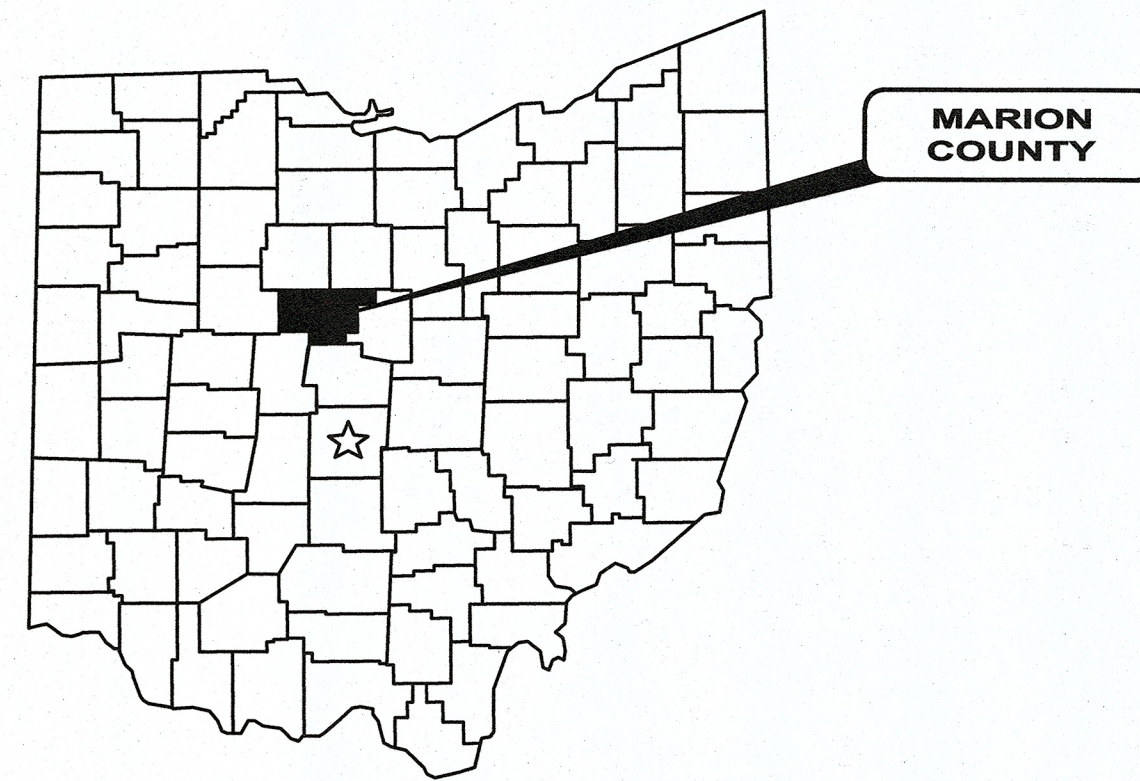


VILLAGE OF WALDO, OHIO

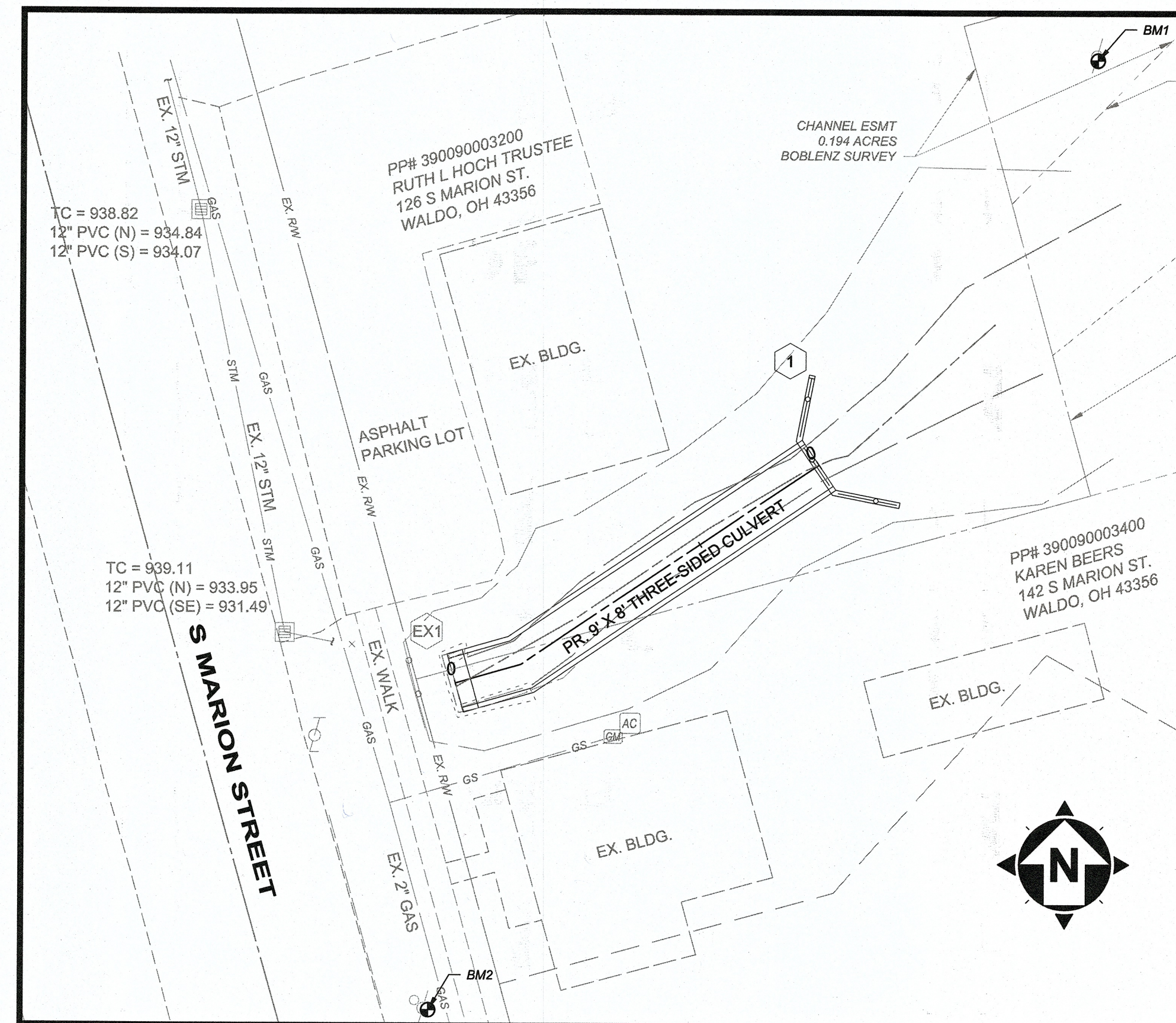
MARION STREET BRIDGE AND RETAINING WALL REPLACEMENT AND IMPROVEMENTS

MARION COUNTY, OHIO



DECEMBER, 2019

INDEX OF SHEETS	
SHEET TITLE:	SHEET NUMBER
TITLE SHEET	1
NOTES 1	2
NOTES 2	3
DETAILS	4
PLAN AND PROFILE	5
SITE PLAN	6
CULVERT DETAILS	C1-C6



LOCATION MAP
1" = 20'

LIST OF STANDARD DRAWINGS

THE STANDARD DRAWINGS ON THESE PLANS SHALL BE CONSIDERED A PART THEREOF.

ODOT
N/A



ENGINEER'S PROJECT No. 190749

VILLAGE OFFICIALS

ADMINISTRATION

BRUCE B. BAKER.....MAYOR
SHIRLEY A. GROLL.....CLERK/TREASURER

COUNCIL

RYAN A. MITCHELL.....COUNCIL MEMBER
WILLIAM C. GROLL.....COUNCIL MEMBER
REX G. HENRY.....COUNCIL MEMBER
JIM D. CELLAR.....COUNCIL MEMBER
KEVIN C. EMIGH.....COUNCIL MEMBER
DOUGLAS A. PARKS.....COUNCIL MEMBER

SIGNATURES BELOW SIGNIFY ONLY CONCURRENCE WITH THE GENERAL PURPOSES AND GENERAL LOCATION OF THE PROJECT. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE ENGINEER PREPARING THE PLAN.

VILLAGE OF WALDO _____ DATE _____

[Signature]
BRADLEY A. KAPLAN

P.E. No. 83461

12/19/19
DATE



BENCH MARKS (NAVD 1988)

NO.	DESCRIPTION	ELEV
BM1	SPIKE IN WEST SIDE OF ELECTRIC POLE ON NORTHWEST SIDE OF EMBANKMENT BEHIND 126 NORTH MARION STREET NORTHING: 289114.319 EASTING: 1808107.441	933.89
BM2	SPIKE IN EAST SIDE OF ELECTRIC POLE ON EAST SIDE OF MARION STREET IN FRONT OF 141 NORTH MARION STREET NORTHING: 288946.201 EASTING: 1807990.036	942.10

SOURCE OF TOPOGRAPHY: TOPOGRAPHIC SURVEY WAS PERFORMED BY CT CONSULTANTS, OCTOBER 2019.



UNDERGROUND UTILITIES

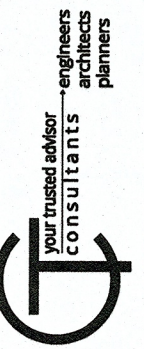
CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)

OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS PROTECTIVE
SERVICE CALL: 1-800-925-0988

1. THE SURVEY SHOWN ON THESE PLANS WAS OBSERVED IN THE FIELD FOR CONSTRUCTION PURPOSES ONLY AND MAY NOT BE SUITABLE FOR PROPERTY LINE SURVEYS OR ANY OTHER PURPOSE.
2. UNDERGROUND BUILDING SERVICE UTILITY LINES ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MAINTAINING AND REPLACING AS NECESSARY TO ENSURE CONTINUAL SERVICE TO BUILDINGS.
3. THE CONTRACTOR IS RESPONSIBLE TO CALL OHIO UTILITIES PROTECTION SERVICE @ 1-800-362-2764, THREE WORKING DAYS PRIOR TO CONSTRUCTION.



CALCULATED
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TITLE SHEET

MARION STREET BRIDGE WING AND RETAINING WALL REPLACEMENT & IMPROVEMENTS WALDO, OHIO

CONTINUED FROM SHEET 2...

- 39. SAWCUTTING
SAWCUTTING IS INCLUDED IN ALL PAVEMENT REMOVAL, EXCAVATION, CURB AND WALK REMOVAL ITEMS TO PROVIDE SMOOTH STRAIGHT EDGES. NO SEPARATE PAYMENT SHALL BE MADE FOR SAWCUTTING.

WHEN SAWCUTTING OF PAVEMENT (CONCRETE, ASPHALT, ETC.) IS NECESSARY, THE CONTRACTOR SHALL EMPLOY DUST COLLECTION MEASURES AND SHALL ENSURE ALL SLURRY IS CLEANED FROM THE ROADWAY OR WALKING SURFACE IMMEDIATELY AFTER SAWING.

- 40. SITE SECURITY
IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE SUFFICIENT SITE SECURITY MEASURES AND/OR PERSONNEL TO PROTECT ALL NEW CONCRETE WORK FROM VANDALISM UNTIL THE CONCRETE IS SUFFICIENTLY CURED AT NO ADDITIONAL COST TO THE CONTRACT PRICE.

- 41. RECORD PLANS
THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING "RECORD PLAN" CONSTRUCTION DRAWINGS TO THE VILLAGE OF WALDO AFTER THE PROJECT HAS BEEN COMPLETED.

- 42. UTILITIES
THE IDENTITY AND LOCATIONS OF EXISTING UNDERGROUND UTILITIES LOCATED IN AND AROUND THE CONSTRUCTION AREA HAVE BEEN SHOWN AND LABELED ON THE PLANS AS ACCURATELY AS PROVIDED BY USING INFORMATION PROVIDED BY THE RESPECTIVE UTILITY OWNERS.

THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION, AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THESE PLANS OR NOT.

THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE RELOCATION OF ANY UTILITIES AS REQUIRED BY THE PLAN WITH THE OWNER OF THE AFFECTED UTILITY.

SUPPORT AND PROTECTION OF ALL UTILITIES AND APPURTENANCES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COSTS FOR REPAIR AND RESTORATION OF EXISTING UTILITIES DAMAGED BY THE CONTRACTOR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

IF THERE ARE MARKERS OR OTHER APPARENT PHYSICAL EVIDENCE IN OR NEAR THE PROJECT AREA THAT MAY INDICATE THE EXISTENCE OF UNDERGROUND PETROLEUM OR NATURAL GAS PIPELINES, THE CONTRACTOR SHALL ADDITIONALLY CONTACT THE OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE (OGUPS) AT 1-800-925-0988 (TOLL FREE).

PRIVATE UTILITY MANHOLES WITHIN THE LIMITS OF THE WORK SHALL BE ADJUSTED TO GRADE BY THE RESPECTIVE UTILITY, IF REQUIRED AS REFERENCED ON THE PLANS.

THE VILLAGE OF WALDO AND THE DESIGN ENGINEER ASSUME NO RESPONSIBILITY FOR UNMARKED OR INCORRECTLY MARKED UTILITIES THAT MAY INTERFERE WITH COMPLETION OF THE PROJECT.

THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, AT NO ADDITIONAL EXPENSE TO THE VILLAGE OF WALDO, TO AVOID DAMAGE TO EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES DURING THE ENTIRE PROJECT.

Table with 3 columns: TELEPHONE, STORM SEWER, GAS, SANITARY SEWER, ELECTRIC. Lists contact information for Frontier Communications, Village of Waldo, and Consolidated Electric Co-OP.

- 43. BACKFILL TESTING
PRIOR TO CONSTRUCTION, SOIL DENSITY TESTS SHALL BE MADE ON ALL TRENCHES WHICH CROSS THE PROPOSED PAVEMENTS OR WHICH LIE SUCH THAT THE PROPOSED PAVEMENTS ARE LOCATED WITHIN ANY PORTION OF THE INFLUENCE LINE OF SAID TRENCH.

- 44. CONCRETE CURE AND SEAL
ALL EXPOSED CONCRETE SURFACES SHALL RECEIVE 2 COATS OF A CLEAR, NON-YELLOWING ACRYLIC CURING COMPOUND MEETING THE REQUIREMENTS OF ASTM C309 AND AASHTO M148.

- 45. CONNECTIONS BETWEEN EXISTING PIPES AND PROPOSED STRUCTURES
THE COST OF MAKING CONNECTIONS BETWEEN EXISTING STORM PIPES THAT ARE TO REMAIN IN SERVICE AND PROPOSED INFRASTRUCTURE, INCLUDING BUT NOT LIMITED TO CONCRETE COLLARS, COUPLINGS, MISCELLANEOUS SECTIONS OF PIPE, BACKFILLING AND BEDDING SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND INCLUDED IN THE PRICE BID FOR THE VARIOUS ITEMS.

- 46. CROSSING AND CONNECTIONS TO EXISTING PIPES AND UTILITIES
WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING STORM SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS ODOT CMS 611 ITEMS.

- 47. EXISTING DRAINAGE SYSTEMS
EXISTING DRAINAGE SYSTEMS (FIELD TILES, ROOF DRAIN OUTLETS, SUMP PUMPS, ETC.) ENCOUNTERED DURING CONSTRUCTION OF THE NEW CULVERT OR REMOVAL OF EXISTING STORM SEWERS SHALL BE EXTENDED AS NECESSARY AND CONNECTED TO THE PROPOSED STORM SEWER OR CULVERT BY BLIND TAPPING TO THE NEW CULVERT OR CONNECTED TO THE CATCH BASIN AS DIRECTED BY THE DESIGN ENGINEER.

THIS PLAN MAKES NO PROVISIONS FOR CONNECTION, NOR SHALL THE CONTRACTOR CONNECT, ANY UNTREATED SEPTIC DRAINAGE INTO THE DRAINAGE SYSTEM.

SPECIAL CARE SHALL BE TAKEN BY THE CONTRACTOR SO THAT EXISTING DRAINS WILL NOT BE CLOSED OR OTHERWISE RENDERED INOPERATIVE BY ANY CONSTRUCTION OPERATION OR NEW IMPROVEMENT.

- 48. UTILITY EXCAVATION/ INSTALLATION, AND DEMOLITION
PAYMENT FOR ALL UTILITY EXCAVATION AND/OR INSTALLATION SHALL BE INCLUDED WITHIN THE PRICE BID FOR THE CONDUIT, STRUCTURE, AND VARIOUS ITEMS.

- 49. STRUCTURES TO BE REMOVED/ABANDONED
THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL/ABANDONMENT OF SEWER STRUCTURES AS DESIGNATED ON THE PLANS.

- 50. INSPECTION NOTE
THE CONTRACTOR SHALL ENSURE THERE IS A SURVEYOR'S LEVEL AND ROD ON THE PROJECT FOR USE IN PERFORMING GRADE CHECKS WHENEVER SEWER LINE STRUCTURES OR PIPE ARE BEING INSTALLED.

- THESE CHECKS WILL BE PERFORMED TO ENSURE THE FOLLOWING:
A. PROPER PLACEMENT OF EACH STRUCTURE.
B. PROPER INSTALLATION OF PIPE RUNS.
C. GRADE, AFTER AN OVERNIGHT OR LONGER SHUTDOWN.
D. GRADE, AT ANY OTHER TIME THE INSPECTOR HAS REASON TO QUESTION GRADE OF INSTALLATION.

A GRADE CHECK PERFORMED BY THE VILLAGE INSPECTOR IN NO WAY RELIEVES THE CONTRACTOR FROM THE ULTIMATE RESPONSIBILITY TO ENSURE CONSTRUCTION TO THE PLAN GRADE.

- 51. GRADE CHANGES
IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING SEWER, OR EXISTING APPURTENANCE TO BE CONNECTED TO, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN SEWER SLOPE,

IF IT IS DETERMINED THAT THE PROPOSED CULVERT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE DESIGN ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CULVERT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

- 52. SEEDING AND MULCHING
ALL SEEDING AND MULCHING FOR ALL DISTURBED AREAS SHALL BE IN ACCORDANCE WITH ODOT CMS ITEM 659.

ALL DISTURBED AREAS SHALL BE SEEDED, AND THE TURF MIX SHALL BE OF THE FOLLOWING COMPOSITION:

Table with 2 columns: SEED MIX, APPLICATION. Lists seed mix components (Kentucky Bluegrass, Creeping Red Fescue, Annual Ryegrass, Perennial Ryegrass) and application instructions.

STARTER FERTILIZER: 18-24-12; APPLY AT RATE EQUAL TO 1 LB. OF ACTUAL NITROGEN PER 1,000 S.F. APPLY TWO APPLICATIONS PER MANUFACTURERS SPECIFICATIONS.

TACKIFIER: 60 GAL./ACRE. WOOD MULCH: 1,500 LBS./ACRE, DYED GREEN.

OR STRAW MULCH: EVENLY PLACE CLEAN STRAW OVER ALL SEEDED AREAS AT A RATE OF 2 TONS/ACRE.

WATER: CONTRACTOR SHALL MAINTAIN ALL SEEDED AREAS BY WATERING AND REPLANTING AS NECESSARY TO ESTABLISH A UNIFORMLY DENSE STAND (90% COVER) OF SPECIFIED GRASS.

- 53. TOPSOIL
TOPSOIL PLACEMENT SHALL BE AS SPECIFIED IN ODOT CMS ITEM 653.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINISH GRADING REQUIRED TO PROVIDE PROPER SEED AND PLANTING BEDS.

WHERE STORMWATER WATER SHEET FLOWS FROM LANDSCAPE AREAS TO PAVEMENT AREAS, THE FINISH GRADE IN LANDSCAPE AREAS AFTER SETTLING SHALL BE 1/2-IN ABOVE THE TOP OF PAVEMENT.

- 54. RESTORATION, CLEANUP, AND MAINTENANCE
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE CLEANUP OF ANY DEBRIS, MUD OR DIRT TRACKED OR SPILLED IN THE VILLAGE OF WALDO AND/OR PUBLIC STREETS OR PRIVATE DRIVES WHETHER INSIDE OR OUTSIDE THE PROJECT AREA.

IT IS THE INTENT OF THE VILLAGE OF WALDO TO KEEP INCONVENIENCE TO THEIR RESIDENTS, BUSINESSES, AND GUESTS AT AN ABSOLUTE MINIMUM.

CARE SHALL BE EXERCISED WHEN WORKING AROUND EXISTING TREES AND SHRUBS.

SPECIAL CARE SHALL BE TAKEN TO AVOID DAMAGE TO TREES AND THEIR ROOT SYSTEMS.

CONTRACTOR SHALL KEEP ALL STREETS, LANES, AND PARKING AREAS ADJACENT TO THE PROJECT CLEAN AND FREE FROM ANY DEBRIS, MUD AND/OR OTHER CONSTRUCTION EQUIPMENT AT ALL TIMES DURING THE PROJECT.

ALL AREAS IN THE RIGHT-OF-WAY ARE TO BE GRADED AND SEEDED AS SOON AS WORK IN THAT AREA IS COMPLETE.

ALL SURFACES INCLUDING DRAINAGE STRUCTURES, LANDSCAPING, PAVEMENTS, DRIVEWAYS, BERMS AND OTHER SURFACES DISTURBED DURING CONSTRUCTION OF THIS PROJECT SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER BY THE CONTRACTOR AT NO ADDITIONAL COST.

EXCAVATING AND BACKFILLING FOR SEWERS SHALL COMPLY WITH ODOT CMS ITEM 611.

- 55. TRENCHING
EXCAVATING AND BACKFILLING FOR SEWERS SHALL COMPLY WITH ODOT CMS ITEM 611.

ANY EXCAVATION PERFORMED BEYOND THE STANDARD TRENCH WIDTH, AS DEFINED ON THE PLAN DETAILS DUE TO SITE CONDITIONS OR THE CONTRACTOR'S METHODS ARE DONE SO SOLELY AT THE CONTRACTOR'S EXPENSE.

- 56. COMPACTION TESTING
THE CONTRACTOR IS RESPONSIBLE FOR ALL COMPACTION, ASPHALT AND CONCRETE TESTING.

ITEM NOTES:

- 58. ITEM 201 - CLEARING AND GRUBBING
ALL TREES, FENCE POSTS, ROCKS, BUSH, STAMPS, AND FENCE SPECIFICALLY MARKED FOR REMOVAL THAT HAVE NOT BEEN ITEMIZED WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED UNDER THE LUMP SUM PRICE BID FOR ITEM 201 - CLEARING AND GRUBBING.

- 59. ITEM 203 - EXCAVATION AND EMBANKMENT CONSTRUCTION, INCLUDING PAVEMENT REMOVAL, AS PER PLAN
ALL EXCAVATION AND EMBANKMENT, INCLUDING TEMPORARY CUTS AND FILLS, REQUIRED TO COMPLETE THE IMPROVEMENTS IDENTIFIED IN THE PLANS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 203 - EXCAVATION AND EMBANKMENT CONSTRUCTION.

- 60. ITEM 601 - ROCK CHANNEL PROTECTION, TYPE B WITH FABRIC FILTER
THIS ITEM HAS BEEN PROVIDED TO STABILIZE THE EXISTING SLOPE ALONG THE DITCH UPSTREAM AND DOWNSTREAM OF THE PROPOSED STORM SEWER HEADWALLS.

- 61. ITEM 832 - EROSION CONTROL, AS PER PLAN
THE CONTRACTOR SHALL PROVIDE SEDIMENT CONTROL AT ALL POINTS WHERE STORMWATER RUNOFF LEAVES THE PROJECT INCLUDING WATERWAYS, OVERLAND SHEET FLOW, AND STORM SEWERS.

EROSION CONTROL MEASURES ARE TO BE INSTALLED PER THE VILLAGE OF WALDO STANDARDS, AND ARE TO BE MAINTAINED UNTIL SUCH TIME THAT THEY ARE NO LONGER REQUIRED BY THE PERMIT AND THE VILLAGE.

ALL LAND DISTURBING ACTIVITIES SHALL BE SUBJECT TO INSPECTION AND SITE INVESTIGATION BY THE

VILLAGE OF WALDO. FAILURE TO COMPLY WITH THESE REGULATIONS IS SUBJECT TO LEGAL ENFORCEMENT ACTION.

EROSION AND SEDIMENT CONTROL MEASURES ARE REQUIRED AS A PART OF THIS PROJECT AND AN SEC PLAN SHALL BE SUBMITTED TO THE VILLAGE OF WALDO BY THE CONTRACTOR AT LEAST 7 DAYS PRIOR TO CONSTRUCTION.

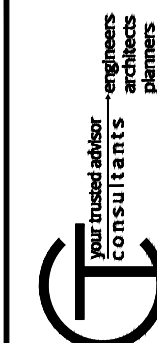
THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING NECESSARY AND ADEQUATE MEASURES FOR PROPER CONTROL OF EROSION END SEDIMENT RUNOFF FROM THE SITE ALONG WITH PROPER MAINTENANCE AND INSPECTION IN COMPLIANCE WITH THE VILLAGE OF WALDO.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE VILLAGE OF WALDO 48-HOURS PRIOR TO COMMENCEMENT OF INITIAL SITE LAND DISTURBANCE ON ANY SITE OF ONE (1) OR MORE ACRES.

NO AREA FOR WHICH GRADING HAS BEEN COMPLETED OR WHERE A DENUDED AREA WILL REMAIN IDLE FOR MORE THAN FOURTEEN (14) DAYS SHALL BE LEFT UNSEEDED FOR LONGER THAN SEVEN (7) DAYS.

LINETYPE LEGEND

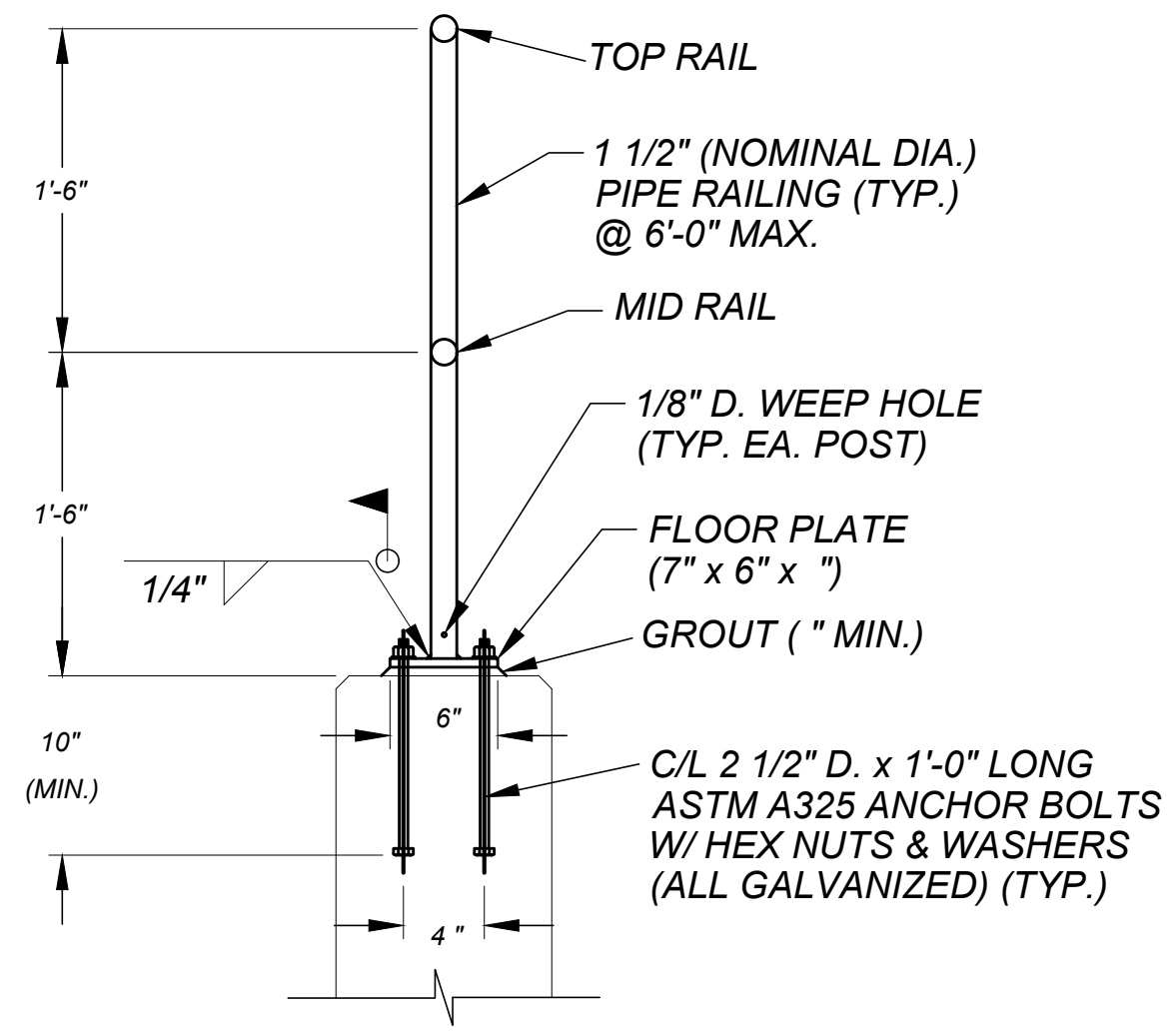
Table mapping line styles to symbols for EX. BUILDING, EX. SIGN, EX. CONTOUR, EX. ELEC POLE, etc. Includes graphical representations for various line types and symbols.



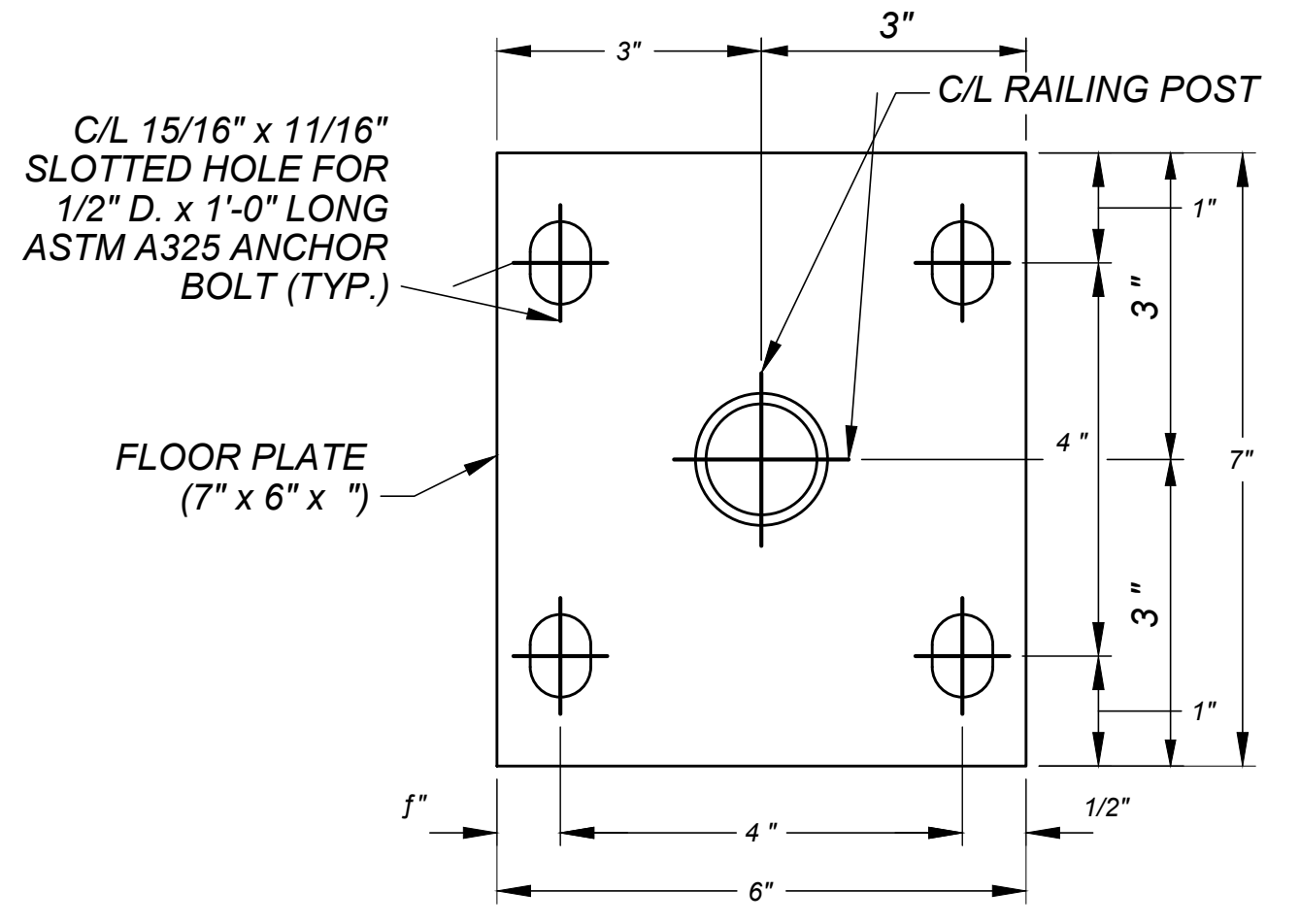
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GENERAL NOTES

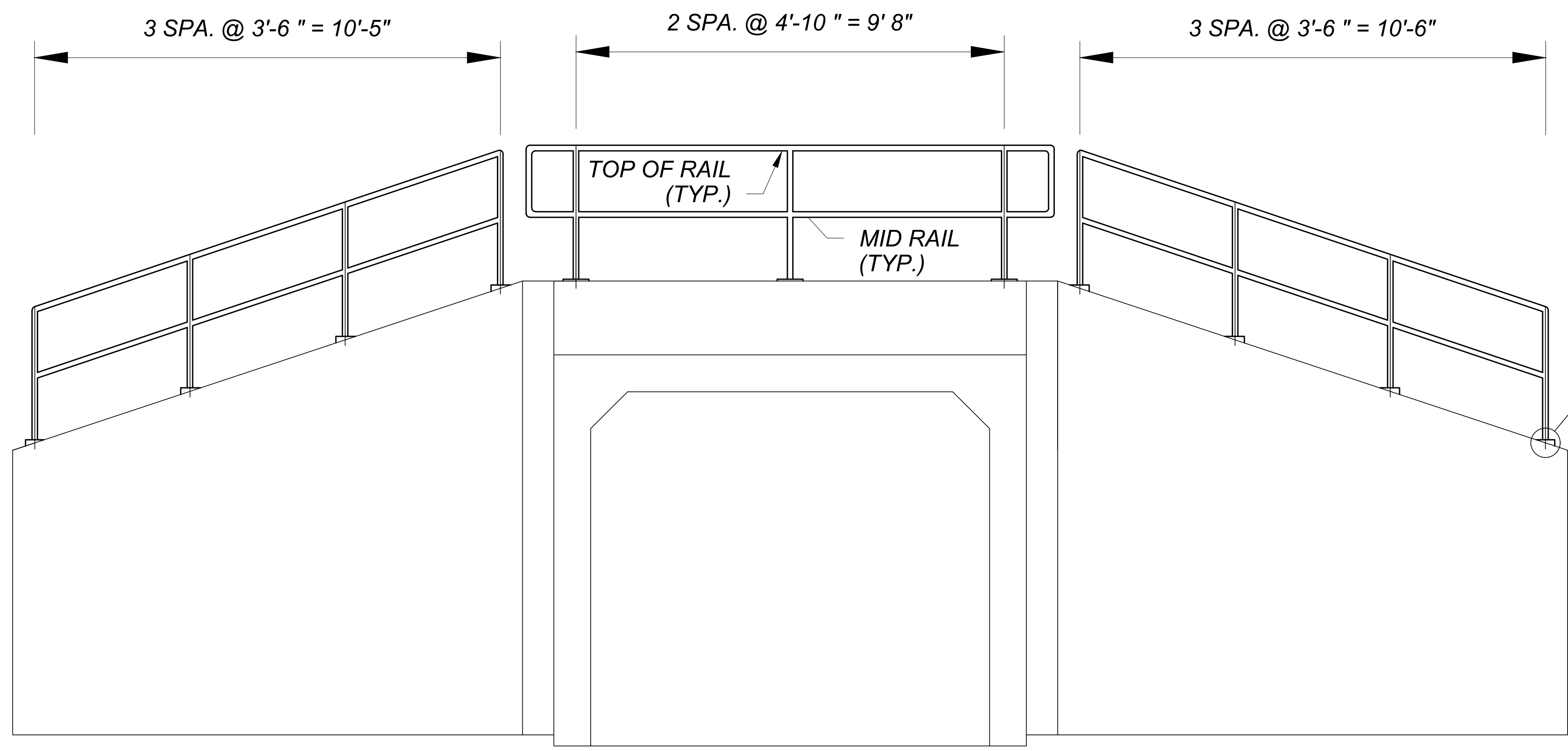
MARION STREET BRIDGE WING AND RETAINING WALL REPLACEMENT & IMPROVEMENTS WALDO, OHIO



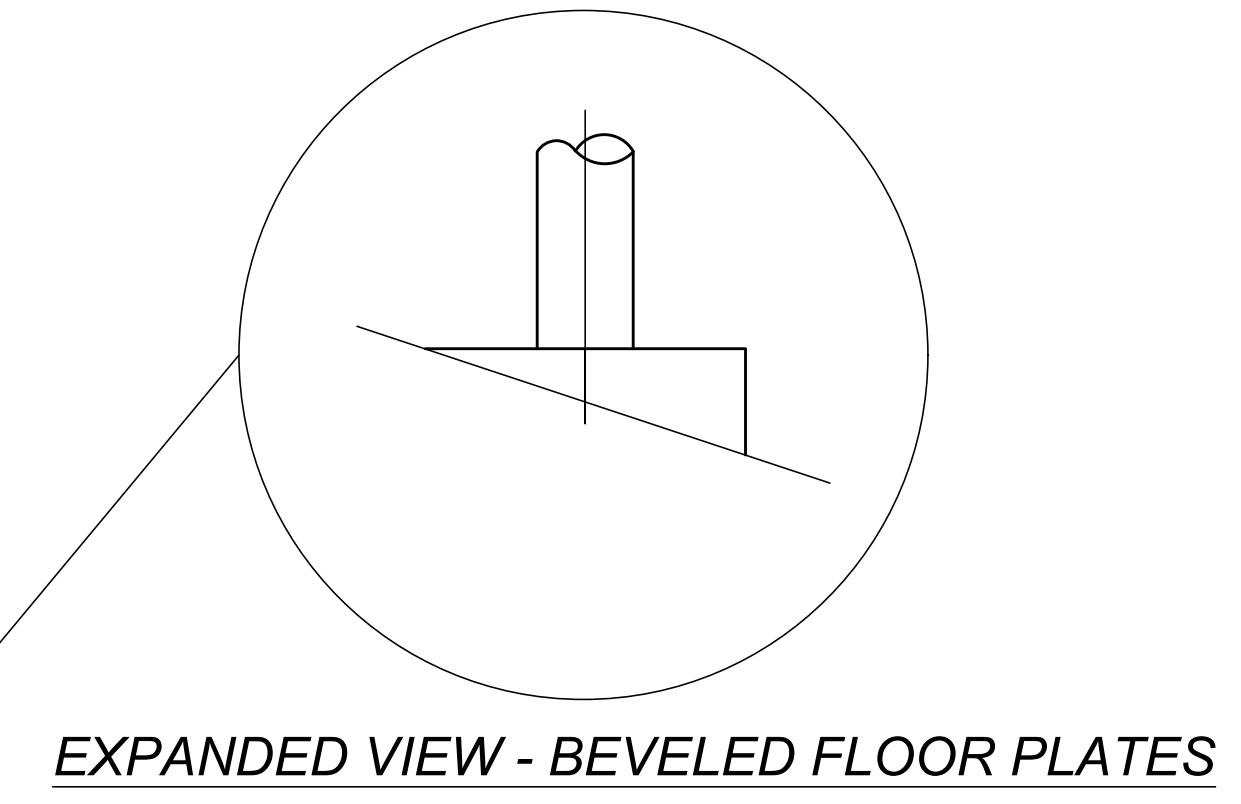
RAILING DETAIL
(SEE NOTE 4)



FLOOR PLATE



RAILING ELEVATION



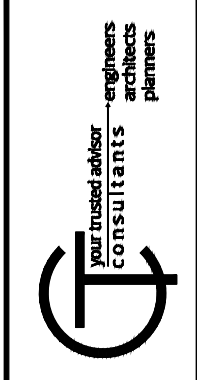
EXPANDED VIEW - BEVELED FLOOR PLATES

RAILING NOTE:
THIS ITEM SHALL CONFORM TO ITEM 517 EXCEPT THAT ALL STEEL RAILING, POSTS, AND FLOOR PLATES SHALL BE PAINTED WITH BLACK (FEDERAL COLOR NO. 17038) POLYVINYL COATING AFTER FABRICATION AND GALVANIZATION.

HAND RAILING AND POSTS SHALL BE FABRICATED FROM NOMINAL SIZE 1 1/2\"/>

GALVANIZE STEEL RAILING, POSTS, AND FLOOR PLATES AFTER FABRICATION, AS SPECIFIED IN ASTM A 123. RE-GALVANIZE AREAS IN WHICH SPALTER COATING HAS BEEN DAMAGED, AS SPECIFIED IN AASHTO M 36, SECTION 24. METALIZING PROCESS OR REPAIR UNDER THE DIRECTION OF THE ENGINEER WITH STICK-FORM GALVANIZING REPAIR COMPOUND MEETING FEDERAL SPECIFICATION O-G-93.

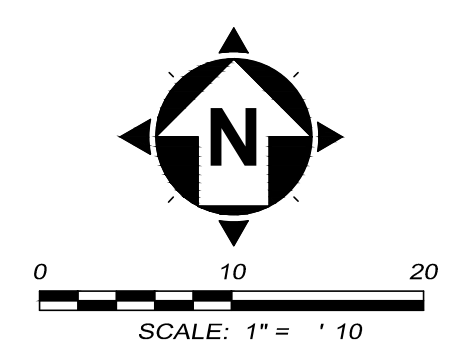
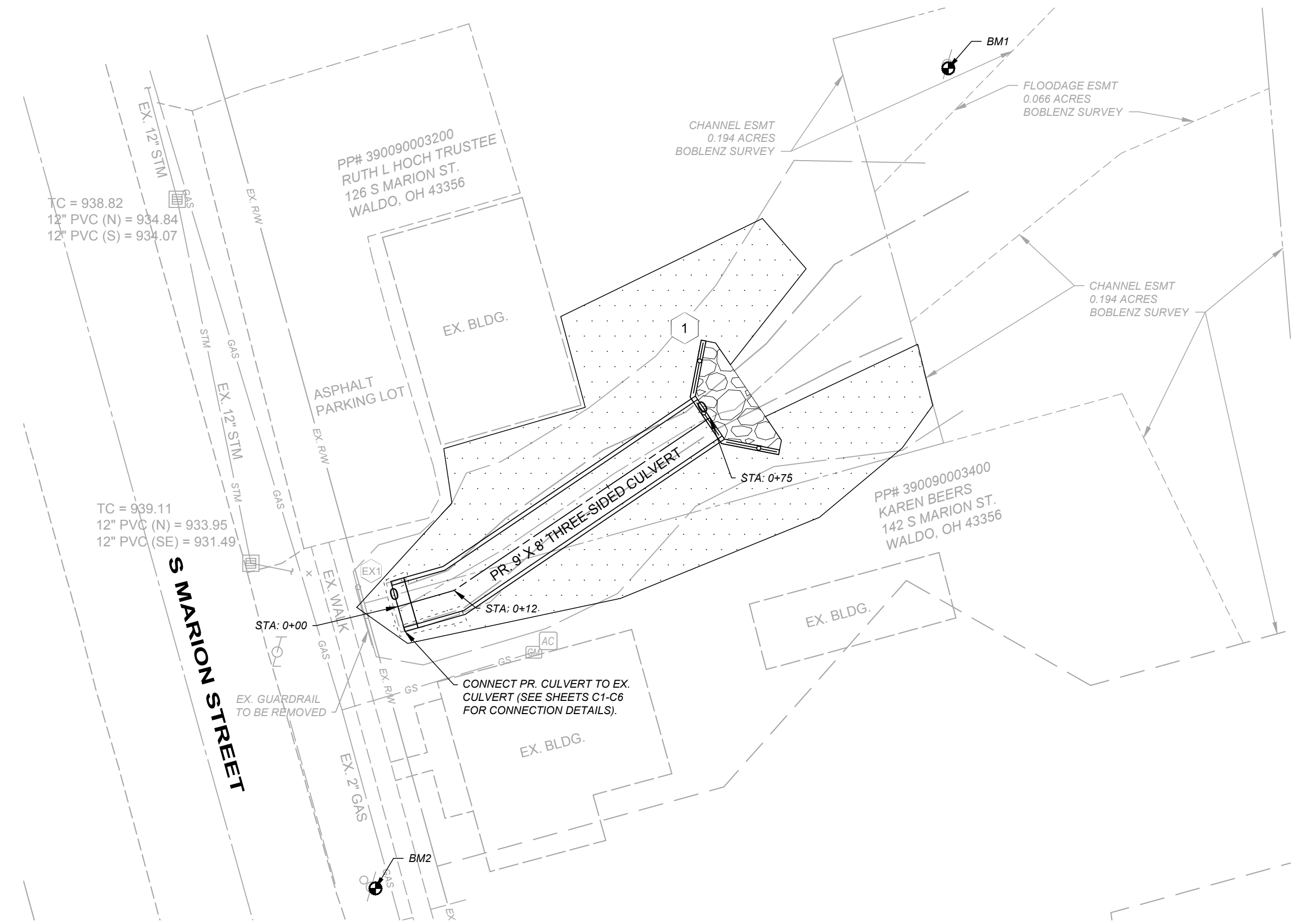
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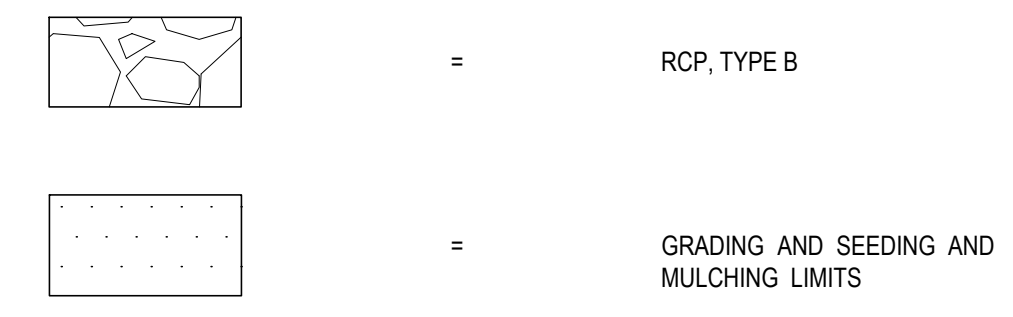
MARION STREET BRIDGE WING AND RETAINING WALL REPLACEMENT & IMPROVEMENTS
WALDO, OHIO



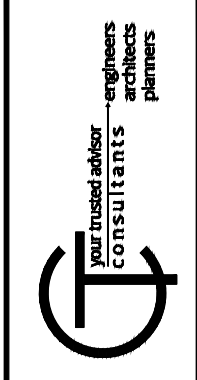
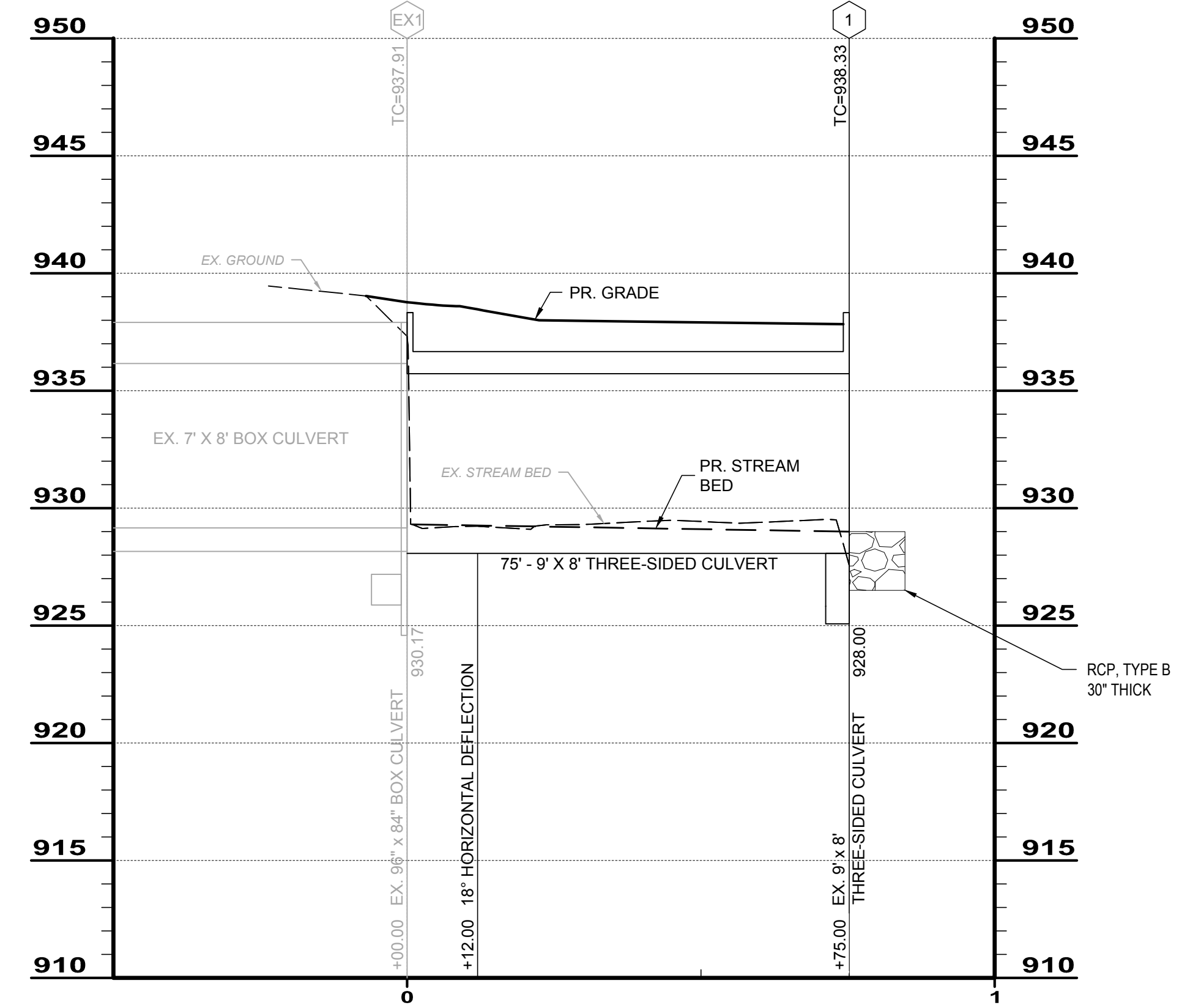
SHEET NOTES

- EXPOSE EXISTING UTILITIES:**
WHERE POTENTIAL GRADE AND ALIGNMENT CONFLICTS MIGHT OCCUR WITH EXISTING UTILITIES, THE CONTRACTOR SHALL EXPOSE UTILITIES OR STRUCTURES SUFFICIENTLY IN ADVANCE OF LAYING PIPE FOR THE DESIGN ENGINEER TO VERIFY THE VERTICAL AND HORIZONTAL EFFECT ON THE NEW CONSTRUCTION. ANY DISCREPANCY WITH THE PLANS SHALL BE COORDINATED WITH THE DESIGN ENGINEER TO ENSURE THAT THERE ARE NO CONSTRUCTION OR CONFLICT ISSUES ASSOCIATED WITH SAID DISCREPANCY. THE COST FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS IMPROVEMENT ITEMS IF A SPECIFIC ITEM IS NOT PROVIDED IN THE ESTIMATE OF QUANTITIES.
- CAUTION:**
O.S.H.A. CLEARANCE REQUIREMENTS TO BE MAINTAINED DURING CONSTRUCTION BETWEEN EQUIPMENT AND OVERHEAD UTILITY LINES.
- SITE GRADING:**
THE CONTRACTOR SHALL PROVIDE SITE GRADING AROUND THE CULVERT, HEADWALL, AND WINGWALL INFRASTRUCTURE, IN ORDER TO ENSURE POSITIVE DRAINAGE TOWARD THE STREAM. PAYMENT FOR GRADING SHALL BE INCLUDED IN THE UNIT PRICE FOR EXCAVATION AND EMBANKMENT CONSTRUCTION.
- PRECAST DETAILS:**
THE CONTRACTOR SHALL BE RESPONSIBLE TO FURNISH AND INSTALL A REINFORCED CONCRETE STRUCTURE THREE-SIDED BOX CULVERT, INCLUDING REINFORCED CONCRETE HEADWALLS, WINGWALLS, AND FOUNDATIONS PER PLAN. SEE SHEETS C1-C6 FOR DETAILS.
- CONCRETE REMOVAL IN EXISTING CHANNEL:**
THE CHANNEL OF THE EXISTING STREAM IS LINED WITH CONCRETE PANELS, BRICKS, AND OTHER MATERIAL. THIS WAS INSTALLED TO PREVENT ADDITIONAL EROSION TO THE PROPERTY OWNERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL CONCRETE PANELS AND MATERIAL LOCATED ALONG THE BANKS AND CHANNEL OF THE STREAM, PRIOR TO THE INSTALLATION OF THE NEW CULVERT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING MATERIAL IN ACCORDANCE WITH ODOT CMS ITEM 202. ALL COST ASSOCIATED FOR THIS EFFORT SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 202 - CONCRETE BASE REMOVED.
- UTILITY POLE PROTECTION:**
THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING REINFORCEMENT WORK WITH UTILITY COMPANY FOR ANY UTILITY POLES LOCATED WITHIN THE INFLUENCE OF TRENCHES OR EARTHWORK OPERATIONS. SEE GENERAL NOTE NO. 22 FOR ADDITIONAL INFORMATION.
- PROPOSED CULVERT**
THE PROPOSED THREE-SIDED BOX CULVERT SHALL BE INSTALLED AS PER THE DRAWINGS (SHEET C1-C6) PROVIDED BY PRETEK GROUP, OR APPROVED EQUAL.

LEGEND



PR. CULVERT CENTERLINE TABLE				
STATION	NORTHING (PER PLAN)	EASTING (PER PLAN)	NORTHING (AS-BUILT)	EASTING (AS-BUILT)
0+00	289003.9726	1807994.6182		
0+12	289007.268	1808006.1586		
0+75	289042.6702	1808058.567		



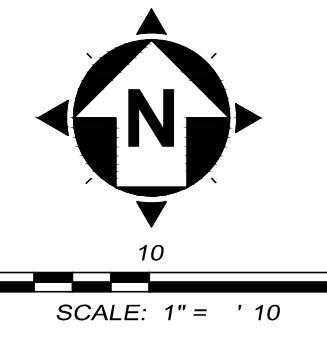
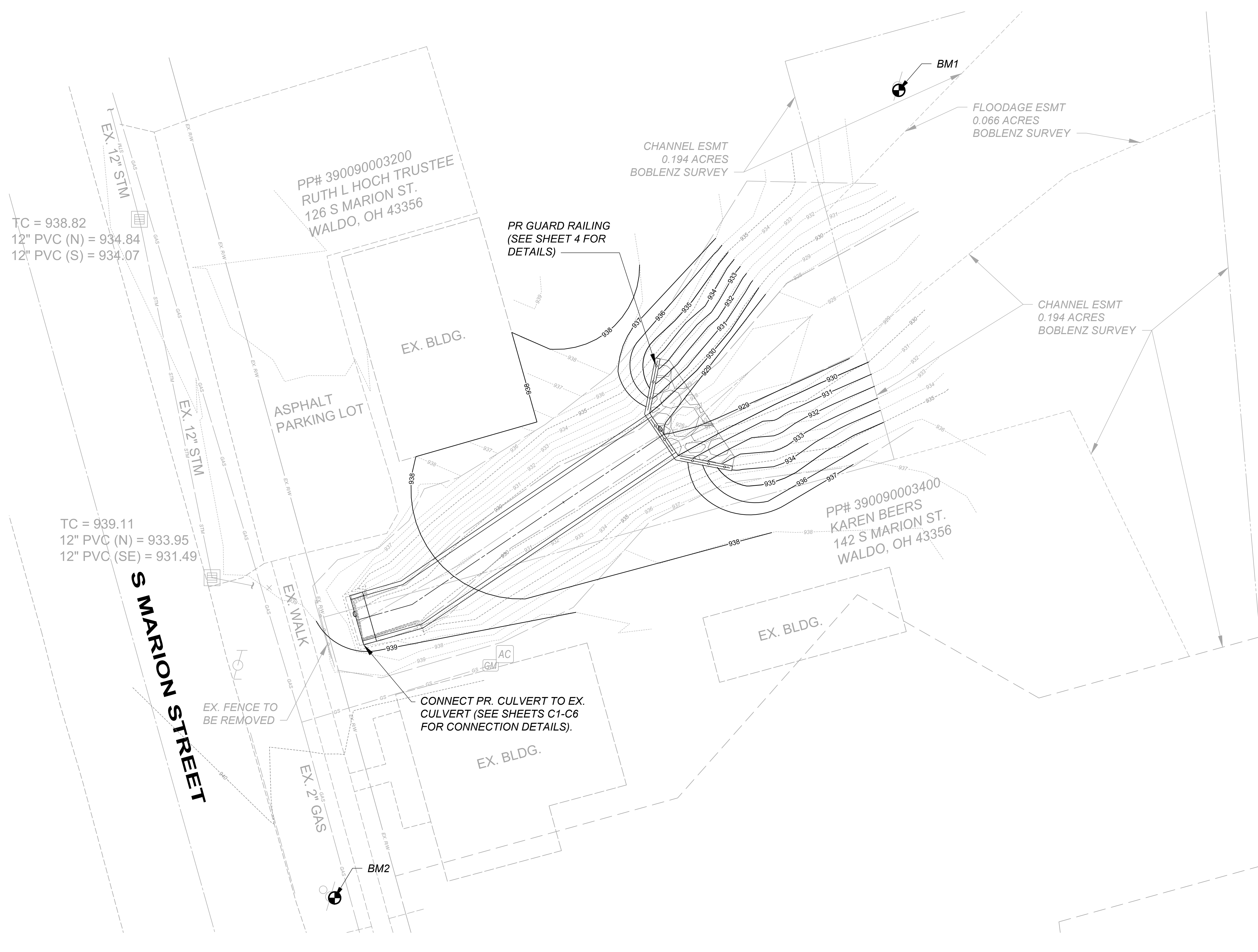
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PLAN AND PROFILE

**MARION STREET BRIDGE WING AND RETAINING WALL REPLACEMENT & IMPROVEMENTS
WALDO, OHIO**

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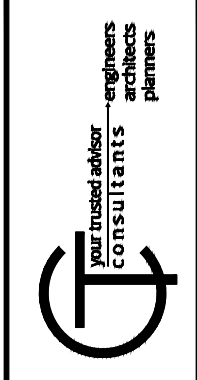
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LEGEND

= RCP, TYPE B

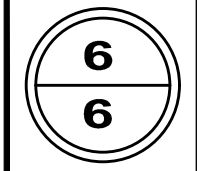
= PROPOSED GUARD RAILING, ODOT ITEM 517



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SITE PLAN

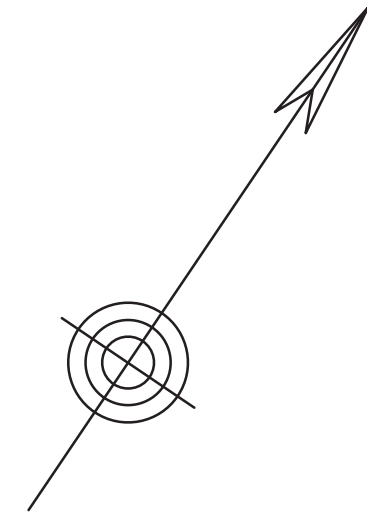
MARION STREET BRIDGE WING AND RETAINING WALL REPLACEMENT & IMPROVEMENTS WALDO, OHIO



SOUTH MARION STREET CULVERT STRUCTURE

WALDO

OHIO



DESIGN NOTES

1. THIS STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS "LRFD BRIDGE DESIGN SPECIFICATIONS", 8TH EDITION AND INTERIM SPECIFICATIONS TO DATE. DESIGN LOADS ARE AS FOLLOWS:

- BRIDGE UNITS: HL-93
- DESIGN FILL HEIGHT: 1'-0" MIN. TO 3'-0" MAX.
- HEADWALLS: EARTH PRESSURE ONLY
- WINGWALLS: EARTH PRESSURE ONLY

2. THE FOUNDATIONS FOR THIS PROJECT ARE DESIGNED IN ACCORDANCE WITH:

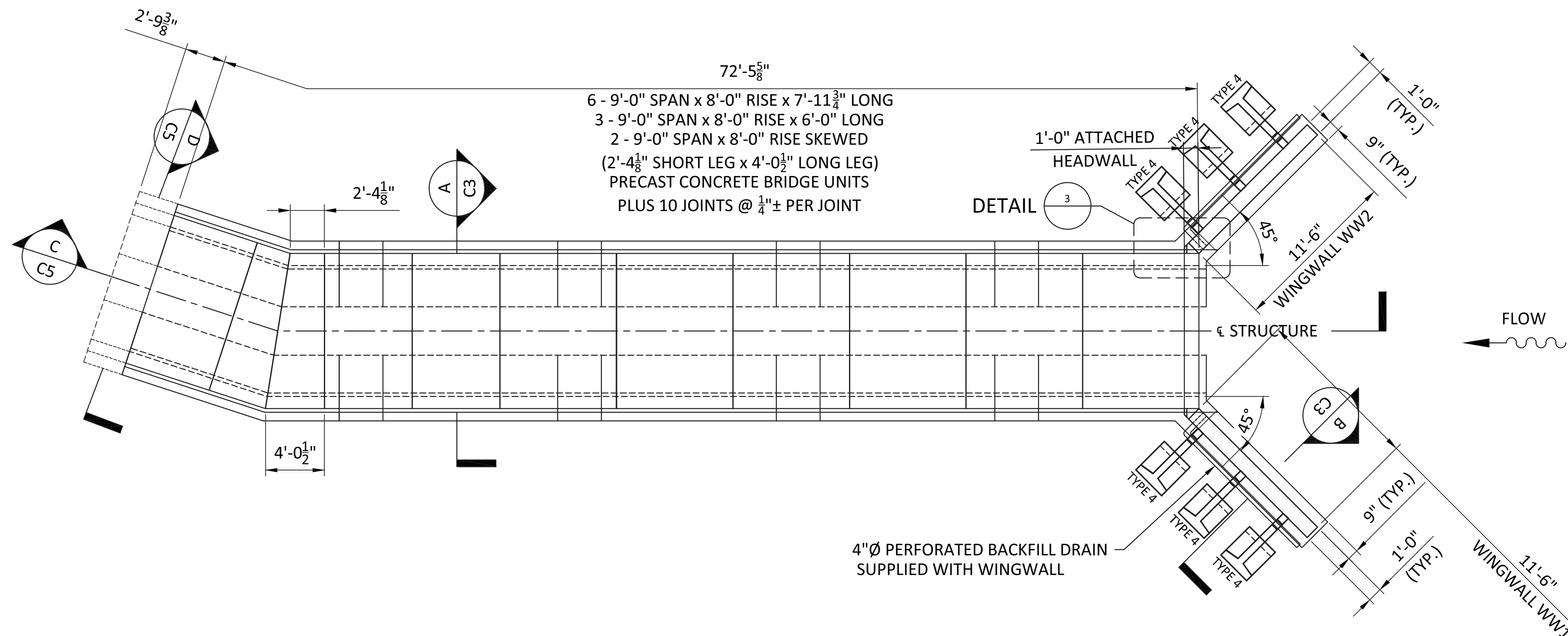
NET ALLOWABLE BEARING PRESSURE: 2,000 PSF
GROSS ALLOWABLE BEARING PRESSURE: 2,480 PSF

3. CONFORMANCE TO THESE DRAWINGS, SPECIFICATIONS, AND EXISTING CONDITIONS, INCLUDING HYDRAULIC CAPACITY, SCOUR, GRADING AND SOIL CONDITIONS SHALL BE VERIFIED BY OTHERS.

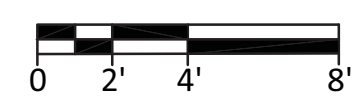
MATERIALS - FOUNDATION

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A996 GRADE 60

NOTE:
BRIDGE STATIONING, LOCATION, ELEVATIONS, AND DIMENSIONS TO BE VERIFIED BY OTHERS PRIOR TO POURING PRECAST.



BRIDGE LAYOUT PLAN



FOR APPROVAL

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SOUTH MARION STREET
CULVERT STRUCTURE

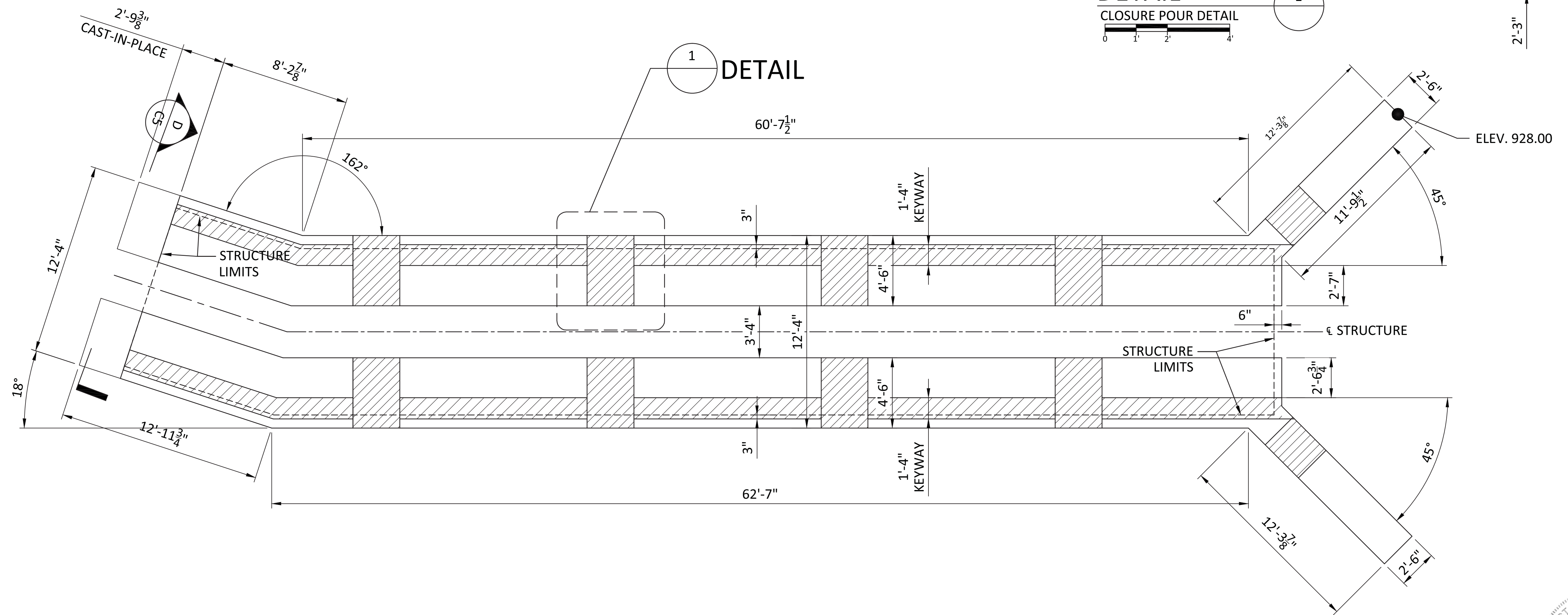
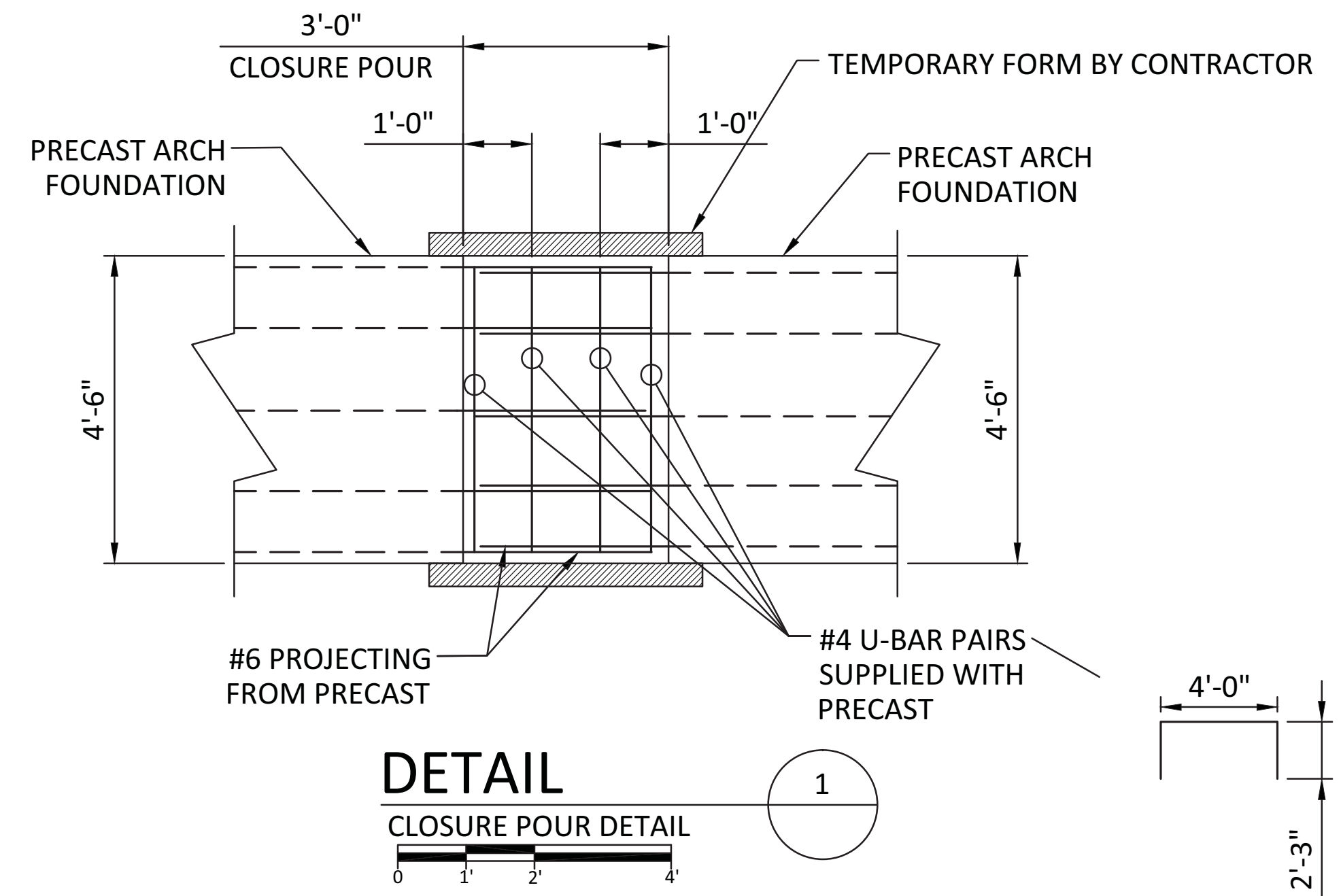
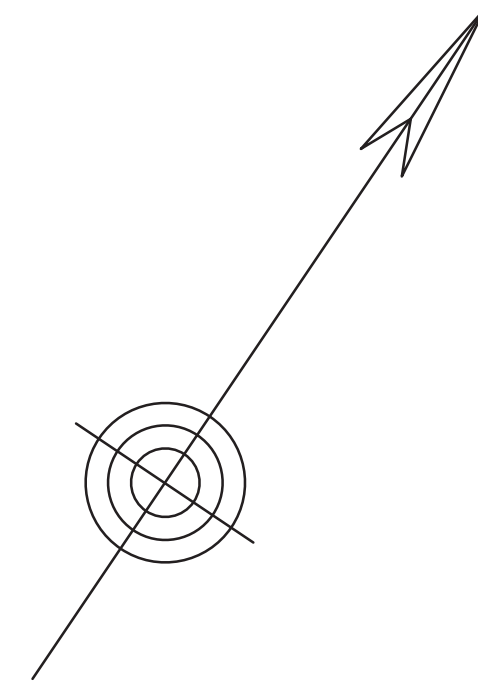
LOCALE: WALDO

STATE: OH

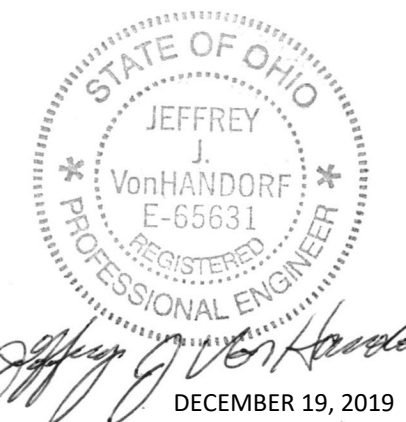
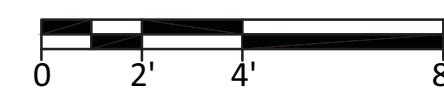
DESIGNED BY:
PRETEK GROUP
P.O. BOX 751471
DAYTON, OH 45475
800.241.0925

PROJECT NUMBER: 19-567
DATE: 11/27/2019
DESIGNED BY: RPZ
DRAWN BY: MAM
CHECKED BY: TEN

C1



FOUNDATION PLAN



FOR APPROVAL

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SOUTH MARION STREET
CULVERT STRUCTURE

LOCALE: WALDO

STATE: OH



P.O. BOX 751471
DAYTON, OH 45475
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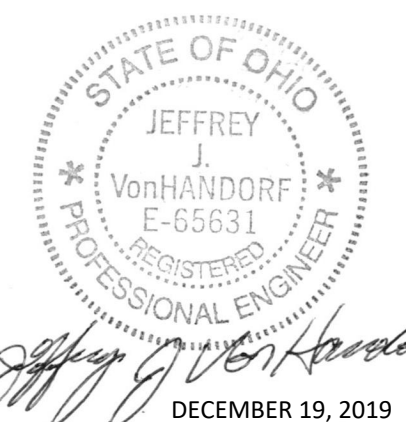
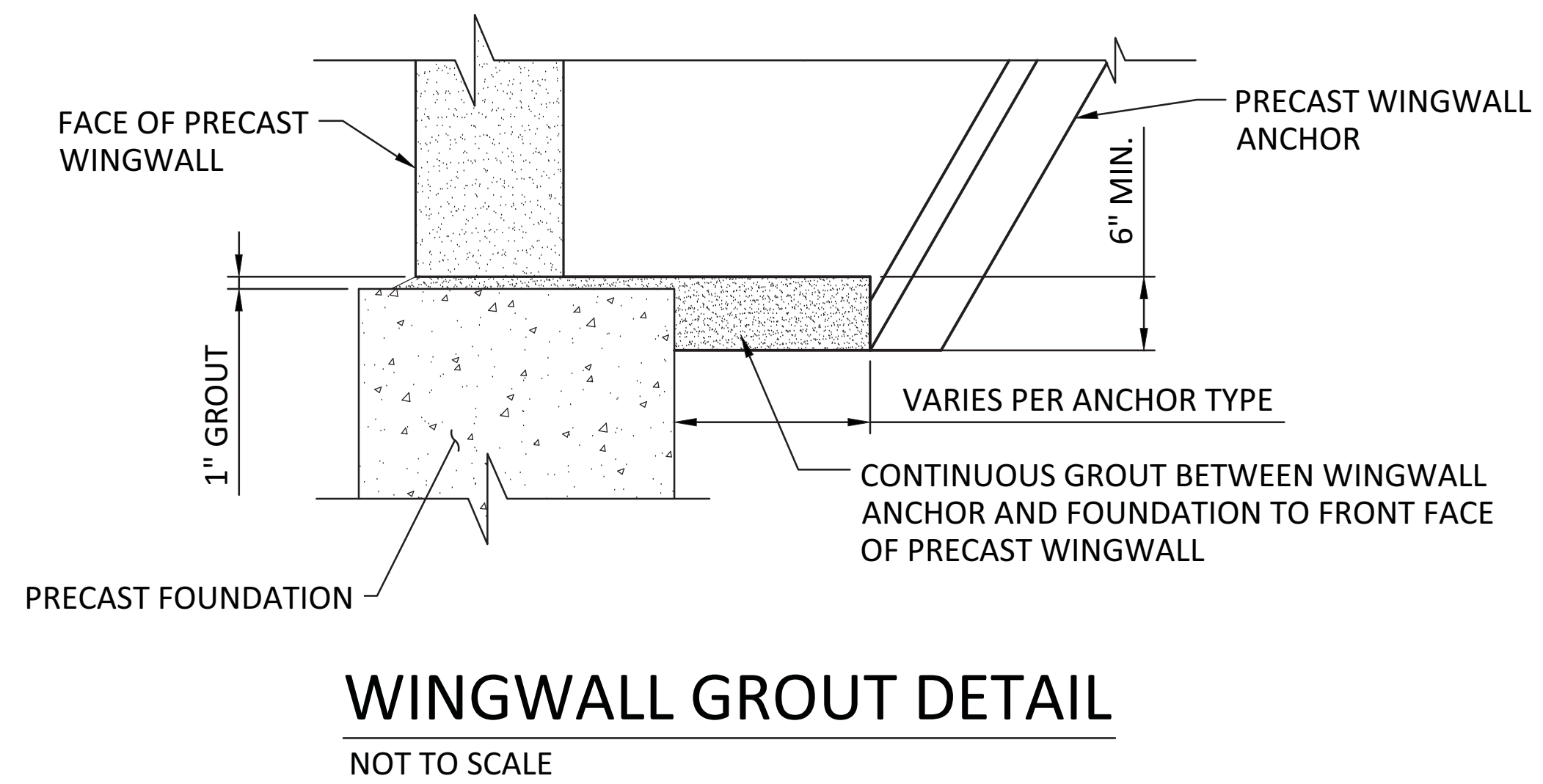
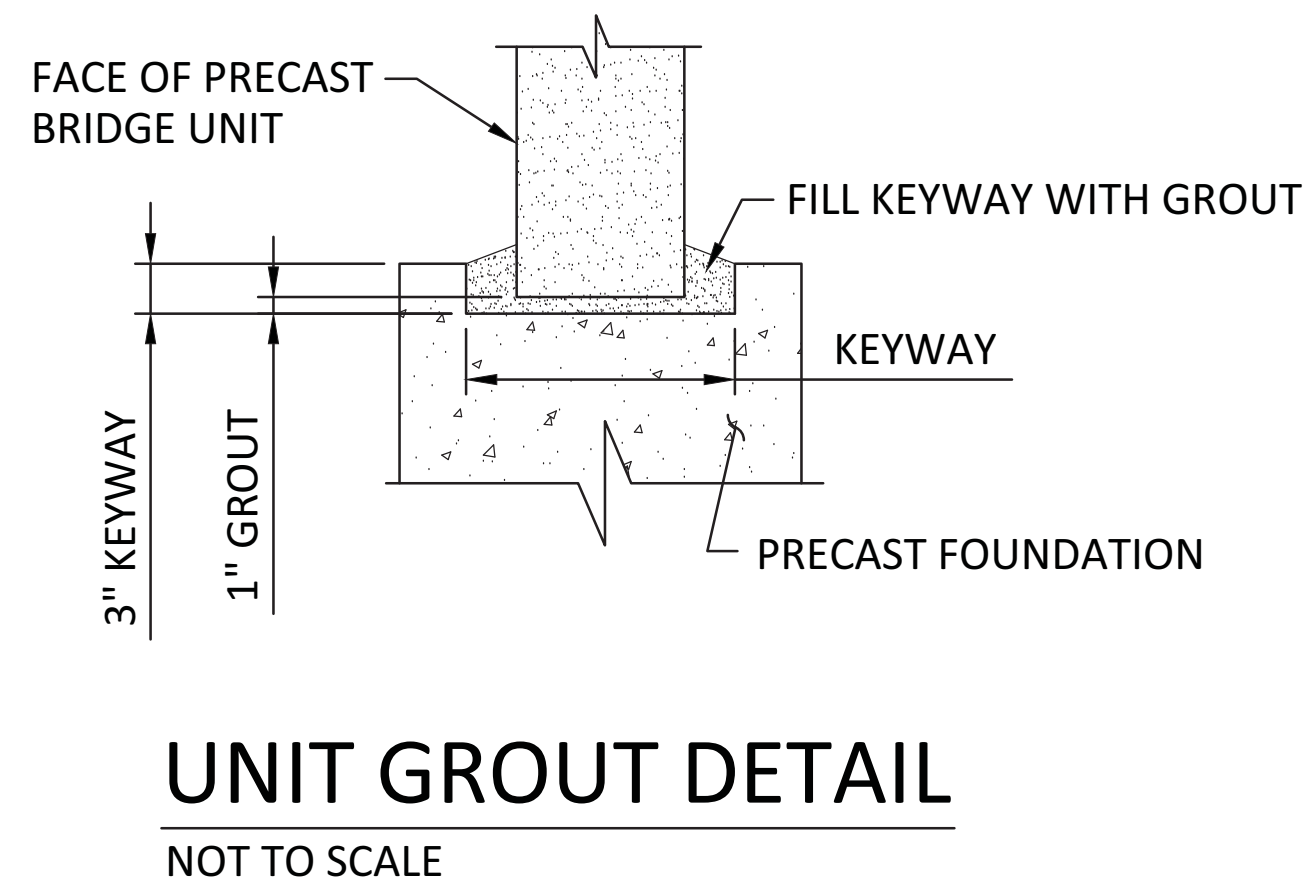
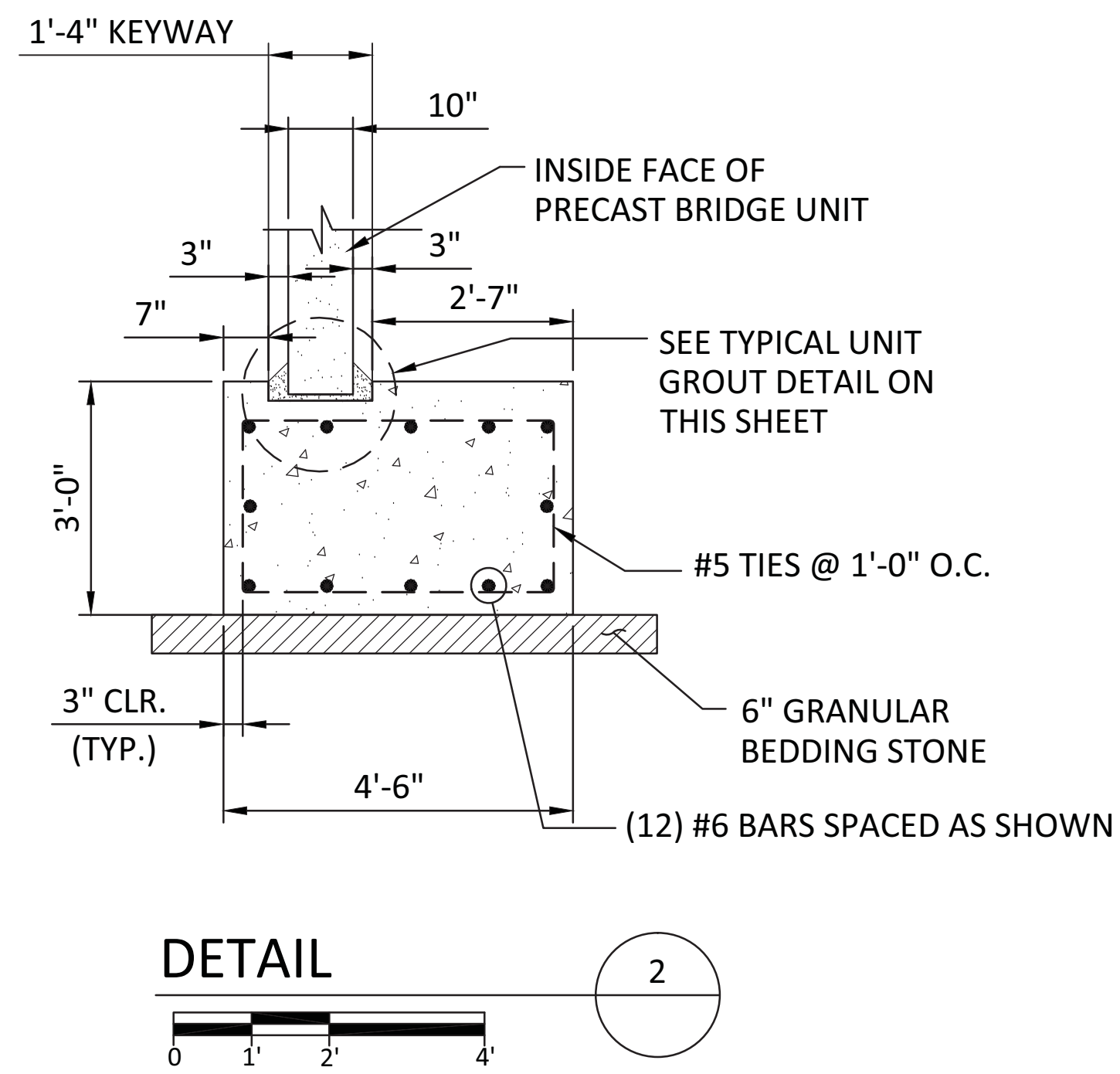
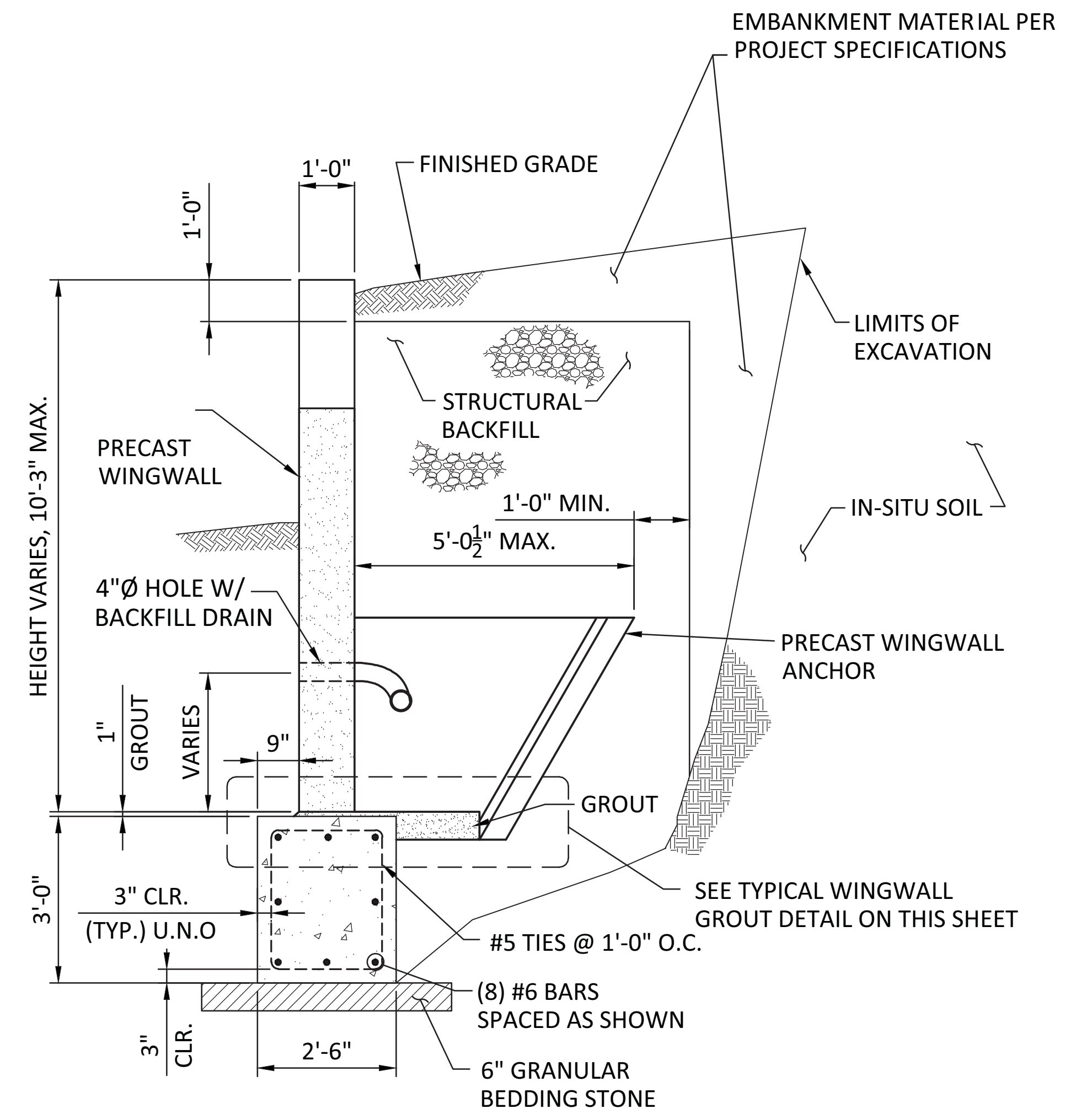
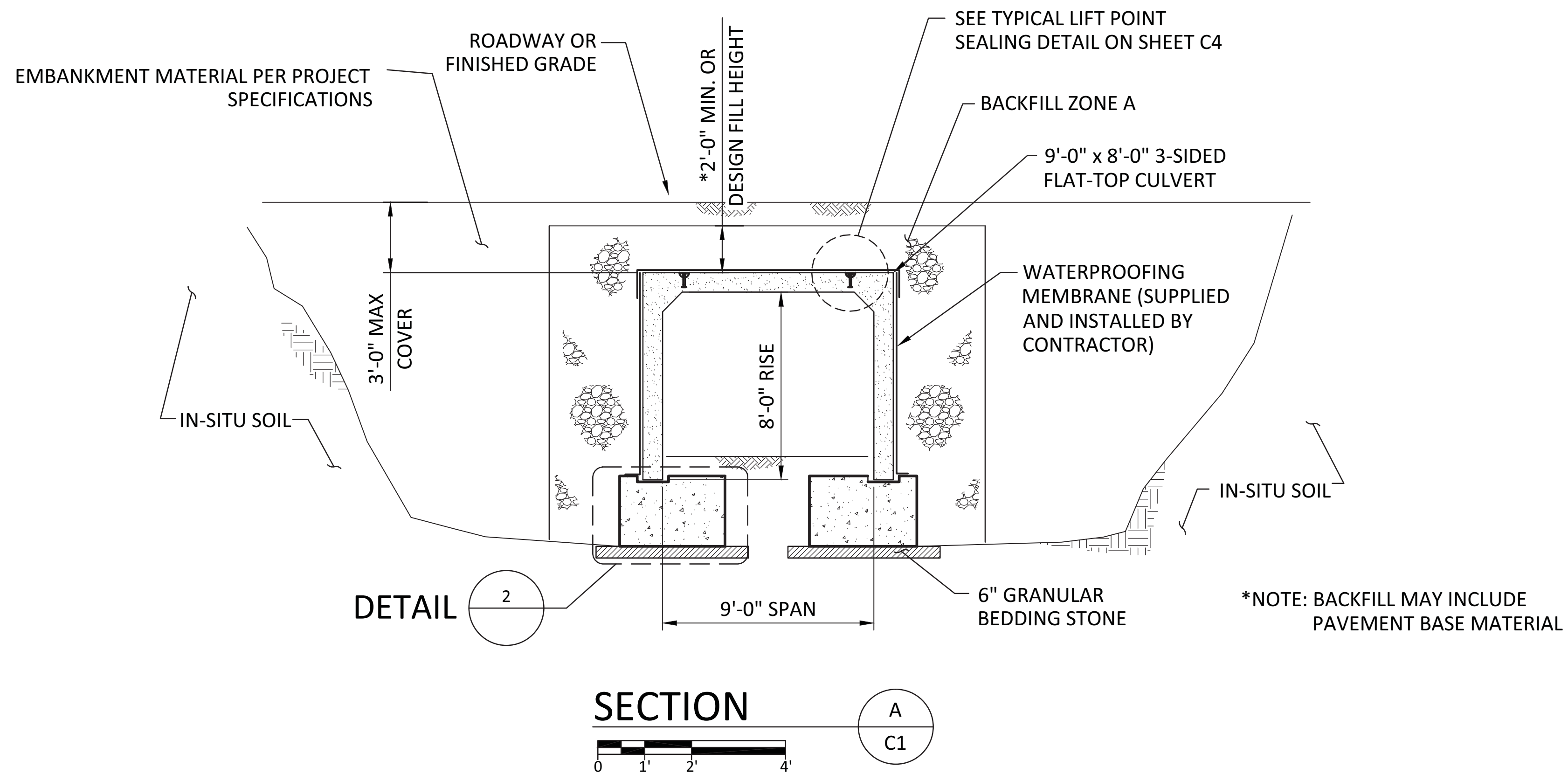
DATE: 11/27/2019

DESIGNED BY: RPZ

DRAWN BY: MAM

CHECKED BY: TEN

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FOR APPROVAL

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**SOUTH MARION STREET
CULVERT STRUCTURE**

LOCALE: WALDO

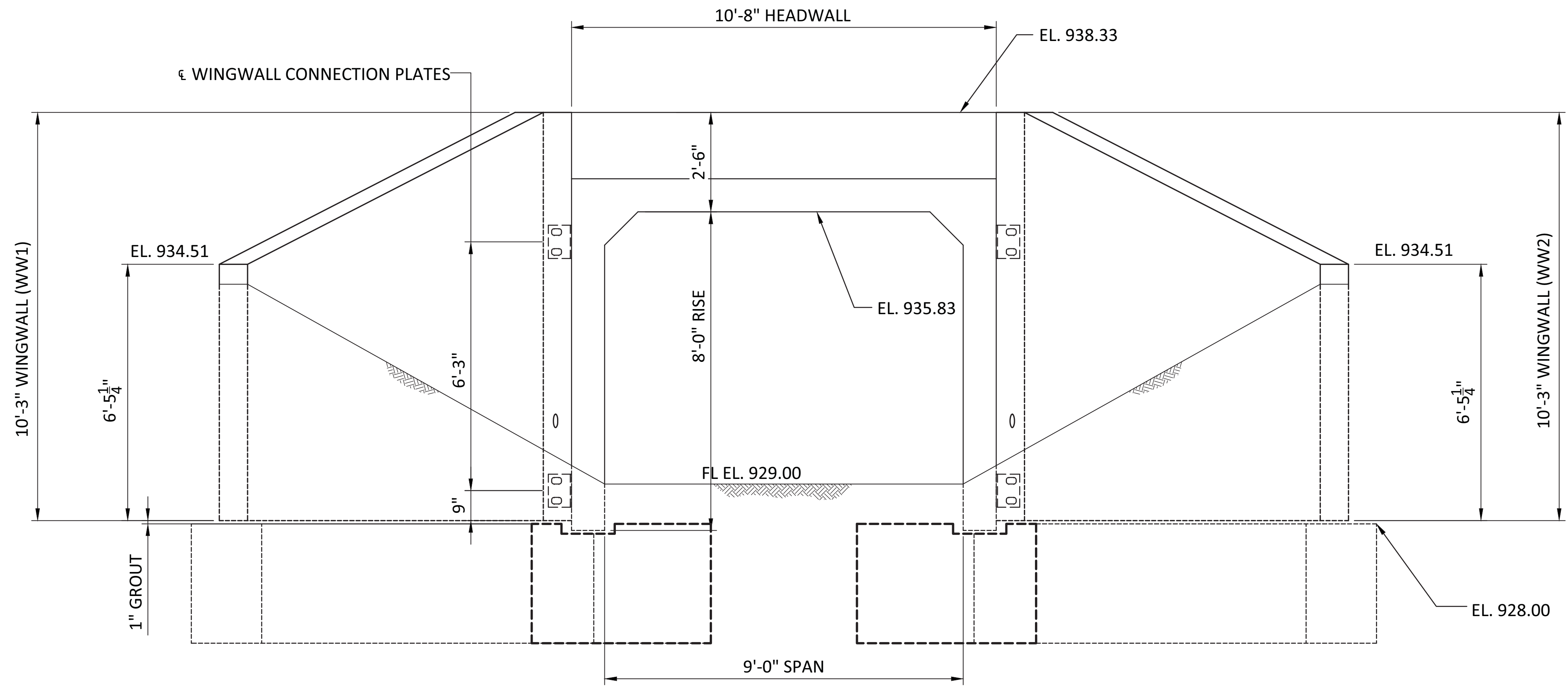
STATE: OH



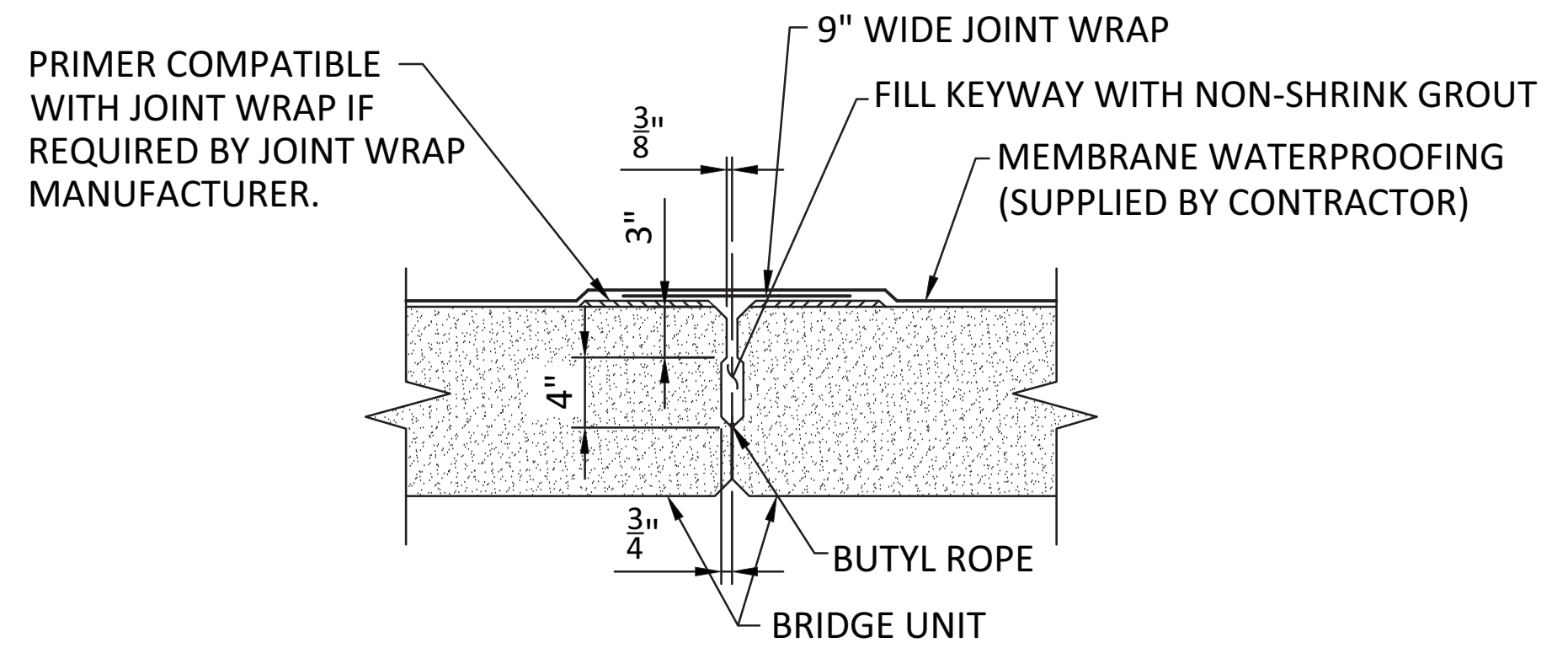
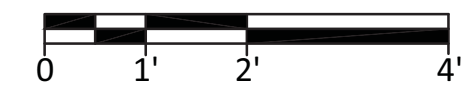
P.O. BOX 751471
DAYTON, OH 45475
800.241.0925

DESIGNED BY:	PROJECT NUMBER: 19-567
DATE: 11/27/2019	
DESIGNED BY: RPZ	
DRAWN BY: MAM	
CHECKED BY: TEN	

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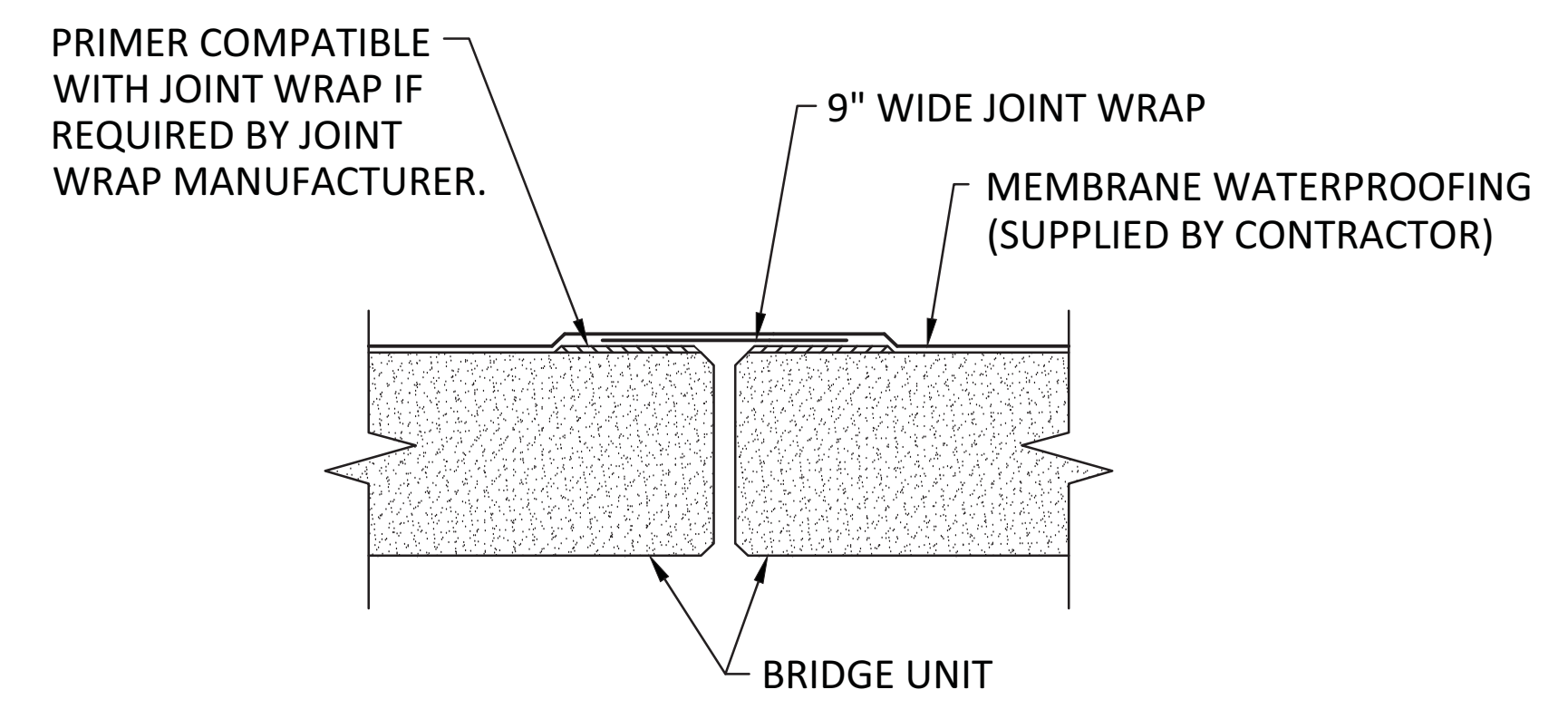
UPSTREAM END ELEVATION



TOP SLAB BRIDGE JOINT SEAL DETAIL

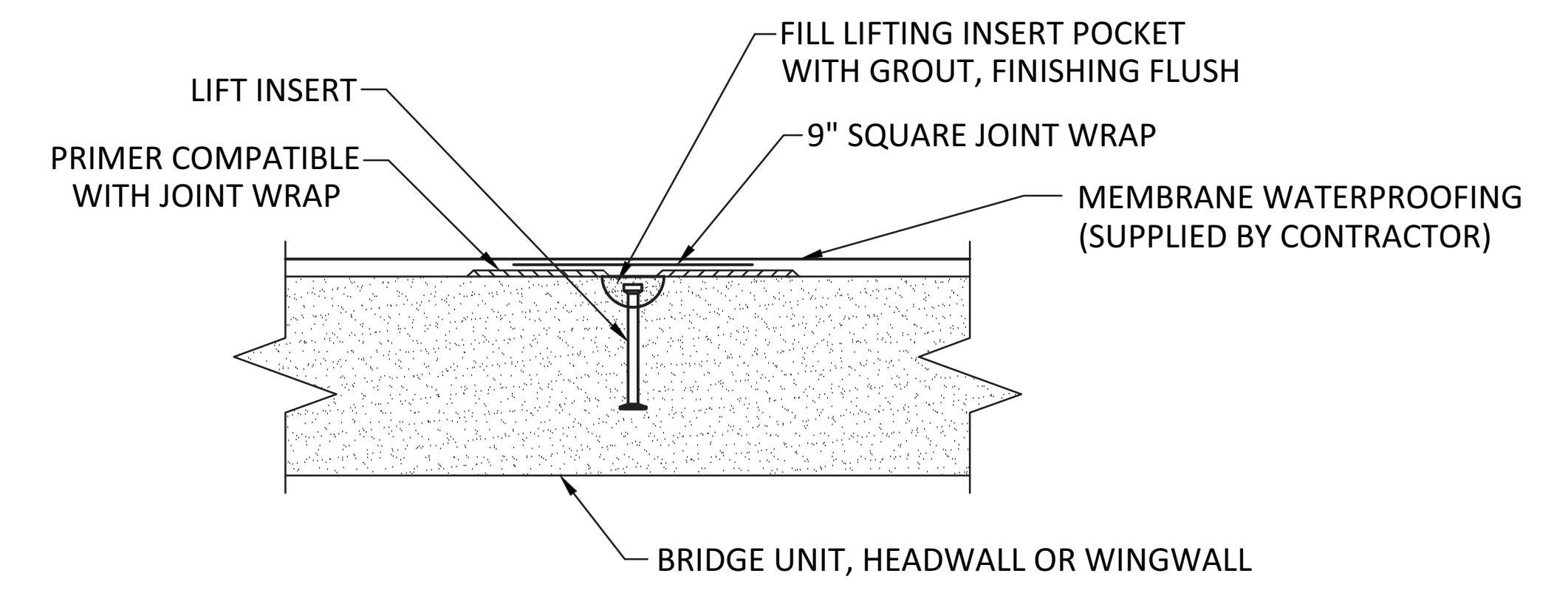
NOT TO SCALE

NOTE: AFTER ERECTION, JOINTS SHALL BE FILLED WITH NON-SHRINK GROUT. OMIT KEY ON EXTERIOR FACES OF PIECES MARKED "U1"



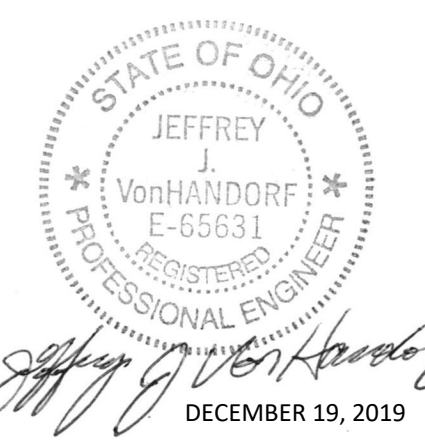
JOINT SEAL DETAIL AT LEGS

NOT TO SCALE



TYPICAL LIFT POINT SEALING DETAIL

NOT TO SCALE



FOR APPROVAL

DATE	DESCRIPTION	ENG
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**SOUTH MARION STREET
CULVERT STRUCTURE**

LOCALE: WALDO

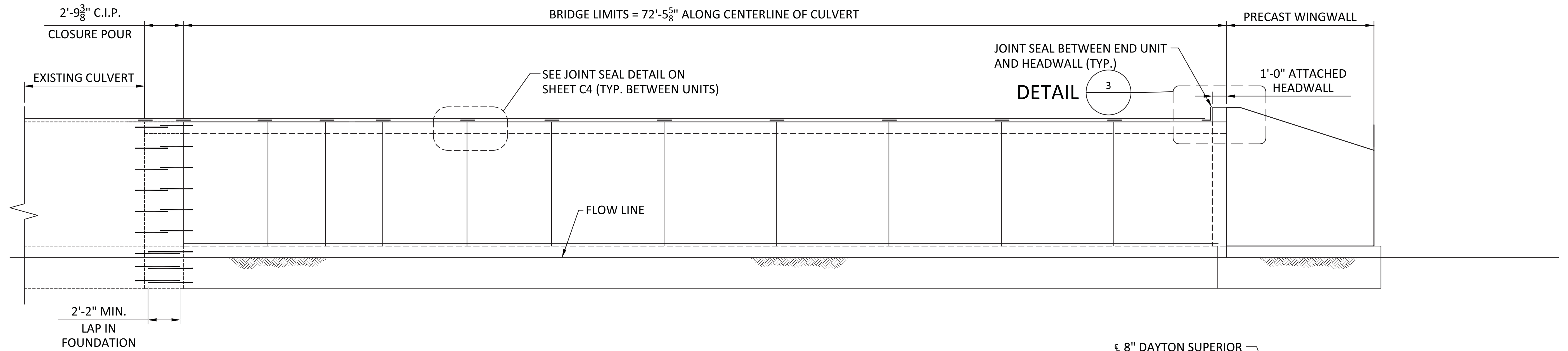
STATE: OH



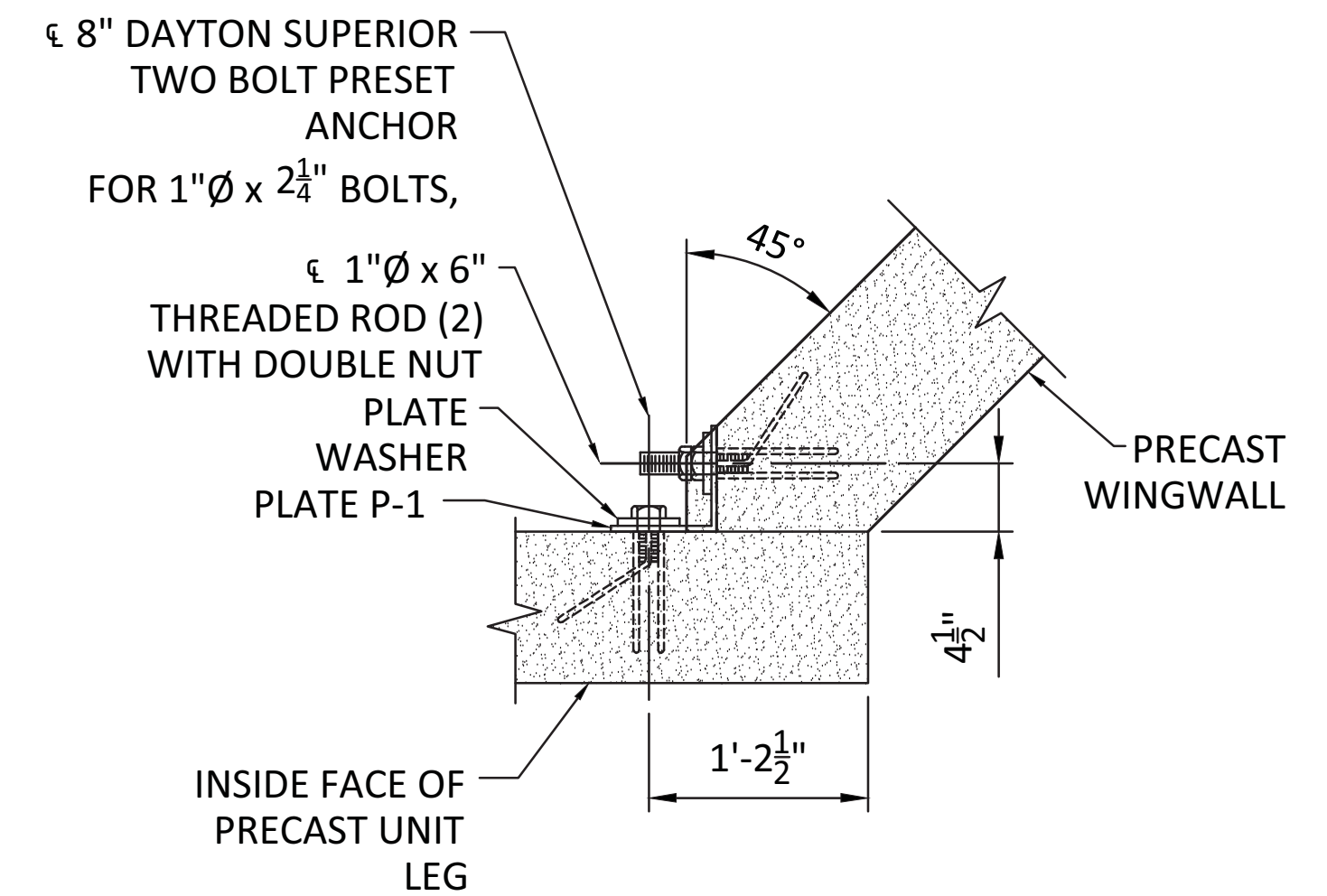
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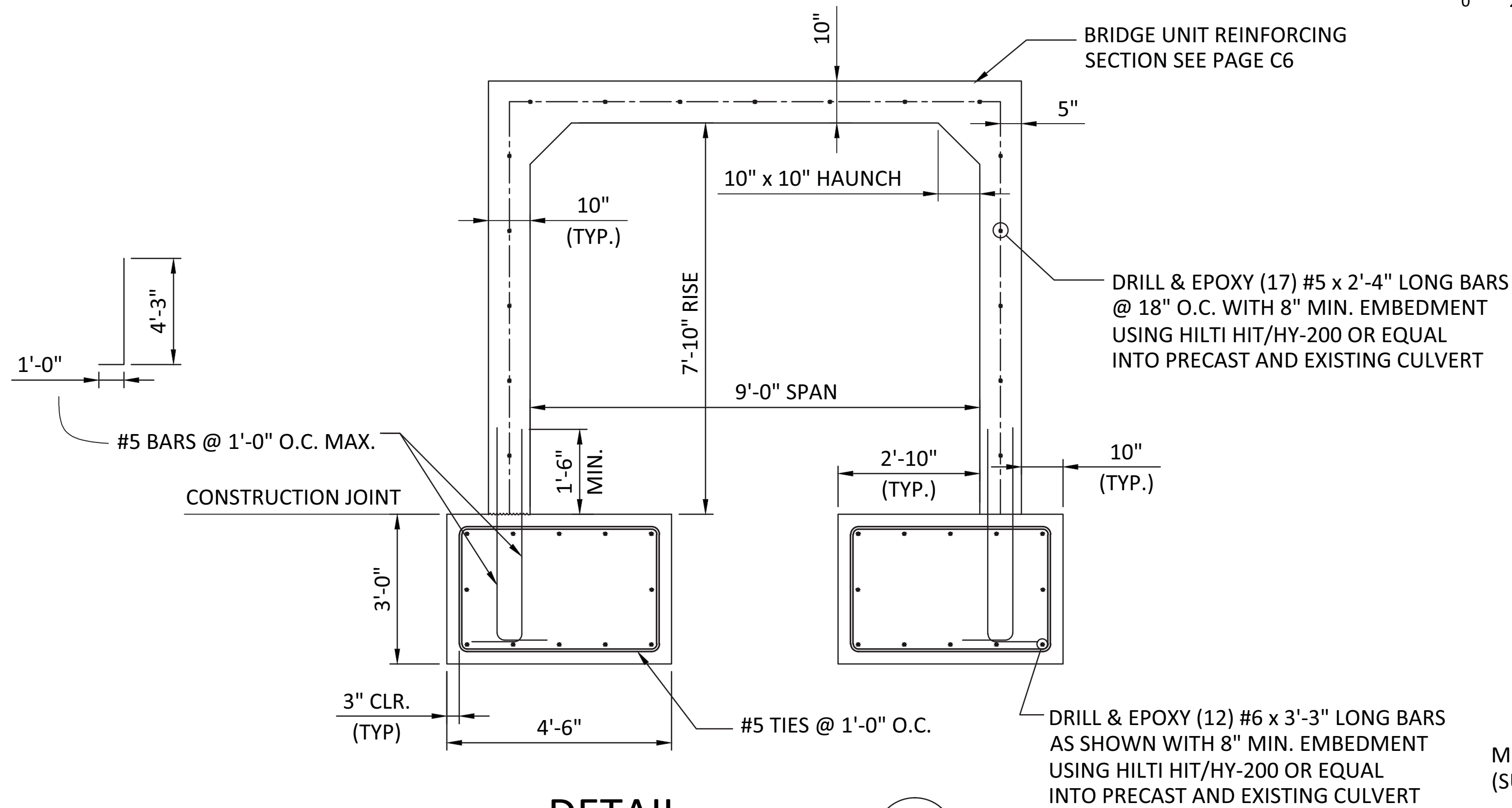
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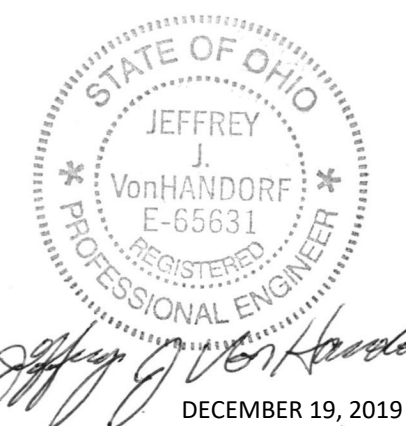
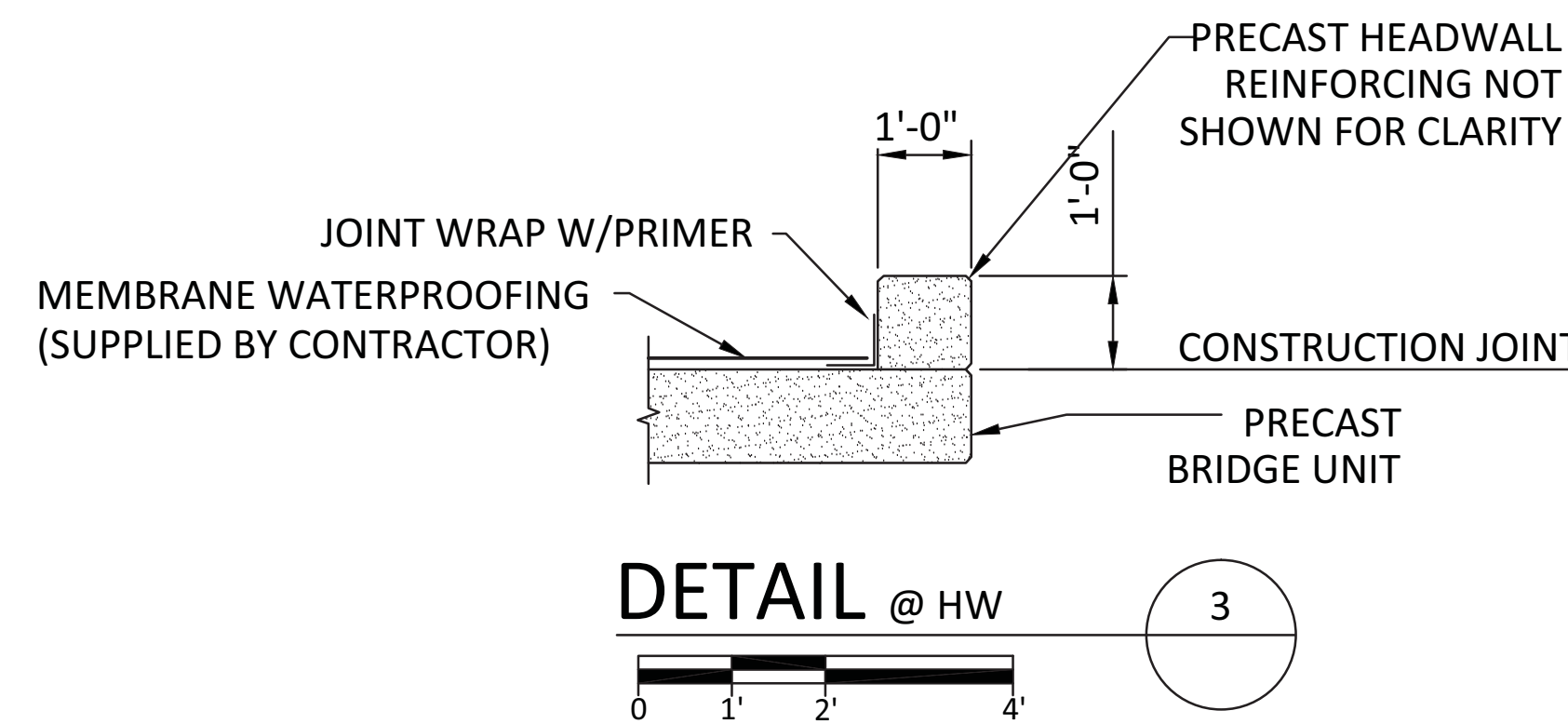
SECTION C
C1



DETAIL @ WW1 AND WW2 A
C1



DETAIL @ CLOSURE POUR D
C1



FOR APPROVAL

DATE	DESCRIPTION	ENG
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SOUTH MARION STREET
CULVERT STRUCTURE

LOCALE: WALDO

STATE: OH

DESIGNED BY:
PRETEK GROUP

P.O. BOX 751471
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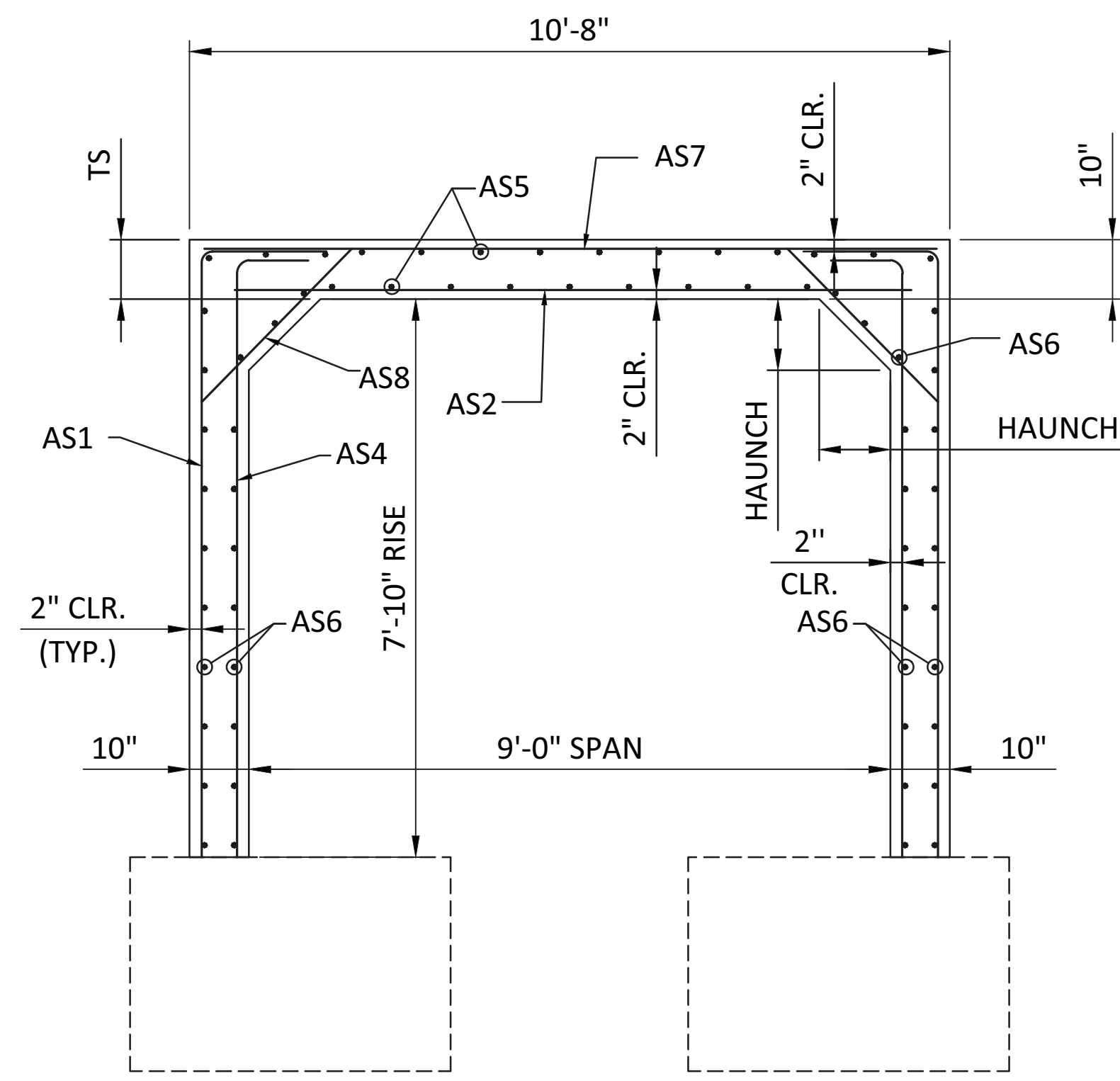
DATE: 11/27/2019

DESIGNED BY: RPZ

DRAWN BY: MAM

CHECKED BY: TEN

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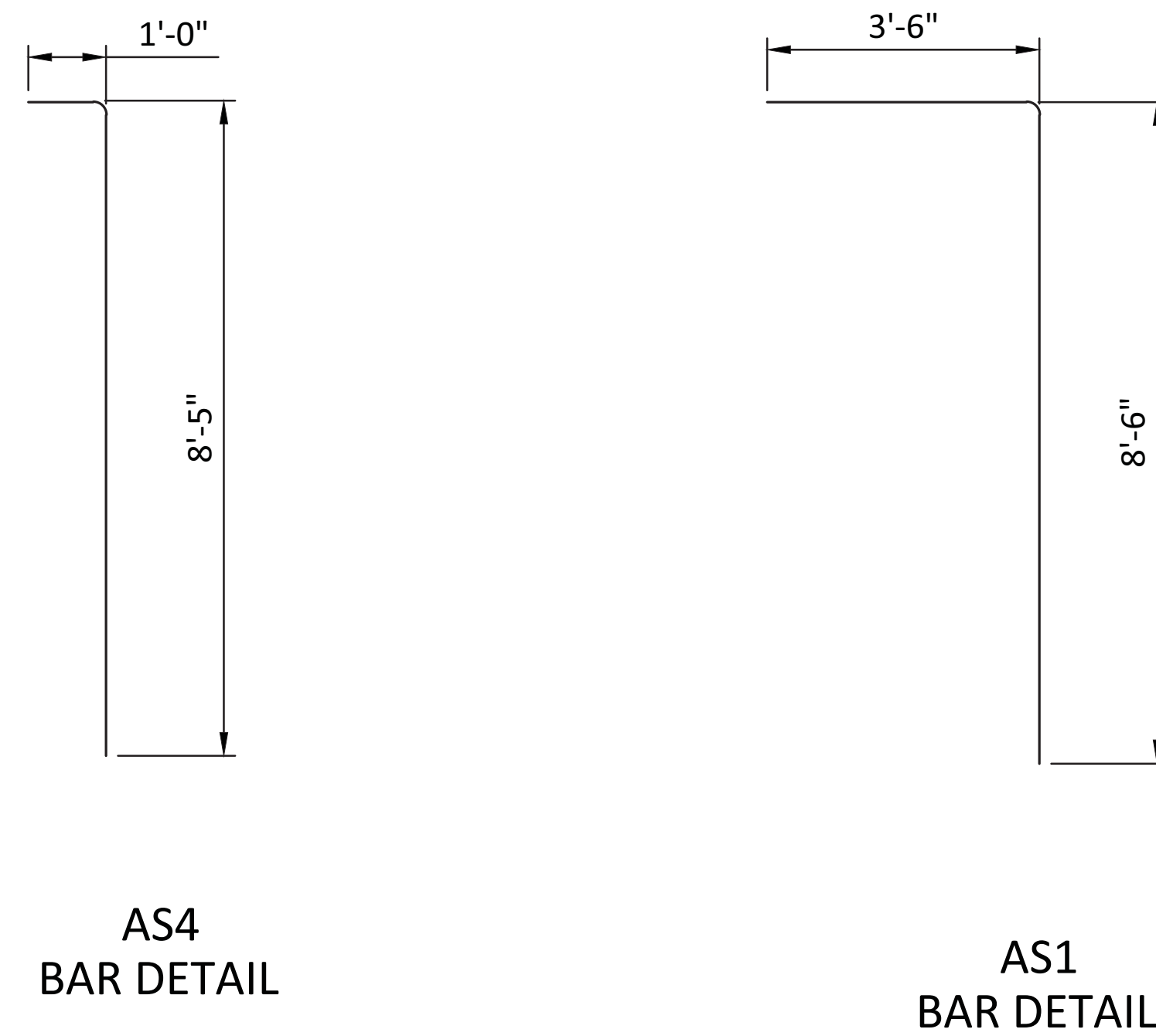


DESIGN DATA:

1. CORE STRENGTH OF CONCRETE SHALL BE 4,500 PSI MINIMUM AT 28 DAYS.
2. REINFORCING STEEL SHALL BE WITH A MINIMUM YIELD STRENGTH OF 60,000 PSI.
3. DESIGN LOAD: HL-93
4. SKEW ANGLE: N/A
5. 2" COVER ON EXT. SURFACES AND 2" COVER ON INT. SURFACES
6. D.E.C. - 1'-0" MIN. TO 3'-0" MAX.

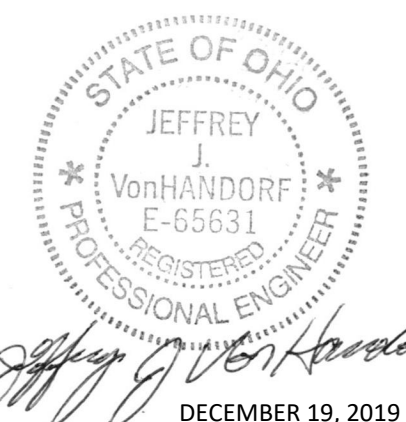
TYPICAL BRIDGE UNIT REINFORCING ELEVATION

TYPICAL BRIDGE UNIT REINFORCING LIST



AREA REQUIRED	ZONE	REINF. DESCRIPTION	LENGTH	TYPE	QTY
0.40 in ² /ft	AS1	#4@6"O.C.	12'-0"	BENT	12
0.60 in ² /ft	AS2	#4@4"O.C.	10'-3"	STR	9
N/A	AS3	N/A	N/A	STR	N/A
0.30 in ² /ft	AS4	#4@8"O.C.	9'-5"	BENT	10
0.24 in ² /ft	AS5	#4@10"O.C.	2'-5"	STR	17
0.13 in ² /ft	AS6	#3@10"O.C.	2'-5"	STR	48
0.30 in ² /ft	AS7	#4@8"O.C.	10'-3"	STR	5
0.30 in ² /ft	AS8	#4@8"O.C.	3'-0"	STR	10

NOTES: AS5 & AS6 LENGTH VARIES BASED ON SKEW = LAY LENGTH -4", MAX =2'-5"



FOR APPROVAL

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LOCALE: WALDO

SOUTH MARION STREET
CULVERT STRUCTURE

STATE: OH



P.O. BOX 751471
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800.241.0925

PROJECT NUMBER: 19-567
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SPECIFICATIONS FOR THE MANUFACTURE AND DESIGN OF PRECAST THREE SIDED STRUCTURES, WINGWALLS AND HEADWALLS

1. DESCRIPTION

THESE SPECIFICATIONS ARE FOR A PRECAST THREE SIDED ARCH STRUCTURE, HEADWALLS AND WINGWALLS. PRECAST PIECES SHALL CONFORM TO ASTM C1504-16.

2. DESIGN

THE PRECAST UNITS ARE DESIGNED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS "LRFD BRIDGE DESIGN SPECIFICATIONS", EIGHTH EDITION AND INTERIM SPECIFICATIONS TO DATE.

CONSTRUCTION EQUIPMENT HEAVIER THAN A D-4 DOZER IS NOT ALLOWED OVER THE ARCH STRUCTURE UNTIL BACKFILL IS PLACED TO AT LEAST 1' DEPTH OVER THE TOP OF THE ARCH. AT NO TIME SHALL HEAVY CONSTRUCTION OR BACKFILLING EQUIPMENT IN EXCESS OF 8 TONS BE PERMITTED OVER THE STRUCTURE OR WITHIN 3' OF ANY STRUCTURAL ELEMENT WITHOUT AT LEAST 2' OF COVER OVER THE STRUCTURE UNLESS THE STRUCTURE IS DESIGNED FOR LESS COVER. EQUIPMENT WITH AXLE WEIGHT OR TOTAL WEIGHT GREATER THAN THE DESIGN LOAD SHALL NOT BE OPERATED ON THE STRUCTURE WITHOUT WRITTEN APPROVAL FROM PRETEK GROUP.

3. MATERIALS - STEEL REINFORCEMENT AND HARDWARE

FERRULE LOOP AND EXPANDED COIL INSERTS SHALL BE AS MANUFACTURED BY DAYTON SUPERIOR CORPORATION OR EQUAL. STAINLESS STEEL INSERTS, RODS, NUTS AND WASHERS SHALL BE SAE 304. STRUCTURAL CONNECTIONS FOR ARCH UNIT PLATES AND PLATE WASHERS SHALL CONFORM TO ASTM A709, GRADE 36, GALVANIZED IN CONFORMANCE WITH ASTM A123. STEEL BOLTS, THREADED RODS AND NUTS FOR ARCH UNIT CONNECTION SHALL CONFORM TO ASTM A325. THREADED ITEMS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM B633, SERVICE CONDITION 1. OTHER ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

4. PRECAST ELEMENTS

STORAGE OF UNITS SHOULD BE IN A MANNER THAT PREVENTS ANY DAMAGE OR CRACKING AND IN A FASHION APPROVED BY THE ENGINEER

5. QUALITY ASSURANCE

THE PRECAST PLANT SHALL BE CERTIFIED BY THE NATIONAL PRECAST CONCRETE ASSOCIATION'S PLANT CERTIFICATION PROGRAM, PRECAST/PRESTRESSED CONCRETE INSTITUTE PLANT CERTIFICATION OR AMERICAN CONCRETE PIPE ASSOCIATION CERTIFIED PLANT DURING PRODUCTION OF ALL PRECAST ELEMENTS.

THE OWNER OR OWNER'S AGENT MAY INSPECT THE MATERIAL, MANUFACTURE AND FINISHED PRECAST ELEMENTS AT THEIR DISCRETION.

6. PERMISSIBLE VARIATIONS

WINGWALL AND HEADWALL ARE TO BE MANUFACTURED SO THAT THE LENGTH, HEIGHT AND THICKNESS DOES NOT VARY MORE THAN 1/2" FROM WHAT IS SHOWN ON THE SHOP DRAWINGS. WINGWALL ANCHOR LENGTH LONGER THAN THAT SHOWN ON THE SHOP DRAWINGS SHALL NOT BE CAUSE FOR REJECTION.

THE MAXIMUM PERMISSIBLE JOINT WIDTH AT ANY LOCATION SHALL BE 3/4"

7. WORKMANSHIP AND FINISH

PRECAST ELEMENTS ARE TO HAVE A SMOOTH STEEL FORM OR TROWELED SURFACE. THE ENDS OF BRIDGE UNITS SHALL BE NORMAL TO THE WALLS AND CENTERLINE OF THE ARCH. THE PRECAST ELEMENTS SHALL BE FREE OF ANY SUBSTANTIAL FRACTURE OR BLEMISH.

8. MARKING

IN ADDITION TO MARKINGS DESCRIBED IN ASTM C1504 AND/OR PROJECT SPECIFICATIONS, THE PIECE MARK SHOWN IN THE SHOP DRAWINGS SHALL BE INCLUDED.

9. CONSTRUCTION

THE BRIDGE UNITS AND WINGWALLS SHALL BE INSTALLED ON CAST IN PLACE FOUNDATIONS PER THE PLANS. THE PROJECT ENGINEER SHALL VERIFY THAT THE FOUNDATION SUBGRADE IS IN COMPLIANCE WITH THE GEOTECHNICAL REPORT FOR THE PROJECT.

THE FOOTINGS SHALL HAVE A SMOOTH FLOAT FINISH WITH A MINIMUM COMPRESSIVE STRENGTH AS SPECIFIED IN THE DESIGN NOTES. THE SURFACE OF THE FOUNDATION SHALL NOT VARY BY MORE THAN 1/4" WHEN MEASURED WITH A 10 FOOT STRAIGHT EDGE. THE FOOTINGS SHALL HAVE REACHED A MINIMUM OF 2,000 PSI BEFORE INSTALLATION OF ANY PRECAST ELEMENTS. FOUNDATION DIMENSION SHALL MATCH THOSE THAT ARE SHOWN ON THE PLANS.

PRECAST ELEMENTS SHALL BE INSTALLED AS SHOWN ON THE PLANS AND SPECIAL CARE SHALL BE TAKEN TO VERIFY THAT ELEMENTS ARE PLACED TO FOLLOW THE DESIGNATED CENTERLINE OF THE STRUCTURE. BRIDGE STRUCTURES AND WINGWALLS ARE TO BE PLACED ON MASONITE SHIMS TO ALLOW A MINIMUM OF 1/2" CLEARANCE BETWEEN BOTTOM OF PRECAST ELEMENT AND TOP OF FOOTING. GAP TO BE FILLED WITH CEMENT GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI. GROUT TO BE COMPOSED OF PORTLAND CEMENT AND WATER OR CEMENT MORTAR COMPOSED OF ONE PART PORTLAND CEMENT AND THREE PARTS SAND BY VOLUME.

BUTT JOINTS BETWEEN BRIDGE UNITS SHALL BE COVERED WITH A 7/8" X 1 3/8" (1" NOMINAL) BUTYL ROPE AND A 9" (MINIMUM) WIDE STRIP OF JOINT WRAP. BUTYL ROPE SHALL BE CONSEAL (CS-101) OR EQUAL, AND WRAP SHALL BE CONSEAL (CS-212) OR EQUAL. A PRIMER COMPATIBLE WITH THE JOINT WRAP TO BE APPLIED ON EACH SIDE OF THE BUTT JOINT ON A CLEAN SURFACE IF REQUIRED BY JOINT WRAP MANUFACTURER. JOINT PROTECTION SHALL EXTEND FROM BOTTOM OF ONE LEG, UP OVER ARCH AND DOWN OPPOSITE LEG. ANY LAPS SHALL HAVE 6" OF OVERLAP AND HAVE OVERLAP RUNNING DOWN HILL.

LIFT HOLES ARE TO BE FILLED, PRIMED AND COVERED WITH JOINT WRAP. EDGES ALONG HEADWALL COLLAR AND TOP OF BRIDGE UNIT TO BE COVERED WITH JOINT WRAP INSTALLED PER MANUFACTURERS RECOMMENDATIONS. HEADWALLS THAT ARE CAST INTEGRAL WITH A BRIDGE UNIT REQUIRES NO TYPE OF JOINT PROTECTION.

JOINTS BETWEEN WINGWALL SECTIONS AND JOINTS BETWEEN A WINGWALL AND BRIDGE UNIT SHALL BE SEALED WITH EITHER A 2' WIDE STRIP OF FILTER FABRIC OR 9" WIDE (MINIMUM) JOINT WRAP.

BACKFILL IS DEFINED AS ALL REPLACED EXCAVATION AND NEW EMBANKMENT MATERIAL THAT IS ADJACENT TO THE THREE SIDED STRUCTURE, WINGWALLS AND HEADWALLS. BACKFILL MATERIAL WITHIN STRUCTURAL BACKFILL ZONE (BACKFILL ZONE A), MUST MEET THE AASHTO MATERIAL REQUIREMENTS ON THIS SHEET.

ALL BACKFILL IN ZONE A IS TO BE COMPACTED TO A MINIMUM DENSITY OF 95% STANDARD PROCTOR PER AASHTO T-99.

SPECIAL CARE IS TO BE TAKEN DURING BACKFILLING TO PROTECT THE PLACEMENT OF JOINT WRAP OR ANY WATERPROOFING MATERIAL.

MECHANICAL TAMPERS OR APPROVED COMPACTING EQUIPMENT NOT EXCEEDING 1 TON SHALL BE USED ON ALL BACKFILL MATERIAL THAT IS DIRECTLY ADJACENT TO THE STRUCTURAL ELEMENTS AND OVER THE TOP OF THE STRUCTURE UNTIL THERE IS AT LEAST 1' OF COVER OVER THE TOP. BACKFILL MATERIAL IN STRUCTURAL BACKFILL ZONE SHALL BE PLACED IN 8" LIFTS (MAXIMUM) BEFORE BEING COMPACTED. AT NO TIME SHALL HEAVY CONSTRUCTION OR BACKFILLING EQUIPMENT IN EXCESS OF 8 TON BE PERMITTED OVER THE STRUCTURE OR WITHIN 3' OF ANY STRUCTURAL ELEMENT WITHOUT AT LEAST 2' OF COVER OVER THE STRUCTURE UNLESS THE STRUCTURE IS DESIGNED FOR LESS COVER.

DURING BACKFILLING, AT NO TIME SHALL THERE BE MORE THAN 24" DIFFERENCE BETWEEN BACKFILL HEIGHT ON EACH SIDE OF THE CULVERT

ACCEPTABLE BACKFILL MATERIAL IN ZONE A		
SPAN	FILL HEIGHT	MATERIAL IN ZONE A
≤ 24'-0"	< 12'-0"	A1, A2, A3
≤ 24'-0"	≥ 12'-0"	A1, A3
> 24'-0"	ALL	A1, A3

TABLE 1 - ACCEPTABLE BACKFILL

BACKFILL DESCRIPTION					
AASHTO GROUP CLASSIFICATION	A-1a	A-1b	A-2-4	A-2-5	A3
TYPICAL USCS MATERIALS	GW, GP, SP	GM, SW, SP, SM	GM, SM, ML, SP, GP	SC, GC, GM	SP, SM, SW
PERCENT PASSING #10	50 MAX.				
PERCENT PASSING #40	30 MAX.	50 MAX.			51 MIN.
PERCENT PASSING #200	15 MAX.	25 MAX.	35 MAX.	35 MAX.	10 MAX.
CHARACTERISTICS OF FRACTION PASSING #40, LIQUID LIMIT			40 MAX.	41 MIN.	
CHARACTERISTIC OF FRACTION PASSING #40, PLASTICITY INDEX	6 MAX.	6 MAX.	10 MAX.	10 MAX.	
DESCRIPTION OF MATERIAL	MOSTLY GRAVEL WITH SOME SANDS AND FINES	GRAVELLY SAND OR GRADED SAND	SILTY OR CLAYEY GRAVEL AND SAND	SILTY OR CLAYEY GRAVEL AND SAND	FINE SAND



FOR APPROVAL

<table border="1"> <tr><th>DATE</th><th>DESCRIPTION</th><th>ENG</th></tr> <tr><td>7</td><td></td><td></td></tr> <tr><td>6</td><td></td><td></td></tr> <tr><td>5</td><td></td><td></td></tr> <tr><td>4</td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td></tr> <tr><td>1</td><td></td><td></td></tr> </table>	DATE	DESCRIPTION	ENG	7			6			5			4			3			2			1			<p align="center">SOUTH MARION STREET CULVERT STRUCTURE</p>	<p>LOCALE: WALDO STATE: OH</p>	<p>DESIGNED BY: PRETEK GROUP P.O. BOX 751471 DAYTON, OH 45475 800.241.0925</p>	<p>PROJECT NUMBER: 19-567 DATE: 11/27/2019 DESIGNED BY: RPZ DRAWN BY: MAM CHECKED BY: TEN</p>	<p align="center">17</p>
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