

CALC: WP 4-80
CHK: PCB 4-80

GENERAL NOTES

APR 24 1984

PUMP STATION FOR STORM WATER DRAINAGE

GENERAL

DESCRIPTION OF WORK:

THE WORK DESCRIBED HEREIN PERTAINS TO THE PROPOSED PUMP STATION LOCATED LEFT OF STATION 26 + 50. THE INTENDED USE OF THE PUMP STATION IS TO COLLECT AND CONVEY STORM WATER WHICH DRAINS FROM THE DITCHES, CULVERTS AND PAVEMENT OF S.R. 306 TO THE NATURAL DRAINAGE COURSE LOCATED LEFT OF STATION 26 + 60. THE PUMP STATION WILL BE SUPPLIED ELECTRICAL POWER BY THE LOCAL UTILITY COMPANY. THE INTENT OF THE GENERAL NOTES AND DRAWINGS IS AN OPERATING STORM WATER PUMP STATION, COMPLETE IN PLACE. MISCELLANEOUS ITEMS REQUIRED FOR A COMPLETE AND FUNCTIONAL STATION, BUT NOT SPECIFIED HEREIN SHALL BE FURNISHED AND INSTALLED AT NO INCREASE IN UNIT PRICE, AND SHALL BE FIRST QUALITY FOR THE SERVICE INTENDED.

PAYMENT:

THE CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR, TOOLS, PLANT, SUPPLIES, EQUIPMENT, TRANSPORTATION, SUPERINTENDENCE, TEMPORARY CONSTRUCTION OF EVERY NATURE, EXCAVATION, DEWATERING, BRACING, BACKFILLING AND ALL OTHER NECESSARY SERVICES AND FACILITIES IN ACCORDANCE WITH THE OHIO DEPARTMENT OF TRANSPORTATION, STANDARD CONSTRUCTION AND MATERIAL SPECIFICATIONS, JANUARY 1, 1979, (DESIGNATED CMS HEREINAFTER), AS SPECIFIED BELOW AND SHOWN ON THE DRAWINGS, AS NECESSARY TO COMPLETE THE CONSTRUCTION OF THE PUMP STATION COMPLETE, INCLUDING ALL INCIDENTAL WORK REQUIRED.

THE WORK SHALL BE APPORTIONED AMONG THE FOLLOWING PAYMENT ITEMS:

ITEM	UNIT	DESCRIPTION
SPECIAL	LUMP SUM	PUMP STATION, STRUCTURE
SPECIAL	LUMP SUM	PUMP STATION, MECHANICAL
SPECIAL	LUMP SUM	PUMP STATION, ELECTRICAL

MATERIALS - GENERAL:

MATERIALS SHALL BE IN ACCORDANCE WITH THE CMS, AS FOLLOWS:

- A. EXCAVATING, FILLING AND GRADING ITEMS 201, 202, 203, 503
- B. STRUCTURES, GENERAL ITEM 501
- C. CONCRETE FOR STRUCTURES ITEM 511
- D. REINFORCING STEEL ITEM 509
- E. FALSEWORK AND FORMS ITEM 508
- F. STRUCTURAL STEEL ITEM 513
- G. SEEDING AND MULCHING ITEM 659

PUMP STATION, STRUCTURE

EXCAVATION & BACKFILL:

EXCAVATION FOR THE STRUCTURE SHALL BE IN ACCORDANCE WITH CMS ITEM 503. EXCAVATION FOR THE STRUCTURE IS DESIGNATED AS UNCLASSIFIED EXCAVATION. BACKFILL SHALL BE IN ACCORDANCE WITH PARAGRAPH 503.10, EXCEPT THAT ALL BACKFILL AROUND THE STRUCTURE SHALL BE COMPACTED ACCORDING TO 203.12.

CONCRETE:

ALL MATERIALS, LABOR AND METHODS SHALL CONFORM TO THE REQUIREMENTS OF ITEM 511. ALL CONCRETE SHALL BE PLACED BY THE VIBRATION METHOD. ALL EXPOSED SURFACES SHALL BE GIVEN A RUBBED FINISH, EXCEPT THE TOPS OF SLABS AND FLOORS WHICH SHALL RECEIVE A HARD STEEL TROWEL FINISH. ALL CONCRETE SHALL BE CLASS C UNLESS OTHERWISE NOTED ON THE DRAWINGS.

CONCRETE GROUT:

CONCRETE GROUT SHALL MEET THE REQUIREMENTS FOR CLASS 'C' CONCRETE EXCEPT THAT THE MAXIMUM AGGREGATE PARTICLE DIMENSION SHALL BE 3/8", AND THE CEMENT CONTENT FOR GROUT SHALL BE INCREASED BY 1/2 BAG PER CUBIC YARD.

NON-SHRINK GROUT SHALL BE NON-FERROUS, FLUID, SELF-LEVELING, HIGH STRENGTH MATERIAL HAVING A MINIMUM COMPRESSIVE STRENGTH OF 7000 PSI AT 28 DAYS AND SHALL NOT BE A GAS-EXPANSIVE MATERIAL.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ITEM 509, AND SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI.

WATERPROOFING:

THE HORIZONTAL, SLOPED SURFACE LOCATED BENEATH THE SIDEWALK AT ELEVATION 642.5± SHALL BE WATERPROOFED IN ACCORDANCE WITH TYPE B, ITEM 512 FROM ELEVATION 643.0 TO ELEVATION 641.00.

UNIT MASONRY CONSTRUCTION:

ALL FACE BRICK SHALL BE MODULAR SIZE BRICK, FULLY VITRIFIED, CONFORMING TO ASTM C 126, GRADE SW, LAID IN RUNNING BOND WITH WEATHERED JOINT, AND SHALL BE ST. SIMON BLEND BY BELDON OR EQUAL.

CONCRETE BLOCK SHALL BE LOAD-BEARING UNITS CONFORMING TO ASTM C 90, GRADE N-1 FOR HOLLOW UNITS AND TO ASTM C 145 FOR SOLID UNITS. ALL UNITS SHALL BE 8" X 16" NOMINAL FACE SIZE AND 8" THICK EXCEPT AS SHOWN OR REQUIRED TO CONFORM TO SPECIAL CONFIGURATIONS. BULL NOSE UNITS ARE REQUIRED FOR OUTSIDE CORNERS SUCH AS DOORWAYS. SAMPLING AND TESTING SHALL CONFORM TO ITEM 704.

PORTLAND CEMENT FOR MORTAR SHALL BE EITHER TYPE I OR TYPE IA CONFORMING TO ASTM C 150. MASONRY CEMENT SHALL BE TYPE II CONFORMING TO FEDERAL SPECIFICATIONS SS-C-181E(1). SAND AND LIME FOR MORTAR SHALL BE IN ACCORDANCE WITH ITEMS 703.04 AND 712.04 RESPECTIVELY. MORTAR SHALL CONFORM TO ASTM C 476, TYPE PL, WITH A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI.

MASONRY REINFORCEMENT SHALL BE TRUSS-TYPE, GALVANIZED, STANDARD WEIGHT WITH A 9 GAGE SIDE AND TRUSS RODS, PLACED TO PROVIDE CONTINUOUS TIE IN ALL MULTIPLE WIDTH WALLS.

PRECAST CONCRETE ROOF DECK:

PRECAST CONCRETE ROOF DECK UNITS SHALL BE 6" THICK X 24" WIDE UNITS WITH LONGITUDINAL, CYLINDRICAL VOIDS DESIGNED IN ACCORDANCE WITH ACI-318 AND ACI-711 AS WELL AS THE OHIO BASIC BUILDING CODE. UNITS SHALL BE DESIGNED TO SUPPORT A MINIMUM SUPERIMPOSED LIVE LOAD OF 40 POUNDS PER SQUARE FOOT AND A DEAD LOAD CONSISTING OF THE UNIT, INSULATION, BUILT UP ROOFING AND APPURTENANCES. DEFLECTION SHALL BE LESS THAN L/240 AT MIDSPAN. SHOP DRAWINGS SHALL INCLUDE DESIGN DETAILS, CALCULATIONS AND A LETTER CERTIFYING THE CONFORMITY OF THE DESIGN AND CASTING OF THE PRECAST UNITS TO THE ABOVE NAMED STANDARDS. THE UNITS SHALL BE FLEXICORE BY PRICE BROTHERS; PERMACRETE PRODUCTS CORP. OR EQUAL. ALL UNIT KEYWAYS SHALL BE COMPLETELY FILLED WITH GROUT. FLOAT THE TOP SURFACE OF ALL GROUT KEYS AND WIPE OFF ALL EXCESS GROUT. ON UNDERSIDE TO PRESERVE A SMOOTH SURFACE FOR CAULKING AND PAINTING.

LUMBER:

ALL PERMANENT LUMBER REQUIRED FOR THIS CONSTRUCTION SHALL CONFORM TO ITEM 711.26 AND SHALL BE CONSTRUCTION GRADE OR EQUIVALENT, PRESSURE TREATED TO 0.75 POUND PER CUBIC FOOT RETENTION OF "CZC" CHROMATED ZINC CHLORIDE IN ACCORDANCE WITH FEDERAL SPECIFICATIONS TTW-571-1 OR WOLMANIZING BY KOPPERS TO THE SAME RETENTION.

INSULATION:

ALL UNIT MASONRY WALLS SHALL BE INSULATED BY FOAMING FULL, ALL VOIDS IN THE WALL WITH INERT FOAMED-IN-PLACE UREA-FORMALDEHYDE OR POLYURETHANE RESIN INSULATION, WITH A MAXIMUM FLAME SPREAD RATING OF 25, WHEN TESTED UNDER ASTM E 84.

FIBERGLASS INSULATION, WHERE SHOWN, SHALL BE UNFACED BATTS MEETING FEDERAL SPECIFICATIONS HH-1-521E, TYPE 1.

ROOF INSULATION FOR THE ROOF DECK SHALL BE A SYSTEM OF TAPERED POLYSTYRENE FOAM INSULATION BOARDS OF 3/4" MINIMUM THICKNESS, TOPPED WITH RIGID PERLITE MINERAL AGGREGATE INSULATION BOARDS OF 3/4" THICKNESS, TO ACHIEVE A ROOF INSULATION SYSTEM WITH DRAINAGE SLOPES AS SHOWN ON THE ROOF PLAN. PERLITE BOARDS SHALL BE NOMINAL 3/4" X 24" X 48" AND CONFORM TO FEDERAL SPECIFICATION HH-1-0529 POLYSTYRENE BOARDS SHALL BE MAXIMUM 48" X 48" TAPERED BLOCKS CONFORMING TO FEDERAL SPECIFICATION HH-1-524B, FOR TYPE 1, CLASS A MATERIAL.

BUILT-UP ROOFING SYSTEM:

THE PRECAST CONCRETE DECK SHALL BE COVERED WITH A MEMBRANE VAPOR BARRIER PRIOR TO THE INSTALLATION OF THE INSULATION BOARD, CONSISTING OF ONE LAYER OF 43 POUND ORGANIC-COATED SHEET WITH MOPPINGS OF ROOFING ASPHALT AS SPECIFIED HEREIN.

BUILT-UP ROOFING SYSTEM SHALL BE A BONDED, HOT-APPLIED COAL TAR PITCH ROOFING SYSTEM. MATERIALS PER SQUARE (100 SQUARE FEET) SHALL BE:

- A. BASE SHEET - 43 POUND ORGANIC-COATED BASE SHEET LAPPED AND SEALED AT ALL EDGES, LAID IN 25 POUND PER SQUARE MOPPING OF ROOF PITCH.
- B. FELTS - 4 LAYERS OF 15 POUND ROOFING FELT, APPLIED IN A 25 POUND MOPPING OF ROOF PITCH OVER THE PRIOR LAYER.
- C. PITCH TOPPING - 75 POUNDS PER SQUARE TOP POURING OF PITCH.
- D. GRAVEL SURFACE - 400 POUNDS PER SQUARE OF APPROVED NATURAL AGGREGATE, EMBEDDED IN PITCH TOPPING WHILE THE TOPPING IS HOT.

TOTALS:
43 POUNDS - BASE SHEET
60 POUNDS - ROOFING FELT
200 POUNDS - PITCH
400 POUNDS - GRAVEL

ON THE PRECAST CONCRETE DECK APPLY ASPHALT PRIMER, MOP ON 25 POUNDS PER SQUARE OF STEEP ASPHALT, IMBED MEMBRANE VAPOR BARRIER WITH 4 INCH LAPPED JOINTS AND SEAL WITH HOT, STEEP ASPHALT. THEN MOP ON 15 POUNDS PER SQUARE OF HOT, STEEP ASPHALT, AND IMMEDIATELY LAY THE POLYSTYRENE BOARD WITH TIGHT BUTT JOINTS AND WALK IN. THE TOP LAYER OF PERLITE SHALL BE BACK MOPPED WITH STEEP ASPHALT AT 25 POUNDS PER SQUARE, "FLOPPED" AND WALKED IN. ALL JOINTS IN THE INSULATION SHALL BREAK 6 INCHES FROM JOINTS BELOW AND ALL JOINTS SHALL BE TAPED WITH ROOFING TAPE AND EMBEDDED IN HOT, STEEP ASPHALT APPLIED AT 15 POUNDS PER SQUARE OF TAPE. THE BUILT-UP ROOF SHALL BE APPLIED IN STRICT ACCORDANCE WITH THE ROOFING MANUFACTURERS RECOMMENDATIONS. FULL 20 YEAR GUARANTEE BOND ON THE BUILT-UP ROOF SHALL BE PROVIDED BY THE ROOFING MANUFACTURER, IN A BONDED AMOUNT NOT LESS THAN \$30 PER 100 SQUARE FEET.

MISCELLANEOUS METALS:

GRAVEL STOP AND FASCIA SHALL ALL BE .050 IN. MINIMUM THICKNESS EXTRUDED ALUMINUM ALLOY 6063-15 CONSTRUCTION, WITH CONCEALED SPLICE PLATE AND CLIPS FOR NON PENETRATING ATTACHMENT. GRAVEL STOP CORNERS SHALL BE PREFABRICATED AND SHOP WELDED. GUTTER AND DOWNSPOUT SHALL BE CONSTRUCTED OF .050 IN. EXTRUDED ALUMINUM. GRAVEL STOP, FASCIA, GUTTER AND DOWNSPOUT SHALL RECEIVE A 20 YEAR KYNAR FINISH, NOT LESS THAN 0.7 MIL THICK, IN MEDIUM BRONZE COLOR. THESE ITEMS SHALL BE MERCHANT & EVANS, MM SYSTEMS CORP. OR EQUAL.

HANDRAIL:

ALL HANDRAIL SHALL BE 1 1/2" SCHEDULE 40 ALUMINUM PIPE AND FITTINGS WITH 0.7 MIL ANODIZED FINISH OVERALL. MAXIMUM POST SPACING SHALL BE 4'-0" C-C, AND THERMAL EXPANSION JOINTS SHALL BE PROVIDED AT 20 FOOT INTERVALS. ALL ALUMINUM IN CONTACT WITH CONCRETE SHALL BE COATED WITH ASPHALTIC PAINT. MISCELLANEOUS FASTENERS SHALL BE STAINLESS STEEL. HANDRAIL SHALL BE REYNORAIL II BY REYNOLDS METALS, FRANKLIN RAILING SYSTEM BY HOOVER UNIVERSAL, OR EQUAL.

ALUMINUM ACCESS COVERS:

ALUMINUM ACCESS COVERS SHALL BE THE SIZES SHOWN ON THE DRAWINGS UNLESS ALTERNATE PUMP SELECTION REQUIRES MODIFICATIONS. THE ACCESS HATCHES SHALL BE CONSTRUCTED ENTIRELY OF STRUCTURAL ALUMINUM WITH STAINLESS STEEL HARDWARE. EACH HATCH SHALL BE EQUIPPED WITH A PADLOCKABLE COVER LEAF WITH STAINLESS STEEL HASP AND STAPLE. THE ACCESS HATCHES SHALL BE BY ML SERIES FLYGT, BILCO, BABCOCK-DAVIS OR EQUAL.

STRUCTURAL STEEL:

ALL STRUCTURAL STEEL, INCLUDING SHAPES, BARS AND PLATES SHALL BE NEW, FREE FROM RUST, AND CONFORMING TO THE REQUIREMENTS OF ASTM A 36.