

STRUCTURE GENERAL NOTES

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002 AND THE ODOT BRIDGE DESIGN MANUAL, JANUARY, 2003.

DESIGN DATA:

DESIGN LOADING: HS25, CASE II AND THE ALTERNATE MILITARY LOADING, AND A 60 PSF FUTURE WEARING SURFACE.

HS25, CASE I AND THE ALTERNATE MILITARY LOADING, AND A 60 PSF FUTURE WEARING SURFACE (STA-77-1132, I-77 OVER 13TH STREET NW ONLY)

HIGH PERFORMANCE CONCRETE – COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

CONCRETE CLASS C – COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL – ASTM A615, A616, OR A617
GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615

STRUCTURAL STEEL – ASTM A572/A709 GRADE 50 – YIELD STRENGTH 50,000 PSI
(UNLESS NOTED OTHERWISE)

REFERENCE SHALL BE MADE TO:

STANDARD DRAWINGS:

AS-1-81	REVISED	7-19-02	VPF-1-90	REVISED	7-19-02
BR-2-98	REVISED	7-19-02	PCB-91	REVISED	7-19-02
BS-1-93	REVISED	7-19-02	SBR-1-99	REVISED	7-19-02
EXJ-4-87	REVISED	7-19-02	SICD-1-96	REVISED	7-19-02
GSD-1-96	REVISED	7-19-02			

SUPPLEMENTAL SPECIFICATIONS:

NO. 800	DATED	4-15-05
NO. 894	DATED	4-15-05
NO. 927	DATED	4-15-05

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL, 2½" CONCRETE COVER

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

UTILITY LINES

ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) ANY AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02, AND 513.04.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PRE-BID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

PLANS OF THE EXISTING STRUCTURES ARE AVAILABLE FOR EXAMINATION AT: THE OHIO DEPARTMENT OF TRANSPORTATION; DISTRICT 4 OFFICE; 2088 SOUTH ARLINGTON ROAD, AKRON, OHIO 44306

PROPOSED WORK

(FOR BRIDGE STA-172-1380, W. TUSCARAWAS STREET OVER WEST BRANCH OF NIMISHILLEN CREEK)

THE FOLLOWING WORK SHALL BE COMPLETED IN TWO CONSTRUCTION STAGES. PHASE NUMBERS CORRESPOND TO THOSE DESIGNATED FOR RECONSTRUCTING WEST TUSCARAWAS STREET.

ONE LANE OF TRAFFIC SHALL BE MAINTAINED EASTBOUND AND WESTBOUND ON WEST TUSCARAWAS STREET AT ALL TIMES. RAMPS C AND D SHALL REMAIN OPEN EXCEPT DURING PAVING OF THE EASTBOUND PART OF THIS INTERSECTION AND DURING RELOCATION WORK INVOLVING AN EXISTING 48" BRICK STORM SEWER ACROSS THIS INTERSECTION. ACCESS TO ELGIN AVENUE AND WASHINGTON BOULEVARD NW SHALL BE MAINTAINED AT ALL TIMES.

PHASE 4 CONSTRUCTION:

- RELOCATE UTILITIES CONFLICTING WITH THE REMOVAL OF THE LEFT PART OF THE EXISTING BRIDGE.
- INSTALL TEMPORARY SHORING ON THE APPROACHES FOR STAGE CONSTRUCTION.
- REMOVE THE LEFT PART OF THE BRIDGE WHERE SHOWN ON THE "PHASE CONSTRUCTION DETAILS" DRAWING AND THE "ABUTMENT REMOVAL PLANS" DRAWING.
- INSTALL TEMPORARY SHORING OR INSTALL COFFERDAMS TO FACILITATE ABUTMENT FOOTING CONSTRUCTION.
- EXCAVATE AND DRIVE FOUNDATION PILES FOR THE LEFT PART OF THE PROPOSED STRUCTURE.
- CONSTRUCT PART-WIDTH WALL-TYPE ABUTMENTS, INCLUDING NW AND NE WINGWALLS UP TO BRIDGE SEATS. PLACE ROCK CHANNEL PROTECTION IN FRONT OF THE NEW BREASTWALLS.
- BACKFILL BEHIND ABUMENT BREASTWALLS AND WINGWALLS.
- ERECT GALVANIZED STEEL BEAMS ON ELASTOMERIC BEARINGS AND BOLT CROSSFRAMES BETWEEN THE BEAMS.
- COMPLETE WINGWALL CONSTRUCTION ABOVE THE BRIDGE SEATS.
- CONSTRUCT PART-WIDTH SEMI-INTEGRAL ABUTMENT DIAPHRAGMS AND DECK AND APPROACH SLABS.
- CONSTRUCT SIDEWALKS AND PARAPET WITH TUBE RAILINGS ON DECK AND APPROACH SLABS, THEN ATTACH A BRIDGE TERMINAL ASSEMBLY TO EACH END.
- SEAL CONCRETE SURFACES AND FIELD PAINT OUTSIDE FASCIA BEAM.

PHASE 5 CONSTRUCTION (ROADWAY):

RELOCATE AN EXISTING 48" BRICK STORM SEWER UNDER THE REAR APPROACH TO OUTLET SOUTH OF THE PROPOSED STRUCTURE. REMOVE THE EXISTING STORM BETWEEN THE NEW MANHOLE IN THE INTERSECTION AND THE EXISTING REAR ABUTMENT.

PHASE 6 CONSTRUCTION:

- RELOCATE UTILITIES CONFLICTING WITH THE REMOVAL OF THE RIGHT PART OF THE EXISTING BRIDGE.
- SAWCUT THE EXISTING SOUTHEAST WINGWALL WHERE SHOWN ON THE "ABUTMENT REMOVAL PLANS" DRAWING. REMOVE THE REMAINING PART OF THE BRIDGE EXCEPT FOR THE SOUTHEAST WINGWALL DESIGNATED "TO REMAIN."
- INSTALL TEMPORARY SHORING OR INSTALL COFFERDAMS TO FACILITATE ABUTMENT FOOTING CONSTRUCTION.
- EXCAVATE AND DRIVE THE REST OF THE BRIDGE ABUTMENT PILES.
- CONSTRUCT THE REST OF THE WALL TYPE ABUTMENTS, INCLUDING SW WINGWALL UP TO BRIDGE SEAT. PLACE THE REST OF THE ROCK CHANNEL PROTECTION IN FRONT OF THE BREASTWALLS. REPLACE WALKWAY IN FRONT OF FORWARD ABUTMENT AS SHOWN ON THE PLANS.
- BACKFILL BEHIND ABUTMENT BREASTWALLS AND SW WINGWALL.
- ERECT GALVANIZED STEEL BEAMS ON ELASTOMERIC BEARINGS AND BOLT CROSSFRAMES BETWEEN BEAMS TO COMPLETE THE BRIDGE FRAMING (DO NOT TIGHTEN BOLTS IN BAY BENEATH CLOSURE POUR).
- COMPLETE WINGWALL CONSTRUCTION ABOVE THE BRIDGE SEATS.

- CONSTRUCT PART-WIDTH SEMI-INTEGRAL ABUTMENT DIAPHRAGMS AND DECK.

- PLACE A CLOSURE POUR FOR THE ABUTMENT DIAPHRAGMS AND DECK. TIGHTEN THE CROSSFRAME CONNECTION BOLTS IN THE BAY HAVING THE CLOSURE POUR PRIOR TO THE DECK CLOSURE POUR.

- CONSTRUCT THE REST OF THE APPROACH SLABS.

- CONSTRUCT SIDEWALKS AND PARAPETS WITH TUBE RAILINGS ON DECK AND APPROACH SLABS, THEN ATTACH A BRIDGE TERMINAL ASSEMBLY TO EACH END.

- SEAL CONCRETE SURFACES AND FIELD PAINT OUTSIDE FASCIA BEAM.

PROPOSED WORK

(FOR BRIDGE STA-172-1351, W. TUSCARAWAS STREET OVER I-77)

THE FOLLOWING WORK SHALL BE COMPLETED IN THREE CONSTRUCTION STAGES. PHASE NUMBERS CORRESPOND TO THOSE DESIGNATED FOR RECONSTRUCTING MAINLINE INTERSTATE 77.

W.TUSCARAWAS STREET SHALL BE CLOSED AT THE BRIDGE LIMITS AND TRAFFIC SHALL BE DETOURED. TWO LANES OF TRAFFIC SHALL BE MAINTAINED NORTHBOUND AND SOUTHBOUND ON INTERSTATE 77 AT ALL TIMES.

PHASE 1 AND PHASE 2 CONSTRUCTION:

- CONSTRUCT A REPLACEMENT SANITARY SIPHON SEWER INCLUDING TWO SIPHON CHAMBERS SOUTH OF THE EXISTING SIPHON SEWER; MAINTAIN EXISTING SBC DUCTS USING A TEMPORARY UTILITY BRIDGE. SEE "SBC TEMPORARY BRIDGE WEST TUSCARAWAS STREET OVER INTERSTATE 77, CANTON, OHIO" PLANS ON SHEETS 916 THROUGH 933; REMOVE THE WATERLINE SUPPORTED ON THE BRIDGE; REMOVE THE TWO GAS LINES SUPPORTED ON THE BRIDGE. (SEE GENERAL NOTE ON SHEET G3/G11).
- REMOVE THE REST OF THE BRIDGE DECK AND BEAMS; MOVE TWO LANES OF TRAFFIC TOWARD THE CENTERLINE AND REMOVE THE NORTHBOUND SHOULDER PIER, INCLUDING ITS FOOTINGS; NORTHBOUND REMOVALS MAY REQUIRE NIGHT WORK; REMOVE THE SOUTHBOUND SHOULDER PIER DOWN TO ITS FOOTINGS.
- REMOVE THE ABANDONED SANITARY CHAMBER AND THE ABANDONED SANITARY VAULT; REMOVE THE ABANDONED SIPHON SEWER PIPES BENEATH BOTH BACK SLOPES OF INTERSTATE 77.
WITH TWO LANES OF TRAFFIC IN EACH DIRECTION NEAR THE CENTERLINE EXCAVATE FOR THE FORWARD AND REAR ABUTMENTS FOOTINGS AND THE TWO WINGWALL FOOTINGS INTO BEDROCK.
- CONSTRUCT WALL-TYPE ABUTMENTS ON SPREAD FOOTINGS UP TO THE BRIDGE SEATS.
- CONSTRUCT TWO CURVED WINGWALLS ON SPREAD FOOTINGS.
- PROVIDE TEMPORARY PAVEMENT UP TO THE NEW ABUTMENTS AND SHIFT THE TRAFFIC TOWARDS THE NEW ABUTMENTS.

PHASE 3 CONSTRUCTION:

- REMOVE THE REAR AND FORWARD APPROACH SLABS; REMOVE THE EXISTING REAR ABUTMENT, INCLUDING ITS FOOTING; REMOVE THE EXISTING FORWARD ABUTMENT BACKWALL AND WINGWALLS DOWN TO THE BRIDGE SEAT LEVEL.
- REMOVE THE EXISTING CENTER PIER AND REMAINDER OF THE EXISTING MEDIAN (FROM STA. 62+50 TO STA. 68+00)
- CONSTRUCT NEW CENTER PIER. COMPLETE MEDIAN REMOVAL AND COMPLETE MEDIAN PAVEMENT REPAIR.
- ERECT STRUCTURAL STEEL OVER NORTHBOUND LANES UTILIZING SHORT TERM CLOSURES (ROLLING ROADBLOCK) AT NIGHT AND/OR WEEKENDS.
- SHIFT ALL TRAFFIC (TWO LANES IN EACH DIRECTION) TO THE EXISTING NORTHBOUND SIDE.

PHASE 4 CONSTRUCTION:

1. COMPLETE ERECTION OF STRUCTURAL STEEL OVER THE SOUTHBOUND LANES.
2. COMPLETE CONSTRUCTION OF PROPOSED BRIDGE.
3. REMOVE THE ABANDONED SIPHON SEWER PIPES THAT ARE ENCASED IN CONCRETE BENEATH THE SOUTHBOUND LANES OF INTERSTATE 77.
4. COMPLETE CONSTRUCTION OF THE SOUTHBOUND LANES OF INTERSTATE 77.
5. COORDINATE WITH SBC WHILE THEY MOVE THE EXISTING TELEPHONE CABLES FROM THE TEMPORARY UTILITY BRIDGE TO THE NEW SUPERSTRUCTURE; CONTRACTOR WILL THEN DISMANTLE AND REMOVE ITS TEMPORARY BRIDGE, INCLUDING BOTH BENTS ABOVE THE BRIDGE SEATS.
6. INSTALL WATER LINE ON THE SUPERSTRUCTURE; COORDINATE WITH DOMINION EAST OHIO GAS WHILE THEY INSTALL TWO GAS LINES ON THE SUPERSTRUCTURE.
7. CONSTRUCT APPROACH SLABS.
8. CONSTRUCT SIDEWALKS AND PARAPETS ON DECK AND APPROACH SLABS, THEN ATTACH A BRIDGE TERMINAL ASSEMBLY TO EACH END.
9. SEAL CONCRETE SURFACES AND FIELD PAINT OUTSIDE FASCIA BEAMS.
10. INSTALL VANDAL PROTECTION FENCES ON THE PARAPETS.

ROADWAY PHASE 5:

1. REMOVE THE ABANDONED SIPHON SEWER PIPES THAT ARE ENCASED IN CONCRETE BENEATH THE NORTHBOUND LANES OF INTERSTATE 77.

PROPOSED WORK

(FOR BRIDGE STA-77-1071, 4TH STREET NW OVER I-77)

THE FOLLOWING WORK SHALL BE COMPLETED IN THREE CONSTRUCTION STAGES. PHASE NUMBERS CORRESPOND TO THOSE DESIGNATED FOR RECONSTRUCTING MAINLINE INTERSTATE 77.

4TH STREET NW SHALL BE CLOSED AT THE BRIDGE LIMITS AND TRAFFIC SHALL BE DETOURED. TWO LANES OF TRAFFIC SHALL BE MAINTAINED NORTHBOUND AND SOUTHBOUND ON INTERSTATE 77 AT ALL TIMES.

PHASE 3 CONSTRUCTION:

1. CONSTRUCT THE EAST PART OF A REPLACEMENT SANITARY SIPHON SEWER INCLUDING THE EAST SIPHON CHAMBER NORTH OF THE BRIDGE; COORDINATE THE RELOCATION OF AERIAL LINES NORTH OF THE BRIDGE (BY THE UTILITIES); COORDINATE THE REMOVAL OF BOTH GAS LINES SUPPORTED ON THE BRIDGE (BY DOMINION EAST OHIO GAS).
2. REMOVE THE BRIDGE SUPERSTRUCTURE.
3. REMOVE THE CAP AND COLUMNS CENTER PIER, INCLUDING ITS FOOTINGS.

PHASE 4 CONSTRUCTION:

1. CONSTRUCT THE WEST PART OF A REPLACEMENT SANITARY SIPHON SEWER INCLUDING THE WEST SIPHON CHAMBER NORTH OF THE BRIDGE; REMOVE THE REAR APPROACH SLAB; REMOVE THE REAR ABUTMENT, INCLUDING ITS FOOTING; REMOVE THE SOUTHBOUND CAP AND COLUMNS SHOULDER PIER, INCLUDING ITS FOOTINGS.
2. REMOVE THE ABANDONED WEST SANITARY CHAMBER; REMOVE THE ABANDONED SIPHON SEWER PIPES BENEATH SOUTHBOUND INTERSTATE 77 AND ITS BACK SLOPE.
3. INSTALL TEMPORARY SHORING ALONG THE REAR BACK SLOPE TO FACILITATE EXCAVATION WORK.
4. EXCAVATE AND DRIVE FOUNDATION PILES FOR THE REAR ABUTMENT AND ITS TWO WINGWALL FOOTINGS. REMOVE EXISTING REAR ABUTMENT PILES BELOW PROPOSED ABUTMENT FOOTING WHERE THEY INTERFERE WITH NEW PILE LOCATIONS.
5. CONSTRUCT A WALL-TYPE REAR ABUTMENT UP TO ITS BRIDGE SEAT.
6. CONSTRUCT TWO CURVED WINGWALLS.
7. CONSTRUCT RETAINING WALL NO. 6 ADJACENT TO THE REAR LEFT WINGWALL.
8. BACKFILL BEHIND THE ABUTMENT AND WINGWALLS.
9. INSTALL TEMPORARY SHORING ALONG THE EAST EDGE OF THE PROPOSED CENTER PIER FOOTINGS.
10. EXCAVATE AND DRIVE FOUNDATION PILES FOR THE CENTER PIER.
11. CONSTRUCT THE CAP AND COLUMNS CENTER PIER.

PHASE 5 CONSTRUCTION:

1. REMOVE THE FORWARD APPROACH SLAB; REMOVE THE FORWARD ABUTMENT ABUTMENT BACKWALL AND WINGWALLS DOWN TO THE BRIDGE SEAT LEVEL; REMOVE THE NORTHBOUND CAP AND COLUMNS SHOULDER PIER, INCLUDING ITS FOOTINGS.
2. REMOVE THE ABANDONED EAST SANITARY CHAMBER; REMOVE THE ABANDONED SIPHON SEWER PIPES BENEATH NORTHBOUND INTERSTATE 77 AND ITS BACK SLOPE.
3. INSTALL TEMPORARY SHORING ALONG THE FORWARD BACK SLOPE TO FACILITATE EXCAVATION WORK.
4. EXCAVATE AND DRIVE FOUNDATION PILES FOR THE FORWARD ABUTMENT AND ITS TWO WINGWALLS. REMOVE EXISTING NB SHOULDER PIER PILES WHEREVER THEY INTERFERE WITH DRIVING NEW PILES.
5. CONSTRUCT A WALL-TYPE FORWARD ABUTMENT UP TO ITS BRIDGE SEAT.
6. CONSTRUCT A CURVED WINGWALL AT THE FORWARD LEFT SIDE.
7. CONSTRUCT RETAINING WALL NO. 21 AT THE FORWARD RIGHT SIDE.
8. BACKFILL BEHIND THE FORWARD ABUTMENT BREASTWALL, WINGWALL AND RETAINING WALL.
9. ERECT GALVANIZED STEEL BEAMS ON ELASTOMERIC BEARINGS AND BOLT CROSSFRAMES BETWEEN THE BEAMS.
10. COMPLETE CURTAIN WALL CONSTRUCTION ABOVE THE BRIDGE SEATS OF BOTH ABUTMENTS.
11. CONSTRUCT SEMI-INTEGRAL ABUTMENT DIAPHRAGMS AND DECK.
12. COORDINATE WITH DOMINION EAST OHIO GAS WHILE THEY INSTALL TWO GAS LINES ON THE NEW SUPERSTRUCTURE.
13. FINISH BACKFILLING BEHIND BOTH ABUTMENTS TO THE SUBGRADE LEVEL.
14. CONSTRUCT APPROACH SLABS.
15. CONSTRUCT SIDEWALKS AND PARAPETS ON DECK AND APPROACH SLABS, THEN ATTACH A BRIDGE TERMINAL ASSEMBLY TO EACH END.
16. SEAL CONCRETE SURFACES AND FIELD PAINT OUTSIDE FASCIA BEAMS.
17. INSTALL VANDAL PROTECTION FENCES ON THE PARAPETS.

PROPOSED WORK

(FOR BRIDGE STA-77-1132 OVER 13TH STREET NW)

THE FOLLOWING WORK SHALL BE COMPLETED IN THREE CONSTRUCTION STAGES. PHASE NUMBERS CORRESPOND TO THOSE DESIGNATED FOR RECONSTRUCTING MAINLINE INTERSTATE 77.

TWO LANES OF TRAFFIC SHALL BE MAINTAINED NORTHBOUND AND SOUTHBOUND ON INTERSTATE 77 AT ALL TIMES.

PHASE 3 CONSTRUCTION:

1. REMOVE THE REINFORCED CONCRETE MEDIAN SAFETY CURB AND DECK OVERHANG FROM CENTERLINE OF THE NORTHBOUND (NB) BRIDGE'S MEDIAN FASCIA BEAM. SEE "PHASE 3 AND 4 CONSTRUCTION" DRAWING. REMOVE THE MEDIAN SAFETY CURB CURB FROM THE WINGWALLS.
2. INSTALL TEMPORARY SHORING IN THE MEDIAN TO FACILITATE PIER FOOTING EXCAVATION WORK.
3. EXCAVATE AND DRIVE FOUNDATION PILES FOR NB HAMMERHEAD PIERS IN THE MEDIAN.
4. EXCAVATE AND DRIVE FOUNDATION PILES FOR NB PART-WIDTH STUB ABUTMENTS IN THE MEDIAN.
5. CONSTRUCT TWO NB HAMMERHEAD PIERS AND THE NB PART-WIDTH STUB ABUTMENTS.
6. PLACE STEEL SLIDING PLATE BEARINGS ON THE NEW SUBSTRUCTURES, ERECT TWO TEMPORARY STEEL BEAMS AND WELD CROSSFRAMES BETWEEN THEM.
7. PLACE A TEMPORARY REINFORCED CONCRETE DECK ON THE EXISTING NB FASCIA BEAM AND THE TEMPORARY BEAMS, INCLUDING EXJ-4-87 STRIP SEAL EXPANSION JOINTS.

8. CONSTRUCT TEMPORARY APPROACH SLABS BEHIND THE NB PART-WIDTH STUB ABUTMENTS.
9. PLACE TEMPORARY PAVEMENT (CLASS A) IN THE GAPS BETWEEN THE TEMPORARY APPROACH SLABS AND THE EXISTING NB APPROACH SLABS.

PHASE 4 CONSTRUCTION:

1. REMOVE THE ENTIRE SOUTHBOUND (SB) BRIDGE SUPERSTRUCTURE.
2. REMOVE COMPLETELY BOTH SB BRIDGE ABUTMENTS (INCLUDING FOOTINGS) AND APPROACH SLABS. REMOVE THE CAPS FROM BOTH EXISTING SB CAP AND COLUMN PIERS.
3. INSTALL TEMPORARY SHORING IN THE MEDIAN TO FACILITATE PIER FOOTING EXCAVATION WORK; DRIVE TEMPORARY SHEETING ALONG CENTERLINE CONSTRUCTION INTERSTATE 77 AS REQUIRED FOR STAGE CONSTRUCTION.
4. EXCAVATE AND DRIVE FOUNDATION PILES FOR SB HAMMERHEAD PIERS IN THE MEDIAN.
5. EXCAVATE AND DRIVE FOUNDATION PILES FOR THE SB BRIDGE ABUTMENTS.
6. CONSTRUCT TWO SB HAMMERHEAD PIERS. EXTEND THE EXISTING SB PIER COLUMNS AND CONSTRUCT NEW LONGER CAPS ON THEM.
7. CONSTRUCT STUB-TYPE ABUTMENTS, INCLUDING TURNED-BACK WINGWALLS OUTSIDE.
8. ERECT GALVANIZED STEEL BEAMS ON ELASTOMERIC BEARINGS AND BOLT CROSSFRAMES BETWEEN THE BEAMS.
9. CONSTRUCT SB BRIDGE DECK AND APPROACH SLABS, INCLUDING EXJ-4-87 STRIP SEAL EXPANSION JOINTS.
10. CONSTRUCT A 42-INCH OUTSIDE DEFLECTOR PARAPET ON THE DECK AND 42-INCH TO 32-INCH DEFLECTOR PARAPET ON THE WINGWALLS.
11. CONSTRUCT A 57-INCH MEDIAN BARRIER ON THE DECK, ABUTMENTS AND APPROACH SLABS.
12. SEAL CONCRETE SURFACES AND FIELD PAINT OUTSIDE FASCIA BEAM.
13. INSTALL CONCRETE SLOPE PROTECTION BELOW THE END SPANS IN FRONT OF THE NEW SB BRIDGE ABUTMENTS.

PHASE 5 CONSTRUCTION:

1. REMOVE THE ENTIRE NB BRIDGE SUPERSTRUCTURE (INCLUDING THE TEMPORARY DECK AND BEAMS.) REMOVE THE EXISTING NB APPROACH SLABS, THE TEMPORARY APPROACH SLABS, AND THE TEMPORARY PAVEMENT BETWEEN THEM.
2. REMOVE COMPLETELY BOTH EXISTING NB ABUTMENTS (INCLUDING FOOTINGS.) REMOVE THE BACKWALLS FROM THE PART-WIDTH ABUTMENTS CONSTRUCTED DURING PHASE 3 CONSTRUCTION.
3. REMOVE THE CAPS FROM BOTH EXISTING NB CAP AND COLUMNS PIERS.
4. EXCAVATE AND DRIVE THE REST OF THE FOUNDATION PILES FOR THE NB STUB ABUTMENTS.
5. EXTEND THE EXISTING PIER COLUMNS AND CONSTRUCT NEW LONGER CAPS ON THEM. CAP THE PIER SEATS ON THE NB HAMMERHEAD PIERS.
6. CAP THE BRIDGE SEATS ON THE PART-WIDTH ABUTMENTS. CONSTRUCT THE REMAINING PORTIONS OF THE NB ABUTMENTS, INCLUDING FULL-WIDTH BACKWALLS AND TURNED-BACK WINGWALLS OUTSIDE.
7. ERECT GALVANIZED STEEL BEAMS ON ELASTOMERIC BEARINGS AND BOLT CROSSFRAMES BETWEEN THE BEAMS.
8. CONSTRUCT NB BRIDGE DECK AND APPROACH SLABS, INCLUDING EXJ-4-87 STRIP SEAL EXPANSION JOINTS.
9. CONSTRUCT A 42-INCH OUTSIDE DEFLECTOR PARAPET ON THE DECK AND A 42-INCH TO 32-INCH DEFLECTOR PARAPET ON THE WINGWALLS; THEN ATTACH A BRIDGE TERMINAL ASSEMBLY TO EACH END.
10. CONSTRUCT A 57-INCH MEDIAN BARRIER ON THE DECK, ABUTMENTS AND APPROACH SLABS.
11. SEAL CONCRETE SURFACES AND FIELD PAINT OUTSIDE FASCIA BEAM.
12. INSTALL CONCRETE SLOPE PROTECTION BELOW THE END SPANS IN FRONT OF THE NEW NB BRIDGE ABUTMENTS.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED OVER 20-FOOT SPAN, AS PER PLAN
(FOR BRIDGE STA-172-1380, W. TUSCARAWAS STREET OVER WEST BRANCH OF NIMISHILLEN CREEK)

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS, AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER.

PORTIONS OF THE EXISTING STRUCTURE SHALL BE REMOVED IN STAGES AS SPECIFIED IN THE "PROPOSED WORK" GENERAL NOTE.

THE ESTIMATED SUPERSTRUCTURE STEEL REMOVAL IS 174,800 POUNDS. THE ESTIMATED SUPERSTRUCTURE CONCRETE REMOVAL IS 141 CUBIC YARDS. THE ESTIMATED ABUTMENT CONCRETE REMOVAL IS 29 CUBIC YARDS. THE SANDSTONE BLOCK REMOVAL IS NOT ESTIMATED DUE TO THE ABSENCE OF CONSTRUCTION PLANS FROM 1883 WHEN THESE BLOCKS WERE PLACED.

THE REMOVAL OF ABOUT 35 LIN. FT. OF CONCRETE EROSION REPAIR ALONG THE NORTHWEST WINGWALL SHALL BE INCIDENTAL TO THIS PAYMENT ITEM.

THIS REMOVAL WORK (AND ANY ADDITIONAL NOT DESCRIBED) AND ALL EXCAVATION ASSOCIATED WITH IT SHALL BE PAID UNDER THE LUMP SUM PRICE BID FOR ITEM 202 – PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

ITEM 202 – STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN
(FOR BRIDGE STA-172-1351, W. TUSCARAWAS STREET OVER I-77)

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURE SHALL BE REMOVED IN STAGES AS SPECIFIED ON THE "PROPOSED WORK" GENERAL NOTE. REMOVE ALL SUBSTRUCTURE CONCRETE EXCEPT AT THE FORWARD ABUTMENT WHERE THE CONCRETE CAN REMAIN BELOW THE BRIDGE SEAT LEVEL AND AT THE SOUTHBOUND SHOULDER PIER WHERE THE SPREAD FOOTINGS ONLY CAN REMAIN.

THE ESTIMATED SUPERSTRUCTURE STEEL REMOVAL IS 475,000 POUNDS. THE ESTIMATED SUPERSTRUCTURE CONCRETE REMOVAL IS 454 CUBIC YARDS. THE ESTIMATED SUBSTRUCTURE CONCRETE REMOVAL IS 425 CUBIC YARDS.

THIS REMOVAL WORK (AND ANY ADDITIONAL NOT DESCRIBED) AND ALL EXCAVATION ASSOCIATED WITH IT SHALL BE PAID UNDER THE LUMP SUM PRICE BID FOR ITEM 202 – STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN.

APPROACH SLAB REMOVAL QUANTITIES ARE GIVEN IN THE PAVEMENT REMOVED SUB-SUMMARY ON SHEET 278/1092 . SEE SHEET 867/1092 AND 867A/1092 FOR ASBESTOS REMOVAL INFORMATION.

ITEM 202 – STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN
(FOR BRIDGE STA-77-1071, 4TH STREET NW OVER I-77)

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURE SHALL BE REMOVED IN STAGES AS SPECIFIED ON THE "PROPOSED WORK" GENERAL NOTE. REMOVE ALL SUBSTRUCTURE CONCRETE EXCEPT AT THE FORWARD ABUTMENT WHERE THE CONCRETE CAN REMAIN BELOW THE BRIDGE SEAT LEVEL. CUT OFF ALL EXISTING PIER PILES THAT ARE DETERMINED TO BE LESS THAN 12" BELOW SUBGRADE OF THE RECONSTRUCTED INTERSTATE 77 PAVEMENT.

THE ESTIMATED SUPERSTRUCTURE STEEL REMOVAL IS 197,400 POUNDS. THE ESTIMATED SUPERSTRUCTURE CONCRETE REMOVAL IS 312 CUBIC YARDS. THE ESTIMATED SUBSTRUCTURE CONCRETE REMOVAL IS 277 CUBIC YARDS. THE ESTIMATED 12" CAST-IN-PLACE REINFORCED CONCRETE PILE CUT-OFFS ARE 44 EACH.

THIS REMOVAL WORK (AND ANY ADDITIONAL NOT DESCRIBED) AND ALL EXCAVATION ASSOCIATED WITH IT SHALL BE PAID UNDER THE LUMP SUM PRICE BID FOR ITEM 202 – STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN.

APPROACH SLAB REMOVAL QUANTITIES ARE GIVEN IN THE PAVEMENT REMOVED SUB-SUMMARY ON SHEET 278/1092. SEE SHEET 867/1092 AND 867A/1092 FOR ASBESTOS REMOVAL INFORMATION.

REMOVAL OF EXISTING GAS LINES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL ASBESTOS COVERED GAS LINES FROM THE STA-172-1351, STA-77-1071 AND STA-HARRISON-0001 STRUCTURES. ASBESTOS IS PRESENT IN THE TAR COATING THAT COVERS THE GAS PIPES AT THESE STRUCTURES. THE CONTRACTOR SHALL NOTIFY DEOG THREE WEEKS (MINIMUM) PRIOR TO THE START OF BRIDGE DEMOLITION WORK. SEE SHEET 867/1092 AND 867A/1092 FOR ASBESTOS REMOVAL INFORMATION.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED OVER 20-FOOT SPAN, AS PER PLAN
(FOR BRIDGE STA-77-1132 OVER 13TH STREET NW)

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, ETC.) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR AT LEAST 30 DAYS BEFORE CONSTRUCTION BEGINS. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. MAINTAIN THE TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR. ALL COSTS ASSOCIATED WITH THIS TRAFFIC PROTECTION WILL BE INCLUDED WITH ITEM 202 FOR PAYMENT.

PORTIONS OF THE FOLLOWING EXISTING STRUCTURES SHALL BE REMOVED IN STAGES AS SPECIFIED IN THE "PROPOSED WORK" GENERAL NOTE. "NORTHBOUND BRIDGE (FOR MAINTAINING TRAFFIC)" REFERS TO MEDIAN WIDENING OF THE RIGHT STRUCTURE CONSTRUCTED DURING PHASE 3.

BRIDGE STA-77-1132L OVER 13TH STREET NW:

THE ESTIMATED SUPERSTRUCTURE STEEL REMOVAL IS 177,200 POUNDS. THE ESTIMATED SUPERSTRUCTURE CONCRETE REMOVAL IS 204 CUBIC YARDS. THE ESTIMATED ABUTMENT CONCRETE REMOVAL IS 149 CUBIC YARDS. THE ESTIMATED PIER CAP CONCRETE REMOVAL IS 38 CUBIC YARDS.

BRIDGE STA-77-1132R OVER 13TH STREET NW.:

THE ESTIMATED SUPERSTRUCTURE STEEL REMOVAL IS 174,140 POUNDS. THE ESTIMATED SUPERSTRUCTURE CONCRETE REMOVAL IS 204 CUBIC YARDS. THE ESTIMATED ABUTMENT CONCRETE REMOVAL IS 150 CUBIC YARDS. THE ESTIMATED PIER CAP CONCRETE REMOVAL IS 39 CUBIC YARDS.

NORTHBOUND BRIDGE (FOR MAINTAINING TRAFFIC):

THE ESTIMATED SUPERSTRUCTURE STEEL REMOVAL IS 40,375 POUNDS. THE ESTIMATED SUPERSTRUCTURE CONCRETE REMOVAL IS 67 CUBIC YARDS. THE ESTIMATED ABUTMENT CONCRETE REMOVAL IS 5 CUBIC YARDS. (FOR BACKWALLS)

FOR EXISTING DECK REMOVAL ABOVE MEDIAN FASCIA BEAM, FOLLOW NOTES A. THRU E. (FOR BRIDGE STA-77-1132R OVER 13TH STREET NW DURING PHASE 3 CONSTRUCTION)

- A. PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.
- B. REMOVAL METHODS: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER BRIDGE MEMBERS (STEEL BEAM), A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STEEL MEMBERS.

C. DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO THE EXISTING STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS DAMAGED BY THE CONTRACTOR'S REMOVAL OPERATIONS SHALL, AT NO COST TO THE PROJECT, BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY A OHIO REGISTERED ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL TO THE DIRECTOR 20 DAYS PRIOR TO COMMENCING REPAIR WORK.

D. EXTRANEEOUS MEMBERS: REMOVE EXISTING EXTRANEEOUS MEMBERS (I.E., FINISHING MACHINE AND FORM SUPPORTS, ETC., AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTION TO THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

E. LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES AS DEFINED IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. SUBMIT STRUCTURAL ANALYSIS COMPUTATIONS, BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE REMOVAL METHODS OR EQUIPMENT TO THE DIRECTOR AT LEAST 20 DAYS BEFORE CONSTRUCTION BEGINS.

FOR PIER CAP REMOVAL, FOLLOW NOTE F AND G:

F. CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS ONE-INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST, OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

G. SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

THIS REMOVAL WORK (AND ANY ADDITIONAL NOT DESCRIBED) AND ALL EXCAVATION ASSOCIATED WITH IT SHALL BE PAID UNDER THE LUMP SUM PRICE BID FOR ITEM 202 – PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

EXISTING APPROACH SLAB REMOVAL QUANTITIES ARE GIVEN IN THE PAVEMENT REMOVED SUB-SUMMARY ON SHEET 279/1092. TEMPORARY APPROACH SLAB REMOVAL QUANTITIES ARE GIVEN IN THE STRUCTURE ESTIMATED QUANTITIES. SEE SHEET 867/1092 AND 867A/1092 FOR ASBESTOS REMOVAL INFORMATION.

ITEM 202 – WEARING COURSE REMOVED, AS PER PLAN
(FOR BRIDGES STA-172-1351, STA-172-1380 AND STA-77-1071)

THE EXISTING ASPHALT WEARING SURFACE ON THE BRIDGE DECK SHALL BE REMOVED PRIOR TO DECK REMOVAL. REMOVE IT IN STAGES AT STA-172-1380.

DISPOSAL OF REMOVED MATERIAL

ALL CONCRETE, REINFORCING STEEL, RAILING, ASPHALT, ETC. REMOVED FROM THE STRUCTURES, UNLESS OTHERWISE SPECIFIED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY HIM FROM THE SITE.

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FALSEWORK, TEMPORARY BRACING AND PROTECTIVE STRUCTURES FOR DECK REPLACEMENT

THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY SUPPORTS UNDER THE STRUCTURE PRIOR TO REMOVAL, RECONSTRUCTION, AND CONSTRUCTION OPERATIONS AS REQUIRED TO MAINTAIN A COMPLETELY STABLE STRUCTURE AT ALL TIMES. IF IN THE OPINION OF THE ENGINEER, ADDITIONAL SUPPORTS ARE REQUIRED, THEY SHALL BE PROVIDED BY THE CONTRACTOR ENTIRELY AT HIS/HER EXPENSE. NO FULL DEPTH BRIDGE REPAIR SHALL BE PERFORMED OVER AN OPEN LANE.

IN ORDER TO PROTECT VEHICULAR TRAFFIC, PEDESTRIANS, AND PAVEMENTS AGAINST DAMAGE FROM FALLING MATERIAL, DEBRIS, AND OTHER DEMOLITION OPERATIONS, WHILE SUPERSTRUCTURE CONCRETE IS BEING REMOVED OR WHILE THE CONTRACTOR IS WORKING OVERHEAD, THE CONTRACTOR SHALL FURNISH AND ERECT A TEMPORARY PROTECTIVE STRUCTURE UNDER THE SPANS THAT ARE DIRECTLY OVER THE ROADWAY, SIDEWALKS, AND SHOULDER AREAS PLUS ENOUGH ADDITIONAL COVERAGE IN THE AREA TO PREVENT FALLING MATERIAL FROM ANY SPAN FROM REACHING THESE AREAS.

IN ADDITION TO THE TEMPORARY PROTECTIVE STRUCTURE, THE CONTRACTOR SHALL PROVIDE PLASTIC SHEETING OR OTHER APPROVED METHODS TO CONTROL WATER USED IN THE SAW CUTTING OPERATION FROM FALLING ON VEHICULAR TRAFFIC AND PEDESTRIANS.

THE PROTECTIVE STRUCTURE(S) SHALL MEET THE APPROVAL OF THE ENGINEER. THE FLOORING AND SIDING OF THE STRUCTURE(S) SHALL HAVE NO CRACKS OR OPENINGS THROUGH WHICH MATERIAL PARTICLES MAY FALL. AS A MINIMUM, TWO LAYERS OF 3/4 INCH PLYWOOD WITH LAPPED JOINTS OR AN EQUIVALENT DESIGN SHALL BE PLACED BETWEEN THE LOWER FLANGES OF THE STRUCTURAL STEEL BEAMS ABOVE THE PAVEMENT, SIDEWALK, AND SHOULDERS OF ROADWAYS ON WHICH VEHICULAR AND/OR PEDESTRIAN TRAFFIC IS BEING MAINTAINED. THE PROTECTION IN ALL CASES SHALL EXTEND BEYOND EXISTING AND/OR NEW EXTERIOR STRUCTURAL BEAMS A SUFFICIENT DISTANCE TO PROTECT UNDER THE EXISTING AND PROPOSED PARAPETS AND SHALL HAVE SIDEWALLS EXTENDING UP TO 4 FEET MINIMUM. SIDEWALLS SHALL BE BRACED SUBSTANTIALLY TO RESIST WIND LOADS. DURING SAW CUTTING AND DECK REMOVAL OPERATIONS, TEMPORARY SHIELDS ATTACHED TO THE SIDEWALLS AND EXTENDING 1 FOOT ABOVE THE TOP OF THE PARAPET SHALL BE INSTALLED TO LIMITS AS DIRECTED BY THE ENGINEER. TEMPORARY SHIELDS SHALL BE REMOVED IMMEDIATELY AFTER THEY HAVE SERVED THEIR PURPOSE. DEBRIS SHALL NOT BE PERMITTED TO COLLECT ON THEIR PROTECTIVE STRUCTURES.

WHEN SUPPORTING THE PROTECTIVE STRUCTURE(S) FROM THE STEEL WORK OF THE BRIDGE(S), ALL CONNECTIONS THERETO SHALL BE MADE BY MEANS OF APPROVED CLAMPS ON BOTH SIDES OF THE BEAM FLANGE. THE DRILLING OF HOLES IN THE STEEL WORK OR WELDING THERETO, FOR THIS PURPOSE WILL NOT BE PERMITTED. NO PORTION OF THE TEMPORARY SUPPORT SYSTEM AND/OR PROTECTIVE STRUCTURE(S) (INCLUDING CONNECTION DEVICES) SHALL EXTEND MORE THAN 10 INCHES BELOW THE BOTTOM FLANGE OF THE STEEL STRINGERS OR COVER PLATES THAT IS OVER THE TRAVELED WAY (PAVEMENT, SHOULDERS) OF THE HIGHWAY ON WHICH TRAFFIC IS BEING MAINTAINED. HOWEVER, IN NO INSTANCE SHALL THE UNDERCLEARANCE BE LESS THAN THE TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL UNLESS OTHERWISE APPROVED BY THE ENGINEER.

AFTER THE FALSEWORK, TEMPORARY BRACING, AND PROTECTIVE STRUCTURE(S) HAVE SERVED THEIR PURPOSE AND WHEN SO DIRECTED BY THE ENGINEER, THEY SHALL BE REMOVED. PROTECTIVE STRUCTURE(S), INCLUDING SIDEWALLS SHALL NOT BE REMOVED UNTIL THE PARAPETS AND/OR PARAPETS WITH FENCE ARE COMPLETED. ALL MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE JOB SITE AND DISPOSED OF BY THE CONTRACTOR AT HIS OWN EXPENSE.

THE CONTRACTOR SHALL SUBMIT IN QUADRUPLLET A DEMOLITION PLAN AND DETAILS OF THE FALSEWORK, TEMPORARY BRACING, AND PROTECTIVE STRUCTURES FOR CATCHING BROKEN CONCRETE AND OTHER MATERIALS. THESE PLANS AND DETAILS SHALL BE SUBMITTED 18 DAYS PRIOR TO COMMENCING ANY DEMOLITION TO THE ENGINEER FOR APPROVAL. THE DETAILS SHALL INCLUDE THE EXISTING AND PROPOSED TEMPORARY UNDER CLEARANCES TO THE TRAVELED WAY. THIS ITEM OF WORK SHALL BE PAID FOR UNDER THE LUMP SUM ITEM 614 MAINTAINANCE OF TRAFFIC.

CUTTING OR BENDING OF REINFORCING BARS

ANY CUTTING OR BENDING OF BARS NECESSARY TO ACCOMMODATE ANY ESSENTIAL ELEMENT OF WORK RELATED TO THE PROJECT, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 509 – EPOXY COATED REINFORCING STEEL.

MECHANICAL CONNECTORS

(FOR BRIDGE STA-172-1380, W. TUSCARAWAS STREET OVER WEST BRANCH OF NIMISHILLEN CREEK)
(FOR BRIDGE STA-77-1132, INTERSTATE 77 OVER 13TH STREET NW)

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE FURNISHED WITH THE CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "L" SHOWN ON PLANS.

CONNECTORS AND DOWEL BARS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY, AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS.

CONNECTORS AND DOWEL BARS SHALL CONFORM WITH ITEM 509, AND THEIR WEIGHT SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE BID PER POUND FOR ITEM 509 – EPOXY COATED REINFORCING STEEL.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING THE COMPLETION OF THIS PROJECT.

ITEM 514 – FIELD PAINTING, MISC.: GALVANIZED STEEL, INTERMEDIATE AND FINISH COAT, SYSTEM EU

THIS ITEM SHALL COMPLY WITH CMS ITEM 514 – PAINTING OF STRUCTURAL STEEL EXCEPT AS MODIFIED BELOW.

AN ORGANIC ZINC PRIMER COAT SHALL NOT BE APPLIED TO THE GALVANIZED STEEL AREAS NOTED IN THE PLANS TO BE PAINTED. ONLY AN EPOXY INTERMEDIATE COAT AND A URETHANE FINISH COAT SHALL BE APPLIED. THEREFORE, DISREGARD ALL REFERENCES TO THE ORGANIC ZINC PRIMER COAT IN CMS ITEM 514.

GRINDING FLANGE EDGES AND REMOVING FINs, TEARS AND SLIVERS ARE INCLUDED IN THE CONTRACT PRICE FOR THE APPLICABLE 513 STRUCTURAL STEEL MEMBERS AS PER PLAN ITEM. THEREFORE, DISREGARD ALL REFERENCES TO THEM IN ITEM 514.

WATER QUENCHING AND CHROMATE CONVERSION COATING FOR GALVANIZED STEEL TO BE PAINTED ARE PROHIBITED PER THE ITEM 513 AS PER PLAN NOTE, SINCE THEY WILL ADVERSELY AFFECT THE BOND BETWEEN THE GALVANIZED STEEL AND THE PAINT. THE CONTRACTOR SHALL VERIFY THEY HAVE NOT BEEN PERFORMED BY THE GALVANIZING SHOP, AND SHALL PERFORM A SPOT TEST PER ASTM B201 FOR CHECKING THE PRESENCE OF A CHROMATE CONVERSION COATING ON THE STEEL TO BE PAINTED.

CLEAN THE AREAS TO BE PAINTED PER STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATION NO. 1 (SSPC-SP1) AS SPECIFIED IN SECTION 514.13A. IF CLEANING WITH SOLVENTS, APPLY WITH LINT FREE RAGS OR SOFT BRISTLED NYLON BRUSHES THAT ARE FREQUENTLY CHANGED. IF CLEANING WITH AN ALKALINE SOLUTION, IT SHALL HAVE A pH RANGING FROM A MINIMUM OF 11.0 TO A MAXIMUM OF 12.0, AND SHALL BE APPLIED BY SPRAYING OR WITH A SOFT BRISTLED NYLON BRUSH. IF SPRAYING, MAINTAIN A SOLUTION TEMPERATURE OF 140° F TO 180° F. ALL CLEANED AREAS SHALL BE SUBSEQUENTLY WASHED BEFORE ABRASIVE BLASTING AS SPECIFIED IN SECTION 514.13A, WITH THE ADDITIONAL REQUIREMENT THAT THE MAXIMUM NOZZLE PRESSURE MAY NOT EXCEED 1450 PSI. THE STEEL SHALL BE COMPLETELY DRY BEFORE PROCEEDING.

AFTER CLEANING, ABRASIVE BLASTING OF THE AREAS TO BE PAINTED AS SPECIFIED IN SECTION 514.13C SHALL BE REQUIRED. HOWEVER, BLASTING SHALL BE PER SSPC-SP7 BRUSH-OFF BLAST CLEANING. THE RESULTANT SURFACE PROFILE SHALL HAVE AN ANGULAR SURFACE PROFILE OF A MINIMUM OF 0.25 MILS AND A MAXIMUM OF 0.50 MILS. THE BLASTING EQUIPMENT, TECHNIQUE AND ABRASIVE MATERIAL SHALL BE SELECTED TO PROVIDE FOR THE SPECIFIED SURFACE PROFILE WITHOUT REMOVAL OF GALVANIZED ZINC LAYERS. THE FINAL GALVANIZED ZINC MILLAGE SHALL NOT BE LESS THAN 3.0 MILS AND SHALL BE MEASURED PRIOR TO EPOXY INTERMEDIATE COAT APPLICATION. REMOVE ABRASIVES AND RESIDUE FROM SURFACES TO BE PAINTED. THE EPOXY INTERMEDIATE COAT SHALL BE APPLIED WITHIN 24 HOURS OF THE BRUSH-OFF BLASTING.

THE INTERMEDIATE AND FINISH COAT APPLICATION SHALL BE PER SECTION 514.17G AND THE FOLLOWING. THE EPOXY INTERMEDIATE COAT AND THE URETHANE FINISH COAT SHALL MEET THE REQUIREMENTS OF SPECIFICATION 514. THE FINISH COAT COLOR SHALL MATCH FEDERAL STANDARD FS-595B COLOR NO. 14272 (GREEN). IF THE EPOXY COAT HAS CURED MORE THAN THIRTEEN (13) DAYS WITHOUT OVERCOATING, IT SHALL BE REMOVED AND THE SURFACE REBLASTED PER SSPC-SP7 TO THE SURFACE PROFILE NOTED ABOVE. THE COMPLETION DATE (MONTH AND YEAR) OF THE FINISH COAT AND THE LETTERS "EU" SHALL BE STENCILED ON THE STEEL IN 4 INCH LETTERS WITH A BLACK URETHANE PAINT NEAR BOTH ENDS OF EACH PAINTED BEAM ON THE OUTSIDE WEB.

REPAIR PROCEDURES SHALL BE PER SECTION 514.22 EXCEPT THAT THE STEEL SHALL BE RETEXTURED TO A BRUSH BLAST CONDITION PER SSPC-SP7 TO THE SURFACE PROFILE NOTED ABOVE.

REVISE THE METHOD OF MEASUREMENT IN SECTION 514.23 TO BASE THE FIELD SURFACE PREPARATION AND PAINTING OF NEW GALVANIZED STRUCTURAL STEEL IN ACCORDANCE WITH ITEM 514 AND THIS NOTE ON A LUMP SUM PAY ITEM. ALL FIELD PAINTING WILL INCLUDE TWO (2) COATS OF PAINT: AN EPOXY INTERMEDIATE COAT AND A URETHANE FINISH COAT ON TOP OF THE GALVANIZED STEEL. CAULKING IS NOT MEASURED SEPARATELY BUT IS ALSO INCLUDED IN THE LUMP SUM PAY ITEM. SURFACE PREPARATION ALSO IS NOT MEASURED SEPARATELY BUT IS INCLUDED IN THE LUMP SUM PAY ITEM.

REVISE THE BASIS OF PAYMENT IN SECTION 514.24 TO THE FOLLOWING:

ITEM	UNIT	DESCRIPTION
514	LUMP SUM	FIELD PAINTING, MISC.: GALVANIZED STEEL, INTERMEDIATE AND FINISH COAT, SYSTEM EU

ITEM SPECIAL – VANDAL PROTECTION FENCE, 10' CURVED, COATED FABRIC

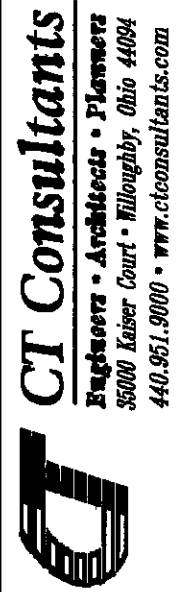
(STA-172-1351, W. TUSCARAWAS STREET OVER I-77)
(STA-77-1071, 4TH STREET NW OVER I-77)

THIS WORK SHALL CONSIST OF FURNISHING AND ERECTING A 10' CURVED STEEL FENCE ON A CONCRETE PARAPET ACROSS THE STRUCTURE PER PLAN DETAILS. ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO FABRICATE, GALVANIZE, CLEAN, SURFACE PROFILE, AND APPLY TWO SHOP COATS (EPOXY/URETHANE) OF PAINT TO THE FENCE ELEMENTS (EXCEPT TO THE PVC COATED FABRIC) SHALL BE INCLUDED. THE FENCE SHALL CONFORM TO CMS ITEM 607 AND STANDARD DRAWING VPF-1-90 (PS-2-POST SECTION BUT WITH A BP-1 BASE PLATE AND BOTTOM RAIL), EXCEPT AS SPECIFIED HEREIN.

PRIOR TO GALVANIZING, ALL CORNERS OF THERMALLY CUT OR SHEARED EDGES SHALL HAVE A 1/16 INCH RADIUS.

MATERIALS FOR FENCE POSTS AND RAILS SHALL BE IN ACCORDANCE WITH AASHTO M181 FOR TYPE I (ZINC-COATED) GRADE 2 STEEL, EXCEPT THE EXTERIOR COATING SHALL BE HOT-DIP ZINC WITHOUT AN ORGANIC TOPCOAT. GALVANIZING OF OTHER FENCE ELEMENTS SHALL BE IN ACCORDANCE WITH THE NOTES ON STANDARD DRAWING VPF-1-90. IN ADDITION, ALL FENCE ELEMENTS TO BE PAINTED SHALL NOT BE POST-TREATED WITH WATER QUENCHING NOR CHROMATE CONVERSION COATED, SINCE THEY WILL ADVERSELY AFFECT THE BOND BETWEEN THE GALVANIZED STEEL AND THE PAINT. THE CONTRACTOR SHALL VERIFY THEY HAVE NOT BEEN PERFORMED BY THE GALVANIZING SHOP, AND SHALL PERFORM A SPOT TEST PER ASTM B201 FOR CHECKING THE PRESENCE OF A CHROMATE CONVERSION COATING.

AFTER GALVANIZING, ZINC HIGH SPOTS SUCH AS METAL DRIP LINES AND OTHERS THAT WOULD DETRACT FROM THE PAINT APPEARANCE SHALL BE MADE FLUSH WITH THE SURROUNDING SURFACE BY SSPC-SP2 OR SP3. CARE SHALL BE TAKEN THAT THE BASE GALVANIZED COATING IS NOT REMOVED. REPAIRED AREAS SHALL BE CHECKED FOR REQUIRED COATING THICKNESS.



DATE	2/28/05
REVIEWED	W.D.B.
STRUCTURE FILE NUMBER	
DRAWN	R.L.B.
REVISED	
DESIGNED	J.P.R.
CHECKED	L.A.S.

GENERAL NOTES
VARIOUS BRIDGES
ON OR OVER INTERSTATE 77

STA-77-10.33

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1092

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GALVANIZED COATINGS DAMAGED IN THE SHOP SHALL BE REPAIRED PER ASTM A780 METHOD A3. GALVANIZED COATINGS DAMAGED IN THE FIELD SHALL BE REPAIRED PER ASTM A780 METHOD A1.

AFTER REMOVING HIGH SPOTS THE GALVANIZED COATING SHALL BE CLEANED PER SSPC-SP1. THE CLEANING SOLUTION SHALL BE AN ALKALINE SOLUTION WITH A PH RANGING FROM A MINIMUM OF 11 TO A MAXIMUM OF 12. THIS SOLUTION CAN BE APPLIED BY IMMERSION, SPRAY OR SOFT NYLON BRUSH. IF IMMERSING OR SPRAYING, MAINTAIN A SOLUTION TEMPERATURE OF 140° F TO 180° F. FOLLOW CLEANING WITH A HOT WATER OR HOT PRESSURE WASH RINSE NOT EXCEEDING 1450 PSI. INDIVIDUAL PIECES SHALL BE SEPARATED AND POSITIONED TO FACILITATE DRAINAGE AND DRYING. THE PIECES SHALL BE COMPLETELY DRY BEFORE PROCEEDING.

AFTER CLEANING, THE PIECES SHALL BE ABRASIVE BLASTED PER SSPC-SP7 BRUSH-OFF BLAST CLEANING. THE BLASTING OPERATION SHALL ROUGHEN THE GALVANIZED SURFACE TO AN ANGULAR SURFACE PROFILE OF 0.25 TO 0.50 MILS. THE BLASTING EQUIPMENT, TECHNIQUE AND ABRASIVE MATERIAL SHALL BE SELECTED TO PROVIDE FOR THE SPECIFIED SURFACE PROFILE WITHOUT REMOVAL OF ZINC LAYERS. THE FINAL ZINC MILLAGE SHALL NOT BE LESS THAN 3.0 MILS, AND SHALL BE MEASURED PRIOR TO EPOXY INTERMEDIATE COAT APPLICATION. ALL ABRASIVE RESIDUE SHALL BE REMOVED WITH CLEAN COMPRESSED AIR OR OTHER METHODS ACCEPTABLE TO THE DEPARTMENT. FIELD CONNECTION AREAS SHALL HAVE A UNIFORM GALVANIZED COATING FREE OF LOCAL EXCESSIVE ROUGHNESS WHICH WOULD PREVENT THE FIELD CONNECTIONS FROM MAKING INTIMATE CONTACT.

ALL PARTS OF THE FENCE (EXCLUDING THE COATED FABRIC) SHALL BE SHOP PAINTED AFTER GALVANIZING. AFTER OBTAINING AN ACCEPTABLE SURFACE PROFILE, SHOP APPLY A TWO-COAT PAINT SYSTEM CONSISTING OF AN EPOXY INTERMEDIATE COAT AND A URETHANE FINISH COAT MEETING THE REQUIREMENTS OF SECTION 708.02 OF THE 2002 CMS. THE FINISH COAT SHALL MATCH FEDERAL STANDARD FS-595B COLOR NO. 27040 (BLACK).

THE EPOXY INTERMEDIATE COATING SHALL BE APPLIED WITHIN 24 HOURS OF THE BRUSH-OFF BLASTING. THE COATINGS SHALL BE APPLIED PER ITEM 514 EXCEPT THAT REQUIREMENTS FOR SURFACE PREPARATION AND PRIMING SHALL NOT BE PERFORMED. THE COATINGS SHALL BE SHOP APPLIED AS SPECIFIED IN THESE NOTES WITHOUT THE WORK LIMITATION SPECIFIED IN ITEM 514. FIELD REPAIRS AND TOUCH-UPS SHALL FOLLOW WORK LIMITATIONS SPECIFIED PER SECTION 514.19 AND BE AS DIRECTED BY THE ENGINEER.

THE 11 GAGE (0.120") CORE WIRES OF THE STEEL FABRIC SHALL BE UNIFORMLY GALVANIZED WITH ZINC METAL OF 0.30 OZ/SQ. FT. MINIMUM WEIGHT IN ACCORDANCE WITH ASTM A641. THE GALVANIZED WIRE SHALL THEN BE PVC COATED TO MATCH FEDERAL STANDARD FS-595B COLOR NO. 27040 (BLACK) IN ACCORDANCE WITH ASTM F668, CLASS 2A OR 2B WITH THE FOLLOWING CHANGES:

A. THE COATING SHALL BE VIRGIN PVC OF 22 MILS THICKNESS FOR CLASS 2A AND 7 MILS FOR CLASS 2B.

B. THE FINISHED FABRIC SHALL BE COMPOSED OF A 1-INCH DIAMOND PATTERN IN WHICH THE INDIVIDUAL PICKETS ARE HELICALLY WOVEN AND INTERWOVEN IN THE FORM OF A CONTINUOUS CHAIN LINK MESH WITH KNUCKLED SELVAGES.

C. ALL PVC COATED FABRIC SHALL BE HANDLED WITH CARE. IF THE PVC COATING IS DAMAGED, THE CONTRACTOR SHALL REPLACE THE FABRIC OR REPAIR THE PVC COATING AS DIRECTED BY THE PROJECT ENGINEER AT NO COST TO THE DEPARTMENT.

EXPPOSED SURFACES OF ALL NUTS, BOLTS, AND ANCHOR BOLTS USED TO ASSEMBLE THE FENCE SHALL BE GALVANIZED AND FIELD PAINTED TO MATCH THE FENCE COMPONENTS.

THE VANDAL PROTECTION FENCE SHALL BE MEASURED FOR PAYMENT PER FOOT INSTALLED AND ACCEPTED. ALL LABOR, EQUIPMENT AND MATERIALS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE CONTRACT PRICE BID PER FOOT FOR ITEM SPECIAL – VANDAL PROTECTION FENCE, 10’ CURVED, COATED FABRIC.

INSTREAM WORK
(STA-172-1380, W. TUSCARAWAS STREET OVER WEST BRANCH OF NIMISHILLEN CREEK)

INSTREAM WORK WILL BE LIMITED WHERE PRACTICABLE AND ONLY CLEAN NON-ERODIBLE MATERIAL WILL BE USED FOR COFFERDAMS. THIS TEMPORARY PLACED MATERIAL WILL BE REMOVED AND THE STREAM BOTTOM RESTORED AS PREVIOUS TO THE START OF OPERATIONS TO NEAR NATURAL CONDITIONS WHEN THE WORK IS COMPLETED.

DEMOLITION DEBRIS
THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID AND/OR LIMIT DEMOLITION DEBRIS FROM ENTERING THE STREAM. ANY MATERIAL THAT DOES FALL INTO THE STREAM SHALL BE REMOVED AS SOON AS POSSIBLE.

STREAM CHANNEL EXCAVATION
THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT INCIDENTAL DISCHARGES ASSOCIATED WITH THE EXCAVATION AND HAULING OF MATERIAL FROM THE STREAM CHANNEL. THIS PERTAINS TO ANY EXCAVATION OPERATIONS SUCH AS, FOUNDATION ABUTMENT EXCAVATION, CHANNEL CLEAN OUT, AND REMOVAL OF ANY TEMPORARY FILL ASSOCIATED WITH CONSTRUCTION OPERATIONS.

CONSTRUCTION CONSTRAINTS
(STA-172-1380, W. TUSCARAWAS STREET OVER WEST BRANCH OF NIMISHILLEN CREEK)
(STA-172-1351, W. TUSCARAWAS STREET OVER I-77)
(STA-77-1071, 4TH STREET NW OVER I-77)

ALL EMBANKMENT MATERIAL FOR FILLING THE VOID CREATED BY EXCAVATING FOR THE ABUTMENT FOOTINGS SHALL BE 203 EMBANKMENT MATERIAL. AFTER THE FOOTING AND THE BREASTWALL HAVE BEEN CONSTRUCTED, THE VOID BEHIND EACH ABUTMENT SHALL BE FILLED UP TO THE BEAM SEAT ELEVATION AND FROM THE BEAM SEAT UP ON A 1:1 SLOPE TO THE SUBGRADE ELEVATION PRIOR TO CONSTRUCTING THE BACKWALL AND SETTING THE BEAMS ON THE ABUTMENT.

PILE DRIVING
IF EQUIPMENT FOR PILE DRIVING OPERATIONS OCCUPIES ANY PORTION OF THE EXISTING STRUCTURE, STRESS CALCULATIONS BY A STATE OF OHIO REGISTERED PROFESSIONAL ENGINEER SHALL BE SUBMITTED TO THE ENGINEER IN ACCORDANCE WITH CMS 501.07.

PILES DRIVEN TO BEDROCK
(STA-172-1380, W. TUSCARAWAS STREET OVER WEST BRANCH OF NIMISHILLEN CREEK)

PILES TO BEDROCK: DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES TO A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR BY CONTACTING HARD BEDROCK AND THE PILE RECEIVING AT LEAST 20 BLOWS. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

THE ULTIMATE BEARING VALUE IS 134 TONS PER PILE FOR THE ABUTMENTS.

REAR ABUTMENT PILES:
10 HP12x53 PILES, 25 FEET LONG, ORDER LENGTH
21 HP12x53 PILES, 25 FEET LONG (BATTERED), ORDER LENGTH

FORWARD ABUTMENT PILES:
9 HP12x53 PILES, 25 FEET LONG, ORDER LENGTH
19 HP12x53 PILES, 25 FEET LONG (BATTERED), ORDER LENGTH

FOUNDATION BEARING PRESSURE
(STA-172-1351, W. TUSCARAWAS STREET OVER I-77)

REAR ABUTMENT FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 4.5 TONS PER SQUARE FOOT. THE ALLOWABLE BEARING PRESSURE IS 5 TONS PER SQUARE FOOT.

PIER FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 4.5 TONS PER SQUARE FOOT. THE ALLOWABLE BEARING PRESSURE IS 5 TONS PER SQUARE FOOT.

FORWARD ABUTMENT FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 4.1 TONS PER SQUARE FOOT. THE ALLOWABLE BEARING PRESSURE IS 5 TONS PER SQUARE FOOT.

FOOTINGS
(STA-172-1351, W. TUSCARAWAS STREET OVER I-77)

FOOTINGS SHALL EXTEND A MINIMUM OF 3 INCHES INTO BEDROCK OR TO THE ELEVATION SHOWN, WHICH EVER IS LOWER.

PILE DESIGN LOADS (ULTIMATE BEARING VALUE)
(STA-77-1071, 4TH STREET NW OVER I-77)
REAR ABUTMENT – THE ULTIMATE BEARING VALUE IS 137 TONS PER PILE:
14 HP12x53 PILES, 75 FEET LONG, ORDER LENGTH
46 HP12x53 PILES, 75 FEET LONG (BATTERED), ORDER LENGTH
1 DYNAMIC LOAD TEST

PIER – THE ULTIMATE BEARING VALUE IS 126 TONS PER PILE:
16 HP12x53 PILES, 70 FEET LONG, ORDER LENGTH
1 DYNAMIC LOAD TEST

PILES DRIVEN TO BEDROCK
(STA-77-1071, 4TH STREET NW OVER I-77)

PILES TO BEDROCK:
DRIVE PILES TO REFUSAL ON BEDROCK AT THE FORWARD ABUTMENT. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES TO A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR BY CONTACTING HARD BEDROCK AND THE PILE RECEIVING AT LEAST 20 BLOWS. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

FORWARD ABUTMENT – THE ULTIMATE BEARING VALUE IS 140 TONS PER PILE:
11 HP12x53 PILES, 55 FEET LONG, ORDER LENGTH
41 HP12x53 PILES, 55 FEET LONG (BATTERED), ORDER LENGTH

BATTERED PILES:
(STA-77-1071, 4TH STREET NW OVER I-77)

THE BLOW COUNT FOR FRICTION BATTERED PILES AT THE REAR ABUTMENT SHALL BE THE BLOW COUNT DETERMINED FOR VERTICAL PILES OF THE SAME ULTIMATE BEARING VALUE DIVIDED AN EFFICIENCY FACTOR (D). COMPUTE THE EFFICIENCY FACTOR (D) AS FOLLOWS:

$$D = \frac{1 - UG}{\sqrt{(1 + G^2)}}$$

U= COEFFICIENT OF FRICTION, WHICH IS ESTIMATED AT 0.05 FOR DOUBLE-ACTING AIR OPERATED OR DIESEL HAMMERS; 0.1 FOR SINGLE-ACTING AIR OPERATED OR DIESEL HAMMERS; AND 0.2 FOR DROP HAMMERS.
G=RATE OF BATTER (1/3, 1/4, ETC.)

PILE DRIVING CONSTRAINTS
(STA-77-1132 OVER 13TH STREET NW)

PRIOR TO DRIVING PILES, THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS SHALL BE CONSTRUCTED UP TO THE LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANCE OF 200 FEET BEHIND EACH ABUTMENT. THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

PILES DRIVEN TO BEDROCK
(STA-77-1132 OVER 13TH STREET NW)

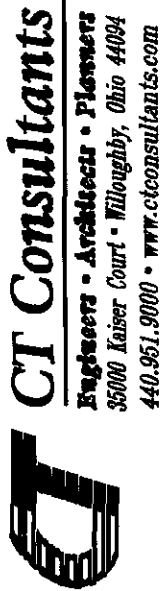
PILES TO BEDROCK: DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES TO A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR BY CONTACTING HARD BEDROCK AND THE PILE RECEIVING AT LEAST 20 BLOWS. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

REAR ABUTMENT – THE ULTIMATE BEARING VALUE IS 106 TONS PER PILE:
11 HP10x42 PILES, 35 FEET LONG, ORDER LENGTH
20 HP10x42 PILES, 35 FEET LONG (BATTERED), ORDER LENGTH

PIER 1 – THE ULTIMATE BEARING VALUE IS 100 TONS PER PILE:
10 HP10x42 PILES, 25 FEET LONG, ORDER LENGTH

PIER 2 – THE ULTIMATE BEARING VALUE IS 100 TONS PER PILE:
10 HP10x42 PILES, 20 FEET LONG, ORDER LENGTH

FORWARD ABUTMENT – THE ULTIMATE BEARING VALUE IS 92 TONS PER PILE:
11 HP10x42 PILES, 30 FEET LONG, ORDER LENGTH
21 HP10x42 PILES, 30 FEET LONG (BATTERED), ORDER LENGTH



DESIGNED J.P.R.	DRAWN R.L.B.	REVIEWED W.D.B.	DATE 2/28/05
CHECKED I.A.S.	REUSED	STRUCTURE FILE NUMBER	

GENERAL NOTES
VARIOUS BRIDGES
ON OR OVER INTERSTATE 77

STA-77-10.33

G5 / G11

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ITEM 503 – UNCLASSIFIED EXCAVATION, AS PER PLAN

(STA-172-1380, W. TUSCARAWAS STREET OVER WEST BRANCH OF NIMISHILLEN CREEK)
(STA-172-1351, W. TUSCARAWAS STREET OVER I-77)
(STA-77-1071, 4TH STREET NW OVER I-77)
(STA-77-1132, I-77 OVER 13TH STREET NW)

THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE TYPE B GRANULAR MATERIAL, 703.16. C, PLACED AND COMPACTED IN 6 INCH LIFTS.

ITEM 507. STEEL POINTS, OR SHOES, AS PER PLAN

(STA-77-1132 OVER 13TH STREET NW)

STEEL PILE POINTS SHALL BE USED TO PROTECT THE TIPS OF THE PROPOSED STEEL "H" PILING. THE STEEL POINTS SHALL BE FURNISHED BY ASSOCIATED PILE AND FITTING CORP., 262 RUTHERFORD BLVD., CLIFTON, NJ 07014; INTERNATIONAL CONSTRUCTION EQUIPMENT, INC., 301 WAREHOUSE DR., MATTHEWS, NC 28015; DOUGHERTY FOUNDATION PRODUCTS, INC., P.O. BOX 688, FRANKLIN LAKES, NJ 07417; VERSA STEEL INC., 1618 N.E. FIRST AVENUE, PORTLAND, OR 97232; PILING ACCESSORIES, INC., 3467 GRIBBLE ROAD, MATTHEWS, NC 28105; OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO THE DIRECTOR. THE MATERIAL USED FOR THE MANUFACTURING OF PILE POINTS SHALL CONFORM TO ASTM A27/A27M 65/35

- CLASS 2 – HEAT TREATED OR AASHTO M103/M103M 65/35
- HEAT TREATED. WELDING OF THE PILE POINTS TO THE PILE SHALL BE IN ACCORDANCE WITH AWS D1.5 OR THE MANUFACTURER'S WRITTEN WELDING PROCEDURE SUPPLIED TO THE ENGINEER BEFORE THE WELDING IS PERFORMED. A NOTARIZED COPY OF THE MILL TEST REPORT SHALL BE SUBMITTED TO THE ENGINEER.

PILES FOR THE REAR ABUTMENT AND PIER 1 FOOTINGS ONLY SHALL BE FITTED WITH STEEL POINTS.

ITEM 512 – SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

THE SECOND SEALING COAT ONLY SHALL BE TINTED TO FEDERAL COLOR STANDARD NUMBER 17778 (LIGHT NEUTRAL).

ITEM 513 – STRUCTURAL STEEL MEMBERS, LEVEL 1, AS PER PLAN (A709, GRADE 50)

(STA-172-1380, W. TUSCARAWAS STREET OVER WEST BRANCH OF NIMISHILLEN CREEK)

ITEM 513 – STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN, NO.1 (A709, GRADE 50)

(STA-77-1071, 4TH STREET NW OVER I-77)

ITEM 513 – STRUCTURAL STEEL MEMBERS, LEVEL 3, AS PER PLAN (A709, GRADE 50)

(STA-77-1132 OVER 13TH STREET NW)

ALL STRUCTURAL STEEL MEMBERS SHALL BE SHOP GALVANIZED, HANDLED, SHIPPED AND ERECTED AS SPECIFIED IN THE NOTE "GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL", BEGINNING ON THE NEXT SHEET.

THE COST FOR COATING THE STEEL, FIELD REPAIRING DAMAGED COATING AND GRINDING COATING OFF WHERE SPECIFIED SHALL BE INCLUDED FOR PAYMENT IN THE LUMP SUM PRICE BID FOR ITEM 513.

HP SHAPES AND/OR FLANGE BEARING PLATES SHOP WELDED TO THE BEAMS SHALL ALSO BE INCLUDED FOR PAYMENT IN THE LUMP SUM PRICE BID FOR ITEM 513.

ITEM 513 – STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN, NO.2 (A709, GRADE 50)

(STA-172-1351, W. TUSCARAWAS STREET OVER I-77 ONLY)

THE STRUCTURAL STEEL FOR THIS ITEM WILL BE PROVIDED BY ODOT AND WILL BE AVAILABLE FOR DELIVERY ON JUNE 1, 2006.

ALL STRUCTURAL STEEL MEMBERS SHALL BE HANDLED AND ERECTED AS SPECIFIED IN THE NOTE "GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL".

THE COST FOR FIELD REPAIRING DAMAGED COATING AND GRINDING COATING OFF WHERE SPECIFIED SHALL BE INCLUDED FOR PAYMENT IN THE LUMP SUM PRICE BID FOR ITEM 513.

ANY STORAGE COSTS OF THE COMPLETED FABRICATED STRUCTURAL STEEL AT THE FABRICATOR'S YARD OR AT A LOCATION CHOSEN BY THE CONTRACTOR AFTER JUNE 15, 2006 SHALL ALSO BE INCLUDED FOR PAYMENT IN THE LUMP SUM PRICE BID FOR ITEM 513.

THE COST OF ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO STORE AND ERECT THE STRUCTURAL STEEL IN ACCORDANCE WITH SPECIFICATION 513 AND THE "GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES" GENERAL NOTE, AND TO PERFORM ANY NECESSARY FIELD REPAIR AND FIELD GRINDING SHALL BE INCLUDED IN THIS ITEM 513 – STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN, NO. 2 (A709, GRADE 50).

ITEM 516 – SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN

(STA-172-1380, W. TUSCARAWAS STREET OVER WEST BRANCH OF NIMISHILLEN CREEK)
(STA-172-1351, W. TUSCARAWAS STREET OVER I-77)
(STA-77-1071, 4TH STREET NW OVER I-77)

INSTALL A 3-FOOT WIDE STRIP, 3/32 INCHES THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT AT LOCATIONS SHOWN IN THE PLANS. SECURE THE 3-FOOT WIDE NEOPRENE SHEETING TO THE CONCRETE WITH 1 1/4 INCHES X #10 GAGE (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 1-INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. OTHER SIMILAR GALVANIZED DEVICES WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES +/- FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS, SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES +/- FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAPS IN THE LENGTH OF THE HORIZONTAL STRIPS DUE TO MATERIAL MANUFACTURING SHALL BE AT LEAST 1 FOOT IN LENGTH, IF NOT VULCANIZED OR ADHESIVE BONDED, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32 INCHES THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003" BY E. I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, INCHES	D 751	0.094"+/- .01
BREAKING STRENGTH, GRAB WXF, LBS. MINIMUM	D 751	700 X 700
ADHESIVE 1-INCH STRIP, 2-INCH MINIMUM	D 751	9 LBS. MINIMUM
BURST STRENGTH (MULLEN) PSI, MINIMUM	D 751	1400
HEAT AGING 70 HOURS T 212° F, 180 BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLINESS 1 HOUR AT -40° F BEND AROUND 1/4 INCH MANDREL	D 2136	NO CRACKING OF COATING

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE TOTAL LENGTH OF JOINT TO BE SEALED BY THE NUMBER OF FEET.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.

ITEM 516 – ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (...NEOPRENE), AS PER PLAN

SHOP AND FIELD REPAIR PAINTING OF STEEL MASONRY PLATES AND STEEL LOAD PLATES PER CMS ITEM 514 SHALL BE INCLUDED FOR PAYMENT IN THE UNIT PRICE BID FOR EACH BEARING. A THREE COAT PAINT SYSTEM SHALL CONSIST OF:

-INORGANIC ZINC PRIME COAT
-EPOXY INTERMEDIATE COAT
-URETHANE FINISH COAT

GRIND THE GALVANIZED COATING OFF THE HP SHAPE AND THE SHOP PAINTING OFF THE BEARING LOAD PLATE PRIOR TO FIELD WELDING THE HP STEEL SHAPE. PAYMENT FOR GRINDING, FIELD WELDING, FIELD REPAIR PAINTING, AND FOR SHOP AND FIELD REPAIR PAINTING OF THE STEEL MASONRY AND LOAD PLATES, AND THE COST FOR FURNISHING AND INSTALLING STEEL BEARING RETAINERS SHALL BE INCLUDED WITH ITEM 516 – ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN.

ITEM 516 – STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL

(STA-77-1132 OVER 13TH STREET NW)

THIS ITEM SHALL CONSIST OF FURNISHING, FABRICATING, CLEANING, METALIZING AND INSTALLING STRUCTURAL STEEL EXPANSION JOINTS WITH 3 INCH ELASTOMERIC STRIP SEALS PER ODOT STANDARD DRAWING EXJ-4-87, FOR PHASE 3 CONSTRUCTION TO MAINTAIN NORTHBOUND TRAFFIC AND FOR PROPOSED SOUTHBOUND AND NORTHBOUND STRUCTURES.

ITEM 601 – CONCRETE SLOPE PROTECTION, AS PER PLAN

(STA-77-1132 OVER 13TH STREET NW)

AFTER COMPLETION OF MAJOR MODIFICATION ITEMS, EXISTING EMBANKMENT SURFACES AT THE ABUTMENTS SHALL BE RESTORED TO A UNIFORM PLANE SURFACE. NEW EMBANKMENT SURFACES SHALL BE PROTECTED AS SPECIFIED IN 601.07. AS MODIFIED HEREIN, PROTECTION SHALL EXTEND LONGITUDINALLY FROM FACE OF THE ABUTMENTS TO TOE OF SLOPE AND Laterally TO AT LEAST 3'-0" BEYOND DECK FASCIAS. THE EMBANKMENT TOE SHALL EXTEND 1'-6" (MIN.) BELOW BOTTOM PLANE OF THE SLOPE PROTECTION. THE TOES SHALL BE PLACED MONOLITHIC WITH THE CONCRETE SLOPE PROTECTION.

THIS WORK SHALL INCLUDE:
EXCAVATION OF ANY MATERIAL NECESSARY TO ACHIEVE A 6" MINIMUM CONCRETE SLOPE PROTECTION DEPTH AND TOES. ALSO INCLUDED IS THE PLACEMENT OF EMBANKMENT MATERIAL COMPACTED IN ACCORDANCE WITH ITEM 203, TO ESTABLISH THE PROPOSED SUBGRADE PLANE.

PROPOSED SLOPE PROTECTION SHALL INCLUDE:
THE INSTALLATION OF THE NEW WELDED STEEL WIRE FABRIC REINFORCED SLOPE PROTECTION AS SHOWN ON THE ABUTMENT DETAILS SHEET INCLUDING WELDED STEEL FABRIC, 709.10 OR 709.12, GEOTEXTILE FILTER, PREFORMED EXPANSION JOINT FILLER AND CONCRETE. THE FILTER SHALL MEET THE REQUIREMENTS OF 712.09, TYPE B (NONWOVEN) FIELD SPLICES OF FILTER SHALL CONSIST OF 12 INCHES OVERLAP SECURED IN ANY MANNER SUITABLE TO THE ENGINEER THAT WILL ASSURE THAT THE OVERLAP IS MAINTAINED.

ALL COSTS OF CONSTRUCTING THE NEW SLOPE PROTECTION, INCLUDING ALL NECESSARY EMBANKMENT, EXCAVATION, WELDED STEEL WIRE FABRIC, GEOTEXTILE FILTER, PREFORMED EXPANSION JOINT FILLER, JOINT SEALER, AND CONCRETE SHALL BE INCLUDED UNDER ITEM 601 – CONCRETE SLOPE PROTECTION, AS PER PLAN.

FURNISHING AND PLACING CRUSHED AGGREGATE SLOPE PROTECTION AT THE 6" PLASTIC PIPE OUTLETS SHALL ALSO BE INCLUDED FOR PAYMENT UNDER THIS ITEM.

ITEM 894 – HIGH PERFORMANCE CONCRETE BRIDGE DECK WITH WARRANTY, AS PER PLAN

(STA-172-1351, W. TUSCARAWAS STREET OVER I-77)
(STA-77-1071, 4TH STREET NW OVER I-77)

THE EXPENSE FOR PROVIDING UTILITY OPENINGS WHERE SHOWN ON THE ABUTMENT DIAPHRAGM PLANS SHALL BE INCIDENTAL TO THIS PAYMENT ITEM.

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GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL BRIDGES

DESCRIPTION

IN ADDITION TO THE REQUIREMENTS OF CMS ITEM 513, THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO CLEAN AND GALVANIZE ALL STRUCTURAL STEEL SURFACES, AS SPECIFIED HEREIN. THE GALVANIZED COATING SYSTEM MAY BE APPLIED BY A GALVANIZER NOT QUALIFIED AS A FABRICATION SHOP UNDER CMS ITEM 513, BUT THE APPROVED FABRICATOR OF THE STRUCTURAL STEEL SHALL BE RESPONSIBLE FOR THE QUALITY OF THE APPLIED GALVANIZED COATING SYSTEM AND ANY REPAIRS, RE-FABRICATING, ADDITIONAL LAYDOWNS REQUIRED TO ASSURE THE FABRICATED STEEL MEETS ALL REQUIREMENTS OF THIS SPECIFICATION. SECTIONS 513.27 AND 513.28 SHALL NOT APPLY.

THIS ITEM SHALL ALSO INCLUDE GALVANIZING, PER 711.02, OF ALL NUTS, WASHERS, BOLTS, ANCHOR BOLTS.
GRIND THE GALVANIZED COATING OFF THE TOP FLANGE AT EACH SHEAR STUD PRIOR TO FIELD WELDING IT.
ALSO GRIND THE GALVANIZED COATING OFF THE TOP FLANGE AT EACH END DAM SUPPORT ANGLE PRIOR TO FIELD WELDING IT.

PRE-FABRICATION MEETING

IN ADDITION TO THE PRE-FABRICATION MEETING REQUIREMENTS UNDER SECTION 513.07, BOTH THE FABRICATOR'S QUALITY CONTROL SPECIALIST, (QCPS) AND GALVANIZED COATING APPLICATOR SHALL BE PRESENT AND DISCUSS METHODS OF OPERATION, QUALITY CONTROL, INCLUDING REPAIRS, TRANSPORTATION, ERECTION METHODS TO ACCOMPLISH ALL PHASES OF THE PREPARATION AND COATING WORK REQUIRED BY THIS SPECIFICATION.

QUALITY CONTROL

QUALITY CONTROL SPECIALIST

THE QCPS (QUALITY CONTROL PAINT SPECIALIST) REQUIRED UNDER SECTION 514.04A IS RESPONSIBLE FOR ALL QUALITY CONTROL REQUIREMENTS OF THIS SPECIFICATION. THE QCPS SHALL HAVE THE TESTING EQUIPMENT SPECIFIED IN SECTION 514.05.

QUALITY CONTROL POINTS (QCP)

QUALITY CONTROL POINTS (QCP) ARE POINTS IN TIME WHEN ONE PHASE OF THE WORK IS COMPLETE AND READY FOR INSPECTION BY THE FABRICATOR'S QCPS AND THE DEPARTMENT'S QA REPRESENTATIVE. THE NEXT OPERATIONAL STEP MUST NOT PROCEED UNLESS THE QCP HAS BEEN ACCEPTED OR QA INSPECTION WAIVED BY THE DEPARTMENT'S QA REPRESENTATIVE. AT THESE POINTS THE FABRICATOR MUST AFFORD ACCESS TO INSPECT ALL AFFECTED SURFACES. IF INSPECTION INDICATES A DEFICIENCY, THAT PHASE OF THE WORK MUST BE CORRECTED IN ACCORDANCE WITH THESE SPECIFICATIONS PRIOR TO BEGINNING THE NEXT PHASE OF WORK. DISCOVERY OF DEFECTIVE WORK OR MATERIAL AFTER A QUALITY CONTROL POINT IS PAST OR FAILURE OF THE FINAL PRODUCT BEFORE FINAL ACCEPTANCE, MUST NOT IN ANY WAY PREVENT REJECTION OR OBLIGATE THE DEPARTMENT TO FINAL ACCEPTANCE.

QUALITY CONTROL POINTS	
QUALITY CONTROL POINTS (QCP)	PURPOSE
1.) SOLVENT CLEANING	REMOVE ASPHALTIC CEMENT, OIL, GREASE, SALT, DIRT, ETC.
2.) GRINDING EDGES	REMOVE SHARP CORNERS PER AWS.
3.) ABRASIVE BLASTING	BLAST SURFACES, INCLUDING REPAIR OF FINs, TEARS, SLIVERS OR SHARP EDGES.
4.) GALVANIZING	CHECK COATING THICKNESS
5.) FAYING SURFACE CLEANING	CHECK FAYING SURFACE ROUGHNESS. CHECK BOLT HOLE CLEARANCE. CHECK OTHER FIELD CONNECTIONS FOR UNIFORM COATING THICKNESS.
6.) SECOND LAY DOWN	CHECK SWEEP AND CAMBER TOLERANCES OF EACH STRUCTURAL MEMBER.
7.) FIELD REPAIR OF DAMAGE AREAS	CHECK FOR DAMAGED AREAS AFTER ERECTION OF STRUCTURE. PERFORM DAMAGE REPAIRS.
8.) FINAL REVIEW	CLEAN STRUCTURE AS PER QCP#1. VISUALLY INSPECT SYSTEM FOR ACCEPTANCE.

SOLVENT CLEANING (QCP #1)

THE STEEL MUST BE SOLVENT CLEANED WHERE NECESSARY TO REMOVE ALL TRACES OF ASPHALTIC CEMENT, OIL, GREASE, DIESEL FUEL DEPOSITS, AND OTHER SOLUBLE CONTAMINANTS PER SSPC-SP-1 SOLVENT CLEANING. UNDER NO CIRCUMSTANCES MUST ANY ABRASIVE BLASTING BE DONE TO AREAS WITH ASPHALTIC CEMENT, OIL, GREASE, OR DIESEL FUEL DEPOSITS. STEEL MUST BE ALLOWED TO DRY BEFORE BLAST CLEANING BEGINS. THE QCPS SHALL INSPECT AND DOCUMENT THAT THE CLEANING CONFORMS TO SSPC-SP1 AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

GRINDING EDGES (QCP #2)

ALL CORNERS OF THERMALLY CUT OR SHEARED EDGES MUST HAVE A 1/16 INCH RADIUS OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE. THERMALLY CUT MATERIAL THICKER THAN 1½ INCH MUST HAVE THE SIDES GROUND TO REMOVE THE HEAT EFFECTED ZONE, AS NECESSARY TO ACHIEVE THE SPECIFIED SURFACE CLEANING. THE QCPS MUST VISUALLY INSPECT AND DOCUMENT THAT THE GRINDING CONFORMS TO THIS SPECIFICATION AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

ABRASIVE BLASTING (QCP #3)

BEAMS AND GIRDERS MUST BE PREPARED BY THE FABRICATOR TO SSPC-SP6 COMMERCIAL BLAST CLEANING PRIOR TO GALVANIZING. ALL MATERIAL MUST BE FREE OF PAINT MARKS. SECONDARY ANGLE, PLATES, BARS AND SHAPES NEED NOT BE BLAST CLEANED.

ABRASIVES MUST ALSO BE CHECKED FOR OIL CONTAMINATION BEFORE USE. A SMALL SAMPLE OF ABRASIVES MUST BE ADDED TO ORDINARY TAP WATER. ANY DETECTION OF AN OIL FILM ON THE SURFACE OF THE WATER MUST BE CAUSE FOR REJECTION. THE QCPS MUST PERFORM AND RECORD THIS TEST AT THE START OF EACH SHIFT.

ALL FINs, TEARS, SLIVERS AND BURRED OR SHAPE SHARP EDGES THAT ARE PRESENT ON ANY STEEL MEMBER OR THAT APPEAR AFTER THE BLASTING OPERATION MUST BE CONDITIONED PER ASTM A6. WELDING REPAIRS MUST ONLY BE PERFORMED BY THE ITEM 513 FABRICATOR.

THE QCPS MUST VISUALLY INSPECT AND DOCUMENT THAT THE BLAST CONFORMS TO SSPC-SP6, THAT ALL CONDITIONING IS PERFORMED PER ASTM A6, AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

GALVANIZING (QCP #4)

GALVANIZE PER 711.02 AND THIS SPECIFICATION. COATING THICKNESS MUST BE A MINIMUM OF 4 MILS MEASURED AS SPECIFIED.

MATERIAL MUST BE FREE OF IMPERFECTIONS OR DEPRESSIONS CAUSED BY MATERIAL HANDLING. THE FABRICATOR, GALVANIZER AND ERECTOR MUST USE LIFTING CLAMPS OR SOFTENERS FOR HANDLING. PRIOR TO GALVANIZING, SURFACE IMPERFECTIONS MAY BE REPAIRED BY THE FABRICATOR IN CONFORMANCE WITH ASTM A6. IMPERFECTIONS GREATER THAN THE LIMITS ALLOWED BY ASTM A6 MUST BE DOCUMENTED. REPAIR OR REPLACEMENT OF THIS MEMBER WILL BE AT THE DISCRETION OF THE DEPARTMENT.

GALVANIZED STEEL TO BE FIELD PAINTED AT LOCATIONS NOTED IN THE PLANS SHALL NOT BE POST-TREATED WITH WATER QUENCHING NOR CHROMATE CONVERSION COATED. AFTER GALVANIZING, ZINC HIGH SPOTS SUCH AS METAL DRIP LINES AND OTHER IMPERFECTIONS THAT WOULD DETRACT FROM THE PAINT APPEARANCE SHALL BE MADE FLUSH WITH THE SURROUNDING SURFACE PER SSPC-SP2 OR SP3. CARE SHALL BE TAKEN THAT THE BASE GALVANIZED COAT IS NOT REMOVED. REPAIRED AREAS SHALL BE CHECKED FOR REQUIRED COATING THICKNESS.

ALL DAMAGED GALVANIZING MUST BE REPAIRED IN ACCORDANCE WITH ASTM A780, METHOD A1 OR A3.

DOCUMENTATION OF COATING THICKNESS MUST BE PERFORMED BY THE QCPS. THE QCPS MUST RECORD THE GAGE READINGS AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

FAYING SURFACE CLEANING (QCP #5)

AREAS OF FIELD CONNECTIONS MUST HAVE A UNIFORM GALVANIZED COATING THICKNESS FREE OF LOCAL EXCESSIVE ROUGHNESS WHICH WOULD PREVENT SPLICE PLATES, BEARINGS OR OTHER FIELD CONNECTIONS FROM MAKING INTIMATE CONTACT.

FAYING SURFACES OF THE BOLTED SPLICES MUST BE ROUGHENED IN THE SHOP AFTER GALVANIZING BY HAND WIRE BRUSHING. POWER WIRE BRUSHING IS NOT PERMITTED. ALL FIELD SPLICE BOLT HOLES MUST BE FREE OF ZINC BUILD UP. AFTER GALVANIZING, EACH HOLE MUST BE CHECKED IN THE SHOP BY USING A DRIFT PIN WITH A DIAMETER 1/16 INCH GREATER THAN THE DIAMETER OF THE BOLT TO BE USED IN THAT HOLE. CONSIDERATION WILL BE GIVEN TO OTHER METHODS OF TREATING THE FAYING SURFACES IF A WRITTEN REQUEST IS SUBMITTED TO THE OFFICE OF STRUCTURAL ENGINEERING (OSE) IN ACCORDANCE WITH CMS 108.05.

INSPECTION OF THE ROUGHENING OF THE FAYING SURFACES AND CHECKING OF HOLES WITH DRIFT PINS MUST BE PERFORMED BY THE QCPS. ACCEPTANCE OF THE FAYING SURFACES AND HOLES SHALL BE DOCUMENTED BY THE QCPS.

SECOND LAY DOWN (QCP # 6)

AFTER GALVANIZING, MATERIALS MUST BE PLACED IN A SECOND SHOP ASSEMBLY PER CMS SECTION 513.24 TO CHECK ALIGNMENT OF HOLES, SWEEP AND CAMBER AGAINST THE FABRICATORS ORIGINAL RECORDED LAY DOWN DIMENSIONS. THIS SHOP ASSEMBLY MAY BE PERFORMED AT THE GALVANIZERS FACILITY, BY THE FABRICATORS PERSONNEL, IF APPROVED BY THE OSE. THE SECOND LAY DOWN MAY BE WAIVED BY THE OSE IF THE FABRICATOR RECORDS INDIVIDUAL BEAM CAMBERS AND SWEEPS DURING THE FIRST LAY DOWN, AND THE NEW INDIVIDUAL BEAM CAMBERS AND SWEEPS, AFTER GALVANIZING, COMPARED TO THE FIRST LAY DOWN ARE WITHIN THE FOLLOWING TOLERANCES:

BEARING POINTS AFTER GALVANIZING, MUST BE WITHIN +/- 1/8 INCH OF THE APPROVED SHOP DRAWING LAY DOWN.

CAMBER POINTS AFTER GALVANIZING MUST BE + 1/4 INCH OR - 0 INCH FROM THE FIRST LAY DOWN.

SWEEP POINTS AFTER GALVANIZING MUST BE +/- 3/8 INCH FROM THE FIRST LAY DOWN.

INDIVIDUAL BEAMS THAT EXCEED THE LISTED TOLERANCES MUST BE PLACED WITH AT LEAST TWO ADJACENT BEAMS IN LAY DOWN FOR CHECKING AGAINST THE RECORDED SHOP ASSEMBLY RECORDS PER 513.04. DOCUMENTATION OF THE SECOND LAY DOWN OR INDIVIDUAL MEMBER CAMBERS MUST BE RECORDED BY THE QCPS PER 513.24.

FIELD REPAIR OF DAMAGED AREAS (QCP #7)

MATERIAL MUST BE FREE OF IMPERFECTIONS OR DEPRESSIONS CAUSED BY MATERIAL HANDLING. THE CONTRACTOR MUST USE LIFTING CLAMPS OR SOFTENERS FOR HANDLING. IMPERFECTIONS MAY BE REPAIRED BY GRINDING AS ALLOWED BY ASTM A6 BY THE CONTRACTOR. IMPERFECTIONS THAT ARE GREATER THAN THE GRINDING LIMITS ALLOWED BY ASTM A6, MUST BE DOCUMENTED. REPAIR OR REPLACEMENT OF THIS MEMBER WILL BE AT THE DISCRETION OF THE OSE.

ALL DAMAGED GALVANIZING MUST BE REPAIRED IN ACCORDANCE WITH ASTM A780, METHOD A1 OR A3.

DAMAGED GALVANIZING WHICH WILL BE INACCESSIBLE FOR REPAIR AFTER ERECTION MUST BE REPAIRED PRIOR TO ERECTION.

IN ORDER TO MINIMIZE DAMAGE TO THE GALVANIZED STEEL, CONCRETE SPLATTER AND FORM LEAKAGE MUST BE WASHED FROM THE SURFACE OF THE STEEL SHORTLY AFTER THE CONCRETE IS PLACED AND BEFORE IT IS DRY. IF THE CONCRETE DRIES, IT MUST BE REMOVED.

TEMPORARY ATTACHMENTS, SUPPORTS FOR SCAFFOLDING, AND FINISHING MACHINE OR FORMS MUST NOT DAMAGE THE COATING SYSTEM. IN PARTICULAR, SUFFICIENT SIZE SUPPORT PADS MUST BE USED ON THE FASCIAS WHERE BRACING IS USED.

DOCUMENTATION OF GALVANIZING REPAIRS MUST BE PERFORMED BY THE QCPS BY A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

FINAL REVIEW (QCP # 8)

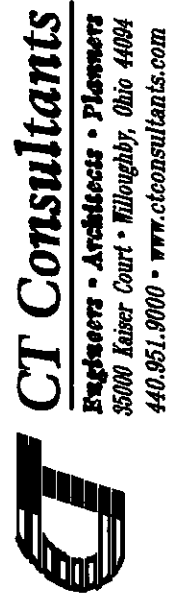
AFTER THE ERECTION WORK HAS BEEN COMPLETED, INCLUDING ALL CONNECTIONS AND THE APPROVED REPAIR OF ANY DAMAGED BEAMS, GIRDERS, OR OTHER STEEL MEMBERS, AND THE DECK HAS BEEN PLACED, THE CONTRACTOR AND ENGINEER MUST INSPECT THE STRUCTURE FOR DAMAGED COATING. (QCP #8). DAMAGED AREAS MUST BE REPAIRED BY QCP #7. AT THE COMPLETION OF CONSTRUCTION, THE GALVANIZING MUST BE UNDAMAGED AND THE SURFACES FREE FROM GREASE, OIL, CHALK MARKS, PAINT, CONCRETE SPLATTER OR OTHER SPILLAGE. SUCH SPILLAGE WILL BE REMOVED BY SOLVENT CLEANING PER SSPC-SP1(QCP #1).

DOCUMENTATION OF FINAL REVIEW MUST BE PERFORMED BY THE QCPS BY A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

TESTING EQUIPMENT

THE FABRICATOR MUST PROVIDE THE QCPS INSPECTOR THE FOLLOWING TESTING EQUIPMENT IN GOOD WORKING ORDER FOR THE DURATION OF THE PROJECT.

ONE (POSITECTOR 2000 OR 6000, QUANIX 2200, OR ELCOMETER A345FBI1) AND THE CALIBRATION PLATES, 1.5 -8 MILS AND 10-25 MILS AS PER THE NBS CALIBRATION STANDARDS IN ACCORDANCE WITH ASTM D-1186.



DESIGNED	J.P.R.	CHECKED	I.A.S.
DRAWN	R.L.B.	REVIEWED	-
REVIEWED	W.D.B.	DATE	2/28/05
		STRUCTURE FILE NUMBER	

GENERAL NOTES
VARIOUS BRIDGES
ON OR OVER INTERSTATE 77

H:\2001\01901\DWG\BRIDGE\01901GN2.DWG PLOT SCALE 1:48

COATING THICKNESS

GALVANIZED THICKNESS MUST BE DETERMINED BY USE OF TYPE 2 MAGNETIC GAGES IN ACCORDANCE WITH THE FOLLOWING:

FIVE SEPARATE SPOT MEASUREMENTS MUST BE MADE, SPACED EVENLY OVER ONE (1) RANDOMLY SELECTED, 100 SQUARE FEET OF SURFACE AREA ON EACH STRUCTURAL MEMBER. THREE GAGE READINGS MUST BE MADE FOR EACH SPOT MEASUREMENT. THE PROBE MUST BE MOVED A DISTANCE OF 1 TO 3 INCHES FOR EACH NEW GAGE READING. ANY UNUSUALLY HIGH OR LOW GAGE READING THAT CANNOT BE REPEATED CONSISTENTLY MUST BE DISCARDED. THE AVERAGE (MEAN) OF THE 3 GAGE READINGS MUST BE USED AS THE SPOT MEASUREMENT. THE AVERAGE OF FIVE SPOT MEASUREMENTS FOR EACH SUCH 100 SQUARE FOOT AREA MUST NOT BE LESS THAN THE SPECIFIED THICKNESS. NO SINGLE SPOT MEASUREMENT IN ANY 100 SQUARE FOOT AREA MAY BE LESS THAN 80% OF THE SPECIFIED MINIMUM THICKNESS. ANY ONE OF 3 READINGS WHICH ARE AVERAGED TO PRODUCE EACH SPOT MEASUREMENT, MAY UNDER-RUN OR OVER-RUN BY A GREATER AMOUNT. THE 5 SPOT MEASUREMENTS MUST BE MADE FOR ONE(1) RANDOMLY SELECTED, 100 SQUARE FEET OF AREA ON EACH STRUCTURAL MEMBER. ALL SPLICE MATERIAL AND SECONDARY MEMBERS MUST HAVE AT LEAST ONE SPOT MEASURED ON EACH PIECE. THE PROBE MUST BE MOVED SO THAT ONE READING IS TAKEN AT EACH END AND MIDDLE OF THE PIECE FOR A TOTAL OF THREE READINGS.

THE QCPS MUST INSPECT AND PROVIDE DOCUMENTATION OF ACTUAL DATA THAT THE GALVANIZED THICKNESS CHECKS WERE PERFORMED PER SPECIFICATION, AND THE COATING THICKNESS MEETS SPECIFICATION REQUIREMENTS.

HANDLING AND SHIPPING

REASONABLE CARE MUST BE EXERCISED IN HANDLING THE GALVANIZED STEEL DURING SHIPPING, ERECTION, AND SUBSEQUENT CONSTRUCTION OF THE BRIDGE. THE STEEL MUST BE INSULATED FROM THE BINDING CHAINS BY SOFTENERS. HOOKS AND SLINGS USED TO HOIST STEEL MUST BE PADDED. DIAPHRAGMS AND SIMILAR PIECES MUST BE SPACED IN SUCH A WAY THAT NO RUBBING WILL OCCUR DURING SHIPMENT THAT MAY DAMAGE THE GALVANIZING. THE STEEL MUST BE STORED ON PALLETS AT THE JOB SITE, OR BY OTHER MEANS, SO THAT IT DOES NOT REST ON THE GROUND OR SO THAT COMPONENTS DO NOT FALL OR REST ON EACH OTHER.

SAFETY REQUIREMENTS AND PRECAUTIONS

THE CONTRACTOR MUST MEET THE SAFETY REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), IN ADDITION TO THE SCAFFOLDING REQUIREMENTS BELOW.

THE CONTRACTOR IS REQUIRED TO MEET THE APPLICABLE SAFETY REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION IN ADDITION TO THE SCAFFOLDING REQUIREMENTS SPECIFIED BELOW.

SCAFFOLDING

RUBBER ROLLERS, OR OTHER PROTECTIVE DEVICES MEETING THE APPROVAL OF THE ENGINEER, MUST BE USED ON SCAFFOLD FASTENINGS. METAL ROLLERS OR CLAMPS AND OTHER TYPES OF FASTENINGS WHICH WILL MAR OR DAMAGE COATED SURFACES MUST NOT BE USED.

INSPECTION ACCESS FOR FIELD REPAIR

IN ADDITION TO THE REQUIREMENT OF 105.10, THE CONTRACTOR MUST FURNISH, ERECT, AND MOVE SCAFFOLDING AND OTHER APPROPRIATE EQUIPMENT, TO PERMIT THE INSPECTOR THE OPPORTUNITY TO INSPECT AND CLOSELY OBSERVE, ALL AFFECTED SURFACES. THIS OPPORTUNITY MUST BE PROVIDED TO THE INSPECTOR DURING ALL PHASES OF THE WORK AND CONTINUE FOR A PERIOD OF AT LEAST TEN (10) WORKING DAYS AFTER THE TOUCH-UP WORK HAS BEEN COMPLETED. WHEN SCAFFOLDING IS USED, IT MUST BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS. WHEN SCAFFOLDING OR THE HANGERS ATTACHED TO THE SCAFFOLDING ARE SUPPORTED BY HORIZONTAL WIRE ROPES, OR WHEN SCAFFOLDING IS PLACED DIRECTLY UNDER THE SURFACE TO BE REPAIRED, THE FOLLOWING REQUIREMENTS MUST BE COMPLIED WITH:

WHEN SCAFFOLDING IS SUSPENDED 43" OR MORE BELOW THE COATED SURFACE TO BE REPAIRED, TWO ROWS OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF THE SCAFFOLDING. ONE ROW OF GUARDRAIL MUST BE PLACED AT 42" ABOVE THE SCAFFOLDING AND THE OTHER ROW AT 20" ABOVE THE SCAFFOLDING.

WHEN THE SCAFFOLDING IS SUSPENDED AT LEAST 21", BUT LESS THAN 43" BELOW THE COATED SURFACE TO BE REPAIRED, A ROW OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF THE SCAFFOLDING AT 20" ABOVE THE SCAFFOLDING.

TWO ROWS OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF SCAFFOLDING NOT PREVIOUSLY MENTIONED. THE ROWS OF GUARDRAIL MUST BE PLACED AT 42" AND 20" ABOVE SCAFFOLDING, AS PREVIOUSLY MENTIONED.

ALL SCAFFOLDING MUST BE AT LEAST 24" WIDE WHEN GUARDRAIL IS USED AND 28" WIDE WHEN THE SCAFFOLDING IS SUSPENDED LESS THAN 21" BELOW THE COATED SURFACE TO BE REPAIRED AND GUARDRAIL IS NOT USED. IF TWO OR MORE SCAFFOLDING ARE LAID PARALLEL TO ACHIEVE THE PROPER WIDTH, THEY MUST BE RIGIDLY ATTACHED TO EACH OTHER TO PRECLUDE ANY DIFFERENTIAL MOVEMENT.

ALL GUARDRAIL MUST BE CONSTRUCTED AS A SUBSTANTIAL BARRIER WHICH IS SECURELY FASTENED IN PLACE AND IS FREE FROM PROTRUDING OBJECTS SUCH AS NAILS, SCREWS, AND BOLTS. THERE MUST BE AN OPENING IN THE GUARDRAIL, PROPERLY LOCATED, TO ALLOW THE INSPECTOR ACCESS ONTO THE SCAFFOLDING.

THE RAILS AND UPRIGHTS MUST BE EITHER METAL OR WOOD. IF PIPE RAILING IS USED, THE RAILING MUST HAVE A NOMINAL DIAMETER OF NO LESS THAN ONE AND ONE HALF INCHES. IF STRUCTURAL STEEL RAILING IS USED, THE RAILS MUST BE 2 X 2 X 3/8 INCHES STEEL ANGLES OR OTHER METAL SHAPES OF EQUAL OR GREATER STRENGTH. IF WOOD RAILING IS USED, THE RAILING MUST BE 2 X 4 INCHES (NOMINAL) STOCK. ALL UPRIGHTS MUST BE SPACED AT NO MORE THAN 8 FEET ON CENTER. IF WOOD UPRIGHTS ARE USED, THE UPRIGHTS MUST BE 2 X 4 INCHES (NOMINAL) STOCK.

WHEN THE SURFACE TO BE INSPECTED IS MORE THAN 15 FEET ABOVE THE GROUND OR WATER, AND THE SCAFFOLDING IS SUPPORTED FROM THE STRUCTURE BEING REPAIRED, THE CONTRACTOR MUST PROVIDE THE INSPECTOR WITH A SAFETY BELT AND LIFELINE. THE LIFELINE MUST NOT ALLOW A FALL GREATER THAN 6 FEET. THE CONTRACTOR MUST PROVIDE A METHOD OF ATTACHING THE LIFELINE TO THE STRUCTURE INDEPENDENT OF THE SCAFFOLDING, CABLES, OR BRACKETS SUPPORTING THE SCAFFOLDING.

WHEN SCAFFOLDING IS MORE THAN TWO AND ONE HALF FEET ABOVE THE GROUND, THE CONTRACTOR MUST PROVIDE A LADDER FOR ACCESS ONTO THE SCAFFOLDING. THE LADDER AND ANY EQUIPMENT USED TO ATTACH THE LADDER TO THE STRUCTURE MUST BE CAPABLE OF SUPPORTING 250 POUNDS WITH A SAFETY FACTOR OF AT LEAST FOUR (4). ALL RUNGS, STEPS, CLEATS, OR TREADS MUST HAVE UNIFORM SPACING AND MUST NOT EXCEED 12" ON CENTER. AT LEAST ONE SIDE RAIL MUST EXTEND AT LEAST 36" ABOVE THE LANDING NEAR THE TOP OF THE LADDER.

AN ADDITIONAL LANDING IS REQUIRED WHEN THE DISTANCE FROM THE LADDER TO THE POINT WHERE THE SCAFFOLDING MAY BE ACCESSED, EXCEEDS 12". THE LANDING MUST BE A MINIMUM OF AT LEAST 24" WIDE AND 24" LONG. IT MUST ALSO BE OF ADEQUATE SIZE AND SHAPE SO THAT THE DISTANCE FROM THE LANDING TO THE POINT WHERE THE SCAFFOLDING IS ACCESSED DOES NOT EXCEED 12". THE LANDING MUST BE RIGID AND FIRMLY ATTACHED TO THE LADDER; HOWEVER, IT MUST NOT BE SUPPORTED BY THE LADDER. THE SCAFFOLDING MUST BE CAPABLE OF SUPPORTING A MINIMUM OF 1000 LBS.

IN ADDITION TO THE AFOREMENTIONED REQUIREMENTS, THE CONTRACTOR IS STILL RESPONSIBLE TO OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS, ORDINANCES, REGULATIONS, ORDERS AND DECREES.

THE CONTRACTOR MUST FURNISH ALL NECESSARY TRAFFIC CONTROL TO PERMIT INSPECTION DURING AND AFTER ALL PHASES OF THE PROJECT.

PROTECTION OF PERSONS AND PROPERTY

THE CONTRACTOR MUST INSTALL AND MAINTAIN SUITABLE SHIELDS OR ENCLOSURES TO PREVENT DAMAGE TO ADJACENT BUILDINGS, PARKED CARS, TRUCKS, BOATS, OR VEHICLES TRAVELING ON, OVER, OR UNDER STRUCTURES HAVING GALVANIZED REPAIRS. THEY MUST BE SUITABLY ANCHORED AND REINFORCED TO PREVENT INTERFERING WITH NORMAL TRAFFIC OPERATIONS IN THE OPEN LANES. PAYMENT FOR THE SHIELDS MUST BE INCLUDED AS INCIDENTAL TO THE APPLICABLE FIELD COATING OPERATION. WORK MUST BE SUSPENDED WHEN DAMAGE TO ADJACENT BUILDINGS, MOTOR VEHICLES, BOATS, OR OTHER PROPERTY IS OCCURRING.

WHEN OR WHERE ANY DIRECT OR INDIRECT DAMAGE OR INJURY IS DONE TO PUBLIC OR PRIVATE PROPERTY, THE CONTRACTOR MUST RESTORE, AT HIS OWN EXPENSE, SUCH PROPERTY, TO A CONDITION SIMILAR OR EQUAL TO THAT EXISTING BEFORE SUCH DAMAGE OR INJURY WAS DONE.

POLLUTION CONTROL

THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS TO COMPLY WITH POLLUTION CONTROL LAWS, RULES OR REGULATIONS OF FEDERAL, STATE OR LOCAL AGENCIES.

METHOD OF MEASUREMENT

(STA-172-1380, W. TUSCARAWAS STREET OVER WEST BRANCH OF NIMISHILLEN CREEK)
(STA-77-1071, 4TH STREET NW OVER I-77)
(STA-77-1132, OVER 13TH STREET N.W.)

THE COST OF ALL LABOR, MATERIALS, EQUIPMENT NECESSARY TO GALVANIZE AND TO FABRICATE THE STRUCTURAL STEEL IN ACCORDANCE WITH SPECIFICATION 513 AND THIS NOTE AND PERFORM ANY NECESSARY FIELD REPAIR AND FIELD GRINDING SHALL BE INCLUDED IN THE APPROPRIATE ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 1,2 OR 3, AS PER PLAN.

METHOD OF MEASUREMENT

(STA-172-1351, W. TUSCARAWAS STREET OVER I-77 ONLY)

THE COST OF ALL LABOR, MATERIALS, EQUIPMENT NECESSARY TO ERECT AND/OR STORE THE STRUCTURAL STEEL IN ACCORDANCE WITH SPECIFICATION 513 AND THIS NOTE AND PERFORM ANY NECESSARY FIELD REPAIR AND FIELD GRINDING SHALL BE INCLUDED IN THE APPROPRIATE ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 1,2 OR 3, AS PER PLAN.

BASIS OF PAYMENT

PAYMENT WILL BE MADE AT THE LUMP SUM CONTRACT PRICE FOR THE APPROPRIATE 513 - STRUCTURAL STEEL MEMBERS, LEVEL 1, 2 OR 3, AS PER PLAN (A709, GRADE 50).

ITEM 526 -- REINFORCED CONCRETE APPROACH SLABS (T=15"). AS PER PLAN

DESCRIPTION: THIS ITEM SHALL CONSIST OF CONSTRUCTING REINFORCED CONCRETE APPROACH SLABS WITH MEDIAN BARRIERS, OUTSIDE PARAPETS, CURBS AND/OR SIDEWALKS ON THEM IN ACCORDANCE WITH THE DETAILS IN THE STRUCTURE PLANS AND ODOT STANDARD DRAWING AS-1-81.

MATERIALS: CONCRETE FOR THIS ITEM SHALL BE ITEM 511 HIGH PERFORMANCE CONCRETE. USE THE SAME MIXES FOR THE SLAB, SIDEWALKS AND PARAPETS AS USED ON EACH BRIDGE.

THE FOLLOWING ESTIMATED CONCRETE QUANTITIES ARE GIVEN FOR INFORMATION ONLY:

STA-172-1380, 16 CU. YD. (SIDEWALKS)

STA-172-1351, 16 CU. YD. (SIDEWALKS)

STA-77-1071, 14 CU. YD. (SIDEWALKS)

STA-77-1132, 18 CU. YD. (MEDIAN BARRIERS AND OUTSIDE PARAPETS ON SOUTHBOUND APPROACH SLABS)

THIS CONCRETE AND ITS REINFORCING STEEL SHALL BE INCIDENTAL IN THE PRICE BID FOR THE APPROACH SLAB CONCRETE.

METHOD OF MEASUREMENT: THE AREA MEASURED WILL BE THE NUMBER OF SQUARE YARDS COMPLETE IN PLACE.

BASIS OF PAYMENT: ACCEPTED QUANTITES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER SQUARE YARD COMPLETE IN PLACE. THIS PRICE SHALL INCLUDE FULL COMPENSATION FOR ALL CONCRETE, REINFORCING STEEL, MECHANICAL CONNECTORS, DOWEL HOLES, PREFORMED EXPANSION MATERIAL, JOINTS (WITH SEALERS) AND OTHER MATERIALS AND INCIDENTALS, LABOR AND EQUIPMENT. PAYMENT WILL BE MADE UNDER ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN.

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DATE

2/28/05

REVIEWED

W.D.B.

DRAWN

R.L.B.

DESIGNED

J.P.R.

CHECKED

I.A.S.

STRUCTURE FILE NUMBER

REVISED

GENERAL NOTES

VARIOUS BRIDGES

ON OR OVER INTERSTATE 77

STA-77-10.33

68

611

866

1092

H:\2001\01901\DWG\BRIDGE\01901G02.DWG PLOT SCALE 1:48

ITEM 511 – CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN

ITEM 517 – RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING),
USING HIGH PERFORMANCE CONCRETE, AS PER PLAN

(FOR BRIDGE STA-172-1380, W. TUSCARAWAS STREET OVER WEST BRANCH OF NIMISHILLEN CREEK)

THE PROVISIONS OF CMS ITEMS 511 AND 517 SHALL APPLY EXCEPT AS NOTED BELOW.

SLIPFORMING

SLIPFORMING SHALL NOT BE ALLOWED FOR THIS PROJECT.

MIX OPTIONS

MIX 4, AS PER PLAN, SHALL BE THE ONLY MIX OPTION FOR THESE ITEMS.
THE FOLLOWING PROPORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE
QUANTITIES PER CUBIC YARD
AGGREGATES (SSD)

MIX 4, AS PER PLAN (GGBF SLAG + MICROSILICA)

AGGREGATE TYPE	FINE AGGRE. (LB)	#8 COARSE AGGRE. (LB)	#57 COARSE AGGRE. (LB)	TOTAL (LB)	CEMENT CONTENT (LB)	GGBF SLAG (LB)	MICRO- SILICA (LB)	WATER TO CEMENTITIOUS RATIO MAX	AIR CONTENT ±2%
GRAVEL	1245	360	1315	2920	400	170	30	0.42	7
LIMESTONE	1245	360	1335	2940	400	170	30	0.42	7
SLAG	1245	315	1155	2715	400	170	30	0.42	7

THE WEIGHTS SPECIFIED IN THE CONCRETE TABLE WERE CALCULATED FOR MATERIALS OF THE FOLLOWING BULK SPECIFIC GRAVITIES (SSD): NATURAL AND GRAVEL 2.62, LIMSTONE SAND 2.68, LIMESTONE 2.65, SLAG 2.30, FLY ASH 2.65, GGBF SLAG 2.90, MICROSILICA SOLIDS 2.20, AND PORTLAND CEMENT 3.15. FOR AGGREGATES OF SPECIFIC GRAVITIES DIFFERING MORE THAN PLUS OR MINUS 0.02 FROM THESE, THE WEIGHTS IN THE TABLE WILL BE CORRECTED.

BASIS OF PAYMENT: PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM	EXTENSION	UNITS	DESCRIPTION
511	50001	CU. YD.	CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN
517	75125	FT.	RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING), USING HIGH PERFORMANCE CONCRETE, AS PER PLAN

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL,
AS PER PLAN

(FOR BRIDGE STA-77-1132 OVER 13TH STREET NW)

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

ITEM 513 – STRUCTURAL STEEL MISC.: SBC TELEPHONE DUCT SUPPORTS
AND SLEEVE PIPES

(FOR BRIDGE STA-172-1351, W. TUSCARAWAS STREET NW OVER INTERSTATE 77)

THIS ITEM SHALL INCLUDE INSTALLING SUPPORTS FOR THE SBC TELEPHONE LINES ON THE FINISHED STRUCTURE. THIS ITEM SHALL INCLUDE ALL DUCT SUPPORTS, SLEEVE PIPES, ADDITIONAL CROSSFRAMES, ALL MOUNTING HARDWARE AND INCIDENTALS AS SHOWN ON THE SHEETS 902, 905, 906, 907 AND THE "SBC TEMPORARY BRIDGE WEST TUSCARAWAS STREET OVER INTERSTATE 77, CANTON, OHIO" PROJECT PLANS, SHEETS 916 THROUGH 933. THE UNIT PRICE BID PER POUND FOR ITEM 513 – STRUCTURAL STEEL MISC.: SBC TELEPHONE DUCT SUPPORTS AND SLEEVE PIPES SHALL BE FULL COMPENSATION FOR ALL LABOR AND MATERIALS REQUIRED TO COMPLETE THE WORK AS DETAILED IN THE PLANS. ALL OTHER REQUIREMENTS OF SECTION 513 OF THE CMS SHALL APPLY.

ITEM SPECIAL – STRUCTURE MISC.: TEMPORARY UTILITY BRIDGE

(FOR BRIDGE STA-172-1351, W. TUSCARAWAS STREET NW OVER INTERSTATE 77)

THIS ITEM SHALL INCLUDE FURNISHING, INSTALLING, MAINTAINING, AND SUBSEQUENTLY REMOVING THE TEMPORARY UTILITY STRUCTURE AS DETAILED ON SHEETS 916 THROUGH 933. THIS ITEM SHALL INCLUDE ALL SUPERSTRUCTURE AND SUBSTRUCTURE ELEMENTS AS DETAILED IN THE PLANS INCLUDING ALL EXCAVATION AND BACKFILL REQUIRED TO PLACE THESE ELEMENTS. THIS ITEM SHALL ALSO INCLUDE ALL MOUNTING HARDWARE AND INCIDENTALS SHOWN FOR SUPPORT OF THE TELEPHONE CABLES. TRAFFIC CONTROL REQUIRED FOR THE ERECTION AND/OR REMOVAL OF THE TEMPORARY UTILITY STRUCTURE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 – MAINTAINING TRAFFIC.

THE LUMP SUM PRICE BID FOR ITEM SPECIAL – STRUCTURE MISC.: TEMPORARY UTILITY BRIDGE SHALL BE FULL COMPENSATION FOR ALL LABOR AND MATERIALS, INCLUDING EXCAVATION AND BACKFILL, REQUIRED TO COMPLETE THE TEMPORARY STRUCTURE AS DETAILED AND TO REMOVE AND DISPOSE OF ALL ITEMS WHEN NO LONGER NEEDED TO SUPPORT THE TELEPHONE CABLES.

ITEM 202 – STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN

(FOR BRIDGE STA-HARRISON-0001, SEE SHEET 531/1092)

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURE SHALL BE REMOVED. REMOVE ENTIRELY BOTH ABUTMENTS AND THE SOUTH PIER. REMOVE THE NORTH PIER CONCRETE TO 12" MINIMUM BELOW THE PROPOSED BACK SLOPE, AND REMOVE ANY PART OF THE NORTH PIER THAT INTERFERES WITH CONSTRUCTING PROPOSED NOISE WALL "H". CUT OFF ALL EXISTING ABUTMENT AND PIER PILES THAT ARE DETERMINED TO BE LESS THAN 12" BELOW THE SUBGRADE OF PROPOSED RAMP "V" OR LESS THAN 12" BELOW THE PROPOSED BACK SLOPE.

THE ESTIMATED SUPERSTRUCTURE STEEL REMOVAL IS 221,600 POUNDS.
THE ESTIMATED SUPERSTRUCTURE CONCRETE REMOVAL IS 287 CUBIC YARDS.
THE ESTIMATED SUBSTRUCTURE CONCRETE REMOVAL IS 347 CUBIC YARDS.
THE ESTIMATED 12" CAST-IN-PLACE REINFORCED CONCRETE PILE CUT-OFFS ARE 40 EACH.

THESE ESTIMATED QUANTITIES ARE GIVEN FOR INFORMATION ONLY. THE CONTRACTOR SHALL OBTAIN HIS OWN QUANTITIES TO BE USED AS A BASIS FOR DETERMINING HIS BID PRICE FOR THIS PAY ITEM.

THIS REMOVAL WORK (AND ANY ADDITIONAL NOT DESCRIBED) AND ALL EXCAVATION ASSOCIATED WITH IT SHALL BE PAID UNDER THE LUMP SUM PRICE BID FOR ITEM 202 – STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN. THIS ITEM IS CARRIED TO THE ESTIMATED QUANTITIES, RAMP "V" ON SHEET 532/1092.

APPROACH SLAB REMOVAL QUANTITIES ARE GIVEN IN THE PAVEMENT SUB-SUMMARY ON SHEET 278/1092. SEE SHEET 60/1092 FOR ASBESTOS REMOVAL INFORMATION, AND SEE "REMOVAL OF EXISTING GAS LINES" GENERAL NOTE ON SHEET G3/G11.

STA-172-1351 W. TUSCARAWAS STREET OVER I-77 (ONLY)

THE PLANS AND SPECIFICATION CONTAINED IN THIS SET OF DOCUMENTS FOR THE STA-172-1351 W. TUSCARAWAS STREET OVER I-77 STRUCTURE HAVE BEEN MODIFIED TO REFLECT THAT THE FOLLOWING ITEMS:

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
513	10041	LUMP		STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN, NO. 2 (A709, GRADE 50)
513	90000	7258	POUND	STRUCTURAL STEEL, MISC.: DOMINION EAST OHIO GAS LINE SUPPORTS AND SLEEVE PIPES (SEE NOTE 2)
513	90000	8248	POUND	STRUCTURAL STEEL, MISC.: SBC TELEPHONE DUCT SUPPORTS AND SLEEVE
513	90000	1130	POUND	STRUCTURAL STEEL, MISC.: WATER LINE SLEEVE PIPES

HAVE BEEN PURCHASED UNDER A SEPARATE CONTRACT BY ODOT IN ORDER TO ENSURE THE AVAILABILITY OF THIS STEEL IN A TIMELY MANNER SO AS NOT TO IMPEDE THE CONTRACTOR'S SCHEDULE IN MEETING THE TIME RESTRICTIONS STATED IN THESE CONTRACT DOCUMENTS.

A COPY OF THE BID DOCUMENTS FOR THE PROCUREMENT OF THE STRUCTURAL STEEL FOR THE STA-172-1351 STRUCTURE AND THE ACCOMPANYING PLANS IS AVAILABLE FOR REVIEW.

THE SUPERSTRUCTURE DETAIL PLANS ADDRESSING THE STRUCTURAL STEEL ITEMS HAVE BEEN INCLUDED IN THESE DOCUMENTS TO ENABLE THE STA-77-10.33 CONTRACTOR (PRIME) TO COMPLETE THE CONSTRUCTION OF THE STA-172-1351 STRUCTURE. WHERE NECESSARY, THE PLAN DETAILS HAVE BEEN MODIFIED TO REFLECT THE FACT THAT THE FURNISHING, FABRICATING, AND GALVANIZING OF THE STRUCTURAL STEEL ARE NOT PART OF THIS CONTRACT.

ITEM SPECIAL – ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY OF THE STA-172-1380 (SFN 7600909, STA-172-1351 (SFN 76008779), STA-77-1071 (SFN 7603908) AND STA-HARRISON-0001 (SFN 7607776) BRIDGE SCHEDULED FOR REPLACEMENT OR REMOVAL WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST.

W. TUSCARAWAS STREET OVER THE W. BRANCH OF THE NIMISHILLEN CREEK
STA-172-1380 (SFN 7600909)

THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THIS BRIDGE.

W. TUSCARAWAS STREET OVER I-77
STA-172-1351 (SFN 7600879)

THE SURVEY DETERMINED THAT APPROXIMATELY 262 LINEAL FEET OF CATEGORY I NONFRIABLE ASBESTOS MATERIAL WAS IDENTIFIED IN AN 8" GAS LINE BLACK TAR COATING ON THE BRIDGE. THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIVE (OSHA) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS. DUE TO THE PRESENCE OF ASBESTOS IN THIS LINE, THE ASBESTOS REMOVAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR SHALL PROVIDE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THE NESHAP TO REMOVE THE ASBESTOS CONTAINING MATERIAL. THE CONTRACTOR SHALL COORDINATE BRIDGE DEMOLITION WITH DOMINION EAST OHIO GAS COMPANY IN ACCORDANCE WITH THE NOTE, REMOVAL OF EXISTING GAS LINES (FOR BRIDGE STA-172-1351, W. TUSCARAWAS STREET OVER I-77) GENERAL NOTE ON PLAN SHEET 861.

I-77 OVER 13TH STREET NW
STA-77-1132 L & R (SFN'S 7603932 AND 7603967)

APPROXIMATELY 364 FEET OF CATEGORY II NONFRIABLE ASBESTOS MATERIAL IS SUSPECTED TO BE ON 2-INCH FIBER CONDUIT ON THE STA-77-1132 L & R (SFN'S 7603932 AND 7603967) BRIDGES SCHEDULED FOR REPLACEMENT OR REMOVAL.

AN ASBESTOS SURVEY SHALL BE CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST DURING THE DEMOLITION AS PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED OVER 20 - FOOT SPAN, AS PER PLAN, (FOR BRIDGES STA-77-1132, I-77 OVER 13TH STREET NW) GENERAL NOTE ON PLAN SHEET 861.

IF THE SURVEY DETERMINES THAT ASBESTOS MATERIAL IS PRESENT ON THE 2-INCH FIBER CONDUIT, THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIVE (OSHA) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER, FOR EACH BRIDGE STRUCTURE WILL BE PROVIDED TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORMS AND SUBMIT THEM TO:

DIVISION OF AIR POLLUTION CONTROL
420 MARKET AVENUE NORTH
CANTON, OHIO 44702
DAN ALEMAN, ADMINISTRATOR
TELEPHONE: 330-489-3385
FAX: 330-489-3335

AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF THE DEMOLITION OF THE BRIDGES.

THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORMS TO THE ENGINEER.

FOR THE BRIDGE WITH NO ASBESTOS PRESENT, INFORMATION REQUIRED ON THE FORM WILL INCLUDE:

- THE NAME, ADDRESS, TELEPHONE/FAX NUMBERS AND CONTACT PERSON OF THE DEMOLITION/GENERAL CONTRACTOR.
- THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL.
- A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED.

THE CONTRACTOR SHALL COORDINATE WITH DOMINION EAST OHIO GAS COMPANY FOR THE BRIDGES WITH ASBESTOS PRESENT. INFORMATION REQUIRED ON THE FORM WILL INCLUDE:

- THE NAME, ADDRESS, TELEPHONE/FAX NUMBERS AND CONTACT PERSON OF THE DEMOLITION/GENERAL CONTRACTOR.
- THE NAME, ADDRESS, TELEPHONE/FAX NUMBERS AND CONTACT PERSON OF THE ASBESTOS REMOVAL CONTRACTOR.
- THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL.
- THE DATE(S) AND HOURS OF OPERATION FOR THE ASBESTOS REMOVAL.
- A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED.
- A DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE SITE.
- THE NAME(S), ADDRESS(ES), TELEPHONE/FAX NUMBERS AND CONTACT PERSON(S) OF THE WASTE TRANSPORTER(S) TO BE USED.
- THE NAME, ADDRESS, TELEPHONE/FAX NUMBERS AND CONTACT PERSON OF THE WASTE DISPOSAL FACILITY TO BE USED.
- A DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED OR REDUCED TO POWDER.

A COPY OF THE OEPA FORMS ARE AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 2088 SOUTH ARLINGTON ROAD, AKRON, OHIO 44306.

4TH STREET NW OVER I-77
STA-77-1071 (SFN 7603908)

THE SURVEY DETERMINED THAT APPROXIMATELY 205 LINEAL FEET OF CATEGORY I NONFRIABLE ASBESTOS MATERIAL WAS IDENTIFIED IN AN 8" GAS LINE BLACK TAR COATING ON THE NORTH SIDE OF THE BRIDGE. THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIVE (OSHA) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS. DUE TO THE PRESENCE OF ASBESTOS IN THIS LINE, THE ASBESTOS REMOVAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR SHALL PROVIDE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THE NESHAP TO REMOVE THE ASBESTOS CONTAINING MATERIAL. THE CONTRACTOR SHALL COORDINATE BRIDGE DEMOLITION WITH DOMINION EAST OHIO GAS COMPANY IN ACCORDANCE WITH THE NOTE, REMOVAL OF EXISTING GAS LINES (FOR BRIDGE STA-77-1171, 4TH STREET NW OVER I-77) GENERAL NOTE ON PLAN SHEET 861.

HARRISON AVENUE NW OVER RAMP X
STA-HARRISON-0001 (SFN 7607776)

THE SURVEY DETERMINED THAT APPROXIMATELY 175 LINEAL FEET OF CATEGORY I NONFRIABLE ASBESTOS MATERIAL WAS IDENTIFIED IN AN 8" GAS LINE BLACK TAR COATING ON THE BRIDGE. THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIVE (OSHA) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS. DUE TO THE PRESENCE OF ASBESTOS IN THIS LINE, THE ASBESTOS REMOVAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR SHALL PROVIDE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THE NESHAP TO REMOVE THE ASBESTOS CONTAINING MATERIAL. THE CONTRACTOR SHALL COORDINATE BRIDGE DEMOLITION WITH DOMINION EAST OHIO GAS COMPANY IN ACCORDANCE WITH THE NOTE, REMOVAL OF EXISTING GAS LINES (FOR BRIDGE STA-HARRISON-0001, HARRISON AVE. OVER RAMP X) GENERAL NOTE ON PLAN SHEET 861.

BASIS OF PAYMENT

THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COORDINATE THE SUBMITTAL OF THE OEPA NOTIFICATION FORMS ADDRESSING THE REMOVAL, TRANSPORTATION AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL FOR THE APPLICABLE BRIDGES.

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COMPLETION OF THE FORMS FOR THE BRIDGE(S) THAT DO(ES) NOT HAVE ASBESTOS CONTAINING MATERIAL ASSOCIATED WITH IT(THEM).

PAYMENT FOR THIS WORK SHALL BE MADE UNDER THE CONTRACT LUMP SUM PRICE BID FOR:

ITEM SPECIAL - ASBESTOS NOTIFICATION LUMP SUM

ITEM SPECIAL - ASBESTOS PIPE REMOVAL

W. TUSCARAWAS STREET OVER I-77
STA-172-1351 (SFN 7600879)

APPROXIMATELY 262 LINEAL FEET OF CATEGORY I NONFRIABLE ASBESTOS MATERIAL WAS IDENTIFIED IN AN 8" GAS LINE BLACK TAR COATING ON THE BRIDGE. THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIVE (OSHA) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS.

THE CONTRACTOR SHALL PROVIDE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THE NESHAP ON SITE TO DIRECT THE REMOVAL OF THE ASBESTOS CONTAINING MATERIAL. THE CONTRACTOR SHALL COORDINATE BRIDGE DEMOLITION WITH DOMINION EAST OHIO GAS COMPANY AS PER ITEM 202 - STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN (FOR BRIDGE STA-172-1351, W. TUSCARAWAS STREET OVER I-77) GENERAL NOTE ON PLAN SHEET 861/1092.

4TH STREET NW OVER I-77
STA-77-1071 (SFN 7603908)

APPROXIMATELY 205 LINEAL FEET OF CATEGORY I NONFRIABLE ASBESTOS MATERIAL WAS IDENTIFIED IN THE 8" GAS LINE BLACK TAR COATING ON THE NORTH SIDE OF THE BRIDGE. THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIVE (OSHA) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS.

THE CONTRACTOR SHALL PROVIDE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THE NESHAP ON SITE TO DIRECT THE REMOVAL OF THE ASBESTOS CONTAINING MATERIAL. THE CONTRACTOR SHALL COORDINATE BRIDGE DEMOLITION WITH DOMINION EAST OHIO GAS COMPANY AS PER ITEM 202 - STRUCTURE REMOVED, OVER 20-FOOT SPAN, AS PER PLAN (FOR BRIDGE STA-77-1071, 4TH STREET NW OVER I-77) GENERAL NOTE ON PLAN SHEET 861/1092.

HARRISON AVENUE NW OVER RAMP X
STA-HARRISON-0001 (SFN 7607776)

APPROXIMATELY 175 LINEAL FEET OF CATEGORY I NONFRIABLE ASBESTOS MATERIAL WAS IDENTIFIED IN THE 8" GAS LINE BLACK TAR COATING ON THE BRIDGE. THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIVE (OSHA) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS.

THE CONTRACTOR SHALL PROVIDE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THE NESHAP ON SITE TO DIRECT THE REMOVAL OF THE ASBESTOS CONTAINING MATERIAL. THE CONTRACTOR SHALL COORDINATE BRIDGE DEMOLITION WITH DOMINION EAST OHIO GAS COMPANY AS PER ITEM 202 - STRUCTURE REMOVED, OVER 20-FOOT SPAN (FOR BRIDGE STA-HARRISON-0001, HARRISON AVENUE NW OVER RAMP X) GENERAL NOTE ON PLAN SHEET 861/1092.

BASIS OF PAYMENT

THE UNIT PRICE BID SHALL INCLUDE ALL FEES, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO REMOVE, TRANSPORT, AND DISPOSE OF THE ASBESTOS CONTAINING MATERIAL FROM STA-172-1351 (SFN 7600879), STA-77-1071 (SFN 7603908) AND STA-HARRISON-0001 (SFN 7607776) BRIDGES.

THE FOLLOWING QUANTITIES SHALL BE PAID 100% BY THE DOMINION EAST OHIO GAS COMPANY TO THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION.

STA-172-1351 (SFN 7600879)
ITEM SPECIAL - ASBESTOS PIPE REMOVAL 262 FEET

STA-77-1071 (SFN 7603908)
ITEM SPECIAL - ASBESTOS PIPE REMOVAL 205 FEET

STA-HARRISON-0001 (SFN 7607776)
ITEM SPECIAL - ASBESTOS PIPE REMOVAL 175 FEET

ITEM SPECIAL - ASBESTOS ABATEMENT (STA-77-1132 L&R)

APPROXIMATELY 364 FEET OF CATEGORY II NONFRIABLE ASBESTOS MATERIAL IS SUSPECTED TO BE ON 2-INCH FIBER CONDUIT ON THE STA-77-1132 L&R (SFN'S 7603932 AND 7603967) BRIDGES SCHEDULED FOR REPLACEMENT OR REMOVAL.

AN ASBESTOS SURVEY SHALL BE CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST DURING THE DEMOLITION AS PER ITEM 202 - PORTIONS OF STRUCTURE REMOVED OVER 20-FOOT SPAN, AS PER PLAN (FOR BRIDGE STA-77-1132, I-77 OVER 13TH STREET NW) GENERAL NOTE ON PLAN SHEET 861/1092.

IF THE SURVEY DETERMINES THAT ASBESTOS MATERIAL IS PRESENT ON THE 2-INCH FIBER CONDUIT, THE REMOVAL AND DISPOSAL OF THE ASBESTOS CONTAINING MATERIAL MUST COMPLY WITH THE OHIO ADMINISTRATIVE CODE, THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIVE (OSHA) REGULATIONS AND THE NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAP) STANDARD FOR ASBESTOS.

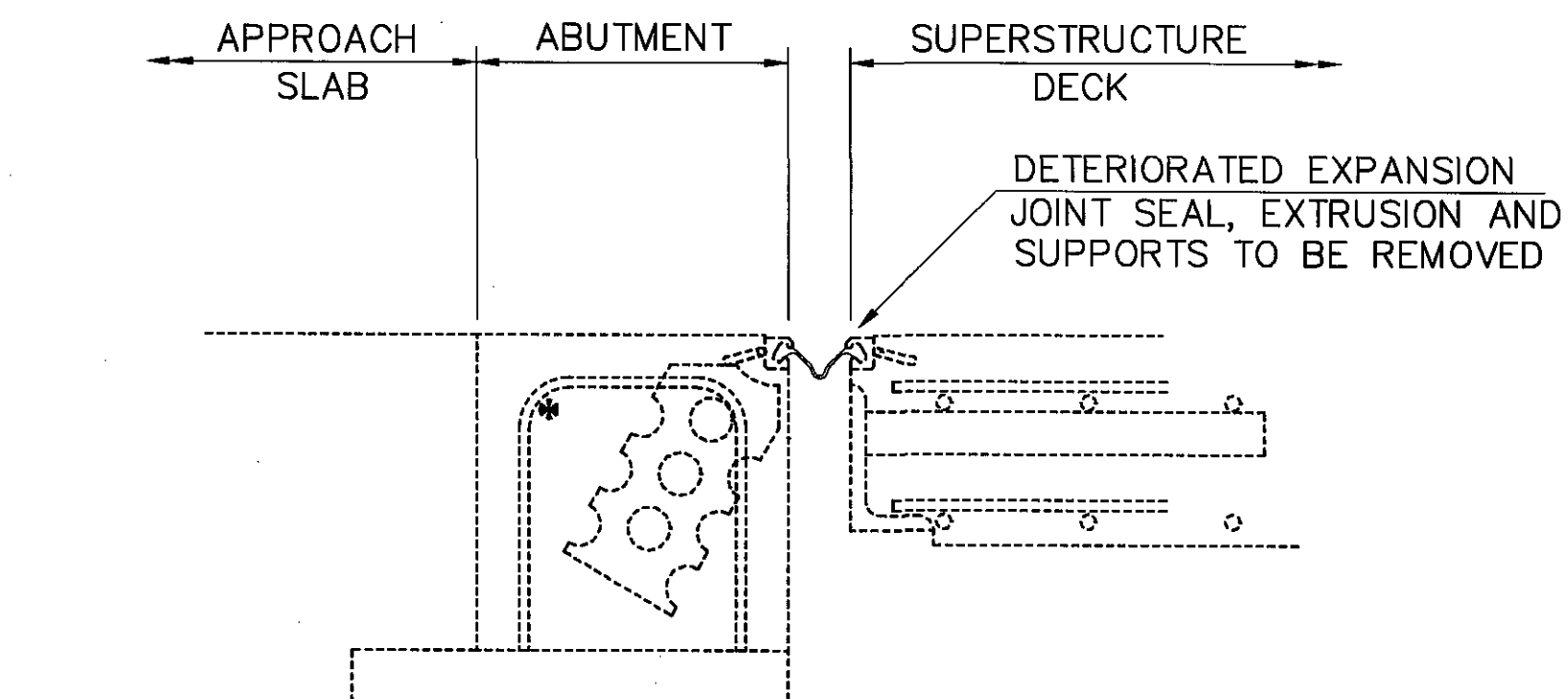
THE CONTRACTOR SHALL PROVIDE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THE NESHAP ON SITE TO DIRECT THE REMOVAL OF THE ASBESTOS CONTAINING MATERIAL.

BASIS OF PAYMENT

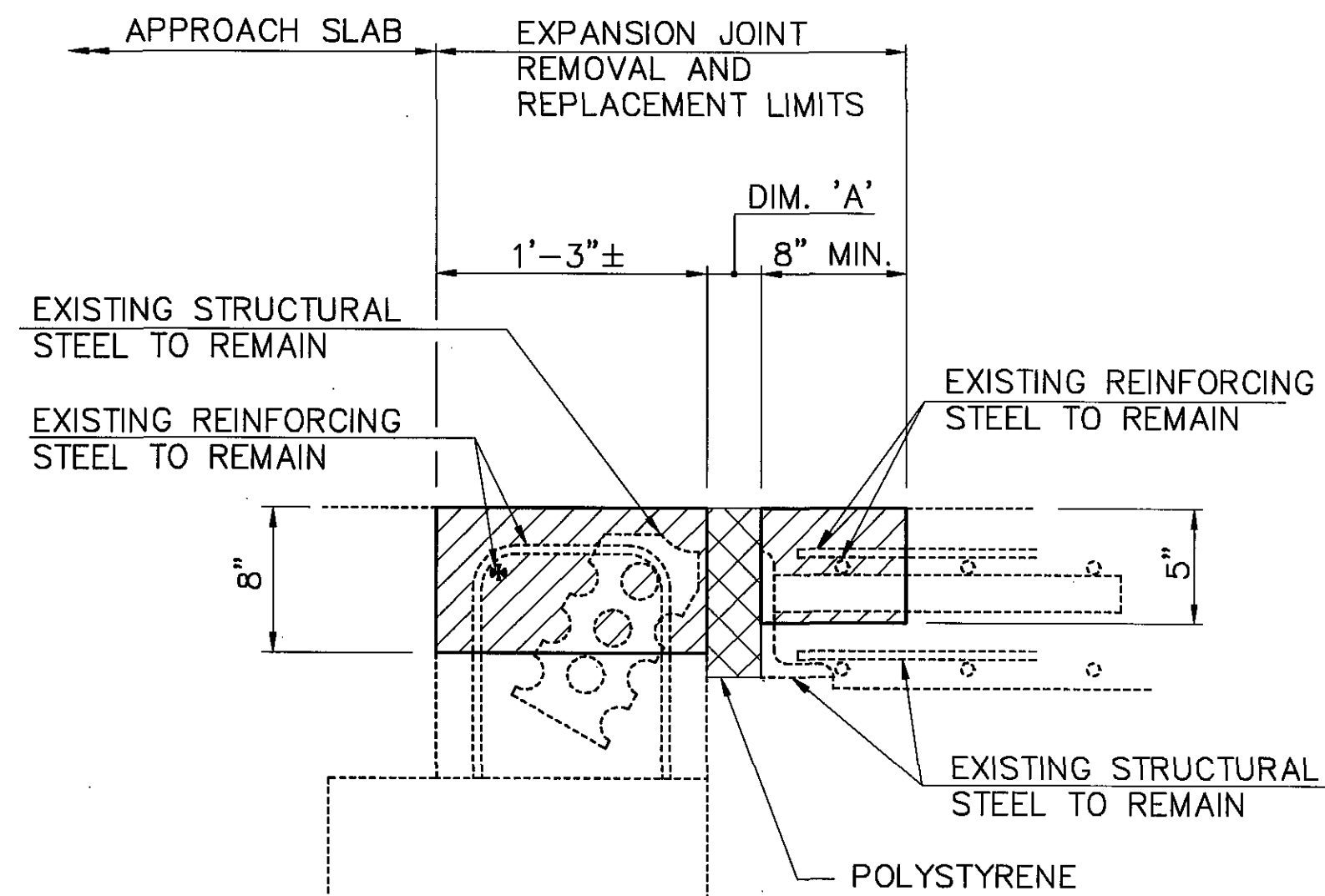
THE LUMP SUM PRICE BID SHALL INCLUDE ALL FEES, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO REMOVE, TRANSPORT, AND DISPOSE OF THE ASBESTOS CONTAINING MATERIAL FROM STA-77-1132 L&R (SFN'S 7603932 AND 7603967) BRIDGES.

THE FOLLOWING QUANTITY IS INCLUDED IN THE ESTIMATED QUANTITIES FOR USE AS DIRECTED BY THE ENGINEER FOR THIS WORK.

ITEM SPECIAL - ASBESTOS ABATEMENT (STA-77-1132 L&R) LUMP SUM



TYPICAL EXPANSION JOINT SECTION



EXPANSION JOINT REPAIR SECTION

EXPANSION JOINT REPAIR FOR MAINTAINING TRAFFIC

(BRIDGES STA-77-1132 - L&R I-77 OVER 13TH STREET NW)

DIM. 'A' - JOINT OPENING AT TIME OF CONCRETE PLACEMENT

- DENOTES LIMITS OF CLASS FS CONCRETE USING NO. 8 AGGREGATE

FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 511 - CONCRETE, MISC.: EXPANSION JOINT REPAIR FOR MAINTAINING TRAFFIC

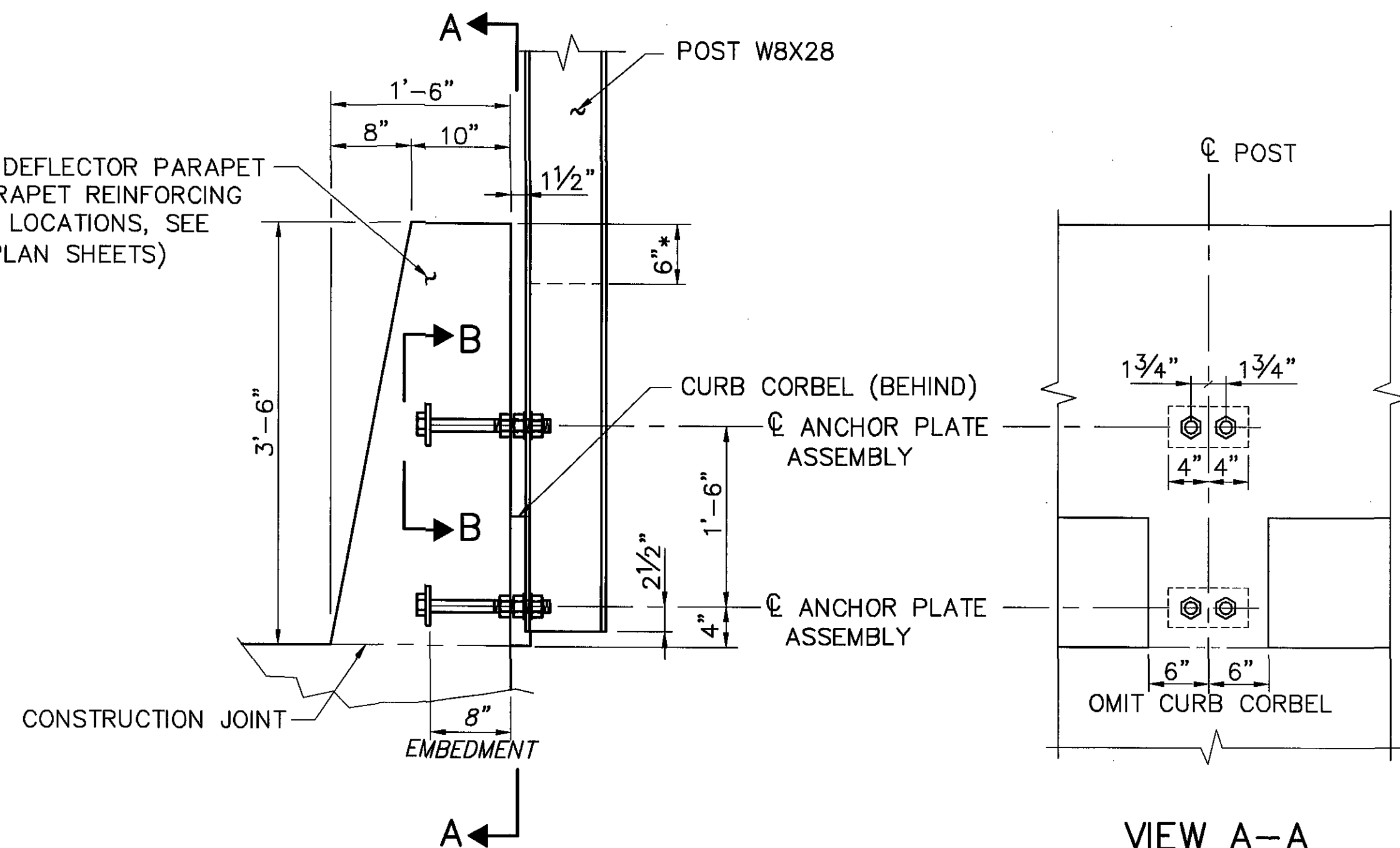
THIS ITEM CONSISTS OF THE REMOVAL OF THE EXISTING EXPANSION JOINT SEAL, EXTRUSION AND SUPPORTS, REMOVAL OF ALL DISINTEGRATED CONCRETE TO THE LIMITS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, THE PREPARATION OF THE SURFACE, FORMS, POLYSTYRENE SPACER, PROVIDING AND PLACING OF CLASS FS CONCRETE WITH NO. 8 AGGREGATE.

PAYMENT SHALL BE MADE AT THE CONTRACT PRICE PER CU. YD. FOR ITEM 511 - CONCRETE MISC.: EXPANSION JOINT REPAIR FOR MAINTAINING TRAFFIC WHICH SHALL INCLUDE ALL MATERIALS AND LABOR INCLUDING REMOVAL AND DISPOSAL OF THE EXPANSION JOINT AND EXISTING CONCRETE, REQUIRED TO MAKE THIS ITEM COMPLETE.

ALL TRAFFIC CONTROL NEEDED TO CONSTRUCT THE TEMPORARY EXPANSION JOINT SHALL BE IN ACCORDANCE WITH ITEM 614 - MAINTAINING TRAFFIC AND SHALL BE INCLUDED FOR PAYMENT IN THE CONTRACT LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC (ROADWAY ITEM).

AN ESTIMATED QUANTITY IS INCLUDED IN THE STA-77-1132 STRUCTURE'S ESTIMATED QUANTITY TABLE FOR USE AS DIRECTED BY THE ENGINEER.

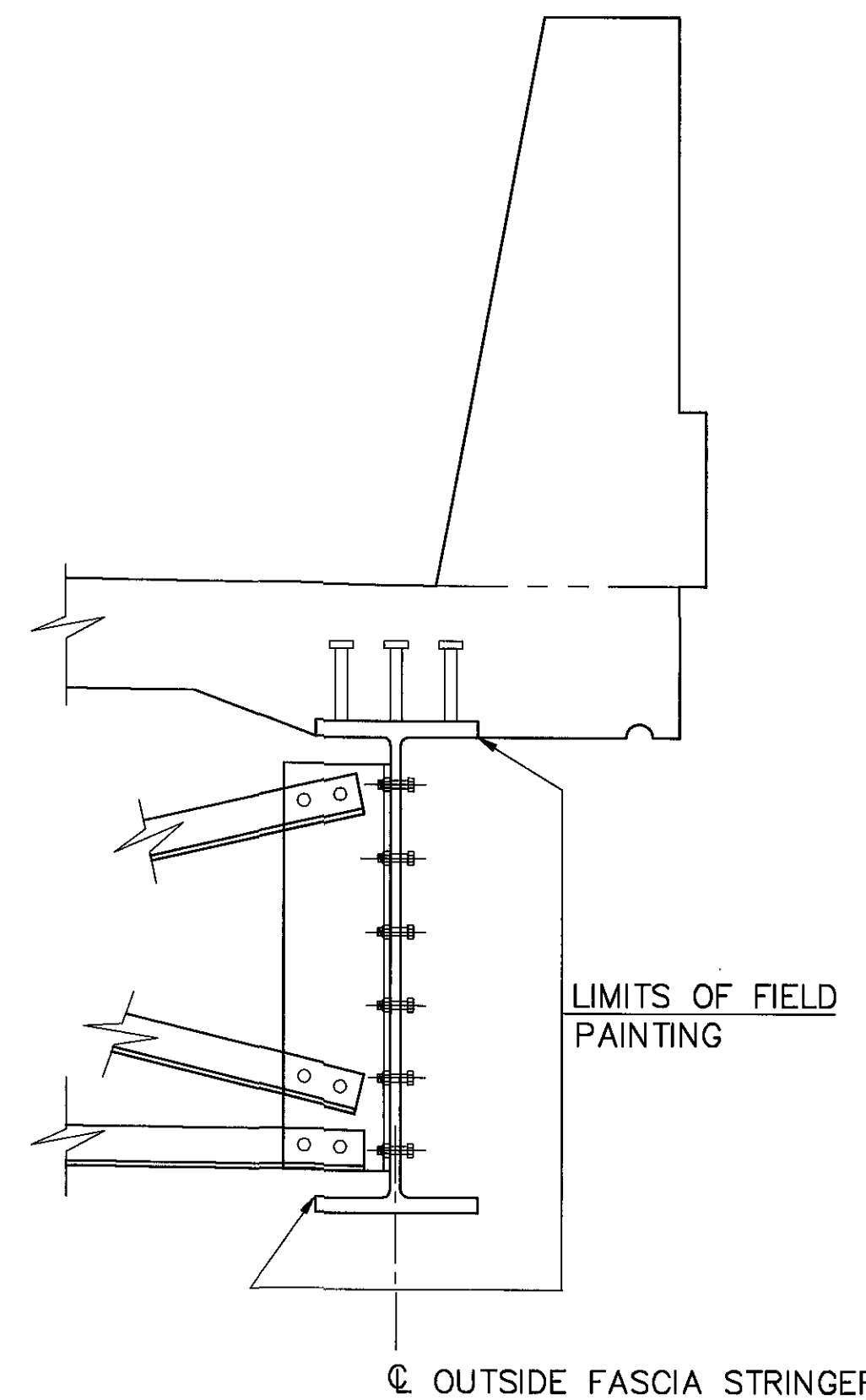
OUTSIDE DEFLECTOR PARAPET (FOR PARAPET REINFORCING AT POST LOCATIONS, SEE BRIDGE PLAN SHEETS)



* - 6" IS THE MINIMUM DISTANCE FROM THE TOP OF PARAPET TO THE BOTTOM OF THE NOISE BARRIER PANEL. (SEE STRUCTURE PLANS FOR POST SPACING)

**ANCHORAGE FOR NOISE BARRIER POST
MOUNTED ON OUTSIDE DEFLECTOR PARAPET**

(SOUTHBOUND, BRIDGE STA-77-1132 OVER 13TH STREET NW)

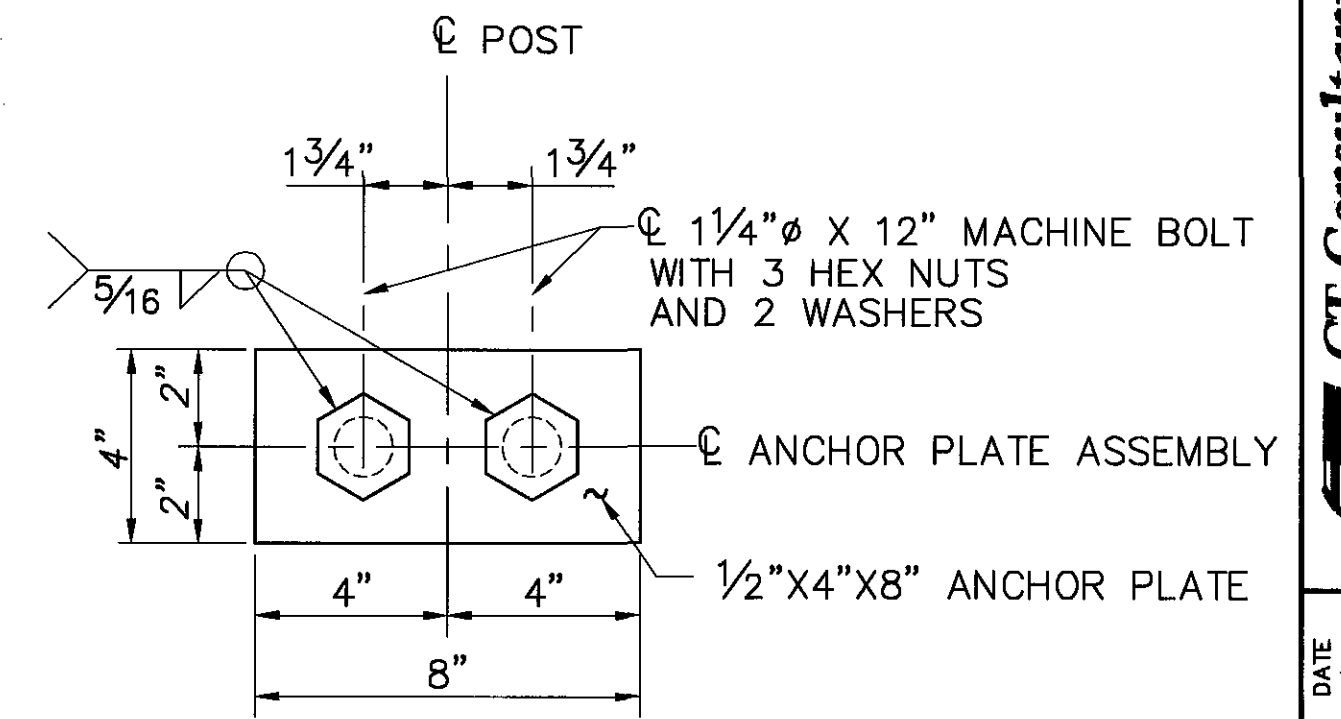


TYPICAL FASCIA STRINGER FIELD PAINTING LIMITS

BRIDGE STA-172-1380 W. TUSCARAWAS STREET OVER WEST BRANCH OF NIMISHILLEN CREEK;
BRIDGE STA-172-1351 W. TUSCARAWAS STREET OVER I-77;
BRIDGE STA-77-1071 4TH STREET NW OVER I-77;
BRIDGE STA-77-1132 OVER 13TH STREET NW

PAINTING OF BRIDGE STEEL NOTES:

1. ALL FOUR STRUCTURES IN THIS CONTRACT SHALL HAVE THEIR TWO OUTSIDE FASCIA STRINGERS ONLY FIELD PAINTED TO THE LIMITS INDICATED ON THE DETAIL.
2. THE PAINT COLOR SHALL BE FEDERAL COLOR NUMBER 14272 (GREEN).
3. FOR ADDITIONAL INFORMATION, SEE "ITEM 514-FIELD PAINTING, MISC.: GALVANIZED STEEL, INTERMEDIATE AND FINISH COAT, SYSTEM EU" GENERAL NOTE ON SHEET G4/G11.

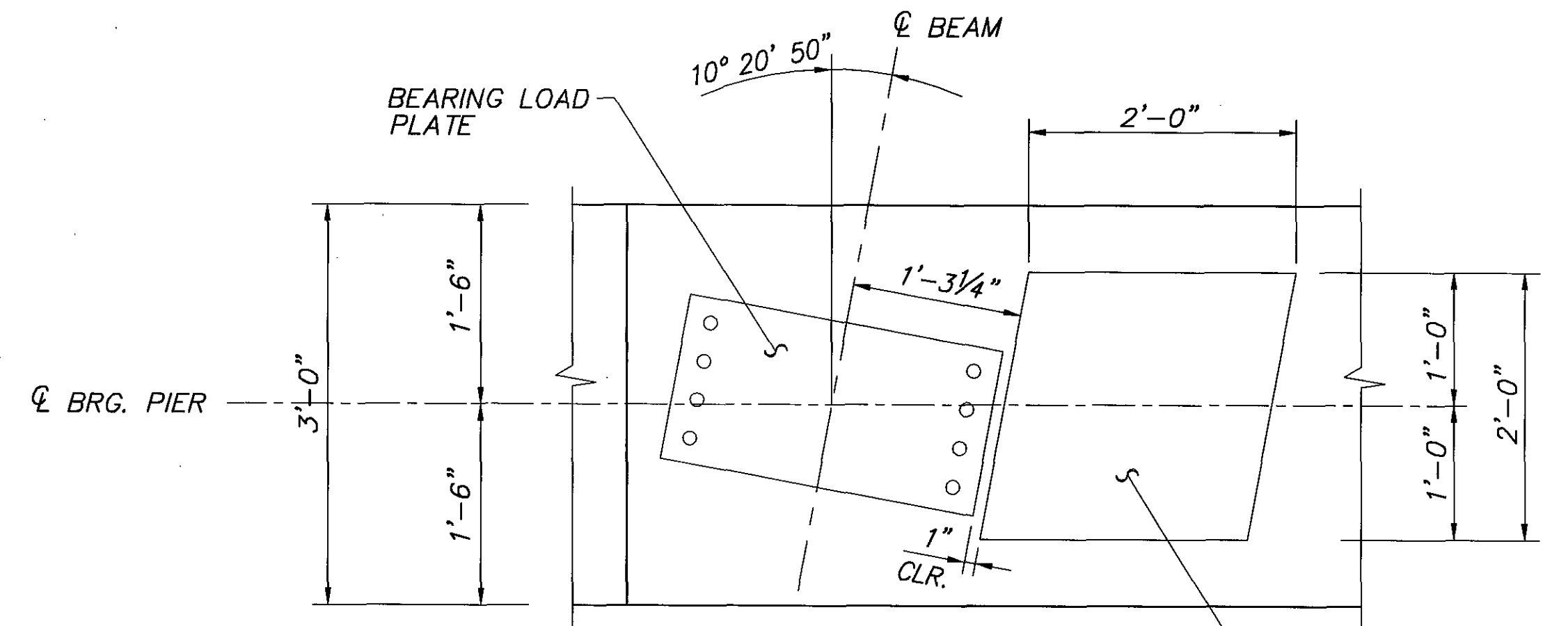


MATERIAL: ALL MACHINE BOLTS, NUTS, WASHERS AND PLATES SHALL CONFORM TO THE PHYSICAL PROPERTIES OF ASTM A325 EXCEPT THAT THE MINIMUM ELONGATION SHALL BE 10%. THE CHEMICAL PROPERTIES ARE WAIVED.

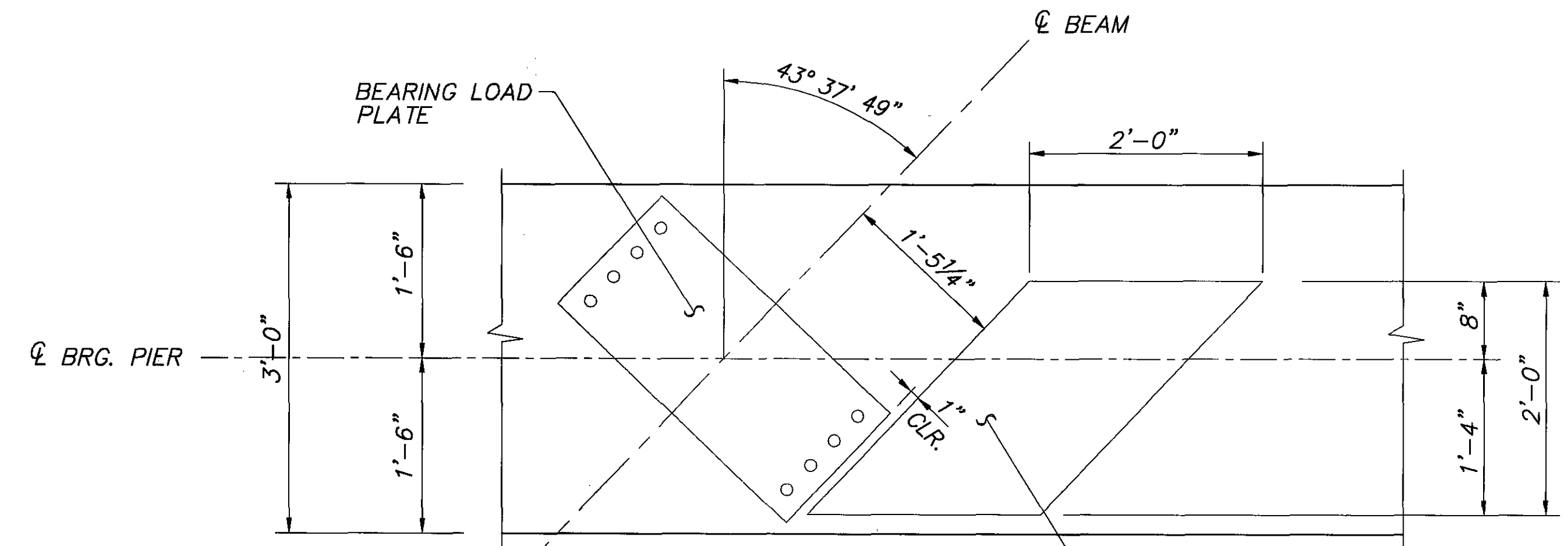
GALVANIZING: ANCHOR PLATES WITH BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 OR ASTM A153. GALVANIZING SHALL BE DONE AFTER THE WELDING IS COMPLETE.

PAYMENT: PROVIDING AND INSTALLING ANCHOR PLATE ASSEMBLIES WILL BE PAID AT THE CONTRACT PRICE BID FOR "EACH" ITEM 513-STRUCTURAL STEEL, MISC.: ANCHOR PLATE ASSEMBLY.

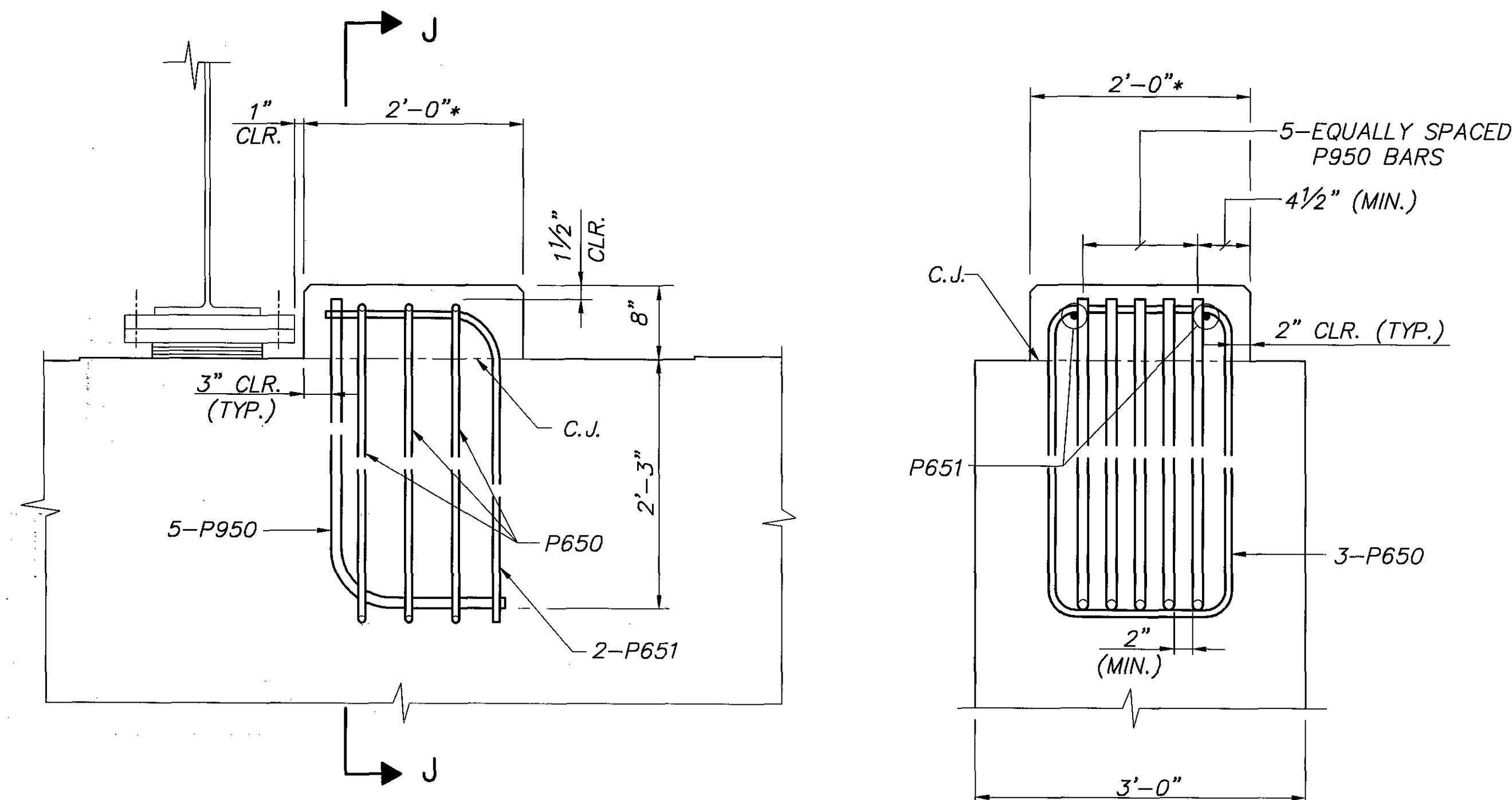
**VIEW B-B
ANCHOR PLATE ASSEMBLY DETAIL**



PLAN VIEW (STA-77-1071)
(FOR SEISMIC PEDESTAL LOCATION, SEE PIER PLANS)

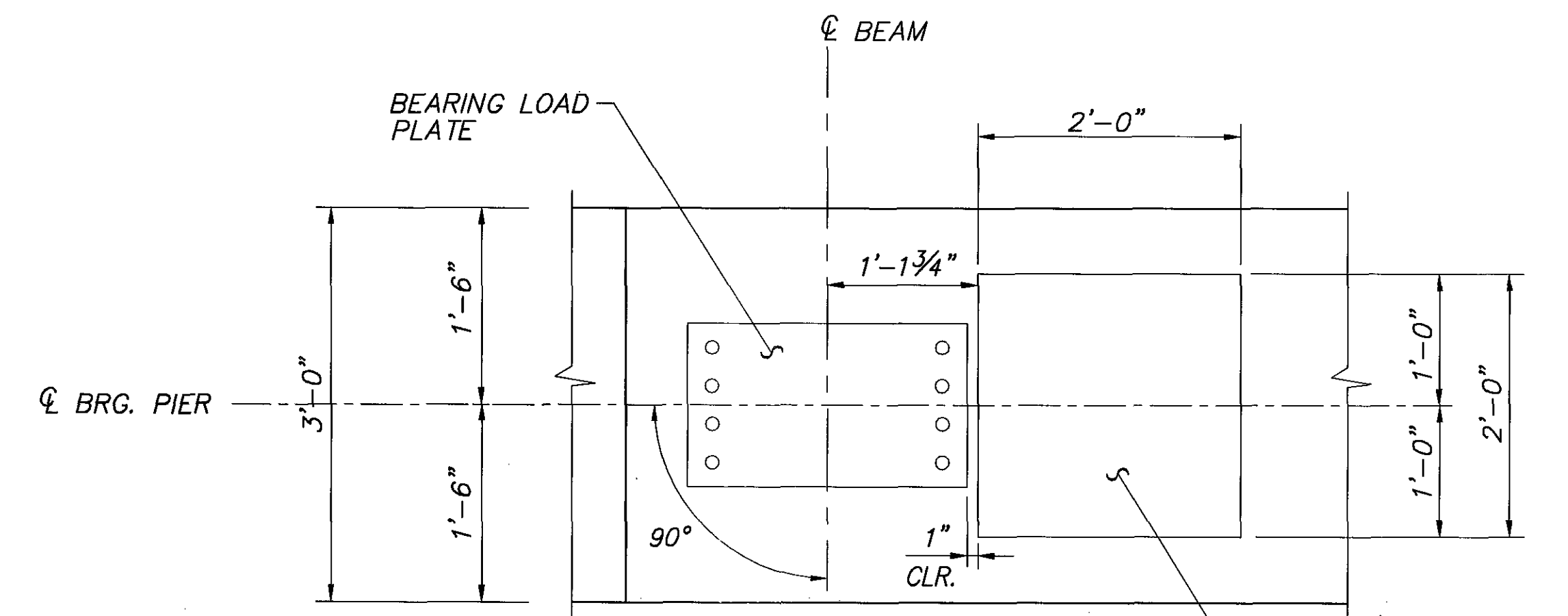


PLAN VIEW (STA-172-1351)
(FOR SEISMIC PEDESTAL LOCATION, SEE PIER PLANS)



FRONT VIEW OF SEISMIC PEDESTAL

SECTION J-J



PLAN VIEW (STA-77-1132)
(FOR SEISMIC PEDESTAL LOCATION, SEE PIER PLANS)

THE 2'-0" WIDTH OF THE PEDESTAL SHALL BE MEASURED PARALLEL TO THE CENTERLINE OF BEARING. THE P950 & P651 BARS SHALL BE PLACED PARALLEL TO THE CENTERLINE OF BEARING. THE P650 BARS SHALL BE PLACED PARALLEL TO THE BEAMS.

THE LOCATION OF THE MAIN REINFORCEMENT IN THE PIER CAP MAY BE ADJUSTED HORIZONTALLY $\pm 1"$ TO ACCOMMODATE THE P950 BARS.

* - THE SURFACE OF THE PIER CAP IN THIS AREA SHALL BE FINISHED WITH A SERRATED TROWEL. THE SERRATIONS SHALL BE $\frac{1}{4}"$ DEEP MINIMUM.

SEISMIC PEDESTAL DETAILS

BRIDGE STA-172-1351 W. TUSCARAWAS STREET OVER I-77;
BRIDGE STA-77-1071 4TH STREET NW OVER I-77;
BRIDGE STA-77-1132 OVER 13TH STREET NW

ABBREVIATIONS: C.J.-CONSTRUCTION JOINT; CLR.-CLEAR;
TYP.-TYPICAL; MIN.-MINIMUM; BRG.-BEARING.

MISCELLANEOUS STRUCTURE DETAILS
VARIOUS BRIDGES
ON OR OVER INTERSTATE 77

STA-77-10.33

G11 / G11

869
1092

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DESIGNED	J.P.R.	CHECKED	I.A.S.
DRAWN	R.R.C.	REVIEWED	
REVIEWED	W.D.B.	DATE	2/28/05
STRUCTURE FILE NUMBER			

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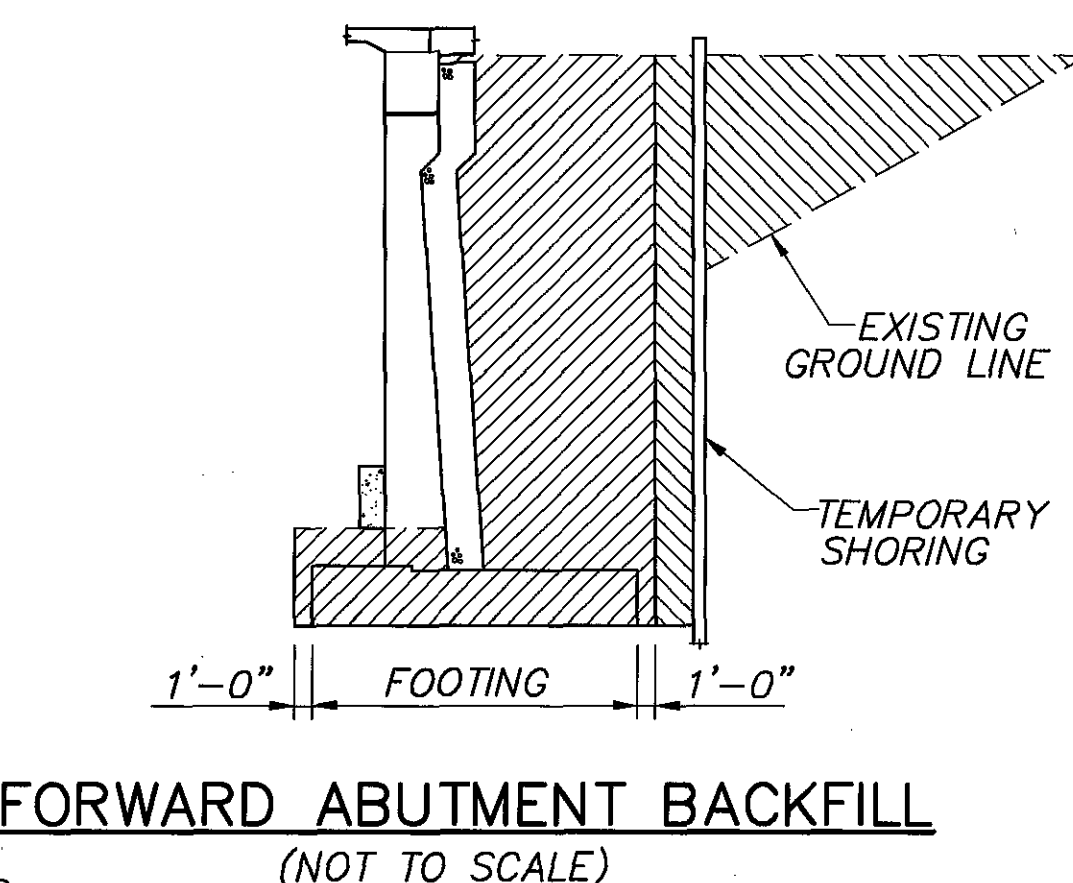
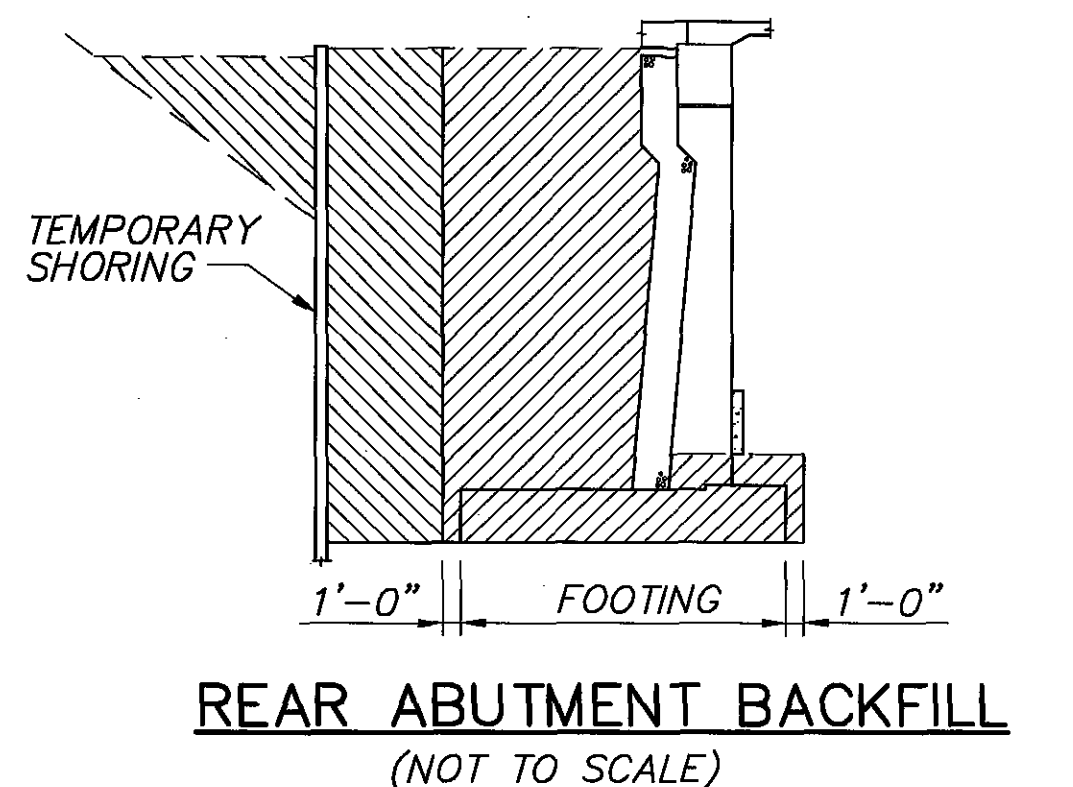
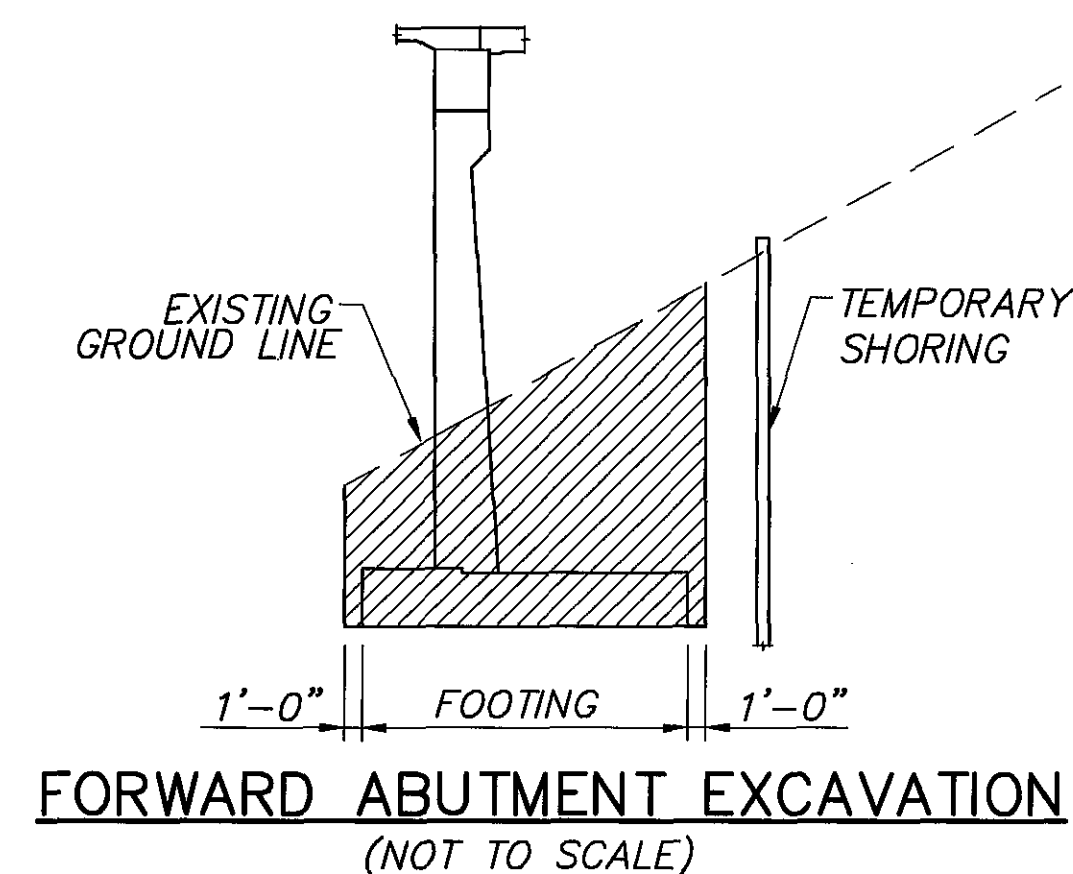
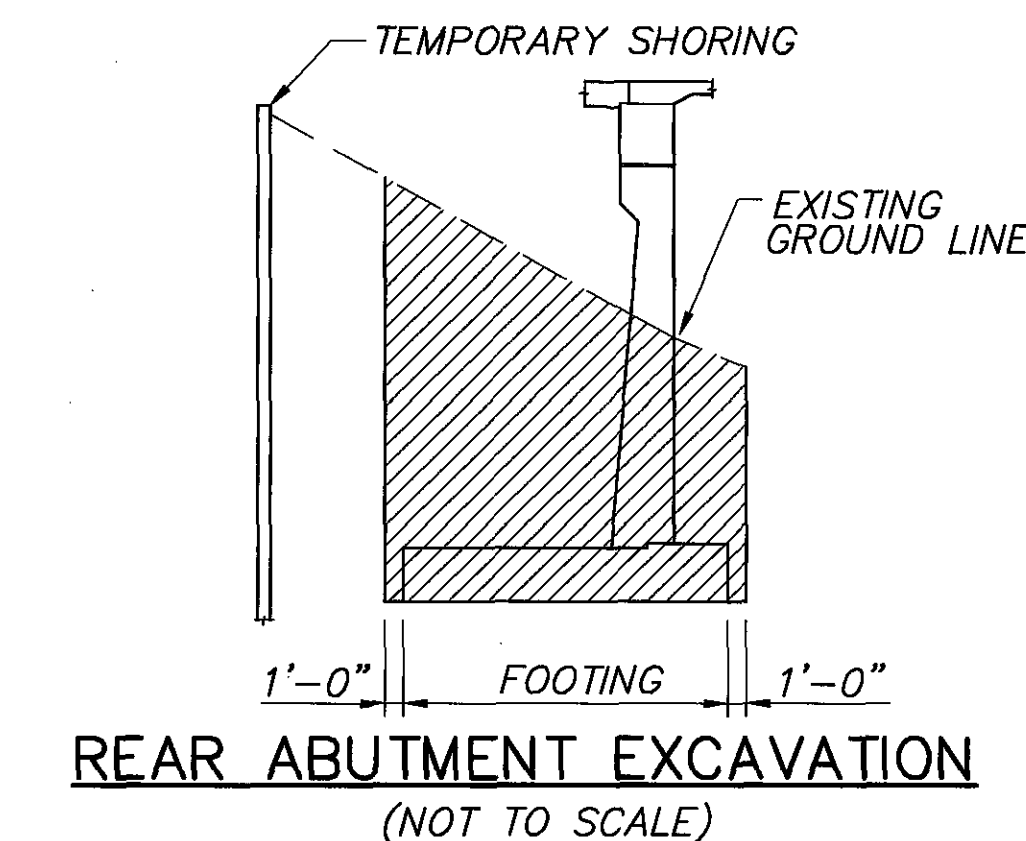
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ESTIMATED QUANTITIES													
ITEM	ITEM EXT.	TOTAL	PARTICIPATION			UNIT	DESCRIPTION	GENERAL	ABUT.	PIER	SUPER.	SPECIAL, MISC. & AS PER PLAN REFERENCE SHEET NO.	
			IM FUNDING	NHS FUNDING	100% DEOG								
202	11003	LUMP		LUMP			STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN #	LUMP				G3/G11, 3/19	
202	23501	743	557	186		SQ.YD.	WEARING COURSE REMOVED, AS PER PLAN	743				G3/G11	
SPECIAL	20235700	205			205	FT.	ASBESTOS PIPE REMOVED (SEE NOTE 2)				205	G9A/G11	
202	98100	16	12	4		EACH	REMOVAL MISC.: EXISTING PILE (SEE NOTE 5)	16				3/19	
503	11100	LUMP		LUMP			COFFERDAMS, CRIBS AND SHEETING	LUMP					
503	21301	LUMP		LUMP			UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP				G6/G11	
505	11100	LUMP		LUMP			PILE DRIVING EQUIPMENT MOBILIZATION	LUMP					
507	00200	8,480	6,360	2,120		FT.	STEEL PILES HP12x53, FURNISHED		7,360	1,120			
507	00250	7,840	5,880	1,960		FT.	STEEL PILES HP12x53, DRIVEN		6,800	1,040			
509	10000	158,624	118,968	39,656		POUND	EPOXY COATED REINFORCING STEEL	977 ▲	74,127	11,170	72,350		
511	41000	42	32	10		CU.YD.	CLASS C CONCRETE, PIER ABOVE FOOTINGS			42			
511	44100	258	194	64		CU.YD.	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING		258			G6/G11	
511	46000	131	98	33		CU.YD.	CLASS C CONCRETE		131				
511	46500	396	297	99		CU.YD.	CLASS C CONCRETE, FOOTING		363	33			
511	50100	37	28	9		CU.YD.	CLASS HP CONCRETE, BRIDGE DECK (PARAPET)	6 ▲			31		
512	10050	294	221	73		SQ.YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)	71 ▲			223		
512	10100	946	710	236		SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) *	47 ▲	398	129	372		
512	44400	37	28	9		SQ.YD.	TYPE B WATERPROOFING		37				
513	10041	LUMP		LUMP			STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN, NO.1 (A709, GRADE 50)				LUMP	G6-G8/G11, 11/19	
513	20000	2,028	1,521	507		EACH	WELDED STUD SHEAR CONNECTORS				2,028		
513	90000	7,398			7,398	POUND	STRUCTURAL STEEL, MISC.: DOMINION EAST OHIO GAS LINE SUPPORTS AND SLEEVE PIPES (SEE NOTE 2)				7,398	10/19	
514	27800	LUMP		LUMP			FIELD PAINTING, MISC.: GALVANIZED STEEL, INTERMEDIATE AND FINISH COAT, SYSTEM EU				LUMP	G4/G11, G10/G11	
516	13600	226	170	56		SQ. FT.	1" PREFORMED EXPANSION JOINT FILLER		226				
516	13900	61	46	15		SQ. FT.	2" PREFORMED EXPANSION JOINT FILLER		61				
516	14021	122	92	30		FT.	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN		122			G6/G11	
516	44101	12	9	3		EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (9"x14"x2 1/8" NEOPRENE), AS PER PLAN		12			G6/G11 & 15/19	
516	44101	6	4	2		EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (13 1/2"x21"x2" NEOPRENE), AS PER PLAN			6		G6/G11 & 15/19	
518	21230	LUMP		LUMP			POROUS BACKFILL WITH FILTER FABRIC		LUMP				
518	40000	212	159	53		FT.	6" PERFORATED CORRUGATED PLASTIC PIPE		212				
518	40010	40	30	10		FT.	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS		40				
523	20000	2	1	1		EACH	DYNAMIC LOAD TESTING		1	1			
526	25001	245	184	61		SQ.YD.	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN	245				G8/G11, 16/19 & 17/19	
SPECIAL	53013000	3,448	2,586	862		SQ.FT.	FORM LINER		3,448			5/19-8/19	
SPECIAL	60739920	360	270	90		FT.	VANDAL PROTECTION FENCE, 10' CURVED, COATED FABRIC	48 ▲			312	G4, G5/G11	
SPECIAL	69072000	LUMP		LUMP			ASBESTOS NOTIFICATION	LUMP				G9A/G11	
894	10001	290	218	72		CU.YD.	HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY, AS PER PLAN				290	G6/G11, 12/19, 14/19	

NOTES:

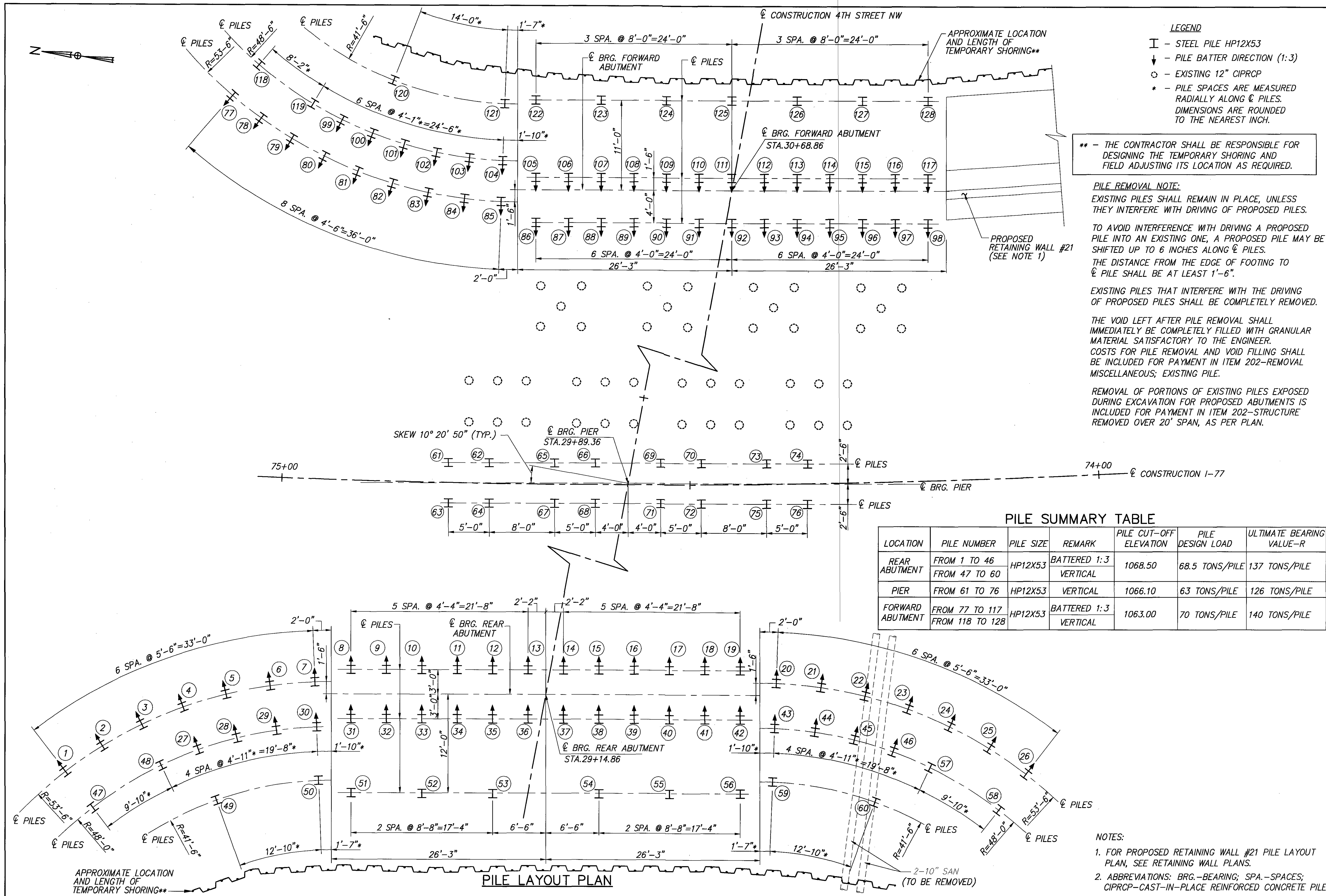
- #- THE ESTIMATED REMOVAL QUANTITIES GIVEN IN THE "REMOVAL OF EXISTING STRUCTURE" GENERAL NOTE ON SHEET G3/G11 ARE GIVEN FOR INFORMATION ONLY. THE CONTRACTOR SHALL OBTAIN HIS OWN QUANTITIES TO BE USED AS A BASIS FOR DETERMINING HIS BID PRICE FOR ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
- TO BE PAID 100% BY THE DOMINION EAST OHIO GAS COMPANY TO THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION.
- * SEE GENERAL NOTE ON SHEET G6/G11.
- ▲ - QUANTITY TO BE PLACED ON APPROACH SLABS.
- TO BE USED AS DIRECTED BY THE ENGINEER.

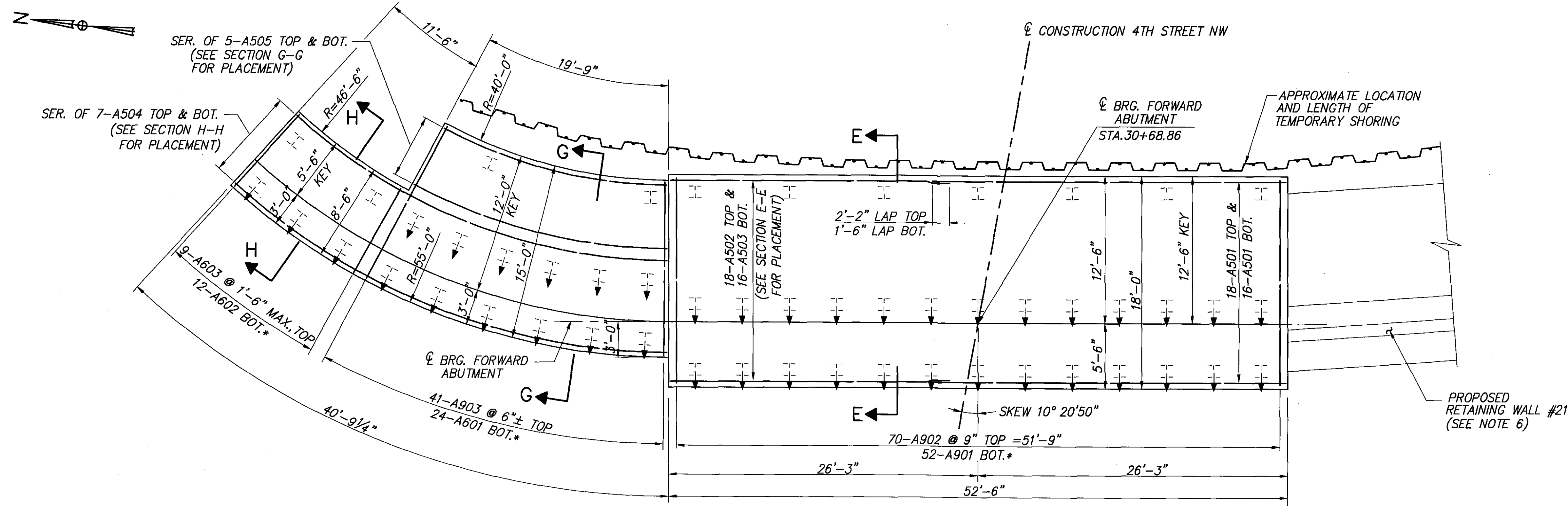
CALC. BY: R.R.C. CHECKED BY J.P.R.
DATE: 12/12/02 DATE: 6/13/03



LEGEND:

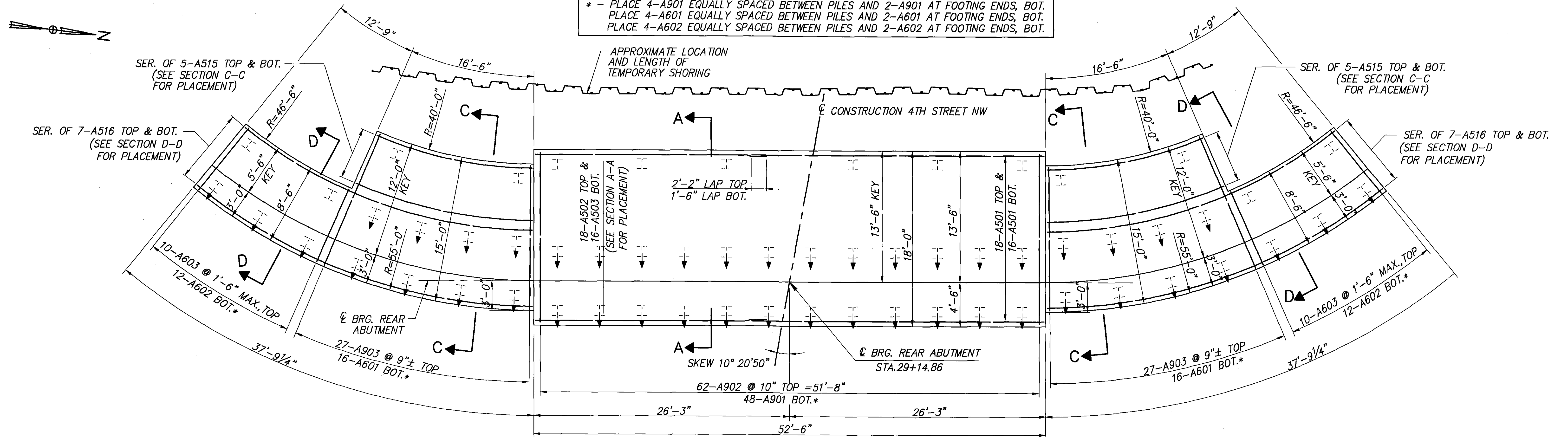
-  - INDICATES AREA INCLUDED WITH ITEM 503- UNCLASSIFIED EXCAVATION, AS PER PLAN.
-  - INDICATES AREA INCLUDED WITH ITEM 203- EMBANKMENT, AS PER PLAN. (ROADWAY ITEM)





FORWARD ABUTMENT FOOTING PLAN

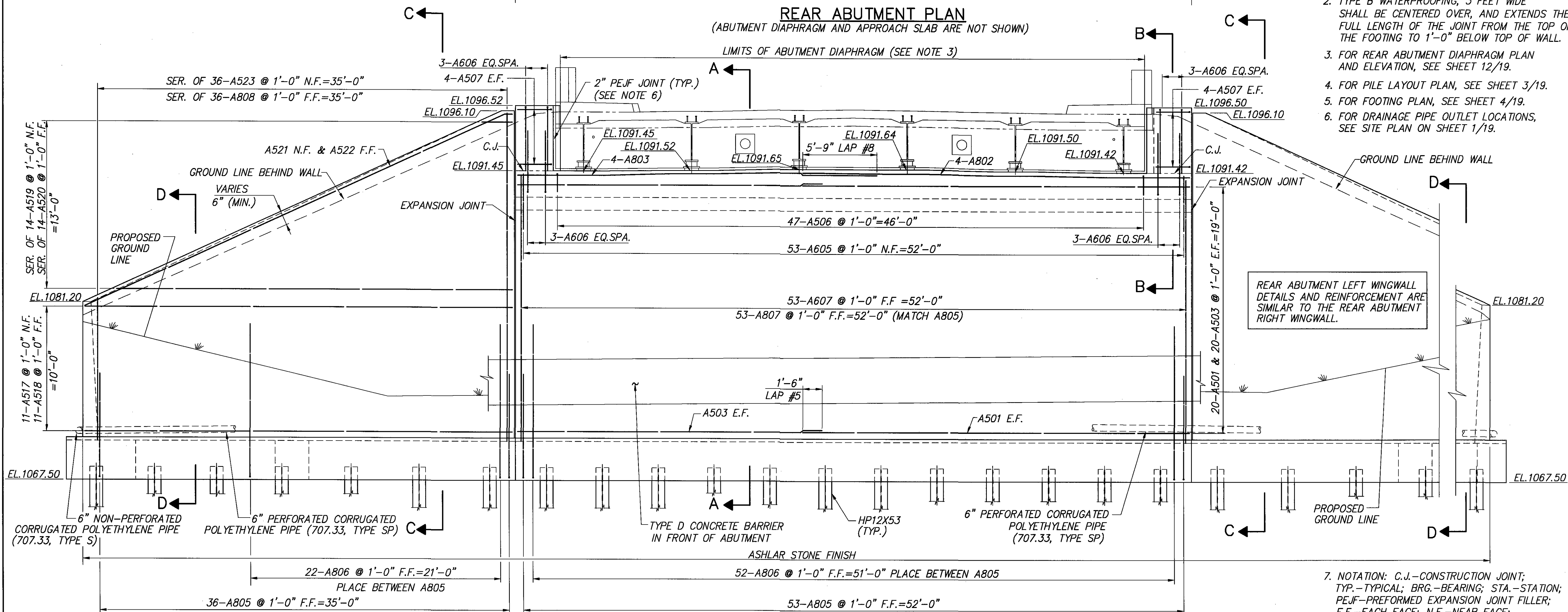
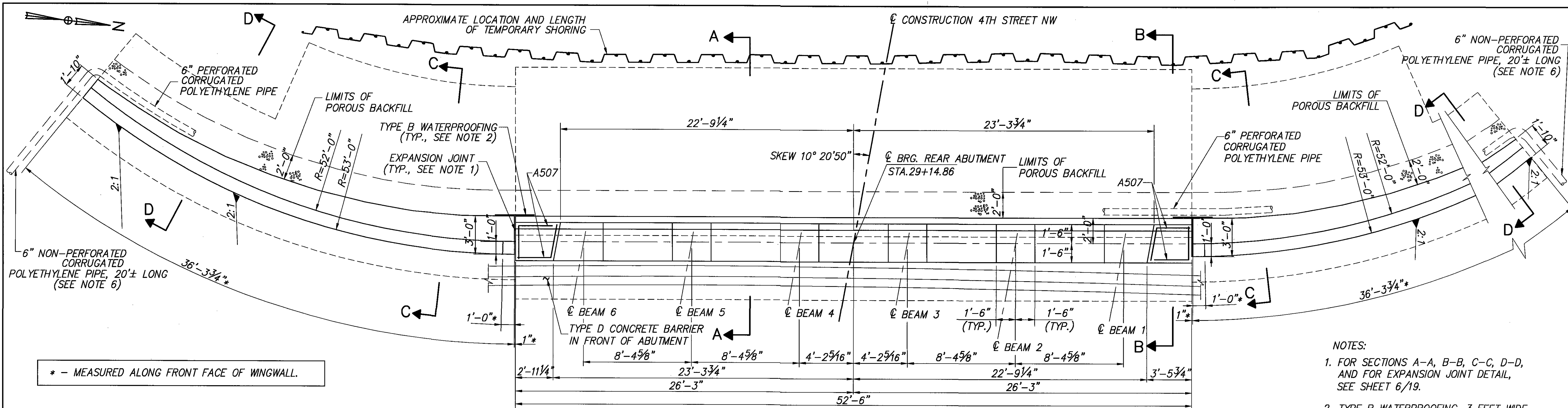
* - PLACE 4-A901 EQUALLY SPACED BETWEEN PILES AND 2-A901 AT FOOTING ENDS, BOT.
 PLACE 4-A601 EQUALLY SPACED BETWEEN PILES AND 2-A601 AT FOOTING ENDS, BOT.
 PLACE 4-A602 EQUALLY SPACED BETWEEN PILES AND 2-A602 AT FOOTING ENDS, BOT.



REAR ABUTMENT FOOTING PLAN

NOTES:

1. FOR SECTIONS A-A, C-C AND D-D, SEE SHEET 6/19.
2. FOR SECTIONS E-E, G-G AND H-H, SEE SHEET 8/19.
3. FOR REAR ABUTMENT PLAN AND ELEVATION, SEE SHEET 5/19.
4. FOR FORWARD ABUTMENT PLAN AND ELEVATION, SEE SHEET 7/19.
5. FOR PILE LAYOUT PLAN, SEE SHEET 3/19.
6. FOR RETAINING WALL #21 PLAN AND ELEVATION, SEE RETAINING WALL PLANS.
7. ABBREVIATIONS: BRG.-BEARING; TYP.-TYPICAL; MAX.-MAXIMUM; EL.-ELEVATION; BOT.-BOTTOM; SER.-SERIES.



- NOTES:
- FOR SECTIONS A-A, B-B, C-C, D-D, AND FOR EXPANSION JOINT DETAIL, SEE SHEET 6/19.
 - TYPE B WATERPROOFING, 3 FEET WIDE SHALL BE CENTERED OVER, AND EXTENDS THE FULL LENGTH OF THE JOINT FROM THE TOP OF THE FOOTING TO 1'-0" BELOW TOP OF WALL.
 - FOR REAR ABUTMENT DIAPHRAGM PLAN AND ELEVATION, SEE SHEET 12/19.
 - FOR PILE LAYOUT PLAN, SEE SHEET 3/19.
 - FOR FOOTING PLAN, SEE SHEET 4/19.
 - FOR DRAINAGE PIPE OUTLET LOCATIONS, SEE SITE PLAN ON SHEET 1/19.

7. NOTATION: C.J.-CONSTRUCTION JOINT; TYP.-TYPICAL; BRG.-BEARING; STA.-STATION; PEJF-PREFORMED EXPANSION JOINT FILLER; E.F.-EACH FACE; N.F.-NEAR FACE; F.F.-FAR FACE; EQ.SPA.-EQUALLY SPACED; MIN.-MINIMUM.

H:\2001\01901\DWG\BRIDGE\01901214.DWG PLOT SCALE 1:48

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DESIGNED	I.A.S.	CHECKED	J.P.R.
DRAWN	I.A.S.	REVISED	-
REVIEWED	W.D.B.	DATE	2/28/05
STRUCTURE FILE NUMBER	7603916		

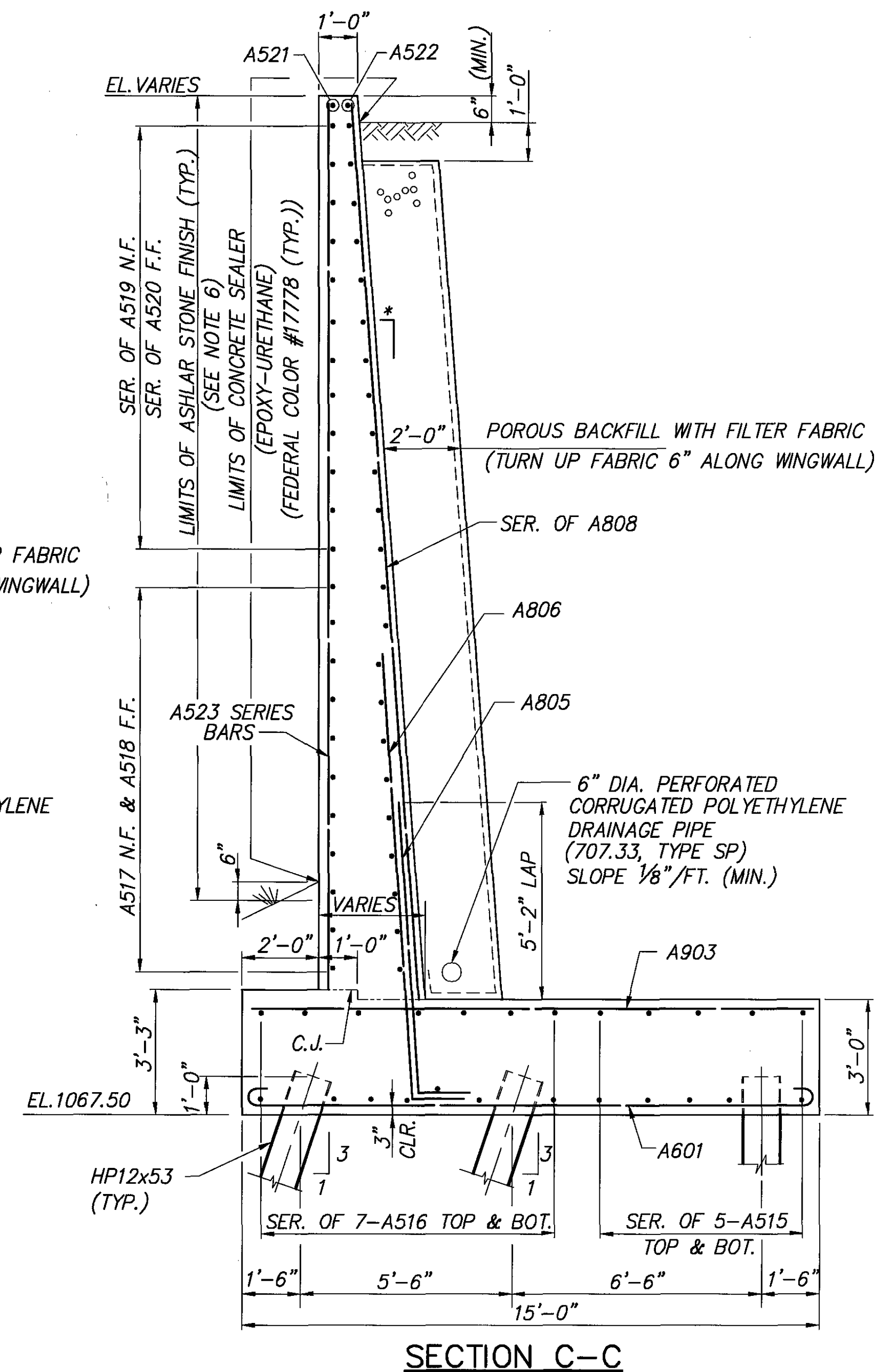
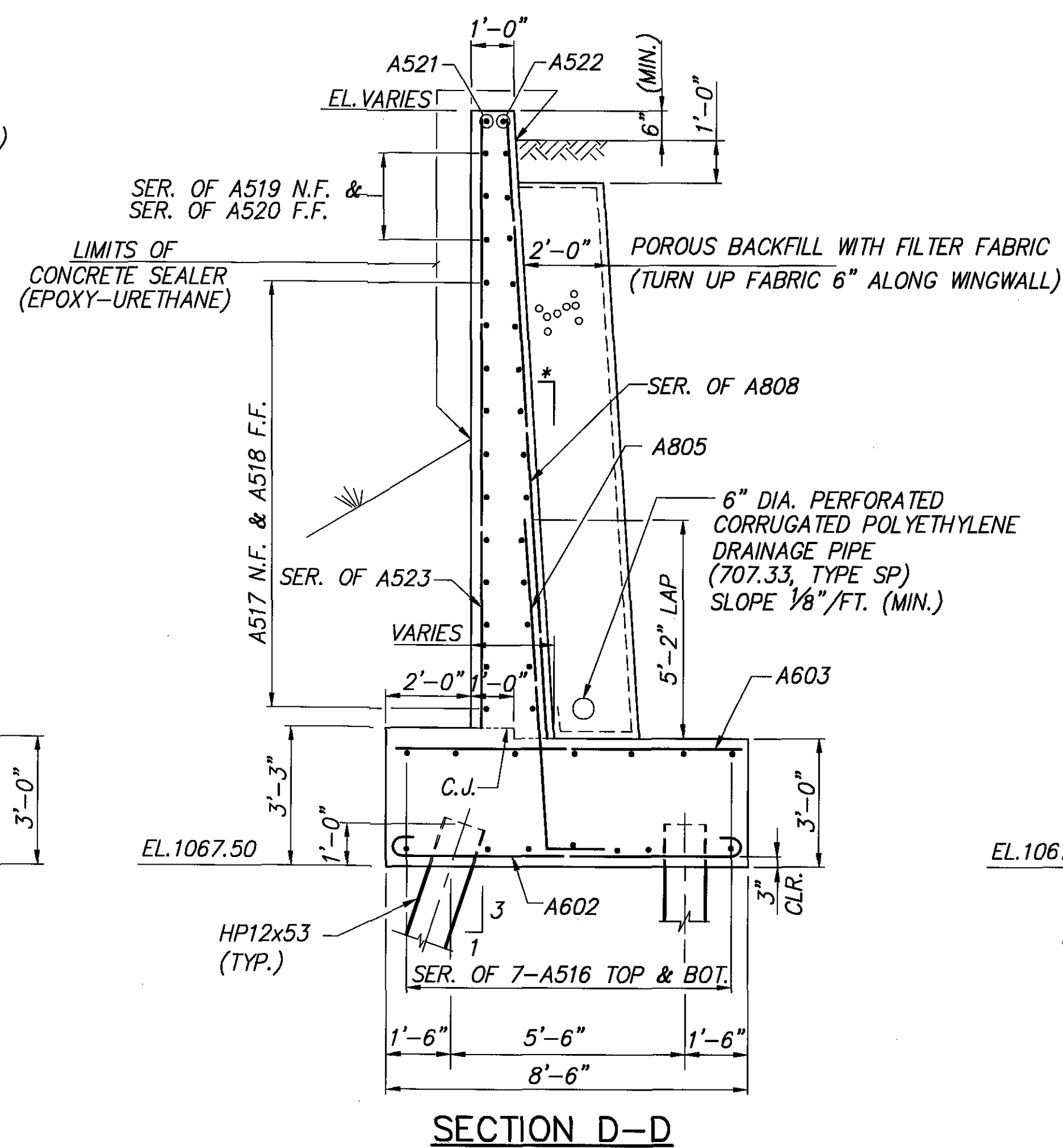
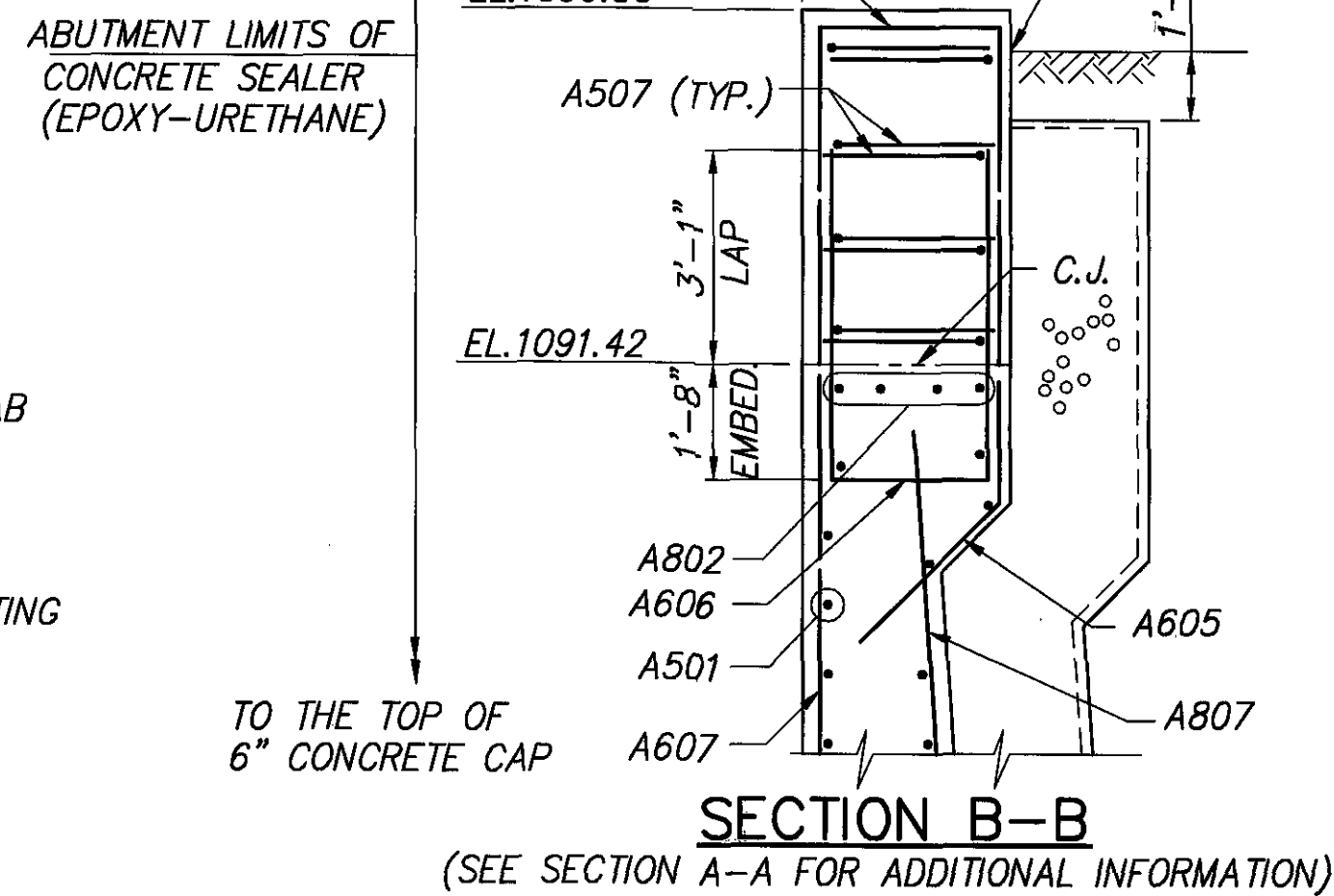
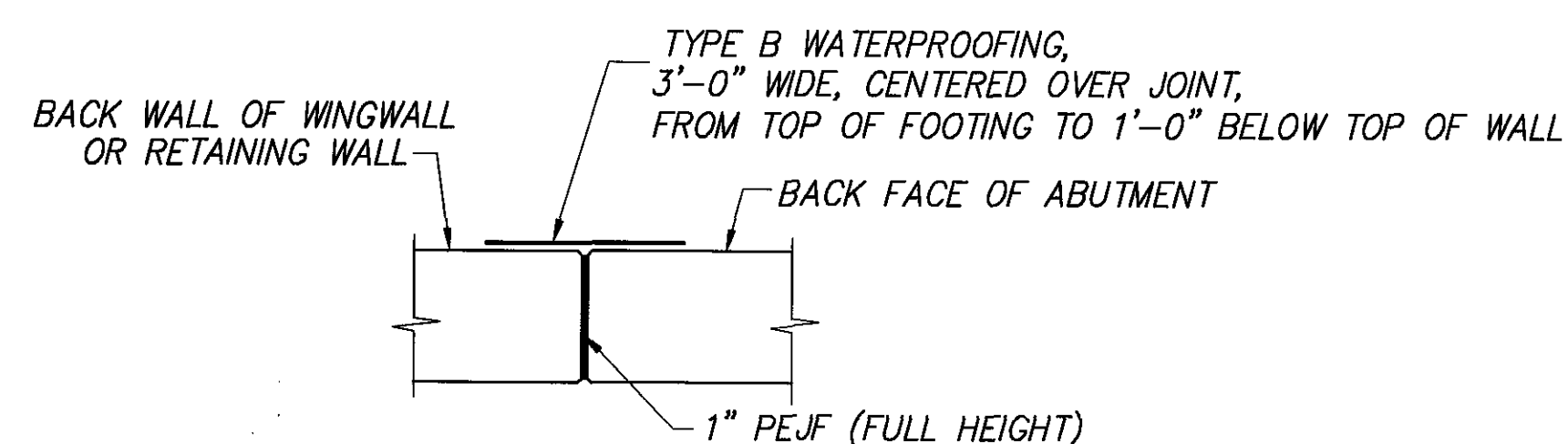
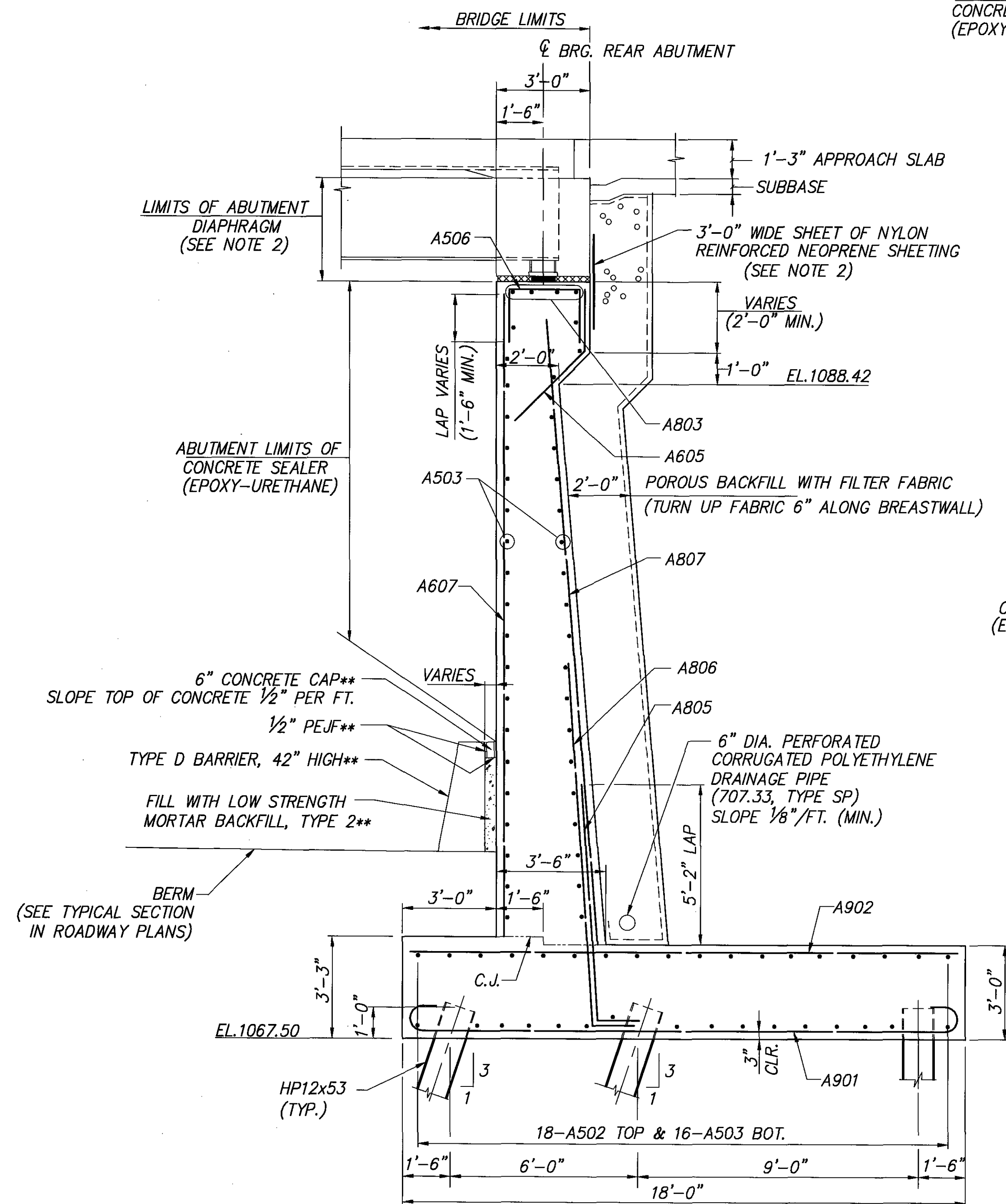
REAR ABUTMENT PLAN & ELEVATION

BRIDGE NO. STA-77-1071
4TH STREET NW OVER INTERSTATE 77

STA-77-10.33

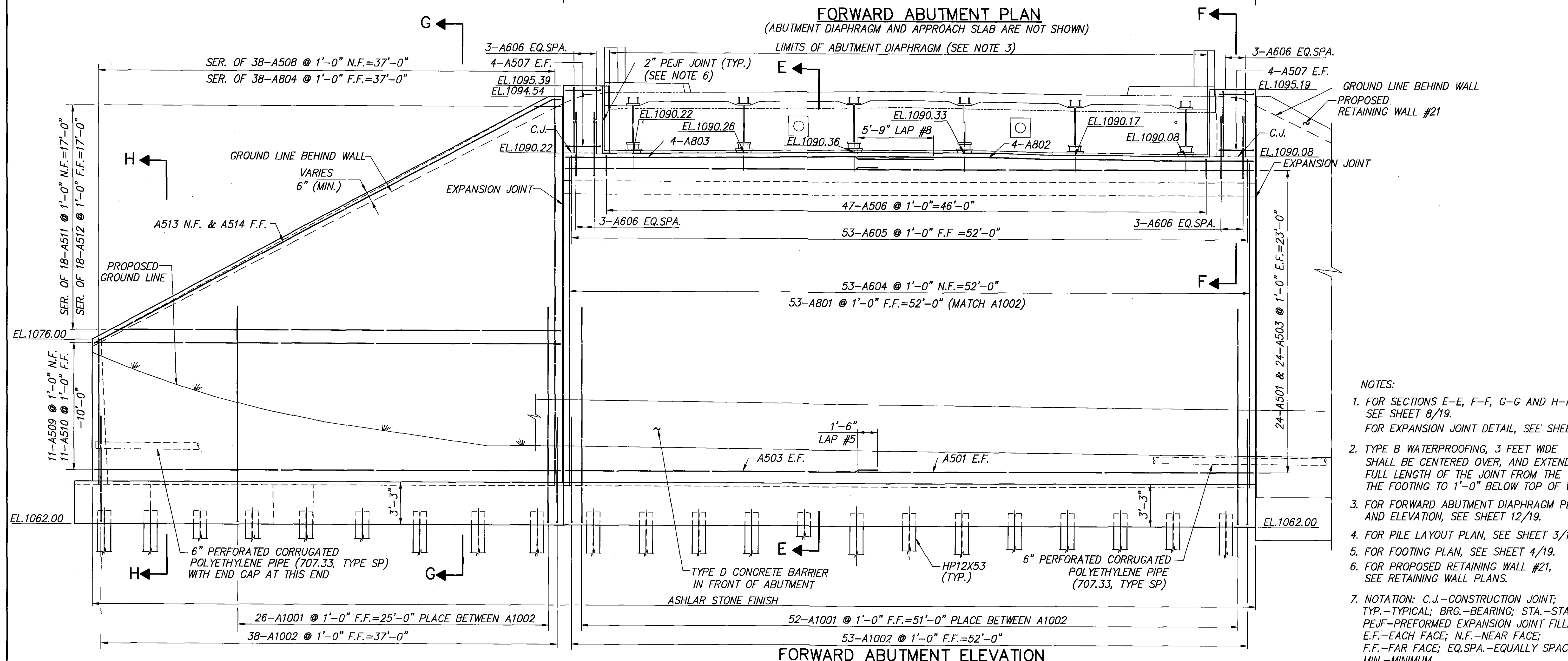
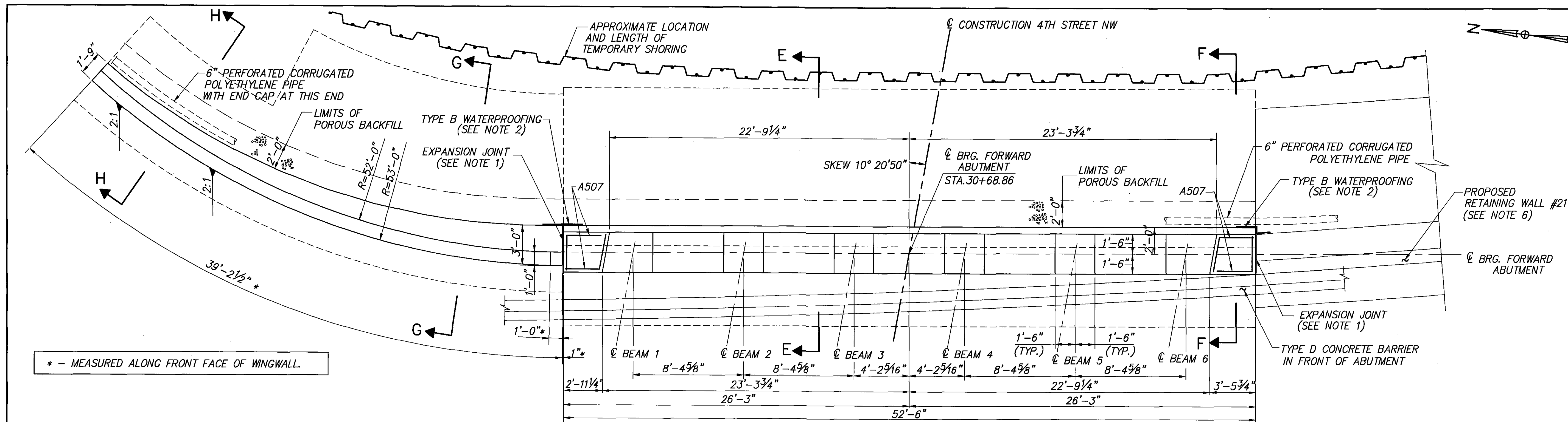
5 / 19

938
1092



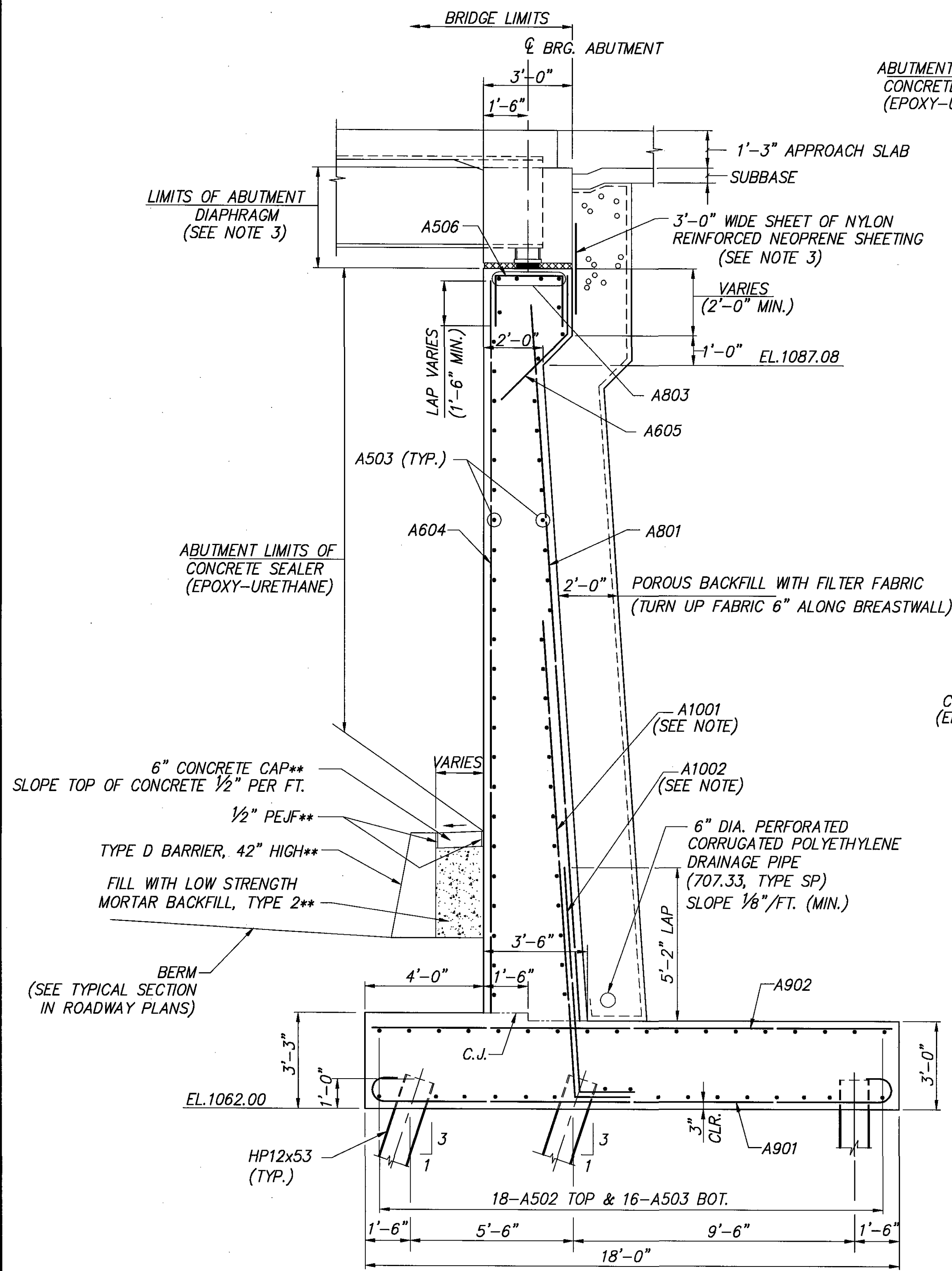
- NOTES:

1. FOR REAR ABUTMENT PLAN AND ELEVATION, SEE SHEET 5/19.
2. FOR REAR ABUTMENT DIAPHRAGM DETAILS, SEE SHEET 12/19.
3. FOR REAR ABUTMENT FOOTING PLAN, SEE SHEET 4/19.
4. FOR PILE LAYOUT PLAN, SEE SHEET 3/19.
5. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND Laterally TO THE ENDS OF THE WINGWALLS.
6. PAYMENT FOR TEXTURING THE CONCRETE WITH AN ASHLAR STONE FINISH IS UNDER ITEM SPECIAL 530—FORM LINER.
7. ABBREVIATIONS: BRC.—BEARING; TYP.—TYPICAL; MIN.—MINIMUM; N.F.—NEAR FACE; F.F.—FAR FACE; E.F.—EACH FACE; C.J.—CONSTRUCTION JOINT; CLR.—CLEAR; PEJF—PREFORMED EXPANSION JOINT FILLER; BOT.—BOTTOM; EL.—ELEVATION; BOT.—BOTTOM; SER.—SERIES; EMBD.—EMBEDMENT.



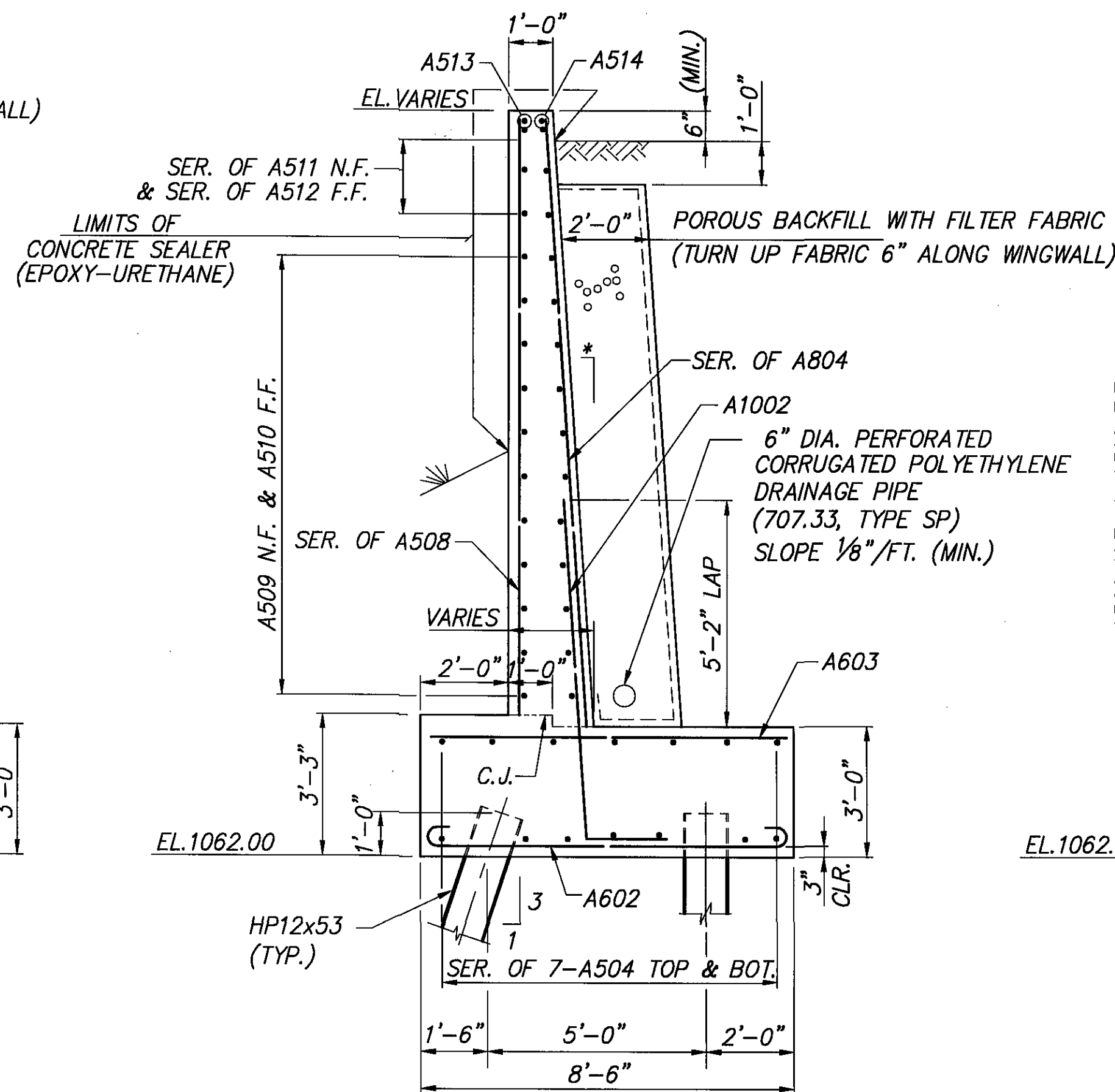
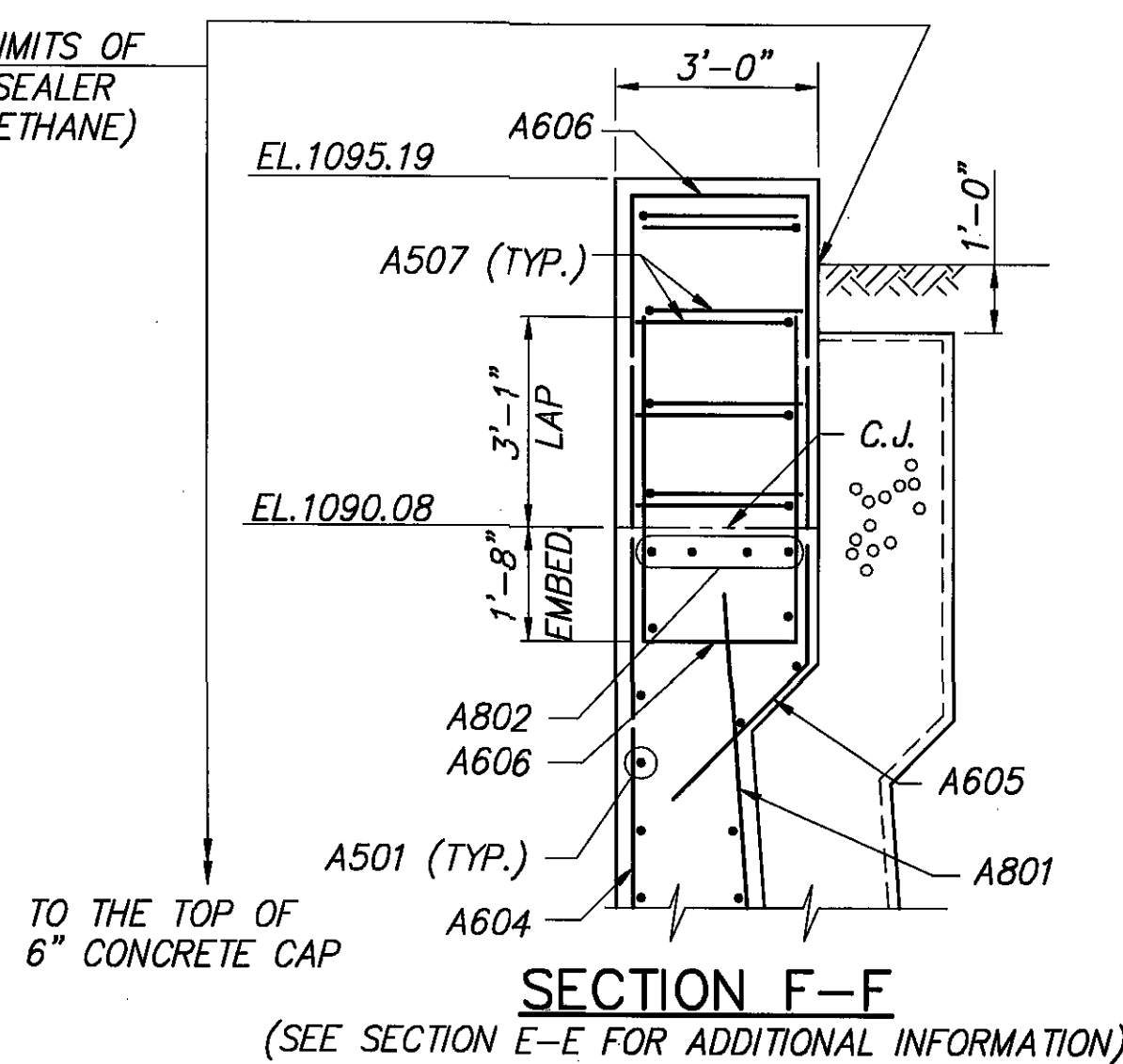
- NOTES:
1. FOR SECTIONS E-E, F-F, G-G AND H-H, SEE SHEET 8/19.
FOR EXPANSION JOINT DETAIL, SEE SHEET 6/19.
 2. TYPE B WATERPROOFING, 3 FEET WIDE SHALL BE CENTERED OVER, AND EXTENDS THE FULL LENGTH OF THE JOINT FROM THE TOP OF THE FOOTING TO 1'-0\"/>

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DATE 2/28/05	REVIEWED W.D.B.
DRAWN I.A.S.	CHECKED J.P.R.
STRUCTURE FILE NUMBER 7603916	
FORWARD ABUTMENT PLAN & ELEVATION BRIDGE NO. STA-77-1071 4TH STREET NW OVER INTERSTATE 77	
STA-77-10.33	
7 / 19	
940 1092	



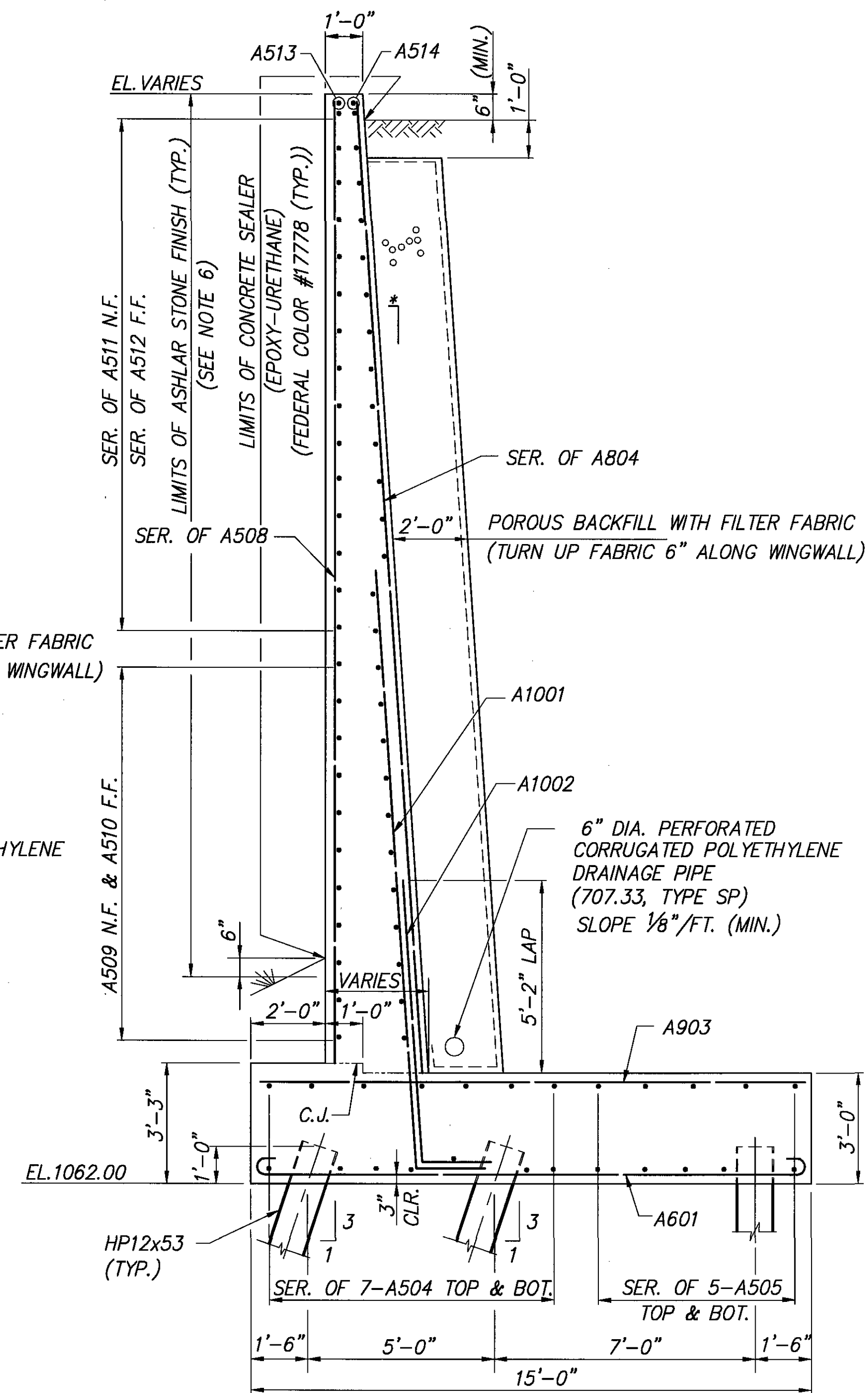
NOTE: IN THE AREAS WHERE THE BARS A1001 AND A1002 PLACEMENT ARE IN CONFLICT WITH PILES, THE BARS MAY BE PLACED ABOVE PILES WITH 1'-10" EMBEDMENT INTO THE FOOTING.

SECTION E-E



SECTION H-H

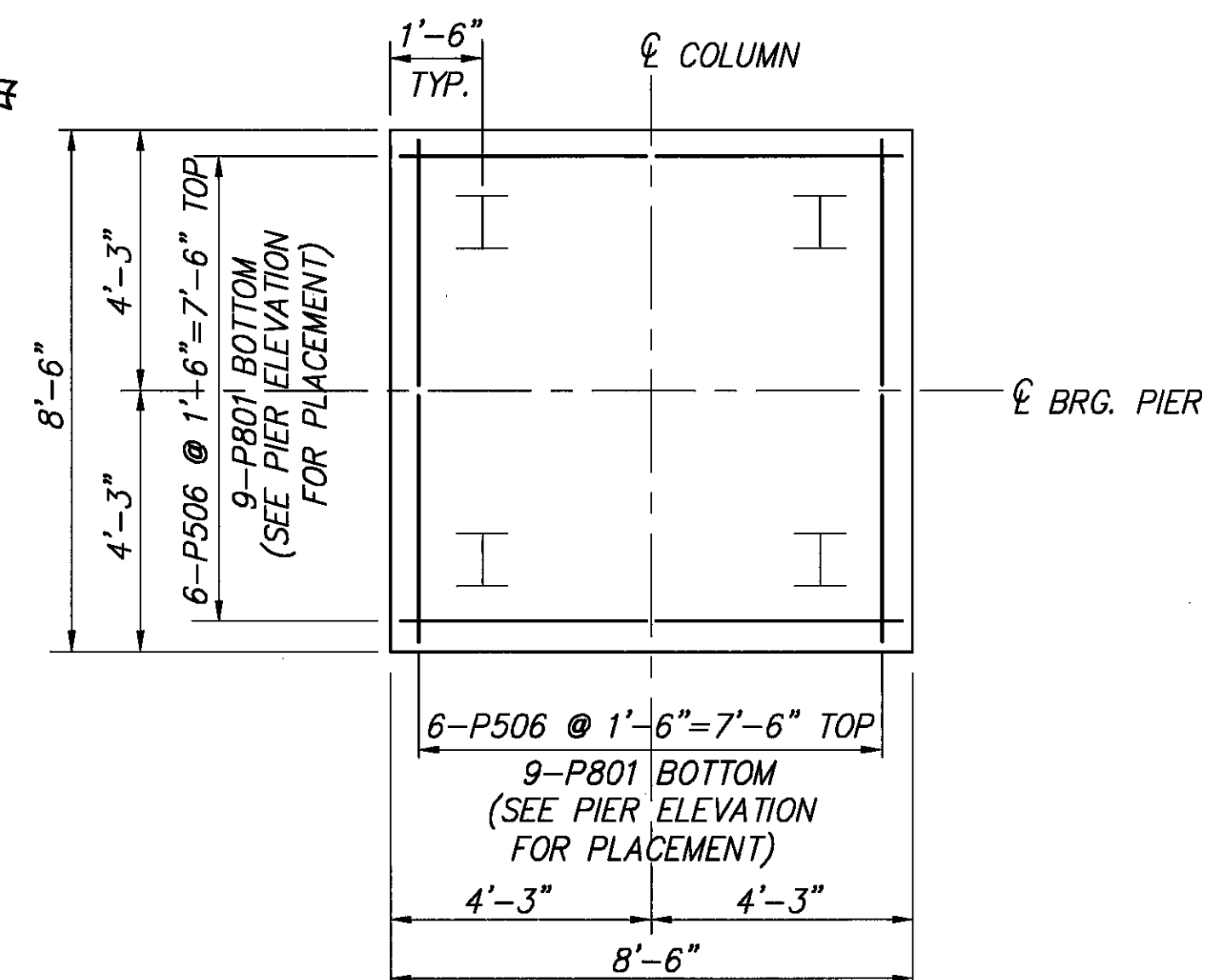
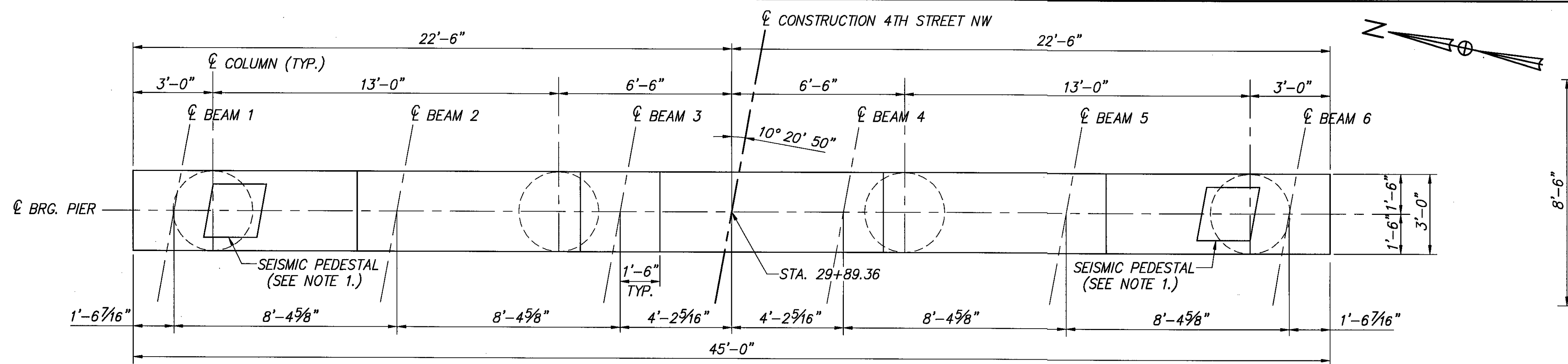
* - SLOPE VARIES, 1" PER FT. MAXIMUM.
** - FOR ADDITIONAL DETAILS AND PAYMENT INFORMATION, SEE ROADWAY PLANS.



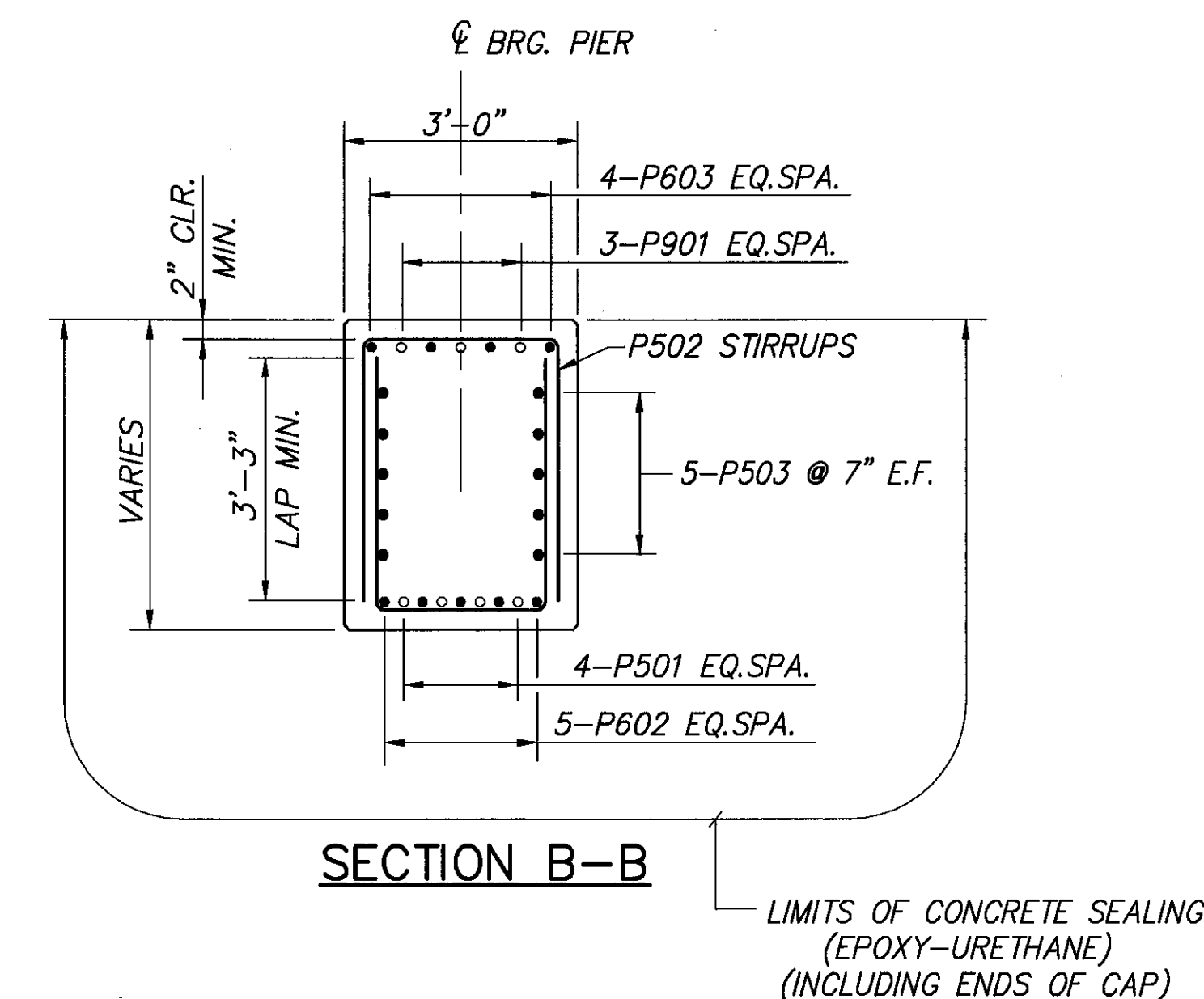
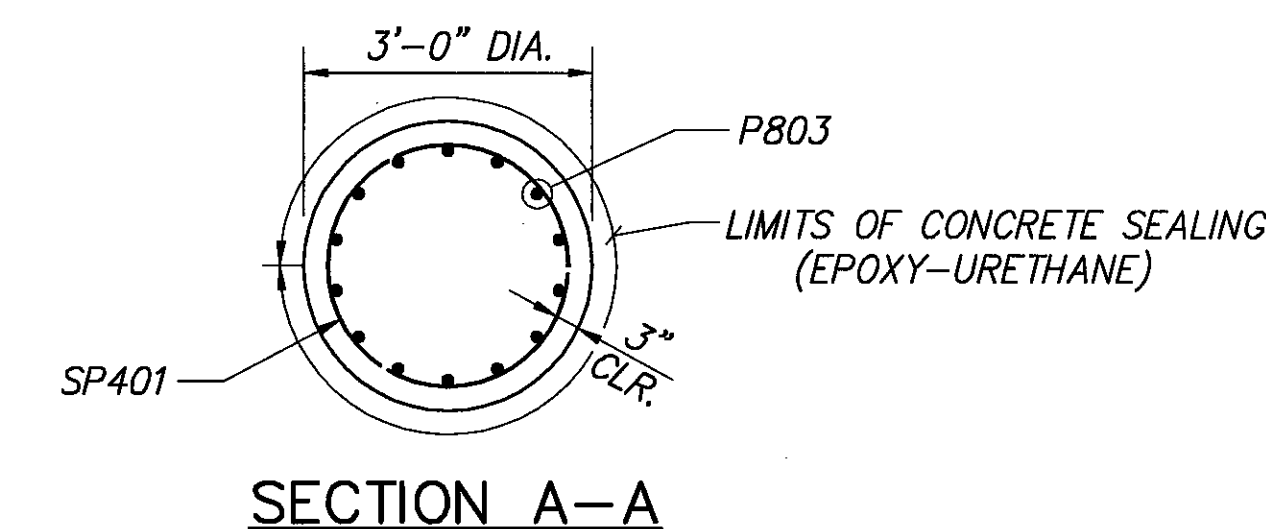
SECTION G-G

NOTES:

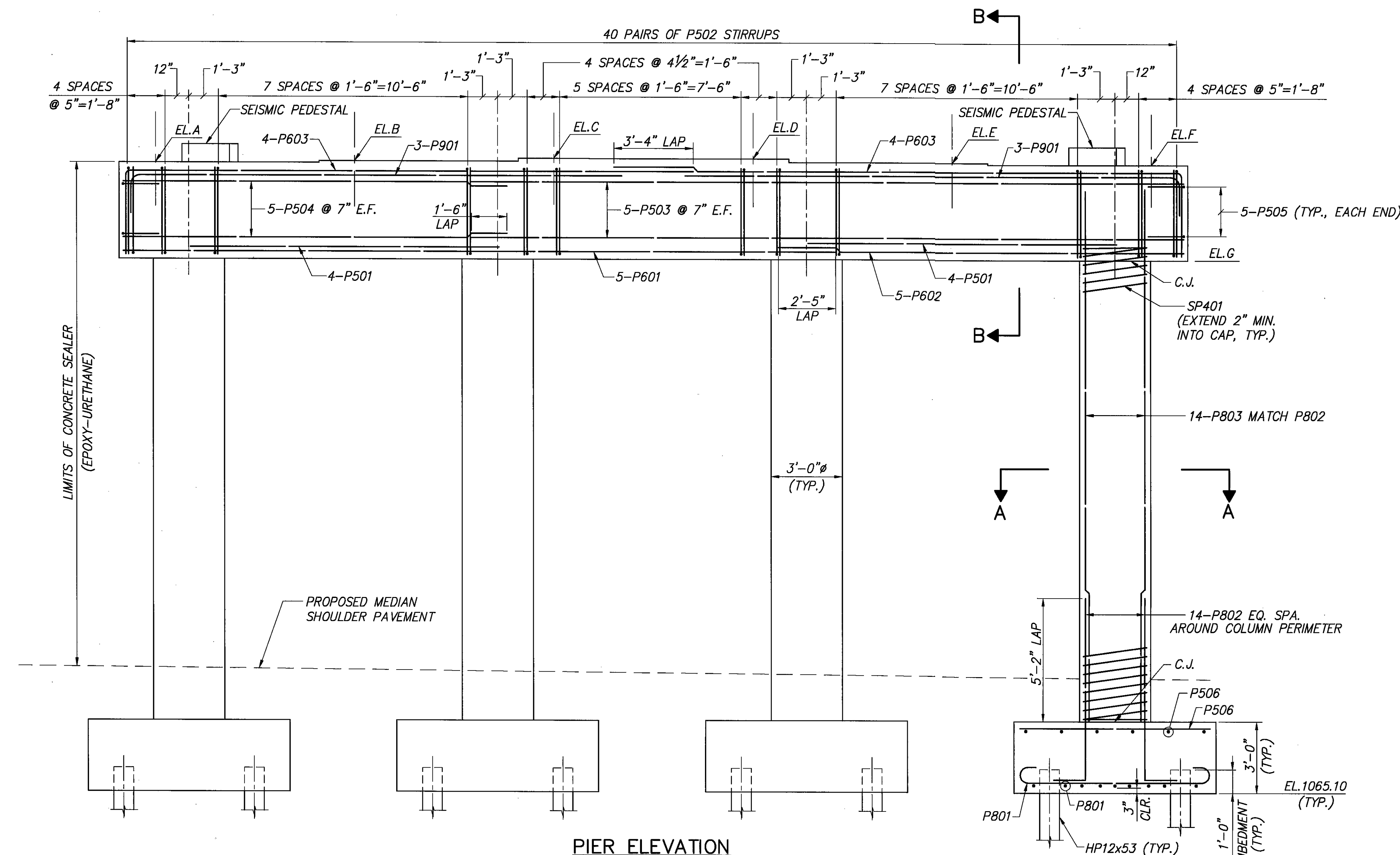
- FOR FORWARD ABUTMENT PLAN AND ELEVATION, SEE SHEET 7/19.
- FOR FORWARD ABUTMENT DIAPHRAGM DETAILS, SEE SHEET 12/19.
- FOR FORWARD ABUTMENT FOOTING PLAN, SEE SHEET 4/19.
- FOR PILE LAYOUT PLAN, SEE SHEET 3/19.
- POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.
- PAYMENT FOR TEXTURING THE CONCRETE WITH AN ASHLAR STONE FINISH IS UNDER ITEM SPECIAL 530-FORM LINER.
- ABBREVIATIONS: BRG.-BEARING; TYP.-TYPICAL; MIN.-MINIMUM; N.F.-NEAR FACE; F.F.-FAR FACE; E.F.-EACH FACE; C.J.-CONSTRUCTION JOINT; CLR.-CLEAR; PEJF-PREFORMED EXPANSION JOINT FILLER; BOT.-BOTTOM; EL.-ELEVATION; BOT.-BOTTOM; SER.-SERIES; EMBED.-EMBEDMENT.



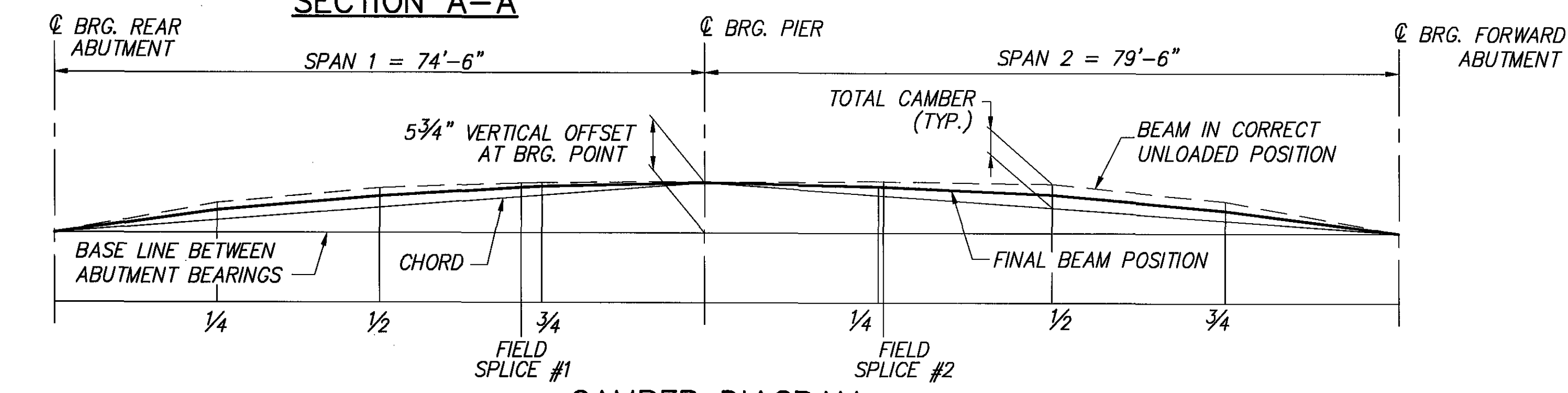
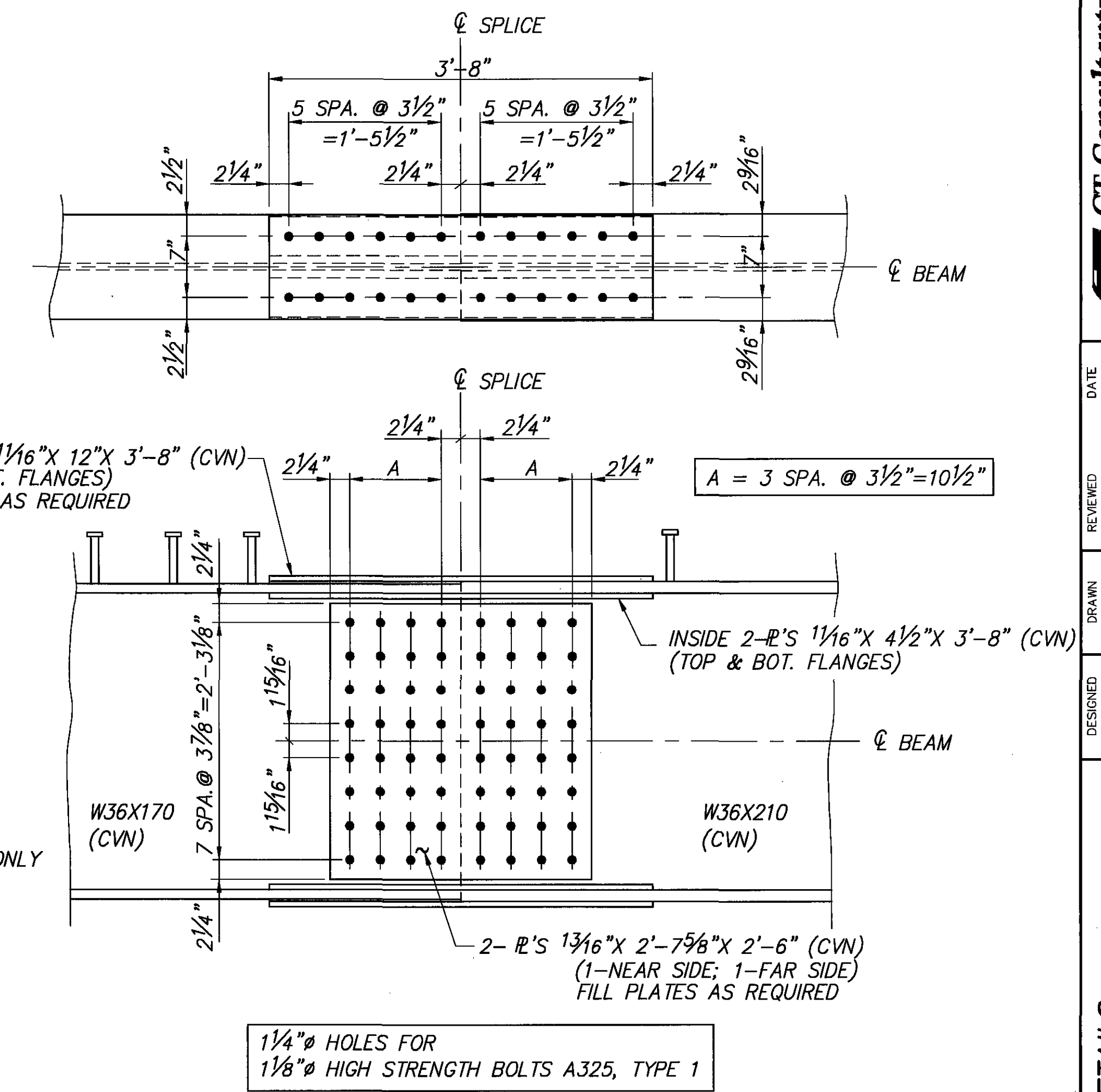
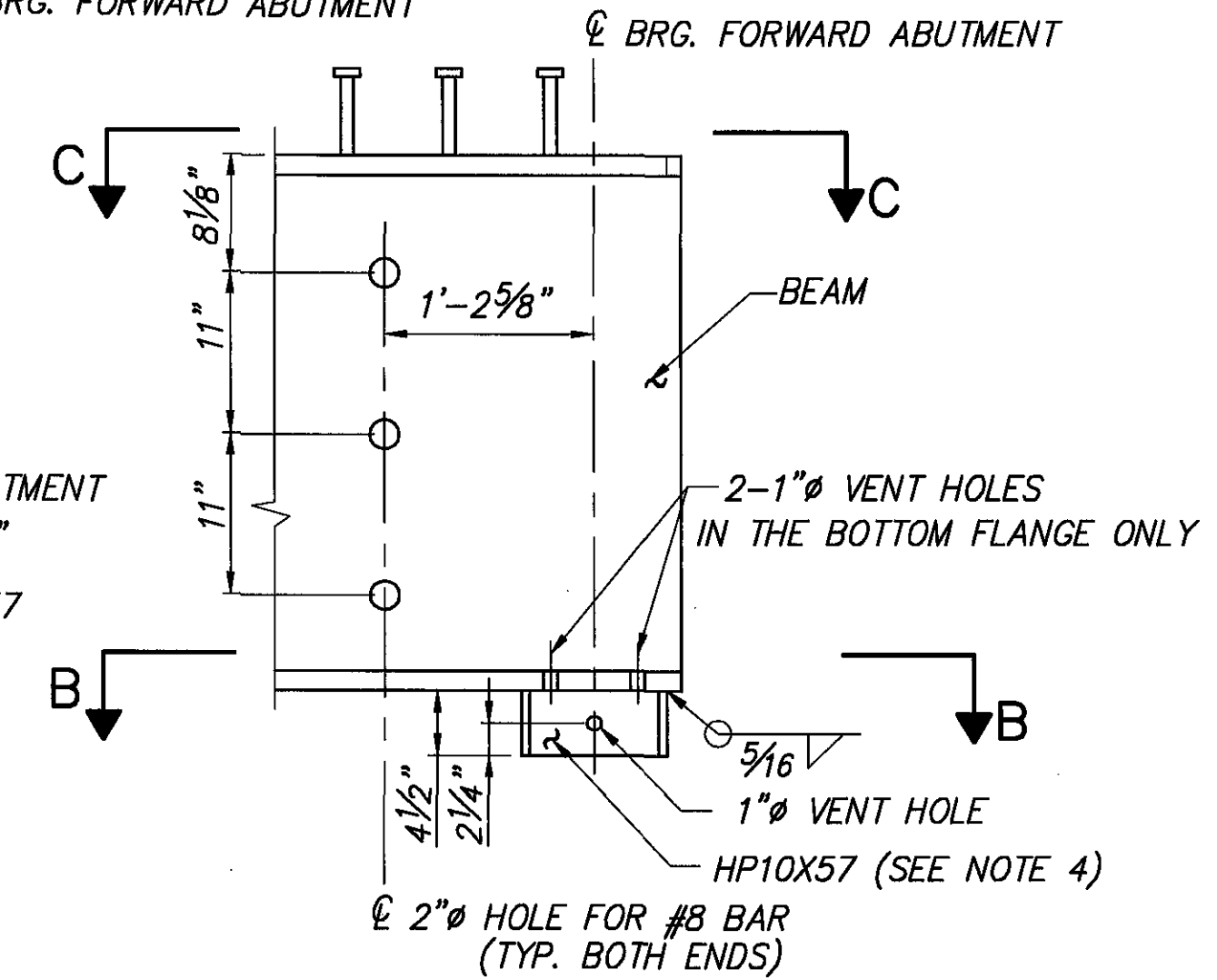
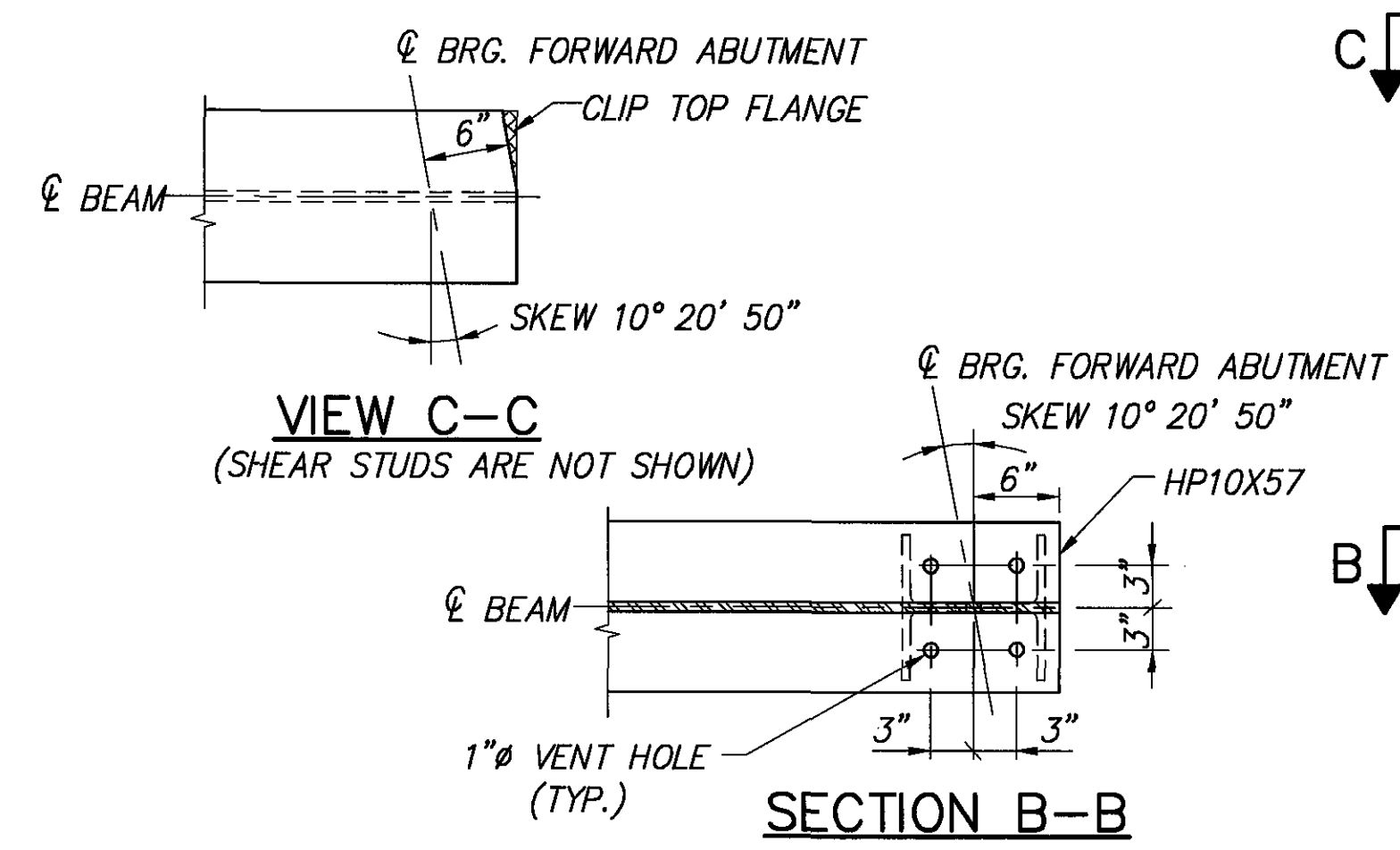
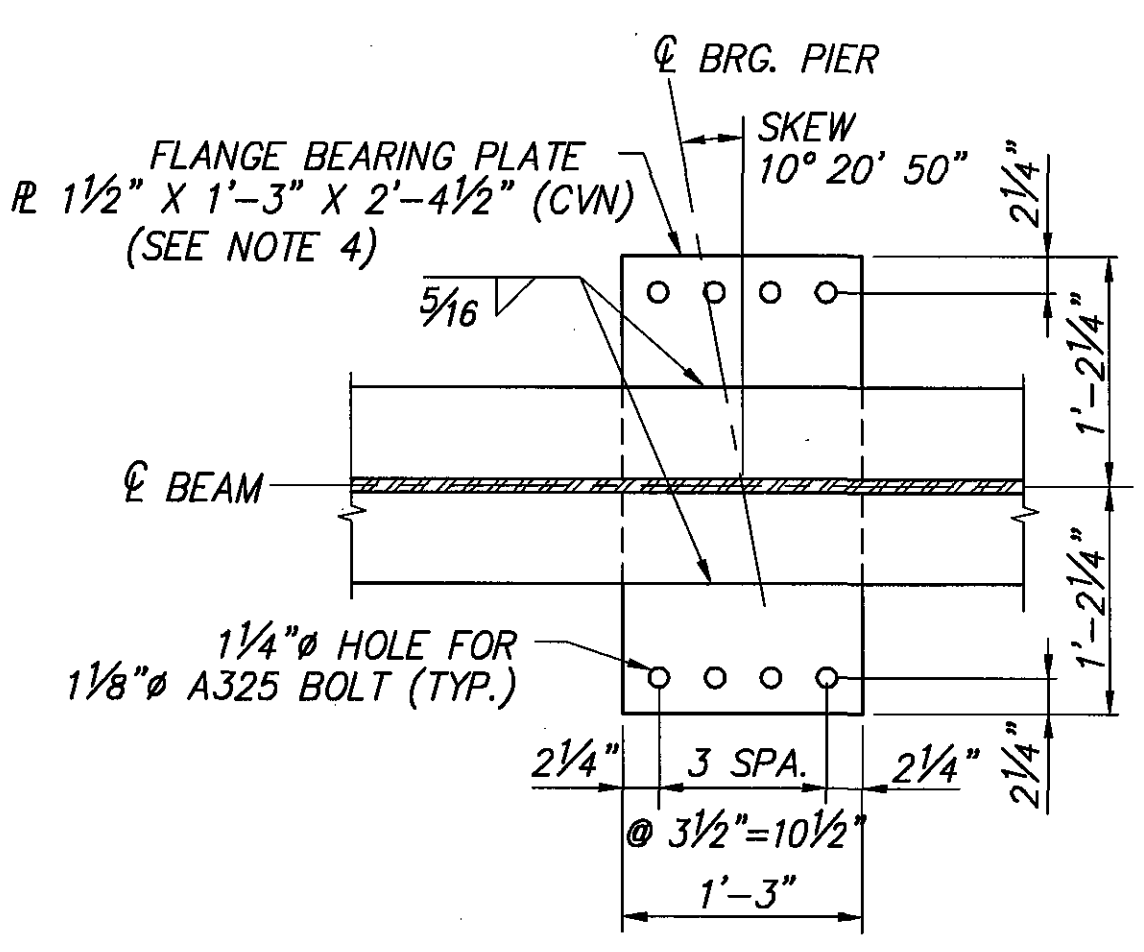
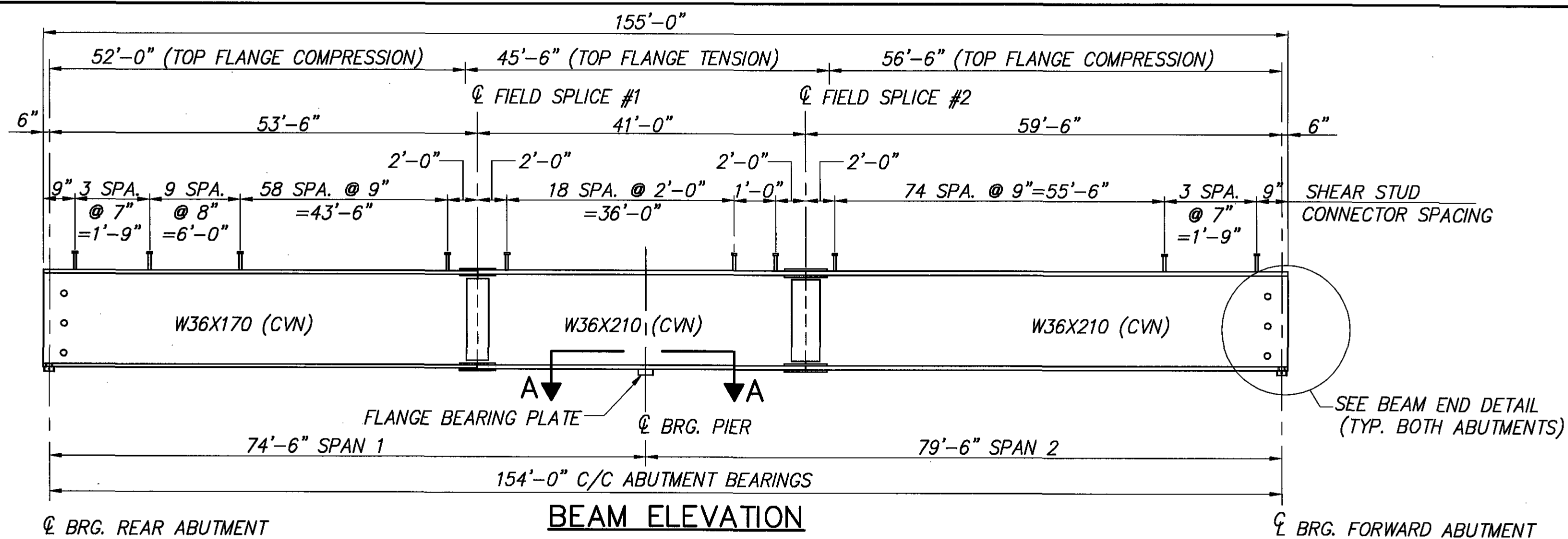
TYPICAL PIER FOOTING PLAN



- NOTES:
- FOR SEISMIC PEDESTAL DETAILS, SEE SHEET G11/G11.
 - FOR PILE LAYOUT PLAN, SEE SHEET 3/19.
 - ABBREVIATIONS: TYP.-TYPICAL; BRG.-BEARING; C.J.-CONSTRUCTION JOINT; EQ. SPA.-EQUALLY SPACED; CLR.-CLEAR; E.F.-EACH FACE; EL.-ELEVATION; MIN.-MINIMUM.



LOCATION	EL.A	EL.B	EL.C	EL.D	EL.E	EL.F	EL.G
PIER	1091.51	1091.57	1091.69	1091.68	1091.53	1091.46	1087.46

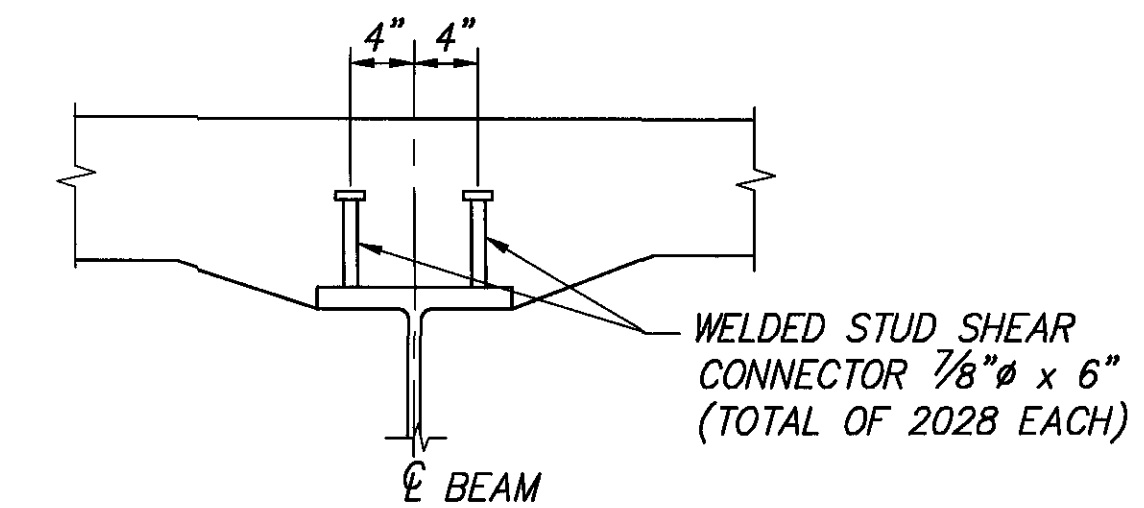


DEAD LOAD DEFLECTIONS AND CAMBER (IN INCHES)

POINT	INTERIOR BEAMS 2; 3; 4 AND 5							
	SPAN 1				SPAN 2			
	1/4 SPAN	1/2 SPAN	FIELD SPLICE #1	3/4 SPAN	1/4 SPAN	FIELD SPLICE #2	1/2 SPAN	3/4 SPAN
DEFLECTION DUE TO WEIGHT OF STEEL	1/8	1/8	1/16	1/16	1/8	1/8	1/4	1/4
DEFLECTION DUE TO REMAINING DEAD LOAD	1 3/16	1 5/16	1/2	7/16	9/16	9/16	1 3/16	1 5/16
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1	1 5/16	1 1/8	1	1 1/8	1 3/16	1 7/16	1 3/16
REQUIRED SHOP CAMBER	1 5/16	2 3/8	1 1/16	1 1/2	1 3/16	1 7/8	2 7/8	2 3/8

POINT	FASCIA BEAMS 1 AND 6							
	SPAN 1				SPAN 2			
	1/4 SPAN	1/2 SPAN	FIELD SPLICE #1	3/4 SPAN	1/4 SPAN	FIELD SPLICE #2	1/2 SPAN	3/4 SPAN
DEFLECTION DUE TO WEIGHT OF STEEL	1/8	1/8	1/16	1/16	1/8	1/8	1/4	1/4
DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/16	1 3/16	7/16	3/8	1/2	1/2	1	1 3/16
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1 1/8	1 5/16	1 1/16	1	1	1 1/16	1 1/2	1 1/8
REQUIRED SHOP CAMBER	1 5/16	2 1/4	1 5/16	1 7/16	1 5/8	1 1/16	2 3/4	2 3/16

NOTE: DEFLECTIONS AND VERTICAL CURVE ADJUSTMENTS ARE GIVEN TO THE NEAREST 1/16 INCH.



WELDED SHEAR CONNECTORS: INSTALL THE WELDED SHEAR CONNECTORS IN THE SHOP OR IN THE FIELD. IF THE CONNECTORS ARE SHOP INSTALLED PRIOR TO GALVANIZING, PROVIDE FALL PROTECTION ACCORDING TO OSHA STANDARDS FOR ALL WORKERS, INCLUDING THOSE ENGAGED IN CONNECTING AND IN DECKING. IF THE CONNECTORS ARE FIELD INSTALLED, REMOVE THE GALVANIC COATING BY GRINDING AT EACH CONNECTOR LOCATION PRIOR TO WELDING.

PAYMENT FOR GRINDING SHALL BE INCLUDED WITH ITEM 513-STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN, NO.1.

STEEL NOTES:

ALL STRUCTURAL STEEL SHALL BE ASTM A572/A709 GRADE 50, GALVANIZED, UNLESS NOTED OTHERWISE.

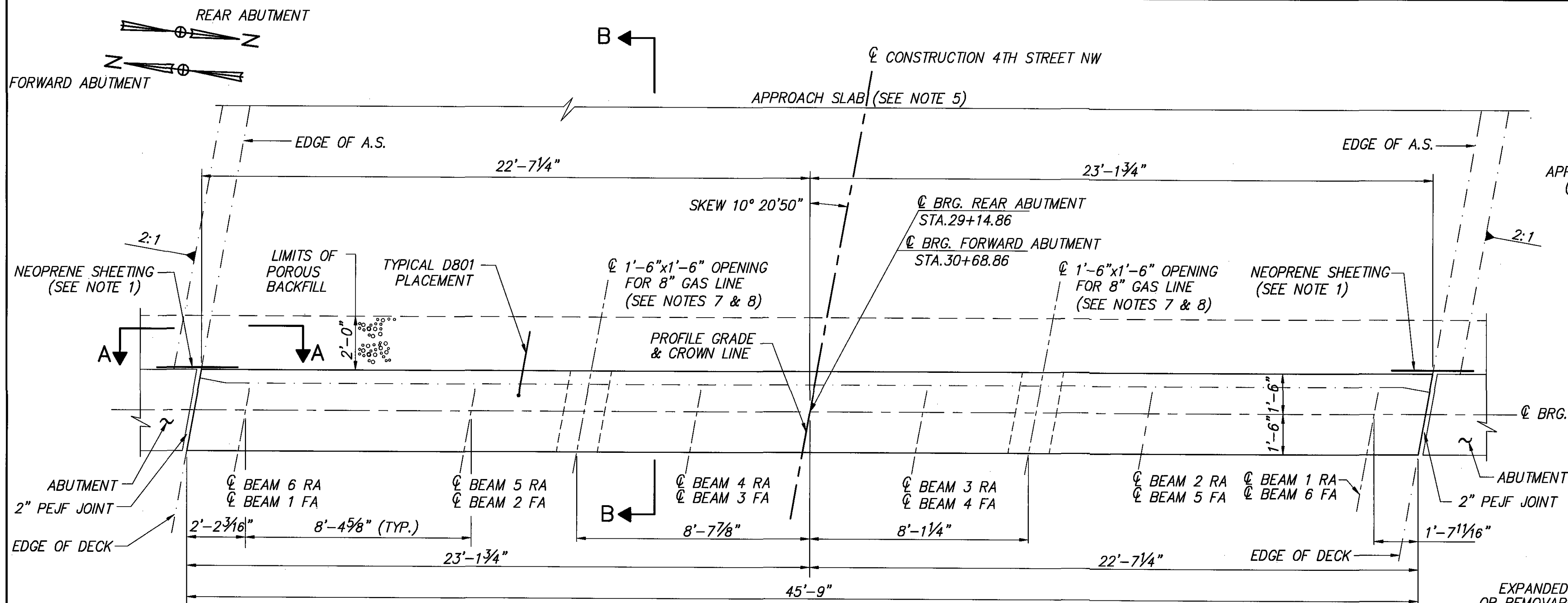
WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE AT LEAST 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK. REMOVE THE GALVANIC COATING BY GRINDING AT EACH SUPPORT LOCATION PRIOR TO WELDING.

CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.

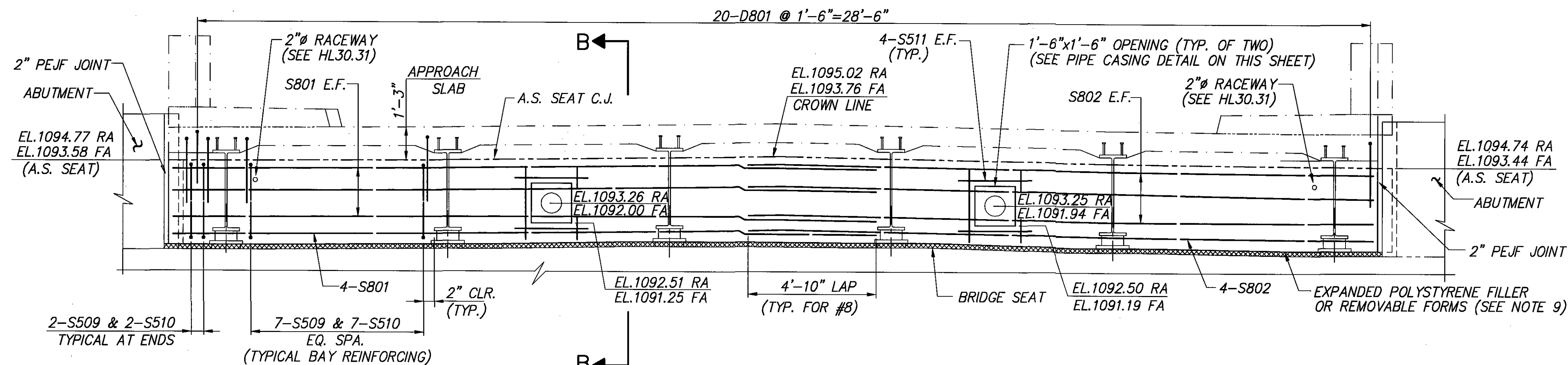
HIGH STRENGTH BOLTS SHALL BE:

- FOR FIELD SPLICES - 1 1/8" DIAMETER A325, TYPE I, GALVANIZED;
- FOR ELASTOMERIC BEARING CONNECTIONS - 1 1/8" DIAMETER A325, TYPE I, GALVANIZED;
- FOR INTERMEDIATE CROSSFRAME CONNECTIONS - 7/8" DIAMETER A325, TYPE I, GALVANIZED.
- FOR CONNECTION ANGLE TO BEAM CONNECTIONS - 7/8" DIAMETER A325, TYPE I, GALVANIZED.

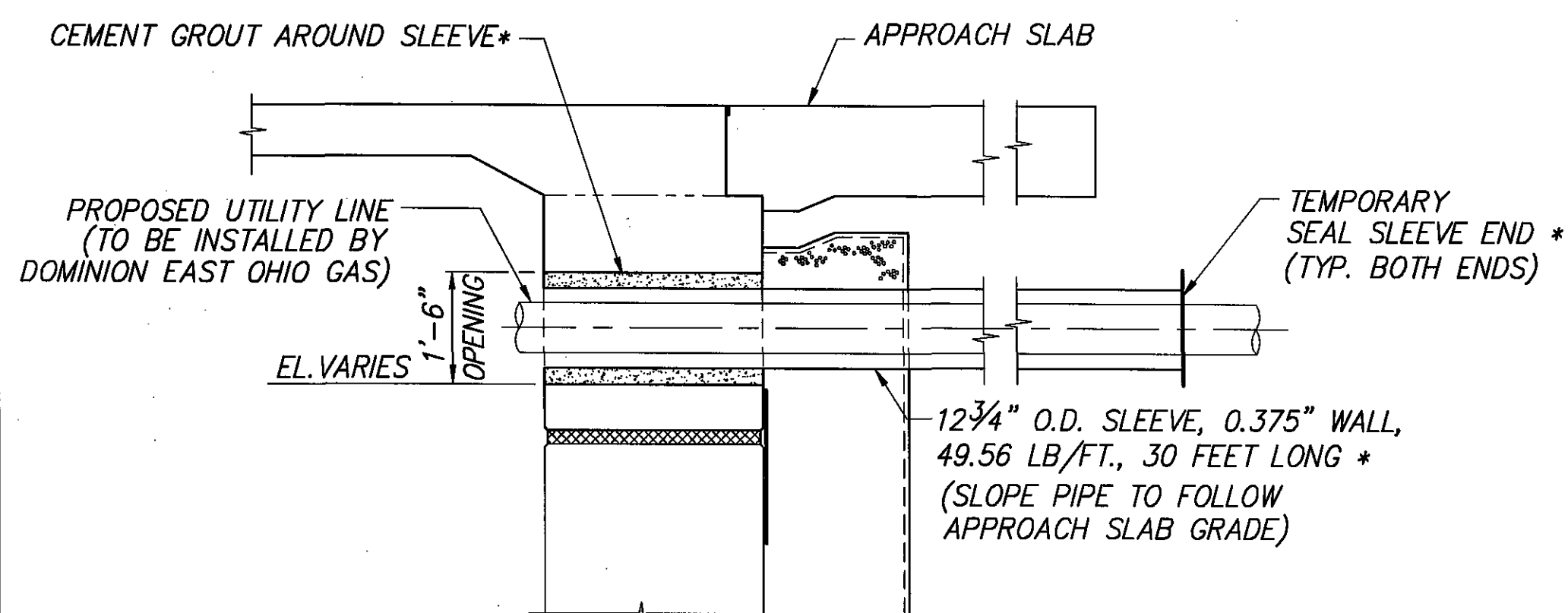
- NOTES:**
- FOR BRIDGE TRANSVERSE SECTION SEE SHEET 13/19.
 - FOR STEEL FRAMING PLAN, INTERMEDIATE CROSSFRAME AND UTILITY SUPPORT DETAILS, SEE SHEET 10/19.
 - FOR ELASTOMERIC BEARINGS AND THEIR CONNECTION DETAILS, SEE SHEET 15/19.
 - PAYMENT FOR FLANGE BEARING PLATES AND HP STEEL SHAPES SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 513-STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN, NO.1.
 - ABBREVIATION: BRG.-BEARING; MIN.-MINIMUM; TYP.-TYPICAL; R-PLATE; CVN-CHARPY V NOTCH; BOT.-BOTTOM; SPA.-SPACES; CLR.-CLEAR.



ABUTMENT DIAPHRAGM PLAN
(SIDEWALKS AND PARAPETS ARE NOT SHOWN)

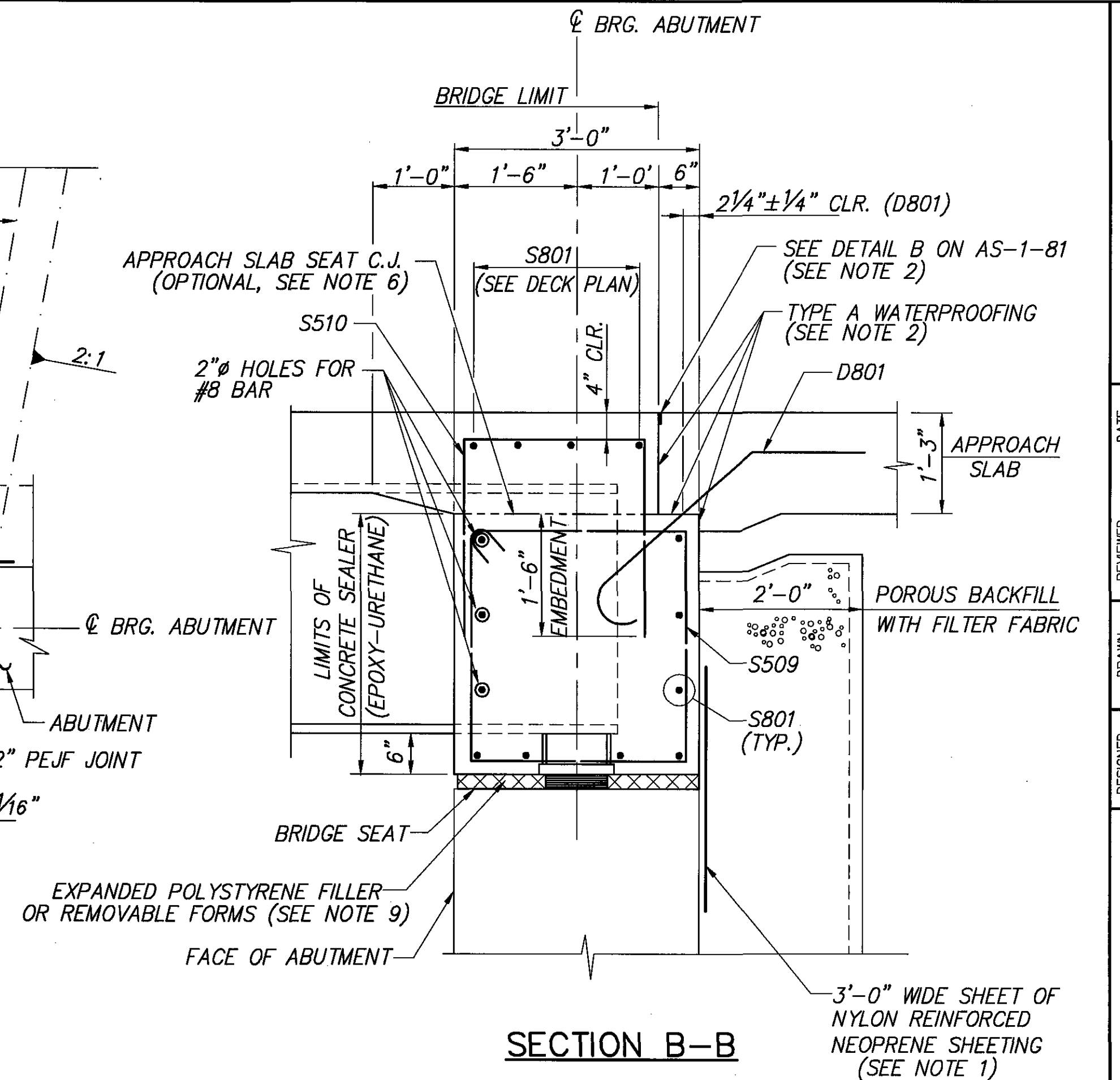


ABUTMENT DIAPHRAGM ELEVATION
(DECK REINFORCEMENT AND PEJF ARE NOT SHOWN)



PIPE CASING DETAIL

* - TO BE INCLUDED FOR PAYMENT WITH
ITEM 513-STRUCTURAL STEEL, MISC.: DOMINION EAST
OHIO GAS LINE SUPPORTS AND STEEL SLEEVE PIPES
(100% PAID BY DOMINION EAST OHIO GAS COMPANY
TO THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION).
NOTE: 12 3/4\"/>

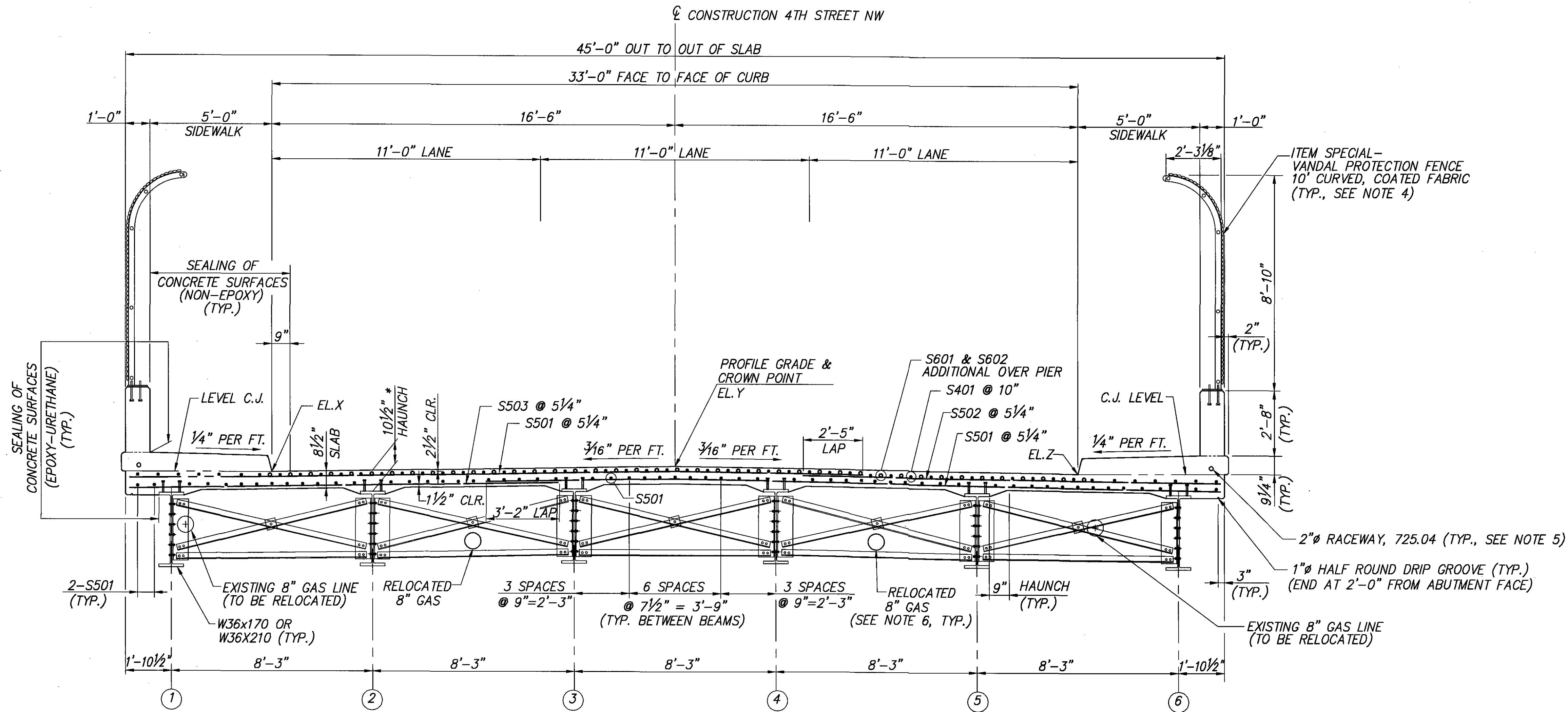


SECTION B-B

NOTES:

- FOR SECTION A-A, SEE ODOT STD. DWG. SICD-1-96 SHEET 1 OF 7.
FOR NEOPRENE SHEETING ADDITIONAL INFORMATION AND PLACING
REQUIREMENTS, SEE GENERAL NOTE ON SHEET G6/G10 AND SECTION A-A.
PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF NEOPRENE
SHEETING SHALL BE UNDER ITEM 516-SEMI-INTEGRAL ABUTMENT
EXPANSION JOINT SEAL, AS PER PLAN.
- INCLUDE WITH ITEM 526-REINFORCED CONCRETE APPROACH SLAB (T=15\"/>

* DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE IS ± 3 INCHES.



TRANSVERSE SECTION

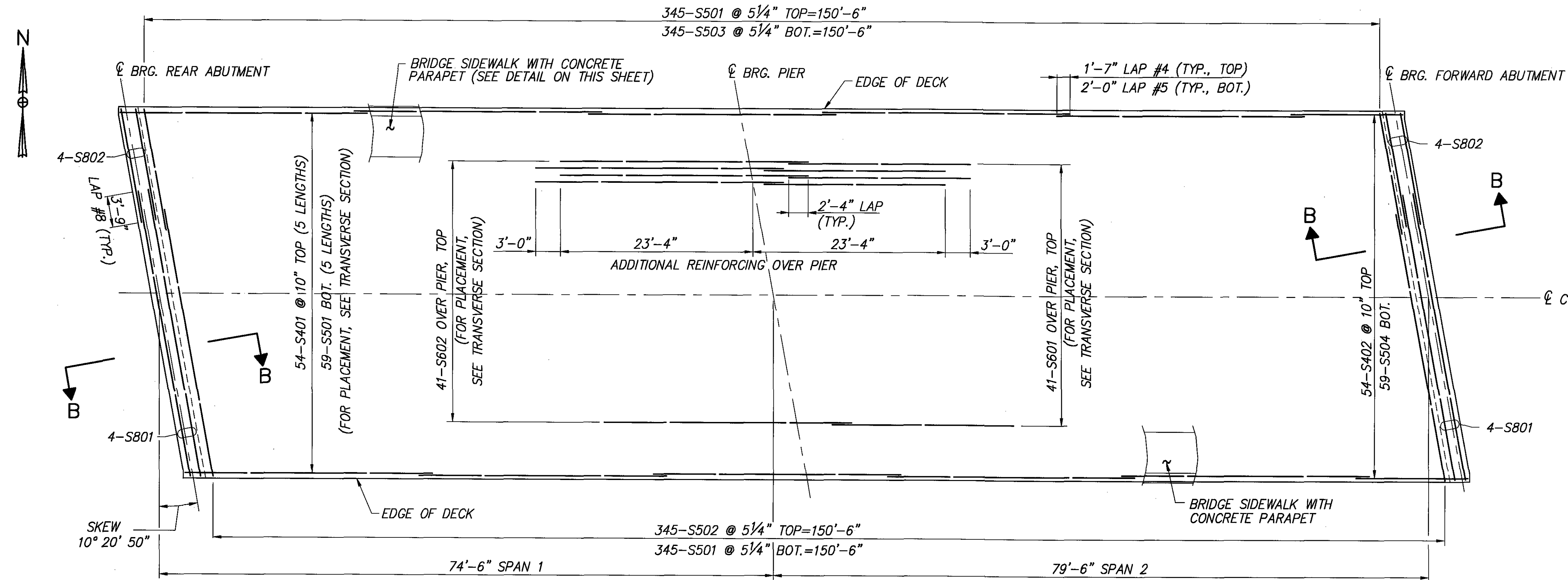
SCREED ELEVATIONS

POINT	STATION @ R.A.	STATION 1/4 SPAN	STATION 1/2 SPAN	STATION F.S. #1	STATION 3/4 SPAN	STATION @ PIER	STATION 1/4 SPAN	STATION F.S. #2	STATION 1/2 SPAN	STATION 3/4 SPAN	STATION @ F.A.
BEAM LINE 1	29+11.09 1095.99	29+29.72 1096.12	29+48.34 1096.13	29+64.59 1096.06	29+66.97 1096.04	29+85.59 1095.91	30+05.47 1095.77	30+05.59 1095.77	30+25.34 1095.59	30+45.22 1095.27	30+65.09 1094.83
GUTTER LINE (EL.X)	29+11.85 1096.00	29+30.47 1096.12	29+49.10 1096.13		29+67.72 1096.04	29+86.35 1095.90	30+06.22 1095.77		30+26.10 1095.58	30+45.97 1095.25	30+65.85 1094.81
BEAM LINE 2	29+12.60 1096.07	29+31.22 1096.19	29+49.85 1096.21	29+66.10 1096.13	29+68.47 1096.11	29+87.10 1095.97	30+06.97 1095.83	30+07.10 1095.84	30+26.85 1095.63	30+46.72 1095.33	30+66.60 1094.87
BEAM LINE 3	29+14.11 1096.21	29+32.73 1096.32	29+51.36 1096.33	29+67.61 1096.25	29+69.98 1096.23	29+88.61 1096.09	30+08.48 1095.94	30+08.61 1095.94	30+28.36 1095.74	30+48.23 1095.42	30+68.11 1094.97
PROFILE GRADE & CROWN POINT (EL.Y)	29+14.86 1096.27	29+33.48 1096.39	29+52.11 1096.40		29+70.73 1096.29	29+89.36 1096.14	30+09.23 1096.01		30+29.11 1095.81	30+48.99 1095.47	30+68.86 1095.01
BEAM LINE 4	29+15.61 1096.22	29+34.24 1096.32	29+52.86 1096.33	29+69.11 1096.25	29+71.49 1096.22	29+90.11 1096.08	30+09.99 1095.93	30+10.11 1095.93	30+29.86 1095.72	30+49.74 1095.39	30+69.61 1094.94
BEAM LINE 5	29+17.12 1096.09	29+35.74 1096.20	29+54.37 1096.20	29+70.62 1096.11	29+72.99 1096.09	29+91.62 1095.93	30+11.49 1095.78	30+11.61 1095.79	30+31.37 1095.57	30+51.24 1095.25	30+71.12 1094.78
GUTTER LINE (EL.Z)	29+17.87 1096.02	29+36.50 1096.13	29+55.12 1096.12		29+73.75 1096.01	29+92.37 1095.86	30+12.25 1095.70		30+32.12 1095.49	30+52.00 1095.15	30+71.87 1094.69
BEAM LINE 6	29+18.63 1096.02	29+37.25 1096.13	29+55.88 1096.12	29+72.13 1096.03	29+74.50 1096.01	29+93.13 1095.86	30+13.00 1095.69	30+13.13 1095.69	30+32.88 1095.48	30+52.75 1095.13	30+72.63 1094.69

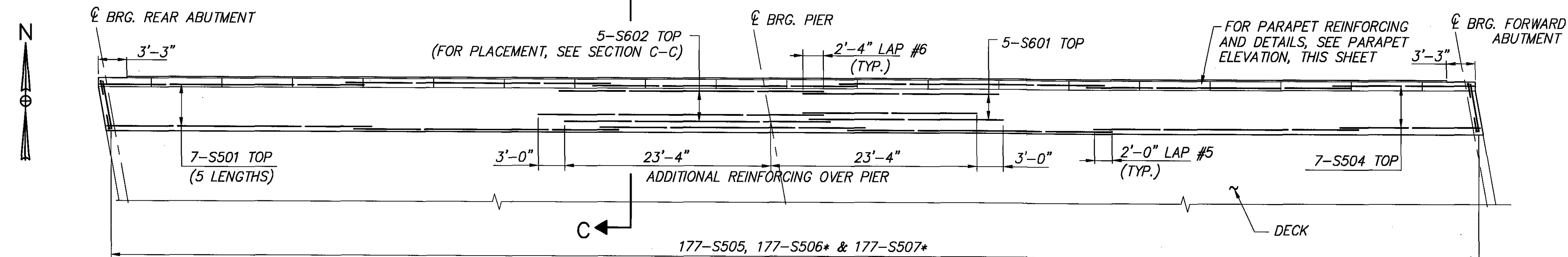
SCREED ELEVATIONS SHOWN ARE FOR DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

NOTES:

1. FOR FRAMING PLAN, SEE SHEET 10/19.
2. FOR DECK REINFORCING PLAN, SEE SHEET 14/19.
3. FOR SIDEWALK AND PARAPET REINFORCING PLAN AND DETAILS, SEE SHEET 14/19.
4. FOR NOTES AND DETAILS OF VANDAL PROTECTION FENCE, SEE ODOT STANDARD DRAWING VPF-1-90. USE COATED FABRIC (SEE GENERAL NOTE ON SHEET G4/G11) AND BASE PLATE BP-1 WITH CAST-IN-PLACE ANCHOR BOLT INSERTS.
5. THE ESTIMATED QUANTITY OF 2" DIAMETER RACEWAY IS CARRIED TO THE LIGHTING SUMMARY SHEET.
6. FOR GAS LINE SUPPORT ANGLES SPACING AND DETAILS SEE SHEET 10/19.
7. ABBREVIATIONS: EL.-ELEVATION; TYP.-TYPICAL; CLR.-CLEAR; C.J.-CONSTRUCTION JOINT; F.S.-FIELD SPLICE; R.A.-REAR ABUTMENT; F.A.-FORWARD ABUTMENT.

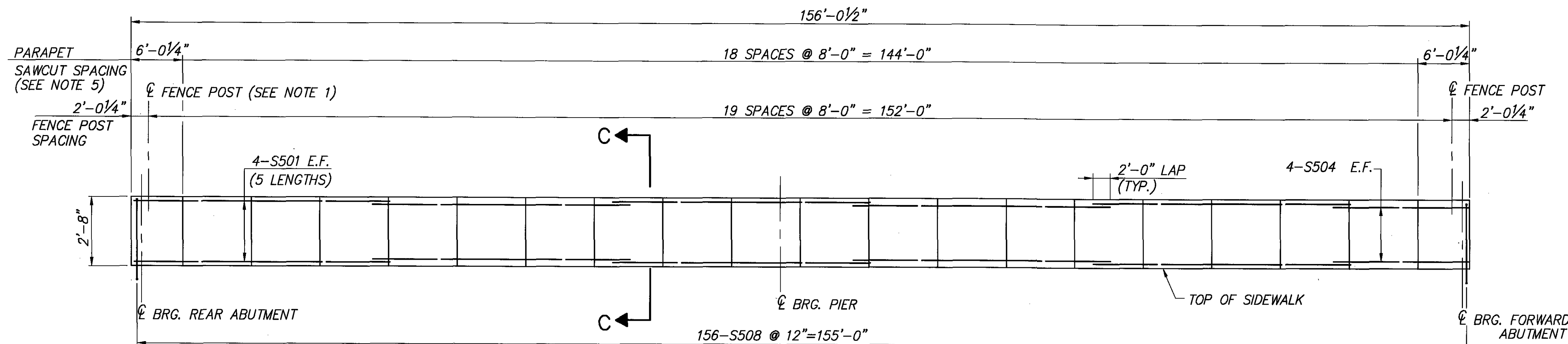


DECK REINFORCING PLAN

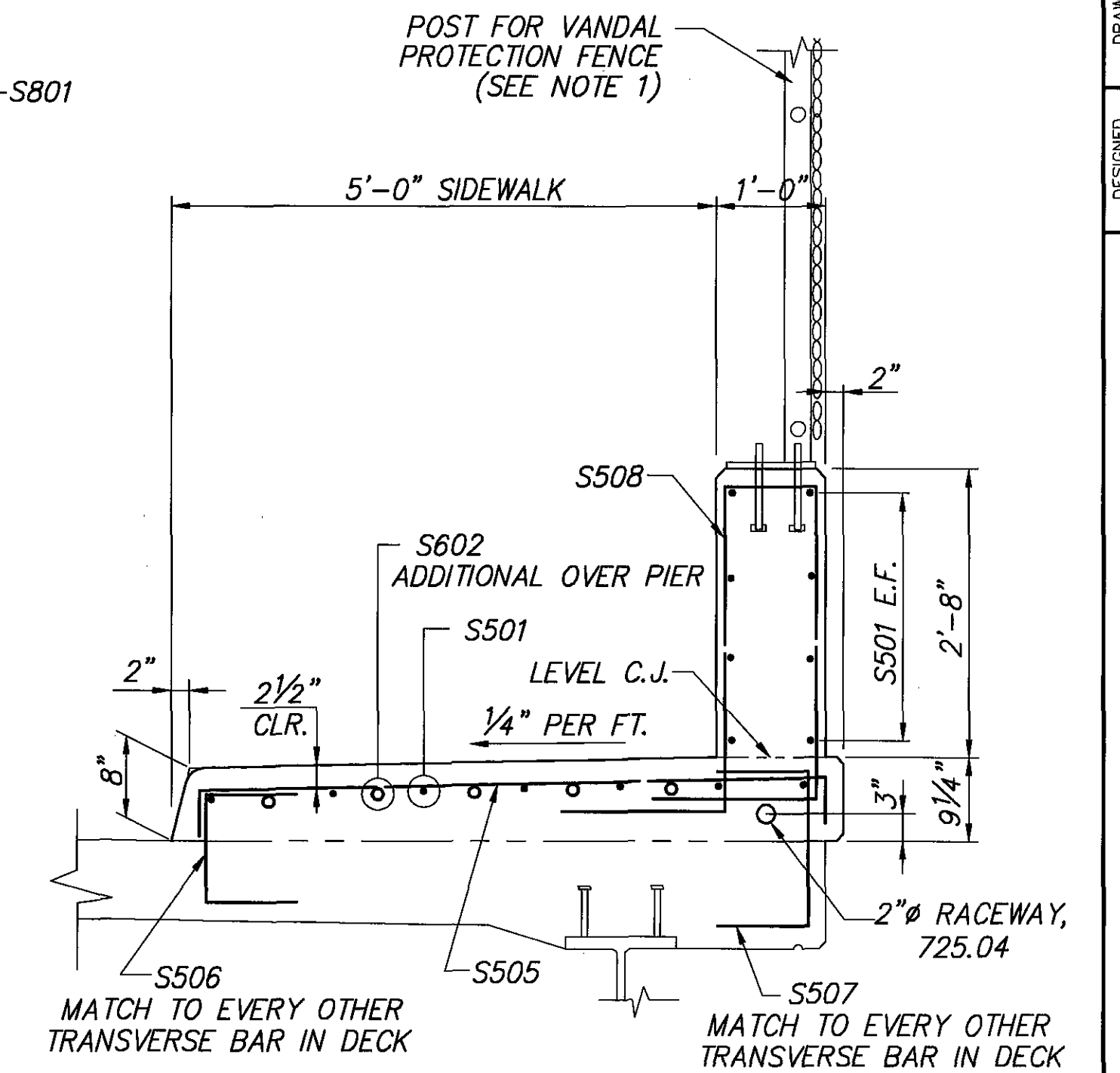


SIDEWALK REINFORCING PLAN
(LEFT SIDE SHOWN, RIGHT SIDE OPPOSITE HAND)

* MATCH EVERY OTHER TRANSVERSE DECK SLAB REINFORCING BAR.



PARAPET ELEVATION
(LEFT PARAPET SHOWN, RIGHT PARAPET OPPOSITE HAND)



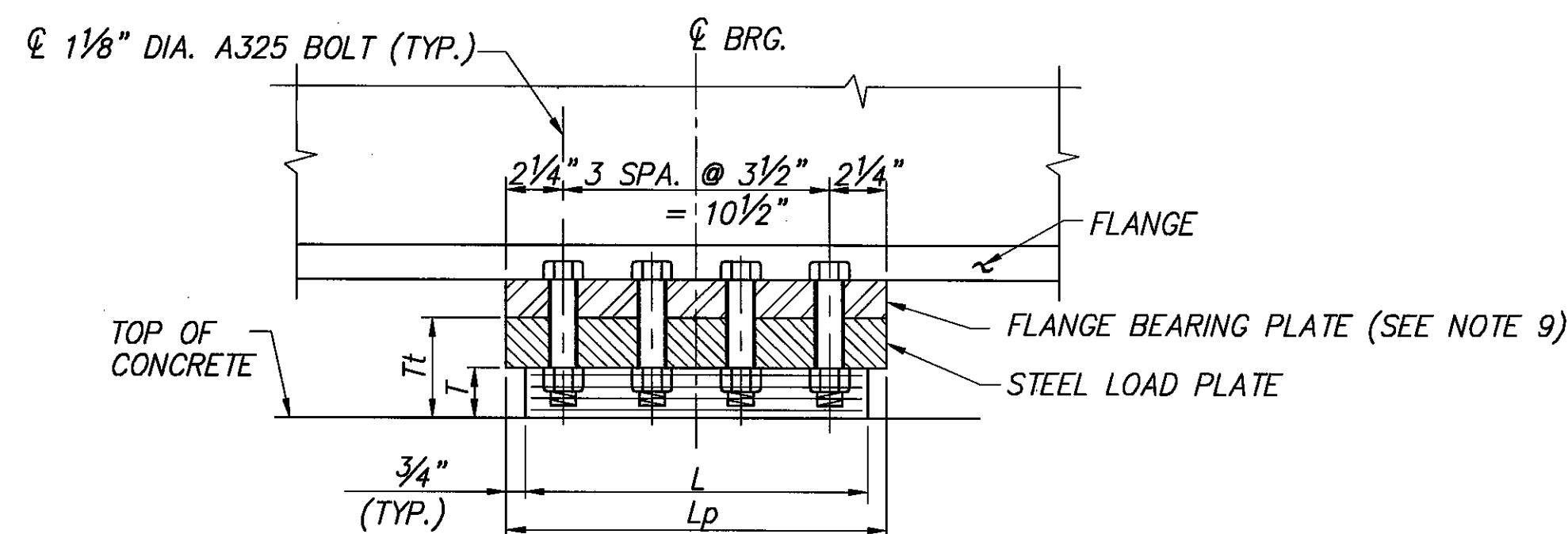
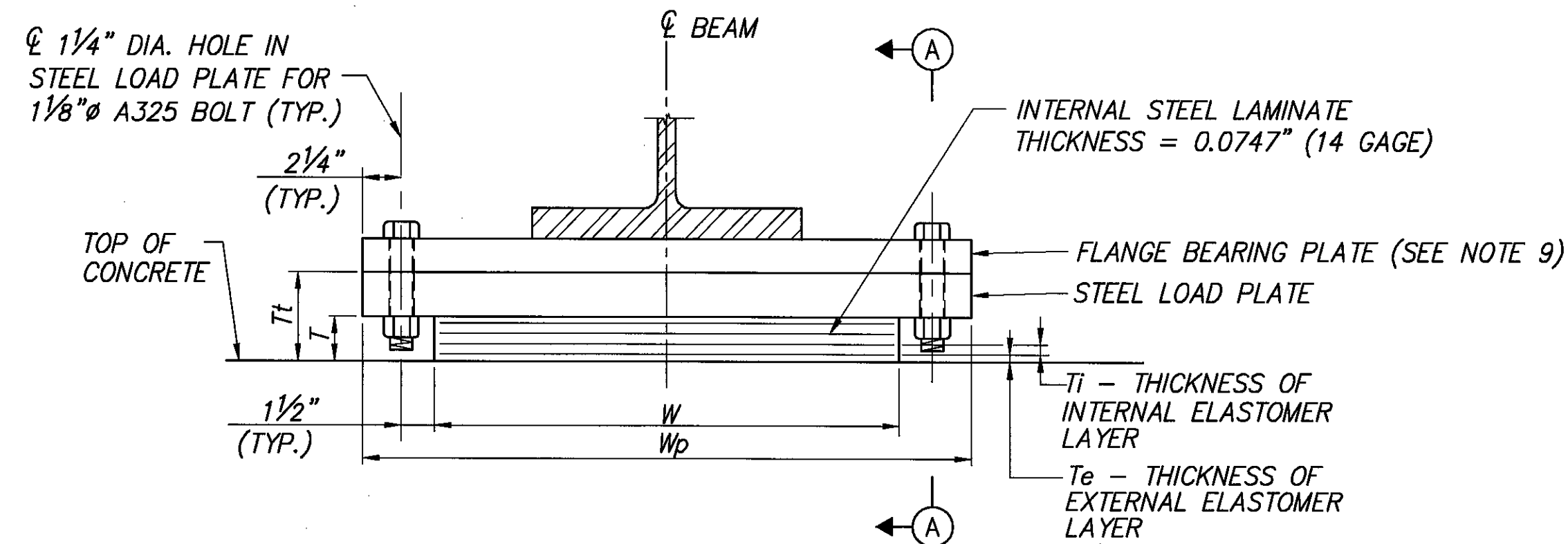
SECTION C-C

NOTES:

1. FOR BRIDGE TRANSVERSE SECTION, FENCE DIMENSIONS AND ADDITIONAL NOTES, SEE SHEET 13/19.
2. FOR SECTION B-B, SEE SHEET 12/19.
3. PAYMENT FOR SIDEWALK CONCRETE SHALL BE UNDER ITEM 894-HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY, AS PER PLAN.
4. PAYMENT FOR PARAPETS CONCRETE SHALL BE UNDER ITEM 511-CLASS HP CONCRETE, BRIDGE DECK (PARAPET).
5. FOR PARAPET SAWCUTTING AND CAULKING REQUIREMENTS, SEE ODOT STANDARD DRAWING BR-2-98 SHEETS 2/3 AND 3/3 FOR DETAIL AND NOTES, RESPECTIVELY.

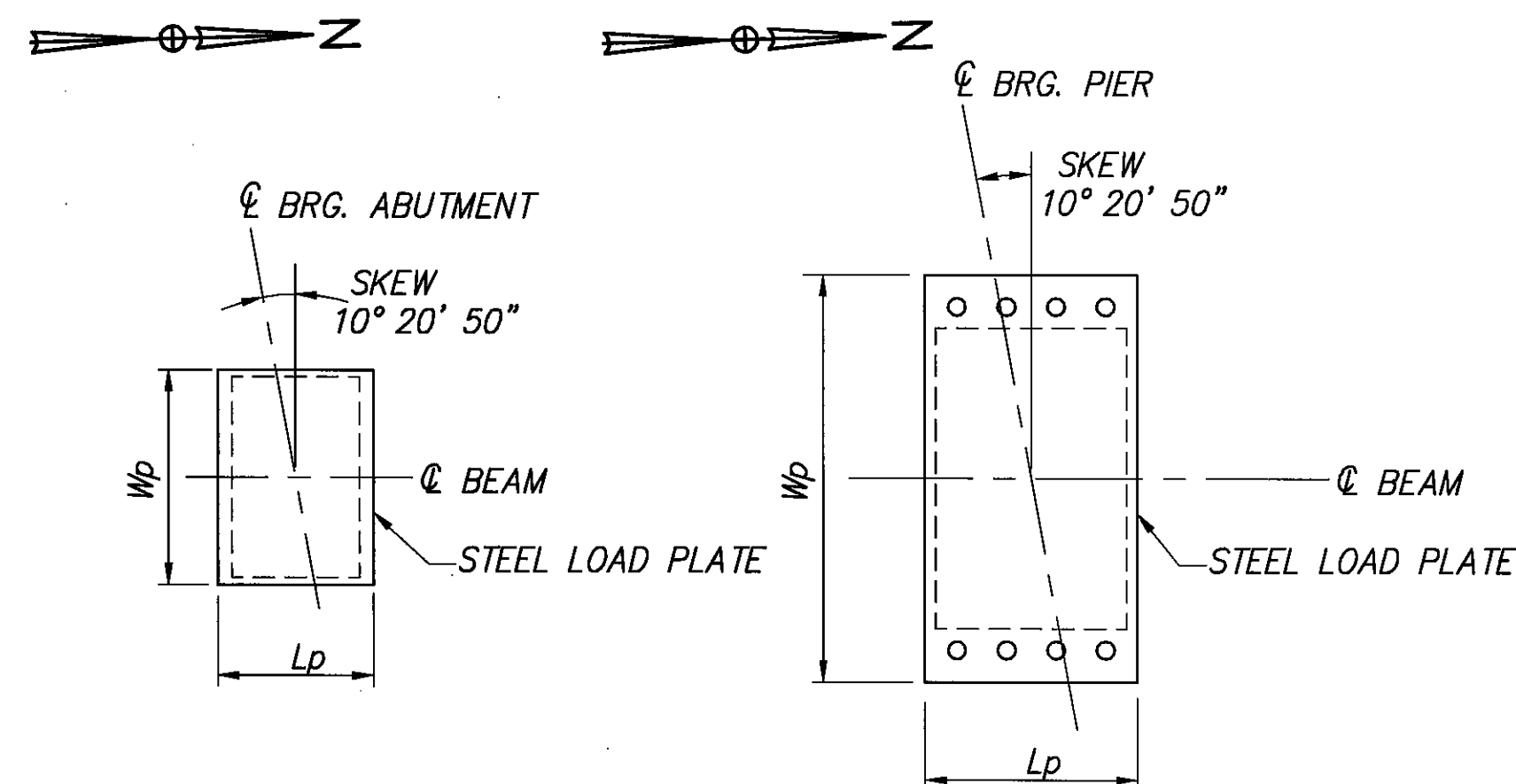
PAYMENT FOR SAWCUTS AND CAULKING COMPOUND SHALL BE INCIDENTAL TO ITEM 511-CLASS HP CONCRETE, BRIDGE DECK (PARAPET).

6. ABBREVIATIONS: BRG.-BEARING; TYP.-TYPICAL; BOT.-BOTTOM; CLR.-CLEAR; E.F.-EACH FACE; C.J.-CONSTRUCTION JOINT.

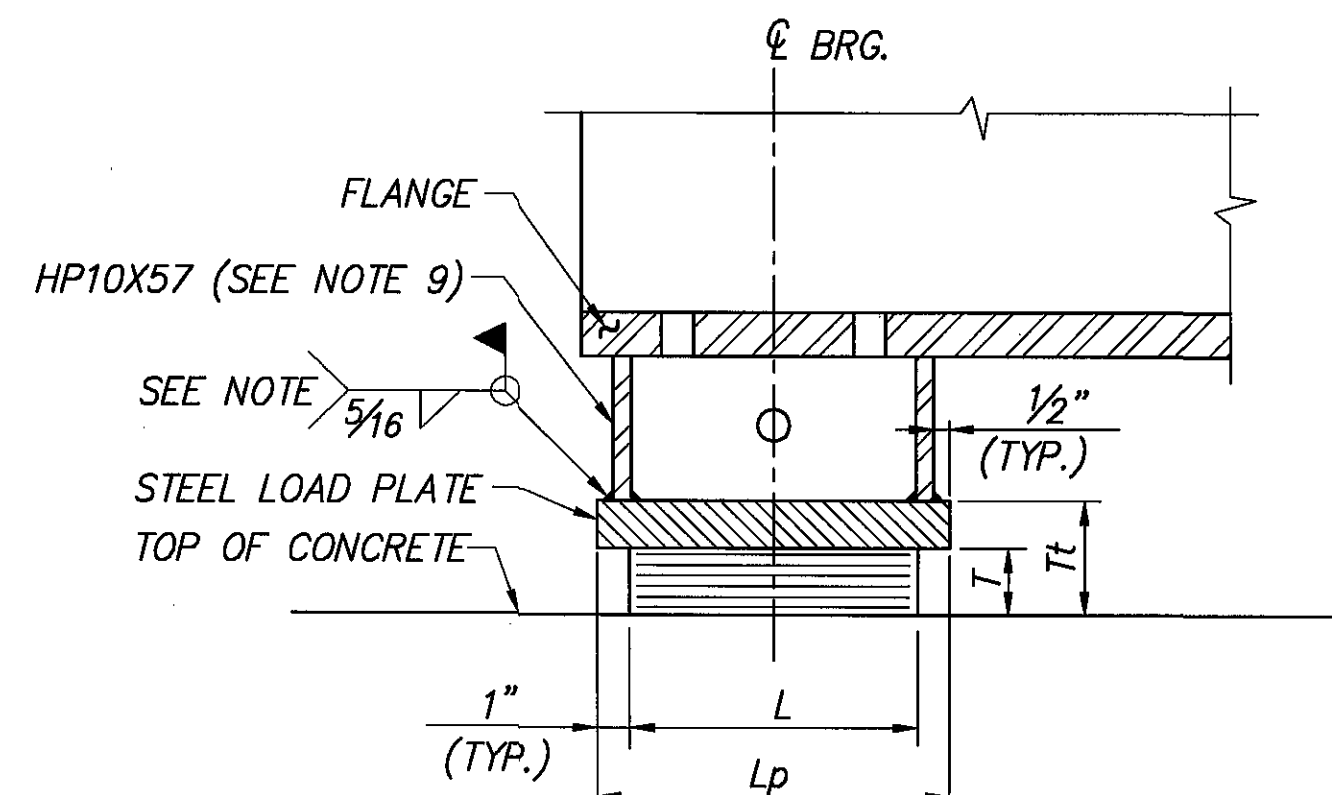
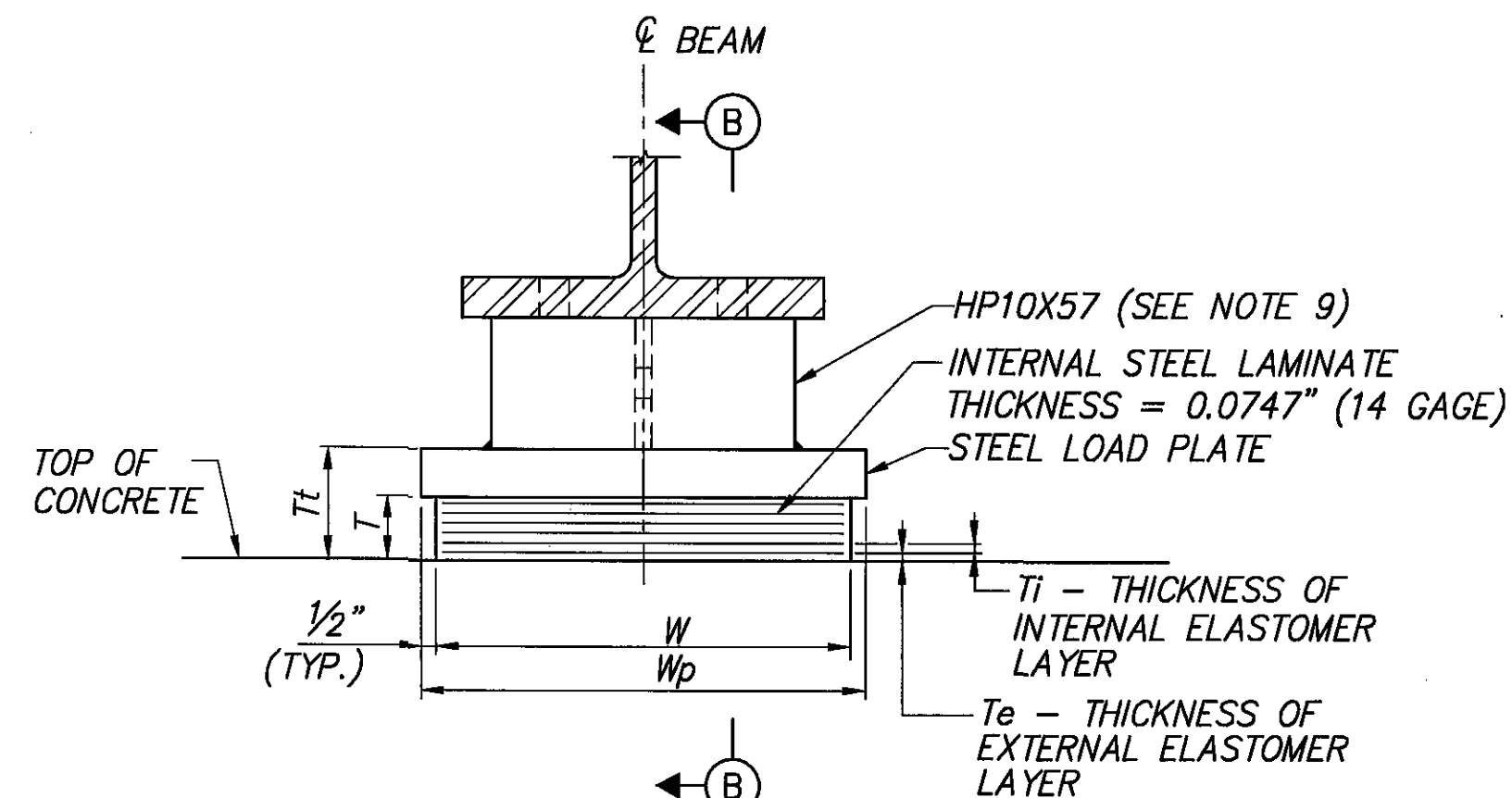


SECTION A-A

LAMINATED ELASTOMERIC EXPANSION BEARING AT PIER



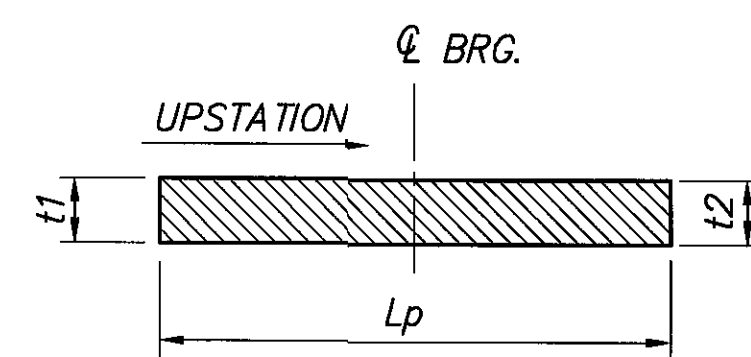
BEARING ORIENTATION PLAN



SECTION B-B

NOTE: GRIND GALVANIZED COATING OFF THE HP SHAPE AND SHOP PAINTING OFF THE STEEL LOAD PLATE PRIOR TO FIELD WELDING.
PAYMENT FOR GRINDING, FIELD WELDING AND FIELD REPAIR PAINTING SHALL BE INCLUDED WITH ITEM 516-ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE, AS PER PLAN.

LAMINATED ELASTOMERIC EXPANSION BEARING AT ABUTMENTS



STEEL LOAD PLATE DETAIL

NOTES

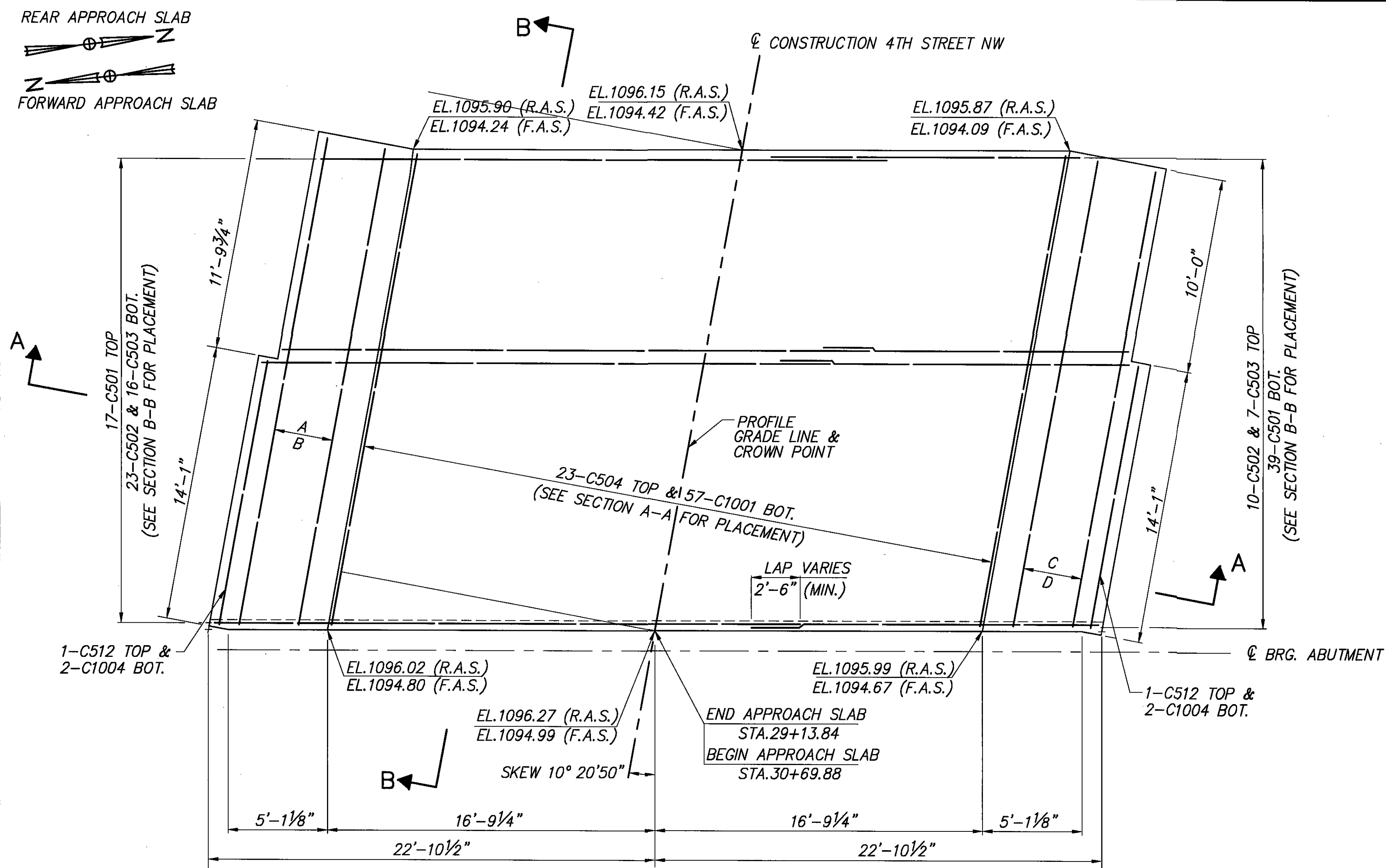
- ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
- ACCEPTANCE OF THE BEARING SHALL BE ACCORDING TO ARTICLE 711.23 OF THE O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE MANUFACTURER SHALL FURNISH CERTIFIED TEST DATA AND SHALL SUPPLY A SAMPLE BEARING OF EACH DESIGN, AS SHOWN ON THE PLANS, FOR DESTRUCTIVE TESTING AND APPROVAL PURPOSES. SAMPLE BEARINGS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED INCIDENTAL TO THE ITEM 516.
- WELDING: CONTROL WELDING SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300° F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
- BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80° F OR LOWER THAN 40° F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60° F (±) 10° F, RAISE THE BEAMS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60° F (±) 10° F.
- THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS. THE STEEL LOAD PLATE SHALL BE ASTM A572/A709 GRADE 50 STEEL. SURFACE PREPARATION, PRIMING AND FINISH COATS WITH SYSTEM IZEU COATING SHALL BE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. SEE GENERAL NOTE ON SHEET G6/G11.
- TOTAL DESIGN LOAD FOR BEARINGS EQUALS THE SUM OF THE DEAD LOADS AND LIVE LOADS TABULATED IN THE BEARING TABLE.
- ALL BOLTS SHALL BE 1 1/8" DIA. HIGH STRENGTH BOLTS, A325, TYPE I. BOLTS SHALL BE FURNISHED AND INSTALLED AS PER ITEM 513, AND SHALL BE INCLUDED WITH ELASTOMERIC BEARING ITEM 516 FOR PAYMENT.
- BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR, TESTING AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. SAMPLE BEARING SHALL NOT BE MEASURED FOR PAYMENT.
- FOR FLANGE BEARING PLATE AND HP STEEL SHAPE DETAILS, SEE BEAM ELEVATION ON SHEET 11/19.

BEARING LOCATION	MARK NO.	BEARING TYPE	NO. REQ'D.	DEAD LOAD KIPS	LIVE LOAD KIPS	TOTAL LOAD (DL+LL) KIPS	L in.	W in.	Ti in.	NO. OF TIS	Te (2 EA.) in.	NUMBER OF INTERNAL LAMINATES (14 GAGE)	T in.	STEEL LOAD PLATE, in.				Tt @ CL BEARING in.
														Lp	Wp	t1	t2	
REAR ABUTMENT	E1	EXP.	6	51	63	114	9	14	0.26	5	0.19	6	2 1/8	11	15	1 1/2	1 1/2	3 5/8
PIER	E2	EXP.	6	181	80	261	13 1/2	21	0.39	3	0.28	4	2	15	28 1/2	2 1/8	2	4 1/16
FORWARD ABUTMENT	E3	EXP.	6	58	64	122	9	14	0.26	5	0.19	6	2 1/8	11	15	1 5/8	1 3/8	3 5/8

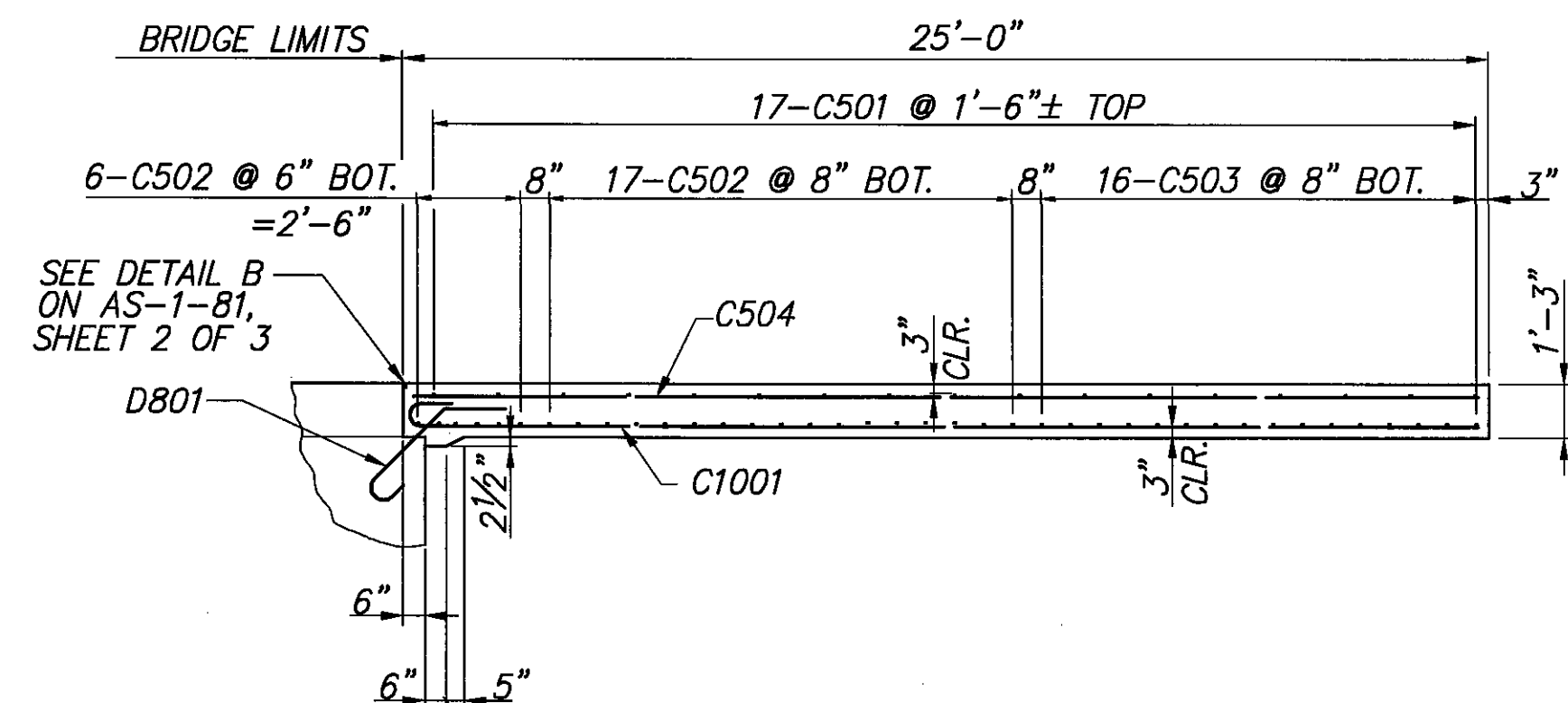
ABBREVIATIONS: BRG.-BEARING; TYP.-TYPICAL; MIN.-MINIMUM; SPA.-SPACES.

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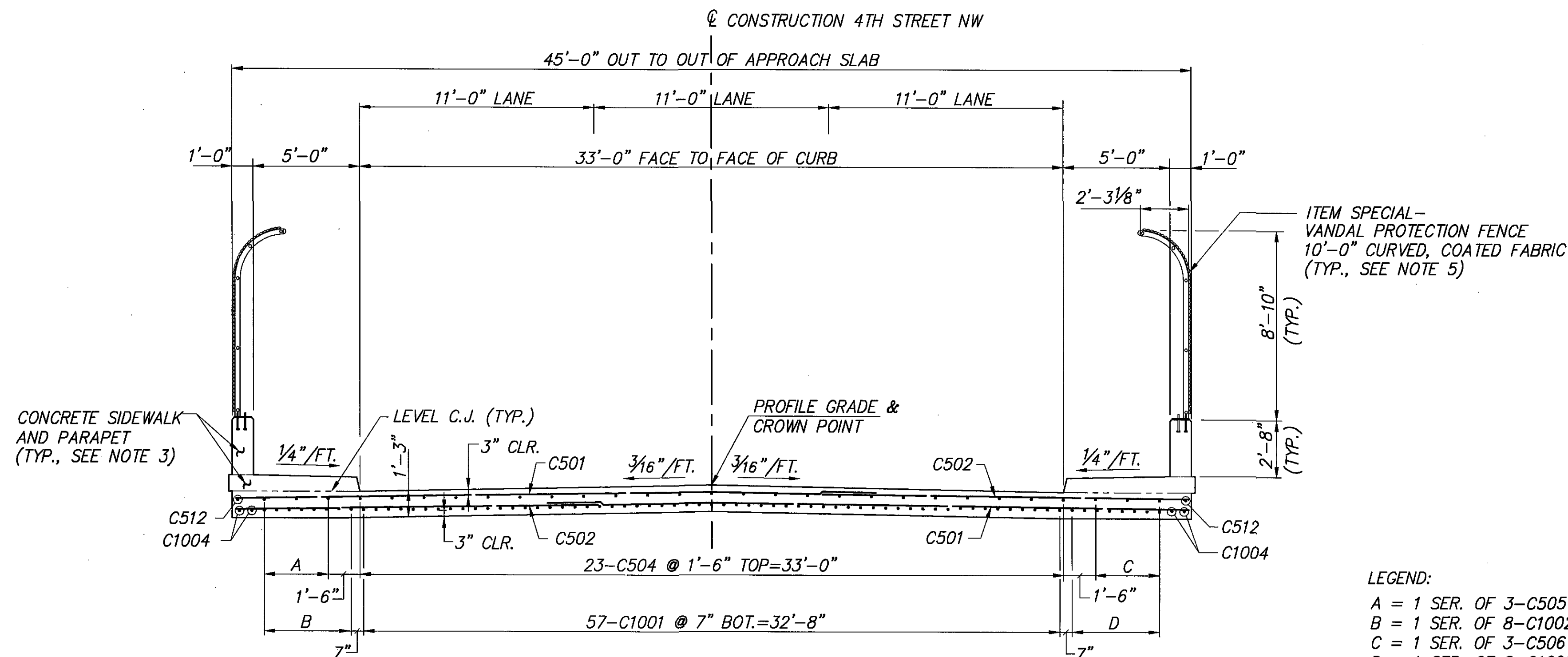
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APPROACH SLAB PLAN
(SIDEWALKS AND PARAPETS ARE NOT SHOWN)



SECTION B-B



SECTION A-A

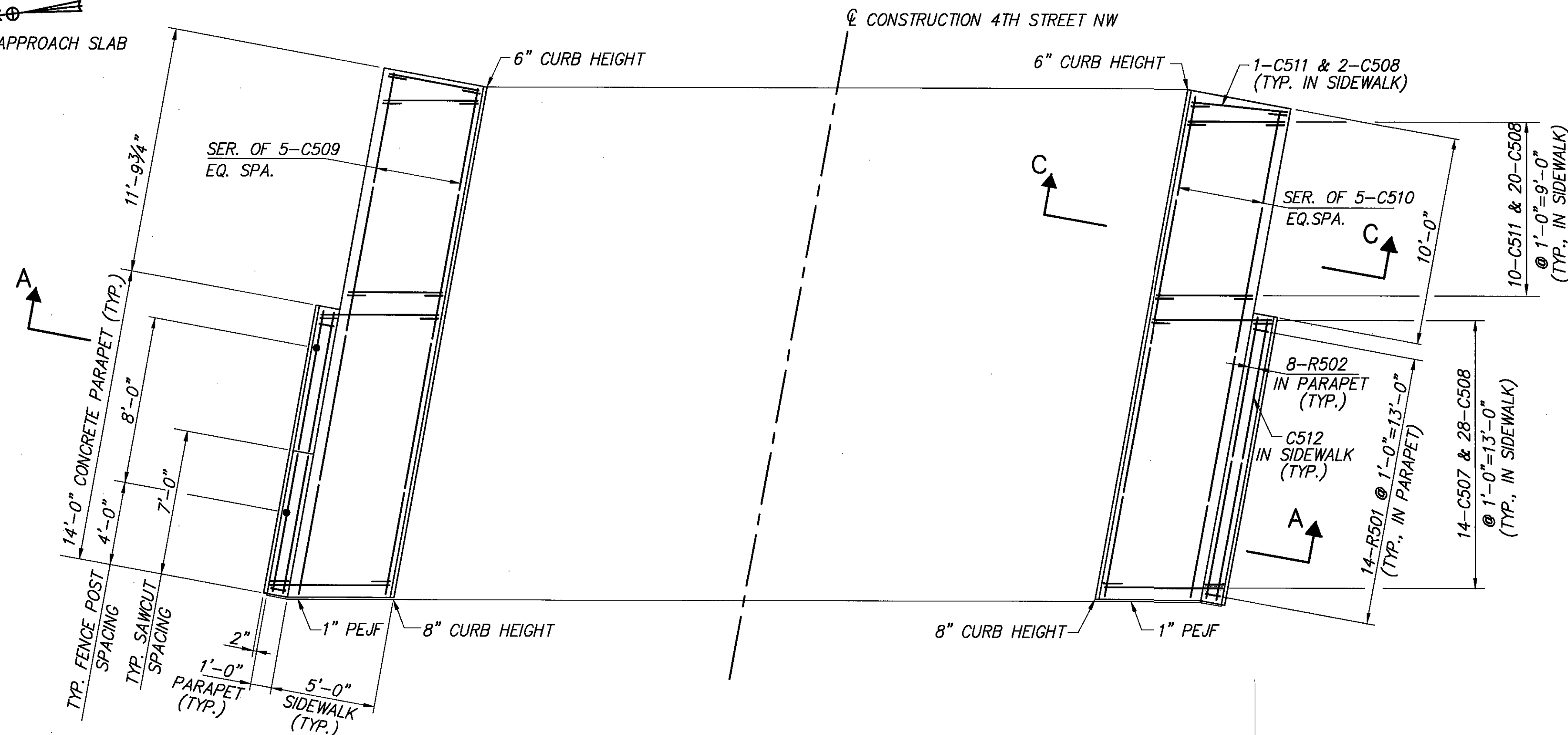
LEGEND:

- A = 1 SER. OF 3-C505 @ 1'-6" TOP
B = 1 SER. OF 8-C1002 @ 7" BOT.
C = 1 SER. OF 3-C506 @ 1'-6" TOP
D = 1 SER. OF 8-C1003 @ 7" BOT.
(SEE SECTION A-A FOR PLACEMENT)

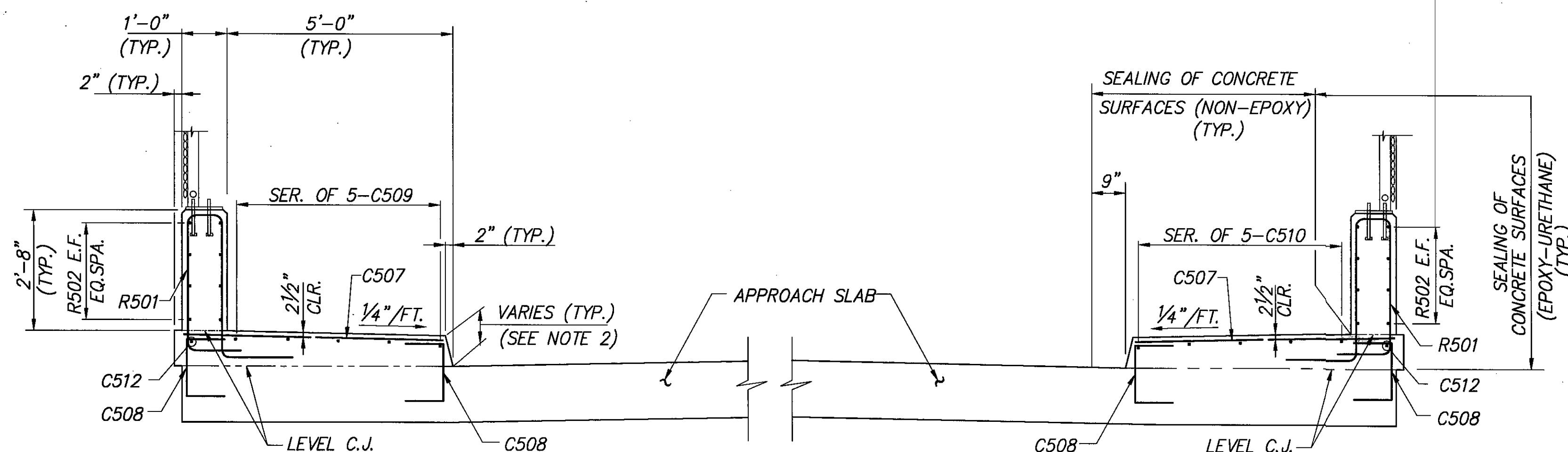
NOTES:

- SEE ODOT STANDARD DRAWING AS-1-81 FOR ADDITIONAL INFORMATION.
- FOR REAR AND FORWARD ABUTMENT DIAPHRAGM PLAN AND ELEVATION, SEE SHEET 12/19.
- FOR APPROACH SLAB SIDEWALKS AND PARAPETS REINFORCING AND ADDITIONAL DETAILS, SEE SHEET 17/19.
- CONCRETE FOR APPROACH SLABS SHALL BE HP3 OR HP4 AND SHALL MATCH THE SUPERSTRUCTURE DECK MIX.
- FOR NOTES AND DETAILS OF VANDAL PROTECTION FENCE, FENCE, SEE STANDARD DRAWING VPF-1-90. USE COATED FABRIC (SEE GENERAL NOTE ON SHEET G4/G11) AND BASE PLATE BP-1 WITH CAST-IN-PLACE ANCHOR BOLT INSERTS.
- ABBREVIATIONS: TYP.-TYPICAL; BRG.-BEARING; BOT.-BOTTOM; C.J.-CONSTRUCTION JOINT; R.A.S.-REAR APPROACH SLAB; F.A.S.-FORWARD APPROACH SLAB; CLR.-CLEAR; SER.-SERIES.

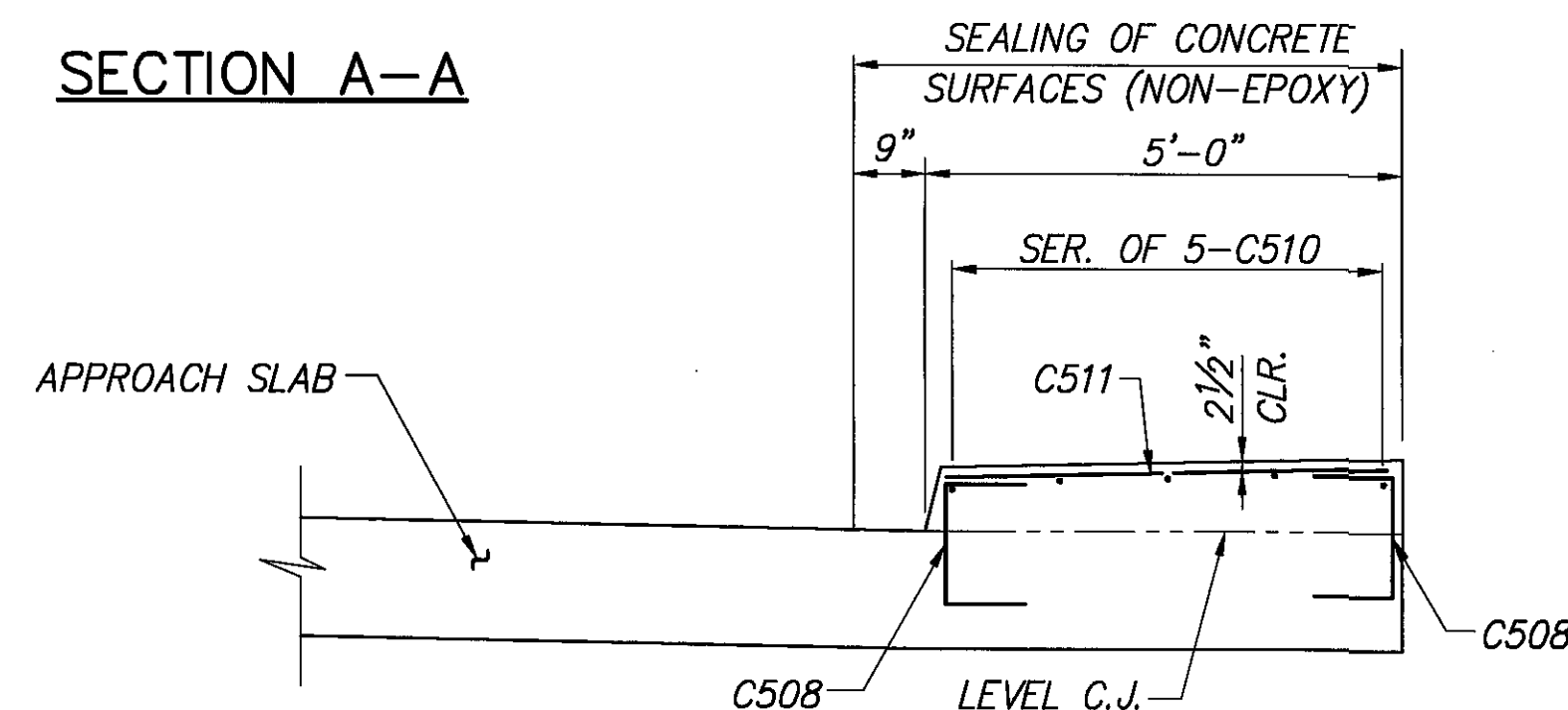
REAR APPROACH SLAB
FORWARD APPROACH SLAB



APPROACH SLAB SIDEWALKS AND PARAPETS



SECTION A-A



NOTE: FOR ADDITIONAL INFORMATION, SEE SECTION A-A.

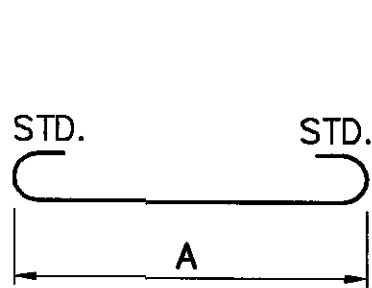
SECTION C-C

NOTES:

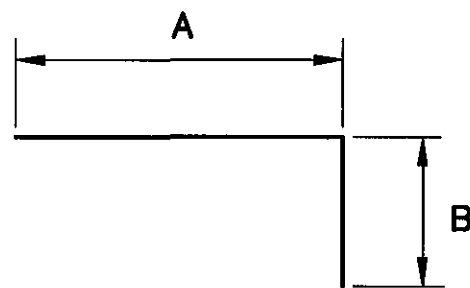
- FOR REAR AND FORWARD APPROACH SLAB PLAN, AND FOR ADDITIONAL DETAILS, SEE SHEET 16/19.
- TRANSITION CURB HEIGHT FROM 8" TO 6" IN 25'-0" ON APPROACH SLABS.
- PAYMENT FOR PARAPETS CONCRETE SHALL BE UNDER ITEM 511-CLASS HP CONCRETE, BRIDGE DECK (PARAPET).
- FOR PARAPET SAWCUTTING AND CAULKING REQUIREMENTS, SEE ODOT STANDARD DRAWING BR-2-98 SHEETS 2/3 AND 3/3 FOR DETAIL AND NOTES, RESPECTIVELY.
PAYMENT FOR SAWCUTS AND CAULKING COMPOUND SHALL BE INCIDENTAL TO ITEM 511-CLASS HP CONCRETE, BRIDGE DECK (PARAPET).
- CONCRETE FOR SIDEWALKS SHALL BE HP3 OR HP4 AND SHALL MATCH THE SUPERSTRUCTURE DECK MIX. SIDEWALK CONCRETE LOCATED ON THE APPROACH SLABS, ITS REINFORCING STEEL AND 1" PEJF ARE INCIDENTAL TO TO ITEM 526-REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN FOR PAYMENT.
- ABBREVIATIONS: TYP.-TYPICAL; BRG.-BEARING; CLR.-CLEAR; PEJF-PREFORMED EXPANSION JOINT FILLER; E.F.-EACH FACE; C.J.-CONSTRUCTION JOINT; EQ.SPA.-EQUALLY SPACED; SER.-SERIES.

MARK	REAR ABUTMENT	FORWARD ABUTMENT	TOTAL NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	H	INC.
ABUTMENTS												
A501	74	82	156	30'-0"	4,882	STR.						
A502	18	18	36	24'-4"	914	STR.						
A503	64	56	120	23'-8"	2,963	STR.						
A504	-	2 SERIES OF 7	2 SERIES OF 7	40'-2" 34'-5"	545	STR.						11½"
A505	-	2 SERIES OF 5	2 SERIES OF 5	22'-3" 19'-7"	219	STR.						8"
A506	47	47	94	6'-3"	613	6	2'-8"	1'-11"	1'-11"			
A507	16	16	32	5'-1"	170	5	2'-7"	2'-7"				
A508	-	1 SERIES OF 38	1 SERIES OF 38	29'-2" 10'-7"	788	STR.						6"
A509	-	11	11	38'-11"	447	STR.						
A510	-	11	11	37'-1"	426	STR.						
A511	-	1 SERIES OF 18	1 SERIES OF 18	37'-2" 2'-1"	369	STR.						2'-1"
A512	-	1 SERIES OF 18	1 SERIES OF 18	35'-5" 4'-0"	370	STR.						1'-10"
A513	-	1	1	42'-9"	45	9	42'-2"	7"			5¾	
A514	-	1	1	42'-2"	44	9	41'-7"	7"			6	
A515	4 SERIES OF 5	-	4 SERIES OF 5	18'-7" 16'-2"	363	STR.						7¼
A516	4 SERIES OF 7	-	4 SERIES OF 7	37'-2" 31'-7"	1,004	STR.						11"
A517	22	-	22	35'-11"	825	STR.						
A518	22	-	22	34'-3"	786	STR.						
A519	2 SERIES OF 14	-	2 SERIES OF 14	33'-6" 2'-9"	530	STR.						2'-4"
A520	2 SERIES OF 14	-	2 SERIES OF 14	32'-0" 2'-8"	507	STR.						2'-3"
A521	2	-	2	38'-7"	81	9	38'-0"	7"			5	
A522	2	-	2	38'-0"	80	9	37'-5"	7"			5¼	
A523	2 SERIES OF 36	-	2 SERIES OF 36	25'-1" 10'-2"	1,324	STR.						5"
A601	32	24	56	16'-0"	1,346	1	14'-8"					
A602	24	12	36	9'-6"	514	1	8'-2"					
A603	20	9	29	8'-2"	356	STR.						
A604	-	53	53	24'-11"	1,984	STR.						
A605	53	53	106	5'-4"	849	9	3'-5"	1'-11"			12	
A606	12	12	24	11'-11"	430	6	2'-8"	4'-9"	4'-9"			
A607	53		53	20'-7"	1,639	STR.						
A801	-	53	53	25'-0"	3,538	STR.						
A802	4	4	8	30'-0"	641	STR.						
A803	4	4	8	27'-11"	596	STR.						
A804	-	1 SERIES OF 38	1 SERIES OF 38	29'-5" 10'-10"	2,042	STR.						6"
A805	125	-	125	9'-1"	3,032	5	7'-11"	1'-4"				
A806	96	-	96	12'-10"	3,289	5	11'-9"	1'-4"				
A807	53	-	53	20'-10"	2,948	STR.						
A808	2 SERIES OF 36	-	2 SERIES OF 36	25'-5" 10'-6"	3,453	STR.						5"

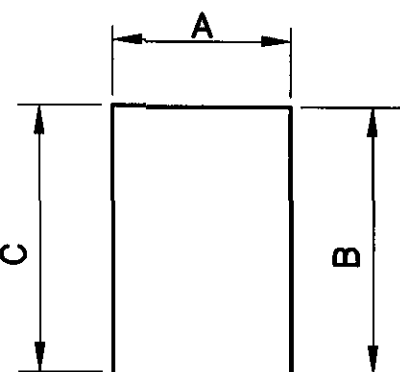
MARK	REAR ABUTMENT	FORWARD ABUTMENT	TOTAL NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	H	INC.
ABUTMENTS												
A901	48	52	100	20'-2"	6,858	1	17'-8"					
A902	62	70	132	17'-8"	7,931	STR.						
A903	54	41	95	14'-8"	4,739	STR.						
A1001	-	78	78	17'-9"	5,958	5	16'-3"	1'-10"				
A1002	-	91	91	9'-5"	3,689	5	7'-11"	1'-10"				
ABUTMENTS TOTAL = 74,127 POUNDS												



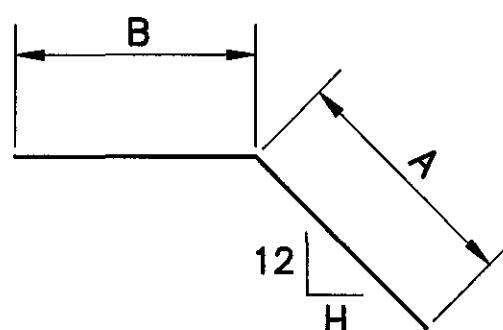
TYPE 1



TYPE 5



TYPE 6



TYPE 9

NOTES:

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ALL REINFORCING STEEL TO BE EPOXY COATED.

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REINFORCING STEEL BAR SCHEDULE

MARK	TOTAL NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	H	INC.
PIER											
SP401	4	19'-7"	1,328	51	2'-6"	4½"					
P501	8	13'-0"	108	STR.							
P502	80	9'-7"	800	6	2'-8"	3'-7"	3'-7"				
P503	10	30'-0"	313	STR.							
P504	10	16'-3"	169	STR.							
P505	10	5'-4"	56	6	2'-7"	1'-6"	1'-6"				
P506	48	8'-0"	401	STR.							
P601	5	30'-0"	225	STR.							
P602	5	17'-1"	128	STR.							
P603	8	27'-4"	328	5	24'-0"	3'-6"					
P650	6	10'-11"	98	84	1'-9"	2'-11"	1'-0"	1'-0"			
P651	4	4'-5"	27	5	2'-11"	1'-7"					
P801	72	9'-10"	1,890	1	8'-0"						
P802	56	9'-0"	1,346	5	7'-10"	1'-4"					
P803	56	22'-5"	3,352	STR.							
P901	6	22'-4"	456	5	21'-0"	1'-7"					
P950	10	4'-3"	145	5	2'-11"	1'-7"					
PIER TOTAL = 11,170 POUNDS											

MARK	TOTAL NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	H	INC.
SUPERSTRUCTURE											
S401	270	30'-0"	5,411	STR.							
S402	54	13'-7"	490	STR.							
S501	1,135	30'-0"	35,514	STR.							
S502	345	17'-0"	6,117	STR.							
S503	345	17'-9"	6,387	STR.							
S504	89	15'-8"	1,454	STR.							
S505	354	6'-3"	2,308	6	5'-8"	5"	5"				
S506	354	2'-5"	892	6	1'-0"	10"	10"				
S507	354	2'-9"	1,015	6	1'-4"	10"	10"				
S508	312	9'-0"	2,929	83	8"	2'-10"	3'-0"	1'-6"	1'-6"		
S509	78	11'-8"	950	10	3'-0"	2'-8"					
S510	78	6'-5"	523	6	1'-10"	2'-5"	2'-5"				
S511	32	2'-9"	92	STR.							
S601	51	22'-0"	1,685	STR.							
S602	51	30'-0"	2,298	STR.							
S801	28	30'-0"	2,243	STR.							
S802	28	20'-2"	1,508	STR.							
D801	40	5'-0"	534	8	2'-8"						
SUPERSTRUCTURE TOTAL = 72,350 POUNDS											

REINFORCING STEEL BAR SCHEDULE

MARK	REAR APPROACH SLAB	FORWARD APPROACH SLAB	TOTAL NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	H	INC.
APPROACH SLABS WITH SIDEWALKS													
C501	56	56	112	30'-0"	3,504	STR.							
C502	33	33	66	17'-9"	1,222	STR.							
C503	23	23	46	15'-9"	756	STR.							
C504	23	23	46	24'-6"	1,175	STR.							
C505	1 SERIES OF 3	1 SERIES OF 3	2 SERIES OF 3	24'-9" 25'-3"	156	STR.							3"
C506	1 SERIES OF 3	1 SERIES OF 3	2 SERIES OF 3	23'-9" 24'-3"	150	STR.							3"
C507	28	28	56	5'-8"	331	STR.							
C508	80	80	160	2'-8"	445	6	1'-3"	10"	10"				
C509	1 SERIES OF 5	1 SERIES OF 5	2 SERIES OF 5	24'-8" 25'-4"	261	STR.							2"
C510	1 SERIES OF 5	1 SERIES OF 5	2 SERIES OF 5	23'-8" 24'-4"	250	STR.							2"
C511	20	20	40	4'-6"	188	STR.							
C512	4	4	8	13'-6"	113	STR.							
C1001	57	57	112	25'-11"	12,490	2	24'-6"						
C1002	1 SERIES OF 8	1 SERIES OF 8	2 SERIES OF 8	25'-11" 26'-6"	1,804	2	24'-6" 25'-1"						1"
C1003	1 SERIES OF 8	1 SERIES OF 8	2 SERIES OF 8	25'-2" 25'-9"	1,753	2	23'-9" 24'-4"						1"
C1004	4	4	8	14'-11"	513	2	13'-6"						
APPROACH SLABS TOTAL = 25,111 POUNDS *													

* INCIDENTAL TO APPROACH SLAB ITEM 526

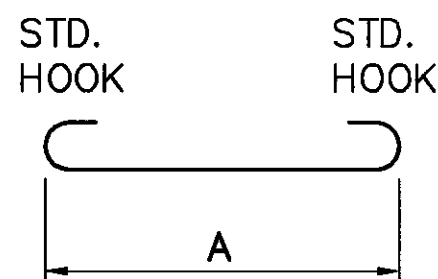
MARK	REAR APPROACH SLAB	FORWARD APPROACH SLAB	TOTAL NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	H	INC.
APPROACH SLAB PARAPETS													
R501	28	28	56	9'-0"	526	83	8"	2'-10"	3'-0"				
R502	16	16	32	13'-6"	451	STR.							
APPROACH SLAB PARAPETS TOTAL = 977 POUNDS													

NOTE: PAYMENT FOR APPROACH SLAB PARAPETS REINFORCING STEEL SHALL BE UNDER ITEM 509-EPOXY COATED REINFORCING STEEL.

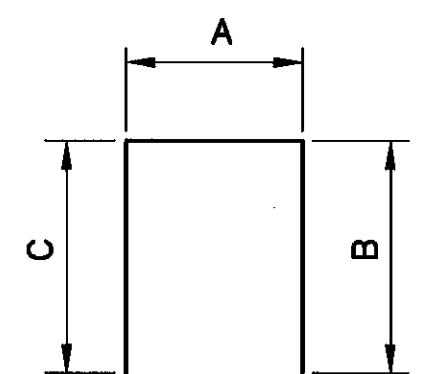
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2. SPIRAL SPACERS: THREE EPOXY COATED ANGLE SPACERS, WEIGHTING APPROXIMATELY 0.80 LB. PER LINEAR FOOT OF SPIRAL, SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG THE PERIPHERY OF EACH COIL. THE TOTAL NUMBER OF POUNDS OF THESE SPACERS, BASED ON 2.40 LB. PER LINEAR FOOT OF SPIRAL, IS INCLUDED IN THE TABULATED SPIRAL WEIGHT.
3. CONCRETE SPACERS OR OTHER APPROVED NONCORROSIVE SPACING DEVICES SHALL BE USED AT SUFFICIENT INTERVALS (NEAR THE BOTTOM AND AT INTERVALS NOT EXCEEDING 10 FEET) TO INSURE CONCENTRIC SPACING FOR THE ENTIRE CAGE LENGTH. SPACERS SHALL BE CONSTRUCTED OF APPROVED MATERIAL EQUAL IN QUALITY AND DURABILITY TO THE CONCRETE SPECIFIED FOR THE SHAFT. THE SPACERS SHALL HAVE ADEQUATE DIMENSIONS TO ENSURE A MINIMUM 3 INCH CLEAR SPACE BETWEEN THE OUTSIDE OF THE REINFORCING CAGE AND THE DESIGN DIMENSION OF THE COLUMN.

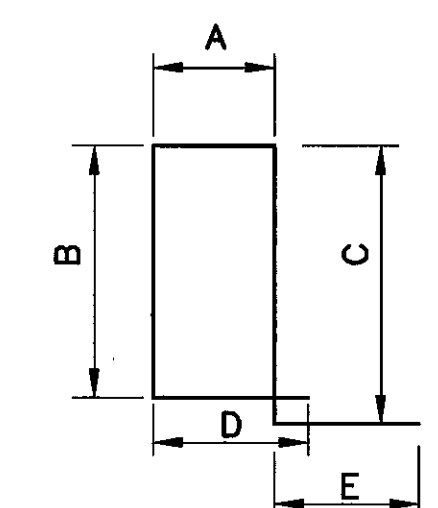
ALL REINFORCING STEEL TO BE EPOXY COATED.



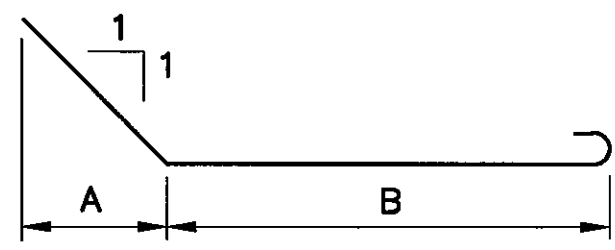
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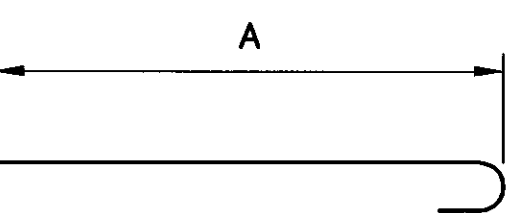
TYPE 5



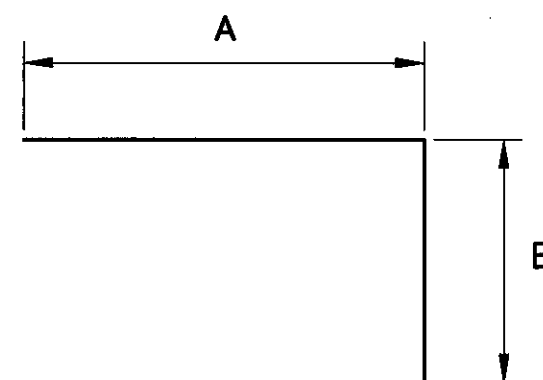
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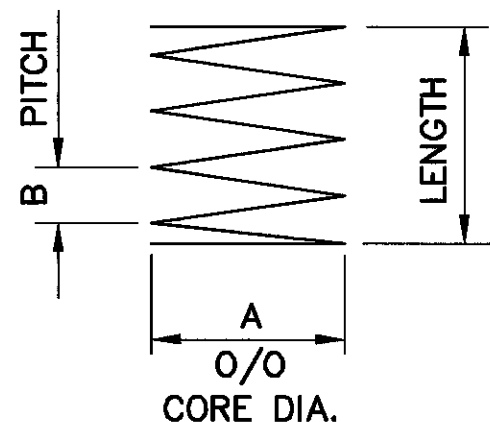
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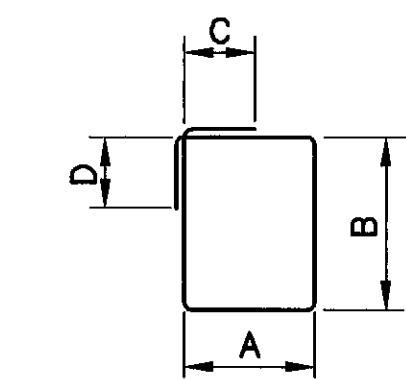
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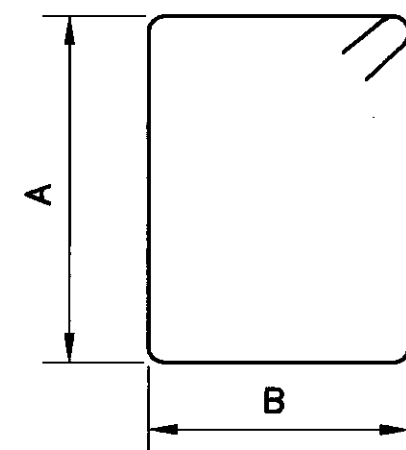
TYPE 5



TYPE 51



TYPE 84



TYPE 10