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TELEPHONE SERVICE
VERIZON COMMUNICATIONS
290 WEST MOUNT PLEASANT AVENUE, FLOOR G,
BUILDING 4, LIVINGSTON, NJ 07039
PHONE: (973) 422-5156
CONTACT: DARREN CRAY

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KATHLEEN MILLER PRUNTY, COMMISSIONER
PATRICIA DONAHUE, TOWNSHIP CLERK
RYAN GRECO, INTERIM ADMINISTRATOR

SHEET #	DESCRIPTION
1	COVER
2	GENERAL NOTES & QUANTITIES
3 - 6	EXISTING CONDITIONS PLAN
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The map displays the project location in the City of New Rochelle, New York. The project area is highlighted in a shaded region, bounded by Wall Street to the north, Cranford Terrace to the east, and Garden Place to the south. The map includes a grid of streets, with major thoroughfares such as Hillside Avenue, Mendell Avenue, Crane Parkway, Collins Street, Wall Street, Cranford Terrace, Garden Place, and others. A north arrow is located in the upper right corner, and a scale bar indicating 1 inch = 300 feet is provided in the lower right corner. The map also shows various other streets and landmarks, including the City of New Rochelle logo and the name of the project, 'PROJECT LOCATION (BASE BID)'.

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

811
Know what's below.
Call before you dig.

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FOR
INFLOW AND
INFILTRATION –
PHASE 2

TOWNSHIP OF CRANFORD
UNION COUNTY
NEW JERSEY

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	01/30/23	BAK	BKP
PROJECT NUMBER:		DRAWING NAME:	
CDT0078		C-COVER	

SHEET NUMBER: 1 of 32

1. ALL EXISTING DEPICTED ON THIS PLAN (EXCLUDING THE BELOW NOTE) ARE BASED ON INFORMATION FROM THE SURVEY ENTITLED, "PARTIAL BOUNDARY AND TOPOGRAPHIC SURVEY FOR PORTION OF BLOCK 598, LOT 1, BLOCK 551, LOTS 10, 11 & 12, BLOCK 544, LOT 1 - CRANFORD TERRACE; MUNSEE DRIVE; EDWARD PLACE; PHILLIPS STREET; GARDEN PLACE FOR THE TOWNSHIP OF CRANFORD, PREPARED BY COLLIER ENGINEERING & DESIGN, DATED 04/25/22, LAST REVISED 08/03/22.
2. EXISTING STORMWATER FEATURES (INLETS, MANHOLES, PIPING) ON CRANE PARKWAY, WALL STREET, MUNSEE DRIVE, CRANFORD TERRACE, ROSE STREET, EDWARD PLACE, PHILLIP STREET AND GARDEN PLACE ARE BASED ON INFORMATION FROM THE PLAN ENTITLED "CONSTRUCTION PLANS FOR INFLOW AND INFILTRATION 2022" FOR THE TOWNSHIP OF CRANFORD, PREPARED BY COLLIER ENGINEERING & DESIGN, DATED 06/24/22, LAST REVISED 7/22/23.
3. THE HORIZONTAL POSITION OF THIS SURVEY IS BASED ON GPS OBSERVATION AND IS RELATIVE TO NAD 1983 ADJUSTMENT.
4. THE ELEVATIONS SHOWN HEREON ARE RELATIVE TO N.A.V.D. 1988 ADJUSTMENT.

1. ALL MATERIALS, WORKSMANSHIP, 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. NJ DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2019", AS CURRENTLY AMENDED;
 - B. NJ DEPARTMENT OF TRANSPORTATION "STANDARD ROADWAY CONSTRUCTION - TRAFFIC CONTROL - BRIDGE CONSTRUCTION DETAILS, 2016", AS CURRENTLY AMENDED;
 - C. "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS CURRENTLY AMENDED;
 - D. CURRENT PREVAILING MUNICIPAL, COUNTY AND/OR STATE AGENCY SPECIFICATIONS, STANDARDS, CONDITIONS AND REQUIREMENTS;
 - E. CURRENT PREVAILING UTILITY COMPANY/AUTHORITY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS;
 - F. CURRENT MANUFACTURER'S SPECIFICATIONS, STANDARDS AND REQUIREMENTS;
2. THE CONTRACTOR IS RESPONSIBLE FOR PROJECT SAFETY INCLUDING PROVISION OF ALL SAFETY DEVICES AND TRAINING REQUIRED.
3. THE CONTRACTOR IS RESPONSIBLE FOR 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.
8. ACTUAL FIELD LIMITS OF MILLING, PAVING, CURB AND SIDEWALK WORK WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
9. NO "SIDE PROJECTS" FOR RESIDENTS, UTILITIES OR BUSINESS MAY BE CONSTRUCTED WITH MATERIAL PURCHASED FOR THE COMPLETION OF THE PROPOSED IMPROVEMENTS SHOWN HEREIN.
10. THE CONTRACTOR MUST REVIEW AND AGREE TO AS-BUILT QUANTITIES WITH THE ENGINEER ON A WEEKLY BASIS.
11. THE ENGINEER MUST BE CONTACTED IMMEDIATELY UPON THE CONTRACTOR RECEIVING A COMPLAINT FROM ANY PERSON WITHIN THE PROJECT AREA OR MUNICIPAL OFFICIAL.
12. FLUSH CONCRETE CURB SHALL BE INSTALLED IN FRONT OF CURB RAMPS.
13. ALL EXISTING FEATURES SHOWN ON THIS PLAN ARE APPROXIMATE AND BASED ON AERIAL IMAGERY AND UTILITY MARKOUTS OBSERVED IN THE FIELD. ALL INFORMATION DEPICTED ON THE PLAN SHOULD BE VERIFIED IN THE FIELD BY THE CONTRACTOR. THE LOCATION OF ALL UNDERGROUND UTILITIES AS SHOWN HEREON ARE APPROXIMATE AND ARE BASED ON VISIBLE ABOVE GROUND STRUCTURES AND UTILITY MARK OUTS. NO EXCAVATIONS WERE MADE. 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.

1. UNDERGROUND UTILITIES WITHIN OFF-SITE STREETS AND FEATURES 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.
2. 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.
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.
7. 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 MAPPED.
8. DEPTHS SHOWN FOR UTILITIES ARE IN FEET BELOW EXISTING GROUND SURFACE AT TIME OF SURVEY. AS RFLS CANNOT PROVIDE RELIABLE DEPTH INFORMATION, DEPTHS ARE NOT PROVIDED FOR UTILITIES LOCATED WITH RFLS BUT NOT DETECTED IN THE GPR DATA.
9. DUE TO THE SITE SPECIFIC CONDITIONS, GPR SIGNAL PENETRATION DEPTH IS APPROXIMATELY 4 FEET. UTILITIES BELOW THIS DEPTH WERE NOT CONSISTENTLY DETECTED WITH GPR. THERE MAY BE OTHER UTILITIES PRESENT AT THE SITE BELOW THIS DEPTH THAT WERE NOT DETECTED AND THEREFORE ARE NOT PLOTTED ON THESE MAPS.
10. ONLY THOSE AREAS DENOTED WITHIN THE PROJECT SITE LIMITS WERE INVESTIGATED WITH GEOPHYSICAL METHODS. NO CLAIMS TO UTILITY POSITION ARE MADE OUTSIDE OF THESE BOUNDARIES.
11. SURFACE OBSTRUCTIONS SUCH AS UTILITY POLES AND HEAVY VEGETATION MAY HAVE LIMITED THE DATA COLLECTION AREA.
12. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ONE-CALL SERVICES AS REQUIRED BY STATE AND/OR LOCAL ORDINANCES PRIOR TO ANY EXCAVATION ACTIVITIES.
13. NOT ALL UTILITY POLES, UTILITY VALVES AND UTILITY LINES ARE SHOWN ON THE PLAN. THE CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
14. THE CONTRACTOR SHALL CALL FOR A UTILITY MARK-OUT PRIOR TO THE START OF CONSTRUCTION (CALL 1-800-272-1000).
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 ALL RELOCATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERTINENT UTILITY COMPANY/AUTHORITIES. NO SEPARATE PAYMENT SHALL BE MADE FOR COORDINATING AND PERFORMING UTILITY RELOCATIONS.
16. ALL UTILITY MAN-HOLES, 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. WATER VALVE BOXES GAS VALVE BOXES WITHIN THE ROADWAY SHALL BE RESET TO MEET PROPOSED GRADES.
18. MISCELLANEOUS UTILITY EQUIPMENT WITHIN THE DRIVEWAYS SHALL BE RESET TO MEET PROPOSED GRADES DURING THE PROGRESS OF CURB, SIDEWALK AND DRIVEWAY CONSTRUCTION. NO SEPARATE PAYMENT SHALL BE MADE FOR THE RESETTING OF MISCELLANEOUS UTILITY EQUIPMENT, INCLUDING VALVE BOXES, CLEANOUTS, METERS, ETC. WITHIN SIDEWALK AND DRIVEWAY AREAS.
19. THE CONTRACTOR SHALL TAKE PRECAUTION WHEN WORKING ADJACENT TO UTILITIES AND TEMPORARILY SUPPORT UTILITY POLES, IF REQUIRED, DURING THE PROGRESS OF WORK.
20. THE CONTRACTOR SHALL CLEAN AND MAINTAIN ALL STORM SEWER STRUCTURES, AS NECESSARY, FOR THE DURATION OF THE PROJECT.

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

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

1. THE CONTRACTOR MUST PROVIDE A SMOOTH SAWCUT EDGE WHERE PROPOSED PAVEMENT ABUTS EXISTING PAVEMENT.
2. AFTER MILLING OPERATIONS AND PRIOR TO PAVING, THE CONTRACTOR MUST ALLOW ADEQUATE TIME FOR THE ENGINEER TO INSPECT THE MILLER SURFACE TO EVALUATE THE NEED FOR REPAIRS IN THE PAVEMENT BASE.
3. IF REPAIRS IN THE PAVEMENT BASE ARE NECESSARY AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL NOT SCHEDULE OR COMMENCE PAVING OPERATIONS UNTIL SUCH TIME THAT ALL REPAIRS IN THE PAVEMENT BASE ARE COMPLETE.
4. 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.
5. ALL JOINTS BETWEEN EXISTING AND PROPOSED ASPHALT SHALL BE SEALED WITHIN 48 HOURS OF PAVING.

1. 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.
3. 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.
5. THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL POLICE DEPARTMENT TO DETERMINE THE NEED FOR POLICE TRAFFIC DIRECTORS. THE CONTRACTOR SHALL PROVIDE THE LOCAL POLICE DEPARTMENT WITHIN AT LEAST ONE (1) WEEK NOTICE PRIOR TO REQUESTING POLICE TRAFFIC DIRECTORS.
6. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PLACING TEMPORARY NO PARKING SIGNS. SIGNS MUST BE OBTAINED FROM THE LOCAL POLICE DEPARTMENT. TEMPORARY NO PARKING SIGNS MUST BE POSTED AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE CONSTRUCTION.

1. 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.
3. SILT FENCE SHALL BE INSTALLED AS DIRECTED IN THE FIELD BY THE ENGINEER, AS NECESSARY.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING DUST CONTROL MEASURES, AS NECESSARY. ALL VEHICLES SHALL BE CLEAN AND ALL ROADWAYS SHALL BE MAINTAINED TO 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.
7. TREES THAT ARE TO REMAIN, WHERE IT IS DETERMINED THAT ROOT CUTTING MAY SEVERELY DAMAGE THE TREE, SHALL HAVE A CURB BREAK AND STEEL CURB FACE PLATE INSTALLED AS DIRECTED BY THE ENGINEER.
8. ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF OFF-SITE. NO EXCAVATED MATERIAL SHALL BE STOCKPILED AND STORED WITHIN THE PROJECT LIMITS.

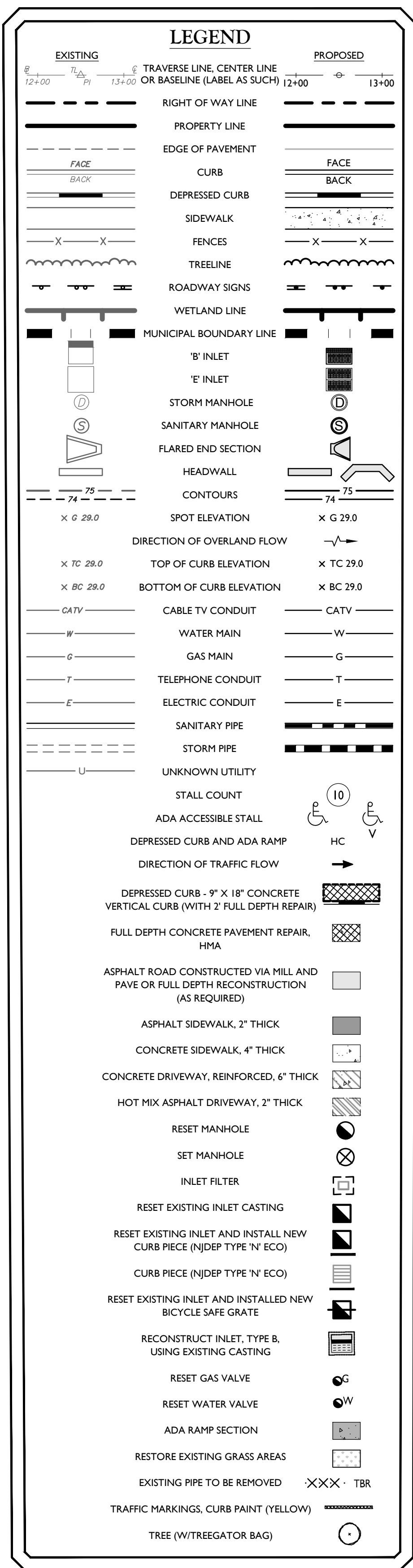
1. ALL EXCAVATED MATERIALS ARE TO BE DISPOSED OF IN ACCORDANCE WITH APPROVED NJDOT AND NJDEP MEANS AND METHODS. THE CONTRACTOR MUST NOT DEPOSIT EXCESS MATERIALS WITHIN THE MUNICIPAL LIMITS WITHOUT EXPRESS PERMISSION OF THE OWNER.
2. ALL EXCAVATED AND DEMOLISHED MATERIALS, DEBRIS, AND EQUIPMENT, INCLUDING 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.
5. 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. RECYCLED AGGREGATE (PROTECT OR ASPHALT) MUST BE NJDOT APPROVED. CONTRACTOR MUST PROVIDE DOCUMENTATION FOR APPROVED MATERIAL PRIOR TO PLACEMENT.
7. THE CONTRACTOR SHALL RESET ALL RAILINGS, GATES AND FENCES AS REQUIRED TO COMPLETE THE PROPOSED IMPROVEMENTS.
8. THE CONTRACTOR IS RESPONSIBLE TO REPLACE/RESET ANY SPRINKLERS DAMAGED/DISTURBED DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.






1. THE CONTRACTOR IS RESPONSIBLE FOR LAYING OUT FORMS, POURING CONCRETE AND CONSTRUCTING ACCESSIBLE CURB RAMPS TO MEET ADA STANDARDS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF FIELD CONDITIONS CONFLICT WITH INDICATED ACCESSIBLE CURB RAMP TYPES AND DETAILS PROVIDED HEREIN.
2. THIS PROJECT MAY REQUIRE THE USE OF RECTANGULAR, RADIAL AND A COMBINATION OF RADIAL/RECTANGULAR DETECTABLE WARNING SURFACES. THE DETECTABLE WARNING SURFACES WILL BE MEASURED BASED ON ACTUAL FINISHED PRODUCT AND NOT INCLUDE SECTIONS THAT ARE CUT AND DISCARDED.
3. DETECTABLE WARNING SURFACES SHALL BE CAST-IN-PLACE AND THE COLOR SHALL CONTRAST FROM THE SURROUNDING MATERIAL.
4. THE ENGINEER WILL INSPECT AND MEASURE THE FINAL CONDITION OF EACH CONSTRUCTED CURB RAMP. ALL CURB RAMPS FOUND NOT TO COMPLY WITH ADA STANDARDS SHALL BE DEMOLISHED AND REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

1. 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 PLANKS TO PROVIDE ACCESS TO RESIDENCES AND BUSINESSES.
3. THE CONTRACTOR SHALL MAINTAIN VEHICULAR ACCESS TO ALL DRIVEWAYS DURING CONSTRUCTION. THE CONTRACTOR SHALL TEMPORARILY INSTALL AND MAINTAIN DENSE GRADED 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.

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

PAY ITEM NO.	BASE BID - INFLOW AND INFILTRATION - PHASE II	UNIT	TOTAL BASE BID QUANTITY
1	SOIL EROSION AND SEDIMENT CONTROL	LS	1
2	POLICE TRAFFIC DIRECTORS	MAN HOUR	520
3	TRAFFIC CONTROL MEASURES AND DEVICES	LS	1
4	FUEL PRICE ADJUSTMENT	DOLLAR	300
5	ASPHALT PRICE ADJUSTMENT	DOLLAR	500
6	CLEARING SITE	LS	1
7	EXCAVATION, BORROW EXCAVATION AND GRADING, UNCLASSIFIED	LS	1
8	HMA MILLING, 3" OR LESS	SY	10,001
9	TRACK COAT	GALLON	1,492
10	HOT MIX ASPHALT 9.5M64 SURFACE COURSE, 2" THICK	TON	1,492
11	SEALING OF CRACKS IN CONCRETE BASE COURSE	LF	9,045
12	FULL DEPTH CONCRETE PAVEMENT REPAIR, HMA	SY	2,198
13	LEADER DRAIN, 4" POLYVINYL CHLORIDE PIPE	LF	100
14	RESET EXISTING CASTING	UNIT	4
15	BICYCLE SAFE GRATE (PHASE II STORMWATER COMPLIANT GRATE)	UNIT	2
16	CURB PIECE (NJDEP TYPE 'N' ECO)	UNIT	2
17	TIMBER GUIDE RAIL	LF	85
18	CONCRETE SIDEWALK, 4" THICK	SY	212
19	HOT MIX ASPHALT DRIVEWAY, 2" THICK	SY	178
20	CONCRETE DRIVEWAY, REINFORCED, 6" THICK	SY	142
21	DETECTABLE WARNING SURFACE	SY	14
22	RESET PAVER DRIVEWAY	SY	6
23	9" X 18" CONCRETE VERTICAL CURB	LF	3,344
24	9" X 24" CONCRETE VERTICAL CURB	LF	44
25	GRANITE BLOCK CURB	LF	100
26	TRAFFIC MARKING LINES, 6"	LF	443
27	TRAFFIC MARKING LINES, 12"	LF	60
28	REGULATORY AND WARNING SIGN	SF	27
29	RECONSTRUCTED MANHOLE, SANITARY SEWER, USING EXISTING CASTING	UNIT	1
30	RESET MANHOLE, SANITARY SEWER, USING EXISTING CASTING	UNIT	3
31	TOPSOIL SPREADING, 6" THICK	SY	1,001
32	FERTILIZING AND SEEDING, TYPE ERNMX-106	SY	1,001
33	STRAW MULCHING	SY	1,001

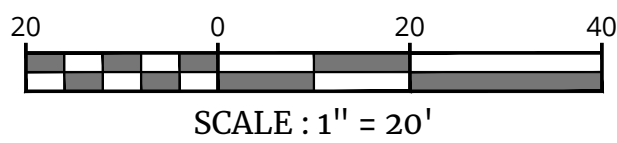


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<div style="display: flex; justify-content: space-between; align-items: center;"><div>Doing Business as</div><div style="text-align: right;"></div></div>																					
<div style="display: flex; justify-content: space-between; align-items: center;"><div style="text-align: center;"> Know what's below. Call before you dig. FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM</div><div style="text-align: center;">PROTECT YOURSELF ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE</div></div>																					
DESCRIPTION																					
DRAWN BY																					
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<div style="text-align: center;"> Carl P. O'Brien NEW JERSEY LICENSED PROFESSIONAL ENGINEER LICENSE NUMBER: G645154 COLLIERS ENGINEERING & DESIGN, INC. NJ, C.O.A. #: 24GA27986500</div>																					
CONSTRUCTION PLANS FOR INFLOW AND INFILTRATION - PHASE 2																					
TOWNSHIP OF CRANFORD UNION COUNTY NEW JERSEY																					
<div style="display: flex; justify-content: space-between; align-items: center;"><div style="text-align: center;"> Engineering & Design</div><div style="text-align: right; font-size: small;">MT. ARLINGTON 400 Valley Road, Suite 304 Mt. Arlington, NJ 07856 Phone: 973.398.3110 COLLIERS ENGINEERING & DESIGN, INC. DOING BUSINESS AS MASER CONSULTING</div></div>																					
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SCALE:	DATE:	DRAWN BY:	CHECKED BY:																		
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<div style="display: flex; justify-content: space-between; align-items: center;"><div>SHEET NUMBER:</div><div>2 of 32</div></div>																					

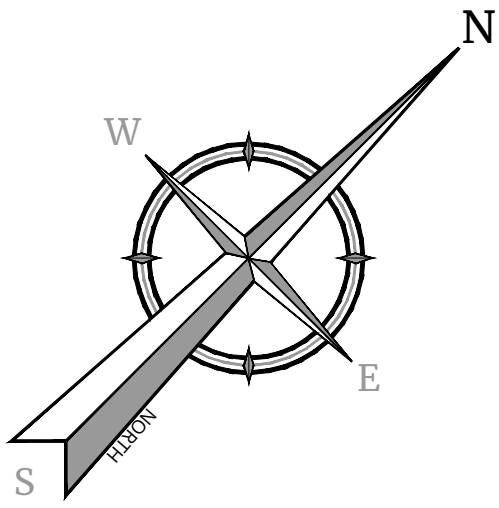
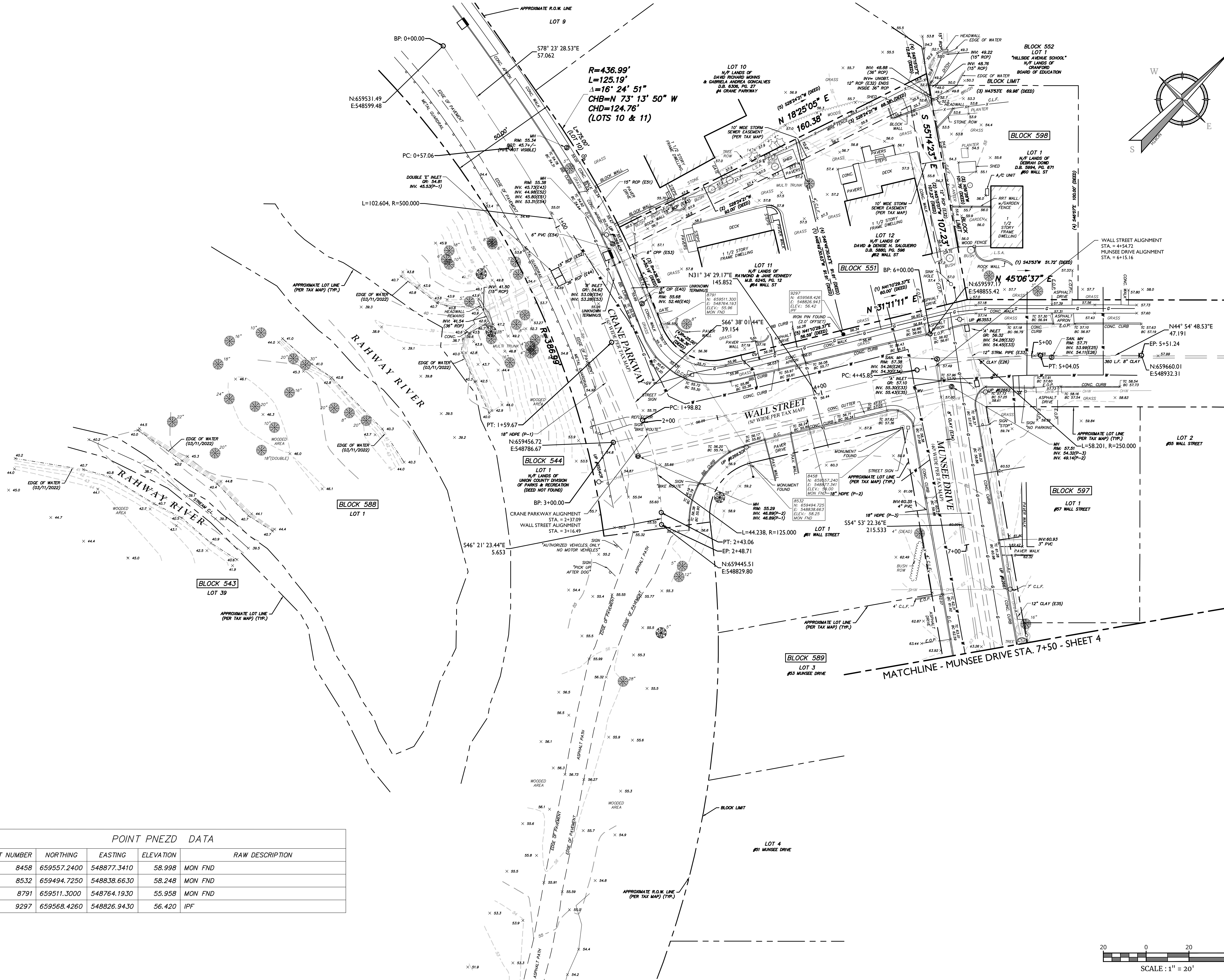
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By: BJK/ALZ

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



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LICENSE NUMBER: 645154

COLLIERS ENGINEERING & DESIGN, INC.

N.J. C.O.A. #: 24GA27986500

CONSTRUCTION PLANS

FOR

INFLOW AND INFILTRATION - PHASE 2

TOWNSHIP OF CRANFORD

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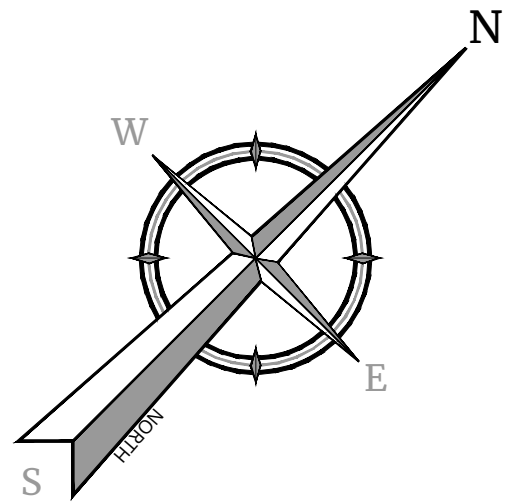
C-DEMO

SHEET TITLE:

EXISTING CONDITIONS PLAN

SHEET NUMBER:

3 of 32



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CONSTRUCTION PLANS

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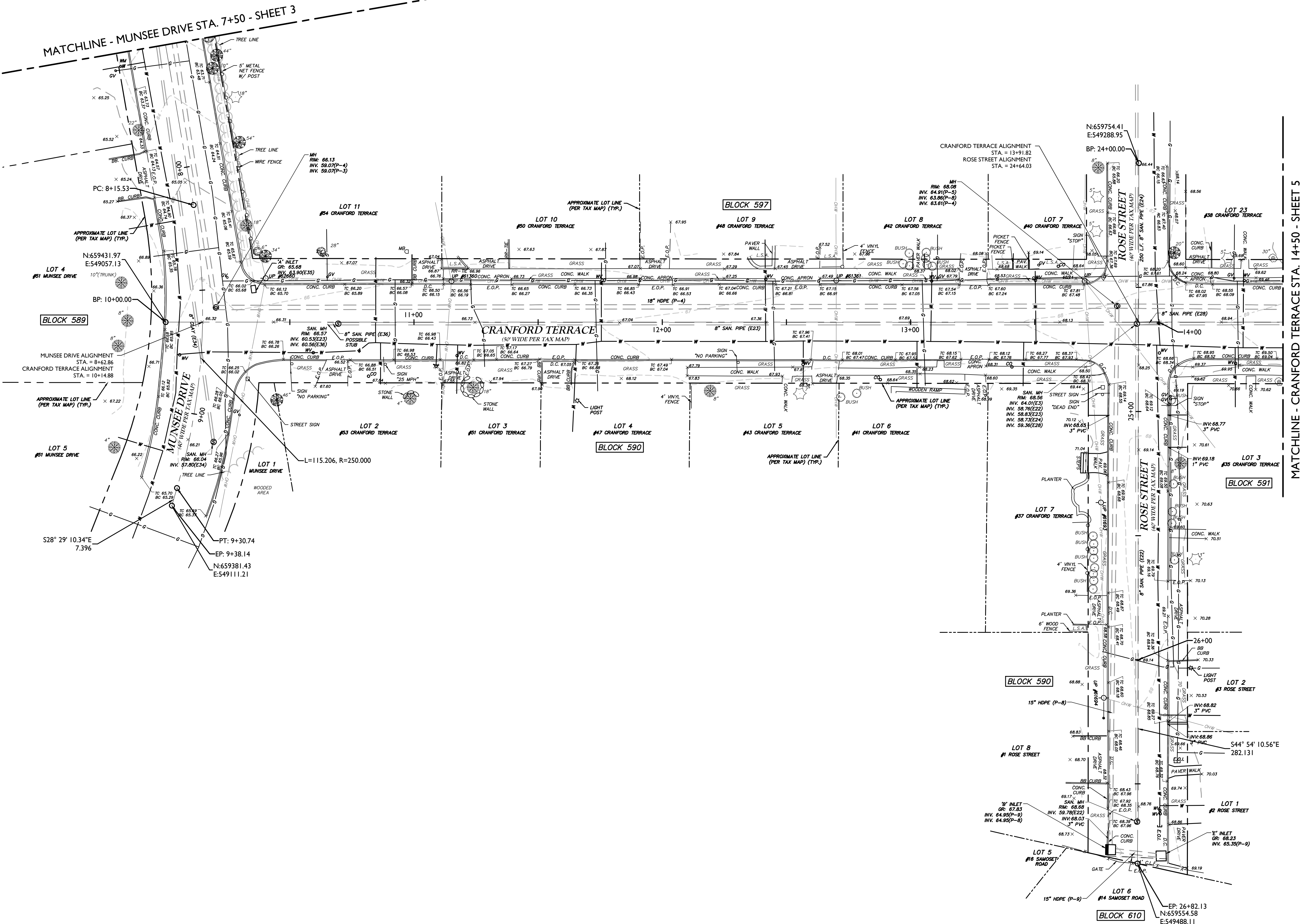
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PROJECT NUMBER: CDT0078 DRAWING NAME: C-DEMO

SHEET TITLE: EXISTING CONDITIONS PLAN
SHEET NUMBER: 4 of 32

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SCALE: 1" = 20'

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100	11-1-81	1	100

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LICENSE NUMBER: GE45154
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N.J. C.O.A. #: 24GA27986500

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INFLOW AND
INFILTRATION -
PHASE 2

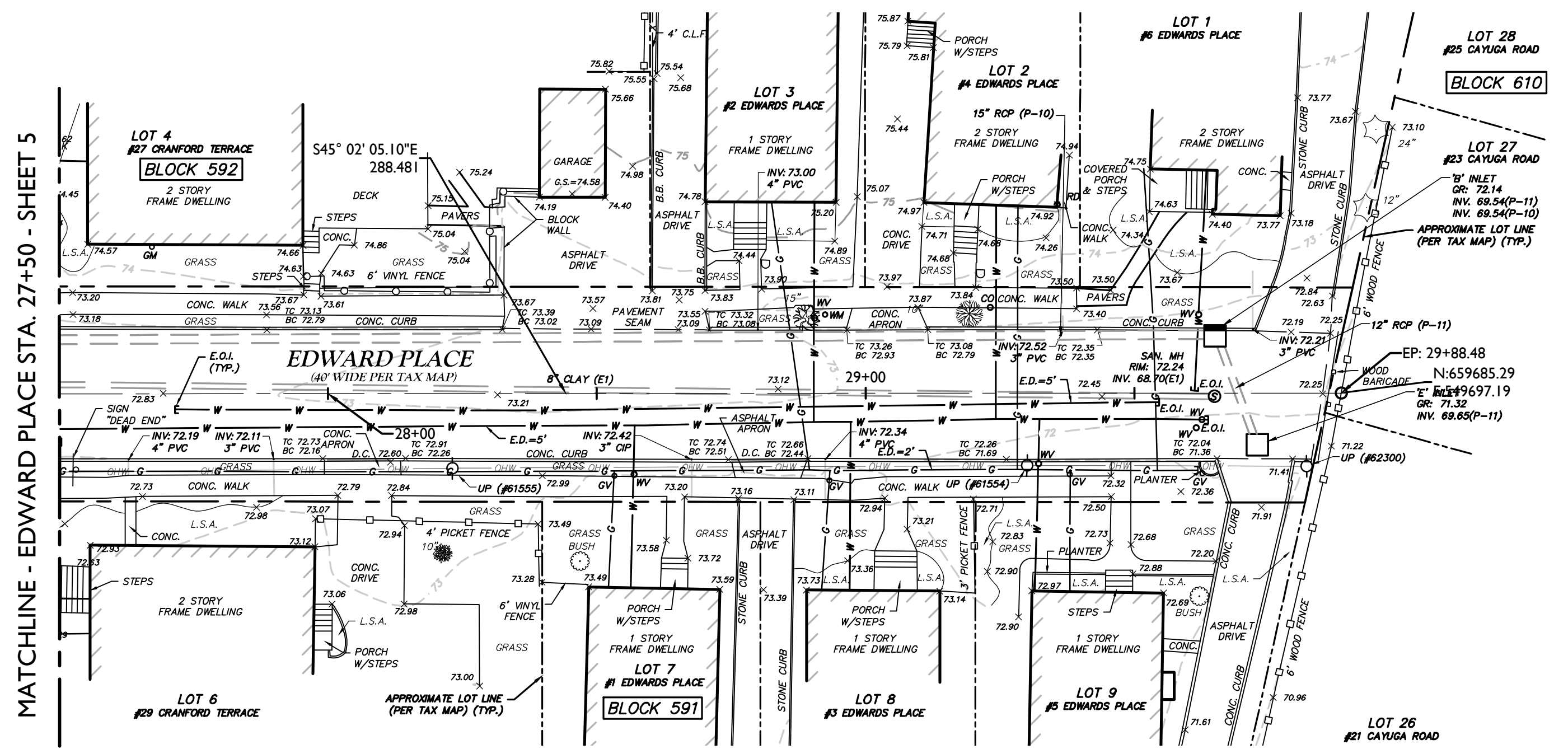
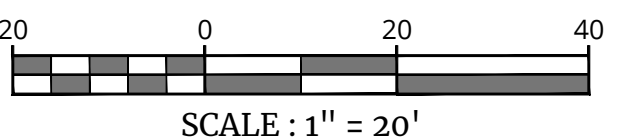
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SHEET NUMBER:

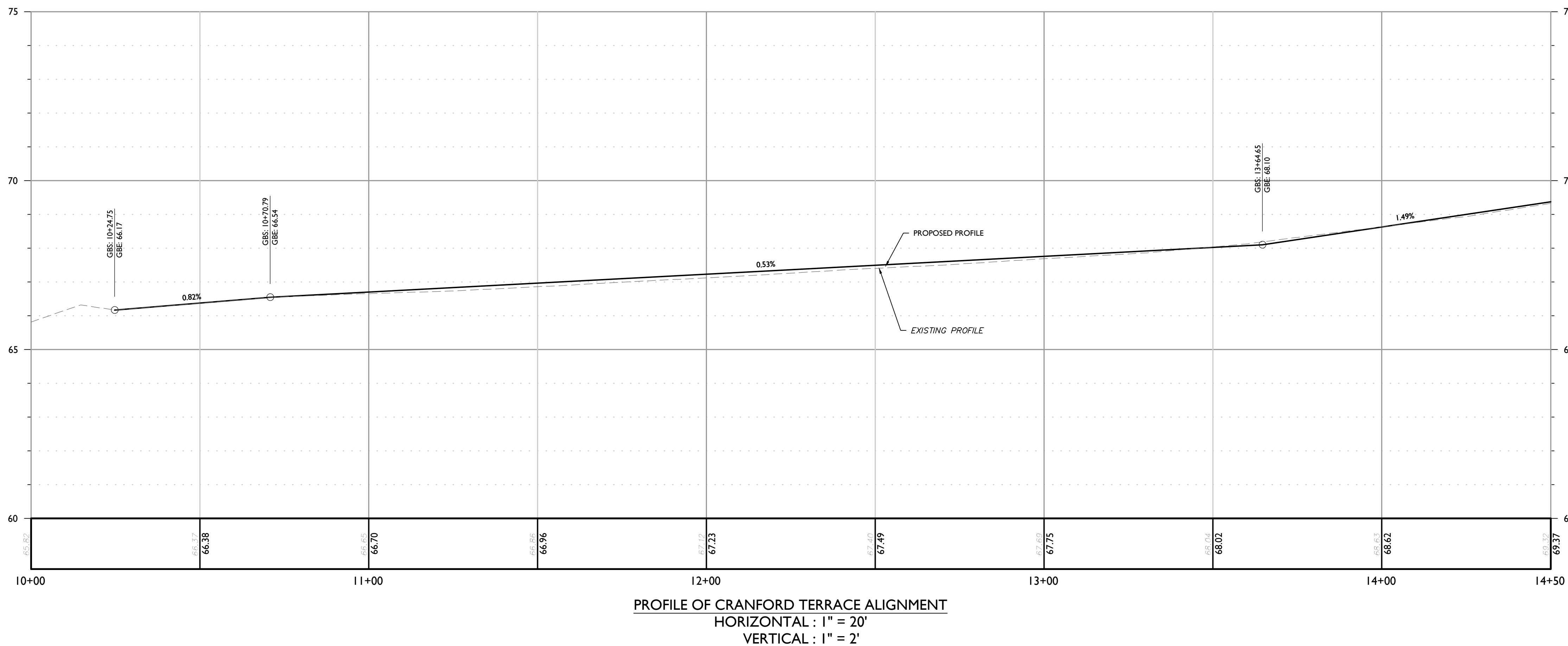
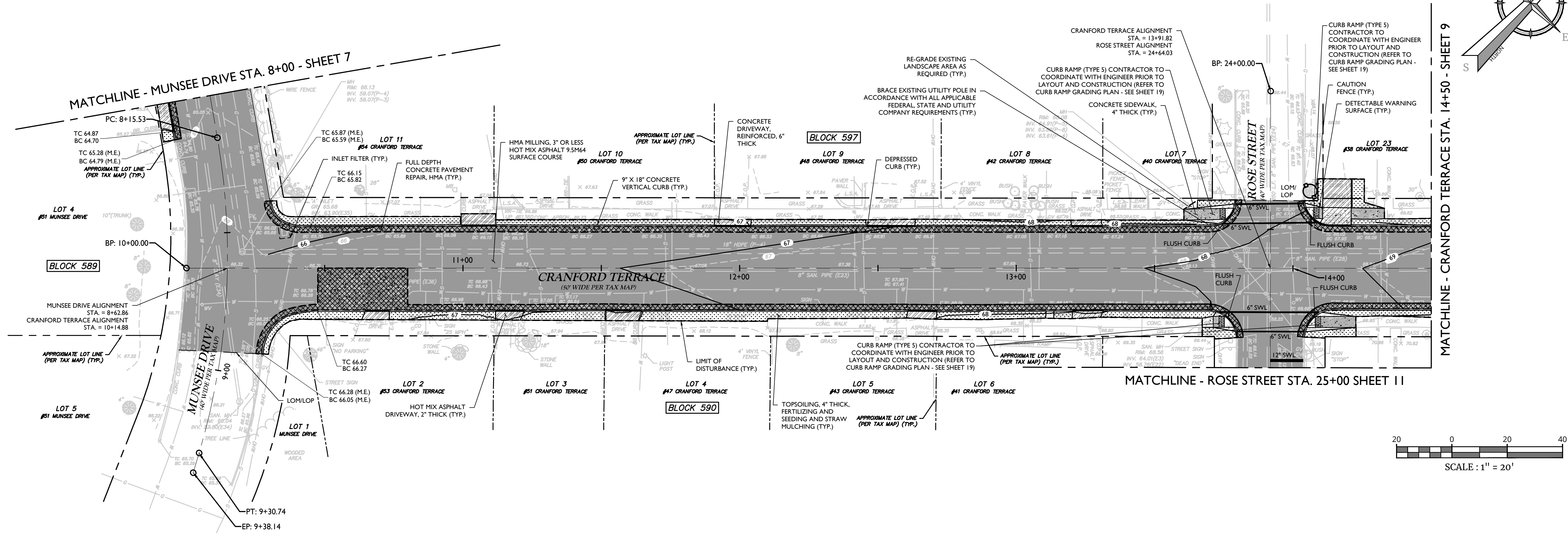
6 of 32



MATCHLINE - EDWARD PLACE STA. 27+50 - SHEET 5

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CDT0078/Phase 2/Engineering/08 Plans/CLAYT.dwg/6.6.17 By: BAK



NOTES:

1. THIS PROJECT IS EXEMPT FROM SOIL DE-COMPACTION REMEDIATION AND TESTING AS IT IS LOCATED IN AN URBAN REDEVELOPMENT AREA.

SOIL EROSION AND SEDIMENT CONTROL PLAN

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CONSTRUCTION PLANS

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PHASE 2

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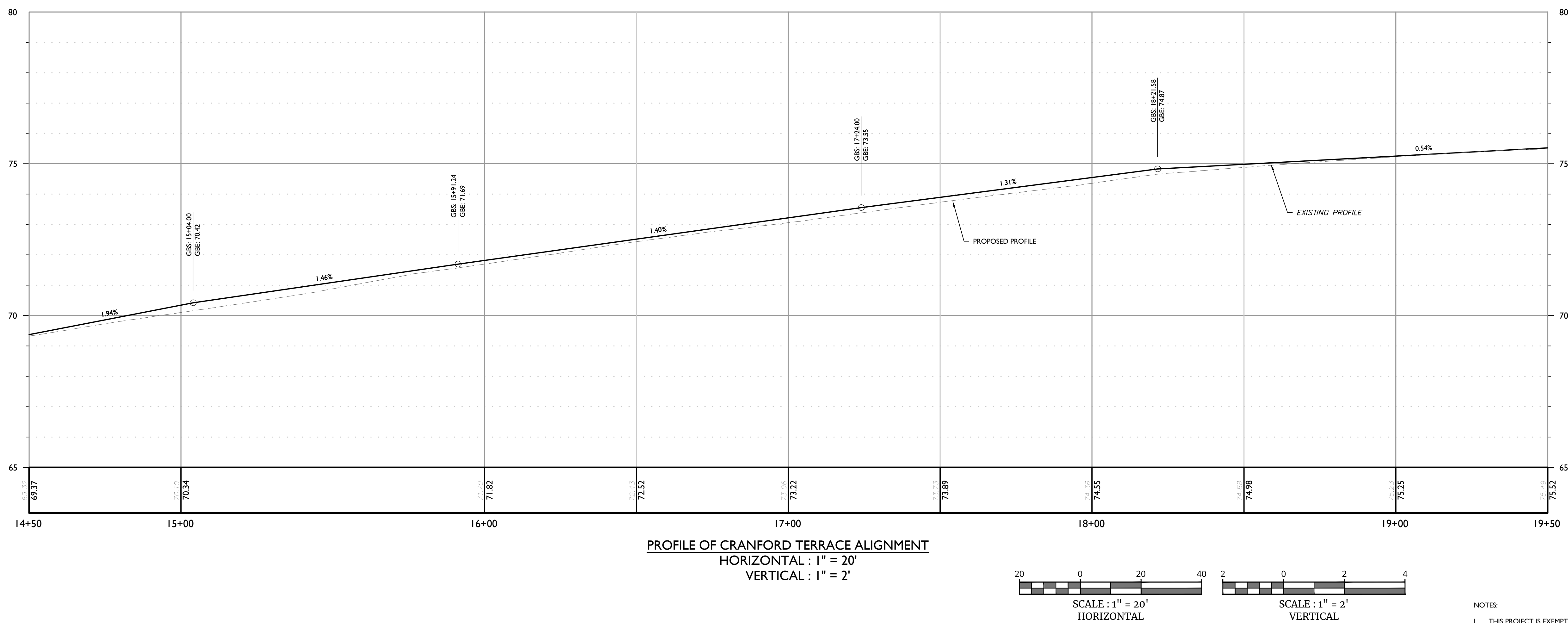
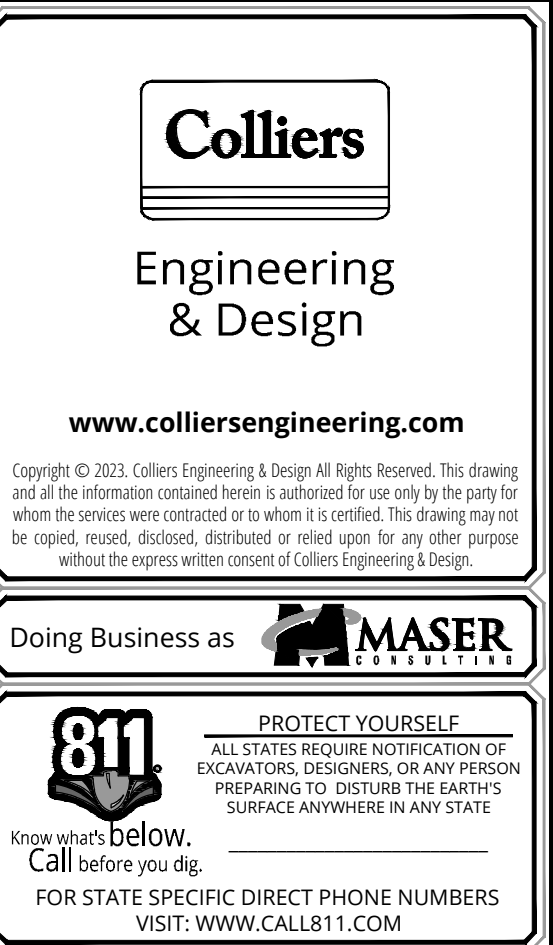
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CHECKED BY: BRP
PROJECT NUMBER: CDT0078
DRAWING NAME: C-LAY1

SHEET TITLE:
DIMENSION PLAN

SHEET NUMBER:
8 of 32

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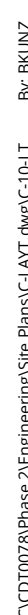


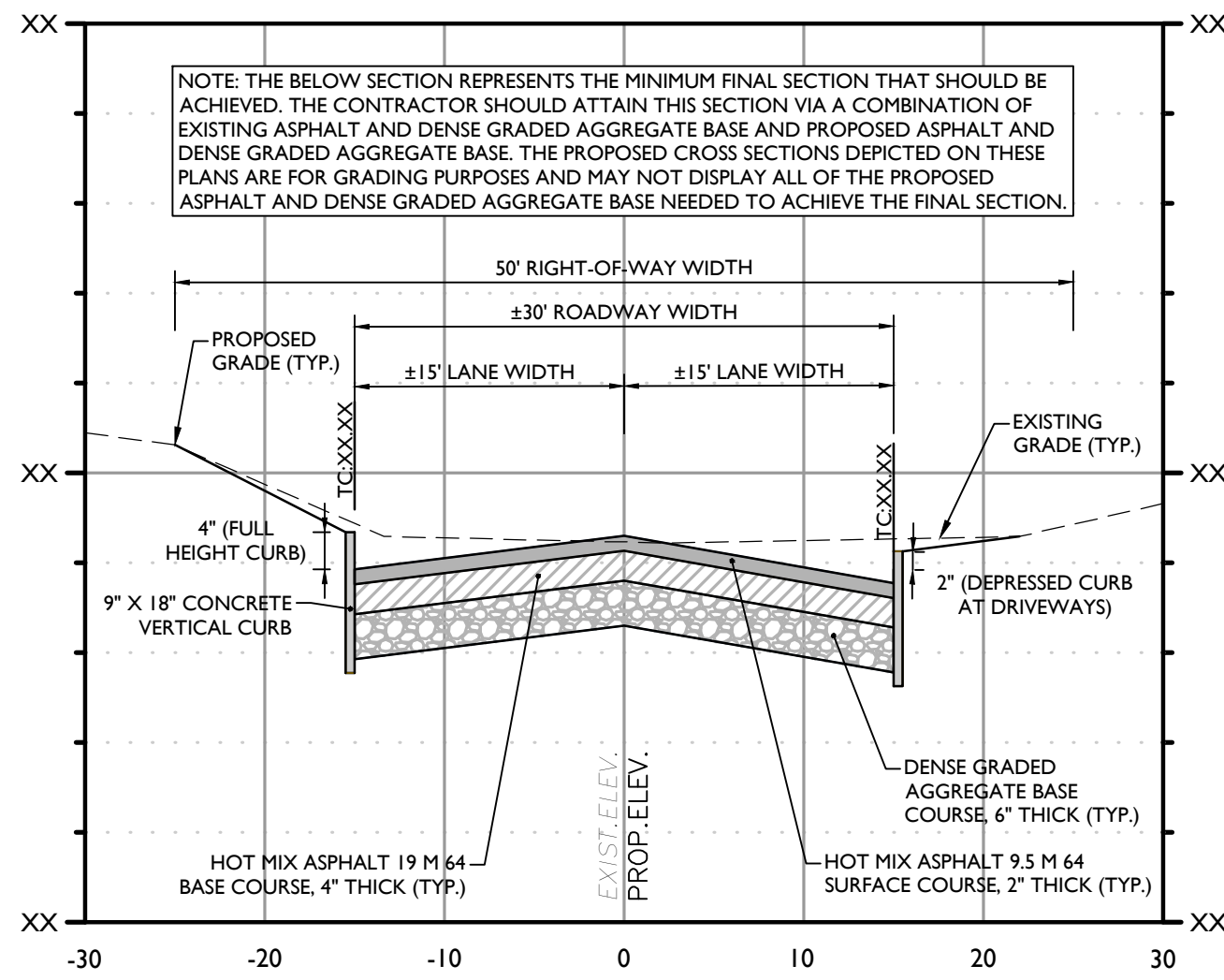
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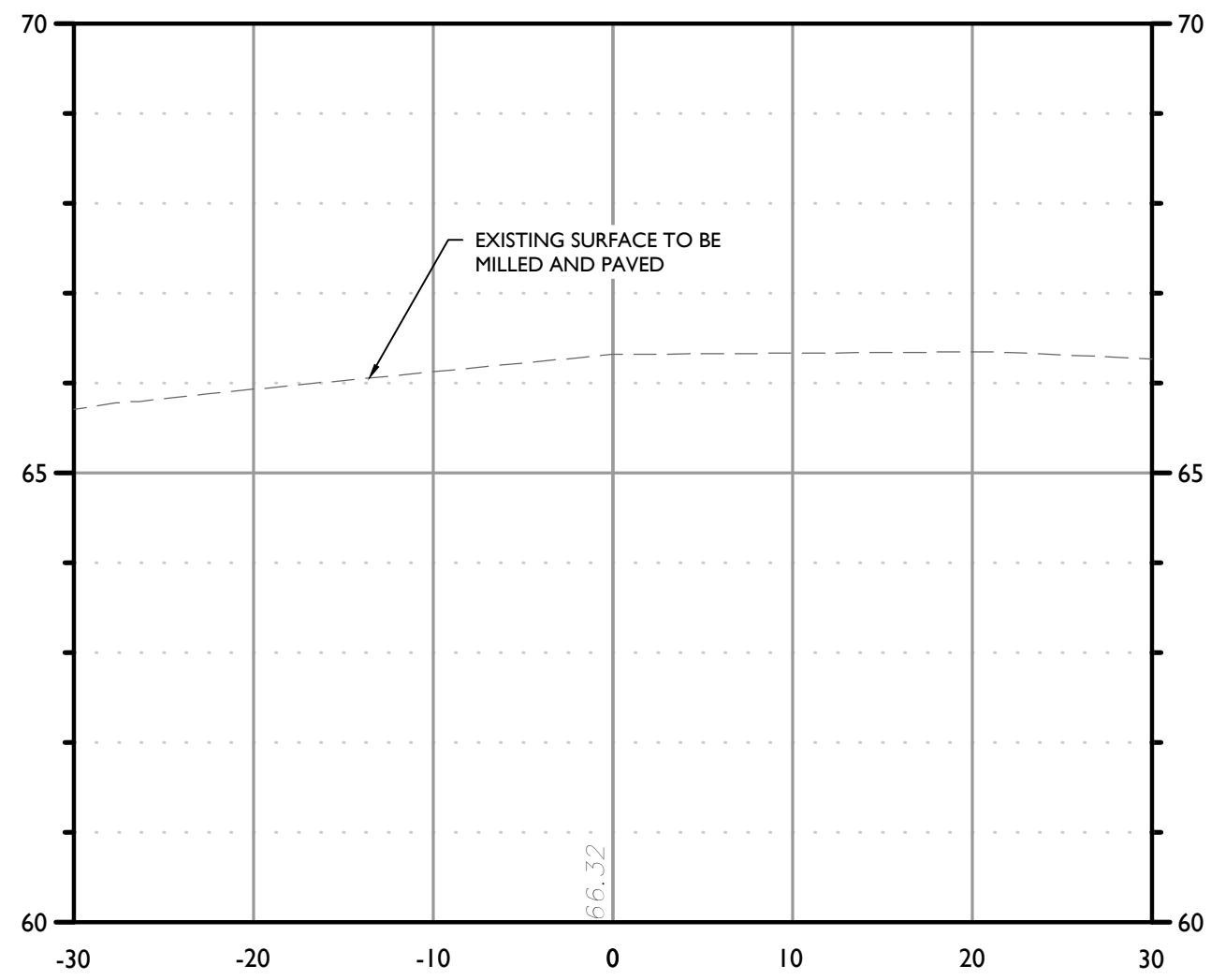
SOIL EROSION AND SEDIMENT CONTROL PLAN

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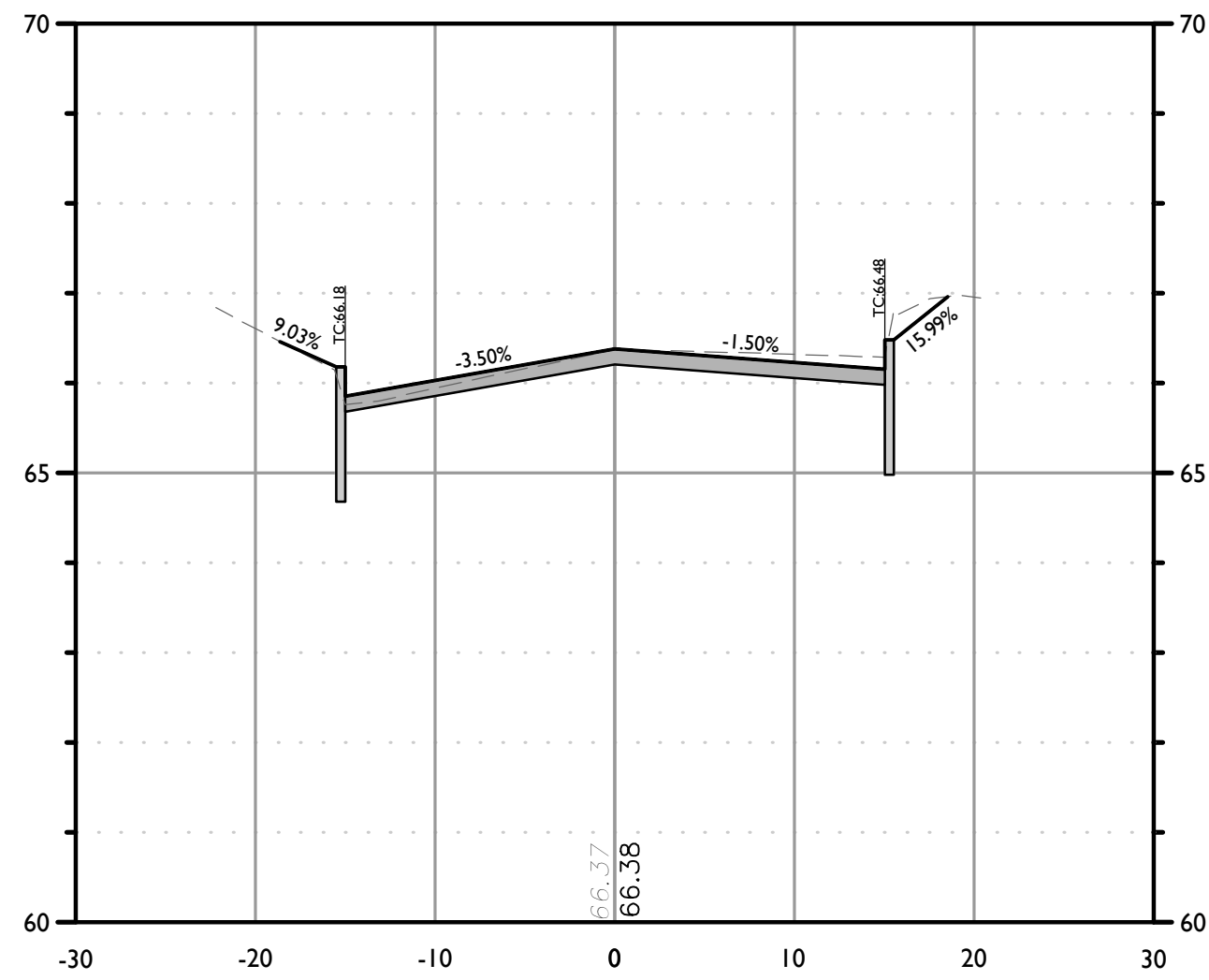




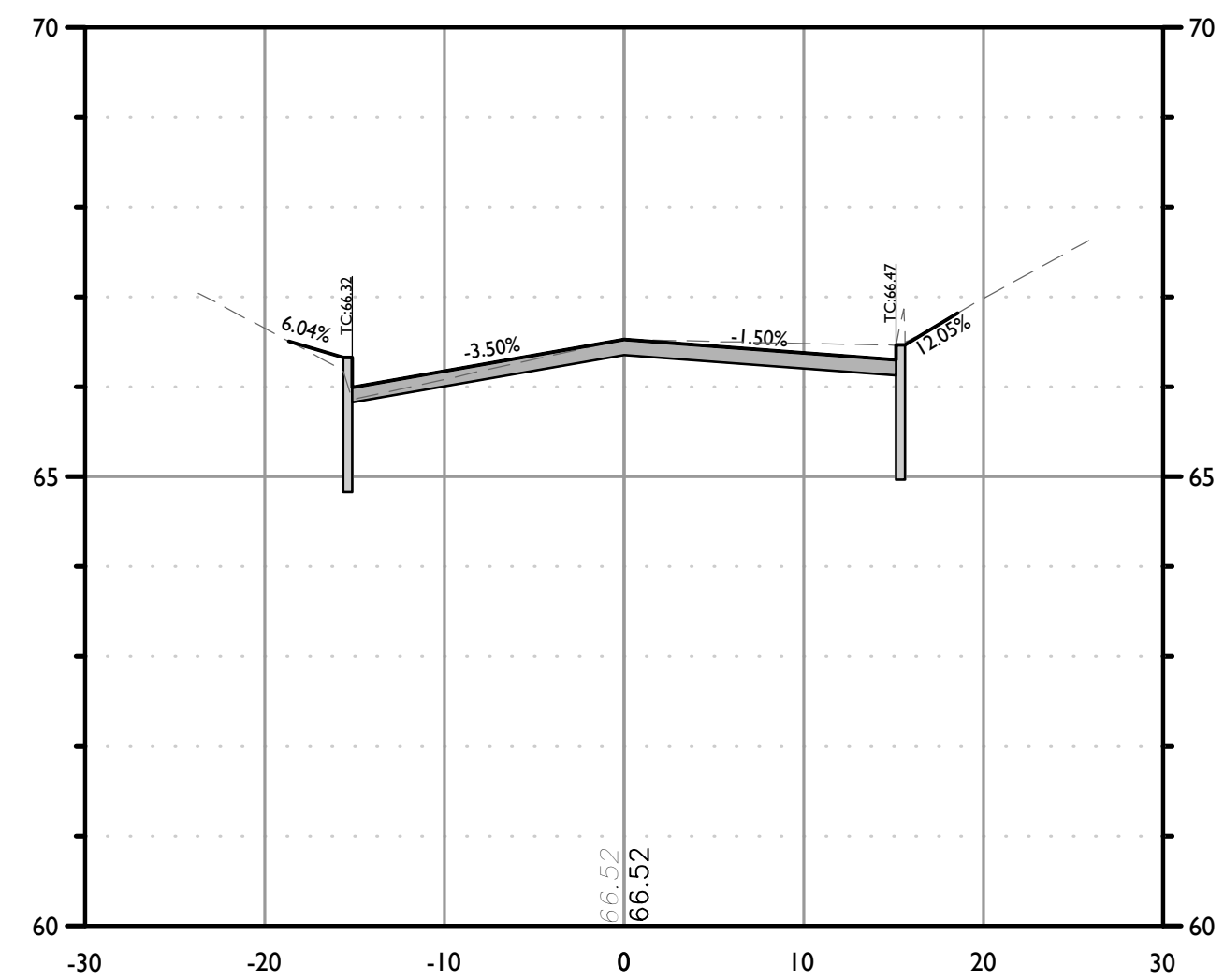
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VERTICAL : 1" = 2'



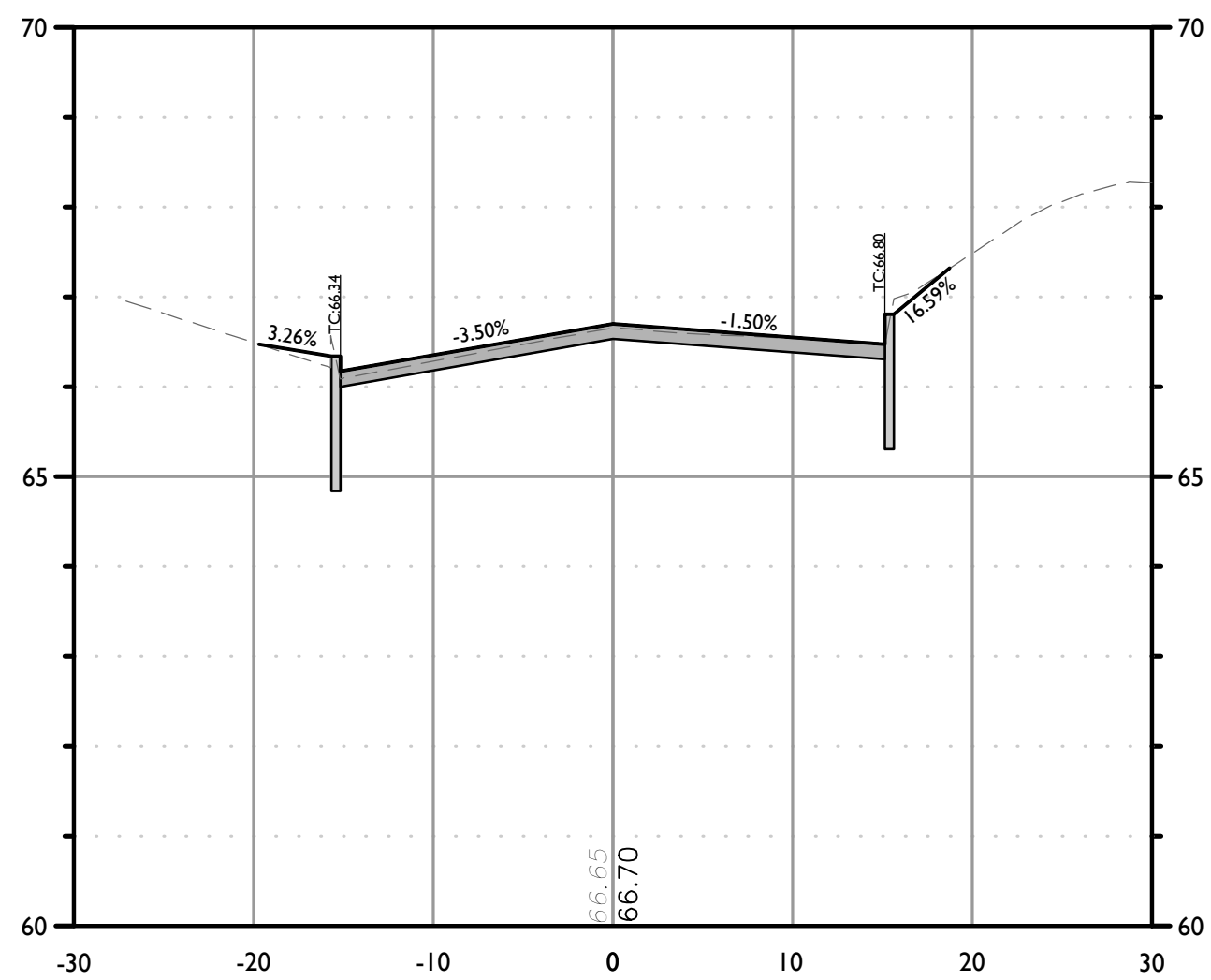
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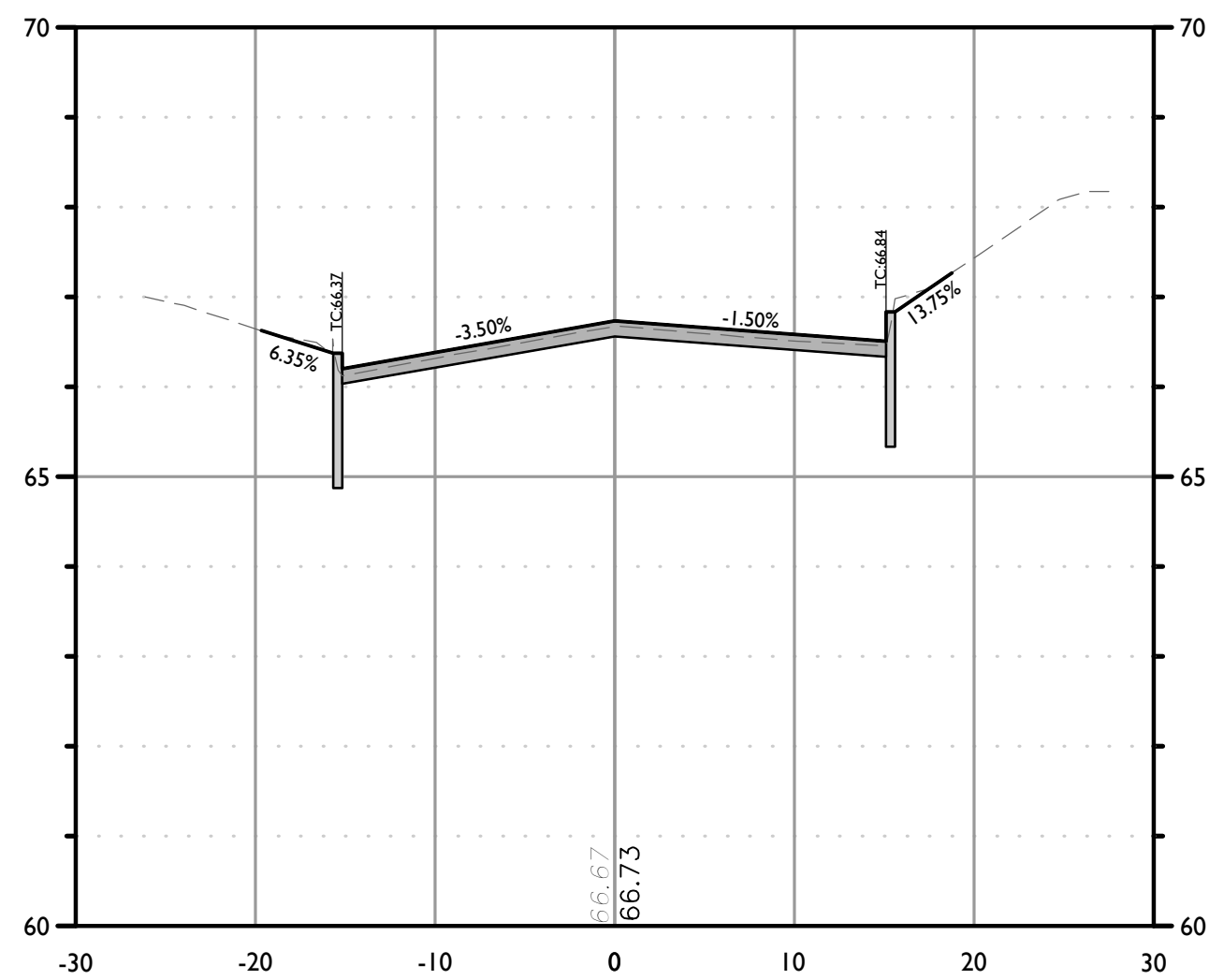
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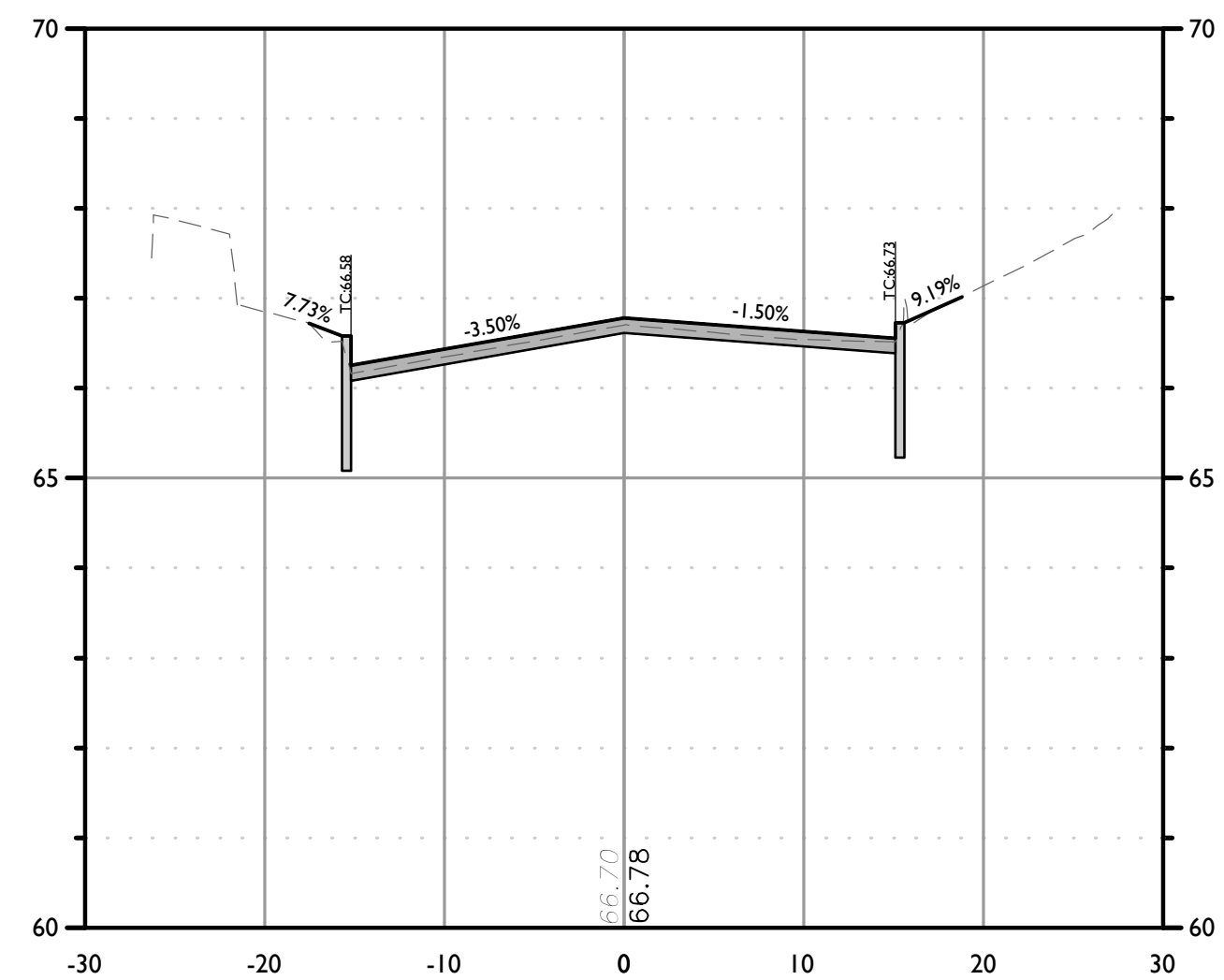
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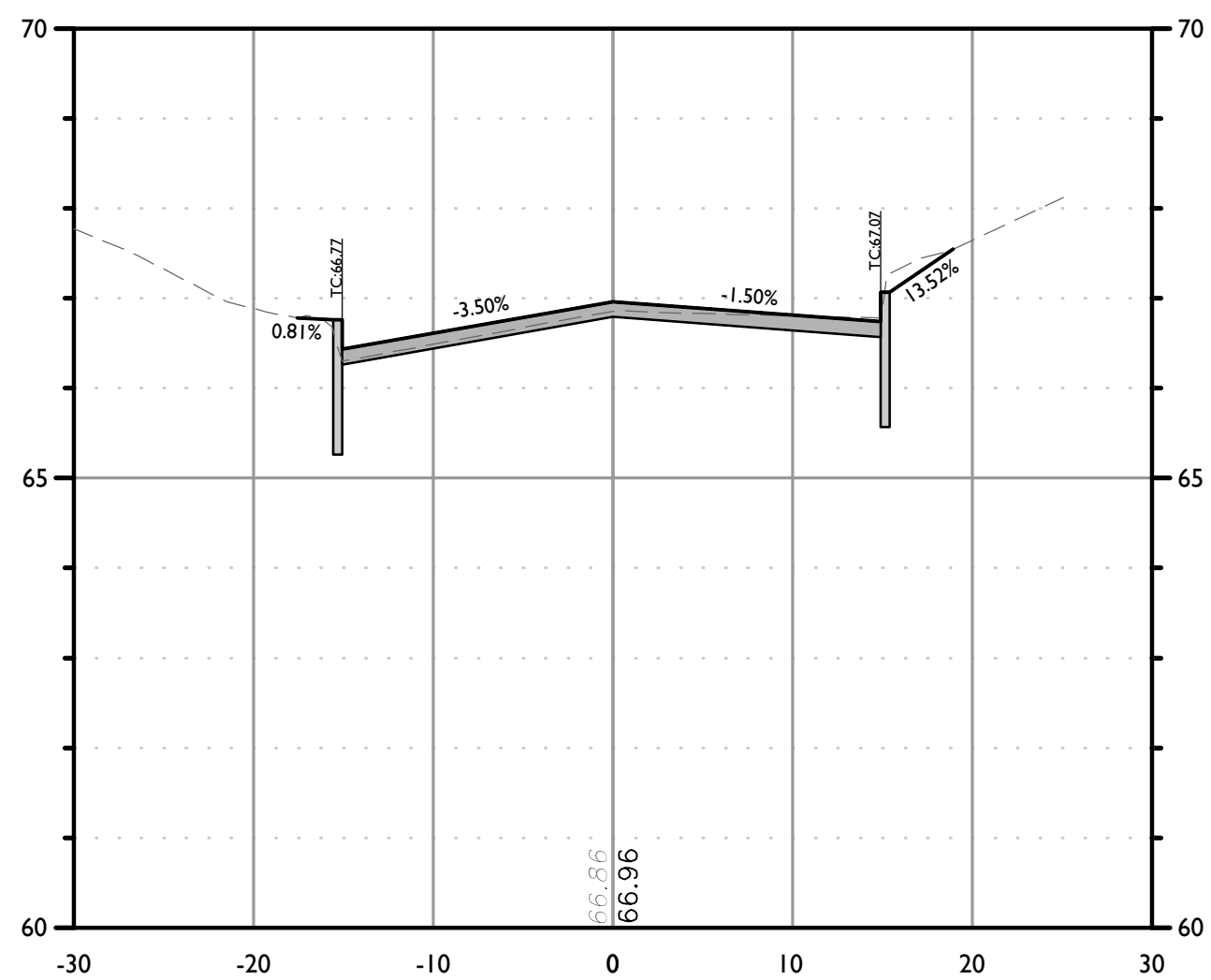
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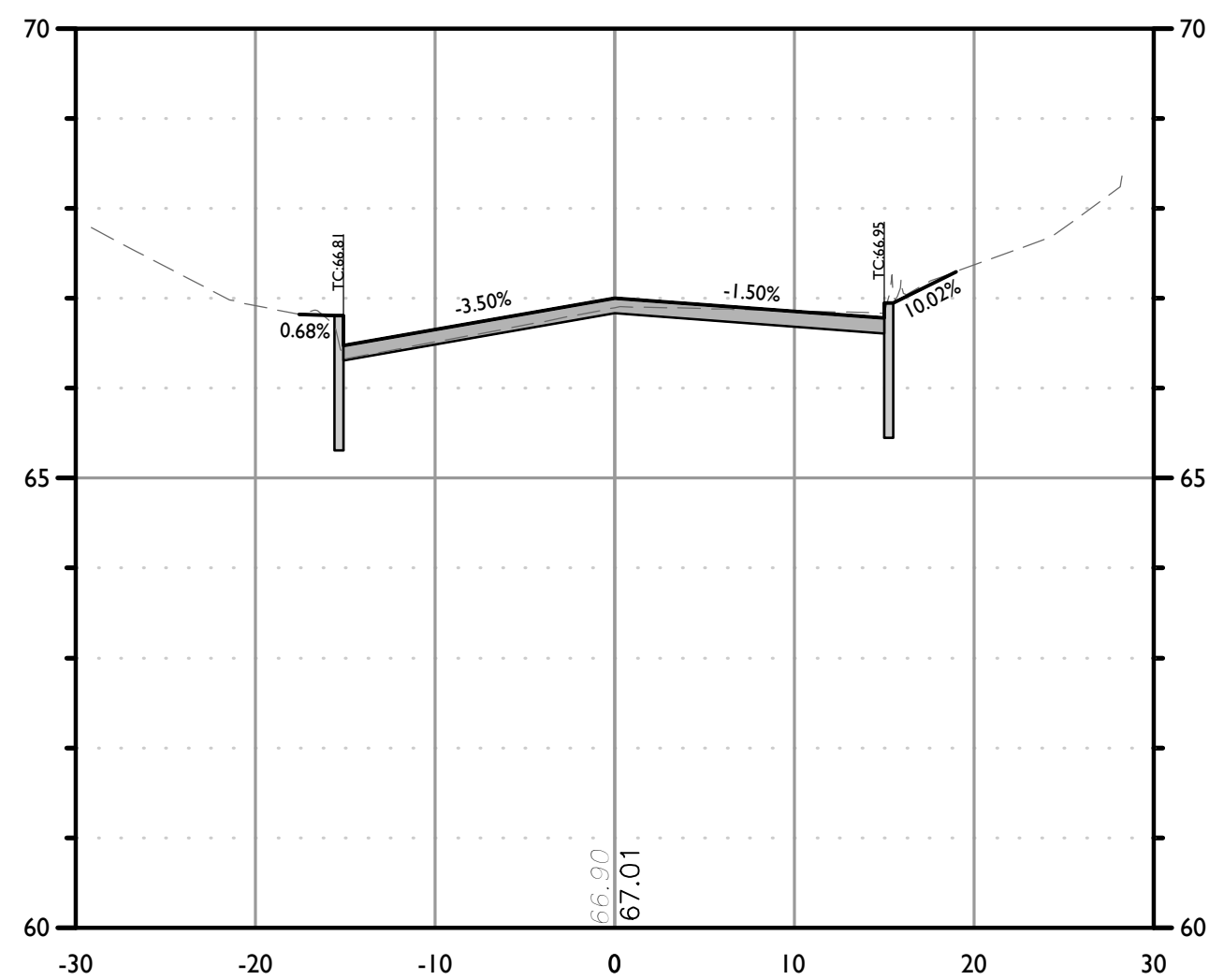
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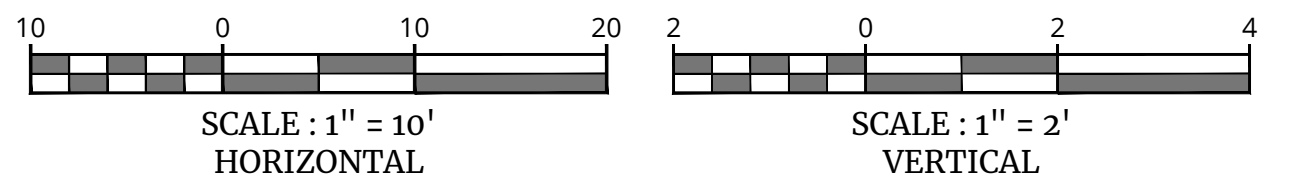
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CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 11+50
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 11+58
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



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N.J. C.O.A. #: 24GA27986500

CONSTRUCTION PLANS

FOR
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INFILTRATION -
PHASE 2

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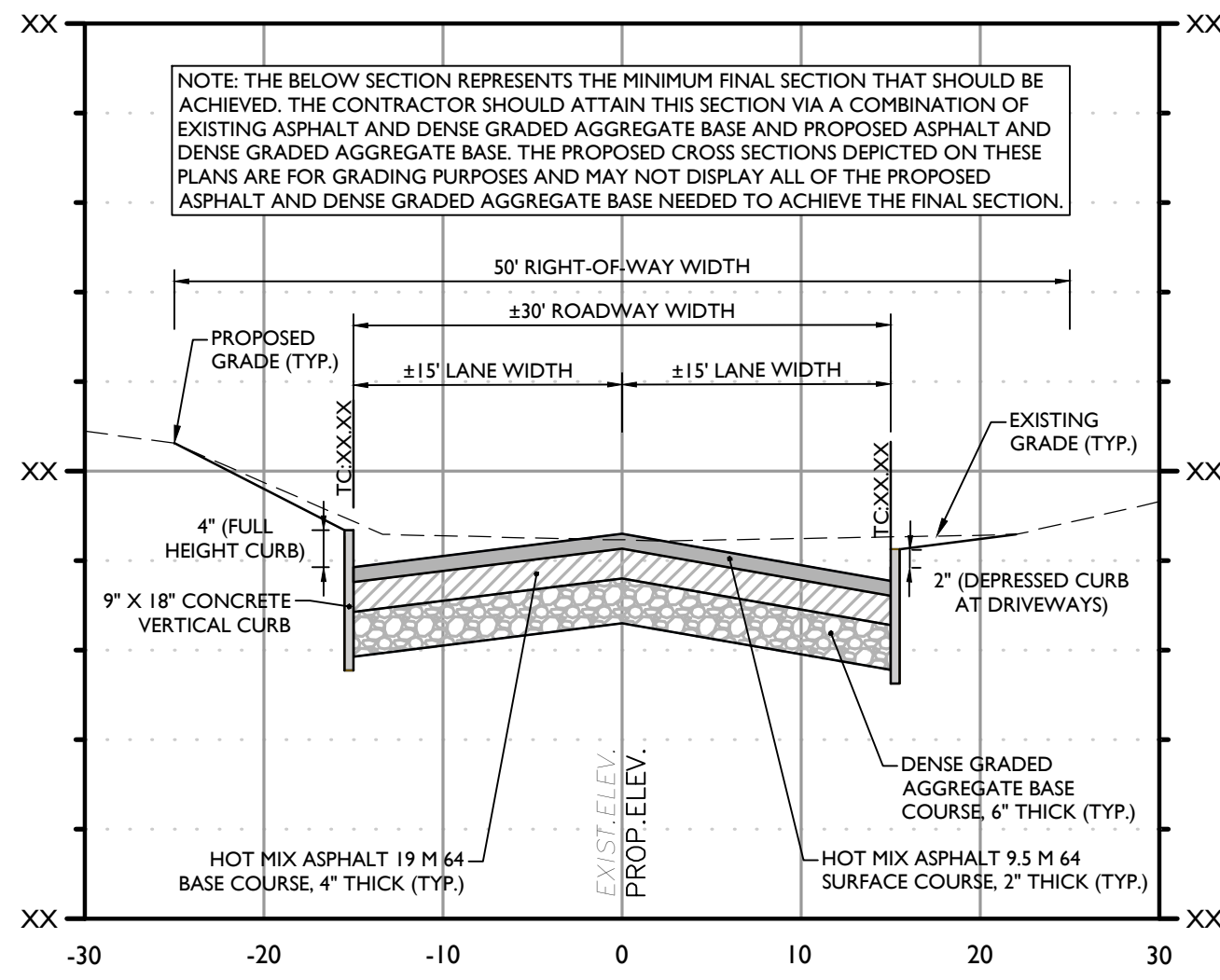
SCALE: AS SHOWN
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DRAWN BY: BAK
CHECKED BY: BRP
PROJECT NUMBER: CDT0078
DRAWING NAME: C-LAY1

SHEET TITLE:
CROSS SECTIONS

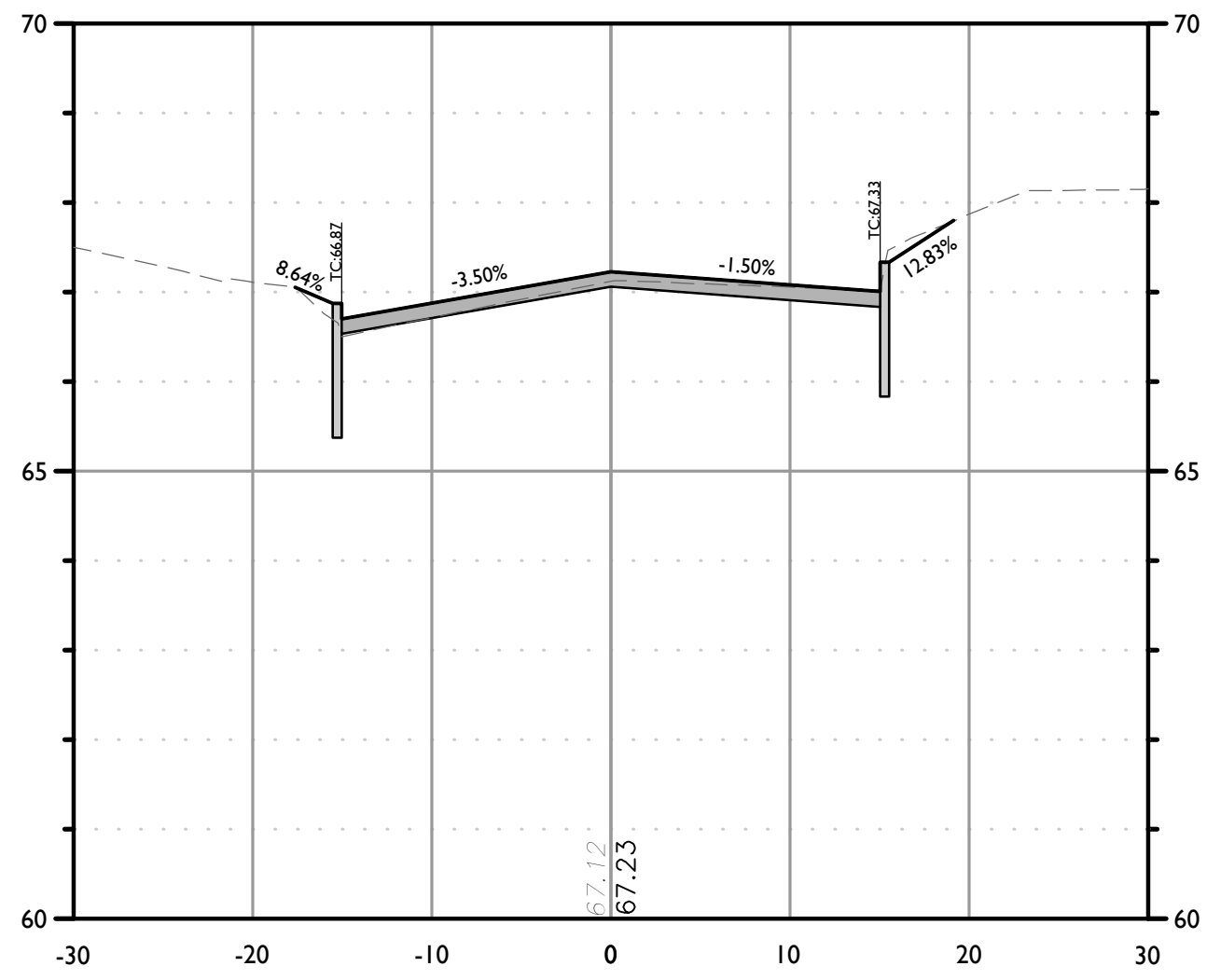
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NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

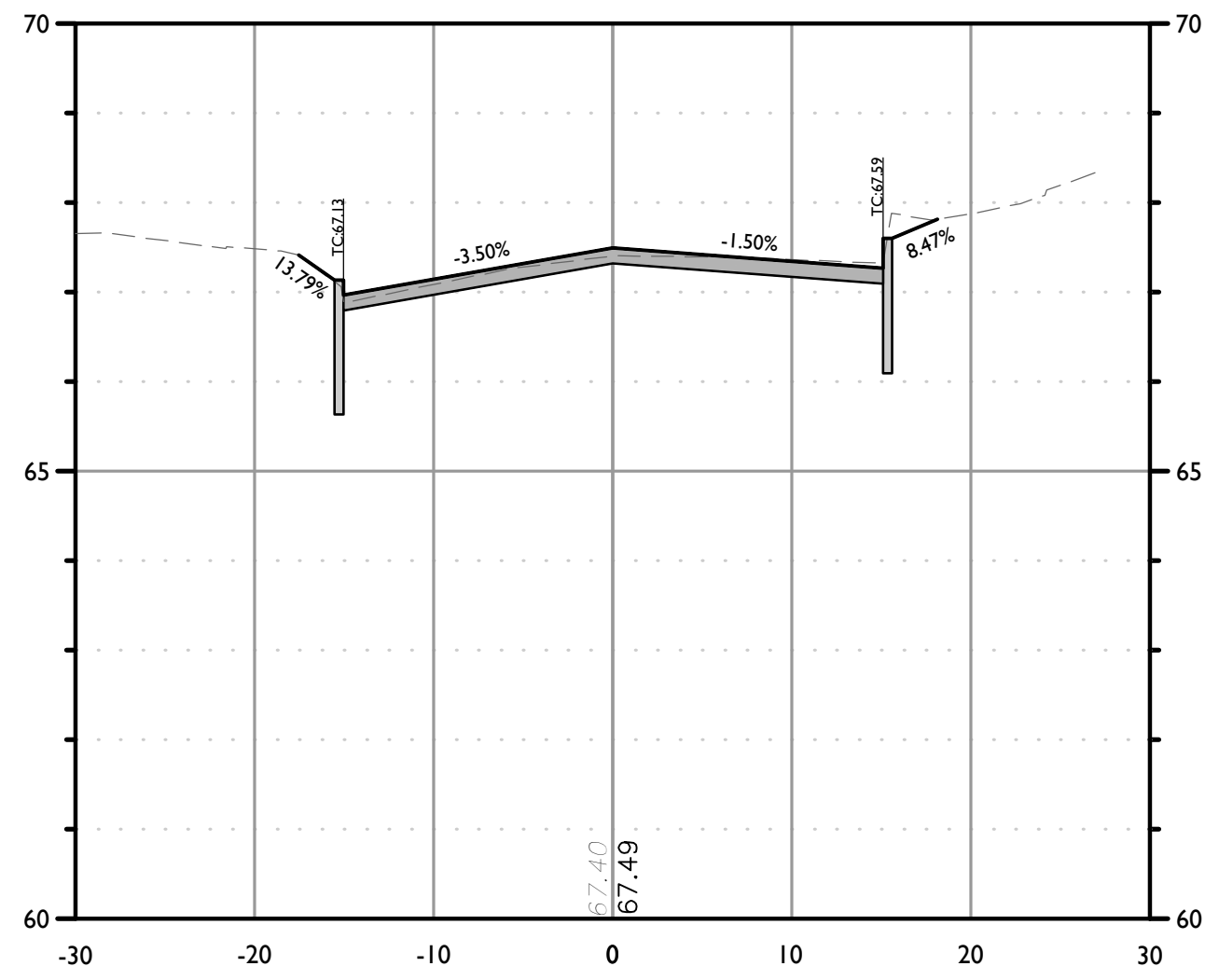
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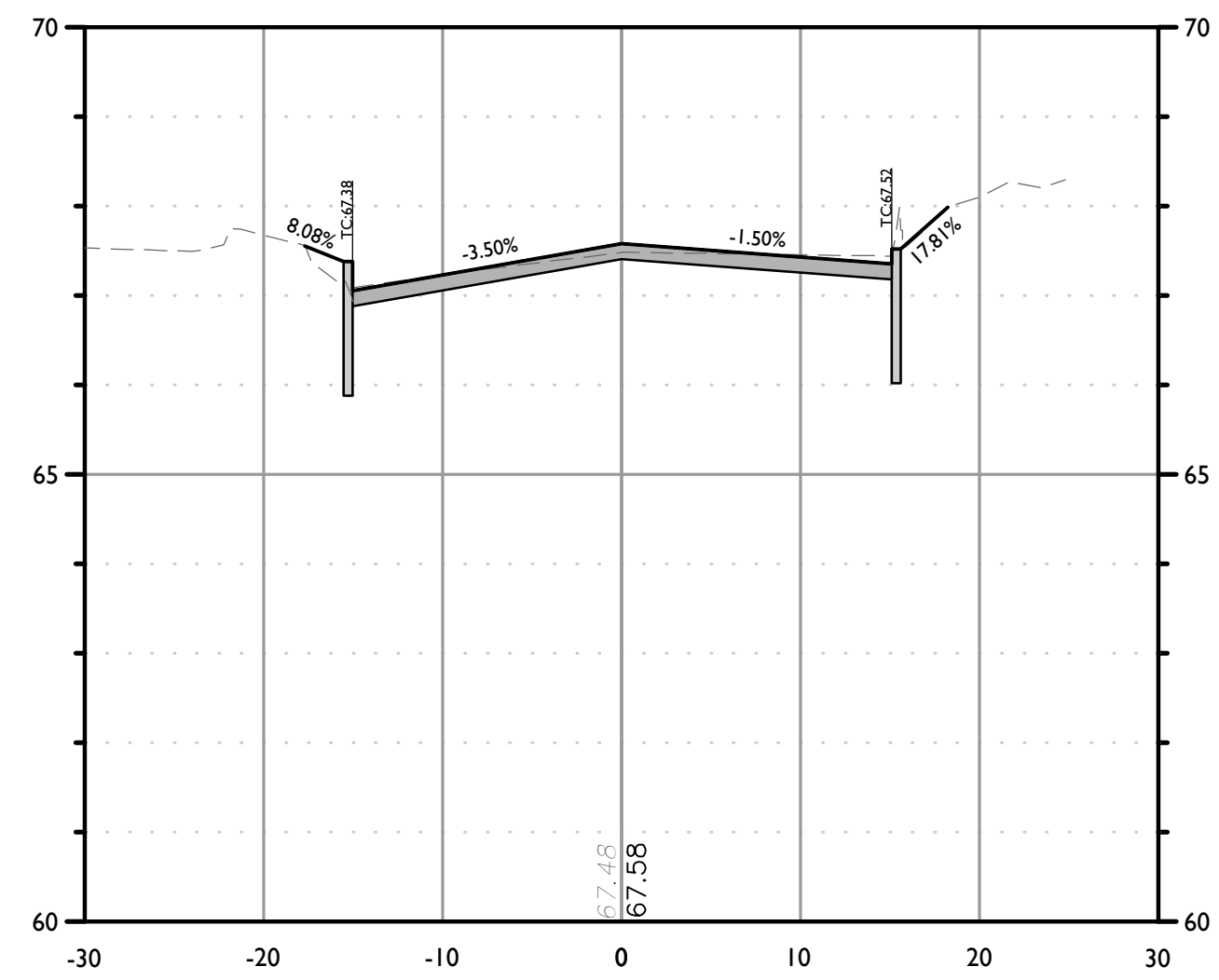
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STATION: XX+XX.XX
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



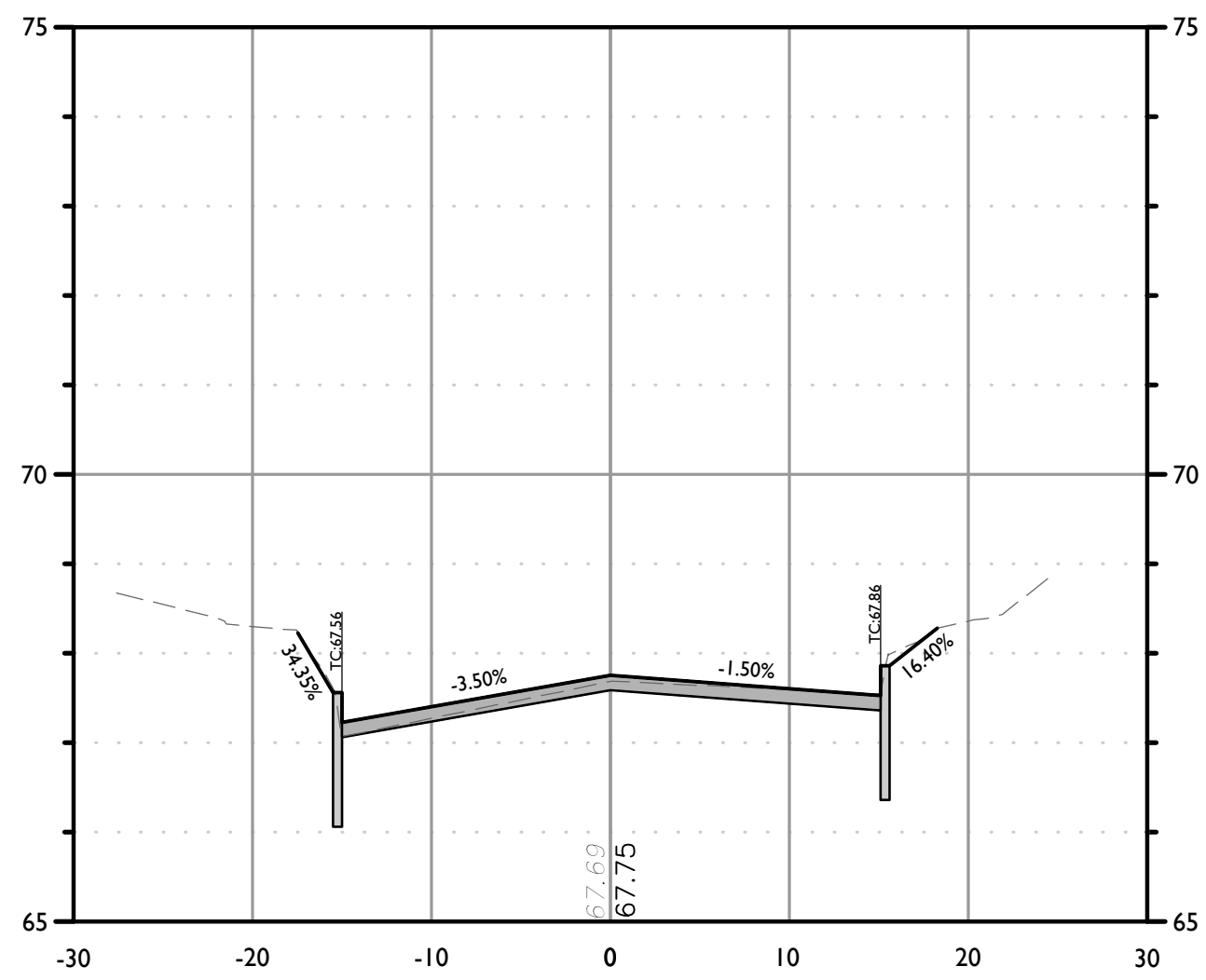
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HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



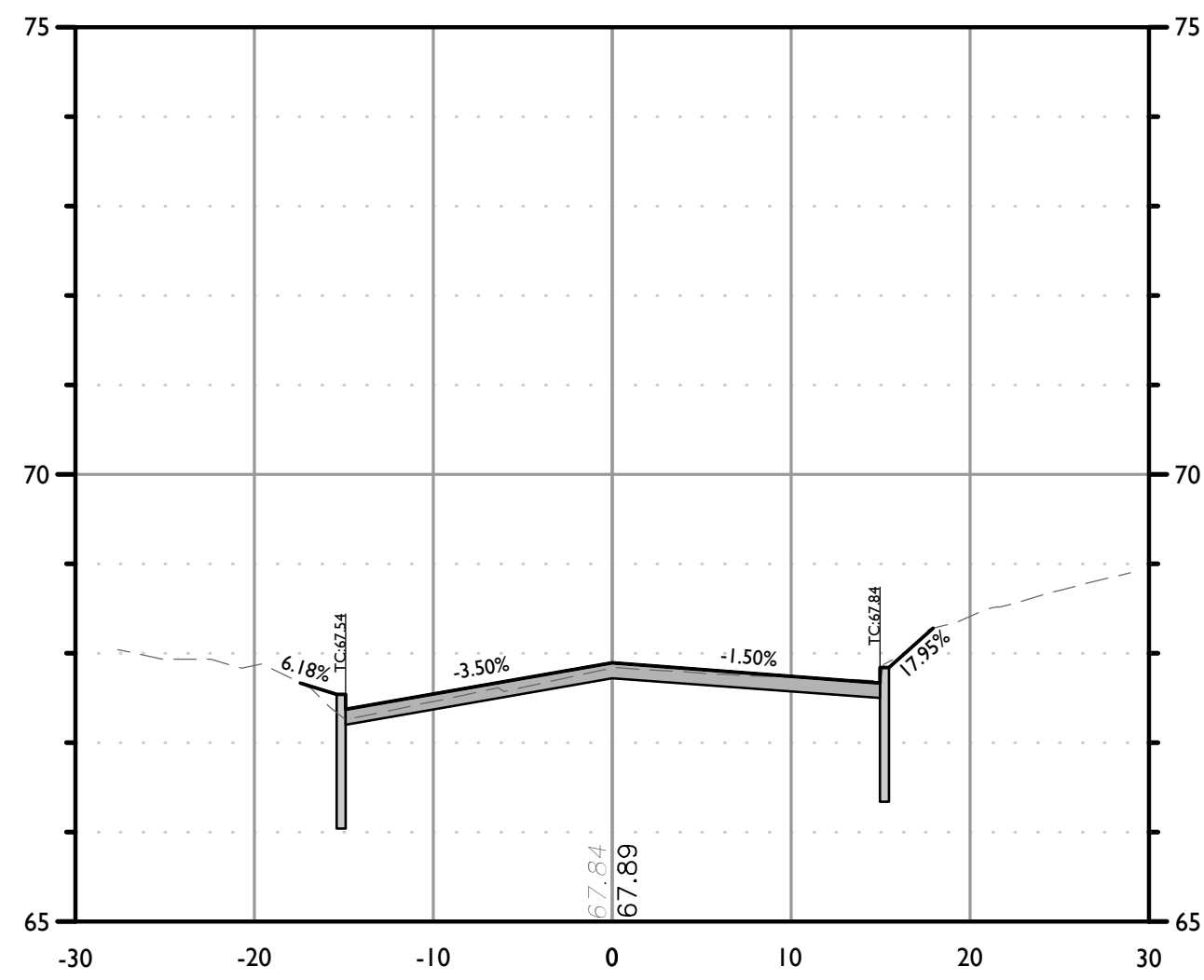
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STATION: 12+50
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



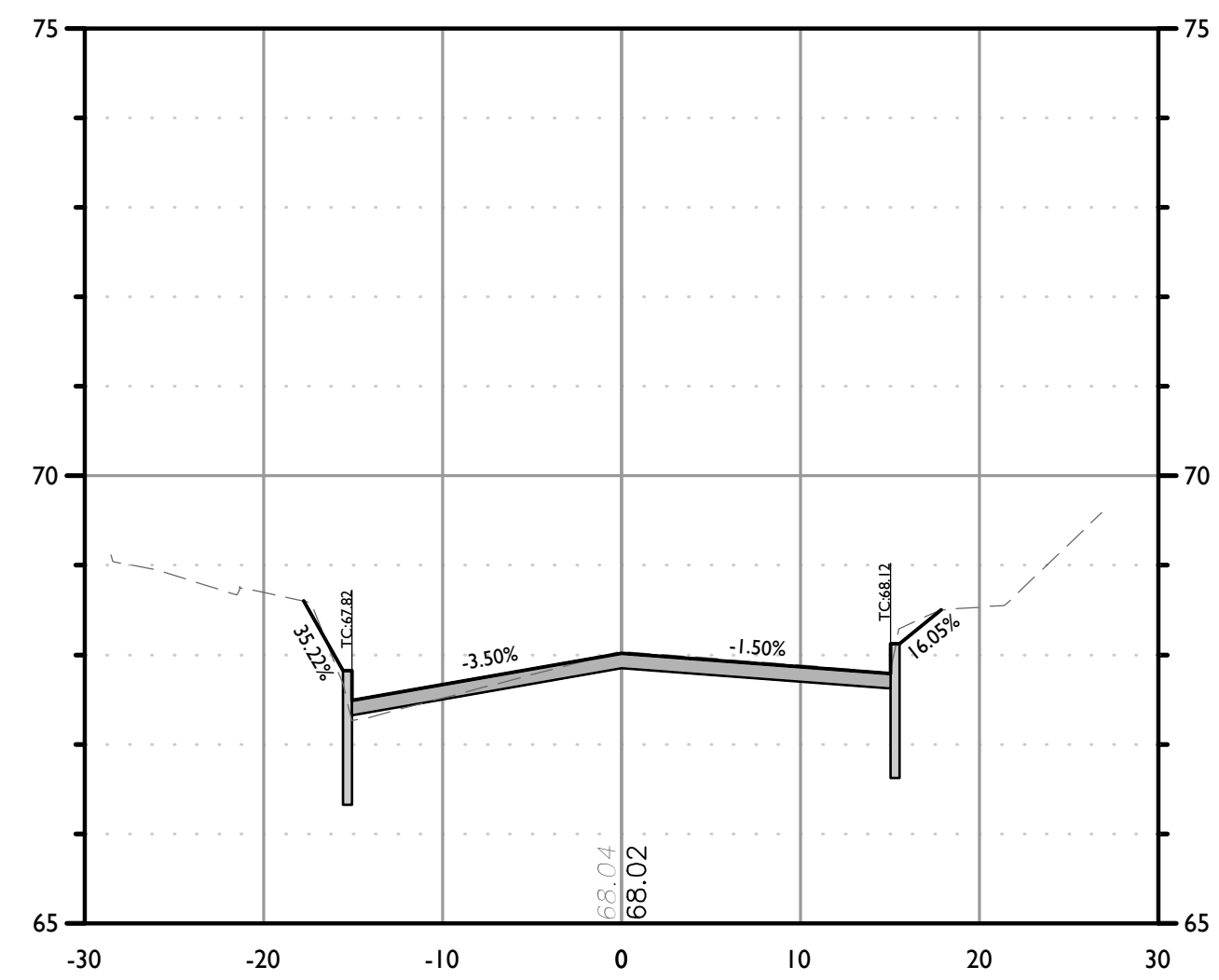
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STATION: 12+66
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VERTICAL : 1" = 2'



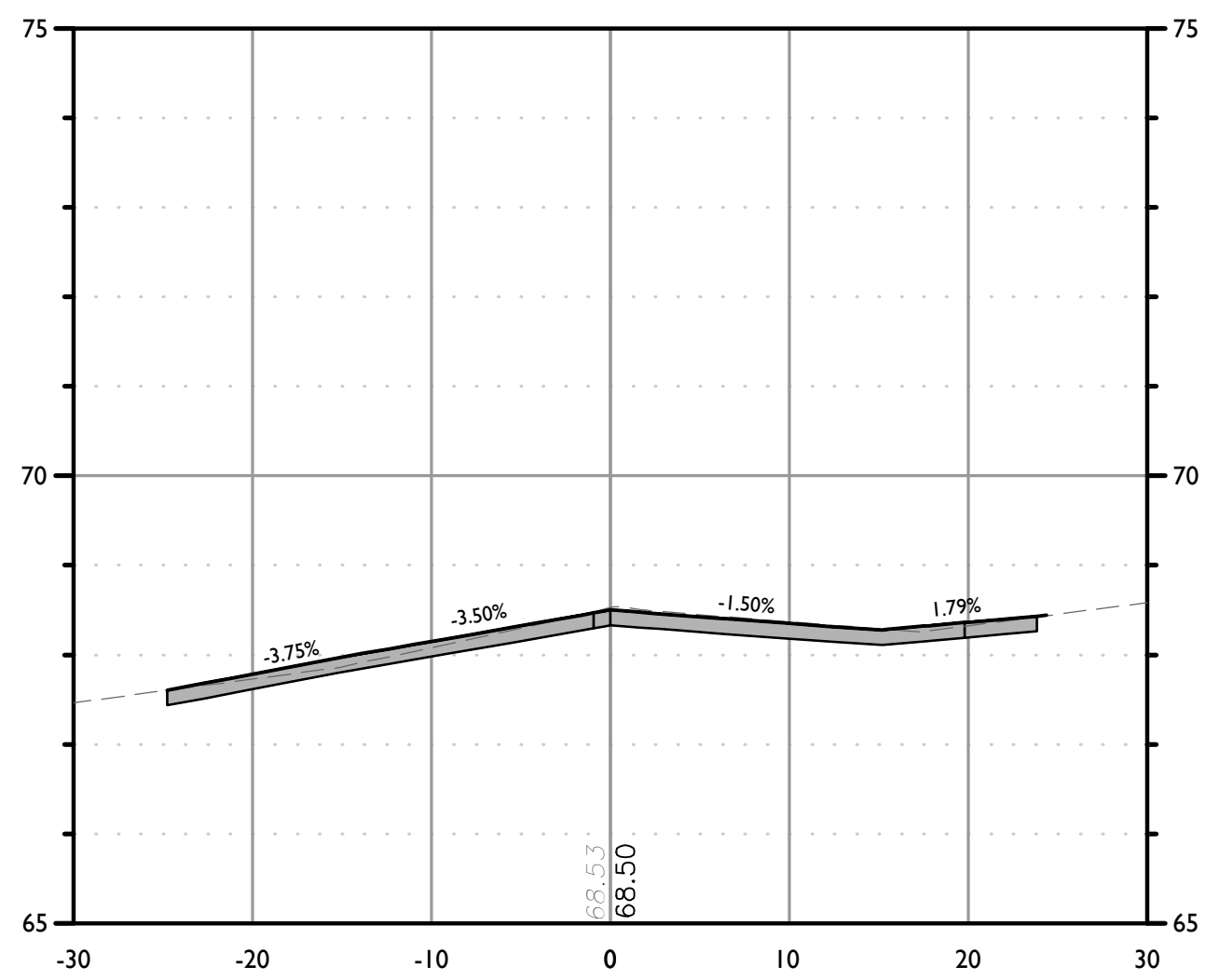
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VERTICAL : 1" = 2'



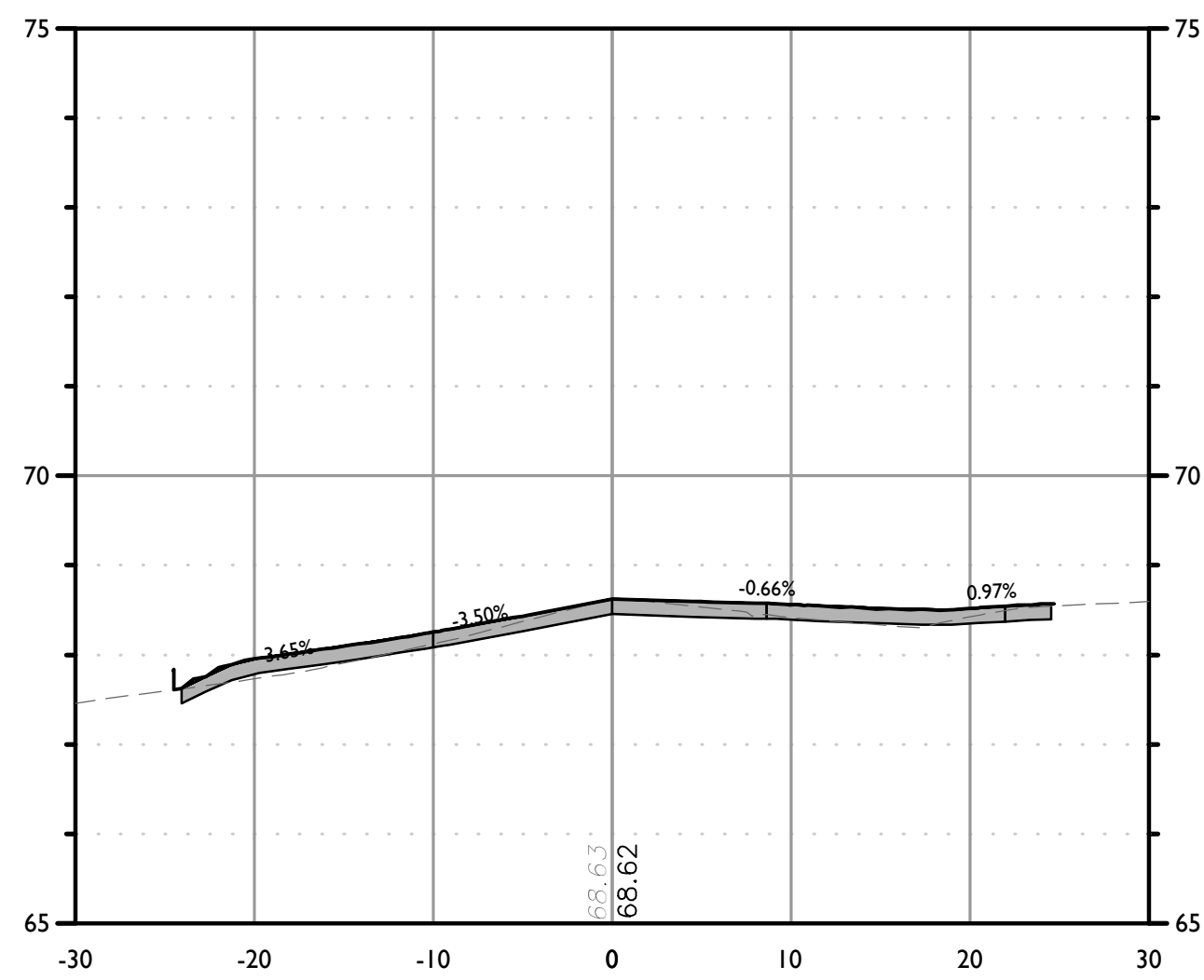
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STATION: 13+26
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VERTICAL : 1" = 2'



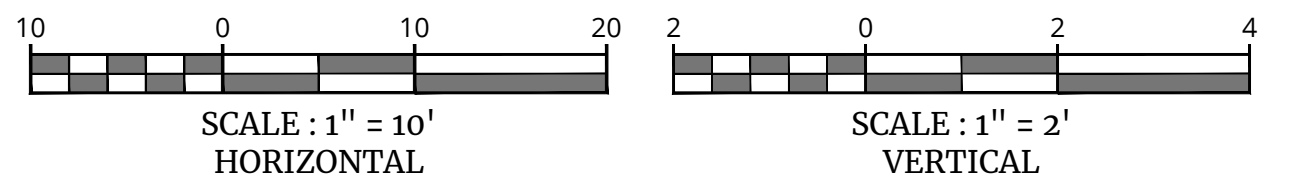
CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 13+50
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 13+91.82
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 14+00
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



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LICENSE NUMBER: 6645154
COLLIERS ENGINEERING & DESIGN, INC.
N.J. C.O.A. #: 24GA27986500

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Suite 304
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Phone: 973.398.3110

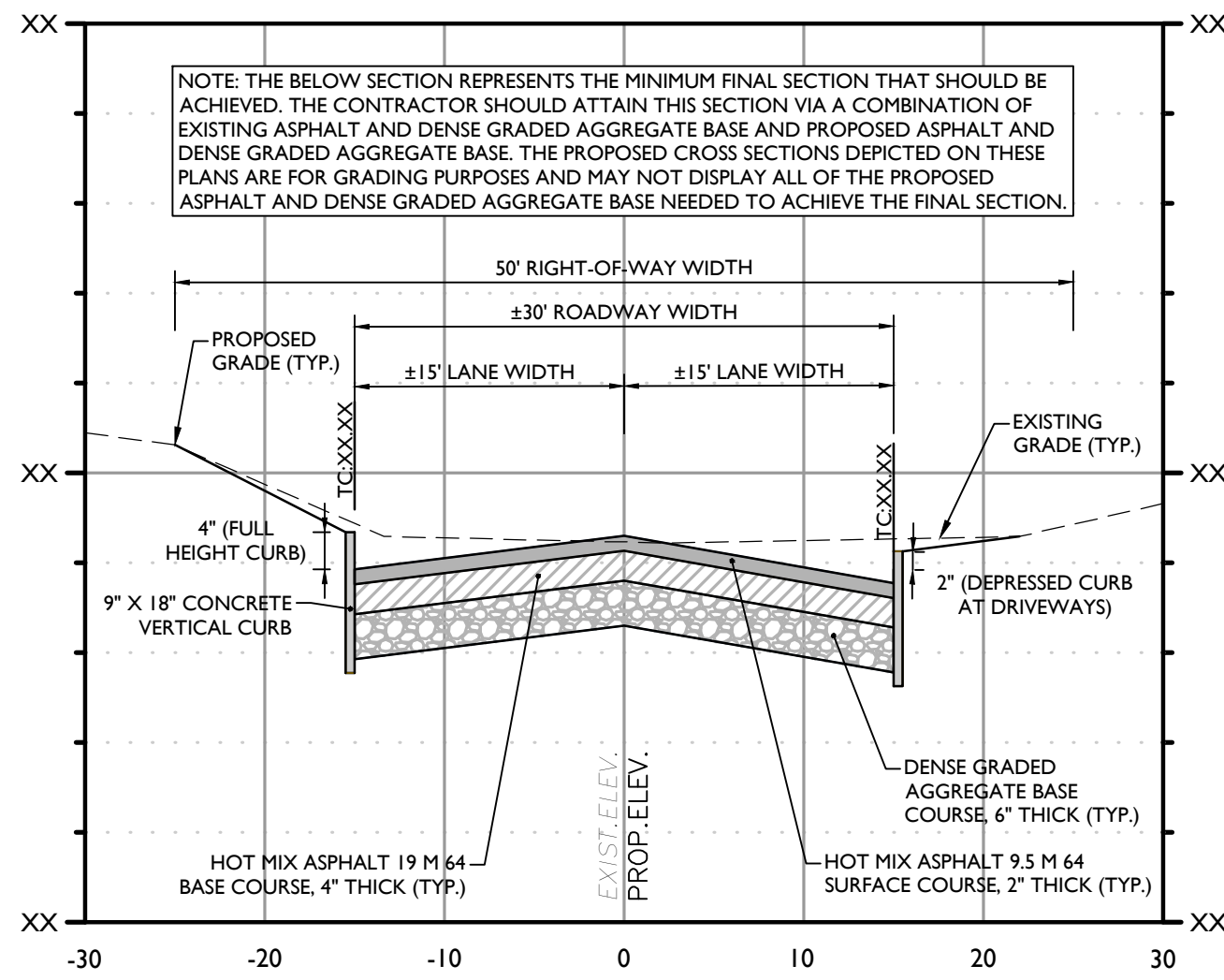
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DRAWN BY: BAK
CHECKED BY: BRP
PROJECT NUMBER: CDT0078
DRAWING NAME: C-LAY1

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CROSS SECTIONS

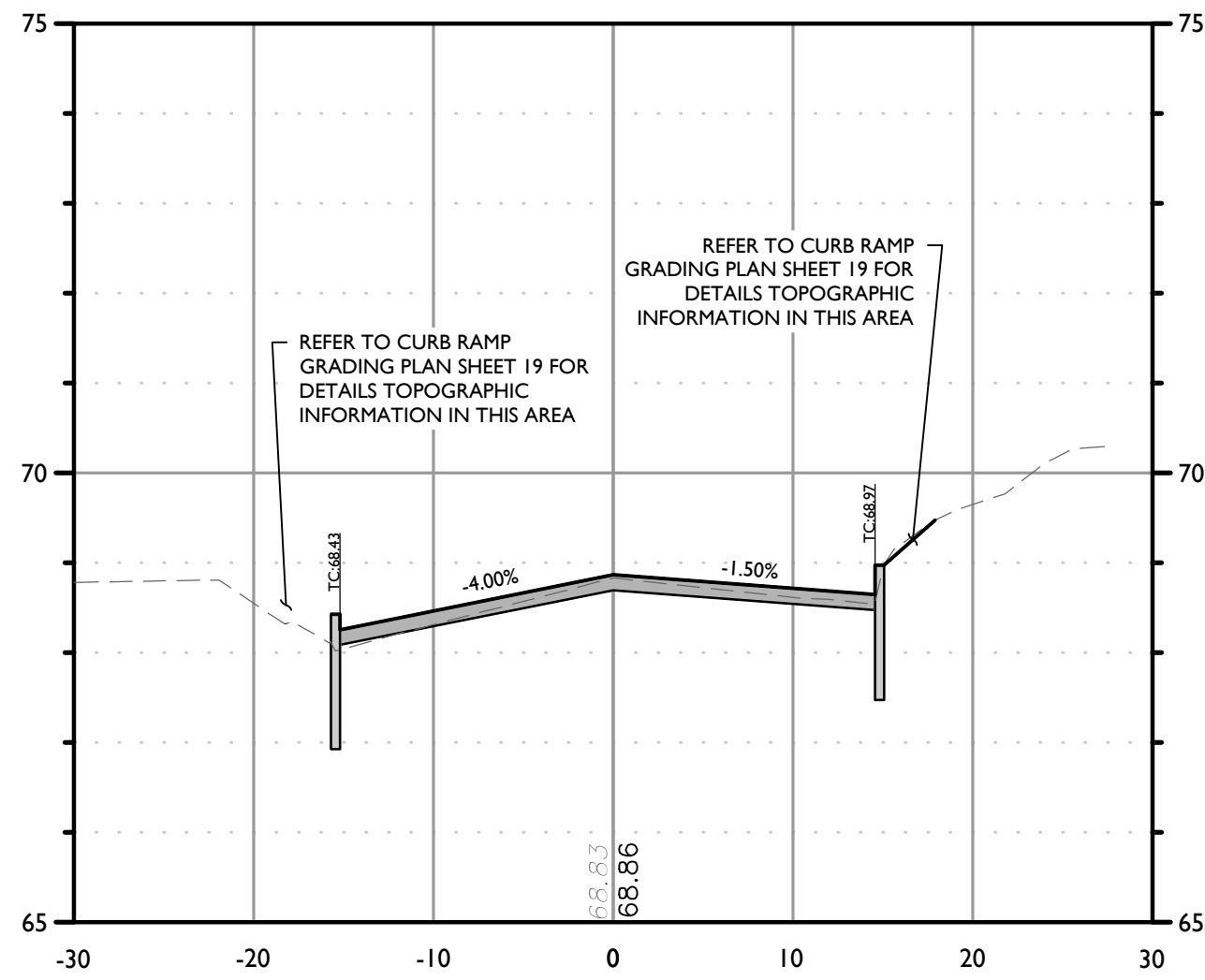
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NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

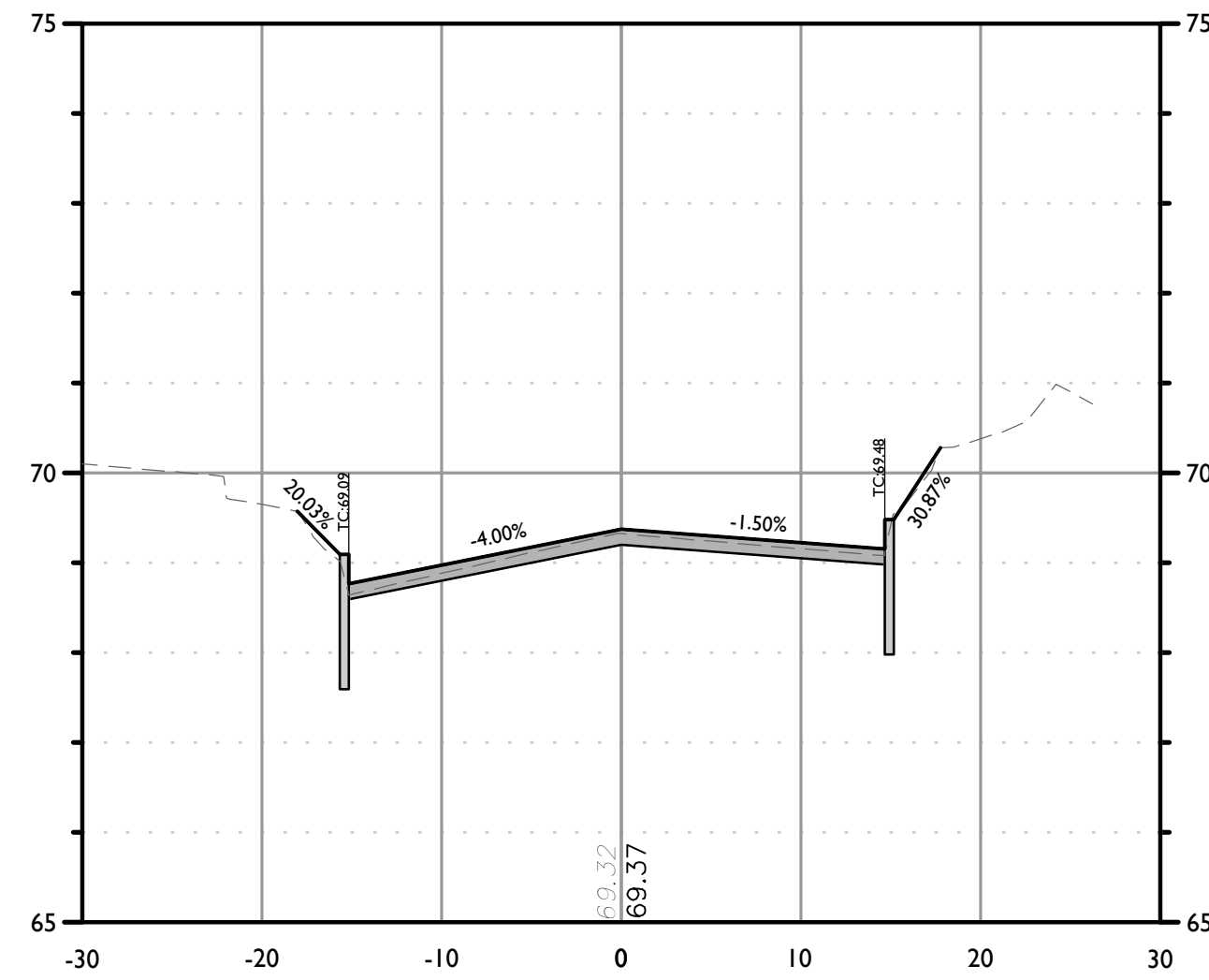
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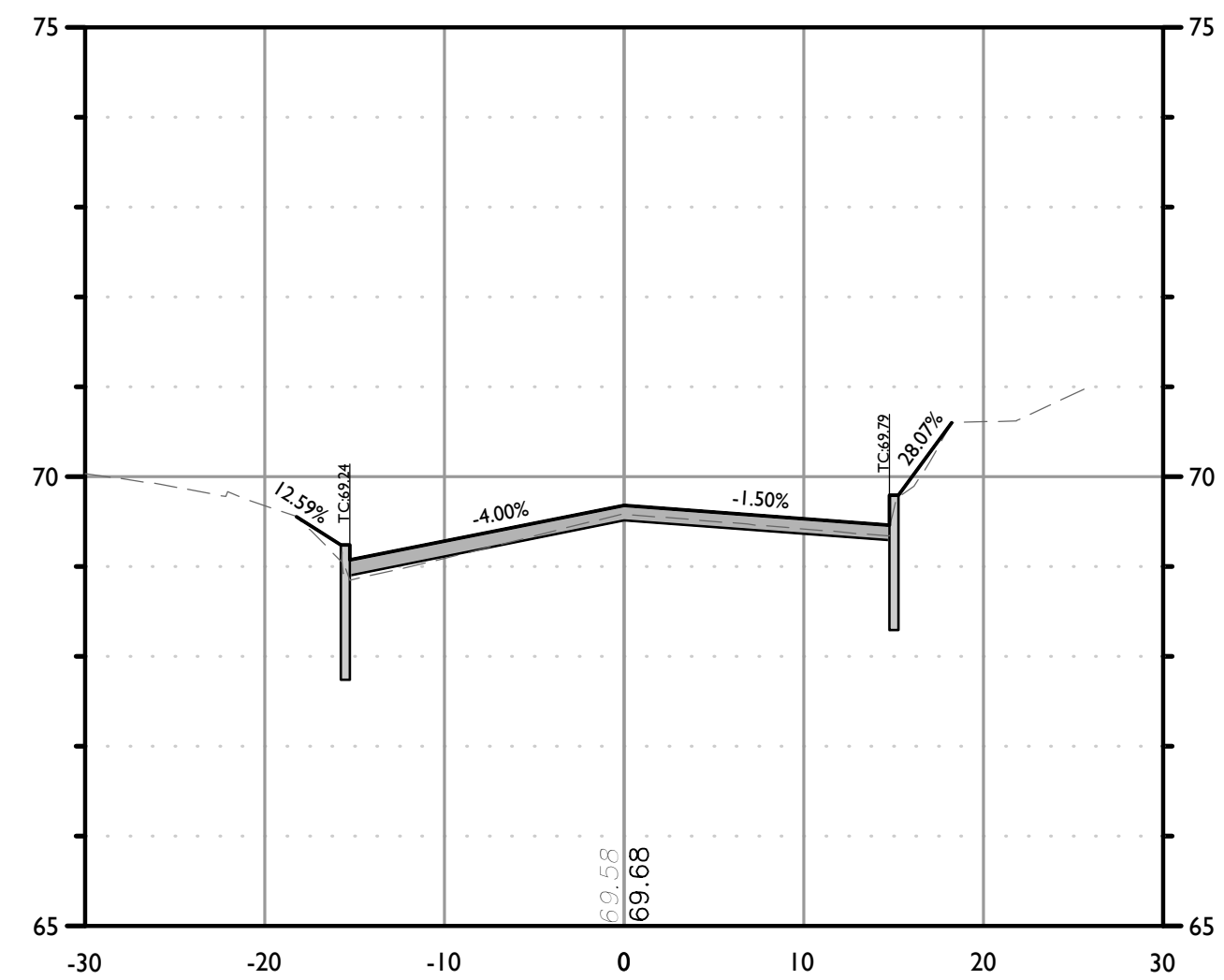
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HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



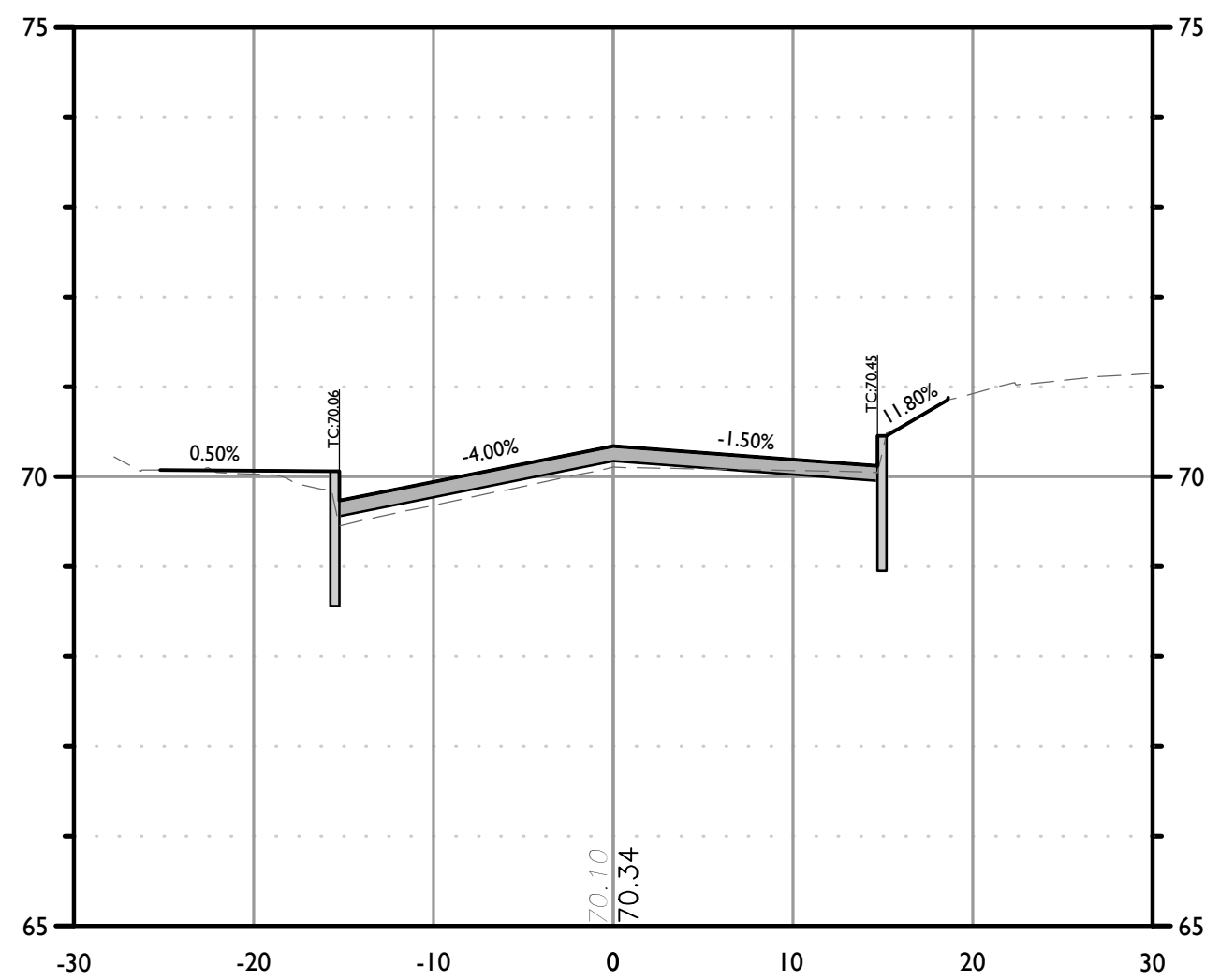
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STATION: 14+16
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



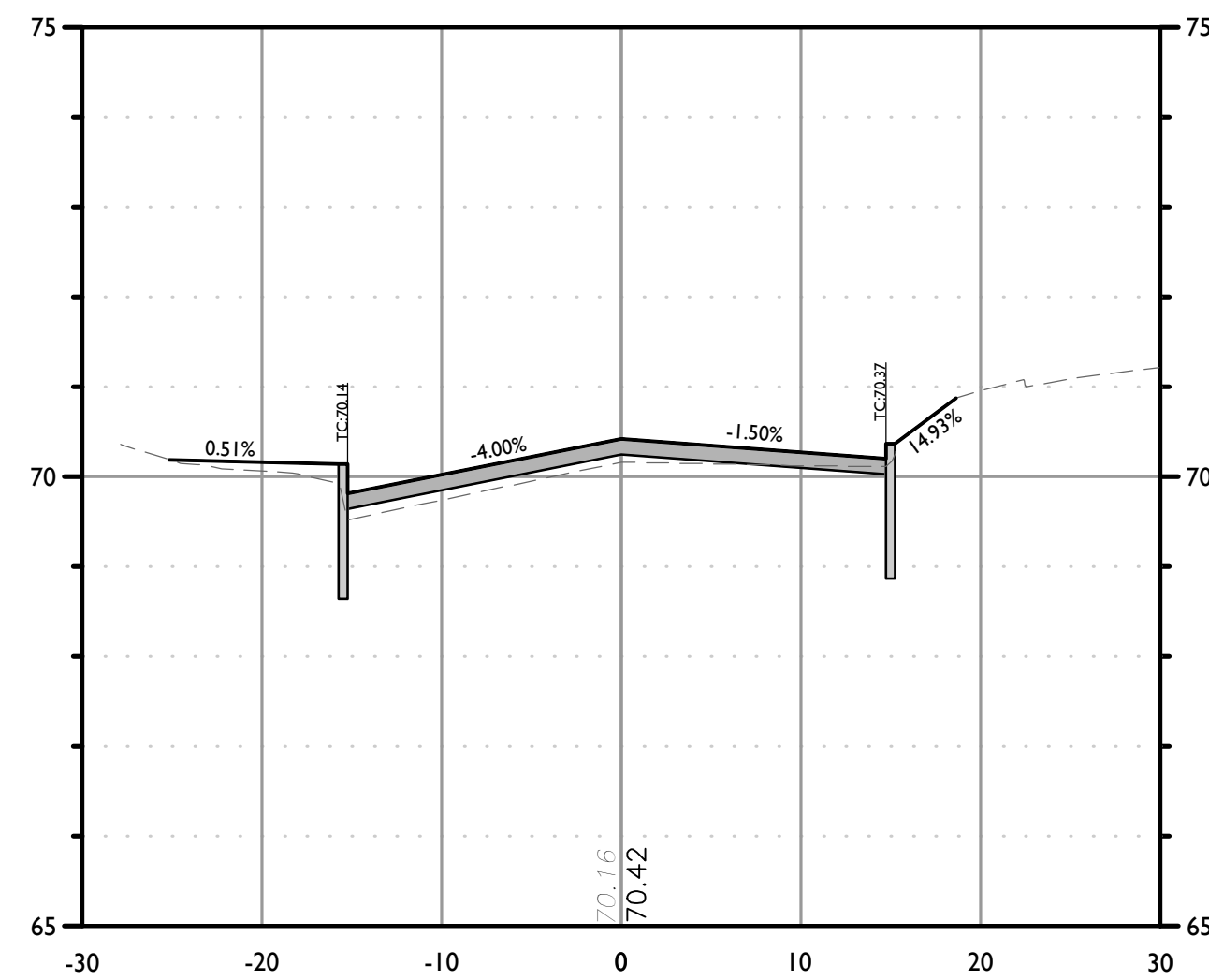
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STATION: 14+50
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



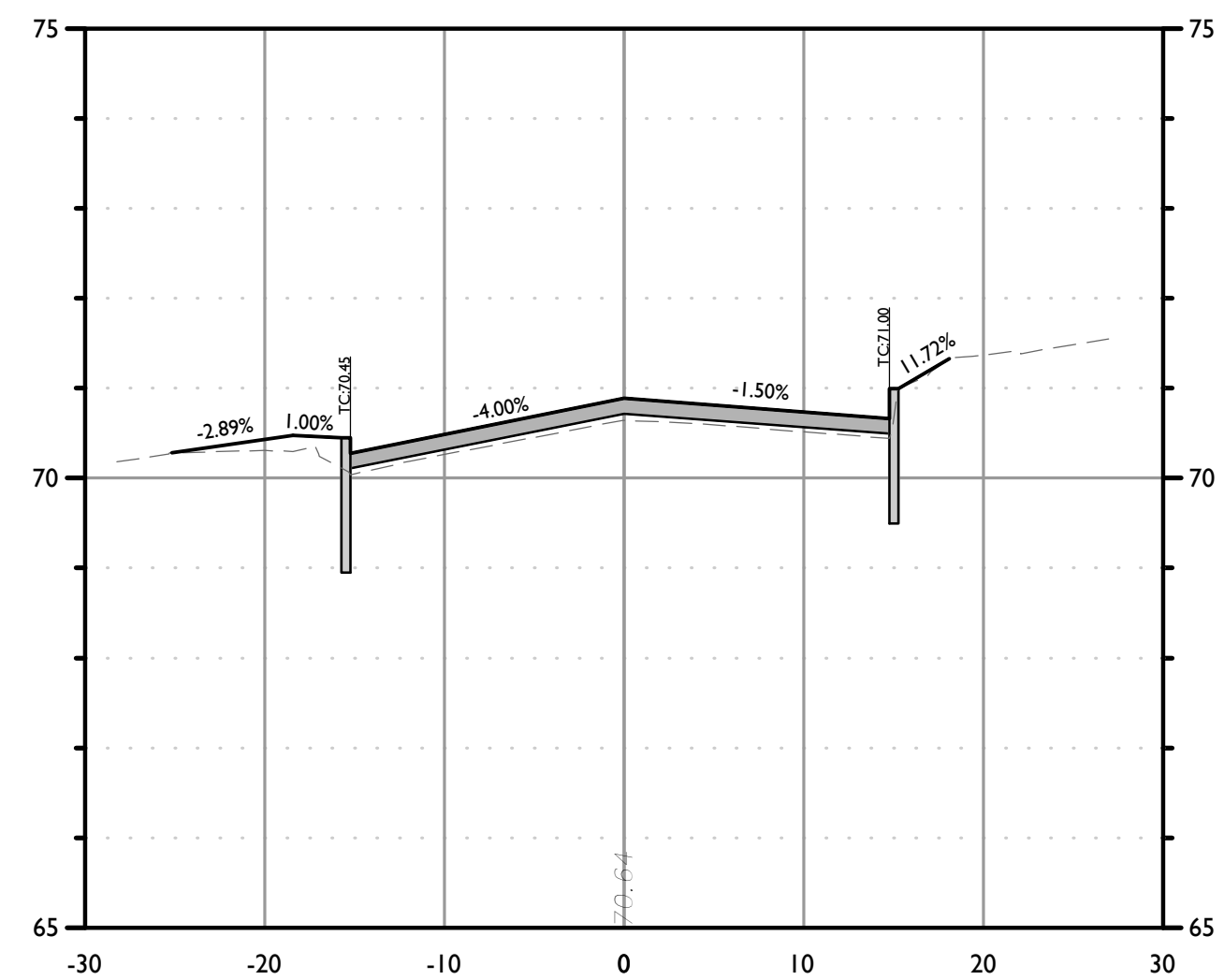
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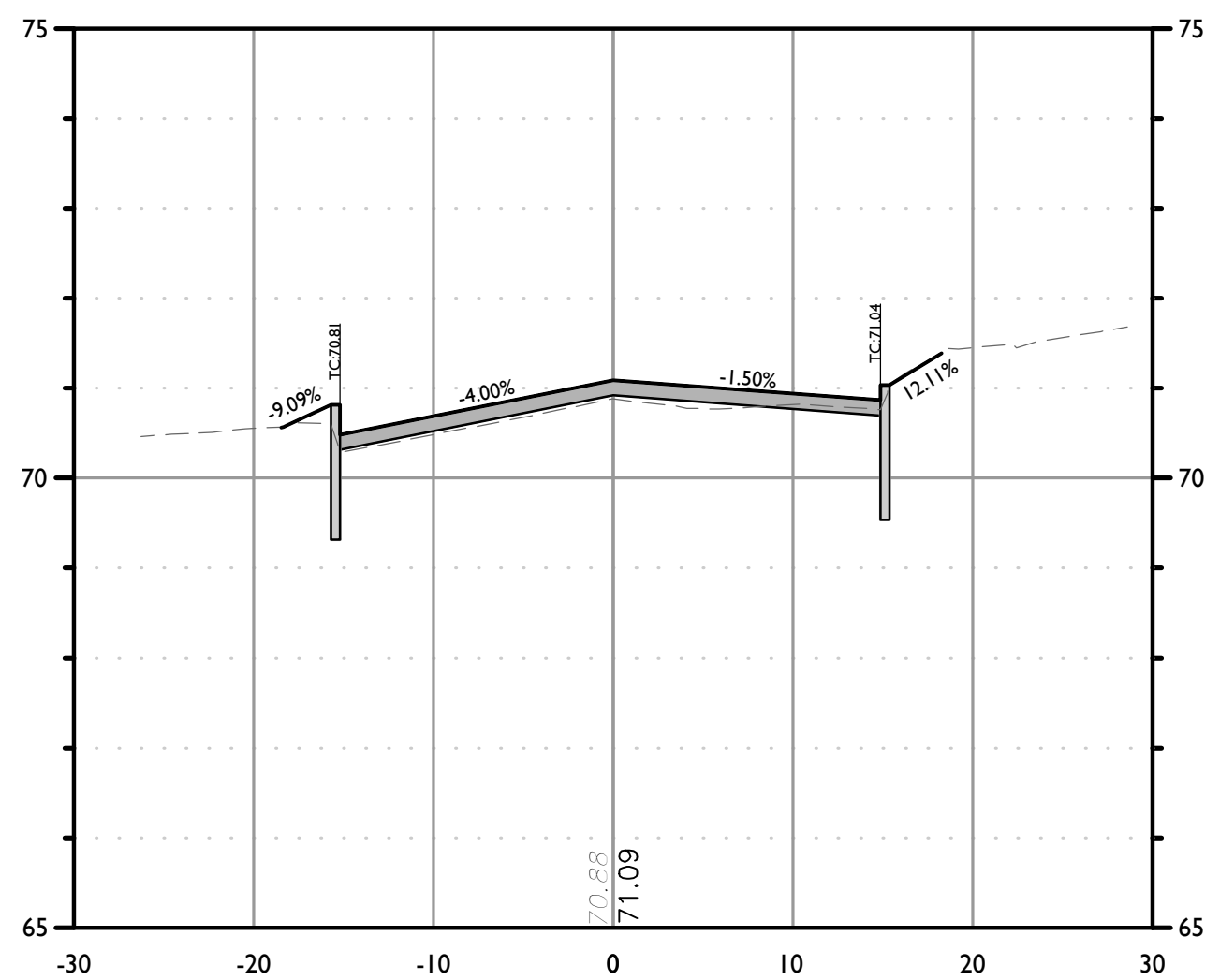
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STATION: 15+00
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



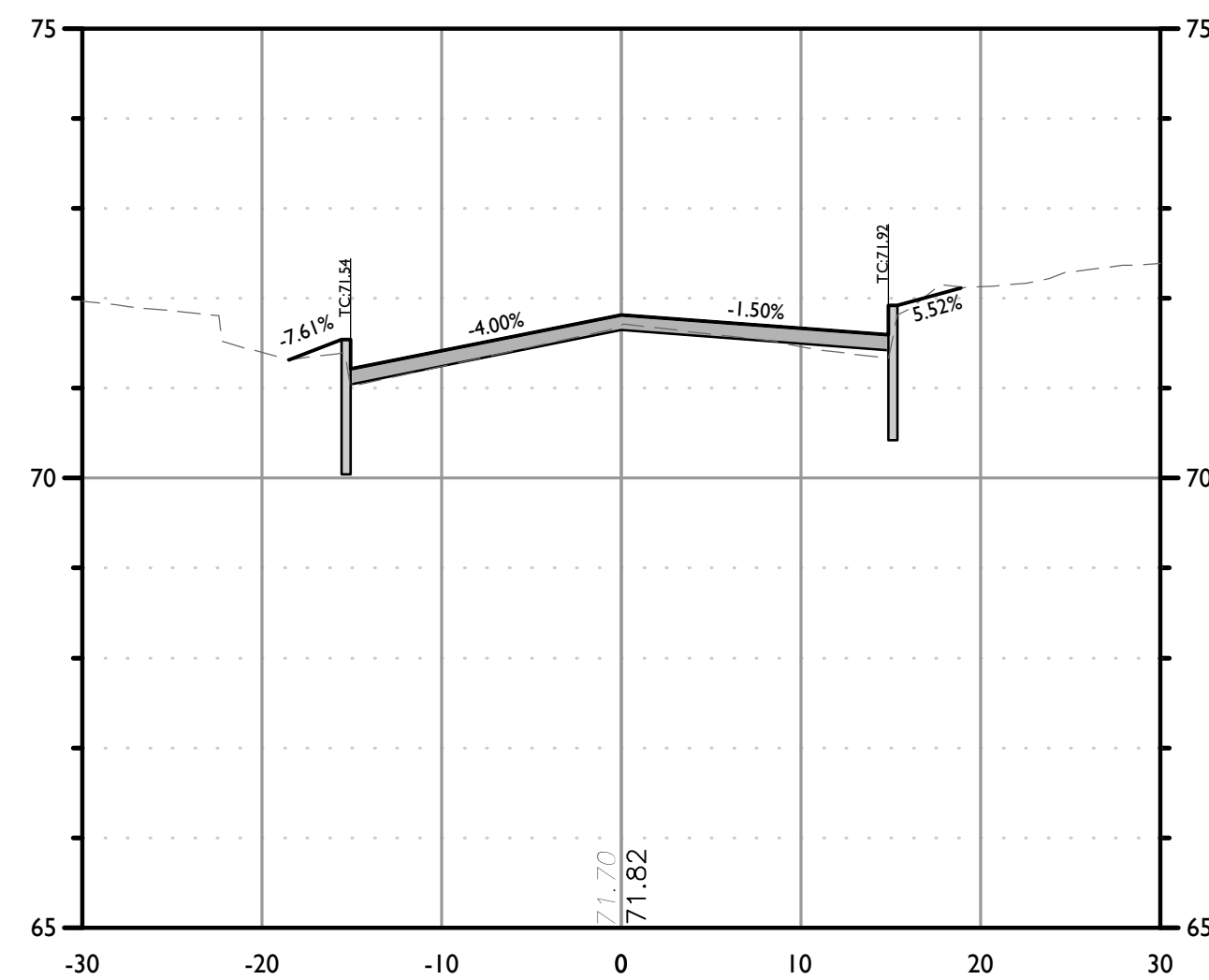
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VERTICAL : 1" = 2'



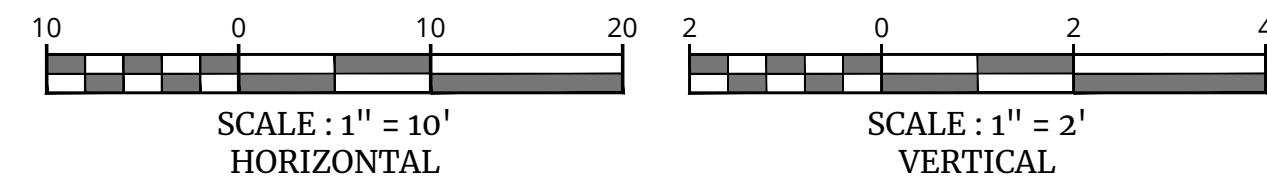
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STATION: 15+36
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 15+50
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 16+00
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



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LICENSE NUMBER: 6645154
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N.J. C.O.A. #: 24GA27986500

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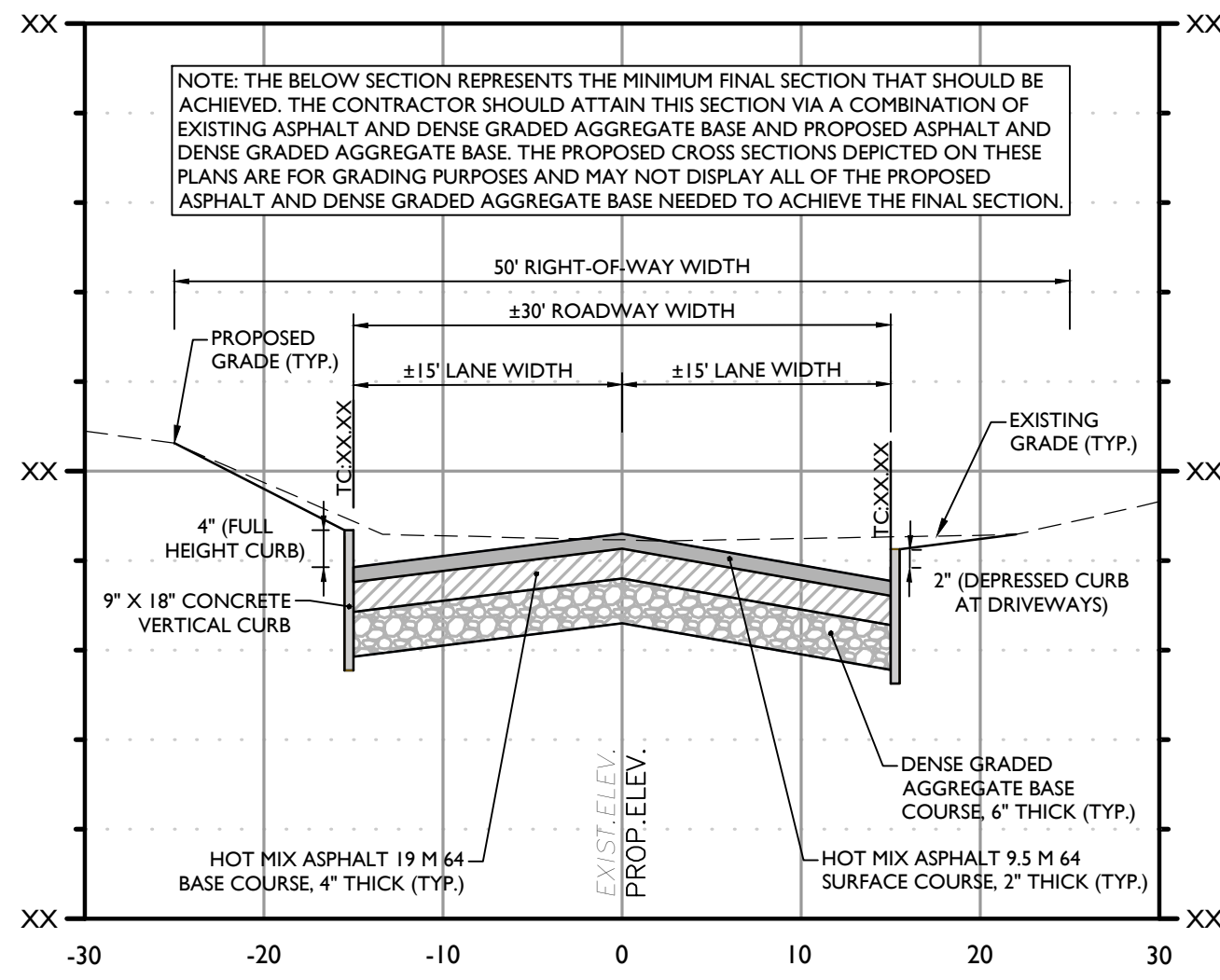
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DATE: 01/30/23
DRAWN BY: BAK
CHECKED BY: BRP
PROJECT NUMBER: CDT0078
DRAWING NAME: C-LAY1

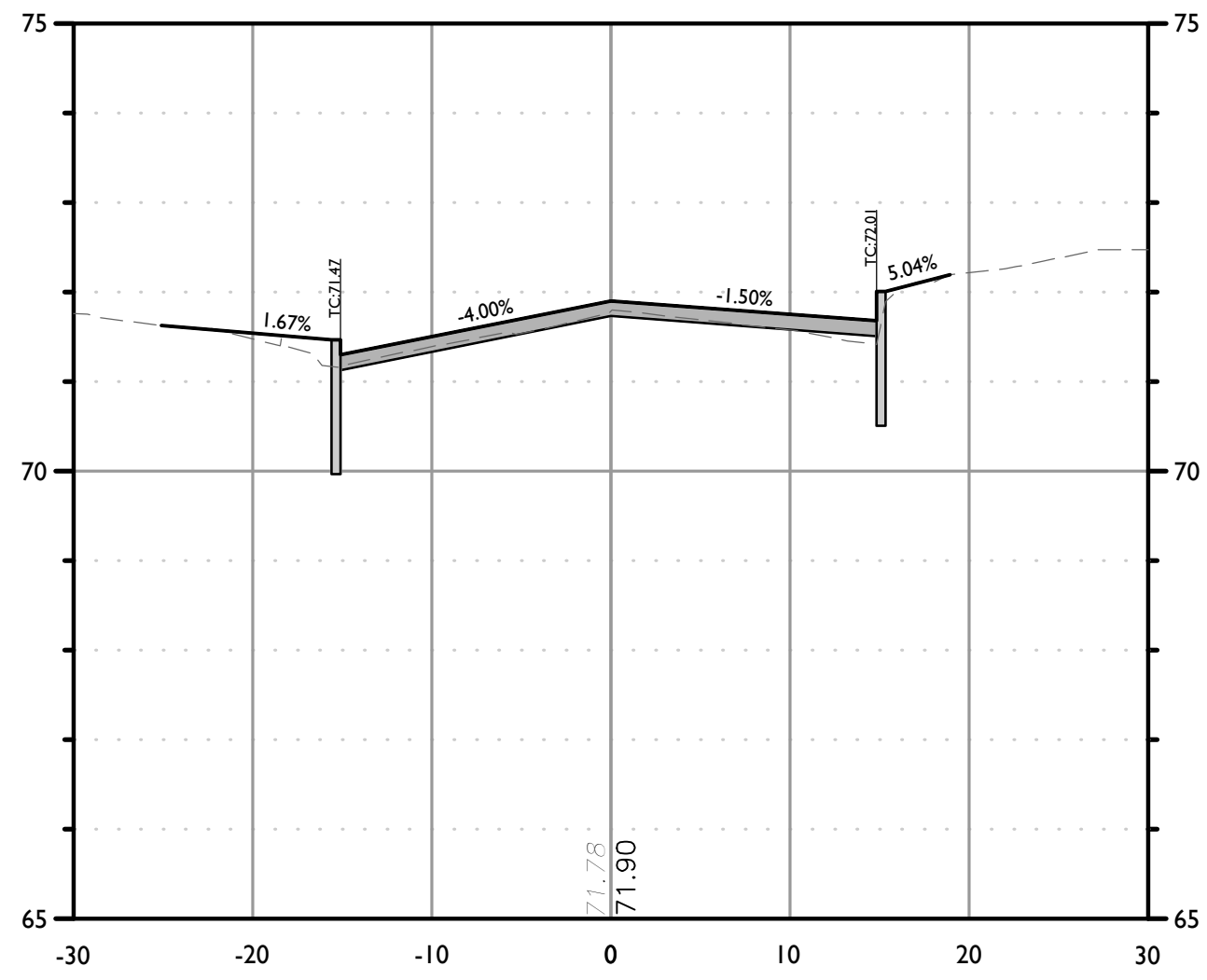
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CROSS SECTIONS

SHEET NUMBER:
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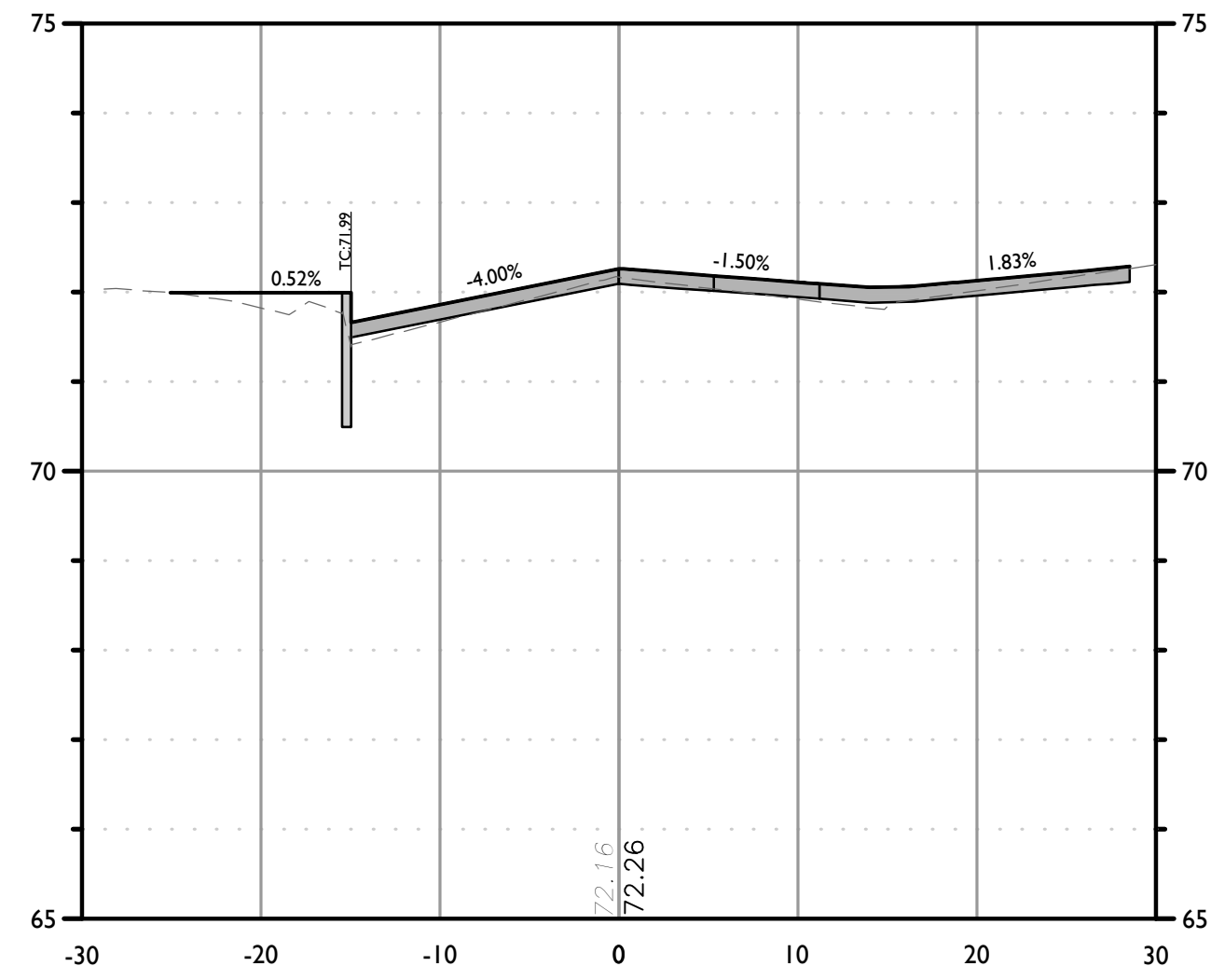
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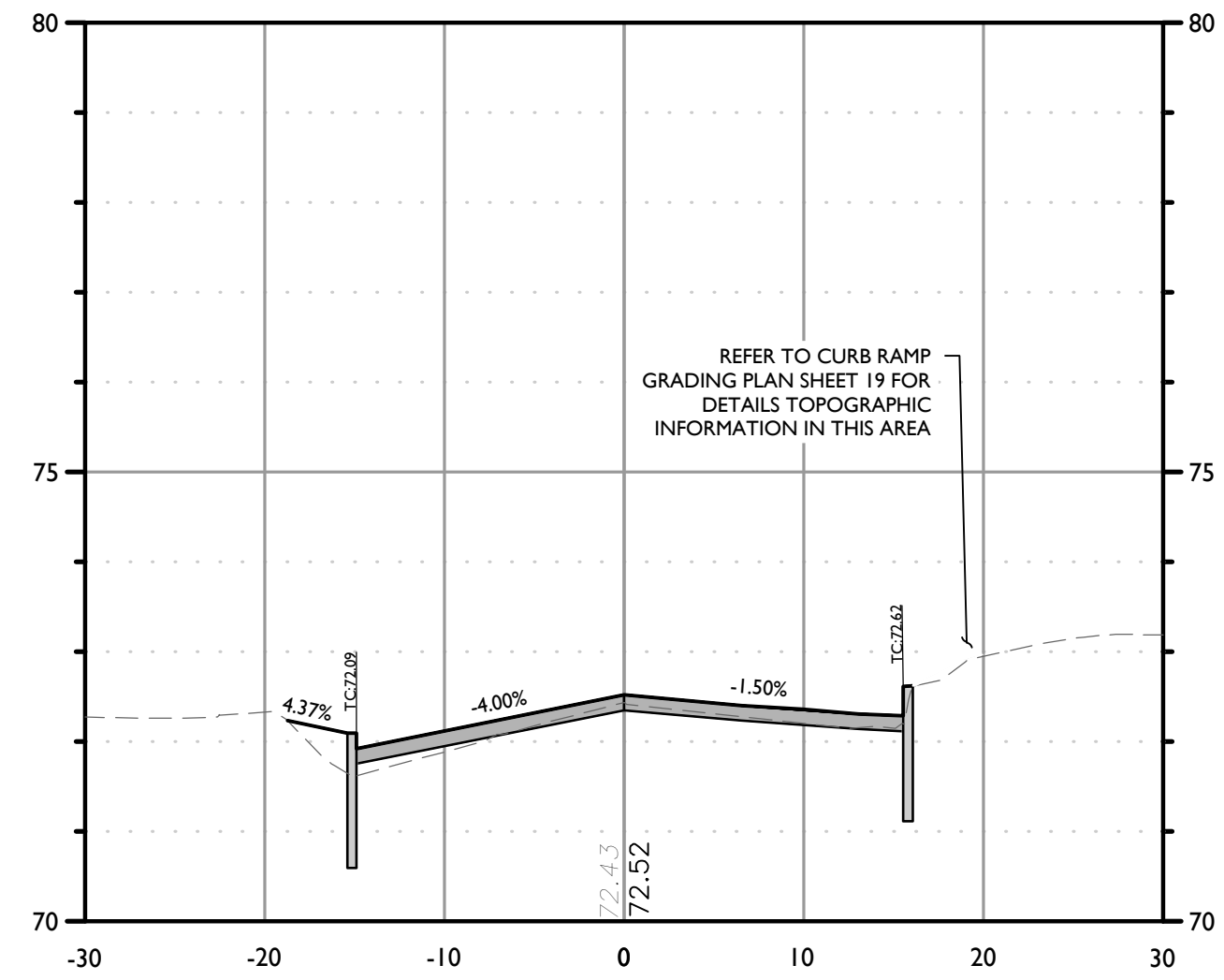
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HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



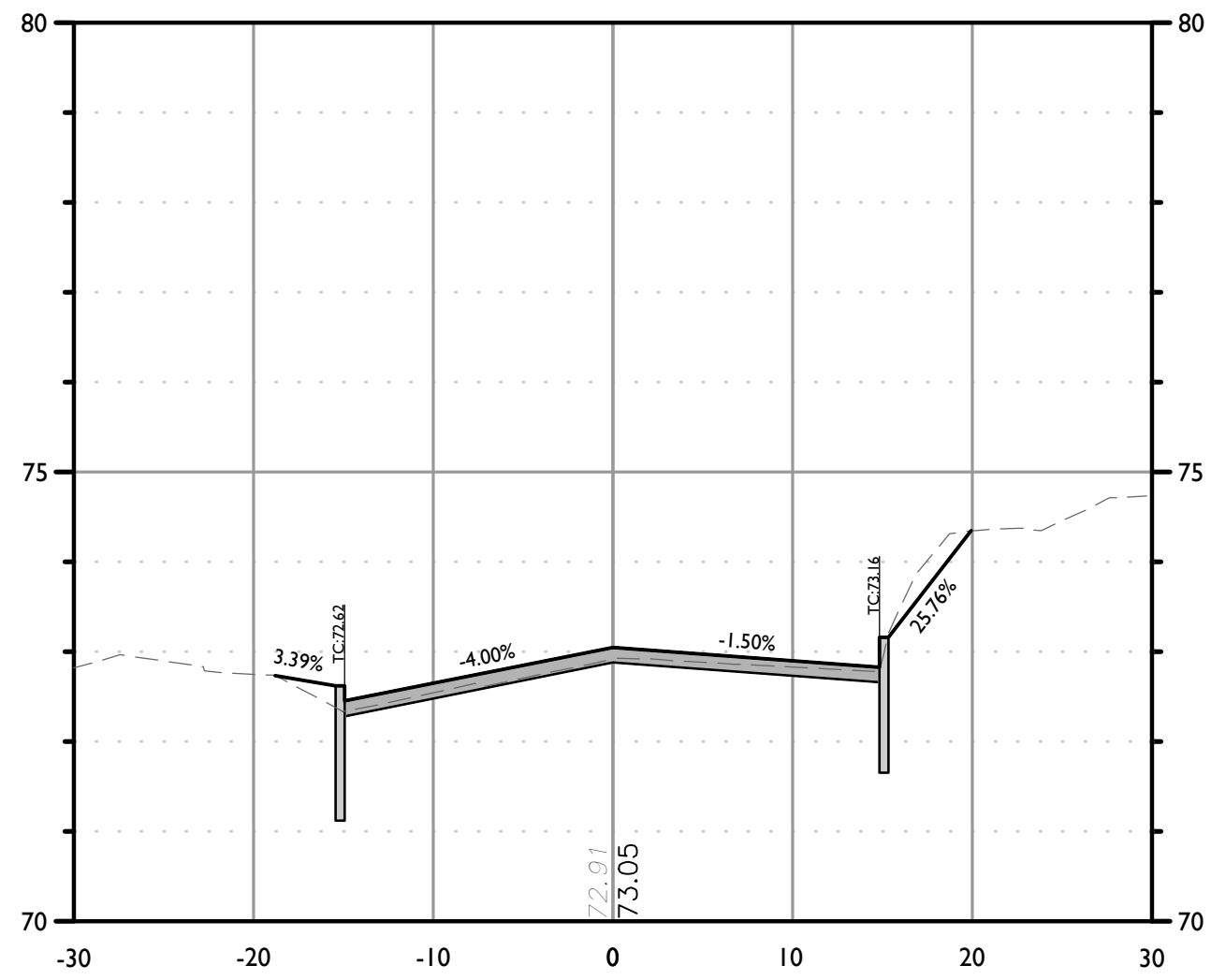
CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 16+06
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



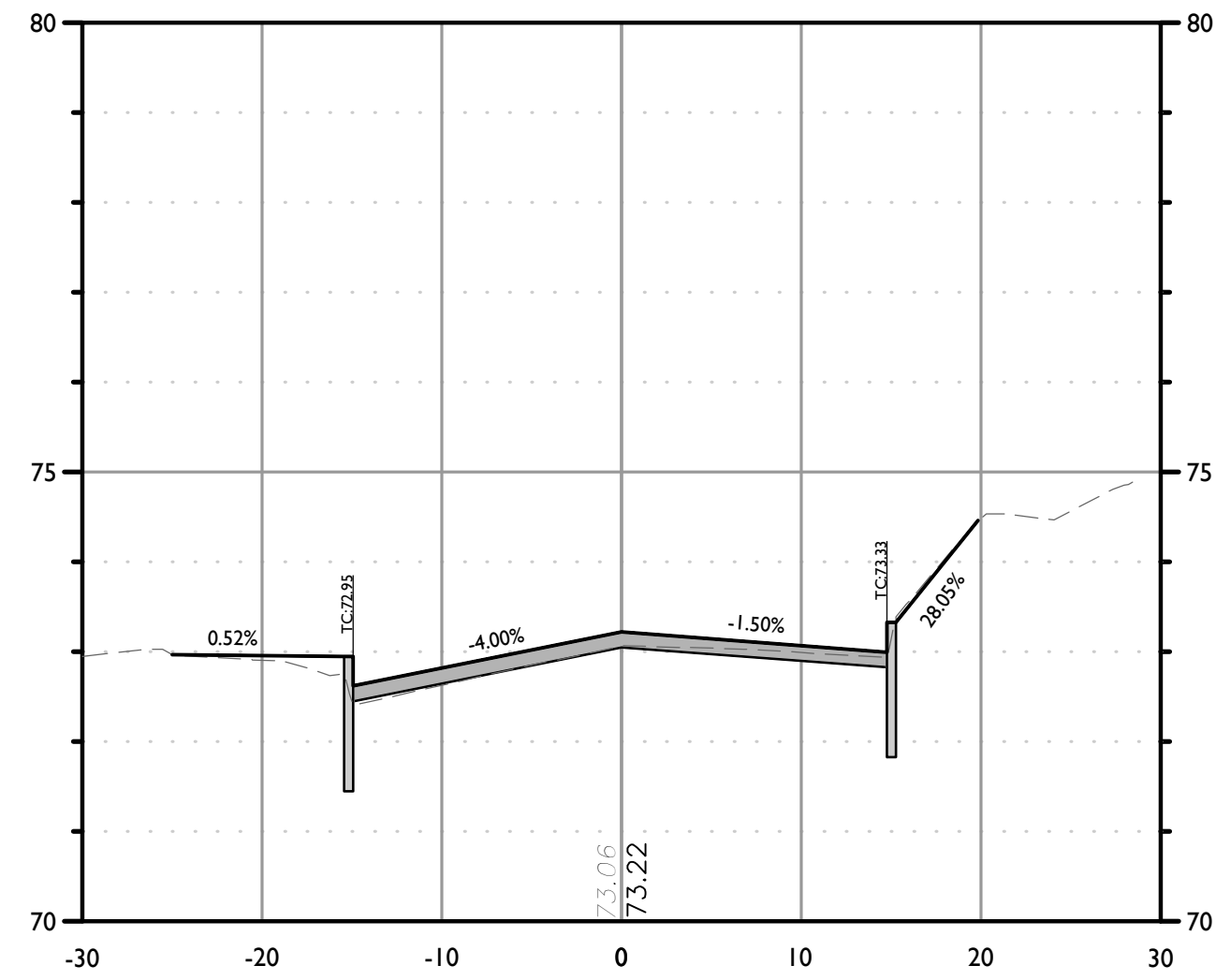
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VERTICAL : 1" = 2'



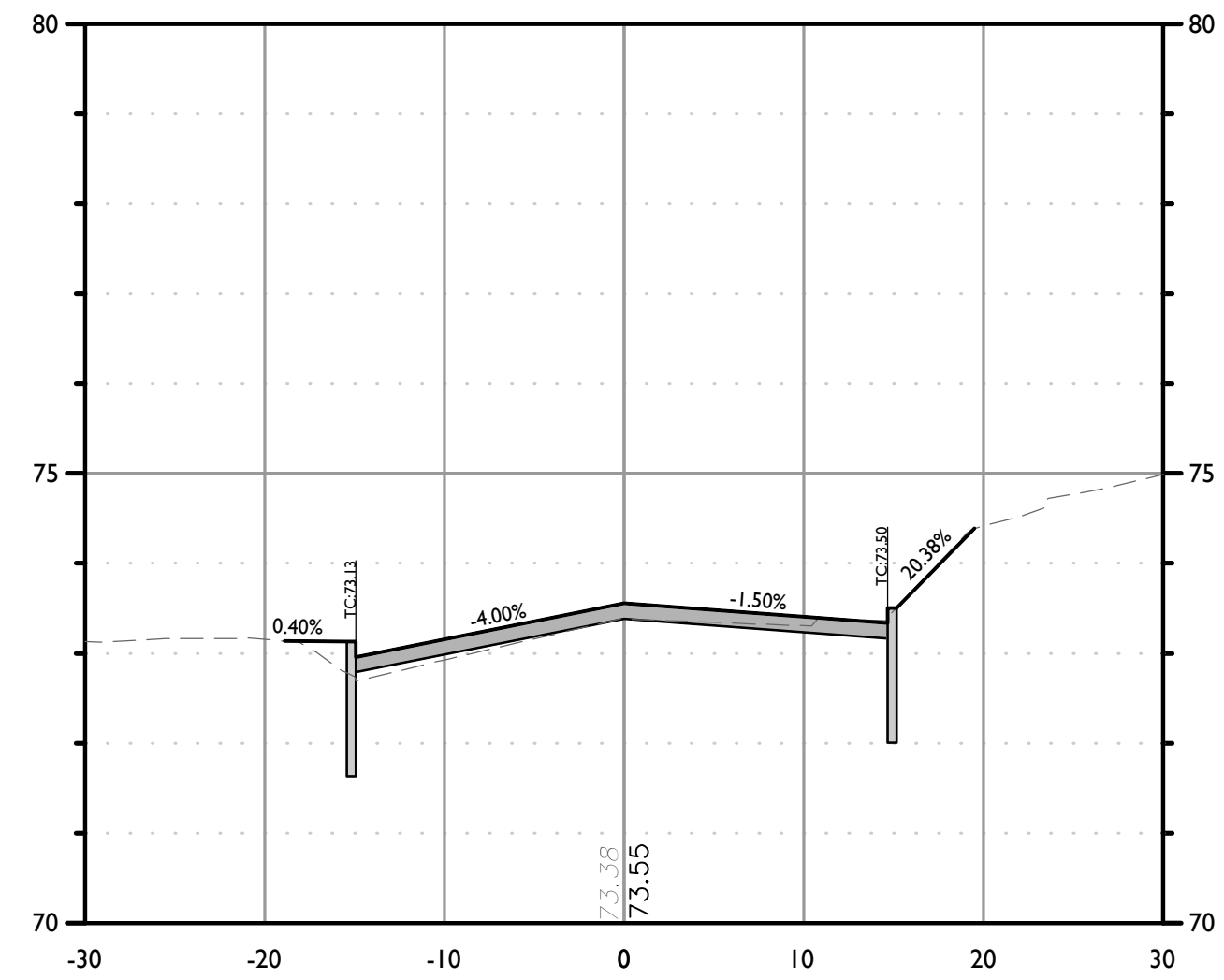
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VERTICAL : 1" = 2'



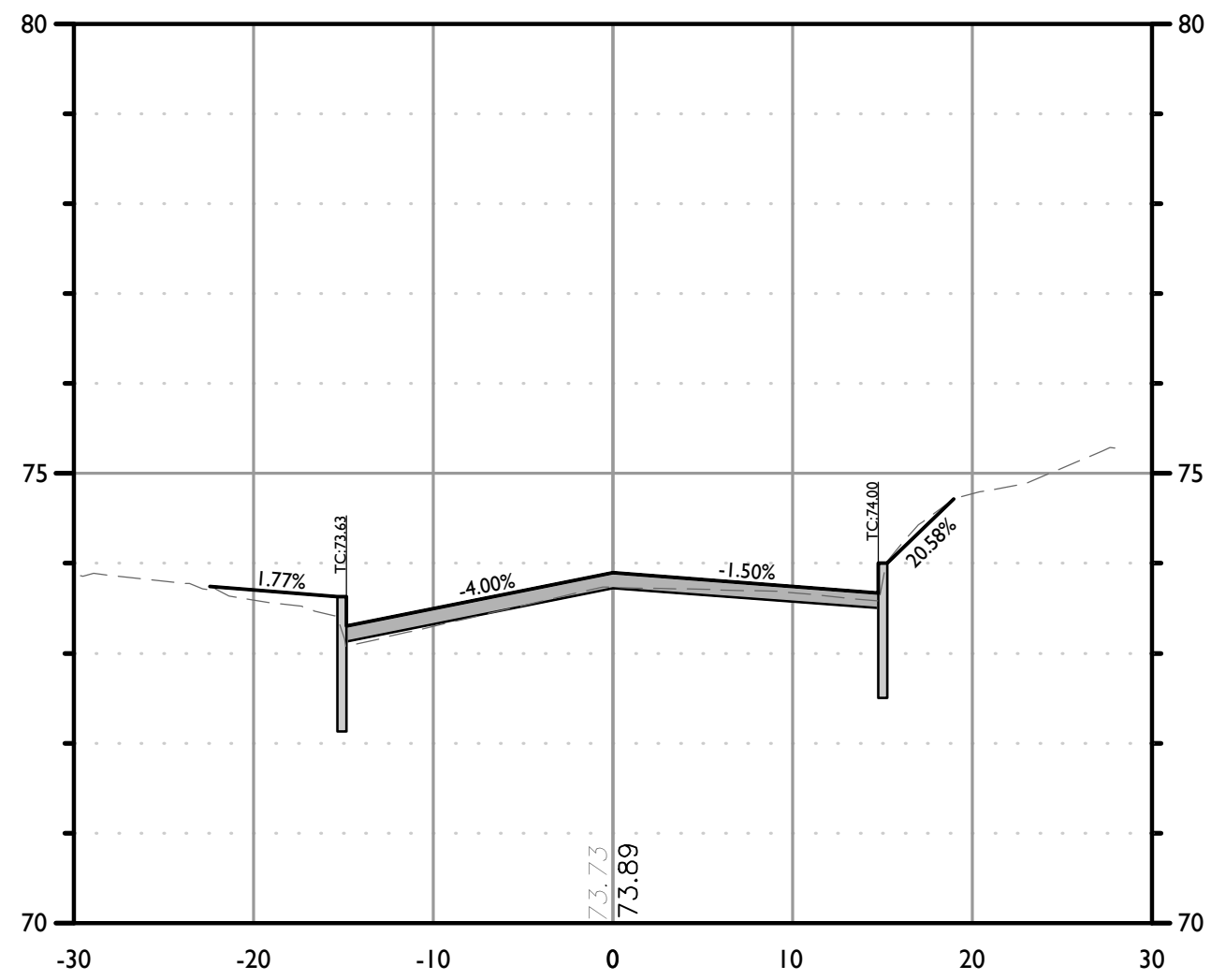
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VERTICAL : 1" = 2'



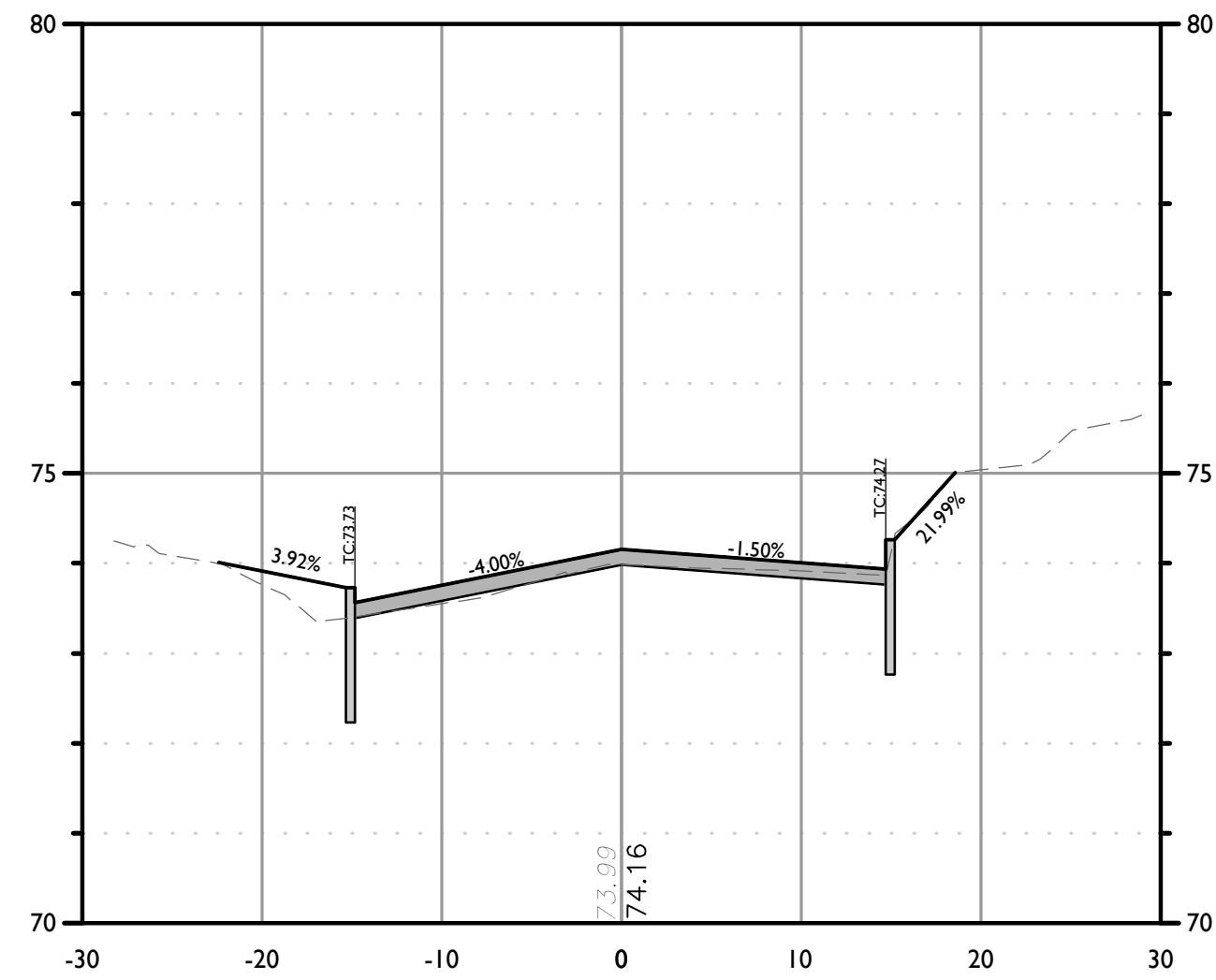
CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 17+00
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



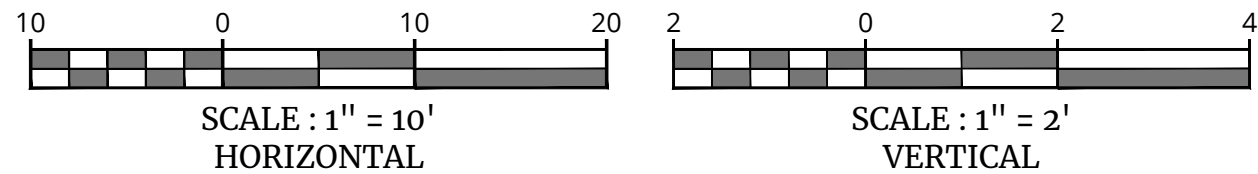
CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 17+24
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 17+50
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 17+70
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



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LICENSE NUMBER: 6645154
COLLIERS ENGINEERING & DESIGN, INC.
N.J. C.O.A. #: 24GA27986500

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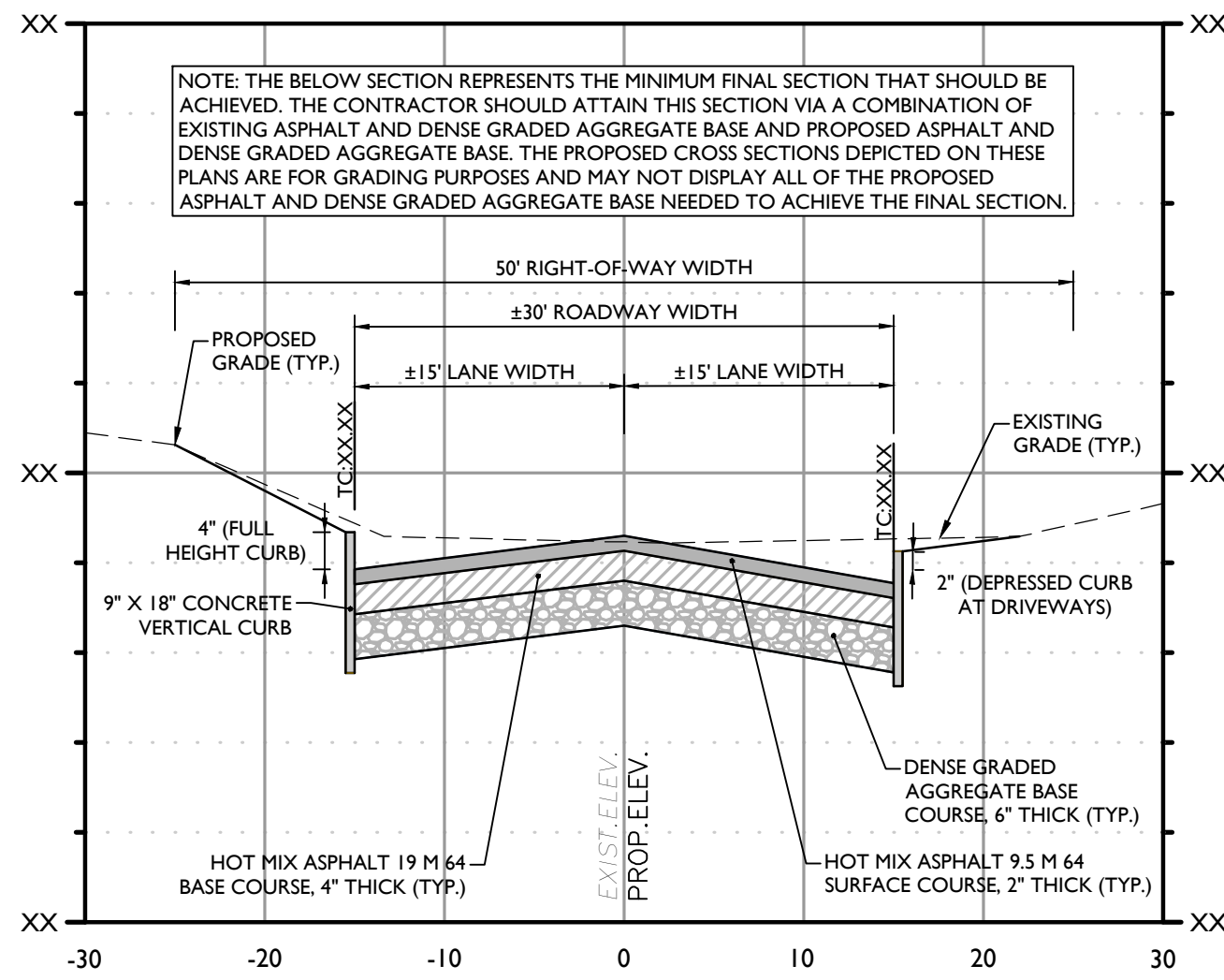
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CHECKED BY: BRP
PROJECT NUMBER: CDT0078
DRAWING NAME: C-LAY1

SHEET TITLE:
CROSS SECTIONS

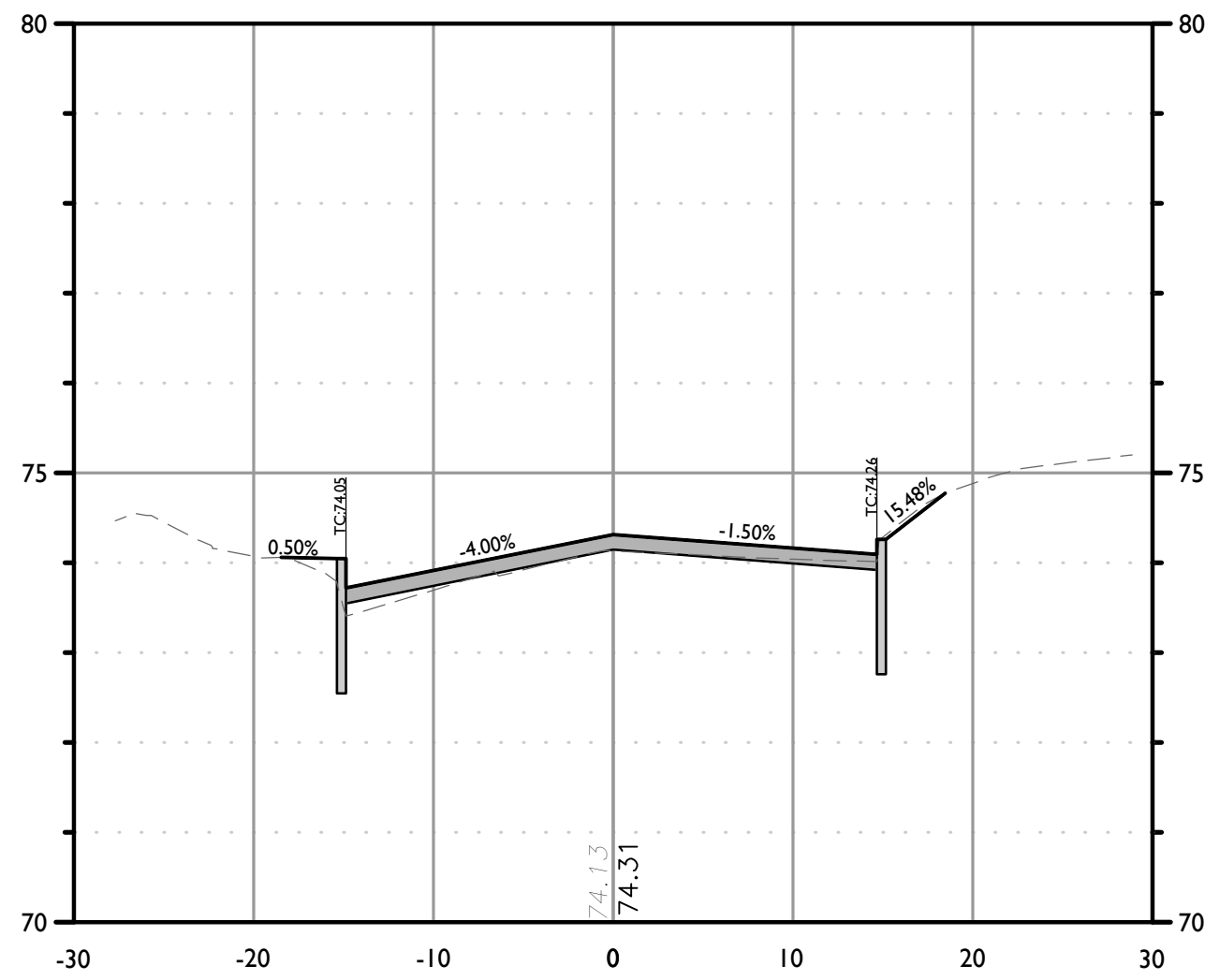
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NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

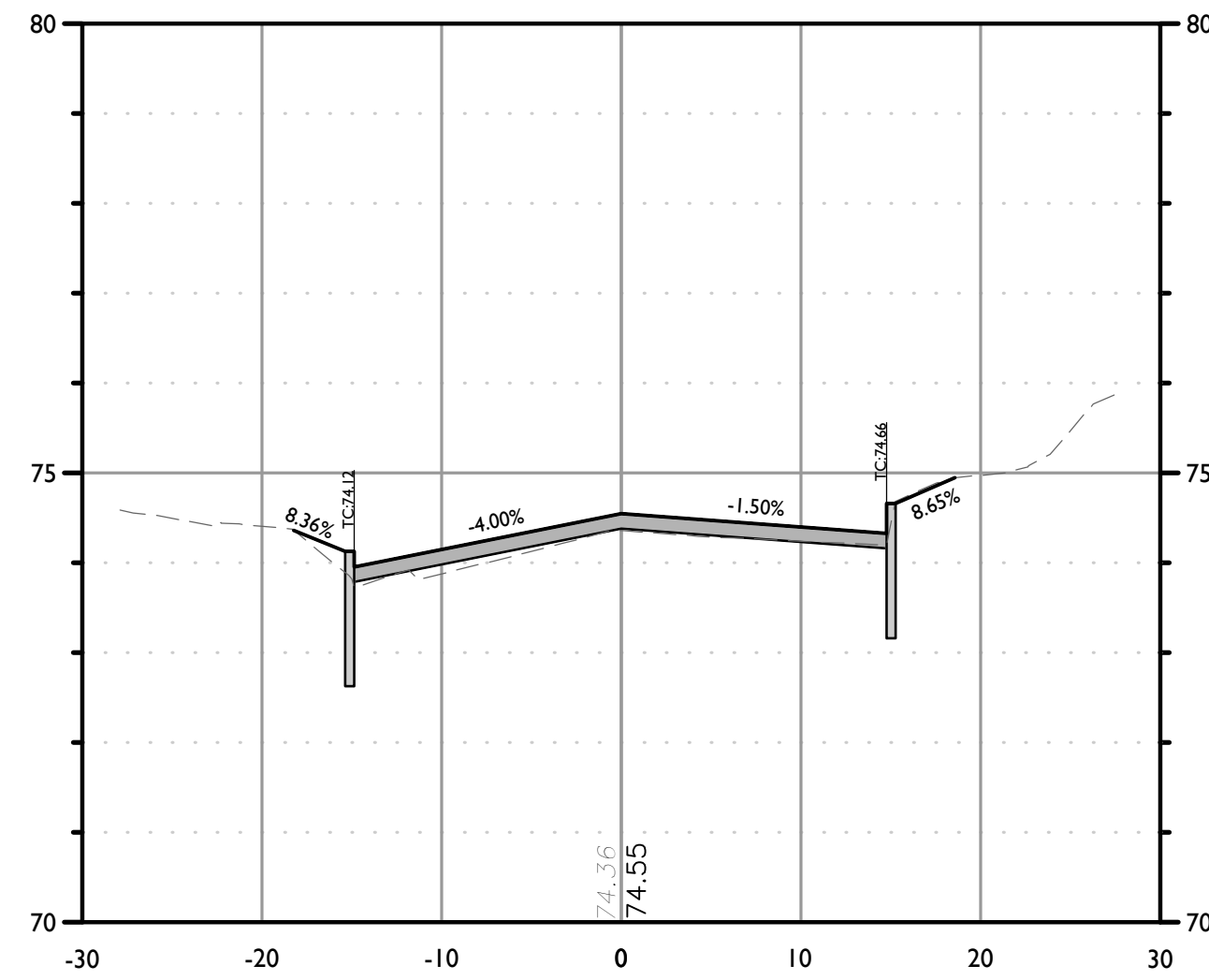
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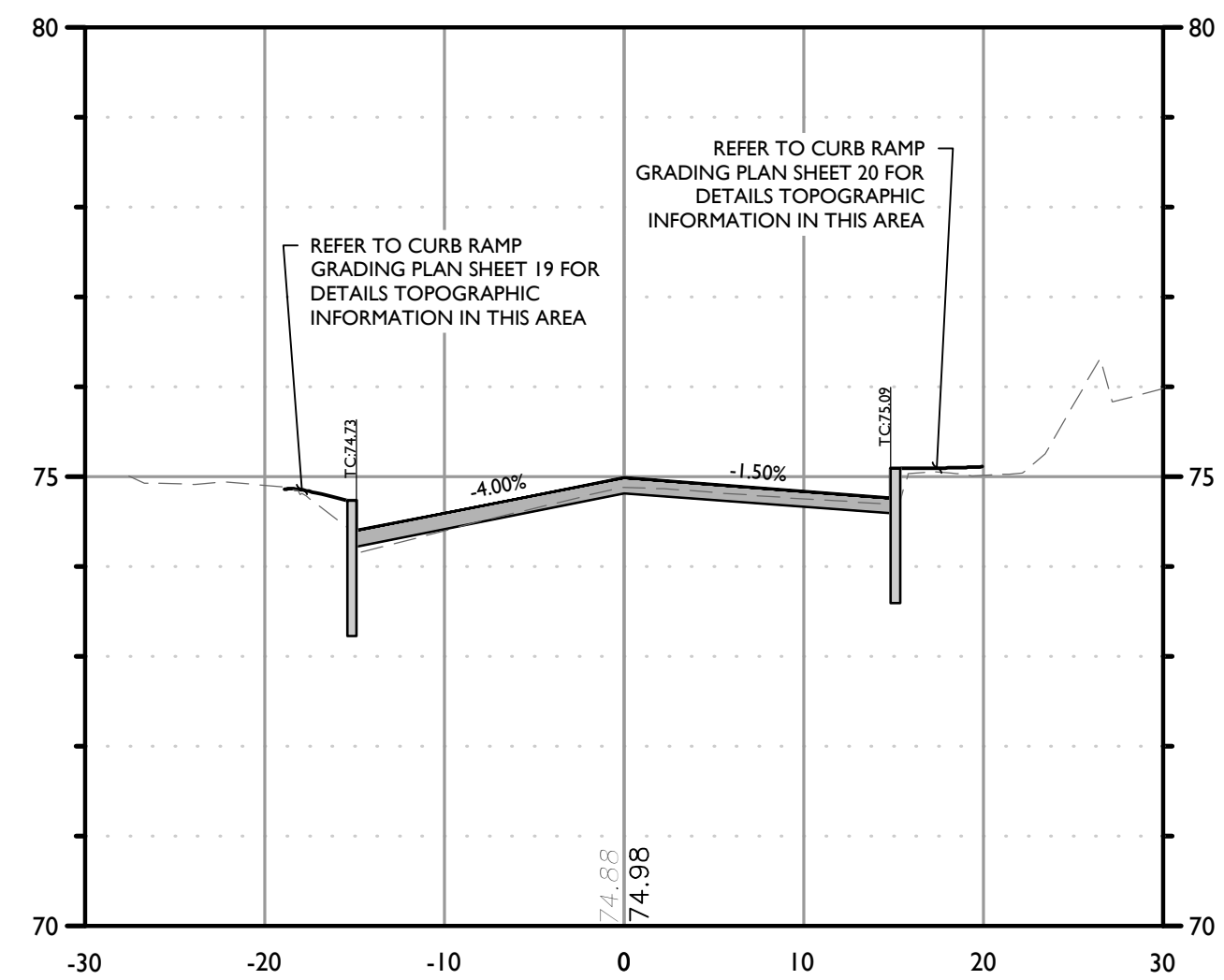
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STATION: XX+XX.XX
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



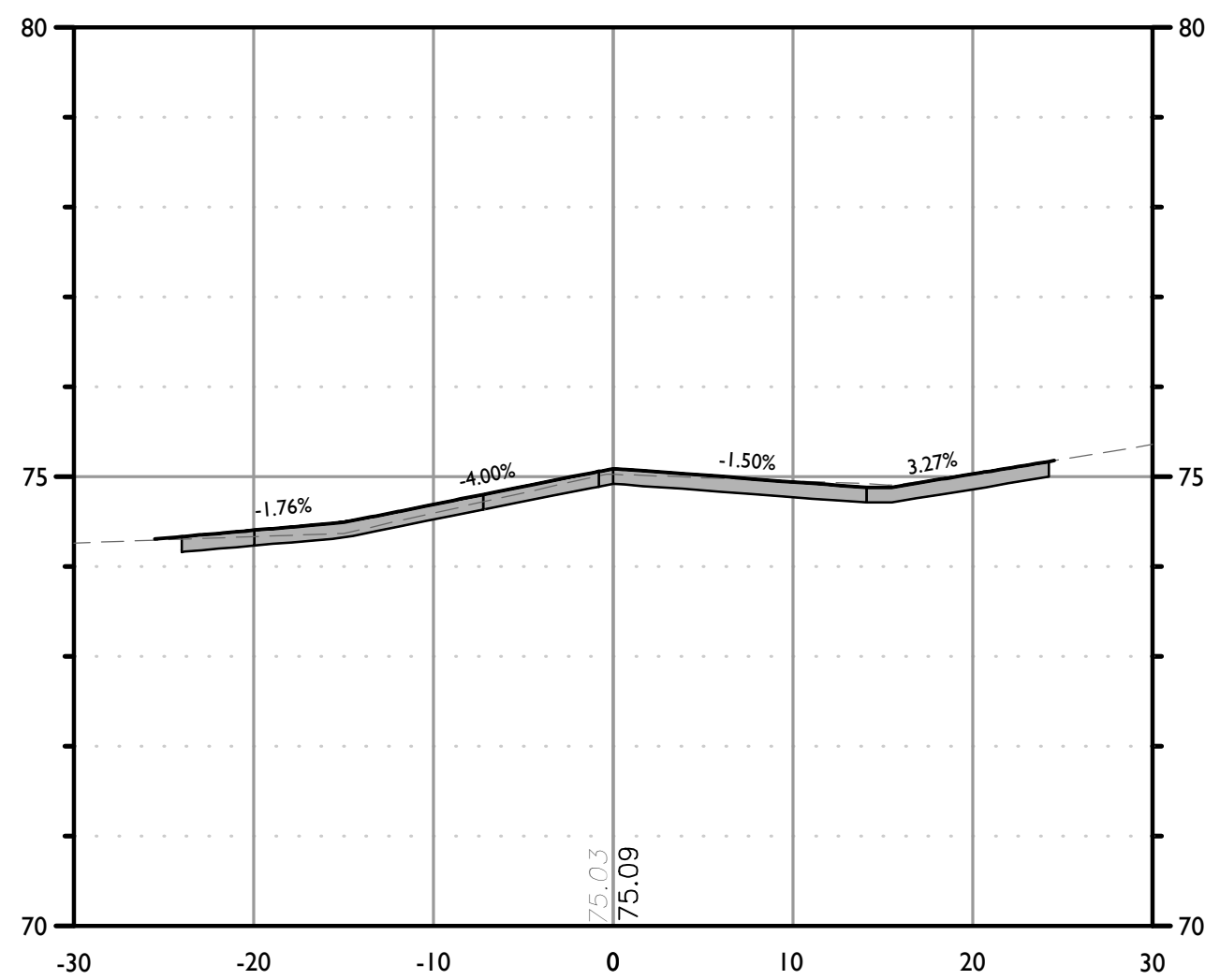
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VERTICAL : 1" = 2'



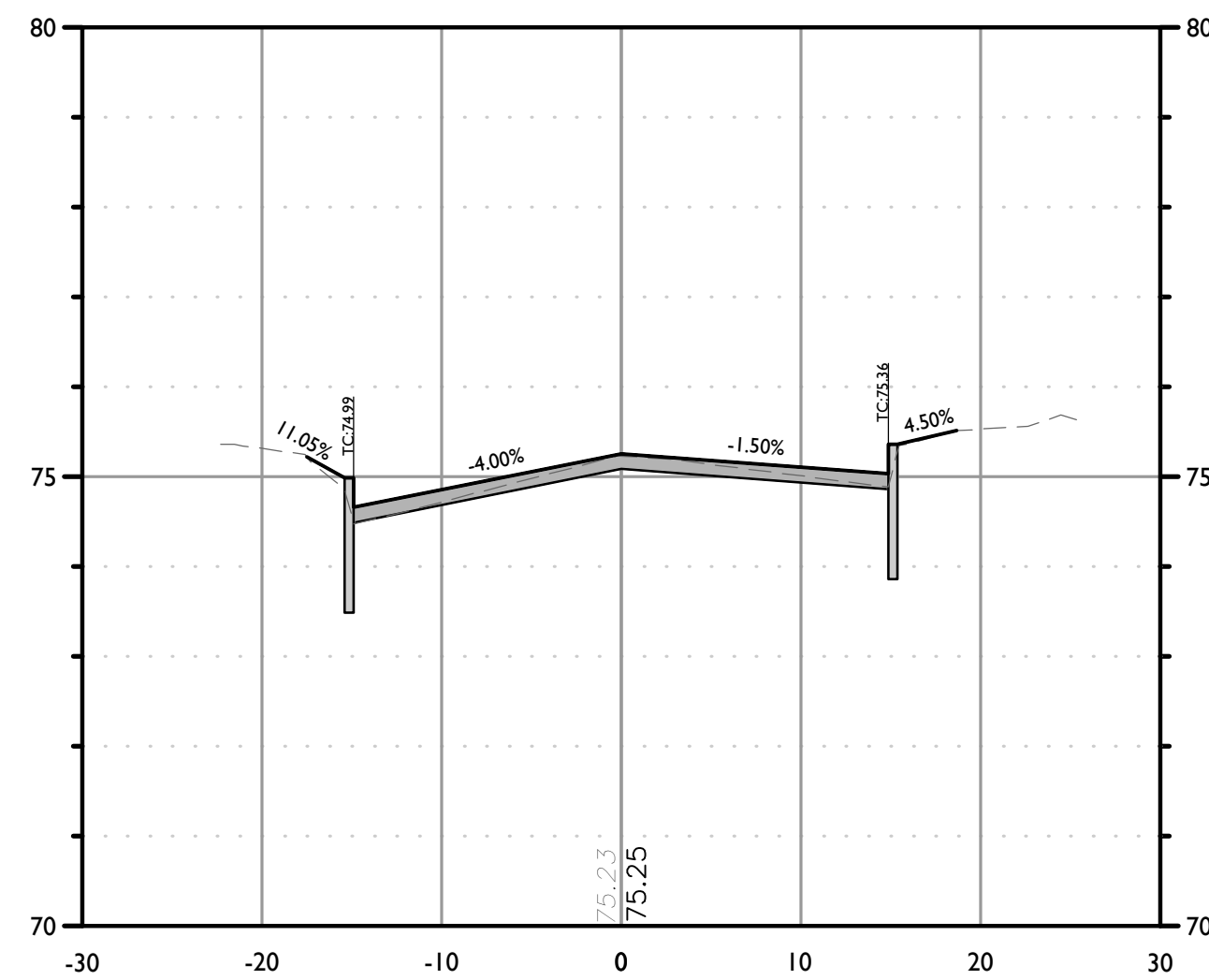
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HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



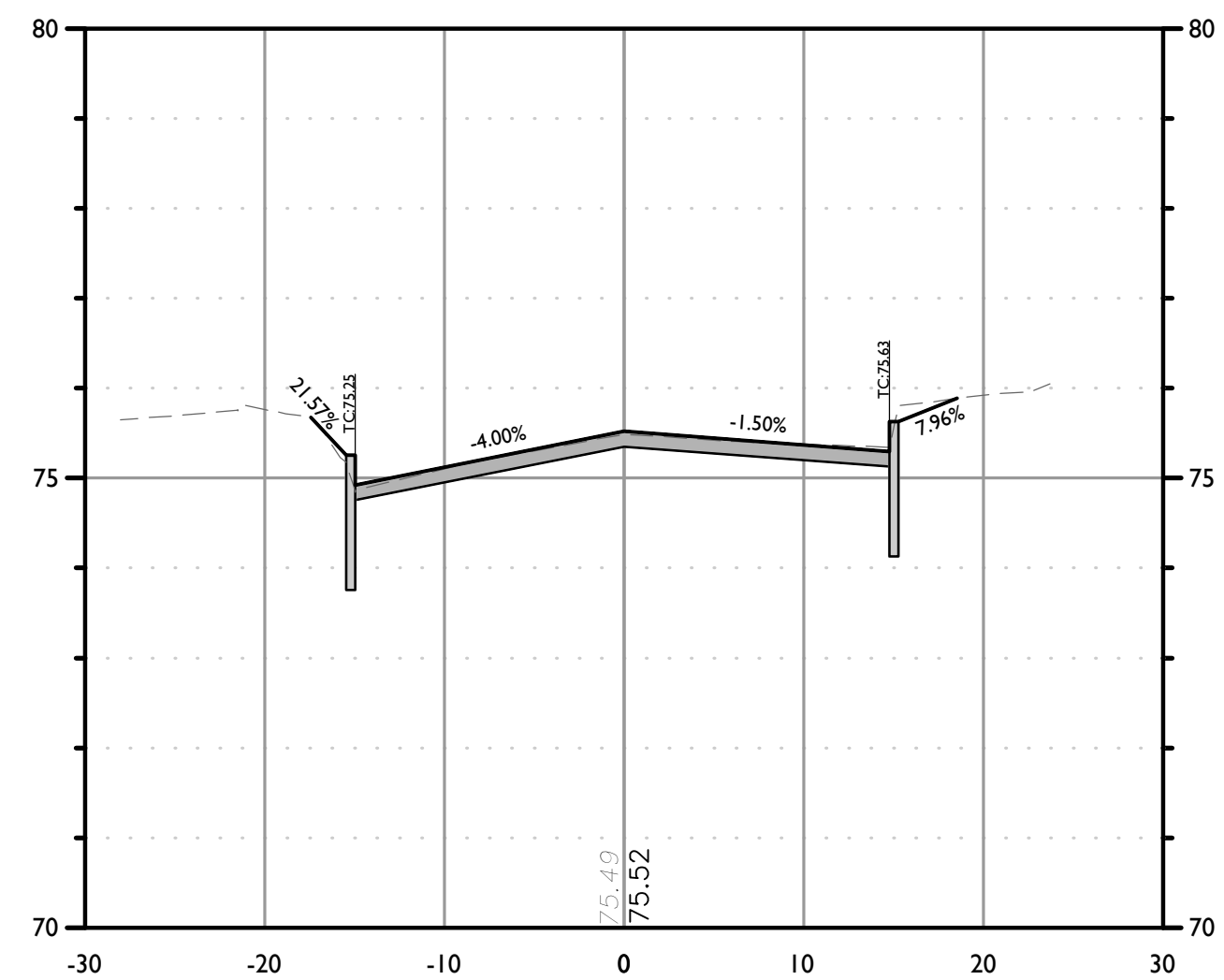
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VERTICAL : 1" = 2'



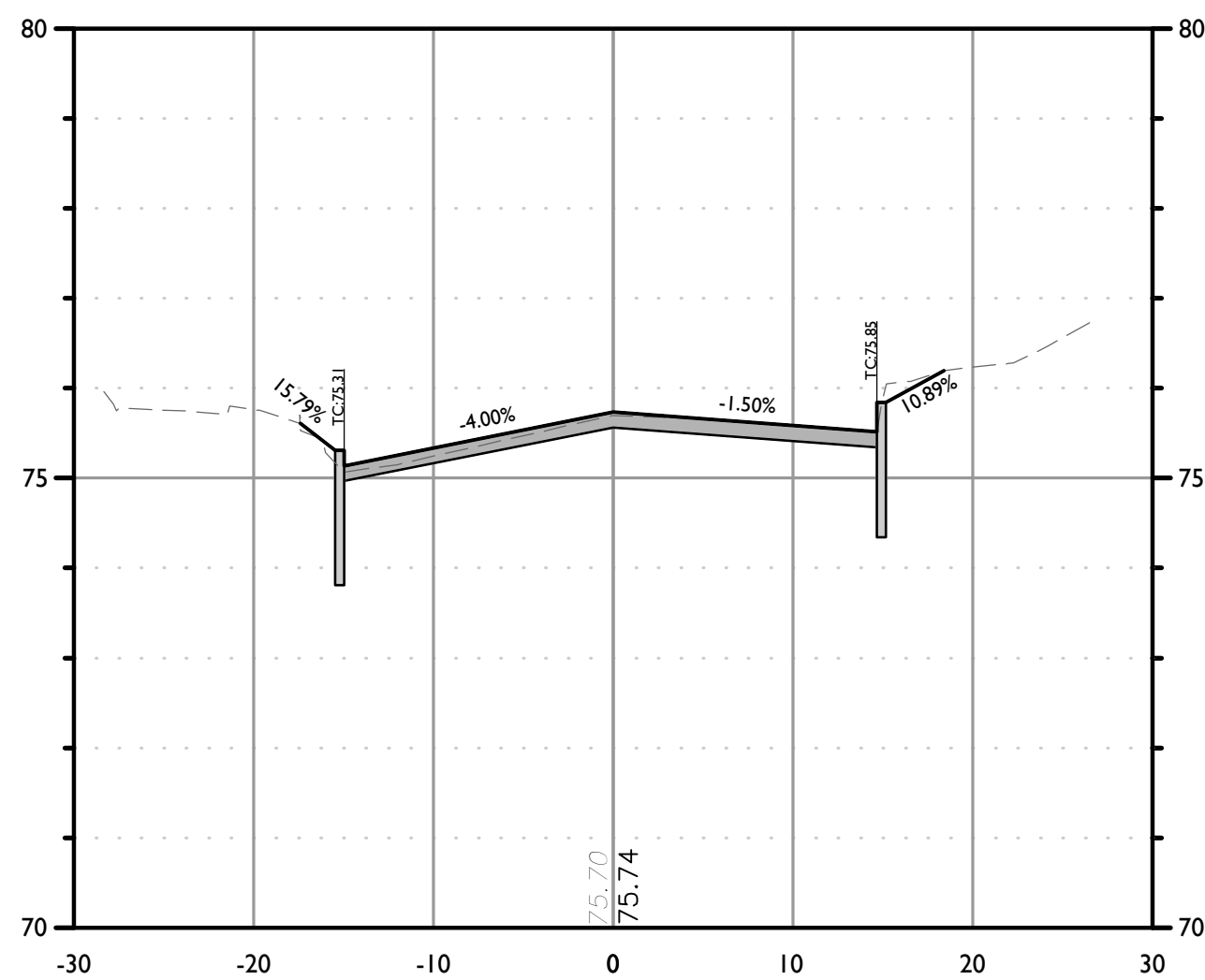
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VERTICAL : 1" = 2'



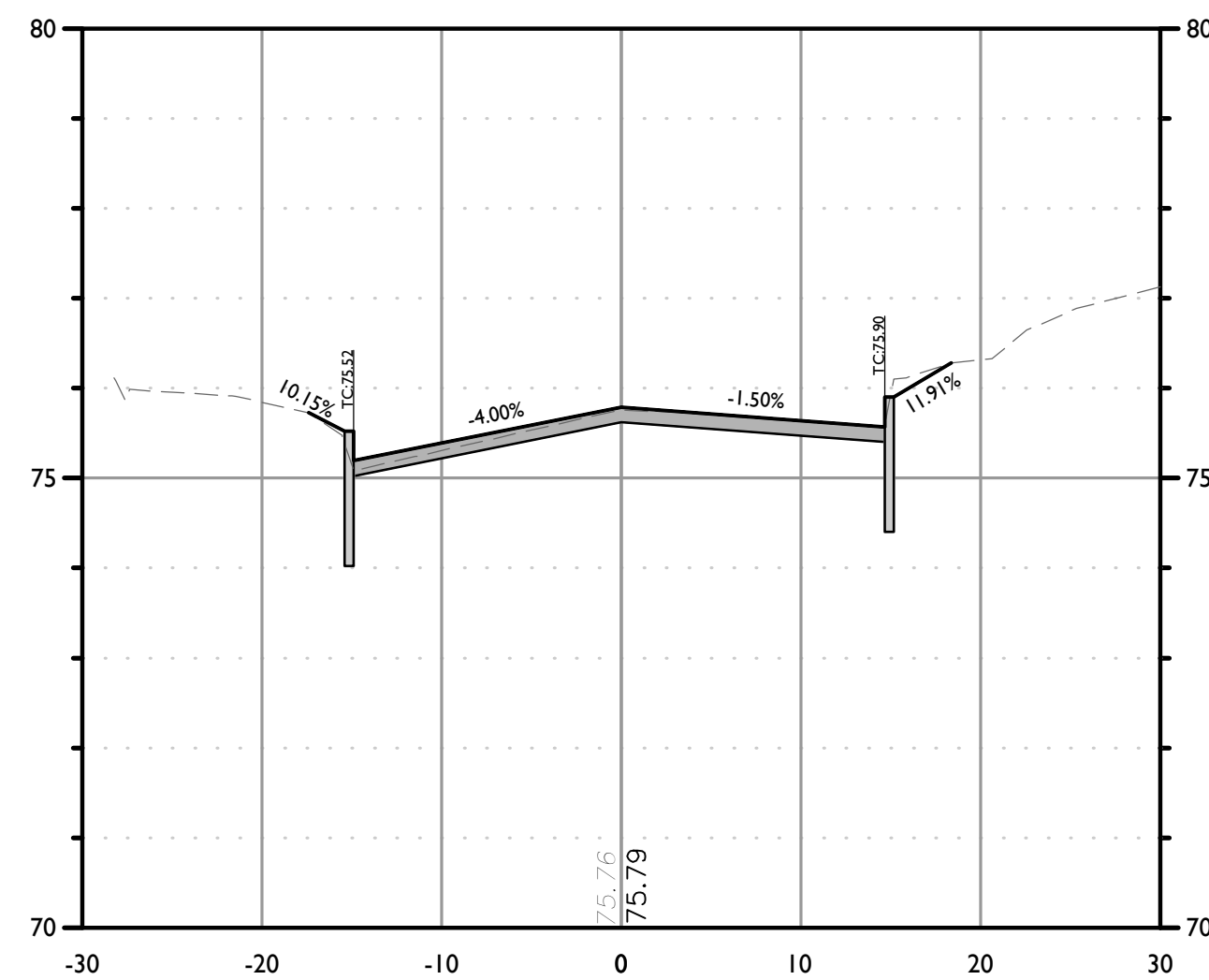
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VERTICAL : 1" = 2'



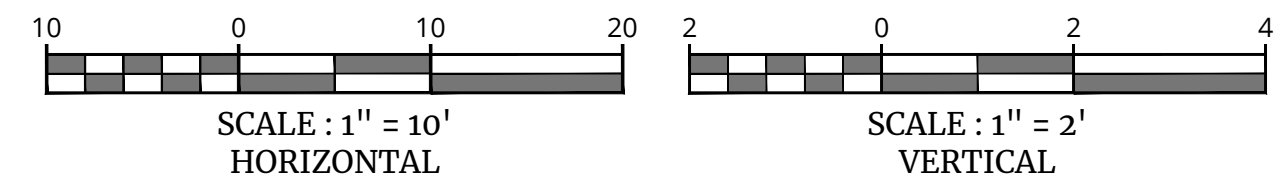
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STATION: 19+50
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 19+90
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 20+00
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



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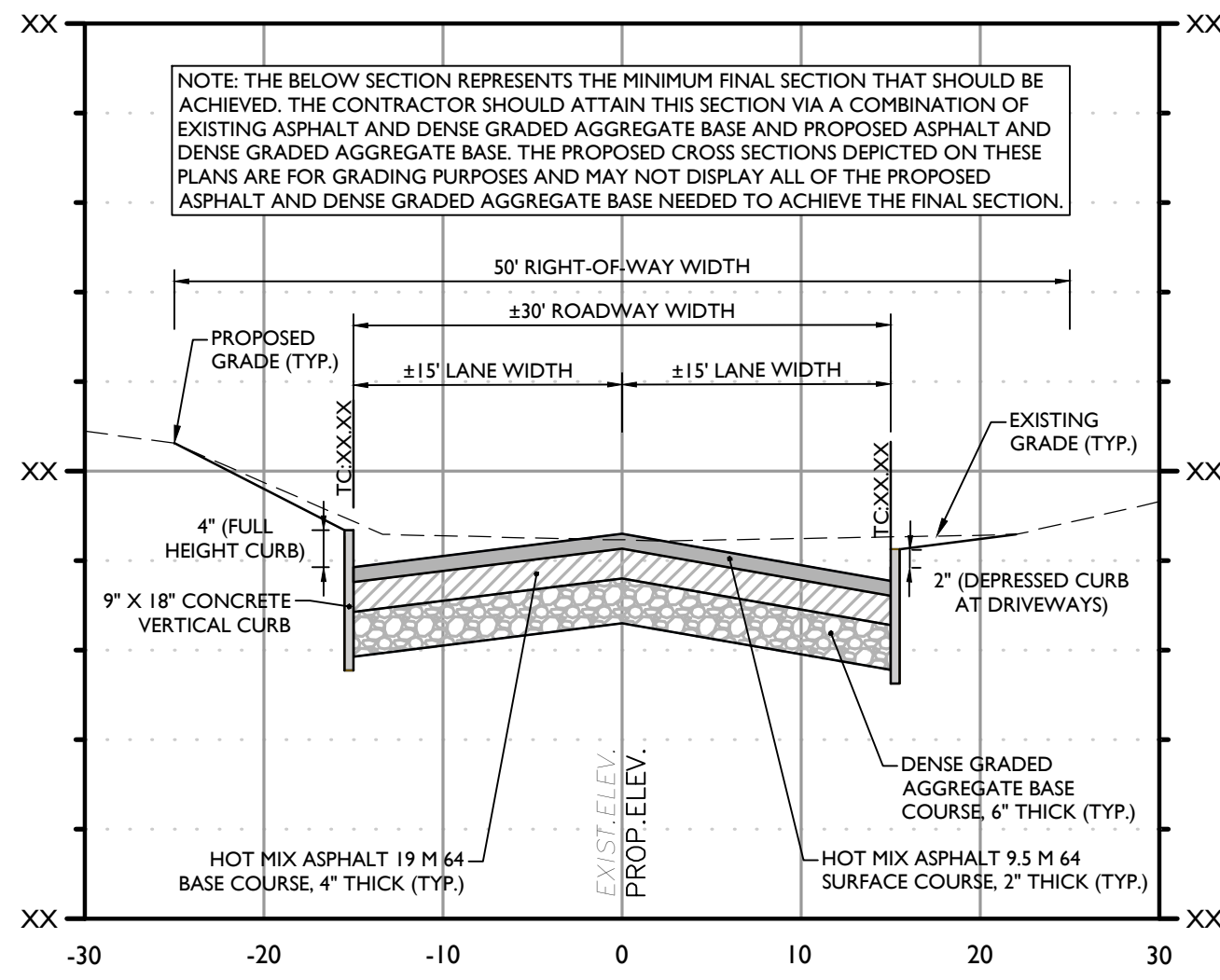
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Mt. Arlington, NJ 07856
Phone: 973.398.3110
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SCALE: AS SHOWN
DATE: 01/30/23
DRAWN BY: BAK
CHECKED BY: BRP
PROJECT NUMBER: CDT0078
DRAWING NAME: C-LAYT

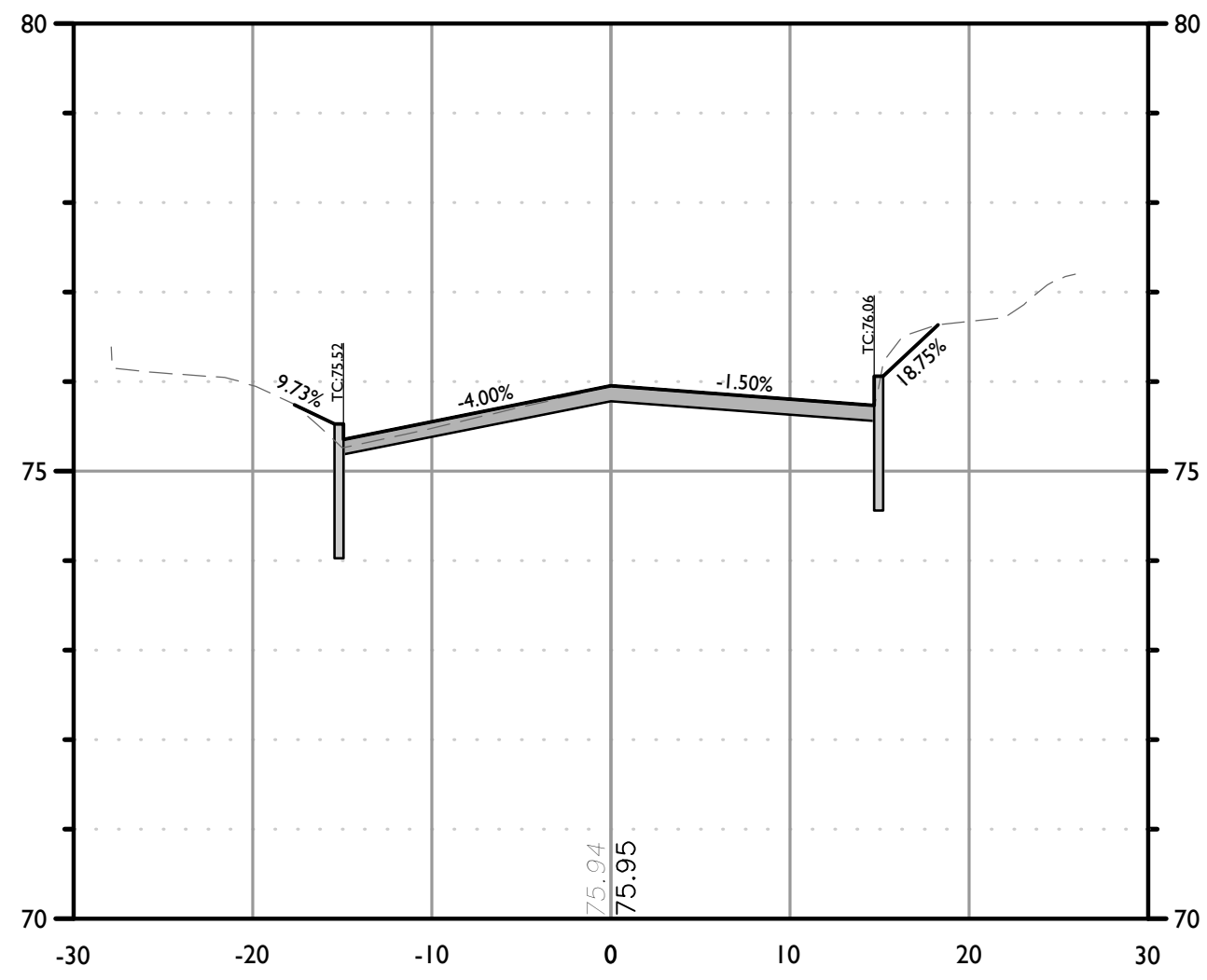
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CROSS SECTIONS

SHEET NUMBER:
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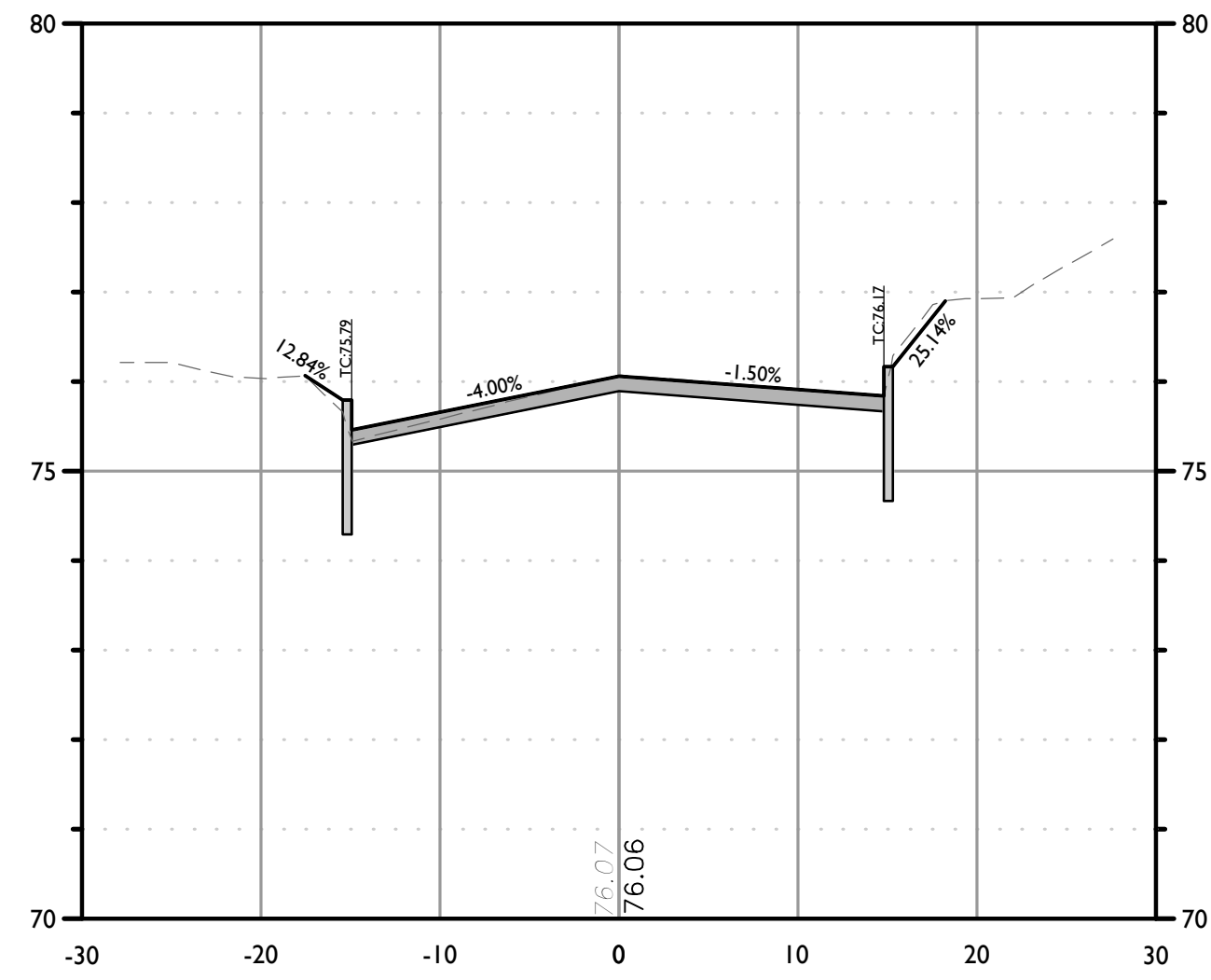
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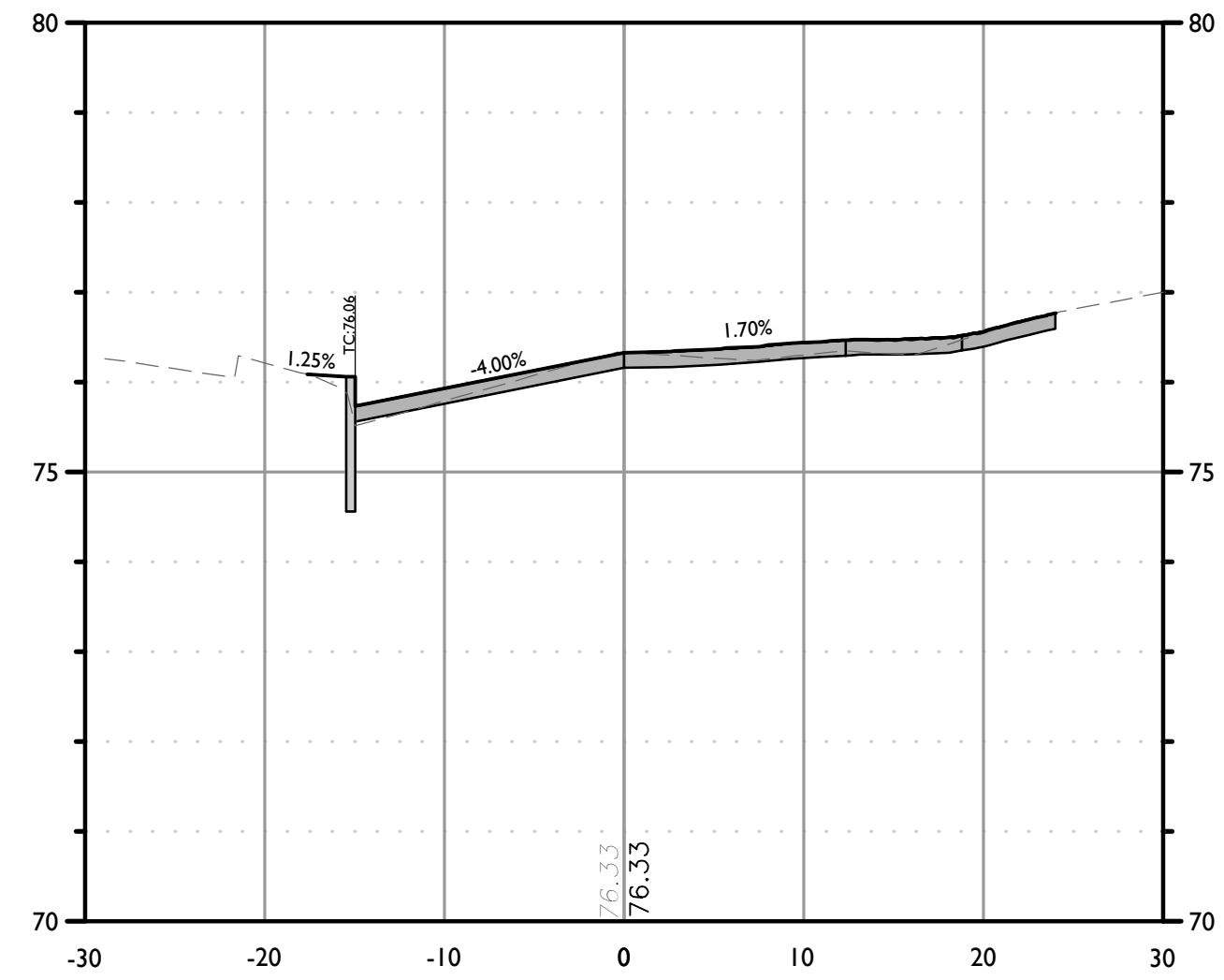
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STATION: XX+XX.XX
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



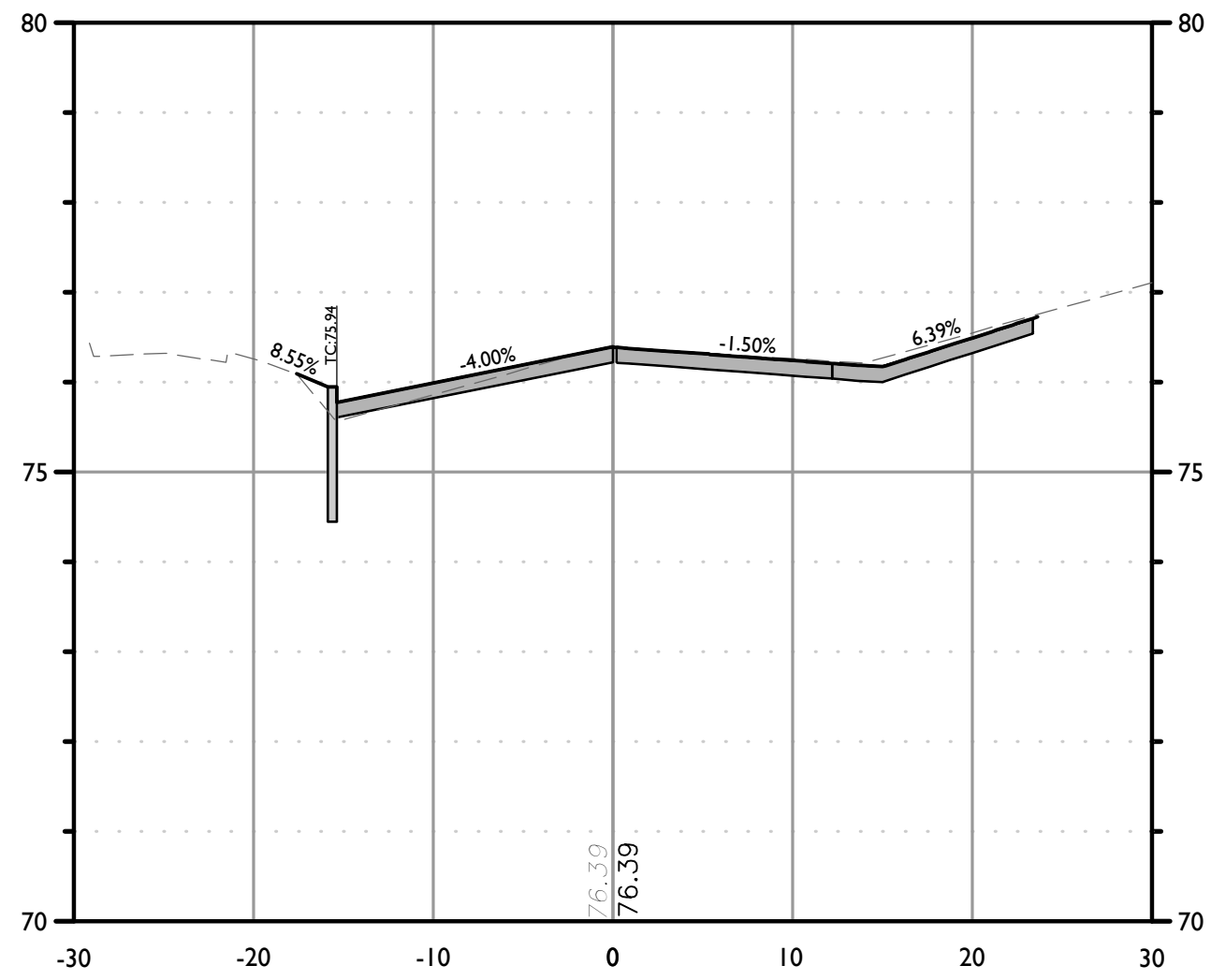
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STATION: 20+30
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



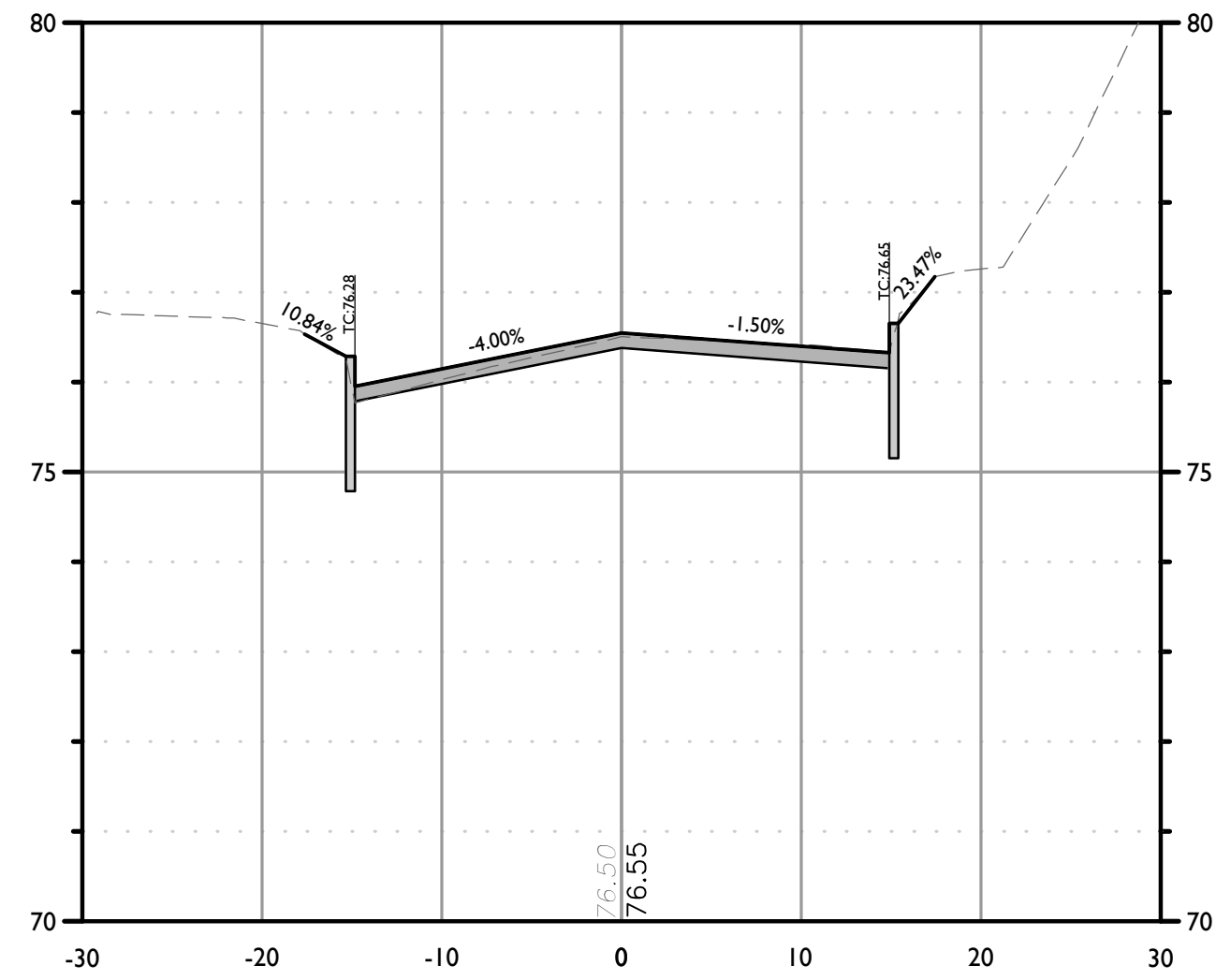
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STATION: 20+50
HORIZONTAL : 1" = 10'
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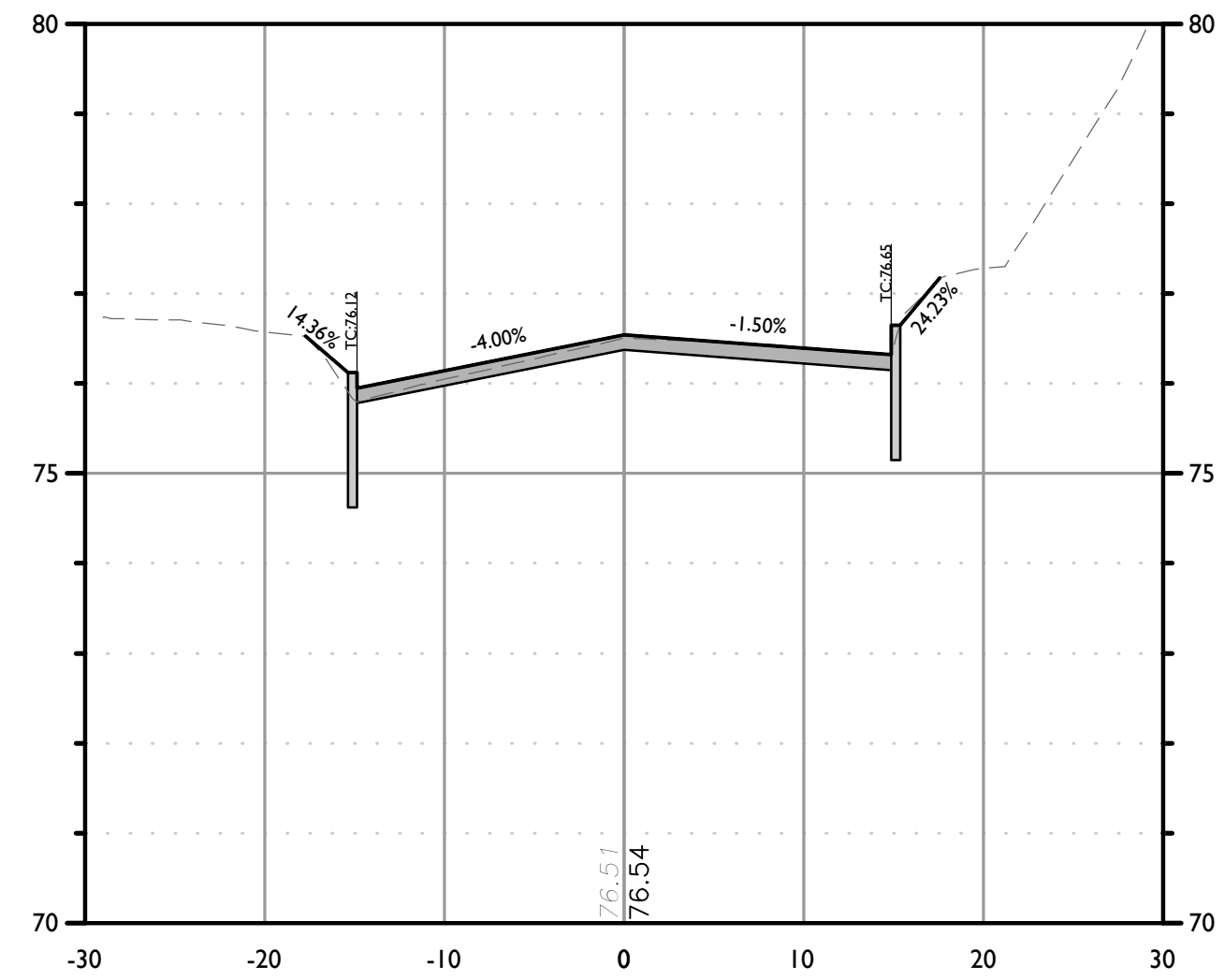
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STATION: 21+00
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



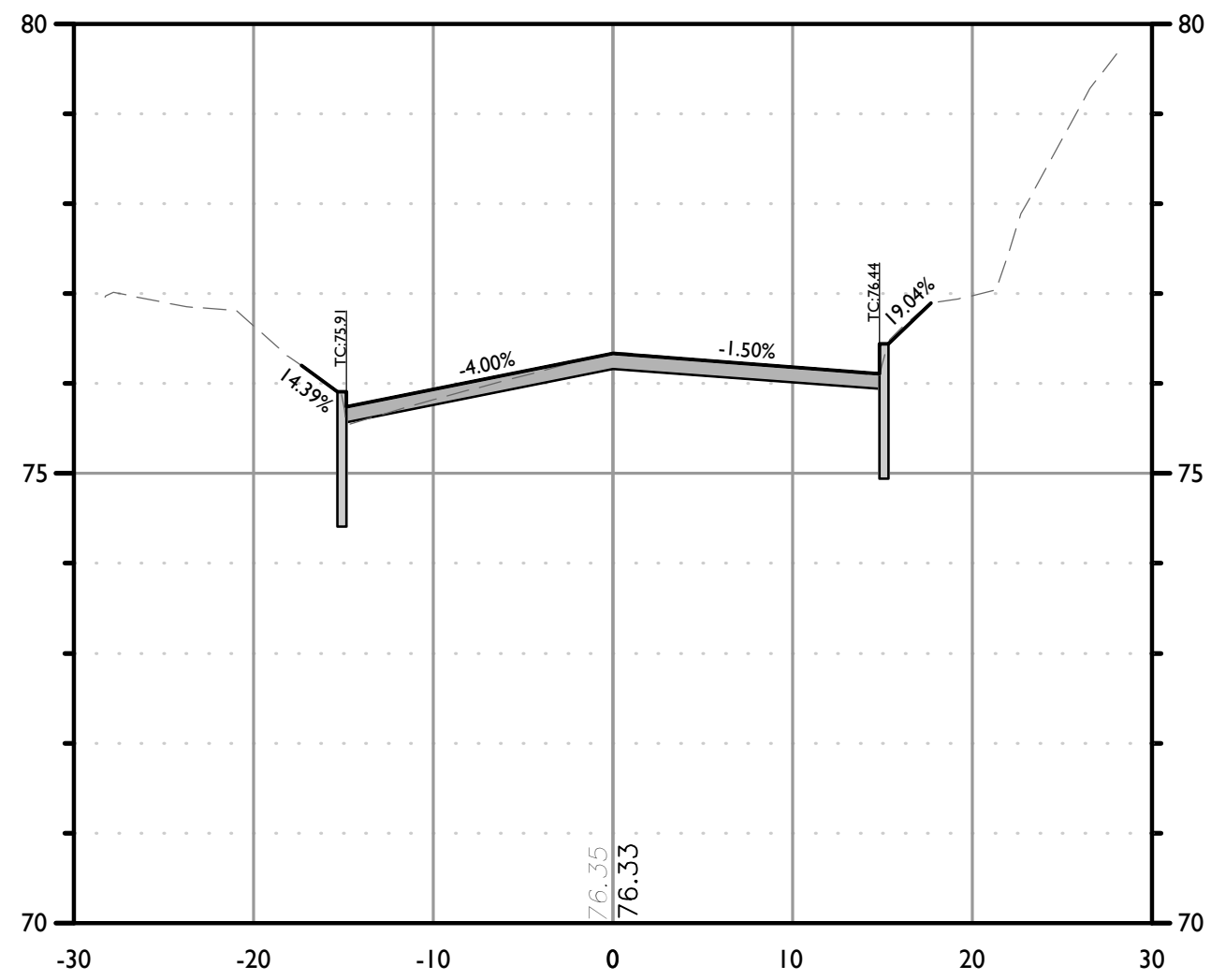
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STATION: 21+11.52
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



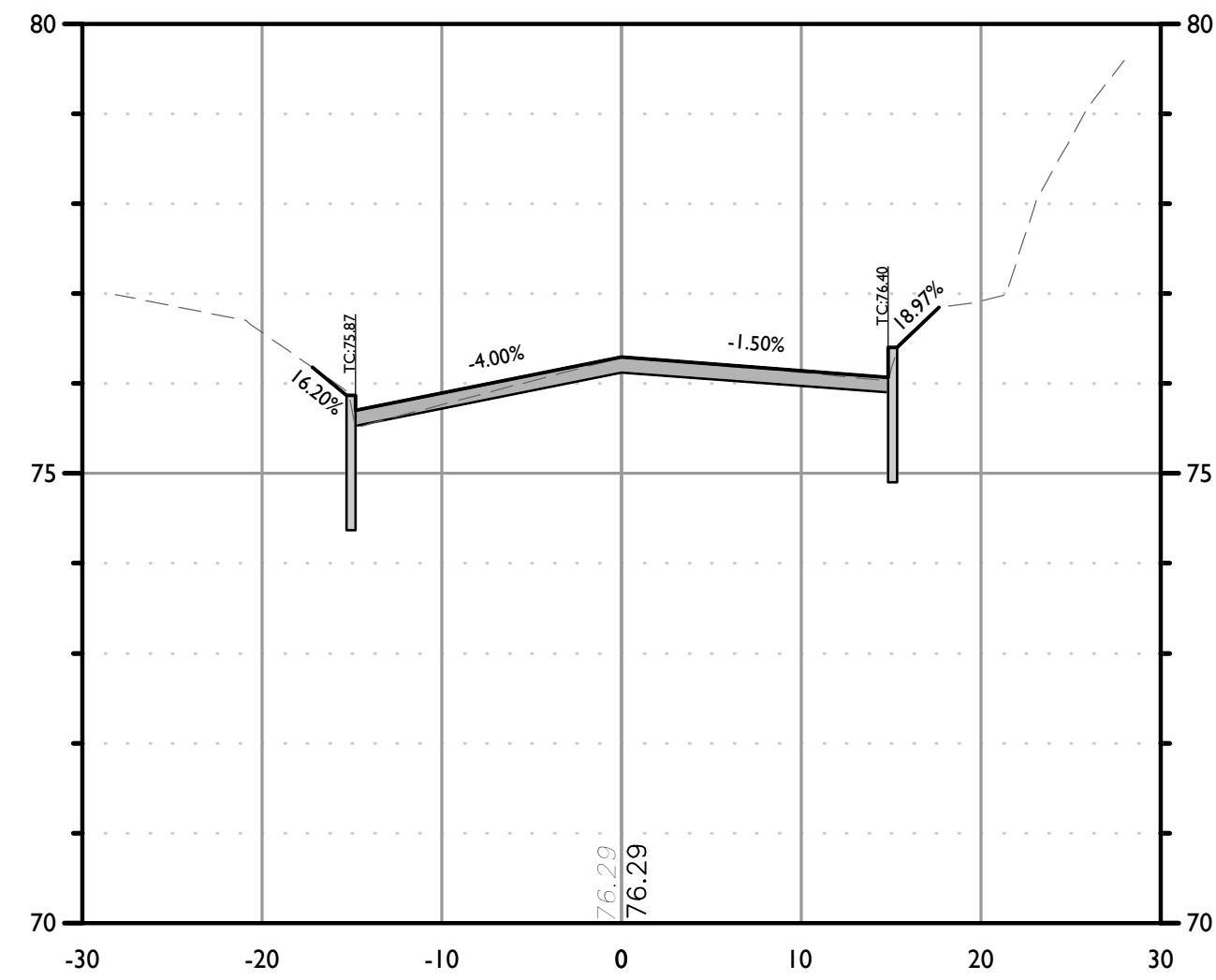
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STATION: 21+50
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



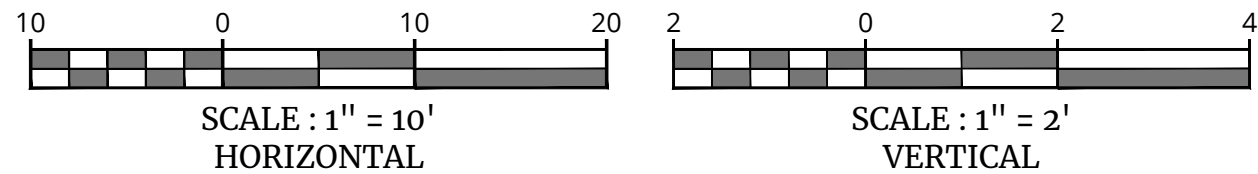
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HORIZONTAL : 1" = 10'
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CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 21+96
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 22+00
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



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Carl P. O'Brien

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LICENSE NUMBER: 6645154
COLLIERS ENGINEERING & DESIGN, INC.
N.J. C.O.A. #: 24GA27986500

CONSTRUCTION PLANS

FOR
INFLOW AND
INFILTRATION -
PHASE 2

TOWNSHIP OF CRANFORD
UNION COUNTY
NEW JERSEY

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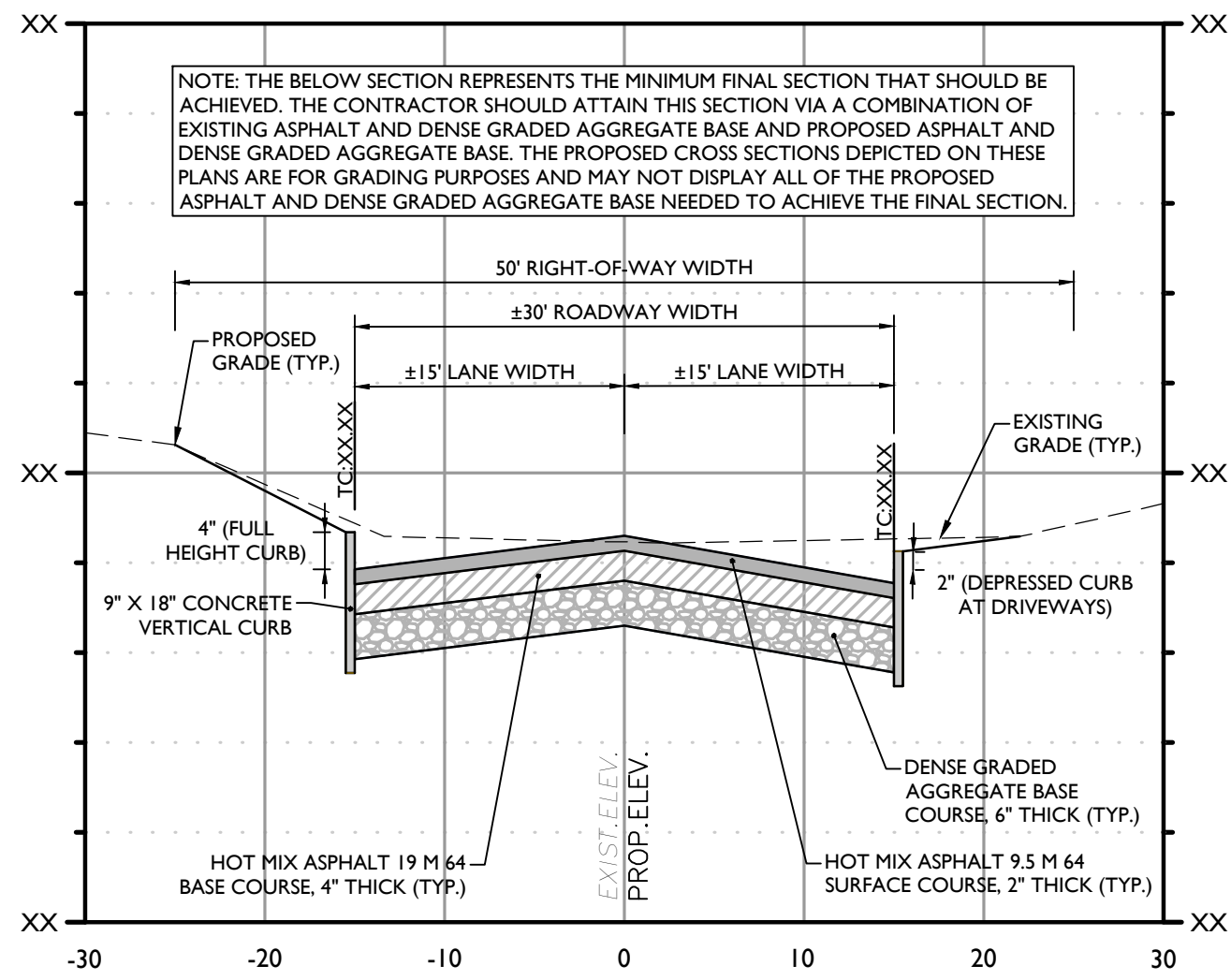
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Suite 304
Mt. Arlington, NJ 07856
Phone: 973.398.3110
COLLIERS ENGINEERING & DESIGN, INC.
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SCALE: AS SHOWN
DATE: 01/30/23
DRAWN BY: BAK
CHECKED BY: BRP
PROJECT NUMBER: CDT0078
DRAWING NAME: C-LAYT

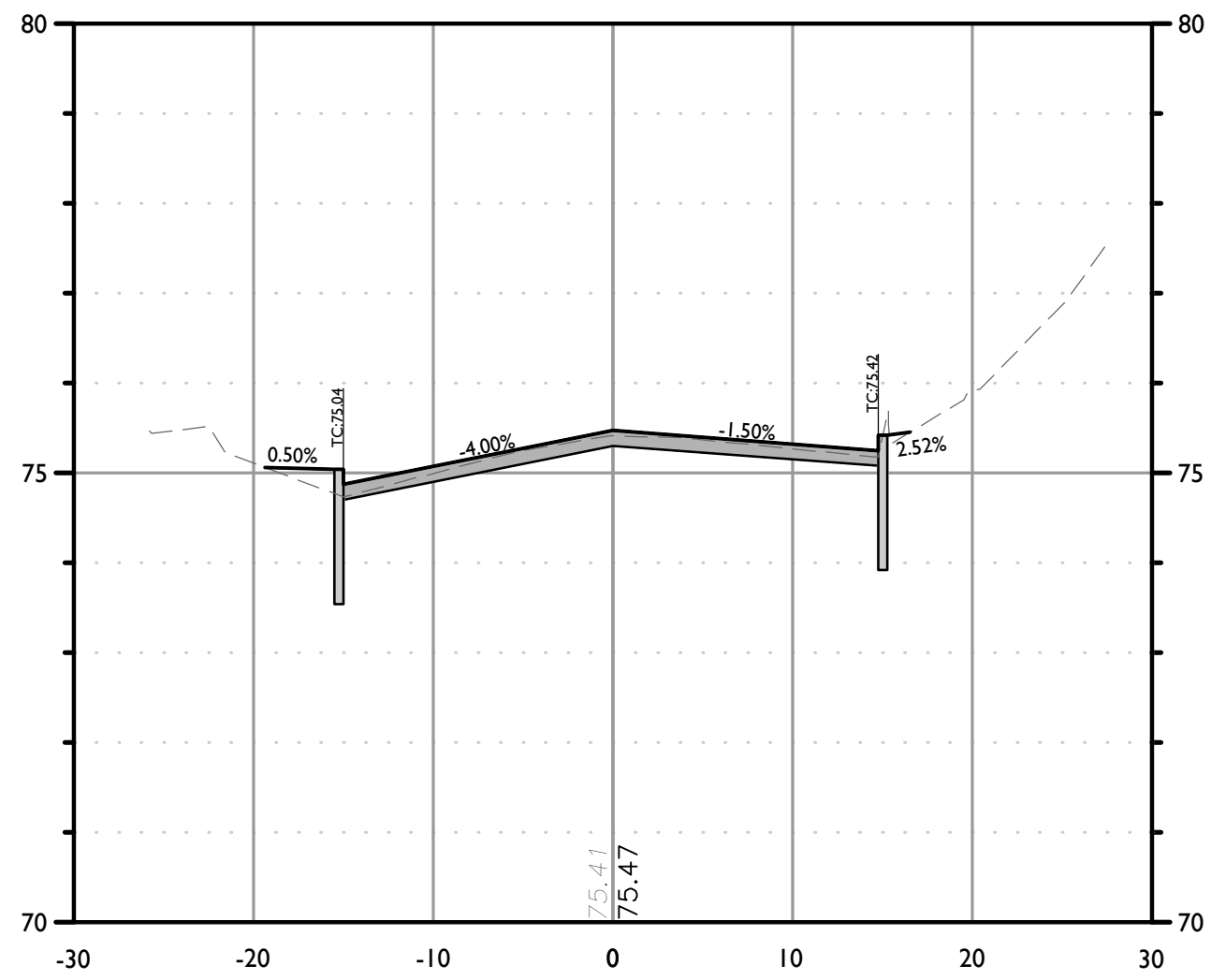
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CROSS SECTIONS

SHEET NUMBER:
17 of 32

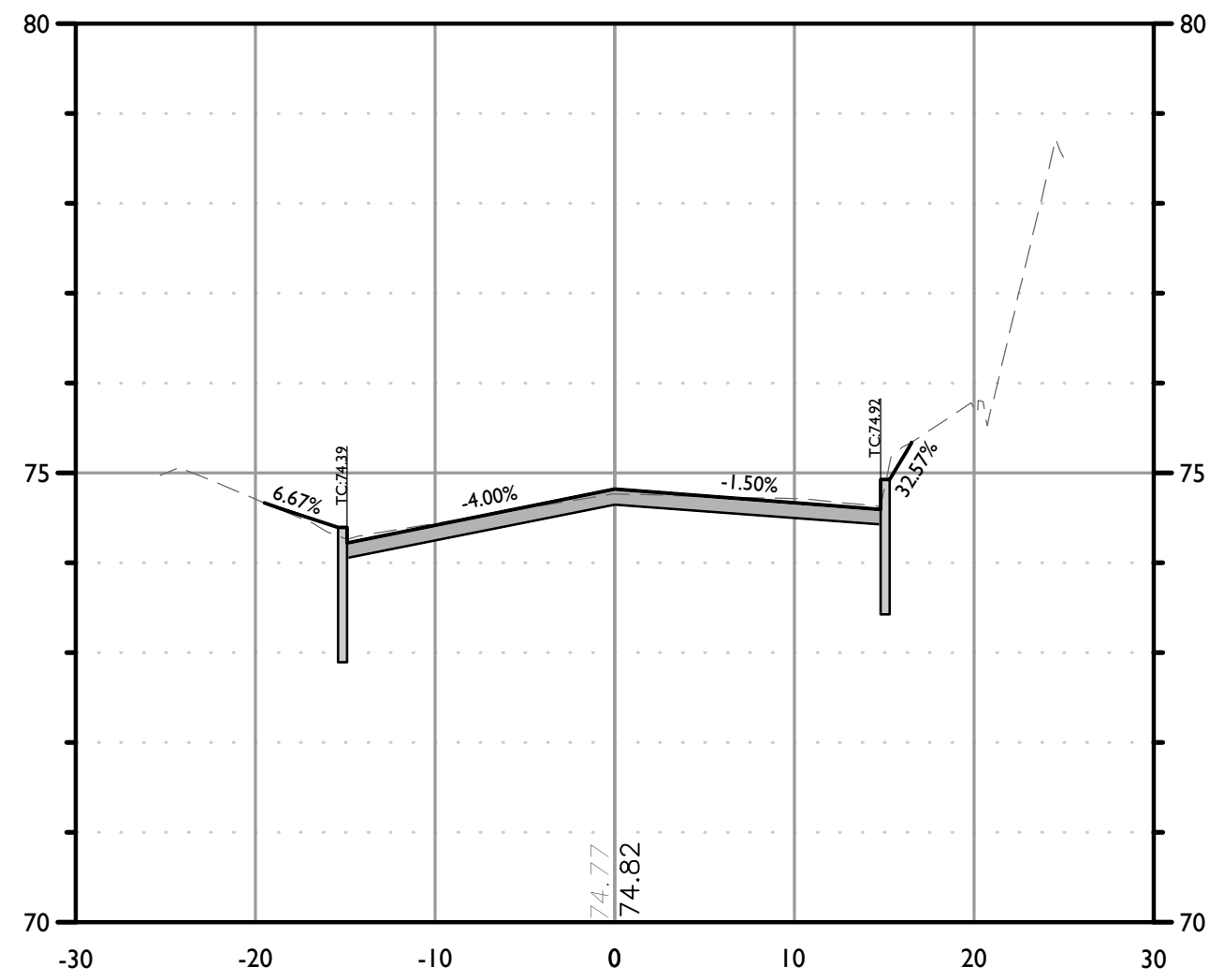
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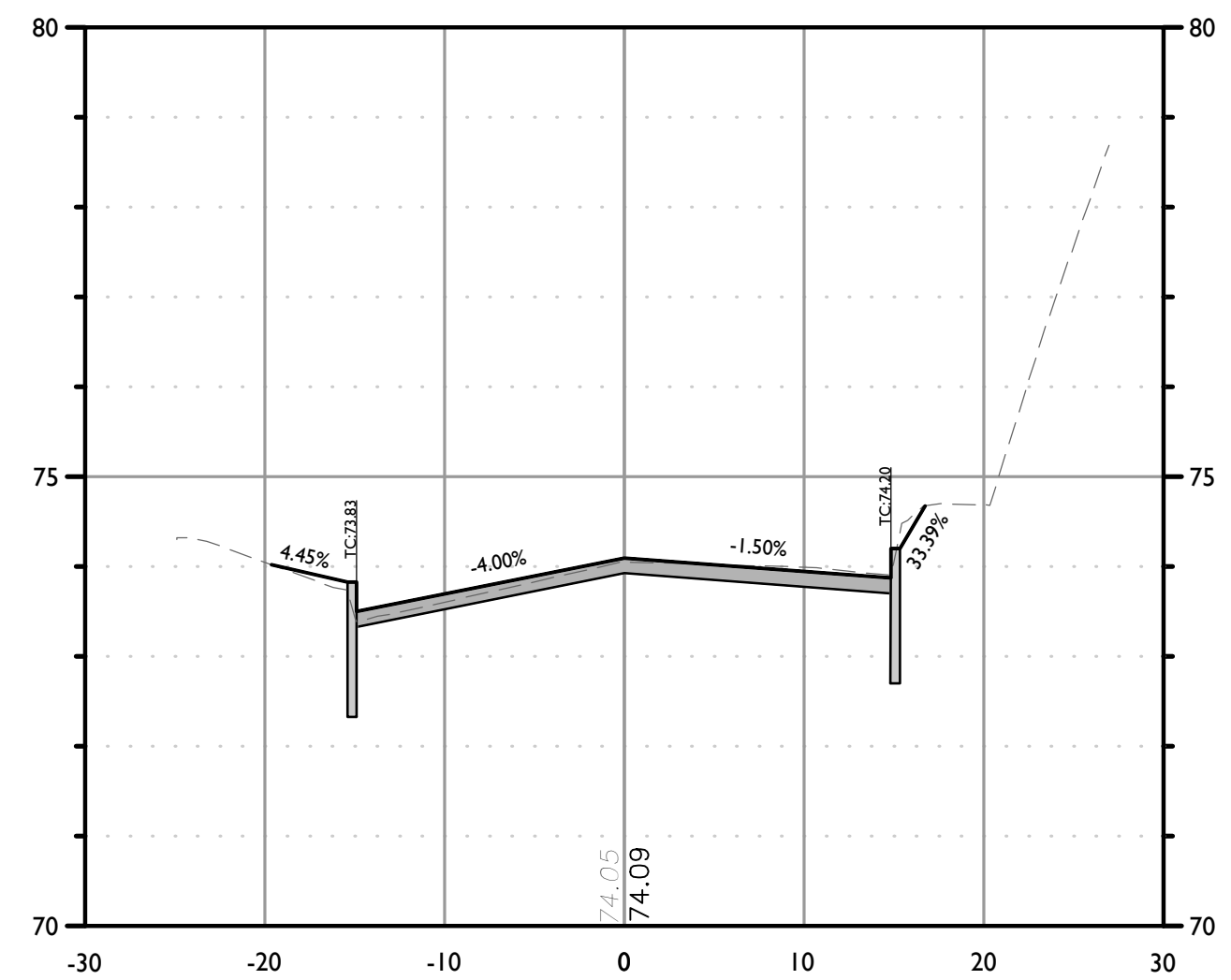
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VERTICAL : 1" = 2'



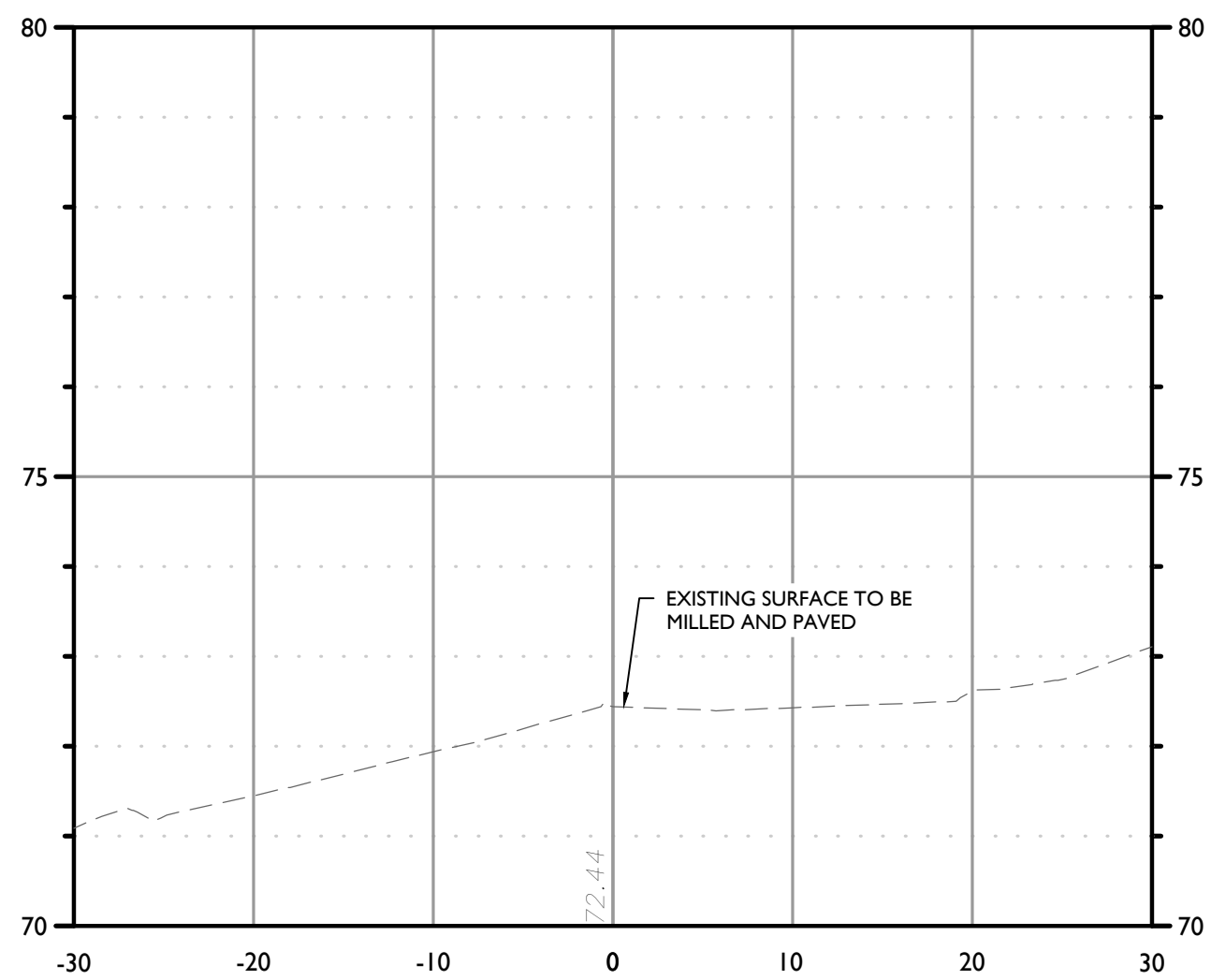
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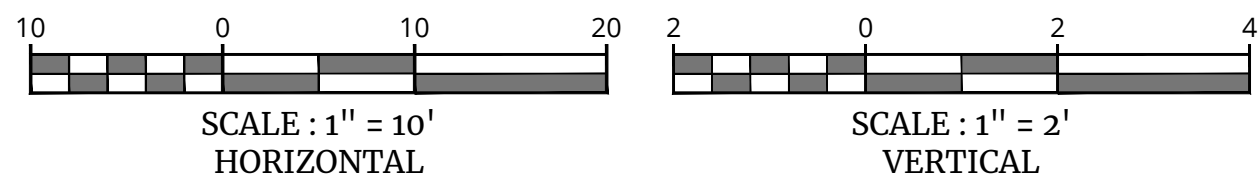
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HORIZONTAL : 1" = 10'
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CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 23+00
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



CROSS SECTION OF CRANFORD TERRACE ALIGNMENT
STATION: 23+50
HORIZONTAL : 1" = 10'
VERTICAL : 1" = 2'



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CONSTRUCTION PLANS

FOR
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INFILTRATION -
PHASE 2

TOWNSHIP OF CRANFORD
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CROSS SECTIONS

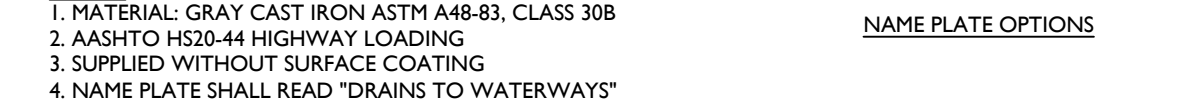
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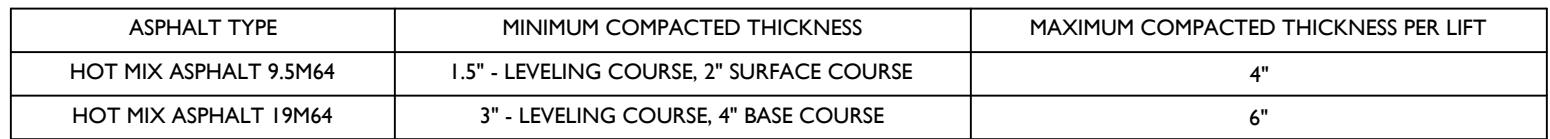
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NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

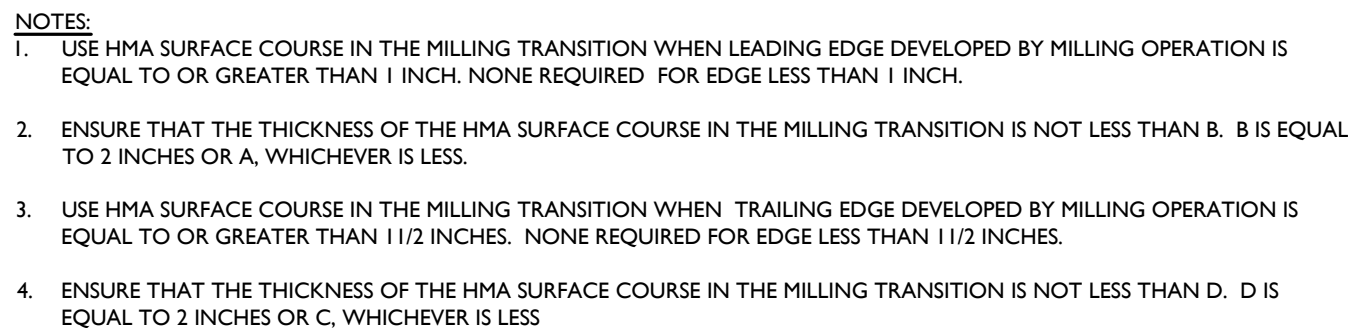


CAMPBELL FOUNDRY COMPANY PATTERN NO. 2618 OR APPROVED EQUAL
N.T.S.



N.T.S.

- INSTRUCTIONS:**
- 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 SURFACE. INSTALL 9.5#MMA 2" COMPACTED LIFT THICKNESS. AFTER MILLING, PERFORM CRACK SEALING OR BASE REPAIR AS DIRECTED IN THE FIELD BY THE ENGINEER. PRIOR TO OVERLAYING SURFACE, WHEN PROPOSED HMA SURFACE IS 2" - 4" ABOVE EXISTING HMA SURFACE COURSE, INSTALL 9.5#MMA 2" - 4" COMPACTED LIFT THICKNESS. LIFTS MAY BE SEPARATED INTO MULTIPLE THINNER LIFTS AS LONG AS EACH LIFT MEETS THE MINIMUM AND MAXIMUM COMPACTED LIFT THICKNESS DESCRIBED ABOVE.
 - WHEN PROPOSED SURFACE IS 4" - 6" ABOVE EXISTING HMA SURFACE COURSE, INSTALL TWO LIFTS OF 9.5#MMA, ADHERING TO MINIMUM AND MAXIMUM COMPACTED LIFT THICKNESS DESCRIBED ABOVE.
 - WHEN PROPOSED HMA SURFACE IS 6" - 10" ABOVE EXISTING HMA SURFACE COURSE, INSTALL DENSE GRADED AGGREGATE FROM THE TOP OF THE EXISTING HOT MIX ASPHALT PAVED SECTION TO THE PROPOSED HMA SURFACE COURSE. 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.
 - WHEN PROPOSED HMA SURFACE IS INSTALLED IN AN AREA WHERE THERE IS NO EXISTING HMA SURFACE COURSE, THE SECTION DEPICTED IN THE RULL DEPTH REPAIR DETAIL SHALL BE USED.
 - WHEN PROPOSED SURFACE IS BELOW THE EXISTING HMA SURFACE, REMOVE THE EXISTING SECTION USING MILLING, PAVEMENT REMOVAL AND EXCAVATION UNLESS DIRECTED OTHERWISE BY THE ENGINEER. INSTALL THE SECTION DEPICTED IN THE RULL DEPTH REPAIR DETAIL UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
 - 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



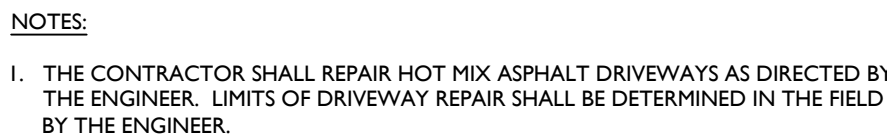
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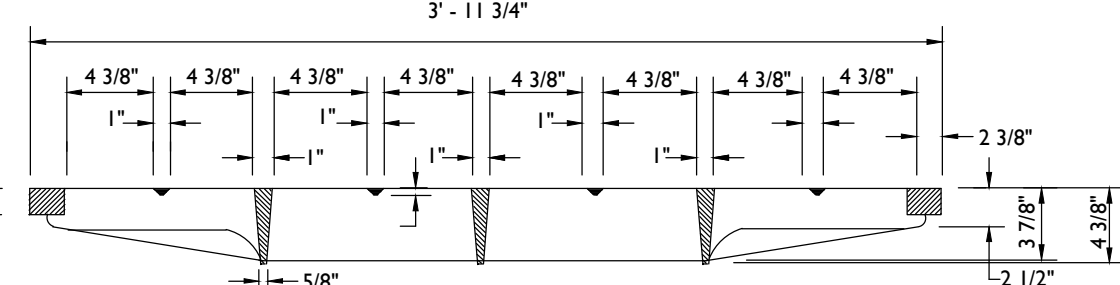
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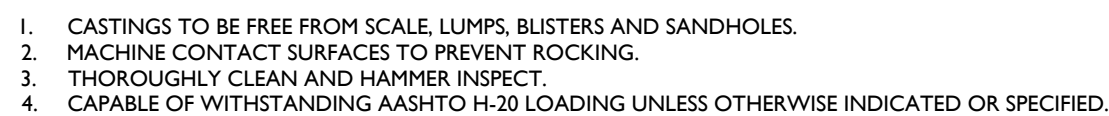
N.T.S



N.T.S.



(CAMPBELL FOUNDRY PATTERN NO. 2618 OR APPROVED EQUAL)

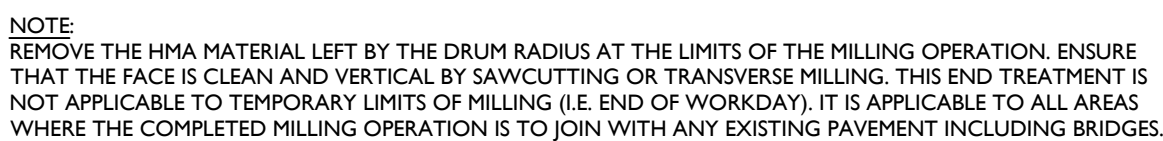


BITUMINOUS WATERPROOFING MATERIAL:

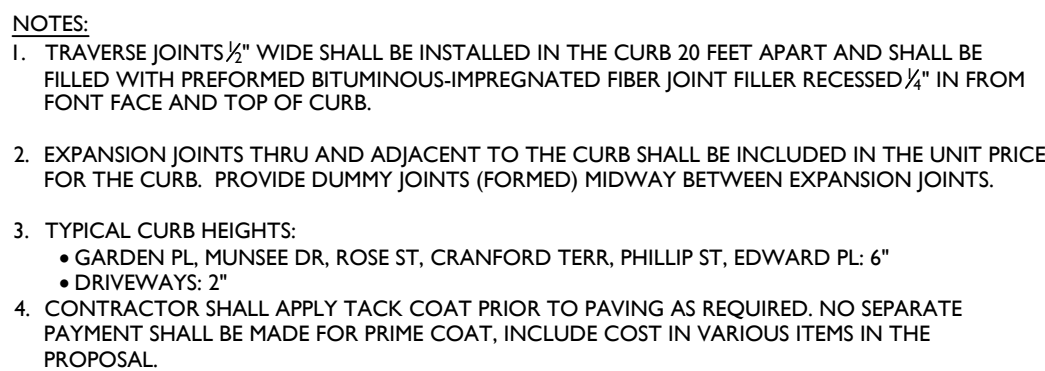
1. H.B. TNEMECOL 46-465, BY TNEMEC COMPANY.
2. AMERCOAT 78HB, BY AMERON INTERNATIONAL.
3. BITUMASTIC SUPER SERVICE BLACK, BY CARBOLINE OR ACCEPTABLE EQUIVALENT PRODUCT.
4. OR APPROVED EQUAL.

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

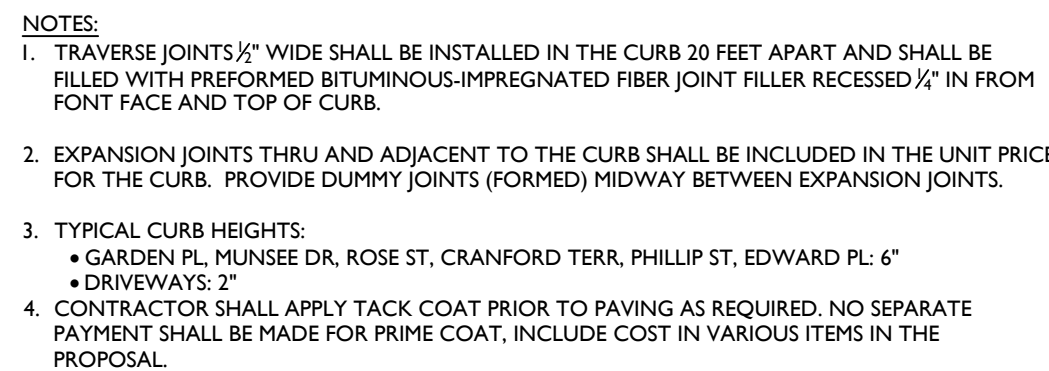
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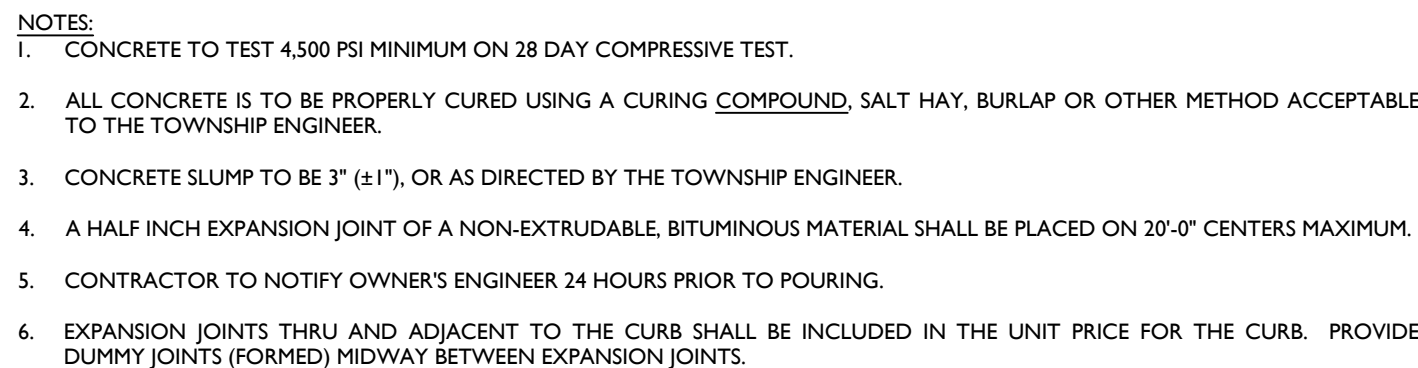
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



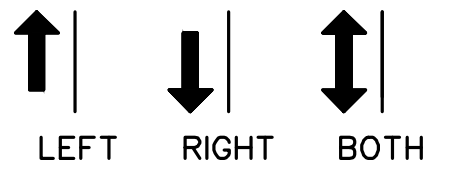

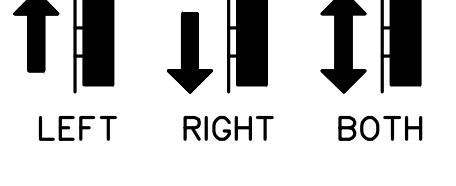


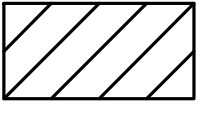
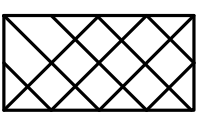
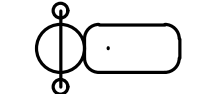


N.T.S

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N.J. C.O.A. #: 24GA27986500

SHEET NUMBER: 22 of 32

LEGEND

	BREAKAWAY BARRICADES
	BREAKAWAY BARRICADES WITH SIGN
	CONSTRUCTION SIGNS
	DRUMS
	CONE
	PRECAST CONCRETE CURB CONSTRUCTION BARRIER (TYPE SPECIFIED)
	DIRECTION OF TRAFFIC FLOW
	TRAFFIC DIRECTOR, FLAGGER
	TRAILER MOUNTED MOUNTED ARROW BOARD SHOWING CAUTION MODE
	ILLUMINATED FLASHING ARROW MOUNTED ON TOWING VEHICLE SHOWING ARROW PATTERN (Left, Right, Both)
	TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING CAUTION MODE
	TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING ARROW PATTERN (Left, Right, Both)
	TEMPORARY CRASH CUSHION, INERTIAL BARRIER SYSTEM
	TEMPORARY CRASH CUSHION, (all other approved)
	BUFFER ZONE
	WORK AREA
	PAINT STRIPING TRUCK OR OTHER OPERATING VEHICLE

GENERAL NOTES:

- 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.
- 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.
- PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.
- 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.
- 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.
- CONFLICTING OR NON-OPERATING SIGNAL INDICATIONS ON EITHER THE EXISTING, TEMPORARY,OR PROPOSED TRAFFIC SIGNAL SYSTEMS SHALL BE BAGGED OR COVERED.
- 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.
- 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.
- CONSTRUCTION SIGNS R11-4 (ROAD CLOSED TO THRU TRAFFIC) SHALL BE PLACED AT THE INTERSECTING STREETS WHICH ARE CLOSED TO TRAFFIC BECAUSE OF CONSTRUCTION.
- 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.
- 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.
- 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.
- TRAFFIC SAFETY SERVICES SHALL BE USED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL.
- 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.
- WHERE REQUIRED, THE CONTRACTOR SHALL MAKE PROVISIONS FOR MAINTAINING PEDESTRIAN CROSSING LOCATIONS AND TYPE AS DIRECTED BY THE RE.
- 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.
- 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.
- 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..
- 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.
- 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.
- 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.
- THE FINAL HMA SURFACE PAVEMENT SHALL NOT BE CONSTRUCTED UNTIL THE FINAL STAGE OF THE PROJECT UNLESS OTHERWISE 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.

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

- TRAFFIC IMPACT NOTICES AND CHANGES
 - TERMS:
WHEN THE FOLLOWING TERMS ARE USED, THE INTENT AND MEANING SHALL BE AS FOLLOWS:
 - 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.
 - PERMANENT LANE CLOSURES - WORK DESCRIBED UNDER "IMPACTS TO NORMAL TRAFFIC FLOW" WHICH REMAINS IN PLACE CONTINUOUSLY FOR 24 HOURS OR MORE.
 - 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.

- PROGRESS NOTICES

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

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 DEPARTMENT.

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

- 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

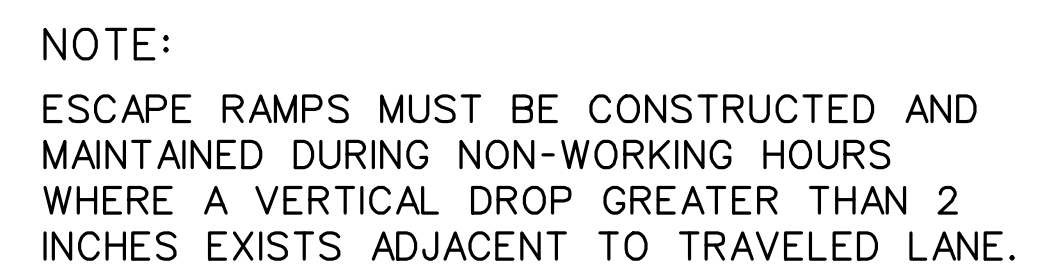
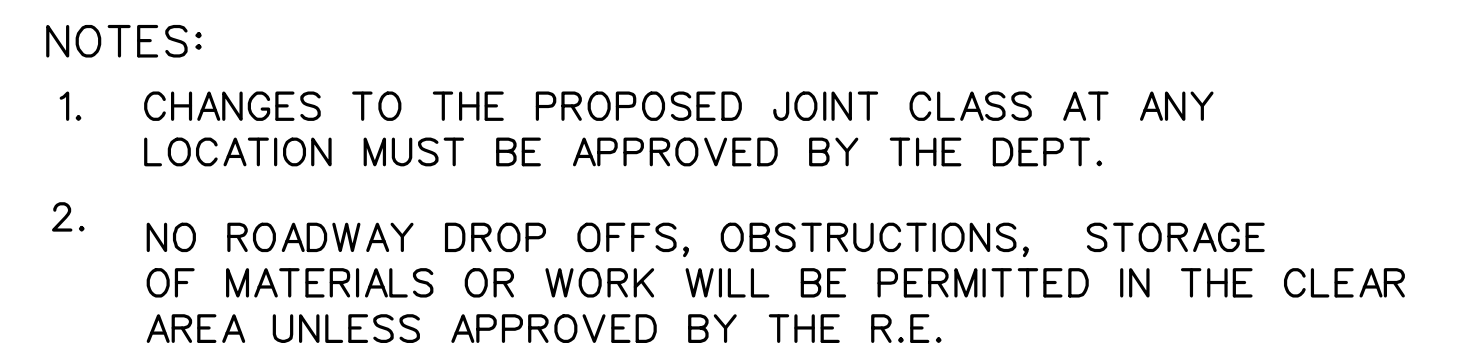


Diagram illustrating the plan view of a construction barrier and traffic lane. The diagram shows a cross-section of the road construction area, including the existing ground, the top of the subgrade, and the constructed pavement.

- EXISTING GROUND:** The ground level before construction.
- TOP OF SUBGRADE:** The prepared base for the pavement.
- CONSTRUCTED PAVEMENT:** The new road surface.
- CONSTRUCTED AREA:** The area where the barrier and pavement are being built.
- TRAFFIC LANE:** The lane for vehicle travel.
- PRECAST CONCRETE CURB CONSTRUCTION BARRIER (WHERE SHOWN ON PLANS):** The barrier structure.
- Dimensions:**
 - 2' MIN. (Minimum width of the barrier area)
 - 4' (Width of the barrier)
 - 11' MIN. (Minimum width of the traffic lane)
 - 2' (Width of the barrier base)
 - 1' (Offset from barrier to pavement edge)
 - 1 1/2' (Offset from existing ground to barrier)
- Striping:**
 - 4" (WHITE OR YELLOW) STRIPE YELLOW LEFT & WHITE RIGHT IN THE DIRECTION OF TRAFFIC
 - 4" WHITE STRIPE

PLACEMENT OF PRECAST CONCRETE CONSTRUCTION BARRIER



JOINT CLASS	CLEAR AREA
A	20 INCHES
B	16 INCHES
C	11 INCHES

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

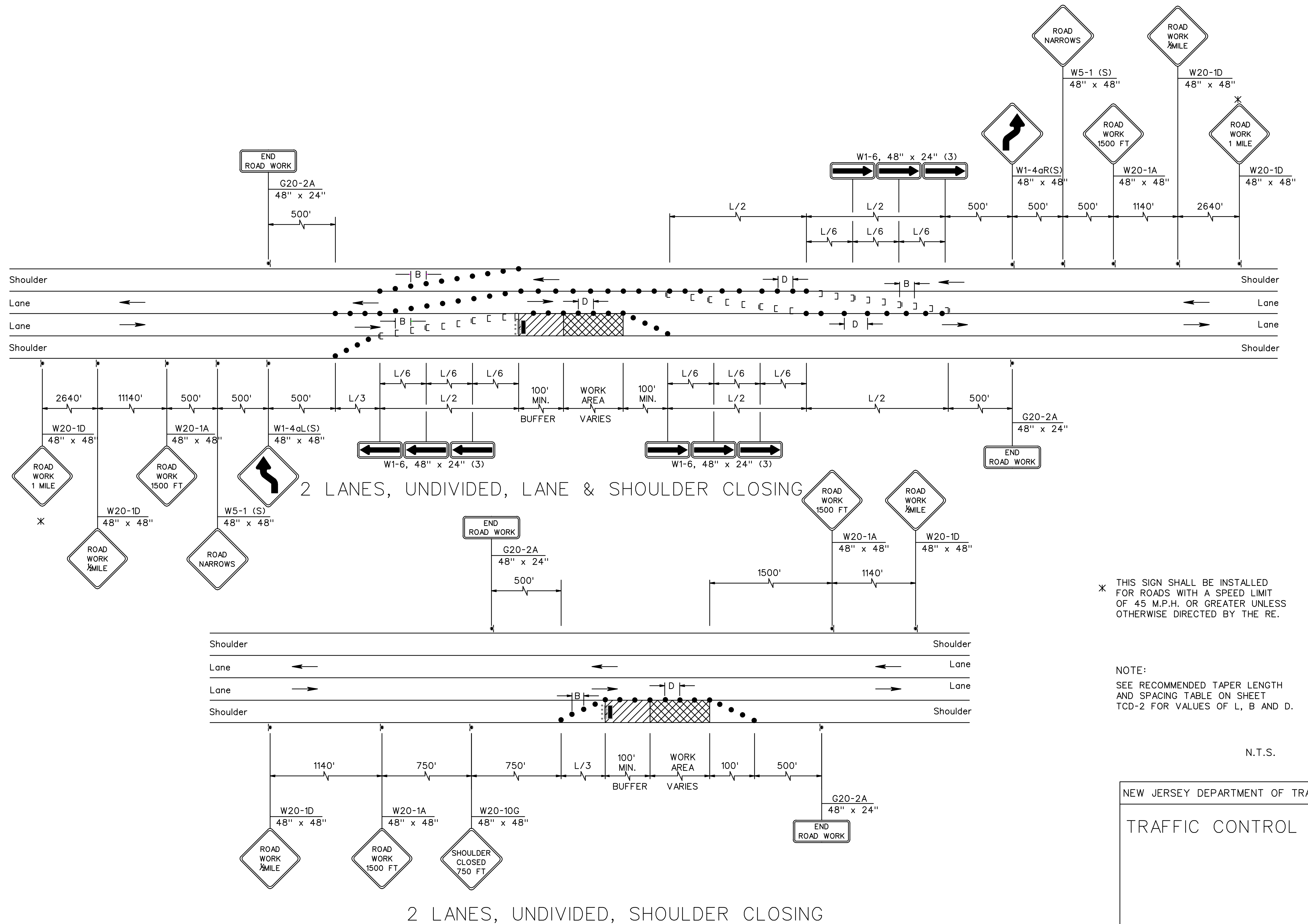
1. AVOIDANCE MANEUVER IS FOR A SPEED, PATH, AND/OR DIRECTION CHANGE PRIOR TO THE BEGINNING OF CHANNELIZING TAPERS.
2. RECOMMENDED DISTANCES BETWEEN TWO SEPARATE LANE CLOSURES SHALL BE DOUBLE THE VALUES SHOWN ABOVE.
3. RURAL AND URBAN ROAD DESIGNATIONS SHALL BE AS DEFINED IN THE NJDOT STATE HIGHWAY STRAIGHT 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.

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

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

TCD-2

TRAFFIC CONTROL DETAILS



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

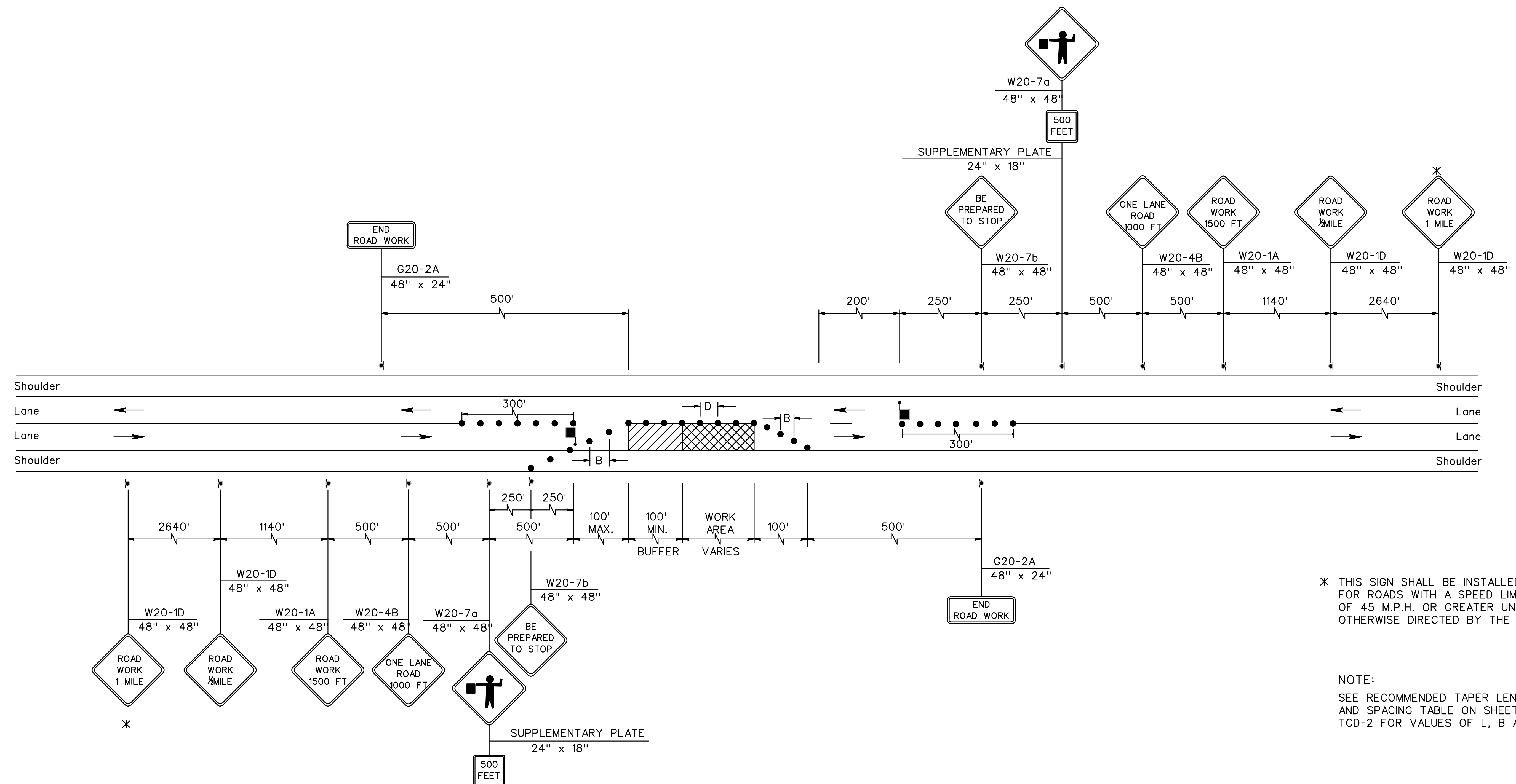
NOTE:
SEE RECOMMENDED TAPER LENGTH AND SPACING TABLE ON SHEET TCD-2 FOR VALUES OF L, B AND D.

N.T.S.

TCD-3

NEW JERSEY DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS



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

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

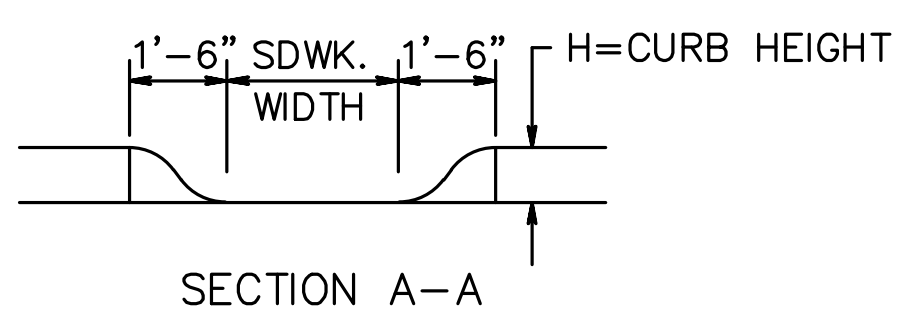
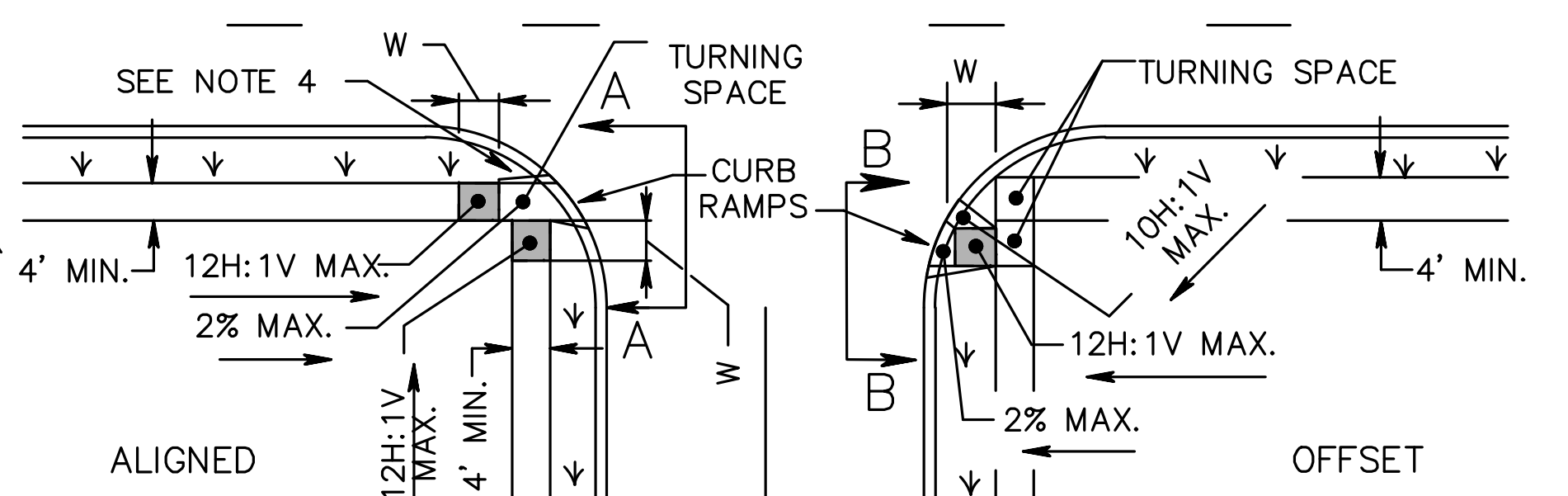
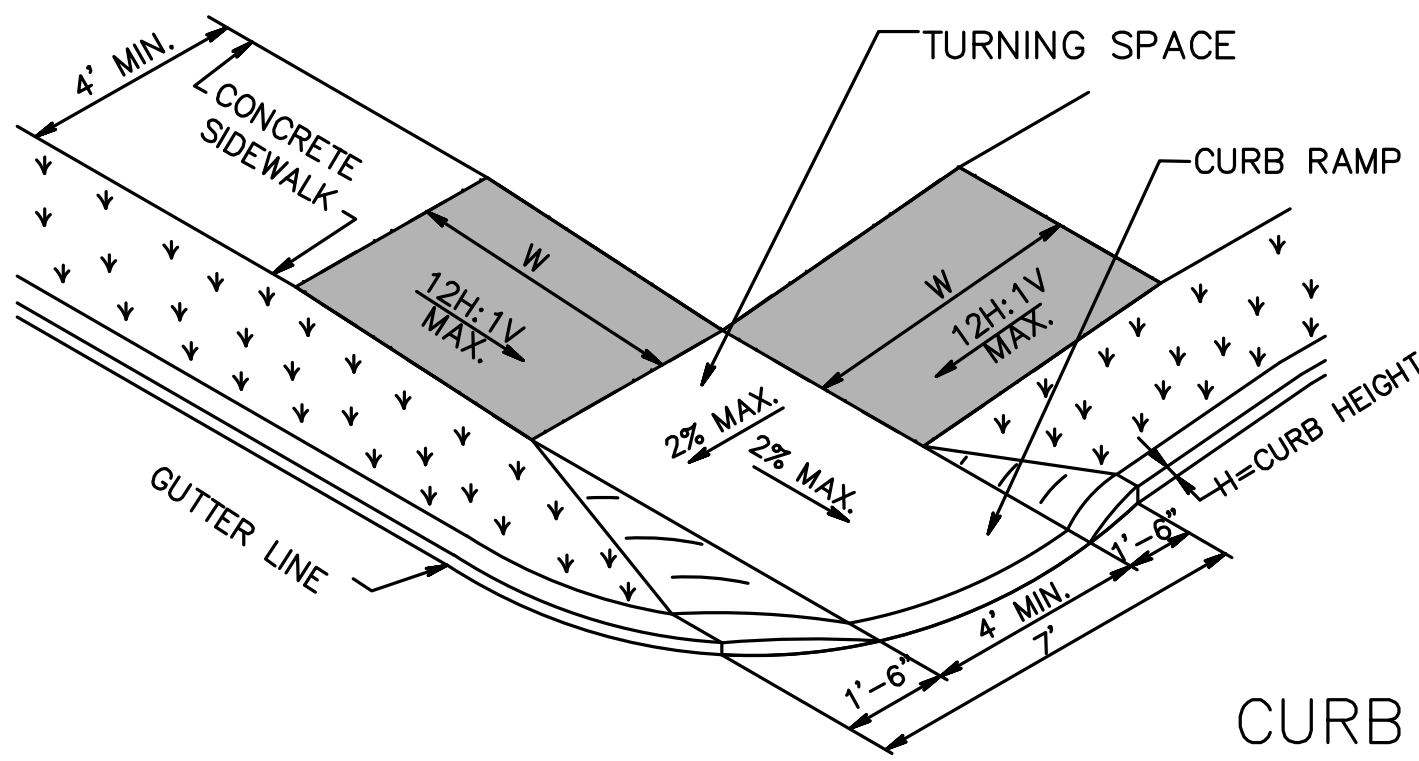
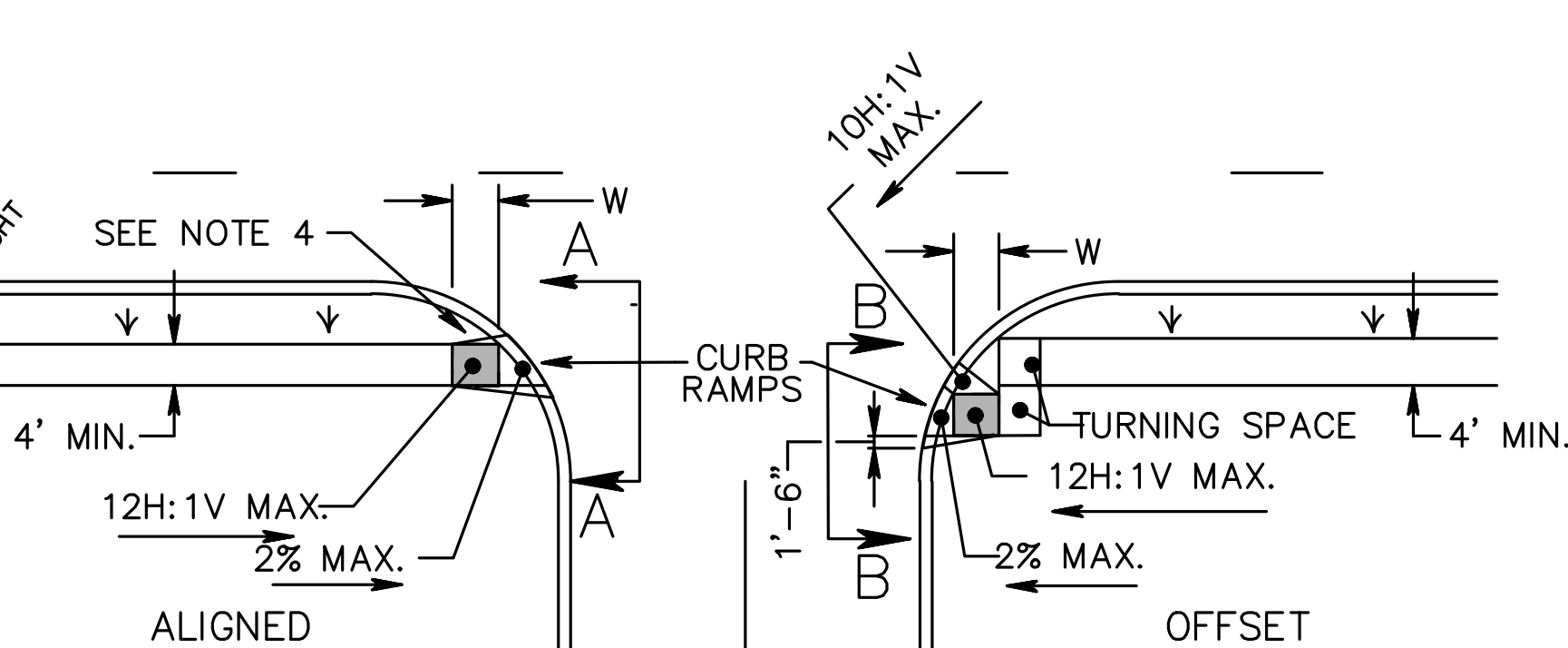
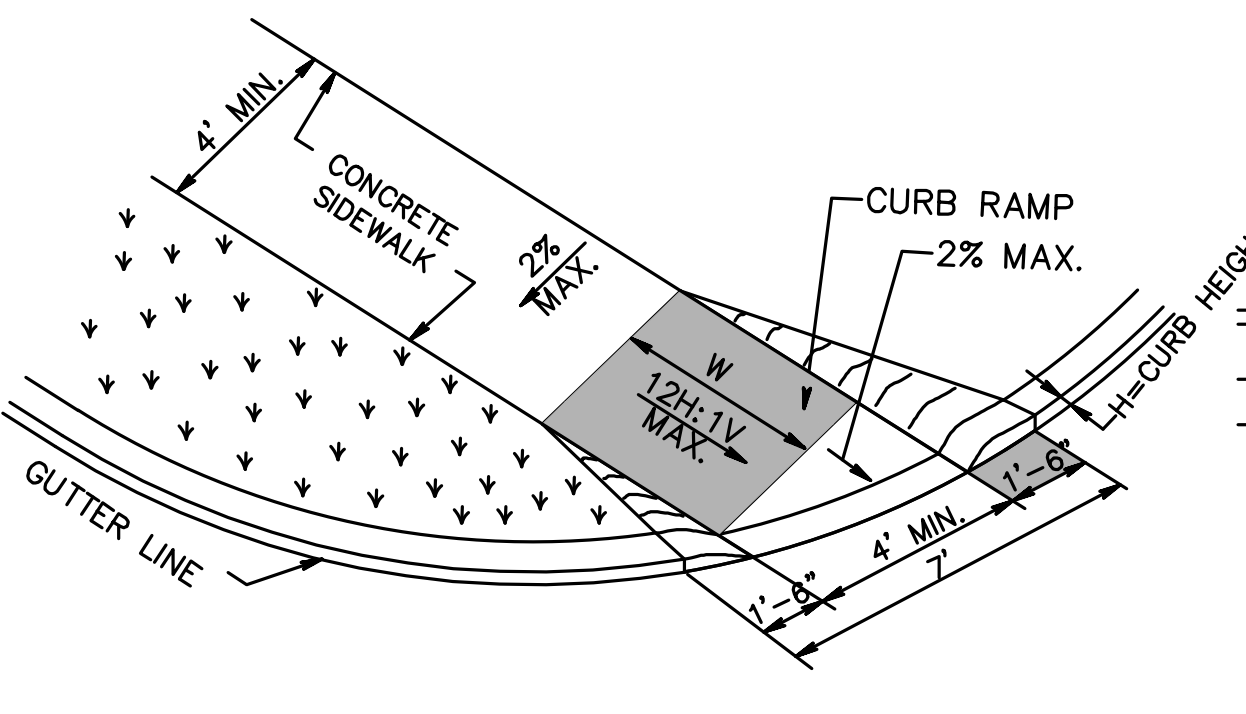
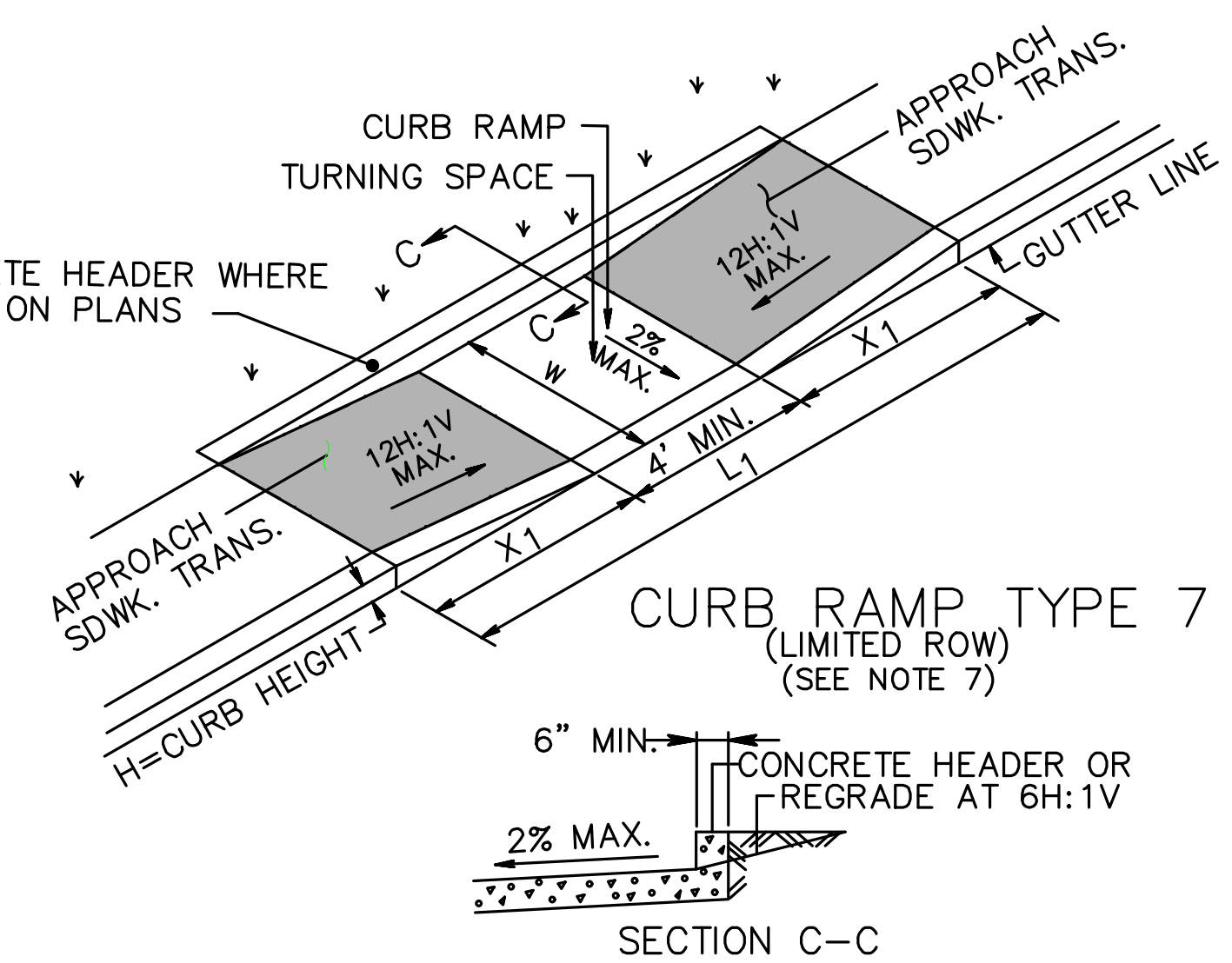
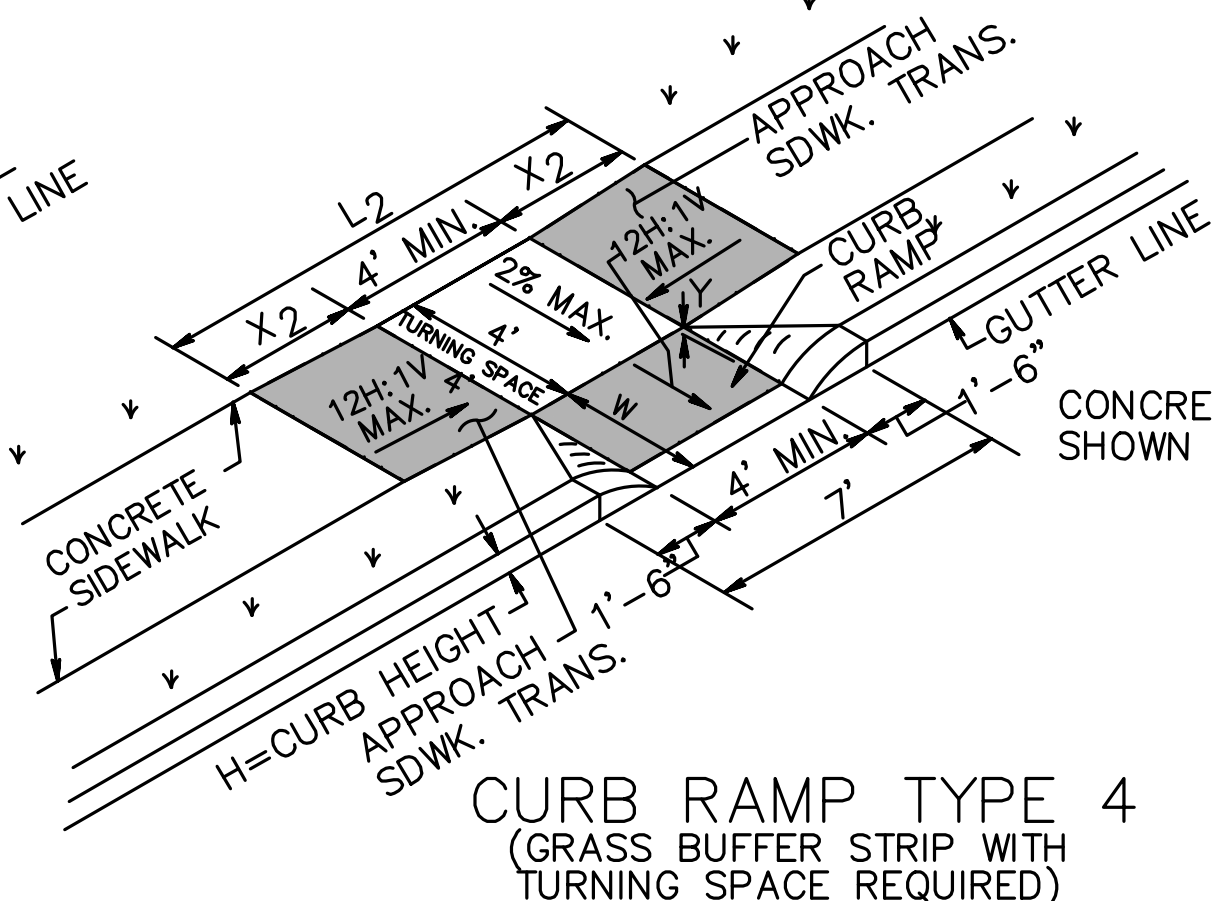
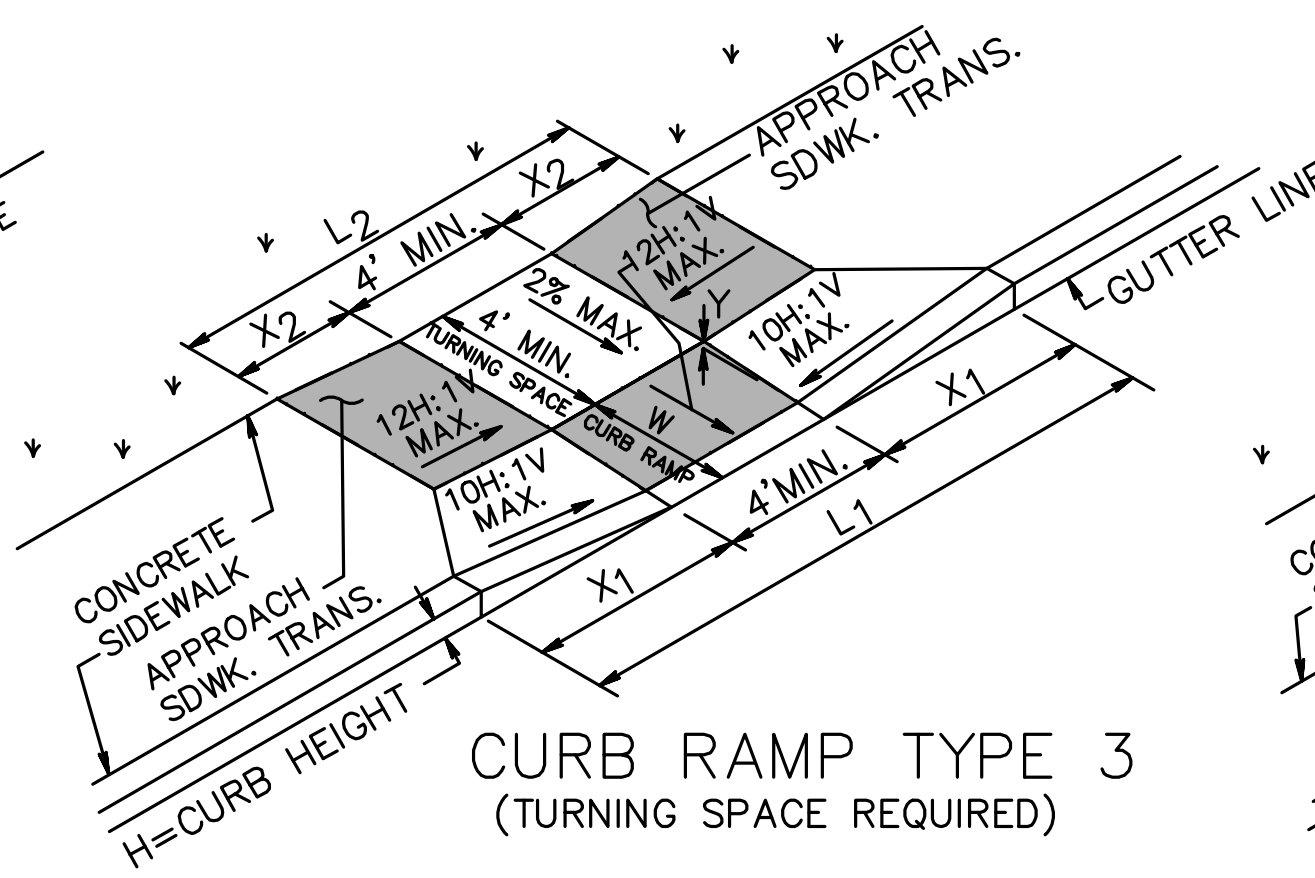
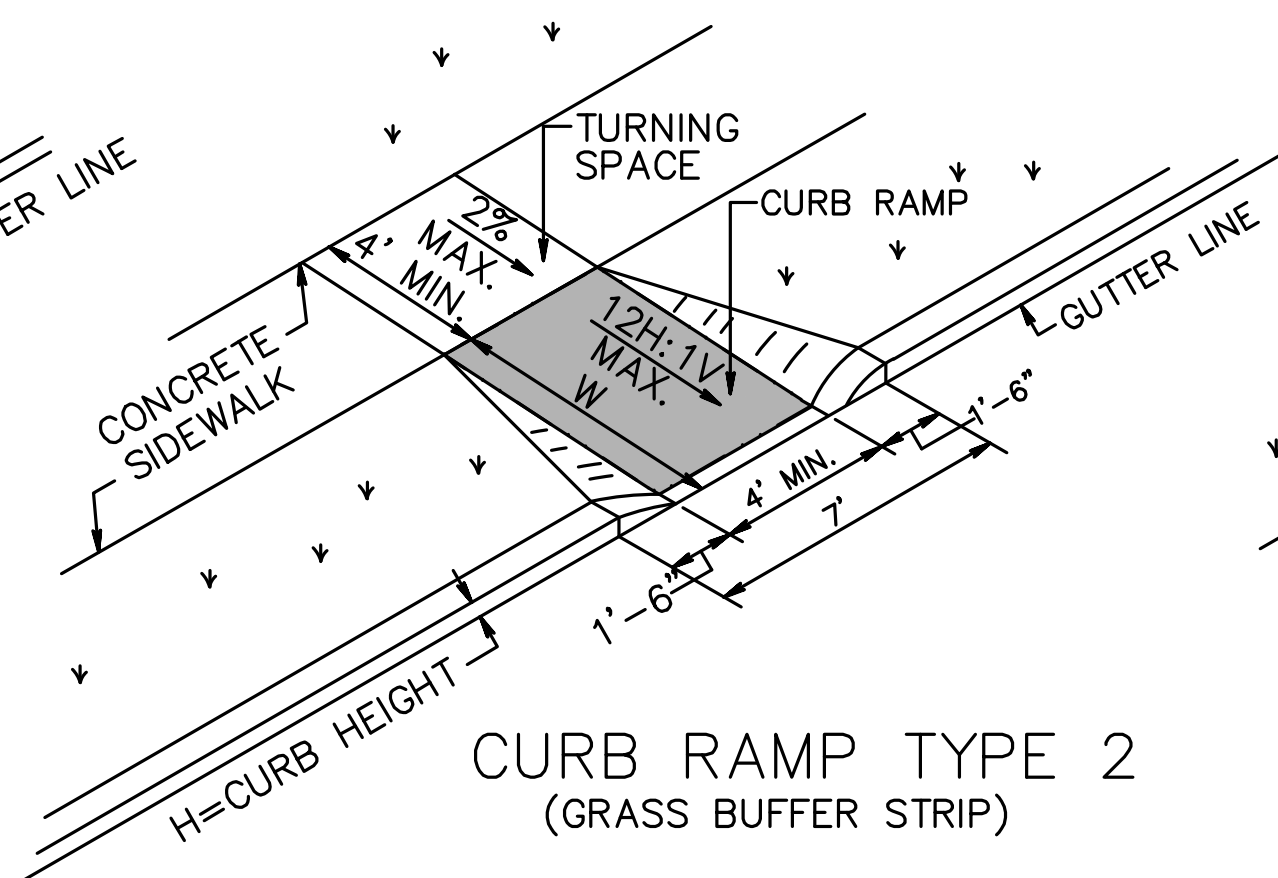
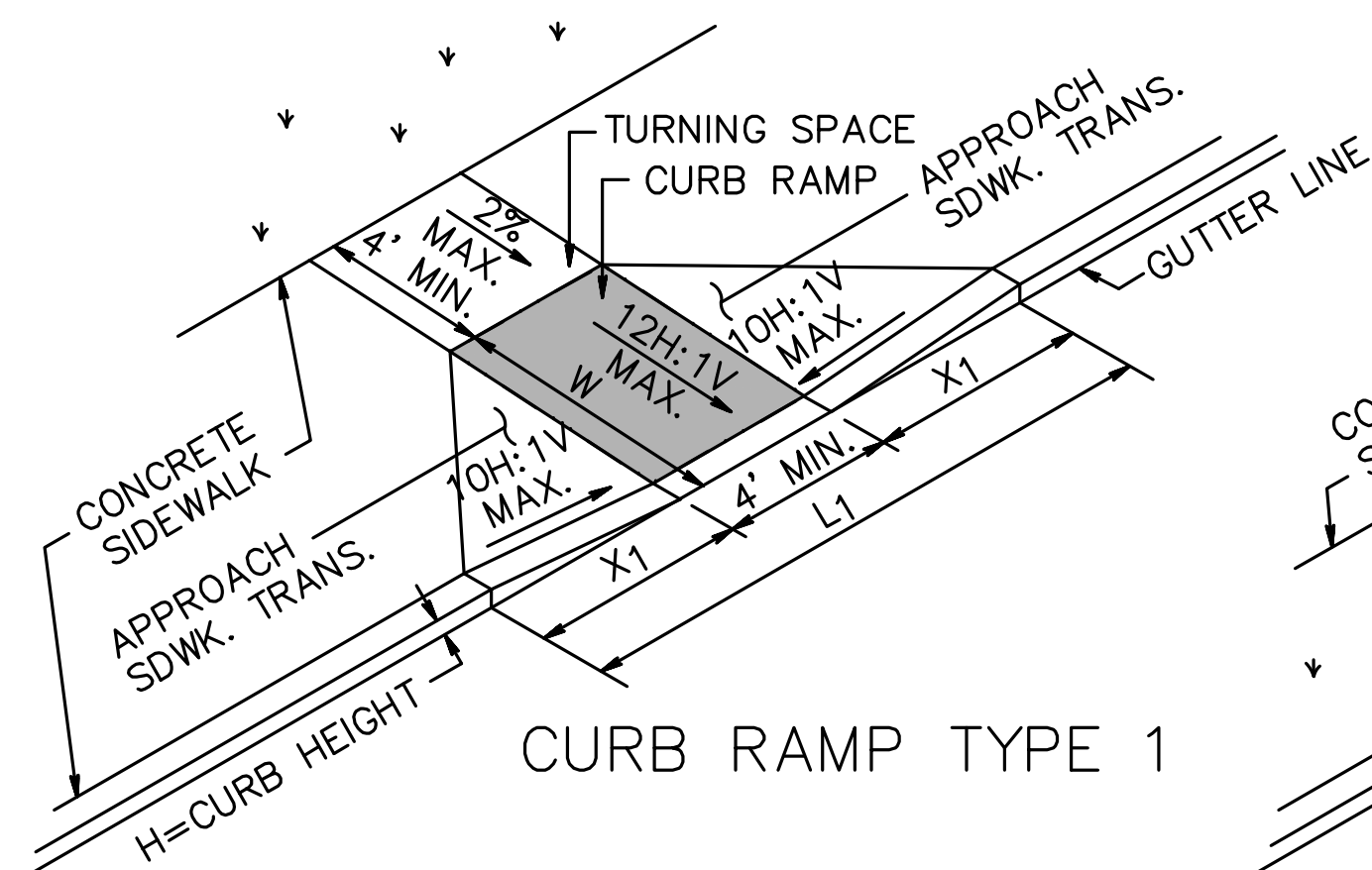
N.T.S.

2 LANES, UNDIVIDED, LANE & SHOULDER CLOSING W/FLAGGING

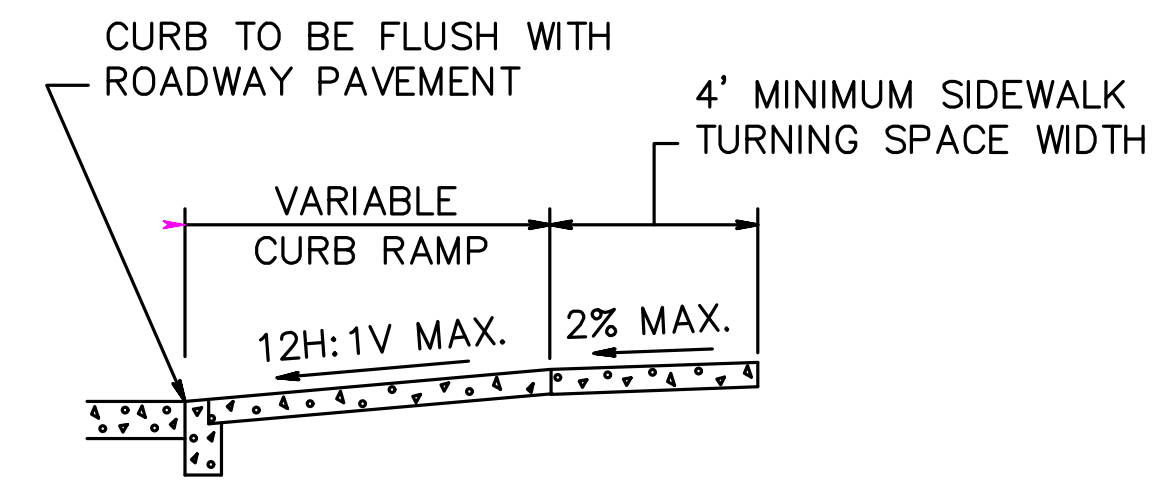
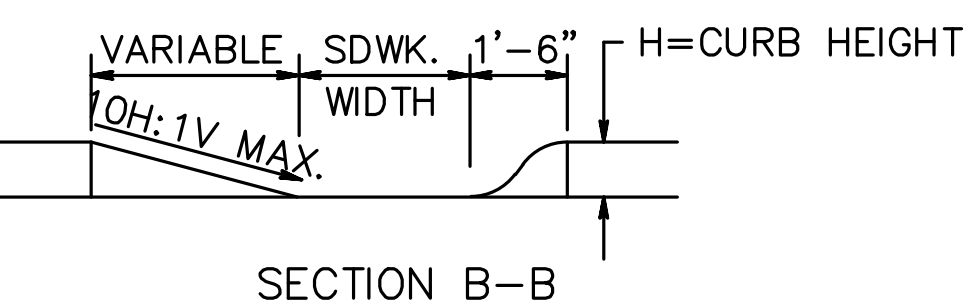
TCD-4

NEW JERSEY DEPARTMENT OF TRANSPORTATION

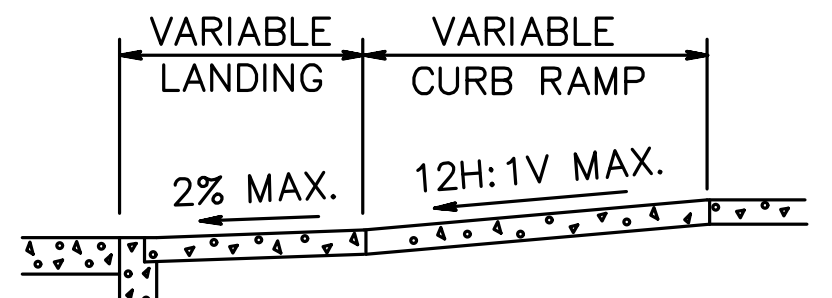
TRAFFIC CONTROL DETAILS



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



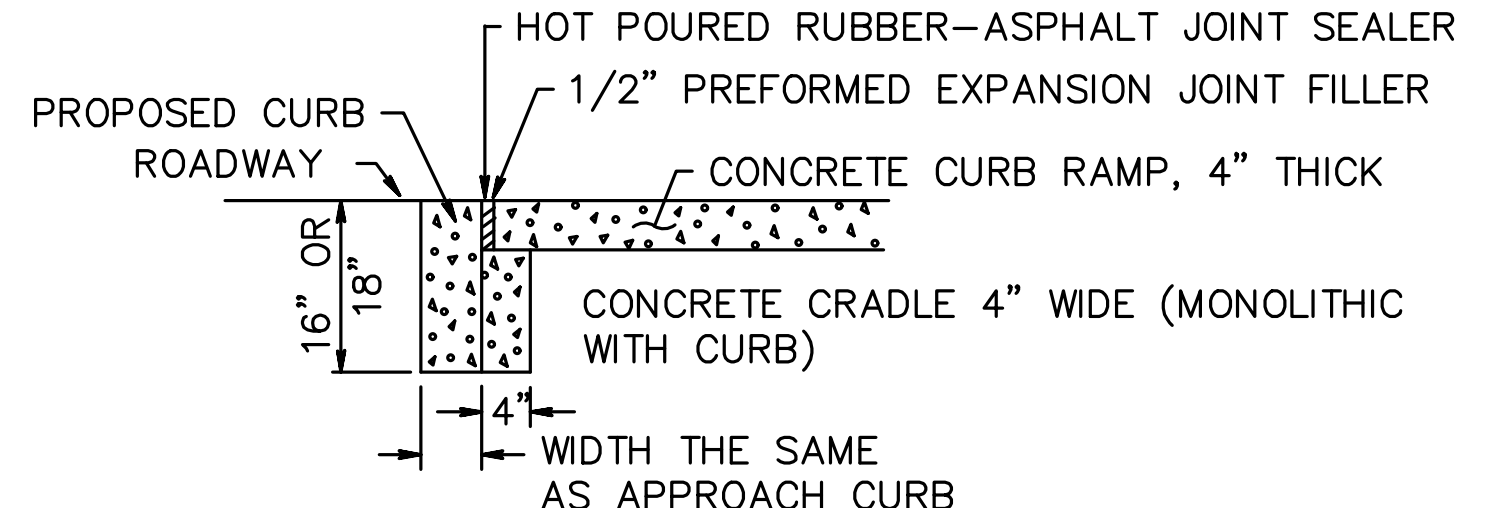
SECTION THROUGH CURB RAMPS 1 THROUGH 4



SECTION THROUGH CURB RAMPS 5 AND 6

- NOTES:
1. KEEP TURNING SPACE, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP CLEAR OF OBSTRUCTIONS THAT PROTRUDE ABOVE THE SIDEWALK.
 2. FOR DIMENSIONS SEE CD-606-1B AND CD-606-1C.
 3. CURB (DROPPED CURB) GUTTERLINE TO BE FLUSH WITH ROADWAY PAVEMENT A MINIMUM OF 4 FEET AT ALL CURB RAMPS.
 4. FOR CURB RAMP TYPES 5 AND 6, IF A GRASS BUFFER DOES NOT EXIST, SLOPE CURB TO EQUAL SLOPE OF ADJACENT CURB RAMP.
 5. SIDEWALK AND CURB RAMP WITHIN AREA ENCLOSED BY HEAVY LINES INDICATES THE PAY LIMIT FOR CONCRETE SIDEWALK OF THE APPROPRIATE ADJACENT THICKNESS.
 6. CURB AND HEADER WITHIN AREA ENCLOSED BY HEAVY LINES INDICATES THE PAY LIMIT FOR VERTICAL CURB OR SLOPING CURB OF THE APPROPRIATE ADJACENT SIZE AND KIND.
 7. WHERE THE DISTANCE FROM THE GUTTER LINE TO THE OUTSIDE EDGE OF SIDEWALK IS 6 FEET OR LESS, USE CURB RAMP TYPE 7, INSTEAD OF CURB RAMP TYPE 1 THROUGH 4.
 8. CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED. SEE PLANS.
 9. DIMENSIONS SHOWN IN TABLES ARE FOR 3 INCH TO 9 INCH CURB HEIGHTS. WHERE THE CURB HEIGHTS ARE OTHER THAN WHAT IS PROVIDED IN THE TABLES, THE DIMENSIONS OF THE RAMPS WILL HAVE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.
 10. THE 12H:1V MAX SLOPE IS THE RUNNING SLOPE FOR CURB RAMPS, BUT ONLY THE 12H:1V SLOPE MEASURED AS X2 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.

- ADDITIONAL NOTES:
1. THE MAXIMUM CROSS SLOP OF SIDEWALKS SHALL BE 2%.
 2. THE MAXIMUM LONGITUDINAL TRANSITION SLOPE OF SIDEWALKS SHALL BE 5%.
 3. THE MAXIMUM LONGITUDINAL SLOPE OF CURB RAMPS SHALL BE 8%.
 4. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE ALONG ALL SIDEWALKS, CURB RAMPS AND ALL ADJACENT SIDEWALK. STORMWATER RUNOFF SHALL NOT BE BLOCKED BY SIDEWALKS OR CURBS.
 5. FOR TYPE 5 RAMPS, LEADING EDGE OF DETECTABLE WARNING SURFACE MUST BE LOCATED A MAXIMUM OF 5 FEET FROM EDGE OF TRAVELWAY - THIS REQUIREMENT MAY WARRANT MULTIPLE DETECTABLE WARNING PADS FOR A SINGLE RAMP.
 6. THERE MUST BE A MINIMUM OF 24 INCHES OF DETECTABLE WARNING SURFACE IN THE DIRECTION OF PEDESTRIAN TRAVEL, THE FULL WIDTH OF THE SIDEWALK - THIS REQUIREMENT MAY WARRANT MULTIPLE DETECTABLE WARNING PADS FOR A SINGLE RAMP.
 7. A MINIMUM 4' X 4' LANDING AREA, GRADED AT A MAXIMUM SLOPE OF 2% IN ANY DIRECTION, MUST BE PROVIDED AT THE TOP OF EVERY RAMP.



DROPPED CURB AND CRADLE

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

CD-606-1

NEW JERSEY DEPARTMENT OF TRANSPORTATION

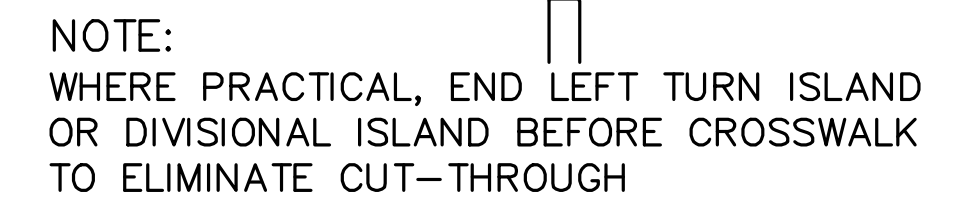
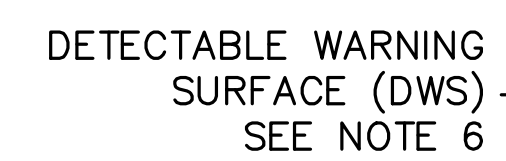
CONSTRUCTION DETAILS

CURB RAMPS

CD-606-1.1



BOTH ENDS OF THE BOTTOM
GRADE BREAK ARE LESS THAN
5' FROM BACK OF CURB.



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



CD-606-1A

CONSTRUCTION DETAILS

- CD-606-1.1A

CURB RAMP TYPE 1

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				
H INCHES	W FEET	X1u FEET	X1L FEET	Lz FEET
3	3	3.13	2.08	9.21
4	4	4.17	2.78	10.94
5	5	5.21	3.47	12.68
6	6	6.25	4.17	14.42
7	7	7.29	4.86	16.15
8	8	8.33	5.56	17.89
9	9	9.38	6.25	19.63

3.0% GUTTER LINE PROFILE				
H INCHES	W FEET	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

0.0% GUTTER LINE PROFILE				
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% GUTTER LINE PROFILE								
H INCHES	W FEET	X1u FEET	X1L FEET	L1 FEET	Y INCHES	X2u FEET	X2L FEET	L2 FEET
3	2.5	2.50	2.50	9.00	2.5	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		5.00	5.00	14.00		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	3.0	*	*	*	3.0	*	*	*
4		3.33	3.33	10.67		1.72	1.72	7.44
5		4.17	4.17	12.33		2.72	2.72	9.44
6		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	3.5	*	*	*	3.5	*	*	*
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		5.00	5.00	14.00		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	4.0	*	*	*	4.0	*	*	*
4		*	*	*		*	*	*
5		4.17	4.17	12.33		1.96	1.96	7.92
6		5.00	5.00	14.00		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

4.0% GUTTER LINE PROFILE								
H INCHES	W FEET	X1u FEET	X1L FEET	L1 FEET	Y INCHES	X2u FEET	X2L FEET	L2 FEET
3	2.5	4.17	1.79	9.95	2.5	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		8.33	3.57	15.90		6.41	3.02	13.43
7		9.72	4.17	17.89		7.98	3.75	15.73
8	3.0	11.11	4.76	19.87	3.0	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		6.94	2.98	13.92		5.24	1.84	11.08
6	3.5	8.33	3.57	15.90	3.5	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	4.0	5.56	2.38	11.94	4.0	2.58	0.91	7.49
5		6.94	2.98	13.92		4.51	1.58	10.09
6		8.33	3.57	15.90		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	4.0	12.50	5.36	21.86	4.0	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		8.33	3.57	15.90		5.70	2.00	11.70
7	4.0	9.72	4.17	17.89	4.0	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

CURB RAMP TYPE 2

0.0% GUTTER LINE PROFILE				
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

1.0% GUTTER LINE PROFILE										
H INCHES	W FEET	X1u FEET	X1L FEET	L1 FEET	Y INCHES	X2u FEET	X2L FEET	L2 FEET		
3	2.5	2.78	2.27	9.05	2.5	1.25	0.98	6.24		
4		3.70	3.03	10.73		2.39	1.18	8.27		
5		4.63	3.79	12.42		3.53	2.77	10.30		
6		5.56	4.55	14.10		4.66	3.66	12.33		
7		6.48	6.06	15.78		5.80	4.56	14.36		
8		7.41	6.06	17.47		6.94	5.45	16.39		
9		8.33	6.82	19.15		8.07	6.34	18.42		
3		3.0	2.78	2.27		9.05	3.0	0.82	0.64	5.46
4			3.70	3.03		10.73		1.96	1.54	7.49
5	4.63		3.79	12.42	3.09	2.43		9.52		
6	5.56		4.55	14.10	4.23	3.32		11.55		
7	6.48		6.06	15.78	4.23	4.22		13.58		
8	7.41		6.06	17.47	5.37	5.11		15.61		
9	8.33		6.82	19.15	7.64	6.00		17.64		
33	*		*	*	3.5	*		*	*	
4	3.70		3.03	10.73		1.53		1.20	6.72	
5	4.63	3.79	12.42	2.66		2.09	8.75			
6	5.56	4.55	14.10	3.80		2.98	10.78			
7	6.48	6.06	15.78	4.94		3.88	12.81			
8	7.41	6.06	17.47	6.07		4.77	14.84			
9	8.33	6.82	19.15	7.21		5.66	16.87			
33	*	*	*	4.0		*	*	*		
4	3.70	3.03	10.73			1.09	0.86	5.95		
5	4.63	3.79	12.42		2.23	1.75	7.98			
6	5.56	4.55	14.10		3.37	2.65	10.01			
7	6.48	6.06	15.78		4.50	3.54	12.04			
8	7.41	6.06	17.47		5.64	4.43	14.07			
9	8.33	6.82	19.15		6.78	5.32	16.01			

5.0% GUTTER LINE PROFILE								
H INCHES	W FEET	X1u FEET	X1L FEET	L1 FEET	Y INCHES	X2u FEET	X2L FEET	L2 FEET
3	2.5	5.00	1.67	10.67	2.5	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		10.00	3.33	17.33		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	3.0	5.00	1.67	10.67	3.0	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		10.00	3.33	17.33		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	3.5	*	*	*	3.5	*	*	*
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		10.00	3.33	17.33		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	4.0	*	*	*	4.0	*	*	*
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		10.00	3.33	17.33		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

CURB RAMP TYPE 4

0.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	1.10	1.10	6.20
4			2.10	2.10	8.20
5			3.10	3.10	10.20
6			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	3.0	3.0	**	**	**
4			1.72	1.72	7.44
5			2.72	2.72	9.44
6			3.72	3.72	11.45
7			4.72	4.72	13.45
8			5.72	5.72	15.45
9			6.72	6.72	17.45
3	3.5	3.5	**	**	**
4			1.34	1.34	6.68
5			2.34	2.34	8.68
6			3.34	3.34	10.69
7			4.34	4.34	12.69
8			5.34	5.34	14.69
9			6.34	6.34	16.69
3	4.0	4.0	**	**	**
4			**	**	**
5			1.96	1.96	7.92
6			2.96	2.96	9.93
7			3.96	3.96	11.93
8			4.96	4.96	13.93
9			5.96	5.96	15.93

4.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	2.12	0.74	6.86
4			4.04	1.42	9.46
5			5.97	2.10	12.06
6			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	3.0	3.0	1.39	0.49	5.88
4			3.31	1.16	8.48
5			5.24	1.84	11.08
6			7.16	2.52	13.68
7			9.09	3.19	16.28
8			11.01	3.87	18.88
9			12.94	4.54	21.48
3	3.5	3.5	0.66	0.23	4.89
4			2.58	0.91	7.49
5			4.51	1.58	10.09
6			6.43	2.26	12.69
7			8.36	2.93	15.29
8			10.28	3.61	17.89
9			12.20	4.29	20.49
3	4.0	4.0	**	**	**
4			1.85	0.65	6.50
5			3.78	1.33	9.10
6			5.70	2.00	11.70
7			7.62	2.68	14.30
8			9.55	3.35	16.90
9			11.47	4.03	19.50

1.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	1.25	0.98	6.24
4			2.39	1.88	8.27
5			3.53	2.77	10.30
6			4.66	3.66	12.33
7			5.80	4.56	14.36
8			6.94	5.45	16.39
9			8.07	6.34	18.42
3	3.0	3.0	0.82	0.64	5.46
4			1.96	1.54	7.49
5			3.09	2.43	9.52
6			4.23	3.32	11.55
7			5.37	4.22	13.58
8			6.50	5.11	15.61
9			7.64	6.00	17.64
3	3.5	3.5	0.39	0.30	4.69
4			1.53	1.20	6.72
5			2.66	2.09	8.75
6			3.80	2.98	10.78
7			4.94	3.88	12.81
8			6.07	4.77	14.84
9			7.21	5.66	16.87
3	4.0	4.0	**	**	**
4			1.09	0.86	5.95
5			2.23	1.75	7.98
6			3.37	2.65	10.01
7			4.50	3.54	12.04
8			5.64	4.43	14.07
9			6.78	5.32	16.10

5.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	2.76	0.69	7.44
4			5.26	1.31	10.57
5			7.76	1.94	13.70
6			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	3.0	1.80	0.45	6.26
4			4.31	1.08	9.38
5			6.81	1.70	12.51
6			9.31	2.33	15.64
7			11.81	2.95	18.77
8			14.32	3.58	21.89
9			15.00	3.87	23.20
3	3.5	3.5	0.85	0.21	5.07
4			3.36	0.84	8.20
5			5.86	1.46	11.32
6			8.36	2.09	14.45
7			10.86	2.71	17.58
8			13.37	3.34	20.71
9			15.00	3.96	22.96
3	4.0	4.0	**	**	**
4			2.41	0.60	7.01
5			4.91	1.23	10.14
6			7.41	1.85	13.26
7			9.91	2.48	16.39
8			12.42	3.10	19.52
9			14.92	3.73	22.65

2.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	1.45	0.89	6.34
4			2.77	1.69	8.46
5			4.08	2.50	10.58
6			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	3.0	3.0	0.95	0.58	5.53
4			2.27	1.39	7.65
5			3.58	2.20	9.78
6			4.90	3.00	11.90
7			6.22	3.81	14.02
8			7.53	4.62	16.15
9			8.85	5.42	18.27
3	3.5	3.5	0.45	0.28	4.72
4			1.77	1.08	6.85
5			3.08	1.89	8.97
6			4.40	2.70	11.09
7			5.72	3.50	13.22
8			7.03	4.31	15.34
9			8.35	5.12	17.46
3	4.0	4.0	**	**	**
4			1.27	0.78	6.04
5			2.58	1.58	8.16
6			3.90	2.39	10.29
7			5.22	3.20	12.41
8			6.53	4.00	14.53
9			7.85	4.81	16.66

6.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	3.94	0.64	8.58
4			7.51	1.22	12.74
5			11.09	1.80	16.89
6			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	3.0	3.0	2.58	0.42	7.0
4			6.16	1.00	11.16
5			9.73	1.58	15.31
6			13.31	2.16	19.47
7			15.00	2.75	21.75
8			15.00	3.33	22.33
9			15.00	3.91	22.91
3	3.5	3.5	1.22	0.20	5.42
4			4.80	0.78	9.58
5			8.37	1.36	13.74
6			11.95	1.94	17.89
7			15.00	2.52	21.52
8			15.00	3.11	22.11
9			15.00	3.69	22.69
3	4.0	4.0	**	**	**
4			3.44	0.56	8.00
5			7.02	1.14	12.16
6			10.59	1.72	16.31
7			14.17	2.30	20.47
8			15.00	2.89	21.89
9			15.00	3.47	22.47

3.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X2u FEET	X2L FEET	Lz FEET
3	2.5	2.5	1.72	0.81	6.53
4			3.28	1.55	8.83
5			4.85	2.28	11.13
6			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	3.0	1.13	0.53	5.66
4			2.69	1.27	7.96
5			4.25	2.00	10.26
6			5.82	2.74	12.55
7			7.38	3.47	14.85
8			8.94	4.21	17.15
9			10.51	4.94	19.45
3	3.5	3.5	0.53	0.25	4.78
4			2.10	0.99	7.08
5			3.66	1.72	9.38
6			5.22	2.46	11.68
7			6.79	3.19	13.98
8			8.35	3.93	16.28
9			9.91	4.66	18.58
3	4.0	4.0	**	**	**
4			1.50	0.71	6.21
5			3.07	1.44	8.51
6			4.63	2.18	10.81
7			6.19	2.91	13.11
8			7.76	3.65	15.41
9			9.32	4.38	17.71

7.0% GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X <u>u</u> FEET	X <u>L</u> FEET	L <u>z</u> FEET
3	2.5	2.5	6.90	0.60	11.50
4			13.16	1.19	18.31
5			15.00	1.69	20.69
6			15.00	2.23	21.23
7			15.00	2.77	21.77
8			15.00	3.32	22.32
9			15.00	3.86	22.86
3	3.0	3.0	4.52	0.39	8.91
4			10.78	0.94	15.72
5			15.00	1.48	20.48
6			15.00	2.02	21.02
7			15.00	2.57	21.57
8			15.00	3.11	22.11
9			15.00	3.65	22.65
3	3.5	3.5	2.14	0.19	6.32
4			8.40	0.73	13.13
5			14.67	1.27	19.94
6			15.00	1.82	20.82
7			15.00	2.36	21.36
8			15.00	2.90	21.90
9			15.00	3.45	22.45
3	4.0	4.0	**	**	**
4			6.03	0.52	10.55
5			12.29	1.07	17.36
6			15.00	1.61	20.61
7			15.00	2.15	21.15
8			15.00	2.70	21.70
9			15.00	3.24	22.24