

MAYFIELD VILLAGE, OHIO

WORTON PARK NEIGHBORHOOD

PHASE I - CULVERT REPLACEMENT PROJECT

WORTON PARK DRIVE AND NORTH WOODLANE DRIVE

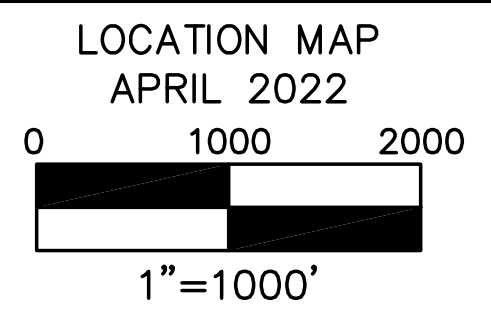
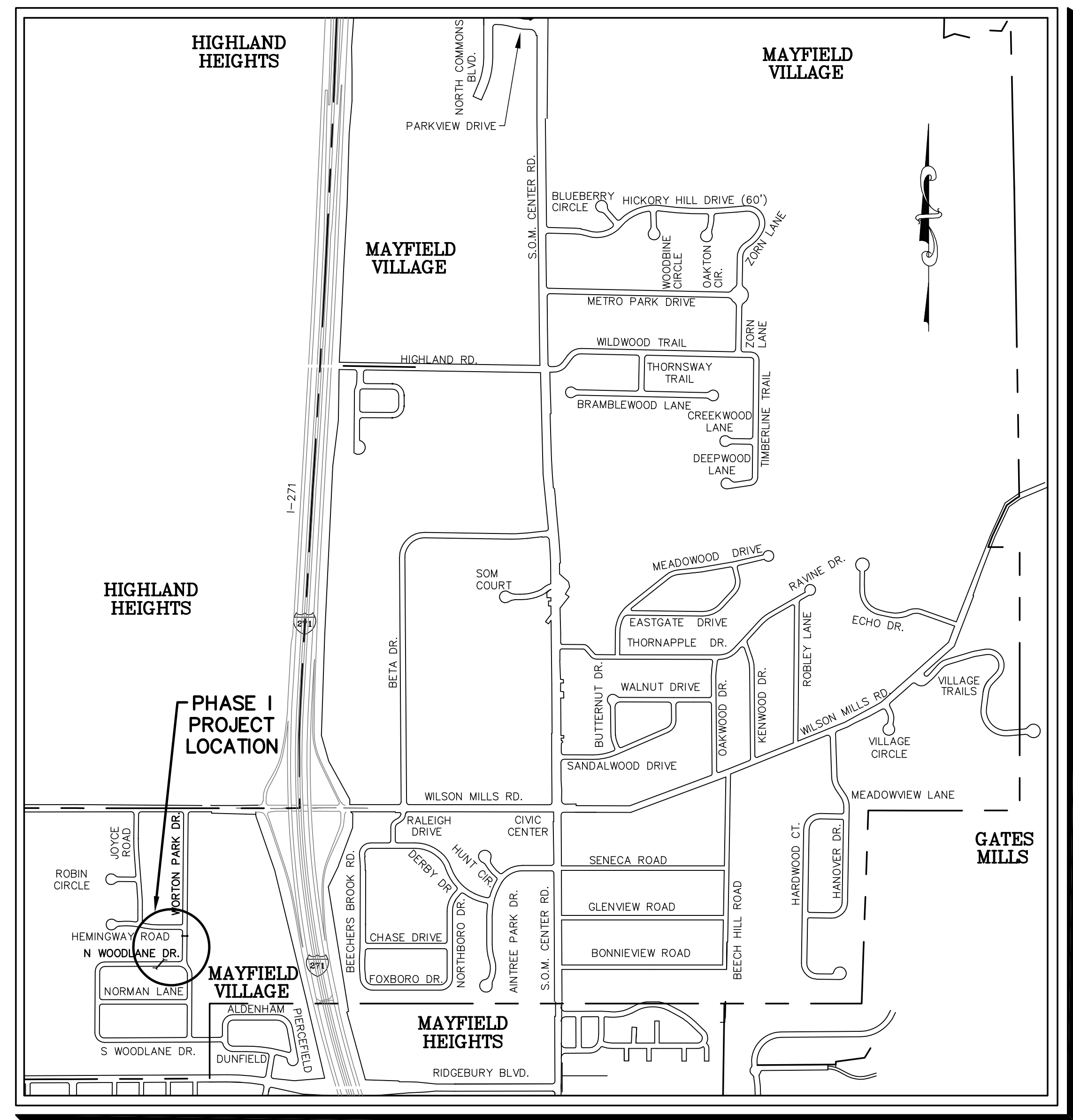
INDEX OF SHEETS	
SHEET DESCRIPTION	SHEET NUMBER
TITLE SHEET	1
SCHEMATIC PLAN	2
TYPICAL SECTION	3
GENERAL NOTES	4-6
SUB-SUMMARY	7
WORTON PARK DRIVE PLAN & PROFILE	8
WORTON PARK DRIVE CULVERT PLAN & PROFILE	9
WORTON PARK DRIVE CULVERT DETAILS	10-11
NORTH WOODLANE DRIVE PLAN & PROFILE	12
NORTH WOODLANE DRIVE CULVERT PLAN & PROFILE	13
NORTH WOODLANE DRIVE CULVERT DETAILS	14-16
NORTH WOODLANE DRIVE ENHANCED FLOOD PLAIN GRADING	17
CROSS SECTIONS-STREAM	18-20
MISCELLANEOUS DETAILS	21-23



EXISTING UNDERGROUND UTILITY NOTE:

THE SIZE AND LOCATION, BOTH HORIZONTAL AND VERTICAL, OF THE UNDERGROUND UTILITIES SHOWN HEREON, HAVE BEEN OBTAINED BY A DILIGENT AND COMPREHENSIVE SEARCH OF AVAILABLE RECORDS. VERIFICATION BY FIELD OBSERVATION HAS BEEN CONDUCTED WHERE PRACTICAL. HOWEVER, STEPHEN HOVANCSEK AND ASSOCIATES INC. DOES NOT GUARANTEE THE COMPLETENESS NOR ACCURACY THEREOF.

REVISIONS			
No.	DESCRIPTION	DATE	BY



PREPARED FOR
MAYFIELD VILLAGE
MAYOR
BRENDA T. BODNAR

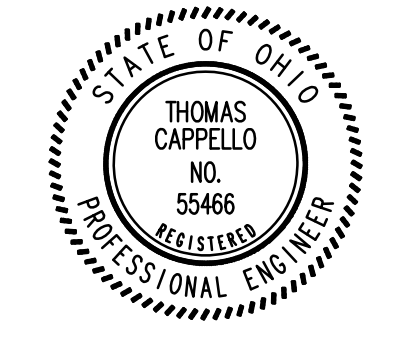
COUNCIL

AT LARGE – PRESIDENT	STEPHEN SCHUTT
WARD 1	BILL MARQUARDT
WARD 2	MARK W. ARNDT
WARD 3	DENNY MURPHY
WARD 4	GEORGE WILLIAMS
AT LARGE	ALLEN MEYERS
AT LARGE – PRESIDENT PRO TEM	JENNIFER JURCISEK

PREPARED BY
STEPHEN HOVANCSEK & ASSOC., INC.

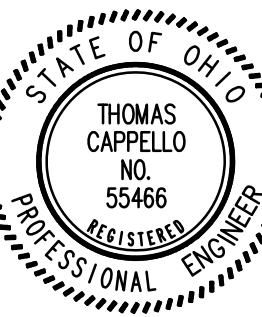
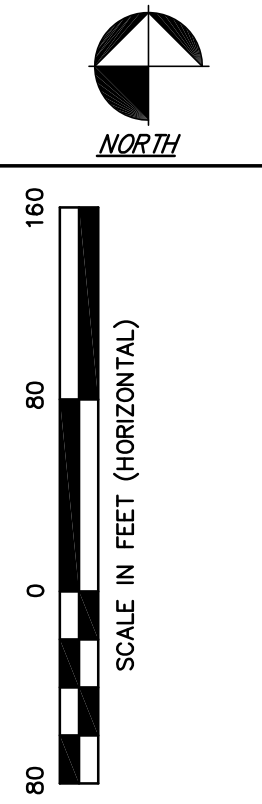
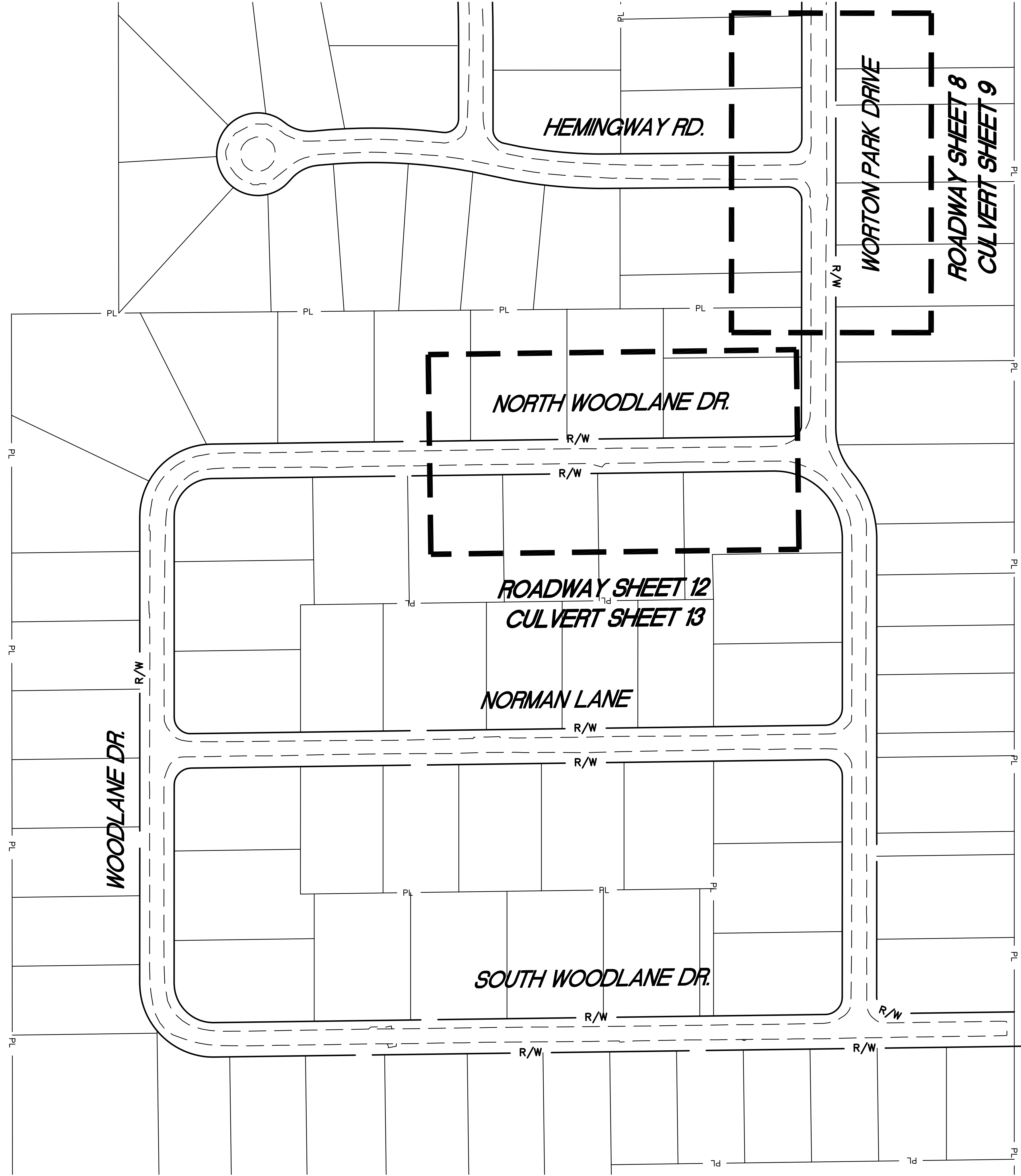
CONSULTING ENGINEERS & PLANNERS
TWO MERIT DRIVE RICHMOND HEIGHTS, OHIO

SCOTT SIPOS
DIRECTOR OF SERVICE



THOMAS CAPPELLO, P.E., P.S.
VILLAGE ENGINEER

SET NO. _____

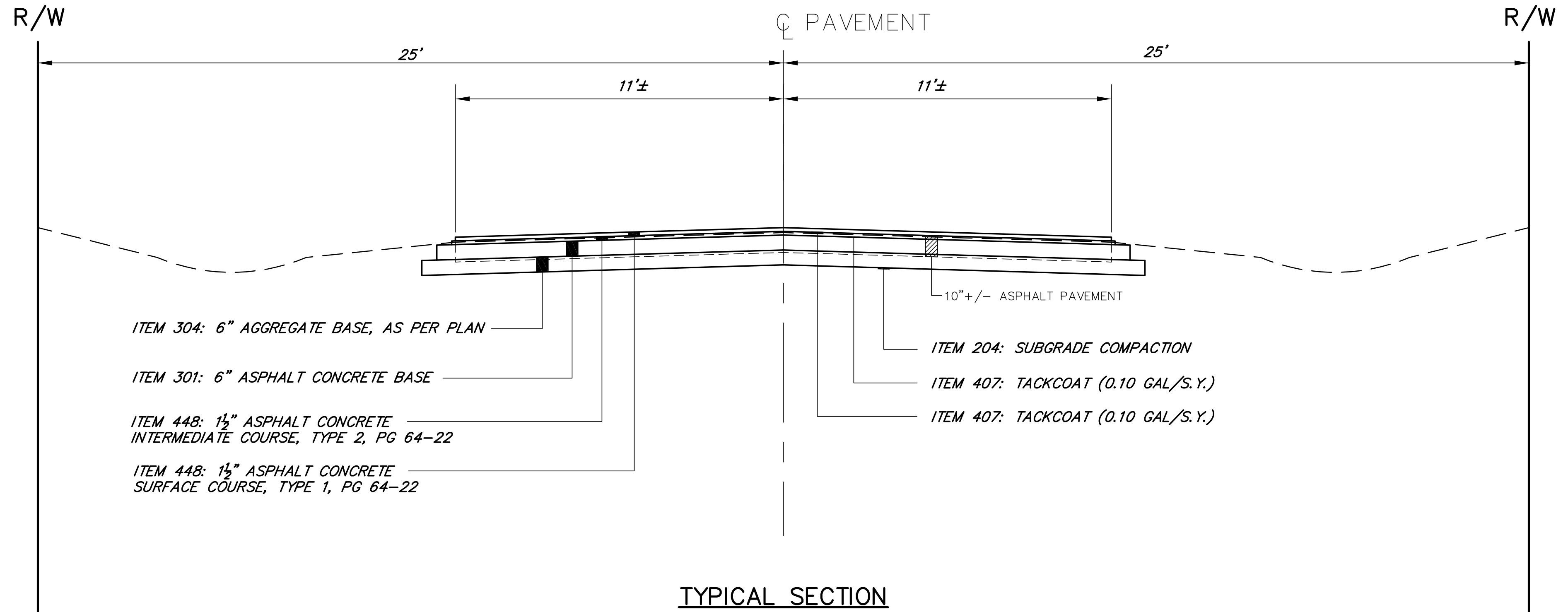


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STEPHEN HOVANCSEK & ASSOCIATES, INC.
 CONSULTING ENGINEERS AND PLANNERS
 TWO MERIT DRIVE
 RICHMOND HEIGHTS, OHIO 44143
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MAYFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
SCHEMATIC PLAN

APRIL 2022
 JOB No. 20-102

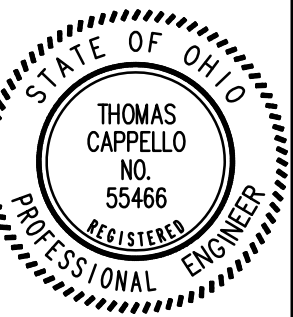


- ITEM 304: 6" AGGREGATE BASE, AS PER PLAN
- ITEM 301: 6" ASPHALT CONCRETE BASE
- ITEM 448: 1 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22
- ITEM 448: 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22
- ITEM 204: SUBGRADE COMPACTION
- ITEM 407: TACKCOAT (0.10 GAL/S.Y.)
- ITEM 407: TACKCOAT (0.10 GAL/S.Y.)
- 10" +/- ASPHALT PAVEMENT

TYPICAL SECTION

SCALE: 3/8" = 1'-0"

WORTON PARK DR. AND NORTH WOODLANE DR.



REVISIONS	DESCRIPTION	DATE	BY
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MAYFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
TYPICAL SECTION

APRIL 2022
 JOB No. 20-102

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

TIME WARNER CABLE
7820 DIVISION DRIVE
MENTOR, OHIO 44060
PHONE: (440) 974-3401 EXT. 123
FAX: (440) 974-3201

AT&T
13630 LORAIN AVE. 4TH FLOOR
CLEVELAND, OHIO 44111
PHONE: (216) 476-6142
FAX: (216) 573-5792

CITY OF CLEVELAND DIVISION OF WATER
1201 LAKESIDE AVE.
CLEVELAND, OHIO 44114
PHONE: (216) 664-2444, EXT. 75590
FAX: (216) 664-2378

CUYAHOGA COUNTY SANITARY ENGINEER
6100 WEST CANAL ROAD
VALLEY VIEW, OHIO 44125
PHONE: (216) 443-8205
FAX: (216) 443-8236

DOMINION EAST OHIO GAS COMPANY
320 SPRINGSIDE DRIVE
FAIRLAWN, OHIO 44333
PHONE: (330) 664-2488

ILLUMINATING COMPANY
6896 MILLER ROAD
BRECKSVILLE, OHIO 44141
PHONE: (440) 717-6845
FAX: (440) 546-8780

CALL OHIO UTILITIES PROTECTION SERVICE
TWO (2) WORKING DAYS BEFORE YOU DIG
TOLL FREE NO. 1-800-362-2764

CALL OHIO OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE (OGPUPS)
TOLL FREE NO. 1-800-925-0988
(NON-MEMBERS MUST BE CALLED DIRECTLY)

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL SUBSIDIARY AGREEMENT GOVERNING COMPLETION OF THIS PROJECT.

ELEVATION DATUM

ELEVATIONS SHOWN ARE BASED ON CLEVELAND REGIONAL GEODETIC SURVEY (C.R.G.S.) DATA. MONUMENTS ARE DESCRIBED ON THE PLANS.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION, AND OPERATION (INCLUDING ERECTION, MAINTENANCE AND REMOVAL) OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS, EXCEPT WHERE OTHERWISE NOTED, SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

EXISTING TYPICAL SECTIONS

EXISTING TYPICAL SECTIONS HAVE BEEN DEVELOPED FROM SITE MEASUREMENTS AND RECORD PLANS AND ARE BELIEVED TO REPRESENT THE WIDTH AND COMPOSITION OF THE EXISTING PAVEMENT, BUT THE VILLAGE DOES NOT GUARANTEE THE ACCURACY OF SAME.

PROJECT PROGRESS MEETINGS

PROGRESS MEETINGS WILL BE HELD EVERY WEEK AT THE PROJECT OFFICE OR OTHER LOCATION DESIGNATED BY THE VILLAGE ENGINEER, AND WILL BE ATTENDED BY THE VILLAGE REPRESENTATIVES AND CONTRACTOR DECISION-MAKING PERSONNEL.

THE PURPOSE OF THESE MEETINGS IS TO DISCUSS CRITICAL OPERATIONS AND POTENTIAL PROBLEMS. ALSO, THE CONTRACTOR WILL CONFIRM THE NUMBER AND DURATION OF WORK SHIFTS, NUMBER OF WORK CREWS, AND SPECIFIC PORTIONS OF THE WORK TO BE PERFORMED DURING THE FOLLOWING WEEKS.

THESE MEETINGS CAN ONLY BE WAIVED BY THE VILLAGE SERVICE DIRECTOR OR VILLAGE ENGINEER.

DEFINITIONS AND TERMS

WHEREVER THERE APPEARS, IN THE STANDARD SPECIFICATIONS (ODOT ITEMIZED CMS), SUPPLEMENTAL SPECIFICATIONS OR PROPOSAL NOTES, THE TERM "THE STATE", "DIRECTOR OF TRANSPORTATION", "DEPARTMENT" "DISTRICT CONSTRUCTION ENGINEER (DCE)", "ENGINEER", OR ANY OTHER TERM DESIGNATING ANY REPRESENTATIVE OR EMPLOYEE OF THE STATE OR ITS DEPARTMENT OF TRANSPORTATION, SUCH TERM SHALL, FOR THE PURPOSE OF THIS CONTRACT, BE CONSIDERED AND TAKEN AS MEANING AND DESIGNATING THE RESPECTIVE BOARD OFFICER OR EMPLOYEE OF MAYFIELD VILLAGE WHOSE DUTY OR FUNCTION IT IS TO DEAL WITH THE SUBJECT MATTER IN CONNECTION WITH WHICH SUCH TERM IS USED AND SPECIFICALLY:

THE STATE - SHALL MEAN MAYFIELD VILLAGE.

DEPARTMENT - SHALL MEAN THE MAYFIELD VILLAGE ENGINEER'S OFFICE.

DIRECTOR - SHALL MEAN THE MAYFIELD VILLAGE ENGINEER, HIS DEPUTIES OR ANY ENGINEER DESIGNATED AS THE MAYFIELD VILLAGE ENGINEER'S REPRESENTATIVE.

DISTRICT CONSTRUCTION - SHALL MEAN THE DULY AUTHORIZED AGENT OR REPRESENTATIVE OF THE MAYFIELD VILLAGE ENGINEER MAYFIELD VILLAGE ENGINEER'S OFFICE ACTING WITHIN THE SCOPE OF HIS/HER AUTHORITY FOR (DCE) OR ENGINEER THE PURPOSES OF CONSTRUCTION ENGINEERING AND ADMINISTRATION OF THE CONTRACT.

LABORATORY - SHALL MEAN ANY LABORATORY DESIGNATED BY MAYFIELD. VILLAGE.

ROADWAY

ITEM 201 - CLEARING AND GRUBBING, AS PER PLAN

ALL APPLICABLE PROVISIONS OF ODOT ITEM 201: CLEARING AND GRUBBING SHALL APPLY EXCEPT AS MODIFIED AS FOLLOWS:

THIS ITEM SHALL ALSO INCLUDE THE REMOVAL OF ALL TREES, OF VARIOUS SIZES, SHOWN ON THE PLAN TO BE REMOVED.

ITEM 203 - EXCAVATION (INCLUDING ROCK), AS PER PLAN

ALL APPLICABLE PROVISIONS OF ODOT ITEM 203: EXCAVATION SHALL APPLY EXCEPT AS MODIFIED AS FOLLOWS:

ALL ROCK EXCAVATION REQUIRED TO PERFORM THIS WORK SHALL BE INCLUDED IN THIS ITEM. CONTRACTOR SHALL BE RESPONSIBLE TO VISIT THE SITE TO OBSERVE THE ROCK IN THE EXISTING STREAM.

ITEM 203 - EMBANKMENT, AS PER PLAN

USE OF SLAG, IN ANY FORM, IS NOT PERMITTED.

ITEM 601: ROCK CHANNEL PROTECTION, TYPE C WITH FILTER, AS PER PLAN

ALL APPLICABLE PROVISIONS OF ODOT ITEM 601: SHALL APPLY EXCEPT AS MODIFIED AS FOLLOWS:

MATERIAL LISTED UNDER 703.19(B) SHALL BE LIMITED TO NATURAL ROCK AND STONE BOULDERS. THE USE OF RPCC AND LIMESTONE SHALL NOT BE PERMITTED.

ITEM 659 - SEEDING AND MULCHING, AS PER PLAN

WHEN THE ABOVE ITEM IS CALLED FOR ON THE PLANS OR IN THE PROPOSAL, ALL APPLICABLE PROVISIONS OF ITEM 659, AS SET FORTH IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL APPLY UNLESS MODIFIED HEREIN.

659.07 SEEDS, UNLESS OTHERWISE DIRECTED/APPROVED BY THE ENGINEER, HIGH QUALITY GERMINATION RATES ARE REQUIRED.

659.10 SITE PREPARATION, IN ADDITION TO "AREAS IN FRONT OF RESIDENCES, COMMERCIAL PROPERTIES, ETC." REFERRED TO IN 659.10(A), THE SPECIAL PREPARATION SHALL BE EXTENDED TO ENCOMPASS ALL LAWNS AND/OR LAWN-LIKE AREAS AS DETERMINED BY THE ENGINEER. REMOVE ALL STONES 1-INCH OR GREATER BY APPROVED METHODS/EQUIPMENT SUCH AS "ROCK HOUNDING", RAKING, ETC.

659.11 PLACING TOPSOIL, TOPSOIL SHALL BE PLACED AND SPREAD TO A MINIMUM COMPACTED DEPTH OF TWO (2) INCHES. THE FINISHED TOPSOIL SURFACES SHALL BE SEEDDED AND MULCHED WITHIN SEVENTY-TWO (72) HOURS OF THEIR ACCEPTED COMPLETION.

659.13 MULCHING OPERATION, UNLESS OTHERWISE DIRECTED OR APPROVED BY THE ENGINEER, STRAW MULCH (PER 659.14) OR COMPOST MULCH (PER 659.16) SHALL BE USED.

659.17 WATERING, IN ADDITION TO THE REQUIREMENTS OF 659.17, THE SEED BED SHALL BE KEPT ACCEPTABLY MOIST UNTIL THE SEED HAS GERMINATED; ALL AT THE DIRECTION OR APPROVAL OF THE ENGINEER.

659.23 PERFORMANCE, THE VILLAGE WILL INSPECT ALL SEEDDED AREAS NO EARLIER THAN ONE (1) MONTH AND NO LATER THAN NINE (9) MONTHS AFTER FINAL/COMPLETED SEEDING; ALL AT THE DISCRETION/DETERMINATION OF THE ENGINEER.

659.24 METHOD OF MEASUREMENT, SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR ITEM 659 - SEEDING AND MULCHING, AS PER PLAN ARE BASED ON THESE LIMITS.

659.25 BASIS OF PAYMENT, PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR THE ACTUALLY COMPLETED AND ACCEPTED QUANTITIES OF:

ITEM 659 - SEEDING AND MULCHING, AS PER PLAN (LUMP SUM)

ITEM 832 - EROSION CONTROL

THE FOLLOWING ESTIMATED QUANTITY IS PROVIDED FOR TEMPORARY SEDIMENT AND EROSION CONTROL (TSEC) IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF ODOT SUPPLEMENTAL SPECIFICATION 832 :

ITEM 832 - EROSION CONTROL, LUMP

ITEM SPECIAL: REMOVE AND REINSTALL EXISTING DRIVE POST LIGHT INCLUDING NEW ELECTRIC LINE, AS PER PLAN

THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING LIGHT POLE LOCATED AT 6208 NORTH WOODLANE DRIVE AND SAFELY STORE AS WELL AS TEMPORARILY DISCONNECT ELECTRIC SERVICE. AFTER THE NEW CULVERTS ARE INSTALLED, THE CONTRACTOR SHALL REINSTALL THE EXISTING LIGHT POLE AND RECONNECT THE ELECTRIC POWER TO THIS LIGHT.

THIS ITEM SHALL BE PAID FOR AT A LUMP SUM PRICE AND SHALL INCLUDE ALL LABOR AND MATERIAL, CONDUIT, MOUNTING CONDUIT TO NEW CULVERT HEADWALL, TRENCHING, ELECTRICAL WORK BY A CERTIFIED ELECTRICIAN AND ANY OTHER ITEMS NECESSARY TO COMPLETE THIS WORK.

SUPPORTING EXISTING UTILITY POLES

THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH FIRST ENERGY (THE ILLUMINATING COMPANY) TO SUPPORT THE EXISTING UTILITY POLES AND/OR DE-ENERGIZING ANY ELECTRIC LINES THAT MAYBE EFFECTED BY THE PROJECT EXCAVATION, INSTALLATION OF NEW BOX CULVERTS AND OTHER ITEMS.

EXISTING OVERHEAD COMMUNICATION LINES ALSO EXIST IN THE RIGHT OF WAY AND CROSS OVER THE ROADWAY TO SERVICE THE INDIVIDUAL HOMES. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH THE RESPECTIVE UTILITIES TO SUPPORT AND PROTECT THESE OVERHEAD LINES.

ALL COSTS FOR COORDINATION BY THE CONTRACTOR WITH FIRST ENERGY (THE ILLUMINATING COMPANY) AS WELL AS WORK PERFORMED BY FIRST ENERGY (THE ILLUMINATING COMPANY) SHALL BE PAID FOR UNDER ITEM SPECIAL: POWER POLE SUPPORT ALLOWANCE, LUMP

COORDINATION WITH DOMINION EAST OHIO GAS COMPANY

CONTRACTOR SHALL CONTACT AND COORDINATE WITH DOMINION EAST OHIO GAS COMPANY TO INSURE THAT THE REQUIRED LOWERINGS OF THE EXISTING GAS MAINS AND RELOCATION OF EXISTING GAS CONNECTIONS THAT ARE REQUIRED TO PERFORM THE WORK ON THIS PROJECT HAVE BEEN COMPLETED.

DRAINAGE

BEDDING, BACKFILL AND JOINTS FOR ITEM 611 - CONDUITS, AS PER PLAN AND ITEM 611 - STRUCTURES, AS PER PLAN

STRUCTURAL BACKFILL (703.11) MATERIAL FURNISHED FOR BEDDING AND BACKFILL OPERATIONS SHALL BE LIMITED TO LIMESTONE.

WATERWORK

WORTON PARK DRIVE WATER MAIN LOWERING

PRIOR TO ORDERING ANY MATERIAL FOR THE LOWERING OF THE WATER MAIN BENEATH THE PROPOSED 16"x4" CONCRETE BOX CULVERT ON WORTON PARK DRIVE, THE CONTRACTOR SHALL DIG TEST HOLES TO LOCATE THE ACTUAL ELEVATION AND LOCATION OF THE EXISTING 8" WATER MAIN LOWERING PIPING AND BENDS. THIS WORK SHALL INCLUDE THE REMOVAL OF A CONCRETE CAP OVER THIS EXISTING LOWERING.

THE COST OF THIS EXCAVATION, CONCRETE CAP REMOVAL AND OTHER ITEMS AND LABOR NECESSARY TO PERFORM THIS WORK SHALL BE PAID FOR UNDER THE LUMP SUM BID PRICE FOR:

ITEM 638: EXPLORATIVE EXCAVATION, AS PER PLAN

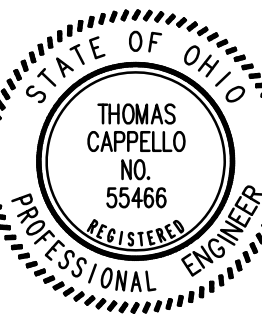
IF THE EXISTING 8" WATER MAIN LOWERING DOES NOT HAVE THE REQUIRED CLEARANCES FOR THE INSTALLATION OF PROPOSED 16"x4 CONCRETE BOX CULVET, THE CONTRACTOR SHALL THEN LOWER THIS EXISTING 8" WATER MAIN.

THE COST OF ALL LABOR AND MATERIAL NECESSARY TO PERFORM THIS WORK SHALL BE PAID FOR UNDER THE VARIOUS SPECIFIED ITEM 638 ITEMS.

IF LOWERING IS REQUIRED, TEMPORARY WATER SERVICE TO SUPPLY THE APPROXIMATELY 60 HOMES SOUTH OF THIS LOWERING LOCATION WILL BE REQUIRED. THIS TEMPORARY WATER SERVICE WILL ONLY BE NEEDED FOR THE SHORT TIME IT WILL TAKE TO PERFORM THIS LOWERING.

THE COST OF THIS TEMPORARY WATER MAIN SHALL INCLUDE ALL 4" DIAMETER PIPING, FITTINGS, EXCAVATION, CHLORINATION AND COORDINATION WITH THE CITY OF CLEVELAND WATER DEPARTMENT AND OTHER ITEMS AND LABOR NECESSARY TO PERFORM THIS WORK AND SHALL BE PAID FOR UNDER THE LUMP SUM BID PRICE FOR:

ITEM 638: MAINTENANCE OF WATER SERVICE, AS PER PLAN



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STEPHEN HOVANCSEK & ASSOCIATES, INC.
CONSULTING ENGINEERS AND PLANNERS
TWO MERIT DRIVE
RICHMOND HEIGHTS, OHIO 44143
PH: (216) 731-6255 FAX: (216) 731-4483

MAYFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
GENERAL NOTES

PAVEMENT

ITEM 304 – AGGREGATE BASE, AS PER PLAN

MATERIAL FURNISHED FOR THIS ITEM SHALL BE LIMITED TO LIMESTONE.

ITEM 452: 6" NON-REINFORCED CONCRETE PAVEMENT, USING MS CONCRETE, AS PER PLAN

THE PROPOSED LOCATIONS AND LIMITS OF DRIVE AND/OR DRIVE APRON REMOVALS/REPLACEMENTS ARE AS SHOWN ON THE PLANS WITH THE ASSOCIATED PLAN QUANTITIES TABULATED AND CARRIED TO THE GENERAL SUMMARY.

THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE DESIGNATED PORTIONS OF EXISTING DRIVES AND/OR DRIVE APRONS PER 202.05 OR 203.04(E), AS APPLICABLE, AND BY METHODS THAT WILL NOT DISTURB, DAMAGE OR UNDERMINE THE ADJACENT PAVEMENT, CURB, SIDEWALK OR THE PORTIONS OF EXISTING DRIVES/DRIVE APRONS INTENDED TO REMAIN IN PLACE. ANY ADJACENT FACILITIES DAMAGED AS A RESULT OF THE CONTRACTOR'S NEGLIGENCE, AS DETERMINED BY THE ENGINEER, AND WHICH ARE NOT OTHERWISE DESIGNATED FOR REPLACEMENT, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE, ALL AT THE DIRECTION OF THE ENGINEER.

EXCEPT AS OTHERWISE DIRECTED BY THE ENGINEER, THE CONFIGURATIONS OF COMPLETELY REPLACED DRIVE APRONS SHALL CONFORM TO THE ORIGINAL DRIVE APRON DIMENSIONS.

CONFIGURATIONS AND COMPOSITIONS OF PARTIALLY REPLACED DRIVES/DRIVE APRONS SHALL GENERALLY MATCH THE EXISTING, AS DIRECTED BY THE ENGINEER.

"CLASS MS" CONCRETE SHALL BE USED FOR THE ITEM 452 CONCRETE DRIVES.

THE CONTRACTOR SHALL STAGE HIS/HER OPERATIONS SUCH THAT THE MAXIMUM OUT OF SERVICE TIME FOR ANY RESIDENTIAL DRIVE IS THREE (3) DAYS. THE CONTRACTOR SHALL NOTIFY EACH RESIDENT OF ANY RESTRICTED ACCESS TO THEIR PROPERTY NO LATER THAN ONE (1) WEEK IN ADVANCE. ACCESS TO COMMERCIAL AND HANDICAP PROPERTY SHALL BE MAINTAINED AT ALL TIMES.

STRUCTURES (20' AND UNDER)

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, LATEST EDITION AND THE ODOT BRIDGE DESIGN MANUAL

DESIGN LOADING:

AASHTO LRFD HL-93 LOADING AND FUTURE WEARING SURFACE OF 60 PSF.

DESIGN STRESSES:

CAST-IN-PLACE STRUCTURES:

CONCRETE CLASS "C" – ALLOWABLE UNIT STRESS 1333 PSI, f'c=4000 PSI
REINFORCING STEEL – ASTM A615, A616 OR A617 GRADE 60
– ALLOWABLE UNIT STRESS 24,000 PSI (EPOXY COATED PER 709.00)
PRECAST STRUCTURES: FOR BOX CULVERTS SEE CMS 611 & 706.05.

REMOVAL OF EXISTING STRUCTURE:

PORTIONS OF THE EXISTING STRUCTURE SHALL BE REMOVED IN STAGES TO CONFORM WITH THE STAGING IN THE MAINTENANCE OF TRAFFIC PLANS.

FOUNDATION BEARING PRESSURE:

RETAINING WALLS AND CULVERT FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 8,000 POUNDS PER SQUARE FOOT.

REINFORCED CONCRETE BOX CULVERT WALL AND TOP SLAB THICKNESS:

THE WALL AND TOP SLAB THICKNESSES SHOWN ON THE PLANS WERE OBTAINED FROM THE MANUFACTURERS AT THE TIME THE PLANS WERE PREPARED. IF THE WALL AND/OR TOP SLAB THICKNESS OF THE CULVERT PROPOSED ARE DIFFERENT FROM WHAT IS SHOWN ON THE PLANS, A MARKED COPY OF THE PROJECT PLANS, INCLUDING ALL PLAN NOTES AND DETAILS SHOWING ALL ITEMS AFFECTED BY THE DIFFERENT CULVERT DIMENSIONS, SHALL BE SUBMITTED FOR APPROVAL WITH THE SHOP DRAWINGS. ALL WORK REQUIRED TO ACCOMMODATE ANY REVISED DIMENSIONS SHALL BE AT NO EXTRA COST TO THE COUNTY

ITEM 503 – COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN

THE CONTRACTOR SHALL DESIGN ALL COFFERDAMS, CRIBS, SHEETING, SHORING, BRACING, OR OTHER MEANS NECESSARY TO SAFELY SUPPORT THE SIDES OF EXCAVATIONS, EMBANKMENTS, ADJACENT BUILDINGS, TRACKS OR OTHER PREMISES IMPACTED BY THE PROPOSED CONSTRUCTION WORK. ALL STREAM DIVERSION AND/OR PUMPING OF GROUND AND/OR STREAM WATER SHALL ALSO BE INCLUDED IN THIS WORK. THE CONTRACTOR SHALL PREPARE AND PROVIDE DETAILED PLANS IN ACCORDANCE WITH CMS 501.05. PAYMENT FOR THE DESIGN AND CONSTRUCTION OF ALL MEANS OF TEMPORARY SUPPORT SHALL BE AT THE LUMP SUM PRICE FOR ITEM 503 – COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN.

ITEM 509 REINFORCING STEEL

THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL REINFORCING STEEL SHOWN ON THE PLAN DETAILS. ALL REINFORCING STEEL SHALL BE EPOXY COATED MEETING THE DESIGN SPECIFICATION OF THE PLANS.

ALL PROVISIONS OF ITEM 509 REINFORCING STEEL SHALL BE FOLLOWED EXCEPT THAT THE PAYMENT FOR THIS ITEM SHALL BE INCLUDED IN THE VARIOUS ITEM 511 CONCRETE FOR STRUCTURES BID.

ITEM 511 RETAINING WALLS, WINGWALLS, HEADWALLS, AND FOOTERS FOR 611 ITEMS

COST OF ALL REINFORCING STEEL REQUIRED AND SHOWN ON THE PLANS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR VARIOUS ITEM 511 CONCRETE FOR STRUCTURES.

FOR ITEMS 706.05, 706.051 AND 706.052 WITH A CAST-IN-PLACE WINGWALL, HEADWALL, OR FOOTER, A PRECAST ALTERNATIVE MAY BE FURNISHED PER 602.03. THE PRECAST ALTERNATIVE WILL MEET THE CAST-IN-PLACE STRUCTURAL DESIGN LOADINGS, DESIGN HEIGHT, AND DESIGN LENGTH DIMENSIONS. APPROVAL FROM THE VILLAGE ENGINEER MUST BE OBTAINED PRIOR TO ALLOWING THIS PRECAST ALTERNATIVE.

ITEM 511 – CONCRETE, MISC.: ARCHITECTURAL TREATMENT

A. GENERAL

THE WORK TO BE DONE UNDER THIS ITEM SHALL INCLUDE THE CONSTRUCTION OF TEXTURED AND COLORED CONCRETE SURFACES USING FORM LINERS AND A COLOR STAIN SYSTEM [DESIGNED TO DUPLICATE CLOSELY THE APPEARANCE OF NATURAL STONE].

THE MANUFACTURER(S) OF THE FORM LINER AND COLOR STAIN SYSTEM SHALL HAVE FIVE (5) YEARS EXPERIENCE MAKING FORM LINERS AND COLOR STAINS [TO MATCH NATURAL STONE SHAPES, SURFACE TEXTURES AND COLORS]. THE PATTERN AND COLORING SHALL FOLLOW THE MANUFACTURER'S STANDARD DETAILS AND SPECIFICATIONS FOR THE CHOSEN DESIGN. THE CONTRACTOR SHALL HAVE A MINIMUM OF FIVE (5) YEARS EXPERIENCE WITH CONSTRUCTING VERTICALLY FORMED ARCHITECTURAL CONCRETE AND SHALL BE TRAINED IN THE MANUFACTURER'S SPECIAL TECHNIQUES IN ORDER TO ACHIEVE THE DESIRED CONCRETE APPEARANCE.

THE FORM LINER TO BE USED SHALL BE FITZGERALD FORM LINERS AGED MARYLAND ASHLAR STONE PATTERN 16984LP, GREENSTREAK ASHLAR STONE PATTERN NO. 330, OR AN APPROVED EQUAL MEETING THE DETAILS SHOWN ON THE PLANS. THE FORM LINER MANUFACTURER SHALL SUBMIT AT LEAST FIVE YEARS RELATED EXPERIENCE. THE AESTHETIC TREATMENT SYSTEM SHALL BE FURNISHED BY ONE OF THE FOLLOWING MANUFACTURERS OR AN APPROVED EQUAL:

FITZGERALD
1341 EAST POMONA STREET
SANTA ANA, CA 92705
TEL. 1-800-547-7760
WWW.FORMLINERS.COM

GREENSTREAK
3400 TREE COURT INDUSTRIAL BLVD.
ST. LOUIS, MO 63122
TEL. 1-800-325-9504
WWW.GREENSTREAK.COM

THE ARCHITECTURAL RELIEF SHALL BE 1 1/2". THERE SHALL BE A SIMULATED GRANITE CAP ON ALL PARAPETS, AND END POSTS AS SHOWN ON THE DRAWINGS.

THE COLOR SCHEME SHALL BE, SIMILAR TO THE COLOR SCHEME USED FOR THE WILSON MILLS ROAD CULVERT JUST EAST OF I-271 AND WEST OF THE WILSON MILLS ROAD INTERSECTION WITH BETA DRIVE AND RALEIGH DRIVE IN MAYFIELD VILLAGE OHIO.

B. PRODUCTS

FORM LINERS SHALL BE REUSABLE, MADE OF HIGH STRENGTH URETHANE AND BE EASILY ATTACHABLE TO CONCRETE FORMS. THEY SHALL NOT COMPRESS MORE THAN ONE-QUARTER INCH (1/4") WHEN CONCRETE IS POURED AT A RATE OF TEN VERTICAL FEET (10'-0") PER HOUR. FORM LINERS SHALL BE REMOVABLE WITHOUT CAUSING DETERIORATION OF THE CONCRETE SURFACE OR ANY UNDERLYING CONCRETE. USE A RELEASE AGENT THAT IS COMPATIBLE WITH THE FORM LINER AND WITH THE COLOR STAIN SYSTEM TO BE APPLIED TO THE CONCRETE SURFACES AND PROVIDE THE ENGINEER WITH THE MANUFACTURER'S SPECIFICATIONS FOR PRODUCT APPLICATION.

METAL OR FIBERGLASS FORM TIES SHALL BE USED. FORM TIES SHALL BE DESIGNED TO SEPARATE A MINIMUM OF ONE INCH (1") BACK FROM THE FINISHED SURFACE LEAVING ONLY A NEAT HOLE THAT CAN BE PLUGGED WITH PATCHING MATERIAL. A SAMPLE AND/OR DESCRIPTION OF THE FORM TIE SHOWING ITS METHOD OF SEPARATION WHEN FORMS ARE REMOVED SHALL BE SUPPLIED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

THE COLOR STAIN MIX SHALL BE [AN ACRYLIC RESIN-BASED STAIN] FORMULATED TO PENETRATE FINISHED CONCRETE SURFACES. THE COLOR(S) NEEDED SHALL BE THOSE REQUIRED TO ACHIEVE THE DESIRED [NATURAL STONE] COLOR VARIATION IN THE FINISHED CONCRETE. THE STAIN MIX SHALL CREATE A SURFACE FINISH THAT IS BREATHABLE (WILL ALLOW WATER VAPOR TRANSMISSION) AND THAT RESISTS DETERIORATION FROM WATER, ACID, ALKALI, FUNGI AND SUNLIGHT (UV). IT SHALL ALSO MEET MILDEW RESISTANCE REQUIREMENTS IN ACCORDANCE WITH FEDERAL TEST METHOD STD. 144, METHOD 6271, AND REQUIREMENTS FOR WEATHERING RESISTANCE OF 2000 HOURS ACCELERATED EXPOSURE MEASURED IN ACCORDANCE WITH ASTM G-23.

CLEAR SEALER: THE MANUFACTURER OF THE COLOR STAIN SHALL ALSO SUPPLY OR RECOMMEND A COMPATIBLE CLEAR SEALER TO BE APPLIED TO ALL TEXTURED AND COLOR STAINED CONCRETE SURFACES. THE CLEAR SEALER SHALL PROVIDE PROTECTION AGAINST FADING OF THE STAIN COLOR DUE TO SUNLIGHT EXPOSURE.

C. SHOP DRAWINGS AND MOCKUPS

PRIOR TO BEGINNING ANY WORK, REPRESENTATIVE SHOP DRAWINGS DETAILING THE LAYOUT OF THE FINISHED PATTERN AND JOINT LOCATIONS, FORM TIE LOCATIONS AND END, EDGE AND OTHER SPECIAL CONDITIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. A PRE-INSTALLATION MEETING SHALL BE SCHEDULED WITH THE ENGINEER, CONTRACTOR AND MANUFACTURER'S REPRESENTATIVE TO ASSURE THE UNDERSTANDING OF FORM LINER USE, COLOR APPLICATION, REQUIREMENTS FOR CONSTRUCTING THE MOCKUPS AND COORDINATION OF THE WORK.

ONCE THE REPRESENTATIVE SHOP DRAWINGS HAVE BEEN APPROVED, THE CONTRACTOR SHALL CONSTRUCT A MOCKUP(S) ON SITE BEFORE ANY PERMANENT ARCHITECTURAL TREATMENT IS ADDED TO THE STRUCTURE. THE MOCKUP(S) MUST UTILIZE THE SAME MATERIALS, METHODS AND WORK FORCE THAT WILL BE USED FOR THE PROJECT. THE ENGINEER AND THE MUNICIPALITY MAY DETERMINE ANY SPECIFIC REQUIREMENTS, LOCATION OR SPECIAL CONSIDERATIONS TO BE INCORPORATED IN THE MOCKUP(S). THE MOCKUP(S) MUST DEMONSTRATE THE FOLLOWING:

1. A SUFFICIENT SIZE TO ADEQUATELY SHOW THE SELECTED PATTERN, TEXTURE AND COLORATION.
2. FORM LINER BUTT JOINTS AND, IF APPROPRIATE, CONTINUATION OF THE PATTERN THROUGH AN EXPANSION JOINT.
3. TEXTURE ACROSS THE TOP OF THE PARAPET/WALL IF INCLUDED IN THE PLAN DETAILS.
4. APPLICATION OF THE COLOR STAIN AND CLEAR SEALER. ALL CONCRETE WORK MUST BE COMPLETED AND CURED FOR A MINIMUM OF 28 DAYS BEFORE THE STAIN IS APPLIED.

AFTER THE TEXTURE AND COLORING IS COMPLETE, THE MUNICIPALITY, STAKEHOLDERS AND/OR THE ENGINEER SHALL CHOOSE WHICH MOCKUP WILL SERVE AS THE QUALITY CONTROL STANDARD FOR THE PROJECT.

DISPOSE OF THE MOCKUP(S) AFTER COMPLETION OF THE PROJECT.

D. CONSTRUCTION

SCHEDULE COLOR STAIN APPLICATION AFTER ADJACENT EARTHWORK IS COMPLETED TO AVOID CONTAMINATING OR DAMAGING THE CONCRETE SURFACES. DELAY ADJACENT PLANTINGS UNTIL COLOR STAIN AND CLEAR SEALER APPLICATIONS HAVE BEEN COMPLETED AND CURED. COORDINATE ALL WORK TO PERMIT COLORING AND SEALING WITHOUT INTERFERENCE FROM OTHER TRADES.

PREPARE THE FORM LINERS BY CLEANING AND REMOVING ALL BUILD-UP AND FOREIGN MATTER PRIOR TO EACH CONCRETE POUR. THE FORM LINERS SHALL BE INSPECTED FOR ANY BLEMISHES OR TEARS. REPAIR ANY SUCH DEFECTS PER MANUFACTURER'S RECOMMENDATIONS. REPLACE ANY FORM LINER IF, AFTER BEING REPAIRED, IT YIELDS A CONCRETE TEXTURE THAT IS INCONSISTENT WITH THE APPROVED MOCKUP. REPLACE ANY FORM LINER THAT CANNOT BE REPAIRED AT NO ADDITIONAL COST TO THE PROJECT.

PLACE ADJACENT FORM LINERS WITH LESS THAN ONE-QUARTER INCH (1/4") SEPARATION BETWEEN LINERS. SECURELY ATTACH LINERS TO FORMWORK AS PER THE MANUFACTURER'S RECOMMENDATIONS. APPLY A FORM LINER RELEASE AGENT PER THE MANUFACTURER'S RECOMMENDATIONS. PLACE FORM TIES AT THE THINNEST POINTS OF THE FORM LINER (HIGH POINTS OF THE FINISHED SURFACE).

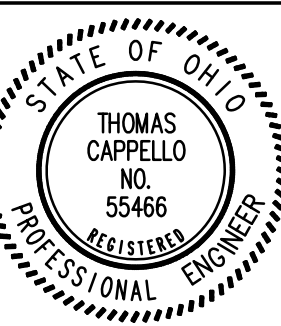
FORM STRIPPING AND RELATED CONSTRUCTION SHALL AVOID CREATING DEFECTS IN THE FINISHED CONCRETE SURFACES. WHERE FORM LINERS ABUT, CAREFULLY BLEND THE CONCRETE TO MATCH THE BALANCE OF THE PATTERN, AVOIDING VISIBLE SEAMS OR FORM MARKS. NEATLY PATCH THE HOLES REMAINING AFTER DISENGAGING THE PROTRUDING PORTION OF THE FORM TIES SO THAT THEY WILL NOT BE VISIBLE AFTER COLORING THE CONCRETE SURFACE. WHERE THE TEXTURE IS TO CONTINUE ACROSS THE TOP OF THE WALL, A FINISH TO ACHIEVE A CONTINUITY OF THE FORMED PATTERN MUST BE DONE BY HAND WHEN THE CONCRETE IS BEING POURED. HAND-CARVE AND EMBOSS THE WET, PLIABLE CONCRETE, ALIGNING RUSTICATION JOINTS WITH THOSE IN THE FORMED PATTERN. GREAT CARE MUST BE TAKEN TO ACHIEVE AS MUCH RELIEF AS POSSIBLE.

WHERE AN EXPANSION JOINT MUST OCCUR AT A POINT OTHER THAN AT THE MORTAR OF RUSTICATION JOINTS, SUCH AS AT THE FACE OF CONCRETE TEXTURE THAT IS TO HAVE THE APPEARANCE OF [STONE], THE CONTRACTOR SHALL CONTACT THE MANUFACTURER FOR THE PROPER TREATMENT OF THE EXPANSION MATERIAL.

CLEAN SURFACE PRIOR TO APPLYING THE COLOR STAIN TO ASSURE THAT THE SURFACE IS FREE OF LATENCE, DIRT, DUST, GREASE, EFFLORESCENCE, PAINT, OR FOREIGN MATERIAL FOLLOWING THE MANUFACTURER'S INSTRUCTIONS FOR SURFACE PREPARATION. THE PREFERRED METHOD TO REMOVE LATENCE IS PRESSURE WASHING WITH CLEAN WATER AT A MINIMUM OF 3000 PSI USING A FAN NOZZLE PERPENDICULAR TO AND AT A DISTANCE OF 12"-24" FROM THE CONCRETE SURFACE. THE COMPLETED SURFACE SHALL BE FREE OF BLEMISHES, DISCOLORATION, SURFACE VOIDS AND UNNATURAL FORM MARKS. DO NOT SANDBLAST. ETCHING IS NOT REQUIRED.

THE COLOR STAIN SYSTEM AND CLEAR SEALER SHALL BE APPLIED PER THE MANUFACTURER'S SPECIFICATIONS FOR EACH PRODUCT. APPLY THE PRODUCTS IN DRY WEATHER CONDITIONS WHEN THE AMBIENT TEMPERATURE IS BETWEEN 50F AND 90F. SHOULD WEATHER CONDITIONS DIFFER FROM THESE REQUIREMENTS OR FROM THE MANUFACTURER'S SPECIFICATIONS, CONSULT THE MANUFACTURER FOR PROPER APPLICATION RECOMMENDATIONS.

THE DESIRED FINISH COLOR EFFECT SHALL BE ACHIEVED BY APPLYING ONE COLOR, ONE COLOR OVER ANOTHER OR BY INTER-MIXING SEVERAL COLORS OF STAIN, AS PER MANUFACTURER'S SPECIFICATIONS. GROUT PATTERN JOINTS SHALL DISPLAY A UNIFORM COLOR AND APPEARANCE OF MORTARED JOINTS. USE COLORS AND APPLICATION TECHNIQUES AS APPROVED FOR THE FINAL MOCKUP. ACTUAL COLORS USED ARE SUBJECT TO CHANGE AT THE DIRECTION OF THE ENGINEER UPON REVIEWING THE APPEARANCE OF THE FINAL MOCKUP.



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STEPHEN HOVANCSEK & ASSOCIATES, INC.
CONSULTING ENGINEERS AND PLANNERS
TWO MERIT DRIVE
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PH: (216) 731-6255 FAX: (216) 731-4483

MAYFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
GENERAL NOTES

APRIL 2022
JOB No. 20-102

PROVIDE TEMPORARY COVER FOR THE COMPLETED WORK WHERE EXPOSED SOIL OR PAVEMENT MAY SPLATTER DIRT OR SOIL FROM RAINFALL OR WHERE SURFACE MAY BE SUBJECTED TO OVSERSPRAY FROM OTHER PROCESSES UNTIL THE STAIN AND SEALER HAVE CURED.

E. PAYMENT

PAYMENT FOR ALL WORK DESCRIBED HEREIN, INCLUDING ANY ADDITIONAL CONCRETE NEEDED TO CREATE THE FORMLINED AESTHETIC TREATMENT AND THAT DOES NOT CONTRIBUTE TO THE CORE DESIGN OF THE HEADWALL, PARAPET, BARRIER, ETC. TO WHICH IT IS APPLIED, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 511: CLASS C CONCRETE, HEADWALL, AS PER PLAN.

ITEM 512: TYPE 2 WATERPROOFING, AS PER PLAN

MEMBRANE WATERPROOFING (SHEET TYPE 2) SHALL BE APPLIED TO THE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND VERTICALLY DOWN ALL SIDES FOR THE PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER LUMP SUM FOR ITEM 512 - TYPE 2 WATERPROOFING.

IN ADDITION TO ALL APPLICABLE REQUIREMENTS OF CMS 512, PROVIDE SELF-ADHERING TYPE 2 MEMBRANE WATERPROOFING AS AVAILABLE FROM:

MEL-ROL CCW MIRADRI 860/861
W.R. MEADOWS, INC. CARLISLE COATINGS & WATERPROOFING
P.O. BOX 338 900 HENSLEY LANE
HAMPSHIRE, IL 60140-0338 WYLIE, TX 75098
PHONE: 847-214-2100 PHONE: 800-527-7092
800-342-5976 WWW.CARLISLE-CCW.COM
WWW.WRMEADOWS.COM

BAKOR BLUESKIN WP 200
HENRY COMPANY CANADA
15 WALLSEND AVENUE
SCARBOROUGH, ON M1E 3X6
PHONE: 800-387-9598
WWW.BAKOR.COM

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR THE ACTUALLY COMPLETED AND ACCEPTED QUANTITY OF:

ITEM 512 - TYPE 2 WATERPROOFING, AS PER PLAN SQ. YD.

ITEM 517: ALLUMINUM PICKET RAILING, AS PER PLAN

THE ALLUMINUM PICKET RAILING SHALL BE 3-LINE PICKET STYLE WITH EITHER CIRCLE OR DIAMOND (OWNER TO DECIDE) WITH 2" SQUARE x 1/8" THICK POSTS AND TC-1 TOP CAP PER DRAWING FILE P3CD.2.TC1.DWG AND AS MANUFACTURED BY "RAILING WORKS, ARCHITECTURAL RAILING SYSTEMS BY NEXAN", WWW.NEXANINC.COM.

RAILING SHALL BE INSTALLED BY CORE MOUNT METHOD PER THE MANUFACTURES RECOMMENDATIONS.

PAYMENT FOR THIS ITEM SHALL BE PER FEET OF RAILING INSTALLED AND SHALL INCLUDE ALL CORE DRILLING, NON-SHRINK NON-CORROSIVE ANCHORING CEMENT, RAILING TOP CAP, PICKETS, POSTS AND FASTENERS AND ANY OTHER ITEMS REQUIRED TO COMPLETE THIS WORK.

ITEM 517: WOOD POST AND RAIL RAILING, AS PER PLAN

THE WOOD POST AND RAIL RAILING SHALL BE CONSTRUCTED AS PER THE DETAILS ON THE PLAN.

PAYMENT FOR THIS ITEM SHALL BE PER FEET OF RAILING INSTALLED AND SHALL INCLUDE ALL BRACKETS, ANCHOR BOLTS, FASTENERS, WOOD POSTS AND RAILINGS AND ANY OTHER ITEMS REQUIRED TO COMPLETE THIS WORK.

ITEM 611 - 14' X 4' AND 16' X 4' CONDUIT, TYPE A, 706.05, AS PER PLAN

THIS ITEM SHALL CONSIST OF REPLACING THE EXISTING STRUCTURE ON WORTON PARK DRIVE WITH A 16' X 4' PRECAST CONCRETE BOX AND THE EXISTING STRUCTURE ON NORTH WOODLANE WITH A 14' X 4' PRECAST CONCRETE BOX. ALL APPLICABLE REQUIREMENTS OF CMS 611, 706.05 AND ASTM C1577 SHALL BE MET EXCEPT AS DETAILED IN THE PLANS AND/OR NOTED HEREIN.

DESIGN OF THE PRECAST REINFORCED CONCRETE BOX SECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. FOUR (4) COPIES OF THE SHOP DRAWINGS SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF OHIO SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL ALONG WITH CALCULATIONS FOR THE REBAR SPACING, SIZE, CLEARANCE, CONCRETE THICKNESS, ETC. MANUFACTURING OF THE PRECAST SECTIONS SHALL NOT BEGIN UNTIL AFTER WRITTEN ACCEPTANCE HAS BEEN RECEIVED FROM THE VILLAGE ENGINEER.

THE DESIGN SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AASHTO LRFD HL-93 LOADING AND FUTURE WEARING SURFACE OF 60 PSF.

JOINTS BETWEEN ADJACENT CONCRETE BOX SECTIONS SHALL BE SEALED PER CMS 611.08, SECTION 3. APPLY TYPE 2 MEMBRANE WATERPROOFING TO ALL EXTERNAL SURFACES OF THE CONCRETE BOX SECTIONS AS PER CMS 611.09 AND AS DETAILED IN THE PLANS.

WHERE OPENINGS IN THE BOX CULVERT ARE REQUIRED FOR PROPOSED UNDERDRAINS OR SEWERS, THE OPENING SHALL BE LOCATED COMPLETELY BETWEEN SUCCESSIVE JOINTS OF THE CULVERT STRUCTURE, IF POSSIBLE. THE DIAMETER OF THE OPENING SHALL BE THE OUTSIDE DIAMETER OF THE PIPE BEING CONNECTED PLUS SIX INCHES (6") WHEN FABRICATED OR FIELD CUT. THE INTERSTITIAL SPACE SHALL BE FILLED WITH CLASS C CONCRETE OR LEAN CONCRETE PER CMS 511, NON-SHRINK MORTAR PER CMS 705.22, OR OTHER MATERIAL FOUND ACCEPTABLE BY THE ENGINEER. ALL COSTS FOR MATERIAL AND LABOR ASSOCIATED WITH THE PIPE OPENINGS SHALL BE CONSIDERED INCIDENTAL TO ITEM 611 - 14' X 4' AND 16' X 4' CONDUIT, TYPE A, 706.05, AS PER PLAN.

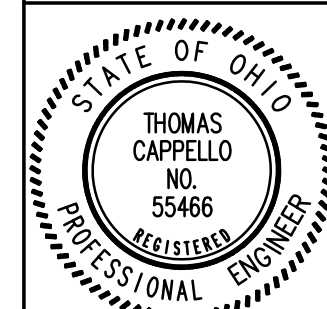
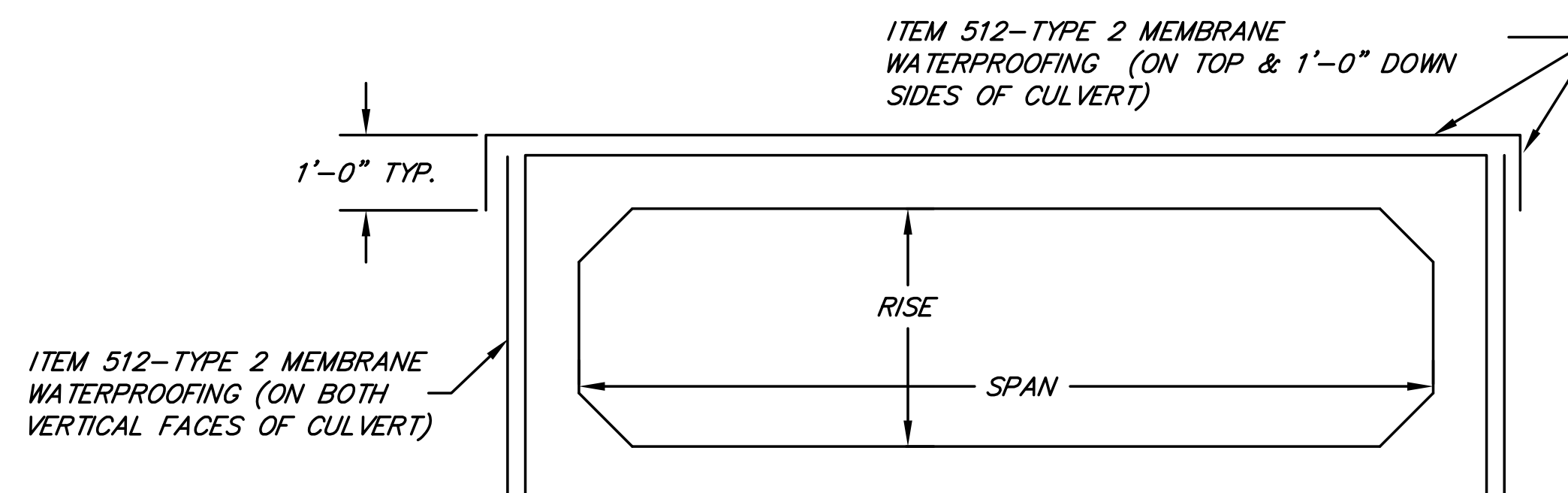
GRANULAR EMBANKMENT (203.02.R) AND STRUCTURAL BACKFILL (703.11) MATERIAL FURNISHED FOR BEDDING AND BACKFILL OPERATIONS SHALL BE LIMITED TO LIMESTONE. THE USE OF SLAG MATERIAL IS PROHIBITED. BEDDING SHALL BE PLACED AND COMPACTED PER 611.06.

THIS WORK SHALL INCLUDE FURNISHING ALL MATERIALS, LABOR, TOOLS AND EQUIPMENT NECESSARY TO INSTALL ALL SECTIONS OF THE PROPOSED CONCRETE STRUCTURE, INCLUDING END BOX SECTION DOWELS, WITH THIS ITEM FOR PAYMENT.

BASIS OF PAYMENT:

PAYMENT FOR ALL WORK DESCRIBED ABOVE SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR THE ACTUALLY COMPLETED AND ACCEPTED QUANTITY OF:

ITEM 603 - 14' X 4' CONDUIT, TYPE A, 706.05, AS PER PLAN FT
ITEM 603 - 16' X 4' CONDUIT, TYPE A, 706.05, AS PER PLAN FT



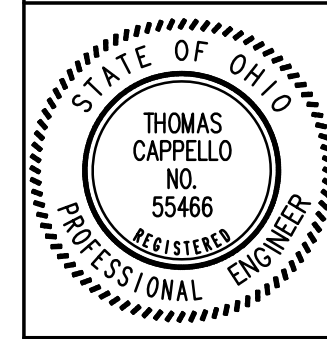
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STEPHEN HOVANCSEK & ASSOCIATES, INC.
CONSULTING ENGINEERS AND PLANNERS
TWO MERIT DRIVE
RICHMOND HEIGHTS, OHIO 44143
PH: (216) 731-6255 FAX: (216) 731-4483

MAYFIELD VILLAGE, OHIO
**WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
GENERAL NOTES**

APRIL 2022
JOB No. 20-102

SHEET NUMBER	REFERENCE	STATION		SIDE	202	202	202	203		204	301		304		441	441		452		611	611		611		638	638	638	638		638		SPECIAL			
		FROM	TO		EA	LF	SY	CY			SY	CY		CY		CY	CY		SY		LF	LF		EACH		EACH	LF	LF	EACH	LUMP					
8	P1	11+14 TO 12+51	L					105			315	55	55																						
	P2	11+74 TO 12+54			3		212				212	36	36		9	9																			
	D1	11+76 TO 12+08	L																					80											
	D2	12+04 TO 12+10	R				6																	6											
	D3	12+25 TO 12+31	R				6																	6											
	D4	12+25 TO 12+31	L				6																	6											
	W1	11+76	L																																
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	A1	96+07	R				21	92			92			15					92																
12	P1	96+18 TO 97+06					215			215	36	36		9	9																				
	P2	95+75					16			95		16																							
	D1	95+94 TO 96+40	R																					52											
	D2	96+30 TO 96+50	L																					36											
	D3	96+63 TO 96+70	R				7																	7											
	D4	96+82 TO 96+97	L				15																	15											
	D5	96+39	R																																
	D6	95+60 TO 95+90	R																																
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TOTALS					3	61	519	221		929	127		158		18	18	16	92		128	110		1		1	118	50	3		LUMP		LUMP			

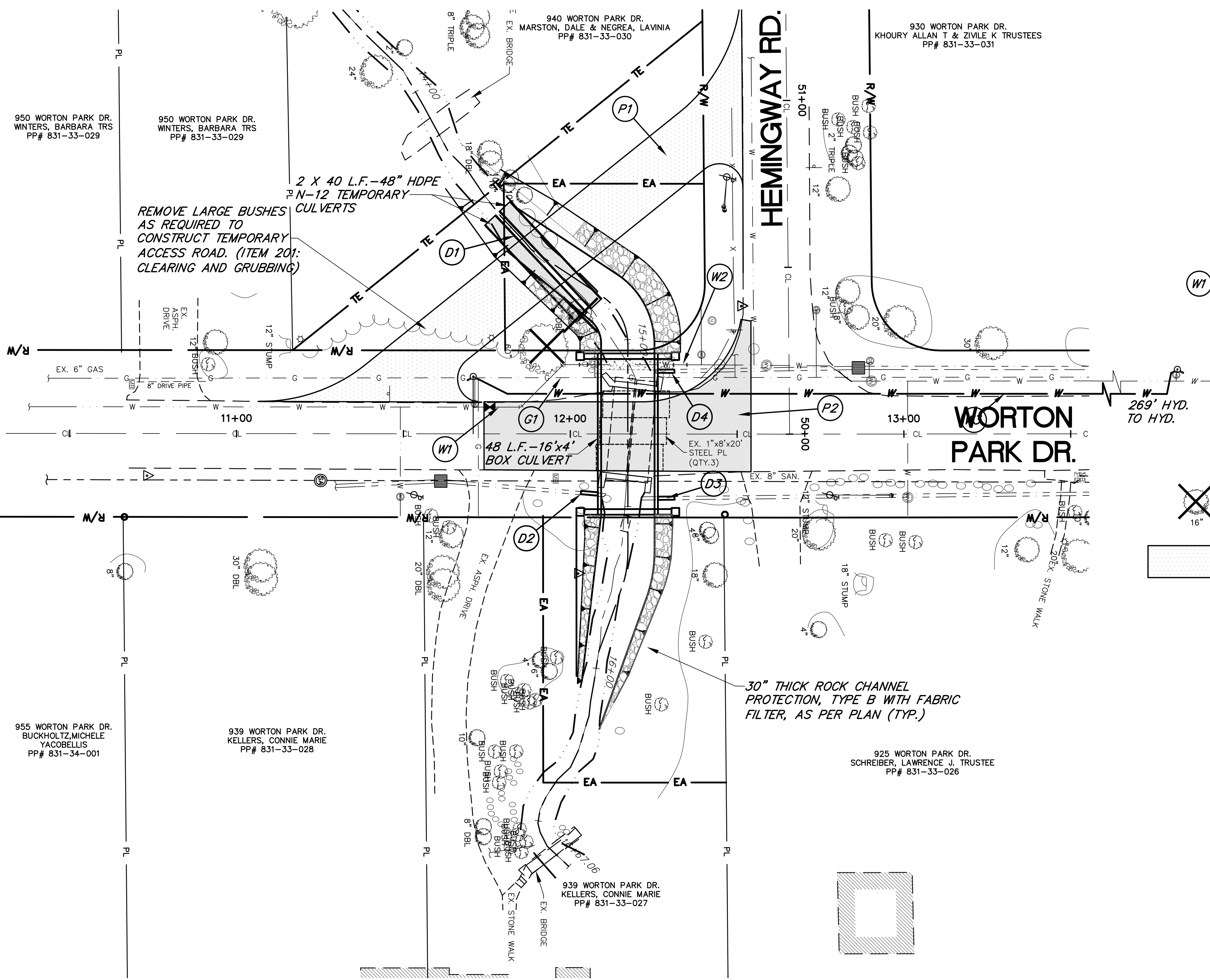


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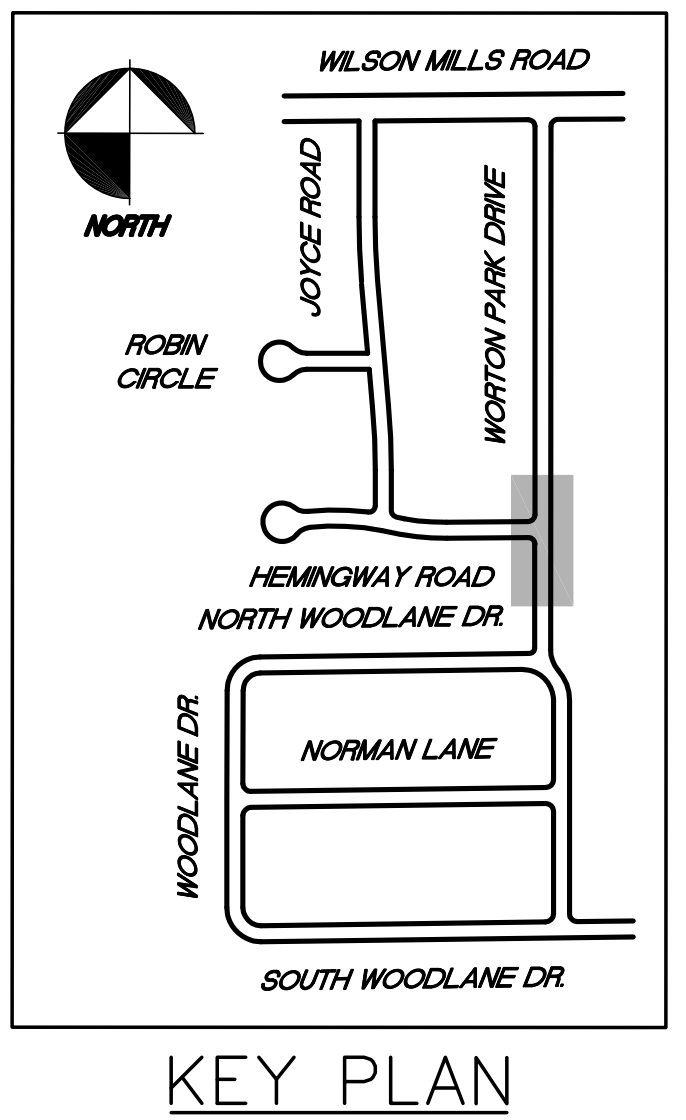
MAYFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
SUB-SUMMARY

APRIL 2022
JOB No. 20-102



REFERENCE	SHEET #
SUB-SUMMARY	7
CROSS SECTIONS	20
CULVERT PLANS AND QUANTITIES	9

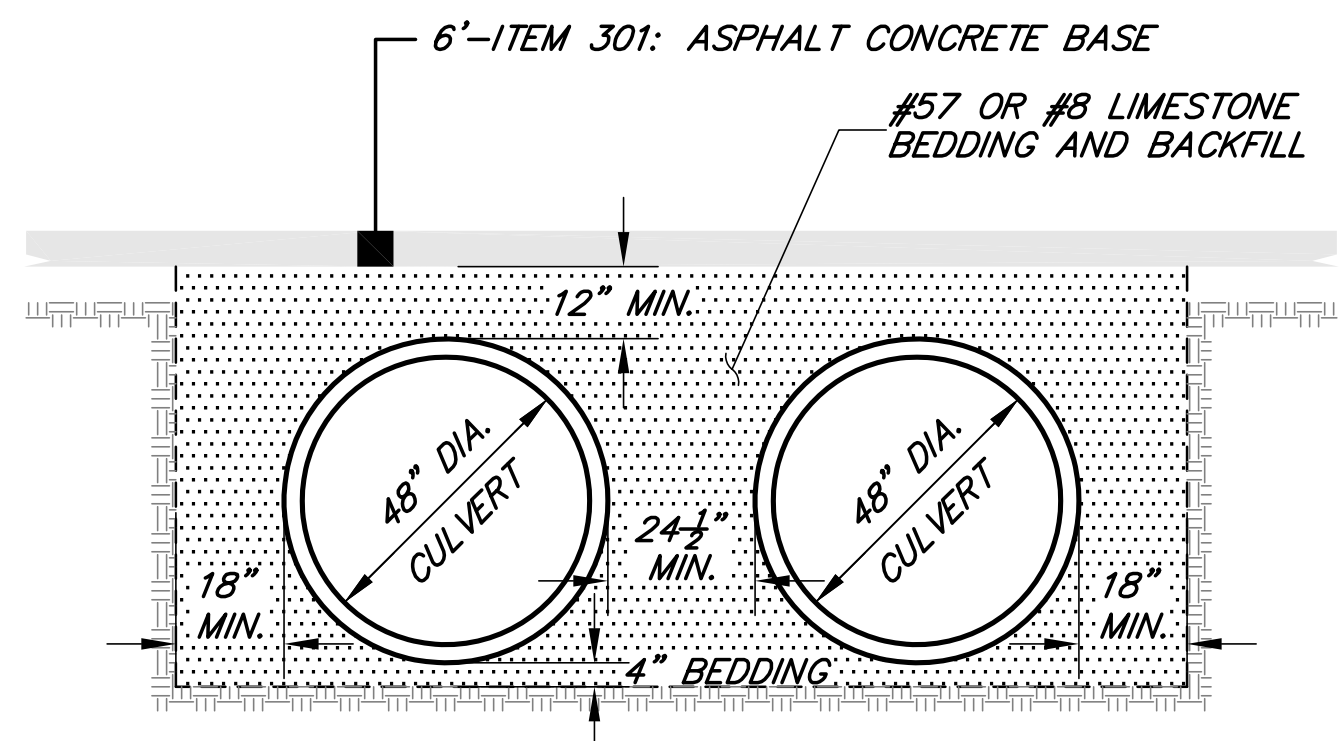
- (G1) GAS MAIN TO BE LOWERED BY OTHERS IF THE EXPLORATIVE EXCAVATION DETERMINES THAT THE WATER MAIN WILL NEED TO BE LOWERED, THEN THESE ITEMS WILL NEED TO BE IMPLEMENTED. (LOWERING TO BE PERFORMED PER CWD DETAILS ON SHEETS 22 & 23.)
- (P1) TEMPORARY ACCESS ROADWAY DURING INSTALLATION OF NEW 16'x4' CONCRETE BOX CULVERT.
- (D1) 2-TEMPORARY 48\"/>



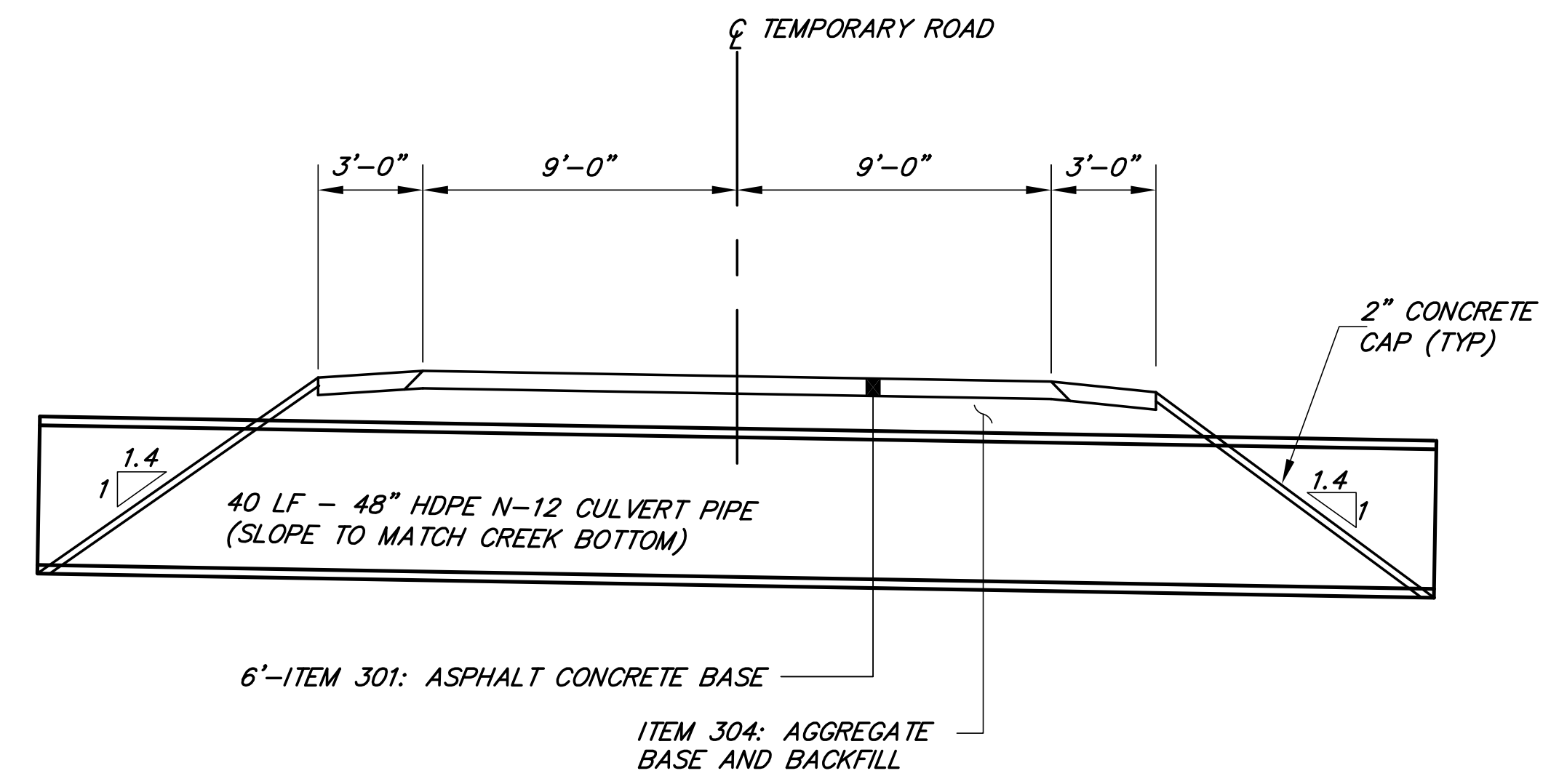
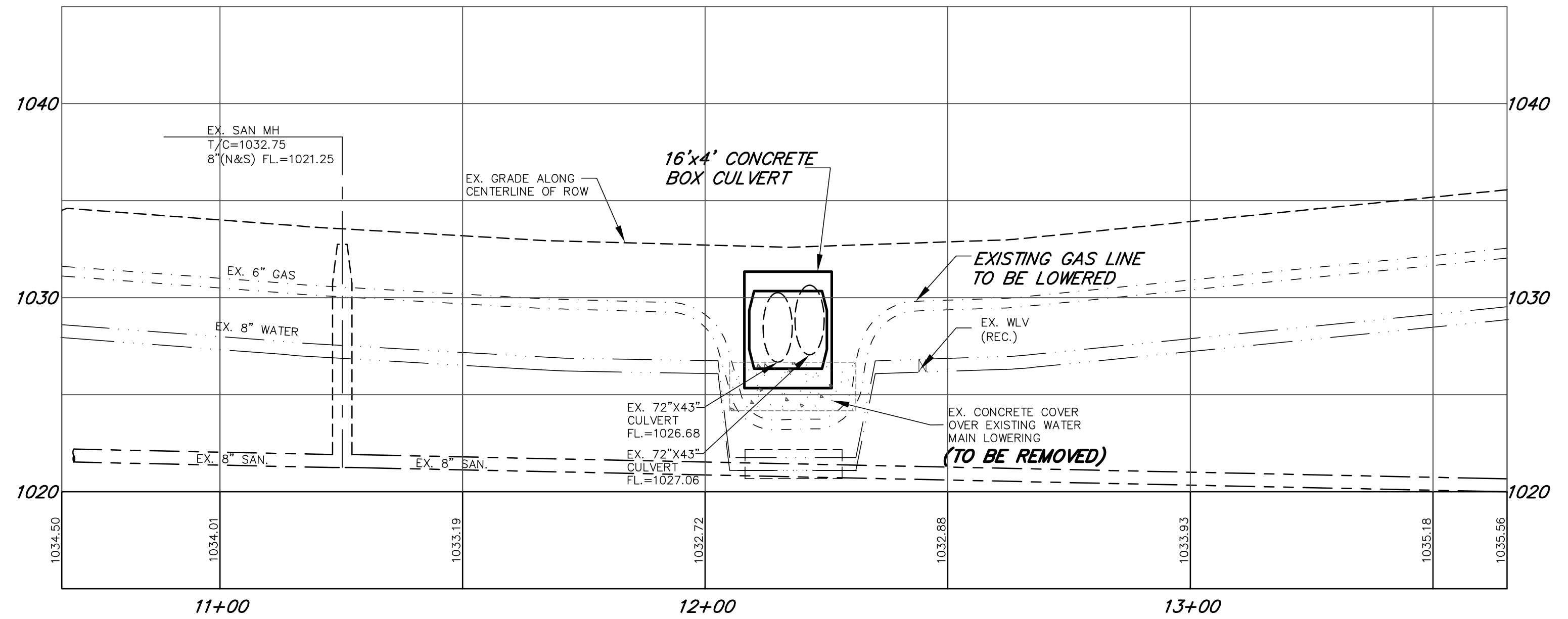
LEGEND

- EXISTING TREE TO BE REMOVED
- TEMPORARY ACCESS ROAD

TBM HYDRANT TOP
 STA. 11+70.90, 17.19'L.T.
 IN FRONT OF #940 WORTON PARK DR.
 ELEV. = 1035.20



TEMPORARY CULVERT BEDDING AND BACKFILL DETAIL



TEMPORARY CULVERT PROFILE

NORTH

SCALE IN FEET (HORIZONTAL)

SCALE IN FEET (VERTICAL)

STATE OF OHIO
 THOMAS CAPPELLO
 NO. 55466
 PROFESSIONAL ENGINEER

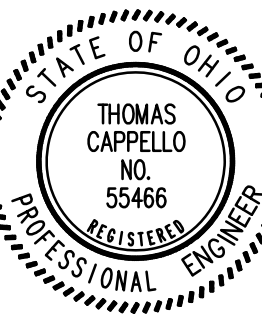
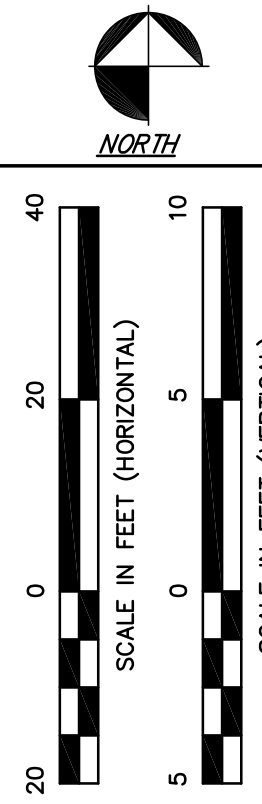
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MAYFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
WORTON PARK DRIVE
PLAN AND PROFILE

APRIL 2022
 JOB No. 20-102

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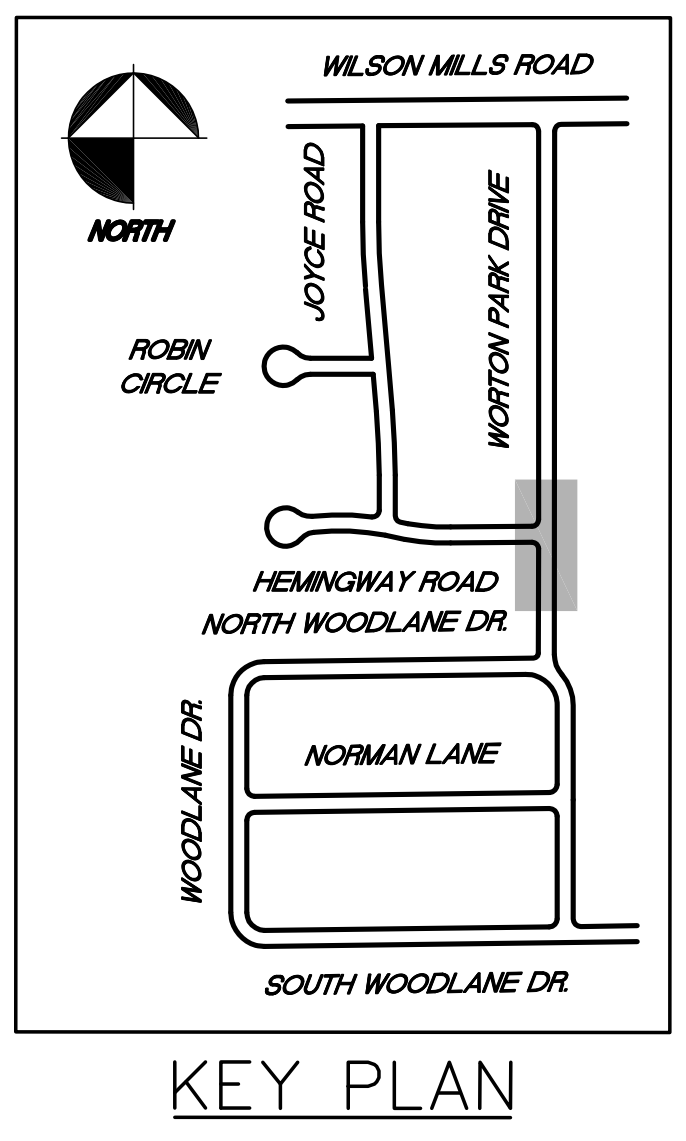
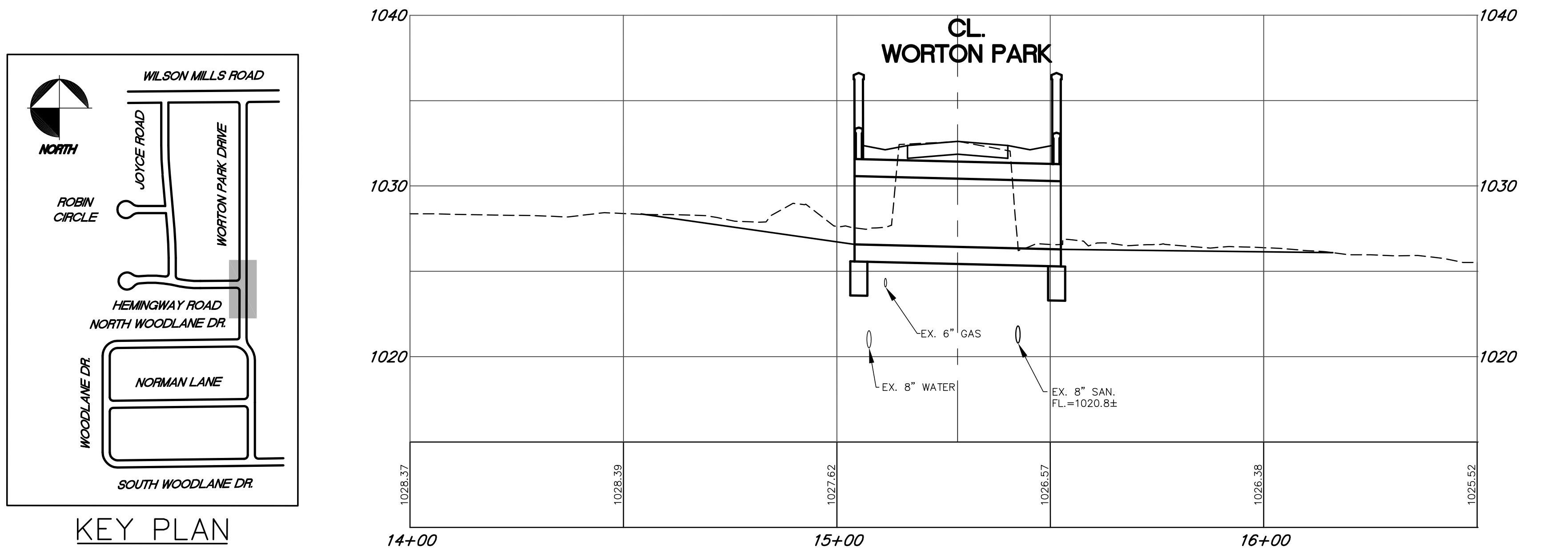
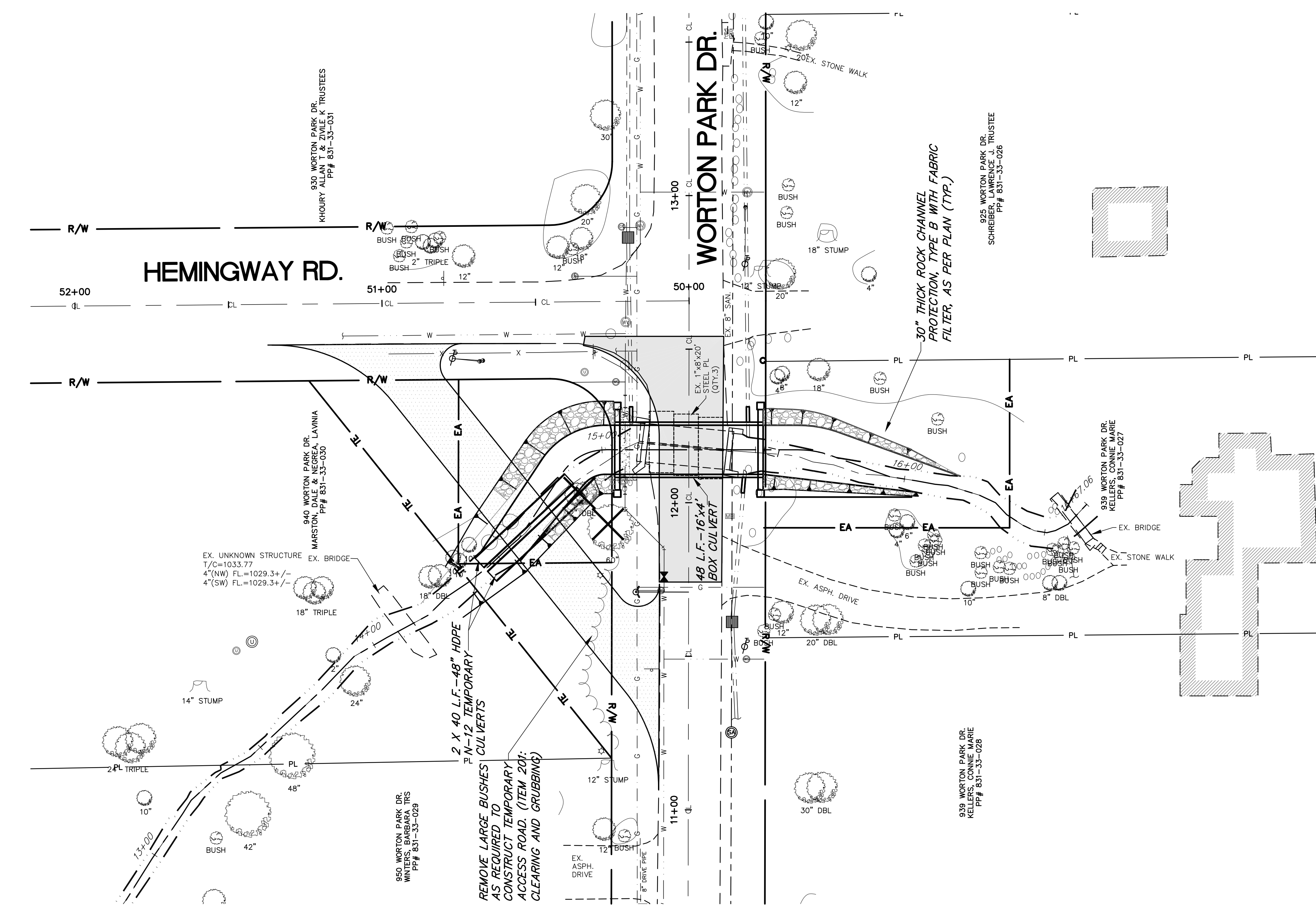
HYDRAULIC DATA	
Q25 = 341 CFS	Q100 = 468 CFS
V25 = 7.0 FPS	V100 = 8.5 FPS
HW25 = 1031.0	HW100 = 1031.8

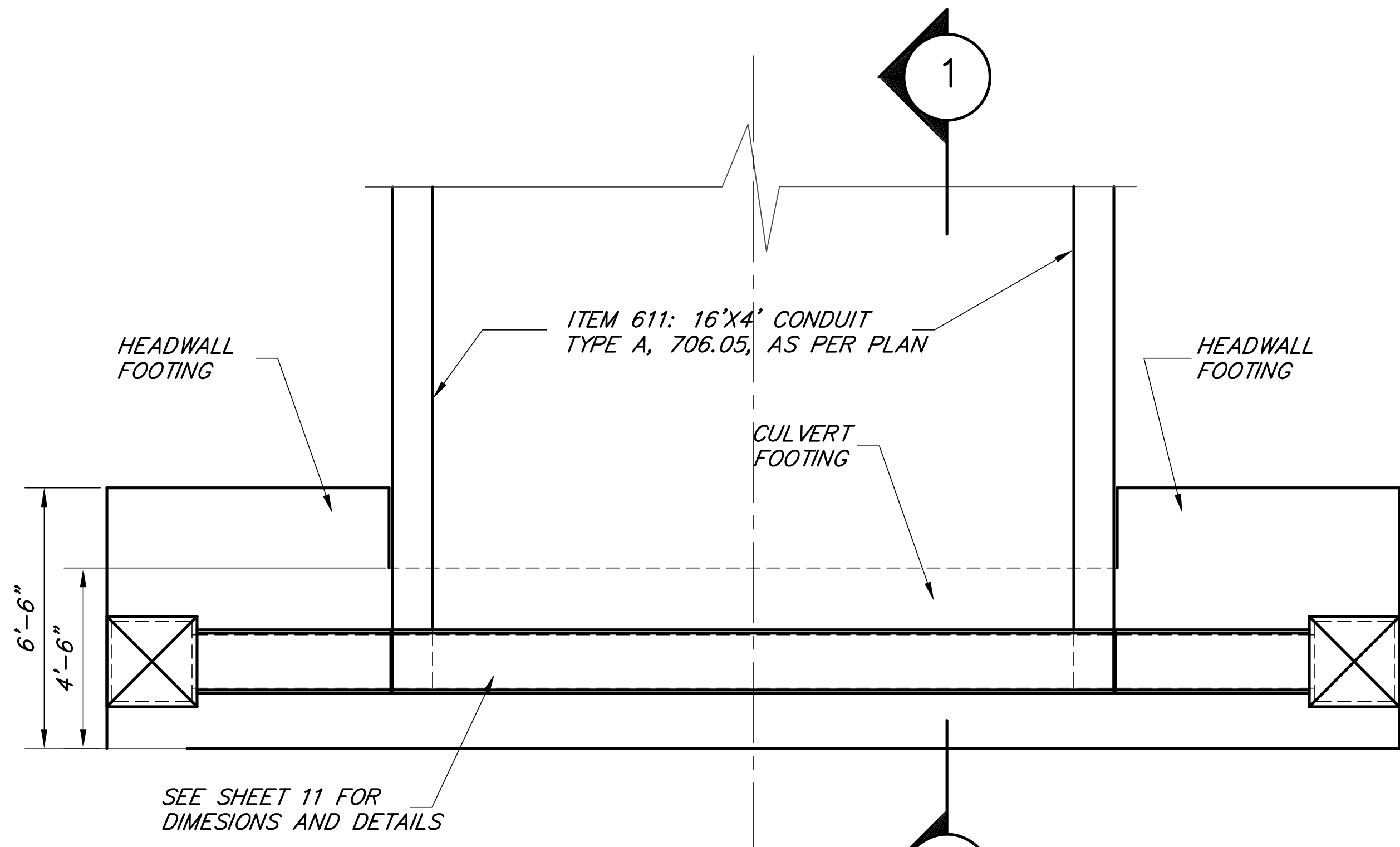
EXISTING STRUCTURE	
TYPE:	CORRUGATED STEEL PIPE ARCH CULVERT
SIZE:	TWIN 71"x47"
ROADWAY:	22' EDGE TO EDGE
ALIGNMENT:	TANGENT
APPROACH SLAB:	N/A
SUPERELEVATION:	NONE
DATE BUILT:	MID 1940's
STRUCTURE FILE NO.:	NONE
SKEW:	0° REFERENCE TANGENT
CONDITION:	CRITICAL
LOADING:	

PROPOSED STRUCTURE	
TYPE:	PRECAST REINFORCED CONCRETE FOUR-SIDED BOX
SIZE:	16'-0" SPAN x 4'0" RISE
ROADWAY:	22' EDGE TO EDGE
ALIGNMENT:	TANGENT
APPROACH SLAB:	NONE
SUPERELEVATION:	NONE
SKEW:	0°
WEARING SURFACE:	ASPHALT
LOADING:	AASHTO LRFD HL-93 LOADING AND FUTURE WEARING SURFACE OF 60 PSF

TBM
 HYDRANT TOP
 STA. 11+70.90, 17.19'L.T.
 IN FRONT OF #940 WORTON PARK DR.
 ELEV. =1035.20

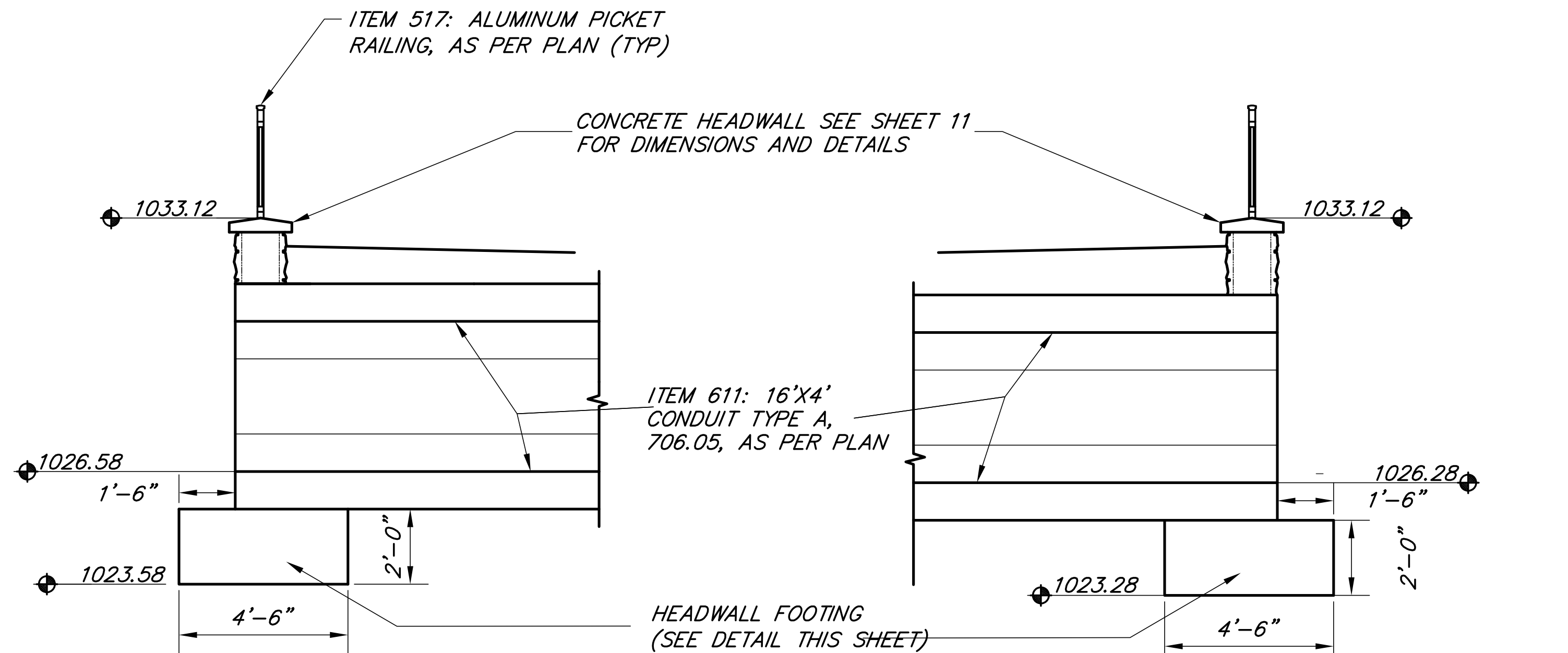
SUB SUMMARY (CARRIED TO GENERAL SUMMARY)			
ITEM	TOTAL	UNIT	DESCRIPTION
202	1	EACH	STRUCTURE REMOVED, AS PER PLAN
503	LUMP	LUMP	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN
503	LUMP	LUMP	UNCLASSIFIED EXCAVATION
511	26	CU. YD.	CLASS C CONCRETE, CULVERT AND HEADWALL FOOTING
511	18	CU. YD.	CLASS C CONCRETE, HEADWALL, AS PER PLAN
512	196	SQ. YD.	TYPE 2 MEMBRANE WATERPROOFING
512	66	SQ. YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)
516	40	SQ. FT.	1/2" PREFORMED EXPANSION JOINT FILLER
517	56	FT.	ALUMINUM PICKET RAILING, AS PER PLAN
518	8	CU. YD.	POROUS BACKFILL, WITH FILTER FABRIC
601	100	CU. YD.	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER, AS PER PLAN
611	48	FT.	16' x 4' CONDUIT, TYPE A, 706.05, AS PER PLAN





PLAN
WEST HEADWALL
EAST HEADWALL SIMILAR

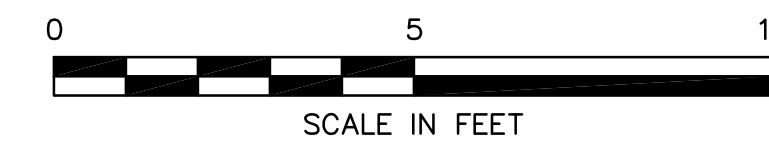
SCALE IN FEET



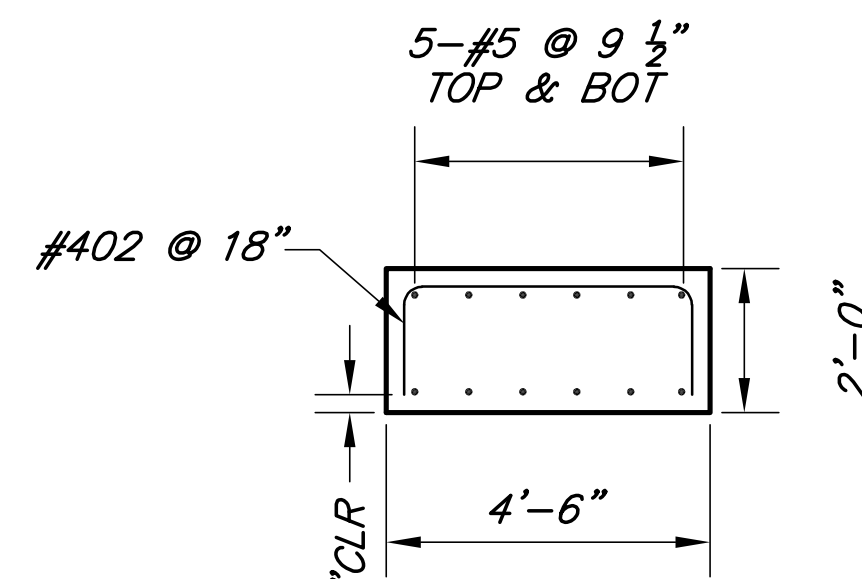
WEST SIDE-SOUTH ELEVATION

EAST SIDE-SOUTH ELEVATION

SECTION-1



NOTE:
CULVERT, CULVERT FOOTING AND ITEM 601:
RIPRAP TO BE INSTALLED IN ROCK.

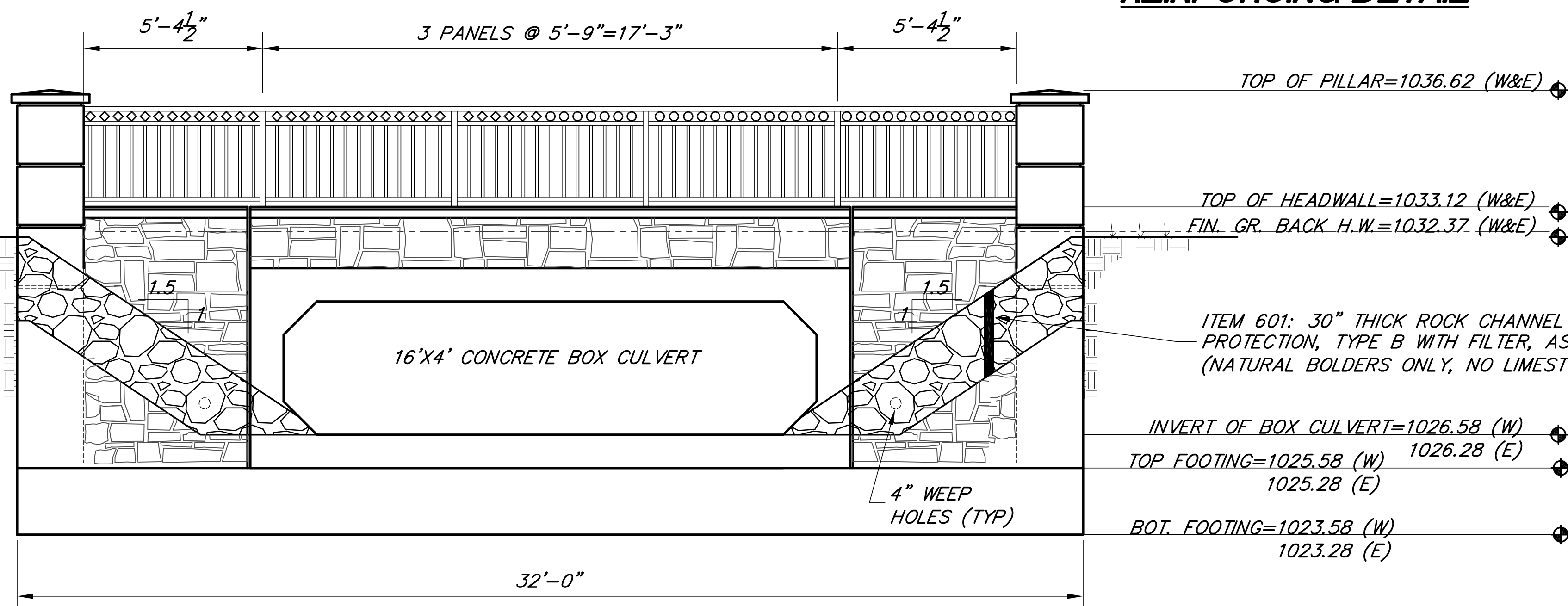


**CULVERT FOOTING
REINFORCING DETAIL**



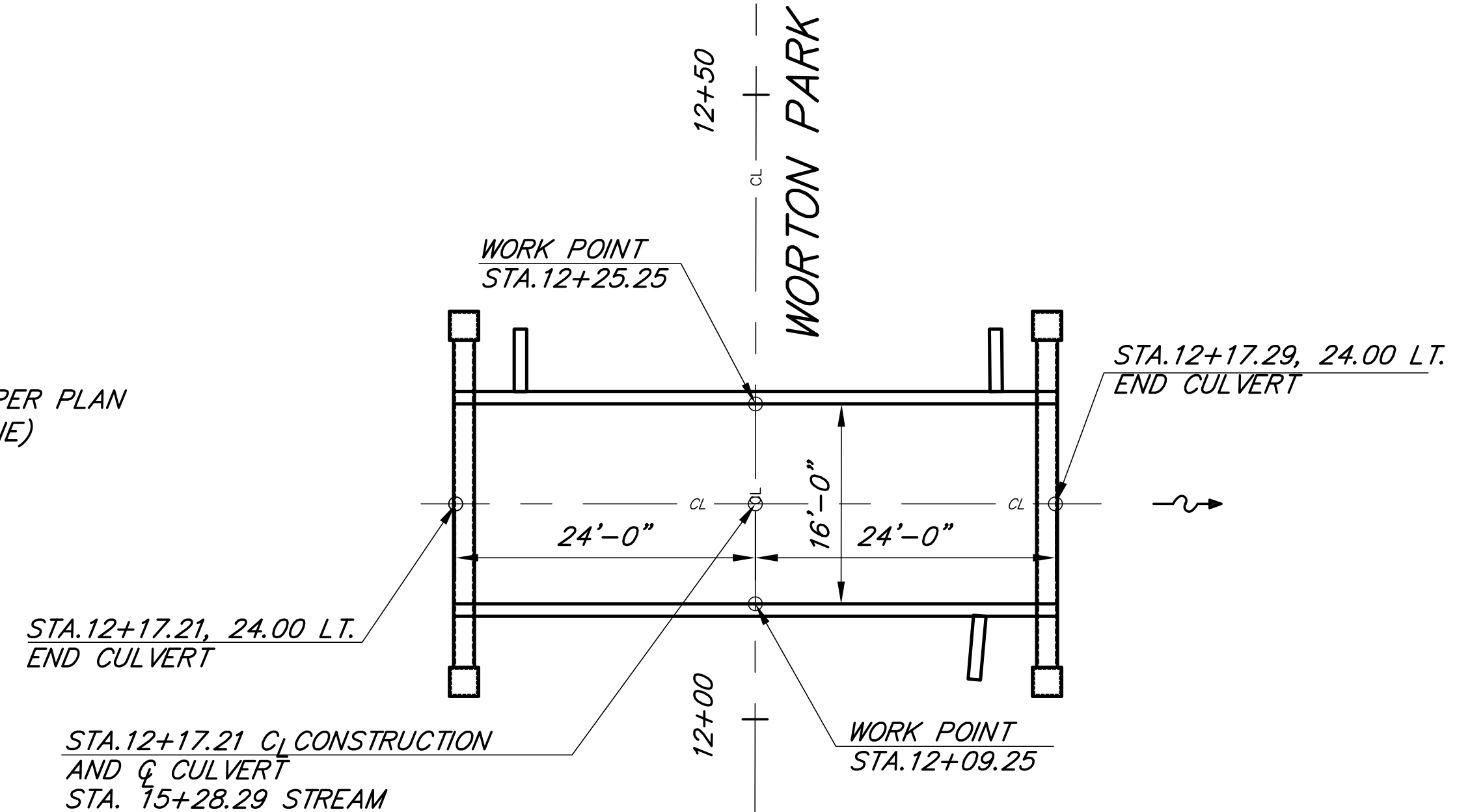
HEMINGWAY RD. (50')

WORTON PARK DR. (50')

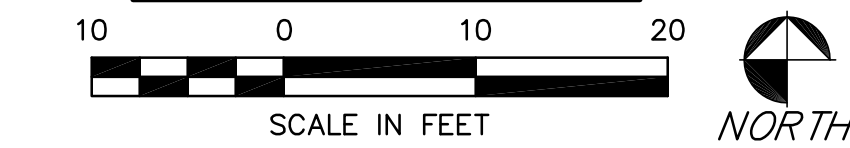


ELEVATION
WEST & EAST HEADWALL

SCALE IN FEET



LAYOUT PLAN



STATE OF OHIO
THOMAS CAPPELLO
NO. 55466
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION
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REVISIONS

BY

DATE

DESCRIPTION

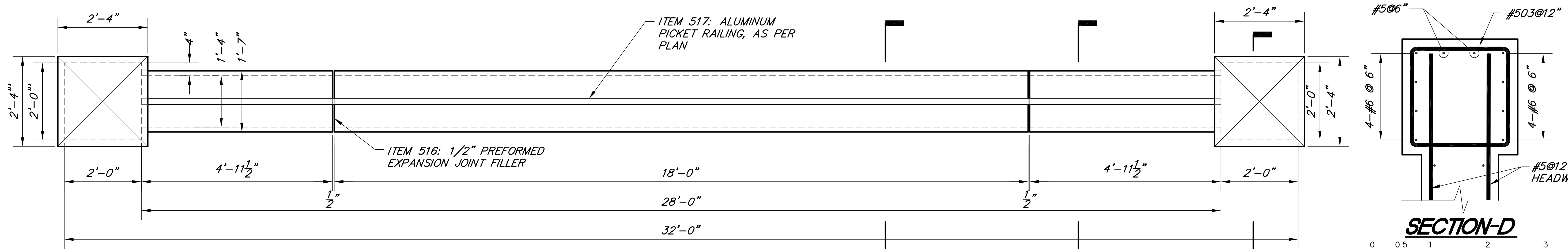
NO.

STEPHEN HOVANCSEK & ASSOCIATES, INC.
CONSULTING ENGINEERS AND PLANNERS
TWO MERIT DRIVE
RICHMOND HEIGHTS, OHIO 44143
PH: (216) 731-6255 FAX: (216) 731-4483

MAXFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
WORTON PARK DR. 16'X4' BOX CULVERT
DETAILS

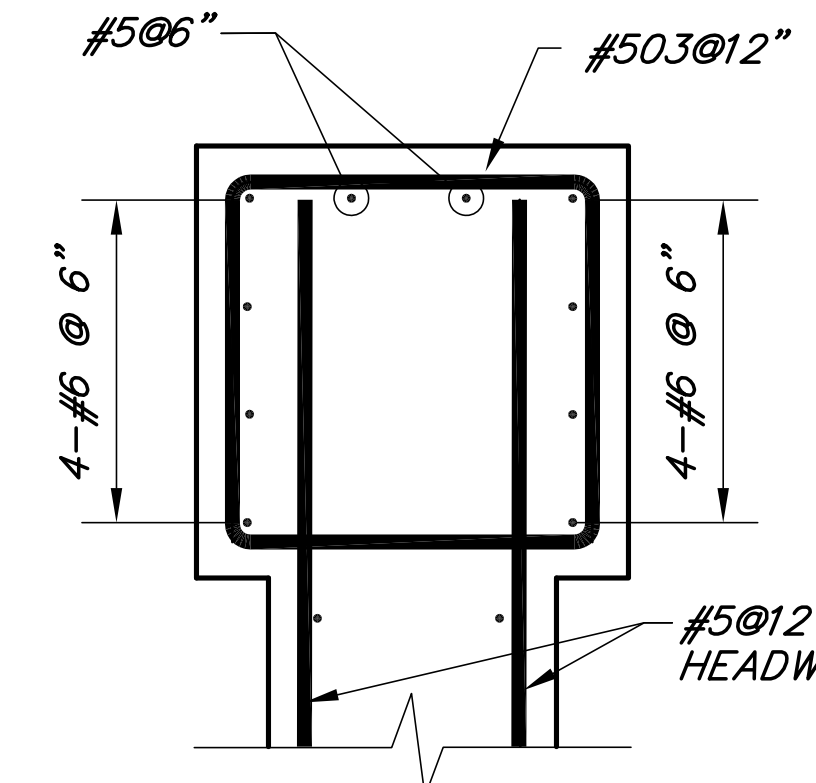
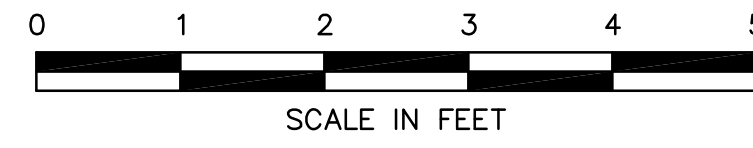
APRIL 2022
JOB No. 20-102

10 OF 23

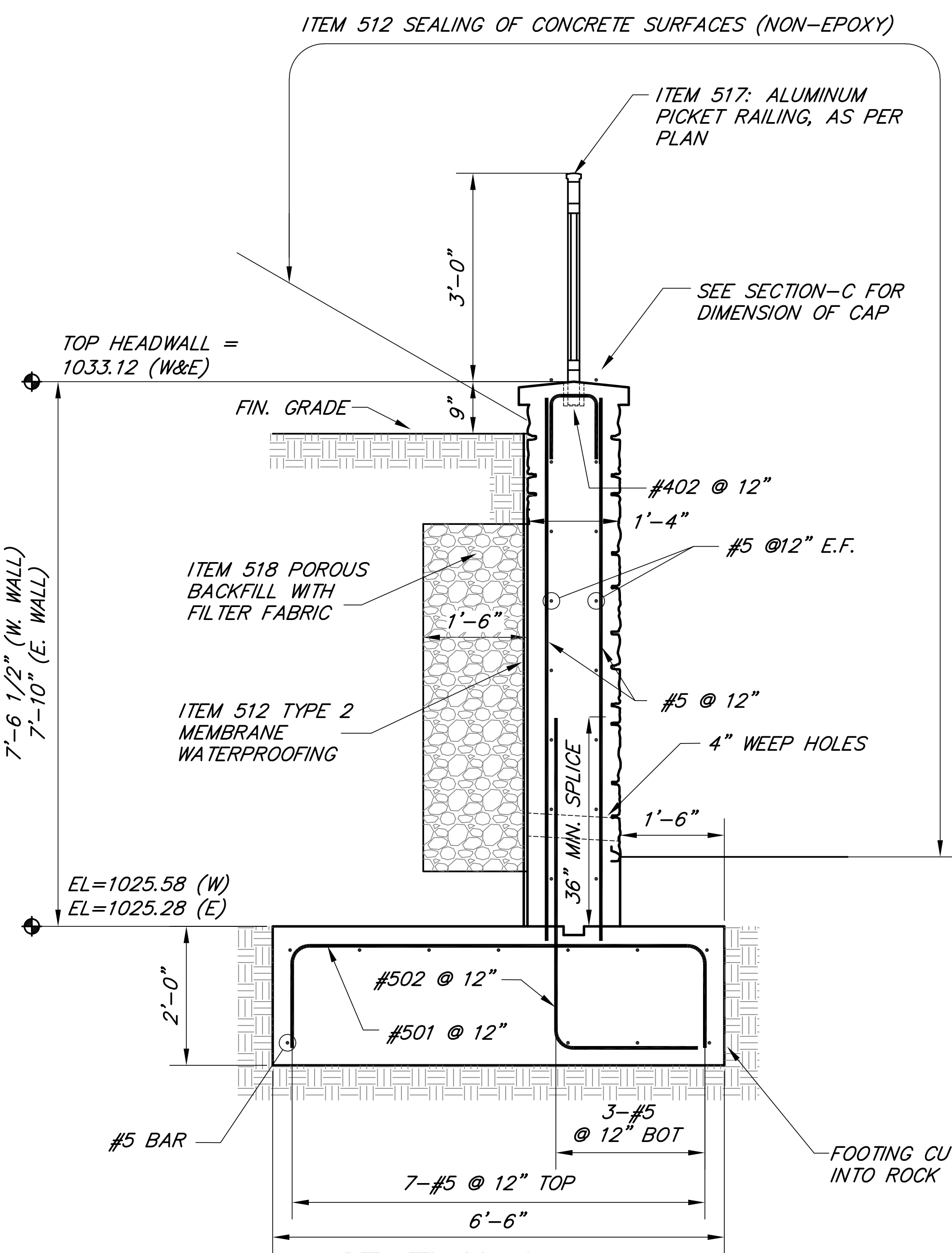


HEADWALL PLAN VIEW

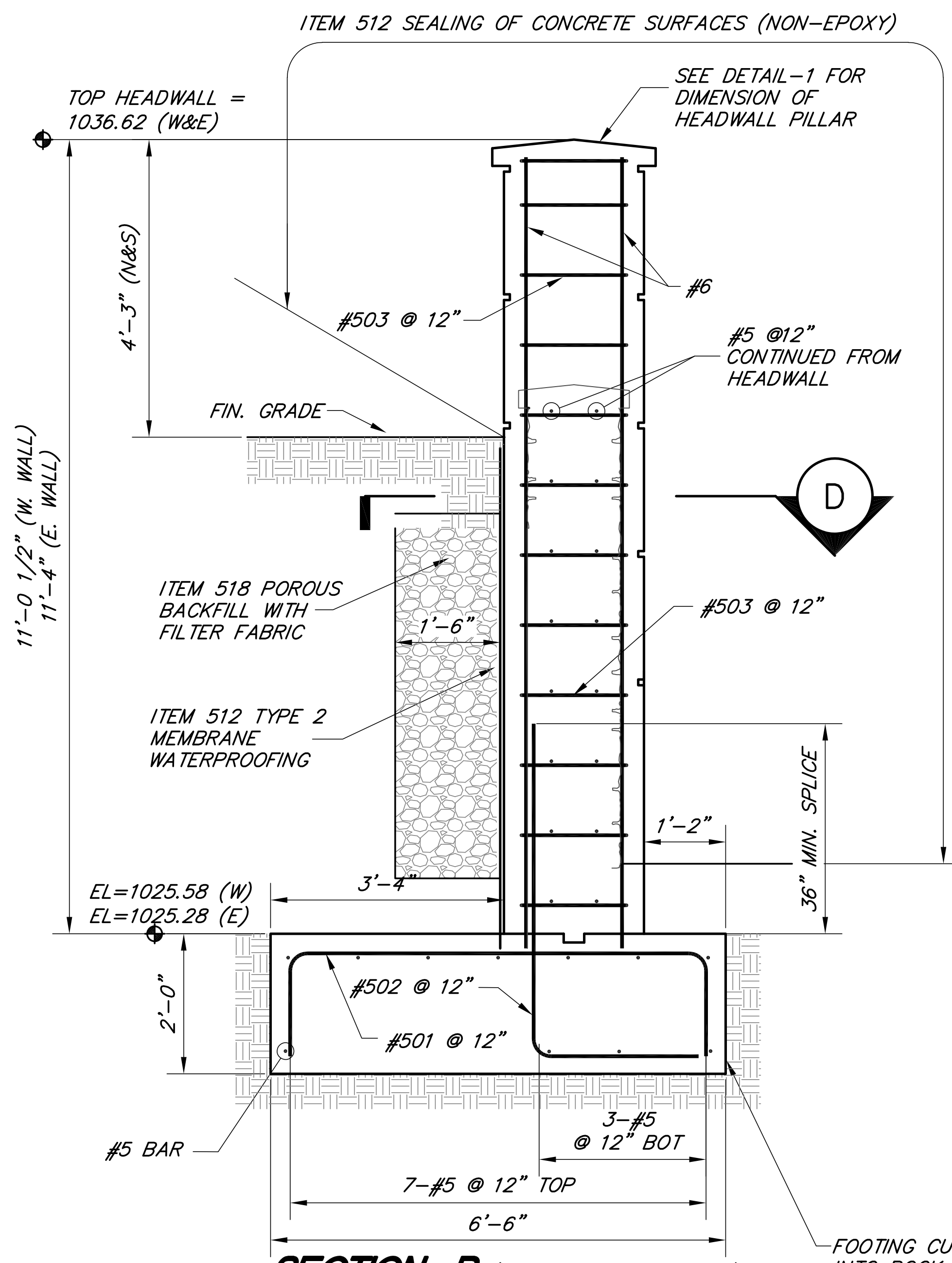
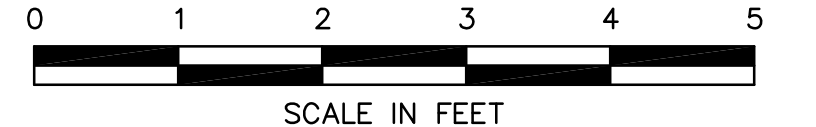
CAST-IN-PLACE HEADWALL



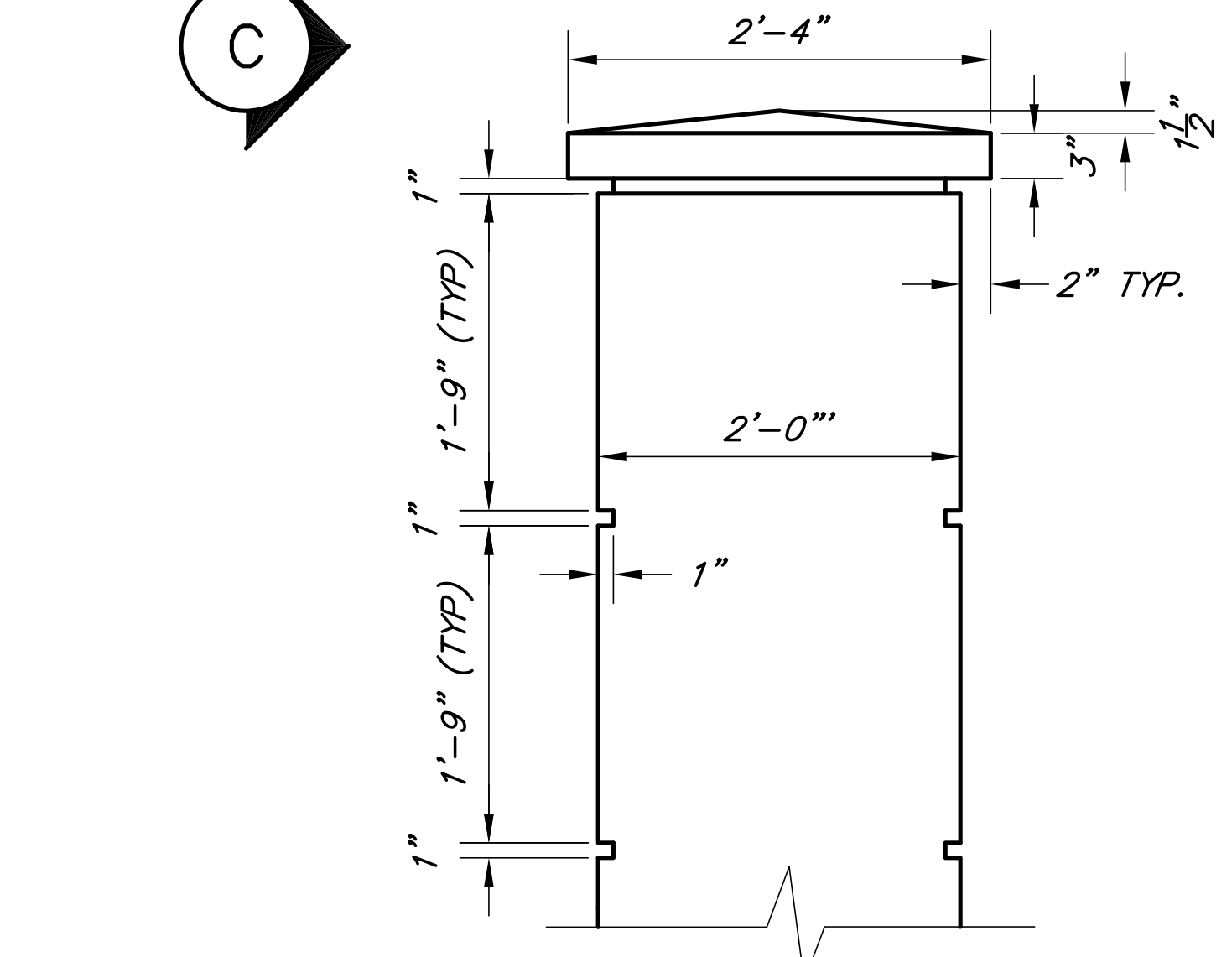
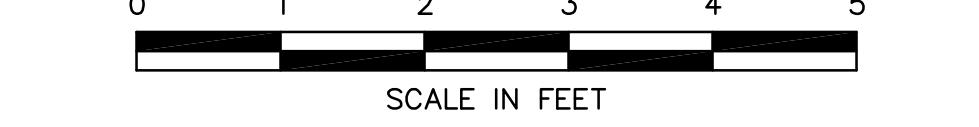
SECTION-D



SECTION -A (HEADWALL)

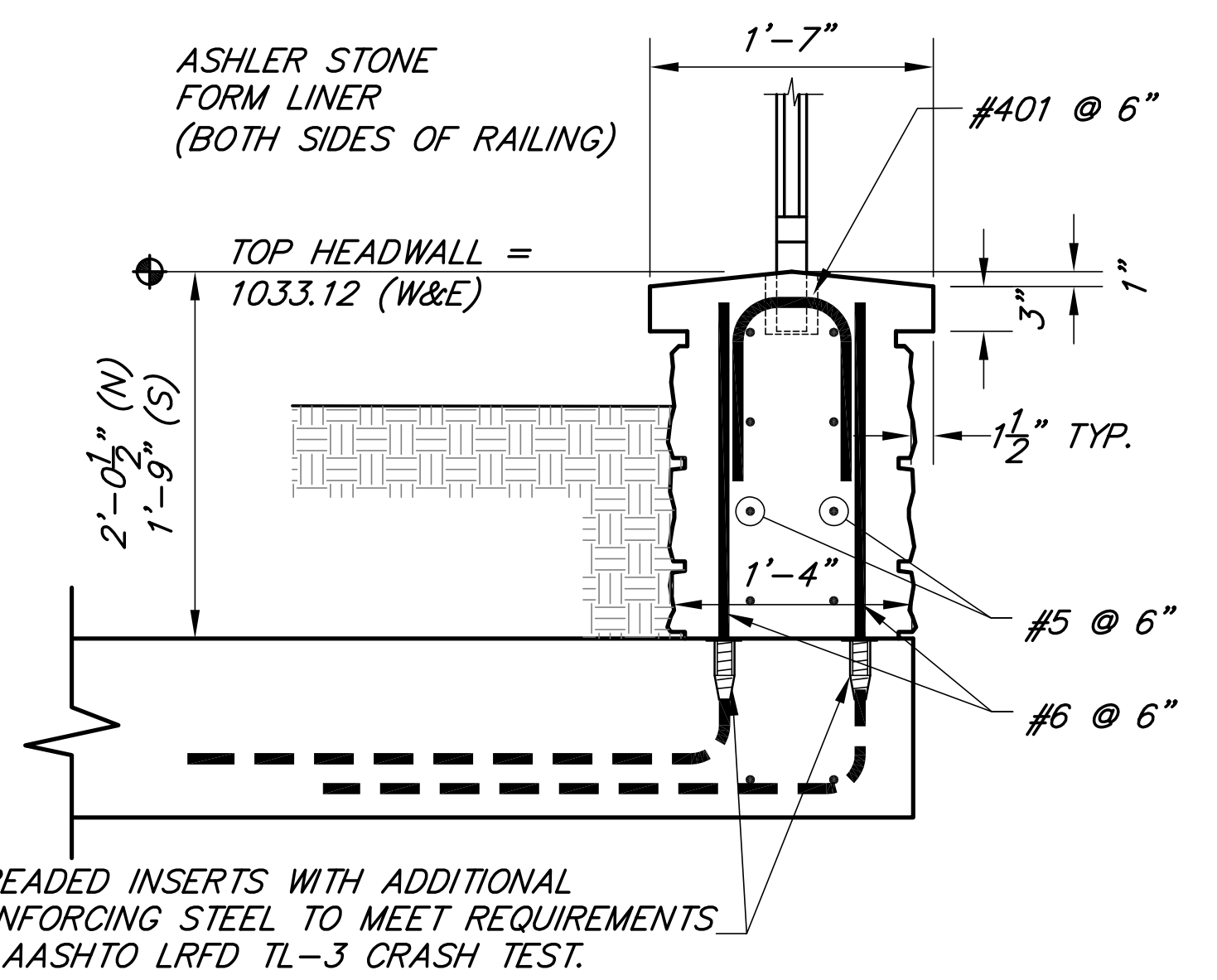


SECTION -B (HEADWALL PILLAR)

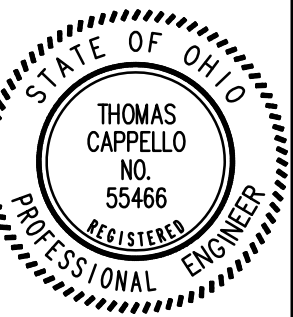


DETAIL 1

HEADWALL PILLAR DETAIL



SECTION -C (HEADWALL ABOVE CULVERT)

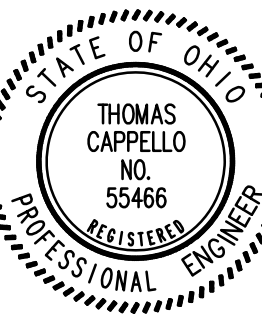
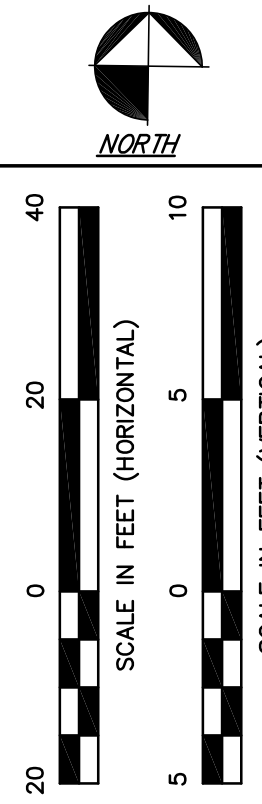


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STEPHEN HOVANCSEK & ASSOCIATES, INC.
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MAXFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
WORTON PARK DR. 16'x4' BOX CULVERT
DETAILS

DATE: APRIL 2022
JOB No. 20-102

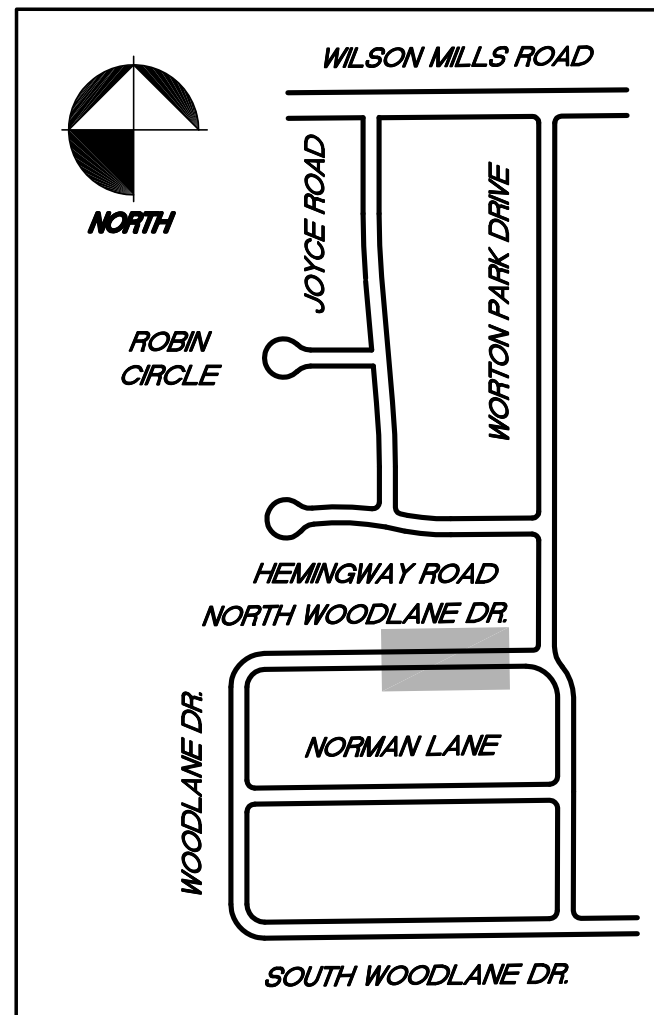
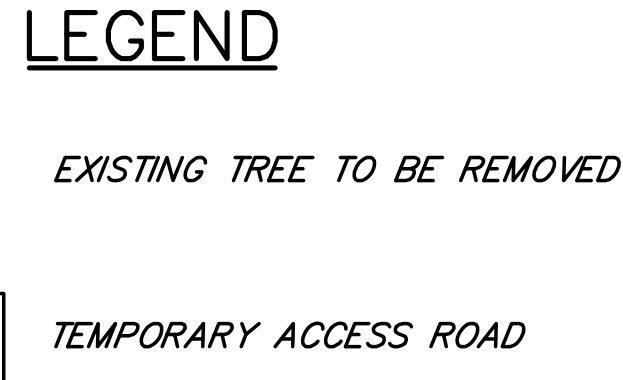
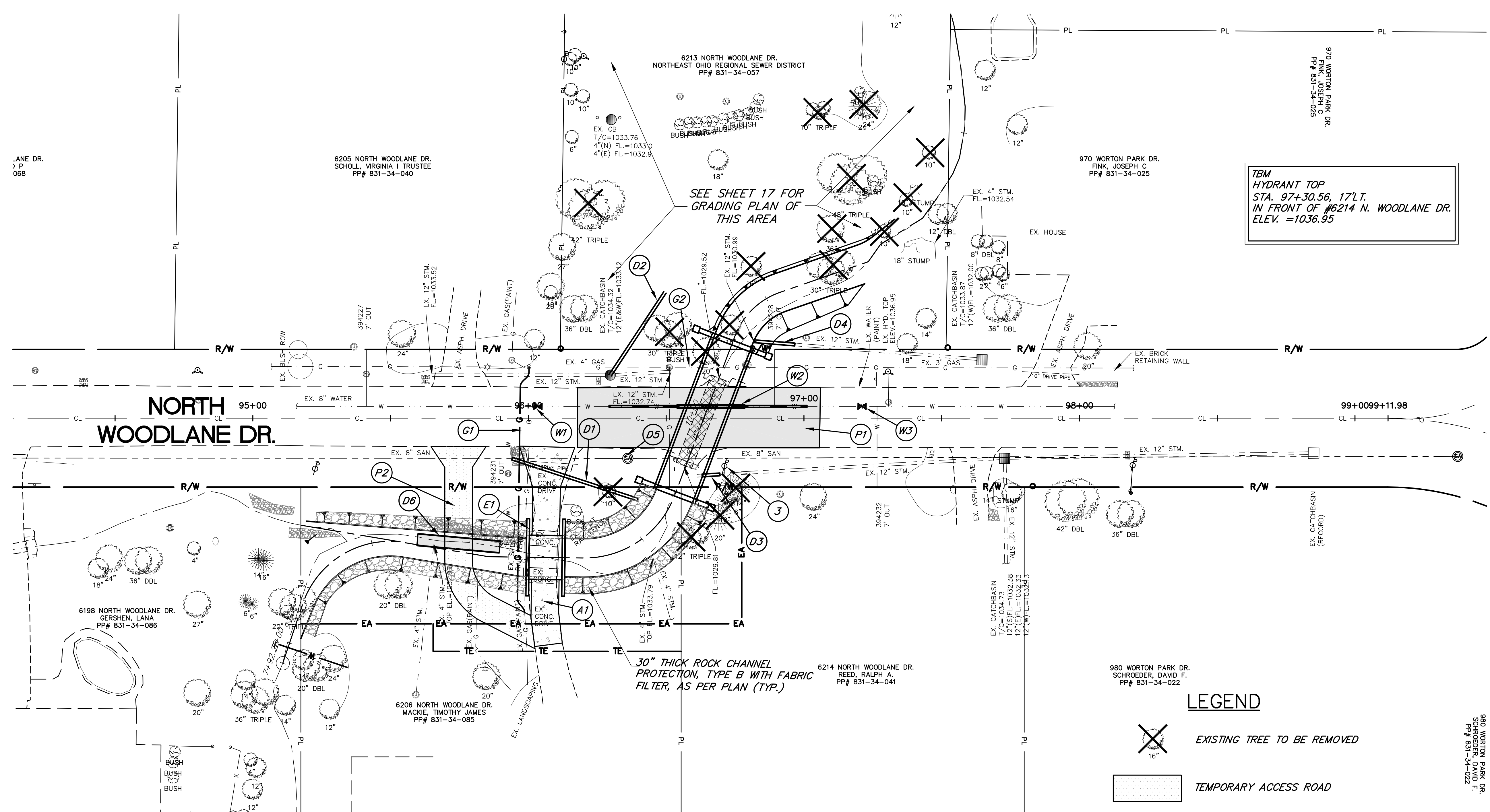


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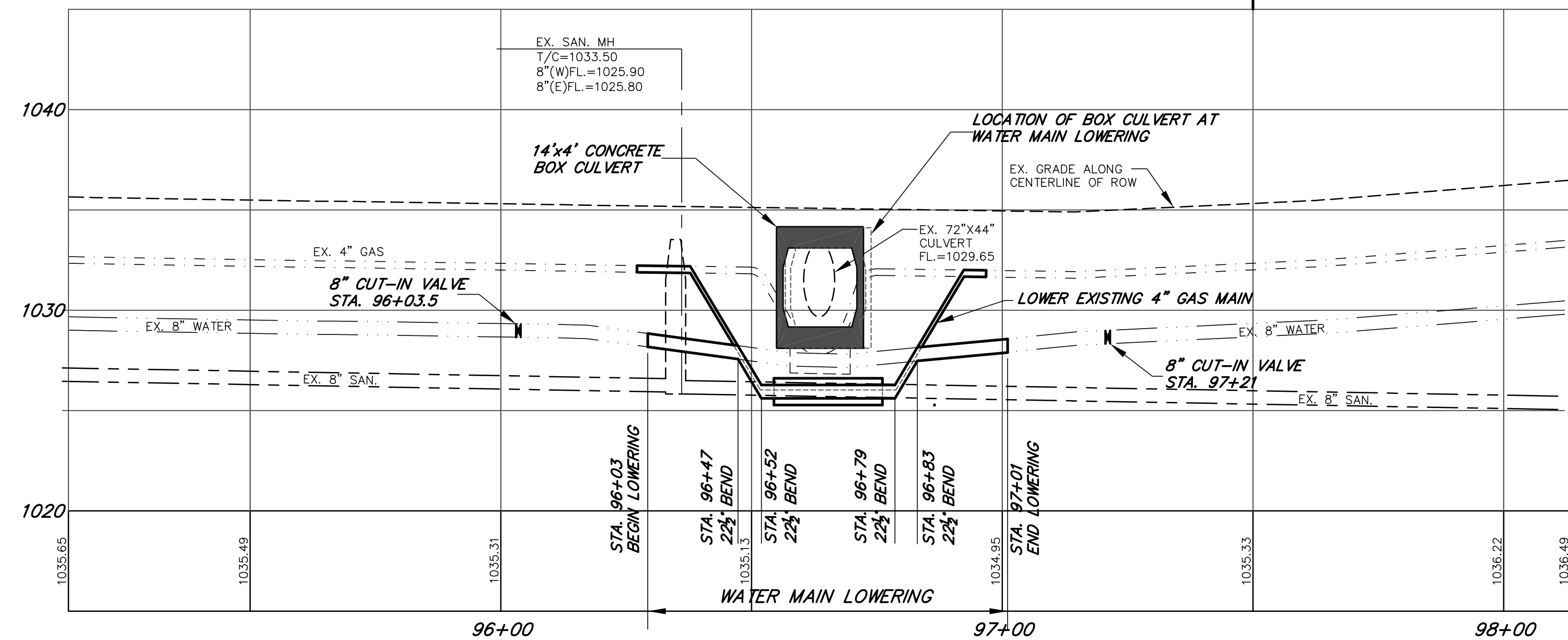
STEPHEN HOVANCSEK & ASSOCIATES, INC.
 CONSULTING ENGINEERS AND PLANNERS
 TWO MERIT DRIVE
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MAYFIELD VILLAGE, OHIO
**WORTON PARK NEIGHBORHOOD
 PHASE I - CULVERT REPLACEMENT PROJECT**
**NORTH WOODLANE DRIVE
 PLAN AND PROFILE**

APRIL 2022
 JOB No. 20-102

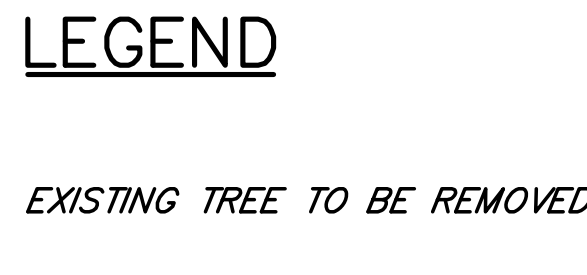
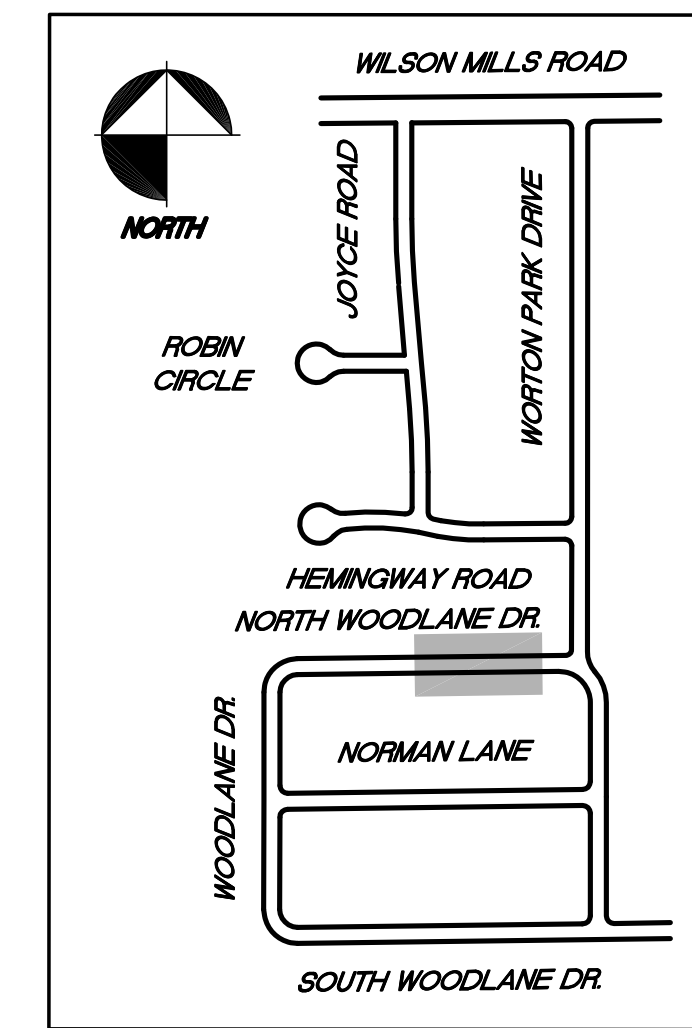
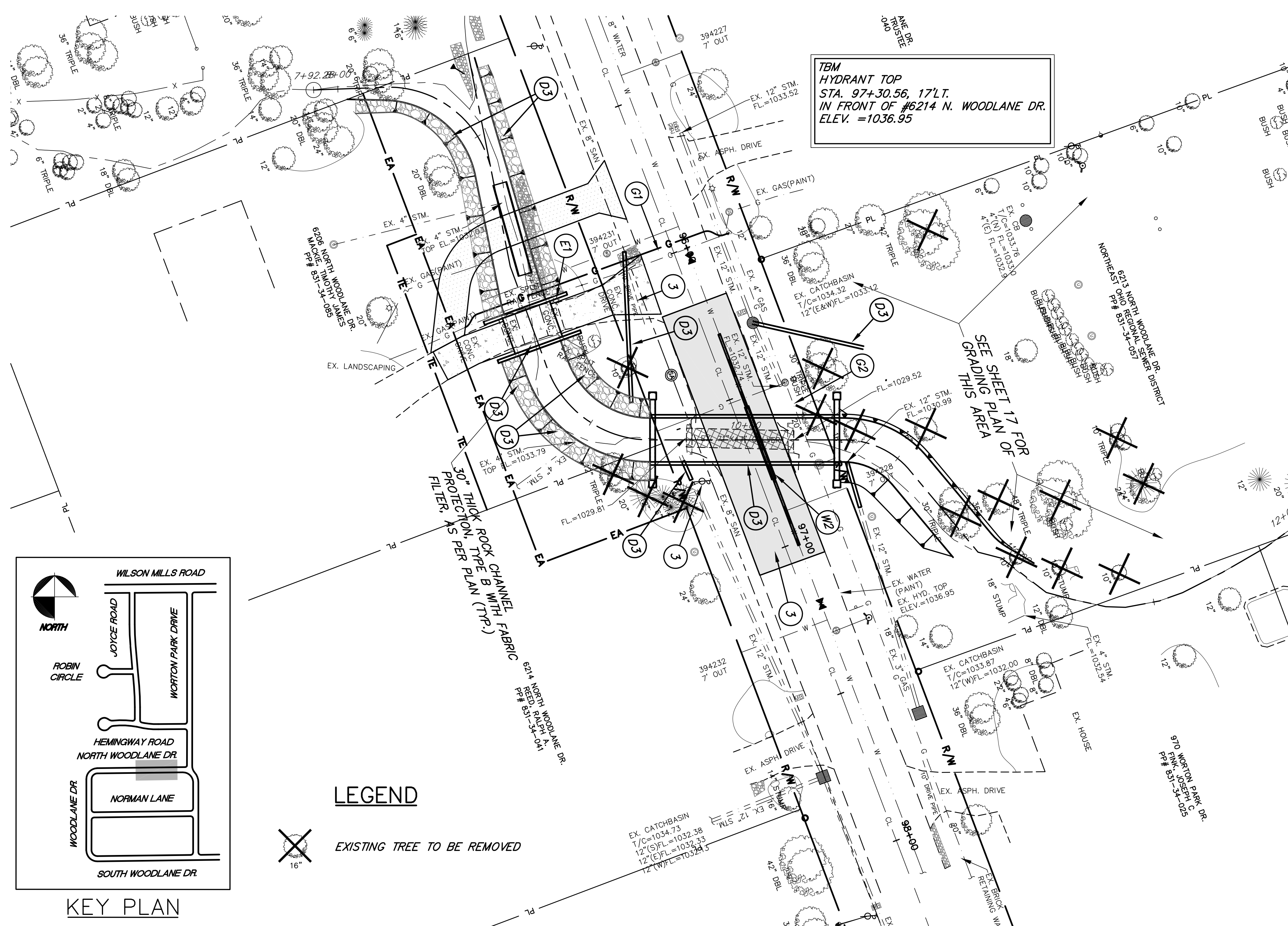


KEY PLAN



REFERENCE	SHEET #
SUB-SUMMARY	7
CROSS SECTIONS	18
CULVERT PLANS AND QUANTITIES	13

- G1** GAS SERVICE TO 6208 NORTH WOODLANE DRIVE TO BE RELOCATED BY OTHERS
- G2** GAS MAIN TO BE LOWERED BY OTHERS
- P2** TEMPORARY GRAVEL ACCESS DRIVE DURING INSTALLATION OF NEW 14'x4' CONCRETE BOX CULVERT IN DRIVEWAY
- D6** TEMPORARY 48" DRIVE CULVERT TO BE INSTALLED AS PART OF TEMPORARY GRAVEL ACCESS DRIVE.



HYDRAULIC DATA

Q25 = 323 CFS	Q100 = 442 CFS
V25 = 5.3 FPS	V100 = 6.1 FPS
HW25 = 1033.62	HW100 = 1034.64

EXISTING STRUCTURE

TYPE: CORRUGATED STEEL PIPE ARCH CULVERT
 SIZE: 71"x47"
 ROADWAY: 22' EDGE TO EDGE
 ALIGNMENT: TANGENT
 APPROACH SLAB: N/A
 SUPERELEVATION: NONE
 DATE BUILT: EARLY 1950's
 STRUCTURE FILE NO. NONE
 SKEW: 69° FROM CENTERLINE OF ROADWAY
 CONDITION: CRITICAL
 LOADING: NOT KNOWN

PROPOSED STRUCTURE

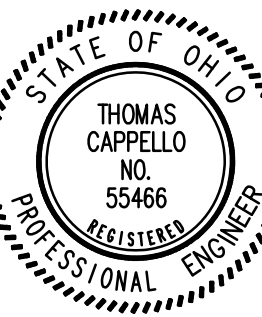
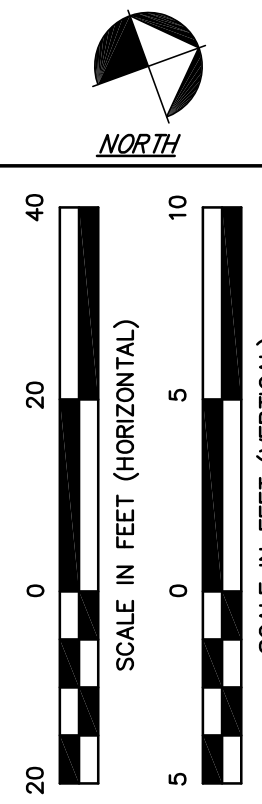
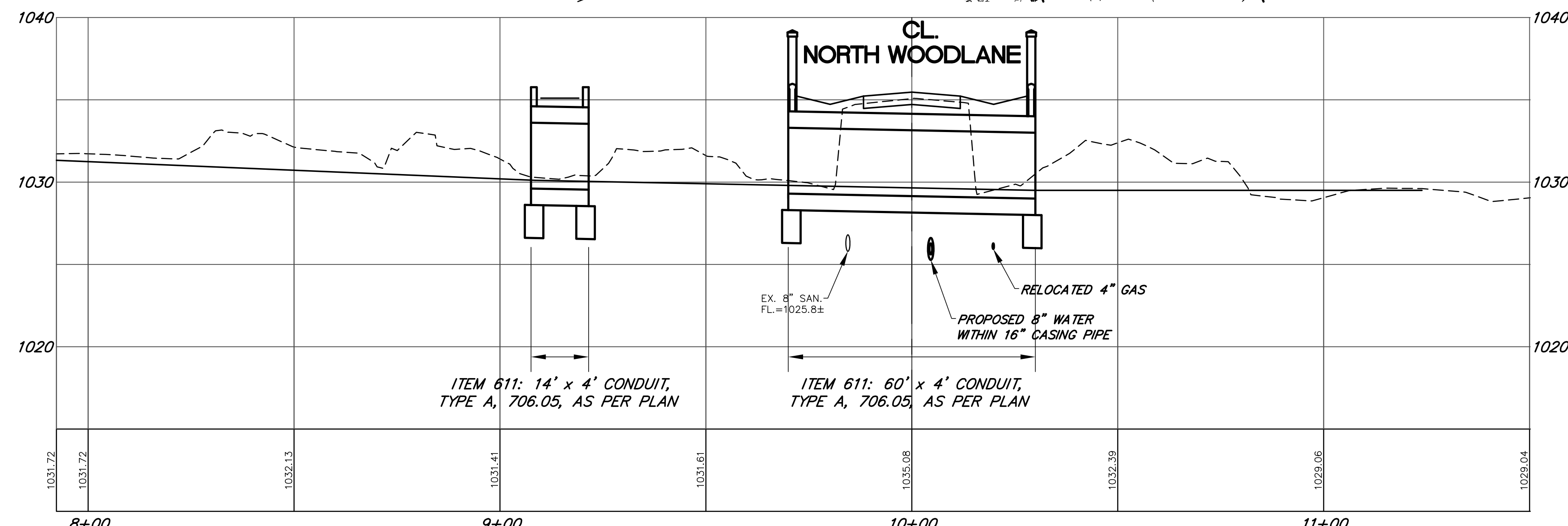
TYPE: PRECAST REINFORCED CONCRETE FOUR-SIDED BOX
 SIZE: 16'-0" SPAN x 4'0" RISE
 ROADWAY: 22' EDGE TO EDGE
 ALIGNMENT: TANGENT
 APPROACH SLAB: NONE
 SUPERELEVATION: NONE
 SKEW: 69° FROM CENTERLINE OF ROADWAY
 WEARING SURFACE: ASPHALT
 LOADING: AASHTO LRFD HL-93 LOADING AND FUTURE WEARING SURFACE OF 60 PSF

SUB SUMMARY (6208 N. WOODLANE DR. DRIVEWAY CULVERT)

ITEM	TOTAL	UNIT	DESCRIPTION
202	1	EACH	STRUCTURE REMOVED, AS PER PLAN
503	LUMP	LUMP	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN
503	LUMP	LUMP	UNCLASSIFIED EXCAVATION
511	21	CU. YD.	CLASS C CONCRETE, CULVERT AND HEADWALL FOOTING
511	8	CU. YD.	CLASS C CONCRETE, HEADWALL, AS PER PLAN (NO FORM LINER)
512	63	SQ. YD.	TYPE 2 MEMBRANE WATERPROOFING
512	25	SQ. YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)
516	28	SQ. FT.	1/2" PREFORMED EXPANSION JOINT FILLER
517	56	FT.	WOOD POST AND RAIL RAILING, AS PER PLAN
518	7	CU. YD.	POROUS BACKFILL, WITH FILTER FABRIC
601	160	SQ. YD.	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER, AS PER PLAN
611	14	FT.	14' x 4' CONDUIT, TYPE A, 706.05, AS PER PLAN (DRIVEWAY)

SUB SUMMARY (NORTH WOODLANE DRIVE CULVERT)

ITEM	TOTAL	UNIT	DESCRIPTION
202	1	EACH	STRUCTURE REMOVED, AS PER PLAN
503	LUMP	LUMP	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN
503	LUMP	LUMP	UNCLASSIFIED EXCAVATION
511	25	CU. YD.	CLASS C CONCRETE, CULVERT AND HEADWALL FOOTING
511	18	CU. YD.	CLASS C CONCRETE, HEADWALL, AS PER PLAN
512	240	SQ. YD.	TYPE 2 MEMBRANE WATERPROOFING
512	62	SQ. YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)
516	42	SQ. FT.	1/2" PREFORMED EXPANSION JOINT FILLER
517	52	FT.	ALUMINUM PICKET RAILING, AS PER PLAN
518	8	CU. YD.	POROUS BACKFILL, WITH FILTER FABRIC
601	160	SQ. YD.	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER, AS PER PLAN
611	60	FT.	14' x 4' CONDUIT, TYPE A, 706.05, AS PER PLAN (ROADWAY)



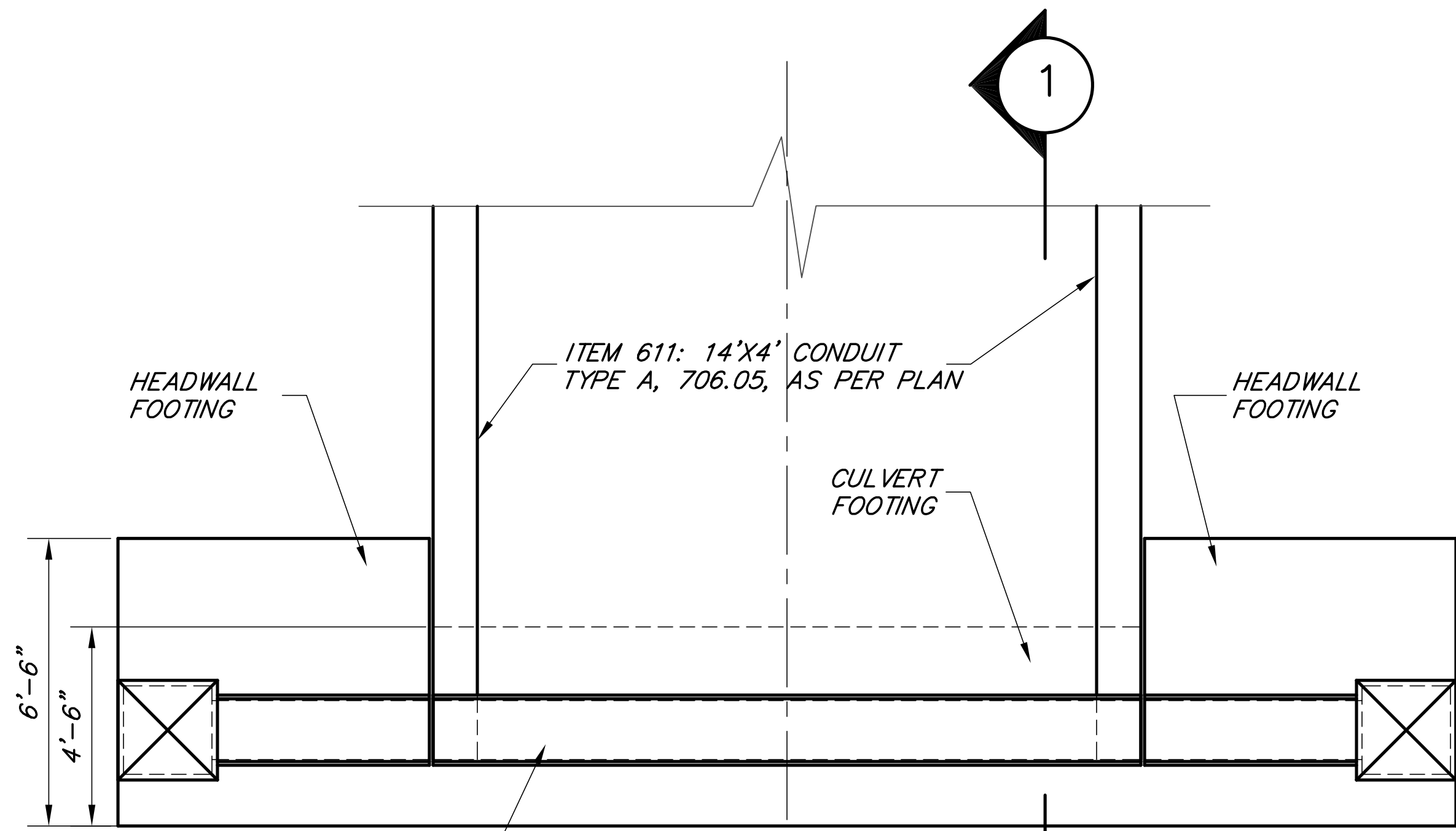
REVISIONS

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STEPHEN HOVANCSEK & ASSOCIATES, INC.
 CONSULTING ENGINEERS AND PLANNERS
 TWO MERIT DRIVE
 RICHMOND HEIGHTS, OHIO 44143
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MAYFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
NORTH WOODLANE CULVERT
PLAN AND PROFILE

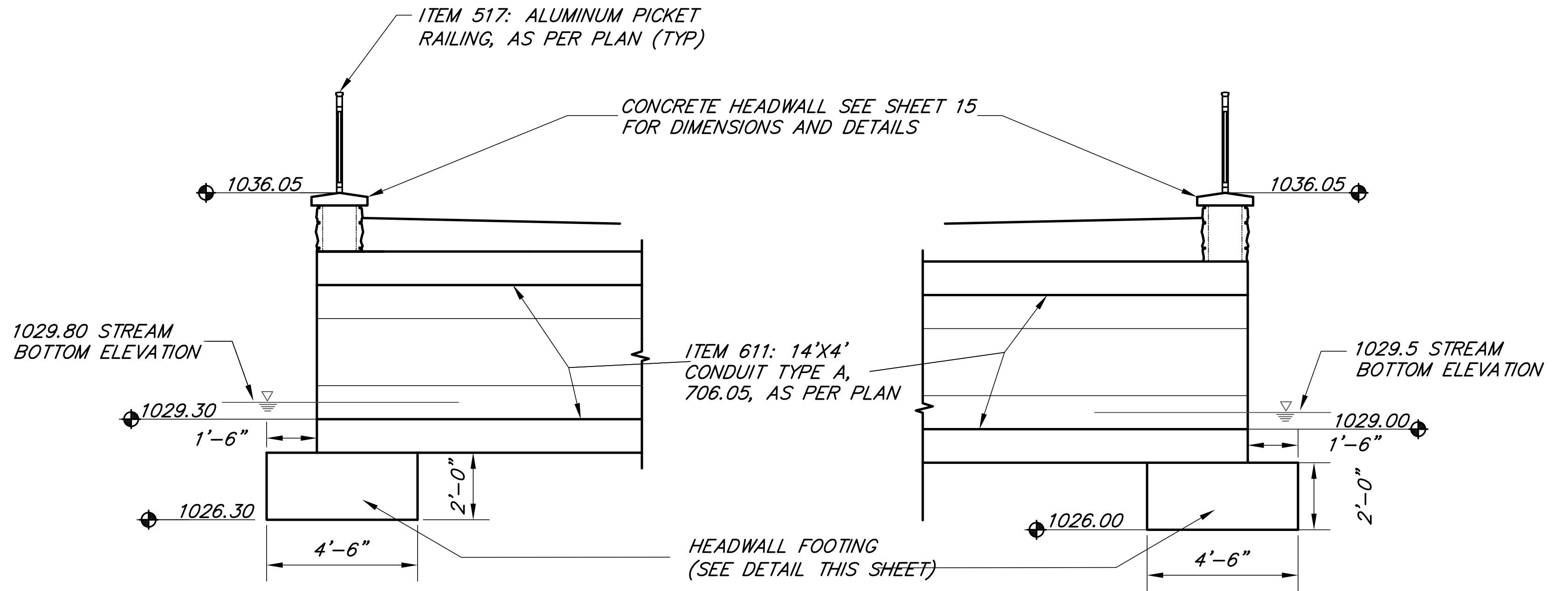
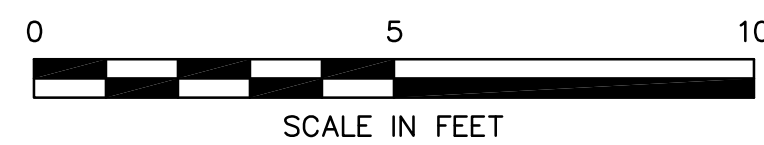
APRIL 2022
 JOB No. 20-102



SEE SHEET 15 FOR DIMENSIONS AND DETAILS

PLAN

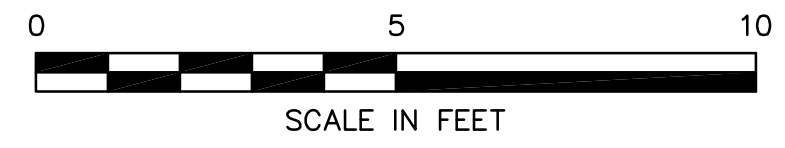
SOUTH HEADWALL
NORTH HEADWALL SIMILAR



SOUTH SIDE-EAST ELEVATION

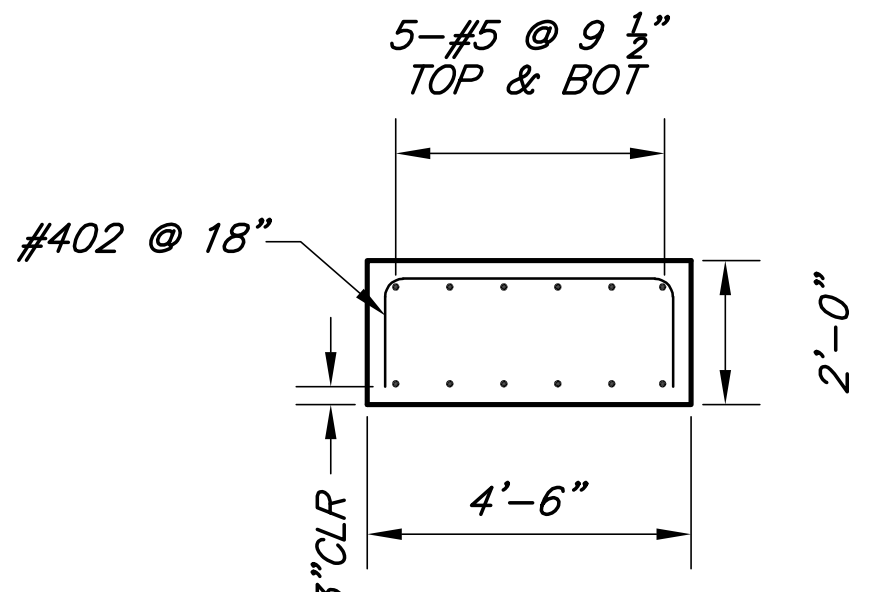
NORTH SIDE-EAST ELEVATION

SECTION-1

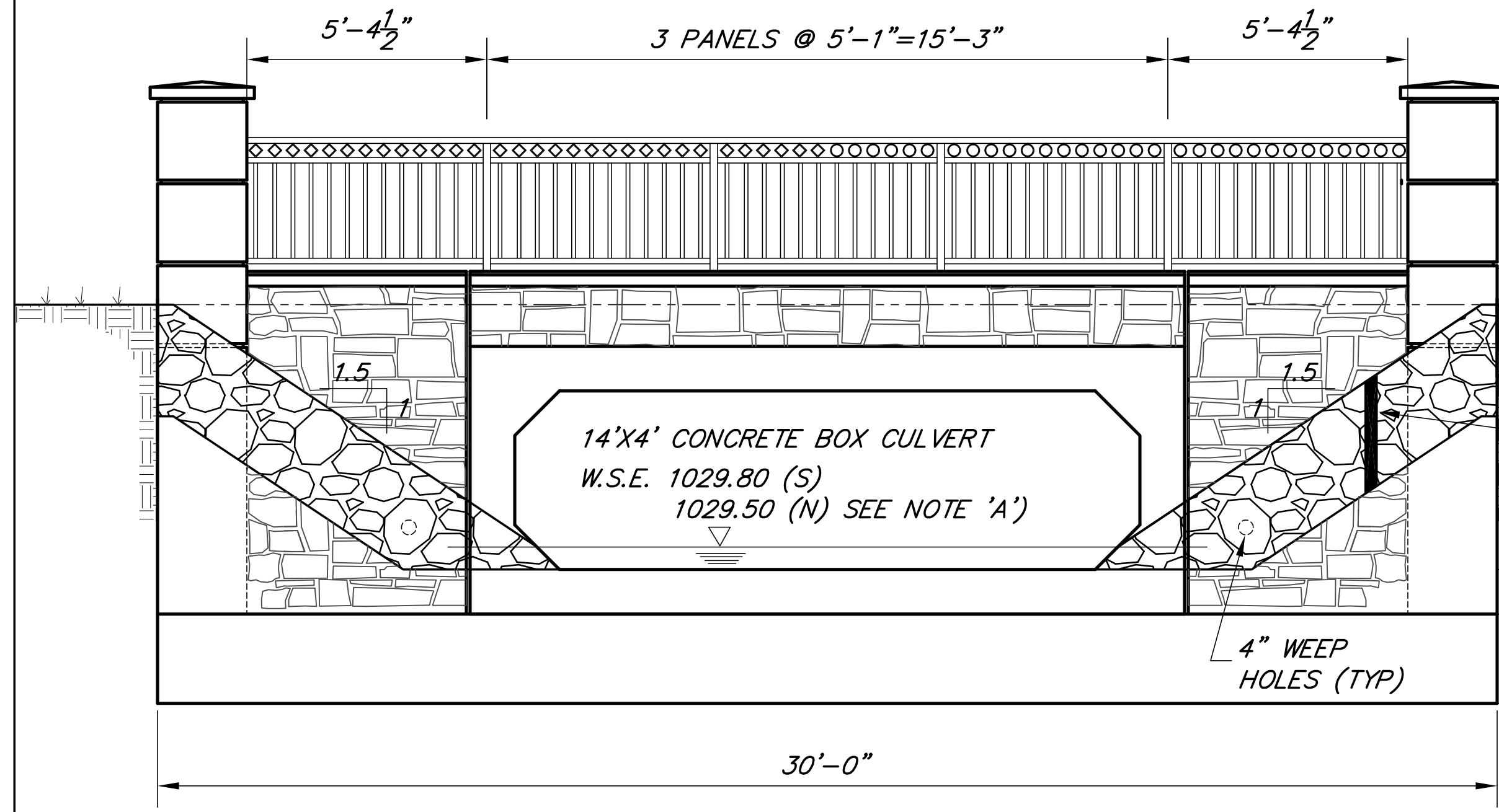


NOTE:
CULVERT, CULVERT FOOTING AND ITEM 601:
RIPRAP TO BE INSTALLED IN ROCK.

NOTE A:
BOTTOM INVERT OF 14'X4' CONDUIT, TYPE A,
706.05 IS SET AT 6" BELOW PROPOSED WATER
SURFACE ELEVATION(W.S.E.) TO ALLOW FOR
CREATION OF NATURAL CHANNEL BOTTOM.

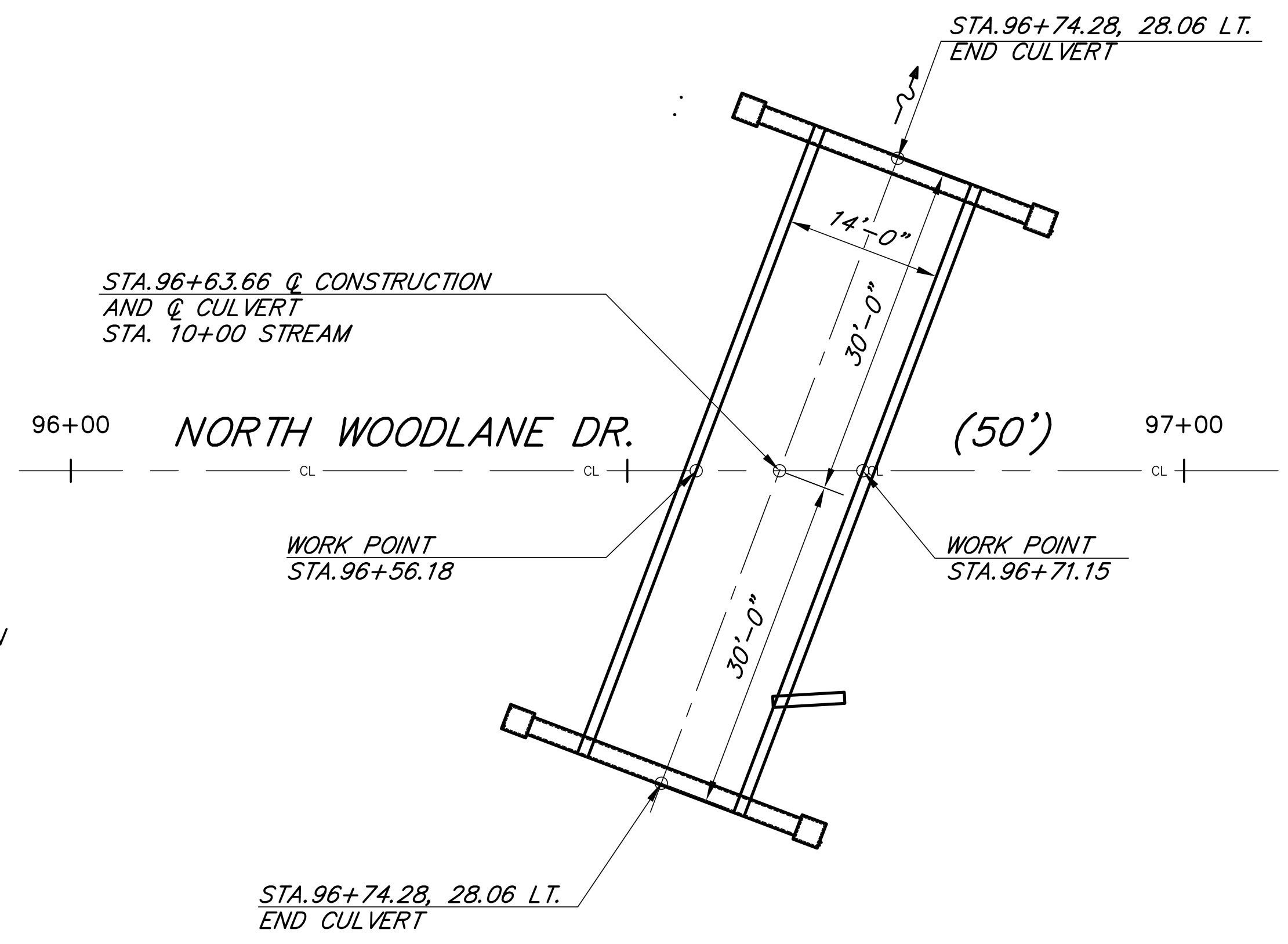
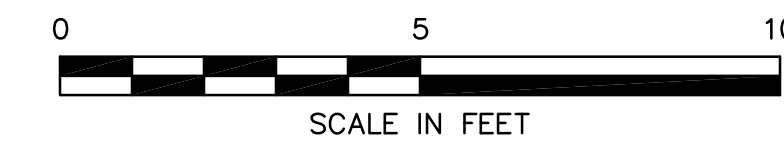


**CULVERT FOOTING
REINFORCING DETAIL**

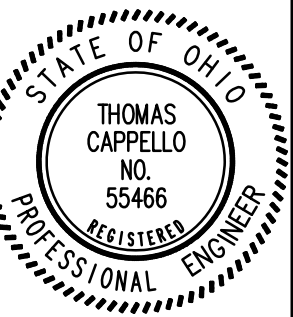
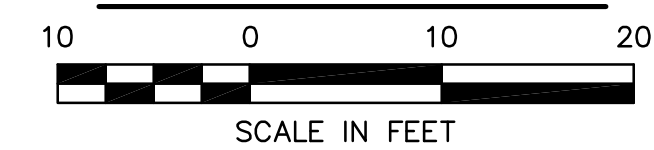


ELEVATION

NORTH & SOUTH HEADWALL



LAYOUT PLAN

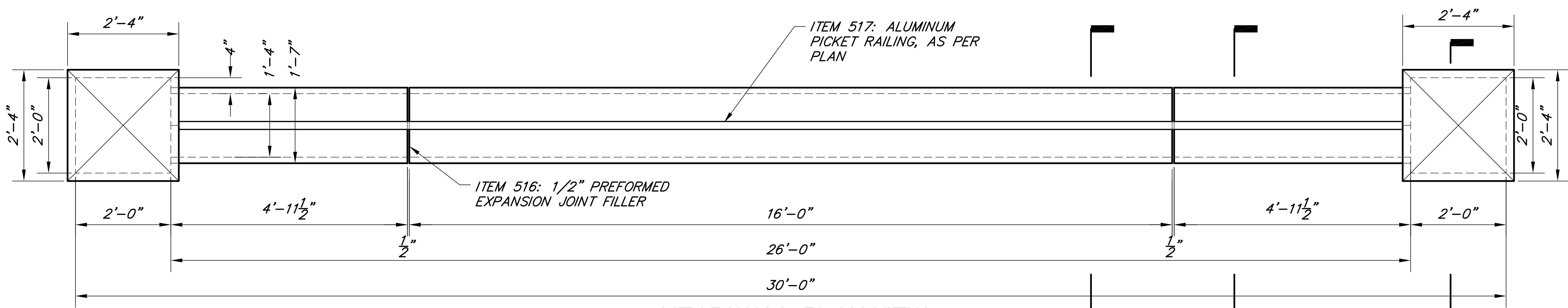


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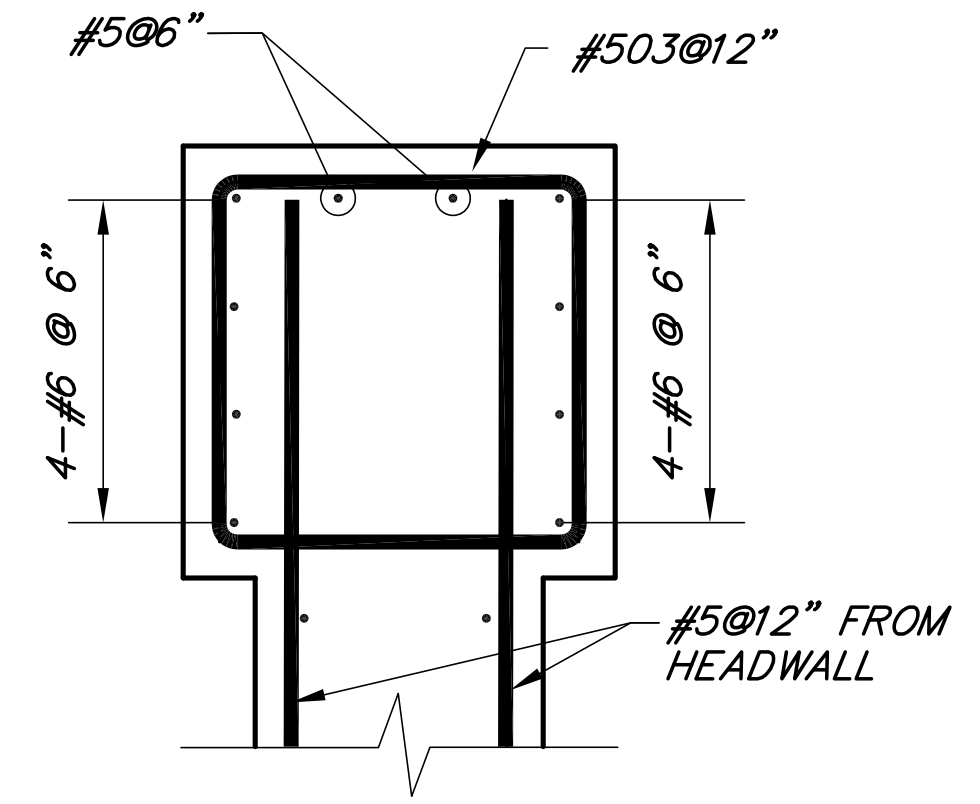
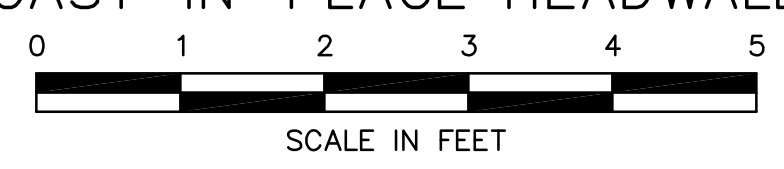
STEPHEN HOVANCSEK & ASSOCIATES, INC.
CONSULTING ENGINEERS AND PLANNERS
TWO MERIT DRIVE
RICHMOND HEIGHTS, OHIO 44143
PH: (216) 731-6255 FAX: (216) 731-4483

MAXFIELD VILLAGE, OHIO
**WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
NORTH WOODLANE DR. 14'X4' BOX CULVERT
DETAILS**

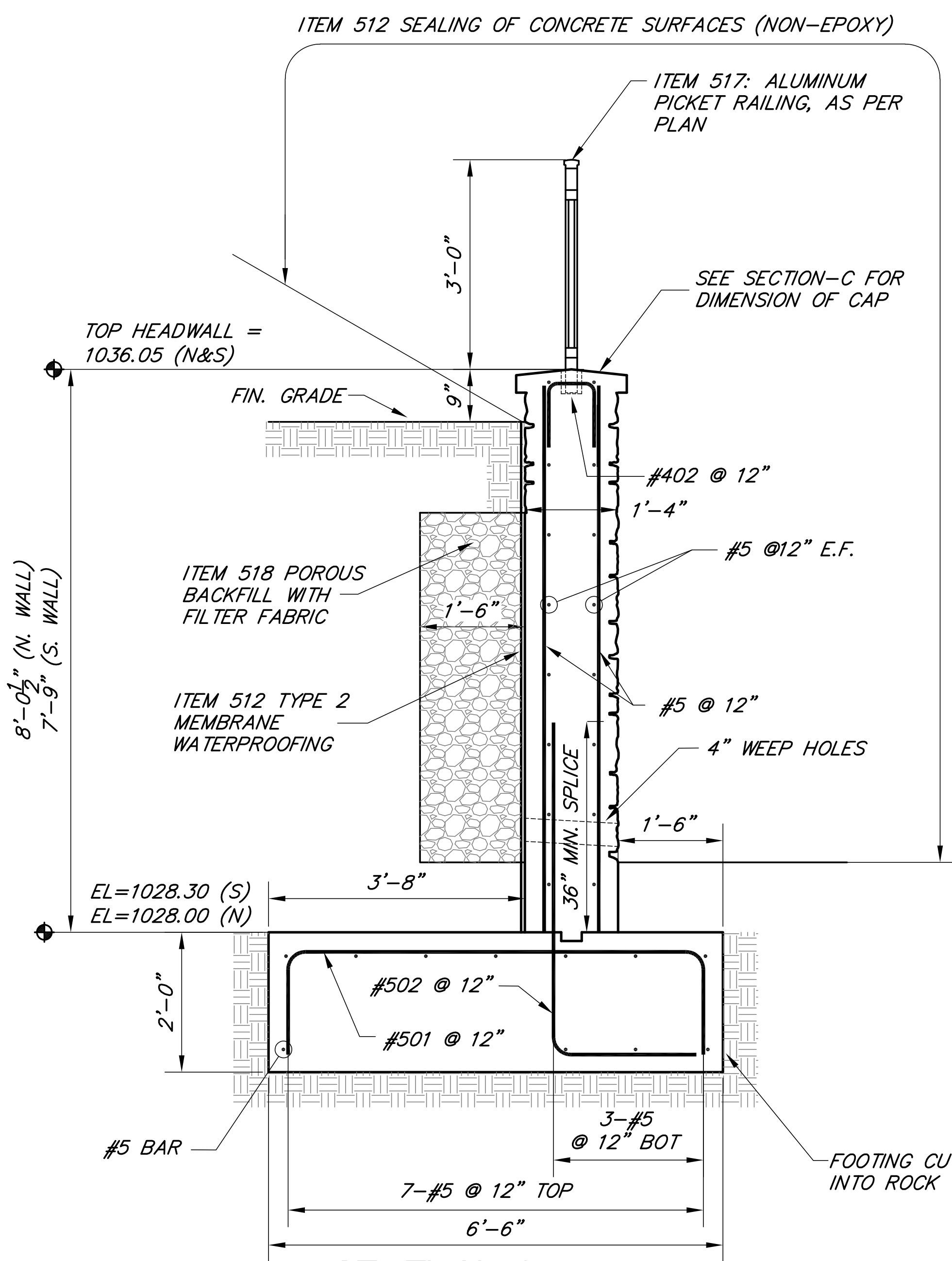
APRIL 2022
JOB No. 20-102



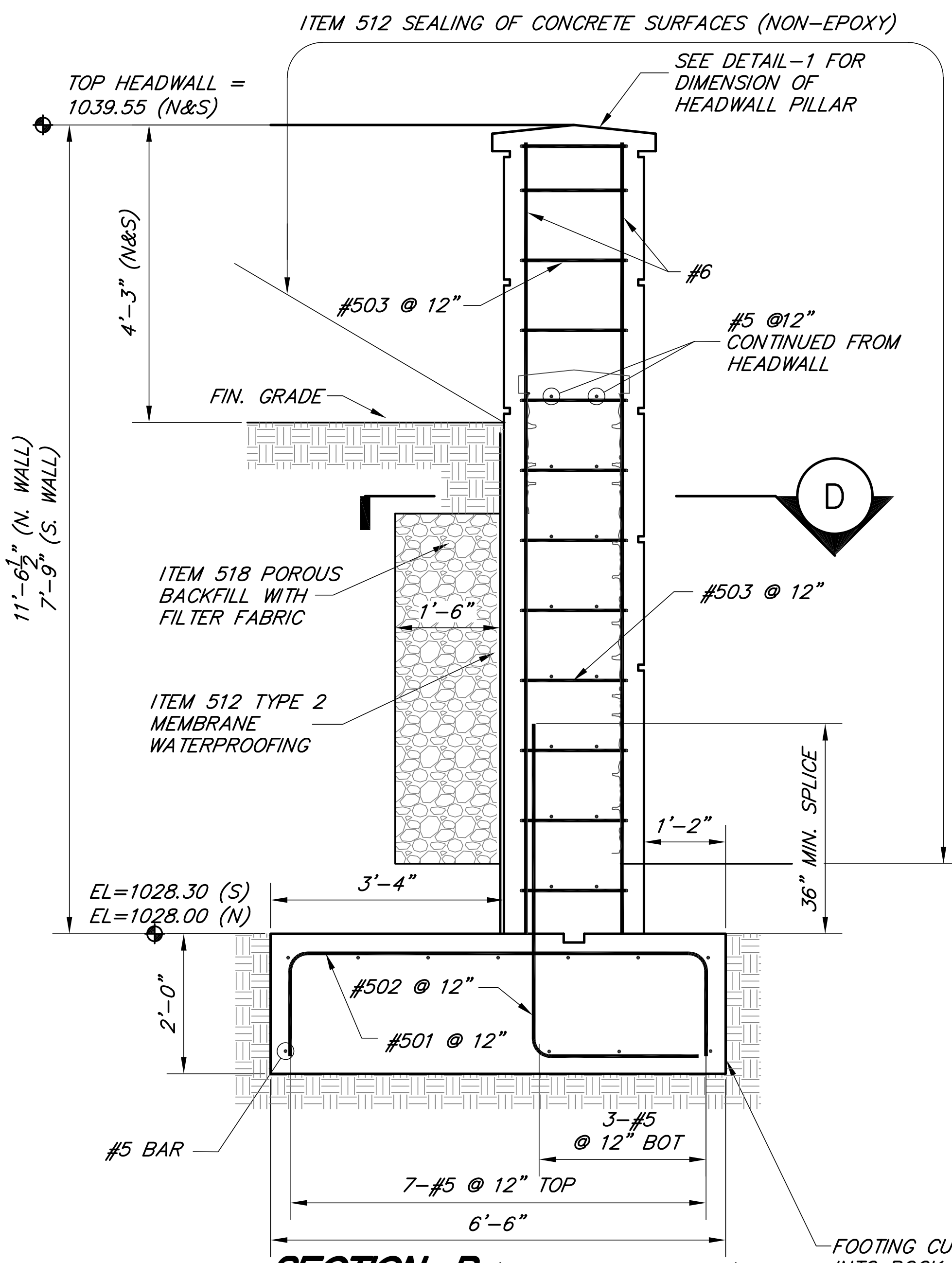
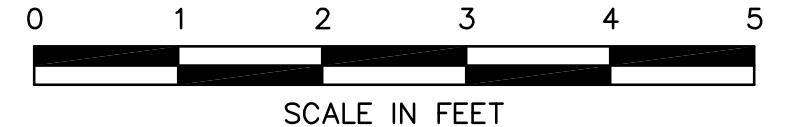
HEADWALL PLAN VIEW
CAST-IN-PLACE HEADWALL



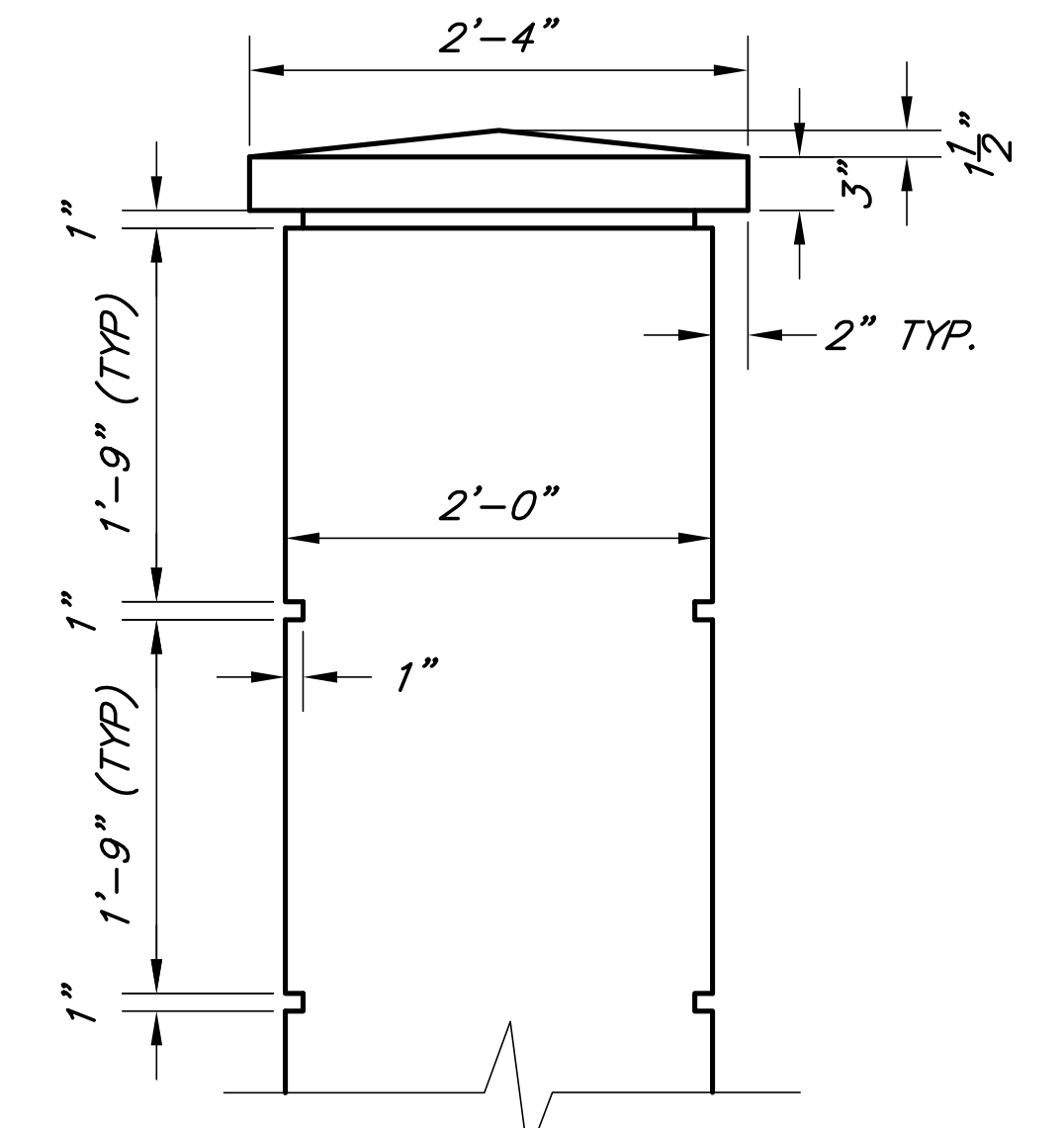
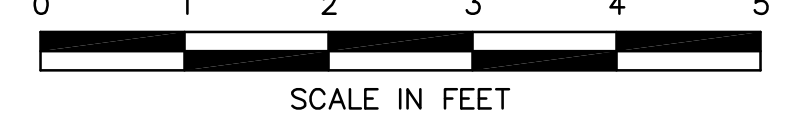
SECTION-D



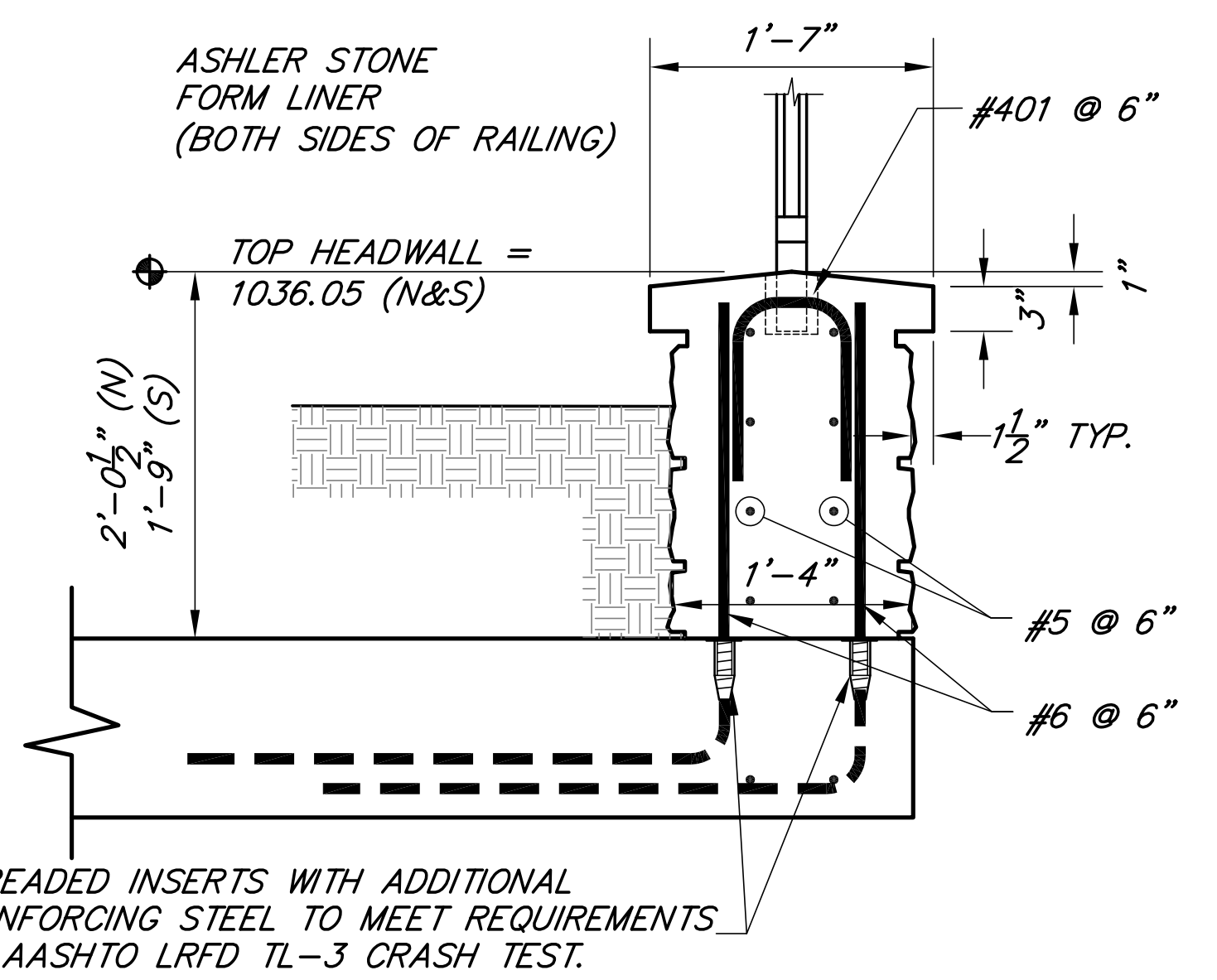
SECTION -A (HEADWALL)



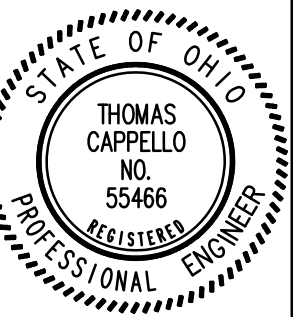
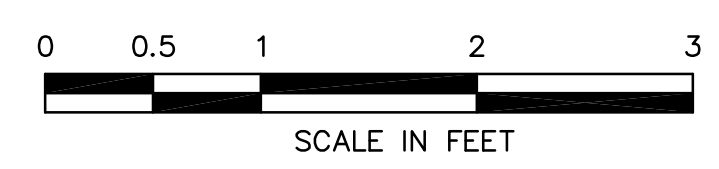
SECTION -B (HEADWALL PILLAR)



DETAIL 1
HEADWALL PILLAR DETAIL



SECTION -C (HEADWALL ABOVE CULVERT)

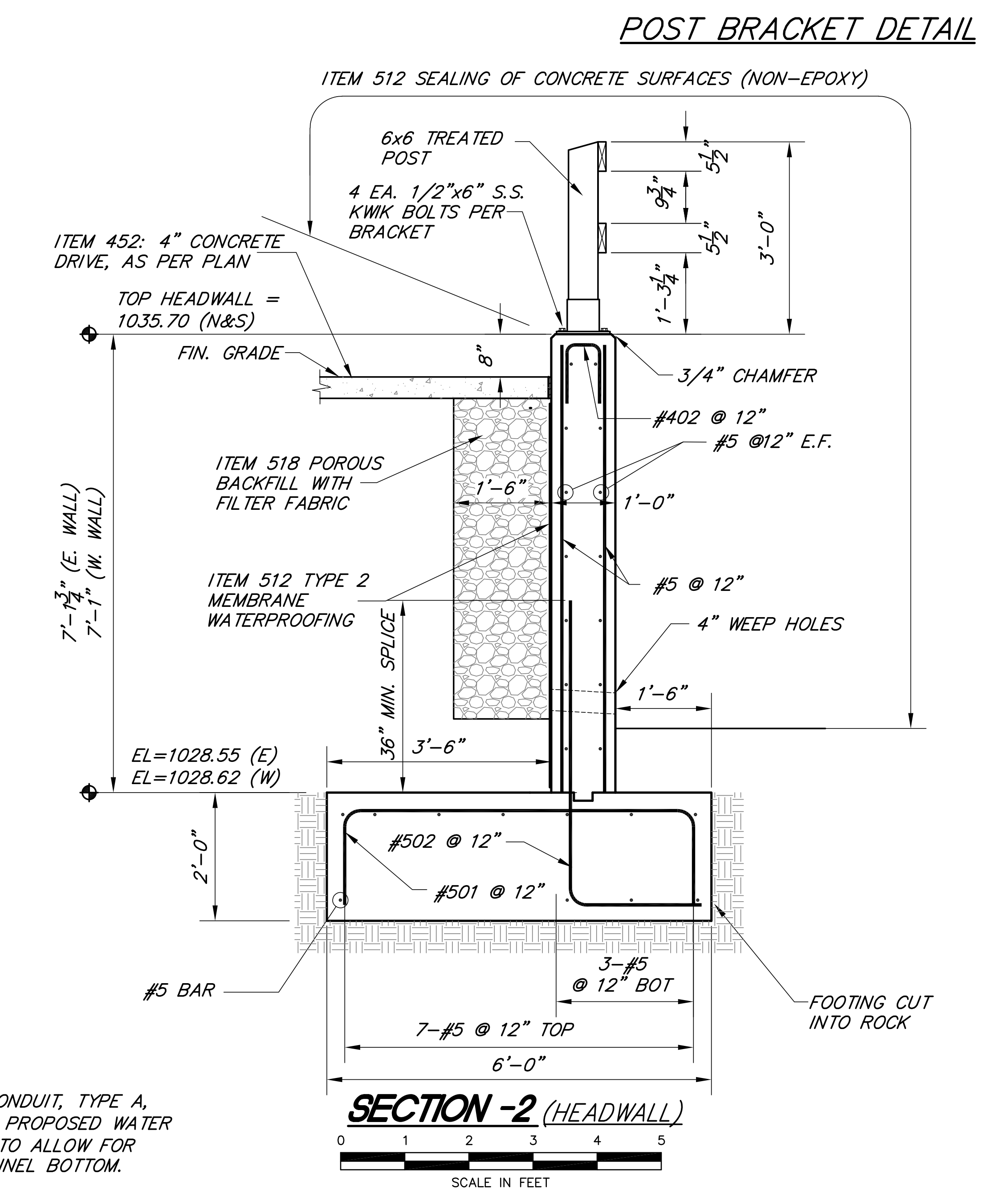
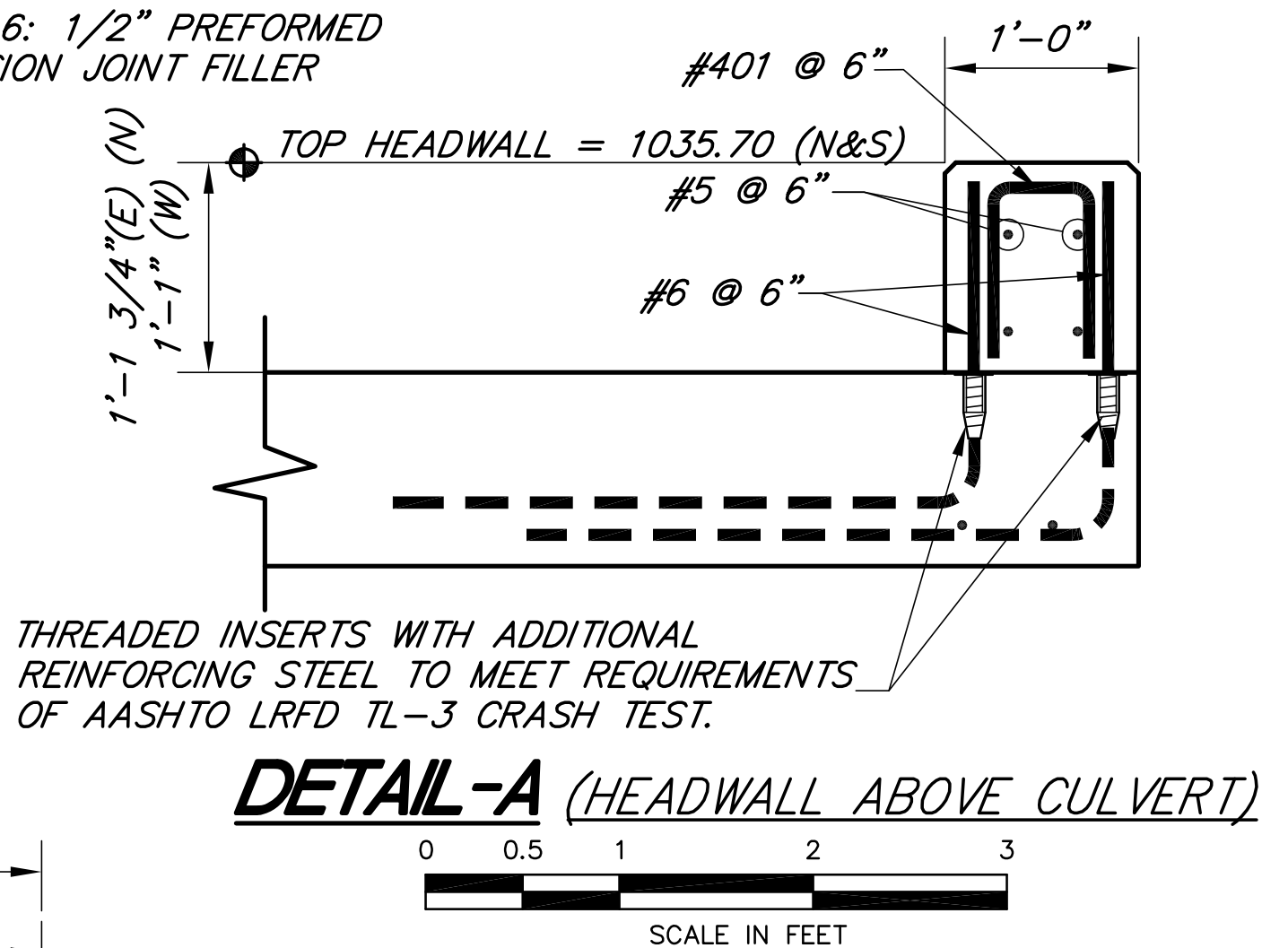
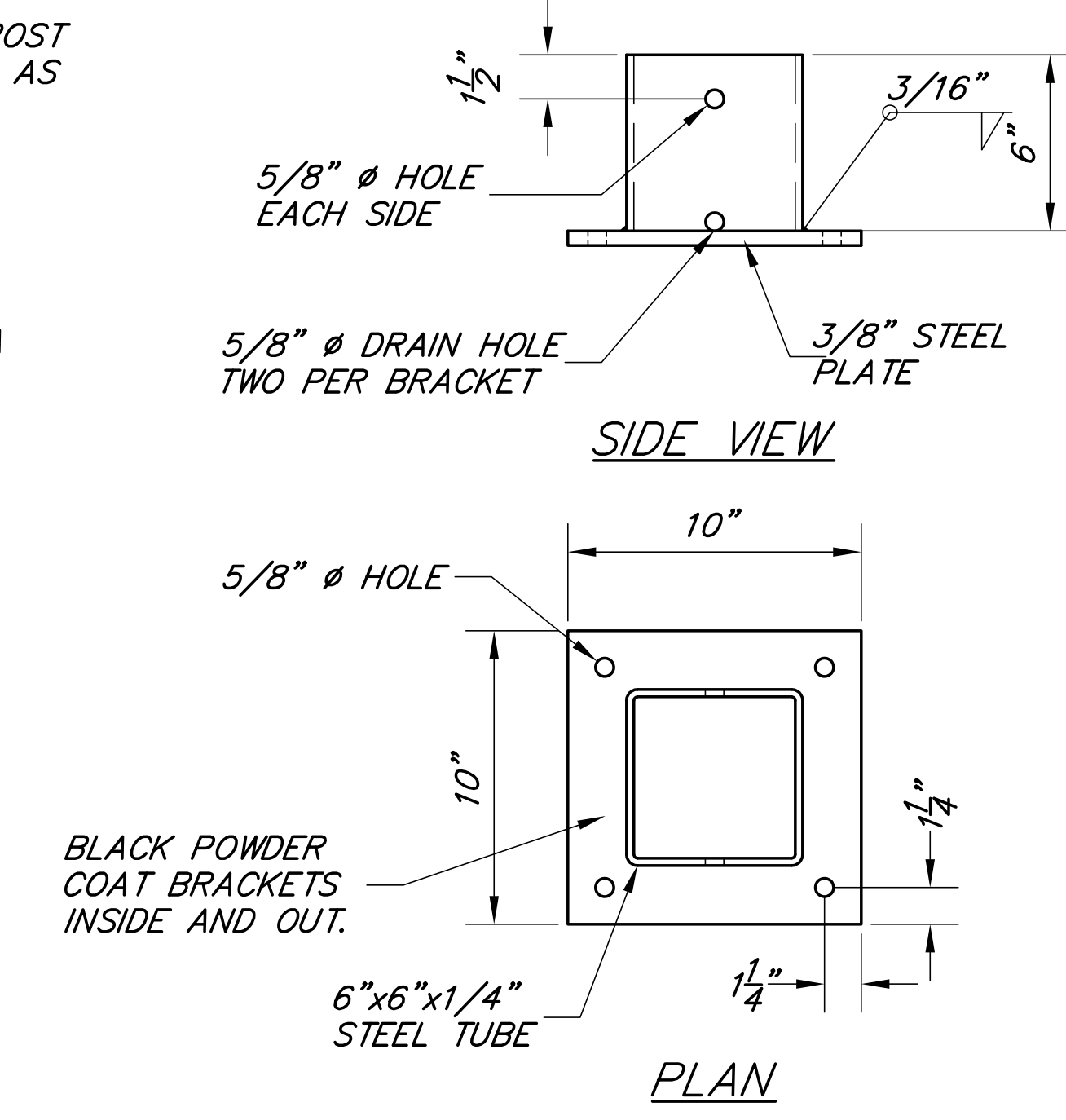
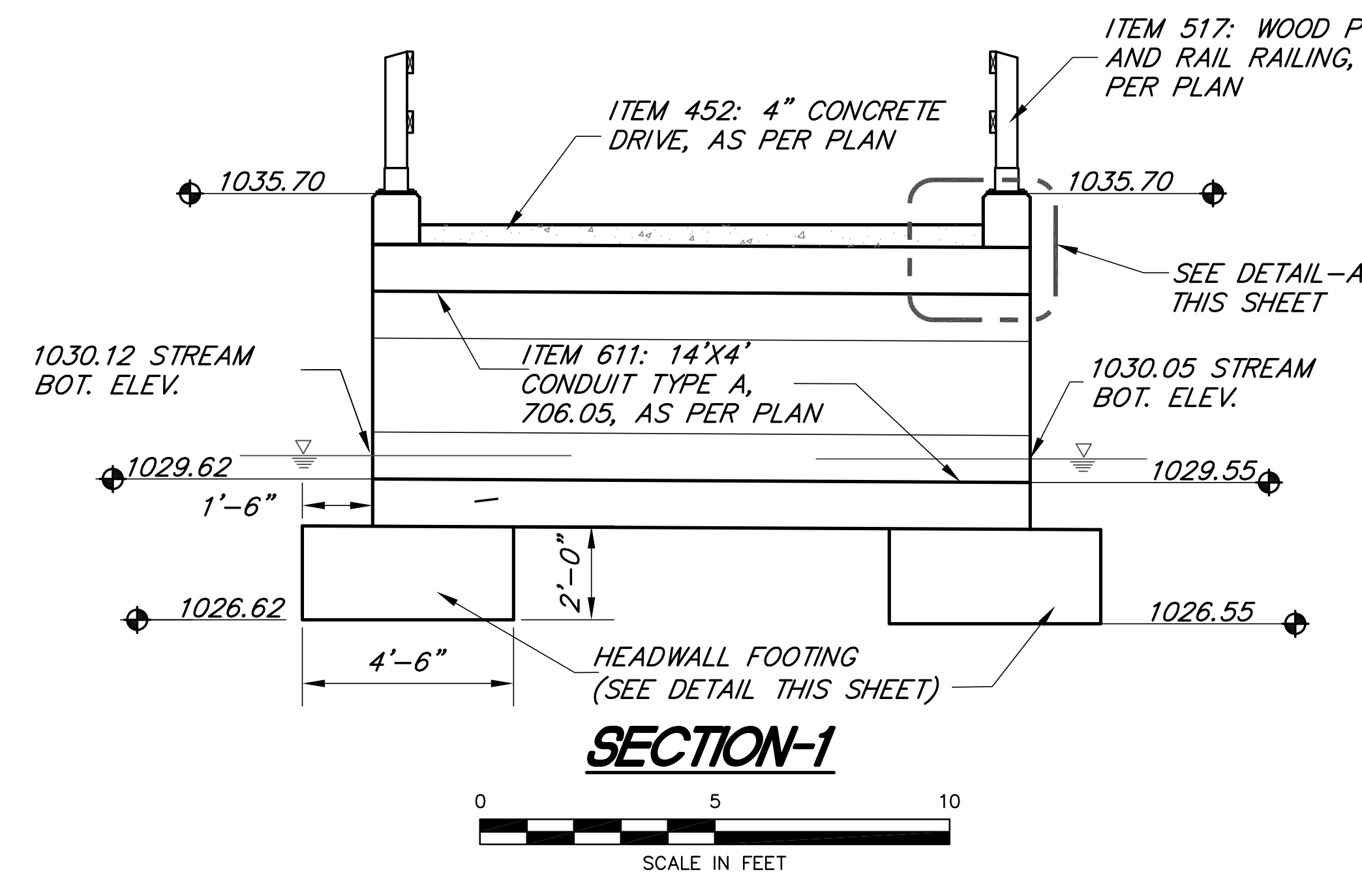
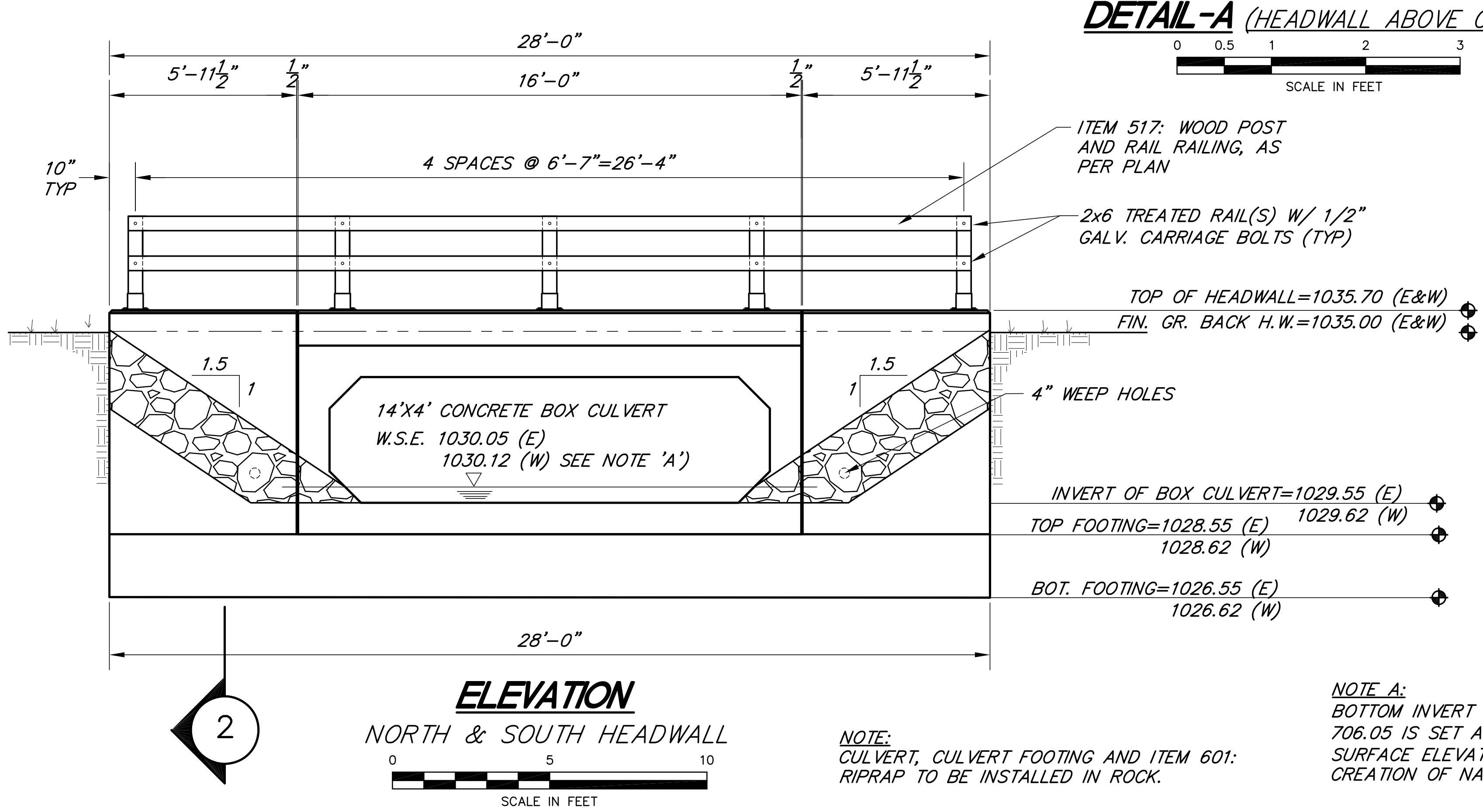
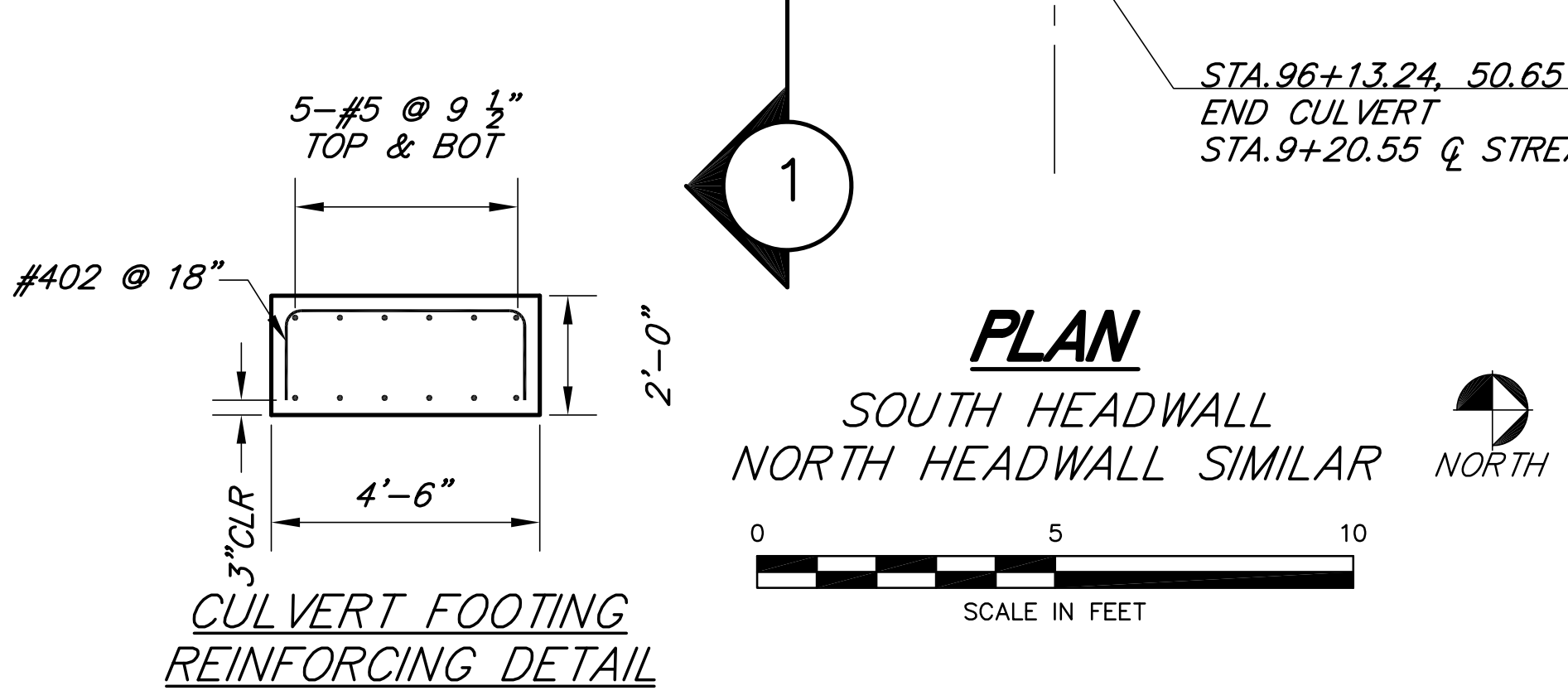
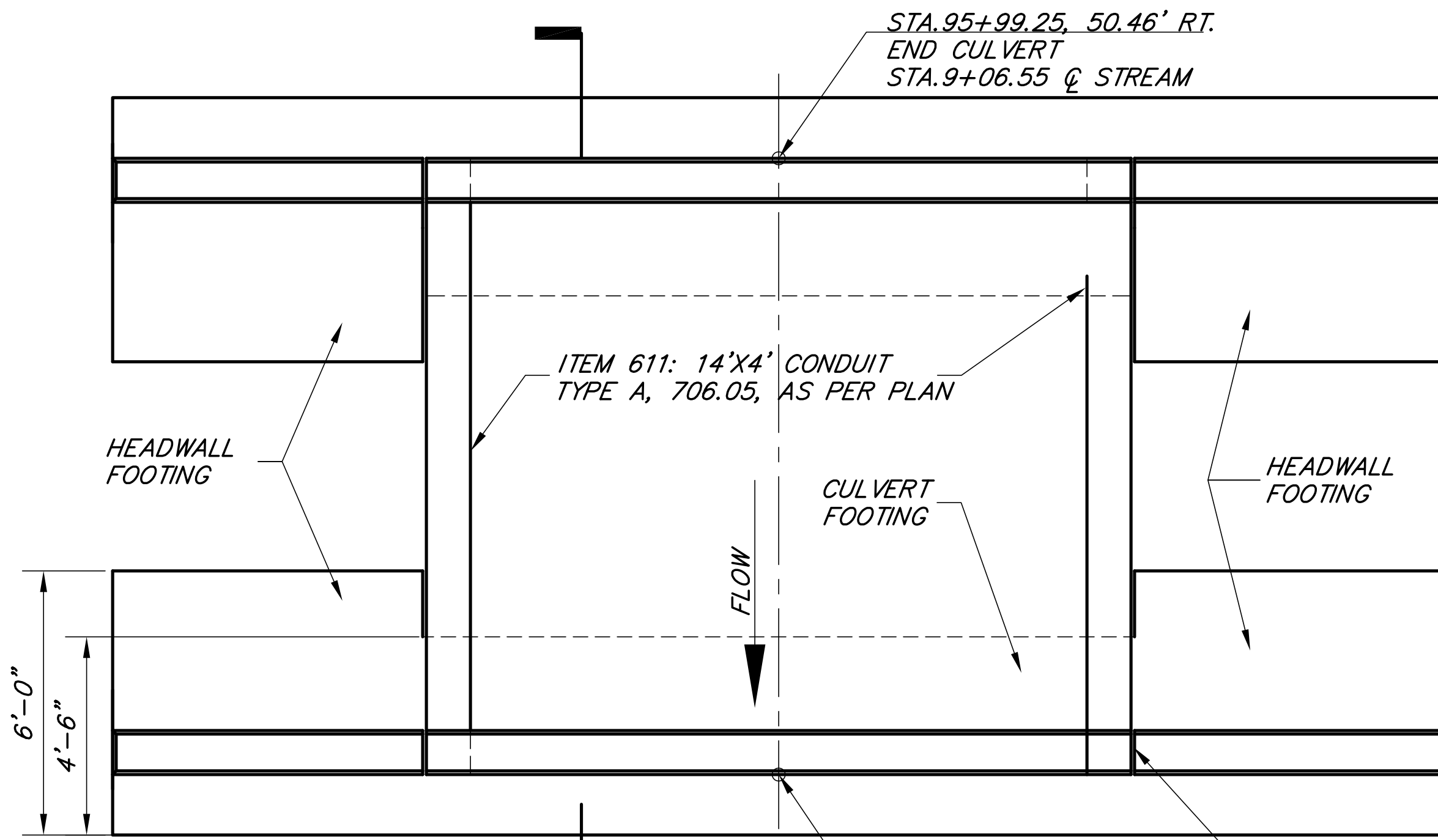


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MAXFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
NORTH WOODLANE DR. 14'x14' BOX CULVERT
DETAILS

APRIL 2022
JOB No. 20-102



NOTE A:
 BOTTOM INVERT OF 14'X4' CONDUIT, TYPE A, 706.05 IS SET AT 6" BELOW PROPOSED WATER SURFACE ELEVATION(W.S.E.) TO ALLOW FOR CREATION OF NATURAL CHANNEL BOTTOM.

NOTE:
 CULVERT, CULVERT FOOTING AND ITEM 601: RIPRAP TO BE INSTALLED IN ROCK.

STATE OF OHIO
 THOMAS CAPPELLO
 NO. 55466
 REGISTERED PROFESSIONAL ENGINEER

REVISIONS

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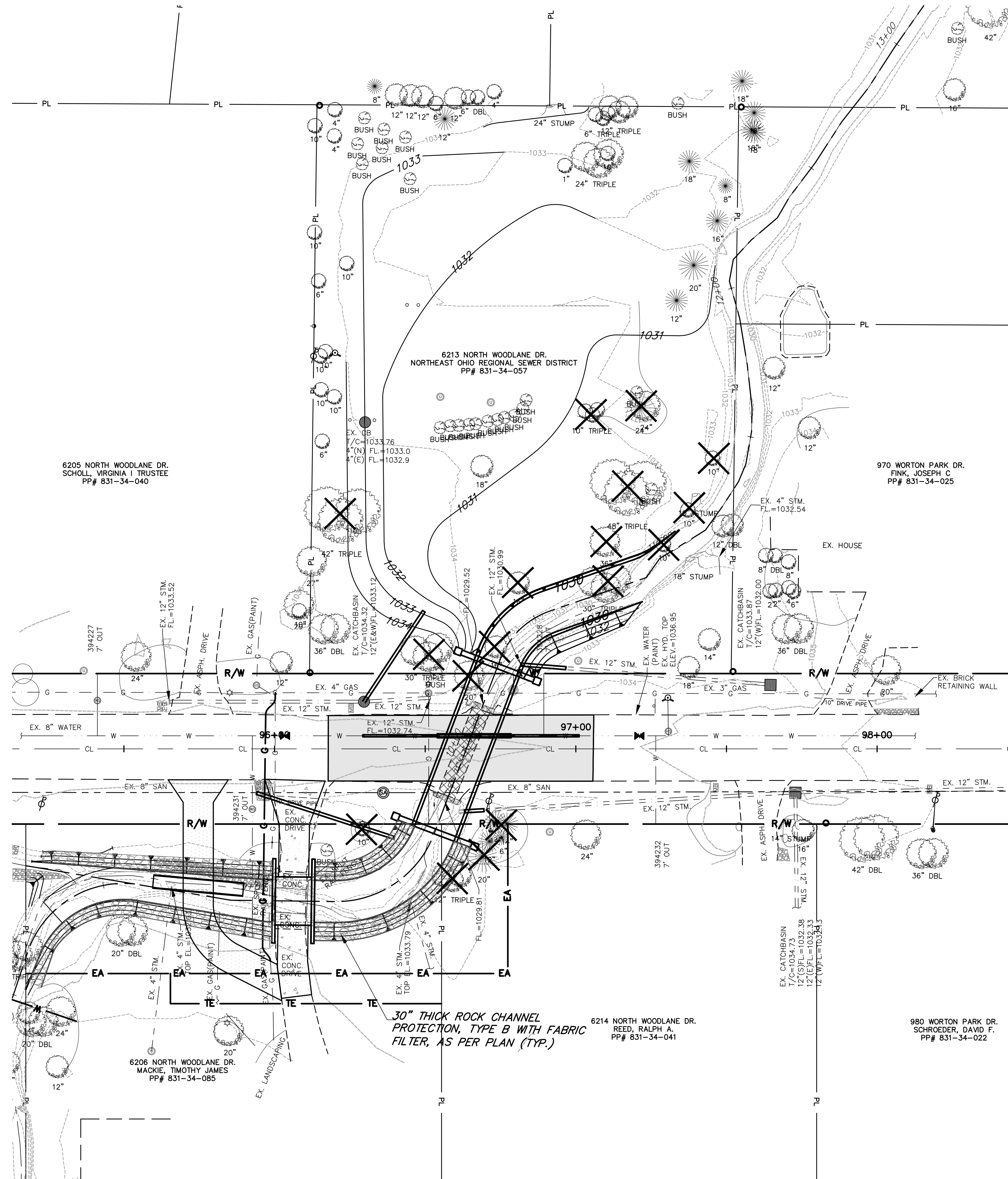
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STEPHEN HOVANCSEK & ASSOCIATES, INC.
 CONSULTING ENGINEERS AND PLANNERS
 TWO MERIT DRIVE
 RICHMOND HEIGHTS, OHIO 44143
 PH: (216) 731-6255 FAX: (216) 731-4483

MAXFIELD VILLAGE, OHIO
 WORTON PARK NEIGHBORHOOD
 PHASE I - CULVERT REPLACEMENT PROJECT
 6208 NORTH WOODLANE DR.
 14'X4' BOX DRIVE CULVERT DETAILS

APRIL 2022
 JOB No. 20-102

16 OF 23



TBM
HYDRANT TOP
STA. 97+30.56, 17'LT.
IN FRONT OF #6214 N. WOODLANE DR.
ELEV. =1036.95

LEGEND

EXISTING TREE TO BE REMOVED

NORTH

SCALE IN FEET (HORIZONTAL)

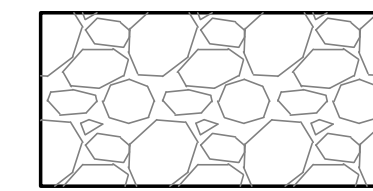
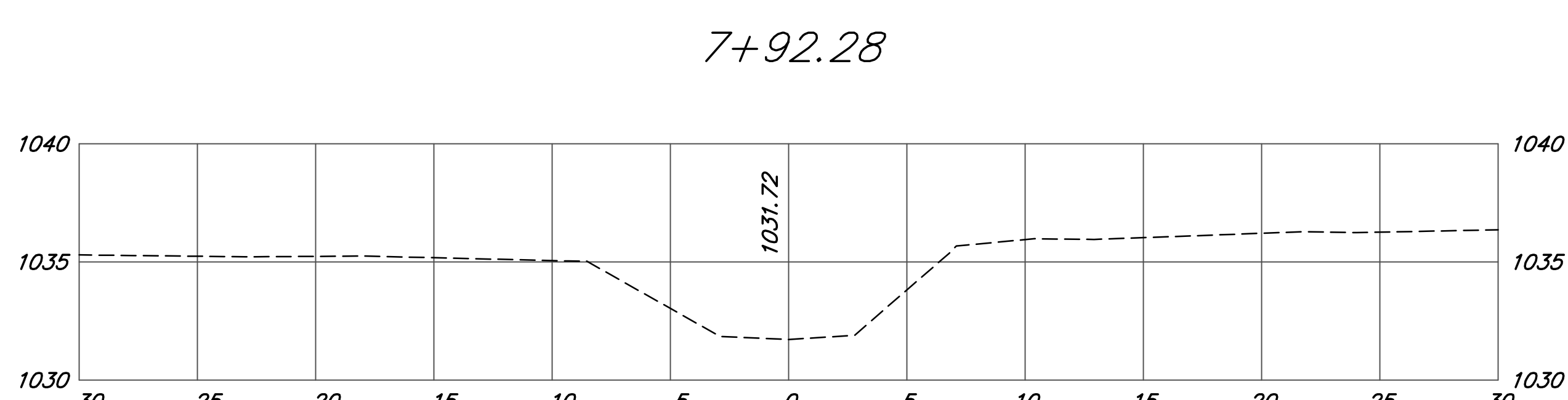
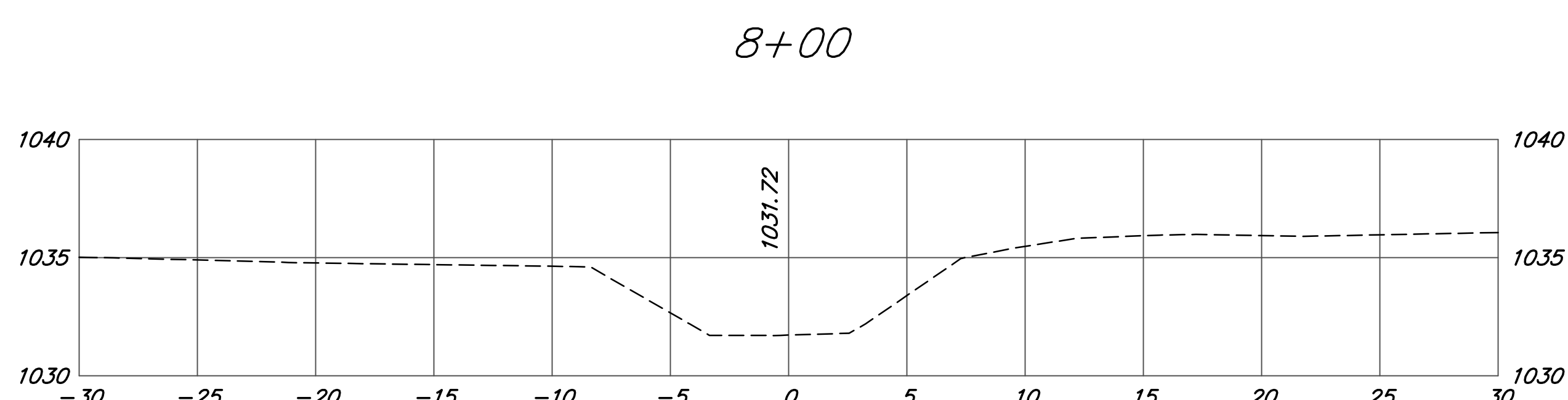
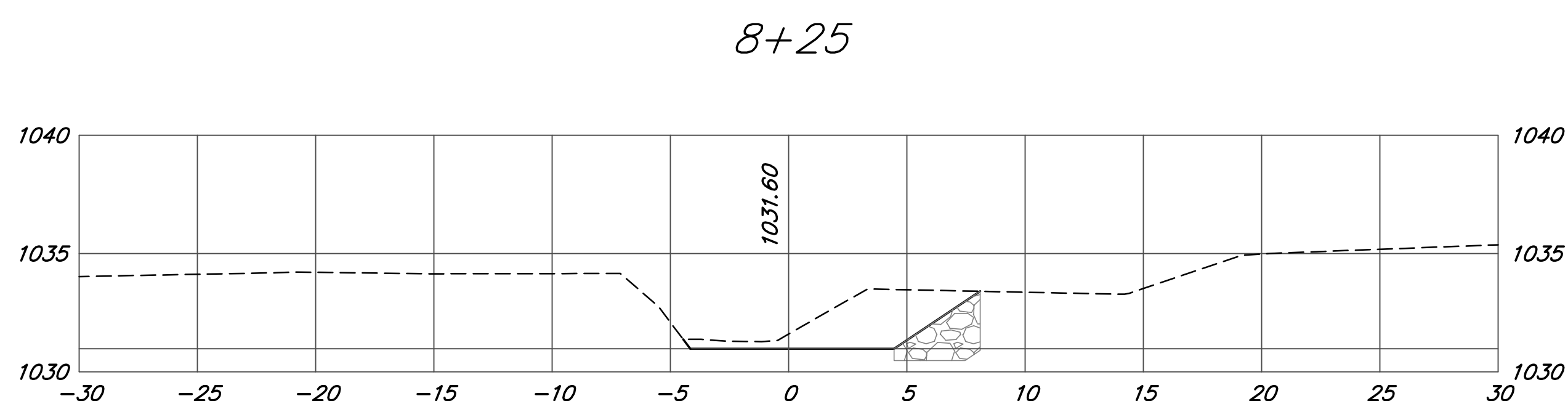
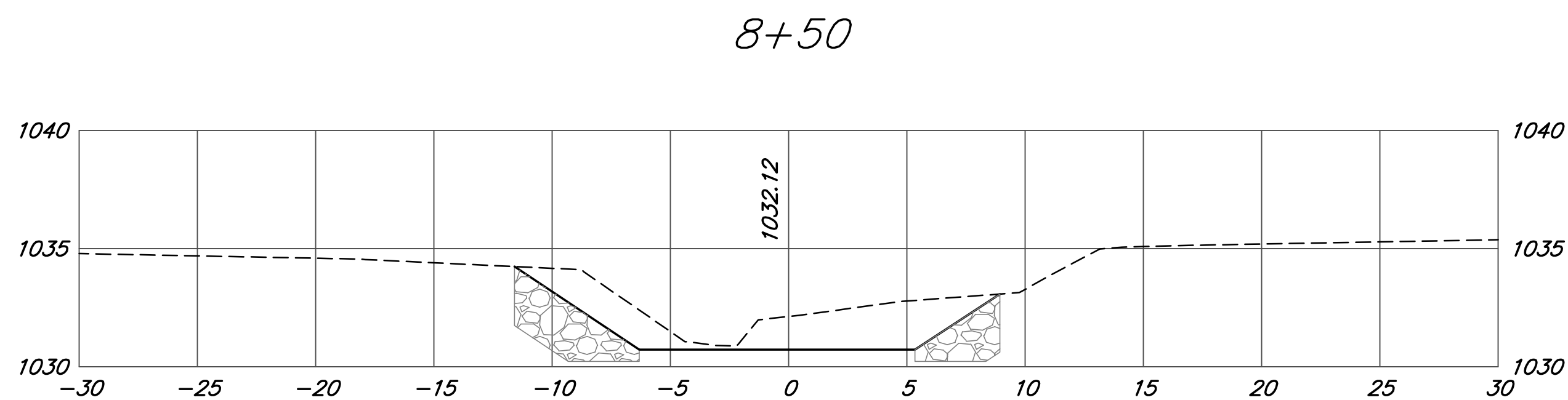
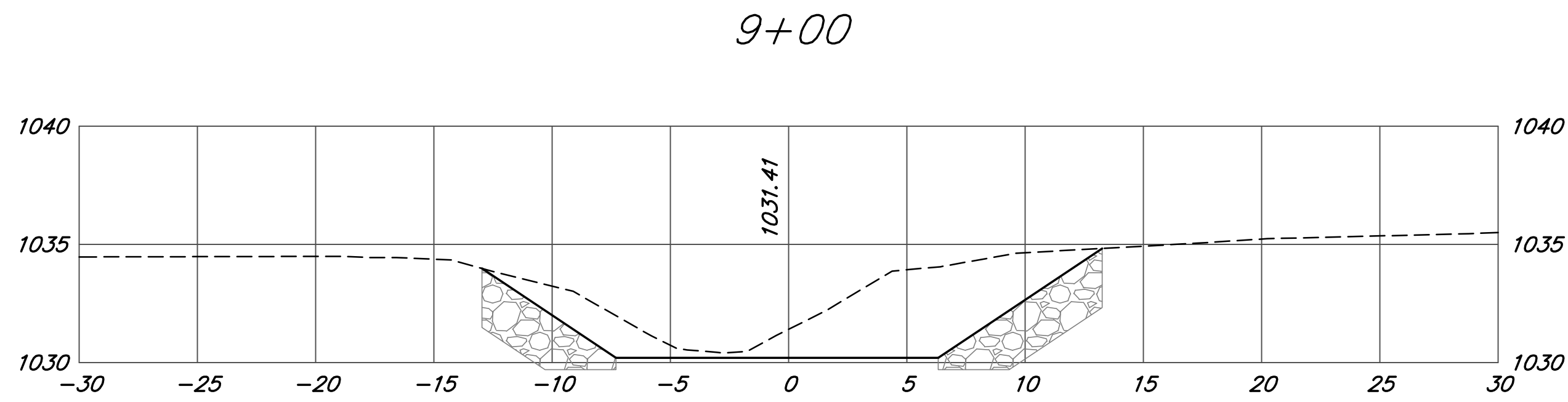
STATE OF OHIO
THOMAS
CAPPELLO
NO. 55466
REGISTERED
PROFESSIONAL ENGINEER

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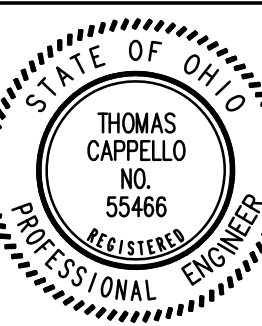
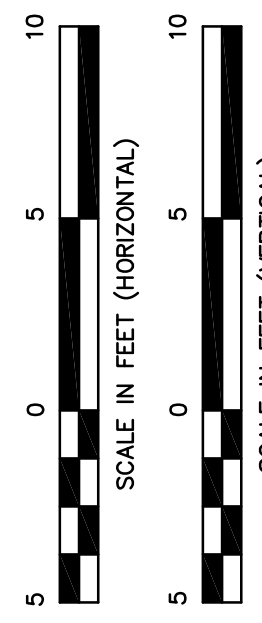
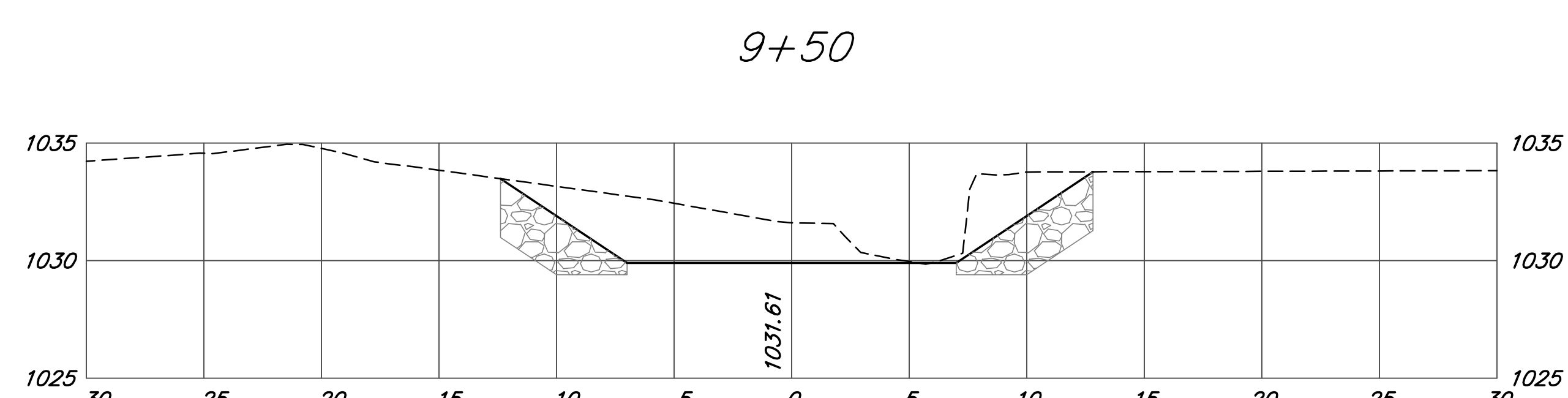
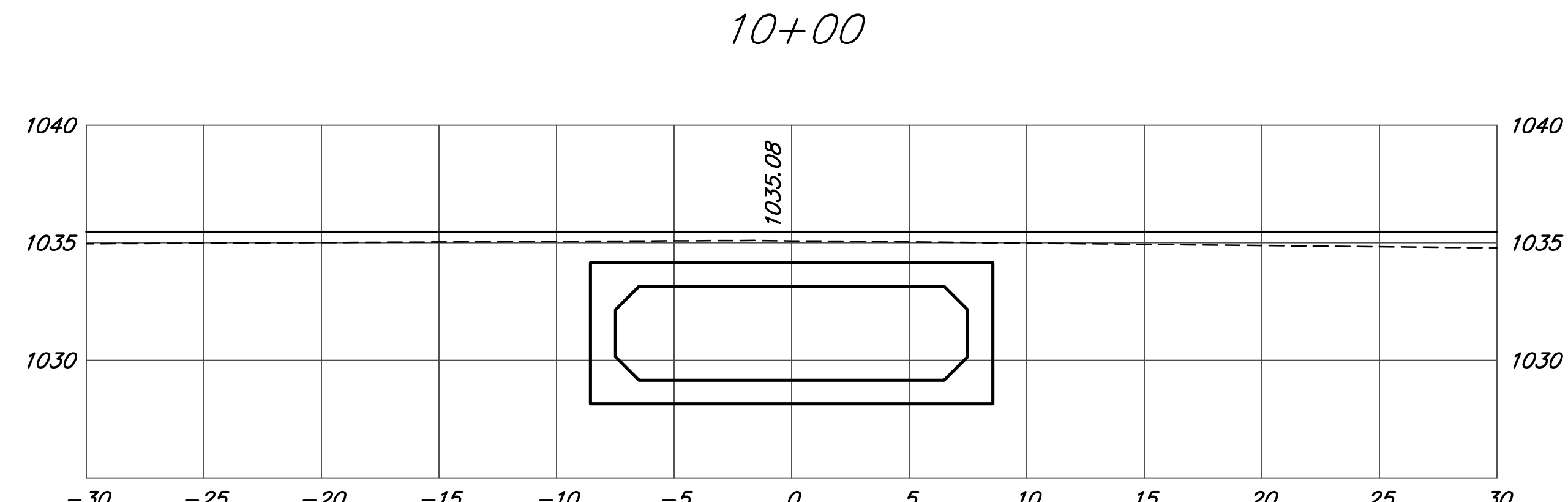
STEPHEN HOVANCSEK & ASSOCIATES, INC.
CONSULTING ENGINEERS AND PLANNERS
TWO MERIT DRIVE
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MAYFIELD VILLAGE, OHIO
**WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
NORTH WOODLANE DRIVE
ENHANCED FLOOD PLAN GRADING**

APRIL 2022
JOB No. 20-102



ITEM 601: 30" THICK ROCK CHANNEL PROTECTION, TYPE B WITH FABRIC FILTER, AS PER PLAN (NATURAL BOULDERS ONLY)



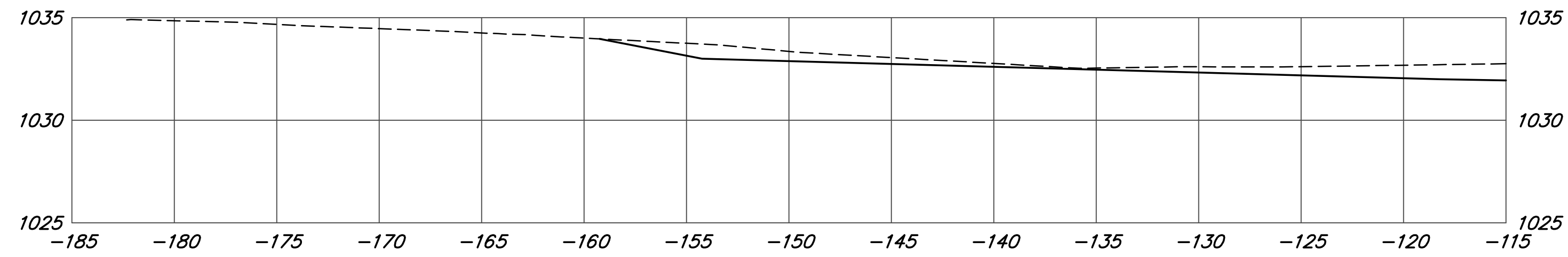
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STEPHEN HOVANCSEK & ASSOCIATES, INC.
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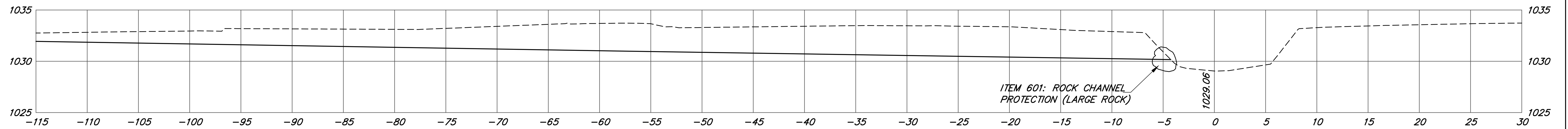
MAYFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
CROSS SECTIONS-STREAM
STATION 7+92.28 TO STATION 10+00

DATE: APRIL 2022
JOB No. 20-102

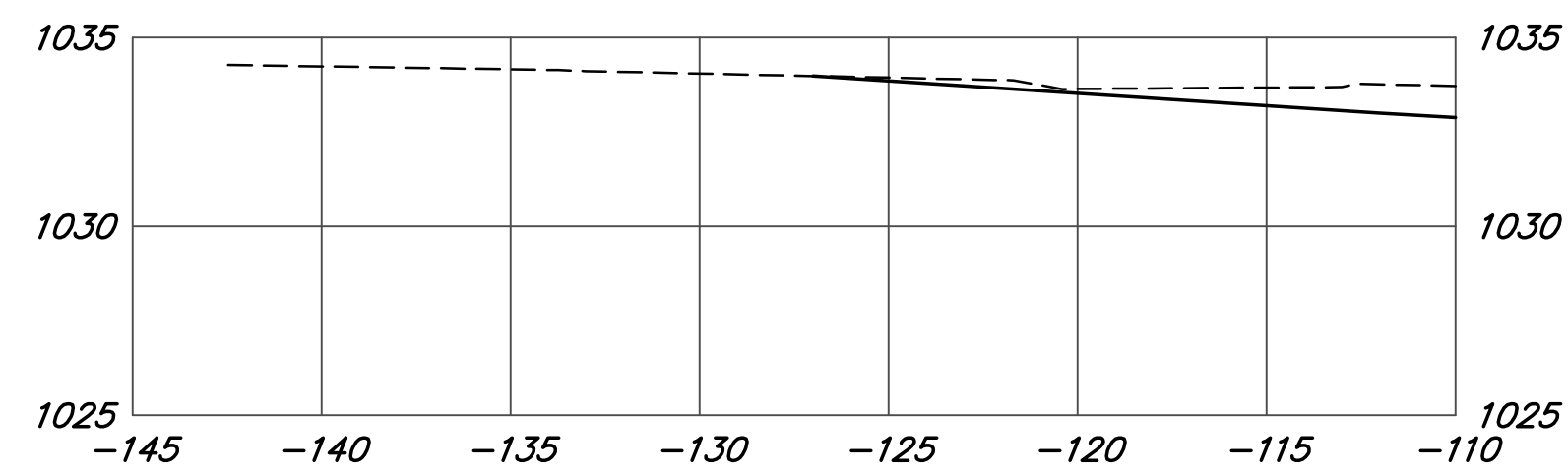
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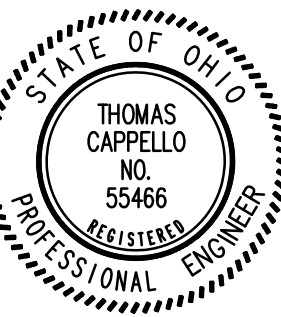
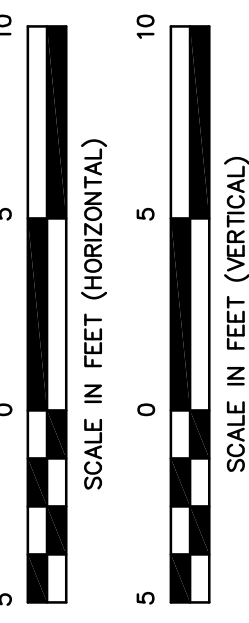
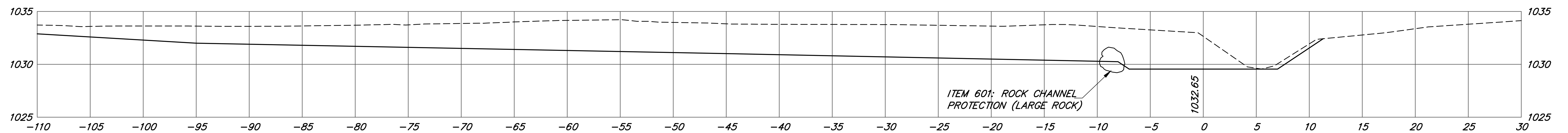
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10+50 (CONT.)



10+50

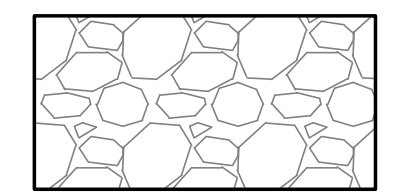
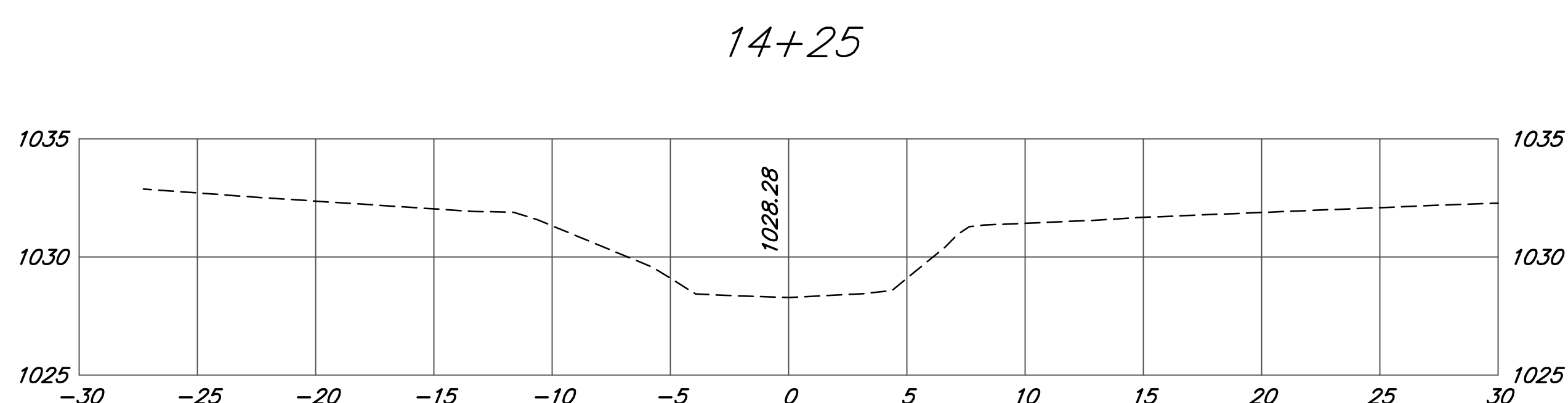
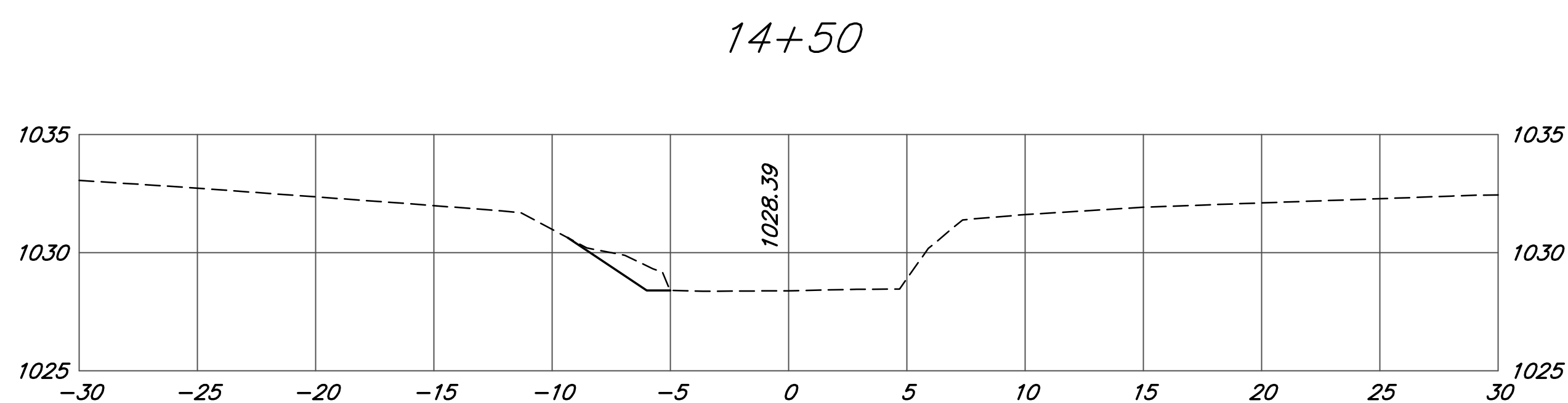
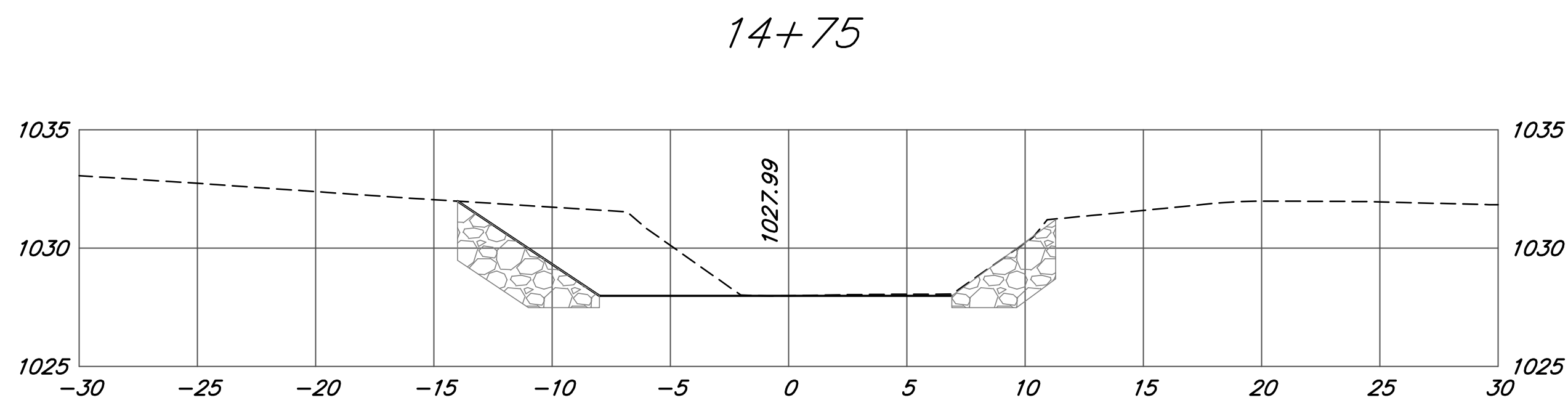
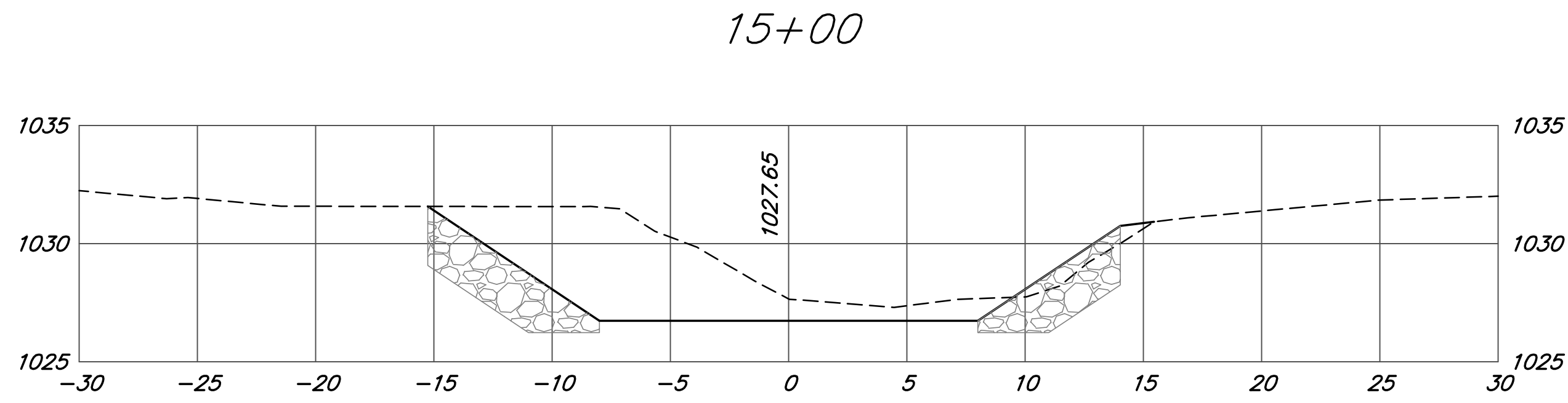
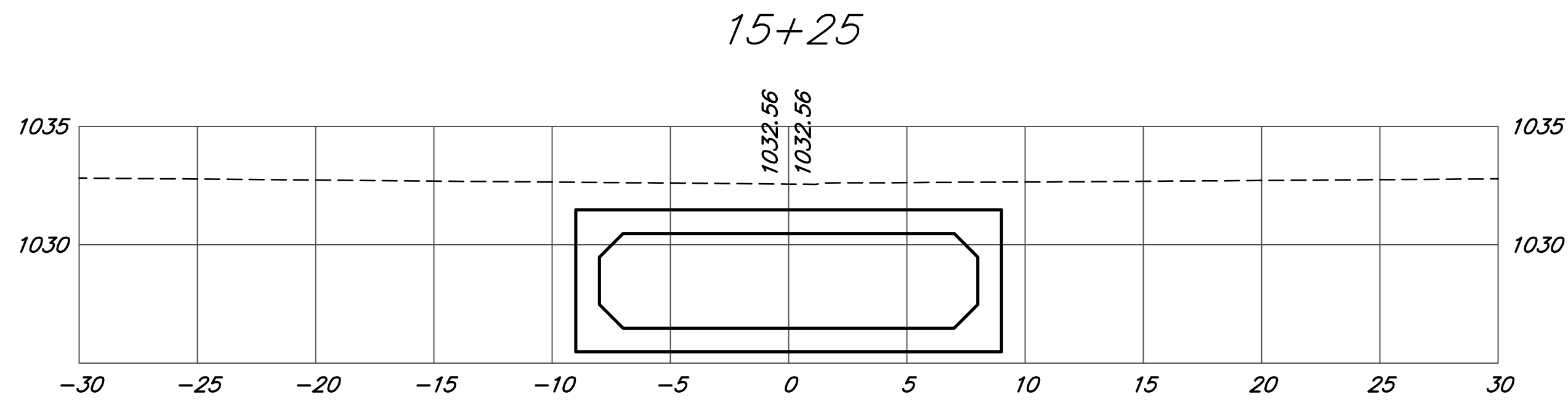


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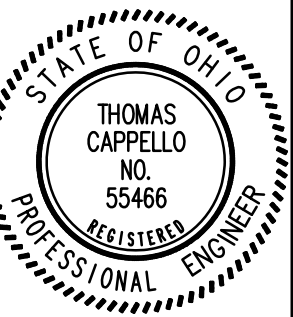
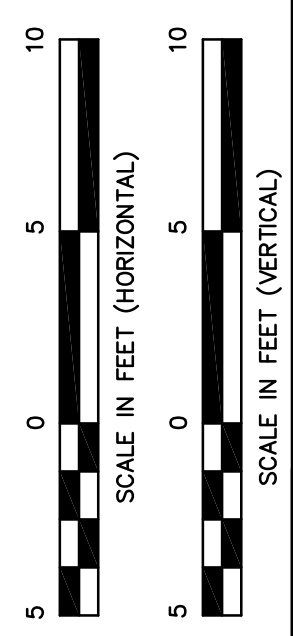
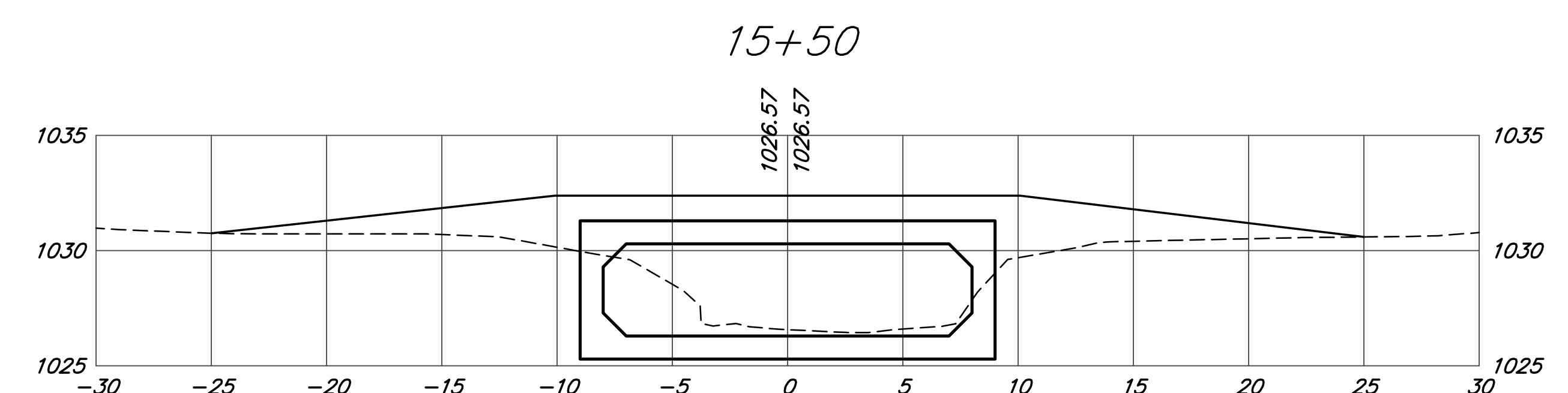
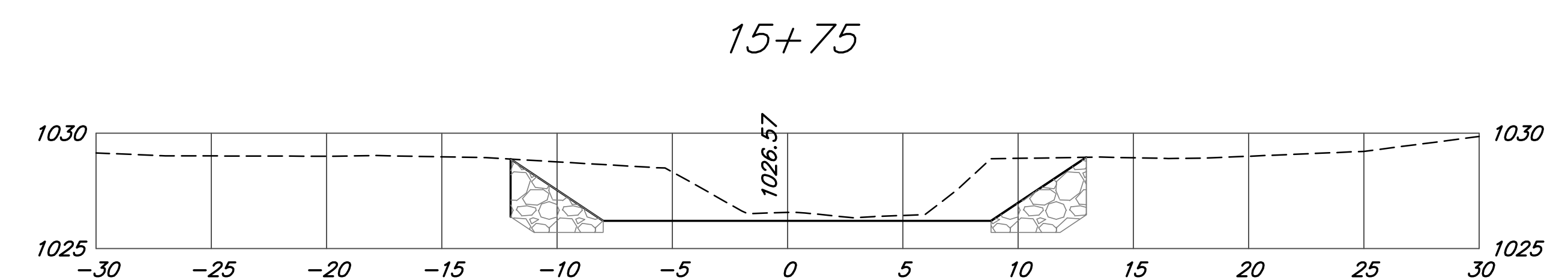
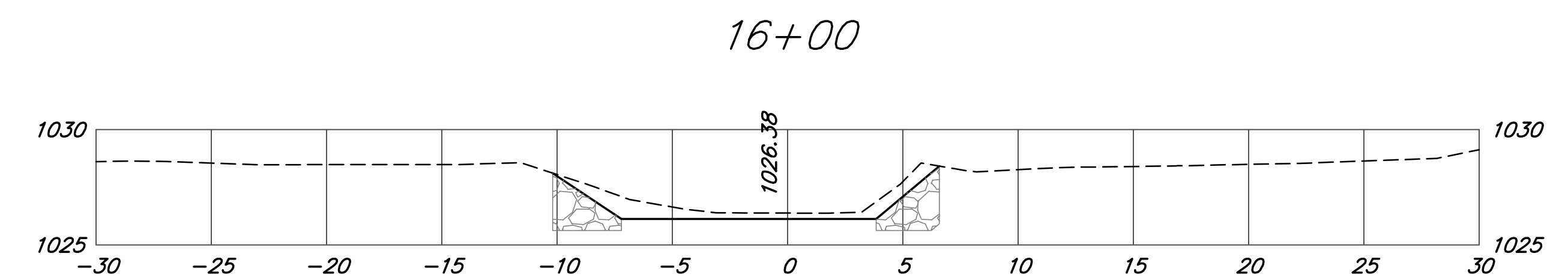
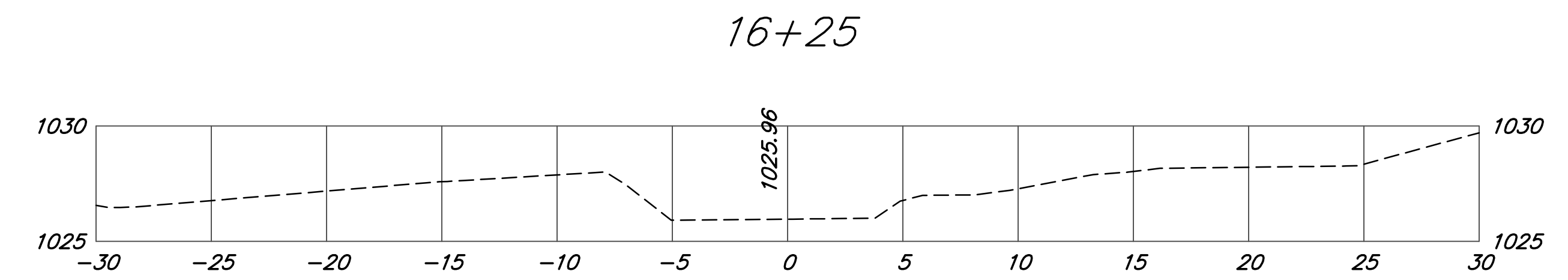
STEPHEN HOVANCSEK & ASSOCIATES, INC.
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MAYFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
CROSS SECTIONS-STREAM
STATION 10+50 TO STATION 11+00

DATE: APRIL 2022
 JOB No. 20-102



ITEM 601: 30" THICK ROCK CHANNEL PROTECTION, TYPE B WITH FABRIC FILTER, AS PER PLAN (NATURAL BOULDERS ONLY)

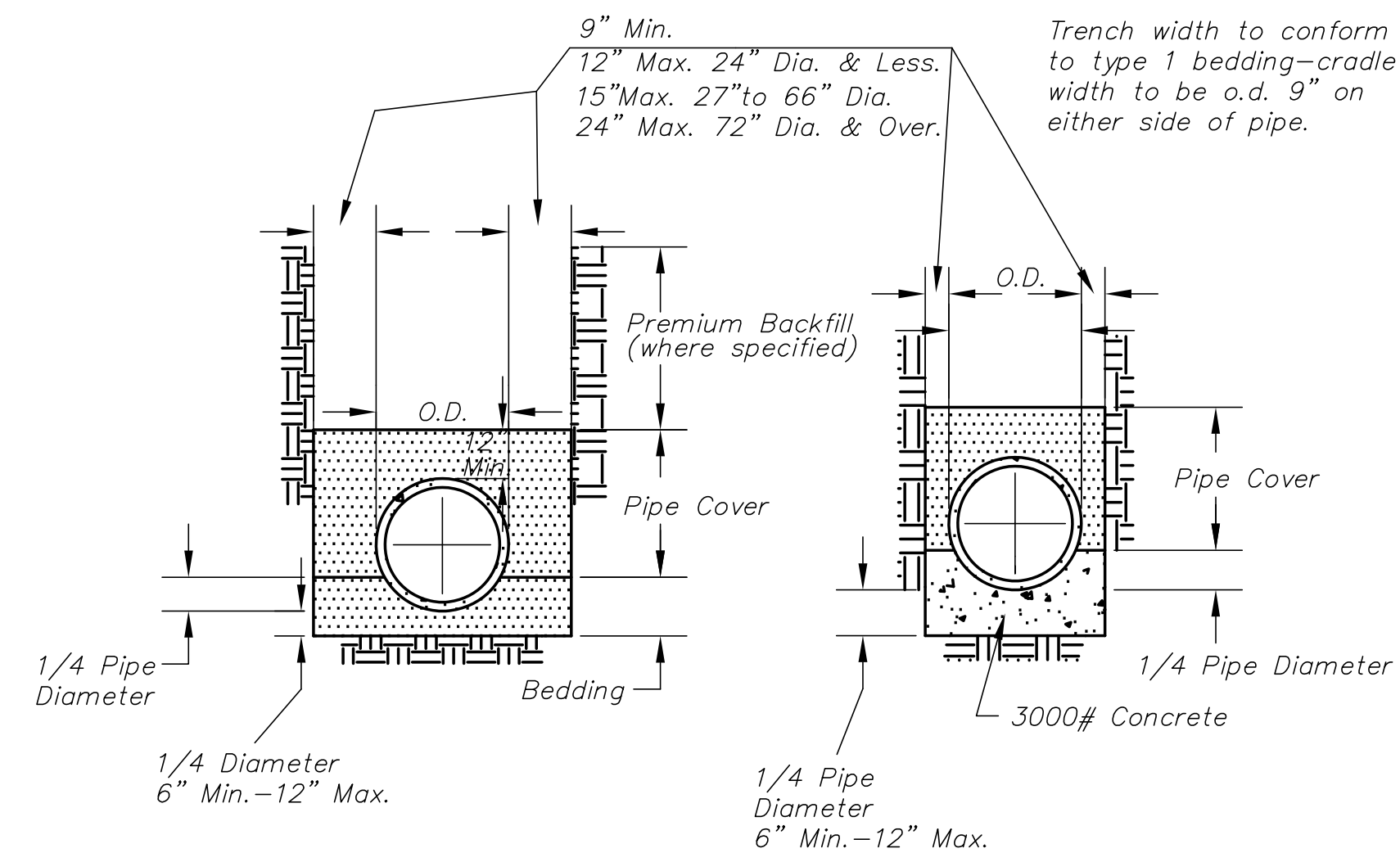


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STEPHEN HOVANCSEK & ASSOCIATES, INC.
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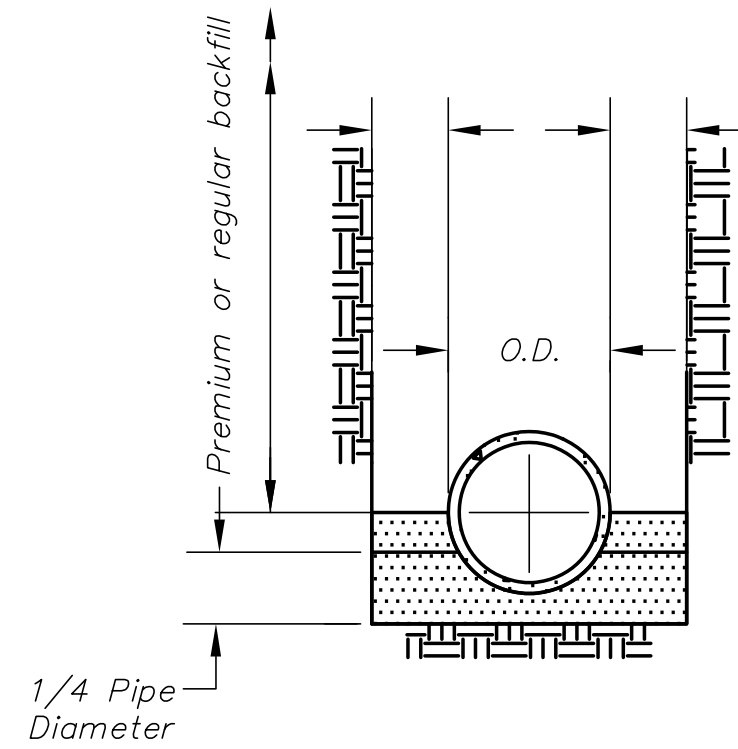
MAXFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
CROSS SECTIONS-STREAM
STATION 14+25 TO STATION 16+25

DATE: APRIL 2022
JOB No. 20-102

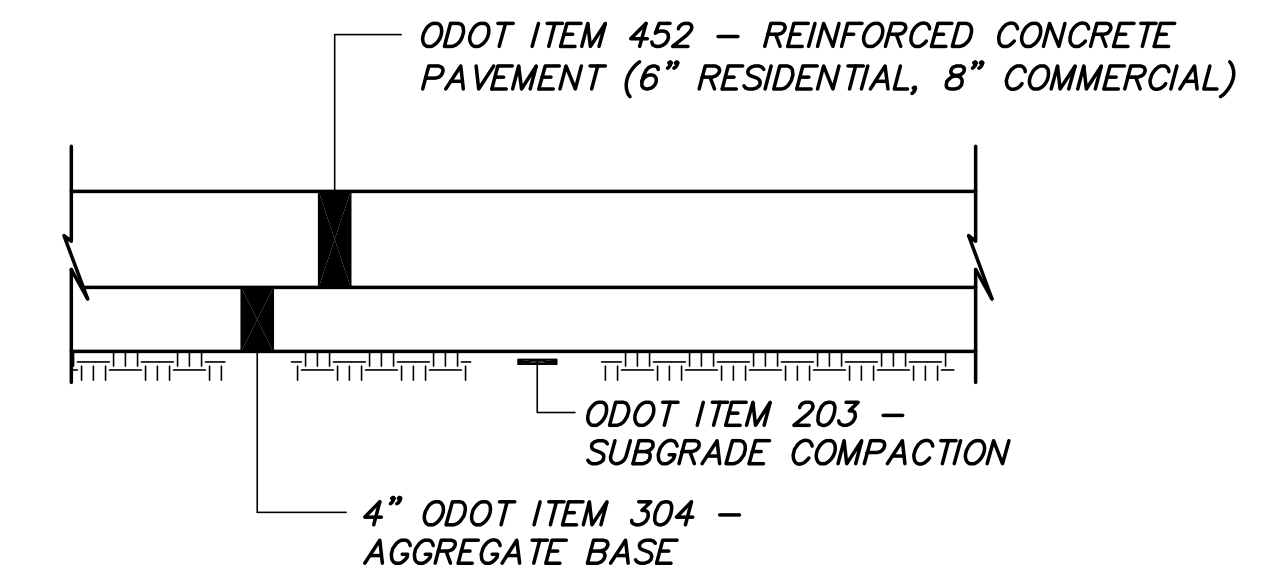


TYPICAL TRENCH DETAIL
(FLEXIBLE PIPE)

TYPE II
TYPICAL TRENCH DETAIL
WITH CONCRETE CRADLE



TYPICAL TRENCH DETAIL
(FOR CONCRETE OR
DUCTILE IRON PIPE)



CONCRETE DRIVE APRON DETAIL

Premium Backfill shall consist of coarse interlocking aggregate no. 57, 6, 67, 68, 7, 78, or 8, 304, also limestone screenings.

Pipe Cover shall consist of coarse interlocking aggregate no. 57, 6, 67, 68, 7, 78, or 8.

Bedding shall consist of coarse interlocking aggregate no. 57, 6, 67, 68, 7, 78, or 8 for 60" or smaller diameter pipe, for 66" or larger diameter pipe no. 4 aggregate may also be used.

Notes:

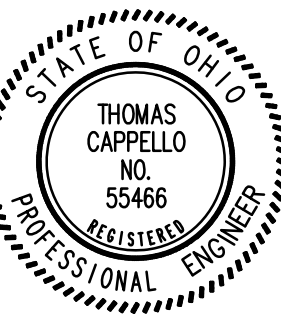
Lateral connections to have a minimum bedding depth of 3" coarse aggregate.

Bedding pipe cover & backfill shall consist of crushed limestone only.

The gradation for premium backfill shall be equal to or larger than the gradation used for the pipe cover.

No. 8 stone shall be used for pipe bedding & cover when PVC profile wall pipe is used.

TYPICAL TRENCH DETAILS
N.T.S.



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MAYFIELD VILLAGE, OHIO
**WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
MISCELLANEOUS DETAILS**

APRIL 2022
JOB No. 20-102

CLEVELAND DIVISION OF WATER NOTES FOR NEW WATER MAIN INSTALLATION

CONTRACTOR IS TO ABIDE BY THE MOST CURRENT VERSION OF THE CLEVELAND DIVISION OF WATER NOTES AND DETAILS. THE MOST UP-TO-DATE VERSION CAN BE FOUND AT WWW.CLEVELANDWATER.COM.

GENERAL:

- ALL WATER WORK REQUIRED, WHETHER SHOWN ON THE PLANS OR AS DIRECTED BY THE CLEVELAND DIVISION OF WATER, SHALL BE AT THE EXPENSE OF THE PROJECT.
- THE INFORMATION SHOWN ON THE CLEVELAND DIVISION OF WATER'S SUMMARY OF WORK/CHARGE LETTER AND STRIP MAPS ARE TAKEN FROM EXISTING AVAILABLE RECORDS, AND THEIR ACCURACY IS NOT GUARANTEED.
- CALL THE INSPECTION AND ENFORCEMENT UNIT AT 216-664-2342 TO SCHEDULE A PRECONSTRUCTION MEETING. THE OPERATION OF ANY VALVE OR ALTERATION OF ANY PART OF THE WATER SYSTEM BY CONTRACTORS OR THEIR EMPLOYEES IS PROHIBITED WITHOUT THE SUPERVISION OF THE CLEVELAND DIVISION OF WATER INSPECTOR.
- THE MUNICIPALITY SHALL REQUIRE THAT THE PROJECT'S PROFESSIONAL ENGINEER OBTAIN ACTUAL FIELD MEASUREMENTS OF THE MAIN DURING INSTALLATION AND SHALL FURNISH THE CWD INSPECTOR WITH RECORD PRINTS IN A FORM ACCEPTABLE TO THE DIVISION OF WATER. THE CLEVELAND DIVISION OF WATER WILL REQUIRE THE DELIVERY AND ACCEPTANCE OF TWO COPIES OF RECORD (AS BUILT) PRINTS BEFORE THE PRESSURE TEST AND CHLORINATION OF THE MAIN.
- FOR THE PURPOSES OF CHLORINATION AND BACTERIOLOGICAL TESTING OF THE WATER MAINS THE CONTRACTOR SHALL PROVIDE AND INSTALL, AT EACH OF THE CHLORINATION PIT LOCATIONS SHOWN AND AT OTHER LOCATIONS DETERMINED BY THE DIVISION OF WATER, FLUSHING/SAMPLING TAPS OF SIZES TO BE DETERMINED BY THE DIVISION OF WATER. CHLORINATION PITS SHALL BE SIX (6) FOOT SQUARE MEETING OSHA STANDARDS.
- A TWO YEAR WARRANTY, COMMENCING FROM THE DATE OF ACCEPTANCE OF THE FINAL CHLORINATION OF THE WATER MAIN INSTALLATION, SHALL BE PROVIDED BY THE BUILDER/DEVELOPER AND/OR CONTRACTOR FOR ALL WATER MAINS AND SERVICE CONNECTION WORK PERFORMED BY THE CONTRACTOR, INCLUDING RETAPS, SHOULD ANY LEAKS OCCUR AND REPAIRS BE REQUIRED DUE TO DEFECTIVE MATERIAL OR POOR WORKMANSHIP.
- USE BACKFILL MATERIAL AS SPECIFIED AND COMPACT SUFFICIENTLY IN THOSE AREAS WHERE EXISTING MAINS AND WATER SERVICE CONNECTIONS ARE EXPOSED. (SEE DIVISION OF WATER STANDARD DETAIL STD-001).
- ALL WATER MAINS AND APPURTENANCES THEREOF SHALL CONFORM WITH THE LATEST MATERIAL SPECIFICATIONS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE CONSTRUCTION AND STANDARD DETAILS OF THE CITY OF CLEVELAND, DIVISION OF WATER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING WATER MAINS AND APPURTENANCES THEREOF WHEN CONNECTING THE NEW WATER MAIN FOR THE HYDROSTATIC TEST. ALL REPAIRS TO DAMAGED EXISTING FACILITIES SHALL BE MADE BY THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE DIVISION OF WATER. (REFER TO THE ALTERNATE TEST DETAIL STD-002 AS NEEDED).
- ALL HYDROSTATIC PRESSURE TESTING SHALL BE DONE BY THE CONTRACTOR IN THE PRESENCE OF THE DIVISION OF WATER'S INSPECTOR. THE HYDROSTATIC TEST PRESSURE SHALL BE 75 PSI ABOVE THE STATIC PRESSURE PREVAILING AT THE SITE, BUT IN NO CASE LESS THAN 150 PSI. THE PRESSURE TEST SHALL BE FOR A DURATION OF TWO (2) HOURS WITH THE PRESSURE BEING MAINTAINED WITHIN 5 PSI OF THE REQUIRED TEST PRESSURE. SHOULD THE PRESSURE TEST FAIL THE CONTRACTOR SHALL FIND AND CORRECT THE DEFICIENCY(IES) TO THE SATISFACTION OF THE DIVISION OF WATER AND REPEAT THE TWO (2) HOUR PRESSURE TEST.

WATER MAINS:

- ALL PIPE, UNLESS OTHERWISE CALLED FOR, SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED HAVING PUSH-ON JOINTS WITH RADIALLY COMPRESSED RUBBER RING GASKET.

- ALL FITTINGS, UNLESS OTHERWISE CALLED FOR, SHALL BE APPROVED DUCTILE IRON, CLASS 350, CEMENT LINED OR FUSION BONDED EPOXY COATED. ALL FITTINGS AND PIPE CONNECTED TO FITTINGS SHALL BE RESTRAINED USING A "RETAINED" MECHANICAL JOINT CONFORMING TO THE MATERIAL AND PERFORMANCE REQUIREMENTS OF ANSI/AWWA C-110/A21.10 AND ANSI/AWWA C-111/A21.11, OR "COMPACT" FITTINGS IN ACCORDANCE WITH ANSI/AWWA C-153/A21.53, EXCEPT FOR ANCHOR TEES, REDUCERS OR OTHER SPECIAL CIRCUMSTANCES WHEN DIRECTED BY CLEVELAND DIVISION OF WATER, ALL FITTINGS ARE TO HAVE BELL ENDS.
- ALL BOLTS AND NUTS ON ALL "RETAINED" MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".
- WHERE SHOWN ON THE PLANS, OR WHEN OTHERWISE CALLED FOR, PIPE AND FITTINGS SHALL HAVE AN APPROVED "TYPE I" OR "TYPE II" BOLTLESS RESTRAINED PUSH-ON JOINTS TO THE LIMITS SHOWN ON THE DRAWINGS.
- AT THE END OF EACH WORKDAY, THE CONTRACTOR SHALL PLUG ALL OPEN PIPE ENDS WITH WATER TIGHT PLUGS AS PER THE "PREVENTATIVE AND CORRECTIVE MEASURES DURING CONSTRUCTION" SECTION OF THE MOST CURRENT REVISION OF AWWA C-651 AS TO PREVENT THE INFILTRATION OR INTRUSION OF ANY FOREIGN OBJECTS OR MATERIALS. DATE STAMPED DIGITAL PHOTOS SHALL BE PROVIDED FOR EACH WORKDAY DEMONSTRATING THAT PROPER AWWA C-651 METHODS WERE USED TO PLUG ALL OPEN WATER MAIN ENDS. EACH PHOTO SHALL CLEARLY IDENTIFY THE STATION AT WHICH THE PIPE IS PLUGGED. THE STATIONING SHALL BE SHOWN BY THE USE OF A STATION MARKER PLACED AT THE PLUGGED PIPE END.

PHOTOS SHALL BE SUBMITTED ON A DAILY BASIS UNLESS OTHERWISE DEFINED BY THE CWD INSPECTOR OR ENGINEER. ALL PHOTOS TAKEN OVER THE COURSE OF THE PROJECT SHALL BE SUBMITTED BY THE CONTRACTOR AS PART OF THE AS-BUILT SUBMITTALS. AS-BUILTS SHALL BE CONSIDERED INCOMPLETE WITHOUT SAID COLLECTION OF DIGITAL PHOTOS.

HYDRANTS:

- IN ALL HYDRANT INSTALLATIONS THE CONTRACTOR SHALL FACE ALL HYDRANT'S 4" (STEAMER) NOZZLE TOWARD THE PAVEMENT PRIOR TO TESTING AND CHLORINATION OF WATER MAINS. CONTRACTOR SHALL CONSULT WITH THE LOCAL MUNICIPALITY'S ENGINEERING OR SERVICE DEPARTMENT TO OBTAIN HYDRANT MODEL AND NOZZLE THREAD REQUIREMENTS IF NOT INDICATED ON THE APPROVED PLANS.
- ALL VALVES SHALL BE AN APPROVED MODEL RESILIENT SEATED GATE VALVES AS PER THE MOST CURRENT VERSION OF AWWA C509 OR C515.

CONNECTIONS:

- WATER CONNECTIONS SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY AND ARE NOT PART OF THE WATER MAIN APPROVAL. ADDITIONAL PERMITS FOR SERVICE CONNECTIONS MUST BE OBTAINED FROM THE DIVISION OF WATER PRIOR TO INSTALLATION OF ANY PORTION OF THE SERVICE CONNECTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR PERMITS FOR ALL SIZE WATER SERVICE CONNECTIONS BEFORE PERFORMING ANY WORK. THE AMOUNT OF THE CHARGES CAN BE OBTAINED FROM THE DIVISION OF WATER, PERMITS AND SALES SECTION AT 216-664-2444 X5203.
- ONE INCH SERVICE CONNECTIONS SHALL BE PERMITTED TO SERVICE HOMES BASED ON THE FOLLOWING CRITERIA:
 - PEAK FLOW DEMANDS DO NOT EXCEED 25 GPM FOR AN INDIVIDUAL HOME/UNIT. INCLUSIVE OF ALL USAGE (FIRE, DOMESTIC AND/OR IRRIGATION) AND
 - LENGTH OF ONE INCH CONNECTION DOES NOT EXCEED 75 FEET AS MEASURED FROM THE MAIN TO THE POINT OF ENTRY INTO THE PROPOSED HOME/UNIT.

ANY SERVICE REQUESTS DIFFERING FROM THE STATED CRITERIA SHALL REQUIRE THE SUBMITTAL OF A COMPLETE WATER SERVICE APPLICATION. PEAK DEMANDS ARE TO BE ASSESSED ON APPLICATION AND SETBACKS ARE TO SHOWN ON AN ACCOMPANYING SITE PLAN. SITE PLANS SHALL SHOW WATER METER VAULTS IN THE RIGHT OF WAY OR IN AN EASEMENT CONTIGUOUS TO THE RIGHT OF WAY FOR ANY HOMES/UNITS WITH SETBACKS GREATER THAN 150 FEET. EASEMENTS ARE TO BE PROVIDED WITH THE SERVICE CONNECTION APPLICATION SUBMITTAL.

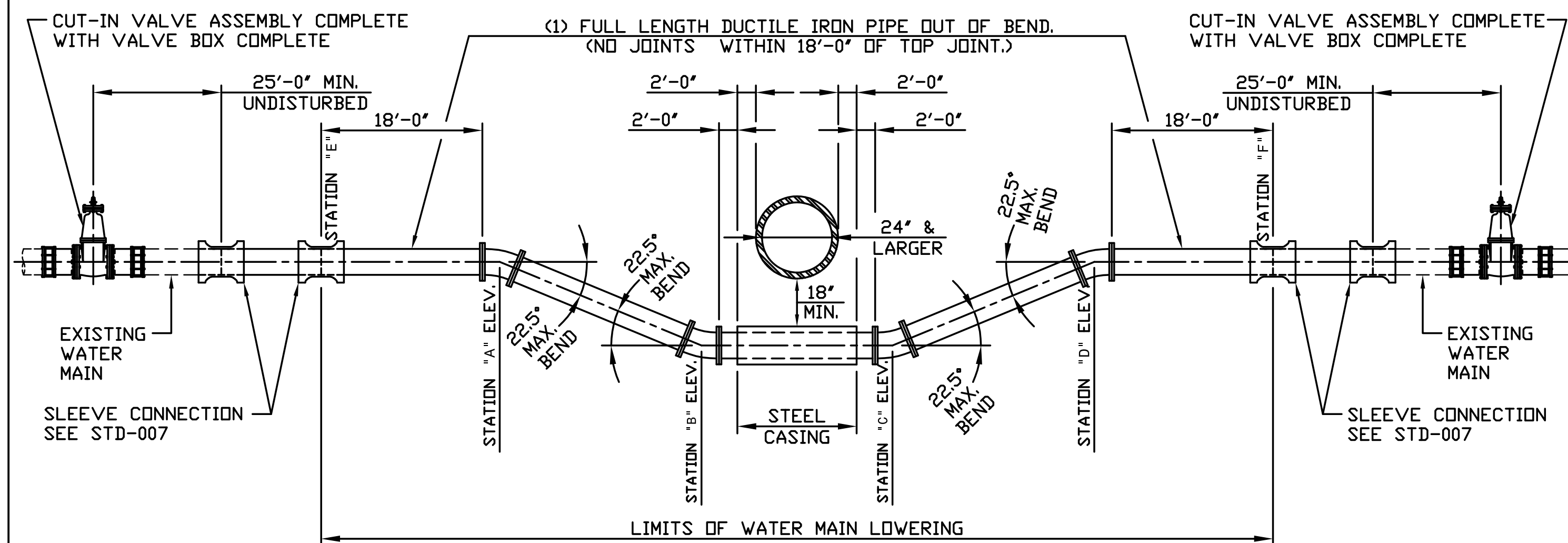
- ALL WATER MAIN CURB VALVE BOXES & METER VAULTS WILL BE INSTALL IN GRASS AREAS WHEN POSSIBLE.

EMERGENCIES:

- IF A WATER MAIN OR SERVICE CONNECTION BREAK OCCURS DURING CONSTRUCTION AND EMERGENCY ASSISTANCE IS REQUIRED, PLEASE NOTIFY THE DIVISION OF WATER AT 216-664-3060.

DATE: 5-20-2008 BY: RSK STD-011A

DATE: 5-20-2008 BY: RSK STD-011B



NOTE:

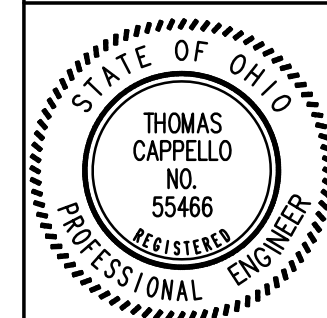
- WATER MAIN SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PUSH-ON JOINT PIPE WITH RETAINED MECHANICAL JOINT DUCTILE IRON CLASS 350, CEMENT LINED OR FUSION BONDED EPOXY COATED RETAINED MECHANICAL JOINT FITTINGS.
- WHERE DEPTH OF LOWERING REQUIRES AN INTERMEDIATE JOINT BETWEEN STATIONS "A" & "B" AND/OR "C" & "D" THE ENTIRE LOWERING SHALL BE MADE WITH DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PIPE AND DUCTILE IRON CLASS 350, CEMENT LINED FITTINGS ALL HAVING BOLTLESS RESTRAINED PUSH-ON JOINTS, TYPE II.
- WHERE LENGTH OF LOWERING UNDER OBSTRUCTION(S) REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN STATIONS "B" & "C", THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE II.
- WHERE EXISTING WATER MAIN IS SIX (6)-INCHES IN DIAMETER THE PIPE LOWERING SHALL BE MADE WITH PIPE AND FITTINGS NO LESS THAN EIGHT (8)-INCH IN DIAMETER WITH REDUCERS INSTALLED AT STATIONS "E" AND "F". THE REDUCERS SHALL BE RETAINED MECHANICAL JOINT WITH SMALL END OF REDUCER PLAIN END FOR CONNECTION WITH SLEEVES OR COMPRESSION COUPLINGS.
- ALL EXISTING WATER SERVICE CONNECTIONS BETWEEN THE CUT-IN-VALVE ASSEMBLIES SHALL BE MAINTAINED BY "TEMPORARY SERVICE CONNECTIONS" PROVIDED AND MAINTAINED BY THE CONTRACTOR.
- EXISTING WATER SERVICE CONNECTIONS NEEDED TO BE RETAPPED AND RECONNECTED WILL ONLY BE PERMITTED BETWEEN STATIONS "A" AND "E" AND STATIONS "D" AND "F". NO RETAPPING OF SERVICE CONNECTIONS WILL BE ALLOWED BETWEEN STATIONS "A" AND "D".

DETAIL FOR WATER MAIN LOWERING UNDER OBSTRUCTIONS 24" & LARGER IN DIAMETER OR WIDTH FOR "EXISTING CONSTRUCTION"

STD-L03

- NOT TO SCALE -

DATE: 3-4-2002 BY: RSK



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STEPHEN HOVANCSEK & ASSOCIATES, INC.
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 PH: (216) 731-6255 FAX: (216) 731-4483

MAYFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
 MISCELLANEOUS DETAILS

APRIL 2022
 JOB No. 20-102

*CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS.

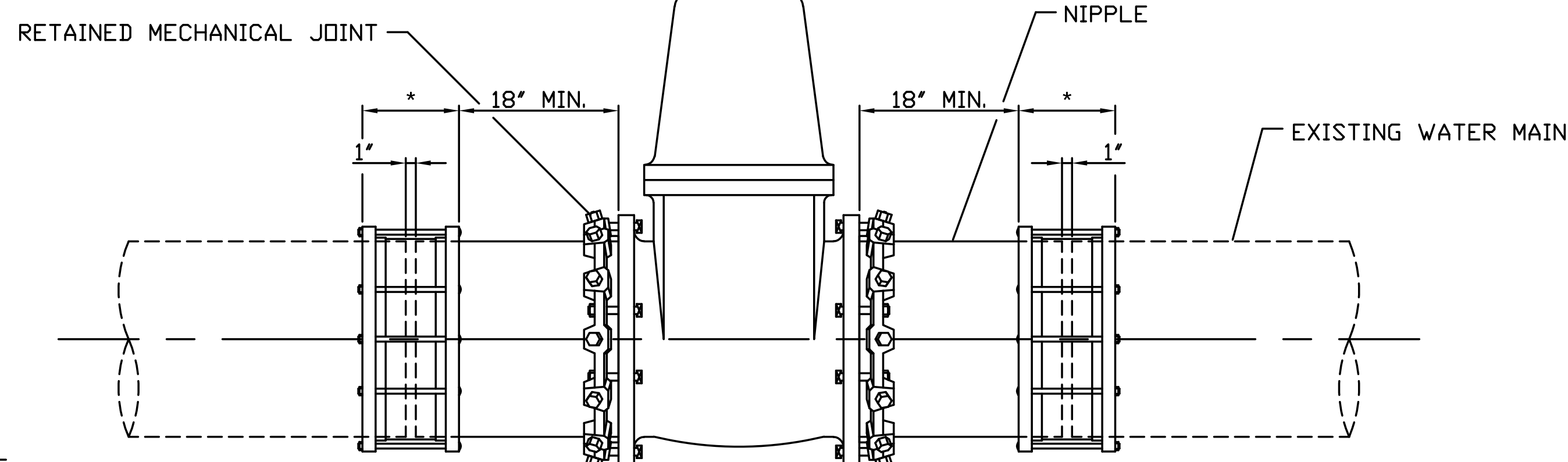
ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

THE DIVISION OF WATER WILL DETERMINE THE FIELD LOCATION OF THE CUT-IN-VALVE ASSEMBLY. THE DIVISION OF WATER WILL ALSO SET THE TIME OF INSTALLATION OF THE CUT-IN-VALVE ASSEMBLY.

THE CONTRACTOR SHALL DO ALL PIPE CUTTING AND INSTALLATION. HOWEVER, THE INSTALLATION OF THE CUT-IN-VALVE ASSEMBLY SHALL BE DONE UNDER THE SUPERVISION OF THE DIVISION OF WATER.

C.W.D. SQUARE HEAD RETAINED MECHANICAL JOINT BELL END GATE VALVE WITH VALVE BOX COMPLETE. (VALVE BOX NOT SHOWN HERE FOR CLARITY)

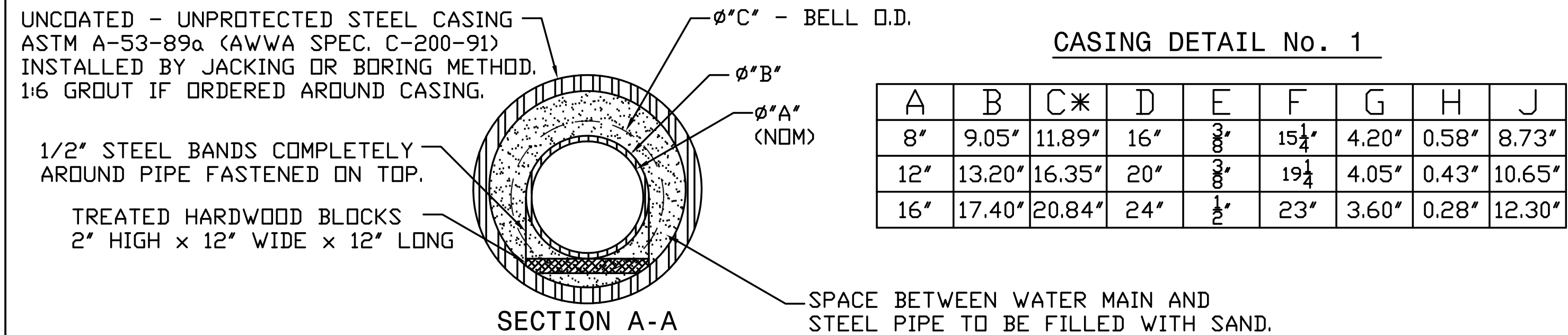
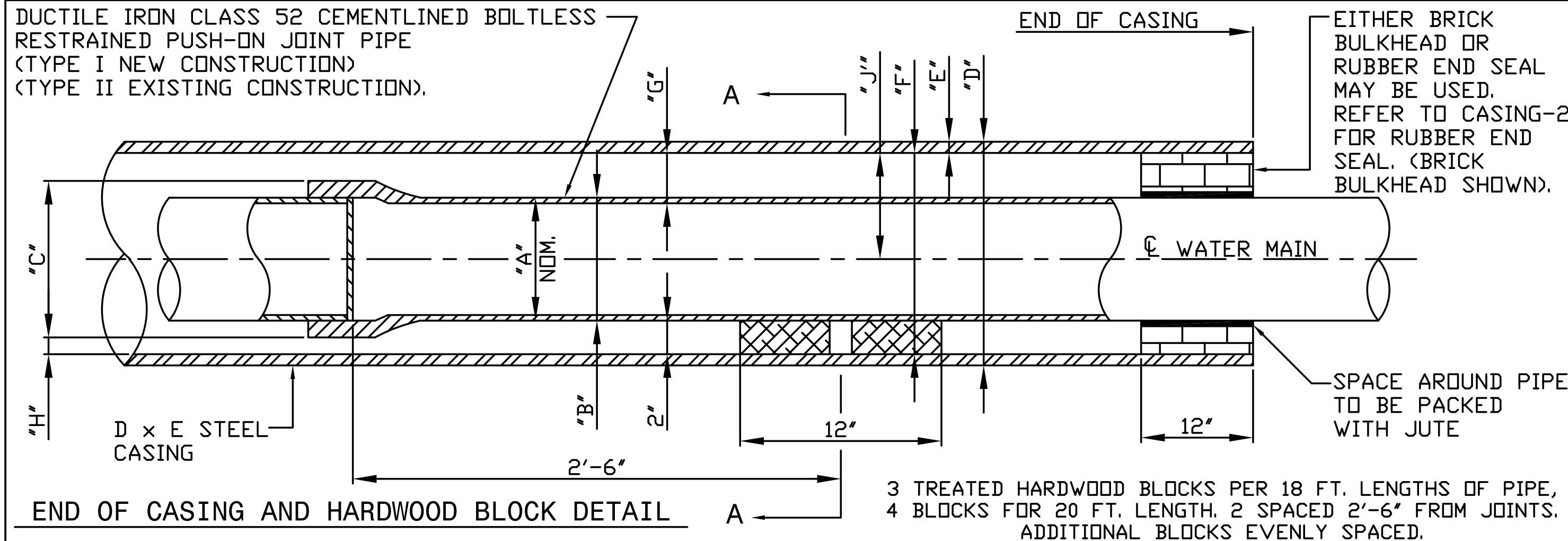
CUT-IN-VALVE DETAIL
- NOT TO SCALE -



NOTE:
BEFORE CUTTING EXISTING WATER MAIN, THE NIPPLES SHALL BE CONNECTED TO THE MECHANICAL JOINT BELL END GATE VALVE. AFTER CUTTING PIPE, FINAL CONNECTIONS SHALL BE MADE WITH COUPLINGS/SOLID SLEEVES AS SPECIFIED.

STD-005

DATE: 10-1-97 BY: RSK

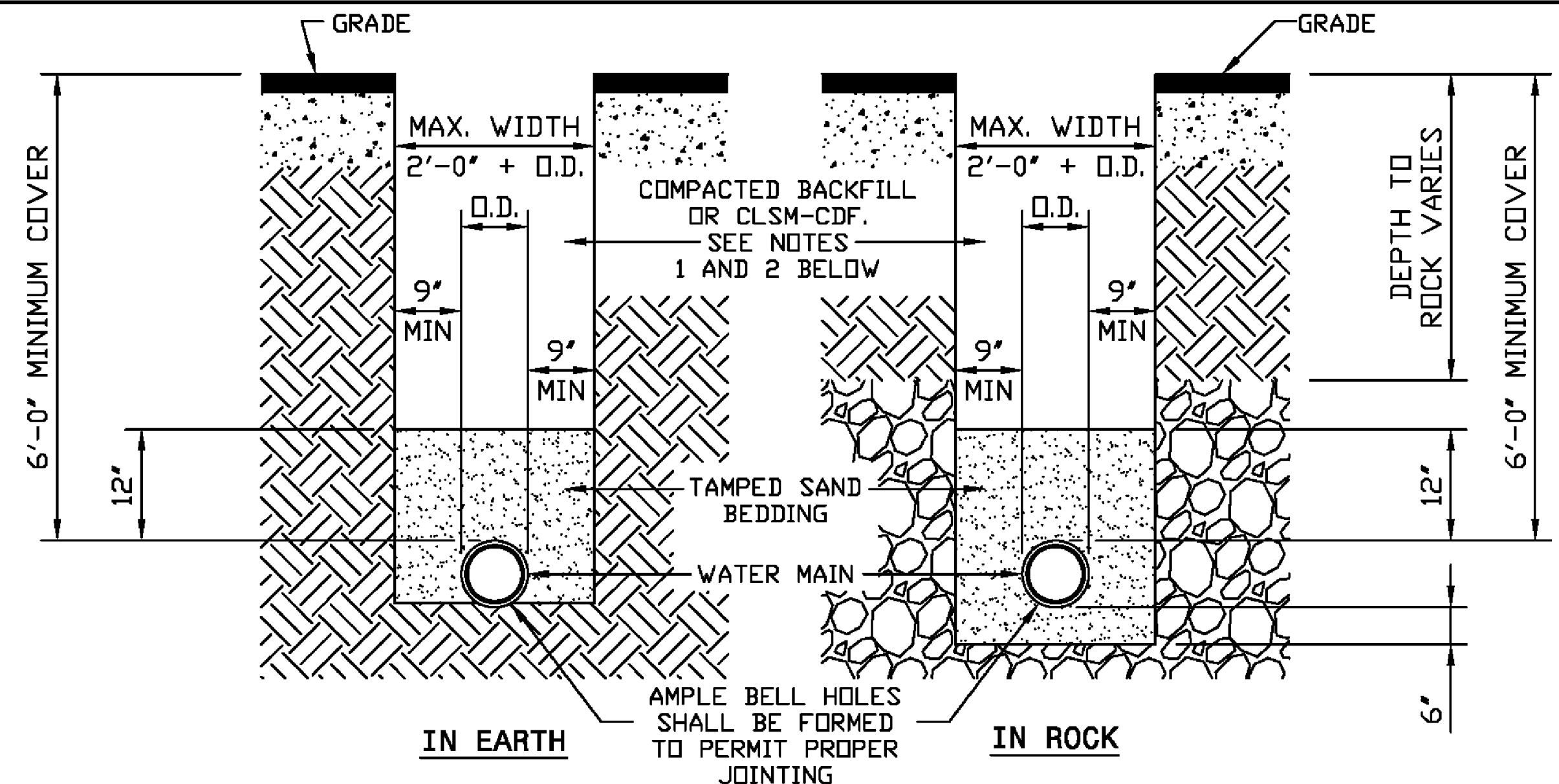


NOTES:
1. CONTRACTOR'S FAILURE TO MAINTAIN THE CASING PIPE ON THE LINE AND GRADE AS SHOWN OR DIRECTED, RESULTING IN THE USE OF ADDITIONAL PIPE AND/OR FITTINGS TO MAKE CONNECTIONS TO EXISTING WATER MAIN WILL BE CAUSE FOR REJECTION OF CASING INSTALLATION.

*2. OUTSIDE DIAMETER OF BELL OF BOLTLESS RESTRAINED PIPE MAY VARY WITH MANUFACTURE, THEREFORE, CONTRACTOR SHALL VERIFY O.D. OF BELL AND INCREASE SIZE OF STEEL CASING AS REQUIRED.

STD-015

DATE: 10-1-97 BY: RSK

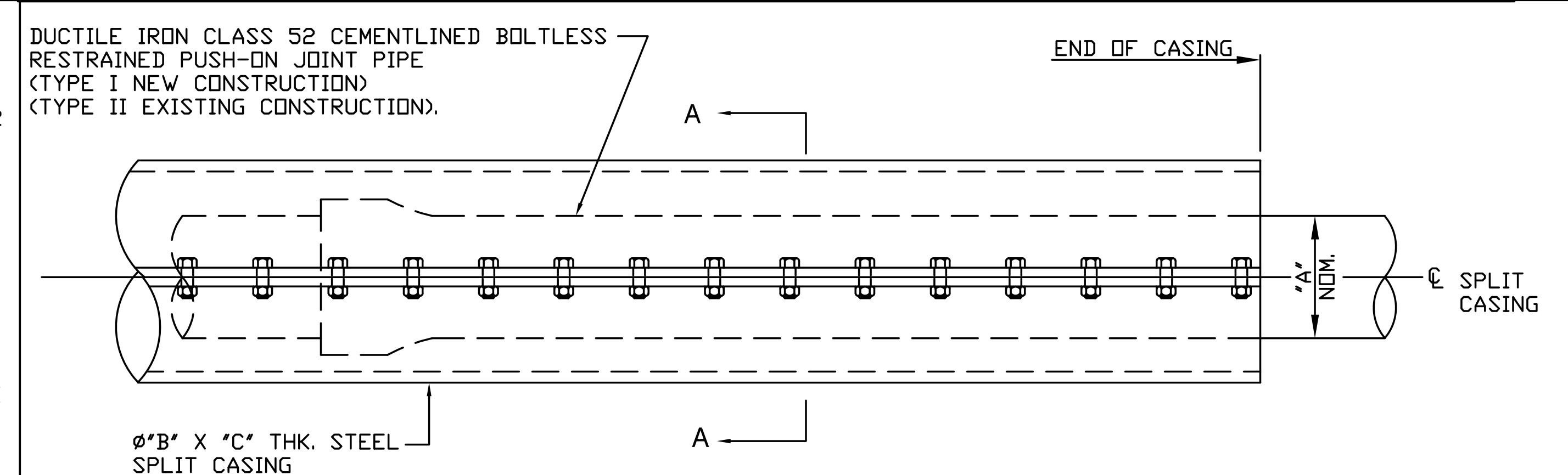


WATER MAIN TRENCH DETAILS
- NOT TO SCALE -

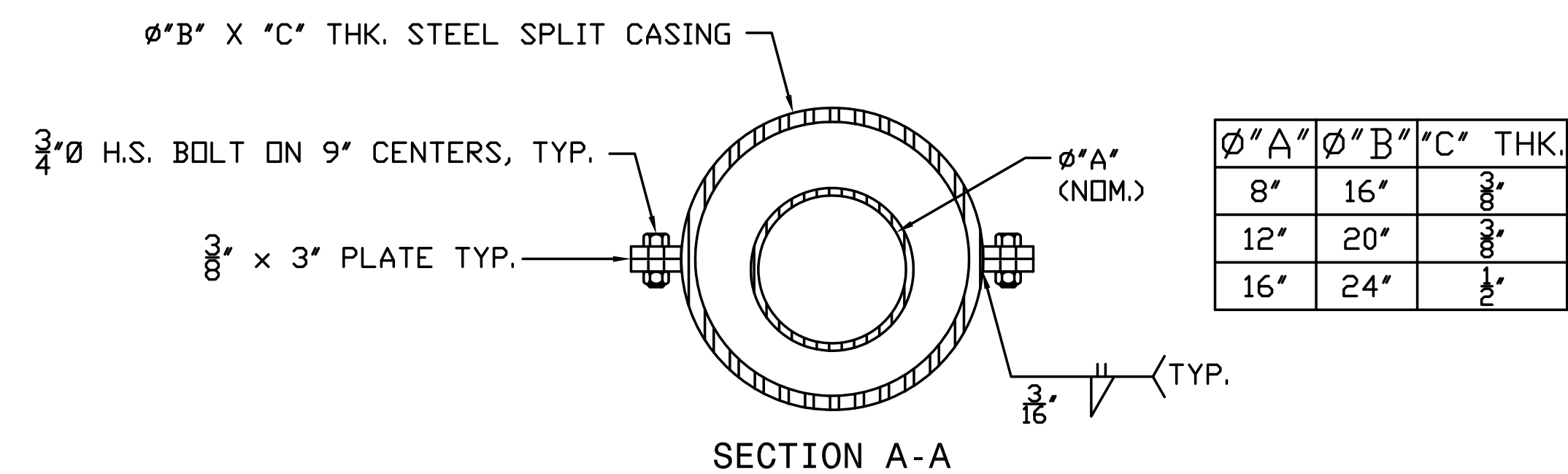
NOTES:
1) PREMIUM BACKFILL CONSISTING OF CONTROLLED LOW STRENGTH MATERIAL - CONTROLLED DENSITY FILL (CLSM-CDF) "FLOWABLE FILL" IS REQUIRED:
A) UNDER ALL EXISTING OR FUTURE PAVEMENTS, SIDEWALKS AND DRIVES
B) AT ALL LOCATIONS WITHIN THE CITY OF CLEVELAND CORPORATION LIMITS
C) AS SPECIFIED IN LOCAL MUNICIPALITIES SERVED BY CWD (SEE LOCAL REQUIREMENTS)
2) WHEN PREMIUM BACKFILL IS REQUIRED BY THE LOCAL MUNICIPALITY FOR CASES OTHER THAN THOSE LISTED IN NOTE 1 ABOVE, IT SHALL BE LIMESTONE GRADED PER ODOT 304.02 OR ODOT 411. NO SLAG IS PERMITTED.
3) CONTRACTOR SHALL USE SPECIAL CARE IN PLACING THE SAND BEDDING, SO AS TO AVOID SCRAPING OF THE EXTERIOR COATING, INJURING THE PIPE, DISTORTING OR MOVING THE PIPE WHEN COMPACTING THE SAME. THE SAND BEDDING SHALL BE TAMPED IN SIX (6) INCH LAYERS, SIMULTANEOUSLY ON EACH SIDE OF THE PIPE, AND THOROUGHLY COMPACTED SO AS TO PROVIDE A SOLID BACKING AGAINST THE EXTERNAL SURFACE OF THE PIPE.
4) MINIMUM COMPACTION FOR ALL SAND BEDDING, BACKFILL AND PREMIUM BACKFILL SHALL BE 95% STANDARD PROCTOR.
5) PAVEMENT, SIDEWALK OR DRIVES TO BE INSTALLED IN ACCORDANCE WITH LOCAL MUNICIPALITY'S SPECIFICATIONS.

STD-001

DATE: 11-2-2009 BY:



SEE STD-015 & STD-016 FOR DETAILED CASING INFORMATION.

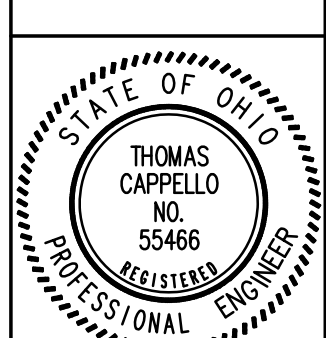


SPLIT CASING DETAIL

- NOT TO SCALE -

STD-021

DATE: 9-16-1999 BY: RSK



NO.	REVISIONS	DATE	BY
1			
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MAYFIELD VILLAGE, OHIO
WORTON PARK NEIGHBORHOOD
PHASE I - CULVERT REPLACEMENT PROJECT
MISCELLANEOUS DETAILS

APRIL 2022
JOB No. 20-102