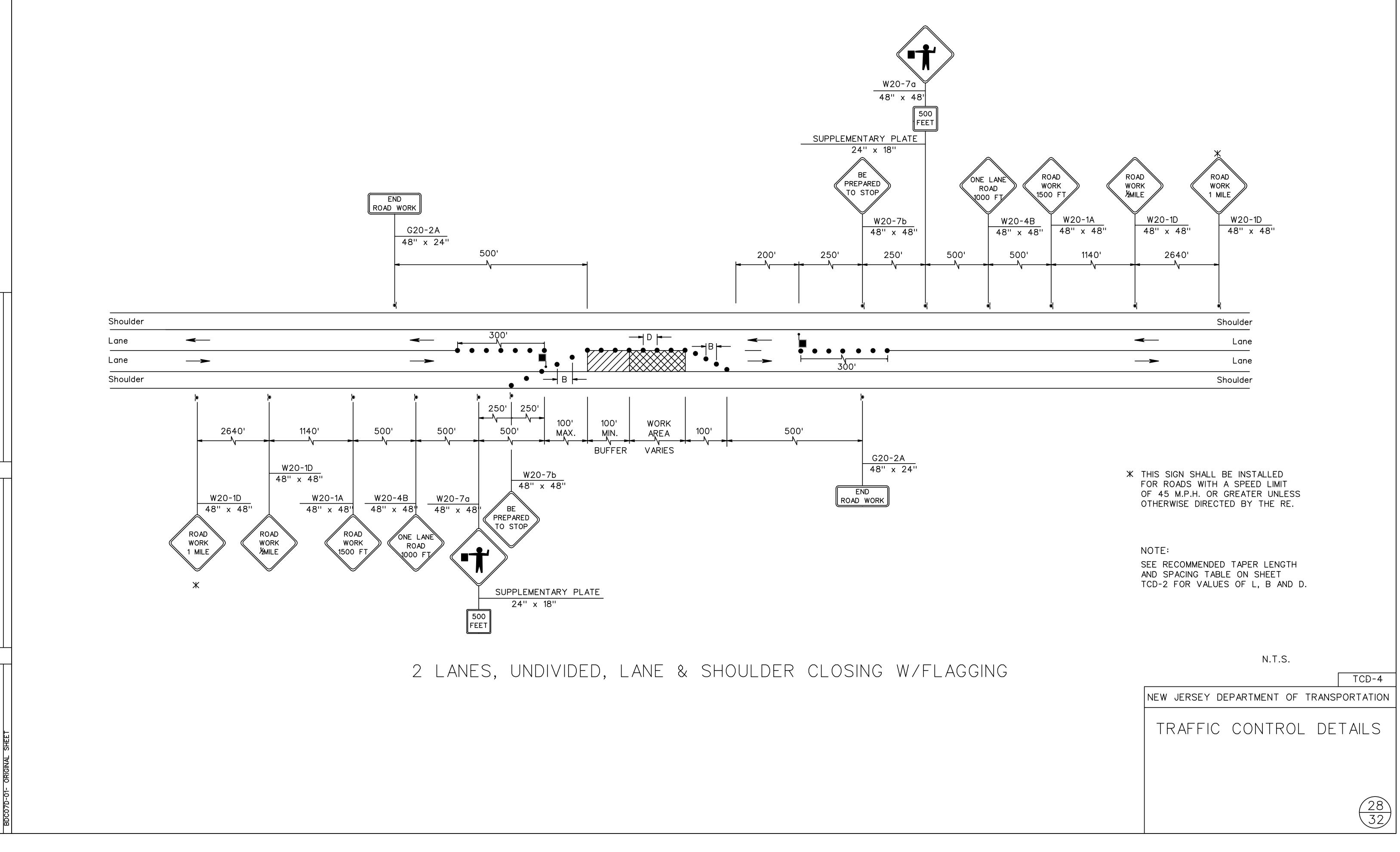
TCD-2

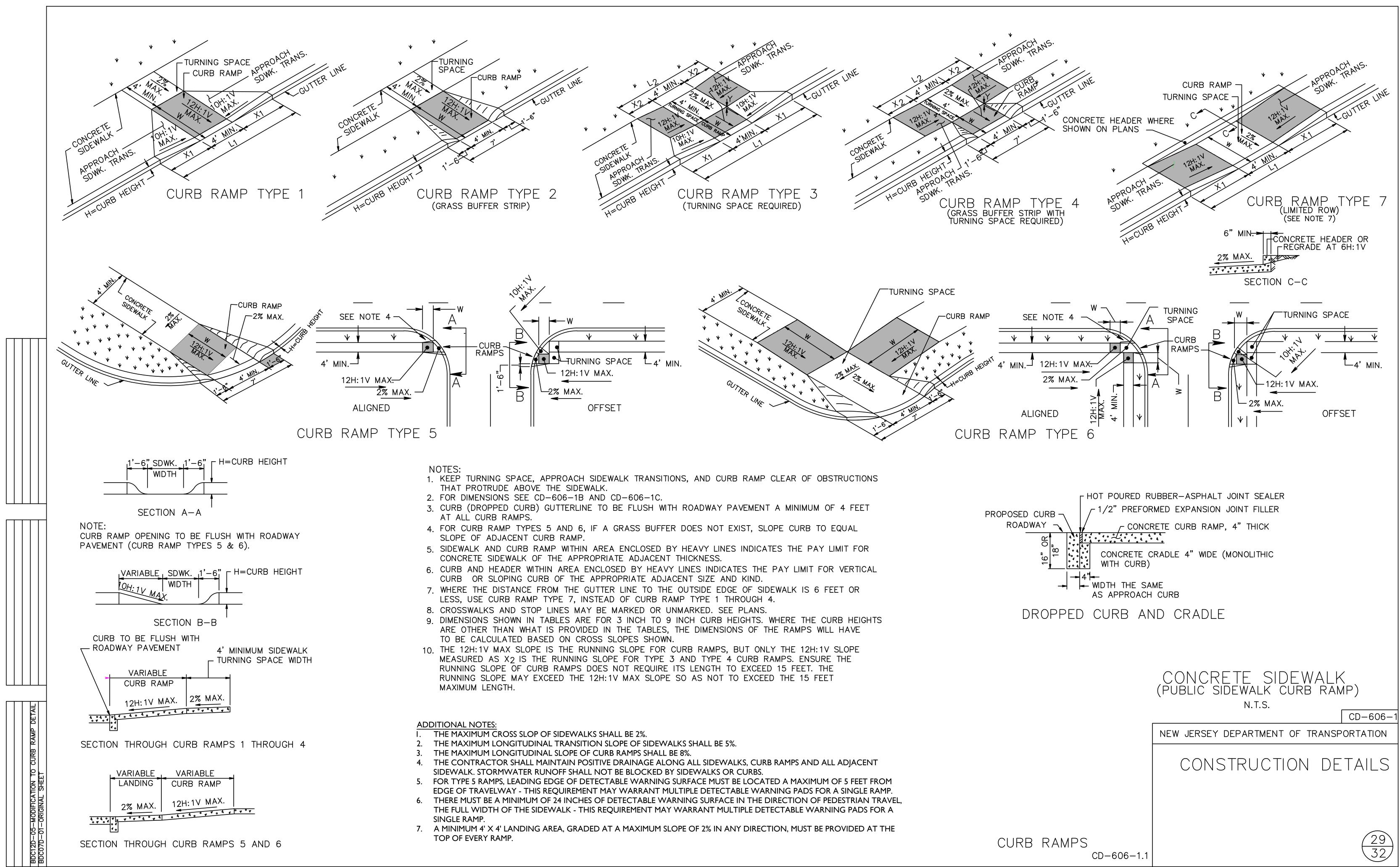
NEW JERSEY DEPARTMENT OF TRANSPORTATION

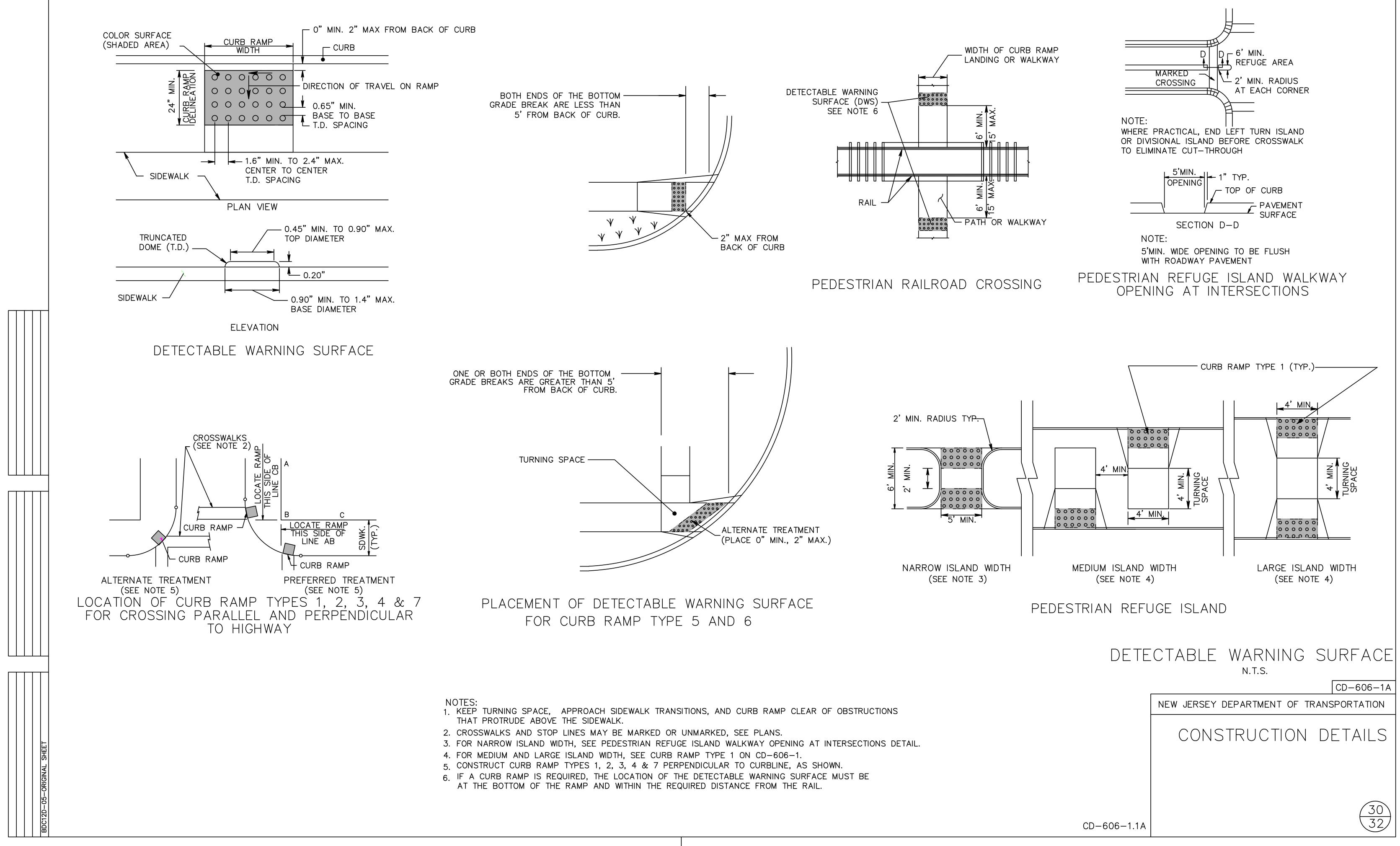
TRAFFIC CONTROL DETAILS











	DRA	MP	TYPE	1
	0.0% GUT	FER LINE PR	OFILE	
Н	W	X1u	X1L	
INCHES 3	FEET 3	FEET	FEET	FE
		2.50	2.50	9
4	4	3.33	3.33	10
5	5	4.17	4.17	12
6	6	5.00	5.00	14
7	7	5.83	5.83	15
8	8	6.67	6.67	17
9	9	7.50	7.50	19
			1	
Н	1.0% GUT W	TER LINE PR X1u	OFILE X1L	
INCHES	FEET	FEET	FEET	FE
3	3	2.78	2.27	ç
4	4	3.70	3.03	10
5	5	4.63	3.79	12
6	6			
-	_	5.56	4.55	14
7	7	6.48	5.30	15
8	8	7.41	6.06	17
9	9	8.33	6.82	19
			0.5.1.5	
Н	2.0% GUT W	TER LINE PR X1u	OFILE X1L	
INCHES	FEET	FEET	FEET	FI
3	3	3.13	2.08	9
4	4	4.17	2.78	10
5	5	5.21	3.47	12
6	6	6.25	4.17	14
7	7			
/ 8		7.29	4.86	16
	8	8.33	5.56	17
9	9	9.38	6.25	19
			0545	
Н	3.0% GUT W	TER LINE PR X1u	OFILE X1L	
INCHES	FEET	FEET	FEET	FI
3	3	3.57	1.92	ç
4	4	4.76	2.56	1
5	5	5.95	3.21	13
6	6			
		7.14	3.85	14
7	7	8.33	4.49	16
8	8	9.52	5.13	18
9	9	10.71	5.77	20
	4.0% GUT	FER LINE PR	OFILE	
Н	W	X1u	X1L	
INCHES	FEET	FEET	FEET	F
3	3	4.17	1.79	Ç
4	4	5.56	2.38	1:
5	5	6.94	2.98	13
6	6	8.33	3.57	15
	7	9.72	4.17	
7	/			17
	8	11.11	4.76	
7		11.11 12.50	4.76 5.36	19
7 8	8 9	12.50	5.36	19
7 8	8 9		5.36 OFILE	19 21
7 8 9	8 9 5.0% GUT	12.50 FER LINE PR	5.36	17 19 21 FI
7 8 9 H	8 9 5.0% GUTT W	12.50 FER LINE PR X1u	5.36 OFILE X1L	19 2: Fl
7 8 9 H INCHES	8 9 5.0% GUTT W FEET	12.50 FER LINE PR X1u FEET	5.36 OFILE X1L FEET	19 22 Fl
7 8 9 H INCHES 3	8 9 5.0% GUTT W FEET 3	12.50 FER LINE PR X1u FEET 5.00 6.67	5.36 OFILE X1L FEET 1.67 2.22	19 22 FI 10 12
7 8 9 	8 9 5.0% GUTT W FEET 3 4	12.50 FER LINE PR X1u FEET 5.00 6.67 8.33	5.36 OFILE X1L FEET 1.67 2.22 2.78	19 2: Fl 10 12
7 8 9 	8 9 5.0% GUT W FEET 3 4 5 6	12.50 FER LINE PR X1u FEET 5.00 6.67 8.33 10.00	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33	19 22 FI 10 12 15
7 8 9 	8 9 5.0% GUT W FEET 3 4 5 6 7	12.50 FER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89	19 22 Ff 10 12 15 17 19
7 8 9 	8 9 5.0% GUT W FEET 3 4 5 6 7 8	12.50 FER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44	19 2: Fl 10 12 15 15 2:
7 8 9 	8 9 5.0% GUT W FEET 3 4 5 6 7	12.50 FER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89	19 2: Ff 10 12 15 15 2:
7 8 9 	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9	12.50 FER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00	19 2: Ff 10 12 15 15 2:
7 8 9 	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 9 6.0% GUT W	12.50 TER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 TER LINE PR X1u	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L	19 2: Fi 10 12 15 2: 24
7 8 9 	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 9 6.0% GUT W FEET	12.50 FER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 FER LINE PR X1u FEET	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET	19 2: Fi 10 12 15 2: 24
7 8 9	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 9 6.0% GUT W FEET 3	12.50 TER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 TER LINE PR X1u	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L	19 2: Fi 10 12 12 12 12 22 24 Fi
7 8 9 	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 9 6.0% GUT W FEET	12.50 FER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 FER LINE PR X1u FEET	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET	19 2: F 10 10 11 19 2: 24 5 F 11
7 8 9	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 9 6.0% GUT W FEET 3	12.50 FER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 FER LINE PR X1u FEET 6.25	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET 1.56	19 2: F 10 12 12 12 22 24 F 12 14
7 8 9 	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 9 6.0% GUT W FEET 3 4	12.50 FER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 FER LINE PR X1u FEET 6.25 8.33 10.42	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET 1.56 2.08 2.60	19 22 FI 10 12 12 12 12 22 24 FI 12 12 12 12 12 12 12 12 12 12 12 12 12
7 8 9	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 6.0% GUT 8 9 6.0% GUT 8 9 6.0% GUT 3 4 5	12.50 TER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 TER LINE PR X1u FEET 6.25 8.33 10.42 12.50	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET 1.56 2.08 2.60 3.13	19 2: Fi 10 12 12 12 12 12 22 24 Fi 12 12 12 12 12 12 12 12 12 12 12 12 12
7 8 9	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 6 7 8 9 6 0 7 8 9 6 0 7 8 9 6 0 7 8 9 7 8 9 1 7 8 9 1 7 8 9 1 7 6 0 7 1 8 9 1 7 1 8 1 9 1 7 1 8 1 9 1 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12.50 TER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 TER LINE PR X1u FEET 6.25 8.33 10.42 12.50 14.58	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET 1.56 2.08 2.60 3.13 3.65	19 22 Fi 10 12 12 12 12 12 24 Fi 12 12 12 12 12 12 12 12 12 12 12 12 12
7 8 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 6.0% GUT 8 9 6.0% GUT 5 6 3 4 5 6 3 4 5 6 7 8 8 9	12.50 FER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 FER LINE PR X1u FEET 6.25 8.33 10.42 12.50 14.58 15.00	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET 1.56 2.08 2.60 3.13 3.65 4.17	19 2: Fi 10 12 12 12 12 12 22 24 Fi 12 12 12 12 12 12 22 22 22 22 22 22 22
7 8 9	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 6 7 8 9 6 0 7 8 9 6 0 7 8 9 6 0 7 8 9 7 8 9 1 7 8 9 1 7 8 9 1 7 6 0 7 1 8 9 1 7 1 8 1 9 1 7 1 8 1 9 1 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12.50 TER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 TER LINE PR X1u FEET 6.25 8.33 10.42 12.50 14.58	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET 1.56 2.08 2.60 3.13 3.65	19 22 Ff 10 12 12 12 12 12 22 24 Ff 12 12 24 24 24 24 24 24 24 24 24 24 24 24 24
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7 8 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 6.0% GUT 8 9 6.0% GUT 8 7 8 9 6.0% GUT 8 7 8 3 4 5 6 7 8 3 4 5 6 7 8 9 9 0.0% GUT 7 8 9 9	12.50 TER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 TER LINE PR X1u FEET 6.25 8.33 10.42 12.50 14.58 15.00 14.58 15.00 15.00 15.00	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET 1.56 2.08 2.60 3.13 3.65 4.17 4.69	19 22
7 8 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 6.0% GUT 8 9 6.0% GUT 8 9 6.0% GUT 8 7 8 9 6 7 8 9 6 7 8 7 8 9 7 8 9 7 8 9 9 0.0% GUT	12.50 TER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 TER LINE PR X1u FEET 6.25 8.33 10.42 12.50 14.58 15.00 15.00 15.00 15.00 15.00	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET 1.56 2.08 2.60 3.13 3.65 4.17 4.69 OFILE X1L FEET	19 2: Fi 10 12 12 12 12 12 22 24 Fi 12 12 22 24 Fi 12 12 22 24 Fi 12 12 24 7 24 7 24 7 7 24 7 7 7 7 7 7 7 7 7
7 8 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 6.0% GUT 8 9 6.0% GUT 8 9 6.0% GUT 8 7 8 9 6 7 8 9 6 7 8 9 6 7 8 9 9 6 0.0% GUT 8 7 8 9 9 7 8 9 9 7 8 9 9 7 8 9 9 7 8 9 9 7 8 8 9 9 7 8 8 9 9 7 8 8 9 7 8 8 9 7 8 8 9 7 8 8 9 9 7 8 9 7 8 8 9 7 8 8 9 9 7 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 7 8 8 8 9 8 8 9 9 8 8 8 9 9 8 8 9 9 9 8 8 9 9 8 8 9 9 9 8 8 9 9 9 8 8 9 9 8 9 9 9 9 9 9 9 9 8 9	12.50 FER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 FER LINE PR X1u FEET 6.25 8.33 10.42 12.50 14.58 15.00 15.00 15.00 15.00 15.00 15.00	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET 1.56 2.08 2.60 3.13 3.65 4.17 4.69 OFILE X1L FEET 1.56 2.08 2.60 3.13 3.65 4.17 4.69 OFILE X1L FEET 1.47	19 22 Ff 10 12 12 12 12 12 22 24 Ff 12 12 24 22 24 7 7 7 7 22 24 7 7 7 7 7 7 7 7
7 8 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 6.0% GUT 8 9 6.0% GUT 8 7 8 9 6 7 8 3 4 5 6 7 8 9 6 7 8 7 8 9 9 6.0% GUT 8 7 8 9 9 6 0.0% GUT	12.50 TER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 13.33 15.00 FER LINE PR X1u FEET 6.25 8.33 10.42 12.50 14.58 15.00 15.00 14.58 15.00 1	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET 1.56 2.08 2.60 3.13 3.65 4.17 4.69 OFILE X1L FEET 1.47 1.96 2.45	19 2: Fi 10 12 12 12 12 12 22 24 Fi 12 12 24 22 24 7 12 12 24 22 24 7 12 12 24 22 24 7 12 12 12 12 24 24 12 12 12 12 12 12 12 12 12 12 12 12 12
7 8 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 6.0% GUT 8 9 6.0% GUT 8 9 6.0% GUT 8 7 8 9 6 7 8 9 6 7 8 9 6 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 8 9 7 7 8 7 8	12.50 FER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 FER LINE PR X1u FEET 6.25 8.33 10.42 12.50 14.58 15.00 14.58 15.00 15.00 15.00 15.00 15.00 15.00 15.00	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET 1.56 2.08 2.60 3.13 3.65 4.17 4.69 OFILE X1L FEET 1.56 2.08 2.60 3.13 3.65 4.17 4.69 OFILE X1L FEET 1.47 1.96 2.45 2.94	19 22 Ff 10 12 15 17 22 24 Ff 12 12 24 7 7 24 7 7 7 24 7 7 7 7 7 7 7 7 7 7
7 8 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8 9 5.0% GUT W FEET 3 4 5 6 7 8 9 6.0% GUT 8 9 6.0% GUT 8 9 6.0% GUT 8 7 8 9 6 7 8 9 6 7 8 9 6 7 8 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	12.50 TER LINE PR X1u FEET 5.00 6.67 8.33 10.00 11.67 13.33 15.00 13.33 15.00 FER LINE PR X1u FEET 6.25 8.33 10.42 12.50 14.58 15.00 15.00 14.58 15.00 1	5.36 OFILE X1L FEET 1.67 2.22 2.78 3.33 3.89 4.44 5.00 OFILE X1L FEET 1.56 2.08 2.60 3.13 3.65 4.17 4.69 OFILE X1L FEET 1.47 1.96 2.45	19 22 Ff 10 12 15 17 22 24 Ff 12 12 24 7 7 7 22 24 7 7 7 7 24 7 7 7 7 7 7

SHEET

CURB RAMP TYPE 3

0.0% CI	JTTER LINE			- 0					1.0% C	UTTER LINE								2 0% 6	UTTER LINE				
Н	W	X1u	X1L	L1	Y	X2u	X2L	L2	Н	W	X1u	X1L	L1	Y	X2u	X2L	L2	Н	W	X1u	X1L	L1	Y
INCHES	FEET	FEET	FEET	FEET	INCHES	FEET	FEET	FEET	INCHES	FEET	FEET	FEET	FEET	INCHES	FEET	FEET	FEET	INCHES	FEET	FEET	FEET	FEET	INCHES
3		2.50	2.50	9.00	-	1.10	1.10	6.20	3	-	2.78	2.27	9.05		1.25	0.98	6.24	3	-	3.13	2.08	9.21	-
5		3.33 4.17	3.33 4.17	10.67 12.33	1	2.10 3.10	2.10 3.10	8.20 10.20	5	-	3.70 4.63	3.03 3.79	10.73 12.42		2.39 3.53	1.18 2.77	8.27 10.30	5	-	4.17 5.21	2.78 3.47	10.94 12.68	-
6	2.5	5.00	5.00	14.00	2.5	4.10	4.10	12.20	6	2.5	5.56	4.55	14.10	2.5	4.66	3.66	12.33	6	2.5	6.25	4.17	14.42	2.5
7	-	5.83	5.83	15.67		5.10	5.10	14.21	7	-	6.48	6.06	15.78		5.80	4.56	14.36	7		7.29	4.86	16.15	
8		6.67	6.67	17.33	1	6.10	6.10	16.21	8	1	7.41	6.06	17.47		6.94	5.45	16.39	8		8.23	5.56	17.89	1
9		7.50	7.50	19.00	1	7.10	7.10	18.21	9		8.33	6.82	19.15		8.07	6.34	18.42	9		9.38	6.25	19.63	1
3		*	*	*		*	*	*	3		2.78	2.27	9.05		0.82	0.64	5.46	3		3.13	2.08	9.21	
4		3.33	3.33	10.67		1.72	1.72	7.44	4		3.70	3.03	10.73		1.96	1.54	7.49	4		4.17	2.78	10.94	
5		4.17	4.17	12.33		2.72	2.72	9.44	5		4.63	3.79	12.42		3.09	2.43	9.52	5		5.21	3.47	12.68	
6	3.0	5.00	5.00	14.00	3.0	3.72	3.72	11.45	6	3.0	5.56	4.55	14.10	3.0	4.23	3.32	11.55	6	3.0	6.25	4.17	14.42	3.0
7		5.83	5.83	15.67	-	4.72	4.72	13.45	7	-	6.48	6.06	15.78		4.23	4.22	13.58	7		7.29	4.86	16.15	4
8		6.67	6.67	17.33	-	5.72	5.72	15.45	8	-	7.41	6.06	17.47		5.37	5.11	15.61	8	-	8.23	5.56	17.89	-
9		7.50	7.50	19.00		6.72	6.72	17.45	9		8.33	6.82	19.15		7.64	6.00	17.64	9		9.38	6.25	19.63	
3		*	*	*	-	*	*	*	33	-	*	*	*		*	*	*	33	-	*	*	*	-
4		3.33	3.33	10.67	-	1.34	1.34	6.68	4	-	3.70	3.03	10.73		1.53	1.20	6.72	4		4.17	2.78	10.94	-
6	3.5	4.17	4.17	12.33	3.5	2.34	2.34	8.68	6	3.5	4.63	3.79	12.42	3.5	2.66	2.09	8.75	6	3.5	5.21	3.47	12.68	3.5
7	5.5	5.00	5.00	14.00	3.5	3.34	3.34	10.69	7	5.5	5.56	4.55	14.10	5.5	3.80	2.98	10.78	7	5.5	6.25	4.17	14.42	- 3.5
8		5.83	5.83	15.67	-	4.34	4.34	12.69	8	-	6.48	6.06	15.78		4.94	3.88	12.81	8	-	7.29	4.86	16.15	-
9		6.67 7.50	6.67 7.50	17.33 19.00	1	5.34 6.34	5.34 6.34	14.69 16.69	9	-	7.41 8.33	6.06 6.82	17.47		6.07 7.21	4.77 5.66	14.84 16.87	9	-	8.23 9.38	5.56 6.25	17.89 19.63	-
3		/.50	*	*		*	*	*	33		8.55 *	*	19.15 *		*	5.00 *	*	33		9.38	*	*	
4		*	*	*	1	*	*	*	4	1	3.70	3.03	10.73		1.09	0.86	5.95	4		4.17	2.78	10.94	-
5		4.17	4.17	12.33	1	1.96	1.96	7.92	5	-	4.63	3.79	12.42		2.23	1.75	7.98	5	-	5.21	3.47	12.68	1
6	4.0	5.00	5.00	14.00	4.0	2.96	2.96	9.93	6	4.0	5.56	4.55	14.10	4.0	3.37	2.65	10.01	6	4.0	6.25	4.17	14.42	4.0
7		5.83	5.83	15.67	1	3.96	3.96	11.93	7	1	6.48	6.06	15.78		4.50	3.54	12.04	7		7.29	4.86	16.15	1
8		6.67	6.67	17.33	1	4.96	4.96	13.93	8	-	7.41	6.06	17.47		5.64	4.43	14.07	8		8.23	5.56	17.89	1
9		7.50	7.50	19.00	1	5.96	5.96	15.93	9		8.33	6.82	19.15		6.78	5.32	16.01	9		9.38	6.25	19.63	1
					•		•	<u> </u>								•							
4.0% GL	JTTER LINE	PROFILE							5.0% G	UTTER LINE	PROFILE							6.0% G	UTTER LINE	PROFILE			
Н	W	X1u	X1L	L1	Y	X2u FEET	X2L FEET	L2 FEET	H INCHES	W FEET	X1u FEET	X1L FEET	L1 FEET	Y	X2u	X2L FEET	L2	Н	W	X1u	X1L	L1 FEET	Y INCHES
	FEET	FFF1	FFFI	I FEET	I INCHES									INCHES	FEEL	I FEET	I FEEL I	LINCHES	FEET	I FEET I			
INCHES	FEET	FEET	FEET	9 95	INCHES									INCHES	FEET		FEET 7 44	INCHES 3	FEET	FEET	FEET	11 81	
	FEET	4.17	1.79	9.95	INCHES	2.12	0.74	6.86	3		5.00	1.67	10.67	INCHES	2.76	0.69	7.44		FEET	6.25	1.56	11.81	-
INCHES 3	FEET	4.17 5.56	1.79 2.38	9.95 11.94	INCHES	2.12 4.04	0.74	6.86 9.46	3	-	5.00 6.67	1.67 2.22	10.67 12.89	INCHES	2.76 5.26	0.69 1.31	7.44 10.57	3	FEET	6.25 8.33	1.56 2.08	14.42	
INCHES 3 4	FEET 2.5	4.17 5.56 6.94	1.79 2.38 2.98	9.95 11.94 13.92	2.5	2.12 4.04 4.85	0.74 1.42 2.28	6.86 9.46 11.13	3	2.5	5.00 6.67 8.33	1.67 2.22 2.78	10.67 12.89 15.11	2.5	2.76 5.26 7.76	0.69 1.31 1.94	7.44 10.57 13.57	3	2.5	6.25 8.33 10.42	1.56 2.08 2.60	14.42 17.02	2.5
INCHES 3 4 5		4.17 5.56 6.94 8.33	1.79 2.38 2.98 3.57	9.95 11.94 13.92 15.90		2.12 4.04 4.85 6.41	0.74 1.42 2.28 3.02	6.86 9.46 11.13 13.43	3 4 5		5.00 6.67 8.33 10.00	1.67 2.22 2.78 3.33	10.67 12.89 15.11 17.33		2.76 5.26 7.76 10.26	0.69 1.31 1.94 2.56	7.44 10.57 13.57 16.83	3 4 5		6.25 8.33 10.42 12.50	1.56 2.08 2.60 3.13	14.42 17.02 19.63	2.5
INCHES 3 4 5 6		4.17 5.56 6.94	1.79 2.38 2.98	9.95 11.94 13.92		2.12 4.04 4.85	0.74 1.42 2.28	6.86 9.46 11.13	3 4 5 6		5.00 6.67 8.33	1.67 2.22 2.78	10.67 12.89 15.11		2.76 5.26 7.76	0.69 1.31 1.94	7.44 10.57 13.57	3 4 5 6		6.25 8.33 10.42	1.56 2.08 2.60	14.42 17.02	2.5
INCHES 3 4 5 6 7		4.17 5.56 6.94 8.33 9.72	1.79 2.38 2.98 3.57 4.17	9.95 11.94 13.92 15.90 17.89		2.12 4.04 4.85 6.41 7.98	0.74 1.42 2.28 3.02 3.75	6.86 9.46 11.13 13.43 15.73	3 4 5 6 7		5.00 6.67 8.33 10.00 11.67	1.67 2.22 2.78 3.33 3.89	10.67 12.89 15.11 17.33 19.56		2.76 5.26 7.76 10.26 12.77	0.69 1.31 1.94 2.56 3.19	7.44 10.57 13.57 16.83 19.95	3 4 5 6 7		6.25 8.33 10.42 12.50 14.48	1.56 2.08 2.60 3.13 3.65	14.42 17.02 19.63 22.23	2.5
INCHES 3 4 5 6 7 8		4.17 5.56 6.94 8.33 9.72 11.11	1.79 2.38 2.98 3.57 4.17 4.76	9.95 11.94 13.92 15.90 17.89 19.87		2.12 4.04 4.85 6.41 7.98 9.54	0.74 1.42 2.28 3.02 3.75 4.49	6.86 9.46 11.13 13.43 15.73 18.03	3 4 5 6 7 8		5.00 6.67 8.33 10.00 11.67 13.33	1.67 2.22 2.78 3.33 3.89 4.44	10.67 12.89 15.11 17.33 19.56 21.78		2.76 5.26 7.76 10.26 12.77 15.00	0.69 1.31 1.94 2.56 3.19 3.81	7.44 10.57 13.57 16.83 19.95 22.81	3 4 5 6 7 8		6.25 8.33 10.42 12.50 14.48 15.00	1.56 2.08 2.60 3.13 3.65 4.17	14.42 17.02 19.63 22.23 23.71	2.5
INCHES 3 4 5 6 7 8 8 9		4.17 5.56 6.94 8.33 9.72 11.11 12.50	1.79 2.38 2.98 3.57 4.17 4.76 5.36	9.95 11.94 13.92 15.90 17.89 19.87 21.86		2.12 4.04 4.85 6.41 7.98 9.54 11.10	0.74 1.42 2.28 3.02 3.75 4.49 5.22	6.86 9.46 11.13 13.43 15.73 18.03 20.33	3 4 5 6 7 8 9		5.00 6.67 8.33 10.00 11.67 13.33 15.00	1.67 2.22 2.78 3.33 3.89 4.44 5.00	10.67 12.89 15.11 17.33 19.56 21.78 24.00		2.76 5.26 7.76 10.26 12.77 15.00 15.00	0.69 1.31 1.94 2.56 3.19 3.81 4.44	7.44 10.57 13.57 16.83 19.95 22.81 23.44	3 4 5 6 7 8 9		6.25 8.33 10.42 12.50 14.48 15.00 15.00	1.56 2.08 2.60 3.13 3.65 4.17 4.69	14.42 17.02 19.63 22.23 23.71 23.69	2.5
INCHES 3 4 5 6 7 8 9 3		4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95		2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88	3 4 5 6 7 8 9 3		5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67		2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26	3 4 5 6 7 8 9 3		6.25 8.33 10.42 12.50 14.48 15.00 15.00 6.25	1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56	14.42 17.02 19.63 22.23 23.71 23.69 11.81	2.5
INCHES 3 4 5 6 7 8 9 3 4		4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94		2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88 4.48	3 4 5 6 7 8 9 3 4		5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89		2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38	3 4 5 6 7 8 9 3 4		6.25 8.33 10.42 12.50 14.48 15.00 15.00 6.25 8.33	1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42	2.5
INCHES 3 4 5 6 7 8 9 3 4 5	2.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88 4.48 11.08	3 4 5 6 7 8 9 3 4 5	2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11	2.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51	3 4 5 6 7 8 9 3 4 5	2.5	6.258.3310.4212.5014.4815.0015.006.258.3310.42	1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02	
INCHES 3 4 5 6 7 8 9 3 4 5 6 6	2.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94 8.33	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98 3.57	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24 5.24	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84 2.52	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88 4.48 11.08 13.68	3 4 5 6 7 8 9 3 4 5 6	2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33	2.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64	3 4 5 6 7 8 9 3 4 5 6	2.5	6.258.3310.4212.5014.4815.0015.006.258.3310.4212.50	$ \begin{array}{r} 1.56\\ 2.08\\ 2.60\\ 3.13\\ 3.65\\ 4.17\\ 4.69\\ 1.56\\ 2.08\\ 2.60\\ 3.13\\ \end{array} $	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63	
INCHES 3 4 5 6 7 8 9 3 4 5 6 7 6 7	2.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94 8.33 9.72	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98 3.57 4.17	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24 5.24 9.09	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84 2.52 3.19	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88 4.48 11.08 13.68 16.28	3 4 5 6 7 8 9 3 4 5 6 7	2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00 11.67	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33 3.89	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33 19.56	2.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31 11.81	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33 2.95	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64 18.77	3 4 5 6 7 8 9 3 4 5 6 7	2.5	6.258.3310.4212.5014.4815.0015.006.258.3310.4212.5014.48	$ \begin{array}{r} 1.56\\ 2.08\\ 2.60\\ 3.13\\ 3.65\\ 4.17\\ 4.69\\ 1.56\\ 2.08\\ 2.60\\ 3.13\\ 3.65\\ \end{array} $	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63 22.23	
INCHES 3 4 5 6 7 8 9 3 4 5 6 7 8 7 8 9 3 4 5 6 7 8 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 8 9 3 8 9 3 8 9 3 8 9 3 8 9 3 8 9 3 8 9 3 8 9 3 8 9 3 8 9 3 8 9 3 8 9 3 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 8 9 8 8 8 9 8 8 8 9 8 8 8 9 8 8 8 9 8 8 8 9 8 8 8 9 8 8 8 9 8 8 8 9 8 8 8 8 9 8 8 8 8 8 8 8 8 8 8 8 8 8	2.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94 8.33 9.72 11.11	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98 3.57 4.17 4.76	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24 5.24 9.09 11.02	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84 2.52 3.19 3.87	6.869.4611.1313.4315.7318.0320.335.884.4811.0813.6816.2818.88	3 4 5 6 7 8 9 3 4 5 6 7 8	2.5	$\begin{array}{r} 5.00\\ 6.67\\ 8.33\\ 10.00\\ 11.67\\ 13.33\\ 15.00\\ 5.00\\ 6.67\\ 8.33\\ 10.00\\ 11.67\\ 13.33\\ \end{array}$	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33 3.89 4.44	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33 19.56 21.78	2.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31 11.81 14.32	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33 2.95 3.58	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64 18.77 21.89	3 4 5 6 7 8 9 3 4 5 6 7 8	2.5	6.258.3310.4212.5014.4815.0015.006.258.3310.4212.5014.4815.00	1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63 22.23 23.71	
INCHES 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 9 3 4 5 6 7 8 9 9 3 4 5 6 7 8 9 9 3 4 5 6 7 8 9 9 3 6 7 8 9 9 3 6 7 8 9 9 3 6 7 8 9 9 3 8 9 9 9 3 8 9 9 9 9 9 9 9 9 9 9 9 9 9	2.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94 8.33 9.72 11.11 12.50	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98 3.57 4.17 4.76 5.36	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24 5.24 5.24 9.09 11.02 12.94	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84 2.52 3.19 3.87 4.54	6.869.4611.1313.4315.7318.0320.335.884.4811.0813.6816.2818.8821.48	3 4 5 6 7 8 9 3 4 5 6 7 8 9 9	2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00 11.67 13.33 15.00	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33 3.89 4.44 5.00	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33 19.56 21.78 24.00	2.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31 11.81 14.32 15.00	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33 2.95 3.58 4.20	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64 18.77 21.89 23.20	3 4 5 6 7 8 9 3 4 5 6 7 8 9 9	2.5	$\begin{array}{r} 6.25\\ 8.33\\ 10.42\\ 12.50\\ 14.48\\ 15.00\\ 15.00\\ 6.25\\ 8.33\\ 10.42\\ 12.50\\ 14.48\\ 15.00\\ 15.00\\ \end{array}$	$ \begin{array}{r} 1.56\\ 2.08\\ 2.60\\ 3.13\\ 3.65\\ 4.17\\ 4.69\\ 1.56\\ 2.08\\ 2.60\\ 3.13\\ 3.65\\ 4.17\\ 4.69\\ \end{array} $	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63 22.23 23.71 23.69	
INCHES 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 6 7 8 9 3 6 7 8 9 3 6 7 8 9 3 8 9 3 8 9 3 8 9 3 8 9 3 8 9 9 3 3 8 9 9 3 3 8 9 9 3 3 8 9 9 3 3 8 9 9 3 3 8 9 9 3 3 8 9 9 3 3 8 9 9 3 3 8 8 9 9 3 3 8 8 9 9 3 3 3 3 3 3 3 3 3 3 3 3 3	2.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94 8.33 9.72 11.11 12.50 *	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98 3.57 4.17 4.76 5.36 *	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86 *	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24 5.24 5.24 9.09 11.02 12.94 *	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84 2.52 3.19 3.87 4.54 *	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88 4.48 11.08 13.68 16.28 18.88 21.48 *	3 4 5 6 7 8 9 3 4 5 6 7 8 9 3	2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00 11.67 13.33 15.00 *	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33 3.89 4.44 5.00 *	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33 19.56 21.78 24.00 *	2.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31 11.81 14.32 15.00 *	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33 2.95 3.58 4.20 *	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64 18.77 21.89 23.20 *	3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 3	2.5	6.25 8.33 10.42 12.50 14.48 15.00 6.25 8.33 10.42 12.50 14.48 15.00 6.25 8.33 10.42 12.50 14.48 15.00 14.5.00 15.00 *	1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 *	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63 22.23 23.71 23.69 *	
INCHES 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6	2.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94 8.33 9.72 11.11 12.50 * 5.56	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98 3.57 4.17 4.76 5.36 * 2.38	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24 5.24 9.09 11.02 12.94 * 2.58	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84 2.52 3.19 3.87 4.54 * 0.91	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88 4.48 11.08 13.68 16.28 18.88 21.48 * 7.49	$ \begin{array}{r} 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 7 \\ 7 \\ 8 \\ 7 \\ 8 \\ 7 \\ 8 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 7 \\ 8 \\ 7 \\ 7 \\ 8 \\ 7 \\ 7 \\ 8 \\ 7 \\ 7 \\ 8 \\ 7 \\ 7 \\ 8 \\ 7 \\ 8 \\ 9 \\ 3 \\ 6 \\ 7 \\ 7 \\ 7 \\ 8 \\ 7 \\ $	2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33 19.56 21.78 24.00 * 12.89	2.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31 11.81 14.32 15.00 * 3.36	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33 2.95 3.58 4.20 * 0.84	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64 18.77 21.89 23.20 * 8.20	$ \begin{array}{r} 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 6 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 6 \\ 6 \\ 7 \\ 6 \\ 7 \\ 7 \\ 8 \\ 7 \\ 7 \\ 8 \\ 7 \\ 6 \\ 7 \\ 7 \\ 7 \\ 8 \\ 7 \\ 7 \\ 7 \\ 7 \\ 8 \\ 7 \\ $	2.5	6.25 8.33 10.42 12.50 14.48 15.00 15.00 6.25 8.33 10.42 12.50 14.48 15.00 15.00 14.48 15.00 14.48 15.00 14.33	1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42	
INCHES 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7	2.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94 8.33 9.72 11.11 12.50 * 5.56 6.94	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98 3.57 4.17 4.76 5.36 * 2.38 2.38	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24 5.24 9.09 11.02 12.94 * 2.58 4.51	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84 2.52 3.19 3.87 4.54 * 0.91 1.58	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88 4.48 11.08 13.68 16.28 18.88 21.48 * 7.49 10.09	3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7	2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33 19.56 21.78 24.00 15.11 17.33 19.56 21.78 24.00 * 12.89 15.11	2.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31 11.81 14.32 15.00 * 3.36 5.86	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33 2.95 3.58 4.20 * 0.84 1.46	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64 18.77 21.89 23.20 * 8.20 11.32	3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7	2.5	6.25 8.33 10.42 12.50 14.48 15.00 15.00 6.25 8.33 10.42 12.50 14.48 15.00 6.25 8.33 10.42 12.50 14.48 15.00 15.00 * 8.33 10.42	1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.08 2.08 2.60	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02	3.0
INCHES 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8	2.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94 8.33 9.72 11.11 12.50 * 5.56 6.94 8.33 9.72 11.11	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98 3.57 4.17 4.76 5.36 * 2.38 2.98 3.57 4.17 4.76	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92 15.90 17.89 19.87 19.87 19.87	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24 5.24 9.09 11.02 12.94 * 2.58 4.51 6.43 8.36 10.28	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84 2.52 3.19 3.87 4.54 * 0.91 1.58 2.26 2.93 3.61	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88 4.48 11.08 13.68 16.28 18.88 21.48 * 7.49 10.09 12.69 15.29 17.89	3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8	2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 10.00 11.67 13.33	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33 19.56 21.78 24.00 * 12.89 15.11 17.33 19.56 21.78	2.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31 11.81 14.32 15.00 * 3.36 5.86 8.36 10.86 13.37	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33 2.95 3.58 4.20 * 0.84 1.46 2.09 2.71 3.34	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64 18.77 21.89 23.20 * 8.20 11.32 14.45 17.58 20.71	3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 8 9 3	2.5	6.25 8.33 10.42 12.50 14.48 15.00 15.00 6.25 8.33 10.42 12.50 14.48 15.00 14.48 15.00 14.48 15.00 14.48 15.00 * 8.33 10.42 12.50 14.48 15.00	1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.08 3.13 3.65 4.17 4.69 * 2.08 2.08 2.60 3.13 3.65 4.17	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23 23.71	3.0
INCHES 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 9	2.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94 8.33 9.72 11.11 12.50 * 5.56 6.94 8.33 9.72 11.11 12.50	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98 3.57 4.17 4.76 5.36 * 2.38 2.98 3.57 4.17 4.76 5.38 2.98 3.57 4.17 4.76	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92 15.90 17.89 19.87 21.86	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24 5.24 9.09 11.02 12.94 * 2.58 4.51 6.43 8.36 10.28 12.20	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84 2.52 3.19 3.87 4.54 * 0.91 1.58 2.26 2.93 3.61 4.29	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88 4.48 11.08 13.68 16.28 18.88 21.48 * 7.49 10.09 12.69 15.29 17.89 20.49	3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 9 3 4 5 6 7 8 9 9 3	2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 10.00 11.67 13.33 15.00	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44 5.00	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33 19.56 21.78 24.00 * 12.89 15.11 17.33 19.56 21.78 24.00 21.78	2.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31 11.81 14.32 15.00 * 3.36 5.86 8.36 10.86 13.37 15.00	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33 2.95 3.58 4.20 * 0.84 1.46 2.09 2.71 3.34 3.96	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64 18.77 21.89 23.20 * 8.20 11.32 14.45 17.58 20.71 22.96	3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 9 3 4 5 6 7 8 9 9 3	2.5	6.25 8.33 10.42 12.50 14.48 15.00 6.25 8.33 10.42 12.50 14.48 15.00 6.25 8.33 10.42 12.50 14.48 15.00 * 8.33 10.42 12.50 14.48 15.00 14.48 15.00 14.500 15.00	1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65 4.17 4.69	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23 23.71 23.69	3.0
INCHES 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 9 3	2.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94 8.33 9.72 11.11 12.50 * 5.56 6.94 8.33 9.72 11.11 12.50 * 5.56 6.94 8.33 9.72 11.11 12.50 *	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98 3.57 4.17 4.76 5.36 * 2.38 2.98 3.57 4.17 4.76 5.36 * 2.98 3.57 4.17 4.76	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92 15.90 17.89 19.87 21.86 15.90 17.89 19.87 21.86 *	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24 5.24 9.09 11.02 12.94 * 2.58 4.51 6.43 8.36 10.28 12.20 *	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84 2.52 3.19 3.87 4.54 * 0.91 1.58 2.26 2.93 3.61 4.29 *	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88 4.48 11.08 13.68 16.28 18.88 21.48 * 7.49 10.09 12.69 15.29 17.89 20.49	$ \begin{array}{r} 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 3 \\ 3 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 5 \\ 6 \\ 7 \\ 7 \\ 8 \\ 9 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 5 \\ 6 \\ 7 \\ 7 \\ 8 \\ 7 \\ 7 \\ 8 \\ 7 \\ 7 \\ 8 \\ 9 \\ 3 \\ 3 \\ 3 \\ 3 \\ 7 \\ 7 \\ 8 \\ 7 \\ $	2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 10.00 11.67 13.33 15.00 *	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44 5.00 *	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33 19.56 21.78 24.00 * 12.89 15.11 17.33 19.56 21.78 24.00 * 15.11 17.33 19.56 21.78	2.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31 11.81 14.32 15.00 * 3.36 5.86 8.36 10.86 13.37 15.00 *	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33 2.95 3.58 4.20 * 0.84 1.46 2.09 2.71 3.34 3.96 *	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64 18.77 21.89 23.20 * 8.20 11.32 14.45 17.58 20.71 22.96 *	3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 3 4 5 6 7 8 9 3 3	2.5	6.25 8.33 10.42 12.50 14.48 15.00 6.25 8.33 10.42 12.50 14.48 15.00 6.25 8.33 10.42 12.50 14.48 15.00 * 8.33 10.42 12.50 14.48 15.00 * 8.33 10.42 12.50 14.48 15.00 15.00 15.00 15.00	1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65 4.17 4.69 * 2.60 3.13 3.65 4.17 4.69 *	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23 23.71 19.63 22.23 23.71 23.69 *	3.0
INCHES 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4	2.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94 8.33 9.72 11.11 12.50 * 5.56 6.94 8.33 9.72 11.11 12.50 * 5.56 6.94 8.33 9.72 11.11	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98 3.57 4.17 4.76 5.36 * 2.38 2.98 3.57 4.17 4.76 5.36 * 2.38 3.57 4.17 4.76 5.36 *	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92 15.90 17.89 19.87 21.86 *	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24 5.24 9.09 11.02 12.94 * 2.58 4.51 6.43 8.36 10.28 12.20 * 1.85	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84 2.52 3.19 3.87 4.54 * 0.91 1.58 2.26 2.93 3.61 4.29 * 0.65	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88 4.48 11.08 13.68 16.28 18.88 21.48 * 7.49 10.09 12.69 15.29 17.89 20.49 * 6.50	$ \begin{array}{r} 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \\ 7 \\ 8 \\ 9 \\ 3 \\ 6 \\ 7 \\ 7 \\ 8 \\ 9 \\ 7 \\ 7 \\ 7 \\ 6 \\ 7 \\ 7 \\ $	2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 10.00 11.67 8.33 15.00 *	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33 19.56 21.78 24.00 * 12.89 15.11 17.33 19.56 21.78 24.00 * 12.89 15.11 17.33 19.56 21.78 24.00 *	2.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31 11.81 14.32 15.00 * 3.36 5.86 8.36 10.86 13.37 15.00 * 2.41	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33 2.95 3.58 4.20 * 0.84 1.46 2.09 2.71 3.34 3.96 * 0.60	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64 18.77 21.89 23.20 * 8.20 11.32 14.45 17.58 20.71 22.96 * 7.01	3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 4 5 6 7 7	2.5	6.25 8.33 10.42 12.50 14.48 15.00 15.00 6.25 8.33 10.42 12.50 14.48 15.00 14.48 15.00 14.48 15.00 14.48 15.00 * 8.33 10.42 12.50 14.48 15.00 * 8.33 10.42 12.50 14.48 15.00 15.00 * 8.33	1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65 4.17 4.69 *	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23 23.71 23.69 *	3.0
INCHES 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 5	2.5 3.0 3.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94 8.33 9.72 11.11 12.50 * 5.56 6.94 8.33 9.72 11.11 12.50 * 5.56 6.94 8.33 9.72 11.11 12.50 *	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98 3.57 4.17 4.76 5.36 * 2.38 2.98 3.57 4.17 4.76 5.36 * 2.98 3.57 4.17 4.76 5.36 *	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24 5.24 9.09 11.02 12.94 * 2.58 4.51 6.43 8.36 10.28 12.20 * 1.85 3.78	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84 2.52 3.19 3.87 4.54 * 0.91 1.58 2.26 2.93 3.61 4.29 * 0.65 1.33	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88 4.48 11.08 13.68 16.28 18.88 21.48 * 7.49 10.09 12.69 15.29 17.89 20.49 * 6.50 9.10		2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 15.00 * 6.67 8.33 15.00 *	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33 19.56 21.78 24.00 * 12.89 15.11 17.33 19.56 21.78 24.00 * 12.89 15.11 17.33	2.5 3.0 3.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31 11.81 14.32 15.00 * 3.36 5.86 8.36 10.86 13.37 15.00 * 2.41 4.91	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33 2.95 3.58 4.20 * 0.84 1.46 2.09 2.71 3.34 3.96 * 0.60 1.23	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64 18.77 21.89 23.20 * 8.20 11.32 14.45 17.58 20.71 22.96 * 7.01 10.14	3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 5 6 7 8 9 3 4 5 5 6 7 7 8 9 9 3 3 4 5 5 6 7 7 8 9 9 3 7 7 7 8 8 9 9 3 7 7 7 8 8 9 9 3 3 7 7 8 8 9 9 3 3 7 7 8 8 9 9 3 3 7 7 8 8 9 9 3 3 7 7 8 8 9 9 3 3 7 7 8 8 9 9 3 3 4 4 5 7 7 8 8 9 9 3 3 4 4 5 5 6 6 7 7 8 8 9 9 3 3 4 4 5 5 6 6 7 7 8 8 9 9 3 3 4 4 5 5 5 8 8 9 9 3 3 4 4 5 5 9 3 3 4 4 5 5 9 3 3 4 4 5 5 9 3 3 4 4 5 5 9 5 5 5 8 8 9 9 3 3 4 4 5 5 5 5 8 8 9 9 3 3 4 4 5 5 5 5 5 5 5 5 5 8 8 9 5 5 5 5 5 5 5 5	2.5	6.25 8.33 10.42 12.50 14.48 15.00 6.25 8.33 10.42 12.50 14.48 15.00 6.25 8.33 10.42 12.50 14.48 15.00 * 8.33 10.42 12.50 14.48 15.00 * 8.33 10.42 12.50 14.48 15.00 * 8.33 10.42	1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.08 2.08 2.08 2.08	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23 23.71 23.69 *	3.0
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15.73 18.03 20.33 5.88 4.48 11.08 13.68 16.28 18.88 21.48 * 7.49 10.09 12.69 15.29 17.89 20.49 * 6.50 9.10 11.70 14.30</td> <td></td> <td>2.5</td> <td>5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 10.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 1.67 13.33 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8 9 8 8 8 9 8 8 8 8 8 9 9 8 8 8 8 9 3 8 8 8 8	2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 10.00 11.67 13.33 15.00 *	1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44	10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33 19.56 21.78 24.00 * 12.89 15.11 17.33 19.56 21.78 24.00 * 12.89 15.11 17.33 19.56 21.78 24.00 *	2.5 3.0 3.5	2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31 11.81 14.32 15.00 * 3.36 5.86 8.36 10.86 13.37 15.00 * 2.41 4.91 7.41 9.91 12.42	0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33 2.95 3.58 4.20 * 0.84 1.46 2.09 2.71 3.34 3.96 * 0.60 1.23 1.85 2.48 3.10	7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64 18.77 21.89 23.20 * 8.20 11.32 14.45 17.58 20.71 22.96 * 7.01 10.14 13.26 16.39 19.52		2.5	6.25 8.33 10.42 12.50 14.48 15.00 15.00 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15.00 1.67</td> <td>1.67 2.22 2.78 3.33 3.89 4.44 5.00 1.67 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44 5.00 * 2.22 2.78 3.33 3.89 4.44</td> <td>10.67 12.89 15.11 17.33 19.56 21.78 24.00 10.67 12.89 15.11 17.33 19.56 21.78 24.00 * 12.89 15.11 17.33 19.56 21.78 24.00 * 12.89 15.11 17.33 19.56 21.78 24.00 * 15.11 17.33 19.56</td> <td>2.5 3.0 3.5</td> <td>2.76 5.26 7.76 10.26 12.77 15.00 15.00 1.80 4.31 6.81 9.31 11.81 14.32 15.00 * 3.36 5.86 8.36 10.86 13.37 15.00 * 2.41 4.91 7.41 9.91</td> <td>0.69 1.31 1.94 2.56 3.19 3.81 4.44 0.45 1.08 1.70 2.33 2.95 3.58 4.20 * 0.84 1.46 2.09 2.71 3.34 3.96 * 0.60 1.23 1.85 2.48</td> <td>7.44 10.57 13.57 16.83 19.95 22.81 23.44 6.26 9.38 12.51 15.64 18.77 21.89 23.20 * 8.20 11.32 14.45 17.58 20.71 22.96 * 7.01 10.14 13.26 16.39</td> <td>3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 7 8 9 3 4 5 6 7 7 8 9 9 3 3 4 5 6 7 7 8 9 9 7 8 7 9 9 8 9 9 3 7 7 8 9 9 8 9 9 7 8 9 9 7 8 8 9 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 9 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 9 8 8 8 9 9 8 8 9 9 8 8 8 9 9 8 8 8 9 8 9 8 8 8 9 9 8 8 8 9 9 8 8 8 8 9 9 8 8 8 9 8 8 8 9 8 8 8 9 9 8 8 8 9 8 8 8 9 9 8 8 8 8 8 9 9 9 8 8 8 8 9 9 8 8 8 8 8 9 9 8 8 8 8 8 9 9 8 8 8 8 8 9 8 8 8 8 9 8 8 8 8 8 8 8 8 9 8 8 8 9 9 8 8 8 8 8 8 9 9 8 8 8 8 8 8 8 8 8 8 8 8 9 9 8 8 8 8 8 8 9 8 8 8 8 8 8 9 8 8 8 8 8 8 9 8</td> <td>2.5</td> <td>6.25 8.33 10.42 12.50 14.48 15.00 6.25 8.33 10.42 12.50 14.48 15.00 6.25 8.33 10.42 12.50 14.48 15.00 * 8.33 10.42 12.50 14.48 15.00 * 8.33 10.42 12.50 14.48 15.00 15.00 15.00 14.48 15.00 15.00 14.48 15.00 15.00 14.48</td> <td>1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65</td> <td>14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23</td> <td>3.0</td>	2.5 3.0 3.5	4.17 5.56 6.94 8.33 9.72 11.11 12.50 4.17 5.56 6.94 8.33 9.72 11.11 12.50 * 5.56 6.94 8.33 9.72 11.11 12.50 * 5.56 6.94 8.33 9.72 11.11 12.50 *	1.79 2.38 2.98 3.57 4.17 4.76 5.36 1.79 2.38 2.98 3.57 4.17 4.76 5.36 * 2.38 2.98 3.57 4.17 4.76 5.36 * 2.38 2.98 3.57 4.17 4.76 5.36 *	9.95 11.94 13.92 15.90 17.89 19.87 21.86 9.95 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92 15.90 17.89 19.87 21.86 * 11.94 13.92 15.90 15.90 15.90 15.90 15.90 17.89	2.5	2.12 4.04 4.85 6.41 7.98 9.54 11.10 1.39 3.31 5.24 5.24 9.09 11.02 12.94 * 2.58 4.51 6.43 8.36 10.28 12.20 * 1.85 3.78 5.70 7.62	0.74 1.42 2.28 3.02 3.75 4.49 5.22 0.49 1.16 1.84 2.52 3.19 3.87 4.54 * 0.91 1.58 2.26 2.93 3.61 4.29 * 0.65 1.33 2.00 2.68	6.86 9.46 11.13 13.43 15.73 18.03 20.33 5.88 4.48 11.08 13.68 16.28 18.88 21.48 * 7.49 10.09 12.69 15.29 17.89 20.49 * 6.50 9.10 11.70 14.30		2.5	5.00 6.67 8.33 10.00 11.67 13.33 15.00 5.00 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 10.00 11.67 13.33 15.00 * 6.67 8.33 10.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 10.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 15.00 11.67 13.33 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6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 8 9 3 4 5 6 7 7 8 9 3 4 5 6 7 7 8 9 9 3 3 4 5 6 7 7 8 9 9 7 8 7 9 9 8 9 9 3 7 7 8 9 9 8 9 9 7 8 9 9 7 8 8 9 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 9 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 8 8 8 9 9 9 8 8 8 9 9 8 8 9 9 8 8 8 9 9 8 8 8 9 8 9 8 8 8 9 9 8 8 8 9 9 8 8 8 8 9 9 8 8 8 9 8 8 8 9 8 8 8 9 9 8 8 8 9 8 8 8 9 9 8 8 8 8 8 9 9 9 8 8 8 8 9 9 8 8 8 8 8 9 9 8 8 8 8 8 9 9 8 8 8 8 8 9 8 8 8 8 9 8 8 8 8 8 8 8 8 9 8 8 8 9 9 8 8 8 8 8 8 9 9 8 8 8 8 8 8 8 8 8 8 8 8 9 9 8 8 8 8 8 8 9 8 8 8 8 8 8 9 8 8 8 8 8 8 9 8	2.5	6.25 8.33 10.42 12.50 14.48 15.00 6.25 8.33 10.42 12.50 14.48 15.00 6.25 8.33 10.42 12.50 14.48 15.00 * 8.33 10.42 12.50 14.48 15.00 * 8.33 10.42 12.50 14.48 15.00 15.00 15.00 14.48 15.00 15.00 14.48 15.00 15.00 14.48	1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 1.56 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65 4.17 4.69 * 2.08 2.60 3.13 3.65	14.42 17.02 19.63 22.23 23.71 23.69 11.81 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23 23.71 23.69 * 14.42 17.02 19.63 22.23	3.0

CURB RAMP TYPE 2

	0.0% GUT	TER LINE PRO	DFILE	
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET
3	3	1.50	1.50	7.00
4	4	1.50	1.50	7.00
5	5	1.50	1.50	7.00
6	6	1.50	1.50	7.00
7	7	1.50	1.50	7.00
8	8	1.50	1.50	7.00
9	9	1.50	1.50	7.00

NOTES:

1. FOR CURB RAMP TYPES, SEE CD-606-1.

2. THE ABOVE TABLES ARE BASED ON THE SPECIFIC GUTTER PROFILE REFERENCED. THEY DO NOT TAKE INTO ACCOUNT VARIATIONS IN THE GUTTER PROFILE. THE ABOVE TABLES TO BE USED BY THE DESIGNERS AND CONTRACTORS TO GET APPROXIMATE DIMENSIONS OF THE CURB RAMP AT EACH LOCATION. FINAL DIMENSIONS WILL BE DETERMINED BY ACTUAL MEASUREMENTS IN THE FIELD DURING CONSTRUCTION.

3. THE 12H:1V MAX SLOPE IS THE RUNNING SLOPE FOR CURB RAMPS, BUT ONLY THE 12H:1V SLOPE MEASURED AS X IS THE RUNNING SLOPE FOR TYPE 3 AND TYPE 4 CURB RAMPS. ENSURE THE RUNNING SLOPE OF CURB RAMPS DOES NOT REQUIRE ITS LENGTH TO EXCEED 15 FEET. THE RUNNING SLOPE MAY EXCEED THE 12H: 1V MAX SLOPE SO AS NOT TO EXCEED THE 15 FEET MAXIMUM LENGTH. THE TABLES ALREADY APPLY THE 15 FEET RULE FOR THOSE CALCULATED LENGTHS WHICH EXCEED 15 FEET.

LEGEND

L = LOWER SIDE OF GUTTER LINE PROFILE FOR THE OTHER ABBREVIATIONS - REFER TO CD-606-1 * TYPE 3 RAMP IS NOT APPLICABLE, USE TYPE 1 ** TYPE 4 RAMP IS NOT APPLICABLE, USE TYPE 2

U = UPPER SIDE OF GUTTER LINE PROFILE

NEW JERSEY DEPARTMENT OF TRANSPORTATION CONSTRUCTION DETAILS

(PUBLIC	SIDEWALK	CURB	RAMP	TABLES)
	Ν	I.T.S.		
				CD-606-1

15.00 3.43 22.43

15.00 3.92 22.92

15.00 4.41 23.41

CD-606-1B

15.00 2.15 21.15

15.00 3.24 22.24

2.70 21.70

15.00

CONCRETE SIDEWALK

31 32

TTER LINE	PROFILE						
W FEET	X1u FEET	X1L FEET	L1 FEET	Y INCHES	X2u FEET	X2l FEET	L2 FEET
	8.33	1.47	13.80		6.90	0.60	11.50
	11.11	1.96	17.07		13.16	1.14	18.31
	13.89	2.45	20.34		15.00	1.69	20.69
2.5	15.00	2.94	21.94	2.5	15.00	2.23	21.05
	15.00	3.43	22.43		15.00	2.77	21.97
	15.00	3.92	22.92		15.00	3.32	22.32
	15.00	4.41	23.41		15.00	3.86	22.86
	8.33	1.47	13.80		4.52	0.39	8.91
	11.11	1.96	17.07		10.78	0.94	15.72
	13.89	2.45	20.34		15.00	1.58	20.48
3.0	15.00	2.94	21.94	3.0	15.00	2.02	21.00
	15.00	3.43	22.43		15.00	2.57	21.57
	15.00	3.92	22.92		15.00	3.11	22.11
	15.00	4.41	23.41		15.00	3.65	22.65
	*	*	*		*	*	*
	11.11	1.96	17.07		8.40	0.73	13.13
	13.89	2.45	20.34		14.67	1.27	19.94
3.5	15.00	2.94	21.94	3.5	15.00	1.82	20.82
	15.00	3.43	22.43		15.00	2.36	21.36
	15.00	3.92	22.92		15.00	2.90	21.90
	15.00	4.41	23.41		15.00	3.45	22.45
	*	*	*		*	*	*
	11.11	1.96	17.07		6.03	0.52	10.55
	13.89	2.45	20.34		12.29	1.07	17.36
4.0	15.00	2.94	21.94	4.0	15.00	1.61	20.61

3.0% Gl	JTTER LINE	PROFILE						
H INCHES	W FEET	X1u FEET	X1l FEET	L1 FEET	Y INCHES	X2u FEET	X2l FEET	L2 FEET
3		3.57	1.92	9.49		1.72	0.81	6.53
4		4.76	2.56	11.33		3.28	1.55	8.83
5		5.95	3.21	13.16		4.85	2.28	11.13
6	2.5	7.14	3.85	14.99	2.5	6.41	3.02	13.43
7		8.33	4.49	16.82		7.98	3.75	15.73
8		9.52	5.13	18.65		9.54	4.49	18.03
9		10.71	5.77	20.48		11.10	5.22	20.33
3		3.57	1.92	9.49		1.13	0.53	5.66
4		4.76	2.56	11.33		2.69	1.27	7.96
5		5.95	3.21	13.16		4.25	2.00	10.26
6	3.0	7.14	3.85	14.99	3.0	5.82	2.74	12.55
7		8.33	4.49	16.82		7.38	3.47	14.85
8		9.52	5.13	18.65] [8.94	4.21	17.15
9		10.71	5.77	20.48		10.51	4.94	19.45
33		*	*	*		*	*	*
4		4.76	2.56	11.33		2.10	0.99	7.08
5		5.95	3.21	13.16		3.66	1.72	9.38
6	3.5	7.14	3.85	14.99	3.5	5.22	2.46	11.68
7		8.33	4.49	16.82		6.79	3.19	13.98
8		9.52	5.13	18.65		8.35	3.93	16.28
9		10.71	5.77	20.48		9.91	4.66	18.58
33		*	*	*		*	*	*
4		4.76	2.56	11.33		1.50	0.71	6.21
5		5.95	3.21	13.16		3.07	1.44	8.51
6	4.0	7.14	3.85	14.99	4.0	4.63	2.18	10.81
7		8.33	4.49	16.82		6.19	2.91	13.11
8		9.52	5.13	18.65		7.76	3.65	15.41
9		10.71	5.77	20.48		9.32	4.38	17.71
7.0% Gl	JTTER LINE	PROFILE						

	9.35	5.73	19.08	
	0.95	0.58	5.53	
	2.27	1.39	7.65	
	3.58	2.20	9.78	
	4.90	3.00	11.90	
	6.22	3.81	14.02	
	7.53	4.62	16.15	
	8.85	5.42	18.27	
1	*	*	*	
	1.77	1.08	6.85	
	3.08	1.89	8.97	
	4.40	2.70	11.09	
	5.72	3.50	13.22.	
	7.03	4.31	15.34	
	8.35	5.12	17.46	
1	*	*	*	
	1.27	0.78	6.04	
	2.58	1.58	8.16	
	3.90	2.39	10.29	
	5.22	3.20	12.41	
	6.53	4.00	14.53	
	7.85	4.81	16.66	
	X2u	X2L	L2	
	FEET	FEET	FEET	
	3.94	0.64	8.58	
	7.51	1.22	12.74	
	11.09	1.80	16.89	
	14.67	2.38	21.05	
	15.00	2.97	21.97	
	15.00	3.81	22.81	
	15.00	4.44	23.44	
	2.58	0.42	7.00	
	6.16	1.00	11.16	
	9.73	1.58	15.31	
	13.31	2.16	19.47	
	15.00	2.75	21.75	
	15.00	3.33	22.33	
	15.00	3.91	22.91	
	*	*	*	
	4.80	0.78	9.58	
	8.37	1.36	13.74	
	11.95	1.94	17.89	
	15.00	2.52	21.52	
	15.00	3.11	22.11	
	15.00	3.69	22.96	
	*	*	*	
	3.44	0.56	8.00	
	7.02	1.14	12.16	
	10.59	1.72	16.31	
		'	<u> </u>	
	14.17	2.30	20.47	

15.00 2.89 21.89

15.00 3.47 22.47

INCHES

4

5 6

7 8

9

3

4

5

6

5 6

7 8 9

5 6

7

8 9

X2l FEET

0.89

1.69 8.46 2.50 10.58

3.31 12.71

4.12 14.83

4.92 16.95 5.73 19.08

FEET

6.34

X2u FEET

1.45

2.77

4.08 5.40

6.72

8.03

9.35

CD-606-1.1B

CURB RAMP TYPE 4

0.0% Gl	JTTER LINE	PROFILE			
H INCHES	W FEET	Y INCHES	Xzu FEET	X2l FEET	Lz FEET
3			1.10	1.10	6.20
4			2.10	2.10	8.20
5			3.10	3.10	10.20
6	2.5	2.5	4.10	4.10	12.20
7			5.10	5.10	14.21
8			6.10	6.10	16.21
9			7.10	7.10	18.21
3			**	**	**
4			1.72	1.72	7.44
5			2.72	2.72	9.44
6	3.0	3.0	3.72	3.72	11.45
7			4.72	4.72	13.45
8			5.72	5.72	15.45
9			6.72	6.72	17.45
3			**	**	**
4			1.34	1.34	6.68
5			2.34	2.34	8.68
6	3.5	3.5	3.34	3.34	10.69
7			4.34	4.34	12.69
8			5.34	5.34	14.69
9			6.34	6.34	16.69
3			**	**	**
4			**	**	**
5			1.96	1.96	7.92
6	4.0	4.0	2.96	2.96	9.93
7			3.96	3.96	11.93
8			4.96	4.96	13.93
9			5.96	5.96	15.93

	JTTER LINE		N	No.	
H INCHES	W FEET	Y INCHES	Xzu FEET	X2l FEET	Lz FEET
3			2.12	0.74	6.86
4			4.04	1.42	9.46
5			5.97	2.10	12.06
6	2.5	2.5	7.89	2.77	14.66
7			9.82	3.45	17.26
8			11.74	4.12	19.87
9			13.67	4.80	22.47
3			1.39	0.49	5.88
4			3.31	1.16	8.48
5			5.24	1.84	11.08
6	3.0	3.0	7.16	2.52	13.68
7			9.09	3.19	16.28
8			11.01	3.87	18.88
9			12.94	4.54	21.48
3			0.66	0.23	4.89
4			2.58	0.91	7.49
5			4.51	1.58	10.09
6	3.5	3.5	6.43	2.26	12.69
7			8.36	2.93	15.29
8			10.28	3.61	17.89
9			12.20	4.29	20.49
3			**	**	**
4			1.85	0.65	6.50
5			3.78	1.33	9.10
6	4.0	4.0	5.70	2.00	11.70
7			7.62	2.68	14.30
8			9.55	3.35	16.90
9			11.47	4.03	19.50

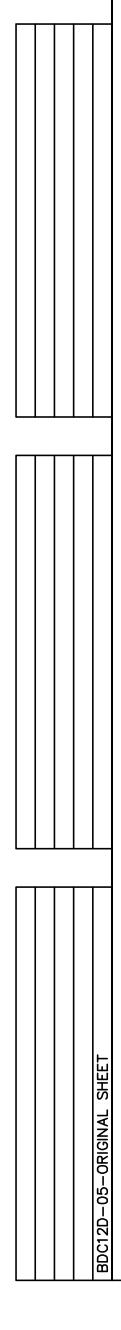
1.0% GL	JTTER LINE	PROFILE				
H INCHES	W FEET	Y INCHES	Xzu FEET	X2l FEET	Lz FEET	
3			1.25	0.98	6.24	
4			2.39	1.88	8.27	
5			3.53	2.77	10.30	
6	2.5	2.5	4.66	3.66	12.33	
7			5.80	4.56	14.36	
8			6.94	5.45	16.39	
9			8.07	6.34	18.42	
3			0.82	0.64	5.46	
4			1.96	1.54	7.49	
5			3.09	2.43	9.52	
6	3.0	3.0	4.23	3.32	11.55	
7			5.37	5.37	4.22	13.58
8			6.50	5.11	15.61	
9			7.64	6.00	17.64	
3			0.39	0.30	4.69	
4			1.53	1.20	6.72	
5			2.66	2.09	8.75	
6	3.5	3.5	3.80	2.98	10.78	
7			4.94	3.88	12.81	
8			6.07	4.77	14.84	
9			7.21	5.66	16.87	
3			**	**	**	
4			1.09	0.86	5.95	
5			2.23	1.75	7.98	
6	4.0	4.0	3.37	2.65	10.01	
7			4.50	3.54	12.04	
8			5.64	4.43	14.07	
9			6.78	5.32	16.10	

5.0% GL	JTTER LINE	PROFILE			
H INCHES	W FEET	Y INCHES	Xzu FEET	X2L FEET	Lz FEET
3			2.76	0.69	7.44
4			5.26	1.31	10.57
5			7.76	1.94	13.70
6	2.5	2.5	10.26	2.56	16.83
7			12.77	3.19	19.95
8			15.00	3.81	22.81
9			15.00	4.44	23.44
3			1.80	0.45	6.26
4			4.31	1.08	9.38
5			6.81	1.70	12.51
6	3.0	3.0	9.31	2.33	15.64
7	7		11.81	18.77	
8			14.32	3.58	21.89
9			15.00	3.87	23.20
3			0.85	0.21	5.07
4			3.36	0.84	8.20
5			5.86	1.46	11.32
6	3.5	3.5	8.36	2.09	14.45
7			10.86	2.71	17.58
8			13.37	3.34	20.71
9			15.00	3.96	22.96
3			**	**	**
4			2.41	0.60	7.01
5			4.91	1.23	10.14
6	4.0	4.0	7.41	1.85	13.26
7			9.91	2.48	16.39
8			12.42	3.10	19.52
9			14.92	3.73	22.65

NOTES:

1. FOR CURB RAMP TYPES, SEE CD-606-1.

- MEASUREMENTS IN THE FIELD DURING CONSTRUCTION.
- LENGTHS WHICH EXCEED 15 FEET.



2.0% GUTTER LINE PROFILE H W Y Xzu X2L Lz								
INCHES	FEET	INCHES	FEET	FEET	FEET			
3			1.45	0.89	6.34			
4			2.77	1.69	8.46			
5			4.08	2.50	10.58			
6	2.5	2.5	5.40	3.31	12.71			
7			6.72	4.12	14.83			
8			8.03	4.92	16.95			
9			9.35	5.73	19.08			
3			0.95	0.58	5.53			
4			2.27	1.39	7.65			
5			3.58	2.20	9.78			
6	3.0	3.0	4.90	3.00	11.90			
7			6.22	3.81	14.02			
8			7.53	4.62	16.15			
9			8.85	5.42	18.27			
3			0.45	0.28	4.72			
4			1.77	1.08	6.85			
5			3.08	1.89	8.97			
6	3.5	3.5	4.40	2.70	11.09			
7			5.72	3.50	13.22			
8			7.03	4.31	15.34			
9			8.35	5.12	17.46			
3			**	**	**			
4			1.27	0.78	6.04			
5			2.58	1.58	8.16			
6	4.0	4.0	3.90	2.39	10.29			
7			5.22	3.20	12.41			
8			6.53	4.00	14.53			
9			7.85	4.81	16.66			

3.0% GUTTER LINE PROFILE								
H INCHES	W FEET	Y INCHES	Xzu FEET	X2l FEET	Lz FEET			
3			1.72	0.81	6.53			
4			3.28	1.55	8.83			
5			4.85	2.28	11.13			
6	2.5	2.5	6.41	3.02	13.43			
7			7.98	3.75	15.73			
8			9.54	4.49	18.03			
9			11.10	5.22	20.33			
3			1.13	0.53	5.66			
4			2.69	1.27	7.96			
5			4.25	2.00	10.26			
6	3.0	3.0	5.82	2.74	12.55			
7			7.38	3.47	14.85			
8			8.94	4.21	17.15			
9			10.51	4.94	19.45			
3			0.53	0.25	4.78			
4			2.10	0.99	7.08			
5			3.66	1.72	9.38			
6	3.5	3.5	5.22	2.46	11.68			
7			6.79	3.19	13.98			
8			8.35	3.93	16.28			
9			9.91	4.66	18.58			
3			**	**	**			
4			1.50	0.71	6.21			
5			3.07	1.44	8.51			
6	4.0	4.0	4.63	2.18	10.81			
7			6.19	2.91	13.11			
8			7.76	3.65	15.41			
9			9.32	4.38	17.71			

6.0% GUTTER LINE PROFILE H W Y Xzu X2L Lz								
H INCHES	VV FEET	Y INCHES	XZU FEET	FEET	Lz FEET			
3			3.94	0.64	8.58			
4			7.51	1.22	12.74			
5			11.09	1.80	16.89			
6	2.5	2.5	14.67	2.38	21.05			
7			15.00	2.97	21.97			
8			15.00	3.55	22.55			
9			15.00	4.13	23.13			
3			2.58	0.42	7.0			
4			6.16	1.00	11.16			
5			9.73	1.58	15.31			
6	3.0	3.0	13.31	2.16	19.47			
7			15.00	2.75	21.75			
8			15.00	3.33	22.33			
9			15.00	3.91	22.91			
3			1.22	0.20	5.42			
4			4.80	0.78	9.58			
5			8.37	1.36	13.74			
6	3.5	3.5	11.95	1.94	17.89			
7			15.00	2.52	21.52			
8			15.00	3.11	22.11			
9			15.00	3.69	22.69			
3			**	**	**			
4			3.44	0.56	8.00			
5			7.02	1.14	12.16			
6	4.0	4.0	10.59	1.72	16.31			
7			14.17	2.30	20.47			
8			15.00	2.89	21.89			
9			15.00	3.47	22.47			

7.0% Gl	ITTER LINE PROFILE						
H INCHES	W FEET	Y INCHES	Xzu FEET	X2l FEET	Lz FEET		
3		Y	6.90	0.60	11.50		
4			13.16	1.14	18.31		
5			15.00	1.69	20.69		
6	2.5	2.5	15.00	2.23	21.23		
7			15.00	2.77	21.77		
8			15.00	3.32	22.32		
9			15.00	3.86	22.86		
3			4.52	0.39	8.91		
4			10.78	0.94	15.72		
5			15.00	1.48	20.48		
6	3.0	3.0	15.00	2.02	21.02		
7			15.00	2.57	21.57		
8			15.00	3.11	22.11		
9			15.00	3.65	22.65		
3			2.14	0.19	6.32		
4			8.40	0.73	13.13		
5			14.67	1.27	19.94		
6	3.5	3.5	15.00	1.82	20.82		
7			15.00	2.36	21.36		
8			15.00	2.90	21.90		
9			15.00				
3			**	**	**		
4			6.03	0.52	10.55		
5			12.29	1.07	17.36		
6	4.0	4.0	15.00	1.61	20.61		
7			15.00	2.15	21.15		
8			15.00	2.70	21.70		
9			15.00	3.24	22.24		

2. THE ABOVE TABLES ARE BASED ON THE SPECIFIC GUTTER PROFILE REFERENCED. THEY DO NOT TAKE INTO ACCOUNT VARIATIONS IN THE GUTTER PROFILE. THE ABOVE TABLES TO BE USED BY THE DESIGNERS AND CONTRACTORS TO GET APPROXIMATE DIMENSIONS OF THE CURB RAMP AT EACH LOCATION. FINAL DIMENSIONS WILL BE DETERMINED BY ACTUAL

3. THE 12H:1V MAX SLOPE IS THE RUNNING SLOPE FOR CURB RAMPS, BUT ONLY THE 12H:1V SLOPE MEASURED AS X IS THE RUNNING SLOPE FOR TYPE 3 AND TYPE 4 CURB RAMPS. ENSURE THE RUNNING SLOPE OF CURB RAMPS DOES NOT REQUIRE ITS LENGTH TO EXCEED 15 FEET. THE RUNNING SLOPE MAY EXCEED THE 12H:1V MAX SLOPE SO AS NOT TO EXCEED THE 15 FEET MAXIMUM LENGTH. THE TABLES ALREADY APPLY THE 15 FEET RULE FOR THOSE CALCULATED

LEGEND

U = UPPER SIDE OF GUTTER LINE PROFILEL = LOWER SIDE OF GUTTER LINE PROFILE FOR THE OTHER ABBREVIATIONS - REFER TO CD-606-1 * TYPE 3 RAMP IS NOT APPLICABLE, USE TYPE 1 ** TYPE 4 RAMP IS NOT APPLICABLE, USE TYPE 2

CURB RAMP TYPE 7

0.0% GUTTER LINE PROFILE					4.0% GUTTER LINE PROFILE						
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET		H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET	
3	3	3.00	3.00	10.00		3	3	5.77	2.03	11.80	
4	4	4.00	4.00	12.00		4	4	7.70	2.70	11.40	
5	5	5.00	5.00	14.00		5	5	9.62	3.38	17.00	
6	6	6.00	6.00	16.00		6	6	11.55	4.06	19.60	
7	7	7.00	7.00	18.01		7	7	13.47	4.73	22.20	
8	8	8.00	8.00	20.01		8	8	15.40	5.41	24.80	
9	9	9.00	9.00	22.01		9	9	17.32	6.08	27.40	
	1.0% GUTTER LINE PROFILE						5.0% GUT	TER LINE PRO	DEILE		
н	W	X1u	X1L	Lz		Н	W	X1u	X1L	Lz	
INCHES	FEET	FEET	FEET	FEET		INCHES	FEET	FEET	FEET	FEET	
3	3	3.41	2.68	10.09		3	3	7.51	1.88	13.38	
4	4	4.55	3.57	12.12		4	4	10.01	2.50	16.51	
5	5	5.68	4.47	14.15		5	5	12.51	3.13	19.64	
6	6	6.82	5.36	16.18		6	6	15.00	3.75	22.75	
7	7	7.96	6.25	18.21		7	7	15.00	4.38	23.38	
8	8	9.10	7.15	20.24		8	8	15.00	5.00	24.00	
9	9	10.23	8.04	22.27		9	9	15.00	5.63	24.63	
	2.0% GUTTER LINE PROFILE				1	6.0% GUTTER LINE PROFILE					
H INCHES	W	X1u FEET	X1L FEET	Lz FEET		H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET	
3	3	3.95	2.42	10.37		3	3	10.73	1.74	16.47	
4	4	5.27	3.23	12.49		4	4	14.31	2.33	20.63	
5	5	6.58	4.03	14.62		5	5	15.00	2.91	21.91	
6	6	7.90	4.84	16.74		6	6	15.00	3.49	22.49	
7	7	9.22	5.65	18.86		7	7	15.00	4.07	23.07	
8	8	10.53	6.45	20.99		8	8	15.00	4.65	23.65	
9	9	11.85	7.26	23.11		9	9	15.00	5.23	24.23	
	3.0% GUT	TER LINE PRO	OFILE		1		7.0% GUT	TER LINE PRO	OFILE		
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET		H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET	
3	3	4.69	2.21	10.90		3	3	15.00	1.63	20.63	
4	4	6.25	2.94	13.20		4	4	15.00	2.17	20.03	
5	5	7.82	3.68	15.49		5	5	15.00	2.72	21.72	
6	6	9.38	4.41	17.79		6	6	15.00	3.26	22.26	
7	7	10.94	5.15	20.09		7	7	15.00	3.81	22.20	
8	8	12.51	5.88	22.38		8	8	15.00	4.35	23.35	
9	9	14.07	6.62	24.69		9	9	15.00	4.89	23.89	
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CD-606-1C

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NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

CD-606-1.1C