UTILITIES / AUTHORITIES

GAS SERVICE
ELIZABETHTOWN GAS COMPANY
520 GREEN LANE, UNION, NJ 7083
PHONE: (908) 662-8321
CONTACT: GREGORY J. BALINT

CABLE SERVICE

COMCAST CABLEVISION OF NJ 800 RAHWAY AVENUE, UNION, NJ 07083 PHONE: (908) 851-2258 CONTACT: GEORGE PALYCA

ELECTRIC SERVICE

PUBLIC SERVICE ELECTRIC AND GAS COMPANY 472 WESTON CANAL ROAD, SOMERSET, NJ 08873 PHONE: (732) 764-3067 CONTACT: JOHN GRABENSTEIN

WATER SERVICE

NEW JERSEY AMERICAN WATER COMPANY 1341 NORTH AVENUE, PLAINFIELD, NJ 07061 PHONE: (908) 791-3456 CONTACT: MICHAEL F. BANGE

TELEPHONE SERVICE
VERIZON COMMUNICATIONS
290 W. MT PLEASANT AVENUE, LIVINGSTON, NJ 07039
PHONE: (973) 422-5156
CONTACT: DARREN CRAY

SEWER SERVICES

TWP OF CRANFORD SEWER DEPARTMENT ROUND HOUSE, 364 NORTH AVENUE PHONE: (908) 709-7217 CONTACT: ERIK HASTRUP

RAHWAY VALLEY SEWERAGE AUTHORITY
1050 EAST HAZELWOOD AVENUE, RAHWAY, NJ 07065
PHONE: (732) 388-0868
CONTACT: JOHN BUONOCORE

TOWNSHIP OF CRANFORD

PATRICK GIBLIN, MAYOR
KATHLEEN MILLER PRUNTY, DEPUTY
MAYOR/COMMISSIONER

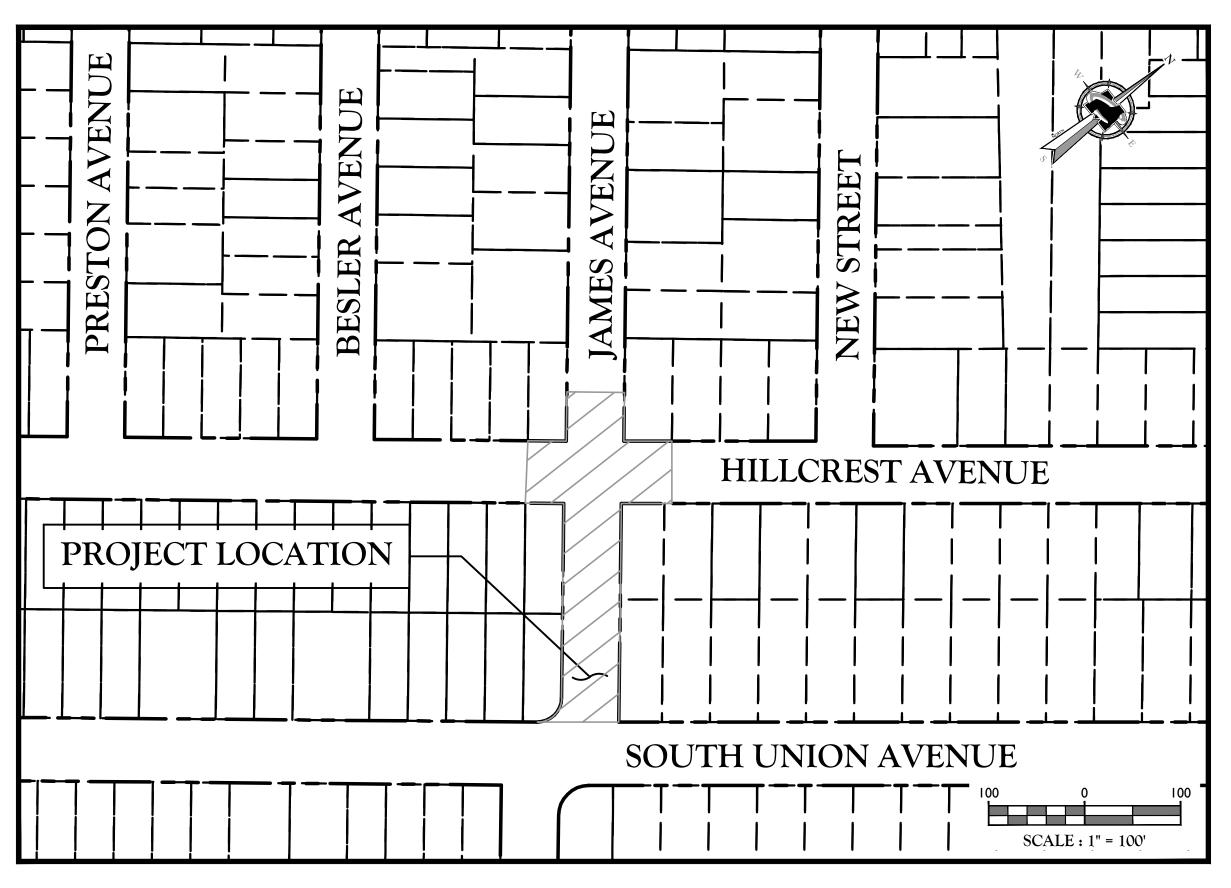
THOMAS H. HANNEN, JR., COMMISSIONER
JEAN-ALBERT MAISONNEUVE, COMMISSIONER
MARY O'CONNOR, COMMISSIONER

PATRICIA DONAHUE, TOWNSHIP CLERK JAMIE CRYAN, TOWNSHIP ADMINISTRATOR

SHT. No. DESCRIPTION 1 COVER 2 GENERAL NOTES & QUANTITIES 3 - 4 EXISTING CONDITIONS PLAN 5 DIMENSION PLAN 6 CROSS SECTIONS 7 SOIL EROSION & SEDIMENT CONTROL DETAILS 8 - 10 CONSTRUCTION DETAILS 11 - 14 NJDOT TRAFFIC CONTROL DETAILS

CONSTRUCTION PLANS FOR JAMES AVENUE DRAINAGE IMPROVEMENTS

TOWNSHIP OF CRANFORD
COUNTY OF UNION
NEW JERSEY



KEY MAP

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

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SURVEY NOTES:

EXISTING FEATURES SHOWN ON THIS PLAN WERE BASED ON INFORMATION FROM THE SURVEY ENTITLED, "TOPOGRAPHIC SURVEY FOR SOUTH UNION AVENUE" DATED 5/21/19, LAST REVISED 8/1/19, AND THE SURVEY ENTITLED, "TOPOGRAPHIC SURVEY FOR JAMES AVENUE & HILLCREST AVENUE" DATED 4/15/20, FOR THE TOWNSHIP OF CRANFORD, PREPARED BY MASER CONSULTING P.A..

- THE HORIZONTAL POSITION OF THIS SURVEY IS BASED ON GPS OBSERVATIONS TIED TO THE KEYNET VIRTUAL REFERENCE STATION SYSTEM RELATIVE TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM, NAD 83. THE VERTICAL POSITION OF THE HEREON SURVEY IS BASED ON GPS OBSERVATIONS TIED TO THE KEYNET VIRTUAL REFERENCE STATION SYSTEM, ADJUSTED AND RELATIVE TO THE NORTH AMERICAN DATUM (NAVD 88).
- ALL RIGHT-OF-WAY LINES, PROPERTY LINES, AND EASEMENTS ARE APPROXIMATE AND BASED UPON TAX MAPS.
- THE LOCATION OF ALL UNDERGROUND UTILITIES AS SHOWN HEREON ARE APPROXIMATE AND ARE BASED ON VISIBLE ABOVE GROUND STRUCTURES AND UTILITY MARK OUTS. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/STRUCTURES. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. THE CONTRACTOR SHALL HAVE ALL UNDERGROUND UTILITIES FIELD VERIFIED BY THE PROPER UTILITY COMPANIES BEFORE ANY CONSTRUCTION BEGINS.

GENERAL NOTES:

- I. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION RELATED TO THE PROPOSED IMPROVEMENTS SHOWN HEREIN SHALL BE IN ACCORDANCE WITH THE FOLLOWING, UNLESS SPECIFICALLY AMENDED OR SUPPLEMENTED BY CONTRACT DOCUMENTS:
- A.N.J. DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2007", AS CURRENTLY AMENDED;
- B. N.J. DEPARTMENT OF TRANSPORTATION "STANDARD ROADWAY CONSTRUCTION TRAFFIC CONTROL BRIDGE CONSTRUCTION DETAILS, 2007", 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.
- 3. THE CONTRACTOR IS RESPONSIBLE FOR THOROUGHLY EXAMINING THE PROJECT PLANS, SPECIFICATIONS, DETAILS, AND SITE. THE CONTRACTOR SHALL NOTIFY THE UNDERSIGNED PROFESSIONAL IMMEDIATELY IF ANY SITE CONDITIONS DIFFER MATERIALLY FROM THOSE REPRESENTED HEREIN.
- 4. THE CONTRACTOR SHALL OBTAIN PERMITS REQUIRED FOR THE PROPOSED IMPROVEMENTS.
- 5. 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 PROPOSED IMPROVEMENTS.
- 6. 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 TWO (2) WEEKS PRIOR TO ORDERING MATERIALS.
- 7. THE CONTRACTOR IS RESPONSIBLE FOR ALL STAKEOUT AND LAYOUT, AS NECESSARY, TO CONSTRUCT THE PROPOSED IMPROVEMENTS IN STRICT CONFORMANCE WITH THE PROJECT PLANS, SPECIFICATIONS AND DETAILS. THESE DESIGN DRAWINGS HAVE NOT BEEN DRAFTED OVER A SURVEY BASE MAP.
- 8. THE CONTRACTOR MUST REVIEW AND AGREE TO AS-BUILT QUANTITIES WITH THE ENGINEER ON A WEEKLY BASIS.
- 9. THE ENGINEER MUST BE CONTACTED IMMEDIATELY UPON THE INSPECTOR OR CONTRACTOR RECEIVING A COMPLAINT FROM ANY PERSON WITHIN THE PROJECT AREA OR MUNICIPAL OFFICIAL.

UTILITY NOTES:

- UNDERGROUND UTILITIES AND FEATURES WITHIN JAMES AVENUE, HILLCREST AVENUE & SOUTH UNION AVENUE WERE MAPPED USING RADIO FREQUENCY PIPE AND CABLE LOCATORS (RFL) AND GROUND PENETRATING RADAR(GPR). OTHER BURIED UTILITIES MAY BE 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% DETECTION IS NOT GUARANTEED. CAUTION SHOULD BE USED WHEN EXCAVATING IN THE VICINITY OF MAPPED FEATURES.
- POSITION OF GEOPHYSICAL FEATURES CANNOT BE GUARANTEED WITHOUT EXPOSURE.
- 3. TARGETS WITH LATERAL EXTENTS OF LESS THAN 3 FEET AS OBSERVED IN GEOPHYSICAL DATA WERE NOT MAPPED.

ARE NOT PROVIDED FOR UTILITIES LOCATED WITH RFLS, BUT NOT DETECTED IN THE GPR DATA.

- 4. PLOTTED UTILITY POSITIONS AND DEPTHS REPRESENT LOCATION OF MOST APPROPRIATE INTERPRETED GEOPHYSICAL RESPONSE. THIS RESPONSE IS GENERALLY PRESENT OVER THE TOP CENTER OF THE TARGET BUT MAY BE 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).
- 5. 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 AND VERTICAL DIMENSIONS OF THE DUCT BANK SYSTEM (AS OBSERVED IN GEOPHYSICAL DATA) MAY VARY.
- 6. 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 FEATURES MAY REPRESENT 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. THE UTILITY MAY CONTINUE, BUT SINCE IT WAS NOT OBSERVED IN THE GEOPHYSICAL DATA BEYOND THESE POINTS, IT COULD NOT BE
- DEPTHS SHOWN FOR UTILITIES ARE IN FEET BELOW EXISTING GROUND SURFACE AT TIME OF SURVEY. AS RFLS CANNOT PROVIDE RELIABLE DETPH INFORMATION, DEPTHS
- 9. DUE TO THE SITE SPECIFIC CONDITIONS, GPR SIGNAL PENETRATION DEPTH IS APPROXIMATELY 6 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.
- II. 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.
- 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 COORDINATE WITH IMPACTED UTILITY COMPANIES/AUTHORITIES AS NECESSARY..
- 17. THE CONTRACTOR SHALL TAKE PRECAUTION WHEN WORKING ADJACENT TO UTILITIES AND TEMPORARILY SUPPORT UTILITY POLES, IF REQUIRED, DURING THE PROGRESS OF WORK
- 18. THE CONTRACTOR SHALL CLEAN AND MAINTAIN ALL STORM SEWER STRUCTURES, AS NECESSARY, FOR THE DURATION OF THE PROJECT.

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 SUBJECT TO MODIFICATION BY THE LOCAL POLICE DEPARTMENT AND OWNER.
- 2. 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.
- 4. 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 (I) 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, IF APPLICABLE. TEMPORARY NO PARKING SIGNS MUST BE POSTED AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE CONSTRUCTION.

SOIL EROSION AND TREE PROTECTION NOTES:

- 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 SOIL EROSION AND SEDIMENT 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.
- 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 AVOID DUST POLLUTION.
- 5. THE CONTRACTOR SHALL PROTECT ALL TREES SCHEDULED TO REMAIN DURING CONSTRUCTION. DAMAGE TO EXISTING TREES WILL BE EVALUATED BY THE OWNER AND ENGINEER. DAMAGED TREES WILL BE REPLACED AS 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 QUESTION. ALL EVALUATIONS SHALL BE 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.

DEMOLITION AND CONSTRUCTION NOTES:

- I. ALL EXCAVATED MATERIALS ARE TO BE DISPOSED OF IN ACCORDANCE WITH APPROVED NJDOT AND NJDEP METHODS AND MEANS. THE CONTRACTOR MUST NOT DEPOSIT EXCESS MATERIALS WITHIN THE MUNICIPAL LIMITS 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 AT THE CONCLUSION OF EACH 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 CONTRACTOR FOR DAMAGES TO EQUIPMENT OR ADDITIONAL LABOR REQUIRED TO MAKE IMPROVEMENTS AS DESCRIBED ON PLANS DUE TO VARIATIONS IN **ROADWAY BASE MATERIALS.**
- 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 PART OF THE PROPOSED IMPROVEMENTS SHALL BE RETURNED TO THE MUNICIPALITY OR RESPECTIVE UTILITY AUTHORITY.
- THE CONTRACTOR MUST PROTECT CONCRETE UNTIL CONCRETE IS CURED. DAMAGED AND VANDALIZED CONCRETE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- 6. THE CONTRACTOR SHALL RESET ALL RAILINGS, GATES AND FENCES AS REQUIRED TO COMPLETE THE PROPOSED IMPROVEMENTS.
- 7. THE CONTRACTOR IS RESPONSIBLE TO REPLACE/RESET ANY SPRINKLERS DAMAGED/DISTURBED DURING CONSTRUCTION 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.
- 2. DURING DEMOLITION AND IMMEDIATELY AFTER POURING CONCRETE, THE CONTRACTOR MUST PLACE WOOD PLANKS, AT LEAST TWO (2) FT. WIDE, AT EACH ADJACENT BUILDING ENTRANCE TO ALLOW FOR SAFE ACCESS. 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 WITHOUT PLACING WOODEN ACCESS PLANKS TO PROVIDE SAFE ACCESS TO RESIDENCES AND
- 3. THE CONTRACTOR SHALL MAINTAIN VEHICULAR ACCESS TO ALL DRIVEWAYS DURING CONSTRUCTION. THE CONTRACTOR SHALL TEMPORARILY INSTALL AND MAINTAIN DENSE GRADED AGGREGATE OR HOT MIX ASPHALT 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.
- 5. THE CONTRACTOR SHALL PROVIDE TEMPORARY ACCESSIBLE CURB RAMPS WITH HAND RAILS WHEN EXISTING ACCESSIBLE ACCESS IS REMOVED OR LIMITED DUE TO CONSTRUCTION.
- 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.

MILLING AND PAVING NOTES:

- I. THE CONTRACTOR MUST PROVIDE A SMOOTH SAWCUT EDGE WHERE PROPOSED PAVEMENT ABUTS EXISTING PAVEMENT
- 2. 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 TEMPORARY PAVEMENT RAMPS AROUND RAISED UTILITIES AS DIRECTED BY THE ENGINEER WHERE SUCH UTILITIES MAY BE IN CONFLICT WITH VEHICULAR AND PEDESTRIAN TRAFFIC.

FINAL CLEAN UP AND PROJECT ACCEPTANCE:

- PRIOR TO FINAL ACCEPTANCE, ALL PROPERTY CORNERS OR MONUMENTS REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY A NEW JERSEY LICENSED LAND SURVEYOR AT NO ADDITIONAL COST TO THE OWNER.
- 2. THE CONTRACTOR MUST REPLACE ANY DAMAGED CONCRETE CURB AND SIDEWALK BEFORE ACCEPTANCE OF THE PROJECT BY THE OWNER.
- 3. 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 PROIECT ACCEPTANCE.
- 4. ALL GRASSED AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED BY TOPSOILING, SEEDING, FERTILIZING AND MULCHING.

PAY ITEM NO.	BASE BID - JAMES AVENUE DRAINAGE IMPROVEMENTS	UNIT	TOTAL BASE BID QUANTITY
1	CAUTION FENCE	LF	130
2	INLET FILTER, TYPE 2	SF	112
3	BREAKAWAY BARRICADE	UNIT	24
4	DRUM	UNIT	10
5	TRAFFIC CONE	UNIT	50
6	CONSTRUCTION SIGNS	SF	200
7	POLICE TRAFFIC DIRECTORS	HOUR	80
8	FUEL PRICE ADJUSTMENT	DOLLAR	200
9	CLEARING SITE	LS	1
10	EXCAVATION, BORROW EXCAVATION AND GRADING, UNCLASSIFIED	LS	1
11	HMA MILLING, 3" OR LESS	SY	449
12	HMA PROFILE MILLING	SY	1,032
13	SEALING OF CRACKS IN HOT MIX ASPHALT SURFACE COURSE	LF	2,700
14	HOT MIX ASPHALT 9.5 M 64 SURFACE COURSE	TON	296
15	HOT MIX ASPHALT 19 M 64 BASE COURSE	TON	179
16	FULL DEPTH CONCRETE PAVEMENT REPAIR, HMA	SY	546
17	24" REINFORCED CONCRETE PIPE, CLASS V	LF	524
18	14" DUCTILE IRON PIPE, CLASS 52	LF	11
19	16" DUCTILE IRON PIPE, CLASS 52	LF	143
20	18" DUCTILE IRON PIPE, CLASS 52	LF	39
21	20" DUCTILE IRON PIPE, CLASS 52	LF	23
22	INLET, TYPE B	UNIT	2
23	INLET, TYPE DOUBLE B	UNIT	2
24	INLET, TYPE E	UNIT	4
25	3' X 3' MANHOLE BOX	UNIT	4
26	RESET EXISTING CASTING (MANHOLE)	UNIT	4
27	HOT MIX ASPHALT DRIVEWAY, 6" THICK	SY	15
28	CONCRETE DRIVEWAY, REINFORCED, 6" THICK	SY	37
29	CONCRETE SIDEWALK, 4" THICK	SY	319
30	DETECTABLE WARNING SURFACE	SY	5
31	9" X 18" CONCRETE VERTICAL CURB	LF	722
32	TRAFFIC STRIPES, 6"	LF	285
33	8" DUCTILE IRON PIPE, CLASS 56	LF	80
34	10" DUCTILE IRON PIPE, CLASS 56	LF	40
35	TOPSOILING, 4" THICK	SY	142
36	FERTILIZING AND SEEDING, TYPE ERNMX-106	SY	142
37	STRAW MULCHING	SY	142

	LEGEND	
EXISTING TL	TRAVERSE LINE, CENTER LINE	PROPOSED
12+00 PI 13+00	OR BASELINE (LABEL AS SUCH)	12+00
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BACK	DEPRESSED CURB	BACK
	- SIDEWALK	A A A A
xx	- FENCES	xx_
···········	TREELINE	~~~~
	ROADWAY SIGNS	-
	WETLAND LINE	
	MUNICIPAL BOUNDARY LINE	
	'B' INLET	
	'E' INLET	
©	STORM MANHOLE SANITARY MANHOLE	S
	FLARED END SECTION	
	HEADWALL	
	CONTOURS	75
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	DIRECTION OF OVERLAND FLOV	v —
× TC 29.0	TOP OF CURB ELEVATION	★ TC 29.0
× BC 29.0	BOTTOM OF CURB ELEVATION	★ BC 29.0
CATV	CABLE TV CONDUIT	CATV
W	- WATER MAIN	w
	- GAS MAIN	—— G——
	TELEPHONE CONDUIT	
E	- ELECTRIC CONDUIT	E
	SANITARY PIPE STORM PIPE	
U	- UNKNOWN UTILITY	
	STALL COUNT	(10)
	ADA ACCESSIBLE STALL	
ı	DEPRESSED CURB AND ADA RAM	P HC V
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	PRESSED CURB - 9" X 18" CONCR CAL CURB (WITH 2' FULL DEPTH	TYXXXAA/
	ILT ROAD CONSTRUCTED VIA M E OR FULL DEPTH RECONSTRUC (AS REQUIRED)	
	ASPHALT OVERLAY	
	CONCRETE SIDEWALK, 4" THICK	
CONC	RETE DRIVEWAY, REINFORCED, 6	" THICK
НОТ	MIXED ASPHALT DRIVEWAY, 6"	LHICK WAS
	RESET MANHOLE	THICK S
	RECONSTRUCT MANHOLE	\bigotimes
	INLET FILTER	
	RESET EXISTING INLET CASTING	
B.E.C.		
	ET EXISTING INLET AND INSTALL CURB PIECE (NJDEP TYPE 'N' ECC))
	CURB PIECE (NJDEP TYPE 'N' ECC	
RESET	EXISTING INLET AND INSTALLEI BICYCLE SAFE GRATE	
	RESET GAS VALVE	⊚ G
	RESET WATER VALVE	o ₩
	REMOVAL OF CONCRETE	Δ .
	RESTORE EXISTING GRASS AREA	<u>.</u>

Eustomer Loyalty *through* Client Satisfactio www.maserconsulting.com ■ NEW IERSEY NEW YORK ■ PENNSYLVANIA **■ VIRGINIA** ■ FLORIDA ■ NORTH CAROLINA ■ COLORADO State of N.J. C.O.A.: 24GA27986500 opyright © 2020. Maser Consulting, All Rights Reserved. se only by the party for whom the services were contracted or disclosed, distributed or relied upon for any other purpose with the express written consent of Maser Consulting, P.A. EXCAVATORS, DESIGNERS, OR ANY PERS PREPARING TO DISTURB THE EARTH
SURFACE ANYWHERE IN ANY STATE Know what's below. Call before you dig. FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: GE45154 CONSTRUCTION PLANS JAMES AVENUE DRAINAGE **IMPROVEMENTS** TOWNSHIP OF CRANFORD COUNTY OF UNION STATE OF NEW JERSEY AS SHOWN 7/21/20

■ NEW MEXICO

■ MARYLAND

■ TENNESSEE

■ GEORGIA

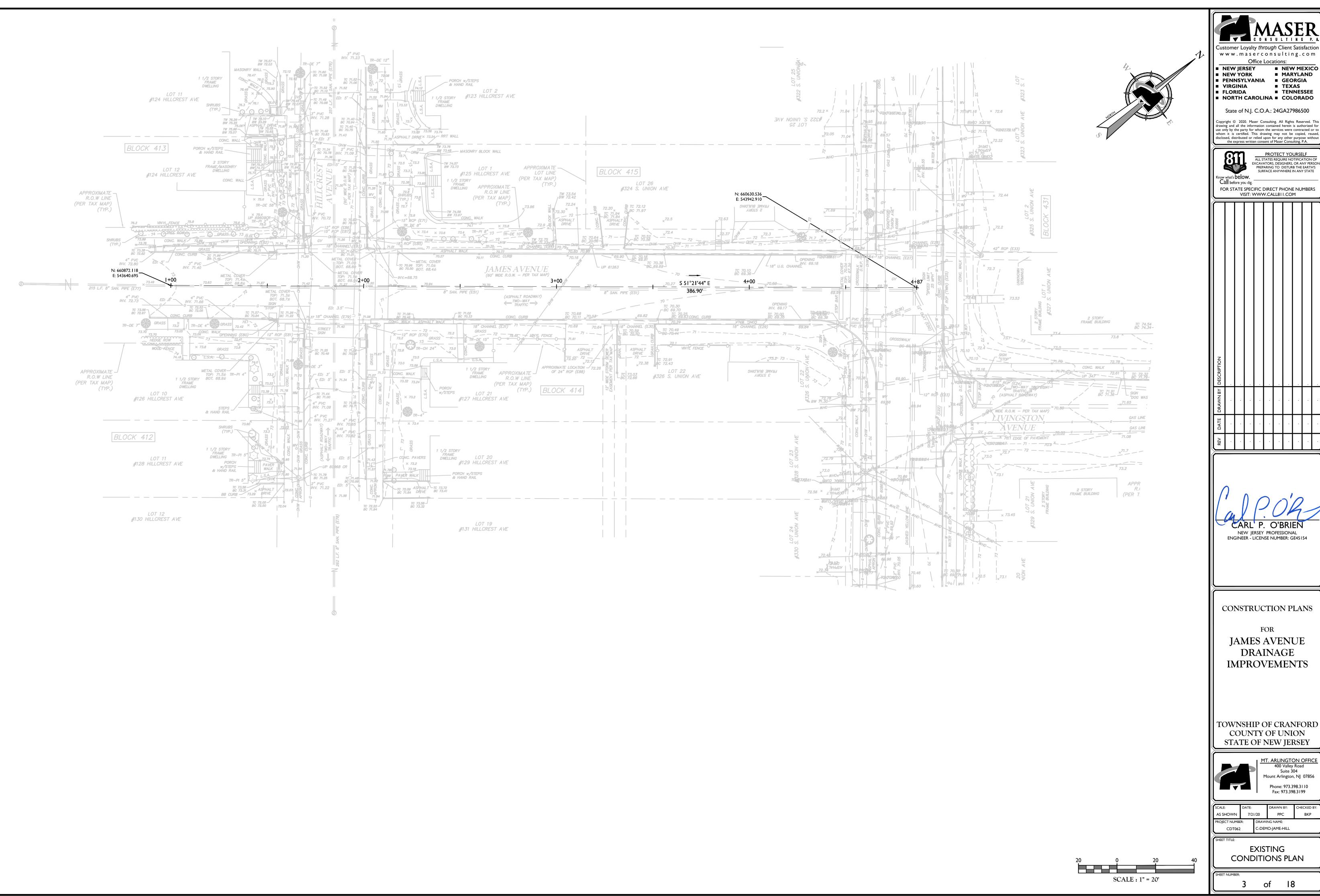
■ TEXAS

PROTECT YOURSELF

Mount Arlington, NJ 07856 Phone: 973.398.3110 Fax: 973.398.3199 -CVER-JAME-HILL **GENERAL NOTES &** QUANTITIES NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

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of NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

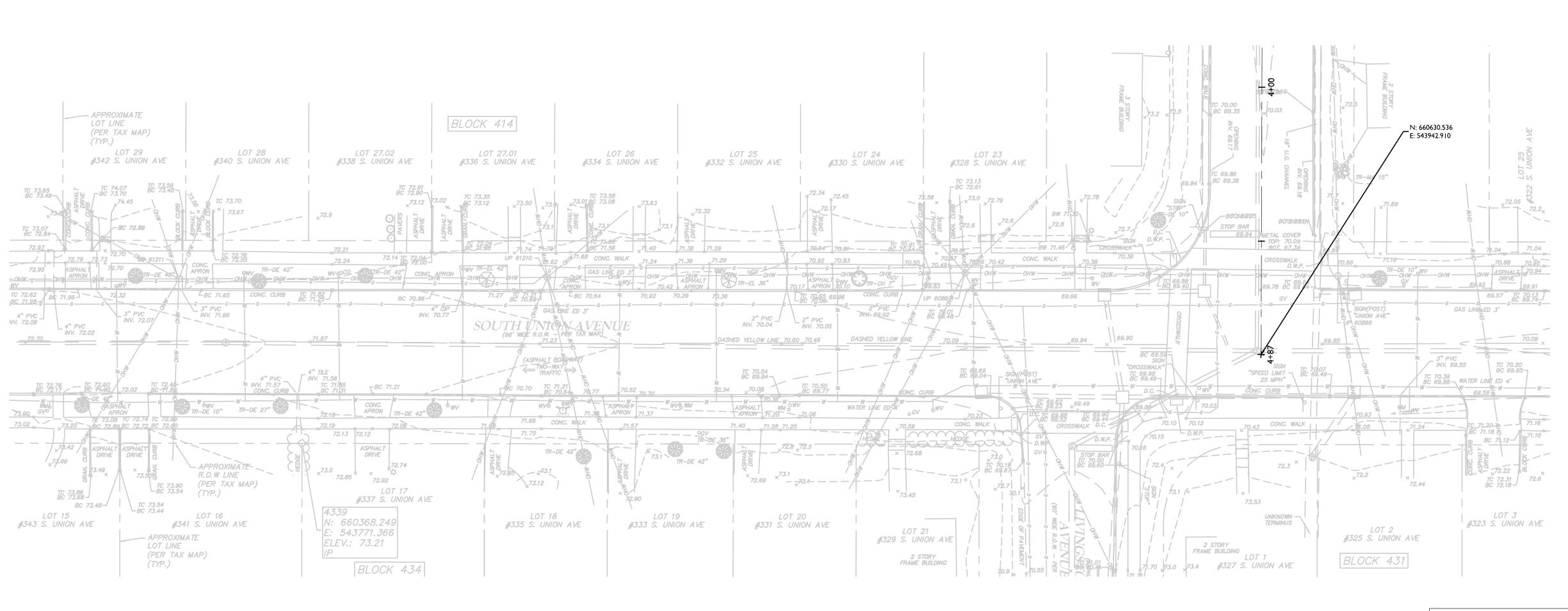
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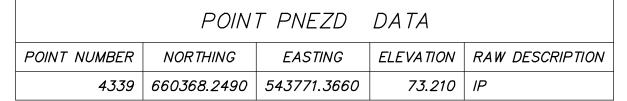
MT. ARLINGTON OFFICE 400 Valley Road Suite 304

Mount Arlington, NJ 07856

Phone: 973.398.3110 Fax: 973.398.3199

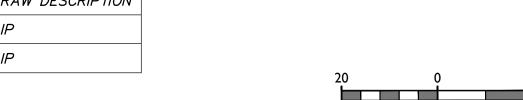
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SURFACE ANYWHERE IN ANY STATE





NOTE: EXISTING CONDITIONS DEPICTED ON THIS SHEET IS FOR ESTABLISHING
SURVEY CONTROL ONLY. NO IMPROVEMENTS SHALL BE INSTALLED IN THESE
AREAS UNDER THIS CONTRACT. ALL WORK IN THIS CONTRACT SHALL BE
PERFORMED ON JAMES AVENUE AND HILLCREST AVENUE.

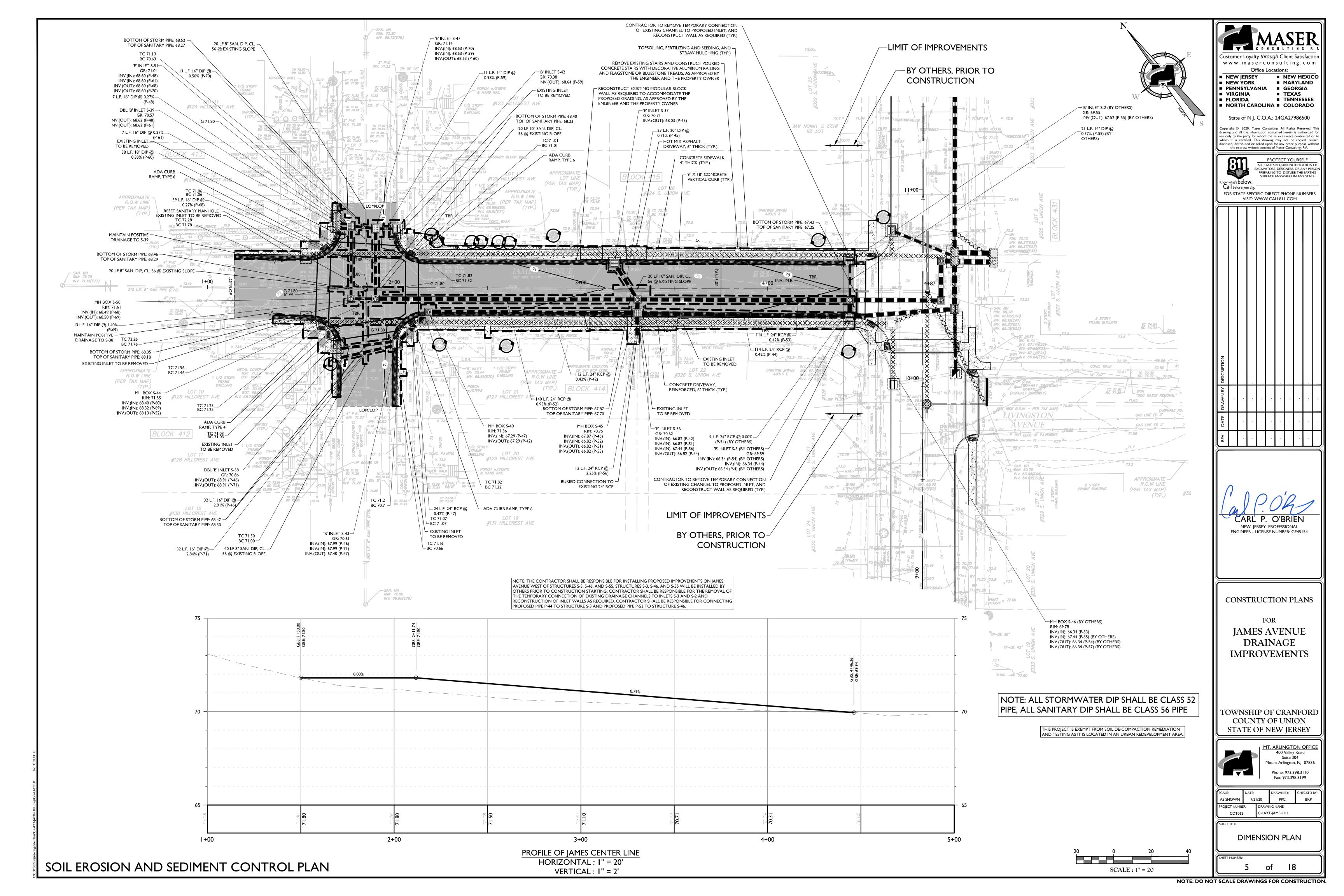
POINT PNEZD DATA					
POINT NUMBER	NORTHING	EASTING	ELEVATION	RAW DESCRIPTION	
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1646	661906.1790	544996.7040	73.703	IP	

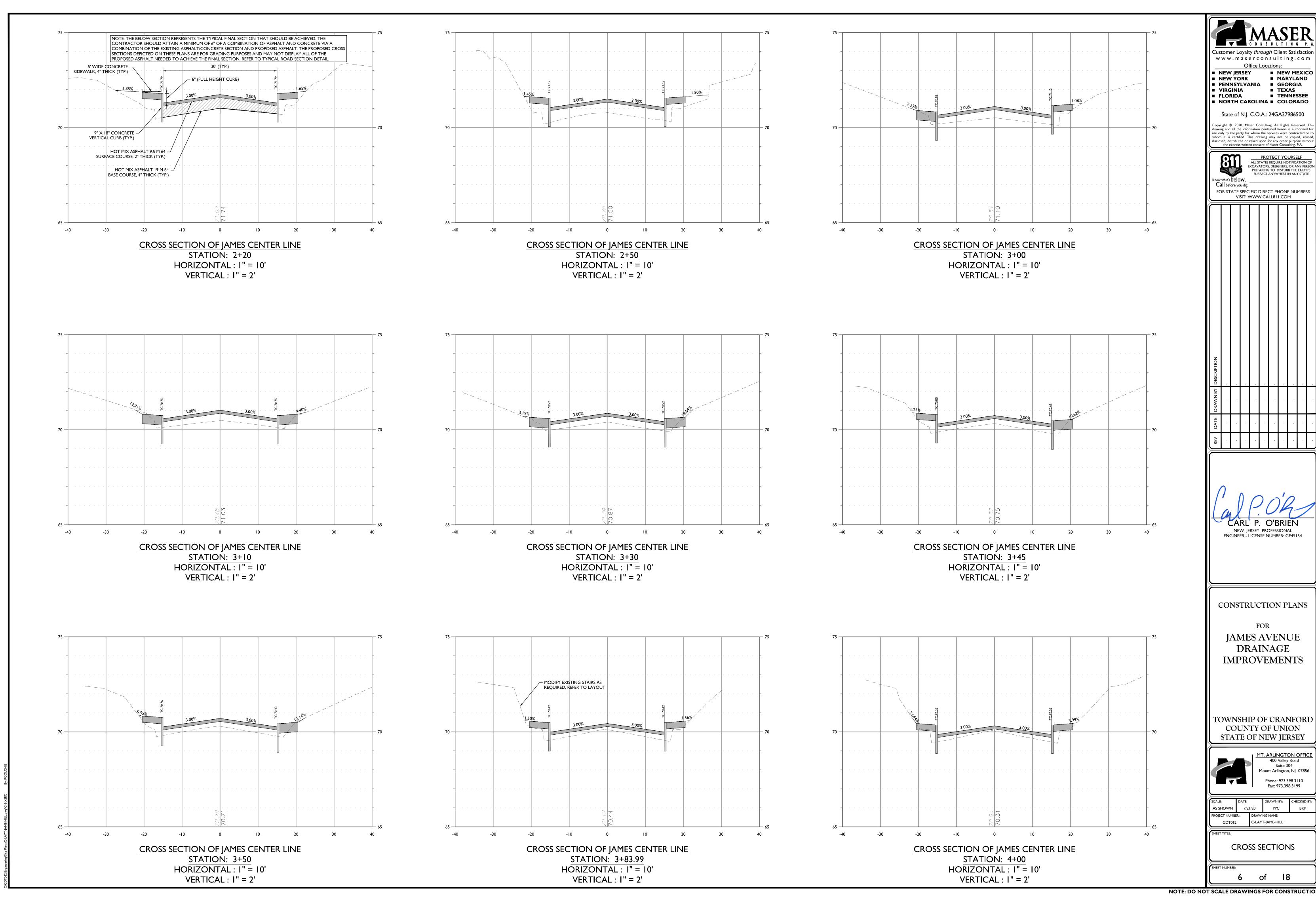


SCALE : 1" = 20'

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VISIT: WWW.CALL811.COM NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: GE45154 CONSTRUCTION PLANS JAMES AVENUE DRAINAGE **IMPROVEMENTS** TOWNSHIP OF CRANFORD COUNTY OF UNION STATE OF NEW JERSEY MT. ARLINGTON OFFICE 400 Valley Road Suite 304 Mount Arlington, NJ 07856 Phone: 973.398.3110 Fax: 973.398.3199 **EXISTING** CONDITIONS PLAN





SOMERSET-UNION SOIL CONSERVATION DISTRICT NOTES

MCNJ-SOIL-NOTE-1013

- THE SOMERSET-UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED IN WRITING 48 HOURS IN ADVANCE OF ANY LAND DISTURBING ACTIVITY.
- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCES, OR IN THEIR PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
- ANY STOCKPILE OR DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 14 DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING, IF THE SEASON PREVENTS THE ESTABLISHMENT OF A 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
- PERMANENT VEGETATION SHALL BE SEEDED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER FINAL GRADING. MULCH WILL BE USED FOR PROTECTION UNTIL SEEDING IS ESTABLISHED
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NJ STATE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.
- 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.
- 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 NI STATE STANDARDS.
- 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 1/2" OR 2" STONE, AT ALL CONSTRUCTION DRIVEWAYS, IMMEDIATELY AFTER INITIAL SITE DISTURBANCE.
-). AT THE TIME WHEN THE SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER. SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT 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 SLITABLE CONDITIONS NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE
- 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 FROSION AND SEDIMENT CONTROL HAVE BEEN COMPLIED WITH FOR PERMANENT MEASURES, ALL SITE 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.
- CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
- 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 RECERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT NJ STATE SOIL EROSION & SEDIMENT CONTROL STANDARDS.
- THE SOMERSET-UNION SOIL CONSERVATION DISTRICT SHALL BE NOTIFIED OF ANY CHANGES IN OWNERSHIP

MULCHING TO THE NI STANDARDS IS REQUIRED FOR OBTAINING A CONDITIONAL REPORT OF COMPLIANCE. CONDITIONALS ARE ONLY ISSUED WHEN THE SEASON

- CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL ADJACENT ROADS CLEAN DURING LIFE
- 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.
- HYDRO SEEDING IS A TWO- STEP PROCESS. THE FIRST STEP INCLUDES SEED, FERTILIZER, LIME, ETC., ALONG WITH MINIMAL AMOUNTS OF MULCH TO PROMOTE CONSISTENCY, GOOD SEED TO SOIL CONTACT, AND GIVE A VISUAL INDICATION OF COVERAGE. UPON COMPLETION OF SEEDING OPERATION. HYDROMULCH SHOULD BE APPLIED AT A RATE OF 1500 LBS. PER ACRE IN SECOND STEP, THE USE OF HYDROMULCH, AS OPPOSED TO STRAW, IS LIMITED TO OPTIMUM SEEDING DATES AS LISTED IN THE NJ STANDARDS.
- UNFILTERED DEWATERING IS NOT PERMITTED. NECESSARY PRECAUTIONS MUST BE TAKEN DURING ALL DEWATERING OPERATIONS TO MINIMIZE SOIL TRANSFER ANY DEWATERING METHODS USED MUST BE IN ACCORDANCE WITH THE STANDARD FOR

0. TOPSOIL STOCKPILE PROTECTION 20.a. APPLY GROUND LIMESTONE AT A RATE OF 90 LBS. PER 1000 SQ. FT.

- 20.b. APPLY FERTILIZER (10-20-10) AT A RATE II LBS. PER 1000 SQ. FT. 20.c. APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS
- SEED AT I LB. PER 1000 SQ. FT.
- 20.d. MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
- 20.e. APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH. 20.f. PROPERLY ENTRENCH A SILT FENCE AT THE BOTTOM OF THE STOCKPILE.
- I. TEMPORARY STABILIZATION SPECIFICATIONS
- 21.a. APPLY GROUND LIMESTONE AT A RATE OF 90 LBS. PER 1000 SQ. FT.
- 21.b. APPLY FERTILIZER (10-20-10) AT A RATE 11 LBS. PER 1000 SQ. FT. 21.c. APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS SEED AT I LB. PER 1000 SQ. FT.
- 21.d. MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT. 21.e. APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
- 2. PERMANENT STABILIZATION SPECIFICATIONS 22.a. APPLY TOPSOIL TO A DEPTH OF 5 INCHES (UNSETTLED)
- 22.b. APPLY GROUND LIMESTONE AT A RATE OF 90 LBS. PER 1000 SQ. FT.
- 22.c. APPLY FERTILIZER (10-20-10) AT A RATE 11 LBS. PER 1000 SQ. FT. 22.d. APPLY PERENNIAL RYEGRASS SEED AT 1 LB. PER 1000 SQ. FT. AND ANNUAL RYEGRASS
- SEED AT I LB. PER 1000 SQ. FT. 22.e. MULCH STOCKPILE WITH STRAW OR HAY AT A RATE OF 90 LBS. PER 1000 SQ. FT.
- 22.f. APPLY A LIQUID MULCH BINDER OR TACK TO STRAW OR HAY MULCH.
- NOTE: 72 HOURS PRIOR TO ANY SOIL DISTURBANCE, NOTICE IN WRITING, SHALL BE GIVEN TO THE SOMERSET UNION SOIL CONSERVATION DISTRICT AND A PRE-CONSTRUCTION MEETING HELD.

CONSTRUCTION SEQUENCE

IMPLEMENTATION OF SOIL EROSION & SEDIMENT CONTROL MEASURES INCLUDING: - INLET FILTERS

CONSTRUCT IMPROVEMENTS: - COMPLETE MILLING OPERATIONS INSTALL DRAINAGE IMPROVEMENTS 2 WEEKS - INSTALL CURB, INLET UPGRADES, AND SIDEWALK REPAIR 2 WEEKS - PAVEMENT IMPROVEMENTS - UNIFORMLY APPLY TOPSOIL TO AVERAGE DEPTH OF 5" MINIMUM OF 4", FIRMED IN PLACE - TOPSOILING, FERTILIZING, SEEDING AND STRAW MULCHING 2 DAYS - REMOVAL OF SOIL EROSION & SEDIMENT CONTROL

NOTE: TOTAL ESTIMATED PROJECT DURATION: 8 WEEKS

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

I. ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF OFF-SITE. NO EXCAVATED MATERIAL SHALL BE STOCKPILED

AND STORED WITHIN THE PROJECT LIMITS.

PERMANENT SEEDING SPECIFICATIONS

I. SITE PREPARATION

MOD: 07/07/20

05/01/17

A. INSTALL EROSION CONTROL MEASURES AND FACILITIES SUCH AS SILT FENCE, DIVERSIONS, SEDIMENT BASINS, CHANNEL STABILIZATION, ETC. SEE STANDARDS 11 THROUGH 42.

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

2. SEEDBED PREPARATION

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

B. TOPSOIL SHOULD BE HANDLED ONLY WHEN DRY ENOUGH TO WORK WITHOUT DAMAGING SOIL

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% 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.

TONS/ACRE	LBS/1,000 SQ. FT.
3	135
2	90
1	45
	TONS/ACRE 3 2 I

D. IMMEDIATELY PRIOR TO SEEDING AND TOPSOIL APPLICATION, THE SURFACE SHOULD BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.)

E. WORK LIME AND FERTILIZER 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, CLODS LUMPS OR OTHER UNSUITABLE

SEEDING

A. SELECT THE SEED MIXTURE AS SPECIFIED ON THIS SHEET AND APPLY AS NOTED WITHIN THE DATES SPECIFIED IN THE STANDARD.

B. CONVENTIONAL SEEDING IS PERFORMED BY APPLYING SEED UNIFORMLY BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIPACKER SEEDER. EXCEPT FOR DRILLED, HYDROSEEDED OR CULTIPACKED SEEDINGS, SEED SHALL BE INCORPORATED INTO THE SOIL WITHIN 24 HOURS OF SEEDBED PREPARATION TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MAY BE 1/4 INCH DEEPER ON COARSE TEXTURED SOIL.

C. HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK OR TRAILER MOUNTED TANK, WITH AN AGITATION SYSTEM AND MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEEDBED, MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED, SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. (ALSO SEE SECTION 4 MULCHING BELOW) HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. POOR SEED TO SOIL CONTACT OCCURS REDUCING SEED GERMINATION AND GROWTH. HYDROSEEDING MAY BE USED FOR AREAS TOO STEEP FOR CONVENTIONAL EQUIPMENT TO TRAVERSE OR TOO OBSTRUCTED WITH ROCKS,

D. AFTER SEEDING, FIRMING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED-TO-SOIL CONTACT, RESTORE CAPILLARITY AND IMPROVE SEEDLING EMERGENCE, THIS IS THE PREFERRED METHOD. WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.

4. MULCHING

A. MULCHING IS REQUIRED ON ALL SEEDING.

B. STRAW OR HAY - UNROTTED SMALL GRAIN STRAW, HAY FREE OF SEEDS, OR OR SALT HAY TO BE APPLIED AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRIMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (TACKIFYING OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE, MULCH CHOPPER-BLOWERS MUST NOT GRIND THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEED, STRAW OR HAY MUI CH MUST BE ANCHORED IMMEDIATELY AFTER PLACEMENT USING PEG AND TWINE, MULCH NETTING, MECHANICAL CRIMPER OR LIQUID MULCH BINDERS IN ACCORDANCE WITH THE STANDARD.

C. WOOD-FIBER OR PAPER-FIBER MULCH - SHALL BE MADE FROM WOOD, PLANT FIBERS OR PAPER CONTAINING NO GROWTH OR GERMINATION INHIBITING MATERIALS, USED AT THE RATE OF 1,500 POUNDS PER ACRE (OR AS RECOMMENDED BY THE PRODUCT MANUFACTURER) AND MAY BE APPLIED BY A HYDROSEEDER. THIS MULCH SHALL NOT BE MIXED IN THE TANK WITH SEED. USE IS LIMITED TO FLATTER SLOPES AND DURING OPTIMUM SEEDING PERIODS IN SPRING AND FALL.

DUST CONTROL NOTES

THE FOLLOWING METHODS SHOULD BE CONSIDERED FOR CONTROLLING DUST:

SEE STANDARD FOR STABILIZATION WITH MULCHES ONLY. (PAGE 5-1 OF "STANDARDS FOR SOIL

EROSION AND SEDIMENT CONTROL IN NEW JERSEY", LATEST EDITION) SEE STANDARD FOR TEMPORARY VEGETATIVE COVER (PAGE 7-1 OF "STANDARDS FOR SOIL VEGETATIVE COVER

EROSIN AND SEDIMENT CONTROL IN NEW IERSEY", LATEST EDITION), PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION (PAGE 4-1 OF "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY", LATEST EDITION), AND PERMANENT STABILIZATION WITH SOD (PAGE 6-I OF "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY", LATEST EDITION).

ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS. SPRAY-ON ADHESIVES

TABLE 16-1: DUST CONTROL MATERIALS					
MATERIAL	WATER DILUTION	TYPE OF NOZZLE	APPLY GALLONS/ACRE		
ANIAONIC ASPHALT EMULSION	7:1	COARSE SPRAY	1200		
LATEX EMULSION	12.5:1	FINE SPRAY	235		
RESIN IN WATER	4:1	FINE SPRAY	300		
POLYACRYLAMIDE (PAM) - SPRAY ON POLYACRYLAMIDE (PAM) - DRY SPRAY	APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS. MAY ALSO BE USED AS AN ADDITIVE TO SEDIMENT BASINS TO FLOCCULATE AND PRECIPITATE SUSPENDED COLLOIDS. (SEE SEDIMENT BASIN STANDARD (PAGE 26-I OF "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY", LATEST EDITION)				
ACIDULATED SOY BEAN SOAP STICK	NONE	COARSE SPRAY	1200		

TILLAGE 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.

SHALL BE IN THE FORM OF LOOSE, DRY GRANULATES OF FLAKES FINE ENOUGH TO FEED THROUGH

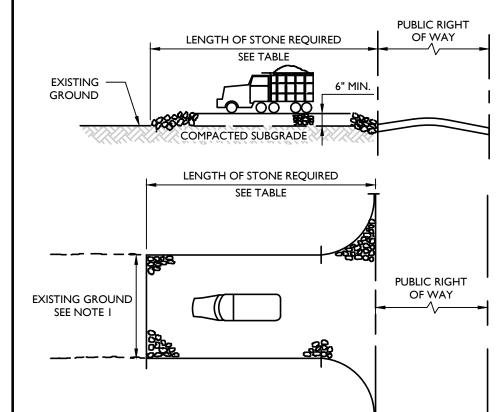
SITE IS SPRINKLED UNTIL THE SURFACE IS WET. <u>SPRINKLING</u>

CALCIUM CHLORIDE

BARRIERS SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY, AND SIMULAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING.

> 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.

COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL **STONE**



I. THE WIDTH OF CONSTRUCTION ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF POINTS OF INGRESS OR EGRESS, OR AS SHOWN ON THE PLAN. THICKNESS SHOWN IS FOR STONE CONSTRUCTION ENTRANCE ONLY. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO ROADWAYS.

THE ENTRANCE SHALL BE PERIODICALLY TOP DRESSED WITH ADDITIONAL STONE OF

SPILLED, DROPPED, WASHED, OR TRACKED SEDIMENT ONTO ROADWAYS OR OTHER

IMPERVIOUS SURFACES SHALL BE REMOVED IMMEDIATELY. WHERE ACCUMULATION OF DUST AND SEDIMENT IS INADEQUATELY CLEANED OR REMOVED BY CONVENTIONAL METHODS, A POWER BROOM OR STREET SWEEPER SHALL

BE USED TO CLEAN PAVED AREAS. ALL OTHER ACCESS POINTS TO THE SITE WHICH DO NOT CONTAIN A CONSTRUCTION ACCESS PAD SHALL BE BLOCKED OFF.

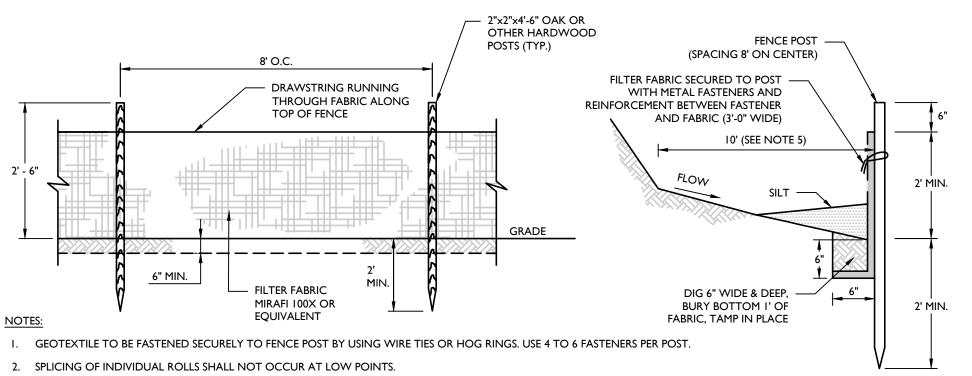
8. STONE SIZE PER ASTM C-33, SIZE #2 (2 $\frac{1}{2}$ " TO I $\frac{1}{2}$ ") OR #3 (2" TO I") STONE. INDIVIDUAL INTERIOR LOT INGRESS/EGRESS CONSTRUCTION ACCESS SHALL HAVE # 3 (I TO 2") STONE, MINIMUM 10' (L) X 10' (W) AND 6" THICK.

PERCENT SLOPE OF LENGTH OF STONE REQUIRED COARSE GRAINED SOILS FINE GRAINED SOILS 100 FT 0% TO 2% 200 FT 2% TO 5%

ENTIRE SURFACE STABILIZED WITH HMA BASE COURSE > 5% MIX I-2 STABILIZED CONSTRUCTION

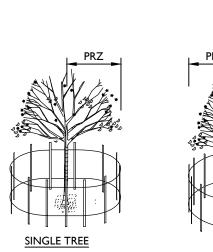
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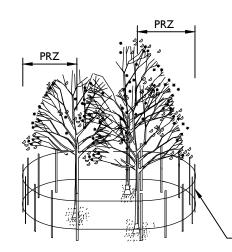
MCNI-SOIL-EROS-1000

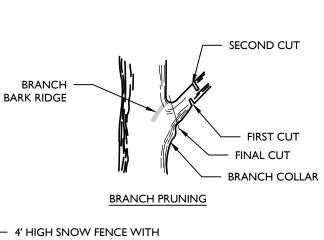


- 3. ALL SILT FENCE TO BE INSPECTED AND REMEDIAL MAINTENANCE PERFORMED BY THE CONTRACTOR WITHIN 24 HOURS AFTER EACH RAINFALL. REMOVE THE SILT ACCUMULATION WHEN IT REACHES I/3 OF THE FENCE FABRIC HEIGHT
- 4. FOR EVERY 100 FEET OF SILT FENCE, OR 1/4 ACRE OF DRAINAGE AREA, PROVIDE AN OVERFLOW POINT TO REDUCE PONDING IN
- 5. IF SPACE PERMITTED, LOCATE SILT FENCE 10' AWAY FROM TOE OF SLOPE IF THE SLOPE IS STEEPER THAN 1:1.

SILT FENCE DETAIL MCNI-SOIL-EROS-1100







- PROTECTIVE FENCING IS TO BE ERECTED PRIOR TO CONSTRUCTION AND MAINTAINED DURING CONSTRUCTION AS DIRECTED BY THE LANDSCAPE ARCHITECT, SOIL CONSERVATION
- DAMAGED TRUNKS OR EXPOSED ROOTS SHOULD HAVE DAMAGED BARK REMOVED IMMEDIATELY AND NO PAINT SHALL BE APPLIED. EXPOSED ROOTS SHOULD BE COVERED WITH
- TREE LIMB REMOVAL WHERE NECESSARY, WILL BE DONE AS NATURAL TARGET PRUNING TO REMOVE THE DESIRED BRANCH COLLAR. THERE SHOULD BE NO FLUSH CUTS. FLUSH CUT DESTROY A MAIOR DEFENSE SYSTEM OF THE TREE, NO TREE PAINT SHALL BE APPLIED, ALL CUTS SHALL BE MADE AT THE OUTSIDE EDGE OF THE BRANCH COLLAR, CUTS MADE TOO FAR BEYOND THE BRANCH COLLAR MAY LEAD TO EXCESS SPROUTING, CRACKS AND ROT. REMOVAL OF A "V" CROTCH SHOULD BE CONSIDERED FOR FREE STANDING SPECIMEN TREES TO
- CRITICAL ROOT ZONE (CRZ) OR PROTECTED ROOT ZONE (PRZ) CALCULATION: MEASURE DHB OF THE TREE (DIAMETER OF TREE IN BREAST HEIGHT OR 4.5' ABOVE GROUND ON THE UPHILL SIDE) IN INCHES CRZ OR PRZ = DHB TIMES 1.5 (FOR OLD/UNHEALTHY/SENSITIVE TREES) OR DHB X 1.0 (FOR YOUNG/HEALTH/TOLEKANT TREES), EXPRESS IN FEET

TEMPORARY TREE PROTECTION DETAIL

COUNTY OF UNION STATE OF NEW JERSEY



NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: GE45154

CONSTRUCTION PLANS

FOR

JAMES AVENUE

DRAINAGE

IMPROVEMENTS

TOWNSHIP OF CRANFORD

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C-DTLS-JAME-HILL

soil erosion & sediment CONTROL DETAILS

TOTAL PROJECT AREA OF DISTURBANCE = 8,856 SF OR 0.20 ACRES

4' HIGH SNOW FENCE WITH POST DRIVEN 3' INTO **GROUND AT 5' INTERVALS** NO CONSTRUCTION ACTIVITY IS PERMITTED WITHIN THE PROTECTIVE FENCING. AS CONSTRUCTION NEARS COMPLETION THE FENCING WILL BE REMOVED AS DIRECTED. AT THE COMPLETION OF CONSTRUCTION, ALL TREES WILL BE PRUNED AS NECESSARY TO CORRECT ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITY. 5. GENERAL MECHANICAL DAMAGE - SEE CRITICAL ROOT ZONE CALCULATION (CRZ) FOR CORRECT PLACEMENT OF TREE PROTECTION 6. BOX TREES WITHIN 25 FEET OF A BUILDING SITE TO PREVENT MECHANICAL INJURY. FENCING OR OTHER BARRIER SHOULD BE INSTALLED BEYOND THE CRITICAL ROOT ZONE. BOARDS WILL NOT BE NAILED TO TREES DURING BUILDING OPERATIONS. FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA INSIDE THE PROTECTED ROOT ZONE (PRZ) OR CRITICAL ROOT ZONE (CRZ). TREE ROOT SYSTEM COMMONLY EXTEND BEYOND THE TOPSOIL IMMEDIATELY AFTER EXCAVATION IS COMPLETE. ROOTS SHALL BE PRUNED TO GIVE A CLEAN, SHARP SURFACE AMENABLE TO HEALING. ROOTS EXPOSED DURING HOT WEATHER SHOULD BE IRRIGATED TO PREVENT PERMANENT TREE INJURY. CARE FOR SERIOUS INJURY SHOULD BE PRESCRIBED BY A PROFESSIONAL FORESTER OR CERTIFIED TREE EXPERT. AVOID FUTURE SPLITTING DAMAGE.

SIDE VIEW INSTALLED XPANSION OVERFLOW RESTRAINT INLET FILTER BAG DUMP LOOPS **INSTALLATION DETAIL**

- INSERT I" REBAR TO DUMP LOOP

FOR BAG REMOVAL FROM INLET

ALL STOCKPILES SHALL NOT TO BE LOCATED WITHIN 50 FEET OF A FLOODPLAIN, SLOPE, ROADWAY OR DRAINAGE FACILITY.

POLYETHYLENE TARP REQUIRED FOR SOILS

TESTED AT 4.5 PH OR

TOPSOIL STOCKPILE DETAIL

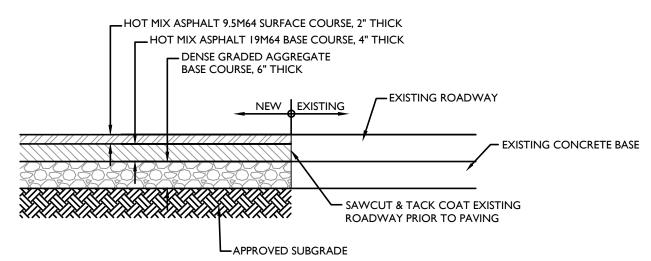
INLET PROTECTION (FILTER BAG) DETAIL

NOT TO SCALE



AS SHOWN CDT062

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



NOTES:

I. ANY EXCAVATION BELOW DESIRED GRADE DUE TO OVER EXCAVATION OR UNSUITABLE SOIL CONDITIONS SHALL BE BACKFILLED WITH DENSE GRADED AGGREGATE. ALL SUBGRADES SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO INSTALLING PAVEMENT REPAIR.

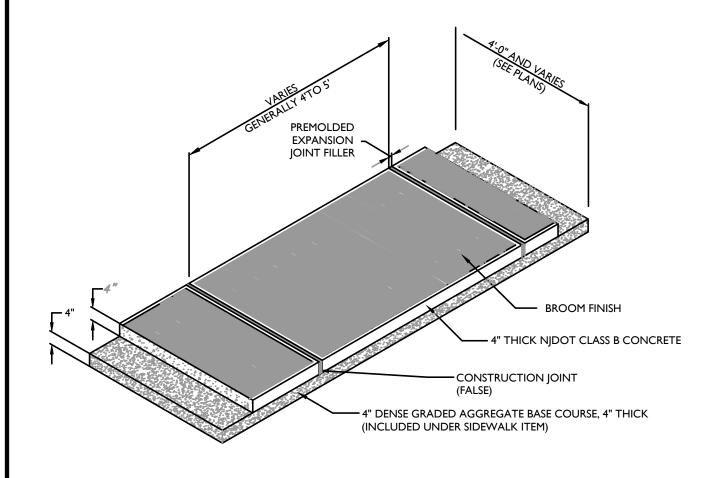
- 2. CONTRACTOR IS TO SUBMIT A PAVING PLAN TO THE ENGINEER PRIOR TO CONSTRUCTION.
- 3. MATERIALS AND METHODS USED SHALL COMPLY WITH NIDOT SPECIFICATIONS.
- 4. HMA PAVEMENT REPAIR SHALL CONSIST OF SAWCUTTING, ROADWAY EXCAVATION, BACKFILL AND COMPACTION OF DENSE-GRADED AGGREGATE BASE AND HOT MIX ASPHALT 19M64 BASE COURSE.
- THE PROPOSED SURFACE COURSE SHALL NOT BE INCLUDED IN THE WORK ASSOCIATED WITH HMA PAVEMENT REPAIR. THE PROPOSED SURFACE COURSE SHALL BE PLACED IN ACCORDANCE WITH THE ITEM, HOT MIX ASPHALT SURFACE COURSE, MIX 9.5M64, 2" THICK.

FULL DEPTH CONCRETE PAVEMENT REPAIR, HMA

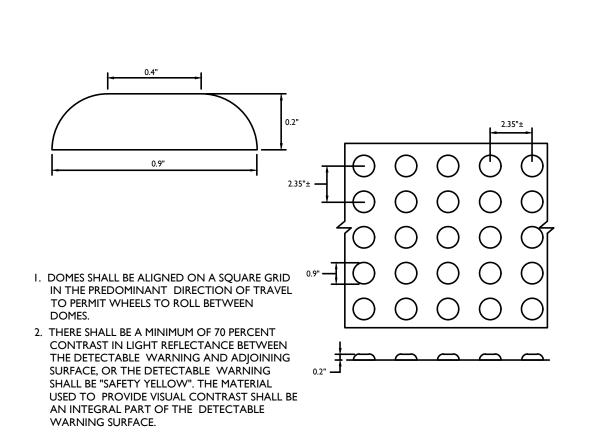
REMOVE EXISTING CASTING WALL AS REQUIRED SURFACE COURSE MATERIAL FILL TO TOP OF BASE COURSE WITH CLASS B CONCRETE, NOT TO BE MONOLITHIC NEW CONCRETE WITH FOOTING FOOTING RING 8' THICK, I' FOOT WIDE (PRECAST OR MADE

RECONSTRUCTED INLET OR MANHOLE, USING EXISTING CASTING

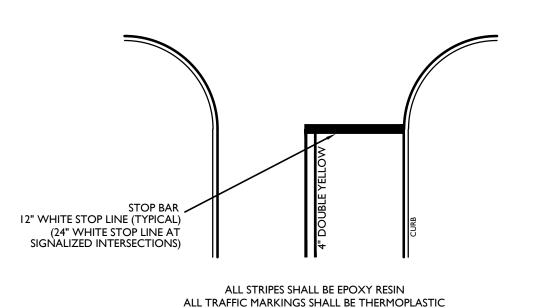
ON SITE)



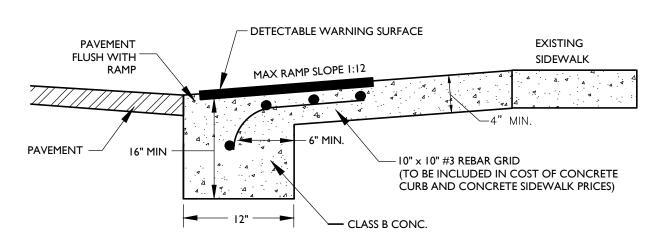
4" THICK CONCRETE SIDEWALK OVER 4" DGA



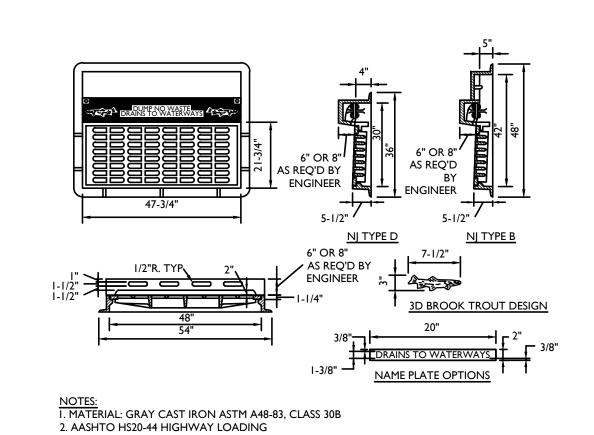
DETECTABLE WARNING SURFACE



STOP BAR LINE DETAIL

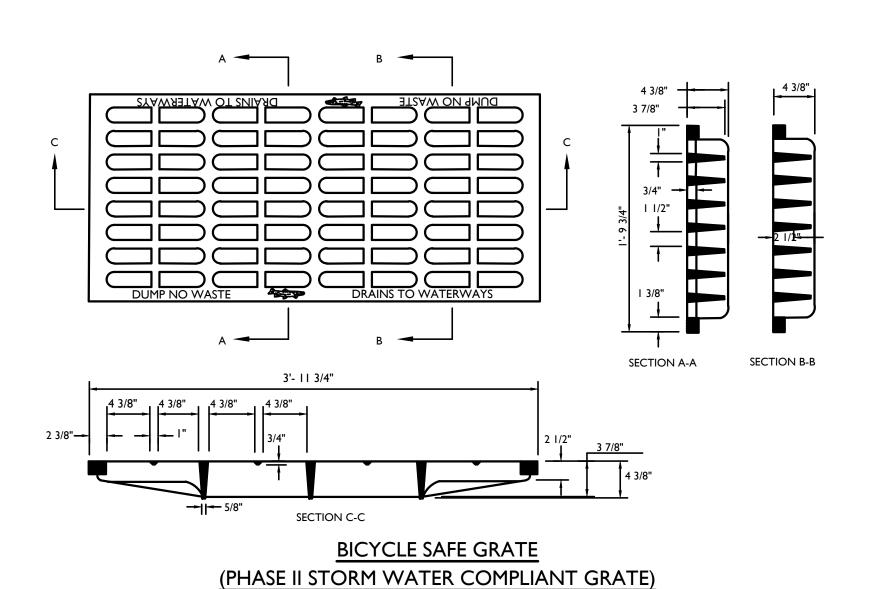


I. NO SEPARATE PAYMENT WILL BE MADE FOR REBAR/CONCRETE REINFORCEMENT, COSTS TO BE INCLUDED IN VARIOUS PROPOSAL ITEMS. 2. FLUSH CURBS AT HANDICAP RAMPS SHALL BE POURED MONOLITHICALLY WITH HANDICAP RAMP. FLUSH BELGIAN BLOCK CURB IS NOT ACCEPTABLE.



CURB PIECE (NJDEP TYPE 'N' ECO) CAMPBELL FOUNDRY COMPANY PATTERN NO, 2618, TYPE N, OR APPROVED EQUAL

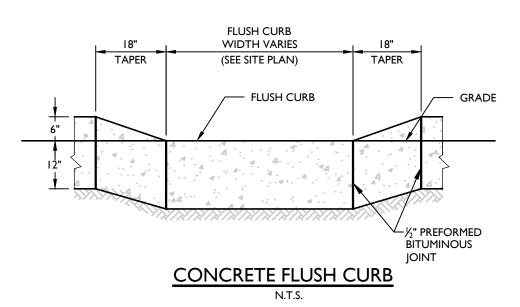
3. SUPPLIED WITHOUT SURFACE COATING

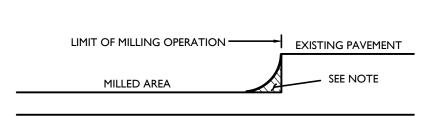


(CAMPBELL FOUNDRY PATTERN NO. 2618 OR APPROVED EQUAL)

FLUSH CURB WIDTH VARIES (SEE SITE PLAN) SEE PLAN CONCRETE CURB FLUSH

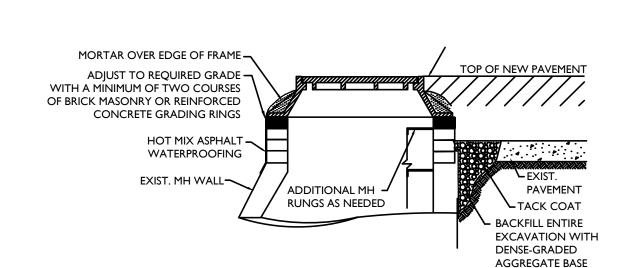
WITH PAVEMENT





REMOVE THE HMA MATERIAL LEFT BY THE DRUM RADIUS AT THE LIMITS OF THE MILLING OPERATION. ENSURE THAT THE FACE IS CLEAN AND VERTICAL BY SAWCUTTING OR TRANSVERSE MILLING. THIS END TREATMENT IS NOT APPLICABLE TO TEMPORARY LIMITS OF MILLING (I.E. END OF WORKDAY). IT IS APPLICABLE TO ALL AREAS WHERE THE COMPLETED MILLING OPERATION MATCHES ANY EXISTING PAVEMENT INCLUDING BRIDGES.

END TREATMENT FOR MILLING OPERATIONS DETAIL N.T.S.

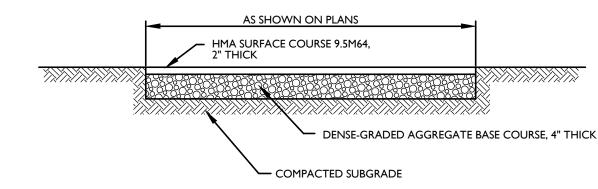


NOTES: FRAMES AND COVERS: CAST IRON MINIMUM CLASS 25 CONFORMING TO ASTM A48, AND AS FOLLOWS:

- CASTINGS TO BE FREE FROM SCALE, LUMPS, BLISTERS AND SANDHOLES. MACHINE CONTACT SURFACES TO PREVENT ROCKING.
- THOROUGHLY CLEAN AND HAMMER INSPECT. 4. CAPABLE OF WITHSTANDING AASHTO H-20 LOADING UNLESS OTHERWISE INDICATED OR
- BITUMINOUS WATERPROOFING MATERIAL:

 I. H.B. TNEMECOL 46-465, BY TNEMEC COMPANY.
- AMERCOAT 78HB, BY AMERON INTERNATIONAL. 3. BITUMASTIC SUPER SERVICE BLACK, BY CARBOLINE OR ACCEPTABLE EQUIVALENT PRODUCT.

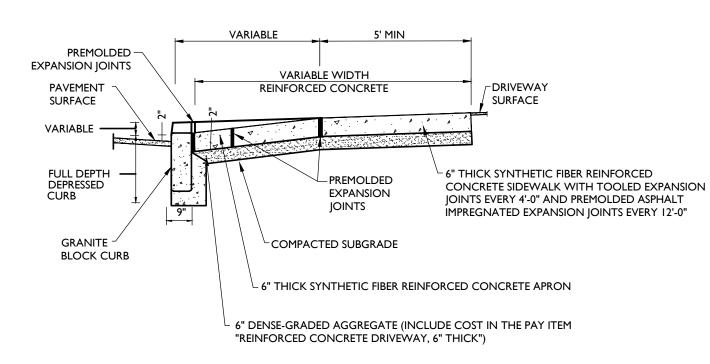
RESET EXISTING MANHOLE CASTINGS



NOTES:

I. THE CONTRACTOR SHALL REPAIR HOT MIX ASPHALT DRIVEWAYS AS DIRECTED BY THE ENGINEER. LIMITS OF DRIVEWAY REPAIR SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

HOT MIX ASPHALT DRIVEWAY, 6" THICK



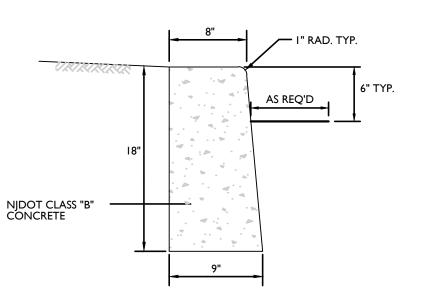
I. CONCRETE PAD SHALL BE 6" THICK FIBER REINFORCED CONCRETE, WITH A 28 DAY COMPRESSIVE STRENGTH OF 4,500 PSI

SECTION

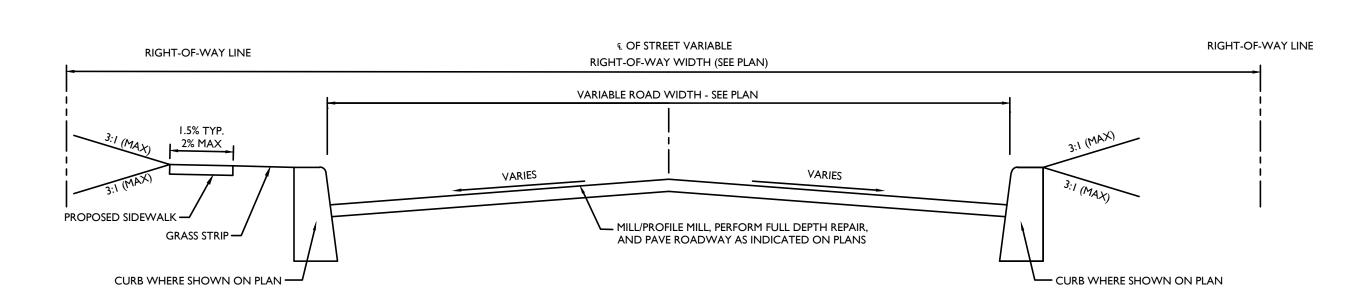
- AND INCLUDE 6" THICK DENSE GRADED AGGREGATE BEDDING ON COMPACTED SUBGRADE. CONCRETE SLAB SHALL INCLUDE SYNTHETIC FIBER REINFORCEMENT.
- SYNTHETIC FIBER REINFORCEMENT SHALL BE FIBRILLATED POLYPROPYLENE MICRO-FIBER, PSI FIBERSTRAND F, AS MANUFACTURED BY EUCLID CHEMICAL, OR APPROVED EQUAL.
- 4. SYNTHETIC FIBER DOSAGE RATE SHALL BE 1.5 LBS/CY.

5. CONCRETE SHALL HAVE BROOM FINISH.

CONCRETE DRIVEWAY, REINFORCED 6" THICK



9 X 18 CONCRETE VERTICAL CURB



ASPHALT TYPE	MINIMUM COMPACTED THICKNESS	MAXIMUM COMPACTED THICKNESS PER LIFT
HOT MIX ASPHALT 9.5M64	1.5" - LEVELING COURSE, 2" SURFACE COURSE	4"
HOT MIX ASPHALT 19M64	3" - LEVELING COURSE, 4" BASE COURSE	6"

INSTRUCTIONS:

- AFTER MILLING/PROFILE MILLING, PERFORM BASE REPAIR AS DIRECTED IN THE FIELD BY THE ENGINEER, PRIOR TO OVERLAYING SURFACE; • TO DETERMINE BASE REPAIR, THE CONTRACTOR SHALL ROLL THE ROAD TO DETERMINE THE CONDITION OF THE BASE COURSE. SOFT SPOTS AND UNSUITABLE ROAD BASE SHALL BE REPAIRED. SAW CUT,
- REMOVE AND REPLACE HMA AND AGGREGATE AS REQUIRED. CONSTRUCT NEW AGGREGATE AND BASE COURSE TO MEET EXISTING DEPTHS. SEE FULL DEPTH BASE REPAIR DETAIL. • WHEN PROPOSED HMA SURFACE IS 0" - 2" ABOVE EXISTING HMA SURFACE COURSE, MILL EXISTING HMA SURFACE COURSE TO ACHIEVE 2" BETWEEN EXISTING HMA SURFACE COURSE AND PROPOSED
- AS MINIMUM COMPACTED THICKNESSES ARE ADHERED TO. PERFORM CRACK SEALING AND BASE REPAIR AS DIRECTED IN THE FIELD BY THE ENGINEER, PRIOR TO OVERLAYING SURFACE; • WHEN PROPOSED SURFACE IS 4" - 5" ABOVE EXISTING HMA SURFACE COURSE, INSTALL TWO LIFTS OF 9.5M64, ADHERING TO MINIMUM AND MAXIMUM COMPACTED LIFT THICKNESS DESCRIBED ABOVE;
- WHEN PROPOSED HMA SURFACE IS 5" 10" ABOVE EXISTING HMA SURFACE COURSE, INSTALL A LIFT OF 19M964 AND A LIFT OF 9.5M64, ADHERING TO MINIMUM AND MAXIMUM COMPACTED LIFT THICKNESS DESCRIBED ABOVE. LIFTS MAY BE SEPARATED INTO MULTIPLE THINNER LIFTS AS LONG AS MINIMUM COMPACTED THICKNESSES ARE ADHERED TO;
- INSTALLATION OF HMA SHALL BE REIMBURSED BY THE TON FOR THE HMA INSTALLED. NO SEPARATE PAYMENT SHALL BE MADE FOR INSTALLING MULTIPLE LIFTS OF HMA. INCLUDE COSTS IN HOT MIX
- CONTRACTOR SHALL APPLY TACK COAT PRIOR TO PAVING AS REQUIRED.

TYPICAL ROAD SECTION

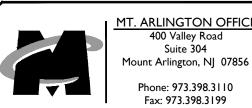
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ENGINEER - LICENSE NUMBER: GE45154

CONSTRUCTION PLANS

JAMES AVENUE DRAINAGE **IMPROVEMENTS**

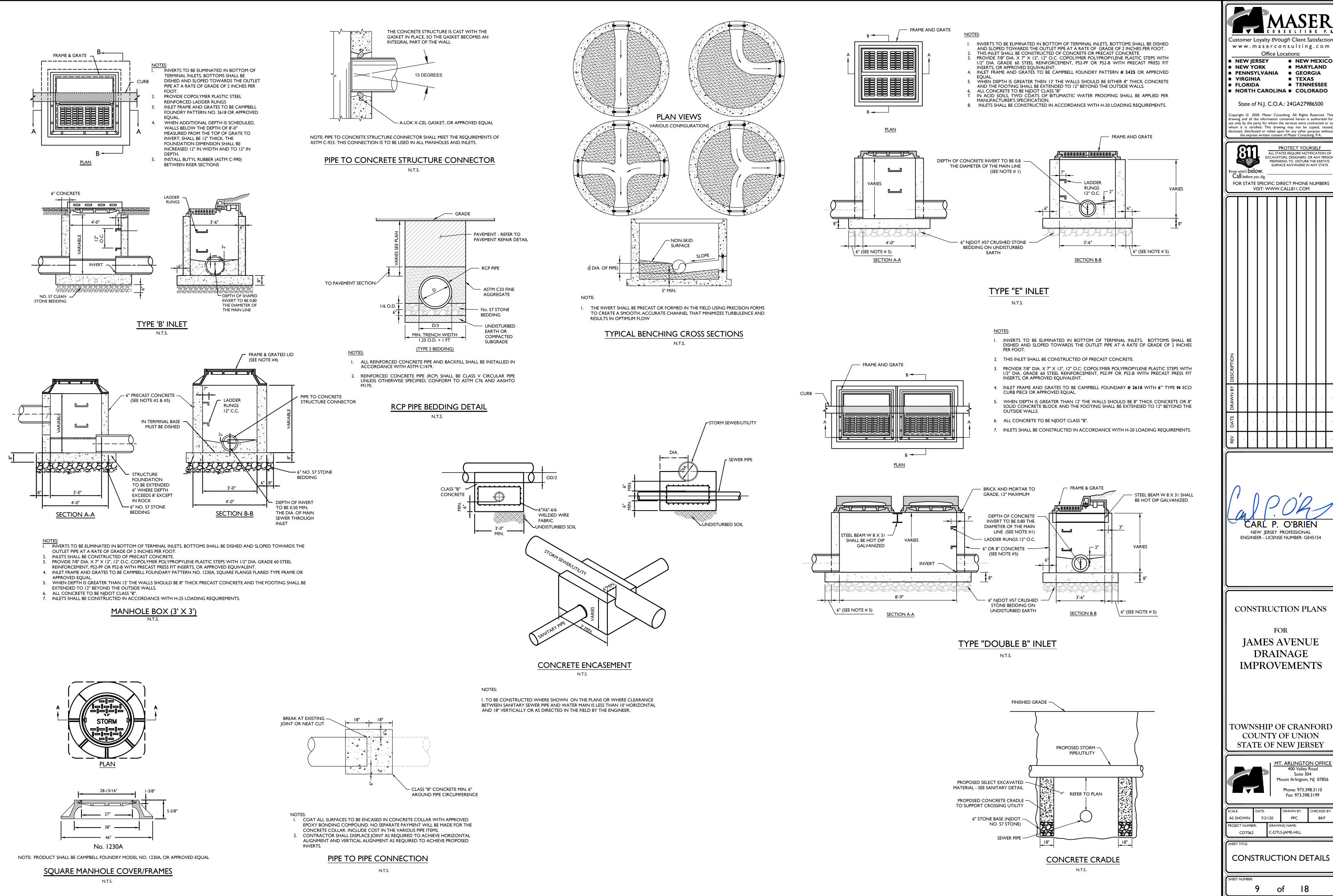
TOWNSHIP OF CRANFORD COUNTY OF UNION STATE OF NEW JERSEY

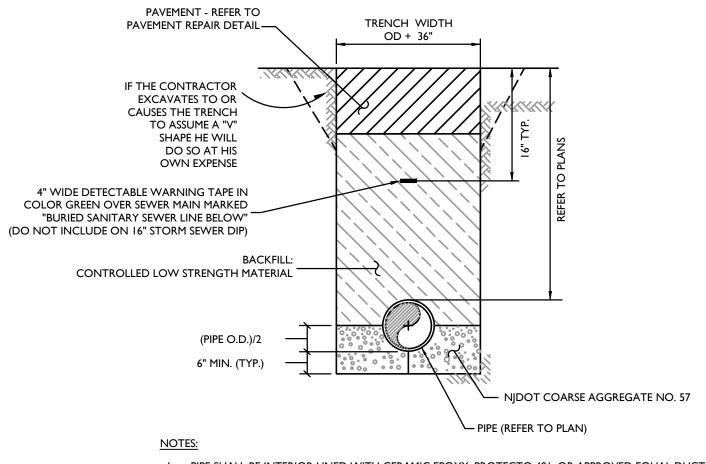


C-DTLS-JAME-HILL

CONSTRUCTION DETAILS

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.





- I. PIPE SHALL BE INTERIOR LINED WITH CERAMIC EPOXY, PROTECTO 401, OR APPROVED EQUAL DUCTILE IRON PIPE (DIP) WITH EXTERIOR ASPHALTIC COATING. ALL STORMWATER DIP SHALL BE CLASS 52 PIPE, ALL SANITÀRY DIP SHALL BE CLASS 56 PIPE.
- 2. ALL DIP PIPE SHALL BE POLYETHYLENE ENCASED, AS PER THE PROVISIONS OF ANSI/AWWA C105/A21.5

DIP SANITARY/STORM SEWER TRENCH DETAIL

GENERAL SANITARY SEWER MAIN TRENCH NOTES:

- I. BACKFILL SHALL BE TAMPED MECHANICALLY IN 6" MAXIMUM LIFTS TO 95% DENSITY TO 12" ABOVE THE PIPE; FROM 12" ABOVE PIPE TO PAVEMENT OR GRADE LIFTS SHALL NOT EXCEED 18". ALL BACKFILL SHALL BE COMPACTED TO 95% DENSITY (UNPAVED AREAS) OR 98% DENSITY (PAVED ROADS). AT A MINIMUM, THE CONTRACTOR SHALL UTILIZE A WALK BEHIND VIBRATORY COMPACTOR OR OTHER MECHANICAL MEANS TO ACHIEVE THE REQUIRED COMPACTION DENSITY. THE USE OF "JUMPING JACK" COMPACTORS AS THE SOLE MEANS OF COMPACTION WILL NOT BE ACCEPTED.
- 2. ALL TRENCHES IN EXISTING PAVEMENT MUST BE SAWCUT.
- 3. SELECT EXCAVATED MATERIAL SHALL CONSIST OF MATERIALS WHICH ARE FREE FROM VEGETATIVE MATTER SUCH AS ROOTS, MULCH, TOPSOIL, ORGANIC MATTER AND CONTAINS NO STONES LARGER THAN 6 INCHES IN THEIR LARGEST DIMENSION. THE MATERIAL MUST BE COMPACTABLE TO 98% DENSITY BENEATH ROADS AND 95% DENSITY BENEATH
- 4. WHERE NECESSARY, PARTICULARLY FOR SAFETY OR TO PREVENT DISTURBANCE, DAMAGE OR SETTLEMENT OF ADJACENT STRUCTURES, PIPELINES, UTILITIES, IMPROVEMENTS OR PAVING, EXCAVATION SHALL BE ADEQUATELY SHEETED AND
- 5. SHEETING AND BRACING OF ALL EXCAVATION SHALL COMPLY WITH NEW JERSEY CONSTRUCTION AND SAFETY CODES AND THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT.
- 6. WHERE SHEETING IS USED, IT MUST BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW JERSEY, SAID ENGINEER SHALL PROVIDE THE CONTRACTOR WITH A SIGNED AND SEALED CERTIFICATE STATING THAT THE DESIGN OF THE SHEETING AND BRACING CONFORMS TO ALL APPLICABLE REQUIREMENTS OF THE NEW JERSEY CONSTRUCTION SAFETY CODE AND THE OCCUPATIONAL HEALTH AND SAFETY ACT. COPIES OF THIS CERTIFICATE SHALL BE SUBMITTED TO THE ENGINEER.
- 7. THE CONTRACTOR SHALL COMPLY WITH OSHA STANDARDS FOR EXCAVATIONS (29 CFR PART 1926), AS SUCH. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A *COMPETENT PERSON* AS DEFINED IN THE OSHA STANDARDS AND AS REQUIRED BY THE STANDARDS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SELECTION, DESIGN, INSTALLATION , AND IMPLEMENTATION OF ALL "PROTECTIVE SYSTEMS" AS DEFINED IN THE OSHA STANDARDS. THE PIPELINE DESIGN BY THE OWNER OR THE ENGINEER DOES NOT INCLUDE THE DESIGN OF "PROTECTIVE SYSTEMS" SINCE THE DESIGN OF THE "PROTECTIVE SYSTEMS" IS THE RESPONSIBILITY OF THE CONTRACTOR.
- 8. THE CONTRACTOR MUST FOLLOW PROPOSED SHEETING PLANS SUBMITTED. NO DEVIATIONS MAY BE MADE FROM THE FILED PROCEDURE WITHOUT FIRST SUBMITTING A REVISED SHEETING AND BRACING PLAN, SIGNED AND CERTIFIED AS REQUIRED FOR THE ORIGINAL SUBMISSION, BY THE SAME LICENSED PROFESSIONAL ENGINEER WHO PREPARED THE ORIGINAL SUBMISSION.
- 9. ANY DAMAGE TO NEW OR EXISTING STRUCTURES OCCURRING THROUGH SETTLEMENT, WATER OR EARTH PRESSURE OR OTHER CAUSES DUE TO INADEQUATE BRACING OR THROUGH NEGLIGENCE OR FAULT OF THE CONTRACTOR IN ANY OTHER MANNER, SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
- 10. SEPARATE PAYMENT WILL NOT BE MADE FOR SAW CUTTING, EXCAVATION AND BACKFILL, REMOVAL OF EXISTING SANITARY SEWER ABANDONED UTILITIES, PIPE BEDDING, CONCRETE ENCASEMENT, DEWATERING, ABANDONMENT OF EXISTING SEWER UTILITIES OR REMOVAL IF REQUIRED. TRENCH PROTECTION, TEMPORARY SURFACE RESTORATION INCLUDING TEMPORARY PAVING, TRAFFIC STRIPES, CURB, DRIVEWAY, SIDEWALK, FENCE, LANDSCAPING, COUPLINGS, BYPASS PUMPING, SERVICE SADDLES, DETECTABLE WARNING TAPE OR TESTING. ALL COSTS TO BE INCLUDED IN THE VARIOUS ITEMS SCHEDULED IN THE PROPOSAL.
- 11. THE ABOVE DEPICTED DETAIL IS APPLICABLE TO TEST PITS. WHEN BACKFILLING AND RESTORING SURFACE OF TEST PIT PAYMENT INCLUDED UNDER THE PAY ITEM FOR TEST PIT.

SANITARY SEWER NOTES

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SURFACE ANYWHERE IN ANY STATE FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM NEW JERSEY PROFESSIONAL ENGINEER - LICENSE NUMBER: GE45154 CONSTRUCTION PLANS FOR JAMES AVENUE DRAINAGE **IMPROVEMENTS** TOWNSHIP OF CRANFORD COUNTY OF UNION STATE OF NEW JERSEY Mount Arlington, NJ 07856 Phone: 973.398.3110 Fax: 973.398.3199 DRAWING NAME: C-DTLS-JAME-HILL

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

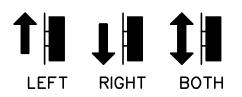
TRAILER MOUNTED MOUNTED ARROW BOARD SHOWING CAUTION MODE

RIGHT

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



ARROW BOARD SHOWING CAUTION MODE



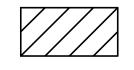
TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING ARROW PATTERN (Left, Right, Both)



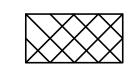
TEMPORARY CRASH CUSHION, INERTIAL BARRIER SYSTEM



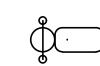
TEMPORARY CRASH CUSHION, (all other approved)



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.
- 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.
- 25. CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE RE.
- 26. TRAFFIC IMPACT NOTICES AND CHANGES

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

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.

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

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

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

"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

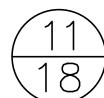
REQUEST FOR A CHANGE TO THE TRAFFIC CONTROL REQUIREMENTS IN THE CONTRACT DOCUMENTS SHALL BE SUBMITTED IN WRITING TO THE RE AS FOLLOWS:

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.

TCD-1

NEW JERSEY DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS

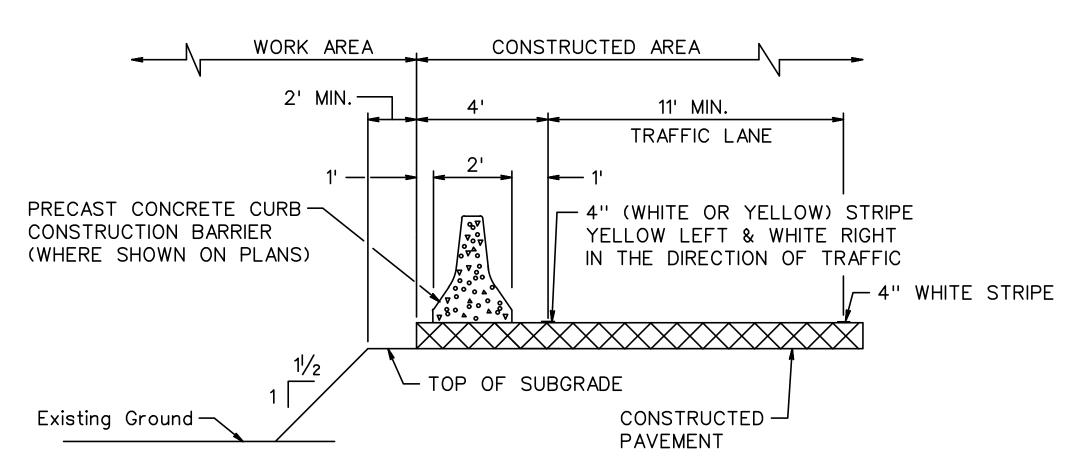


NOTE:

MATERIAL AS APPROVED BY THE R.E.

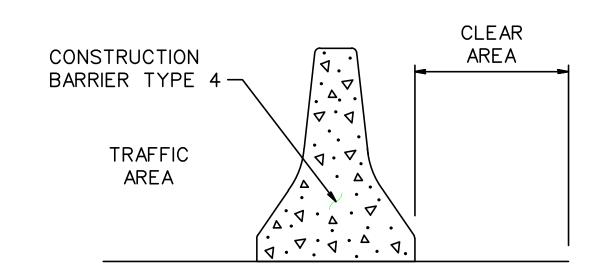
ESCAPE RAMPS MUST BE CONSTRUCTED AND MAINTAINED DURING NON-WORKING HOURS WHERE A VERTICAL DROP GREATER THAN 2 INCHES EXISTS ADJACENT TO TRAVELED LANE.

ESCAPE RAMP DETAIL



TYPICAL SECTION

PLACEMENT OF PRECAST CONCRETE CONSTRUCTION BARRIER



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

CONSTRUCTION BARRIER, TYPE 4
JOINT CLASS AND CLEAR AREA

REGULATORY APPROACH SPEED OF		IMENDED SIGHT NG OF CHANNE	
TRAFFIC	DESI	RABLE	MINIMUM
MILES/HOUR	RURAL FEET	URBAN FEET	RURAL AND URBAN FEET
25	375	525	150
30	450	625	200
35	525	725	250
40	600	825	325
45	675	925	400
50	750	1025	475
55	875	1150	550
60	1000	1275	650
65	1050		725

NOTES:

- 1. AVOIDANCE MANEUVER IS FOR A SPEED, PATH, AND/OR DIRECTION CHANGE PRIOR TO THE BEGINNING OF CHANNELIZING TAPERS.
- 2. RECOMMENDED DISTANCES BETWEEN TWO SEPARATE LANE CLOSURES SHALL BE DOUBLE THE VALUES SHOWN ABOVE.
- 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	RECOMMENDED SPACING ALONG TANGENTS					
REGULATORY APPROACH SPEED OF TRAFFIC MILES/HOUR	MINIMUM TAPER RATIO IN LENGTH PER FOOT OF WIDTH	TAPE L -	MINIMUM IR LEN FOR L WIDTHS	IGTH .ANE	MAXIMUM DEVICE (B) SPACING ALONG TAPERS IN FEET	MAXIMUM DEVICE (D) SPACING ALONG TANGENTS IN FEET
		10'	11'	12'		
25	10.5:1	105	115	125	25	50
30	15:1	150	165	180	30	60
35	20.5:1	205	225	245	35	70
40	27:1	270	300	325	40	80
45	45:1	450	495	540	45	90
50	50:1	500	550	600	50	100
55	55:1	550	605	660	55	110
60	60:1	600	660	720	60	120
65	65:1	650	715	780	65	130

NOTE:

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

N.T.S.

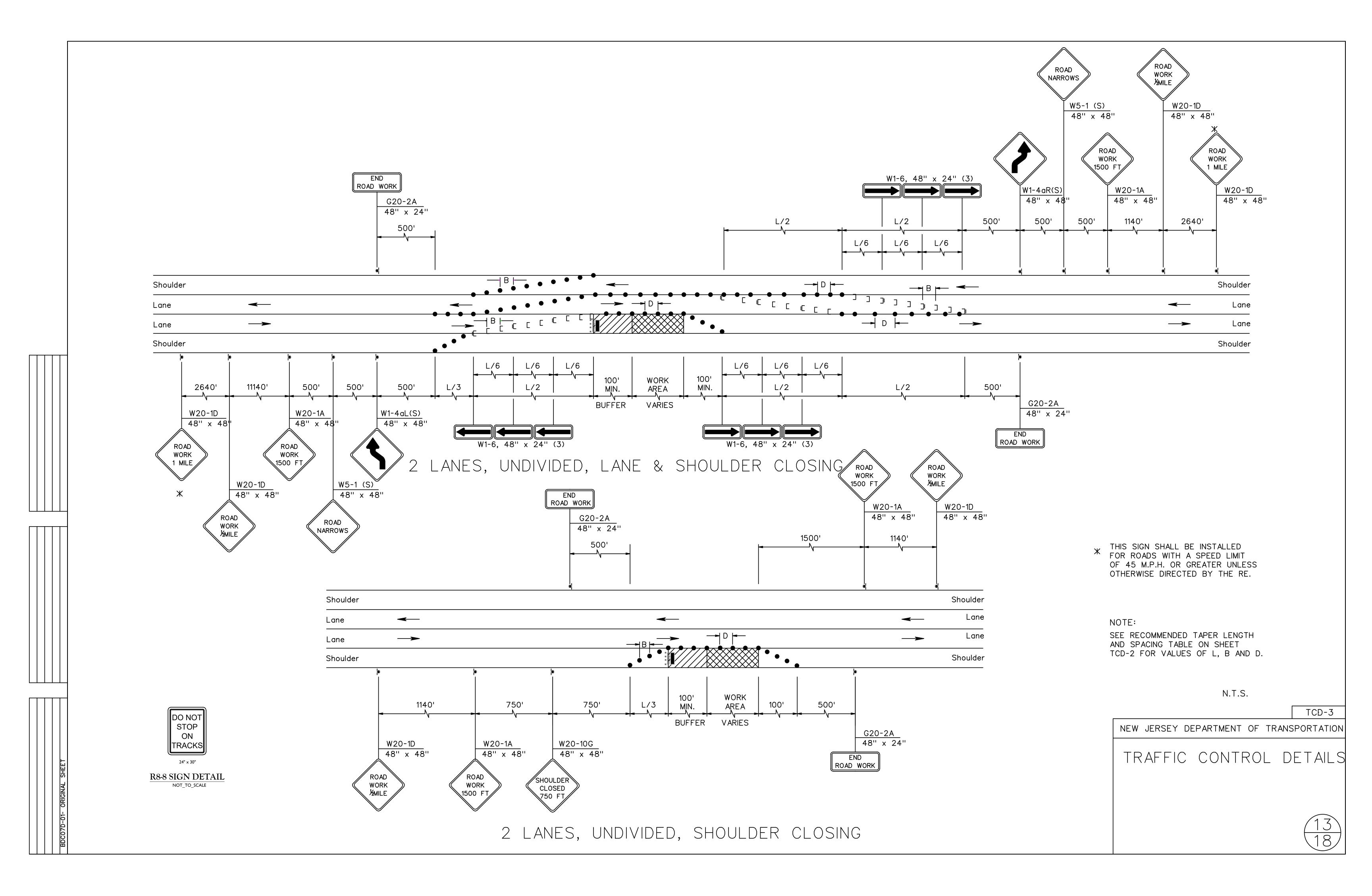
TCD-2

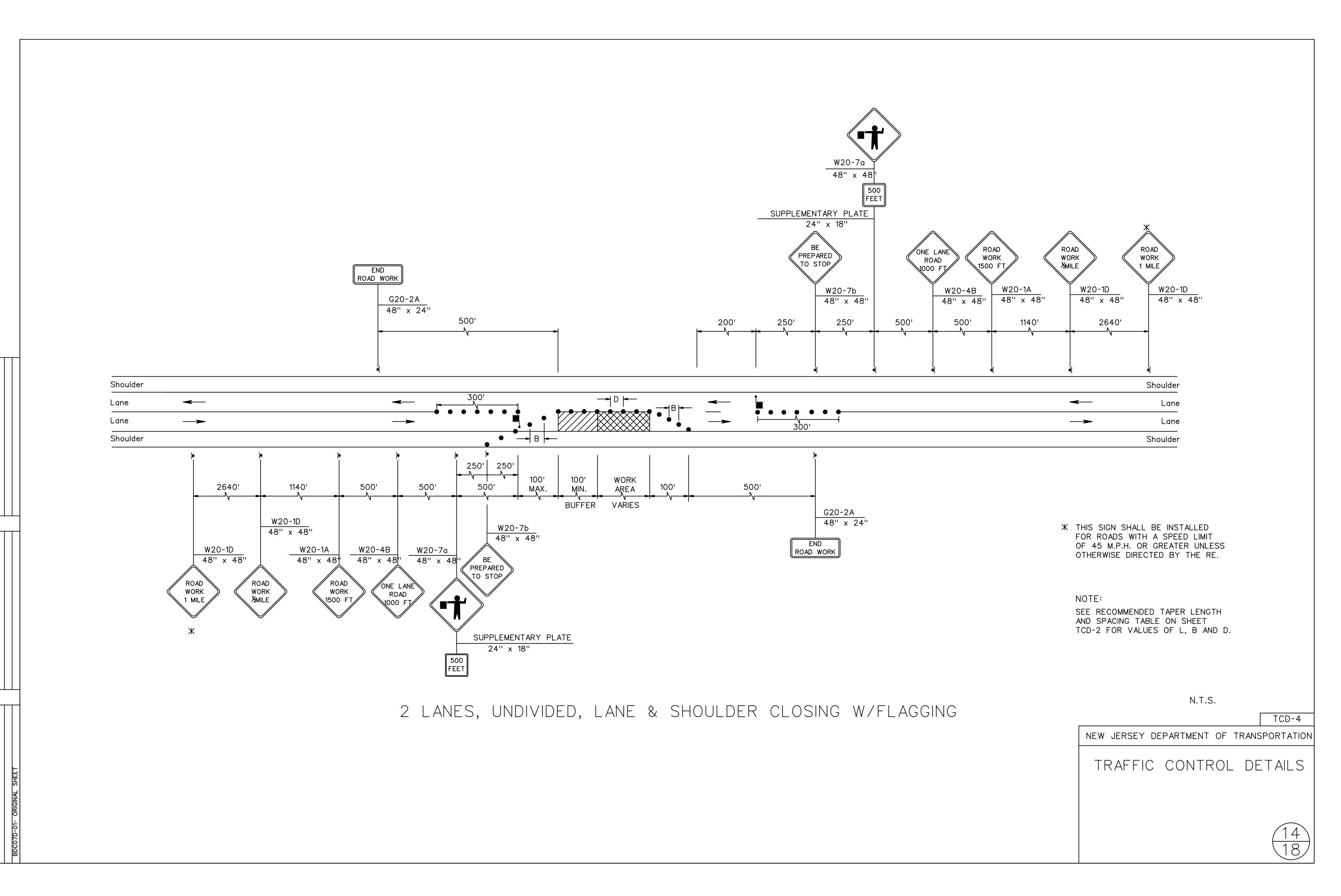
NEW JERSEY DEPARTMENT OF TRANSPORTATION

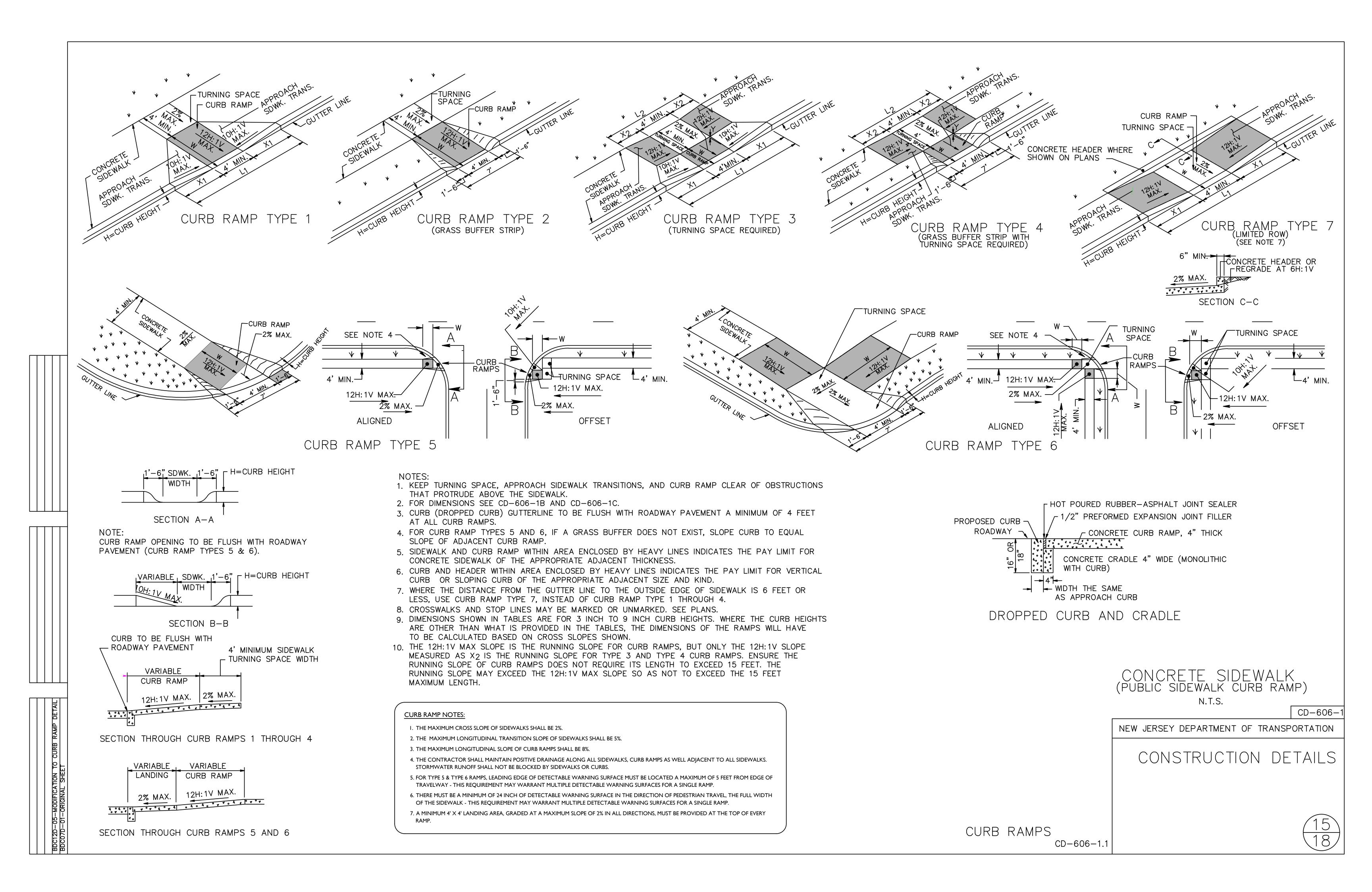
TRAFFIC CONTROL DETAILS

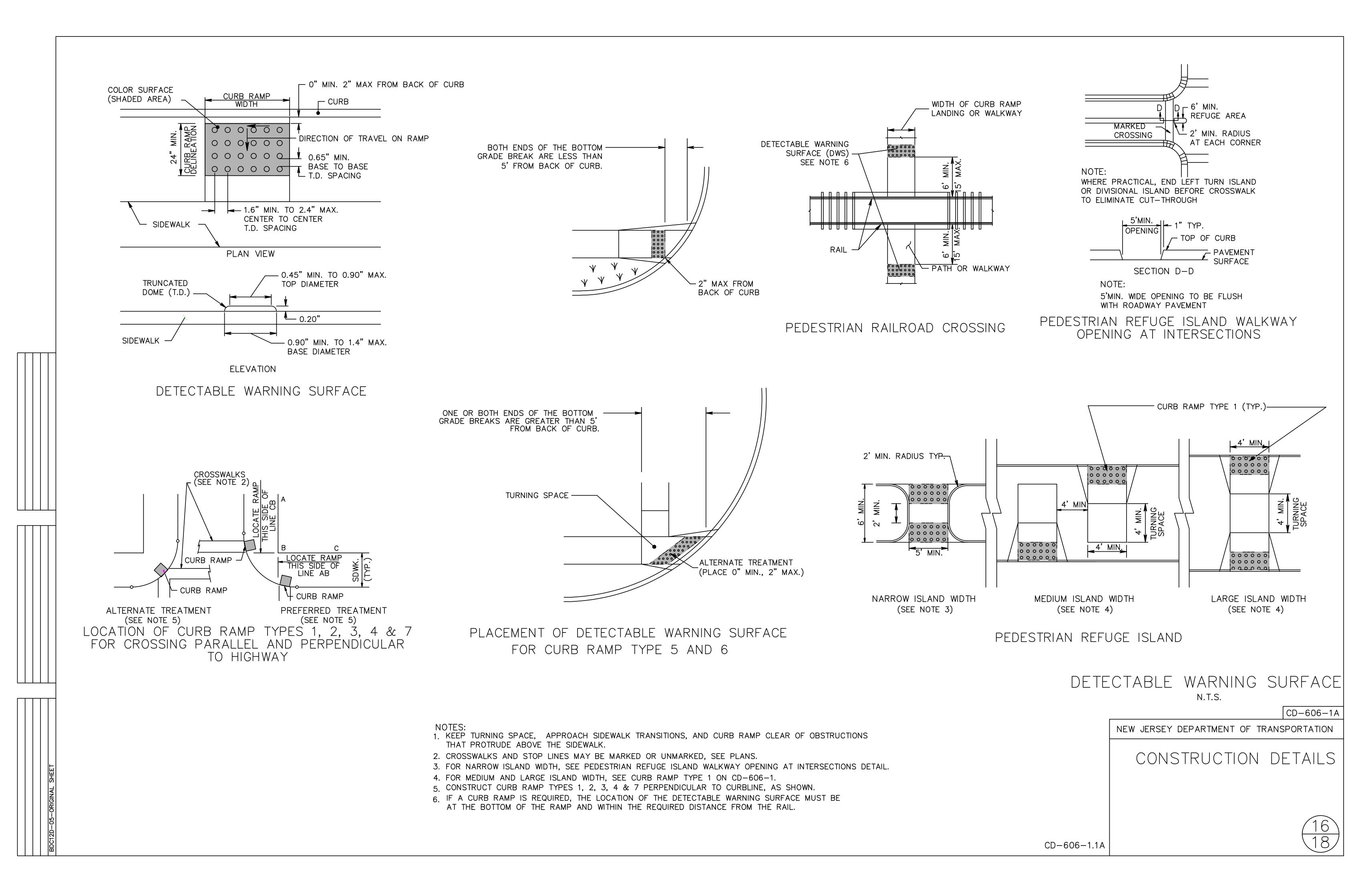
<u>12</u> 18

770-01- ORIGINAL SHEFT









CURB RAMP TYPE 1 0.0% GUTTER LINE PROFILE

0.0% GUTTER LINE PROFILE							
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET			
3	3	2.50	2.50	9.00			
4	4	3.33	3.33	10.67			
5	5	4.17	4.17	12.33			
6	6	5.00	5.00	14.00			
7	7	5.83	5.83	15.67			
8	8	6.67	6.67	17.33			
9	9	7.50	7.50	19.00			
•			•	•			

1.0% GUTTER LINE PROFILE									
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET					
3	3	2.78	2.27	9.05					
4	4	3.70	3.03	10.73					
5	5	4.63	3.79	12.42					
6	6	5.56	4.55	14.10					
7	7	6.48	5.30	15.78					
8	8	7.41	6.06	17.47					
9	9	8.33	6.82	19.15					

	2.0% GUTTER LINE PROFILE								
W	X1u FFFT	X1L FFFT	Lz FEET						
3	3.13	2.08	9.21						
4	4.17	2.78	10.94						
5	5.21	3.47	12.68						
6	6.25	4.17	14.42						
7	7.29	4.86	16.15						
8	8.33	5.56	17.89						
9	9.38	6.25	19.63						
	FEET 3 4 5 6 7 8	FEET FEET 3 3.13 4 4.17 5 5.21 6 6.25 7 7.29 8 8.33	FEET FEET FEET 3 3.13 2.08 4 4.17 2.78 5 5.21 3.47 6 6.25 4.17 7 7.29 4.86 8 8.33 5.56						

3.0% GUTTER LINE PROFILE							
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET			
3	3	3.57	1.92	9.49			
4	4	4.76	2.56	11.33			
5	5	5.95	3.21	13.16			
6	6	7.14	3.85	14.99			
7	7	8.33	4.49	16.82			
8	8	9.52	5.13	18.65			
9	9	10.71	5.77	20.48			

4.0% GUTTER LINE PROFILE								
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET				
3	3	4.17	1.79	9.95				
4	4	5.56	2.38	11.94				
5	5	6.94	2.98	13.92				
6	6	8.33	3.57	15.90				
7	7	9.72	4.17	17.89				
8	8	11.11	4.76	19.87				
9	9	12.50	5.36	21.86				

5.0% GUTTER LINE PROFILE							
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET			
3	3	5.00	1.67	10.67			
4	4	6.67	2.22	12.89			
5	5	8.33	2.78	15.11			
6	6	10.00	3.33	17.33			
7	7	11.67	3.89	19.56			
8	8	13.33	4.44	21.78			
9	9	15.00	5.00	24.00			

6.0% GUTTER LINE PROFILE							
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET			
3	3	6.25	1.56	11.81			
4	4	8.33	2.08	14.42			
5	5	10.42	2.60	17.02			
6	6	12.50	3.13	19.63			
7	7	14.58	3.65	22.23			
8	8	15.00	4.17	23.17			
9	9	15.00	4.69	23.69			

))	15.00	4.69	23.69				
	0.0% GUT	TER LINE PRO	OFILE					
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET				
3	3	8.33	1.47	13.80				
4	4	11.11	1.96	17.07				
5	5	13.89	2.45	20.34				
6	6	15.00	2.94	21.94				
7	7	15.00	3.43	22.43				
8	8	15.00	3.92	22.92				
9	9	15.00	4.41	23.41				

CURB RAMP TYPE 3

0.0% Gl	JTTER LINE	PROFILE						
H INCHES	W FEET	X1u FEET	X1L FEET	L1 FEET	Y INCHES	X2u FEET	X ₂ L FEET	L2 FEET
3		2.50	2.50	9.00		1.10	1.10	6.20
4		3.33	3.33	10.67		2.10	2.10	8.20
5		4.17	4.17	12.33		3.10	3.10	10.20
6	2.5	5.00	5.00	14.00	2.5	4.10	4.10	12.20
7		5.83	5.83	15.67		5.10	5.10	14.21
8		6.67	6.67	17.33		6.10	6.10	16.21
9		7.50	7.50	19.00		7.10	7.10	18.21
3		*	*	*		*	*	*
4		3.33	3.33	10.67		1.72	1.72	7.44
5	3.0	4.17	4.17	12.33	3.0	2.72	2.72	9.44
6		5.00	5.00	14.00		3.72	3.72	11.45
7		5.83	5.83	15.67		4.72	4.72	13.45
8		6.67	6.67	17.33		5.72	5.72	15.45
9		7.50	7.50	19.00		6.72	6.72	17.45
3		*	*	*		*	*	*
4		3.33	3.33	10.67		1.34	1.34	6.68
5		4.17	4.17	12.33		2.34	2.34	8.68
6	3.5	5.00	5.00	14.00	3.5	3.34	3.34	10.69
7		5.83	5.83	15.67		4.34	4.34	12.69
8		6.67	6.67	17.33		5.34	5.34	14.69
9		7.50	7.50	19.00		6.34	6.34	16.69
3		*	*	*		*	*	*
4		*	*	*		*	*	*
5		4.17	4.17	12.33		1.96	1.96	7.92
6	4.0	5.00	5.00	14.00	4.0	2.96	2.96	9.93
7		5.83	5.83	15.67		3.96	3.96	11.93
8		6.67	6.67	17.33		4.96	4.96	13.93
9		7.50	7.50	19.00		5.96	5.96	15.93

H INCHES	W FEET	X1u FEET	X1L FEET	L1 FEET	Y INCHES	X2u FEET	X ₂ L FEET	L2 FEET	H INCHES	W FEET
3		2.78	2.27	9.05		1.25	0.98	6.24	3	
4		3.70	3.03	10.73		2.39	1.18	8.27	4	
5		4.63	3.79	12.42		3.53	2.77	10.30	5	
6	2.5	5.56	4.55	14.10	2.5	4.66	3.66	12.33	6	2.5
7		6.48	6.06	15.78		5.80	4.56	14.36	7	
8		7.41	6.06	17.47		6.94	5.45	16.39	8	
9		8.33	6.82	19.15		8.07	6.34	18.42	9	
3		2.78	2.27	9.05		0.82	0.64	5.46	3	
4		3.70	3.03	10.73		1.96	1.54	7.49	4	
5		4.63	3.79	12.42		3.09	2.43	9.52	5	
6	3.0	5.56	4.55	14.10	3.0	4.23	3.32	11.55	6	3.0
7		6.48	6.06	15.78		4.23	4.22	13.58	7	
8		7.41	6.06	17.47		5.37	5.11	15.61	8	
9		8.33	6.82	19.15		7.64	6.00	17.64	9	
33		*	*	*		*	*	*	33	
4		3.70	3.03	10.73		1.53	1.20	6.72	4	
5		4.63	3.79	12.42		2.66	2.09	8.75	5	
6	3.5	5.56	4.55	14.10	3.5	3.80	2.98	10.78	6	3.5
7		6.48	6.06	15.78		4.94	3.88	12.81	7	
8		7.41	6.06	17.47		6.07	4.77	14.84	8	
9		8.33	6.82	19.15		7.21	5.66	16.87	9	
33		*	*	*		*	*	*	33	
4		3.70	3.03	10.73		1.09	0.86	5.95	4	
5		4.63	3.79	12.42		2.23	1.75	7.98	5	
6	4.0	5.56	4.55	14.10	4.0	3.37	2.65	10.01	6	4.0
7		6.48	6.06	15.78		4.50	3.54	12.04	7	

6.78 5.32 16.01

X2L FEET

X2u FEET

1.0% GUTTER LINE PROFILE

3		3.13	2.08	9.21		1.45	0.89	6.34
4		4.17	2.78	10.94		2.77	1.69	8.46
5		5.21	3.47	12.68		4.08	2.50	10.58
6	2.5	6.25	4.17	14.42	2.5	5.40	3.31	12.71
7		7.29	4.86	16.15		6.72	4.12	14.83
8		8.23	5.56	17.89		8.03	4.92	16.95
9		9.38	6.25	19.63		9.35	5.73	19.08
3		3.13	2.08	9.21		0.95	0.58	5.53
4		4.17	2.78	10.94		2.27	1.39	7.65
5		5.21	3.47	12.68		3.58	2.20	9.78
6	3.0	6.25	4.17	14.42	3.0	4.90	3.00	11.90
7		7.29	4.86	16.15		6.22	3.81	14.02
8		8.23	5.56	17.89		7.53	4.62	16.15
9		9.38	6.25	19.63		8.85	5.42	18.27
33		*	*	*		*	*	*
4]	4.17	2.78	10.94	3.5	1.77	1.08	6.85
5		5.21	3.47	12.68		3.08	1.89	8.97
6	3.5	6.25	4.17	14.42		4.40	2.70	11.09
7		7.29	4.86	16.15		5.72	3.50	13.22.
8		8.23	5.56	17.89		7.03	4.31	15.34
9		9.38	6.25	19.63		8.35	5.12	17.46
33		*	*	*		*	*	*
4		4.17	2.78	10.94		1.27	0.78	6.04
5		5.21	3.47	12.68		2.58	1.58	8.16
6	4.0	6.25	4.17	14.42	4.0	3.90	2.39	10.29
7		7.29	4.86	16.15		5.22	3.20	12.41
8		8.23	5.56	17.89		6.53	4.00	14.53
		9.38	6.25	19.63		7.85	4.81	16.66
9								
9								
	TTER LINE	PROFILE						

X1u X1L L1 Y X2u X2L L2
FEET FEET INCHES FEET FEET FEET

2.0% GUTTER LINE PROFILE

3 4 5 6 7		3.57	1.00					
5			1.92	9.49		1.72	0.81	6.5
6	_	4.76	2.56	11.33		3.28	1.55	8.8
		5.95	3.21	13.16		4.85	2.28	11.1
7	2.5	7.14	3.85	14.99	2.5	6.41	3.02	13.4
,		8.33	4.49	16.82		7.98	3.75	15.7
8		9.52	5.13	18.65		9.54	4.49	18.0
9		10.71	5.77	20.48		11.10	5.22	20.3
3		3.57	1.92	9.49		1.13	0.53	5.6
4		4.76	2.56	11.33		2.69	1.27	7.9
5		5.95	3.21	13.16		4.25	2.00	10.2
6	3.0	7.14	3.85	14.99	3.0	5.82	2.74	12.5
7		8.33 4.49 16.82	7.38	3.47	14.8			
8		9.52	5.13	18.65		8.94	4.21	17.1
9		10.71	5.77	20.48		10.51	4.94	19.4
33		*	*	*		*	*	*
4		4.76	2.56	11.33		2.10	0.99	7.0
5		5.95	3.21	13.16		3.66	1.72	9.3
6	3.5	7.14	3.85	14.99	3.5	5.22	2.46	11.6
7		8.33	4.49	16.82		6.79	3.19	13.9
8		9.52	5.13	18.65		8.35	3.93	16.2
9		10.71	5.77	20.48		9.91	4.66	18.5
33		*	*	*		*	*	*
4		4.76	2.56	11.33]	1.50	0.71	6.2
5		5.95	3.21	13.16]	3.07	1.44	8.5
6	4.0	7.14	3.85	14.99	4.0	4.63	2.18	10.8
7		8.33	4.49	16.82]	6.19	2.91	13.1
8		9.52	5.13	18.65]	7.76	3.65	15.4
9		10.71	5.77	20.48		9.32	4.38	17.7

4.0% Gl	JTTER LINE	PROFILE						
H INCHES	W FEET	X1u FEET	X1L FEET	L1 FEET	Y INCHES	X2u FEET	X ₂ L FEET	L2 FEET
3		4.17	1.79	9.95		2.12	0.74	6.86
4		5.56	2.38	11.94		4.04	1.42	9.46
5		6.94	2.98	13.92		4.85	2.28	11.13
6	2.5	8.33	3.57	15.90	2.5	6.41	3.02	13.43
7		9.72	4.17	17.89		7.98	3.75	15.73
8		11.11	4.76	19.87		9.54	4.49	18.03
9		12.50	5.36	21.86		11.10	5.22	20.33
3		4.17	1.79	9.95		1.39	0.49	5.88
4		5.56	2.38	11.94		3.31	1.16	4.48
5	3.0	6.94	2.98	13.92		5.24	1.84	11.08
6		8.33	3.57	15.90	3.0	5.24	2.52	13.68
7		9.72	4.17	17.89		9.09	3.19	16.28
8		11.11	4.76	19.87	-	11.02	3.87	18.88
9		12.50	5.36	21.86		12.94	4.54	21.48
3		*	*	*		*	*	*
4		5.56	2.38	11.94		2.58	0.91	7.49
5		6.94	2.98	13.92		4.51	1.58	10.09
6	3.5	8.33	3.57	15.90	3.5	6.43	2.26	12.69
7		9.72	4.17	17.89		8.36	2.93	15.29
8		11.11	4.76	19.87		10.28	3.61	17.89
9		12.50	5.36	21.86		12.20	4.29	20.49
3		*	*	*		*	*	*
4		5.56	2.38	11.94		1.85	0.65	6.50
5		6.94	2.98	13.92		3.78	1.33	9.10
6	4.0	8.33	3.57	15.90	4.0	5.70	2.00	11.70
7		9.72	4.17	17.89		7.62	2.68	14.30
8		11.11	4.76	19.87		9.55	3.35	16.90
9		12.50	5.36	21.86		11.47	4.03	19.50

3		5.00	1.67	10.67		2.76	0.69	7.44
4		6.67	2.22	12.89		5.26	1.31	10.57
5		8.33	2.78	15.11		7.76	1.94	13.57
6	2.5	10.00	3.33	17.33	2.5	10.26	2.56	16.83
7		11.67	3.89	19.56		12.77	3.19	19.95
8		13.33	4.44	21.78		15.00	3.81	22.81
9		15.00	5.00	24.00		15.00	4.44	23.44
3		5.00	1.67	10.67		1.80	0.45	6.26
4		6.67	2.22	12.89		4.31	1.08	9.38
5		8.33	2.78	15.11		6.81	1.70	12.51
6	3.0	10.00	3.33	17.33	3.0	9.31	2.33	15.64
7		11.67	3.89	19.56		11.81	2.95	18.77
8		13.33	4.44	21.78		14.32	3.58	21.89
9		15.00	5.00	24.00		15.00	4.20	23.20
3		*	*	*		*	*	*
4		6.67	2.22	12.89		3.36	0.84	8.20
5		8.33	2.78	15.11		5.86	1.46	11.32
6	3.5	10.00	3.33	17.33	3.5	8.36	2.09	14.45
7		11.67	3.89	19.56		10.86	2.71	17.58
8		13.33	4.44	21.78		13.37	3.34	20.71
9		15.00	5.00	24.00		15.00	3.96	22.96
3		*	*	*		*	*	*
4		6.67	2.22	12.89		2.41	0.60	7.01
5		8.33	2.78	15.11		4.91	1.23	10.14
6	4.0	10.00	3.33	17.33	4.0	7.41	1.85	13.26
7		11.67	3.89	19.56		9.91	2.48	16.39
8	_	13.33	4.44	21.78		12.42	3.10	19.52
9		15.00	5.00	24.00		11.92	3.73	22.65

X1L L1 Y FEET FEET INCHES

		9.36	0.23	15.03	<u>- </u>	7.85	4.01	10.00
6.0% Gl	JTTER LINE	PROFILE						
H INCHES	W FEET	X1u FEET	X1L FEET	L1 FEET	Y INCHES	X2u FEET	X2L FEET	L2 FEET
3		6.25	1.56	11.81		3.94	0.64	8.58
4		8.33	2.08	14.42		7.51	1.22	12.74
5		10.42	2.60	17.02		11.09	1.80	16.89
6	2.5	12.50	3.13	19.63	2.5	14.67	2.38	21.05
7		14.48	3.65	22.23		15.00	2.97	21.97
8		15.00	4.17	23.71		15.00	3.81	22.81
9		15.00	4.69	23.69		15.00	4.44	23.44
3		6.25	1.56	11.81		2.58	0.42	7.00
4		8.33	2.08	14.42		6.16	1.00	11.16
5		10.42	2.60	17.02		9.73	1.58	15.31
6	3.0	12.50	3.13	19.63	3.0	13.31	2.16	19.47
7		14.48	3.65	22.23		15.00	2.75	21.75
8		15.00	4.17	23.71		15.00	3.33	22.33
9		15.00	4.69	23.69		15.00	3.91	22.91
3		*	*	*		*	*	*
4		8.33	2.08	14.42		4.80	0.78	9.58
5		10.42	2.60	17.02		8.37	1.36	13.74
6	3.5	12.50	3.13	19.63	3.5	11.95	1.94	17.89
7		14.48	3.65	22.23		15.00	2.52	21.52
8		15.00	4.17	23.71		15.00	3.11	22.11
9		15.00	4.69	23.69		15.00	3.69	22.96
3		*	*	*		*	*	*
4		8.33	2.08	14.42		3.44	0.56	8.00
5		10.42	2.60	17.02		7.02	1.14	12.16
6	4.0	12.50	3.13	19.63	4.0	10.59	1.72	16.31
7		14.48	3.65	22.23		14.17	2.30	20.47
8		15.00	4.17	23.71		15.00	2.89	21.89
9		15.00	4.69	23.69		15.00	3.47	22.47

7.0% GL	JTTER LINE	PROFILE						
H INCHES	W FEET	X1u FEET	X1L FEET	L1 FEET	Y INCHES	X2u FEET	X2L FEET	L2 FEET
3		8.33	1.47	13.80		6.90	0.60	11.50
4		11.11	1.96	17.07		13.16	1.14	18.31
5		13.89	2.45	20.34		15.00	1.69	20.69
6	2.5	15.00	2.94	21.94	2.5	15.00	2.23	21.05
7		15.00	3.43	22.43		15.00	2.77	21.97
8		15.00	3.92	22.92		15.00	3.32	22.32
9		15.00	4.41	23.41		15.00	3.86	22.86
3		8.33	1.47	13.80		4.52	0.39	8.91
4		11.11	1.96	17.07		10.78	0.94	15.72
5		13.89	2.45	20.34	3.0	15.00	1.58	20.48
6	3.0	15.00	2.94	21.94		15.00	2.02	21.00
7		15.00	3.43	22.43		15.00	2.57	21.57
8		15.00	3.92	22.92		15.00	3.11	22.11
9		15.00	4.41	23.41		15.00	3.65	22.65
3		*	*	*		*	*	*
4		11.11	1.96	17.07		8.40	0.73	13.13
5		13.89	2.45	20.34		14.67	1.27	19.94
6	3.5	15.00	2.94	21.94	3.5	15.00	1.82	20.82
7		15.00	3.43	22.43		15.00	2.36	21.36
8		15.00	3.92	22.92		15.00	2.90	21.90
9		15.00	4.41	23.41		15.00	3.45	22.45
3		*	*	*		*	*	*
4		11.11	1.96	17.07		6.03	0.52	10.55
5		13.89	2.45	20.34		12.29	1.07	17.36
6	4.0	15.00	2.94	21.94	4.0	15.00	1.61	20.61
7		15.00	3.43	22.43		15.00	2.15	21.15
8		15.00	3.92	22.92		15.00	2.70	21.70
9	1	15.00	4.41	23.41		15.00	3.24	22.24

CURB RAMP TYPE 2

	0.0% GUT	TER LINE PRO	OFILE	
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.

CONCRETE SIDEWALK (PUBLIC SIDEWALK CURB RAMP TABLES)

LEGEND

U = UPPER SIDE OF GUTTER LINE PROFILE

L = LOWER SIDE OF GUTTER LINE PROFILE

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

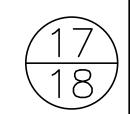
- * TYPE 3 RAMP IS NOT APPLICABLE, USE TYPE 1
- ** TYPE 4 RAMP IS NOT APPLICABLE, USE TYPE 2

N.T.S.

CD-606-1B

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS



CD-606-1.1B

CURB RAMP TYPE 4

CUR	BRA	MP	IYPE 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		

1.0% GUTTER LINE PROFILE H						
NCHES	1.0% GL	JTTER LINE	PROFILE			
4 2.39 1.88 8.27 5 3.53 2.77 10.30 6 2.5 4.66 3.66 12.33 7 5.80 4.56 14.36 6.94 5.45 16.39 8 0.82 0.64 5.46 1.96 1.54 7.49 3.09 2.43 9.52 6 3.09 2.43 9.52 5 3.7 4.22 13.58 6.50 5.11 15.61 7.64 6.00 17.64 3 4 0.39 0.30 4.69 1.53 1.20 6.72 2.66 2.09 8.75 6 3.5 3.80 2.98 10.78 4.94 3.88 12.81 6.07 4.77 14.84 7.21 5.66 16.87 3 ** ** ** 4 1.09 0.86 5.95 2.23 1.75 7.98 6 4.0						
5 3.53 2.77 10.30 6 2.5 4.66 3.66 12.33 5 5.80 4.56 14.36 6.94 5.45 16.39 8 9 8.07 6.34 18.42 3 0.82 0.64 5.46 1.96 1.54 7.49 3.09 2.43 9.52 5 3.09 2.43 9.52 5 5.37 4.22 13.58 6.50 5.11 15.61 9 7.64 6.00 17.64 3 4 1.53 1.20 6.72 2.66 2.09 8.75 6 3.80 2.98 10.78 4.94 3.88 12.81 6.07 4.77 14.84 9 7.21 5.66 16.87 3 4 1.09 0.86 5.95 2.23 1.75 7.98 6 4.0 4.0 3.37 2.65 10.01	3			1.25	0.98	6.24
6 2.5 2.5 4.66 3.66 12.33 7 8 6.94 5.45 16.39 8 6.94 5.45 16.39 8 8.07 6.34 18.42 3 0.82 0.64 5.46 1.96 1.54 7.49 3.09 2.43 9.52 5 3.09 2.43 9.52 5 5.37 4.22 13.58 6.50 5.11 15.61 7.64 6.00 17.64 3 0.39 0.30 4.69 1.53 1.20 6.72 2.66 2.09 8.75 6 3.80 2.98 10.78 4.94 3.88 12.81 6.07 4.77 14.84 9 3.66 16.87 3 4 1.09 0.86 5.95 2.23 1.75 7.98 6 4.0 4.0 3.37 2.65 10.01	4			2.39	1.88	8.27
7 5.80 4.56 14.36 8 6.94 5.45 16.39 8 0.82 0.64 5.46 4 1.96 1.54 7.49 5 3.09 2.43 9.52 6 3.09 2.43 9.52 8 6.50 5.11 15.61 9 7.64 6.00 17.64 3 0.39 0.30 4.69 1.53 1.20 6.72 2.66 2.09 8.75 6 3.5 3.80 2.98 10.78 4.94 3.88 12.81 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	5			3.53	2.77	10.30
8 6.94 5.45 16.39 9 8.07 6.34 18.42 3 0.82 0.64 5.46 1.96 1.54 7.49 3.09 2.43 9.52 6 3.09 2.43 9.52 5 5.37 4.22 13.58 6.50 5.11 15.61 7.64 6.00 17.64 3 0.39 0.30 4.69 1.53 1.20 6.72 2.66 2.09 8.75 6 3.80 2.98 10.78 4.94 3.88 12.81 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	6	2.5	2.5	4.66	3.66	12.33
9 8.07 6.34 18.42 3 0.82 0.64 5.46 1.96 1.54 7.49 3.09 2.43 9.52 6 3.09 2.43 9.52 5 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 1.53 1.20 6.72 2.66 2.09 8.75 6 3.80 2.98 10.78 4.94 3.88 12.81 6.07 4.77 14.84 9 7.21 5.66 16.87 3 ** ** ** 4 1.09 0.86 5.95 2.23 1.75 7.98 6 4.0 4.0 3.37 2.65 10.01	7			5.80	4.56	14.36
3 0.82 0.64 5.46 4 1.96 1.54 7.49 5 3.09 2.43 9.52 6 3.09 2.43 9.52 5 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 1.53 1.20 6.72 2.66 2.09 8.75 6 3.5 3.80 2.98 10.78 7 4.94 3.88 12.81 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	8			6.94	5.45	16.39
4 1.96 1.54 7.49 3.09 2.43 9.52 6 3.09 2.43 9.52 7 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 1.53 1.20 6.72 2.66 2.09 8.75 3 4.94 3.88 12.81 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	9			8.07	6.34	18.42
5 3.0 3.0 2.43 9.52 6 3.0 4.23 3.32 11.55 7 5.37 4.22 13.58 6 5.37 4.22 13.58 6.50 5.11 15.61 7.64 6.00 17.64 3 0.39 0.30 4.69 1.53 1.20 6.72 2.66 2.09 8.75 3 4.94 3.88 12.81 6.07 4.77 14.84 9 7.21 5.66 16.87 3 ** ** ** 4 1.09 0.86 5.95 2.23 1.75 7.98 6 4.0 4.0 3.37 2.65 10.01	3			0.82	0.64	5.46
6 3.0 3.0 3.0 4.23 3.32 11.55 7 5.37 4.22 13.58 8 6.50 5.11 15.61 9 7.64 6.00 17.64 3 0.39 0.30 4.69 1.53 1.20 6.72 2.66 2.09 8.75 3 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	4			1.96	1.54	7.49
7 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 2.98 10.78 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	5			3.09	2.43	9.52
8 6.50 5.11 15.61 9 7.64 6.00 17.64 3 0.39 0.30 4.69 1.53 1.20 6.72 2.66 2.09 8.75 6 3.80 2.98 10.78 7 4.94 3.88 12.81 8 6.07 4.77 14.84 9 7.21 5.66 16.87 3 ** ** ** 4 1.09 0.86 5.95 5 2.23 1.75 7.98 6 4.0 4.0 3.37 2.65 10.01	6	3.0	3.0	4.23	3.32	11.55
9 7.64 6.00 17.64 3 0.39 0.30 4.69 1.53 1.20 6.72 2.66 2.09 8.75 6 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			5.37	4.22	13.58
3 0.39 0.30 4.69 4 1.53 1.20 6.72 2.66 2.09 8.75 6 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	8			6.50	5.11	15.61
4 1.53 1.20 6.72 5 2.66 2.09 8.75 6 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	9			7.64	6.00	17.64
5 2.66 2.09 8.75 6 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	3			0.39	0.30	4.69
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	4			1.53	1.20	6.72
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	5			2.66	2.09	8.75
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	6	3.5	3.5	3.80	2.98	10.78
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			4.94	3.88	12.81
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	8			6.07	4.77	14.84
4 1.09 0.86 5.95 5 2.23 1.75 7.98 6 4.0 3.37 2.65 10.01	9			7.21	5.66	16.87
5 2.23 1.75 7.98 6 4.0 4.0 3.37 2.65 10.01	3			**	**	**
6 4.0 4.0 3.37 2.65 10.01	4			1.09	0.86	5.95
	5			2.23	1.75	7.98
7 4.50 3.54 12.04	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	8			5.64	4.43	14.07
9 6.78 5.32 16.10	9			6.78	5.32	16.10

	JTTER LINE									
H INCHES	W FEET	Y INCHES	Xzu FEET	X2L FEET	Lz FEET					
3			1.45	0.89	6.34					
4			2.77	1.69	8.46					
5		2.5	4.08	2.50	10.58					
6	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		3.0	2.27	1.39	7.65					
5	3.0		3.58	2.20	9.78					
6			4.90	3.00	11.90					
7			6.22	3.81	14.02					
8			7.53	4.62	16.15					
9			8.85	5.42	18.27					
3			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		3.0	1.13	0.53	5.66				
4			2.69	1.27	7.96				
5	3.0		4.25	2.00	10.26				
6			5.82	2.74	12.55				
7			7.38	3.47	14.85				
8			8.94	4.21	17.15				
9			10.51	4.94	19.45				
3			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				

4.0% GI	JTTER LINE	PROFILE			
H INCHES	W FEET	Y INCHES	Xzu FEET	X ₂ L 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		3.0	3.31	1.16	8.48
5	3.0		5.24	1.84	11.08
6			7.16	2.52	13.68
7			9.09	3.19	16.28
8			11.01	3.87	18.88
9			12.94	4.54	21.48
3			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

5.0% GL	JTTER LINE	PROFILE			
H INCHES	W FEET	Y INCHES	Xzu FEET	X ₂ L 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		3.0	1.80	0.45	6.26
4			4.31	1.08	9.38
5	3.0		6.81	1.70	12.51
6			9.31	2.33	15.64
7			11.81	2.95	18.77
8			14.32	3.58	21.89
9			15.00	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

6.0% Gl	6.0% GUTTER LINE PROFILE								
H INCHES	W FEET	Y INCHES	Xzu FEET	X2L 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				
			13.00	J.4/	<i>LL.41</i>				

7.0% GL	JTTER LINE	PROFILE			
H INCHES	W FEET	Y INCHES	Xzu FEET	X2L FEET	Lz FEET
3			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 3.3		3.32	22.32
9			15.00	3.86	22.86
3		3.0 3.0	4.52	0.39	8.91
4	3.0		10.78	0.94	15.72
5			15.00	1.48	20.48
6			15.00	2.02	21.02
7			15.00	2.57	21.57
8			15.00	3.11	22.11
9			15.00	3.65	22.65
3			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	3.45	22.45
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

LEGEND

U = UPPER SIDE OF GUTTER LINE PROFILE

L = LOWER SIDE OF GUTTER LINE PROFILE

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

* TYPE 3 RAMP IS NOT APPLICABLE, USE TYPE 1

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

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.

CURB RAMP TYPE 7

	0.0% GUTTER LINE PROFILE						4.0% GUT	ΓER 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	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% GUT	TER LINE PRO	FILE				5.0% GUT	ΓER LINE PRO	OFILE	
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET		H INCHES	W FEET	X1u FEET	X1L FEET	
3	3	3.41	2.68	10.09		3	3	7.51	1.88	
4	4	4.55	3.57	12.12		4	4	10.01	2.50	
5	5	5.68	4.47	14.15		5	5	12.51	3.13	
6	6	6.82	5.36	16.18		6	6	15.00	3.75	
7	7	7.96	6.25	18.21		7	7	15.00	4.38	
8	8	9.10	7.15	20.24		8	8	15.00	5.00	
9	9	10.23	8.04	22.27		9	9	15.00	5.63	
					•					

			6.				
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET		H INCHES	
3	3	3.95	2.42	10.37		3	
4	4	5.27	3.23	12.49		4	
5	5	6.58	4.03	14.62		5	
6	6	7.90	4.84	16.74		6	
7	7	9.22	5.65	18.86		7	
8	8	10.53	6.45	20.99		8	
9	9	11.85	7.26	23.11		9	
					-		

	6.0% GUTTER LINE PROFILE						
	H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET		
	3	3	10.73	1.74	16.47		
	4	4	14.31	2.33	20.63		
	5	5	15.00	2.91	21.91		
	6	6	15.00	3.49	22.49		
	7	7	15.00	4.07	23.07		
	8	8	15.00	4.65	23.65		
	9	9	15.00	5.23	24.23		

23.38

3.0% GUTTER LINE PROFILE							
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET			
3	3	4.69	2.21	10.90			
4	4	6.25	2.94	13.20			
5	5	7.82	3.68	15.49			
6	6	9.38	4.41	17.79			
7	7	10.94	5.15	20.09			
8	8	12.51	5.88	22.38			
9	9	14.07	6.62	24.69			

	7.0% GUTTER LINE PROFILE							
	H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET			
	3	3	15.00	1.63	20.63			
	4	4	15.00	2.17	20.17			
	5	5	15.00	2.72	21.72			
	6	6	15.00	3.26	22.26			
	7	7	15.00	3.81	22.81			
	8	8	15.00	4.35	23.35			
	9	9	15.00	4.89	23.89			

CONCRETE SIDEWALK (PUBLIC SIDEWALK CURB RAMP TABLES)

N.T.S.

CD-606-1C

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

(18) 18)

CD-606-1.1C