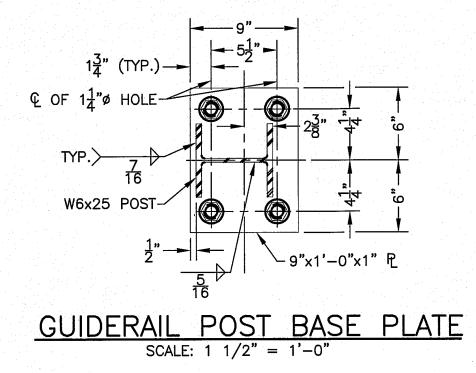
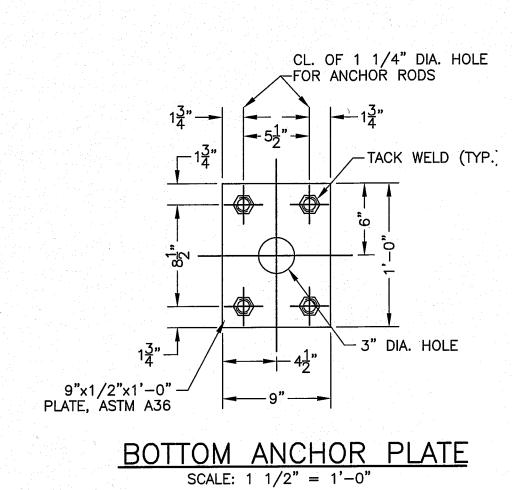
BOX CULVERT NOTES **SPECIFICATIONS:** All provisions and stipulations of the New York State Department of Transportation Standard Specifications of May 1, 2017 and all addendums, shall apply to the manufacturer of this structure. SHAPE: The section is a four sided box section with sloped open ends to be SEE SHEET 2 DETAIL A 1'-6" CAST IN PLACE CURBmonolithically cast of reinforced concrete. Chamfered 45 degrees x 8 inch minimum fillets shall be monolithically cast in all four inside corners © CATTARAUGUS COUNTY -2017 SIZE: Internal dimensions of 18'-0" width by 5'-6" height shall be SEE SHEET 2 DETAIL A maintained. Box culvert shall be 50'-0" linear feet in length measured 6"x6" PRESSURE TREATED HEADWALL along its center line. Precast toe wall is to be the width of the total section, – KEYWAY, 53"X3' (TO BE SUPPLIED BY THE COUNTY) 16'-0" 4'-0" in depth and a minimum of 1'-6" thick as shown on the accompanying [™]© OF BOX TO FACE OF CURB & RAIL detail sheet. SUBMITTAL: - SEE SHEET 2 DETAIL B € OF BOX TO € GUIDERAIL BASE PLATE Shop drawings showing reinforcement size and location shall be submitted to the Cattaraugus County Engineer or his designee for approval. Drawings shall be stamped by a registered professional engineer and accompanied by design and load rating calculations. SEE SHEET 2 DETAIL B-OF BOX TO Q GUIDERAIL BASE PLATE **INSPECTION:** 3" (TYP.) The quality of materials, the process of manufacture, and the finished box sections shall be subject to inspection by the County Engineer and/or © OF BOX TO FACE OF CURB & RAIL his designee. KEYWAY, $5\frac{1}{2}$ "X $\frac{1}{2}$ "-STEEL INSERTS FOR 1/2" Ø STRUCTURAL NOTES FOR REINFORCED CONCRETE BOX CULVERT: ALL THREAD ROD. 24" O.C. SEE SHEET 2 DETAIL A TO SECURE HEADWALL WITH MIN. 2000 LBS. ALLOWABLE PULLOUT - AASHTO load factor design method. Design DESIGN SPECIFICATION: (INSERTS SUPPLIED BY PRECASTER, to meet requirements of AASHTO, Section 6. 3" ALL THREAD SUPPLIED BY COUNTY) - Steel reinforcement - ASTM A615, Grade 60 2. MATERIALS PROPERTIES: Concrete minimum compressive strength -SEE SHEET 2 DETAIL A--1'-6" CAST IN PLACE CURB 5000 PSI at 28 days. (Conformation testing will be required) <u>PLAN</u> 3. SOIL DATA: - Unit Weight - 120 LB/CF SCALE: 1/4"= 1'-0" - Allowable bearing - 4500 PSF L CAPACITY REDUCTION: - Shear - 0.9 - Bending - 1.0 FACTORS (FROM AASHTO): 5. LOADING DATA: - Load factor, dead load - 1.3, live load - 2.17 1'-6" CAST IN PLACE CURB truck axle load H25-40,000 lb. 1'-6" CAST IN PLACE CURB SOUTH CURB (SC) 6"x6" PRESSURE TREATED HEADWALL earth cover — 1.40' at CL. Refer to Details A & B for cover ranges at edges of culvert. NORTH CURB (NC) (TO BE SUPPLIED BY THE COUNTY) **┌**─1'**─**2" **STRUCTURAL ARRANGEMENT:** - Concrete cover over steel - 2 inch minimum. Design and method of installing mechanical fasteners shall be submitted with shop drawings. Only metal fasteners and inserts will be allowed. Concrete mix shall include a NYSDOT approved calcium nitrate based $1'-1\frac{3}{16}"$ corrosion inhibitor. The corrosion inhibitor shall be added at a dosage FLOW rate of 4 gallons per cudic yard of concrete. Culvert end sections shall have (12) 2" diameter holes (18" o.c.) in base to allow contractor to field drill and grout #8 rebar dowels into CAT precast toewall. Rebar dowels to be supplied by precaster. _____ 10. All joints shall be mated male/female with permanent joint connections and have a rubatex or equivalent seal installed before delivery. DEP 1'-0"-11. Box culvert sections shall have two sets of draw—together apparatus on each side at each joint. Four draw-together points per joint. All draw—together hardware shall be furnished by supplier. ₽ 2" ø HOLE (12 HOLES, 18" O.C. 12. Weight of each individual box section shall be specified. **ELEVATION** TYP. BOTH ENDS) - PRE-CAST TOE WALL 13. Wall and slab thicknesses shown are nominal. Actual thicknesses are to be 8 SCALE: 1/4"= 1'-0' (TYP.) determined by design. (10F 14. Threaded inserts, where detailed, shall be designed for use with #5 reinforcing steel. Inserts shall be non-corrosive and when used in 5000 PSI concrete, able to resist minimum pull out loads of 8 tons. 4 TON DAYTON SUPERIOR SL ANCHORS TO BE PLACED IN THESE LOCATION AT MID-POINT OF EACH CULVERT 15. The individual pre-cast sections of the culvert shall be coated on the DETAILS SECTION TO AID IN INSTALLATION OF BOX CULVERT. exterior top and 1 foot down the side surfaces with bituminous material which shall conform to the specifications for Rapid Curing Liquid Asphalt RC-250, RC-800 with or without additives, or Asphalt Emulsion RS-2 as designated in Section 702-12, 702-13, 702-15, 702.15 and 703-3101. 8" CHAMFER (TYP. COUNTY F _1/2" DESIGN GAP COAT EXTERIOR TOP AND 1 FOOT DOWN CULVERT SIDES OF BOX WITH BITUMINOUS ASPHALT ∠P 3"x2'-4"x1/2" THK. FIELD WELD TO 8"x 8" P'S BRUSH GALV., PAINT AFTER WELD MATERIAL (SEE NOTE 15)~ (FURNISHED BY SUPPLIER) 3" CHAMFER EACH END— - DRAW TOGETHER HARDWARE TWO(2) SETS (2 RODS) FOR EACH SIDE OF EACH JOINT. INCLUDED BOX SHALL BE APPROPRIATE NUTS 1'-0" 6"x6"x16'-8" PRESSURE TREATED BAFFLE-BOLTS, WASHERS. LOCATED AT THE CENTER OF EACH BOX SECTION 8"x8" PLATES FLUSH (TO BE SUPPLIED BY THE COUNTY) WITH CULVERT WALLS -**PRECAST** TOEWALL STEEL INSERTS FOR 10 ALL THREAD ROD, 24" O.C. DAYTON/RICHMOND TYPE F-57 3/4"ø TO SECURE BAFFLE TO BOX WITH EXPANDED COIL FERRULE INSERTS OR MIN. 2000 LBS. ALLOWABLE PULLOUT 2" ϕ HOLES, $^{\perp}$ (12) HOLES, 18" O.C. 1'-0"-COUNTY APPROVED EQUIVALENT. (SUPPLIED BY PRECASTER) SEE NOTE 9 -₽ 8"x8"x1/2" W/2 5/8"øx6" ± LONG STUDS NOTE: ALL DRAW TOGETHER HARDWARE TO STAY IN PLACE. GALVANIZED TYPICAL SECTION NOTE: ½"ø STAINLESS STEEL ALL THREAD PERMANENT JOINT CONNECTION DETAIL TO BE SUPPLIED BY CATT. COUNTY PROJECT NO.

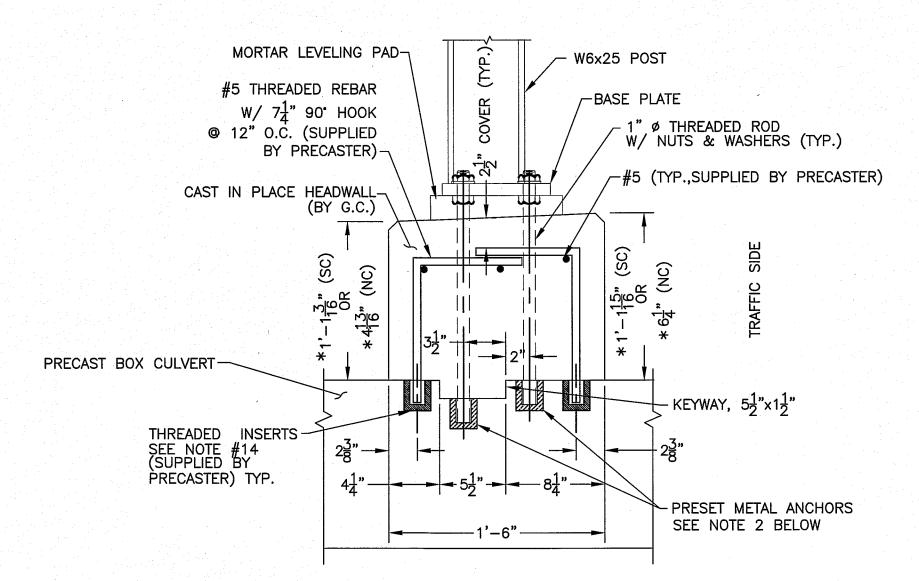
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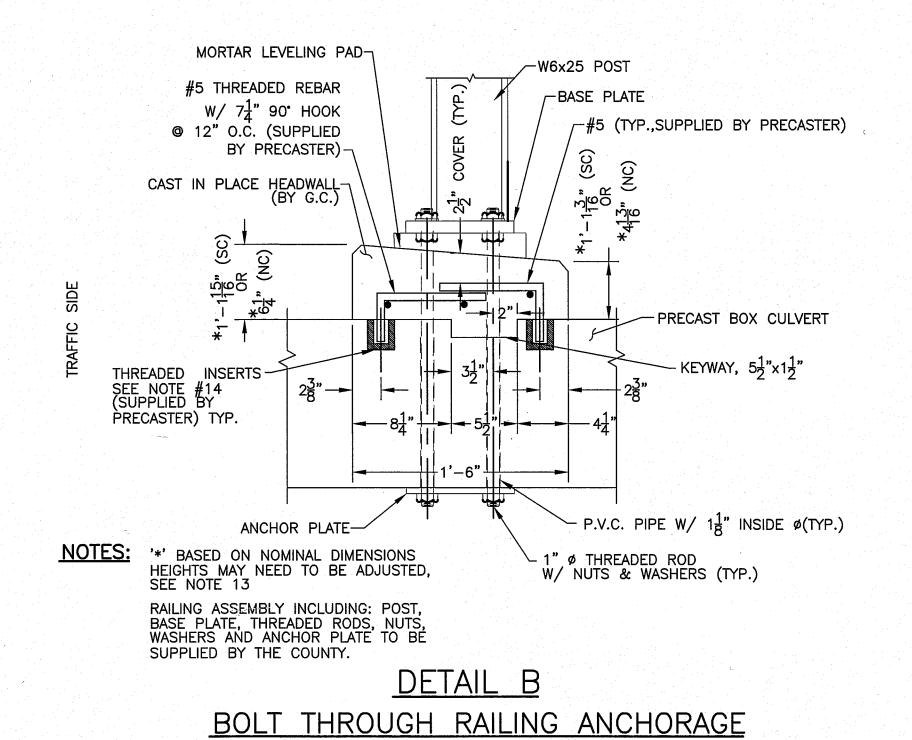






- NOTES: 1) PLATES, THREADED ROD, NUTS, WASHERS, RAILING POSTS, AND MORTAR PADS TO BE SUPPLIED BY CATTARAUGUS COUNTY.
 - 2) PRESET METAL ANCHORS SHALL BE FURNISHED BY PRECASTER AND DESIGNED TO RESIST A MINIMUM ALLOWABLE PULLOUT LOAD OF 6.5 KIPS PER BOLT AND AN ALLOWABLE SHEAR LOAD OF 3.5 KIPS PER BOLT ACTING SIMULTANEOUSLY.
 - 3) '*' BASED ON NOMINAL DIMENSIONS, HEIGHTS MAY NEED TO BE ADJUSTED, SEE NOTE 13.

DETAIL A PRE-CAST RAILING ANCHORAGE AND CAST IN PLACE CURB SCALE: 1\frac{1}{2}"=1'-0"



AND CAST IN PLACE CURB SCALE: 1\frac{1}{2}"=1'-0"

CATTARAUGUS COUNTY
DEPARTMENT OF PUBLIC WORKS
8810 NYS ROUTE 242
LITTE VALLEY, NEW YORK 14755 8 0F COUNTY ROAD 24
FRANKLINVILLE CULVERT DETAILS CULVERT TOWN OF BOX

PROJECT NO.

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