

PLAN, PROFILE, SECTIONS, & DETAILS  
OF THE

# ROAD 10 CROSSING OVER THE PATTERSON DRAIN

IN THE

TOWN OF KINGSVILLE (Geographic Township of Gosfield North)

IN THE

COUNTY OF ESSEX • ONTARIO

*A.B.P.*  
ANTONIO B. PERALTA, P.ENG.



**N. J. PERALTA ENGINEERING LTD.**

45 DIVISION STREET NORTH  
KINGSVILLE, ONTARIO  
N9Y 1E1

DATE: APRIL 23rd, 2018

**TOWN OF KINGSVILLE**

MAYOR: NELSON SANTOS  
CLERK: JENNIFER ASTROLOGO  
DRAINAGE SUPERINTENDENT: KEN VEGH

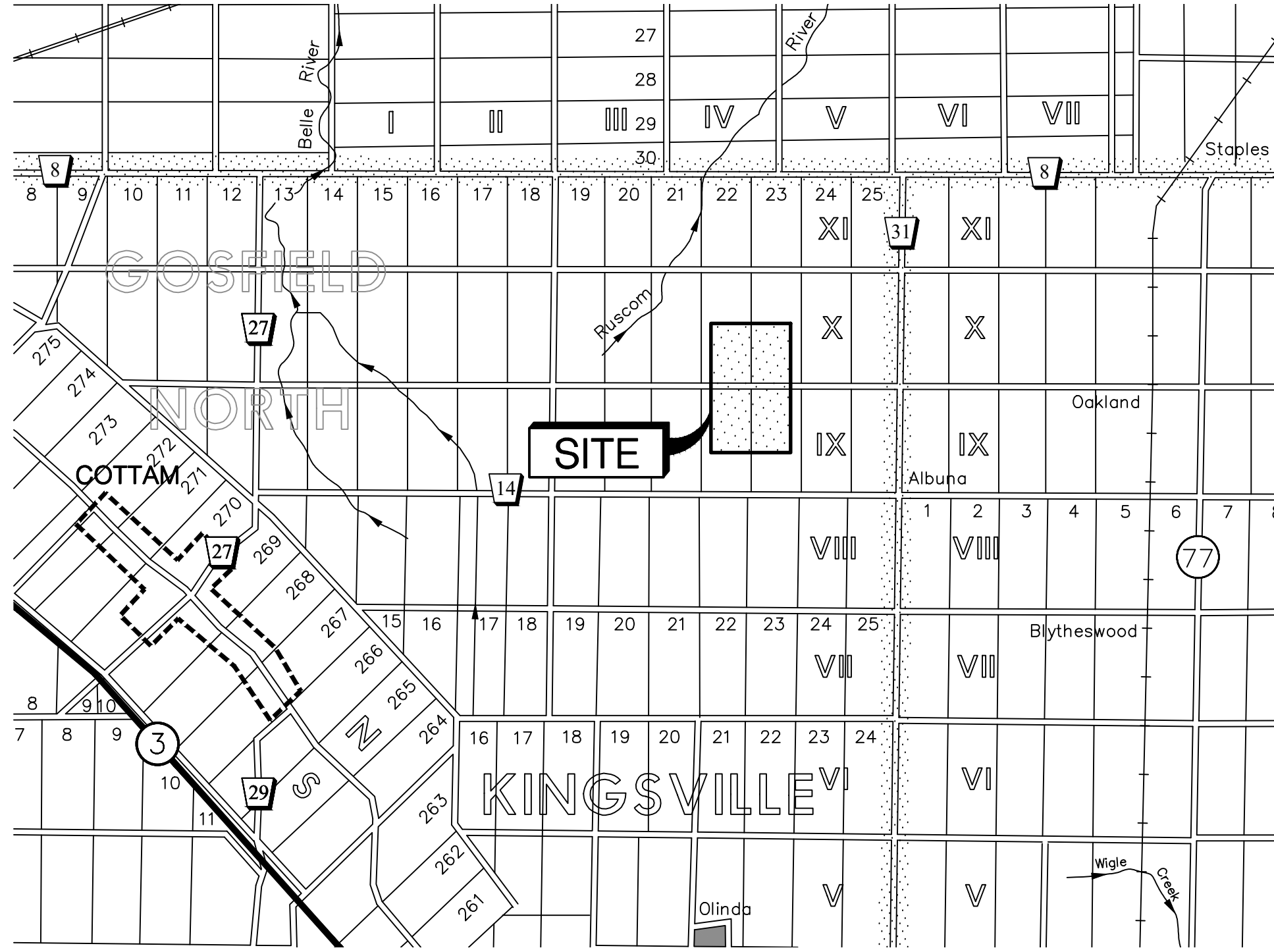
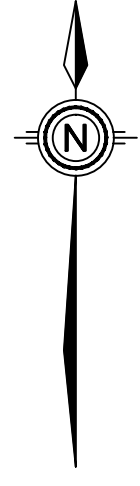
## BENCHMARKS:

- 1) TOP NUT OF EXISTING FIRE HYDRANT LOCATED ON THE NORTH SIDE OF ROAD 10, APPROXIMATELY 57.0m WEST OF SUBJECT ROAD CROSSING.

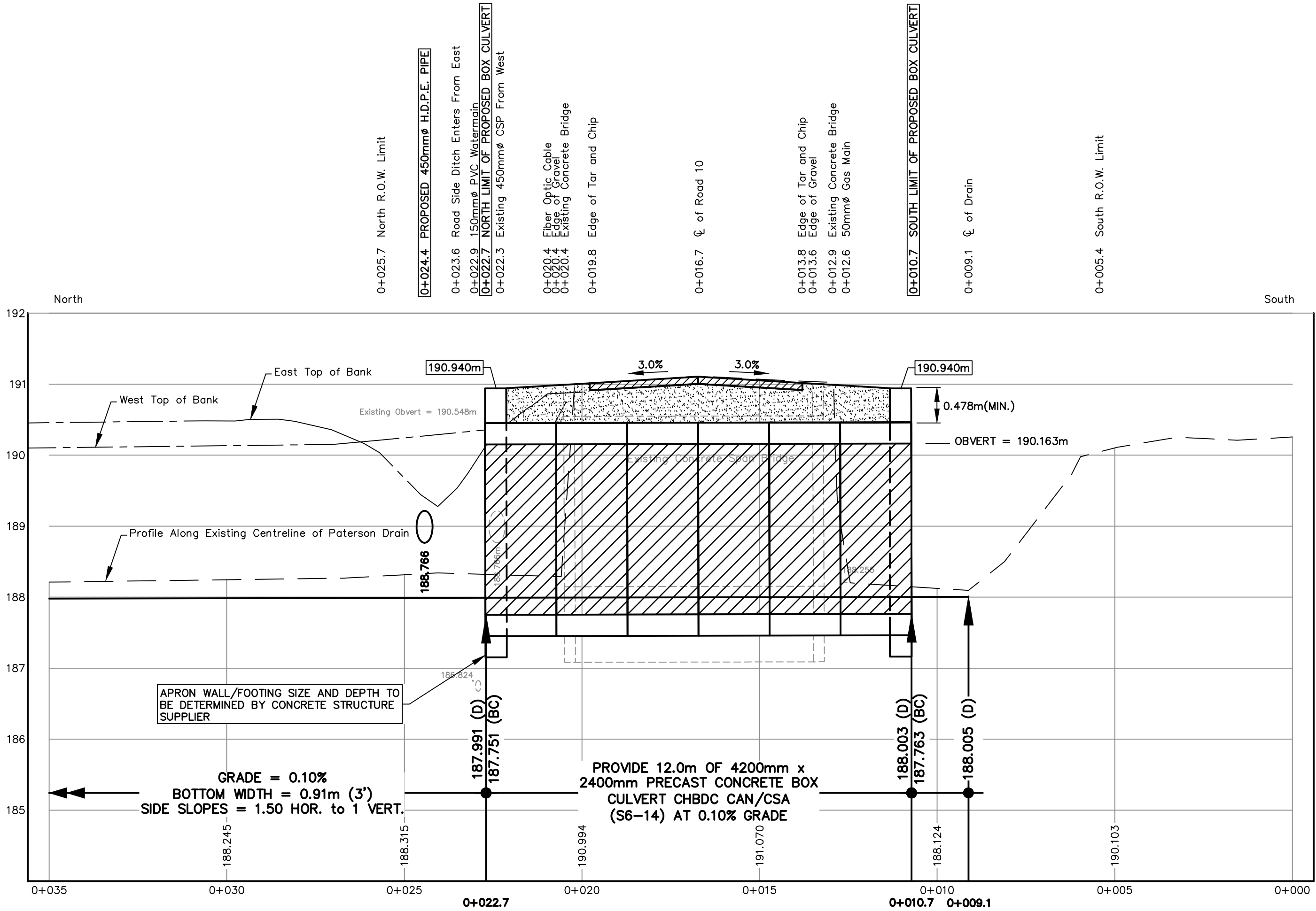
ELEV. = 191.093m

- 2) TOP OF NAIL SET IN SOUTH FACE OF EXISTING HYDRO POLE LOCATED ON THE NORTH SIDE OF ROAD 10, APPROXIMATELY 152.0m WEST OF SUBJECT ROAD CROSSING.

ELEV. = 190.963m



**KEY PLAN**  
N.T.S.

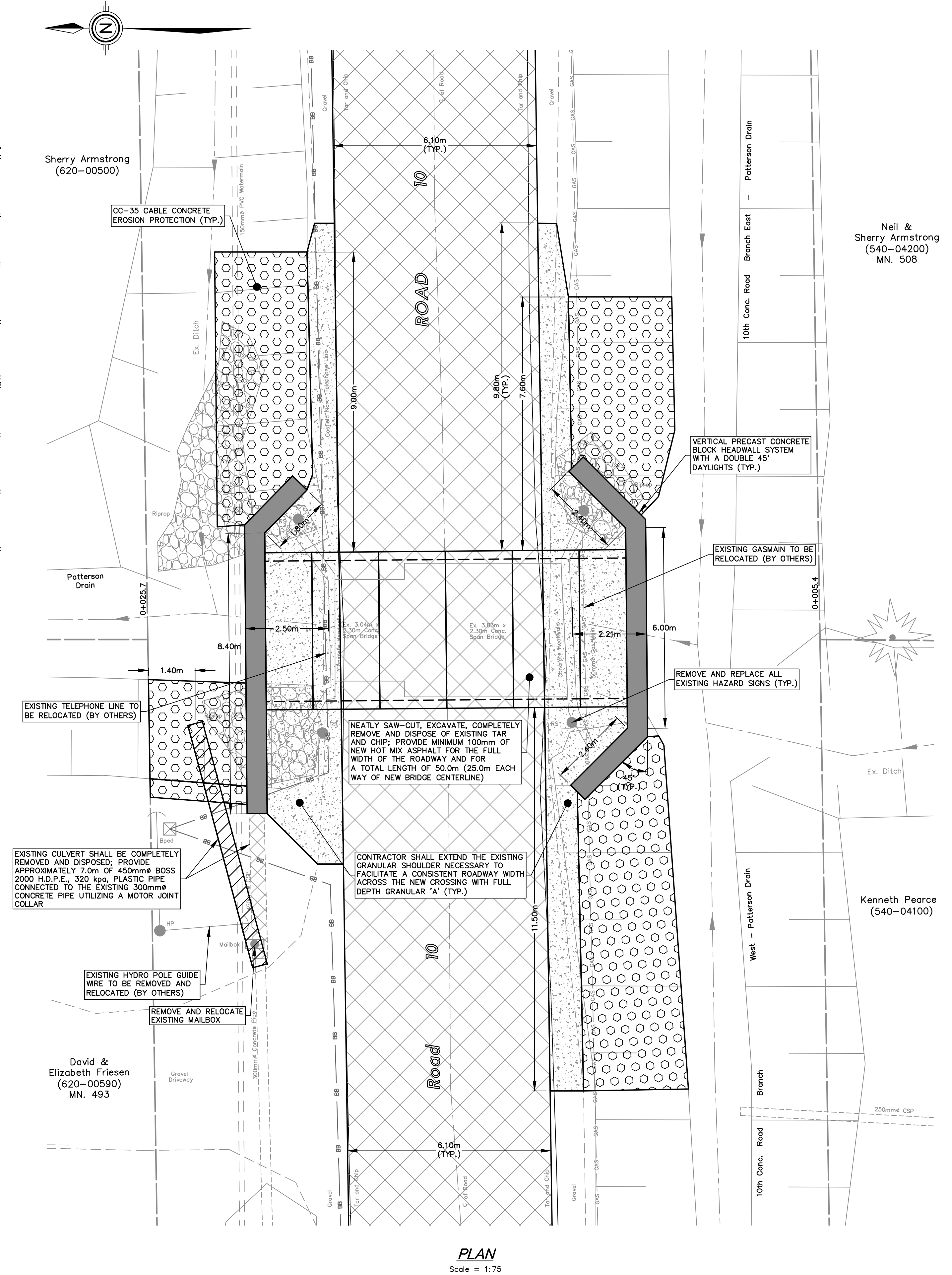


## LEGEND:

(D) - DENOTES DRAIN BOTTOM  
(BC) - DENOTES BOX CULVERT INVERT

## SECTION THROUGH ROAD CULVERT

Scale = 1:100 (Hor.)  
= 1:50 (Ver.)

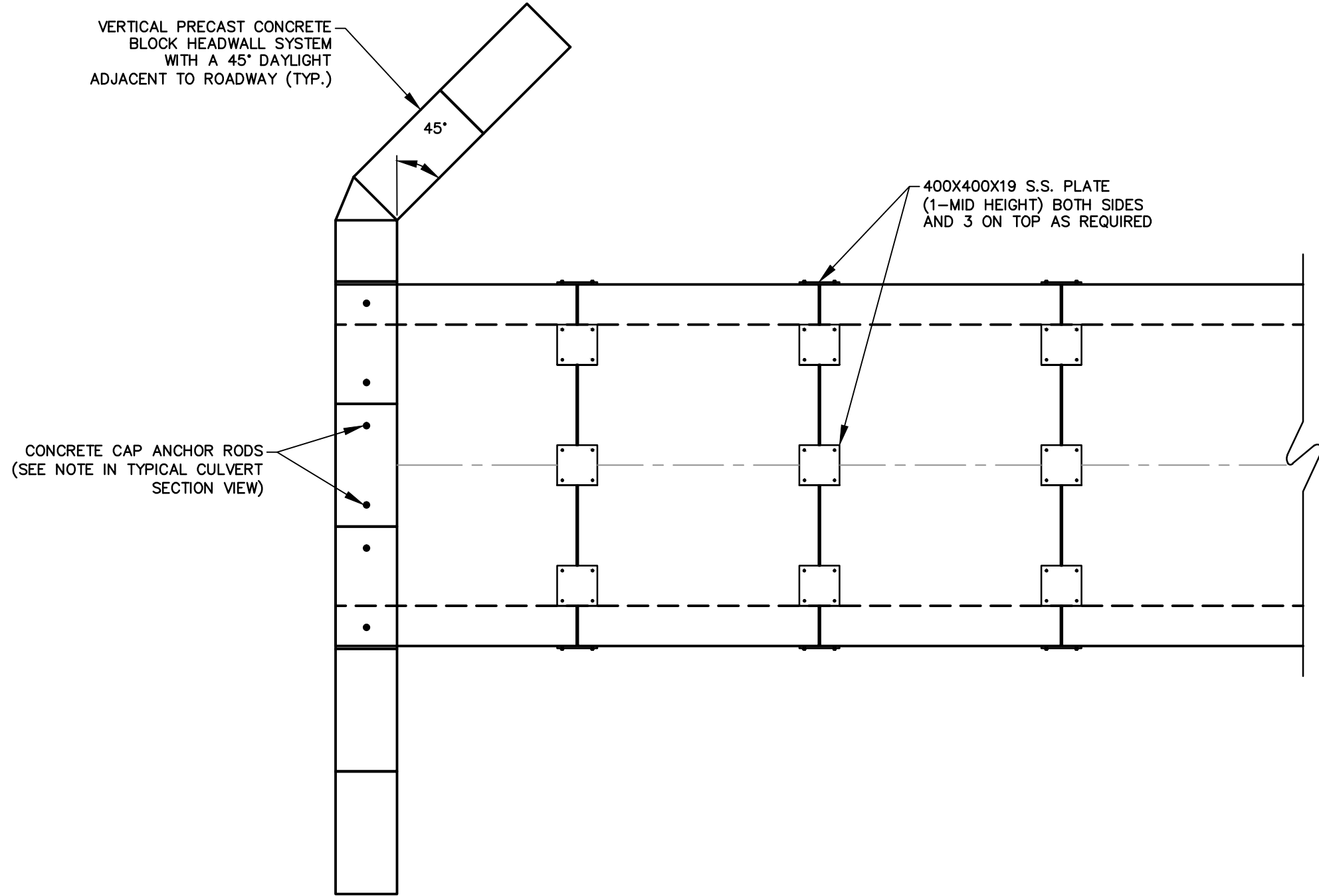


## NOTE TO FABRICATOR:

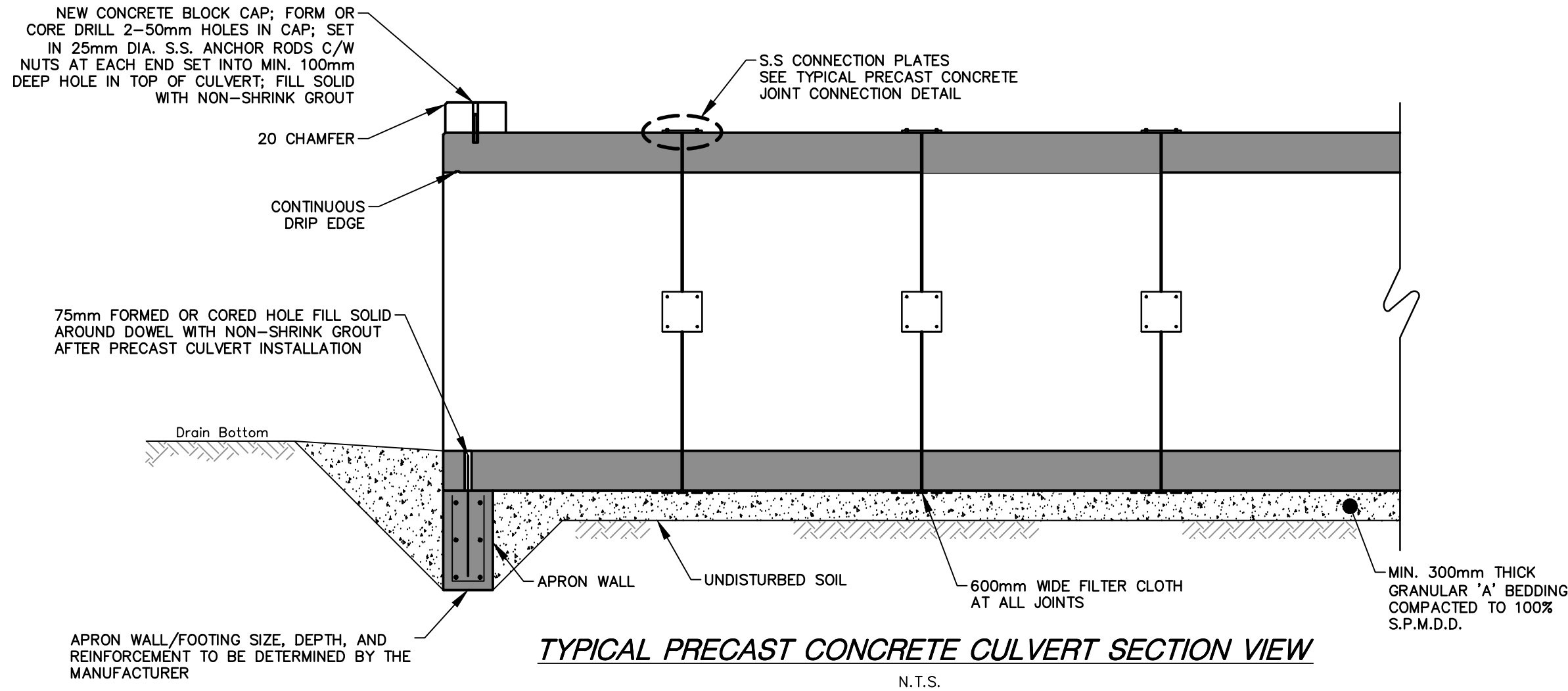
FABRICATOR SHALL NOTE THAT THIS BRIDGE WILL HAVE LESS THAN 600mm OF COVER AND THEREFORE, SHALL MAKE PROVISIONS TO INCLUDE THE APPROPRIATE REINFORCEMENT WITHIN THE STRUCTURE DESIGN OR A DISTRIBUTION SLAB TO CARRY ALL REQUIRED LOADING BASED ON THE C.H.B.D.C. PROVISIONS.

DRAWN BY: R.A.L.  
PLOT CODE: 1:1  
COMPUTER FILE: D17029S1.dwg

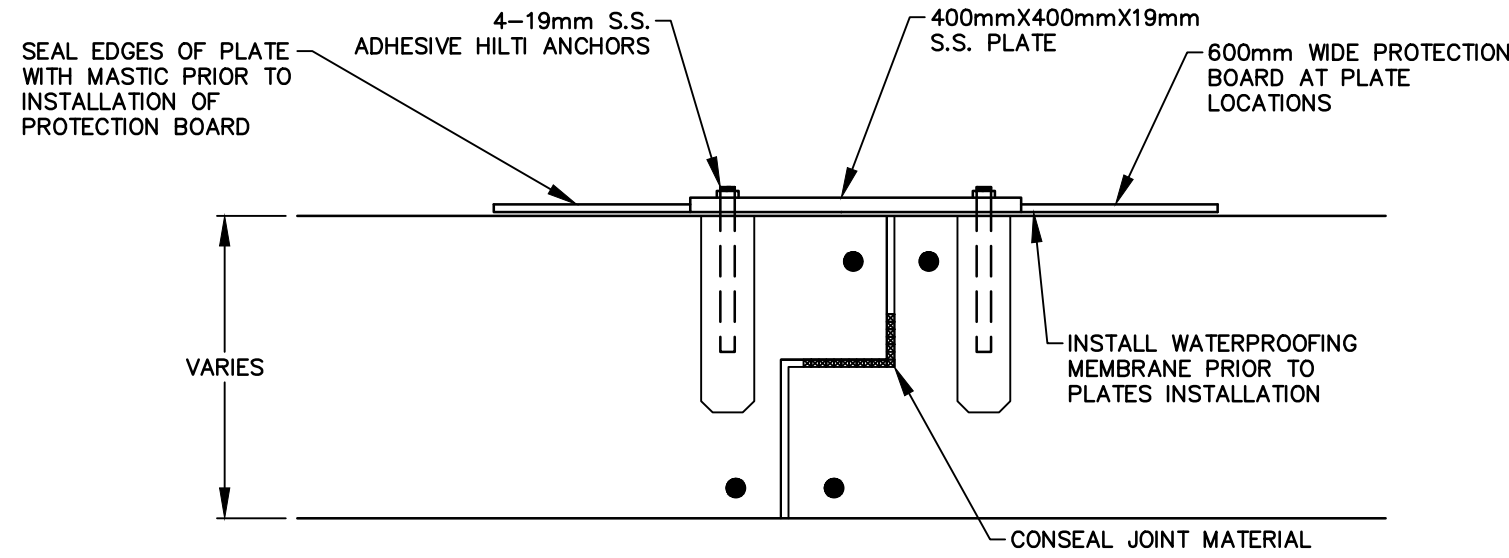
FILE No.: D17-029  
SHEET No.: 1 OF 2



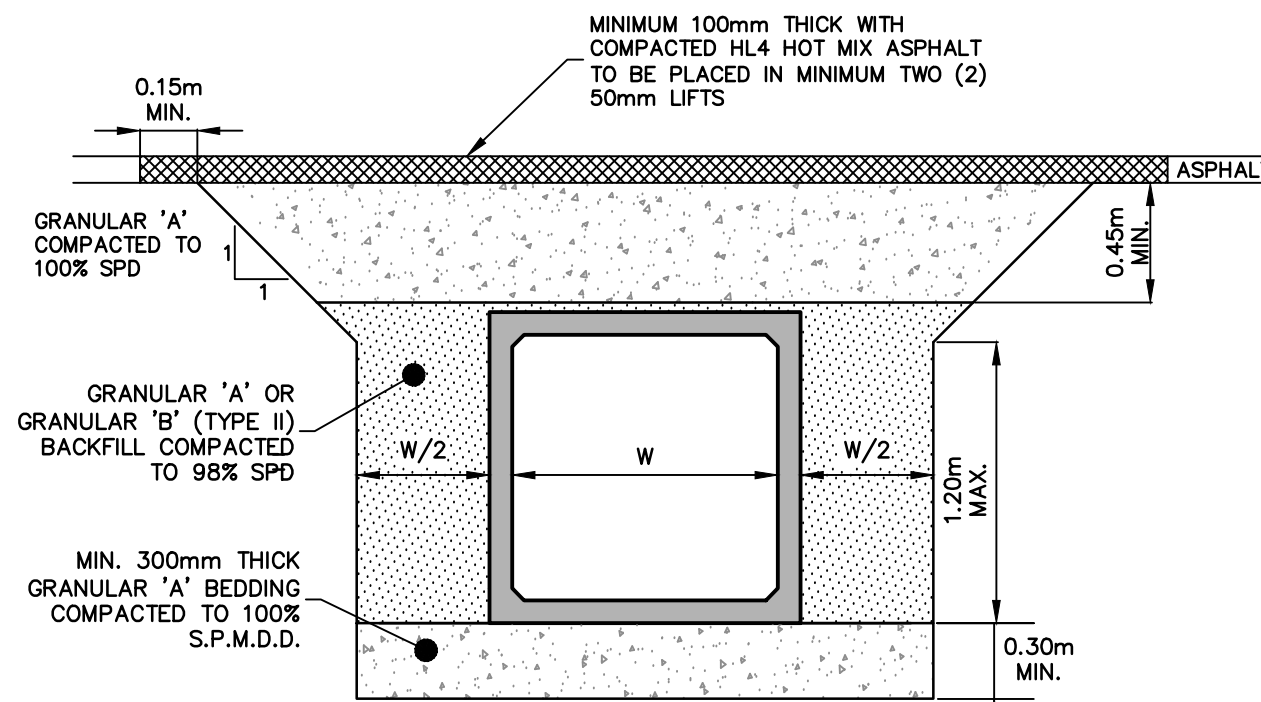
**TYPICAL PRECAST CONCRETE CULVERT PLAN VIEW**  
N.T.S.



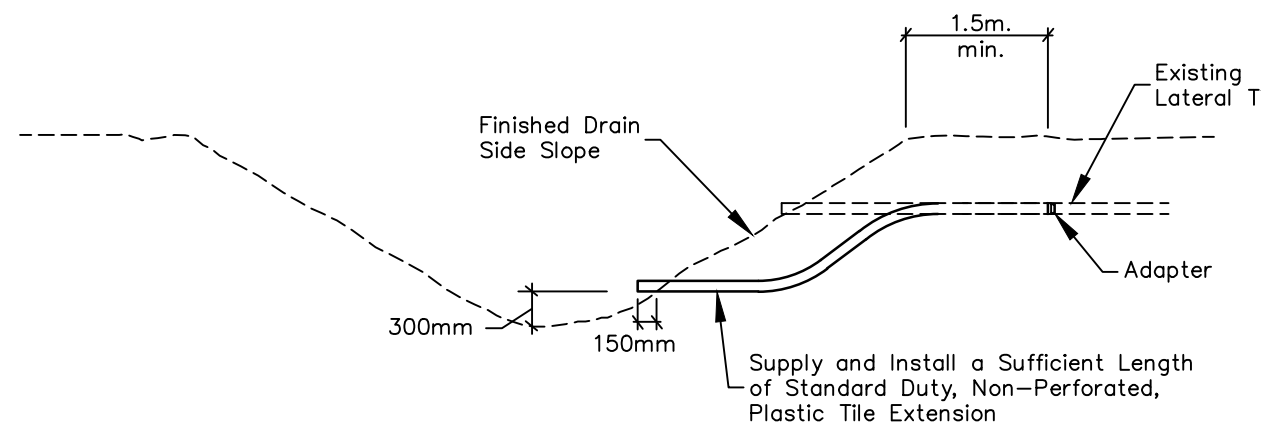
**TYPICAL PRECAST CONCRETE CULVERT SECTION VIEW**  
N.T.S.



**TYPICAL PRECAST CONCRETE JOINT CONNECTION DETAIL**  
N.T.S.



**TYPICAL ROADWAY CROSSING BACKFILL DETAIL**  
Scale = N.T.S.



**NOTE:**  
If Existing Lateral Tile is Plastic, Utilize a Plastic Coupler in Place of Adapter

**STANDARD LATERAL TILE DETAIL**  
Scale = N.T.S.

#### CONCRETE STRUCTURES AND HEADWALL NOTES:

##### GENERAL NOTES:

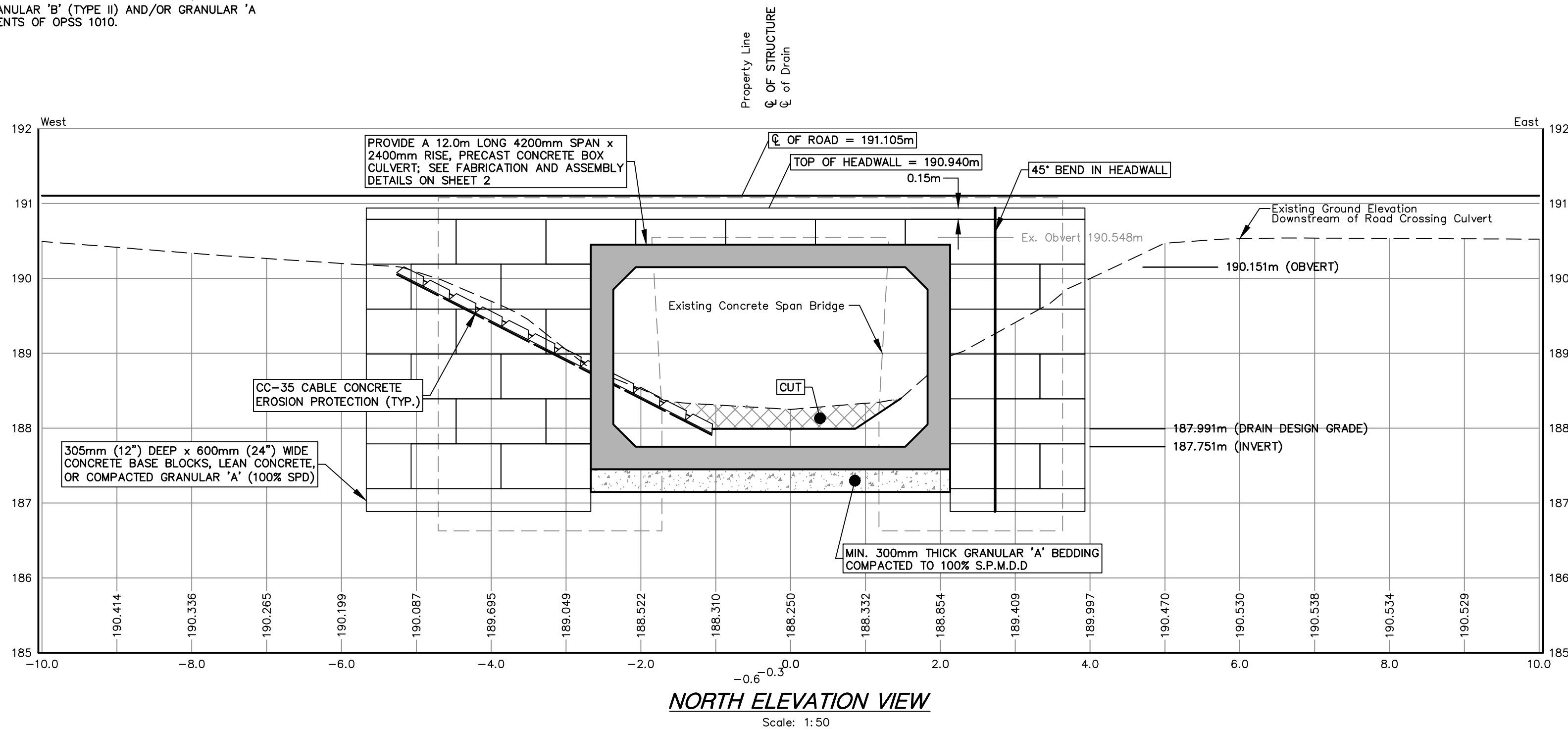
- THE ACCURACY OF THE UTILITIES SHOWN ON THESE DRAWINGS ARE NOT GUARANTEED BY THE OWNER OR N. J. PERALTA ENGINEERING LTD.; OTHER UTILITIES MAY BE PRESENT OR THE UTILITIES SHOWN MAY DIFFER IN SIZE AND/OR LOCATION SHOWN.
- ALL DIMENSIONS SHOWN IN METRIC UNLESS NOTED OTHERWISE. PROPERTY LINES ARE APPROXIMATE AND ARE BASED ON THE TOWN OF LAKESHORE GIS AND FIELD SURVEY INFORMATION.
- CONTRACTOR SHALL VERIFY ALL BURIED SERVICES WITHIN CONSTRUCTION ZONE AND SHALL REMAIN RESPONSIBLE FOR THEIR PROTECTION DURING CONSTRUCTION.
- THE CONTRACTOR SHALL ENTIRELY REMOVE THE EXISTING ROAD CROSSING STRUCTURE AND DISPOSE OF SAME; RESTORE THE EXISTING DRAIN BANKS TO ITS ORIGINAL DRAIN CONFIGURATION.
- THE CONTRACTOR MUST SUBMIT THE FOLLOWING PLANS PRIOR TO CONSTRUCTION; DEMOLITION PLAN (DEBRIS MANAGEMENT PLAN), SEDIMENT AND EROSION CONTROL PLAN, WATER CONTROL PLAN (FLOW CONVEYANCE) AND FISH SALVAGE PLAN TO ERCA (ESSEX REGION CONSERVATION AUTHORITY) AND CONSULTING ENGINEER FOR REVIEW AND APPROVAL.
- CONTRACTOR MUST COMPLY WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS LATEST EDITION FOR CONSTRUCTION PROJECTS. NO WORK TO BE COMMENCED UNTIL ALL APPROVALS ARE IN PLACE.
- CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY NEW CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER AND TO THE SATISFACTION OF THE OWNER.
- APPROPRIATELY DISPOSE OF ALL SURPLUS MATERIALS AND DEBRIS OFF-SITE.
- BACKFILL BEHIND THE ABUTMENTS AND WING WALLS WITH GRANULAR MATERIALS AS INDICATED ON DRAWING. COMPACT GRANULAR 'A' MATERIALS TO A MINIMUM OF 98% STANDARD PROCTOR MAXIMUM DRY DENSITY RESPECTIVELY. PLACE FILL AT BOTH SIDES OF THE CULVERT SIMULTANEOUSLY.
- THE CONTRACTOR MUST PROVIDE THE TOWN AND ENGINEER WITH A MINIMUM OF 48 HOUR NOTICE PRIOR TO COMMENCING ANY WORKS ON THIS PROJECT.
- RUBBISH AND DEBRIS SHALL BE REMOVED FROM SITE ON A DAILY BASIS AND DISPOSED OF APPROPRIATELY.
- CONTRACTOR SHALL INSTALL TEMPORARY SILT FENCE AS PER OPSS 219.130.
- THE CONTRACTOR SHALL FIELD CHECK AND VERIFY ALL CONDITIONS AND MEASUREMENTS AT THE SITE AND REPORT ANY DISCREPANCIES TO THE DESIGN ENGINEER BEFORE PROCEEDING WITH THE WORK.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING AS REQUIRED FOR ALIGNMENT, WIND, DEAD LOAD AND EROSION STRESSES.
- DO NOT EXCEED DEAD LOADS DURING CONSTRUCTION UNLESS SHORING IS PROVIDED BY THE STRUCTURAL DESIGN ENGINEER.

#### MATERIALS:

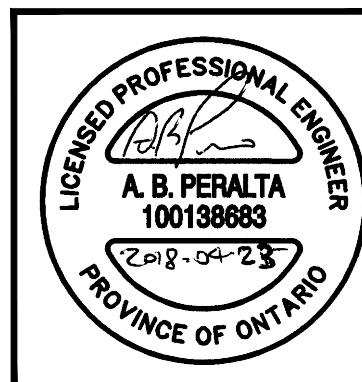
- ONLY PRECAST PLANT CERTIFIED BY CSA STANDARD A23.4 FOR STRUCTURAL PRECAST OR MEETING OPSS 1821 REQUIREMENTS SHALL DESIGN AND SUPPLY THE PRECAST CONCRETE BOX CULVERT.
- PRECAST CULVERT SUPPLIER SHALL BE CERTIFIED BY THE CANADIAN STANDARDS ASSOCIATION IN STRUCTURAL CATEGORY ACCORDING TO CSA A23.4, SUBMIT STAMPED SHOP DRAWINGS FOR THE CONSULTING ENGINEER'S REVIEW AND APPROVAL.
- DESIGN CULVERT TO CHBDC REQUIREMENTS. PROVIDE ADDITIONAL REINFORCING AROUND PIPE OPENINGS. SUBMIT CERTIFIED DRAWINGS FOR REVIEW AND APPROVAL.
- FABRICATOR SHALL NOTE THAT THIS BRIDGE WILL HAVE LESS THAN 600mm OF COVER AND THEREFORE, SHALL MAKE PROVISIONS TO INCLUDE THE APPROPRIATE REINFORCEMENT WITHIN THE STRUCTURE DESIGN OR A DISTRIBUTION SLAB TO CARRY ALL REQUIRED LOADING BASED ON THE C.H.B.D.C. PROVISIONS.
- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE FABRICATION DESIGN DRAWINGS. IN THE EVENT OF A CONFLICT WITH THESE DRAWINGS, THE FABRICATION DRAWINGS SHALL GOVERN.
- CONCRETE - 35 MPA AT 28 DAYS FOR WALLS, CUT OFF WALLS AND SLABS (5 TO 8% AIR ENTRAINMENT), <0.40 WATER/CEMENT RATIO AND 15MPA MUD MAT.
- JOINT WATERPROOFING - 'MEL-ROL' ROLLED, SELF-ADHESIVE WATERPROOFING MEMBRANE BY W.R. MEADOWS OR APPROVED EQUIVALENT.
- PROTECTION BOARD ON WATERPROOFING MEMBRANE - PC-3 HEAVY DUTY ASPHALT BOARD BY W.R. MEADOWS OR APPROVED EQUIVALENT.
- ANCHORS - HILTI FASTENING SYSTEMS OR APPROVED EQUIVALENT
- CONCRETE BLOCK GRAVITY WALL/RETAINING WALL SYSTEM - SHALL CONFORM TO OBC, CHBDC DESIGN CODE & CSA STANDARD. SUBMIT CERTIFIED DRAWINGS TO THE CONSULTING ENGINEERS FOR REVIEW.
- REINFORCEMENT - GRADE 400R CSA G30.18.
- GRANULAR MATERIALS - OPSS SPECIFICATIONS BEDDING, COVER AND BACKFILL SHALL BE GRANULAR 'B' (TYPE II) AND/OR GRANULAR 'A' MEETING THE REQUIREMENTS OF OPSS 1010.

#### FOUNDATIONS/FOOTINGS

- FOOTINGS SHALL BE INSTALLED ON NATURAL UNDISTURBED SOIL CAPABLE OF SUSTAINING BEARING CAPACITIES ESTABLISHED IN THE GEOTECHNICAL EXPLORATIONS FOR THE STRUCTURE PROVIDED BY GOLDERS ASSOCIATES AND INCLUDED WITHIN THE CONTRACT DOCUMENTS.
- EXCAVATION TO BE INSPECTED BY A SOIL ENGINEER BEFORE PROCEEDING WITH INSTALLATION OF CONCRETE STRUCTURES AND CONSTRUCTION OF WALL SYSTEM.
- TEMPORARY FLOW CONVEYANCE PIPE SHALL BE INSTALLED DURING CULVERT INSTALLATION, AND SHALL BE REMOVED JUST PRIOR TO FINAL BACKFILL AND SUBSTRATE INSTALLATION (SIZE OF PIPE AS DIRECTED BY ENGINEER OR OWNER). CONTRACTOR TO REMAIN RESPONSIBLE FOR MAINTENANCE OF PIPE OPERATION DURING CONSTRUCTION PERIOD.



**NORTH ELEVATION VIEW**  
Scale: 1:50



DRAWN BY: R.A.L.  
PLOT CODE: 1:1  
COMPUTER FILE: D17029S1.dwg  
FILE No.: D17-029  
SHEET No.: 2 OF 2