MICROFILMED
APR 29 1996

CONVENTIONAL SIGNS :

LIMITED ACCESS & RIGHT OF WAY (EXISTING) ------ LA & R/W --------
LIMITED ACCESS & RIGHT OF WAY (PROPOSED) ——— LA & R/W ———
LIMITED ACCESS (ONLY) (EXISTING) ------ LA ----------
LIMITED ACCESS (ONLY) (PROPOSED) ——— LA ———
RIGHT OF WAY (EXISTING) ----- R/W ---- (PROPOSED) ——— R/W ———
EXISTING RIGHT OF WAY
PROPERTY LINE —— PL ——— (IN EXISTING FENCE) ——X—— PL ——X——
GUARDRAIL (EXISTING) —o— —o— —o— (PROPOSED) —•— —•— —•—
FENCE (EXISTING) ———X———X——— (PROPOSED) —X——X——X—
CENTERLINE 200 + 20
CORPORATION LIMIT ----------
UTILITY POLES: TELEPHONE ⊘ POWER ℗ LIGHT ℄

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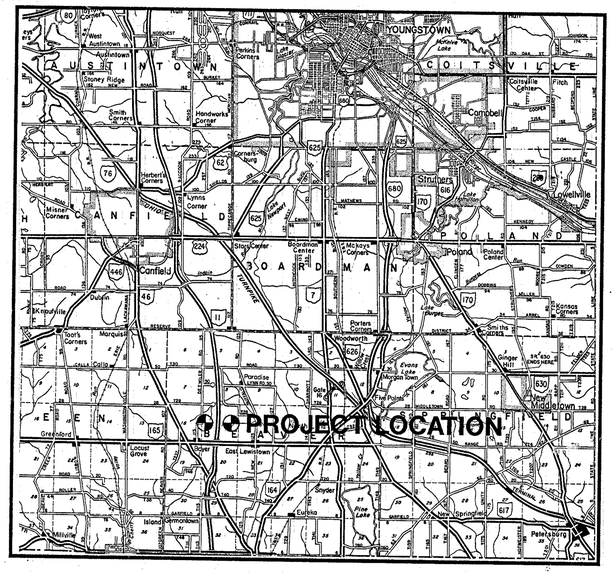
LINE DATA :

NET LENGTH OF PROJECT = 0
BEGIN PROJECT = 0
END PROJECT = 0
BEGIN WORK = STATION 166+84
END WORK = STATION 208+63
TOTAL LENGTH OF WORK = 4179 LIN. FT. OR .791 MILES

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
MAH-11-3.31
SAFETY REST AREA



LOCATION MAP :

SCALE IN MILES 0 1 2 3 4 5 6
STATE AND FEDERAL ROUTES
OTHER ROADS

UNDERGROUND UTILITIES
2 WORKING DAYS
BEFORE YOU DIG
CALL 800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

MAH-11-3.31 MAHONING COUNTY SAFETY REST AREA	OHIO
NH-78(39)	FHWA REGION 5
	FEDERAL PROJECT

1/73

LIMITED ACCESS :

This improvement is especially designed for through traffic and has been declared a limited access highway or freeway by action of the Director in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio.

1993 SPECIFICATIONS :

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing of the highway except for the affected Rest Area, and that provisions for maintenance and safety of traffic will be set forth in these plans and estimate.

APPROVED David R. Dragga
DATE 1-4-94 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

APPROVED Christopher L. Bunyan
DATE 10-13-94 CHIEF ENGINEER, PLANNING AND DESIGN

APPROVED Jerry Wray
DATE 10-13-94 DIRECTOR, DEPARTMENT OF TRANSPORTATION

Project :
Date of Letting 1-18, 1995 Contract No. 16-19

PLAN PREPARED BY :
OHIO DEPT. OF TRANSPORTATION
BUREAU OF DESIGN SERVICES
ROADSIDE DEVELOPMENT SECTION
COLUMBUS, OHIO
S.W. Rennebaum 12/28/93
REGISTERED ENGINEER, DATE

SEAL

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

LA-2	6-1-79	CB-8	11-10-83				
MH-3	12-18-84			HL-10.11	5-1-87	HL-50-11	5-1-87
MC-4	7-26-76			HL-10.12	5-1-87	HL-60.11	5-1-87
HW-D	6-1-65			HL-10.13	5-1-87	HL-60.31	5-1-87
BP-4.1	2-21-92			HL-20.11	5-1-87		
BP-5.1	2-21-92			HL-30.11	5-1-87		
BP-7.1	10-30-92			HL-40.10	5-1-87		

SUPPLEMENTAL SPECIFICATIONS
SPECIAL SPECIFICATIONS FOR REST AREAS 12-1-93

942	3-18-92		
820	3-18-92		

REVISED 12-7-94

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR DATE

CALC BY DATE	MAH-II-3.31 MAHONING COUNTY SAFETY REST AREA	OHIO FHWA REGION 5	2 / 73
CHKD BY DATE			

GENERAL NOTES

PROJECT GENERAL DESCRIPTION
THE REHABILITATION OF A REST AREA FACILITY IN MAHONING COUNTY SHALL INCLUDE TWO MOTORIST SERVICES BUILDINGS (MSB-4), A 14,000 GALLON WASTE-WATER TREATMENT SYSTEM, LIFT STATION, STORM DRAINAGE, UTILITIES, SIDEWALKS, SERVICE DRIVE, TWO PICNIC SHELTERS, PICNIC TABLES , BENCHES, WASTE RECEPTACLES, CHARCOAL GRILLS AND LANDSCAPING.

CLOSURE OF REST AREAS TO THE PUBLIC
REST AREAS SHALL BE CLOSED TO THE TRAVELING PUBLIC FOR THE TOTAL TIME PERIOD OF THE CONSTRUCTION.

UTILITIES NOTIFICATION
AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN ANY AREA WHICH MAY INVOLVE UNDERGROUND FACILITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE REGISTERED UNDERGROUND UTILITY PROTECTION SERVICES AND THE OWNERS OF ALL UNDERGROUND UTILITY FACILITIES SHOWN IN THE PLANS.

AFTER NOTICE IS RECEIVED, THE OWNER OF ANY UNDERGROUND UTILITY FACILITY THAT IS TO REMAIN IN SERVICE DURING AND/OR AFTER CONSTRUCTION SHALL STAKE, MARK OR OTHERWISE DESIGNATE THE LOCATION OF THE UNDERGROUND FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING OR LOCATING SHALL BE CO-ORDINATED TO STAY APPROXIMATELY TWO DAYS AHEAD OF THE PLANNED CONSTRUCTION.

UNDERGROUND UTILITIES
THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.04 ORC.

ITEM SPECIAL - TELEPHONE SERVICE
THE ELECTRICAL CONTRACTOR SHALL CONTACT THE TELEPHONE COMPANY AND ARRANGE FOR THE INSTALLATION OF TELEPHONE SERVICE AND TELEPHONE EQUIPMENT AT THE LOCATIONS SHOWN IN THE PLANS.

AT LEAST ONE OF THE TWO PUBLIC TELEPHONE STATIONS IN THE MOTORIST SERVICES BUILDING SHALL BE ARRANGED FOR ACCESS BY HANDICAPPED PERSONS AND SHALL BE EQUIPPED TO ALLOW ACCESS TO THE TELEPHONE COMPANY OPERATOR WITHOUT DEPOSITING ANY FORM OF PAYMENT.

THE TELEPHONE IN THE STORAGE UNIT SHALL BE EQUIPPED TO RECEIVE INCOMING CALLS AND NOT ALLOW OUTGOING CALLS TO BE CHARGED TO THE STORAGE UNIT PHONE, BUT ALLOW THE STORAGE UNIT PHONE TO BE USED TO CONTACT THE OPERATOR AT NO CHARGE, OR TO PAY FOR DIRECT-DIALED OUTGOING CALLS AT THE TIME THE CALL IS PLACED.

THE CONTRACTOR SHALL COMPENSATE THE TELEPHONE COMPANY AS REQUIRED. EQUIPMENT PROVIDED BY THE TELEPHONE COMPANY SHALL REMAIN THE PROPERTY OF THE TELEPHONE COMPANY.

PAYMENT SHALL BE MADE PER EACH ITEM SPECIAL - "TELEPHONE SERVICE" FOR EACH REST AREA FOR WHICH TELEPHONE SERVICE IS ARRANGED AND INSTALLED.

UTILITY OWNERS
1. POWER
OHIO EDISON
P.O. BOX 570
YOUNGSTOWN, OH 44501

2. TELEPHONE
OHIO BELL TELEPHONE COMPANY
CITY CENTER ONE BUILDING
YOUNGSTOWN, OH 44503

3. LIGHTING
ODOT
705 OAKWOOD
RAVENNA, OHIO 44266

ESTIMATED QUANTITIES AND BID ITEMS
THE ESTIMATED QUANTITIES OF THE VARIOUS SPECIFIC AND SPECIAL ITEMS LISTED THROUGHOUT THESE PLANS ARE APPROXIMATE. THESE QUANTITIES ARE SUBSEQUENTLY INCLUDED IN THE FOUR (4) BID ITEMS LISTED ON THE GENERAL SUMMARY SHEET AND IN OTHER CONTRACT DOCUMENTS.

MISCELLANEOUS
FOR ADDITIONAL NOTES, PAY ITEMS AND DESCRIPTIONS, SEE VARIOUS SPECIALTY ITEM SHEETS THROUGH THE PLANS.

STORAGE OF MATERIALS AND EQUIPMENT
ALL MATERIALS, EQUIPMENT AND VEHICLES SHALL BE STORED WITHIN THE CONFINES OF THE PARKING LOTS AT THE DIRECTION OF THE ENGINEER.

APPROVED EQUAL MANUFACTURERS OR COMPANIES
IT IS INTENDED, THAT IN THOSE LOCATIONS THROUGHOUT THE PLANS AND SPECIAL SPECIFICATIONS WHERE MANUFACTURING COMPANIES OR SOURCES OF MATERIALS ARE LISTED, THE CONTRACTORS MAY UTILIZE OTHER MANUFACTURING COMPANIES OR SOURCES OF MATERIALS PROVIDED THE INTENT OF THE PLANS AND SPECIAL SPECIFICATIONS ARE FOLLOWED. THE ACCEPTANCE OF THE CONTRACTORS PROPOSED ALTERNATIVES WILL BE DETERMINED BY THE SUBMISSION AND APPROVAL OF THE CONTRACTORS SHOP DRAWINGS OR MATERIAL SELECTIONS.

ITEM 619 - FIELD OFFICE
THE GENERAL CONTRACTOR SHALL PROVIDE A TYPE B FIELD OFFICE. PAYMENT SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 619 FIELD OFFICE.

ITEM 614 - TRAFFIC MAINTENANCE
THE GENERAL CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS (SIGNS, BARRIERS, ETC.) FOR CONTROL OF TRAFFIC DURING CONSTRUCTION AS SHOWN ON SHEET NO. 13

THE CONTRACTOR SHALL FURNISH, PLACE AND SUBSEQUENTLY REMOVE THE BARRIER AS WELL AS FURNISH, ERECT AND SUBSEQUENTLY REMOVE ALL SIGNS AND OTHER TRAFFIC CONTROL DEVICES NECESSARY TO CLOSE THE REST AREAS. ANY TEMPORARY REARRANGEMENT OR DEVICES THAT MAY BECOME NECESSARY FOR THE CONTRACTOR TO FACILITATE OPERATIONS SHALL BE DONE BY THE CONTRACTOR. HOWEVER, NO TRAFFIC CONTROL DEVICES SHALL BE REARRANGED OR ALTERED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER. AT THE CONCLUSION OF THE TEMPORARY OPERATION, THE CONTRACTOR SHALL REPLACE THE TRAFFIC CONTROL DEVICES TO THEIR ORIGINAL POSITION AND CONDITION.

UNDERDRAINS FOR PULL BOXES
REFERENCE IS MADE TO STANDARD CONSTRUCTION DRAWING HL - 30.11 FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 40 FEET. AN ESTIMATED QUANTITY OF 640 LINEAR FEET OF ITEM 603, - 4" CONDUIT TYPE E" IS INCLUDED IN THE LIGHTING GENERAL SUMMARY FOR THIS PURPOSE.

ITEM 202 - LUMINAIRE REMOVED, AS PER PLAN
THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LUMINAIRE AND STORING IT ON THE PROJECT SITE FOR REMOVAL BY STATE FORCES.
PAYMENT WILL BE MADE FOR EACH ITEM 202 "LUMINAIRE, REMOVED AS PER PLAN".

ITEM 202 - LIGHT POLE FOUNDATION REMOVED
THIS ITEM OF WORK WILL CONSIST OF REMOVING AN EXISTING LIGHT POLE FOUNDATION TO A MINIMUM OF ONE FOOT BELOW FINISHED GRADE, BACKFILLING THE RESULTANT DEPRESSION WITH COMPACTED SOIL AND RESTORING THE DISTURBED AREA.
PAYMENT WILL BE MADE FOR EACH ITEM 202 "LIGHT POLE FOUNDATION REMOVED".

ITEM 202-LIGHT POLE REMOVED, AS PER PLAN
THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LIGHT POLE INCLUDING THE LUMINAIRE, BRACKET ARM(S) AND TRANSFORMER BASE (IF ANY). THE POLE, BRACKET ARMS(S) BASE AND WIRING SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY OFF THE PROJECT SITE.
PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH ITEM 202 "LIGHT POLE REMOVED, AS PER PLAN".

ITEM 625 - LIGHT POLE, MISC., AS PER PLAN, T ON 10, DECORATIVE
THIS ITEM SHALL CONSIST OF ALL LABOR, MATERIALS AND TOOLS REQUIRED TO FURNISH, PLACE AND MAINTAIN LIGHT POLE AND BASE (WITH ACCESS DOOR)
INSTALLATION SHALL BE AS PER MANUFACTURER'S INSTRUCTIONS. MODELS SHALL BE MANUFACTURED BY ONE OF THE FOLLOWING COMPANIES.
ALL MODELS TO BE THE SAME TYPE.

1) MEL-NOR 303 GULF BANK HOUSTON, TEXAS 77037 (713) 445- 7456		WASHINGTON SERIES *46-9, POST BLACK FINISH
2) STERNBERG, INC. 5801 N. TRIPP AVE. CHICAGO, ILLINOIS 60646 312-252-8200		4910 FP, POST BLACK FINISH
3) HERWIG LIGHTING P.O. BOX 768 RUSSELVILLE, ARK. 72801 800-643-9523		*WH-10, POST BLACK FINISH

COST OF ALL OF THE ABOVE SHALL BE INCLUDED IN PRICE BID FOR EACH ITEM 625-LIGHT POLE MISC. AS PER PLAN DECORATIVE

ITEM 625 - LUMINAIRE, MISC., AS PER PLAN, DECORATIVE
THIS ITEM SHALL CONSIST OF ALL LABOR, MATERIALS, AND TOOLS REQUIRED TO FURNISH, PLACE, AND MAINTAIN A POST TOP LUMINAIRE WHICH SHALL BE MANUFACTURED BY THE COMPANY PRODUCING THE POST. THE LUMINAIRE SHALL HAVE SINGLE RATED 120 VT., 100 WATT, INTERGAL REGULATOR BALLASTS FOR USE WITH METAL HALIDE. INSTALLATION TO BE PER MANUFACTURERS INSTRUCTIONS. ACCEPTABLE MODELS SHALL BE MANUFACTURED BY ONE OF THESE COMPANIES. ALL MODELS TO BE ONE TYPE.

1) MEL-NOR 303 GULF BANK HOUSTON, TEXAS 77037 (713) 445- 7456		B14, SINGLE 16" ROUND GLOBE
2) STERNBERG, INC. 5801 N. TRIPP AVE. CHICAGO, ILLINOIS 60646		G 18 W/ 508 FITTER SINGLE 18" ROUND GLOBE
3) HERWIG LIGHTING P.O. BOX 768 RUSSELVILLE, ARKANSAS 72801 800-643-9523		NO. A-19 , SINGLE GLOBE

ITEM 625 - LIGHT POLE FOUNDATION, 24"X 6', AS PER PLAN
THE DECORATIVE LIGHT POLE MANUFACTURER SHALL SUBMIT DRAWINGS SPECIFYING THE ANCHOR BOLT DIAGRAM AND BOLT CIRCLE DIAGRAM FOR THE SPECIFIED LIGHT POLE BEFORE CONSTRUCTION OF THE FOUNDATION, AS PER HL-20.11.
PAYMENT SHALL CONSIST OF ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO BUILD THE FOUNDATION AS SPECIFIED

ITEM 625 - POWER SERVICE, AS PER PLAN
THE ELECTRICAL CONTRACTOR SHALL CONTACT THE POWER COMPANY AND ARRANGE FOR THEM TO PROVIDE AND INSTALL THE SERVICE POLE, PRIMARY ELECTRIC CABLES, TRANSFORMER AND METERING EQUIPMENT AT THE LOCATIONS SHOWN IN THE PLANS AND MAKE CONNECTIONS AT THE SERVICE POLE, TRANSFORMER AND METERING EQUIPMENT TO ESTABLISH THE PERMANENT ELECTRICAL POWER SERVICE FOR THE EXCLUSIVE USE OF THE STATE'S FACILITIES BEING CONSTRUCTED BY THIS CONTRACT.

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COMPENSATING THE POWER COMPANY FOR THE ESTABLISHMENT OF THE SERVICE AND FOR ANY ENERGY USED BETWEEN THE ESTABLISHMENT OF THE SERVICE AND FINAL ACCEPTANCE BY THE STATE.

PAYMENT SHALL BE MADE PER EACH ITEM 625 "POWER SERVICE, AS PER PLAN", OR EACH REST AREA IN WHICH POWER SERVICE IS PROVIDED.

ITEM 625 - HIGH VOLTAGE TEST
A HIGH VOLTAGE TEST, AS DESCRIBED IN ITEM 625.72 SHALL BE PERFORMED ON ALL ROADWAY AND PICNIC AREA LIGHTING CIRCUITS.

ITEM 202 - STRUCTURE REMOVED
THIS WORK SHALL CONSIST OF THE REMOVAL OF EXISTING STRUCTURES (BUILDINGS), APPURTENANCES, FOUNDATIONS, CONCRETE SLABS AND WALKS IN CONFORMANCE WITH THE PROVISIONS OF SECTION 202.

THE GENERAL CONTRACTOR SHALL REMOVE: MOTORIST SERVICES BUILDINGS, WATER RESERVOIR TANKS AND WASTE-WATER TREATMENT PLANT, PICNIC SHELTERS, SHEDS.

ITEM 623 - CONSTRUCTION LAYOUT STAKES, A.P.P.
THE STATE WILL LOCATE AND REFERENCE THE BASELINE OF THE PROJECT AND ESTABLISH BENCH MARKS AS INSTRUCTED BY THE PROJECT ENGINEER. THESE CONTROL POINTS WILL BE GIVEN TO THE CONTRACTOR AT THE PRE-CONSTRUCTION MEETING.
IN ADDITION TO THE REQUIREMENTS OF 623.02, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND STAKING OF ALL REST AREA IMPROVEMENTS AND THE VERIFICATION OF BASE DATA USED IN THE PLANS, EXCEPT FOR THE REST AREA BASE LINE.

ITEM SPECIAL - 1050 GAL. TRASH TRAP
TWO 1050 GAL. TRASH TRAPS ARE REQUIRED FOR THE WASTEWATER TREATMENT SYSTEM. ONE TRAP SHALL BE INCLUDED IN THE PRICE BID FOR "ITEM SPECIAL COMPLETE WASTEWATER TREATMENT SYSTEM, 14,000 GAL." AND THE OTHER SHALL BE PAID FOR UNDER THE PRICE BID FOR "ITEM SPECIAL - ROADSIDE REST AREA, MISC: TRASH TRAP 1050 GAL."

GENERAL NOTES

ITEM 655 - RENOVATION OF EXISTING GRASS AREAS

AREAS WHICH ARE DAMAGED DUE TO THE CONTRACTOR'S NEGLIGENT OPERATIONS UNDER THIS CONTRACT ARE TO BE FILLED IN AND UNIFORMLY COVERED WITH ONE (1) INCH OF TOPSOIL (653). FERTILIZING THE AREA TO BE RENOVATED SHALL BE DONE IN ACCORDANCE WITH 655.06. GRASS SEED MIXTURES SPECIFIED IN 659 FOR URBAN AREAS SHALL BE USED.

THE EXTENT OF THE AREAS TO BE RENOVATED SHALL BE DETERMINED BY THE ENGINEER. ALL AREAS TO BE RENOVATED, PLUS THE IMMEDIATE ADJACENT AREAS, SHALL BE MOWED TO A HEIGHT OF TWO (2) INCHES BEFORE ACTUAL OPERATION OF SEEDING AND RENOVATING IN ACCORDANCE WITH ITEM 655. ALL AREAS TO BE RENOVATED SHALL BE DONE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE.

ITEM 202 - GRAVEL PATH REMOVED, AS PER PLAN

THIS WORK SHALL CONSIST OF THE REMOVAL AND DISPOSAL OF THE GRAVEL PATH AS SHOWN ON THE PLANS AND THE PLACEMENT OF TOPSOIL, GRASS SEEDING AND MULCHING. THE GRAVEL SHALL BE REMOVED TO A DEPTH OF SIX (6") INCHES. TOPSOIL SHALL BE FURNISHED AND PLACED AS PER ITEM 653. GRASS SEEDING AND MULCHING WILL BE ACCOMPLISHED WITH THE URBAN SEED MIXTURE AS DESCRIBED IN ITEM 659.
THE COST FOR ALL THE ABOVE, INCLUDING EXCAVATION SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE FOOT FOR ITEM 202 - "GRAVEL PATH REMOVED, AS PER PLAN".

ITEM SPECIAL - CHARCOAL GRILL AND SERVING TABLE REMOVED

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE EXISTING CHARCOAL GRILL AND SERVING TABLE. THE GALVANIZED PIPE SUPPORT POSTS SHALL BE REMOVED ALSO, AFTER THE CHARCOAL GRILL AND SERVING TABLE ARE REMOVED THEY WILL BE TURNED OVER TO ODOT DISTRICT MAINTENANCE PERSONNEL.
ALL OF THE ABOVE SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH ITEM SPECIAL - "CHARCOAL GRILL AND SERVING TABLE REMOVED".

ITEM SPECIAL - SNOW FENCE - TREE PROTECTION

SNOW FENCE SHALL CONSIST OF WOOD PICKETS 1/2" X 1 1/2" X 4'-0" NOMINAL SIZE, PAINTED RED AND WOVEN WITH FIVE (5) DOUBLE STRANDS OF 12 GUAGE STEEL WIRE, SPACED APPROXIMATELY TWO INCHES (2") APART OR APPROVED EQUAL.

THE FENCE SHALL BE SUPPORTED BY STEEL OR WOOD POSTS OF ADEQUATE SIZE AND SPACING. USED FENCE AND POSTS IN GOOD CONDITION MAY BE USED AS APPROVED BY THE ENGINEER.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT OF SNOW FENCE FURNISHED, ERECTED AND SUBSEQUENTLY REMOVED.

ITEM 659 - WATERING PERMANENT SEEDED AREAS

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED, AS DIRECTED BY THE ENGINEER, TO PROMOTE GROWTH AND TO CARE FOR THE PERMANENT SEEDED AREAS AS PER 659.09:

ITEM 659 WATER 26 GAL.

ITEM SPECIAL- CONCRETE SLABS

DETAIL PLACEMENT OF SHELTER HOUSE, PICNIC TABLES AND SLABS, WASTE RECEPTABLE SLABS AND SLEEVES, CHARCOAL GRILLS AND SERVING TABLES (WITH SLABS) SHALL BE AS DIRECTED BY THE ENGINEER IN CONSULTATION WITH THE DISTRICT LANDSCAPE ARCHITECT OR HORTICULTURALIST. COST FOR EACH ITEM AND SLAB SHALL BE INCLUDED IN EACH ITEM SPECIAL AS DESCRIBED AND DETAILED IN THE PLANS.

ITEM SPECIAL - SHELTER HOUSE

THE CONTRACTOR MAY PROVIDE AN "IRON MOUNTAIN FORGE-PARK SHELTER" (AS MODIFIED BELOW) OR EQUAL, AS A SHELTER HOUSE ON THIS PROJECT.
THE SHELTER HOUSE SHALL HAVE A MINIMUM SIZE OF 20' X 26' (ALT. 20' X 28') AND SHALL BE MANUFACTURED FROM KILN-DRIED SOUTHERN PINE. THE STRUCTURAL, GLUED LAMINATED TIMBER SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS: AITC-100, 117, 177, 200 AND PS-56-73. A CERTIFICATE OF CONFORMANCE SHALL BE FURNISHED AND THE AITC QUALITY MARK SHALL APPEAR ON ALL LAMINATED MEMBERS. THE ADHESIVE SHALL BE WATERPROOF AND CONFORM TO ASTM D-2559-70. THE ROOF DECK SHALL BE NOMINAL 2" X 6" AND BTR, SINGLE TONGUE AND GROOVE WITH V-JOINT FACE SIDE AND SHALL BE FACTORY FINISHED WITH A POTLATCH ACRYLIC POLYMER IN EARTH TONE. THE ASPHALT SHINGLE ROOF SHALL CONFORM TO LA-16.

THE ROOF SYSTEM SHALL, IN ADDITION TO THE MANUFACTURERS LOADING, BE ABLE TO WITHSTAND 90 MPH WIND LOADS IN CONFORMANCE WITH ARTICLE 9 (OAC 4101: 2-9) OF THE OHIO BASIC BUILDING CODE. THE FABRICATOR SHALL FURNISH COMPLETE SHOP DRAWINGS, SHOWING ALL DETAILS AND CONNECTIONS OF THE COLUMNS AND ROOF SYSTEM, AS WELL AS CALCULATIONS VERIFYING THAT THE SYSTEM SATISFIES THE OHIO BUILDING CODE.

ALL MEMBERS SHALL BE INDIVIDUALLY WRAPPED FOR PROTECTION DURING SHIPPING AND STORAGE, THE COLUMNS AND FASCIA SHALL BE TREATED BY THE CELLON (R) PROCESS IN ACCORDANCE WITH STD C-28 AWPA TO A RETENTION OF 0.6 POUNDS PER CUBIC FEET. THE CONTRACTOR SHALL PROTECT THE SHELTER HOUSE MATERIALS ON THE JOB SITE. IF STORED TEMPORARILY, MEMBERS SHALL BE PLACED ON BLOCKS WELL OFF THE GROUND AND SEPARATED BY WOOD STRIPS SO THAT AIR CAN CIRCULATE AROUND EACH MEMBER. THE TOP AND BOTTOM SHALL BE COVERED WITH MOISTURE-RESISTANT PAPER. ALL ERECTION WORK SHALL BE PERFORMED USING NON-MARRING SLINGS WHEN MEMBERS ARE TO BE HANDLED.
THE FOOTER, SLAB, HARDWARE AND AGGREGATE BASE SHALL CONFORM TO LA-15. IN ADDITION, THE FOUNDATION SHAFTS SHALL HAVE A MINIMUM DIAMETER AND DEPTH OF 2'-0" AND 4'-6" RESPECTIVELY.
THE COLUMNS AND FASCIA SHALL BE STAINED IN ACCORDANCE WITH LA-16.

OPTIONAL SHELTER HOUSE FIELD PAINTING PROCEDURE

IF MANUFACTURER DOES NOT SUPPLY THE SPECIFIED POTLACH ACRYLIC POLYMER FACTORY FINISHED ROOF DECK AND BEAMS WITH THEIR SHELTER HOUSE, THE CONTRACTORIS AUTHORIZED TO FIELD FINISH THESE ITEMS AT NO ADDITIONAL COST TO THE CONTRACT. THE ACCEPTABLE FIELD PAINTING PROCEDURE IS AS FOLLOWS:

A. APPLY ONE (1) COAT OF PRATT AND LAMBERT EARLY AMERICAN MAPLE TONETIC WOOD STAIN TO ALL SIDES AND EDGES OF EACH PIECE OF ROOF DECKING AND EACH BEAM BEFORE ERECTION.

B. LET STAIN DRY FOR FOUR (4) HOURS BEFORE USING FOR ERECTION.

C. APPLY TWO (2) COATS OF PRATT AND LAMBERT VITRALITE UVA SPAR VARNISH TO ALL EXPOSED SURFACES OF THE BEAMS AND ROOF DECKING AFTER ERECTION. ALLOW 12 HOURS DRYING TIME BETWEEN COATS. FINISH THICKNESS SHALL BE 2.0 MILS.

D. NO THINNING IS PERMITTED AND APPLICATION METHOD SHALL COMPLY WITH PAINT MANUFACTURERS RECOMMENDED PROCEDURE.

THE METHOD OF MEASUREMENT AND BASIS OF PAYMENT SHALL BE AS PER LA-16.

ITEM SPECIAL - 6' BENCH, WASTE RECEPTACLES & ASH URNS

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING BENCHES, MATCHING WASTE RECEPTACLES & ASH URNS AS SHOWN ON THE PLANS.
SLATS FOR BENCH, WASTE RECEPTACLE & URN CONSTRUCTION. SHALL BE POLYSITE™ TIMBERS OR APPROVED EQUAL OR JARRAH, TEAK OR IPE. SHALL BE SURFACE MOUNTED WITH GALVANIZED VANDAL PROOF FASTENERS PER MANUFACTURERS RECOMMENDATIONS AND APPROVAL OF THE ENGINEER.
WASTE RECEPTACLE SLABS, WHERE SHOWN ON PLANS, SHALL CONSIST OF A 36"X36" 4" THICK CLASS C CONCRETE SLAB REINFORCED WITH 6"X6" 10X10 GALVANIZED WIRE MESH CENTERED IN SLAB.
BENCHES AND MATCHING WASTE RECEPTACLES AND URNS SHALL CONSIST OF ONE OF THE FOLLOWING COMPANIES AND MODELS:

1) COLUMBIA CASCADE TIMBERFORM
   BENCH: RESTORATION MODEL *2120-6
   WASTE RECEPACLES: MODEL*2126-HT WITH BLACK HAMPER TOP
   ASH URN: MODEL* 2127
2) LANDSCAPE FORMS
   BENCH: GRETCHENS BENCH MODEL*GR 3005-BA-72 WITH ORNAMENTAL ARMRESTS
   WASTE RECEPTACLES: MODEL * GR5002-22-42 &
   ASH URN: GR 6002-14-21, STORMCLOUD COLOR TOPS
3) CANTERBURY INTERNATIONAL
   BENCH: EMBARCADERO BENCH 700
   WASTE RECEPTACLES: PENNSYLVANIA AVENUE 36" WITH SIDE DOOR OPENING
   ASH URN: PENNSYLVANIA AVENUE

THE COST OF ALL OF THE ABOVE SHALL BE INCLUDED IN THE PRICE BID TO COMPLETE EACH ITEM SPECIAL - "6' WOOD BENCH". ITEM SPECIAL - WASTE RECEPTACLE, OR ITEM SPECIAL - ASH URN.

TREE PROTECTION

NO WORK WILL BE PERMITTED WHERE TREES, SHRUBS OR UTILITIES ARE PRESENT WITHIN THE WORK LIMITS OF THE REST AREA PROJECT PRIOR TO STAKING BY THE GENERAL CONTRACTOR OR THE LIMITS OF ALL REST AREA BUILDINGS, SERVICE DRIVES, SIDEWALKS, GRADING WORK AND EXISTING AND PROPOSED UTILITY LINES.

THE METHOD FOR MARKING TREES AND SHRUBS TO BE SALVAGED, PROTECTED OR REMOVED WILL BE ESTABLISHED BY THE ENGINEER, DISTRICT LANDSCAPE ARCHITECT OR HORTICULTURALIST AND THE GENERAL CONTRACTOR PRIOR TO WORK AROUND ANY EXISTING TREES, SHRUBS AND UTILITY LINES.

TREE AND ROOT SYSTEM PROTECTION USING SNOW FENCE SHALL BE PROVIDED BY THE GENERAL CONTRACTOR AS INDICATED ON THE PLAN AND AS DIRECTED BY THE ENGINEER. TREE ROOT AREAS EQUAL TO 24" OUTSIDE THE BRANCH SPREAD SHALL BE PROTECTED AS PER STANDARD DRAWING LA-1.

ONLY PNEUMATIC TIRED EQUIPMENT SHALL BE USED WITHIN THE REST AREAS OUTSIDE THE PARKING LOTS. CARE SHALL BE TAKEN BY THE VARIOUS CONTRACTORS NOT TO OPERATE EQUIPMENT OR OTHER VEHICLES WHEN THE GROUND IS WET OR SOFT IN ORDER TO AVOID DEEP RUTTING, SOIL COMPACTION AND OTHER DESTRUCTION OF TREE ROOT SYSTEMS.

TREES TO BE SALVAGED THAT ARE DAMAGED AT ANY TIME DURING THE CONTRACT SHALL BE REPAIRED OR REPLACED (AT THE CONTRACTOR'S EXPENSE) AS DETERMINED BY THE ENGINEER AFTER CONSULTATION WITH THE DISTRICT LANDSCAPE ARCHITECT OR HORTICULTURALIST. DAMAGED TREES THAT CAN BE REPAIRED SHALL BE PRUNED AND THE DAMAGE REPAIRED WITH PAINT OR WOUND DRESSING AS PER 663.14. REPLACEMENT SHALL BE, IN QUANTITY AND QUALITY, SUFFICIENT TO COMPENSATE FOR SIZES OR TREES LOST. THE WORK SHALL BE COMPLETED AS PER 665 WITH TREES OF THE SIZE AND VARIETY, AS DIRECTED BY THE ENGINEER IN CONSULTATION WITH THE DISTRICT LANDSCAPE ARCHITECT OR HORTICULTURALIST.

ITEM 452 - 7" PLAIN CONCRETE PAVEMENT, AS PER PLAN

SUBGRADE UNDER SERVICE DRIVES AND CURB RAMPS SHALL BE COMPACTED TO A DEPTH OF SIX INCHES (6") AS DESCRIBED IN 203.13. JOINTS SHALL BE PLACED AT MAXIMUM TEN FOOT (10') INTERVALS OR AS SHOWN ON THE PLANS AND CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING BP-6. 4" OF BASE COURSE MATERIAL AS PER ITEM 608 WILL BE INSTALLED. THE COST OF JOINTS, GRADING, EXCAVATION, COMPACTION AND BASE COURSE MATERIAL SHALL BE INCLUDED IN ITEM 452 - "7" PLAIN CONCRETE PAVEMENT, AS PER PLAN".

ITEM 608 - 4" CONCRETE WALK, AS PER PLAN

ITEM 304, AGGREGATE BASE SHALL BE PLACED UNDER ALL AREAS OF 4" CONCRETE WALKS, AS PER PLAN. THE AGGREGATE WILL BE INCLUDED IN THE BID FOR ITEM 608, 4" CONCRETE WALK, AS PER PLAN.

EXCAVATION FOR FOUR INCHES (4") OF AGGREGATE BASE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 203 - EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION.

EMBANKMENT FOR WALK AREAS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 203 - EMBANKMENT.
The price bid for item 608 Conc. curb, Type 2-A as detail on sht. 25 & plan sht. 12 shall be included for payment under item 608 4" concrete walk, As per plan.

ITEM SPECIAL - STACKING CHAIR

THE GENERAL CONTRACTOR SHALL PROVIDE THREE (3) STACKING CHAIRS PER MOTORIST SERVICES BUILDING IN ROOM 105, UTILITY ROOM. CHAIRS SHALL HAVE A POLYPROPOLENE BACK AND SEAT WITH CHROME FINISHED STEEL ROD FRAME AS MANUMANUFACTURED BY KRUEGAR, MODEL NO. MX/BNN-CH/P IN COLOR PL/YG3 TAN VALUE 3; STEELCASE MODEL NO. 472-410 IN COLOR BROWN VALUE 2 OR APPROVED EQUAL.

PAYMENT SHALL BE AT THE UNIT PRICE BID PER EACH ITEM SPECIAL - STACKING CHAIR.

ITEM SPECIAL - FOLDING LEG TABLE

THE GENERAL CONTRACTOR SHALL FURNISH ONE (1) FOLDING LEG TABLE PER MOTORIST SERVICES BUILDING IN ROOM 105, UTILITY ROOM. TABLE SHALL BE 36" X 36" X 29" WITH LAMINATED TOP, VINYL EDGE, AND TAN OR CHROME FINISHED BASE W/FOLDING LEGS AS MANUFACTURED BY KRUEGAR, PINNACLE SERIES NO. K3-3 WITH TOP COLOR 917 TIDAL SAND; GENERAL FIREPROOFING, 500 SERIES T3636SP TOP TABLE IN COLOR R2Q SMOKE WITH BASE W8-19B OR APPROVED EQUAL.

PAYMENT SHALL BE AT THE UNIT PRICE BID PER EACH ITEM SPECIAL - FOLDING LEG TABLE.

ITEM 201 - CLEARING AND GRUBBING

ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED UNDER THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING, EXCEPT THAT THOSE TREES FOR WHICH PROTECTION AND PRESERVATION IS INDICATED BY THE ENGINEER IN CONSULTATION WITH THE DISTRICT LANDSCAPE ARCHITECT OR HORTICULTURALIST. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED:

* NUMBER OF TREES: 11
* NUMBER OF STUMPS: 9

THE ABOVE ESTIMATE IS APPROXIMATE AND THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES OR STUMPS OUTSIDE OF THE LIMITS OF CONSTRUCTION BUT WITHIN THE RIGHT-OF-WAY AND/OR EASEMENT LINES. PAYMENT FOR THE REMOVAL OF THESE ADDITIONAL TREES OR STUMPS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

GENERAL NOTES

ITEM SPECIAL, DRILLED WATER WELL ABANDONED

THE EXISTING CONCRETE OR STONE SLAB WELL COVER AND PUMPING EQUIPMENT SHALL BE REMOVED AND DISPOSED OF. THE CASING SHALL BE CUT OFF AT LEAST ONE FOOT BELOW THE PROPOSED SUBGRADE ELEVATION INSIDE PROPOSED PAVEMENT AREAS. THE WELL SHALL BE FILLED FROM BOTTOM TO TOP WITH CLEAN PUDDLED CLAY OR CONCRETE.

THE UNIT PRICE BID PER EACH FOR ITEM SPECIAL - DRILLED WATER WELL ABANDONED SHALL INCLUDE PAYMENT FOR ALL LABOR, TOOLS, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.

SEWERLINE LEAKAGE TEST

THE CONTRACTOR SHALL PERFORM A LEAKAGE TEST BY THE LOW PRESSURE AIR TEST METHOD, OR WHEN REQUIRED, BY THE INFILTRATION/EXFILTRATION METHOD AS DESCRIBED BELOW:

1. LOW PRESSURE AIR TEST SHALL BE CONDUCTED BETWEEN TWO CONSECUTIVE MANHOLES FOR THE ENTIRE LENGTH OF THE COMPLETED SEWERLINE. ALL PIPE OUTLETS MUST BE PLUGGED IN THE SECTION BEING TESTED WITH SUITABLE TEST PLUGS. ONE OF THE PLUGS USED AT A MANHOLE MUST BE TAPPED AND EQUIPPED FOR AN AIR COMPRESSOR. AIR SHALL BE SUPPLIED SLOWLY TO THE TEST SECTION UNTIL THE INTERNAL PRESSURE REACHES APPROXIMATELY FOUR (4) P.S.I.. AT LEAST TWO MINUTES SHALL BE ALLOWED FOR THE AIR PRESSURE TO STABILIZE. WHEN THE PRESSURE HAS STABILIZED AND IS AT OR ABOVE 3.5 P.S.I. THE AIR SUPPLY SHALL BE DISCONNECTED AND TIMING SHALL BEGIN WITH A STOP WATCH. THE STOP WATCH SHALL BE ALLOWED TO RUN UNTIL THE PRESSURE HAS DROPPED 1.0 P.S.I.. IF THE TIME SHOWN ON THE STOP WATCH IS GREATER THAN THE SPECIFIED MINIMUM TIME AS SHOWN ON THE CHART BELOW, THE SECTION SHALL BE CONSIDERED TO HAVE PASSED THE TEST.

PIPE DIAMETER IN INCHES	MINUTES
04	2.0
06	3.0
08	4.0
10	5.0
12	5.5
15	7.5
18	8.5
21	10.0
24	11.5

IF A SEWERLINE IS BELOW EXISTING GROUNDWATER LEVEL, THE INTERNAL PRESSURE SHALL BE INCREASED BY THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY BE OVER THE PIPE. THE AIR PRESSURE SHALL BE INCREASED .433 P.S.I. FOR EACH FOOT THE GROUNDWATER LEVEL IS ABOVE THE INVERT OF THE PIPE. THE INTERNAL AIR PRESSURES SHOULD NEVER EXCEED 5.0 P.S.I..

IF THE PREVAILING GROUNDWATER IS MORE THAN TWO FEET ABOVE THE INVERT OF THE SEWERLINE, THE INFILTRATION/EXFILTRATION TEST SHOULD BE USED.

2. INFILTRATION AND EXFILTRATION TEST. IF THE SEWERLINE REQUIRES TESTING FOR LEAKAGE BY THE INFILTRATION/EXFILTRATION TEST METHOD, THE MAXIMUM ALLOWABLE LEAKAGE SHALL BE 200 GAL./INCH OF DIAMETER OF PIPE/MILE/DAY AND THE TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM-C969-82.

PAYMENT FOR TESTING OF THE SEWERLINE SHALL BE INCLUDED IN THE COST OF INSTALLATION OF THE SEWERLINE.

ITEM SPECIAL - STEEL PIPE ENCASEMENT BY SIZE

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING A CASING OF THE DIAMETER INDICATED, TO PERMIT THE LAYING WITHIN OF A SANITARY SEWER LINE AS SHOWN IN THE PLANS. ENCASEMENT PIPE SHALL BE STEEL IN ACCORDANCE WITH ASTM-A53, SCHEDULE 40, GRADE B, THE CONTRACTOR SHALL MAKE ANY NECESSARY EXCAVATION TO COMPLETE THE OPEN CUT OR BORING OR JACKING OPERATION TO INSTALL THE STEEL CASING. THE METHOD OF BORING OR JACKING OPERATION MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL INSTALL THE CASING AS SHOWN ON THE PLANS. ANY DEVIATION IN GRADE OR ALIGNMENT OF THE CASING WHICH SHALL PREVENT THE SEWER LINE INSTALLATION AS DESIGNED OR ACCESS FOR MAINTENANCE SHALL REQUIRE THE CONTRACTOR TO REINSTALL THE CASING IN THE PROPER MANNER.

THE SEWER LINE WITHIN SHALL BE LAID ON HARDWOOD BLOCKING DESIGNED TO REMAIN FIXED IN POSITION. AFTER THE SEWER LINE IS LAID, THE CONTRACTOR SHALL COMPLETELY FILL ALL VOIDS BETWEEN THE OUTSIDE OF THE SEWER LINE AND THE CASING WITH PEA GRAVEL OR AGGREGATE CONFORMING TO 703.02. BOTH ENDS OF THE CASING SHALL BE CLOSED WITH A 4" BRICK OR CONCRETE BULKHEAD.

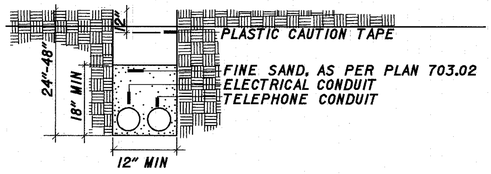
STEEL PIPE ENCASEMENT OF SANITARY SEWER LINE WILL BE MEASURED AS THE ACTUAL LINEAR FEET CONSTRUCTED, INCLUDING THE OPEN CUT OR BORING OR JACKING OPERATION, ENCASEMENT PIPE, BLOCKING TO SUPPORT THE INTERNAL SEWER LINE, GRAVEL OR AGGREGATE TO FILL THE INTERIOR VOID AND END BULKHEADS. PAYMENT FOR ACCEPTABLE QUANTITIES OF STEEL PIPE ENCASEMENT WILL BE MADE AT THE CONTRACT UNIT PRICE.

PAYMENT WILL BE FULL COMPENSATION FOR LABOR, MATERIAL, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY FOR THE INSTALLATION OF THE STEEL PIPE ENCASEMENT; FURNISHED, INSTALLED IN PLACE, TESTED AND ACCEPTED.

ITEM 202 - REMOVE EXISTING POLE WIRING AS PER PLAN

THIS ITEM SHALL CONSIST OF REMOVING ALL ELECTRICAL CABLE AND CONNECTOR KITS FROM AN EXISTING LIGHT POLE BETWEEN THE LUMINAIRES AND THE CIRCUIT CONNECTION AT THE POLE BASE. EXISTING GROUND CABLE FROM THE POLE TO THE GROUND ROD SHALL REMAIN IN PLACE. PAYMENT WILL BE AT THE CONTRACT UNIT PRICE BID PER EACH UNDER ITEM 202 'REMOVE EXISTING POLE WIRING AS PER PLAN.

TYPICAL TRENCH DETAIL:



CONNECTION TO EXISTING PIPE

WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING SEWER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT.

CONDUIT END TREATMENT

UNLESS OTHERWISE SPECIFIED IN THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY AFTER PLACEMENT OF ANY CONDUIT, CONSTRUCT THE END TREATMENTS REQUIRED BY THE PLANS AT BOTH THE OUTLET AND INLET ENDS. THIS SHALL INCLUDE HEADWALLS, CONCRETE RIPRAP, ROCK CHANNEL PROTECTION, SODDING, ETC.

ITEM SPECIAL - CAST IRON SOIL PIPE (SV) W/FLEXIBLE JOINTS: 6"

THE CONTRACTOR SHALL FURNISH AND INSTALL 6 " CAST IRON SOIL PIPE W/FLEXIBLE JOINTS IN ITEM 603, CLASS "C" BEDDING AS SHOWN IN THE PLANS.

THE PIPE SHALL CONFORM TO ASTM-A-74-75, C15P-301-78 WITH NEOPRENE GASKETS AS PER ASTM-C-564-70.

THE COMPLETE SEWER LINE SHALL BE TESTED AS DESCRIBED IN THE SEWER LINE LEAKAGE TEST NOTE.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT OF "ITEM SPECIAL - " 6 " CAST IRON SOIL PIPE W/FLEXIBLE JOINTS" INSTALLED, INCLUDING ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, EXCAVATION & BACKFILLING, INCIDENTALS AND TESTING NECESSARY TO COMPLETE THIS ITEM OF WORK.

ITEM SPECIAL - CAST IRON SOIL PIPE (SV) W/FLEXIBLE JOINTS: 8"

THE CONTRACTOR SHALL FURNISH AND INSTALL 8 " CAST IRON SOIL PIPE W/FLEXIBLE JOINTS IN ITEM 603, CLASS "C" BEDDING AS SHOWN IN THE PLANS.

THE PIPE SHALL CONFORM TO ASTM-A-74-75, C15P-301-78 WITH NEOPRENE GASKETS AS PER ASTM-C-564-70.

THE COMPLETE SEWER LINE SHALL BE TESTED AS DESCRIBED IN THE SEWER LINE LEAKAGE TEST NOTE.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT OF "ITEM SPECIAL - " 8 " CAST IRON SOIL PIPE W/FLEXIBLE JOINTS" INSTALLED, INCLUDING ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, EXCAVATION & BACKFILLING, INCIDENTALS AND TESTING NECESSARY TO COMPLETE THIS ITEM OF WORK.

ITEM SPECIAL - COLD WATER SERVICE TO BOX HYDRANT

THIS ITEM SHALL CONSIST OF PROVIDING ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT AND EXECUTING ALL EXCAVATION AND BACKFILLING NECESSARY TO INSTALL A 1.5 INCH, TYPE K, HARD COPPER WATER LINE AND A FLUSH BOX HYDRANT WITH WATTS NO. 8 VACUUM BREAKER AND KEY AS SHOWN ON THE PLANS.

THE FLUSH BOX HYDRANT SHALL BE A "MURDOCK" MODEL NO. V477- WITH A 3/4-INCH HOSE CONNECTION, BRONZE BOX AND LID. THE HYDRANT SHALL BE ANTI-FREEZING WITH 48-INCH DEPTH OF BURY. APPROVED EQUAL HYDRANTS SHALL BE SMITH, MODEL 5810 OR WADE, MODEL W-8609-L4-89-2.

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE PER LINEAR FOOT FOR ITEM SPECIAL - "COLD WATER SERVICE TO BOX HYDRANT".

ITEM 625 - LIGHT POLE DISCONNECT SWITCH WITH HOUSING, AS PER PLAN

THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING A DISCONNECT SWITCH 4' ABOVE THE TOP OF LIGHT POLE FOUNDATION IN A RAIN TIGHT HOUSING FOR THE INDICATED LIGHT. WHEN THE CIRCUIT IS ENERGIZED, THE INDIVIDUAL LIGHT MAY BE SWITCHED OFF AND ON AS NEEDED. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH ITEM 625 'LIGHT POLE DISCONNECT SWITCH WITH HOUSING AS PER PLAN'.

ITEM 625 - RELABEL EXISTING LIGHT POLE, AS PER PLAN

THIS ITEM SHALL CONSIST OF REMOVING THE EXISTING LIGHT POLE IDENTIFICATION NUMBER FROM REMAINING LIGHT POLES AND PROVIDING NEW NUMBERS IN ACCORDANCE WITH THE CONSTRUCTIONS AND MATERIALS SPECIFICATIONS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH UNDER ITEM 625 'RELABEL EXISTING LIGHTPOLE AS PER PLAN'.

Relabel Existing Light Pole, As Per Plan -- 6 each.

WASTEWATER TREATMENT SYSTEM REMOVAL

THIS ITEM SHALL CONSIST OF THE REMOVAL AND DISPOSAL OF THE EXISTING WASTEWATER TREATMENT SYSTEM (WWTS) WHICH INCLUDES AN AERATION TANK, CLARIFIER, AERATION CHAMBER, TRASH TRAP AND RELATED PIPING.

THE GENERAL CONTRACTOR SHALL, THREE (3) WEEKS IN ADVANCE OF THE DATE HE INTENDS TO REMOVE THE WWTS, MEET WITH ODOT DISTRICT PERSONNEL TO DETERMINE WHICH COMPONENTS OF THE WWTS WILL BE REMOVED BY THE CONTRACTOR AND TURNED OVER TO ODOT FOR FUTURE USE. ALL CONCRETE PADS ENCOUNTERED SHALL BE REMOVED IN ACCORDANCE WITH 202.05. PRIOR TO THE REMOVAL AND DISPOSAL OF THE WWTS THE CONTRACTOR SHALL HAVE THE WASTE WITHIN THE WWTS REMOVED BY A LICENSED WASTE TANK TRUCK OPERATING AGENCY.

AS SOON AS THE REMOVAL AND DISPOSAL WORK HAS BEEN OTHERWISE COMPLETED AND APPROVED BY THE ENGINEER BACKFILLING PROCEDURES SHALL BE PERFORMED AS DESCRIBED IN ITEM 202 AND ITEM 203. IN THOSE CASES WHERE THE WWTS AREAS ARE NOT TO BE USED FOR THE PLACEMENT OF A NEW WWTS OR LIFT STATION, THE UPPERMOST TWO (2) INCHES OF BACKFILL SHALL BE TOPSOIL AS PER ITEM 653. THE ENTIRE AREA OF CONSTRUCTION WILL THEN BE SEEDED AND MULCHED USING THE URBAN MIXTURE AS DESCRIBED IN ITEM 659. THE FINAL GRADE OF BACKFILL SHALL BE SUCH AS TO CREATE A NEAT, WELL-DRAINED APPEARANCE AND TO PREVENT WATER FROM DRAINING UNNECESSARILY ONTO ADJACENT PROPERTY.

THE COST FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 202 - "STRUCTURE REMOVED".

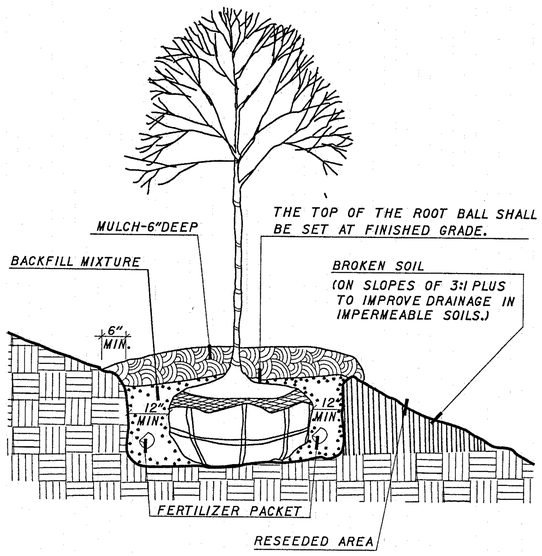
ITEM SPECIAL - PLASTIC CAUTION TAPE

THE LOCATION OF UNDERGROUND DUCT CABLE OR NON-METALLIC CONDUIT, WHEN INSTALLED IN LOCATIONS OTHER THAN THE NORMAL OR ALTERNATE TRENCH ALIGNMENT SHOWN ON STANDARD CONSTRUCTION DRAWING HL-20.11, SHALL BE MARKED BY THE USE OF A CONTINUOUS IDENTIFYING TAPE BURIED IN THE TRENCH ABOVE THE LINE. THE IDENTIFYING TAPE SHALL BE AN INERT MATERIAL, APPROXIMATELY 6" WIDE, COMPOSED OF POLYETHYLENE PLASTIC, HIGHLY RESISTANT TO ALKALIS, ACID OR OTHER CHEMICAL COMPONENTS LIKELY TO BE ENCOUNTERED IN SOILS. THE TAPE SHALL BE RED WITH PRINT IDENTIFYING "ELECTRIC" IN BLACK LETTERS, ONE SIDE ONLY. TAPES SHALL BE SUPPLIED IN CONTINUOUS ROLLS WITH THE IDENTIFYING LETTERING REPEATED CONTINUOUSLY THE FULL LENGTH OF THE TAPE. IDENTIFYING TAPES SHALL BE BURIED IN THE ELECTRIC LINE TRENCH WITH ONE STRIP PLACED APPROXIMATELY DOWN THE CENTERLINE AND LOCATED APPROXIMATELY 8" TO 12" BELOW THE FINAL FINISHED GRADE. THE TAPE SHALL BE PLACED IN THE TRENCH WITH PRINTED SIDE UP AND SHALL BE ESSENTIALLY PARALLEL WITH THE FINISHED SURFACE. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO INSURE THAT THE TAPE IS NOT PULLED, DISTORTED, OR OTHERWISE MISPLACED IN COMPLETING THE TRENCH BACKFILL. TAPE SHALL BE ALLEN SYSTEM'S, TERRA TAPE, TECTA TAPE OR EQUAL AS APPROVED BY THE ENGINEER THE TAPE SHALL BE PAID FOR PER LINEAR FEET OF "ITEM SPECIAL - PLASTIC CAUTION TAPE," COMPLETE AND IN PLACE.

ITEM 625- CONDUIT CLEANED & CABLE REMOVED AS PER PLAN

THIS ITEM SHALL CONSIST OF LOCATING AND CLEANING AN EXISTING CONDUIT OF ALL EXISTING CABLES, MUD&DEBRIS SO THAT THE NEW CABLE MAY BE INSTALLED. INCIDENTAL TO THE CLEANING IS THE INSTALLATION OF BUSHINGS AND /OR COUPLINGS ON THE ENDS OF EXISTING CONDUIT AS REQUIRED. MATERIALS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF PROJECT SITE. DISTURBED AREAS SHALL BE PROPERLY RESTORED. CONDUIT NOT REUSED SHALL BE CAPPED ON BOTH ENDS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER LINEAL FOOT UNDER ITEM 625 'CONDUIT CLEANED AND CABLE REMOVED AS PER PLAN'.

GENERAL NOTES



GENERAL REQUIREMENTS

ALL PLANT MATERIAL TO BE INSTALLED PER ITEMS 661, 662 AND 663, UNLESS OTHERWISE DESCRIBED HEREIN. CONTRACTOR SHALL PROVIDE AN ONA (OHIO NURSERYMAN'S ASSOCIATION) CERTIFIED LANDSCAPE TECHNICIAN TO SUPERVISE THE PLANTING OPERATION.

PLANTING BED PREPARATION

PRIOR TO LAYOUT AND PLANTING OF ALL PROPOSED PLANTINGS THE TOP 12" OF ALL PLANTING BEDS AS SHOWN ON LANDSCAPE PLANS IS TO CONSIST OF BACKFILL MIXTURE NO.2.

ANY EXCAVATED MATERIAL SHALL BE REMOVED FROM THE SITE. PLANTING BEDS TO BE INSPECTED AND APPROVED BY DISTRICT HORTICULTURIST OR ENGINEER PRIOR TO PLANT INSTALLATION.

PLANTING HOLE PREPARATION

WHERE TREES AND SHRUBS ARE SHOWN ON THE PLANS, THE INDIVIDUAL HOLES SHALL BE DUG ON CENTERS. THESE HOLES SHALL ALLOW FOR A MINIMUM OF 12" (INCHES) OF BACKFILL MIXTURE AROUND THE SIDES OF THE BALLS AS ILLUSTRATED. THE BOTTOM OF THE HOLE SHALL BE DUG NO DEEPER THAN THE BALL TO BE PLANTED. THE MATERIAL REMOVED FROM THE THE HOLES SHALL BE REMOVED FROM THE SITE. THE PROPOSED TREE AND/OR SHRUB SHALL BE SET AND THE HOLE FILLED WITH BACKFILL MIXTURE.

EXISTING TREES AND SHRUBS SHALL TAKE PRIORITY OVER PROPOSED PLANTINGS. THE LOCATIONS OF THE PROPOSED TREES AND SHRUBS ARE APPROXIMATE AND MAY BE REARRANGED AT THE DIRECTION OF THE ENGINEER OR HORTICULTURIST WHEN OBSTRUCTIONS ARE ENCOUNTERED.

IF AN AUGER IS USED IN DIGGING POCKET HOLES AND POLISHED (SHINY) SIDES OCCUR IN CLAY OR HEAVY SOIL, THE USE OF SUCH AN AUGER SHALL BE DISCONTINUED AND THE HOLES SHALL BE DUG WITH A BACKHOE OR ANOTHER APPROVED METHOD.

PLANTING HOLE AND BED BACKFILL MIXTURE

BACKFILL MIXTURE IS TO BE MIXED ON SITE & APPROVED BY DISTRICT HORTICULTURIST OR ENGINEER.

BACKFILL NO.1 - THE BACKFILL MIXTURE USED TO FILL POCKET HOLES IN LIGHT AND MEDIUM SOILS (SAND AND AVERAGE) SHALL CONSIST BY VOLUME OF 2 PARTS *SOIL CONDITIONER, 2 PARTS COMPRESSED SPHAGNUM PEAT OR 2 PARTS COM-TIL OR APPROVED EQUAL, AND 2 PARTS APPROVED TOPSOIL (ITEM 661.02)

BACKFILL NO. 2 - THE BACKFILL MIXTURE USED TO FILL POCKET HOLES IN HEAVY SOILS (CLAY AND SHALE) SHALL CONSIST BY VOLUME OF 1 PART *SOIL CONDITIONER, 1 PART COMPRESSED SPHAGNUM PEAT OR 1 PART COM-TIL, OR APPROVED EQUAL. AND 2 PARTS TOPSOIL. (ITEM 661.02)

SOIL CONDITIONER

A SOIL CONDITIONER SUCH AS "HAYDITE", "PERLITE" OR AN APPROVED EQUAL SHALL BE USED. THE PARTICLE SIZE GRADATION OF THE SOIL CONDITIONER SHALL BE AT LEAST 80% PASSING A NO.6 SIEVE AND NOT MORE THAN 5% PASSING A NO.50 SIEVE.

PLANTING PERIOD OF ESTABLISHMENT

BEFORE FINAL INSPECTION, ALL PLANTINGS SHALL BE IN PLACE AND UNDER THE CARE OF THE CONTRACTOR FOR A PERIOD OF ESTABLISHMENT. THIS PERIOD SHALL BEGIN IMMEDIATELY UPON COMPLETION OF THE PLANTING OPERATION FOR ANY PLANT OR SPECIES GROUP AND CONTINUE UNTIL OCTOBER 1. IN NO CASE SHALL IT BE LESS THAN ONE GROWING SEASON, JUNE 1 TO OCTOBER 1.

DURING THIS PERIOD OF ESTABLISHMENT, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW SUCH HORTICULTURAL PRACTICES AS REQUIRED TO ASSURE THE VIGOR AND GROWTH OF THE TRANSPLANTED MATERIAL. THIS CARE SHALL INCLUDE WATERING, REMULCHING, RESTAKING, GUYING AND CULTIVATING. THERE SHALL BE A MINIMUM OF TWO WEEDING AND MOWING (BED EDGES, AROUND TREES AND GUY STAKES) PROGRAMS OF SUCH INTENSITY AS TO COMPLETELY RID THE PLANTED AND MULCHED AREAS OF WEEDS AND GRASSES. THE FIRST PROGRAM SHALL BEGIN ON OR ABOUT JUNE 15 AND THE OTHER APPROXIMATELY 8 WEEKS LATER.

EACH PLANT SHALL HAVE SUFFICIENT WATER TO KEEP IT IN A HEALTHY, GROWING CONDITION. IF LOCAL WEATHER CONDITIONS WARRANT, WEEKLY WATERING MAY BE REQUIRED. A SCHEDULE FOR WATERING EACH PLANT AND REQUIRED MAINTENANCE AS DESCRIBED IN THE FOLLOWING PARAGRAPH SHALL BE SUPPLIED TO AND APPROVED BY THE ENGINEER OR HORTICULTURIST BEFORE PLANTING BEGINS. SOIL MIXTURE TO BE TESTED IN EACH PLANTING ZONE BY A SOIL MOISTURE METER APPROVED BY THE ENGINEER OR HORTICULTURIST . WATERING IS TO BE DONE AS INSTRUCTED ON THE WATERING TABLE WHEN NEED IS INDICATED BY METER READINGS. THE WATER SHALL BE APPLIED IN SUCH A MANNER AS TO SATURATE THE ROOT AND MULCHED AREA OF EACH PLANT WITHOUT CAUSING RUN-OFF (SEE WATERING TABLE). IN CASE OF FALL PLANTINGS, THESE WATERINGS SHALL CONTINUE UNTIL SOIL FREEZES UP AND RECOMMENCE AFTER THE SPRING THAW UNLESS OTHERWISE DIRECTED.

ON OR ABOUT SEPTEMBER 15, THE ENGINEER SHALL INSPECT THE PLANTING AND SUPPLY THE CONTRACTOR WITH A LISTING OF THOSE PLANTS HAVING DIED, DIED BACK BEYOND NORMAL PRUNING LINES OR ARE MISSING FROM THE PLANTING. THE CONTRACTOR SHALL MAKE THE REPLANTING AS REQUIRED IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE ORIGINAL MATERIAL. THESE REPLACEMENTS ARE NOT SUBJECT TO THE PERIOD OF ESTABLISHMENT, HOWEVER, PLANTS PLANTED INITIALLY IN THE FALL WHICH HAVE DIED BEFORE THE SPRING PLANTING SEASON SHALL BE REPLACED IMMEDIATELY AND ARE SUBJECT TO THE ESTABLISHMENT PERIOD.

AFTER REPLACEMENTS HAVE BEEN PLANTED, THE FINAL INSPECTION SHALL BE MADE AND THE ACTUAL COUNT OF LIVE PLANTS OF EACH VARIETY AND SPECIES LISTED FOR PAYMENT.

ITEM 661.21 WATERING

WATER SHALL BE FURNISHED BY THE CONTRACTOR AND ALL PLANT MATERIAL SHALL BE WATERED THOROUGHLY AT THE TIME OF PLANTING REGARDLESS OF AMPLE MOISTURE CONTENT OF THE SURROUNDING SOIL. SUSPENSION OF WATERING OPERATIONS BECAUSE OF RAINFALL WILL BE DETERMINED BY THE ENGINEER OR HORTICULTURIST.
AN AVERAGE OF ONE INCH OF RAINFALL PER WEEK SHALL BE CONSIDERED ADEQUATE. DETERMINATION OF RAINFALL SHALL BE BASED UPON THE USE OF A RAIN GAUGE APPROVED BY THE PROJECT ENGINEER OR HORTICULTURIST.

WATERING TABLE

SHRUBS 1'-2' SIZE	2 GAL. PER PLANT
SHRUBS 2'-3' SIZE	4 GAL. PER PLANT
SHRUBS 4'-5' SIZE	7 GAL. PER PLANT
TREES 5'-6' SIZE	10 GAL. PER PLANT
TREES 1-1/4" - 1-1/2" CAL.	15 GAL. PER PLANT
TREES 1-1/2" - 2-1/2" CAL.	20 GAL. PER PLANT
TREES 2" - 3" CAL.	25 GAL. PER PLANT
TREES 3" - 4" CAL.	30 GAL. PER PLANT

THE METHOD OF MEASUREMENT FOR SUMMER WATERING SHALL BE BY APPROVED METERING FROM TANKS OR BY INDIVIDUALLY MEASURED CONTAINERS TO EACH PLANT TO BE WATERED. PAYMENT FOR PLANTING PERIOD OF ESTABLISHMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS 661, 662 AND 663 AND IS CONSIDERED TO BE 15% OF THE COST FOR THE ITEM.

TOPSOIL TESTING

TOPSOIL FAILING CURRENT TEST STANDARDS MAY BE ALTERED, UPON APPROVAL OF THE HORTICULTURIST, OR ENGINEER BY ADDING APPROVED CONDITIONERS TO CORRECT THE DEFICIENCIES. TOPSOIL SHALL BE FREE OF JOHNSON GRASS 653 AS DETERMINED BY THE HORTICULTURIST OR ENGINEER.

PLANT TRANSPORT

ALL PLANTS SHALL BE DELIVERED ON TRUCKS WITH THE ENTIRE LOAD COMPLETELY COVERED FOR PROTECTION .

MULCH

MULCH SHALL BE AS PER ITEM 661.04 WITH THE FOLLOWING EXCEPTIONS, WOOD SHAVINGS OR PEAT MOSS OR CORN COBS SHALL NOT BE USED AS A TOP MULCH. WOOD CHIPS SHALL BE AGED (STOCKPILED) AT LEAST SIX MONTHS PRIOR TO PLACEMENT AROUND PLANTS. MULCH SHALL BE SIX INCHES LOOSE MEASUREMENT AFTER MULCHING.

STAKING MATERIALS

ALL TREES SHALL BE STAKED AS SHOWN IN THE STANDARD DRAWING LA-2. STAKING OF SMALL ORNAMENTAL TREES SHALL BE SIMILAR TO THAT OF EVERGREENS.

FERTILIZER

FOUR OUNCE (8-YEAR) COMMERCIAL FERTILIZED PACKETS USED IN PLANTING OPERATION SHALL BE DELIVERED DRY IN ORIGINAL, UNOPENED CONTAINERS. FERTILIZER ANALYSIS SHALL BE 16% NITROGEN, 8% PHOSPHORIC ACID AND 16% POTASH. FERTILIZER SHALL BE OF A SLOW RELEASE TYPE IN A POLYETHYLENE PERFORATED PACKET WITH MICROPORE HOLES.

THE PACKETS SHALL BE PLACED 6 TO 8 INCHES DEEP AND EVENLY SPACED AROUND THE PERIMETER OF THE PLANTING HOLE, ADJACENT TO THE BALL OR ROOT MASS BUT NOT IN DIRECT CONTACT WITH THE ROOTS. THE PACKETS SHALL NOT BE CUT, RIPPED OR DAMAGED.

EACH SHRUB OR TREE SHALL BE FERTILIZED ACCORDING TO THE FOLLOWING SCHEDULE:

SHRUBS 1' - 2'	2 PACKETS
SHRUBS 2' - 3'	2 PACKETS
SHRUBS 3' - 4'	3 PACKETS
TREES 5' - 6'	3 PACKETS
TREES 6' - 8'	4 PACKETS
TREES 1-1/2" - 2" CAL.	2 PACKETS
TREES 2" - 2-1/2" CAL.	3 PACKETS
TREES 2-1/2" - 3" CAL.	4 PACKETS
TREES 3" - 3-1/2" CAL.	5 PACKETS

IF IT BECOMES NECESSARY TO REMOVE AND REPLACE MISSING, DEAD OR UNHEALTHY PLANTS, ALL OLD PACKETS SHALL BE REPLACED WITH NEW PACKETS.

THE FOUR OUNCE 16-8-16 FERTILIZER PACKETS SHALL BE DESIGNATED BY THE MANUFACTURER TO BE EFFECTIVE FOR EIGHT YEARS. PACKETS SUCH AS "EEESY GROW" (S&D PRODUCTS, INC., BOX 66, PRARIE DUCHIEN, WISC. 53821, 608-326-2821

HERBICIDES

THE MONTH PRIOR TO CULTIVATION AND PLANTING ALL SHRUB BEDS WILL BE TREATED WITH ROUNDUP BRAND HERBICIDE OR AN APPROVED EQUAL IF WEEDS ARE PRESENT.
AFTER VEGETATION PLACEMENT AND FERTILIZING HAVE BEEN COMPLETED AND APPROVED, THE SHRUB BEDS WILL BE TREATED WITH SURFLAN BRAND HERBICIDE OR AN APPROVED EQUAL. THE RATE AND METHOD OF APPLICATION SHALL BE IN STRICT CONFORMANCE WITH THE MANUFACTURERS PRODUCT LABEL AND CONSISTENT WITH CURRENT PRACTICES FOR ROADSIDE MANAGEMENT. THIS WORK SHALL BE ACCOMPLISHED UNDER THE DIRECT SUPERVISION OF A PESTICIDE APPLICATOR LICENSED BY THE STATE OF OHIO.

STORAGE AREAS

THE CONTRACTOR MAY STORE PLANT MATERIALS AND EQUIPMENT 30 FEET FROM PAVEMENT, BEHIND GUARDRAIL AND WITHIN OR ADJACENT TO THE PROJECT LIMITS BY OBTAINING OFFICIAL PERMISSION OF THE ENGINEER. NO PEDESTRIAN OR VEHICULAR TRAFFIC MAY BE IMPEDED NOR HAZARDOUS CONDITION CREATED AS A RESULT OF SUCH STORAGE.

THE STORAGE OF ALL DUG PLANTS SHALL CONFORM TO 661.14 WHETHER WITHIN THE PROJECT LIMITS, ADJACENT THERETO, OR AT SOME OTHER LOCATION. THESE AREAS SHALL BE DESIGNATED PRIOR TO ACTUAL PLANT STORAGE AND SHALL BE OPEN TO INSPECTION UPON REQUEST OF THE ENGINEER.

SCHEDULING

ALL DIGGING AND PLANTING OF DECIDUOUS PLANTS SHALL BE DONE AFTER OCTOBER 1, AND BEFORE JUNE 1. EVERGREENS SHALL BE DUG AND PLANTED AFTER MARCH 15, AND BEFORE JUNE 1.

ITEMS 662 AND 663

ALL TREES AND SHRUBS SHALL BE SPECIMEN (NO. 1 GRADE) PLANTS WITH GROWTH AND BRANCHING HABIT TYPICAL OF THE SPECIES SPECIFIED. NO PARK GRADE (NO. 2 OR 3 GRADE) PLANTS WILL BE ACCEPTED.

GENERAL SUMMARY

CALC BY		MAH-11-3.31 MAHONING COUNTY SAFETY REST AREA	OHIO FHWA REGION 5	6 / 73
CHKD BY DATE 11/93				

SHEET NUMBER															ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
2	11	12	13	14	15	16	17	18	19	20	23	28	29	3					
																			GENERAL
		1				1									SPECIAL	680 10400	2	EACH	MOTORIST SERVICES BUILDING, MSB-4 (GENERAL ONLY)
		1				1									SPECIAL	680 11000	2	EACH	SHELTER HOUSE (GENERAL ONLY)
									1						SPECIAL	680 11408	1	EACH	COMPLETE WASTEWATER TREATMENT SYSTEM (GENERAL ONLY) 14,000 GALLON
											2				SPECIAL	680 12000	2	EACH	WATER RESERVOIR ASSEMBLY (GENERAL ONLY)
	2267				2472					254					SPECIAL	680 12500	4993	LIN FT	SNOW FENCE - TREE PROTECTION
				11				6							SPECIAL	680 13000	17	EACH	PICNIC TABLE
				2				4							SPECIAL	680 14000	6	EACH	PICNIC TABLE AND SLAB
				2				2							SPECIAL	680 14500	4	EACH	CHARCOAL GRILL AND SERVING TABLE (WITH SLAB)
				12				10							SPECIAL	680 15000	22	EACH	WASTE RECEPTACLE SLEEVE
				6				3							SPECIAL	680 15500	9	EACH	WASTE RECEPTACLE SLAB
				5				5							SPECIAL	680 16500	10	EACH	6' WOOD BENCH
														6	SPECIAL	680 18100	6	EACH	STACKING CHAIR
2															SPECIAL	680 18200	2	EACH	FOLDING LEG TABLE
									1						SPECIAL	680 19200	1	EACH	LIFT STATION (GENERAL ONLY)
	5				6										SPECIAL	680 43400	11	EACH	CHARCOAL GRILL AND SERVING TABLE REMOVED
									841.35						SPECIAL	680 43900	841	LIN FT	CAST IRON SOIL PIPE (SV) WITH FLEXIBLE JOINTS: 6"
									784.62						SPECIAL	680 43900	785	LIN FT	CAST IRON SOIL PIPE (SV) WITH FLEXIBLE JOINTS: 8"
									1						SPECIAL	680 98100	1	EACH	ROADSIDE REST AREA, MISC.: TRASH TRAP- 1050 GAL.
				1				1							SPECIAL	680 98100	2	EACH	ROADSIDE REST AREA, MISC.: ASH URN
				1				1							SPECIAL	680 98100	2	EACH	ROADSIDE REST AREA, MISC.: WOOD SIGN
		1635				1650									SPECIAL	680 98200	3285	SQ FT	ROADSIDE REST AREA, MISC.: BRICK PAVERS
									284.62		240				SPECIAL	680 98300	525	LIN FT	ROADSIDE REST AREA MISC.: 12" STEEL PIPE ENCASEMENT
									105						SPECIAL	680 98300	105	LIN FT	ROADSIDE REST AREA MISC.: 18" STEEL PIPE ENCASEMENT
		35				35									SPECIAL	680 98300	70	LIN FT	ROADSIDE REST AREA, MISC.: WOOD FENCE
										659					SPECIAL	680 98300	659	LIN FT	ROADSIDE REST AREA, MISC.: WOOD FENCE WITH 14' GATE
				440				485							SPECIAL	680 98300	925	LIN FT	ROADSIDE REST AREA, MISC.: LANDSCAPE BORDER EDGING
	1				1										SPECIAL	202 66000	2	EACH	DRILLED WATER WELL ABANDONED
	LUMP				LUMP										201	11000	LUMP		CLEARING AND GRUBBING
	LUMP				LUMP										202	11000	LUMP		STRUCTURE REMOVED
	3423				3716										202	30000	7139	SQ FT	WALK REMOVED
	122				122										202	32000	244	LIN FT	CURB REMOVED
	12														202	34900	12	LIN FT	PIPE REMOVED
	1														202	58500	1	EACH	CATCH BASIN ABANDONED
	1				1										202	68100	2	EACH	REMOVAL AND DISPOSAL OF UNDERGROUND STORAGE TANK
	1				1										202	98100	2	EACH	REMOVE MISC: PICNIC SLAB ONLY
					1										202	98100	1	EACH	REMOVE MISC: FLAG POLE
	1				5										202	98100	6	EACH	REMOVE MISC: WOOD PICNIC TABLE & SLAB REMOVED
	6				2										202	98100	8	EACH	REMOVE MISC: WOOD PICNIC TABLE [illegible]
	128				134										202	98200	262	LIN FT	REMOVE MISC: SPLIT RAIL FENCE
	274				151										202	98300	425	SQ YD	REMOVE MISC:GRAVEL DRIVE [illegible], AS PER PLAN.
	LUMP		LUMP		LUMP		LUMP		LUMP	LUMP					203	13200	LUMP		EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
	LUMP		LUMP		LUMP		LUMP		LUMP	LUMP					203	35200	LUMP		EMBANKMENT

GENERAL SUMMARY

CALC BY	DATE
CHKD BY	DATE 11/93

MAH-11-3.31
MAHONING COUNTY
SAFETY REST AREA

OHIO
FHWA REGION 5

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SHEET NUMBER												PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	
10	12	13	14	15	16	17	18	19	20	28	29	3								
																			GENERAL (CONTINUED)	
	642				471				284						452	11001	1397	SQ YD	7" PLAIN CONCRETE PAVEMENT, AS PER PLAN	
									3.7						601	34300	4	CU YDS	ROCK CHANNEL PROTECTION, TYPE D, WITHOUT FILTER	
									.65						602	20001	.65	CU YDS	CONCRETE MASONRY, AS PER PLAN	
		178				392									603	00900	570	LIN FT	6" CONDUIT, TYPE B	
						2									604	02800	2	EACH	CATCH BASIN, NO.8	
								8							604	31500	8	EACH	MANHOLE, NO. 3	
								2							604	32500	2	EACH	MANHOLE, MISC. DROP MANHOLE	
	8924				10409										608	10001	19333	SQ FT	4" CONCRETE WALK, AS PER PLAN	
	348				312										608	53001	660	SQ FT	CURB RAMP, TYPE 1, AS PER PLAN	
	774				798										609	26001	1572	LIN FT	CURB, TYPE 6, AS PER PLAN	
2.2															630	00100	2.2	CU YDS	CONCRETE FOR EMBEDDED FOUNDATION	
			12				12								630	02100	24	LIN FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
36															630	07600	36	LIN FT	GROUND MOUNTED SUPPORT, W 10X12 BEAM	
2															630	09000	2	EACH	BREAKAWAY BEAM CONNECTION	
58.5			6				6								630	80204	71	SQ FT	SIGN, EXTRUSHEET, TYPE G	
			3422				3244		1777						659	10000	8443	SQ YD	SEEDING AND MULCHING	
			.3				.3								659	20000	.6	TON	COMMERCIAL FERTILIZER	
			1458				1956								660	30000	3414	SQ YD	SODDING	
												26			659	35000	26	M.GAL	WATER	CONDITION:
			50												661	14000	50	EACH	PERENNIALS (PHALARIS ARUNDINACEA 'PICTA'-RIBBON GRASS)	1 GAL.
							25								661	14000	25	EACH	PERENNIALS (HOSTA SIEBOLDIANA 'ELEGANS'- SIEBOLDS PLANTAIN LILY)	1 GAL.
			7												661	14000	7	EACH	PERENNIALS (PENNISETUM ALOPECUROIDES 'HAMELN'- FOUNTAIN GRASS)	2 GAL.
			250				135								661	14000	385	EACH	PERENNIALS (IBERIS SEMPERVIRENS CHRISTMAS SNOW- CANDYTUFT)	3"POT
			224				330								661	14000	554	EACH	PERENNIALS (RUDBECKIA FULGIDIA SPEC 'GOLDSTRUM'- BLACK EYED SUSAN)	3"POT
							115								661	14000	115	EACH	PERENNIALS (DICENTRA SPECTABILIS ALBA- BLEEDING HEART)	1 GAL.
			1500				1500								661	99900	3000	EACH	GROUNDCOVER & VINES, MISC. (AJUGA REPTANS 'BRONZE BEAUTY'- CARPET BUGLE)	FLAT
			2500				2500								661	99900	5000	EACH	GROUNDCOVER & VINES, MISC. (EUONYMOUS COLORATUS- PURPLELEAF WINTERCREEPER)	FLAT
			13				20								662	10500	33	EACH	DECIDUOUS SHRUB, 15"-18" (COTONEASTER APICULATUS- CRANBERRY COTONEASTER)	2 GAL.
			16				13								662	11000	29	EACH	DECIDUOUS SHRUB, 18"-24" HT. (FORSYTHIA VIRIDISSIMA 'BRONXENSIS'- BRONXENSIS FORSYTHIA)	3 GAL.
			9												662	12000	9	EACH	DECIDUOUS SHRUB, 3'-4' HT. (VIBURNUM CARLESI CHESAPEAKE- CHESAPEAKE VIBURNUM)	12" B&B
			17												662	12000	17	EACH	DECIDUOUS SHRUB, 3'-4' HT. (VIBURNUM OPULUS - CRANBERRYBUSH VIBURNUM)	12" B&B
			12												662	12000	12	EACH	DECIDUOUS SHRUB, 3'-4' HT. (VIBURNUM OPULUS COMPACTUM-COMPACT CRANBERRYBUSH VIBURNUM)	12" B&B
							23								662	20500	23	EACH	EVERGREEN SHRUB, 15"-18" HEIGHT (ILEX CRENATA 'GREEN LUSTER'- GREEN LUSTER HOLLY)	2 GAL.
			39				20								662	20500	59	EACH	EVERGREEN SHRUB, 15"-18" HT. (POTENTILLA FRUTICOSA 'GOLDFINGER'-BUSH CINQUEFOIL)	2 GAL.
			65				98								662	21000	163	EACH	EVERGREEN SHRUB, 18"-24" HT. (JUNIPERUS HORIZONTALIS 'PLUMOSA'-PLUMOSA JUNIPER)	3 GAL.
			13												662	21000	13	EACH	EVERGREEN SHRUB, 18-24" HEIGHT (JUNIPERUS SABINA 'BROADMOOR'-BROADMOOR JUNIPER)	3 GAL.
			19				19								662	21000	38	EACH	EVERGREEN SHRUB, 18"-24" HEIGHT (PINUS MUGO MUGO - COMPACT MUGO PINE)	3 GAL.
			10				28								662	21000	38	EACH	EVERGREEN SHRUB, 18"-24" HEIGHT (TAXUS MEDIA 'EVERLOW'- EVERLOW YEW)	3 GAL.
			3				4								662	99900	7	EACH	SHRUB OR BUSH, MISC. 4-5' HEIGHT (AESCULUS PARVIFLORA- BOTTLEBRUSH BUCKEYE)	14"B&B
							1								663	11000	1	EACH	DECIDUOUS FLOWERING TREE, 1 1/2"-1 3/4" CALIPER (MALUS 'CORALBURST'- CORALBURST CRABAPPLE)	20"B&B
			4												663	12000	4	EACH	DECIDUOUS FLOWERING TREE, 2-2 1/2" CALIPER (MALUS SNOWDRIFT- SNOWDRIFT CRABAPPLE)	24"B&B
			9				10								663	12000	19	EACH	DECIDUOUS FLOWERING TREE, 2-2 1/2" CALIPER (PRUNUS SERRULATA 'KWANZAN'- KWANZAN CHERRY)	24"B&B
							5								663	21000	5	EACH	DECIDUOUS SHADE TREE, 2"-2½" CALIPER (LIQUIDAMBAR STYRACIFLUA - SWEETGUM)	24"B&B
			1				4								663	21000	5	EACH	DECIDUOUS SHADE TREE, 2"-2½" CAL. (ACER RUBRUM 'RED SUNSET'- RED SUNSET MAPLE)	24"B&B
			2				2								663	21000	4	EACH	DECIDUOUS SHADE TREE, 2"-2 1/2" CALIPER (GLEDITSIA TRIACANTHOS INERMIS 'SKYLINE'- SKYLINE HONEYLOCUST)	24" B&B
			7				11								663	33000	18	EACH	EVERGREEN TREE, 6' - 7' HEIGHT (PINUS NIGRA- AUSTRIAN PINE)	22"B&B
			2				2								663	99900	4	EACH	TREE, MISC., 7'-8' HEIGHT (BETULA NIGRA 'HERITAGE'- HERITAGE BIRCH)	24"B&B
															614	11000	LUMP		MAINTAINING TRAFFIC	
															619	15010	LUMP		FIELD OFFICE, TYPE B	
															623	10001	LUMP		CONSTRUCTION LAYOUT STAKES, AS PER PLAN	
															624	10000	LUMP		MOBILIZATION	
															SPECIAL	619 25010	LUMP		COMPUTER EQUIPMENT FOR TYPE B OR C OFFICE (SEE PROPOSAL NOTE)	

REVISED 12/7/94

GENERAL SUMMARY

CALC BY / DATE	MAH-11-3.31 MAHONING COUNTY SAFETY REST AREA	OHIO FHWA REGION 5	8 73
CHKD BY / DATE 11/93			

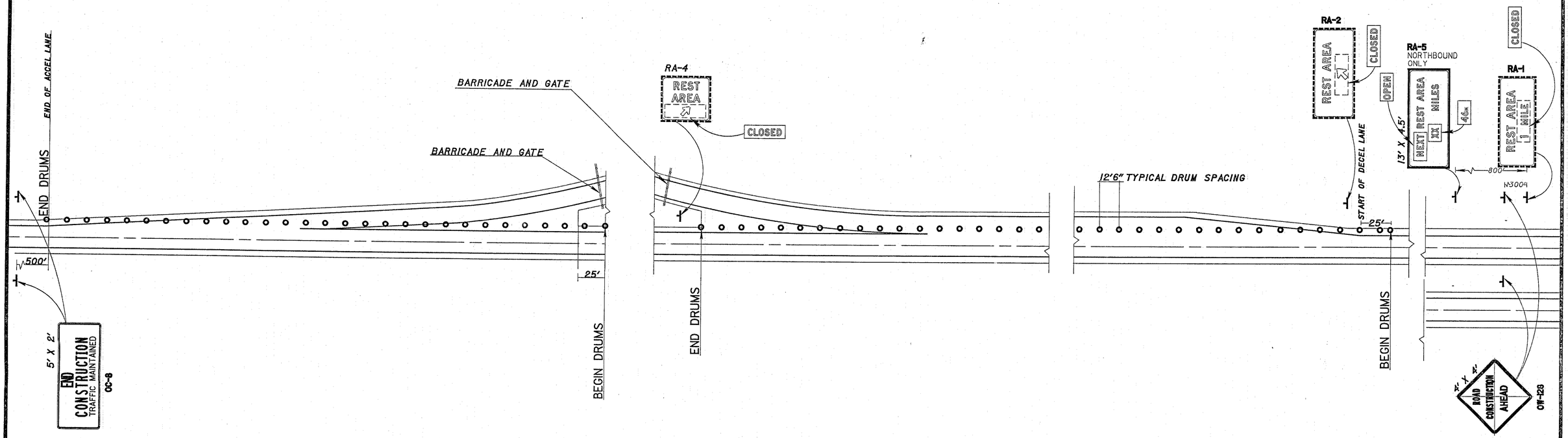
SHEET NUMBER												PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
11	12	13	14	15	16	17	23	24	25	28	29	19	4						
																			ELECTRICAL CONTRACT
							2								SPECIAL	680 40400	2	EACH	MOTORIST SERVICES BUILDING, MSB-4 (ELECTRICAL ONLY)
							2								SPECIAL	680 41000	2	EACH	WATER WELL ASSEMBLY (ELECTRICAL ONLY)
							1								SPECIAL	680 41300	1	EACH	COMPLETE WASTE TREATMENT SYSTEM (ELECTRICAL ONLY)
							2								SPECIAL	680 41500	2	EACH	WATER SYSTEM HYPOCHLORINATOR (ELECTRICAL ONLY)
							2								SPECIAL	680 42000	2	EACH	WATER RESERVOIR ASSEMBLY (ELECTRICAL ONLY)
							2	2							SPECIAL	680 44700	2	EACH	TELEPHONE SERVICE
							1								SPECIAL	680 49200	1	EACH	LIFT STATION (ELECTRICAL ONLY)
							2	—							SPECIAL	680 98100	2	EACH	ROADSIDE REST AREA, MISC.: CONTROLS
								8819							SPECIAL	625 36000	8819	LIN FT	PLASTIC CAUTION TAPE
7				6											202	75300	13	EACH	PULLBOX REMOVED
12				12											202	75401	24	EACH	LIGHT POLE REMOVED, AS PER PLAN
12				12											202	75500	24	EACH	LIGHT POLE FOUNDATION REMOVED
6				6											202	75507	12	EACH	LUMINAIRE REMOVED, AS PER PLAN
1				1											202	75510	2	EACH	POWER SERVICE REMOVED
3				3											202	98100	6	EACH	REMOVAL MISCELLANEOUS: EXISTING POLE WIRING, AS PER PLAN
								320				640			603	00400	960	LIN. FT	4" CONDUIT, TYPE E (PULL BOX UNDERDRAIN)
								60							625	00500	60	EACH	CONNECTOR KIT, TYPE II,
								18							625	01004	18	EACH	CONNECTOR KIT, TYPE VII B,
								27							625	01500	27	EACH	CABLE SPLICING KIT
								14							625	06400	14	EACH	LIGHT POLE, DESIGN AT15B 41.7
								1							625	10500	1	EACH	LIGHT POLE, MISC: DISCONNECT SWITCH W/HOUSING AS PER PLAN (SEE SHT. 4)
								13							625	10500	13	EACH	LIGHT POLE, MISC: DECORATIVE, AS PER PLAN
								13							625	14001	13	EACH	LIGHT POLE FOUNDATION, 24' X 6' DEEP, AS PER PLAN
								14							625	14100	14	EACH	LIGHT POLE FOUNDATION, 24' X 8' DEEP
								600							625	23000	600	LIN FT	NO. 4 AWG 600 VOLT DISTRIBUTION CABLE
								570							625	23100	570	LIN FT	NO. 2 AWG 600 VOLT DISTRIBUTION CABLE
								630							625	23200	630	LIN FT	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE
								3120							625	23308	3120	LIN FT	DISTRIBUTION CABLE, MISC.: 1/C NO. 12 AWG 600 VOLT
								300							625	23308	300	LIN FT	DISTRIBUTION CABLE, MISC.: 1/C 350 MCM UL TYPE, 600 VOLT SECONDARY FEEDER CABLE
								7544							625	24320	7544	LIN FT	1-1/2" DUCT CABLE WITH THREE NO. 4 AWG 5000 VOLT CABLES
								2865							625	23400	2865	LIN FT	NO. 10 AWG POLE AND BRACKET CABLE
														6	625	10500	6	Each	LIGHT POLE, MISC.: RELABLE EXISTING LIGHT POLE AS PER PLAN
								600							625	25300	600	LIN FT	CONDUIT, 1 1/2 ", 713.04
								390							625	25400	390	LIN FT	CONDUIT, 2", 713.04
								342							625	25500	342	LIN FT	CONDUIT, 3", 713.04
								100							625	25600	100	LIN FT	CONDUIT, 4", 713.04
								1095							625	25602	1095	LIN FT	CONDUIT, 4", 713.07
500				500											625	25911	1000	LIN FT	CONDUIT CLEANED AND CABLES REMOVED, AS PER PLAN
								26							625	27600	26	EACH	LUMINAIRE, MISC.: LUMINAIRE, STYLE B, TYPE 2, 200 WATT HIGH PRESSURE SODIUM, 713.11, 240 VT.
								13							625	27600	13	EACH	LUMINAIRE, MISC: DECORATIVE
								7694							625	29002	7694	LIN FT	TRENCH, 24" DEEP
								30							625	29100	30	LIN FT	TRENCH, 36" DEEP
								1095							625	29200	1095	LIN FT	TRENCH, 48" DEEP
								13							625	30706	13	EACH	PULL BOX, 713.08, 24"
								5							625	31600	5	EACH	PULL BOX, MISC.: 713.08 48" X 48" DEEP, AS PER PLAN
								29							625	32000	29	EACH	GROUND ROD
								2							625	34001	2	EACH	POWER SERVICE, AS PER PLAN
															625	38000	LUMP		HIGH VOLTAGE TEST
															623	10001	LUMP		CONSTRUCTION LAYOUT STAKES, AS PER PLAN
															624	10000	LUMP		MOBILIZATION

GENERAL SUMMARY

CALC BY / DATE	MAH-11-3.31	OHIO	9
CHKD BY / DATE	MAHONING COUNTY	FHWA REGION 5	73
	SAFETY REST AREA		

SHEET NUMBER												PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
11	12	13	14	15	16	17	23	24	25	28	29								
																			PLUMBING CONTRACT
							2								SPECIAL	680 20400	2	EACH	MOTORIST SERVICES BUILDING, MSB-4 (PLUMBING ONLY)
							2								SPECIAL	680 21000	2	EACH	WATER WELL ASSEMBLY (PLUMBING ONLY)
							2								SPECIAL	680 21500	2	EACH	WATER SYSTEM HYPOCHLORINATOR (PLUMBING ONLY)
							2								SPECIAL	680 22000	2	EACH	WATER RESERVOIR ASSEMBLY (PLUMBING ONLY)
							210								SPECIAL	680 23000	210	LIN FT	COLD WATER SERVICE TO WASTE TREATMENT PLANT
							260								SPECIAL	680 44600	260	LIN FT	COLD WATER SERVICE TO BOX HYDRANT
							2								SPECIAL	680 98100	2	EACH	MOTORIST SERVICES BUILDING, MSB-4 (PLUMBING FIXTURE AND TRIM ONLY)
															623	10000	LUMP		CONSTRUCTION LAYOUT STAKES
															624	10000	LUMP		MOBILIZATION
																			HEATING & VENTILATING CONTRACT
							2								SPECIAL	680 30400	2	EACH	MOTORIST SERVICES BUILDING, MSB-4 (HEATING & VENTILATING ONLY)
															624	10000	LUMP		MOBILIZATION

CALC BY DATE	MAH-II-3.31 MAHONING COUNTY SAFETY REST AREA	OHIO FHWA REGION 5	10 73
CHKD BY DATE			



ESTIMATED QUANTITIES (RA-5 SIGN, NORTHBOUND ONLY)			
ITEM	DESCRIPTION	UNIT	QUANT.
630	SIGN, EXTRUSHEET, TYPE G	SQ.FT.	58.5
630	GROUND MOUNTED SUPPORT, W10 X 12 BEAM	L.F.	36
630	CONCRETE FOR EMBEDDED FOUNDATION	C.Y.	2.2
630	BREAKAWAY BEAM CONNECTIONS	EA.	2

LEGEND

= EXISTING SIGN

= PROPOSED SIGN

= PROPOSED DRUMS DURING REST AREA CLOSURE

NOTES:

1. ALL PROVISIONS AND PROCEDURES SHALL COMPLY WITH ODOT CMS 614 MAINTAINING TRAFFIC
2. MAINTENANCE OF TRAFFIC PLAN TYPICAL FOR BOTH NORTHBOUND AND SOUTHBOUND REST AREAS.
3. DURING CLOSURE REST AREA SIGNS SHALL HAVE THE ACTION MESSAGE COVERED BY AN OVERLAY BEARING THE LEGEND "CLOSED". THIS PANEL SHALL HAVE A BLACK LEGEND ON A REFLECTORIZED ORANGE BACKGROUND THE OVERLAY FOR THE RA-1, RA-2, RA-3 SIGNS SHALL BE 8'X1 1/2' THE OVERLAY FOR THE RA-4 SIGNS SHALL BE 4'X 1 1/2'.
4. SUPPLEMENTAL PANELS LOCATED UNDER MAINLINE REST AREA SIGNS SHALL BE REMOVED OR COVERED WHILE THE REST AREA IS CLOSED. (EXAMPLE: TELEPHONE, TOURIST INFO., HANDICAPPED SYMBOL SIGN)
5. WHERE REST AREA RAMP LIGHTING EXISTS, IT SHALL BE MAINTAINED IN PROPER CONDITION TO PROVIDE OPTIMUM ILLUMINATION.
6. ALL ITEMS TO BE INCLUDED IN LUMP SUM BID FOR MAINTAINING TRAFFIC EXCEPT THOSE ITEMS LISTED UNDER ESTIMATED QUANTITIES ON THIS PAGE.

5. REST AREA SIGN RA-5 SHALL BE ADDED WITH PROPER MILEAGE SHOWN ON NORTHBOUND SIDE: NB RA-5, 46 =MILEAGE
6. SEE STANDARD DRAWING SHEET MT 101.06 FOR BARRICADE AND GATE DETAILS AND ADDITIONAL QUANTITIES.

MAINTENANCE OF TRAFFIC PLAN

DS_HUNT
S_HUNT

CALC. BY		MAH-11-3.31	OHIO	11
DATE			FHWA REGION 5	73
CHKD. BY				
DATE	11/93			

ESTIMATED QUANTITIES:

ITEM	DESCRIPTION	QUANTITY
GENERAL CONTRACT		
201	CLEARING AND GRUBBING	LUMP
202	STRUCTURE REMOVED	LUMP
202	CURB REMOVED	122 L.F.
202	WALK REMOVED	3423 SQ. FT.
202	PIPE REMOVED	12 LIN. FT.
202	CATCH BASIN ABANDONED	1 EACH
SPECIAL	DRILLED WATER WELL ABANDONED	1 EACH
202	REMOVAL AND DISPOSAL OF UNDERGROUND STORAGE TANK	1 EACH
202	REMOVE MISC.: SPLIT RAIL FENCE	128 LIN. FT.
202	REMOVE MISCELLANEOUS: PICNIC SLAB ONLY	1 EACH
202	REMOVE MISC.: WOOD PICNIC TABLE & SLAB REMOVED	1 EACH
202	REMOVE MISCELLANEOUS: WOOD PICNIC TABLE REMOVED	6 EACH
202	REMOVE MISCELLANEOUS: GRAVEL DRIVE REMOVED	274 SQ. YDS.
SPECIAL	SNOW FENCE-TREE PROTECTION	2267 LIN.FT.
SPECIAL	CHARCOAL GRILL & SERVING TABLE REMOVED	5 EACH
203	EMBANKMENT	LUMP
203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	LUMP
ELECTRICAL CONTRACT		
202	PULL BOX REMOVED	7 EACH
202	LIGHT POLE FOUNDATION REMOVED	12 EACH
202	LIGHT POLE REMOVED, AS PER PLAN	12 EACH
202	LUMINAIRE REMOVED, AS PER PLAN	6 EACH
202	REMOVE EXISTING POLE WIRING, AS PER PLAN	3 EACH
625	CONDUIT CLEANED AND CABLE REMOVED AS PER PLAN	500 L.F.
202	POWER SERVICE REMOVED	1 EACH

REMOVE WASTEWATER TREATMENT PLANT
REMOVE SHED
REMOVE GRILL &SLAB
REMOVE LIGHT
SNOW FENCE
REMOVE LIGHT POLE
REMOVE TABLE ONLY
REMOVE TABLE & SLAB
REMOVE LIGHT POLE
MAINTAIN EXISTING WELL
REMOVE STUMPS
REMOVE GRILL &SLAB
REMOVE SLAB ONLY
REMOVE GRAVEL DRIVE
REMOVE GRILL & SLAB
REMOVE LIGHT POLE
ABANDON CO
REMOVE SAN SEWER
ABANDON SAN SEWER
REMOVE PULLBOX
REMOVE TRANSFORMER
REMOVE WATER RESERVOIR TANK
REMOVE MOTORIST SERVICES BUILDING
ABANDON WATER LINES
REMOVE PULLBOX CLEAN & CAP CONDUIT
REMOVE TABLE ONLY
REMOVE STUMP
ABANDON DRAIN
ABANDON WELL
ABANDON ST SEWER
REMOVE TELEPHONE PULLBOX
ABANDON ST SEWER
ABANDON CO
ABANDON CONDUIT
ABANDON DRAIN
ABANDON CO
SNOW FENCE
REMOVE WALK
REMOVE SPLIT RAIL FENCE
REMOVE WALK
REMOVE SHELTER HOUSE
REMOVE LIGHT POLE
REMOVE GRILL &SLAB
REMOVE TABLE ONLY
REMOVE GRILL &SLAB
REMOVE PULLBOX
REMOVE LIGHT POLE
CB & 544'+- SAN SEWER TO BE ABANDONED
SNOW FENCE
SAN
REST AREA BASE LINE
STA 86-00
STA 88-00
STA 90-00
CURB TO BE REMOVED
MAINTAIN EXISTING STORM SEWER
REMOVE FENCE
CURB TO BE REMOVED
EXISTING CONDUIT TO BE CLEANED AND CABLE REMOVED
REMOVE PULLBOX TO BE REPLACED
RAMP LIGHTING (3 FIXTURES)
POLE, LUMINAIRE, & FOUNDATION TO BE REMOVED
SEE RAMP LIGHTING DETAIL "A", SHEET 23
SNOW FENCE
LIGHT POLE (TO REMAIN)
LUMINAIRE AND POLE
WIRING TO BE REMOVED
REMOVE PULL BOX
TO BE REPLACED
SNOW FENCE
LIGHT POLE (TO REMAIN)
LUMINAIRE AND POLE
WIRING TO BE REMOVED
LIGHT POLE (TO REMAIN)
LUMINAIRE AND POLE
WIRING TO BE REMOVED
REMOVE PULL BOX
20 40
RAMP LIGHTING (4 FIXTURES)
POLE, LUMINAIRE, & FOUNDATION TO BE REMOVED
SEE RAMP LIGHTING DETAIL B , SHEET 23

LEGEND

- ITEMS TO BE REMOVED
- EXISTING VEGETATION
- SAN — EXISTING SANITARY
- EXISTING LIGHT POLE
- EXISTING STUMPS
- EXISTING PICNIC TABLE AND SLAB
- EXISTING CHARCOAL GRILL AND SERVING TABLE
- PROPOSED SNOW FENCE FOR TREE PROTECTION
- EXISTING SPLIT RAIL FENCE
- EXISTING CURB TO BE REMOVED

NOTES:

* SOIL TO BE BACKFILLED AND COMPACTED IN ALL AREAS DISRUPTED BY THE DEMOLITION PROCESS.
* THE CONTRACTOR SHALL PROTECT FROM DAMAGE VEGETATION SHOWN TO REMAIN
* WOOD PICNIC TABLES, STORAGE SHED, WOOD FENCE GRILLS AND SERVING TABLES SHOWN TO BE REMOVED SHALL BE TURNED OVER TO THE DISTRICT
* TREE PROTECTION FENCE LOCATIONS ARE APPROXIMATE AND MAY REQUIRE ADJUSTMENT IN THE FIELD
* SEE SHEET 15 & 20 FOR ADDITIONAL SNOW FENCE QUANTITY

SOUTHBOUND DEMOLITION & TREE PROTECTION PLAN

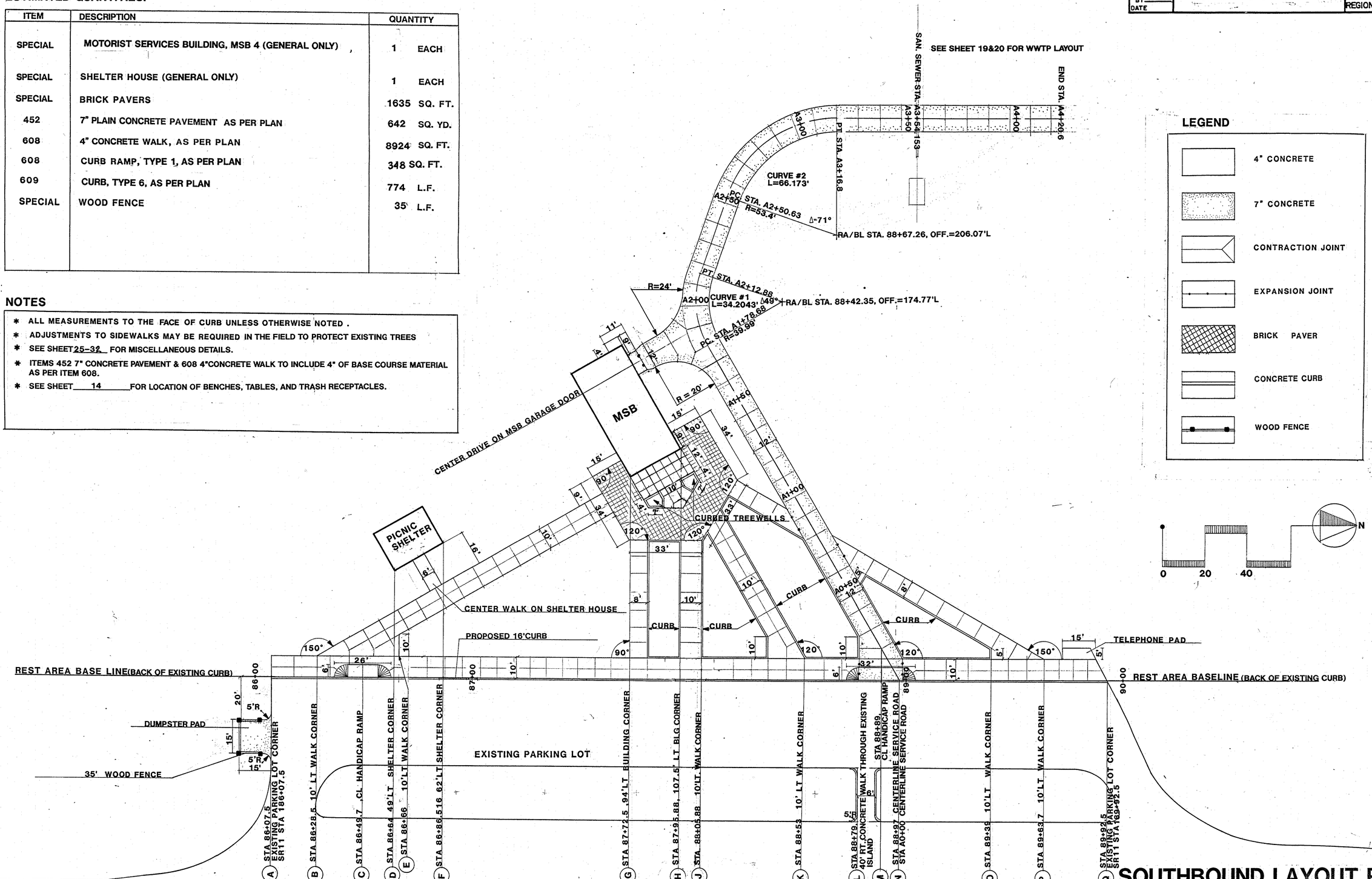
CALC. BY		MAH-11-3.31	OHIO	12
DATE			FHWA REGION 5	73
CHKD. BY				
DATE				

ESTIMATED QUANTITIES:

ITEM	DESCRIPTION	QUANTITY
SPECIAL	MOTORIST SERVICES BUILDING, MSB 4 (GENERAL ONLY)	1 EACH
SPECIAL	SHELTER HOUSE (GENERAL ONLY)	1 EACH
SPECIAL	BRICK PAVERS	1635 SQ. FT.
452	7" PLAIN CONCRETE PAVEMENT AS PER PLAN	642 SQ. YD.
608	4" CONCRETE WALK, AS PER PLAN	8924 SQ. FT.
608	CURB RAMP, TYPE 1, AS PER PLAN	348 SQ. FT.
609	CURB, TYPE 6, AS PER PLAN	774 L.F.
SPECIAL	WOOD FENCE	35 L.F.

NOTES

* ALL MEASUREMENTS TO THE FACE OF CURB UNLESS OTHERWISE NOTED .
* ADJUSTMENTS TO SIDEWALKS MAY BE REQUIRED IN THE FIELD TO PROTECT EXISTING TREES
* SEE SHEET 25-32 FOR MISCELLANEOUS DETAILS.
* ITEMS 452 7" CONCRETE PAVEMENT & 608 4"CONCRETE WALK TO INCLUDE 4" OF BASE COURSE MATERIAL AS PER ITEM 608.
* SEE SHEET 14 FOR LOCATION OF BENCHES, TABLES, AND TRASH RECEPTACLES.

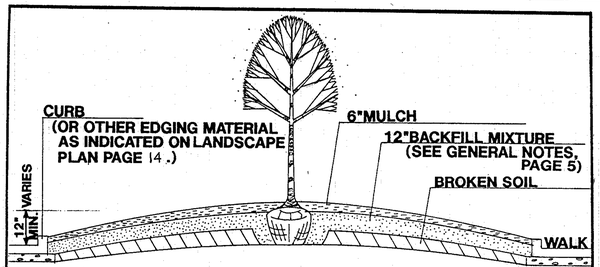


LEGEND

- 4" CONCRETE
- 7" CONCRETE
- CONTRACTION JOINT
- EXPANSION JOINT
- BRICK PAVER
- CONCRETE CURB
- WOOD FENCE

0 20 40 N

SOUTHBOUND LAYOUT PLAN



TYPICAL PLANTING BED SECTION
(SEE PLANTING PLAN P. 14 FOR QUANTITIES AND NOTES)

WASTEWATER TREATMENT PLANT GRADING
SEE SHEET 20

MOTORIST SERVICES BUILDING
FF= 1160.75

PROPOSED SHELTER
FF=1157.5

PROPOSED CO #1
RIM= 1158.1
INV= 1155.1+-

PROPOSED CO #2
RIM= 1159.7

PROPOSED CO #3
RIM=1160

PROPOSED CO #4

PROPOSED CO #5

2" CONDUIT (FOR QUANTITY SEE P.5)

PROPOSED ST S

EXISTING ST S

EXISTING CB
INV= 1153
RIM=1156

CURBED PLANTING BED

EXISTING PARKING LOT

WALK

DUMPSTER PAD 2%

TELEPHONE PAD

REST AREA BASE LINE

STA 86+00
STA 87+00
STA 88+00
STA 89+00
STA 90+00

TC 1156.83
EX 1157.6
EX 1157.7
EX 1157.8
EX 1157.9
EX 1158.44
EX 1158.54+

+1159.2MP

0 20 40 N

ESTIMATED QUANTITIES:

ITEM	DESCRIPTION	QUANTITY
203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	LUMP
203	EMBANKMENT	LUMP
603	6" CONDUIT, TYPE B	178 L.F.

NOTES

* PROPOSED CONCRETE WALK TO BE FLUSH WITH EXISTING CURB
* THIS GRADING PLAN IS INTENDED TO PROVIDE POSITIVE SITE DRAINAGE WITHOUT DAMAGING EXISTING TREES. ADJUSTMENTS IN THE FIELD MAY BE REQUIRED
* PROPOSED CONCRETE WALK THROUGH EXISTING PARKING ISLAND TO BE FLUSH WITH ASPHALT PARKING LOT. ASSURE POSITIVE DRAINAGE.

LEGEND

_____ PROPOSED CONTOUR	ST S = STORM SEWER	TC = TOP OF CURB
---------- EXISTING CONTOUR	FF = FINISHED FLOOR	CO = CLEAN OUT
+SPOT GRADE	CB = CATCH BASIN	EX = EXISTING

SOUTHBOUND GRADING PLAN

WASTEWATER TREATMENT

CALC. BY		MAH-11-3.31	OHIO	14
DATE			FHWA REGION 5	73
CHKD. BY				
DATE				

ESTIMATED QUANTITIES: PLANT LIST

ITEM	#	KEY	BOTANICAL NAME	COMMON NAME	SIZE	COND.
663	1	AR	ACER RUBRUM 'RED SUNSET'	RED SUNSET MAPLE	2 1/2"-3" CAL.	28" B&B
	2	BN	BETULA NIGRA 'HERITAGE'	HERITAGE BIRCH	7-8'	24" B&B
	2	GT	GLEDITSIA TRIACANTHOS INERMIS SKYLINE	THORNLESS HONEYLOCUST SKYLINE	2-2 1/2" CAL.	24"B&B
	4	MS	MALUS "SNOWDRIFT"	SNOWDRIFT CRABAPPLE	2-2 1/2" CAL.	24" B&B
	7	PN	PINUS NIGRA	AUSTRIAN PINE	6-7'	22"B&B
	9	PS	PRUNUS SERRULATA 'KWANZAN'	KWANZAN CHERRY	2-2 1/2"CAL.	24"B&B
	0	TC	TSUGA CANADENSIS	CANADIAN HEMLOCK	6-7'	22"B&B
662	3	AP	AESCULUS PARVIFLORA	BOTTLEBRUSH BUCKEYE	4-5'	14"B&B
	13	CA	COTONEASTER APICULATUS	CRANBERRY COTONEASTER	15-18"	2 GAL.
	16	FB	FORSYTHIA VIRIDISSIMA 'BRONXENSIS'	BRONXENSIS FORSYTHIA	18-24"	3 GAL.
	13	JS	JUNIPERUS SABINA "BROADMOOR"	BROADMOOR JUNIPER	18-24"	3 GAL.
	65	JP	JUNIPERUS HORIZONTALIS PLUMOSA COMPACTA	COMPACT PLUMOSA JUNIPER	18-24"	3 GAL.
	19	PM	PINUS MUGO VAR. MUGO	COMPACT MUGO PINE	18-24"	3 GAL.
	39	PF	POTENTILLA FRUTICOSA 'GOLDFINGER'	GOLDFINGER BUSH CINQUEFOIL	15-18"	2 GAL.
	10	TM	TAXUS MEDIA 'EVERLOW'	EVERLOW YEW	18-24"	14" B&B
	9	VC	VIBURNUM CARLESI 'CHESAPEAKE'	CHESAPEAKE VIBURNUM	3-4'	14" B&B
	12	VO	VIBURNUM OPULUS 'COMPACTUM'	COMPACT CRANBERRYBUSH VIBURNUM	3-4'	14" B&B
	17	VN	VIBURNUM OPULUS	CRANBERRYBUSH VIBURNUM	15-18"	2 GAL.
661	1500	AB	AJUGA REPTANS 'BRONZE BEAUTY'	BRONZE BEAUTY CARPET BUGLE (12"O.C.	ROOTED CUTTINGS	FLAT
	2500	EC	EUONYMOUS COLORATUS	PURPLELEAF WINTERCREEPER(12"O.C.)	ROOTED CUTTINGS	FLAT
	250	IS	IBERIS SEMPERVIRENS	CANDYTUFT (18"O.C.)		3"POT
	50	PA	PHALARIS ARUNDINACEA 'PICTA'	RIBBON GRASS (2'O.C.)		3"POT
	7	PH	PENNISETUM ALOPECUROIDES 'HAMELN'	FOUNTAIN GRASS		2 GAL.
	224	RF	RUDBECKIA FULGIDIA SPEC 'GOLDSTRUM'	GOLDSTRUM BLACK EYED SUSAN(2'O.C.)		3"POT

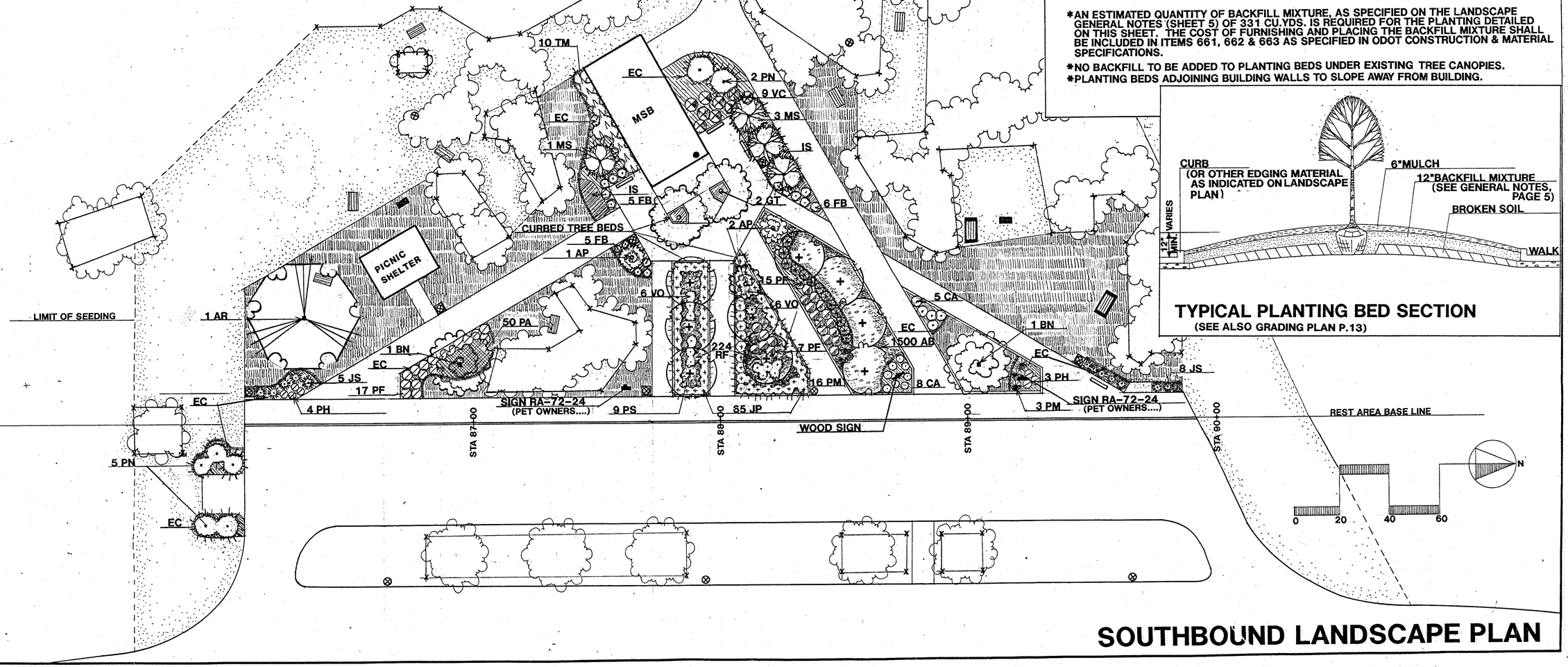
ESTIMATED QUANTITIES:

ITEM	KEY	DESCRIPTION	QUANTITY
630		GROUND MOUNTED SUPPORT, NO.2 POST ~~(SIGN RA-72-24)~~	12 LIN.FT (2 SIGNS)
630		SIGN, EXTRUSHEET, TYPE G	6 SQ.FT.
659		SEEDING & MULCHING (URBAN GRASS MIXTURE)	3422 SQ.YDS.
659		COMMERCIAL FERTILIZER	.3 TONS
660		SOD	1458 SQ.YDS.
SPEC.	✱	WOOD SIGN	1 EA.
SPEC.	⊗	WASTE RECEPTACLE SLEEVES	12 EA.
SPEC.	⊠	WASTE RECEPTACLE SLAB	6 EA.
SPEC.		PICNIC TABLE (4 IN SHELTER)	11 EA.
SPEC.		PICNIC TABLE AND SLAB	2 EA.
SPEC.		CHARCOAL GRILL AND SERVING TABLE(WITH SLAB)	2 EA.
SPEC.		WOOD BENCH	5 EA.
SPEC.		LANDSCAPE BORDER EDGING	440 L.F.
SPEC.	X—X	SNOW FENCE (FOR QUANTITIES SEE SHEET 11)	
SPEC.	●	ASH URN	1 EA.

NOTES:

- ✱SEEDING & SODDING QUANTITIES TO BE ADJUSTED IN THE FIELD BY ENGINEER.
- ✱SEEDING & SODDING TO CONTINUE UNDER TREE CANOPIES AS NEEDED.
- ✱SEE SHEET 25 FOR WOOD SIGN DETAIL.
- ✱SEE SHEET 18&20 FOR ADDITIONAL SEEDING QUANTITIES.
- ✱ALL PLANTING BEDS INDICATED ON LANDSCAPE PLANS BY CURBS OR LANDSCAPE BORDER EDGING ARE TO BE PREPARED AS SHOWN IN DETAIL.(SEE ALSO PAGE 5)
- ✱AN ESTIMATED QUANTITY OF BACKFILL MIXTURE, AS SPECIFIED ON THE LANDSCAPE GENERAL NOTES (SHEET 5) OF 331 CU.YDS. IS REQUIRED FOR THE PLANTING DETAILED ON THIS SHEET. THE COST OF FURNISHING AND PLACING THE BACKFILL MIXTURE SHALL BE INCLUDED IN ITEMS 661, 662 & 663 AS SPECIFIED IN ODOT CONSTRUCTION & MATERIAL SPECIFICATIONS.
- ✱NO BACKFILL TO BE ADDED TO PLANTING BEDS UNDER EXISTING TREE CANOPIES.
- ✱PLANTING BEDS ADJOINING BUILDING WALLS TO SLOPE AWAY FROM BUILDING.

TYPICAL PLANTING BED SECTION
(SEE ALSO GRADING PLAN P.13)



SOUTHBOUND LANDSCAPE PLAN

CALC. BY		MAH-11-3.31	OHIO	15
DATE			FHWA REGION 5	73
CHKD. BY				
DATE	11/93			

RAMP LIGHTING (4 FIXTURES) POLE, LUMINAIRE, & FOUNDATION TO BE REMOVED SEE RAMP LIGHTING DETAIL "A", SHEET 23.

RAMP LIGHTING(3 FIXTURES) POLE,LUMINAIRE AND FOUNDATION TO BE REMOVED SEE RAMP LIGHTING DETAIL B, SHEET 23.

REMOVE PULLBOX

LIGHT POLE (TO REMAIN) LUMINAIRE AND POLE WIRING TO BE REMOVED

SNOW FENCE

LIGHT POLE (TO REMAIN) LUMINAIRE AND POLE WIRING TO BE REMOVED

REMOVE PULLBOX TO BE REPLACED

SNOW FENCE

LIGHT POLE (TO REMAIN) LUMINAIRE AND POLE WIRING TO BE REMOVED

REMOVE PULL BOX TO BE REPLACED

MAINTAIN EXISTING STORM SEWER

EXISTING CONDUIT TO BE CLEANED AND CABLE REMOVED

CURB TO BE REMOVED

REMOVE GRAVEL DRIVE

REMOVE FENCE

REMOVE WALK

REMOVE WASTEWATER TREATMENT PLANT

ABANDON STORM SEWER

REMOVE FLAG POLE

ABANDON CONDUIT

REMOVE SHRUBS

REMOVE TREE

REMOVE LIGHT POLE

REMOVE GRAVEL DRIVE

REMOVE TELEPHONE PULLBOX

REMOVE SHRUBS

REMOVE MOTORIST SERVICE BUILDING

REMOVE SHELTER HOUSE

REMOVE TELEPHONE PULLBOX

REMOVE SHRUBS

ABANDON WELL

REMOVE LIGHT POLE

SNOW FENCE

MAINTAIN EXISTING WELL

REMOVE WOOD PICNIC TABLE ONLY

REMOVE WOOD PICNIC TABLE ONLY

REMOVE UNDERGROUND STORAGE TANK

REMOVE CHARCOAL GRILL

REMOVE TRANSFORMER

REMOVE LIGHT POLE

REMOVE CHARCOAL GRILL

REMOVE SHED

REMOVE PULL BOX CLEAN & CAP CONDUIT

REMOVE LIGHT POLE

REMOVE PICNIC TABLE & SLAB

REMOVE PICNIC SLAB ONLY

REMOVE LIGHT POLE

REMOVE CHARCOAL GRILL

REMOVE TRASH PADS

SNOW FENCE

REMOVE PICNIC TABLE & SLAB

REMOVE TREES

REMOVE CHARCOAL GRILL

REMOVE PICNIC TABLE & SLAB

REMOVE PICNIC TABLE & SLAB

REMOVE CHARCOAL GRILL

REMOVE CHARCOAL GRILL

REMOVE STUMPS

SNOW FENCE

REMOVE PICNIC TABLE & SLAB

REMOVE WOOD PICNIC TABLE ONLY

N

0 20 40

LEGEND

- ITEMS TO BE REMOVED
- EXISTING VEGETATION
- SAN — EXISTING SANITARY
- EXISTING PULL BOX
- EXISTING LIGHT POLE
- EXISTING STUMPS
- EXISTING PICNIC TABLE AND SLAB
- EXISTING TRASH CAN PADS
- EXISTING CHARCOAL GRILL AND SERVING TABLE
- PROPOSED SNOW FENCE FOR TREE PROTECTION
- EXISTING SPLIT RAIL FENCE
- EXISTING CURB TO BE REMOVED

NOTES:

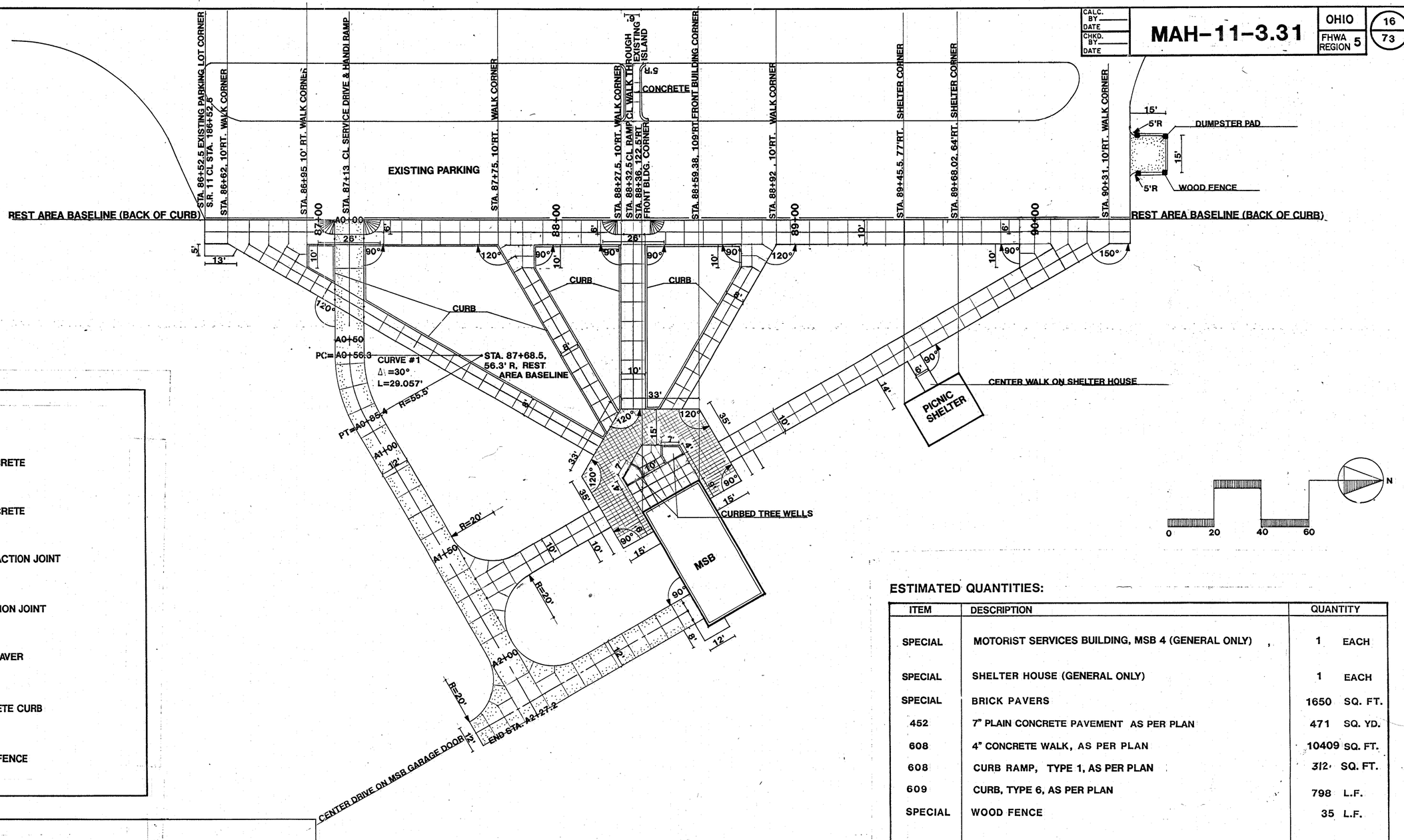
* SOIL TO BE BACKFILLED AND COMPACTED IN ALL AREAS DISRUPTED BY THE DEMOLITION PROCESS.
* THE CONTRACTOR SHALL PROTECT FROM DAMAGE VEGETATION SHOWN TO REMAIN
* WOOD PICNIC TABLES, STORAGE SHED, WOOD FENCE, GRILLS AND SERVING TABLES SHOWN TO BE REMOVED SHALL BE TURNED OVER TO THE DISTRICT
* TREE PROTECTION FENCE LOCATIONS ARE APPROXIMATE AND MAY REQUIRE ADJUSTMENT IN THE FIELD
* **SEE SHEETS 11 & 20 FOR ADDITIONAL SNOW FENCE QUANTITIES**

ESTIMATED QUANTITIES:

ITEM	DESCRIPTION	QUANTITY
	GENERAL CONTRACT	
201	CLEARING AND GRUBBING	LUMP
202	STRUCTURE REMOVED	LUMP
202	CURB REMOVED	122' L.F.
202	WALK REMOVED	3716 SQ. FT.
SPECIAL	DRILLED WATER WELL ABANDONED	1 EACH
202	REMOVAL AND DISPOSAL OF UNDERGROUND STORAGE TANK	1 EACH
202	**REMOVE MISC:SPLIT RAIL FENCE**	134 LIN. FT.
202	REMOVE MISCELLANEOUS: PICNIC SLAB ONLY	1 EACH
202	REMOVE MISC.: WOOD PICNIC TABLE & SLAB REMOVED	5 EACH
202	REMOVE MISCELLANEOUS: WOOD PICNIC TABLE REMOVED	2 EACH
202	REMOVE MISCELLANEOUS: GRAVEL DRIVE REMOVED	151 SQ. YDS.
202	REMOVE MISCELLANEOUS: FLAG POLE	1 EACH
SPECIAL	SNOW FENCE–TREE PROTECTION	2472 LIN.FT.
SPECIAL	CHARCOAL GRILL & SERVING TABLE REMOVED	6 EACH
203	EMBANKMENT	LUMP
203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	LUMP
	ELECTRICAL CONTRACT	
202	PULL BOX REMOVED	6 EACH
202	LIGHT POLE FOUNDATION REMOVED	12 EACH
202	LIGHT POLE REMOVED, AS PER PLAN	12 EACH
202	LUMINAIRE REMOVED, AS PER PLAN	6 EACH
202	REMOVE EXISTING POLE WIRING, AS PER PLAN	3 EACH
625	CONDUIT CLEANED AND CABLE REMOVED AS PER PLAN	500 L.F.
202	POWER SERVICE REMOVED	1 EACH

NORTHBOUND DEMOLITION & TREE PROTECTION PLAN

CALC. BY		MAH-11-3.31	OHIO	16
DATE			FHWA REGION 5	73
CHKD. BY				
DATE				



LEGEND

- 4" CONCRETE
- 7" CONCRETE
- CONTRACTION JOINT
- EXPANSION JOINT
- BRICK PAVER
- CONCRETE CURB
- WOOD FENCE

NOTES

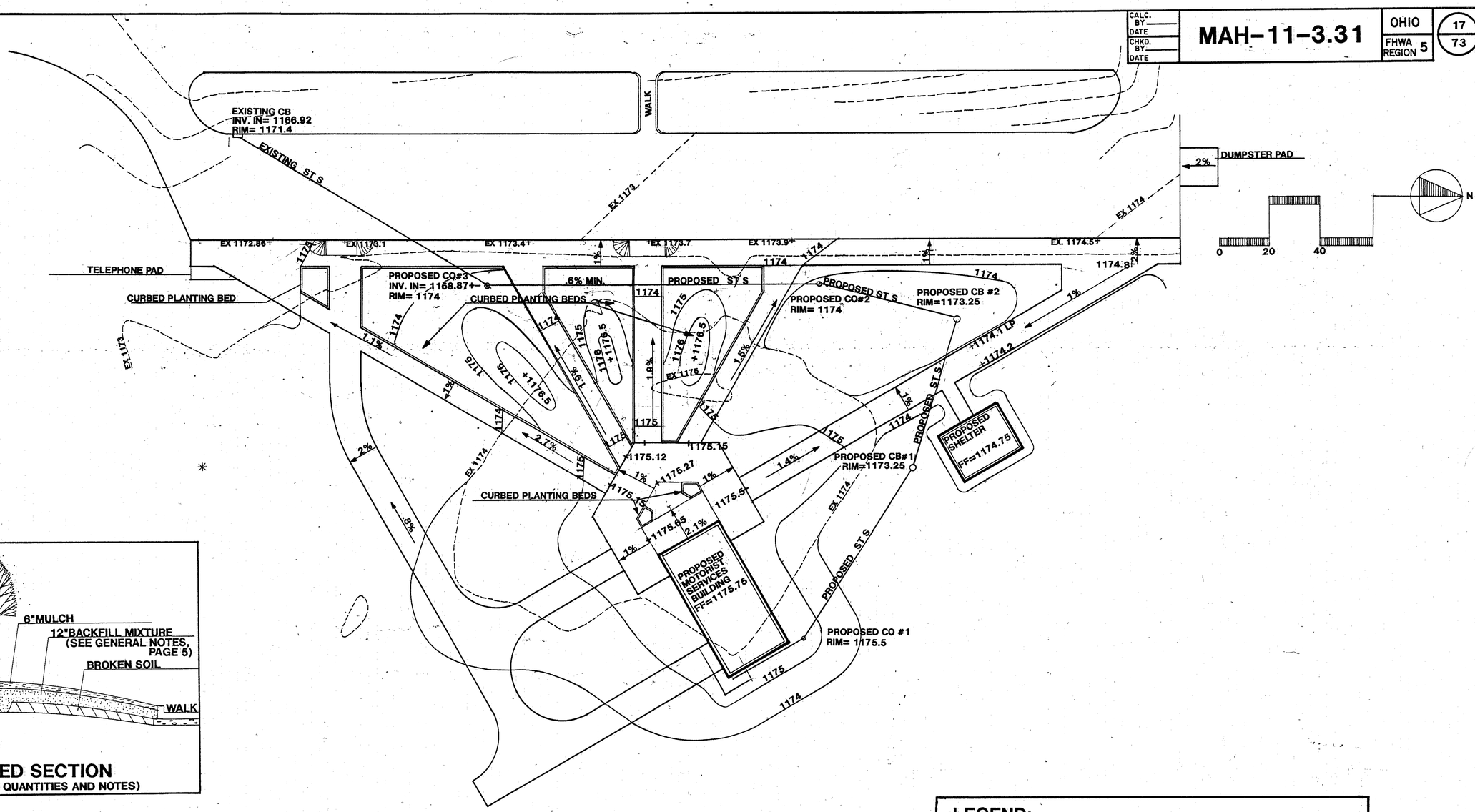
* ALL MEASUREMENTS TO FACE OF CURB UNLESS OTHERWISE NOTED
* SEE SHEET 25-32 FOR MISCELLANEOUS DETAILS.
* SEE SHEET 18 FOR LOCATION OF BENCHES, TABLES, AND TRASH RECEPTACLES.
* ADJUSTMENTS TO THE SIDEWALK MAY BE REQUIRED IN THE FIELD TO PROTECT EXISTING TREES.
* ITEMS 452 7" CONCRETE PAVEMENT & 608 4"CONCRETE WALK TO INCLUDE 4" OF BASE COURSE MATERIAL AS PER ITEM 608.

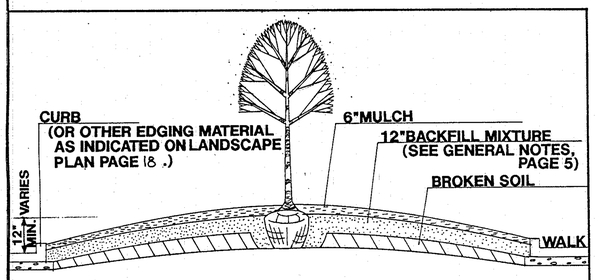
ESTIMATED QUANTITIES:

ITEM	DESCRIPTION	QUANTITY
SPECIAL	MOTORIST SERVICES BUILDING, MSB 4 (GENERAL ONLY)	1 EACH
SPECIAL	SHELTER HOUSE (GENERAL ONLY)	1 EACH
SPECIAL	BRICK PAVERS	1650 SQ. FT.
452	7" PLAIN CONCRETE PAVEMENT AS PER PLAN	471 SQ. YD.
608	4" CONCRETE WALK, AS PER PLAN	10409 SQ. FT.
608	CURB RAMP, TYPE 1, AS PER PLAN	312 SQ. FT.
609	CURB, TYPE 6, AS PER PLAN	798 L.F.
SPECIAL	WOOD FENCE	35 L.F.

NORTHBOUND LAYOUT PLAN

CALC. BY		MAH-11-3.31	OHIO	17
DATE			FHWA REGION 5	73
CHKD. BY				
DATE				





TYPICAL PLANTING BED SECTION

(SEE PLANTING PLAN P. 18 FOR QUANTITIES AND NOTES)

NOTES

* THIS GRADING PLAN IS INTENDED TO PROVIDE POSITIVE SITE DRAINAGE WITHOUT DAMAGE TO EXISTING TREES. ADJUSTMENTS IN THE FIELD MAY BE REQUIRED.
* PROPOSED CONCRETE WALK TO BE FLUSH WITH EXISTING CURB
* PROPOSED CONCRETE WALK THROUGH EXISTING PARKING ISLAND TO BE FLUSH WITH ASPHALT PARKING LOT. ASSURE POSITIVE DRAINAGE.

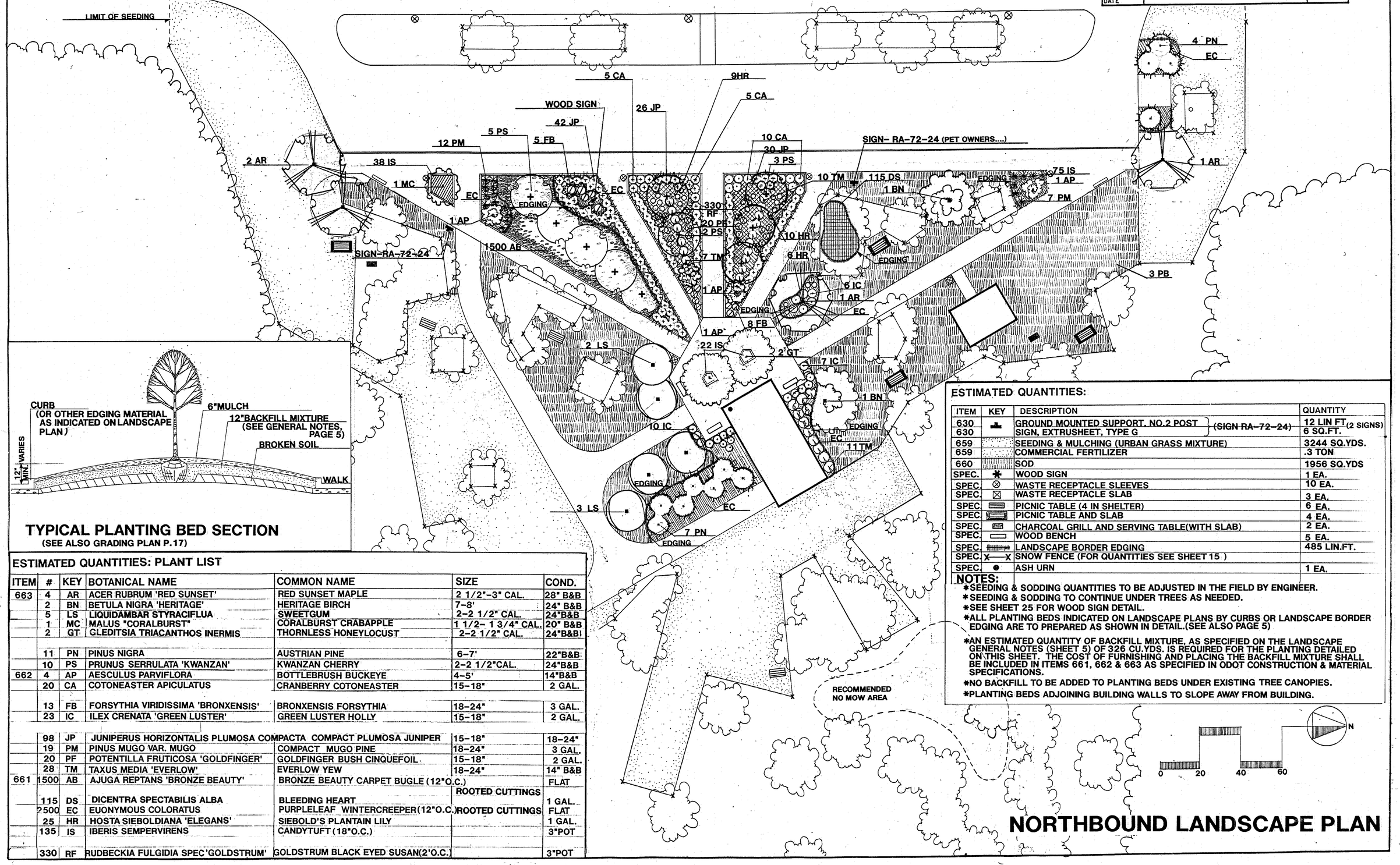
ESTIMATED QUANTITIES:

ITEM	DESCRIPTION	QUANTITY
203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	LUMP
203	EMBANKMENT	LUMP
603	6" CONDUIT, TYPE B	392 L.F.
604	CATCH BASIN, TYPE 8	2 EACH

LEGEND:

_____ PROPOSED CONTOUR	ST S = STORM SEWER
---------- EXISTING CONTOUR	FF = FINISHED FLOOR
+ SPOT GRADE	CO = CLEAN OUT
	EX = EXISTING
	CB = CATCH BASIN
	TC = TOP OF CURB

NORTHBOUND GRADING PLAN



TYPICAL PLANTING BED SECTION
(SEE ALSO GRADING PLAN P.17)

ESTIMATED QUANTITIES: PLANT LIST

ITEM	#	KEY	BOTANICAL NAME	COMMON NAME	SIZE	COND.
663	4	AR	ACER RUBRUM 'RED SUNSET'	RED SUNSET MAPLE	2 1/2"-3" CAL.	28" B&B
	2	BN	BETULA NIGRA 'HERITAGE'	HERITAGE BIRCH	7-8'	24" B&B
	5	LS	LIQUIDAMBAR STYRACIFLUA	SWEETGUM	2-2 1/2" CAL.	24"B&B
	1	MC	MALUS "CORALBURST"	CORALBURST CRABAPPLE	1 1/2- 1 3/4" CAL.	20" B&B
	2	GT	GLEDITSIA TRIACANTHOS INERMIS	THORNLESS HONEYLOCUST	2-2 1/2" CAL.	24"B&B
	11	PN	PINUS NIGRA	AUSTRIAN PINE	6-7'	22"B&B
	10	PS	PRUNUS SERRULATA 'KWANZAN'	KWANZAN CHERRY	2-2 1/2"CAL.	24"B&B
662	4	AP	AESCULUS PARVIFLORA	BOTTLEBRUSH BUCKEYE	4-5'	14"B&B
	20	CA	COTONEASTER APICULATUS	CRANBERRY COTONEASTER	15-18"	2 GAL.
	13	FB	FORSYTHIA VIRIDISSIMA 'BRONXENSIS'	BRONXENSIS FORSYTHIA	18-24"	3 GAL.
	23	IC	ILEX CRENATA 'GREEN LUSTER'	GREEN LUSTER HOLLY	15-18"	2 GAL.
	98	JP	JUNIPERUS HORIZONTALIS PLUMOSA COMPACTA	COMPACT PLUMOSA JUNIPER	15-18"	18-24"
	19	PM	PINUS MUGO VAR. MUGO	COMPACT MUGO PINE	18-24"	3 GAL.
	20	PF	POTENTILLA FRUTICOSA 'GOLDFINGER'	GOLDFINGER BUSH CINQUEFOIL	15-18"	2 GAL.
	28	TM	TAXUS MEDIA 'EVERLOW'	EVERLOW YEW	18-24"	14" B&B
661	1500	AB	AJUGA REPTANS 'BRONZE BEAUTY'	BRONZE BEAUTY CARPET BUGLE (12"O.C.)		FLAT
	115	DS	DICENTRA SPECTABILIS ALBA	BLEEDING HEART	ROOTED CUTTINGS	1 GAL.
	2500	EC	EUONYMOUS COLORATUS	PURPLELEAF WINTERCREEPER(12"O.C.)	ROOTED CUTTINGS	FLAT
	25	HR	HOSTA SIEBOLDIANA 'ELEGANS'	SIEBOLD'S PLANTAIN LILY		1 GAL.
	135	IS	IBERIS SEMPERVIRENS	CANDYTUFT (18"O.C.)		3"POT
	330	RF	RUDBECKIA FULGIDIA SPEC 'GOLDSTRUM'	GOLDSTRUM BLACK EYED SUSAN(2'O.C.)		3"POT

ESTIMATED QUANTITIES:

ITEM	KEY	DESCRIPTION	QUANTITY
630		GROUND MOUNTED SUPPORT, NO.2 POST (SIGN RA-72-24)	12 LIN FT (2 SIGNS)
630		SIGN, EXTRUSHEET, TYPE G	6 SQ.FT.
659		SEEDING & MULCHING (URBAN GRASS MIXTURE)	3244 SQ.YDS.
659		COMMERCIAL FERTILIZER	.3 TON
660		SOD	1956 SQ.YDS
SPEC.	✱	WOOD SIGN	1 EA.
SPEC.	⊗	WASTE RECEPTACLE SLEEVES	10 EA.
SPEC.	⊠	WASTE RECEPTACLE SLAB	3 EA.
SPEC.		PICNIC TABLE (4 IN SHELTER)	6 EA.
SPEC.		PICNIC TABLE AND SLAB	4 EA.
SPEC.		CHARCOAL GRILL AND SERVING TABLE(WITH SLAB)	2 EA.
SPEC.		WOOD BENCH	5 EA.
SPEC.		LANDSCAPE BORDER EDGING	485 LIN.FT.
SPEC.	X—X	SNOW FENCE (FOR QUANTITIES SEE SHEET 15)	
SPEC.	●	ASH URN	1 EA.

NOTES:

- *SEEDING & SODDING QUANTITIES TO BE ADJUSTED IN THE FIELD BY ENGINEER.
- *SEEDING & SODDING TO CONTINUE UNDER TREES AS NEEDED.
- *SEE SHEET 25 FOR WOOD SIGN DETAIL.
- *ALL PLANTING BEDS INDICATED ON LANDSCAPE PLANS BY CURBS OR LANDSCAPE BORDER EDGING ARE TO PREPARED AS SHOWN IN DETAIL.(SEE ALSO PAGE 5)
- *AN ESTIMATED QUANTITY OF BACKFILL MIXTURE, AS SPECIFIED ON THE LANDSCAPE GENERAL NOTES (SHEET 5) OF 326 CU.YDS. IS REQUIRED FOR THE PLANTING DETAILED ON THIS SHEET. THE COST OF FURNISHING AND PLACING THE BACKFILL MIXTURE SHALL BE INCLUDED IN ITEMS 661, 662 & 663 AS SPECIFIED IN ODOT CONSTRUCTION & MATERIAL SPECIFICATIONS.
- *NO BACKFILL TO BE ADDED TO PLANTING BEDS UNDER EXISTING TREE CANOPIES.
- *PLANTING BEDS ADJOINING BUILDING WALLS TO SLOPE AWAY FROM BUILDING.

NORTHBOUND LANDSCAPE PLAN

CALC. BY		MAH-11-3.31	OHIO	19
DATE			FHWA REGION 5	73
CHKD. BY				
DATE	11/93			

OUTFLOW DITCH
10'X20'X12" R.C.P.
PROPOSED FL= 1151.00

PROPOSED HEADWALL, TYPE HW-D
INV.= 1152.95

R/W

1158

1156

1154

SOUTHBOUND REST AREA BASELINE

298.62' 8" PIPE @ 40%

MH#7
RIM=1157.36
INV=1153.86
SB RA BL 90+53.78 268.02' L

MH # 5A (DROP MANHOLE)
RIM=1157.5
INV. IN = 1153.13
INV. OUT = 1150.3
SB RA BL 89+05, 241.81'L

MH#6
RIM=1158.39
INV=1154.39
SB RA BL STA 89+93, 375' L

8' AT .4%
8" PIPE

123' @ 43%
8" PIPE

FPA

FPB

CHLORINATOR TANK
RIM=1159.78
INV IN=1155.23
INV OUT=1154.42

35' @ .6% 6" PIPE
35' 12" STEEL SLEEVE
35' 18" STEEL SLEEVE

CL A

SB
INV. IN = 1150.09
@ WET WELL

SAND FILTER
RIM=1161.92
INV IN=1159.36
INV OUT=1155.41

+1157.2+

CL B

1157.2+

VALVE BOX
RIM=1163.36
INV IN=1159.44
INV OUT=1159.36
INTERSECTION CL A & CL B
SB RA BL STA. 89+05, 375' L

FPE

SECOND STAGE TREATMENT
RIM=1157.7
INV IN=1153.7
INV OUT=1154.94

TRASH TRAP #2 1050 GPD
RIM=1157.5
INV. IN = 1153.44
INV. OUT = 1153.19

355' @ 45%
8" PIPE

10' @ 0.6% 6" PIPE

FPC

FPD

MH #5
RIM=1157
INV=1153.50
SB RA BL STA.89+05, 210' L

MH #8 RA BL STA= 88+26.91 208.1'L
RIM=1158
INV=1154.45

10' @ 0.6% 6" PIPE

76.73' @ 1.2% 6" PIPE

79.62' @ 3.8% 6" PIPE

BUILDING CLEANOUT
INV=1157.45

79.62' OF
12" STEEL SLEEVE

5' @ 1.04%
4" PIPE

LIFT STATION (NO.1)
WET WELL
RIM=1158.5
NB INV IN=1149.81
INV OUT=1153.33
SB RA BL STA 89+05, 277.1'L
VALVE PIT
RIM=1158.5
INV=1153.33

16.5'

FF 1160.75

PROPOSED MOTORIST SERVICES BUILDING

WATER WELL

1154

193+00
192+00
91+00
191+00
90+00
190+00
89+00
189+00
88+00
188+00
87+00
187+00
186+00
185+00
184+00

MH#4
RIM=1157.59
INV=1151.42
S.R. 11 CL STA.190+56 .215' L=
SB RA BL STA. 90+56, 44'R

MH#3
RIM=1159.5
INV=1151.70
SR 11 CL STA 190+56
145' L

MH#2
RIM=1170.34
INV=1160
SR CL STA 190+56
124' R

FINISHED GRADE LOW POINT=1155.5

270' AT 3.07% 6" PIPE

70' AT 4%
8" PIPE
70' 18" STEEL SLEEVE JACKED

60' 12" STEEL SLEEVE, JACKED

90°

60' 12" STEEL SLEEVE JACKED

FINISHED GRADE LOW POINT=1163.5

50' 12" STEEL SLEEVE, JACKED

144' @ 2.0%
6" PIPE

MH # 1A (DROP MANHOLE)
RIM= 1174
INV. IN = 1169.61
INV. OUT = 1162.88
SR 11 CL STA 190+56, 268'R=NB RA BL 90+56, 7' R

TRASH TRAP #1 1050 GPD
RIM=1174.5
INV. IN =1169.92
INV. OUT = 1169.67

MH#1
RIM=1174
INV=1170
NB RA BL 90+56, 37' R

198' AT .6%
6" PIPE

8' @ 75% 6" PIPE

10' @ 75% 6" PIPE

BUILDING CLEANOUT
RIM=1175.21
INV. IN= 1172.45
INV. OUT= 1171.19

5' AT 1.04
4" PIPE

16.5'

FF 1175.75

PROPOSED MOTORIST SERVICES BUILDING

1174

1172

WATER WELL

STA 186+52.51

STA 186+07.5

NORTHBOUND REST AREA BASELINE

R/W

N

0 50 100

ESTIMATED QUANTITIES:

ITEM	DESCRIPTION	QUANTITY
SPECIAL	COMPLETE WASTEWATER TREATMENT PLANT (GENERAL ONLY) /4,000 GALLON	1 EACH
203	EMBANKMENT	LUMP
203	EXCAVATION, NOT INCLUDING EMBANKMENT	LUMP
604	MANHOLE, NO.3	8 EACH
604	MANHOLE,MISC. DROP MANHOLE	2 EACH
SPECIAL	CAST IRON SOIL PIPE(SV) W/ FLEXIBLE JOINTS: 6"	841.35 L.F.
SPECIAL	CAST IRON SOIL PIPE(SV) W/FLEXIBLE JOINTS: 8"	784.62 L.F.
SPECIAL	12" STEEL PIPE ENCASEMENT	284.62 L.F.
SPECIAL	18" STEEL PIPE ENCASEMENT	105 L.F.
SPECIAL	LIFT STATION(GENERAL ONLY)	1 EACH
SPECIAL	TRASH TRAP /050 GAL.	1 EACH

NOTES

* SEE SHEETS 69-72 FOR LIFT STATION DETAILS.
* ALL SANITARY SEWER PIPE TO BE COVERED WITH A MINIMUM OF 3.5' OF SOIL.
* OUTFLOW DITCH TO BE DREDGED AND LINED WITH RIPRAP AS SHOWN ON PLANS. FINISHED FLOW LINE AT DISCHARGE POINT TO BE 1151.00

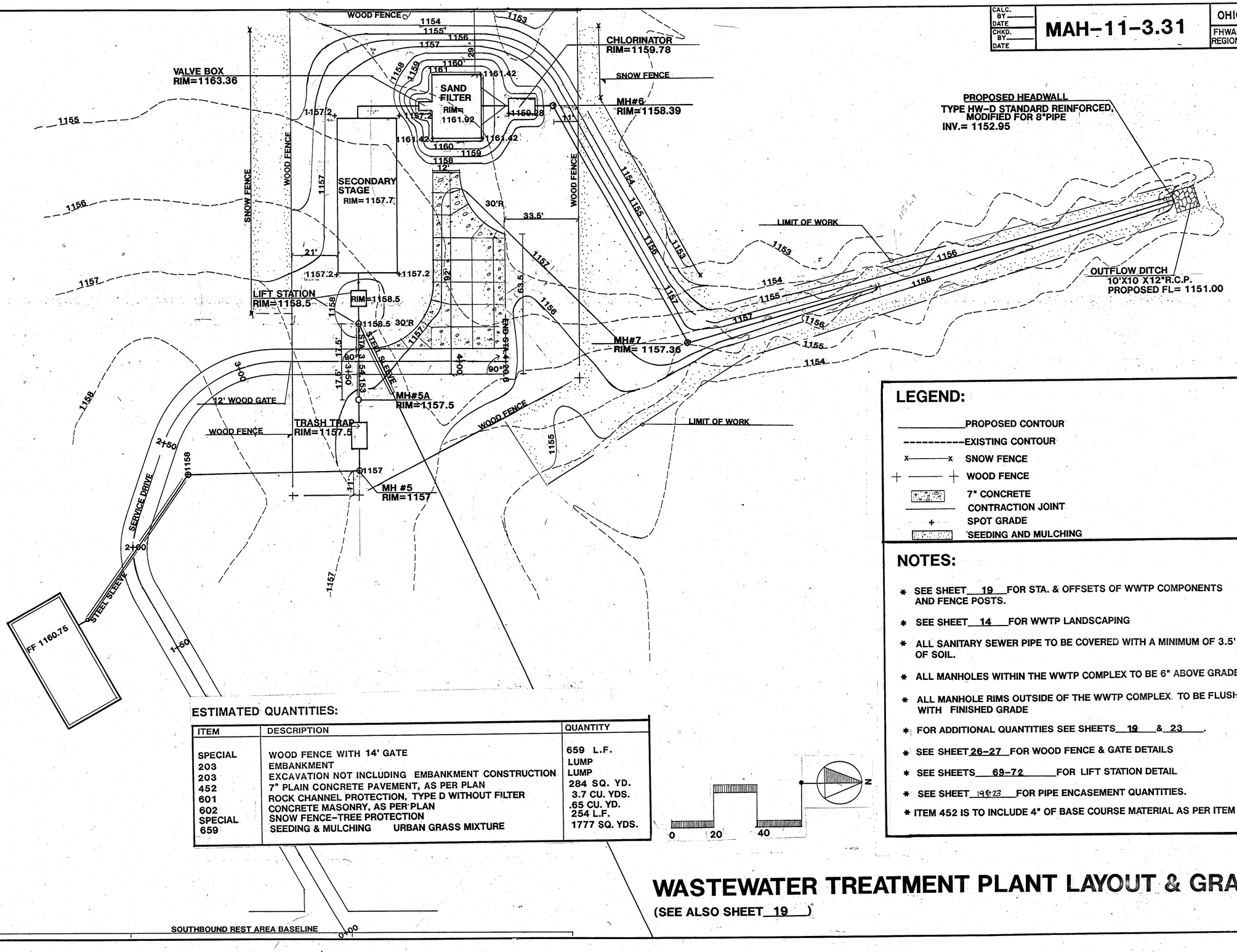
SR 11 BL= STATE ROUTE 11 BASELINE
SR RA BL= SOUTHBOUND REST AREA BASELINE
NB RA BL= NORTHBOUND REST AREA BASELINE

FPA= FENCE POST SB RA BL STA.90+04, 418.5'L
FPB= FENCE POST SB RA BL STA.90+04, 252'L
FBC= FENCE POST SB RA BL STA.89+05, 199'L
FPD= FENCE POST SB RA BL STA.88+75,199'L
FPE= FENCE POST SB RA BL STA.88+75, 418.5'L

* SEE SHEETS 26 & 27 FOR WOOD FENCE AND GATE DETAILS.
* SEE SHEETS 20 & 23 FOR ADDITIONAL QUANTITIES
* MANHOLE SYMBOL AND STATIONING REPRESENTS CENTERLINE OF 48"MANHOLE.
* SEE SHEET 21-22 FOR SANITARY SEWER PROFILE

PROPOSED WASTEWATER TREATMENT PLANT, LIFT STATION AND SANITARY SEWER LAYOUT PLAN (SEE ALSO SHEET 20)

CALC. BY		MAH-11-3.31	OHIO	20
DATE			FHWA REGION 5	73
CHKD. BY				
DATE				



LEGEND:

- PROPOSED CONTOUR
- EXISTING CONTOUR
- SNOW FENCE
- WOOD FENCE
- 7" CONCRETE
- CONTRACTION JOINT
- SPOT GRADE
- SEEDING AND MULCHING

NOTES:

* SEE SHEET 19 FOR STA. & OFFSETS OF WWTP COMPONENTS AND FENCE POSTS.
* SEE SHEET 14 FOR WWTP LANDSCAPING
* ALL SANITARY SEWER PIPE TO BE COVERED WITH A MINIMUM OF 3.5' OF SOIL.
* ALL MANHOLES WITHIN THE WWTP COMPLEX TO BE 6" ABOVE GRADE
* ALL MANHOLE RIMS OUTSIDE OF THE WWTP COMPLEX TO BE FLUSH WITH FINISHED GRADE
* FOR ADDITIONAL QUANTITIES SEE SHEETS 19 & 23 .
* SEE SHEET 26-27 FOR WOOD FENCE & GATE DETAILS
* SEE SHEETS 69-72 FOR LIFT STATION DETAIL
* SEE SHEET 19&23 FOR PIPE ENCASEMENT QUANTITIES.
* ITEM 452 IS TO INCLUDE 4" OF BASE COURSE MATERIAL AS PER ITEM 608

ESTIMATED QUANTITIES:

ITEM	DESCRIPTION	QUANTITY
SPECIAL	WOOD FENCE WITH 14' GATE	659 L.F.
203	EMBANKMENT	LUMP
203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	LUMP
452	7" PLAIN CONCRETE PAVEMENT, AS PER PLAN	284 SQ. YD.
601	ROCK CHANNEL PROTECTION, TYPE D WITHOUT FILTER	3.7 CU. YDS.
602	CONCRETE MASONRY, AS PER PLAN	.65 CU. YD.
SPECIAL	SNOW FENCE-TREE PROTECTION	254 L.F.
659	SEEDING & MULCHING URBAN GRASS MIXTURE	1777 SQ. YDS.

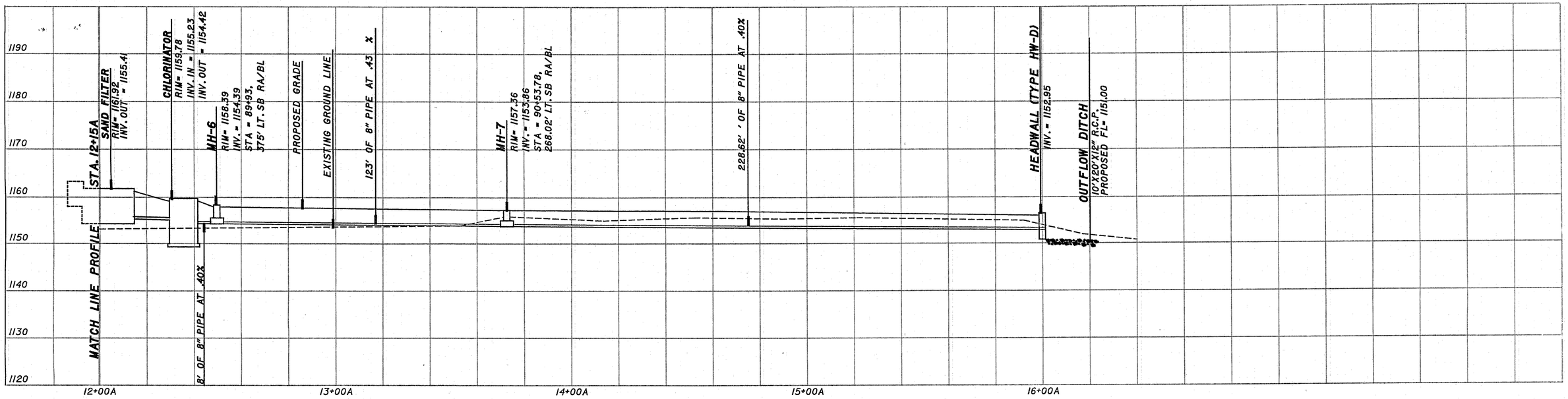
WASTEWATER TREATMENT PLANT LAYOUT & GRADING

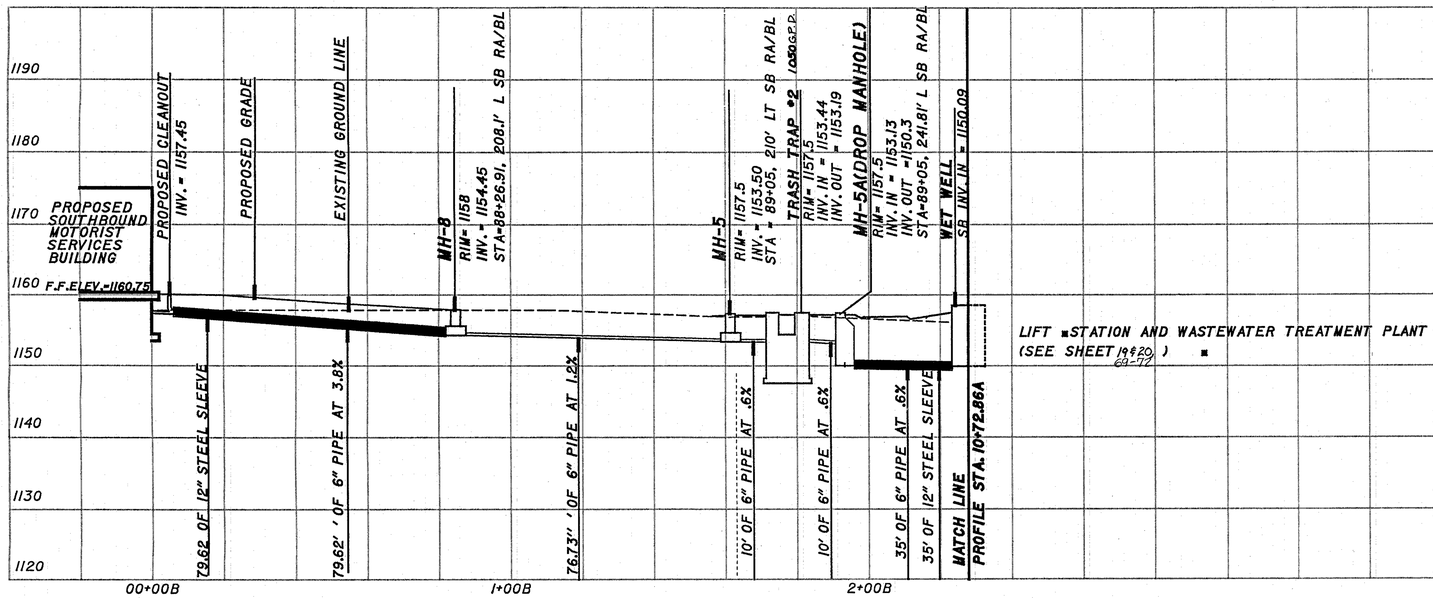
(SEE ALSO SHEET 19)

NOTES:
- FINISH GRADE IS 6" BELOW RIM ELEVATIONS OF ALL TREATMENT PLANT COMPONENTS.
- FINISH GRADE IS FLUSH WITH ALL MANHOLES OUTSIDE OF THE WWTP COMPLEX.
- FOR LAYOUT AND GRADING OF TREATMENT PLANT SEE SHEET 19 AND 20 .
- UNLESS OTHERWISE NOTED ALL MANHOLES ARE ODOT MANHOLE, NO.3

CALC BY / DATE	MAH-11-3.31	OHIO	21
CHKD BY / DATE	MAHONING COUNTY SAFETY REST AREA	FHWA REGION 5	73

HORIZONTAL SCALE 1"=20'
VERTICAL SCALE 1"=10'





LIFT STATION AND WASTEWATER TREATMENT PLANT (SEE SHEET 19 & 20)

SANITARY SEWER AND WASTEWATER TREATMENT PLANT PROFILE SHEET

HUNT

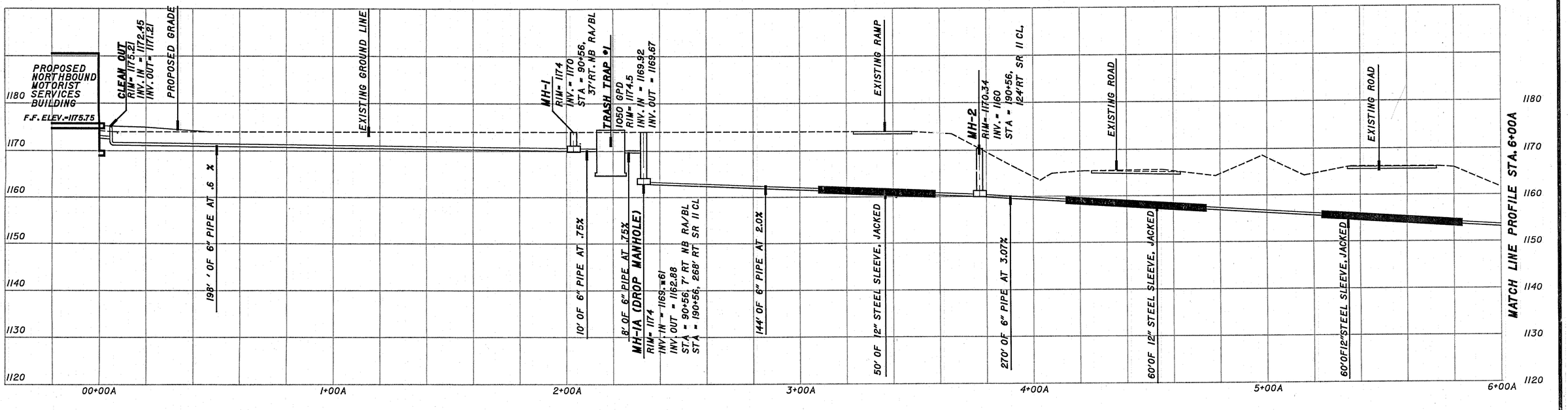
NOTES:

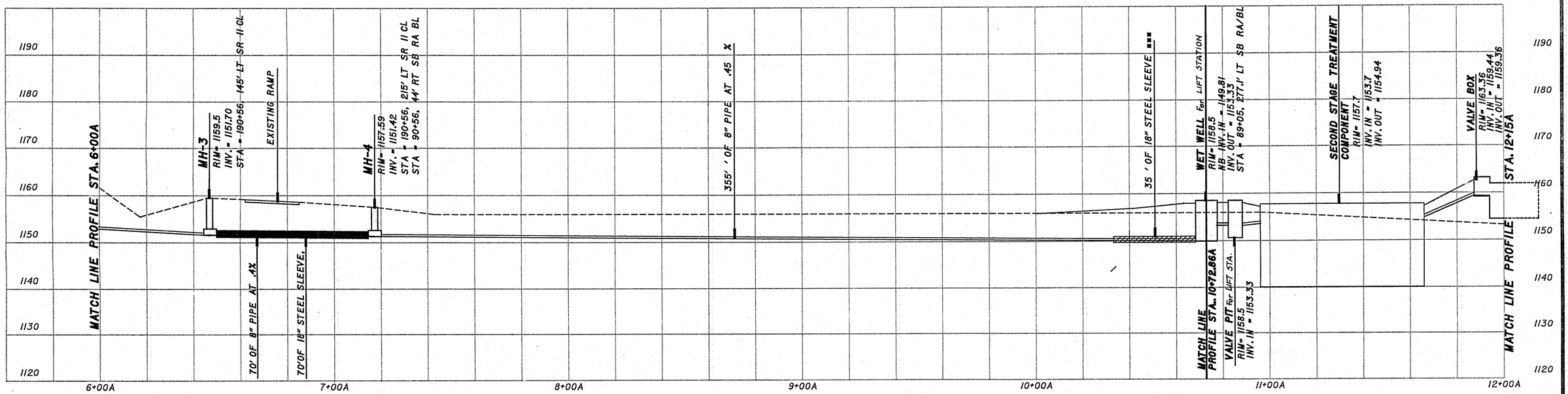
- FINISH GRADE IS 6" BELOW RIM ELEVATIONS OF ALL TREATMENT PLANT COMPONENTS.
- FINISH GRADE IS FLUSH WITH RIM ELEVATIONS OF ALL MANHOLES OUTSIDE OF WWTP COMPLEX
- FOR LAYOUT AND GRADING OF TREATMENT PLANT SEE SHEET 19 AND 20 .
- UNLESS OTHERWISE NOTED ALL MANHOLES ARE ODOT MANHOLE, NO.3

CALC BY DATE	MAH-11-3.31 MAHONING COUNTY, SAFETY REST AREA	OHIO	22 / 73
CHKD BY DATE		FHWA REGION 5	

HORIZONTAL SCALE 1"=20'

VERTICAL SCALE 1"=10'





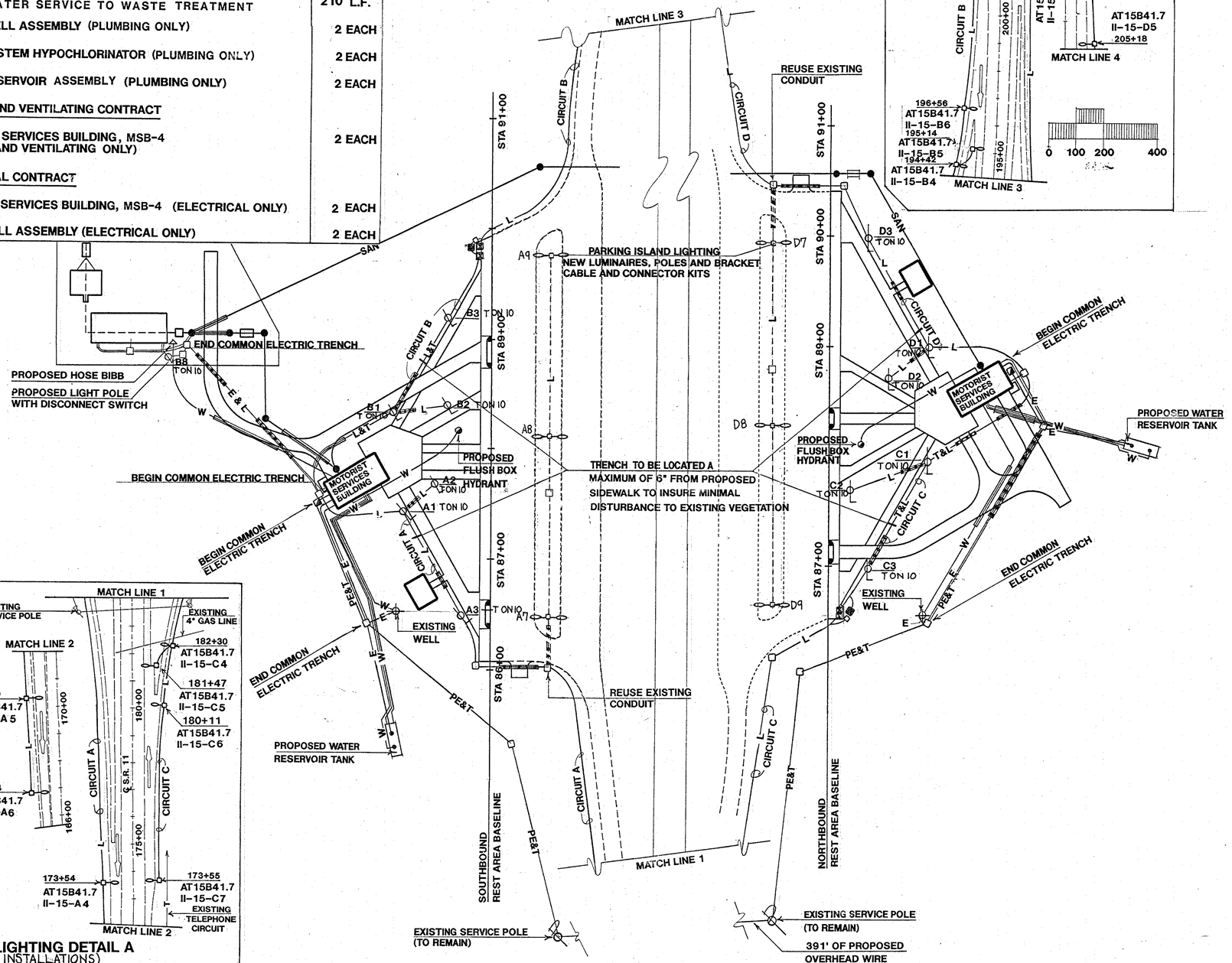
SANITARY SEWER AND WASTEWATER TREATMENT PLANT PROFILE SHEET

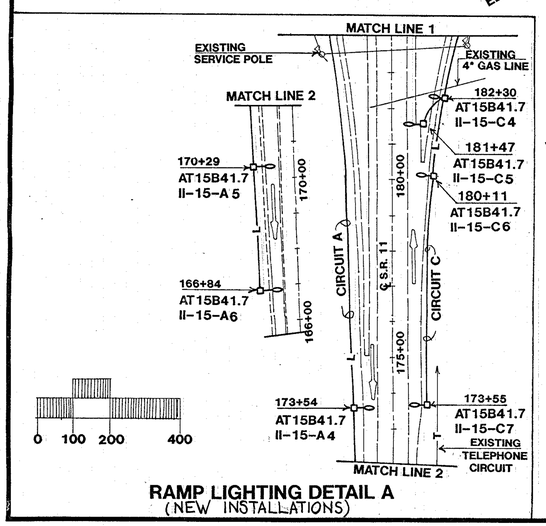
ESTIMATED QUANTITIES:

ITEM	DESCRIPTION	QUANTITY
	GENERAL CONTRACT	
SPECIAL	WATER RESERVOIR ASSEMBLY (GENERAL ONLY)	2 EACH
SPECIAL	12" STEEL PIPE ENCASEMENT	240 L.F.
	PLUMBING CONTRACT	
SPECIAL	MOTORIST SERVICES BUILDING, MSB-4 (PLUMBING ONLY)	2 EACH
SPECIAL	MOTORIST SERVICES BUILDING , MSB-4 (PLUMBING FIXTURES AND TRIM ONLY)	2 EACH
SPECIAL	COLD WATER SERVICE TO BOX HYDRANT	260 L.F.
SPECIAL	COLD WATER SERVICE TO WASTE TREATMENT PLANT	210 L.F.
SPECIAL	WATER WELL ASSEMBLY (PLUMBING ONLY)	2 EACH
SPECIAL	WATER SYSTEM HYPOCHLORINATOR (PLUMBING ONLY)	2 EACH
SPECIAL	WATER RESERVOIR ASSEMBLY (PLUMBING ONLY)	2 EACH
	HEATING AND VENTILATING CONTRACT	
SPECIAL	MOTORIST SERVICES BUILDING, MSB-4 (HEATING AND VENTILATING ONLY)	2 EACH
	ELECTRICAL CONTRACT	
SPECIAL	MOTORIST SERVICES BUILDING, MSB-4 (ELECTRICAL ONLY)	2 EACH
SPECIAL	WATER WELL ASSEMBLY (ELECTRICAL ONLY)	2 EACH

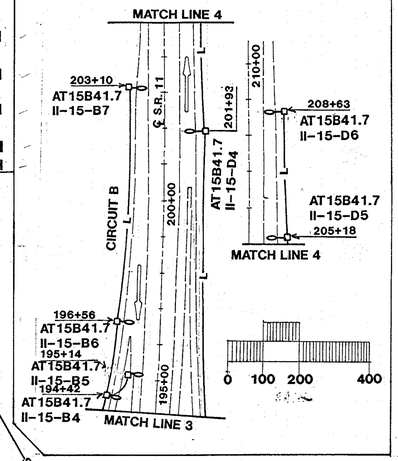
ESTIMATED QUANTITIES:

ITEM	DESCRIPTION	QUANTITY
	ELECTRICAL CONTRACT	
SPECIAL	WATER SYSTEM HYPOCHLORINATOR (ELECTRICAL ONLY)	2 EACH
SPECIAL	WATER RESERVOIR ASSEMBLY (ELECTRICAL ONLY)	2 EACH
SPECIAL	CONTROLS	2 EACH
SPECIAL	COMPLETE WASTE TREATMENT SYSTEM (ELECTRICAL ONLY)	1 EACH
SPECIAL	LIFT STATION (ELECTRICAL ONLY)	1 EACH





RAMP LIGHTING DETAIL A
(NEW INSTALLATIONS)



RAMP LIGHTING DETAIL B
(NEW INSTALLATIONS)

CALC BY	DATE
CHKD BY	DATE 11/93

MAHONING-11-3.31
MAHONING COUNTY
SAFETY REST AREA

OHIO | FHWA REGION 5 | 23 / 73

0 25 50 100

NORTH

LEGEND:

- EXISTING LIGHTING CIRCUIT
- PROPOSED TELEPHONE CIRCUIT
- PROPOSED ELECTRIC CIRCUIT
- PROPOSED WATER LINE
- PROPOSED LIGHTING CIRCUIT
- PROPOSED PIMARY ELECTRIC
- PROPOSED SANITARY SEWER
- EXISTING WELL
- EXISTING SERVICE POLE
- PROPOSED REST AREA LIGHT (DECORATIVE T ON 10)
- PROPOSED PARKING LOT LIGHT
- PROPOSED RAMP LIGHT
- PROPOSED ELECTRIC PULL BOX
- PROPOSED TELEPHONE PULL BOX
- PROPOSED TRANSFORMER
- PROPOSED TELEPHONE BOOTH
- PROPOSED FLUSH BOX HYDRANT
- PROPOSED HOSE BIB
- PROPOSED 3" CONDUIT
- PROPOSED 12" SLEEVE

NOTES

* CIRCUIT "B" TO WWTS LIGHT POLE TO BE BURIED IN SAME TRENCH AS ELECTRIC SERVICE TO WWTS.
* SEE SHEET 19&20 FOR LAYOUT OF WASTEWATER TREATMENT PLANT SYSTEM.
* SECONDARY ELECTRICAL CIRCUITS TO RUN BETWEEN THE TRANSFORMER AND MOTORIST SERVICES BUILDING.
* FOR ELECTRICAL QUANTITIES SEE SHEET 24.

UTILITY PLAN

CALC BY		DATE 11/16/93
CHKD BY		DATE

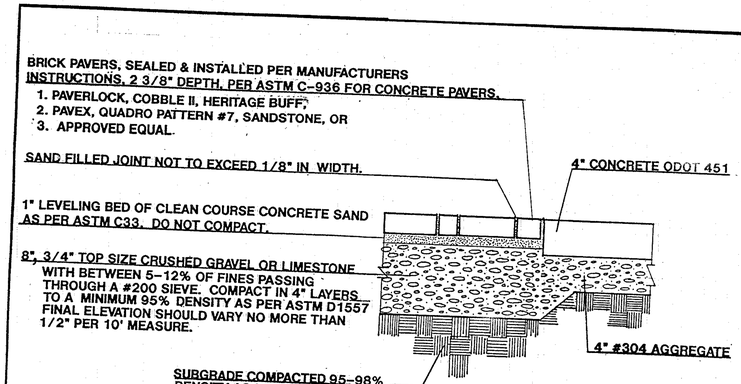
MAHONING COUNTY
MAH-11-3.31
SAFETY REST AREA

OHIO
FHWA REGION 5

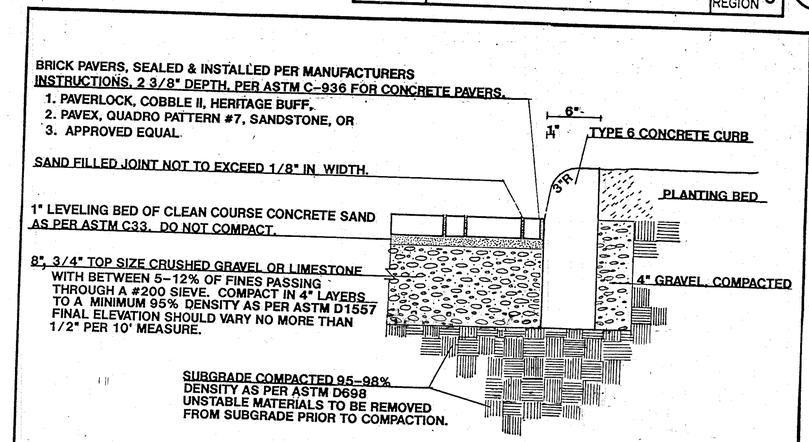
SUB-SUMMARY

| KEY | DESCRIPTION | SPEC | SPEC | 603 | 625 | 625 | 625

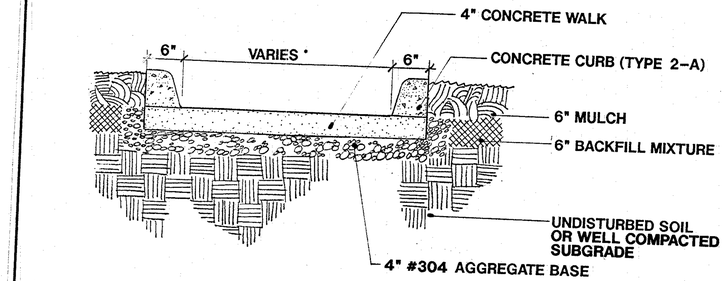
CALC. BY / DATE	MAH-11-3.31	OHIO	25
CHKD. BY / DATE		FHWA REGION 5	73



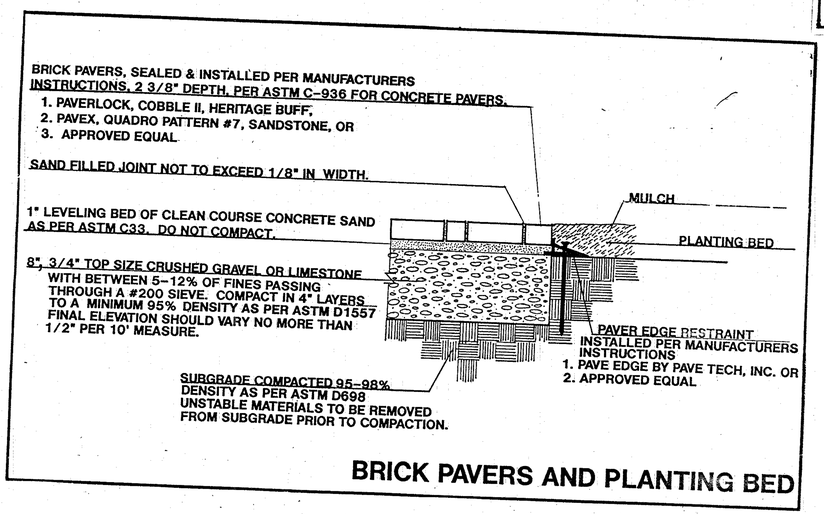
BRICK PAVERS AND CONCRETE WALK



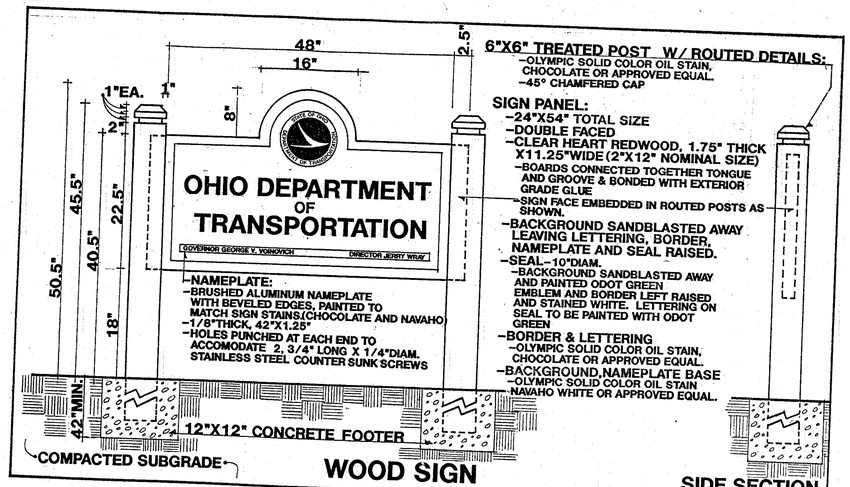
BRICK PAVERS AND CONCRETE CURB



CONCRETE WALK AND CURB



BRICK PAVERS AND PLANTING BED

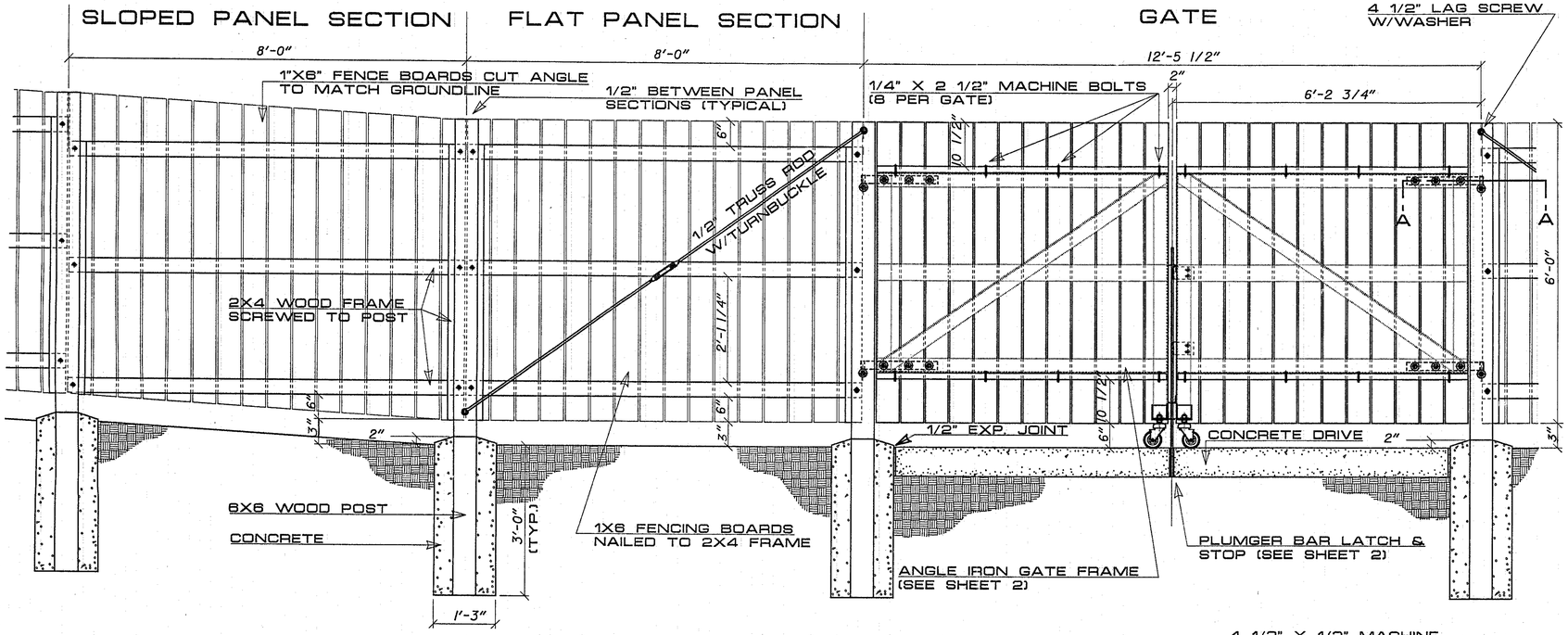


WOOD SIGN

SIDE SECTION

CALC BY DATE	MAH-11-3.31	OHIO FHWA REGION 5	26 / 73
CHKD BY DATE			

REVISED 4-14-92



NOTES:

CONCRETE: ALL CONCRETE SHALL BE CLASS C. THE PROVISIONS OF 511.12 ARE MODIFIED TO THE EXTENT THAT THE CONCRETE SHALL BE PROTECTED DURING THE CURING PROCESS IN A MANNER SUCH THAT IT WILL NOT FREEZE.

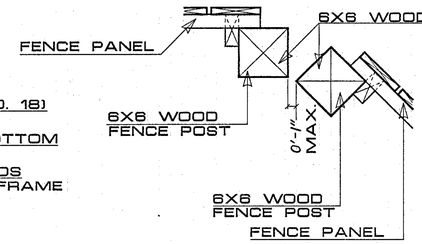
WOOD: ALL WOOD MEMBERS SHALL BE CLEAR DOUGLAS FIR, REDWOOD OR CCA PRESSURE TREATED PINE.

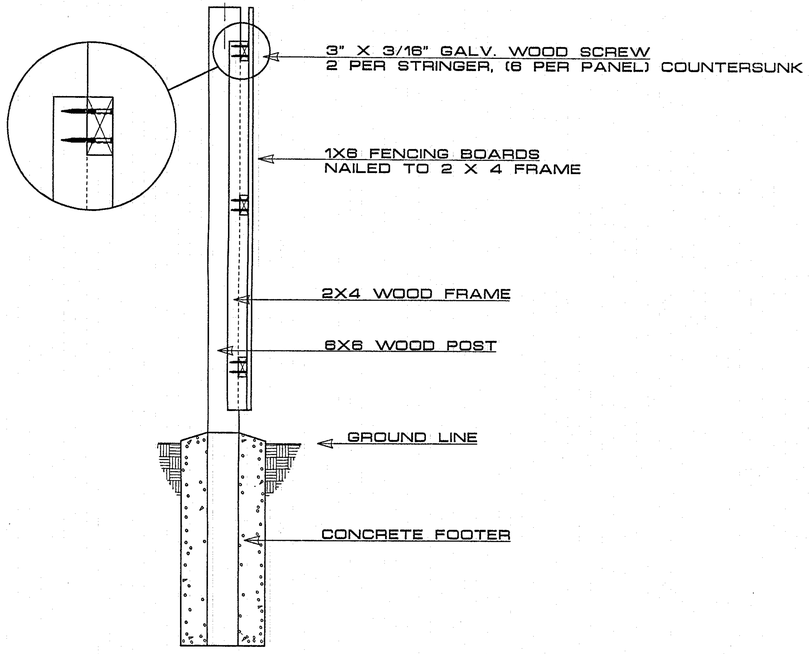
HARDWARE: ALL HARDWARE, WITH THE EXCEPTION OF THE BOLT HOOK AND STRAP HINGES, SHALL BE HOT DIPPED GALVANIZED.

GATES: EACH GATE SHALL BE EQUIPPED WITH A GALVANIZED PLUNGER BAR, LATCH AND STOP ALONG WITH AN APPROVED PADLOCK WITH DOUBLE LOCKING BOLT, FIVE PIN TUMBLER, LAMINATED STEEL CASE, BRASS CYLINDER AND BE RUST PROOF. WHERE COMPANION GATES ARE INSTALLED ON OPPOSITE SIDES OF THE HIGHWAY, TUMBLERS SHALL BE IDENTICAL IN EACH LOCK. TWO KEYS SHALL BE FURNISHED WITH EACH LOCK.

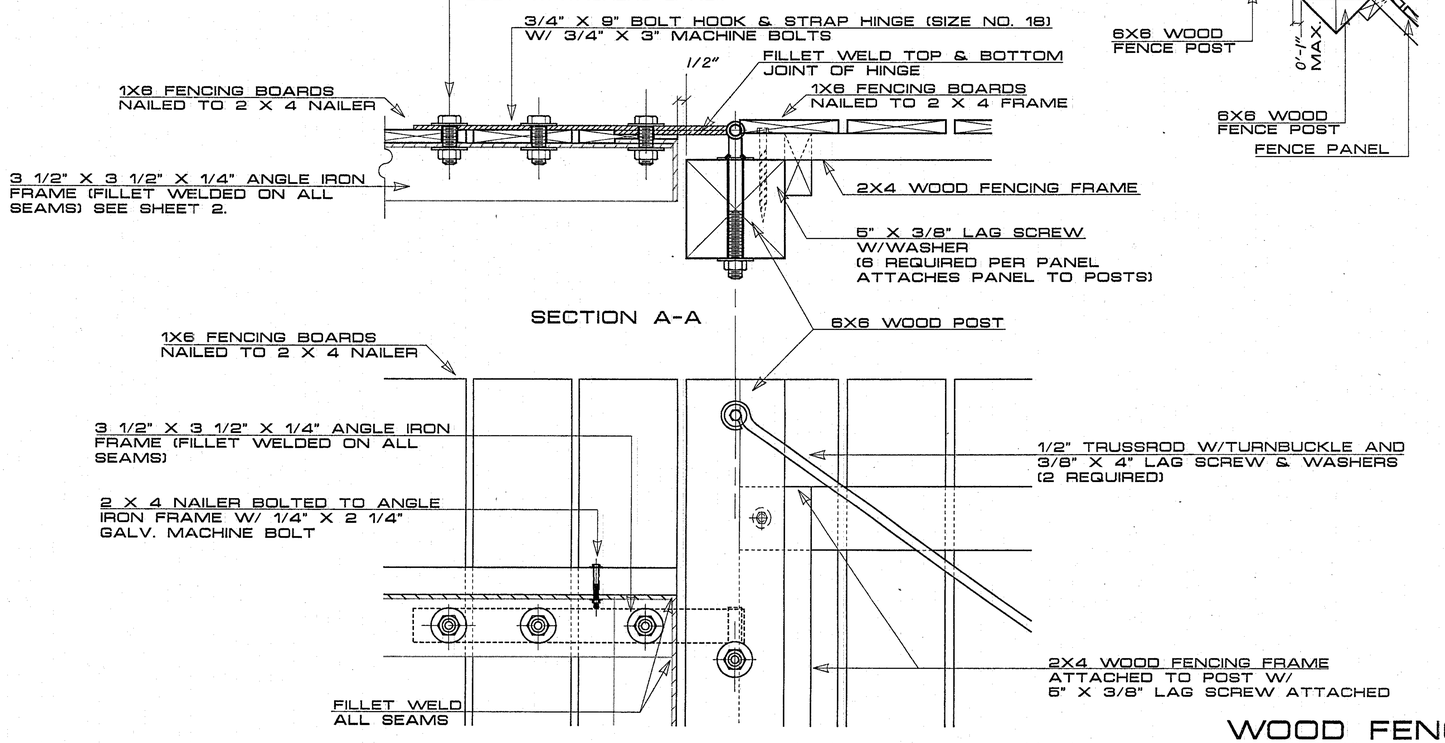
ANGLE IRON FRAME: ALL ANGLE IRON SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.

POST PLACEMENT: IN THOSE SITUATIONS WHERE A FENCE CORNER IS SOMETHING OTHER THAN 90°, TWO POSTS WILL BE PLACED SIDE BY SIDE, AS SHOWN BELOW. A COMMON CONCRETE FOOTER SHALL BE CONSTRUCTED FOR BOTH POSTS.





WOOD PANEL FRAME DETAIL



BOLT HOOK & STRAP HINGE DETAIL

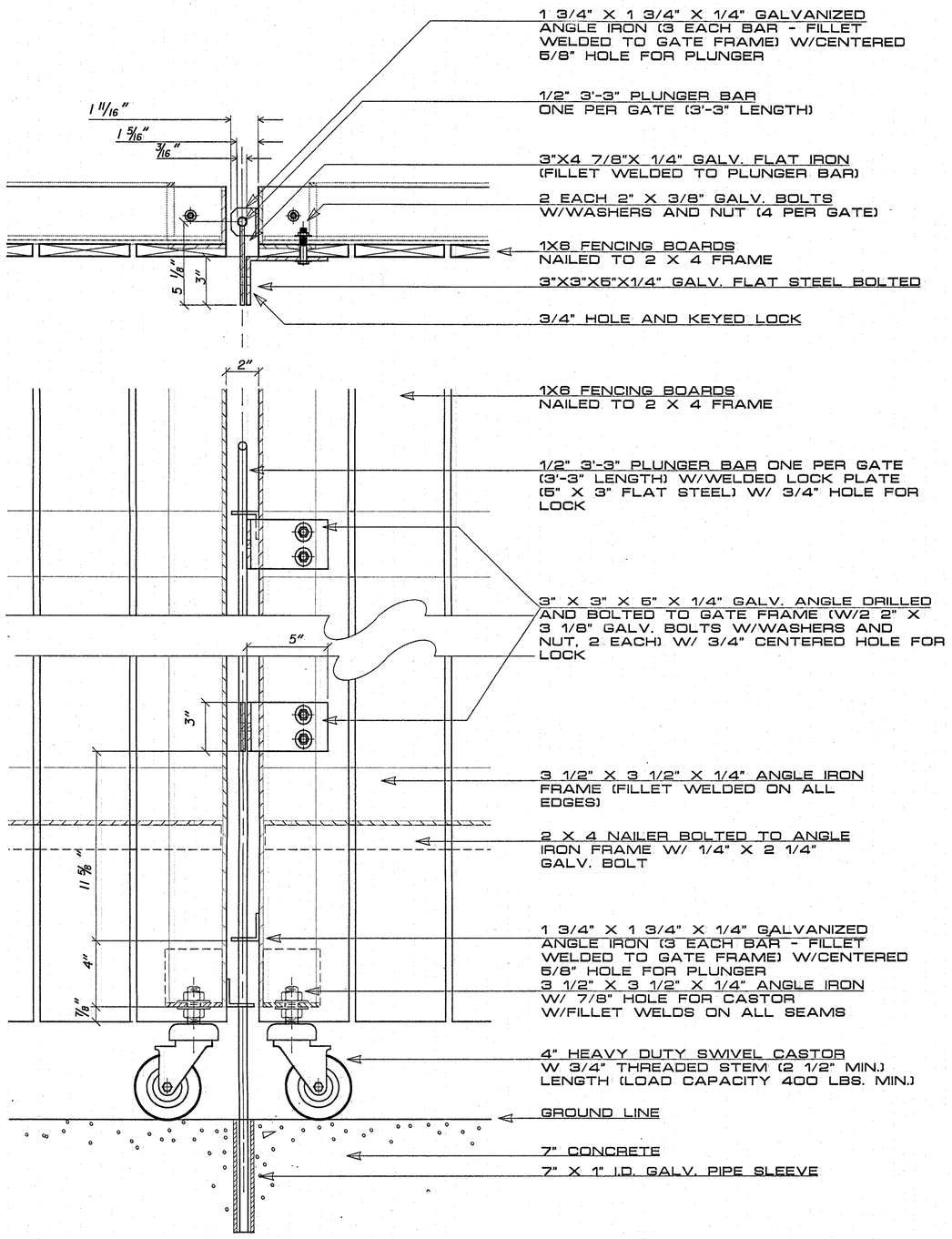
WOOD FENCE
SHEET 1 OF 2

CALC BY: DATE:
CHKD BY: DATE:

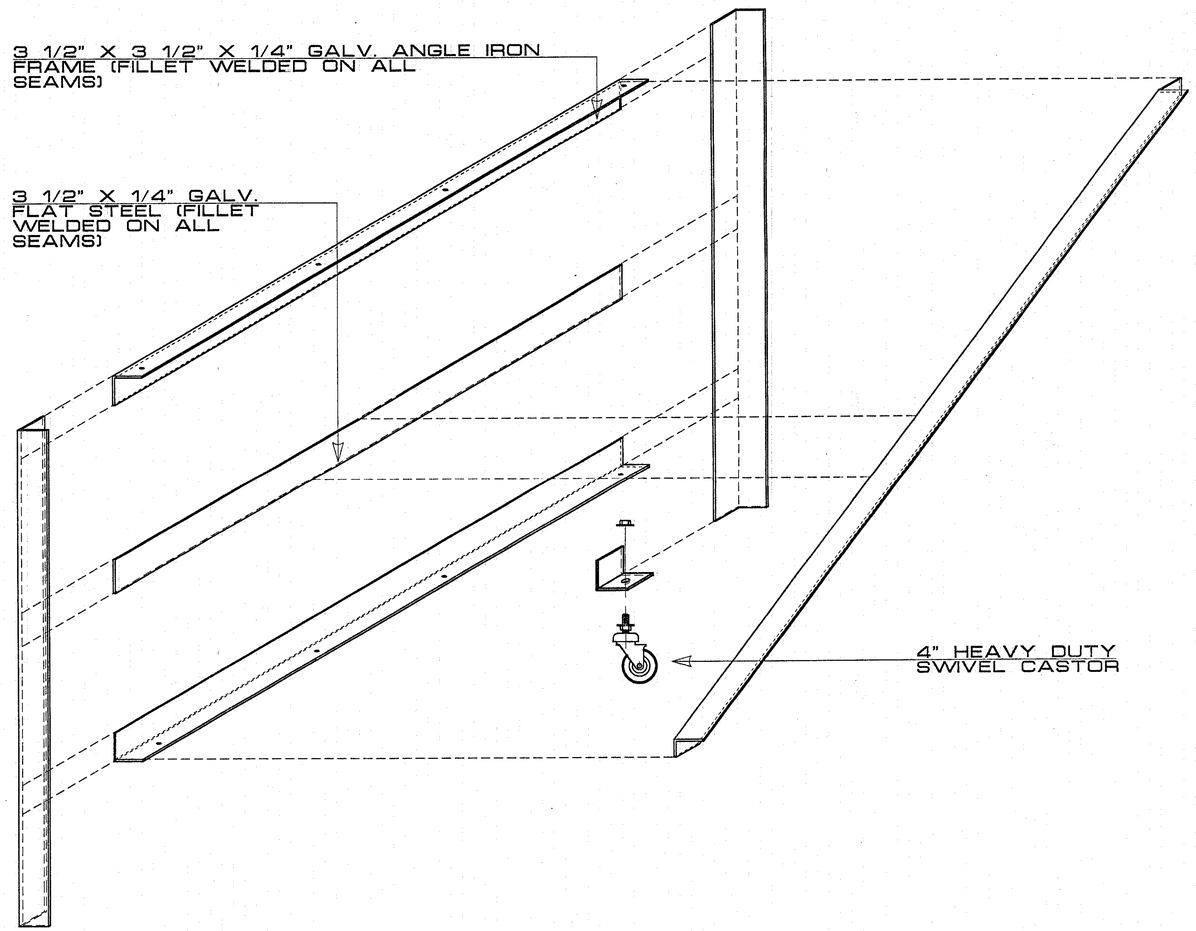
MAH-11-3.31

OHIO | FHWA REGION 5 | 27 / 73

REVISED 4-14-92



GATE, WHEEL & LATCH DETAIL

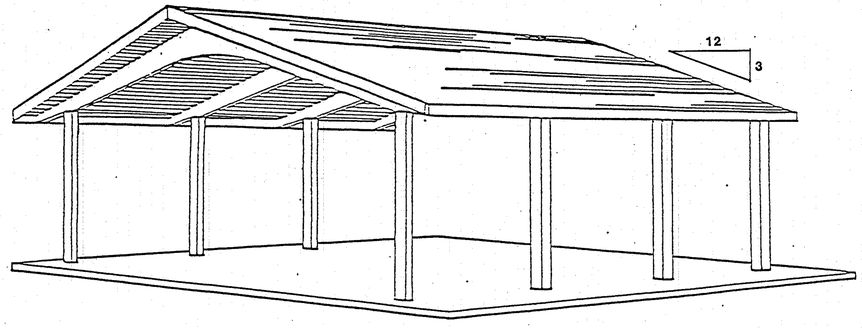


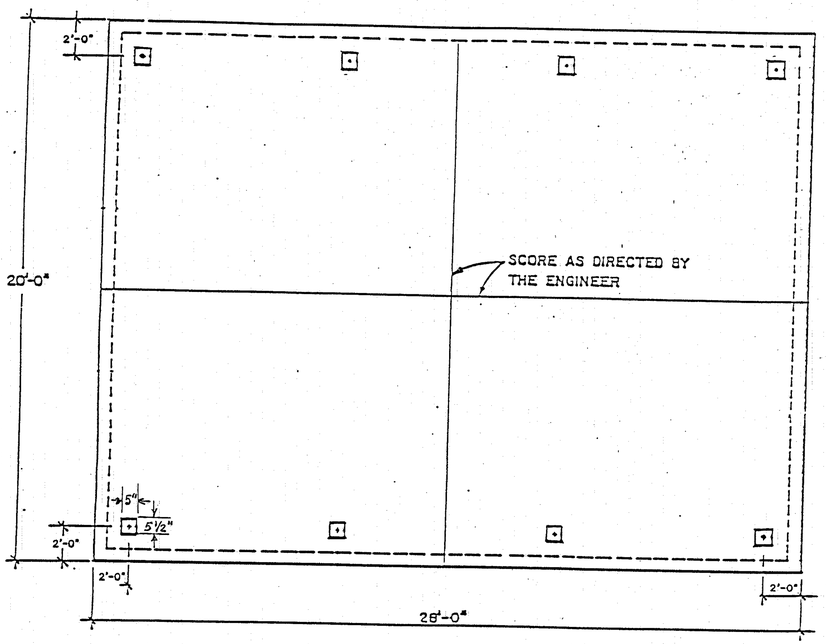
GATE FRAME DETAIL

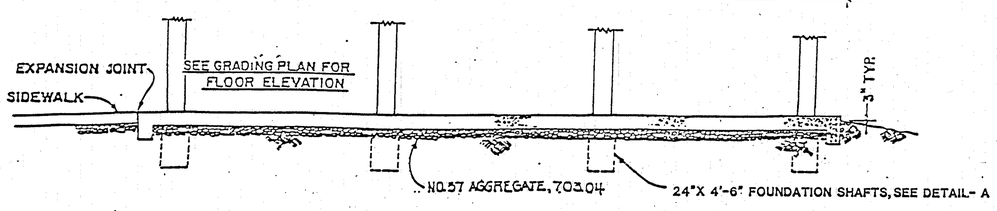
WOOD FENCE
SHEET 2 OF 2

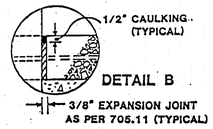
DS_HUNT

CALC BY HWB DATE 3-2-90 CHKD. BY DATE	MAH-11-3.31	OHIO FHWA REGION 5	28 73







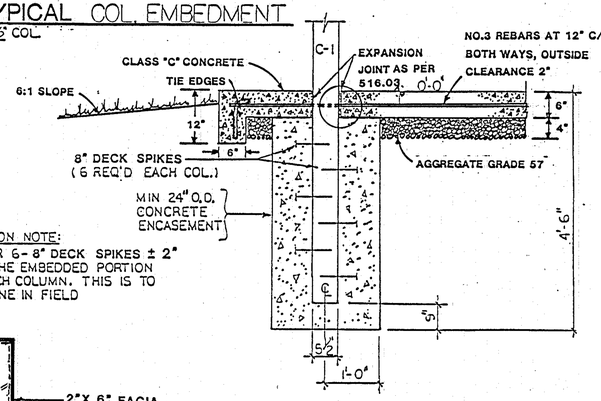


CAULKING

COMPOUND SHALL CONFORM TO THE REQUIREMENTS OF FED. SPEC. TT-S-00227E, TYPE II, CLASS A, SUCH AS TREMCO "DYMERIC", SONNEBORN SONOLASTIC NP 11 OR APPROVED EQUAL.

TYPICAL COL. EMBEDMENT

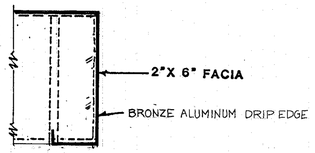
5" X 5½" COL.



ERECTION NOTE:

HAMMER 6- 8" DECK SPIKES ± 2" INTO THE EMBEDDED PORTION OF EACH COLUMN. THIS IS TO BE DONE IN FIELD

DETAIL- A



DETAIL C

FOOTER AND SLAB

1) THE NECESSARY EXCAVATION AND BACK FILLING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 503.

2) SUBBASE AGGREGATE SHALL MEET THE REQUIREMENTS OF 703.04 NO. 57 AGGREGATE.

3) REINFORCING BAR TYPE AND PLACEMENT SHALL BE IN ACCORDANCE WITH ITEM 509.

4) CONCRETE SHALL BE CLASS "C" IN ACCORDANCE WITH ITEM 511. FLOAT FINISH IN ACCORDANCE WITH 511.17 AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL PROVIDE AN "UNIT STRUCTURES INC. RALEIGH MODEL SHELTER" (AS MODIFIED BELOW) OR EQUAL BY "IRON MOUNTAIN FORGE", AS THE SHELTER HOUSE ON THIS PROJECT.

THE SHELTER HOUSE SHALL BE 20' X 28' (ALT. 20' X 26') AND SHALL BE MANUFACTURED FROM KILN-DRIED SOUTHERN PINE.

THE ROOF SYSTEM SHALL IN ADDITION TO THE MANUFACTURERS LOADING BE ABLE TO WITHSTAND 80 MPH WIND LOADS IN CONFORMANCE WITH ARTICLE 11 (OAC 4101:2-11-12) OF THE OHIO BASIC BUILDING CODE. THE FABRICATOR SHALL FURNISH COMPLETE SHOP DRAWINGS, SHOWING ALL DETAILS AND CONNECTIONS OF THE COLUMNS AND ROOF SYSTEM, AS WELL AS CALCULATIONS VERIFYING THAT THE SYSTEM SATISFIES THE OHIO BUILDING CODE. TOTAL LOAD SHALL BE A MIN. OF 40 PSF AND WIND LOAD A MIN. OF 20 PSF/80 MPH.

THE STRUCTURAL GLUED LAMINATED ARCHED BEAMS SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS: AITC-100, 117, 177, 200 AND PS-56-73. A CERTIFICATE OF CONFORMANCE SHALL BE FURNISHED AND THE AITC QUALITY MARK SHALL APPEAR ON ALL LAMINATED MEMBERS. THE ADHESIVE SHALL BE WATERPROOF AND CONFORM TO ASTM D-2559-70.

THE ROOF DECK SHALL BE NOMINAL 2" X 8" GRADE NO. 2 OR BETTER, SINGLE TONGUE AND GROOVE WITH A V-JOINT FACE SIDE DOWN.

THE COLUMNS SHALL BE 5" X 5 1/2" AND SHALL BE TREATED BY THE CELLON (R) OR CCA PROCESS IN ACCORDANCE WITH STD. C-28 AWPA AND THE 2" X 6" FASCIA WITH STD. C-2 AWPA TO A RETENTION OF 0.6 # PER CUBIC FEET.

ALL WOOD MEMBERS SHALL BE FACTORY FINISHED WITH A SEMI-TRANSPARENT WOOD STAIN NO. ML-729 DARK MAHOGANY. CERTIFICATION OF TREATMENT TO ALL WOOD SURFACES SHALL BE NOTED ON SHOP DRAWINGS.

ALL MEMBERS SHALL BE INDIVIDUALLY WRAPPED FOR PROTECTION DURING SHIPPING AND STORAGE. THE CONTRACTOR SHALL PROTECT THE SHELTER HOUSE MATERIALS ON THE JOB SITE. IF STORED TEMPORARILY, MEMBERS SHALL BE PLACED ON BLOCKS WELL OFF THE GROUND AND SEPARATED BY WOOD STRIPS SO THAT AIR CAN CIRCULATE AROUND EACH MEMBER.

THE TOP AND BOTTOM SHALL BE COVERED WITH MOISTURE-RESISTANT PAPER. ALL ERECTION WORK SHALL BE PERFORMED USING NON-MARRING SLINGS WHEN MEMBERS ARE TO BE HANDLED.

THE ROOF SHALL BE COVERED WITH 15 LB. FELT AND 240 LB. 3-TAB, SEAL-DOWN DARK BROWN ASPHALT SHINGLES WITH A 25 YEAR LIMITED WARRANTY. A DARK BRONZE ALUMINUM DRIP EDGE SHALL BE PROVIDED ALONG ALL ROOF SIDES.

THE CONTRACTOR SHALL FIELD FINISH THE SHELTER HOUSE USING THE FOLLOWING PAINTING PROCEDURE:

1. APPLY TWO (2) COATS OF PRATT AND LAMBERT VITRALITE UVA SPAR VARNISH TO ALL THE EXPOSED SURFACES OF THE BEAMS AND ROOF DECKING AFTER ERECTION. ALLOW 12 HOURS DRYING TIME BETWEEN COATS. FINISH THICKNESS SHALL BE 2.0 MILS.

2. NO THINNING IS PERMITTED AND APPLICATION METHOD SHALL BE IN ACCORDANCE WITH PAINT MANUFACTURERS RECOMMENDED PROCEDURE.

3. CERTIFICATION OF TREATMENT SHALL BE FURNISHED WITH THE SHOP DRAWINGS.

THE FOOTER, SLAB, HARDWARE AND AGGREGATE BASE SHALL BE AS SHOWN HEREIN. IN ADDITION THE FOUNDATION SHAFTS SHALL HAVE A MIN. DIA. & DEPTH OF 2' - 0" AND 4' - 6" RESPECTFULLY.

METHOD OF MEASUREMENT

THE QUANTITY WILL BE ONE SHELTER HOUSE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, COMPLETE AND IN PLACE.

BASIS OF PAYMENT

THE COST OF ALL MATERIALS, LABOR AND INCIDENTALS REQUIRED TO CONSTRUCT THE STRUCTURE AS DETAILED AND DESCRIBED ON THIS SHEET SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "ITEM SPECIAL - SHELTER HOUSE".

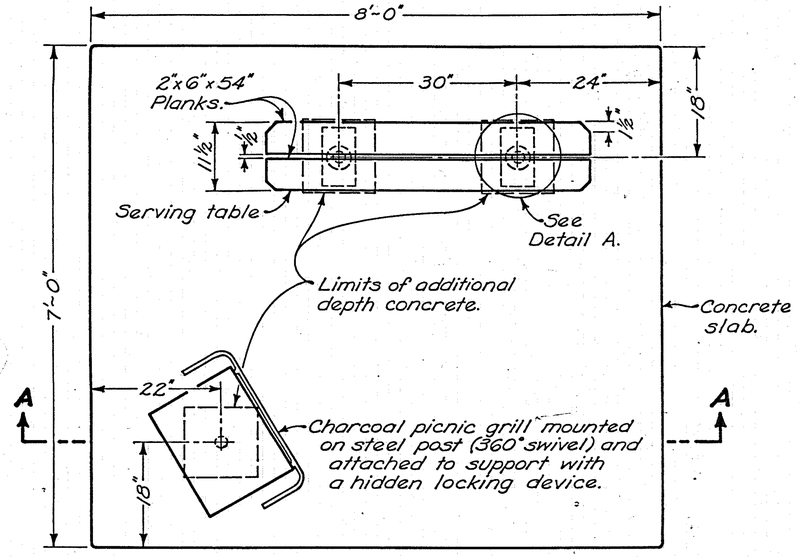
BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

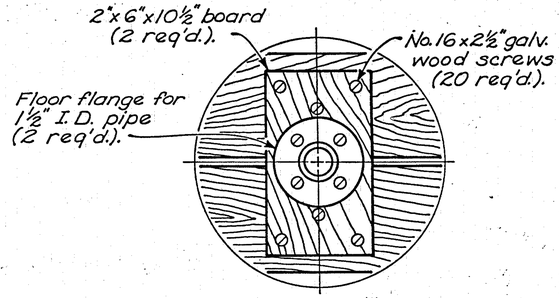
SHELTER HOUSE

DATE
2-23-90
10-3-90
7-25-91
8-26-92

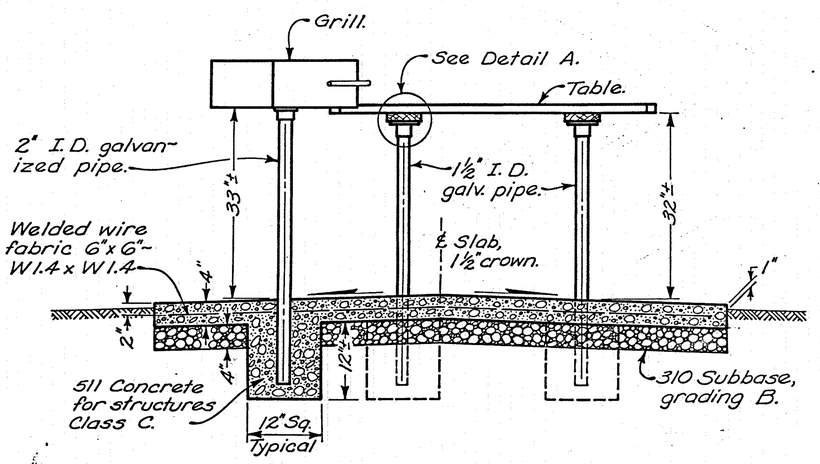
DRAWN BY H.W. BAKER



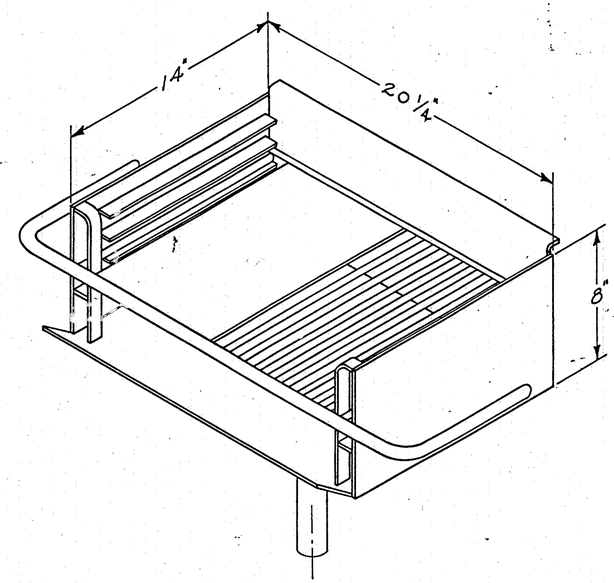
PLAN VIEW



DETAIL A
UNDERSIDE OF TABLE TOP



SECTION A-A



CHARCOAL GRILL

NOTES MAH-11-3.31 (29/73)

MATERIALS: Lumber shall be S4S Std., KD, No. 1 common or better, Southern Yellow Pine or Douglas Fir, 711.26. It shall be treated with CCA (chromated copper arsenate) conforming to AASHTO M 133, Types A, B or C (see 712.06).

Pipe and pipe fittings shall meet the requirements of 707.08 and 711.02.

Screws shall meet the requirements of 711.09.

CHARCOAL GRILL shall be the same as the one shown hereon, or an approved equal. Detailed descriptive literature must be submitted for approval by ODOT.

METHOD OF MEASUREMENT: THE CHARCOAL GRILL AND SERVING TABLE AND CONCRETE SLAB MAY BE BID TOGETHER OR SEPARATELY AS FOLLOWS:

ITEM SPECIAL – CHARCOAL GRILL, SERVING TABLE AND CONCRETE SLAB
ITEM SPECIAL – CHARCOAL GRILL AND SERVING TABLE
ITEM SPECIAL – CONCRETE SLAB FOR CHARCOAL GRILL AND SERVING TABLE

BASIS OF PAYMENT: EACH OF THE ABOVE ITEMS SHALL INCLUDE EXCAVATION AND BACKFILL, FURNISHING, HAULING AND PLACING ALL MATERIALS, AND ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THESE ITEMS AS REQUIRED FOR EACH ITEM.

THE NUMBER OF UNITS TO BE PAID FOR SHALL BE THE NUMBER COMPLETED AND ACCEPTED UNDER THE ITEM SPECIFIED.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

LANDSCAPING

DATE
6-1-79
11-8-88

CHARCOAL GRILL & SERVING TABLE

MAH-11-3.31

CALC. BY HWB	MAH-11-3.31	OHIO	30
DATE 9-1-85		FHWA REGION 5	73
CHKD. BY			
DATE			

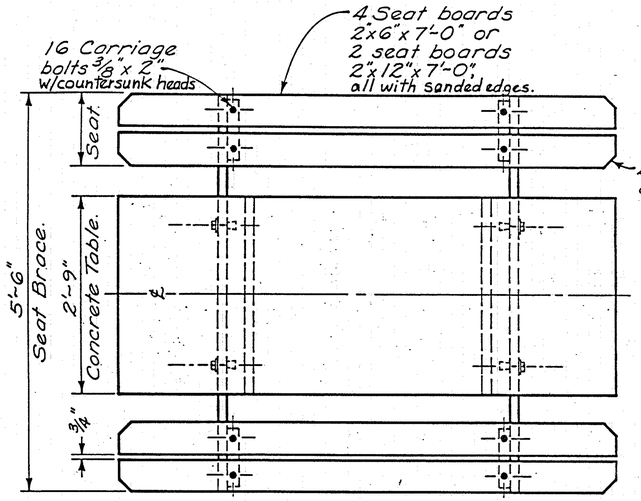
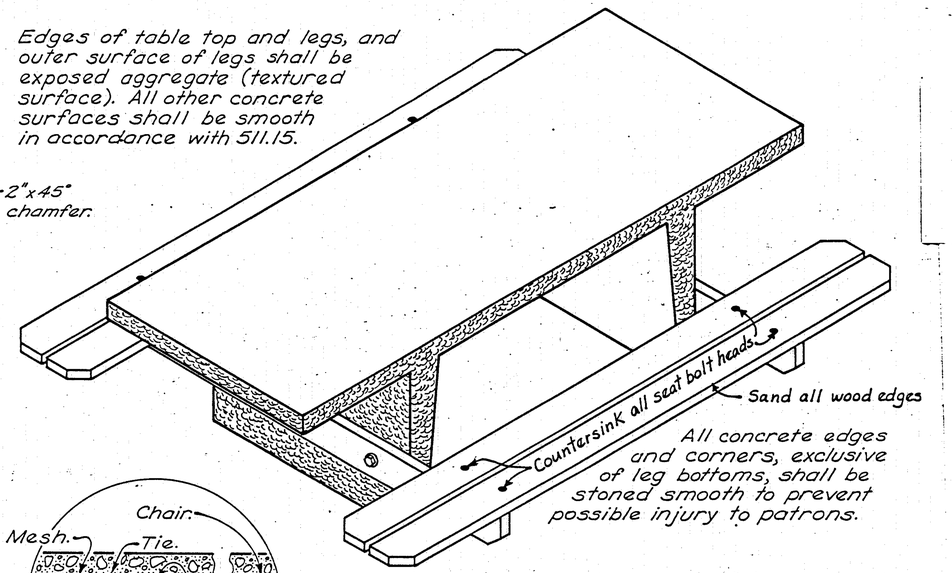


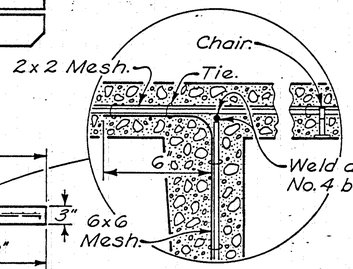
TABLE ~ PLAN

Edges of table top and legs, and outer surface of legs shall be exposed aggregate (textured surface). All other concrete surfaces shall be smooth in accordance with 511.15.



All concrete edges and corners, exclusive of leg bottoms, shall be stoned smooth to prevent possible injury to patrons.

TABLE ASSEMBLY



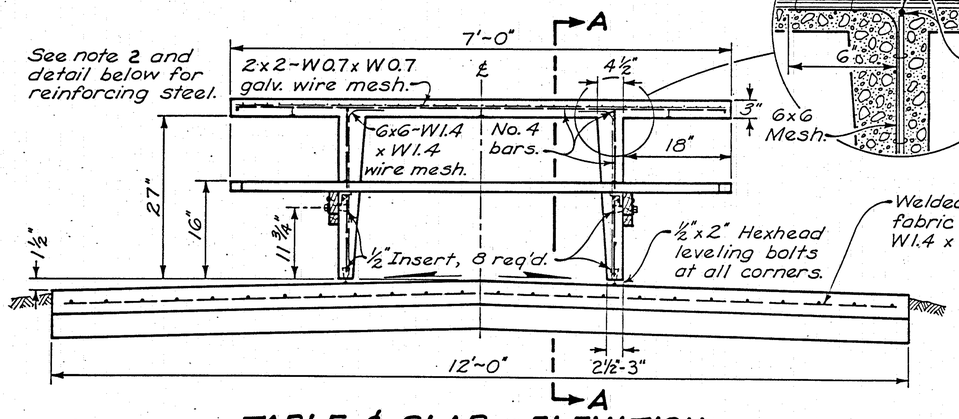
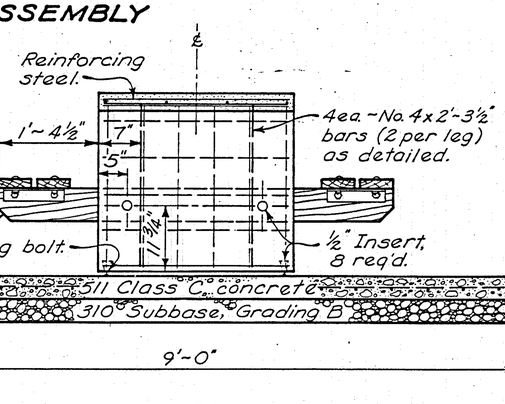


TABLE & SLAB ~ ELEVATION



SECTION A-A

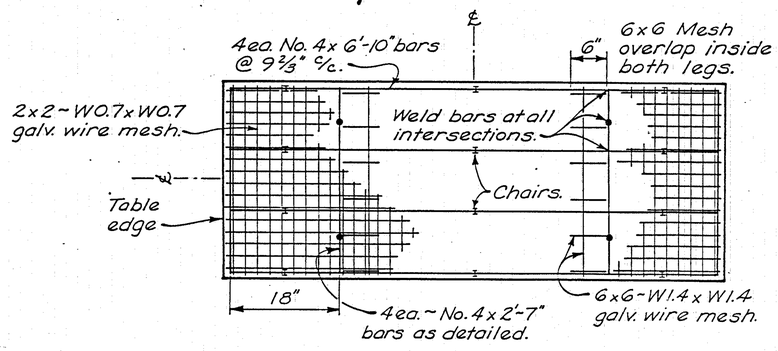
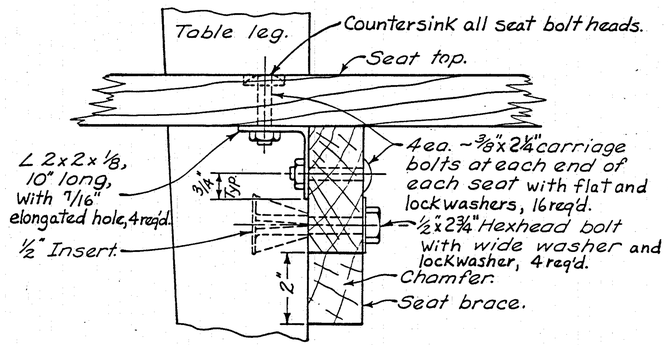


TABLE TOP ~ STEEL DETAIL



SEAT DETAIL

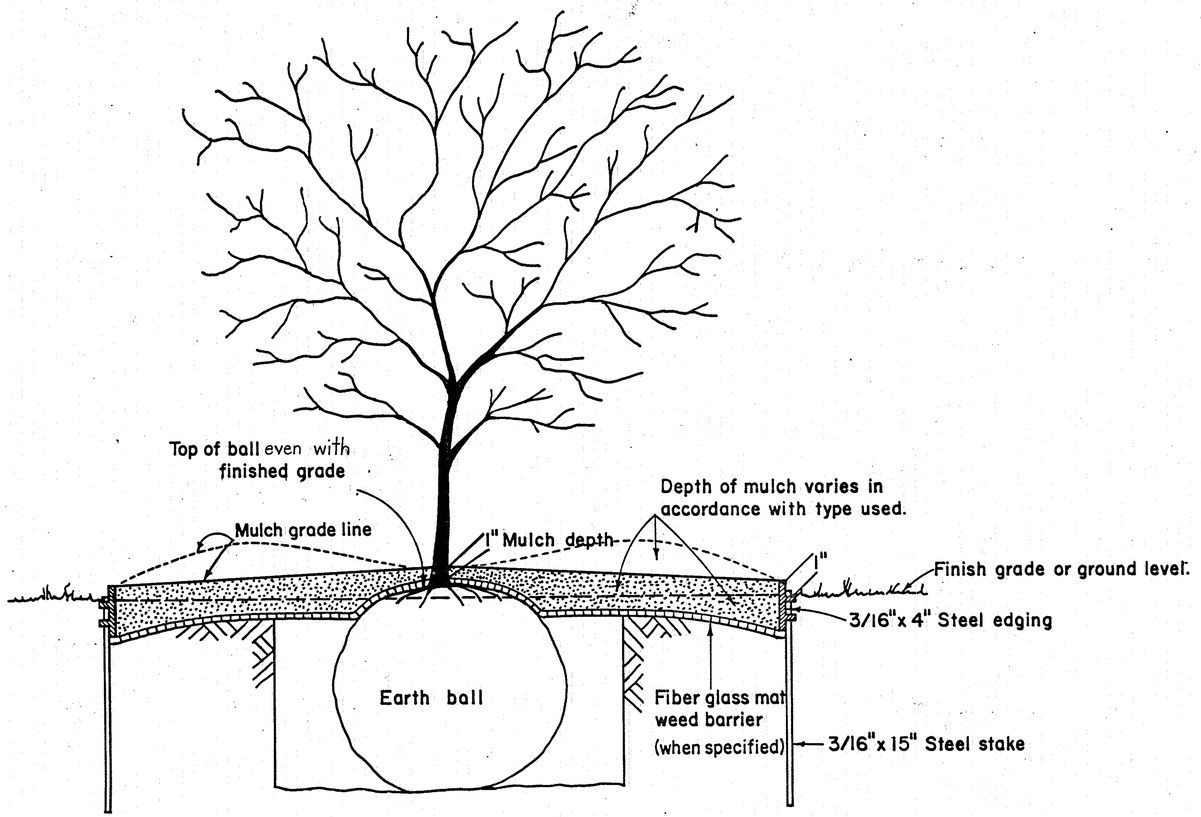
1. All bolts, nuts, washers, lockwashers and seat angles shall be galvanized. Each hex bolt shall have one wide washer and one lockwasher at the head end.
2. Reinforcing steel for table shall be:
   TOP ~ 4 each No. 4 x 6'-10" rebars longitudinally with 4 each No. 4 x 2'-7" rebars welded transversely. Place 2"x2"~W0.7xW0.7 galv. wire mesh across rebars and tie to rebars.
   LEGS ~ 4 each No. 4 x 2'-3½" rebars (2 per leg) welded at right angles to the top rebar frame. Place 6x6~W1.4xW1.4 galv. wire mesh on the insides of the leg rebars, bend the top 6" under the top rebar frame and tie to all rebars.
3. Table top and aggregate surfaces shall have two coats of sealer such as the Euclid Chemical Co.'s Rez-Seal, the Thoro System's Thoroglaze, Sonneborn KNS309, or approved equal.
4. Lumber shall be S4S Std., KD., No.1 common or better Southern Yellow Pine or Douglas Fir, 711.26, treated with CCA (chromated copper arsenate) conforming to AASHTO M 133, Type A, B or C (see 712.06). Alternate shall be CCA-C (Osmose K-33 Sunwood).
5. Method of measurement ~ Picnic table and slab may be bid together or separately as follows:
   Item Special ~ Picnic table and slab.
   Item Special ~ Picnic table.
   Item Special ~ Picnic table without seats.
   Item Special ~ Concrete slab for picnic table.
6. Payment for each of the above items shall include excavation and backfill; furnishing, hauling and placing all materials; and all labor, equipment, tools and incidentals necessary to complete these items, as required for each item. The number of units to be paid for shall be the number completed and accepted under the item specified.
7. Weight: Concrete table only ~ approx. 1265 lbs. Table shall be precast concrete and meet the requirements of 706.13 with 6 ± 2% air void content in the hardened concrete.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

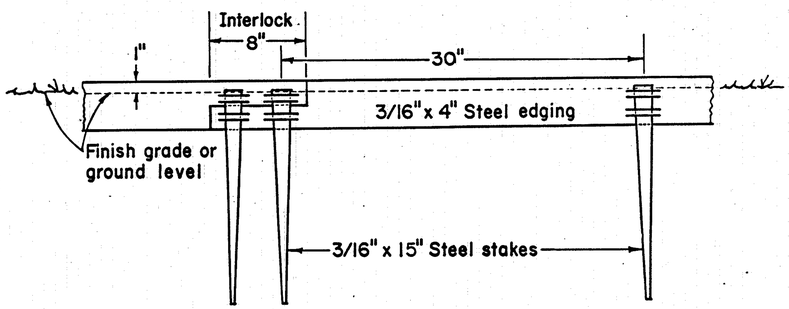
LANDSCAPING

DATE 2-2-81 9-1-85

PICNIC TABLE



SECTION
TYPICAL REST AREA PLANTING BED



SECTION
TYPICAL EDGING INSTALLATION

All designated planting beds, detailed or dimensioned on the Rest Area Landscape Plans, shall be enclosed with Landscape Border Edging.

The edging shall be made of flexible steel plate, 3/16" x 4" min. dimensions, crackproof, rotproof, and coated with a thick coating of green rust resistant paint. It shall be anchored in place by 3/16" x 15" tapered steel stakes driven through slots punched in the edging at a maximum of 30" intervals.

Edging strips or sections shall be connected by joints formed by interlocking ends of strips. Joints shall be interlocked a min. of 8" and secured with two (2) stakes as shown in edging installation detail. The top of the edging shall extend one (1") above finish grade to allow for mower clearance and provide mulch stop.

Edging shall be free of cuts, scratches, rust, or damage resulting from shipment, storage, or installation. Edging shall be installed one (1") above finish grade and in accordance with manufacturer's recommendations. Bed lines and curves shall be natural, free flowing, radius bent, and free of short radius or sharp bends, unless approved by the Engineer.

Contractor shall submit shop drawings of edging for approval prior to installation.

ITEM SPECIAL-LANDSCAPE BORDER EDGING:

This item shall consist of furnishing all material, equipment, and labor, necessary to complete in all details, the installation of the Landscape Border Edging, as detailed and specified on the plans, including all excavation, trenching, anchoring, and backfilling.

BASIS OF PAYMENT:

The accepted work, in place, in satisfactory condition, and complete in all details as specified, will be included for payment in the contract unit price bid for "Item Special-Landscape Border Edging."

OHIO DIVISION OF HIGHWAYS—DESIGN SERVICES.

REVISIONS		SHEET NO
2-18-83	LANDSCAPE BORDER EDGING	RRA 17
	DRAWN BY - H.W.BAKER	DATE 8-4-69

CALC. BY		MAH-11-3.31	OHIO	32
CHKD. BY		SAFETY REST AREA	FHWA REGION 5	73
DATE				

A. DROP PIPE AND FITTINGS WITHIN THE DROP MANHOLE SHALL BE 6 - INCHES MINIMUM DIAMETER.

B. BOTTOM INLET PIPE IS SHOWN ON SECTION A - A TO SHOW INSTALLATION OF A DROP MANHOLE WITHIN A RUN OF A STORM OR SANITARY SEWER LINE.

C. INLETS AND OUTLETS OF SEWER LINE PIPING MAY BE ROTATED AT DIFFERENT ANGLES OTHER THAN SHOWN TO ACCOMMODATE DIFFERENT ANGLES OF PIPING PLACEMENT REQUIRED. FOR DESIRED ANGLES REFER TO STORM AND/OR SANITARY SEWER PLANS.

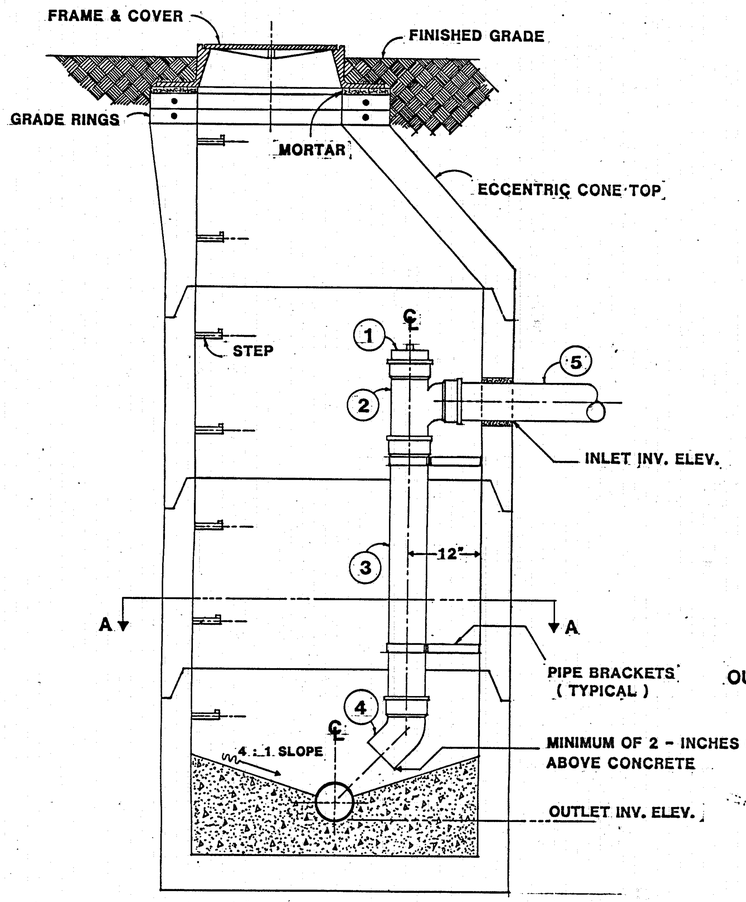
D. FOR REQUIRED INLET AND OUTLET STORM AND/OR SANITARY SEWER INVERT ELEVATIONS AT DROP MANHOLES, REFER TO PLAN AND PROFILE PLAN SHEETS.

E. QUANTITIES FOR DROP MANHOLES SHALL BE SHOWN WITHIN THE ESTIMATED QUANTITIES OR SUB - SUMMARIES OF THE UTILITIES PLANS OR OTHER SEWER LAYOUT PLANS AND CARRIED FORWARD TO THE GENERAL SUMMARY AS MODIFIED NO. 3 DROP MANHOLE (ECCENTRIC CONE TOP).

F. (SV) CAST-IRON EIGHTH BEND MAY BE DIRECTIONALLY ROTATED TO CENTER LINE AT FACE OF DISCHARGE OUTLET PIPE IN DROP MANHOLE

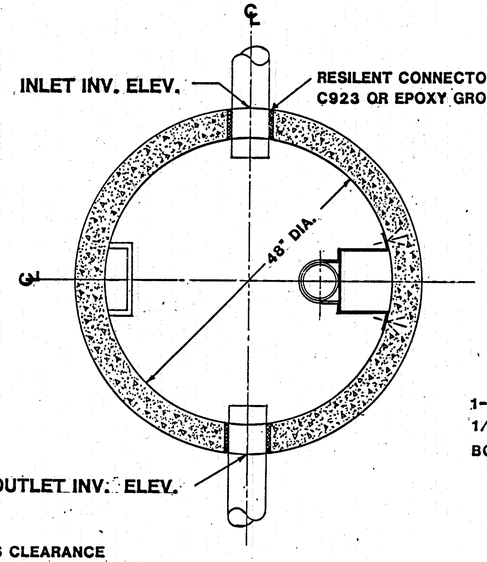
1. IRON BODY FERRULE W/ BRASS RAISED-HEAD CLEANOUT PLUG
2. (SV) CAST-IRON SANITARY TEE W/ C564 (FLEXIBLE GASKET)
3. (SV) CAST-IRON SOIL PIPE W/ (FLEXIBLE GASKET)
4. (SV) CAST-IRON EIGHTH BEND W/ (FLEXIBLE GASKET)
5. (SV) CAST-IRON SOIL PIPE W/ C564 (FLEXIBLE GASKETS) OR ADAPTATION TO THE STORM OR SANITARY SEWER PIPE AS SPECIFIED AND/OR SHOWN ON PLANS

REFER TO STANDARD CONSTRUCTION DRAWINGS MH-3 FOR NO. 3 MANHOLE DETAILS NOT SHOWN AND MH-1 FOR FRAME AND COVER AND RUNG DETAIL REQUIREMENTS.



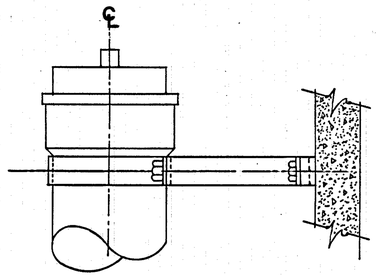
SECTION VIEW OF REINFORCED PRECAST DROP MANHOLE

SCALE 1" = 1' - 0"



SECTION A-A

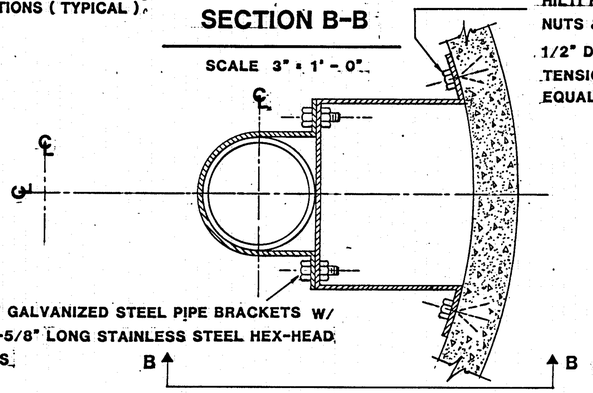
SCALE 1" = 1' - 0"



SECTION B-B

SCALE 3" = 1' - 0"

HILTI HKB, ALL STAINLESS STEEL KWIK BOLTS, NUTS & WASHERS, AND WEDGES, SIZE 1/2" DIA. X 3-1/2" EMBEDMENT W/ 9450 PSI TENSION & 8316 PSI SHEAR, OR AN APPROVED EQUAL.



PLAN VIEW OF PIPE BRACKET DETAIL

SCALE 3" = 1' - 0"

MODIFICATION OF MANHOLE NO. 3 FOR SANITARY OR STORM SEWER DROP MANHOLE DETAILS

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

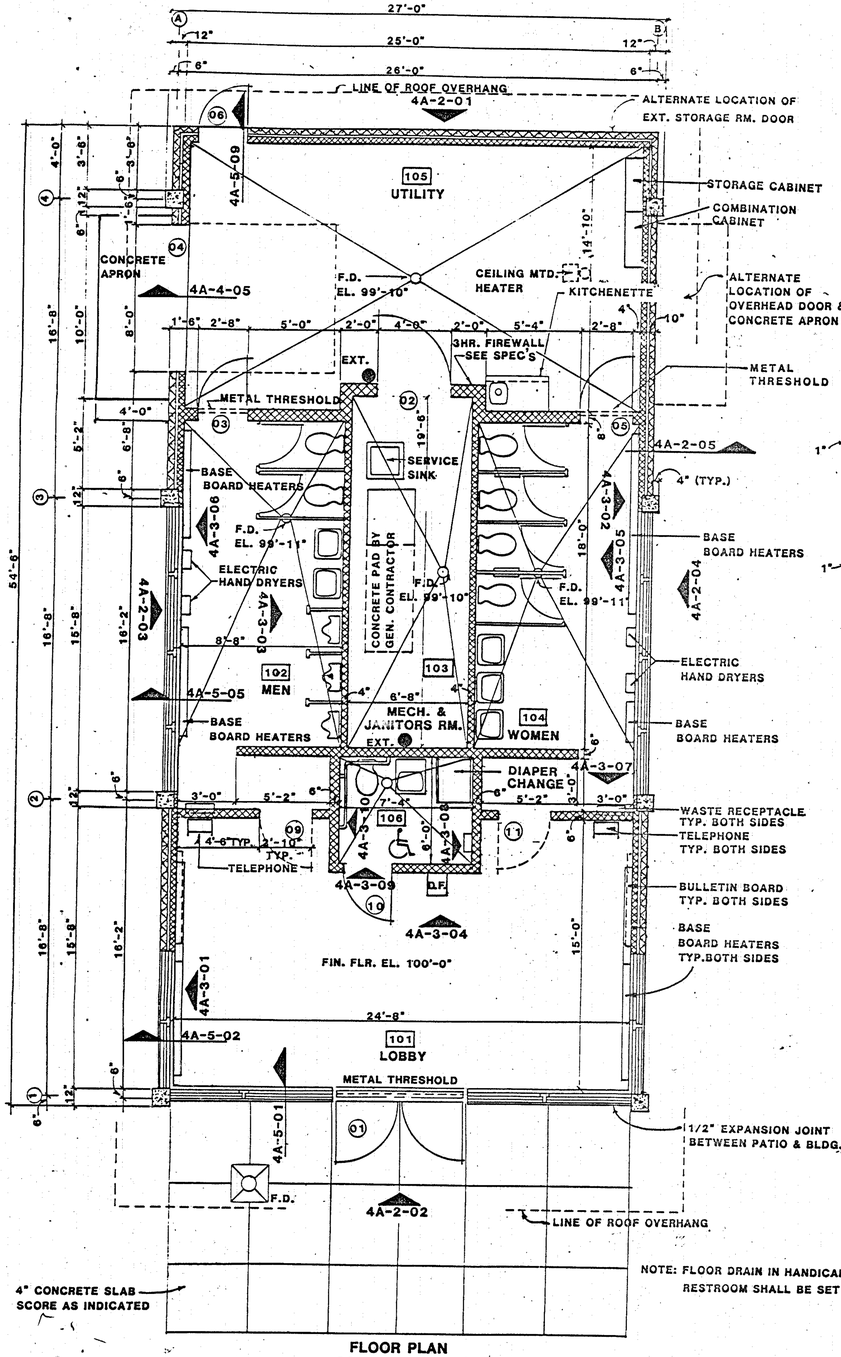
ROADSIDE DEVELOPMENT

STORM & SANITARY DROP MANHOLE DETAILS

DATE

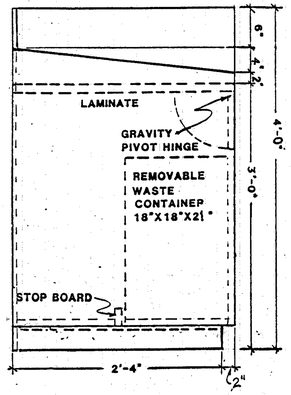
APPROVED _____ ENGR. OF DESIGN SERVICES

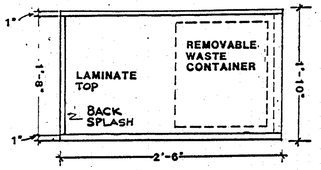
BY		MAH-11-3.31	OHIO	33
DATE			FHWA REGION 5	73
CHKD. BY				
DATE				

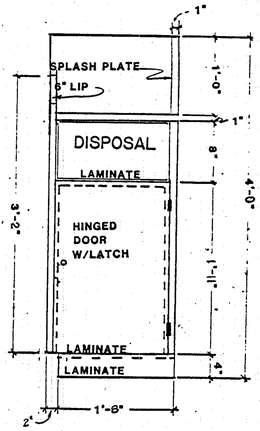


FLOOR PLAN
SCALE: 1/4"=1'-0"

NOTE: FLOOR DRAIN IN HANDICAPPED RESTROOM SHALL BE SET AT 99'-11"

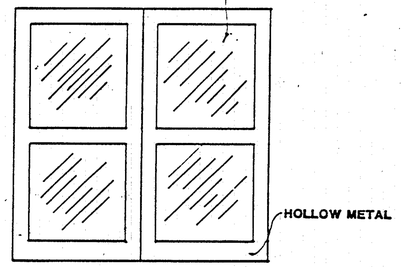




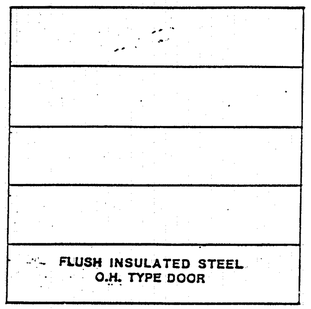


ORTHOGRAPHIC VIEW OF DIAPER CHANGING TABLE/ DISPOSAL UNIT

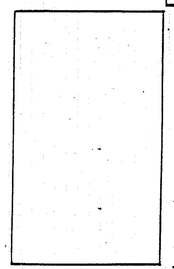
NO SCALE



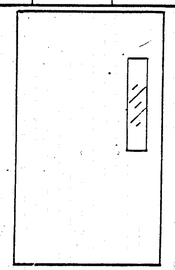
TYPE-A



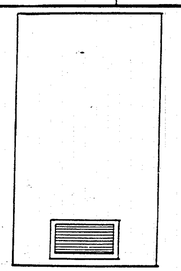
TYPE-C



TYPE-B
TYPE-D



TYPE-E



TYPE-F

ROOM FINISH SCHEDULE

ROOM NO.	NAME	FLOOR	BASE	WALLS	CEILING	HT.	REMARKS
101	LOBBY	QUARRY TILE	4" COVE BLOCK	GLAZED BLOCK	CONC. PAINTED	9'-0"	
102	MEN	QUARRY TILE	4" COVE BLOCK	GLAZED BLOCK	CONC. PAINTED	9'-0"	
103	MECH. & JANITOR	CONCRETE		GLAZED BLOCK	CONC. PAINTED	9'-0"	
104	WOMEN	QUARRY TILE	4" COVE BLOCK	GLAZED BLOCK	CONC. PAINTED	9'-0"	
105	UTILITY	CONCRETE		CONC. BLOCK	CONC. PAINTED	9'-0"	
106	♿	QUARRY TILE	COVE BLOCK	GLAZED BLOCK	CONC. PAINTED	9'-0"	

*RECESSED

DOOR SCHEDULE

DOOR NO.	TYPE	SIZE	HRDWR.	REMARKS
01	A	PR.-3'-6"X7'-0"X1 3/4"	A	CENTER STILE (MIN. 4" HIGH)
02	B	4'-0"X6'-8"X1 3/4"	C	U.L."A" LABEL, 3-HOUR RE.
03	B	2'-8"X6'-8"X1 3/4"	B	U.L."A" LABEL, 3-HOUR RE.
04	C	8'-2"X8'-1"	D	5 SECTION
05	B	2'-8"X6'-8"X1 3/4"	B	U.L."A" LABEL, 3-HOUR RE.
06	D	2'-10" X6'-8"X1 3/4"	E	EXTERIOR/INSULATED
09	E	2'-10"X6'-8"X1 3/4"	F	DOOR W/WIRE GLASS VISION PANEL
10	F	2'-10"X6'-8"X1 3/4"	G	24"X12" LOUVER
11	E	2'-10"X6'-8"X1 3/4"	F	DOOR W/WIRE GLASS VISION PANEL

BUILDING USE AND OCCUPANCY INFORMATION

FIRST FLOOR USE GROUP.....B
FIRE GRADING HOURS.....2
OCCUPANCY LOAD.....49
FLOOR LIVE LOAD.....100P.S.F.

SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

MSB-4
FLOOR PLAN & SCHEDULES

DATE
5/2/85
5/6/86
8/1/86
8/26/86
11/20/86
1/20/87
3/2/87
6/30/87
2/2/88
10-30-90

APPROVED _____ Engr. of Design Services

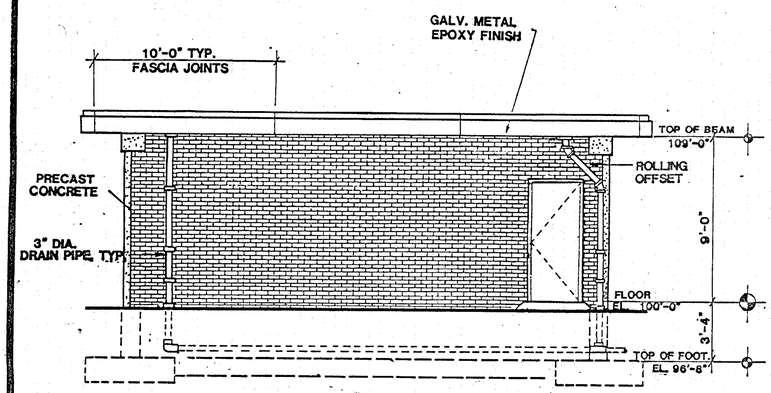
4A-1

CALC BY ____ DATE ____
CHKD BY ____ DATE ____

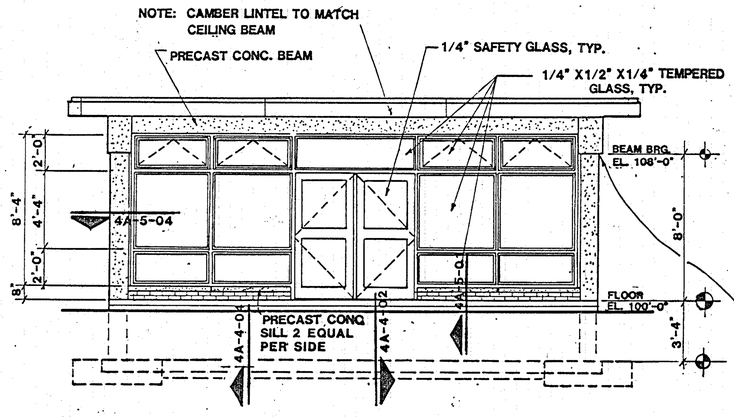
MAH-11-3.31

OHIO FHWA REGION 5

34 / 73

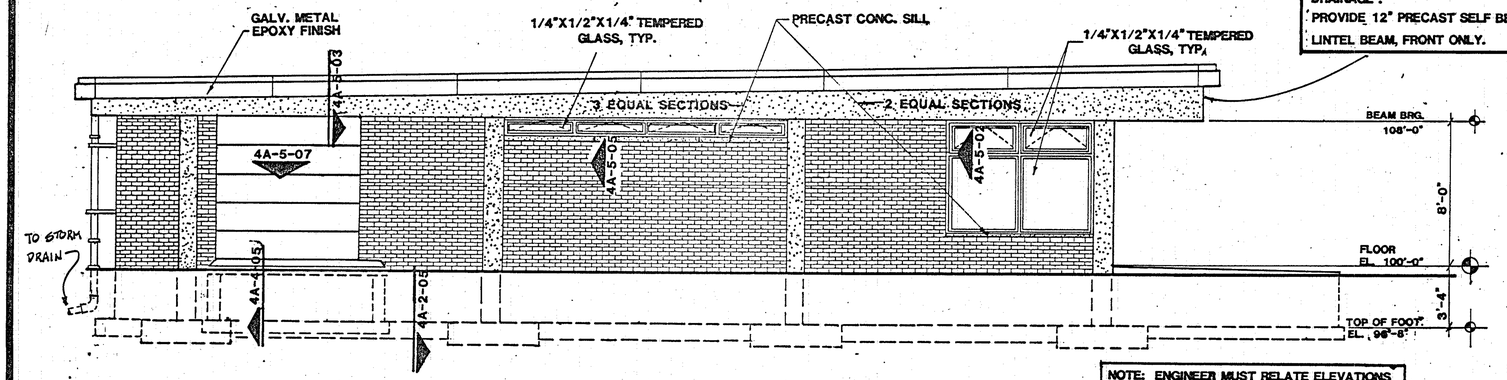


4A-2-01
REAR ELEVATION



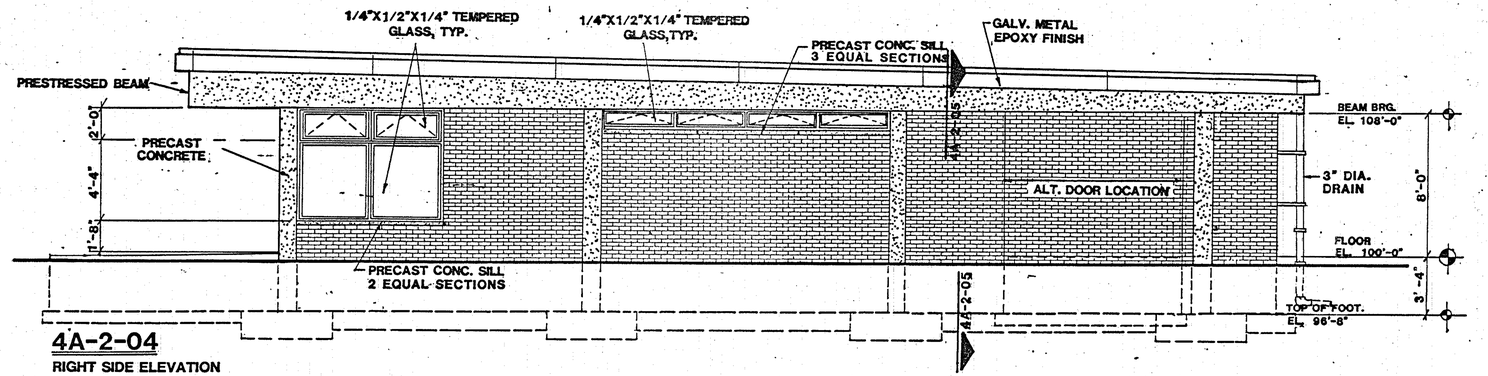
4A-2-02
FRONT ELEVATION

PRESTRESSED BEAMS ARE TO BE TAPERED FROM 24" IN FRONT TO 12" IN BACK TO GIVE ROOF SLOPE FOR PROPER DRAINAGE. PROVIDE 12" PRECAST SELF BEARING LINTEL BEAM, FRONT ONLY.



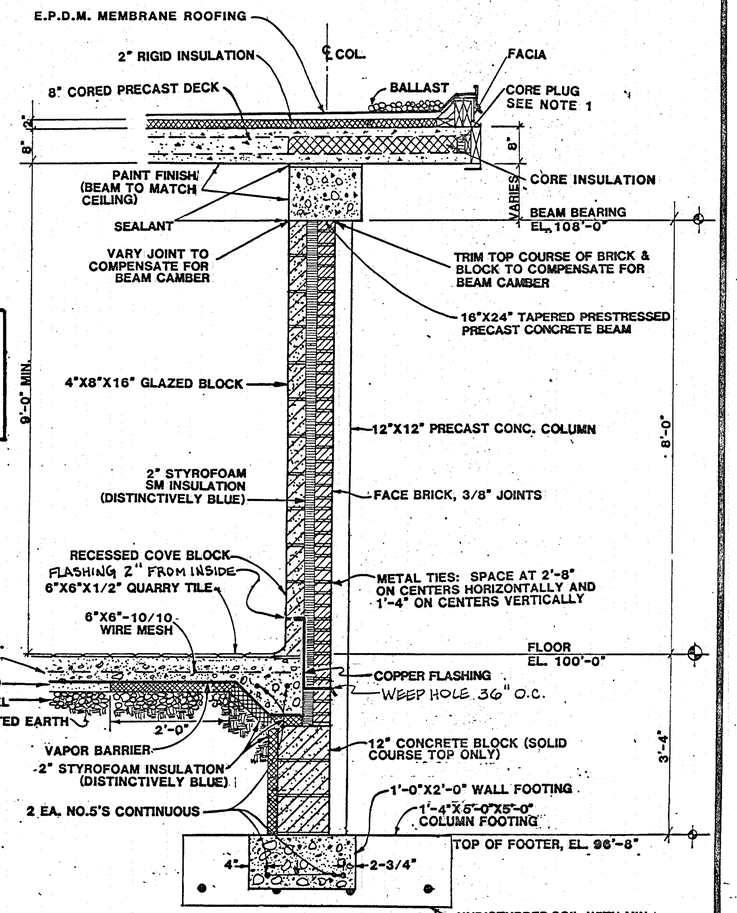
NOTE: ENGINEER MUST RELATE ELEVATIONS OF MOTORIST SERVICES BUILDING TO ELEVATIONS ON SITE PLAN.

4A-2-03
LEFT SIDE ELEVATION



4A-2-04
RIGHT SIDE ELEVATION

SCALE, ELEVATIONS: 1/4"=1'-0"



4A-2-05
WALL SECTION
SCALE: 3/4"=1'-0"

NOTE 1

THE GENERAL CONTRACTOR SHALL FURNISH AND INSTALL WOOD PLUGS IN ALL CORE OPENINGS. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL METAL PLUGS BEHIND THE WOOD PLUGS WHEN ELECTRICAL WIRES ARE INSIDE THE CORES.

SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

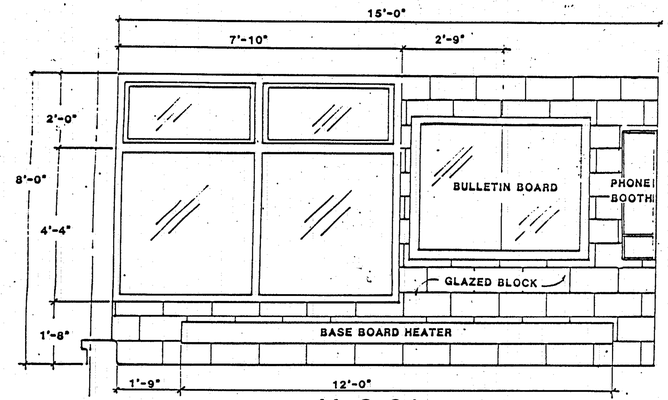
MSB-4

ELEVATIONS & WALL SECTIONS

DATE: 5/2/85, 5/6/86, 8/1/86, 1/20/87, 3/2/87, 10/30/87

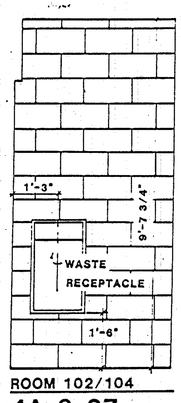
APPROVED R. W. Henderson Engr. of Design Services

4A-2



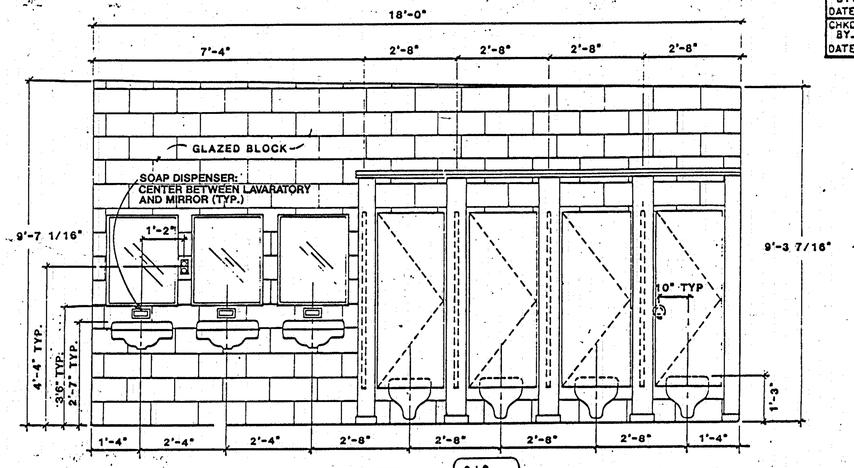
ROOM 101 (LOBBY)
SAME BOTH SIDES

4A-3-01



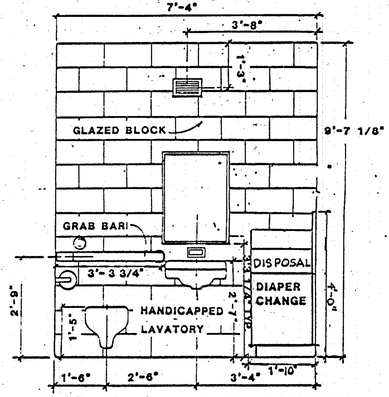
ROOM 102/104

4A-3-07



ROOM 104 (WOMEN)

4A-3-05



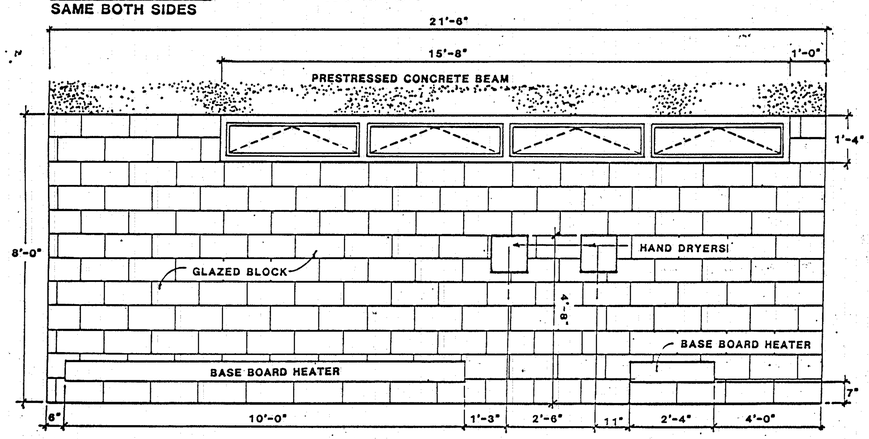
ROOM 106 (HANDICAPPED FACILITIES)

4A-3-09

DIAPER CHANGING TABLE

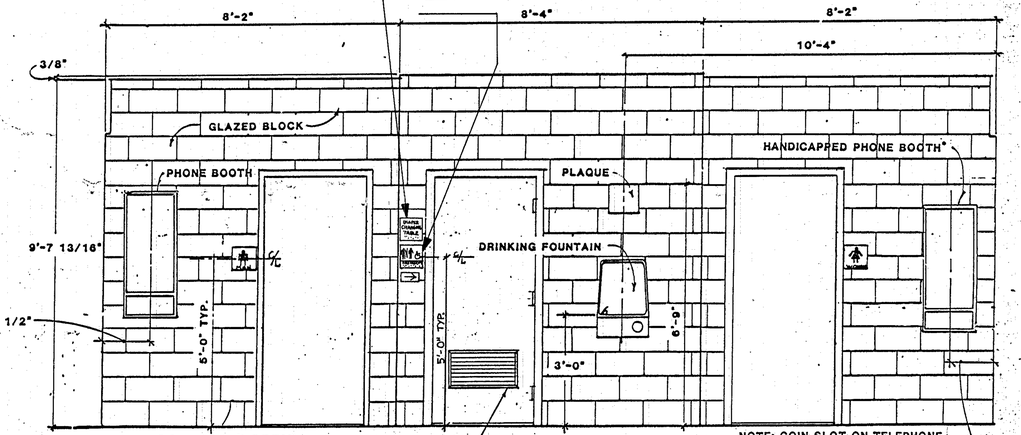
RESTROOM

FOR SIGN COLORS & DETAILS SEE SPECIAL SPECIFICATIONS



ROOM 104 (WOMEN)

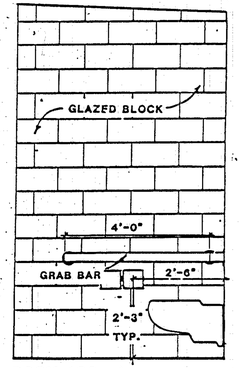
4A-3-02



ROOM 101 (LOBBY)

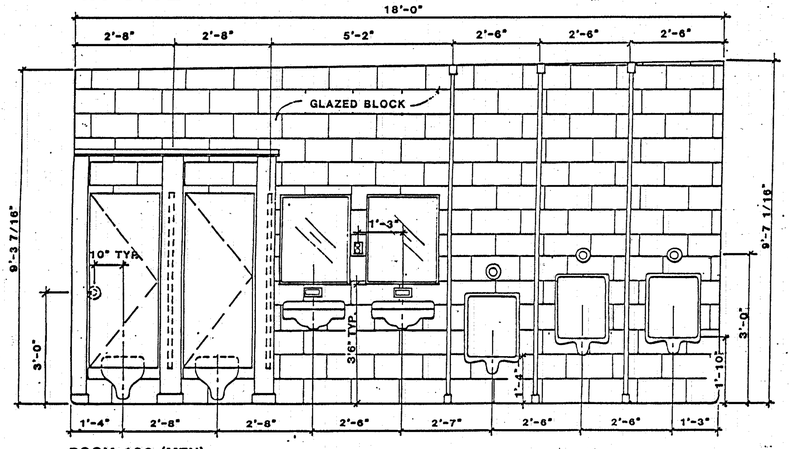
4A-3-04

NOTE: COIN SLOT ON TELEPHONE SHALL BE 54" ABOVE FINISHED FLOOR



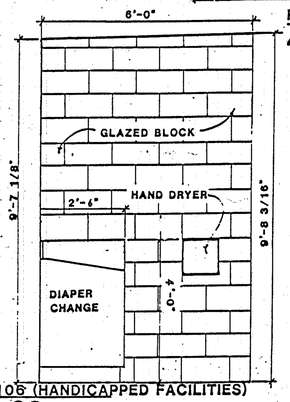
ROOM 106 (HANDICAPPED FACILITIES)

4A-3-10



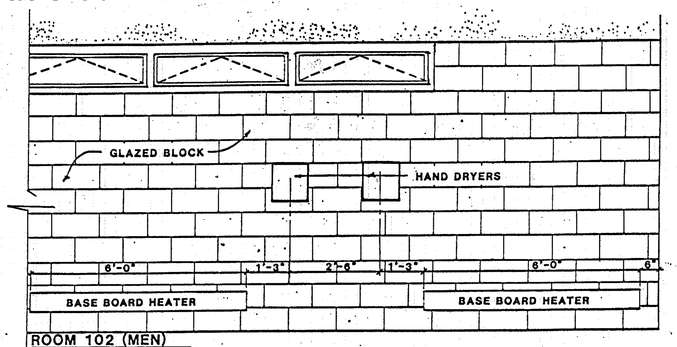
ROOM 102 (MEN)

4A-3-03



ROOM 106 (HANDICAPPED FACILITIES)

4A-3-08



ROOM 102 (MEN)

4A-3-06

SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

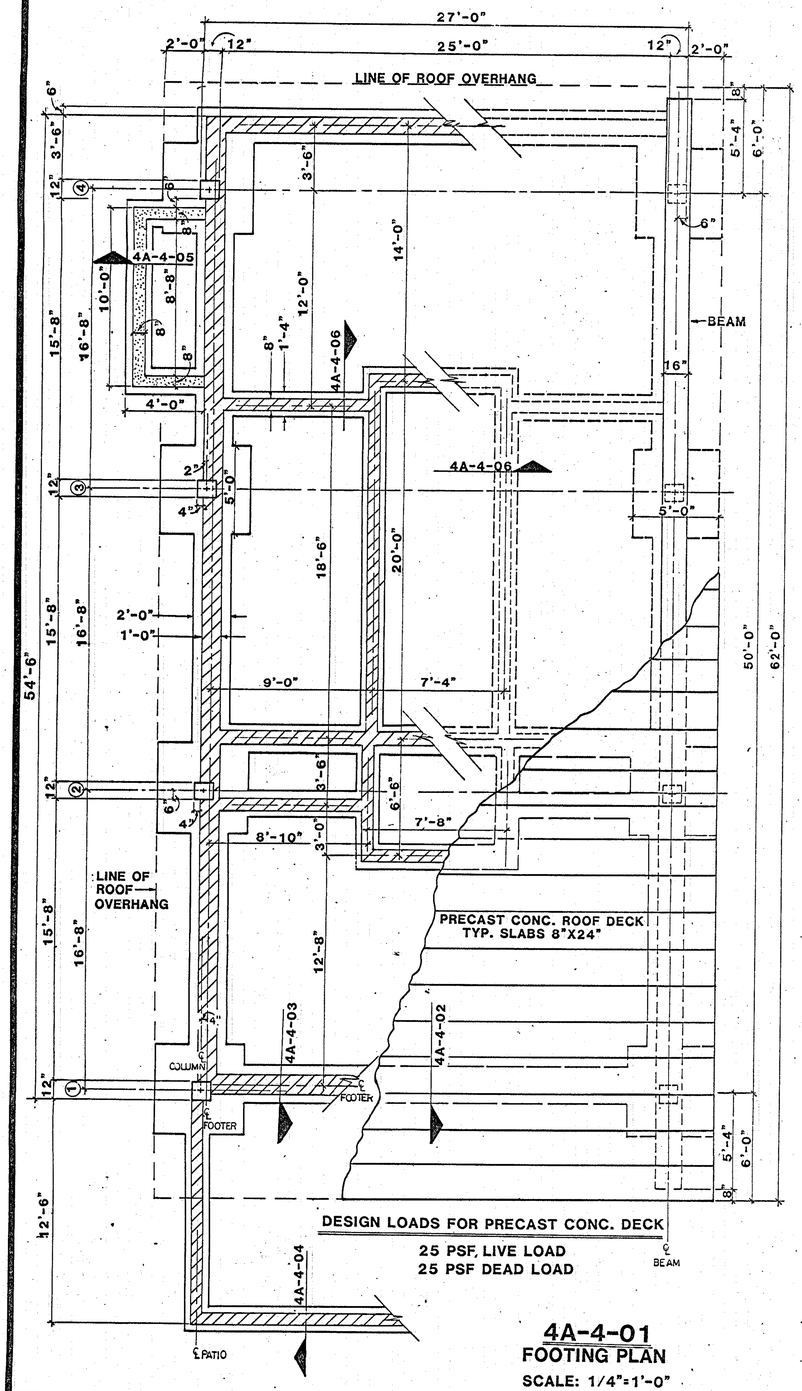
ROADSIDE DEVELOPMENT

MSB-4
INTERIOR WALL CROSS SECTIONS

DATE
8/1/86
1/20/87
3/2/87
10-30-87
2-2-88
10-30-90
1-5-93

APPROVED R. Whitehurst Engr. of Design Services

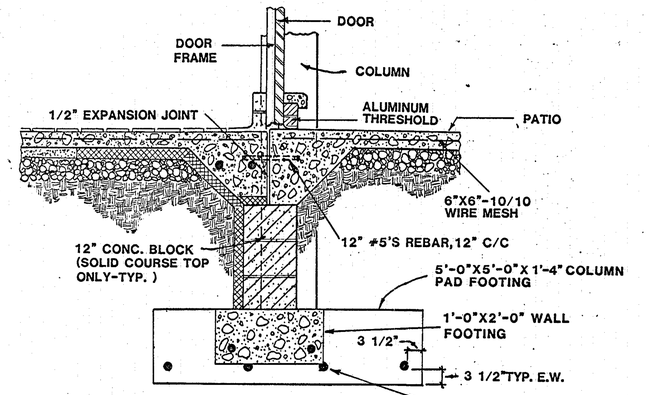
4A-3



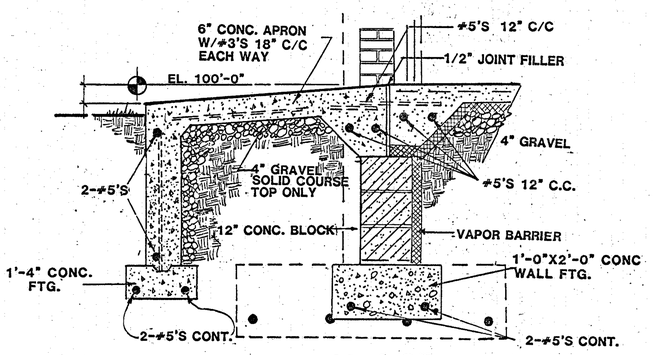
DESIGN LOADS FOR PRECAST CONC. DECK

25 PSF, LIVE LOAD
25 PSF DEAD LOAD

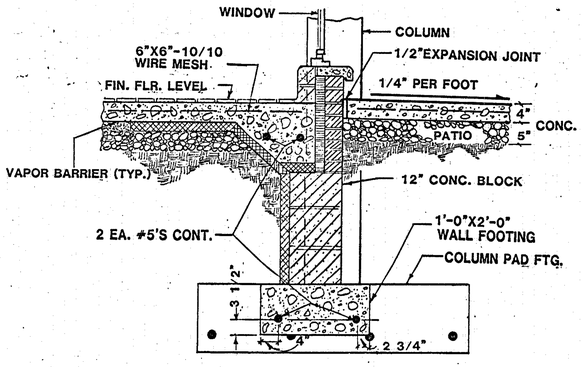
4A-4-01
FOOTING PLAN
SCALE: 1/4"=1'-0"



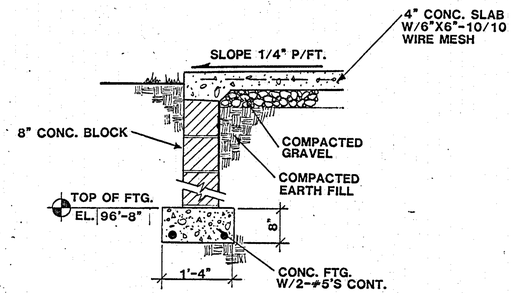
4A-4-02
DETAIL THROUGH DOORWAY



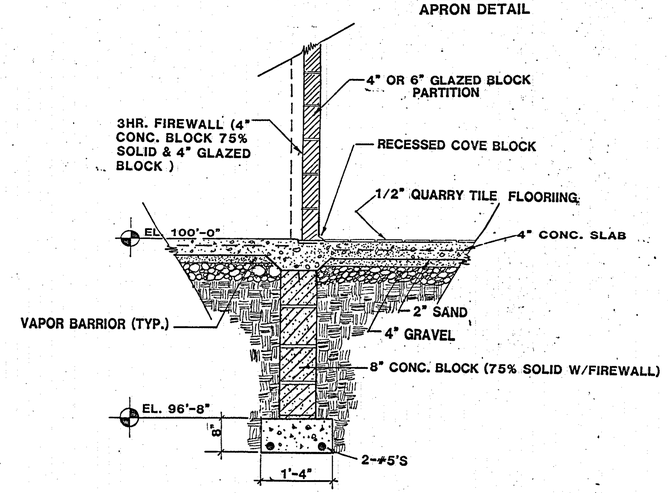
4A-4-05
APRON DETAIL



4A-4-03
DETAIL THROUGH WINDOW



4A-4-04
PATIO FOOTING DETAIL



4A-4-06
TYP. FTG. UNDER PARTITION

SCALE, ALL DETAILS: 3/4"=1'-0"

FOUNDATION NOTES:

1. FOOTINGS ARE DESIGNED FOR 2000 PSI SOIL BEARING PRESSURE. FOOTINGS SHALL BE FOUNDED ON UNDISTURBED SOIL . EXCAVATIONS KEPT FREE OF WATER AT ALL TIMES CONSULT ENGINEER IF SOIL AT GIVEN ELEVATION DO NOT SATISFY REQUIREMENTS.
2. MATERIALS:
   - A. CONCRETE
     - INTERIOR SLAB ON GRADE, FOOTINGS: f'_c =3000 PSI
     - EXTERIOR SLAB ON GRADE: f'_c =4000 PSI (AIR)
     - LEAN CONCRETE FOR OVEREXCAVATION: f'_c =1500 PSI
   - B. REINFORCING STEEL: f_y =60000 PSI
3. CAST IN FOOTINGS INSERTS, ANCHOR BOLTS AND/OR POCKETS FOR PRECAST CONCRETE COLUMN CONNECTION AS DETAILED ON APPROVED PRECAST CONCRETE ERECTION DRAWINGS. ALL LOOSE HARDWARE AND SETTING DIAGRAMS WILL BE FURNISHED BY THE PRECAST CONCRETE SUPPLIER.

SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

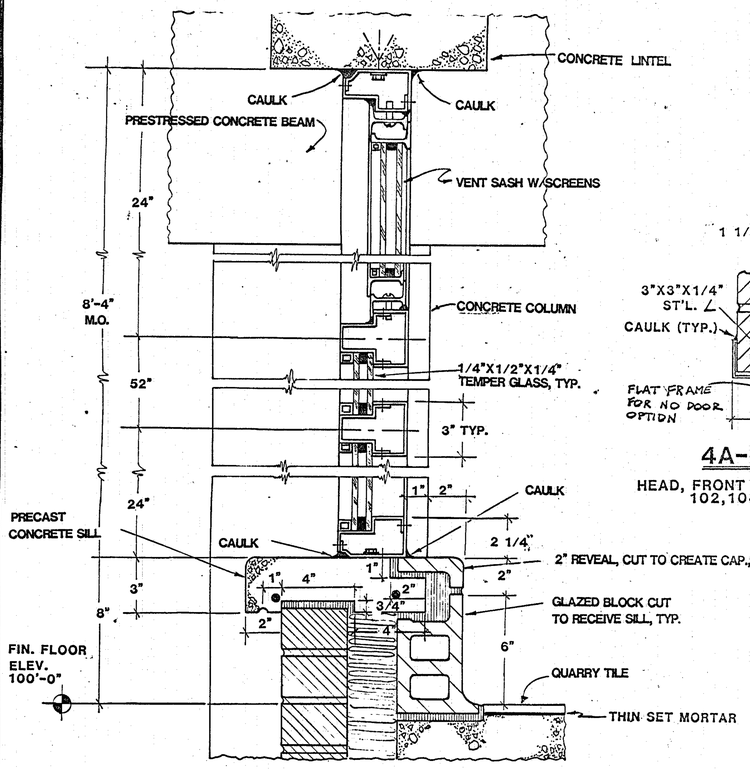
MSB-4
FOOTING PLAN & DETAILS

MAH-11-3.31

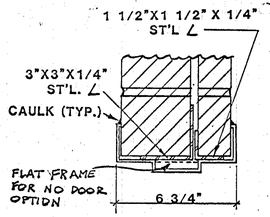
DATE
5/2/85
5/6/86
8/14/86
8/26/86
1/20/87

APPROVED R Wilbourn Engr. of Design Services

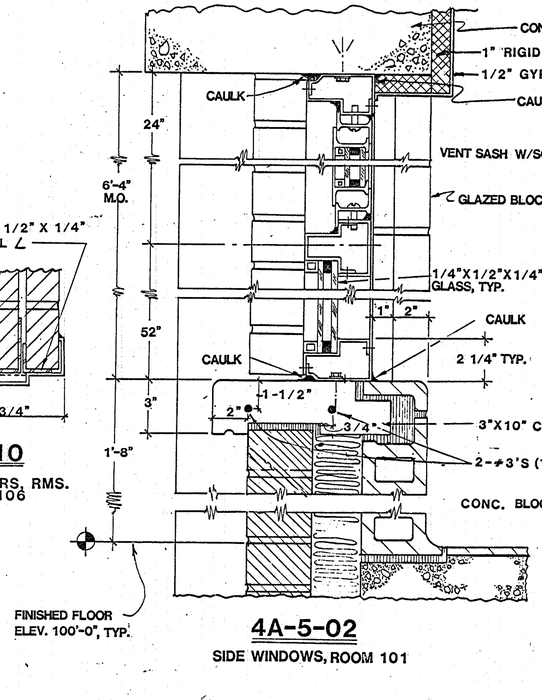
4A-4



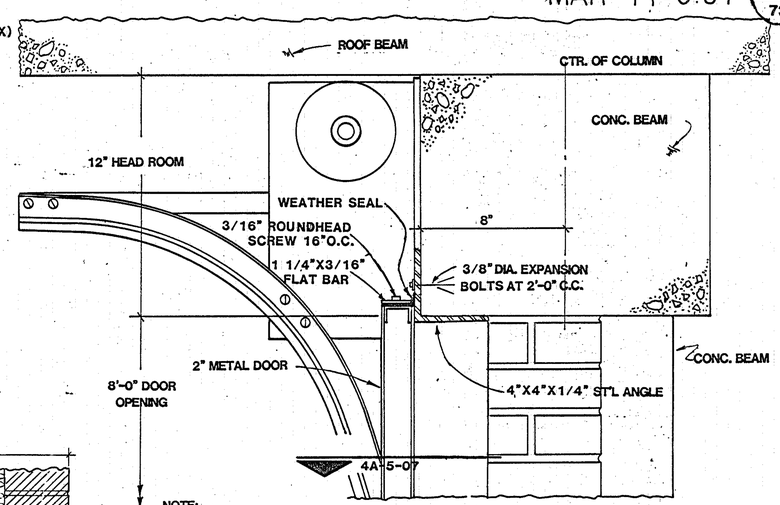
4A-5-01
FRONT WINDOW, 101



4A-5-10
HEAD, FRONT DOORS, RMS. 102,104,& 106

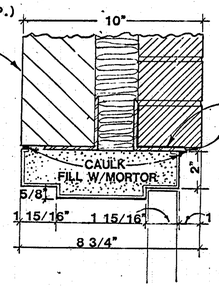


4A-5-02
SIDE WINDOWS, ROOM 101

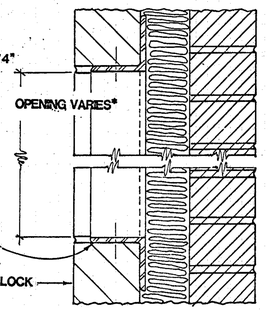


NOTE:
FOR WEATHER SEALS, SEE SPECIFICATIONS

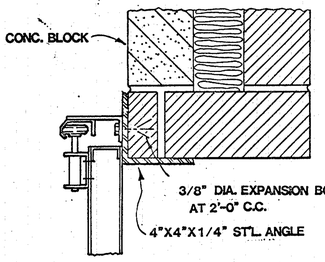
4A-5-03
HEAD, OVERHEAD DOOR



4A-5-09
HEAD , EXT. DOOR RM.105

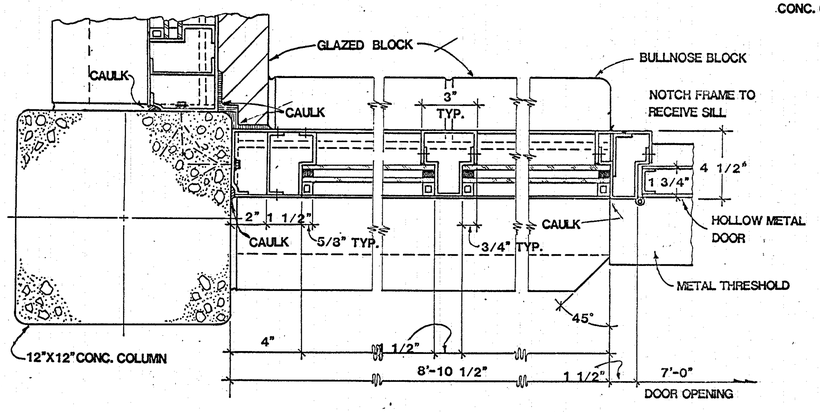


4A-5-06
OPENING FRAMES FOR WASTE RECEPTACLES AND HAND DRYERS

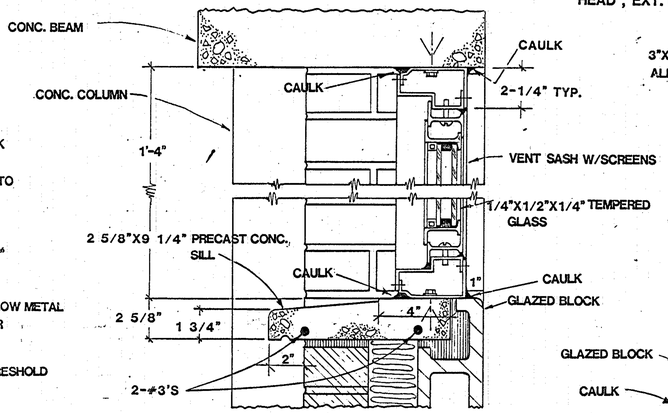


4A-5-07
JAMB,OVERHEAD DOOR

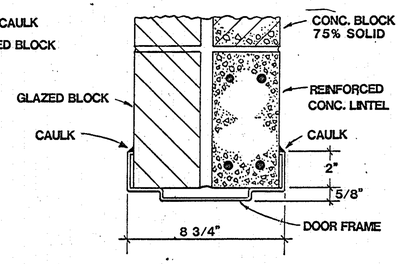
* CHECK REQUIRED OPENINGS OF DESIRED RECEPTICALS & HAND DRYERS.



4A-5-04
FRONT WINDOW & DOOR FRAME



4A-5-05
SIDE WINDOWS, RM'S. 102 & 104



4A-5-08
HEAD, REAR DOORS, RM'S. 102 103 & 104

SCALE: 3"=1'-0"

SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

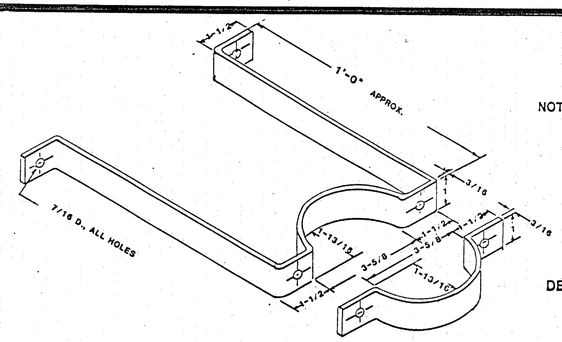
ROADSIDE DEVELOPMENT

MSB-4
DOOR & WINDOW DETAILS
MAH-11-3.31

APPROVED R.D. Anderson Engr. of Design Services

DATE
5/2/85
5/6/86
8/12/86
8/26/86
1/20/87
3/2/87
10/30/87

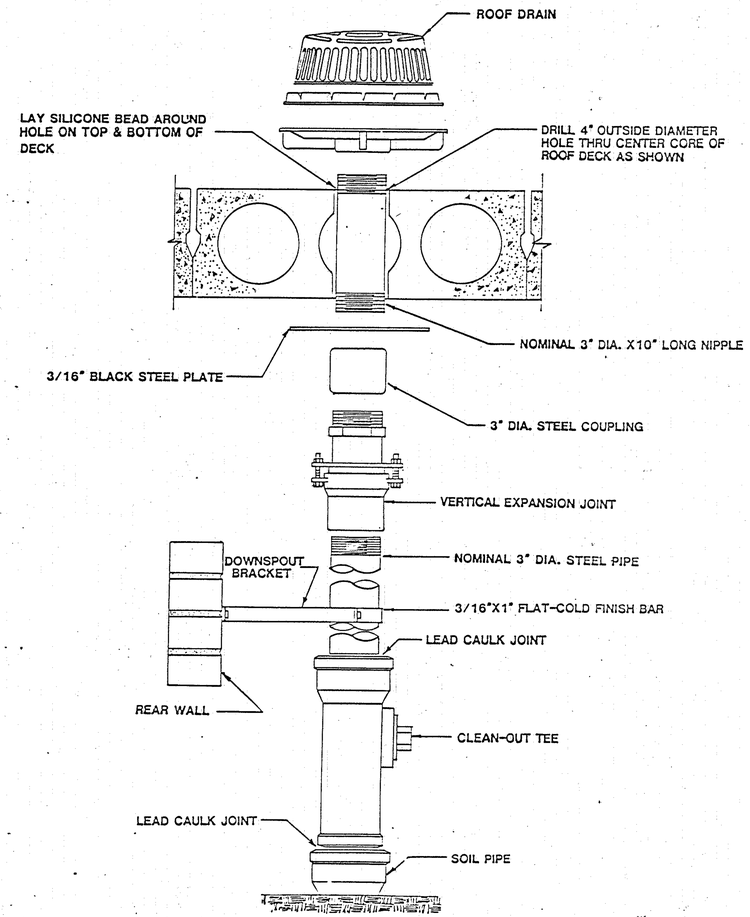
4A-5



NOTE: USE 2-3/8" WEDGE ANCHORS W/WASHERS TO MOUNT PIPE BRACKET TO WALL & 2-3/8"X1" CADMIUM PLATED BOLTS W/WASHERS TO BOLT BRACKET TOGETHER

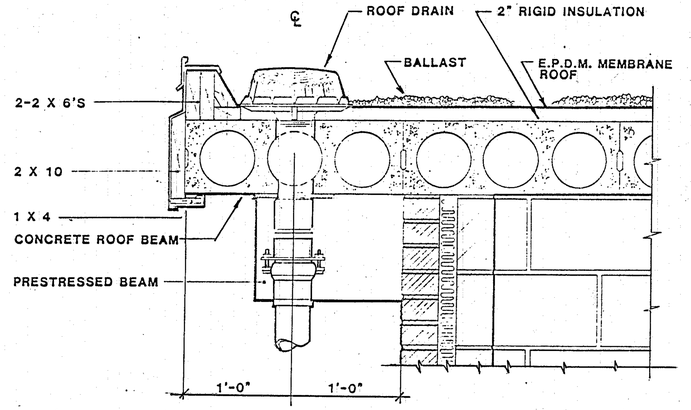
4A-6-01
DETAIL OF DOWNSPOUT BRACKET

NO SCALE

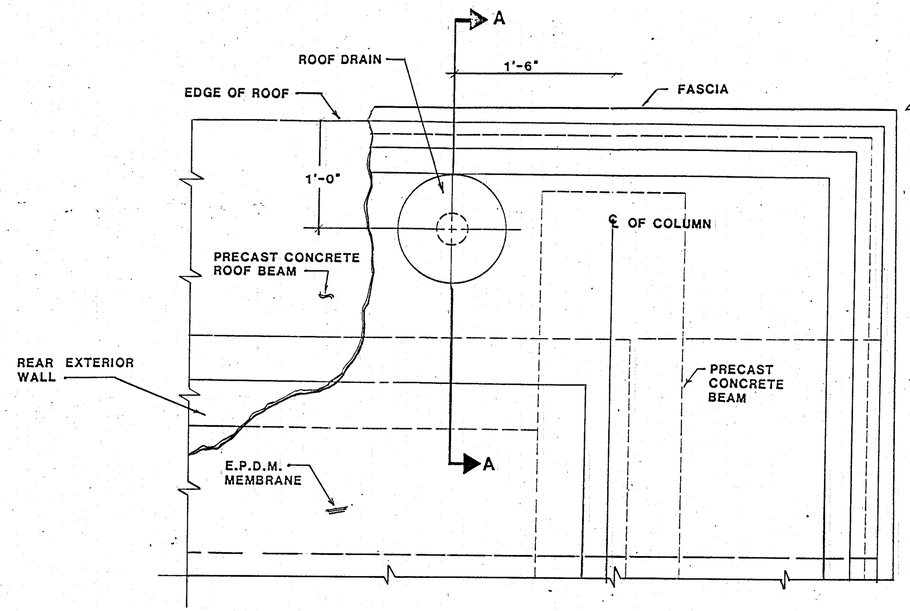


4A-6-02
ROOF DRAIN & DOWNSPOUT ASSEMBLY DETAIL

NO SCALE

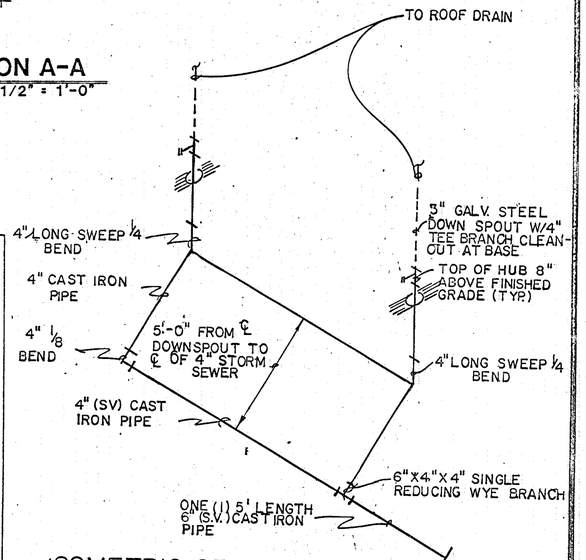


SECTION A-A
SCALE: 1 1/2" = 1'-0"



4A-6-04
RIGHT HALF OF ROOF WITH DRAIN

NO SCALE

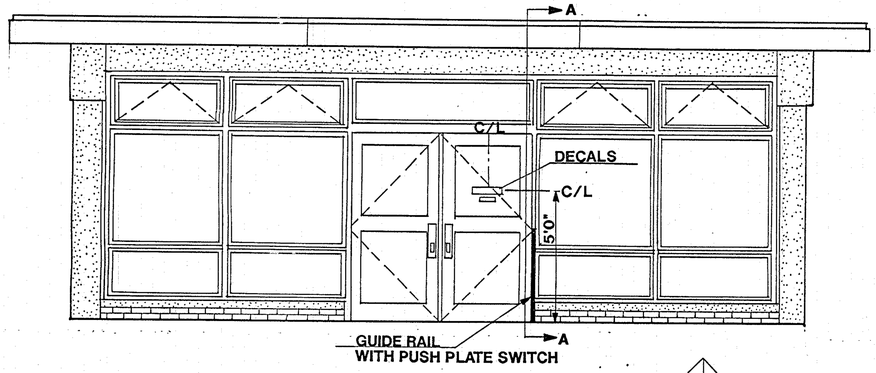


ISOMETRIC OF STORM SEWER CONNECT TO BUILDING DOWNSPOUT & ROOF DRAIN

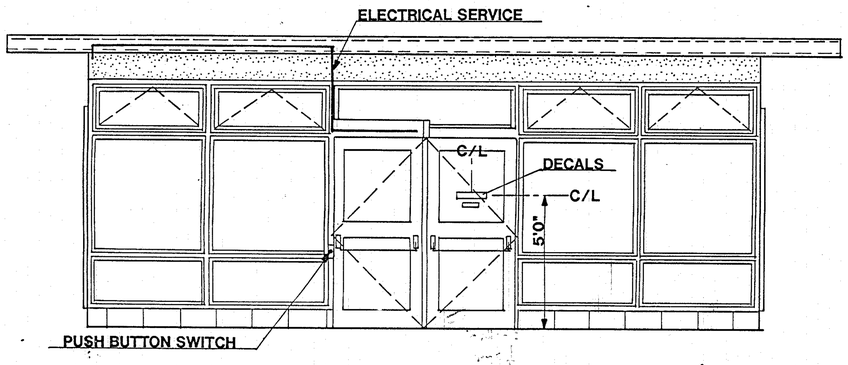
SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

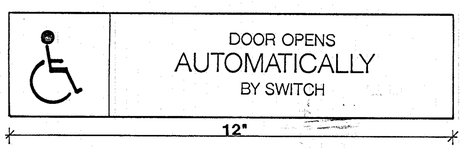
ROADSIDE DEVELOPMENT	DATE 5/2/85 8/11/86 10/30/87
MSB-4 ROOF DETAILS	
MAH-11-3.31	
APPROVED Engr. of Design Services	4A-6



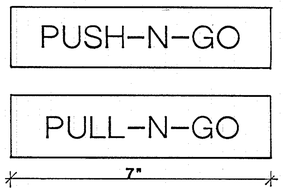
EXTERIOR STOREFRONT ELEVATION



INTERIOR STOREFRONT ELEVATION



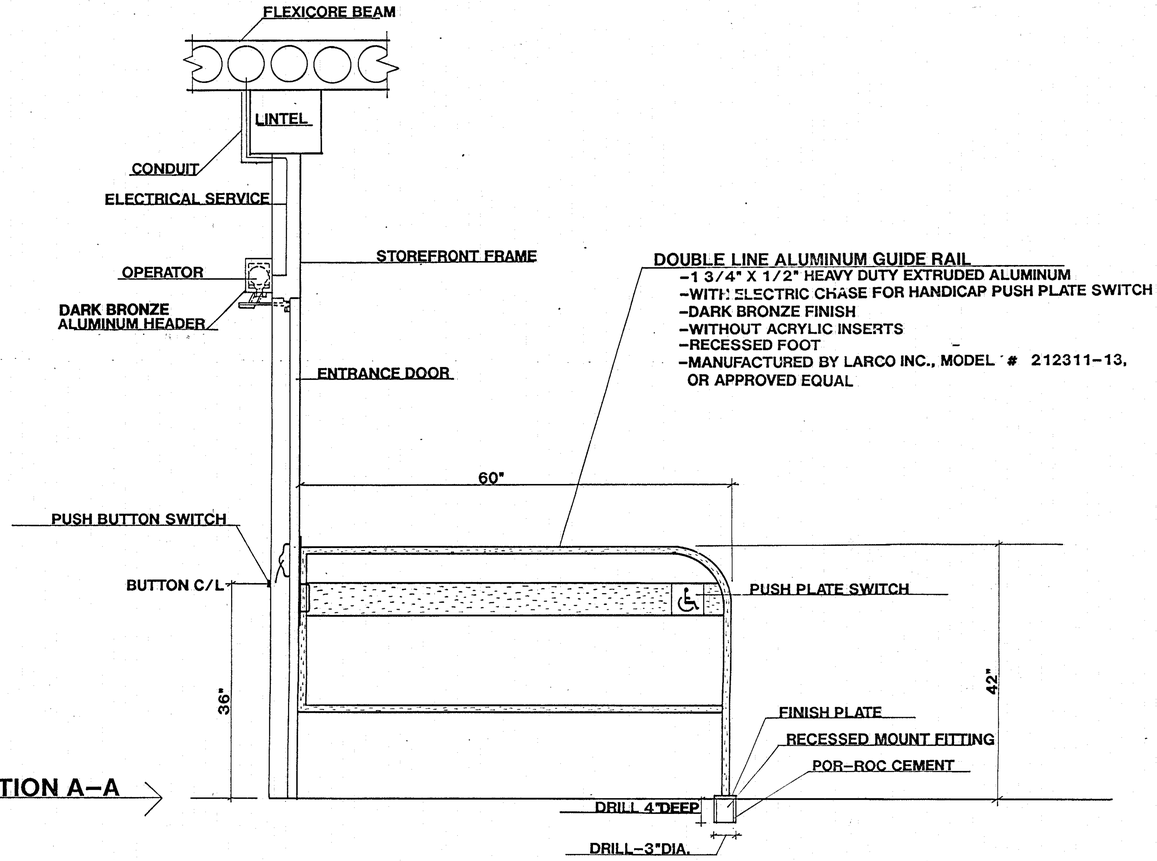
TWO-SIDED DECAL
-SAME BOTH SIDES
-WHITE BACKGROUND
-BLUE LETTERING, SYMBOL, AND BORDER



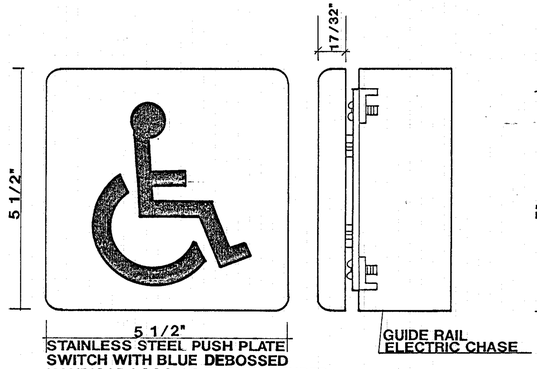
TWO-SIDED DECAL
-PUSH-N-GO FACING INTERIOR
-PULL-N-GO FACING EXTERIOR
-WHITE LETTERING
-BLUE BACKGROUND

DECALS

DECALS SHALL BE AS DETAILED ABOVE, OR APPROVED EQUAL.



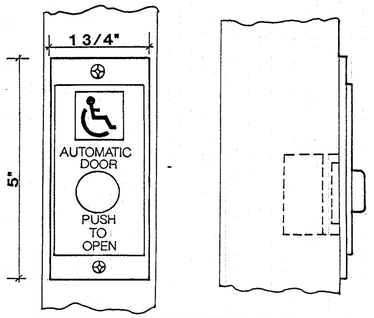
SECTION A-A



STAINLESS STEEL PUSH PLATE SWITCH WITH BLUE DEBOSSED HANDICAP LOGO AS MANUFACTURED BY DOR-O MATIC MODEL#1292-000 OR APPROVED EQUAL.

GUIDE RAIL ELECTRIC CHASE

PUSH PLATE SWITCH



JAMB MOUNTED PUSH BUTTON SWITCH HAVING AN ALUMINUM FACE PLATE WITH BLUE LETTERING AND RED BUTTON AS MANUFACTURED BY DOR-O-MATIC MODEL #1211-900 OR APPROVED EQUAL

PUSH BUTTON SWITCH

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

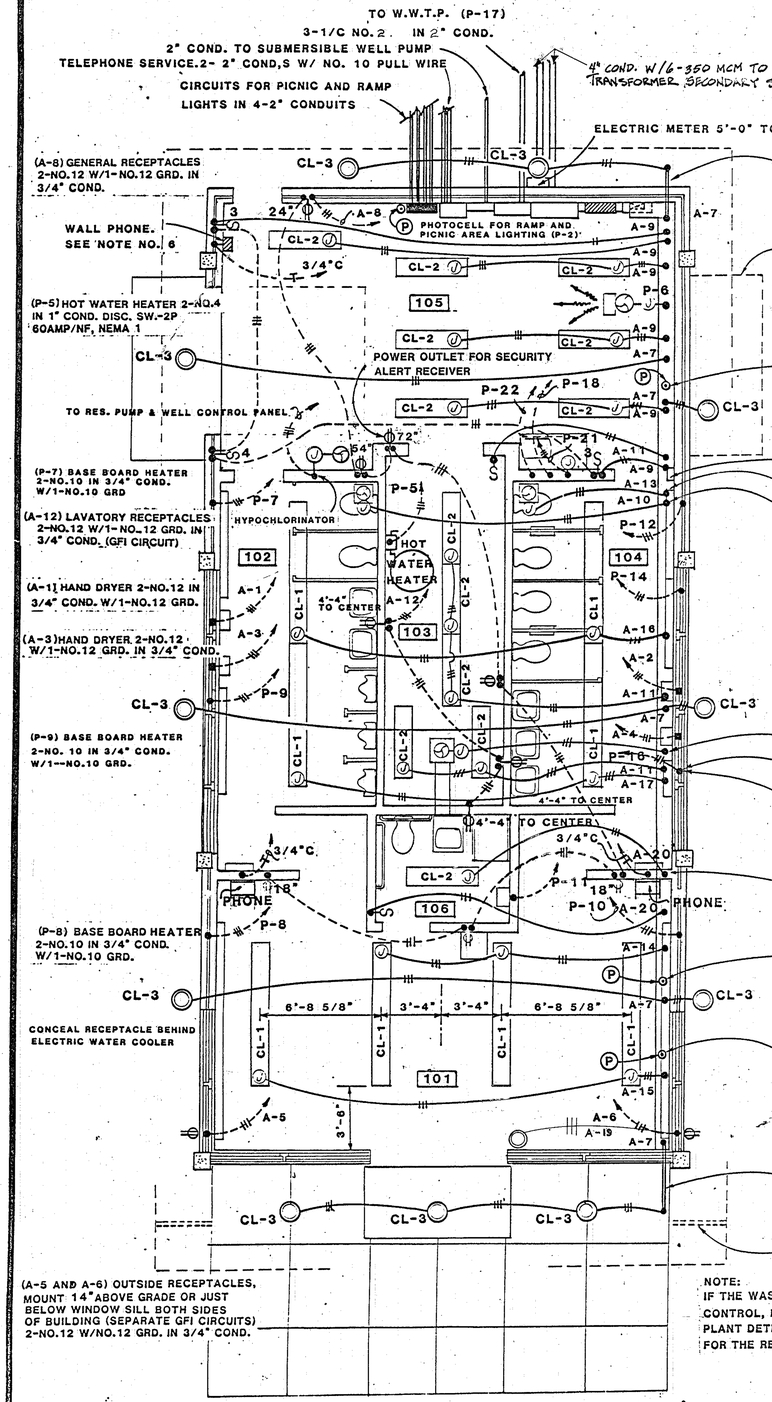
ROADSIDE DEVELOPMENT

DATE 11/93

MSB-4
HANDICAP ACCESS DOOR OPERATOR

APPROVED _____ Engr. of Design Services

4A-7



FOR LIFT STATION AND W.W.T.P. BUILDING ALARM INSTALLATIONS, REFER TO PLANS, SPECIFICATIONS AND SUMMARIES. COMPLETE CONDUIT, CONDUCTORS, ALARMS AND EPDM MOLDED, FLEXIBLE PIPE FLASHINGS W/ STAINLESS STEEL WORM CLAMPS SHALL BE FURNISHED, INSTALLED AND TESTED BY THE ELECTRICAL CONTRACTOR.

CALC. BY		MAH-11-3.31	OHIO	40
DATE			FHWA REGION 5	73
CHKD. BY				
DATE				

LEGEND

SYMBOL	MEANING	MOUNTING HEIGHT
○	LIGHTING OUTLET, CEILING	SEE FIXTURE SCHEDULE
$ ^{3}	SWITCH , 3-WAY, ETC.	4'-6"
⊖	DUPLEX RECEPTACLE	AS NOTED
(P)	PHOTOELECTRIC CELL	18" ABOVE ROOF
(PS)	PRESSURE SWITCH	AS REQUIRED
(J)	JUNCTION BOX	AS REQUIRED
	WIRING CONCEALED IN CORE OF CEILING	HASH MARKS INDICATE NUMBER OF CONDUCTORS WHEN MORE THAN TWO ARE PRESENT
	WIRING CONCEALED IN OR BELOW FLOOR SLAB.	
⊗	MOTOR OUTLET	AS REQUIRED
	DISCONNECT SWITCH	5'-4" OR AS REQUIRED
	STARTER W/DISCONNECT SWITCH BELOW	5'-4" OR AS REQUIRED
○ ○	FLUSH CEILING OUTLET B-WITH BLANK COVER	
○	WIRED JUNCTION	AS REQUIRED
	POWER PANEL "P"	AS REQUIRED
LTG PNL	LIGHTING PANEL "A"	AS REQUIRED

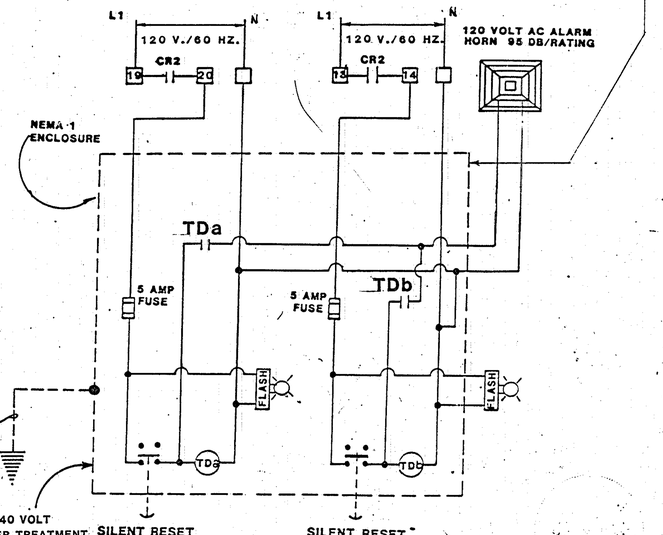
FIXTURE SCHEDULE

FIXT. NO.	MANUFACTURER	CATALOGUE NO.	LAMP SIZE	REMARKS:
CL-1	MILLER	CP-2191-08	4-F40 WW	RAPID START
CL-2	MILLER	CP-2191-04	2-F40 WW	RAPID START
CL-3	HOLOPHANE	PARK PAK #247	70W. S&2	HIGH PRES. SODIUM
NOTE:	FIXTURE NUMBER LETTER PREFIX DENOTES TYPE OF MOUNTS AS FOLLOWS: CL-MOUNT ON CEILING SURFACE, W-MOUNT ON WALL			
NOTE:	FIXTURES SHOWN ARE GIVEN FOR TYPE AND QUALITY ONLY, OTHER FIXTURE MANUFACTURERS SHALL BE COLUMBIA, DAYBRITE, MARCO, MC PHILBEN, LITHONIA AND MERCURY LIGHTING PRODUCTS CO., INC.			

NOTES

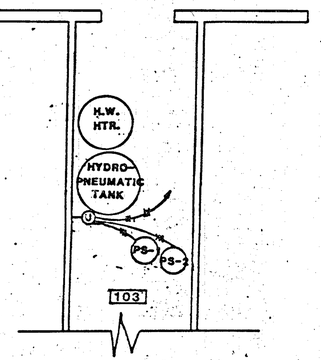
1. IF OVERHEAD DOOR IS LOCATED IN THIS SIDE OF BUILDING, ALL ELECTRICAL LIGHTS , PANELS, SURFACE METAL RACEWAY, THERMOSTATS, SWITCHES, HEATERS, ETC., SHALL BE LOCATED OPPOSITE HAND TO THE ARRANGEMENT SHOWN. THE MAIN SWITCH GEAR SHALL REMAIN ON THE SAME WALL BUT SHALL BE REVERSED FROM THAT SHOWN IN DETAIL, AND SHALL MOVE BACK TOWARDS THE SIDE OF THE BUILDING AWAY FROM THE OVERHEAD DOOR.
2. PHOTOCELLS SHALL BE MOUNTED ON THE END OF 3/4" CONDUIT AT 18" ABOVE THE ROOF. THE "WINDOW" OF THE SENSING DEVICE IN THE PHOTO-ELECTRIC CELL SHALL BE FACED DUE NORTH IF NO MARKING IS PROVIDED TO INDICATE AIMING THE DEVICE.
3. METAL CORE PLUGS SHALL BE INSTALLED BETWEEN THE INSULATION CORE AND WOOD CORE PLUG BY THE ELECTRICAL CONTRACTOR IN BOTH ENDS OF ALL DECK CORES USED FOR ELECTRICAL WIRING. INSULATION CORES AND WOOD CORE PLUGS SHALL BE INSTALLED BY THE GENERAL CONTRACTOR. REFER TO DETAILS 4MV-02.
4. THE ELECTRICAL CONTRACTOR SHALL INSTALL A FLUSH OUTLET AND CONCEALED CONDUIT FOR ELECTRIC BASE BOARD HEATERS. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE HEIGHT OF THE HEATING AND VENTILATING CONTRACTOR.
5. ALL WIRE, UNLESS OTHERWISE NOTED, SHALL BE TYPE "THW" OR "THWN" WITH COPPER CONDUCTORS. GREEN CONDUCTORS SHALL BE USED FOR GROUNDING PURPOSES.
6. THE ELECTRICAL CONTRACTOR SHALL ALWAYS INSTALL CONDUIT AND OUTLET BOX IN WALL. A STANDARD WALL HUNG TELEPHONE, DIRECT DIAL, FOR CARETAKERS USE ONLY, WILL BE FURNISHED AND INSTALLED BY THE TELEPHONE COMPANY, WHEN SPECIFIED.

HOFFMAN ENCLOSURE A-14N128 (SIZE 14"X12"X8") W/A-14N12P PANEL, WIEGMANN, SQUARE "D", KEYSTONE OR APPROVED EQUAL.



NOTE:
IF THE WASTEWATER TREATMENT PLANT CONTROL PANEL'S ARE WIRED FOR 240 VOLT CONTROL, REFER TO " BUILDING HIGH WATER ALARM SYSTEM FOR WASTEWATER TREATMENT PLANT DETENTION/FLOW EQUALIZATION TANK AND DOSING TANK " ELECTRIAL SPECIFICATION'S FOR THE REQUIRED CHANGES OF SOME OF THE BUILDING ALARM PANEL COMPONENTS.

W.W.T.P. HIGH WATER ALARM



ELECTRICAL INSTALLATION REQUIRED FOR WELL WATER SYSTEM

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

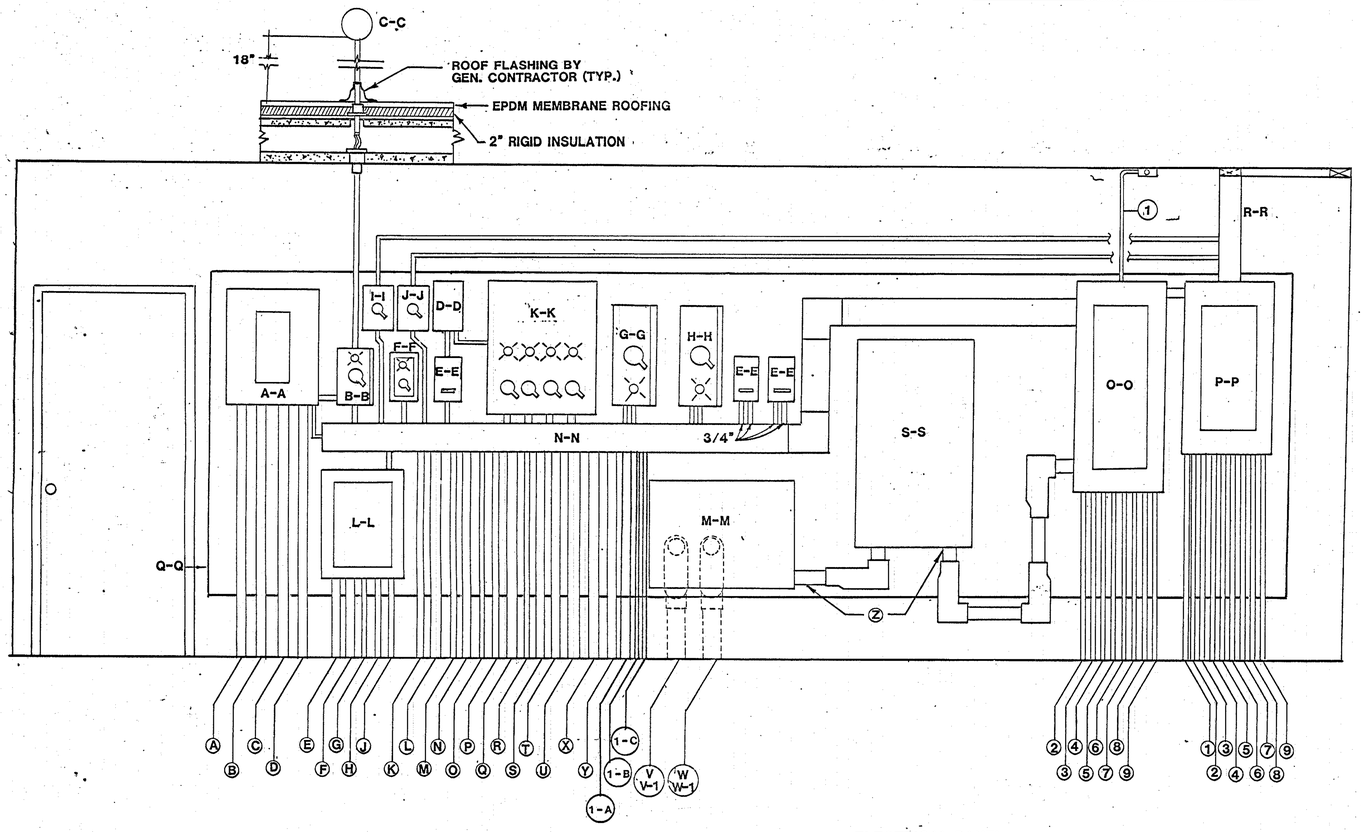
MSB-4
ELECTRICAL PLAN

DATE
5/2/85
10/31/85
3/12/86
8/11/86
3/2/87
10/30/87
2/2/88
12/12/89
10-23-90
12/1/93

APPROVED _____ Engr. of Design Services

4E-1

600 AMPS



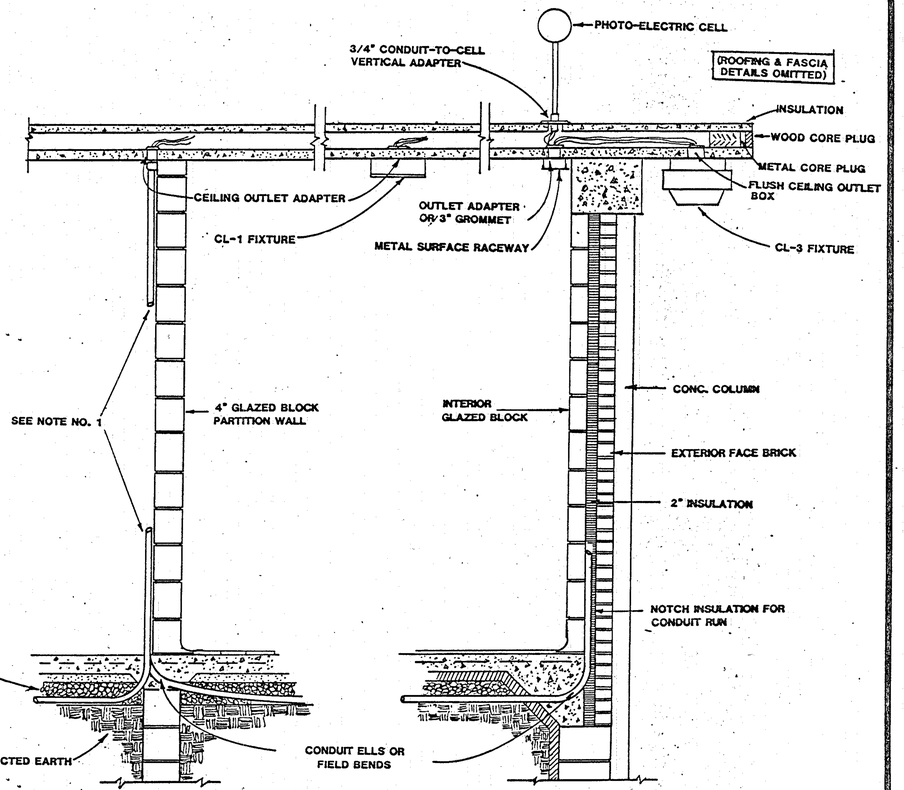
ELECTRICAL PANEL
4E-2-01

SCALE: 3/4"=1'-0"

LEGEND

A-A	P & R PANEL
B-B	P & R LIGHTING CONTACTOR & DISCONNECT SWITCH
C-C	P & R PHOTO-ELECTRIC CELL SWITCH
D-D	SUB. WELL PUMP DISCONNECT SWITCH
E-E	SUB. WELL & RES. PUMP MOTOR CONTROL BOX
F-F	SUB. WELL PUMP A/C MAGNETIC STARTER
G-G	RESERVOIR PUMP #1
H-H	RESERVOIR PUMP #2
I-I	LIGHTING CONTACTOR A-14
J-J	LIGHTING CONTACTOR A-15
1-A	2" CONDUIT TO LIFT STATION MAIN PANEL
1-B	1" CONDUIT TO LIFT STATION ALARM
1-C	SPARE (CAP CONDUIT OUTSIDE BUILDING) 3/4" CONDUIT
K-K	RES. & WELL PUMP CONTROL PANEL
L-L	TELEPHONE
M-M	C/T CABINET
N-N	6X6 WIREWAY
O-O	PANEL "P"
P-P	PANEL "A"
Q-Q	PLYWOOD MOUNTING BOARD
R-R	SURFACE METAL RACEWAY
S-S	SERVICE ENTRANCE SWITCH

3. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ONE(1) 1-INCH CONDUIT FROM 6X6 WIREWAY (N-N) TO THE TELEPHONE CABINET (L-L) AND EXTEND ONE(1) INSULATED 1/c,NO.8 GROUND WIRE FROM PANEL "P" (O-O) TO THE TELEPHONE CABINET (L-L). LEAVE 3'-0" OF COILED GROUND WIRE IN TELEPHONE CABINET FOR TELEPHONE CO. TO MAKE NECESSARY GROUND CONNECTION TO THEIR SYSTEM.



ELECTRICAL DISTRIBUTION
4E-2-02

SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

ELECTRICAL DISTRIBUTION NOTES

1. ELECTRICAL DEVICE BOXES INSTALLED IN THE 4" PARTITION WALL BETWEEN ROOM 103 AND ROOMS 101, 102 AND 104 MAY BE SERVICED BY EXPOSED CONDUIT ATTACHED TO THE 4" WALL INSIDE OF ROOM 103, INSTEAD OF CONCEALING CONDUIT INSIDE OF THE 4" WALL. DISCONNECT SWITCHES, MOTOR CONTROLS AND OTHER ELECTRICAL DEVICES INSIDE OF ROOM 103 MAY BE SERVICED BY ELECTRICAL CONDUITS ATTACHED TO THE WALL; HOWEVER, NO ELECTRICAL CONDUITS SHALL RUN EXPOSED ACROSS THE FLOOR OR CEILING. THE ONLY EXPOSED ELECTRICAL CONDUITS IN ROOM 105 SHALL BE BETWEEN THE PANELBOARD AND THE FLOOR OR CEILING. NO EXPOSED ELECTRICAL CONDUITS SHALL BE PERMITTED IN ROOMS 101, 102 AND 104 EXCEPT FOR THE CEILING MOUNTED SURFACE METAL RACEWAY SHOWN ON THE PLANS.
2. METAL CORE PLUGS SHALL BE INSTALLED BETWEEN THE INSULATION CORES AND WOOD PLUGS BY THE ELECTRICAL CONTRACTOR IN BOTH ENDS OF ALL CORES USED FOR ELECTRICAL WIRING. INSULATION CORES AND WOOD CORE PLUGS SHALL BE INSTALLED BY THE GENERAL CONTRACTOR.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT	DATE 5/2/85 10/31/85 10-23-90
MSB-4 600 AMPS ELECTRICAL PANEL/DISTRIBUTION	
MAH-11-3.31	
APPROVED Engr. of Design Services	4E-2 600 AMP

ELECTRICAL PANEL NOTES

P & R LIGHTING PANEL (A-A)

(A) 2" COND. PER 713.04 W/3-NO. 4 AWG, U.L. TYPE MV-90 DRY, 5000 VOLT CONDUCTORS. FEED TO RAMP AND AREA LIGHTS CIRCUIT "A". EXTEND TO 1ST. PULL BOX AND PROVIDE (3) EPOXY FILLED SPLICE KIT PER 713.15. 2" DIA., 36" RADIUS 90° ELBOW AS PER 713.04 SHALL BE USED TO ENTER BUILDING, (120/240 VOLT, 3-WIRE GROUNDED NEUTRAL CIRCUIT)

(B) 2" COND. PER 713.04 W/3-NO. 4 AWG, U.L. TYPE MV-90 DRY, 5000 VOLT CONDUCTORS. FEED TO RAMP AND AREA LIGHTS CIRCUIT "B". EXTEND TO 1ST PULL BOX AND PROVIDE (3) EPOXY FILLED SPLICE KITS PER 713.15. 2" DIA., 36" RADIUS 90° ELBOW AS PER 713.04 SHALL BE USED TO ENTER BUILDING. (120/240 VOLT, 3-WIRE GROUNDED NEUTRAL CIRCUIT).

(C) 2" COND. PER 713.04 W/3- NO. 4 AWG, U.L. TYPE MV-90 DRY, 5000 VOLT CONDUCTORS. FEED TO RAMP AND AREA LIGHTS CIRCUIT "C". EXTEND TO 1ST PULL BOX AND PROVIDE (3) EPOXY FILLED SPLICE KITS PER 713.15. 2" DIA., 36" RADIUS 90° ELBOWS AS PER 713.04 SHALL BE USED TO ENTER BUILDING. (120/240 VOLT, 3-WIRE GROUNDED NEUTRAL CIRCUIT.) IF ONLY "A" AND "B" CIRCUITS IS USED, TERMINATE CIRCUIT "C" IN 1ST PULL BOX. INSTALL AS NOTED HERE-IN.

(D) 2" COND. PER 713.04 W/3-NO. 4 AWG, U.L. TYPE MV-90 DRY, 5000 VOLT CONDUCTOR. FEED TO RAMP AND AREA LIGHTS CIRCUIT "D". EXTEND TO 1ST PULL BOX AND PROVIDE (3) EPOXY FILLED SPLICE KITS PER 713.15. 2" DIA., 36" RADIUS 90° ELBOWS AS PER 713.04 SHALL BE USED TO ENTER BUILDING. (120/240 VOLT, 3-WIRE GROUNDED NEUTRAL CIRCUIT.) IF ONLY "A", "B" AND "C" CIRCUITS ARE USED, TERMINATE CIRCUIT "D" IN 1ST PULL BOX. INSTALL AS NOTED HERE-IN.

TELEPHONE CABINET (L-L)

(E) 2" COND. PER 713.04 W/1 - NO. 10 PULL WIRE (FOR TELEPHONE SERVICE 20-PAIR CONDUCTORS) FROM TELEPHONE CABINET TO 1ST PULL BOX IF TELEPHONE CO. TERMINAL BOX IS REMOTE FROM BUILDING. IF TELEPHONE COMPANY TERMINAL BOX IS ADJACENT TO BACK WALL OF BUILDING. THE CONDUIT SHALL FEED TO THEIR TERMINAL BOX AND ANOTHER 2" COND. AS PER ABOVE SHALL FEED FROM THEIR TERMINAL BOX TO THE 1ST. PULL BOX.

(F) 2" COND. PER 713.04 W/1 - NO. 10 PULL WIRE (FOR EXTERIOR TELEPHONE DISTRIBUTION) FROM TELEPHONE CABINET TO 1ST PULL BOX.

(G) 3/4" COND. PER 713.04 W/1-NO. 10 PULL WIRE (TELEPHONE) TO TELEPHONE STATION IN RM. 101, ADJACENT TO MEN'S TOILET ROOM ENTRANCE.

(H) 3/4" COND. PER 713.04 W/ 1-NO. 10 PULL WIRE (TELEPHONE) TO TELEPHONE STATION IN RM. 105 (DIRECT DIAL PHONE FOR EMPLOYEE USE ONLY). IF TELEPHONE NOT REQUESTED BY ODOT DISTRICT OFFICE, PROVIDE STAINLESS STEEL BLANK COVER ON OUTLET BOX.

(J) 3/4" COND. PER 713.04 W/1-NO. 10 PULL WIRE (TELEPHONE) TO TELEPHONE STATION IN RM. 101, ADJACENT TO WOMEN'S TOILET ENTRANCE.

CIRCUITS TO 6" X 6" WIRE WAY (N-N)

(K) 1.) (1)-1 1/4" CONDUIT PER 713.04 W/6-NO. 12 (▲) CONDUCTORS FROM PANEL "A" CIRCUITS NO. A-14 AND A-15 FROM 1 1/4" CONDUIT FROM PANEL "S" (120 VOLTS, 1-PHASE, 3-WIRE, 60 HZ. FEED (LIGHTS IN ROOM NO. 101).

2.) FROM 6" X 6" WIREWAY, 3-NO. 12 (▲) CONDUCTORS, 600 VOLTS, SHALL FEED THROUGH 1" CONDUIT PER 713.04 AND CONNECT TO CAT. NO. 702L-TAD 92 AC LIGHTING CONTRACTOR NOTED AS "CIR. A-15" (120 VOLTS, 1-PHASE, 60HZ. FEED)(LIGHTS IN ROOM NO. 101)

3.) FROM 6" X 6" WIREWAY, 3-NO. 12 (▲) CONDUCTORS, 600 VOLTS, SHALL FEED THROUGH 1" CONDUIT PER 713.04 AND CONNECT TO CAT. NO. 702L-TAD 92 AC LIGHTING CONTRACTOR NOTED AS "CIR. A-14". (120 VOLTS, 1-PHASE, 60 HZ. FEED)(LIGHTS IN ROOM NO. 101)

(L) (1)1¼" CONDUIT PER 713.04 W/6-NO. 10(▲) AND 3-NO.10 (▲) GREENGRD. TO KITCHENETTE ROOM 105 CKTS. P-18, P-21, P-22.

(M) (1) 1" CONDUIT PER 713.04 W/5-TYPE 3Z1A SUSPENSION WIRES, 4/64" INSULATED, SINGLE CONDUCTOR, 18 GAUGE, 41 STRAND COPPER; 2-ACTIVE TO WELL PUMP START/STOP ELECTRODE CENSOR, 1-ACTIVE TO WELL PUMP GROUND ELECTRODE CENSOR AND 2-SPARE (TO SUBMERSIBLE WELL PUMP FROM RELAYS IN THE RESERVOIR AND WELL PUMP CONTROL PANEL. B/W SW SUSPENSION WIRE AND ELECTRODE CENSORS ALSO MEET APPROVAL.

(N) 1.) (1) 2" CONDUIT PER 713.04 W/3-NO. 10 RHH/RHW, 600 VOLT CONDUCTORS. BRANCH FEED TO SUBMERSIBLE WELL PUMP FROM F.E. MYERS CO. MOTOR CONTROL CAT. NO. CU3-2. (240 VOLTS, 1-PHASE, 3-WIRE, 60 HZ. BRANCH FEED TO SUBMERSIBLE WELL PUMP)

2.) FROM MOTOR CONTROL CAT. NO. CJ3-2 FEED THROUGH 1 1/4" CONDUIT PER 713.04 TO WIREWAY AND FROM WIREWAY TO SQUARE "D" AC MAGNETIC STATER CAT. NO. SAG 11, CLASS 8536. 3-NO. 10(▲), 600 VOLTS CONDUCTORS IN 1 1/4" CONDUIT PER 713.04. (240 VOLTS, 1-PHASE, 3-WIRE, 60 HZ. FEED)

3.) FROM 2) ABOVE FEED 3-NO. 10 (▲), 600 VOLT CONDUCTORS IN 1 1/4" CONDUIT TO SQUARE "D" HEAVY DUTY, 3-POLE, 240 VOLT, VISIBLE BLADE, FUSED, SAFETY SWITCH, CAT. NO. H221N.

4.) FROM 3) ABOVE FEED 3-NO. 10 (▲), 600 VOLT CONDUCTORS IN 2" CONDUIT. PER 713.04 TO CIRCUIT AND RELAYS IN THE RESERVOIR AND WELL PUMP CONTROL PANEL. (240 VOLTS, 1-PHASE, 3-WIRE, 60 HZ, BRANCH FEED)

(O) (1) 3/4" CONDUIT PER 713.04 W/3-NO. 12 (▲), 600 VOLT CONDUCTOR TO ROOM NO. 105. EXTEND CONDUIT UP TO OUTLET BOX, IN WALL, AND INSTALL AN ARROW-HART, U.L. LISTED, 3-WIRE ISOLATED GROUNDING DUPLEX RECEPTACLE, 15 AMP, 125 VOLT CAT. NO. IG-5262 W/STAINLESS STEEL WALL PLATE CAT. NO. 93101. THIS RECEPTACLE SHALL BE USED TO PLUG THE CHLORINATOR LIQUID LEVEL SWITCH ASSEMBLY INTO WHICH, IN TURN, OPERATES THE 110 WATT RATED CHLORINATOR PUMP. (120 VOLTS, 1-PHASE, 60 HZ. BRANCH FEED.) FROM THE 6" X 6" WIREWAY THE 3-NO. 12 (▲), 600 VOLT CONDUCTORS SHALL FEED THROUGH 2" CONDUIT TO RESERVOIR AND WELL PUMP CONTROL PANEL AND CONNECT TO THE 120 VOLT TERMINALS ON THE PRIMARY 240/480 VOLT, 60 HZ, SECONDARY 120 VOLT, 60 HZ FUSED, 50 V.A. RATED CONTROL CIRCUIT TRANSFORMER, ALLEN-BRADLEY CAT. NO. 1497-N27 (MOUNT IN RESERVOIR AND WELL PUMP CONTROL CABINET.)

FROM THE 240 VOLT TERMINALS OF THE TRANSFORMER THE 3-NO. 12 CONDUCTORS SHALL FEED TO CONTACTS AS SHOWN ON THE WIRING. SCHEMATIC FOR WELL PUMP CONTROL. A ALLEN-BRADLEY OIL-TIGHT, 3-POSITION HAND-OFF-AUTO (H.O.A.) SWITCH UNIT CAT. NO. 800T-J2A W/STANDARD TYPE OPERATOR, MAINTAINED POSITION, 2 N.O.-2 N.C., COMPLETE W/LEGEND PLATE MARKED "HAND-OFF-AUTO", SHALL BE INSTALLED IN THE RESERVOIR WELL PUMP CONTROL PANEL TO ENERGIZE THE LIQUID LEVEL SWITCH ASSEMBLY AND CHLORINATOR PUMP FOR TESTING OR IN THE AUTO MODE TO BE ENERGIZED BY ACTION OF THE RELAYS. REFER TO WIRING SCHEMATIC FOR CONTROL WIRING.

(P) (1) 1 1/4" CONDUIT PER 713.04 W/6-NO. 12 (▲), 600 VOLT CONDUCTORS FROM PRESSURE SWITCHES P-1 AND P-2 CONTACTS IN RESERVOIR AND WELL PUMP CONTROL PANEL TO PRESSURE SWITCHES IN ROOM # 103. 3-CONDUCTOR SHALL FEED PRESSURE SWITCH P-1, OF WHICH ONE CONDUCTOR SHALL BE A GROUND; THE REMAINING 3-CONDUCTORS SHALL FEED PRESSURE SWITCH P-2, OF WHICH ONE CONDUCTOR SHALL BE A GROUND.

(Q) (1) 2" CONDUIT PER 713.04 W/3 NO. 4 AWG, MV-90 DRY, 5000 VOLT CONDUCTORS TO 1ST. PULL BOX AND PROVIDE (3) EPOXY FILLED SPLICE KITS PER 713.15, FEED OFF OF 1-POLE, 20 AMP CIRCUIT BREAKER IN P&R PANEL WHICH IS CONTROLLED BY A PHOTO-ELECTRIC CELL. THIS CIRCUIT SHALL FEED THE LIGHTS IN THE EXTERIOR TELEPHONE BOOTHS. 2-CONDUCTORS SHALL BE FOR THE 120 VOLT, 1-PHASE, 60 HZ. CIRCUIT, THE REMAINING CONDUCTOR SHALL BE A GROUND. THE 3-NO. 4 AWG, MV-90 DRY, 5000 VOLT CONDUCTORS SHALL FEED FROM THE 6" X 6" WIREWAY IN 1" CONDUIT PER 713.04 TO THE P&R PANEL.

(R) (1) 1" CONDUIT AS PER 713.04 W/9-TYPE 3ZLA SUSPENSION WIRE, 4/64" INSULATED, SINGLE CONDUCTOR, 18 GAUGE, 41 STRAND COPPER OR APPROVED EQUAL BY BW. 4 ACTIVE FOR ELECTROD LEVEL SENSORS AND 1-FOR GROUND SENSOR, AND 4-SPARE TO UNDER GROUND RESERVOIR TANK FROM RESERVOIR AND WELL PUMP CONTROL PANEL. TERMINATE SPARES AS REQUIRED. (240 VOLTS, 60 HZ. CONTROL COIL CONTACT CONNECTIONS.)

(S) (1) 2" CONDUIT PER 713.04 W/6-NO. 6 RHH/RHW, 600 VOLT CONDUCTORS. TWO SEPARATE 3-WIRE CIRCUIT BRANCH FEEDS, ONE TO EACH SUBMERSIBLE RESERVOIR PUMP, EXTERIOR LOCATION ADJACENT TO RESERVOIR TANK. FROM THE 6" X 6" WIREWAY THE CONDUCTORS SHALL FEED THRU 2" CONDUIT PER 713.04 TO THE TWO (2) SQUARE "D" NEMA I, CLASS 8538, CAT. NO. SBG-12, 30 AMP, (230 VOLT, 1-PHASE, 3-WIRE, 60 HZ., 3-POLE) COMBINATION STARTER, FUSIBLE DISCONNECT SWITCH TYPE W/CLASS R FUSE CLIPS, NON-REVERSING W/3-MELTING OVERLOAD RELAYS NEMA SIZE 0 RATING W/HAND-OFF-AUTO SELECTOR SWITCH FORM C, FUSED CONTROL TRANSFORMER FORM FT, AND PILOT LIGHT FORM P-G. NOTE: THE H.O.A. AND PILOT LIGHT SHALL BE MOUNTED IN THE COMBINATION STARTERS, ADDITIONAL H.O.A. AND PILOT LIGHTS SHALL BE INSTALLED IN THE RESERVOIR AND WELL PUMP CONTROL PANEL FOR RESERVOIR PUMP PER THE WIRING SCHEMATIC. FUSE ONLY TWO POLES W/30 AMP CLASS R FUSES. (THESE CIRCUITS SHALL FEED RESERVOIR PUMP NO. 1 AND RESERVOIR PUMP NO. 2, 3-H.P., 230 VOLT, 1-PHASE, 3-WIRE, 6 HZ. SUBMERSIBLE RESERVOIR PUMPS.)
FROM PANEL "P" CIRCUIT NO. P-3 AND P-4 SHALL FEED THROUGH 6"X6" WIREWAY AND FROM WIREWAY THROUGH 2" CONDUIT PER 713.04 INTO RESERVOIR AND WELL PUMP CONTROL PANEL W/6-NO. 6 RHH/RHW, 600 VOLT CONDUCTORS AND MAKE CONNECTIONS TO RELAY AND CONTROL TERMINALS AS PER WIRING SCHEMATIC.

(T) (1)-1½ CONDUIT PER 713.04 W/6-NO. 12 PULL WIRE FOR ANNUCIATOR CONDUCTORS FROM SEWAGE TREATMENT PLANTS MAIN CONTROL PANEL AND DOSING PUMPS CONTROL PANEL. TERMINATE PULL WIRES IN 6"X6" WIREWAY, PULL BOXES AND PANELS AS REQUIRED.

(U) (1) - 2" CONDUIT PER 713.04 W/3-NO. 2 TYPE USE, RHH/RHW, 600 VOLT CONDUCTORS FROM PANEL "P" CIRCUIT P-17 THROUGH 6"X6" WIREWAY TO SEWAGE TREATMENT PLANT MAIN BLOWER CONTROL PANEL. (230 VOLTS, 1-PHASE, 3-WIRE, 60 HZ. BRANCH FEED.) FOR CONTINUATION OF CIRCUIT P-17 REFER TO UTILITY PLANS AND WIRING DIAGRAMS FOR CONNECTIONS TO ALL SEWAGE TREATMENT CONTROL PANELS.

(V) (1) - 3" CONDUIT PER 713.04 W/3-500 MCM, TYPE USE, RHH/RHW, 600 VOLT CONDUCTORS, FOR 120/240 VOLTS, 1-PHASE, 3-WIRE, 60HZ. SECONDARY ELECTRICAL SERVICE FROM UTILITY COMPANY'S TRANSFORMER (PRIMARY SERVICE). ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL CROUSE-HINES COMPANY OR APPROVED EQUAL 3" SIZE CAT. NO. LBNEC8 DIE CAST ALUMINUM MOGUL PULLING 90° ELBOW, COMPLETE W/GASKET AND SCREWS. THIS SHALL EXTEND FROM A 3" DIA., 36" RADIUS LONG SWEEP 90° E11 ON EXTERIOR SIDE OF WALL, AND FEED INTO C/T CABINET THROUGH A 3" DIA. NIPPLE PER 713.04. FURNISH AND INSTALL TWO "BRUNDY" CAT. NO. KS-34 SOLDERLESS SERVICE CONNECTORS OR APPROVED EQUAL BY BLACKBURN OR PENN-UNION, ONE ON EACH PHASE LEG OF THE 240 VOLT, 3-WIRE, 60 HZ CONDUCTORS INSIDE THE C/T CABINET. THESE SHALL BE USED TO PERMIT C/T COILS TO BE INSTALLED ON EACH PHASE LEG OF THE SECONDARY SERVICE IF THE UTILITY COMPANY SELECTS TO INSTALL C/T COILS. THESE CONNECTORS SHALL BE TAPED WITH ELECTRICIANS TAPE AFTER ALL DEVICES AND CONDUCTORS HAVE BEEN PROPERLY INSTALLED. A

CONT'D.

(▲) THWN OR THHN S1-58101

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

DATE 5/2/85 10/31/85

MSB-4

ELECTRICAL PANEL NOTES

MAH-11-3.31

APPROVED _____ Engr. of Design Services

4E-3 a

ELECTRICAL PANEL NOTES (CONT'D)

CONT'D

1 1/4" DIA. NIPPLE PER 713.04 SHALL EXTEND FROM THE C/T CABINET, THROUGH THE WALL TO PERMIT CONDUCTOR WIRES TO CONNECT TO THE 400 AMP METER SOCKET ENCLOSURE IF REQUIRED. IF NOT REQUIRED THIS NIPPLE SHALL BE CAPPED ON THE EXTERIOR SIDE OF WALL. THE NEUTRAL CONDUCTOR SHALL NOT BE FURNISHED WITH A "BRUNDY" FITTING.

(W) 1) - 3" CONDUIT PER 713.04 W/1-NO. 10 PULL WIRE. THE 3" CONDUIT SHALL BE INSTALLED SAME AS (V) ABOVE AND SHALL BE USED FOR SPARE SECONDARY ELECTRICAL SERVICE. TERMINATION POINTS SHALL BE IN THE C/T CABINET AND IN THE TRANSFORMER (PRIMARY SERVICE). STUB 6" ABOVE TOP OF PAD OR FINISHED GRADE AND CAP.

(V-1) IF THE ELECTRIC UTILITY COMPANY FURNISHES A 400 AMP METER SOCKET ENCLOSURE W/C/T COILS IN THE ENCLOSURE, THE 3" CONDUIT W/3-500 MCM, TYPE USE, RHH/RHW, 600 VOLT CONDUCTORS IN (V) ABOVE SHALL FEED TO THE 400 AMP. METER ENCLOSURE, AND FROM ENCLOSURE SHALL FEED THROUGH 3" CONDUIT PER 713.04 DOWN EXTERIOR WALL TO A 3" SIZE CAT. NO. LBNEC8 MOGUL PULLING 90° ELBOW AND ENTER C/T CABINET THROUGH A 3" DIA. NIPPLE PER 713.04 THROUGH WALL. THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL SPADE LUG TERMINAL CONNECTORS TO CONNECT THE 3-500 MCM, TYPE USE, RHH/RHW CONDUCTORS TO THE 400 AMP METER SOCKET AS REQUIRED. LUGS MUST MEET APPROVAL OF THE UTILITY COMPANY BEFORE BEING INSTALLED.

(W-1) IF (V-1) IS INSTALLED, (W) ABOVE SHALL BE INSTALLED IN LOCATION SHOWN BUT SHALL TERMINATE 6" ABOVE FINISHED GRADE AND CAPPED FOR SPARE SECONDARY ELECTRICAL SERVICE OUTSIDE BUILDING WALL. THE OTHER END SHALL TERMINATE IN THE PAD MOUNTED TRANSFORMER AS NOTED IN (W) ABOVE.

PANEL "P" (O-O)

(1) 2 - NO. 10 (▲) & 1 - NO. 10 (▲) GREEN GRD. IN 3/4" COND. TO JUNCTION BOX ON CEIL. THEN TO CEIL. MOUNT UNIT HEATER. 5KW. CKT. P-6, RM. 105.

(2) 2 - NO. 4 (▲) & 1 - NO. 4 (▲) GREEN GRD. IN 1¼" COND. TO H.W. HEATER. 10 KW, CKT. P-5, RM. 103.
CKT. P-5 SHALL FEED TO A SQUARE "D" HEAVY DUTY SAFETY SWITCH, VISIBLE BLADES, SINGLE THROW FUSIBLE, 3-WIRE (2 BLADES AND FUSEHOLDERS, 1 S/N) 120/240 V. AC, 1-PHASE, NEMA 1, UL LISTED, 60 AMPS. CAT. NO. H 222 N, WITH CLASS R FUSE REJECTION KIT CAT. NO. HRK 60. FUSES SHALL BE GOULD SHAWMUT A2D 60 R OR APPROVED EQUAL. FROM DISCONNECT SWITCH MOUNTED ON WALL OF RM. 103 CONDUCTOR SHALL CONNECT TO H.W. HEATER AS REQUIRED.

(3) 4 - NO. 10 (▲) & 2 - NO. 10 (▲) GREEN GRD. IN 1" COND. TO (2) 2-P/30A BRK'S, TO (2) 6'-0", 3.75 KW B.B. HEATERS, CKT'S P-7 & P-9, RM. 102.

(4) 2 - NO. 12 (▲) & 1 - NO. 12 (▲) GREEN GRD. IN 3/4" COND. HAND DRYER, CKT P-11, ROOM 106.

(5) 2 - NO. 10 (▲) & 1 - NO. 10 (▲) GREEN GRD. IN 3/4" COND. TO 2 - P/30A BRK., (2) 6'-0", 3.75 KW B.B. HEATERS, CKT. P-8, RM. 101.

(6) 2 - NO. 10 (▲) & 1 - NO. 10 (▲) GREEN GRD. IN 3/4" COND. TO 2-P/30A BRK., (2) 6'-0", 3.75 KW B.B. HEATERS, CKT. P-10, RM. 101.

(7) 4 - NO. 10 (▲) & 2 - NO. 10 (▲) GREEN GRD. IN 1" COND. TO (2) 2-P/30A BRK'S, TO (2) 5'-0", 3.18 KW B.B. HEATERS, CKT'S P-12 & P-14, RM. 104.

(8) 2 - NO. 10 (▲) & 1 - NO. 10 (▲) GREEN GRD. IN 1" COND. TO 2-P/30A BRK, TO '28", 1.25 KW B.B. HEATER, CKT P-16 RM. 104.

(9) 1 - NO. 1/0 COPPER (▲) GREEN GROUND IN 1" CONDUIT. CONDUCTOR SHALL BE THE SECONDARY SERVICE EQUIPMENT GROUNDING CONDUCTOR. CONDUIT SHALL EXTEND UNDER FLOOR TO OUTSIDE THE EXTERIOR WALL AND STUB 8" ABOVE FINISH GRADE.

THE GROUND WIRE SHALL BE BONDED, AS PER 625.10 AND 713.16, TO A GROUND ROD. BONDING AND GROUND CONNECTIONS SHALL BE FURNISHED AND INSTALLED ON EACH CONDUIT AS PER ARTICLE 250 OF THE N.E.C..

PANEL "A" (P-P)

(1) 1 1/4" CONDUIT PER 713.04 w/6-NO. 12 (▲) CONDUCTORS TO "K" LINE FEEDING INTO 6"X6" WIREWAY. 3 - NO. 12 (▲), 600 VOLT CONDUCTORS SHALL FEED OFF OF CIRCUIT NO. A15 FROM PANEL "A" AND CONNECT TO ALLEN BRADLEY CAT. NO. 702L-TAD 92 AC LIGHTING CONTRACTOR W/H.O.A. SWITCH NOTED AS "CIR. A-15". THE REMAINING 3-NO. 12 (▲), 600 VOLT CONDUCTOR SHALL FEED OFF OF CIRCUIT NO. A14 FROM PANEL "A" AND CONNECT TO ALLEN BRADLEY CAT. NO. 702L-TAD 92 AC LIGHTING CONTRACTOR W/H.O.A. SWITCH NOTED AS "CIR. A-14".

(2) 2 - NO. 12 (▲) & 1 - NO. 12 (▲) GREEN GRD. IN 3/4" COND. HAND DRYER, CKT. A-1, RM 102.

(3) 2 - NO. 12 (▲) & 1 - NO. 12 (▲) GREEN GRD. IN 3/4" COND. HAND DRYER CKT A-2, RM 104.

(4) 2 - NO. 12 (▲) & 1 - NO. 12 (▲) GREEN GRD. IN 3/4" COND. HAND DRYER, CKT A-3, RM 102.

(5) 2 - NO. 12 (▲) & 1 - NO. 12 (▲) GREEN GRD. IN 3/4" COND. HAND DRYER, CKT. A-4, RM. 104.

(6) 2 - NO. 12 (▲) & 1 - NO. 12 (▲) GREEN GRD. IN 3/4" COND. FROM GFCI CKT. BRK, TO EXTERIOR DUPLEX RECEPTACLE, CKT. A-5.

(7) 2 - NO. 12 (▲) & 1 - NO. 12 (▲) GREEN GRD. IN 3/4" COND. FROM GFCI CKT. BRK. TO EXTERIOR DUPLEX RECPTACLE, CKT. A-6.

(8) 2 - NO. 12 (▲) & 1 - NO. 12 (▲) GREEN GRD. IN 3/4 " COND. TO RECEPTACLE IN RM'S. 105, 103 & 101, CKT. A-8.

(9) 2 - NO. 12 (▲) & 1 - NO. 12 (▲) GREEN GRD. IN 3/4" COND. FROM GFCI CKT. BREAKER TO (2) INTERIOR DUPLEX RECEPTACLES IN RM'S 102, 104 & 106 CKT. A-12.

(▲) THHN OR THWN S1-58101

600 AMP.

600 AMP. SYSTEM

(X) 1) 2" CONDUIT PER 713.04 W/3- 1/C NO. 4 TYPE USE, RHH/RHW, 600 VOLT CONDUCTORS FROM PANEL "P", CIRCUIT P-19, THROUGH 6" X 6" WIREWAY TO NO. 1 SEWAGE LIFT STATION MAIN CONTROL PANEL LOCATED AT LIFT STATION. (240 VOLTS, 1-PHASE, 3-WIRE, 60 HZ. BRANCH FEED). FOR CONTINUATION OF CIRCUIT P-17, REFER TO UTILITY PLANS AND WIRING DIAGRAMS FOR CONNECTIONS TO THE NO. 1 SEWAGE LIFT STATION MAIN CONTROL PANEL.

2) SHOULD NO LIFT STATION NO. 2 BE REQUIRED THE ELECTRICAL CONTRACTOR SHALL EXTEND THE 2" CONDUIT, PER 713.04, 5'-0" BEYOND EXTERIOR WALL, INSTALL ONE (1) 1/C NO. 10 PULL WIRE IN THE 2" CONDUIT AND PROVIDE A 2" CAP ON END OF CONDUIT AT TERMINATION POINT OUTSIDE BUILDING. THIS SHALL BE USED FOR FUTURE CIRCUIT AND SHALL BE NOTED AS A "SPARE".

(Y) (1) 2" CONDUIT PER 713.04 W/3-1/C NO. 4, TYPE USE, RHH/RHW, 600 VOLT CONDUCTORS FROM PANEL "P", CIRCUIT P-20, THROUGH 6" X 6" WIREWAY TO NO. 2 SEWAGE LIFT STATION MAIN CONTROL PANEL LOCATED AT LIFT STATION. (240 VOLTS, 1-PHASE, 3-WIRE, 60 HZ. BRANCH FEED). FOR CONTINUATION OF CIRCUIT P-20, REFER TO UTILITY PLANS AND WIRING DIAGRAMS FOR CONNECTIONS TO THE NO. 2 SEWAGE LIFT STATION MAIN CONTROL PANEL.

(2) SHOULD NO LIFT STATION NO. 2 BE REQUIRED THE ELECTRICAL CONTRACTOR SHALL EXTEND THE 2" CONDUIT, PER 713.04, 5'-0" BEYOND EXTERIOR WALL, INSTALL ONE (1) 1/C NO. 10 PULL WIRE IN THE 2" CONDUIT AND PROVIDE A 2" CAP ON END OF CONDUIT AT TERMINATION POINT OUTSIDE BUILDING. THIS SHALL BE USED FOR FUTURE CIRCUIT AND SHALL BE NOTED AS A "SPARE".

(Z) THE ELECTRICAL CONTRACTOR SHALL EXTEND THE SECONDARY ELECTRICAL SERVICES 6-1/C - 350 MCM, TYPE USE, RHH/RHW, 600 VOLT CONDUCTORS FROM THE C/T CABINET THROUGH 4" CONDUIT, PER 713.04, INTO THE 600 AMP. SERVICE ENTRANCE FUSED DISCONNECT SWITCH, MAKE CONNECTION THEREIN, AS REQUIRED AND FEED LIKE CONDUCTORS FROM DISCONNECT SWITCH TO POWER PANEL "P" THROUGH 4" CONDUIT, PER 713.04 AND MAKE CONNECTION TO TERMINALS LUGS AS REQUIRED. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL FOUR (4) CROUSE-HINDS THREADED RIGID BODIES, CONDULET CONDUIT OUTLET BODIES LB FITTINGS, STYLE MARK 9, CAT. NO. LB1089, HUB SIZE 4" W/CROUSE-HINDS FERALOY BLANK COVERS W/GASKETS CAT. NO. BG98, SIZE 4", AS SHOWN ON DRAWING TO PERMIT THE SECONDARY SERVICE CONDUCTORS TO BE INSTALLED IN AN EASY MANNER WITHOUT DAMAGE TO THE CONDUCTORS. A CONTINUOUS INSULATED GROUND SHALL CONNECT TO ALL COMPONENTS AND SHALL BE SIZED AS NOTED IN THE SPECIFICATIONS.

SECONDARY

(V) (1) - 4" CONDUIT PER 713.04 W/6-350 MCM, TYPE USE, RHH/RHW, 600 VOLT CONDUCTORS, FOR 120/240 VOLTS, 1-PHASE, 3-WIRE, 60HZ. SECONDARY ELECTRICAL SERVICE FROM UTILITY COMPANY'S TRANSFORMER (PRIMARY SERVICE). ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL CROUSE-HINES COMPANY OR APPROVED EQUAL 4" SIZE CAT. NO. LBNEC10 DIE CAST ALUMINUM MOGUL PULLING 90° ELBOW, COMPLETE W/GASKET AND SCREWS. THIS SHALL EXTEND FROM A 4" DIA., 36" RADIUS LONG SWEEP 90° ELL ON EXTERIOR SIDE OF WALL, AND FEED INTO C/T CABINET THROUGH A 4" DIA. NIPPLE PER 713.04. FURNISH AND INSTALL (4) "BRUNDY" CAT. NO. XS-31 SOLDERLESS SERVICE CONNECTORS OR APPROVED EQUAL BY BLACKBURN OR PENN-UNION, ONE ON EACH PHASE LEG OF THE 240 VOLT, 3-WIRE, 60 HZ CONDUCTORS INSIDE THE C/T CABINET. THESE SHALL BE USED TO PERMIT C/T COILS TO BE INSTALLED ON EACH PHASE LEG OF THE SECONDARY SERVICE IF THE UTILITY COMPANY SELECTS TO INSTALL C/T COILS. THESE CONNECTORS SHALL BE TAPED WITH ELECTRICIANS TAPE AFTER ALL DEVICES AND CONDUCTORS HAVE BEEN PROPERLY INSTALLED. A 1 1/4" DIA. NIPPLE PER 713.04 SHALL EXTEND FROM THE C/T CABINET, THROUGH THE WALL TO PERMIT CONDUCTOR WIRES TO CONNECT TO THE 600 AMP METER SOCKET ENCLOSURE IF REQUIRED. IF NOT REQUIRED THIS NIPPLE SHALL BE CAPPED ON THE EXTERIOR SIDE OF WALL. THE NEUTRAL CONDUCTOR SHALL NOT BE FURNISHED WITH A "BRUNDY" FITTING. USE TWO CONDUCTOR PER PHASE AND GROUND FOR A TOTAL OF SIX CONDUCTORS.

(W) 1) - 4" CONDUIT PER 713.04 W/1-NO. 10 PULL WIRE. THE 4" CONDUIT SHALL BE INSTALLED SAME AS (V) ABOVE AND SHALL BE USED FOR SPARE SECONDARY ELECTRICAL SERVICE. TERMINATION POINTS SHALL BE IN THE C/T CABINET AND IN THE TRANSFORMER (PRIMARY SERVICE). STUB 6" ABOVE TOP OF PAD OR FINISHED GRADE AND CAP.

(V-1) IF THE ELECTRIC UTILITY COMPANY FURNISHES A 600 AMP METER SOCKET ENCLOSURE W/C/T COILS IN THE ENCLOSURE, THE 4" CONDUIT W/ 6-350 MCM, TYPE USE, RHH/RHW, 600 VOLT CONDUCTORS IN (V) ABOVE SHALL FEED TO THE 600 AMP. METER ENCLOSURE, AND FROM ENCLOSURE SHALL FEED THROUGH 4" CONDUIT PER 713.04 DOWN EXTERIOR WALL TO A 4" SIZE CAT. NO. LBNEC10MOGUL PULLING 90° ELBOW AND ENTER C/T CABINET THROUGH A 4" DIA. NIPPLE PER 713.04 THROUGH WALL. THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL SPADE LUG TERMINAL CONNECTORS TO CONNECT THE 6-350 MCM, TYPE USE, RHH/RHW CONDUCTORS TO THE 600 AMP METER SOCKET AS REQUIRED. LUGS MUST MEET APPROVAL OF THE UTILITY COMPANY BEFORE BEING INSTALLED.

(W-1) IF (V-1) IS INSTALLED, (W) ABOVE SHALL BE INSTALLED IN LOCATION SHOWN BUT SHALL TERMINATE 6" ABOVE FINISHED GRADE AND CAPPED FOR SPARE SECONDARY ELECTRICAL SERVICE OUTSIDE BUILDING WALL. THE OTHER END SHALL TERMINATE IN THE PAD MOUNTED TRANSFORMER AS NOTED IN (W) ABOVE.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT	DATE 5/2/85
MSB-4 ELECTRICAL PANEL NOTES	
MAH-11-3.31	4E-3 b

APPROVED Engr. of Design Services

PANEL "P" SCHEDULE

600 AMPS.42 POLES.120/240 V..1-PHASE.60 HERTZ.3-WIRE S/N
(MAIN LUGS ONLY)

CIRCUIT NO.	DESCRIPTION	LOCATION		VOLTS	HP/FLA	BREAKER POLES	BREAKER AMPS	CONNECTED WATTS
1	PANEL "A", 26.4 KW (Q2-H SUB-FEED BREAKER)	RM. 105		240	164	2	225	24427
2	RAMP & PICNIC AREA LIGHTING, 10.0KW	EXTERIOR		240	41.7	2	60	10000
3	RESERVOIR PUMP NO.1, 4.1KW	EXTERIOR		240	17.0	2	30	4080
4	RESERVOIR PUMP NO.2, 4.1KW	EXTERIOR		240	17.0	2	30	4080
5	HOT WATER HEATER, 10.0KW	RM. 103		240	41.7	2	60	10000
6	UNIT HEATER, 5.0KW	RM. 105		240	20.8	2	30	5000
7	B.B. HEATER (1) 3.75 KW	RM. 102		240	15.6	2	20	3750
8	B.B. HEATER (2) 2.25 KW	RM. 101		240	18.8	2	30	4500
9	B.B. HEATER (1) 3.75 KW	RM. 102		240	15.6	2	20	3750
10	B.B. HEATER (2) 2.25 KW	RM. 101		240	18.8	2	30	4500
11	HAND DRYER, 2.4 KW	RM. 106		240	10.0	2	20	2400
12	B.B. HEATER (1) 3.13 KW	RM. 104		240	13.0	2	20	3125
13	SPARE					1	20	
14	B.B. HEATER (1) 3.13 KW	RM. 104		240	13.0	2	20	3125
15	SUBMERSIBLE WELL PUMP, 1.7KW	EXTERIOR		240	6.9	2	20	1656
16	B.B. HEATER (1) 1.25 KW	RM. 104		240	5.2	2	20	1250
17	WASTE TREATMENT PLANT, 20.7 KW *	EXTERIOR	5-HP	240	86.2	2	125	20688
18	REFRIGERATOR UNIT (DUPLEX RECETACLE)	RM.105		120	1.7	1	20	200
19	NO.1 SEWAGE LIFT STATION, 15.1 KW *	EXTERIOR	5-HP	240	63.0	2	80	15120
20		SPARE						
21	MICROWAVE OVEN 1.44 KW	RM. 105		120	12.0	1	20	1440
22	COFFEE MAKER 1.8 KW (DUPLEX RECEPTACLE)	RM. 105		120	15.0	1	20 GFI	1800
23	SPARE			240		2	10	

	NB	SB
TOTAL CONNECTED WATTS	89083	124891
TOTAL CONNECTED AMPS	385.5	534.7

PANEL "A" SCHEDULE

225 AMPS , 30 POLES, 120/240 VOLTS, 1-PHASE, 60-HERTZ, 3-WIRE S/N
(MAIN LUGS ONLY)

CIRCUIT NO.	DESCRIPTION	LOCATION		VOLTS	HP/FLA	BREAKER POLES	BREAKER AMPS	CONNECTED WATTS
1	HAND DRYER, 2.4KW	RM. 102		240	10.0	2	20	2400
2	HAND DRYER, 2.4KW	RM. 104		240	10.0	2	20	2400
3	HAND DRYER, 2.4KW	RM. 102		240	10.0	2	20	2400
4	HAND DRYER, 2.4KW	RM. 104		240	10.0	2	20	2400
5	DUPLEX RECEPT. TO GRD. FAULT CIR. BKR., 2.4KW	EXTERIOR		120	20.0	1	20 GFI	2400
6	DUPLEX RECEPT. TO GRD. FAULT CIR. BKR., 2.4KW	EXTERIOR		120	20.0	1	20 GFI	2400
7	EXTERIOR BLD'G. LIGHTS, 1.0KW	EXTERIOR		120	8.2	1	20	979
8	DUPLEX RECEPTACLES, 2.4KW	RM.'S 101, 103, & 105		120	20.0	1	20	2400
9	LIGHTS, 0.7 KW	RM. 105		120	5.6	1	20	672
10	EXHAUST FAN, 0.3KW	RM. 102		120	2.4	1	20	288
11	LIGHTS, 0.5 KW	RM. 103		120	4.0	1	20	480
12	(3) DUPLEX RECEPTACLES, TO GRD. FAULT CIR. BKR., 2.4KW	RM'S 102, 104 & 106		120	20.0	1	20 GFI	2400
13	EXHAUST FAN, 0.3KW	RM. 104		120	2.4	1	20	288
14	LIGHTS, 0.4KW	RM. 101		120	3.2	1	20	384
15	LIGHTS, 0.4KW	RM. 101		120	3.2	1	20	384
16	LIGHTS, 0.4KW	RM.'S 102 & 104		120	3.2	1	20	384
17	LIGHTS, 0.4KW	RM.'S 102 & 104		120	3.2	1	20	384
18	EXHAUST FAN 0.3 KW	RM. 103		120	24	1	20	288
19	DOOR OPERATOR, 0.6 KW	RM. 101		120	5.0	1	15	600
20	LIGHT, 0.1 KW	RM. 106		120	0.8	1	20	96
21	SPARE					1	15	
22	SPARE			120		1	15	
23 - 24	SPARE			240		2	20	

TOTAL CONNECTED WATTS 24427

TOTAL CONNECTED AMPS 164

* SB ONLY, NB SPARE

NOTE: ALL CIRCUIT BREAKERS SHALL BE FURNISHED AS SHOWN FOR EACH PANEL

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

MSB-4
ELECTRICAL PANEL SCHEDULES

APPROVED _____ Engr. of Design Services

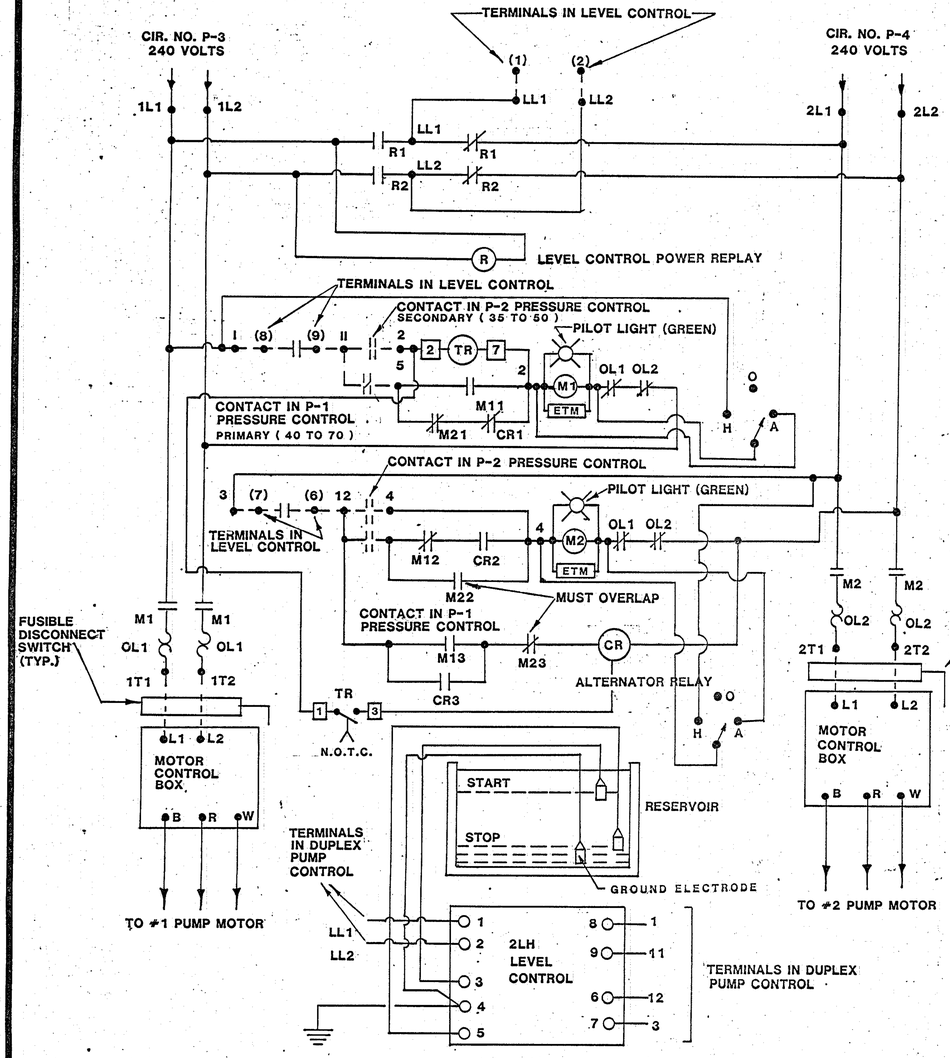
NOTES:

1. PUMP CONTROL SCHEMATICS DESIGN WIRED AS SHOWN FOR 240 VOLTS, 1-PHASE, 3-WIRE, 60 HERTZ OPERATION, BASED ON B/W CONTROLS OR APPROVED EQUAL AS PER SPECIFICATIONS. CONTRACTOR HAS THE OPTION OF FURNISHING 120 VOLTS, 1-PHASE, 60 HERTZ TO B/W CONTROLS ONLY, ALL SUBMERSIBLE PUMPS SHALL BE WIRED FOR 240 VOLTS AS SHOWN. SEE PLAN SHEET 4E-6.

2. FOR 120 VOLTS, 1-PHASE, 60 HERTZ PUMP CONTROL SCHEMATICS OPERATION, BASED ON CHARLES F. WARRICK COMPANY CONTROLS. SEE PLAN SHEET 4E-6. ALL SUBMERSIBLE PUMPS SHALL BE WIRED FOR 240 VOLTS ON THE 120 VOLTS CONTROL SYSTEM ALSO.

SYM.	QUAN.	
TR	1,	ALLEN-BRADLEY BULLETIN 700 TYPE HT SINGLE RANGE TIMING RELAY, CONTINUOUS DUTY CYCLE, 2-POLE (DPDT) ((2 FORM C), 8-PIN ON-DELAY TIMING MODE, RATED AT 10 AMPERES, TIMING RANGE 1.0 TO 180 SECONDS, INPUT VOLTAGE 240 AC, 3.5 VA POWER CONSUMPTION, W/ IMPACT RESISTANT DUST COVER, SILVER CADMIUM OXIDE CONTACTS, PILOT DUTY RATING NEMA B300, REPEAT ACCURACY ADJUSTABLE +/- 1% +/-33 MSEC OF SETTING AT CONSTANT VOLTAGE AND TEMPERATURE, W/ ADJUSTABLE KNOB, CAT. NO. 700-HT12BA2 W/ TYPE HN SCREW TERMINAL TUBE BASE SOCKET, PANEL MOUNTED, 8-PIN FOR USE WITH HT TIMING RELAY, CAT. NO. 700-HN100.

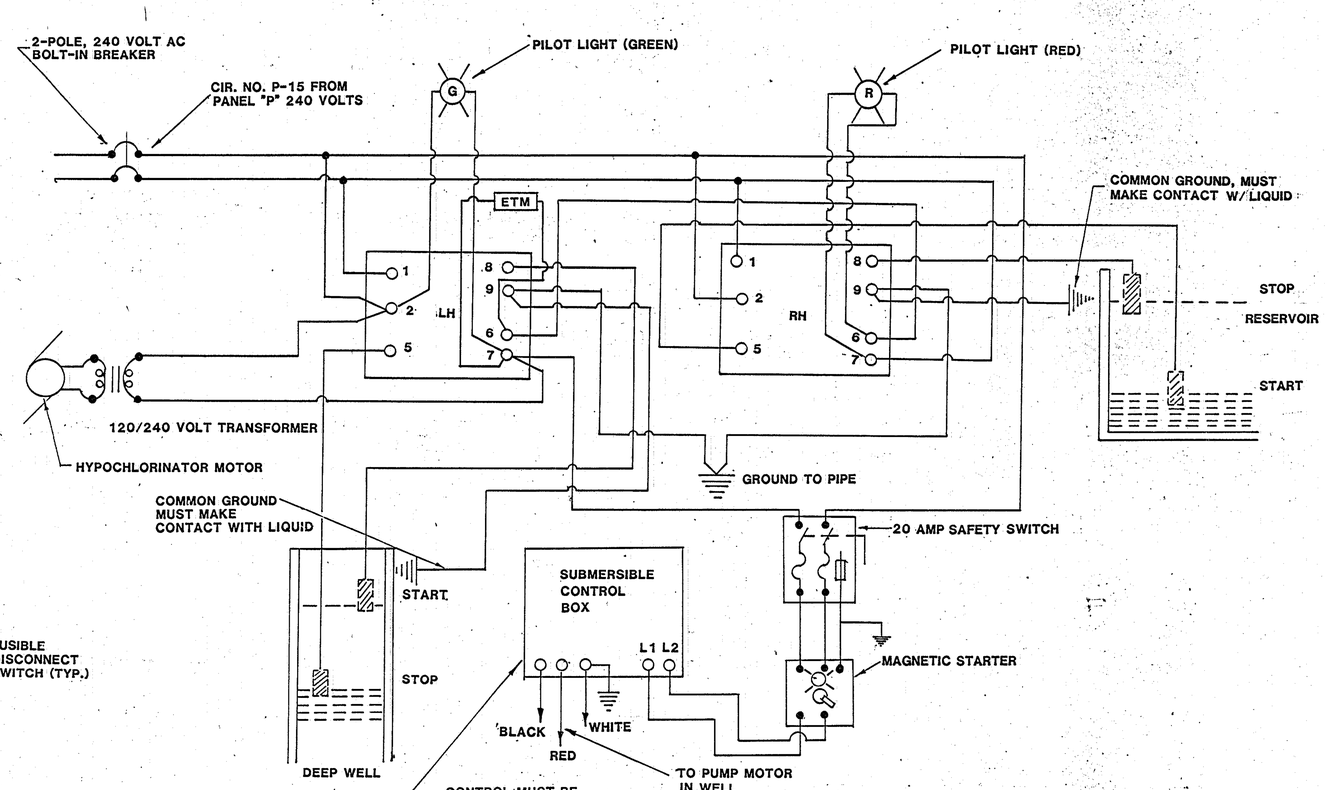
PS-2 PRESSURE SWITCH SHALL ENERGIZE THE (TR) ON-DELAY TIMER BUT THE MOTOR OF EITHER PUMP, THROUGH M1 OR M2, CAN NOT START UNTIL THE TIME DELAY CONTACT HAS CLOSED, (SET FOR 120 SECONDS). THIS TIME DELAY IS TO PREVENT BOTH PUMPS FROM STARTING AT THE SAME TIME, ALLOWING ALL SURGE TO STOP.



SCHEMATIC FOR RESERVOIR PUMPS & HYDROPNEUMATIC PRESSURE TANK CONTROL

NO SCALE

4E-5-01



SCHEMATIC FOR WELL PUMP CONTROL

NO SCALE

4E-5-02

SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

NOTE: CONTRACTORS SHALL SUBMIT FOR APPROVAL PRIOR TO INSTALLATION, SHOP DRAWINGS AND COMPLETE WIRING DIAGRAMS OF THE FOLLOWING:

SUBMERSIBLE WELL PUMP. PITLESS ADAPTER ASSEMBLY. WATER-TIGHT CAP WITH INTEGRAL JUNCTION BOX. ALL REQUIRED PUMP CONTROLS.

REFER TO GENERAL NOTE CONCERNING ELECTRICAL SHOP DRAWINGS. CONTRACTORS SHALL COMPLY AS TO SPECIFICATIONS.

LH = LEVEL CONTROL (START ON HIGH LEVEL)
RH = LEVEL CONTROL (START ON LOW LEVEL)

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

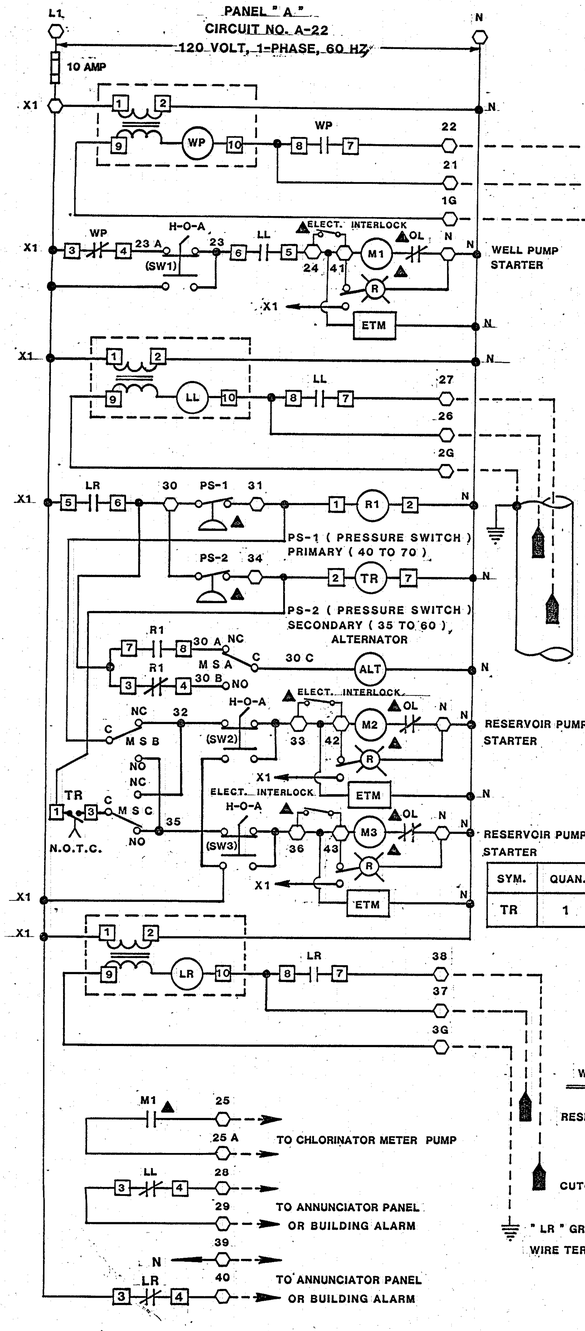
DATE 5/2/85 3/20/90

MSB-4
PUMP CONTROL SCHEMATICS

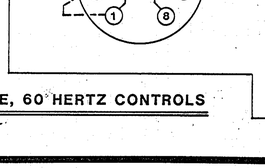
MAH-11-3.31

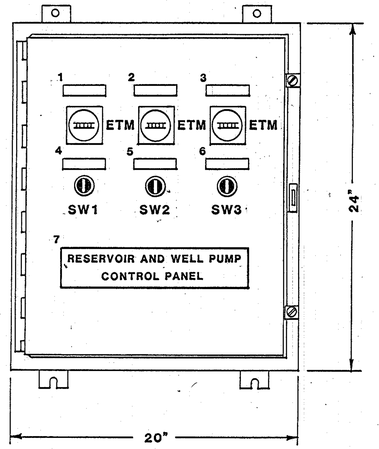
4E-5

APPROVED _____ Engr. of Design Services



DESCRIPTION		
SYM.	QUAN.	
TR	1	ALLEN-BRADLEY BULLETIN 700 TYPE HT SINGLE RANGE TIMING RELAY, CONTINUOUS DUTY CYCLE, 2-POLE (DPDT) (2 FORM C), 8-PIN ON-DELAY TIMING MODE, RATED AT 10 AMPERES, TIMING RANGE 1.0 TO 180 SECONDS, INPUT VOLTAGE 120 AC, 2.4 VA POWER CONSUMPTION, W/ IMPACT RESISTANT DUST COVER, SILVER CADMIUM OXIDE CONTACTS, PILOT DUTY RATING NEMA B300, REPEAT ACCURACY ADJUSTABLE +/- 1% +/-33 MSEC OF SETTING AT CONSTANT VOLTAGE AND TEMPERATURE, W/ ADJUSTABLE KNOB, CAT. NO. 700-HT12BA1 W/ TYPE HN SCREW TERMINAL TUBE BASE SOCKET, PANEL MOUNTED, 8-PIN FOR USE WITH HT TIMING RELAY, CAT. NO. 700-HN100.





NAMEPLATES

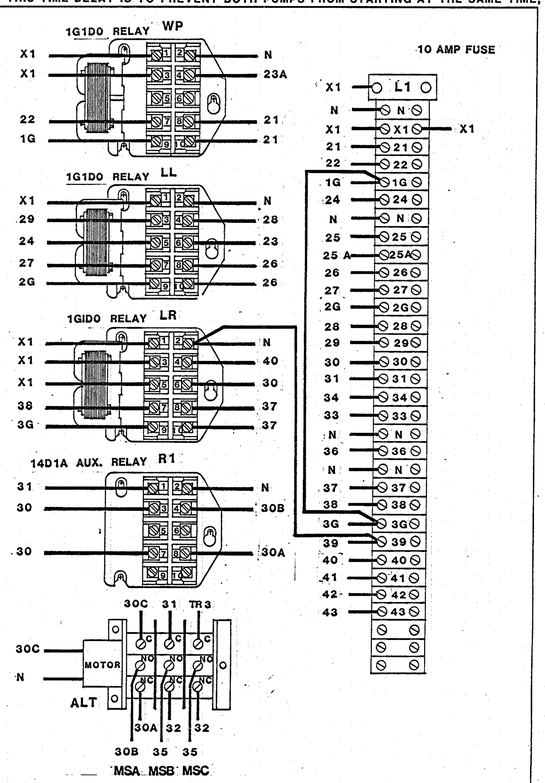
3/4" X 3" - WHITE WITH BLACK LETTERING

1. WELL PUMP
2. RESERVOIR PUMP NO. 1
3. RESERVOIR PUMP NO. 2
4. WELL PUMP HAND-OFF-AUTO
5. RESERVOIR PUMP NO. 1 HAND-OFF-AUTO
6. RESERVOIR PUMP NO. 2 HAND-OFF-AUTO
7. RESERVOIR AND WELL PUMP CONTROL PANEL

(SEE SPECIFICATIONS FOR SIZE)

SYMBOL	QUANTITY	DESCRIPTION
	1	ENCLOSURE, NEMA TYPE 12 " HOFFMAN " P/N A242008 WITH INTERIOR PANEL A24P20
WP	1	LIQUID LEVEL CONTROL " WARRICK " TYPE 1G1DO
LL	1	LIQUID LEVEL CONTROL " WARRICK " TYPE 1G1DO
LR	1	LIQUID LEVEL CONTROL " WARRICK " TYPE 1G1DO
R1	1	AUXILIARY RELAY " WARRICK " TYPE 14D1A
ALT	1	MOTOR DRIVEN SWITCH " LANDIS & GYR " P/N KKB1A3E/0232Z97
	32	TERMINAL BLOCK 20 AMP., 300 VOLT " ALLEN - BRADLEY " P/N 1492-F3
	1	TERMINAL BLOCK FUSE HOLDER " ALLEN - BRADLEY " P/N 1492-CE6 WITH 10 AMP. FUSE (1- MOUNT CHANNEL 1492 - N22)
ETM	3	ELAPSE TIME METER 99999.9 HOURS (CRAMER) " GRAINGER " P/N 6X139 (NON-RESETTABLE)
SW1 SW2 SW3	3	OPERATOR 3 - POSITION " IDEC " P/N ASW-300-1 HANDLE, BLACK " IDEC " P/N ASW-HHY-B COLOR INSERT, WHITE " IDEC " P/N TW-HC1-W
	6	BLOCK, CONTACT, 1 - N.O. " IDEC " P/N TWC10

4. CHARLES F. WARRICK COMPANY WIRE FROM CONTROL PANEL LOCATED IN THE REST AREA BUILDING TO ALL LIQUID LEVEL 3W2 STAINLESS STEEL ELECTRODES SHALL BE CAT. NO. 3Z1A SUSPENSION WIRE, 18 GAUGE, 41 STRAND, COPPER, WITH 4/64 INCH VINYL INSULATION.
5. PS-2 PRESSURE SWITCH SHALL ENERGIZE THE (TR) ON-DELAY TIMER BUT THE MOTOR OF EITHER PUMP, THROUGH M2 OR M3, CAN NOT START UNTIL THE TIME DELAY CONTACT HAS CLOSED, (SET FOR 120 SECONDS). THIS TIME DELAY IS TO PREVENT BOTH PUMPS FROM STARTING AT THE SAME TIME, ALLOWING ALL SURGE TO STOP.



NOTES:

1. FOR RESERVOIR SUBMERSIBLE WELL PUMPS (2-REQUIRED) AND WELL SUBMERSIBLE PUMP (1-REQUIRED) 240 VOLTS, 1-PHASE, 3-WIRE, 60 HERTZ BRANCH CIRCUIT FEEDS P-3, P-4 AND P-15 TO REQUIRED FUSED DISCONNECT SWITCHES, MAGNETIC STARTERS AND DISCONNECT SWITCHES, AND REQUIRED SUBMERSIBLE PUMP CAPACITOR STARTERS FOR EACH SUBMERSIBLE PUMP, REFER TO DRAWING MSB-4 " PUMP CONTROL SCHEMATICS ", PLAN SHEET NO. 4E-5 AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. PUMP CONTROL SCHEMATICS DESIGN WIRED AS SHOWN FOR 120 VOLTS, 1-PHASE, 60 HERTZ OPERATION, BASED ON CHARLES F. WARRICK COMPANY CONTROLS ONLY, EQUALS AS PER SPECIFICATIONS. THIS IS A CONTRACTORS OPTION OF FURNISHING THE 120 VOLTS, 1-PHASE, 60 HERTZ SYSTEM FOR CHARLES F. WARRICK COMPANY CONTROLS ONLY AND SHALL BE WIRED AS SHOWN. ALL SUBMERSIBLE PUMPS SHALL BE WIRED FOR 240 VOLTS, 1-PHASE, 3-WIRE, 60 HERTZ AS DESCRIBED IN NOTE 1. ABOVE.
3. THE CONTRACTOR SHALL REFER TO ALL NOTES SHOWN ON PLAN SHEET NO. 4E-5 AND, AS REQUIRED, THEY SHALL ALSO APPLY TO PLAN SHEET NO. 4E-6.

SCHEMATIC FOR RESERVOIR PUMPS AND WELL PUMP CONTROL PANEL WIRED FOR 120 VOLTS, 1-PHASE, 60 HERTZ CONTROLS

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

DATE 3/20/90 10-23-90

MSB-4
PUMP CONTROL SCHEMATICS

MAH-11-3.31

APPROVED Gary A Creager Engr. of Design Services

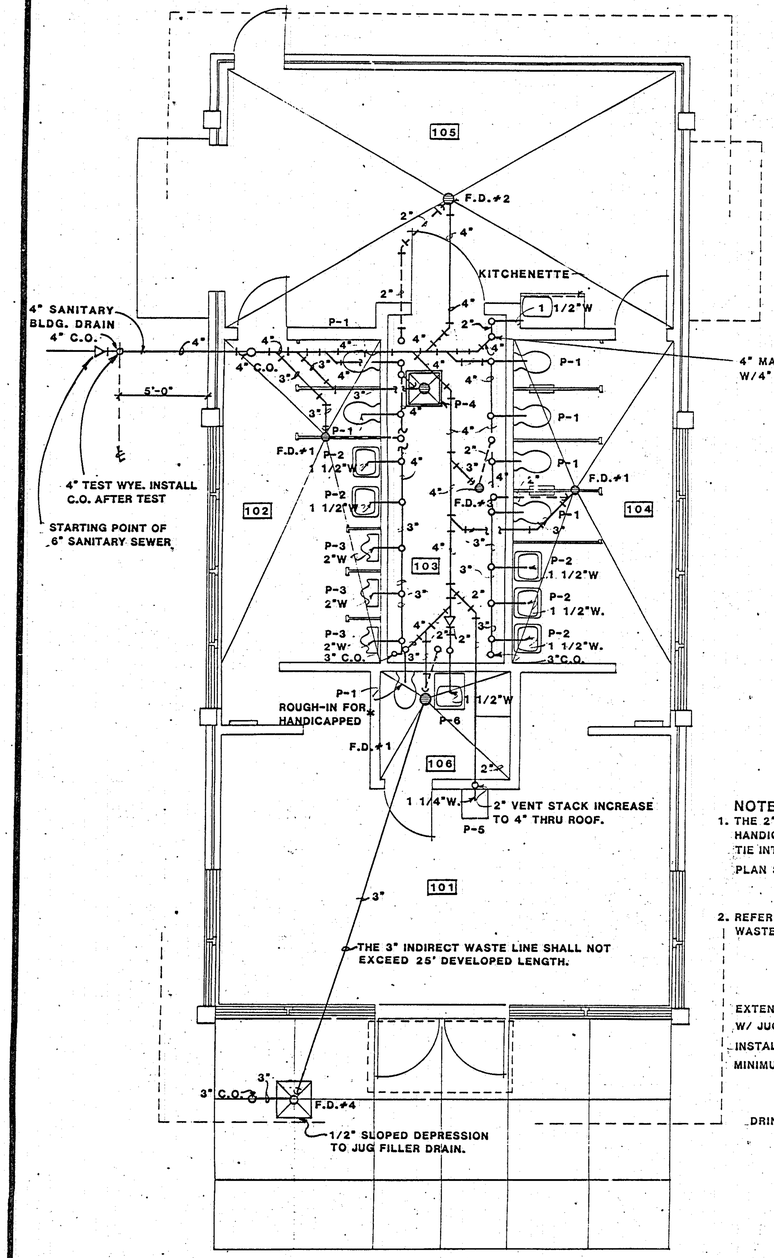
4E-6

CALC. BY ____ DATE ____
CHKD. BY ____ DATE ____

MAH-11-3.31

OHIO FHWA REGION 5

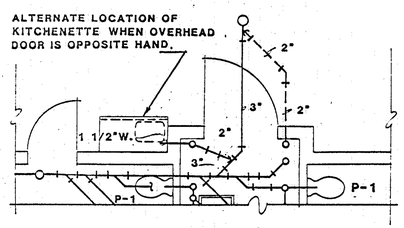
47 / 73



WASTE AND VENT PLUMBING PLAN

4P-1-01

ALTERNATE LOCATION OF KITCHENETTE WHEN OVERHEAD DOOR IS OPPOSITE HAND.



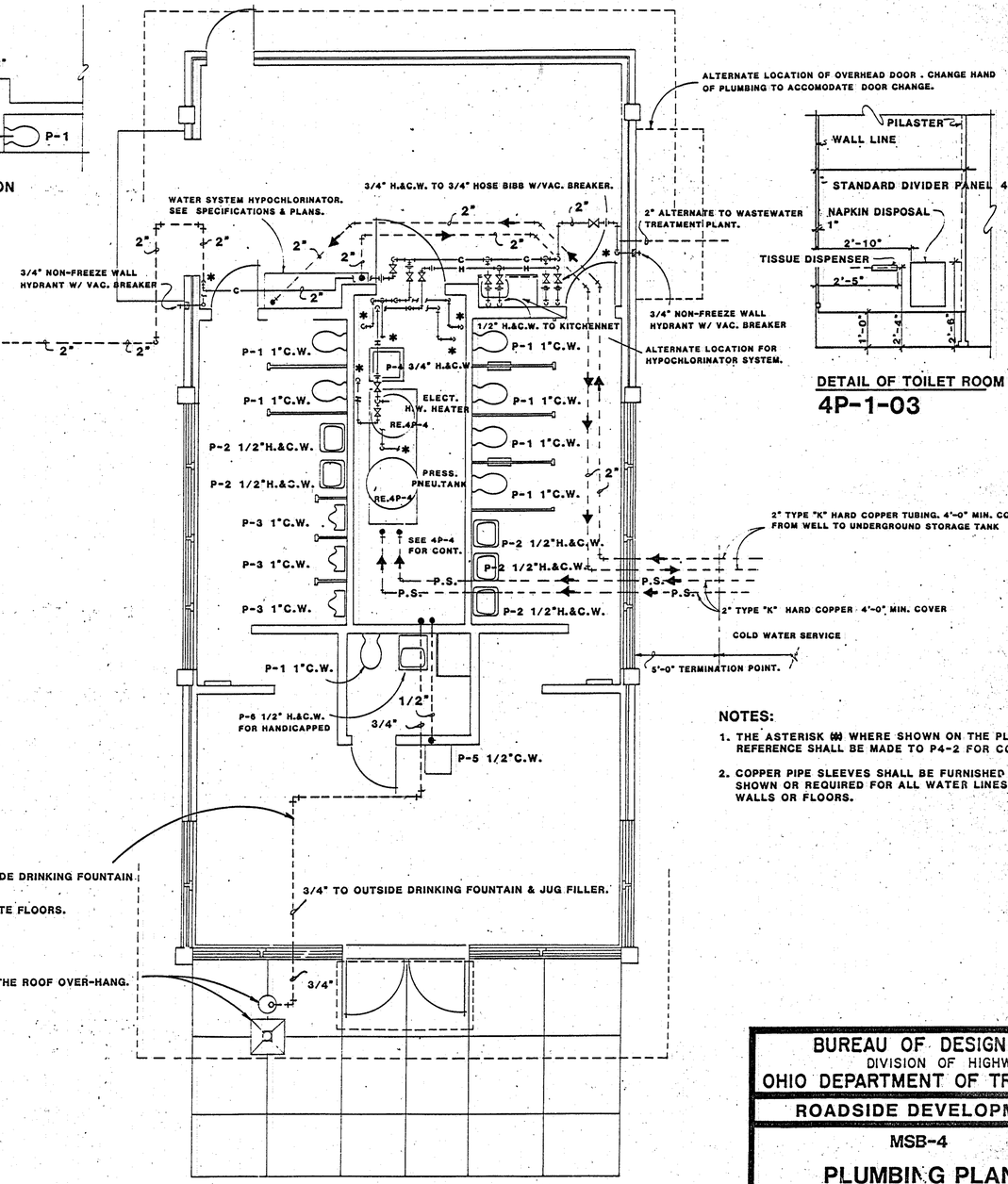
ALTERNATE KITCHENETTE LOCATION

NOTE:

1. THE 2" VENT OFF OF FLOOR DRAIN IN HANDICAPPED TOILET ROOM SHALL TIE INTO BRANCH-VENT AS SHOWN ON PLAN SHEET 4P - 3.
2. REFER TO ISOMETRIC FOR THE SOIL, WASTE AND VENT PIPING INSTALLATION.

EXTEND 3/4" TYPE "K" HARD COPPER TUBING TO OUTSIDE DRINKING FOUNTAIN W/ JUG FILLER.
INSTALL UNDER HANDICAPPED, LOBBY & PATIO CONCRETE FLOORS.
MINIMUM 3'-6" BURY.

DRINKING FOUNTAIN & DRAIN MUST BE WELL UNDER THE ROOF OVER-HANG.



DETAIL OF TOILET ROOM ACCESSORIES

4P-1-03

NOTES:

1. THE ASTERISK (*) WHERE SHOWN ON THE PLAN INDICATES REFERENCE SHALL BE MADE TO P4-2 FOR CONT. OF PIPING.
2. COPPER PIPE SLEEVES SHALL BE FURNISHED AND INSTALLED AS SHOWN OR REQUIRED FOR ALL WATER LINES PASSING THROUGH WALLS OR FLOORS.

WATER SYSTEM PLUMBING PLAN

4P-1-02

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

DATE 8-22-86 4-13-92

MSB-4

PLUMBING PLANS

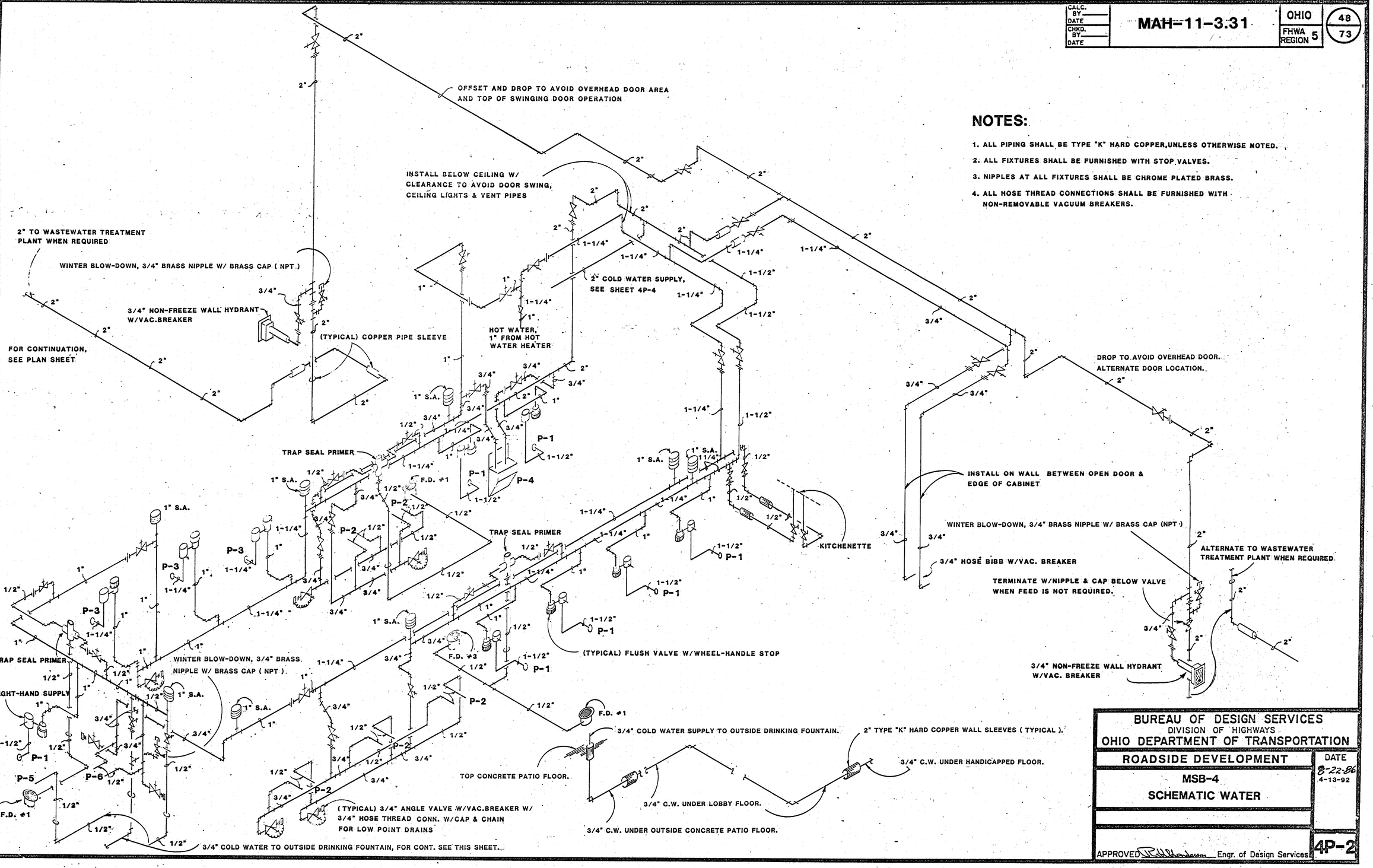
APPROVED _____ Engr. of Design Services

4P-1

CALC. BY / DATE	MAH-11-3.31	OHIO	48
CHKD. BY / DATE		FHWA REGION 5	73

NOTES:

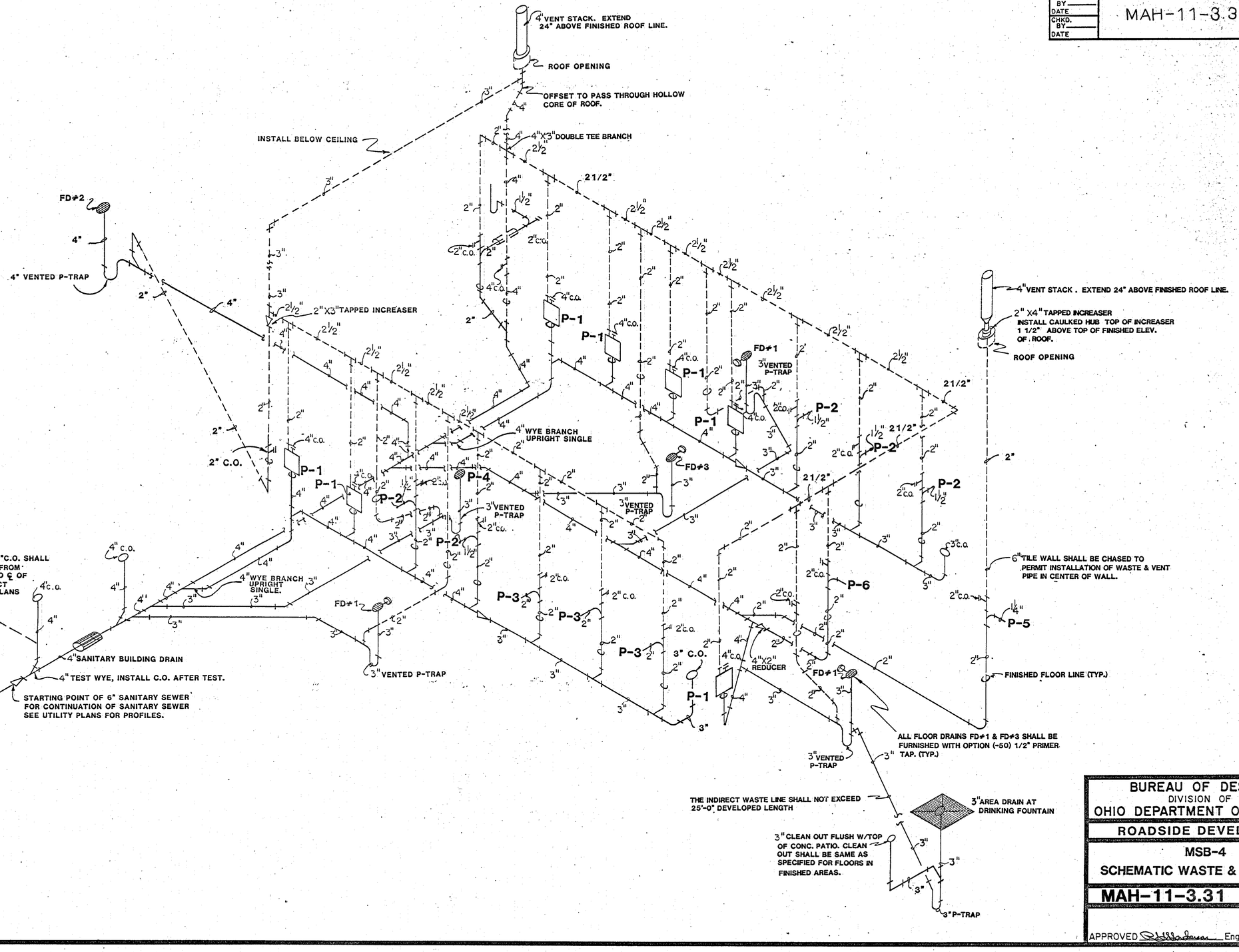
1. ALL PIPING SHALL BE TYPE "K" HARD COPPER, UNLESS OTHERWISE NOTED.
2. ALL FIXTURES SHALL BE FURNISHED WITH STOP VALVES.
3. NIPPLES AT ALL FIXTURES SHALL BE CHROME PLATED BRASS.
4. ALL HOSE THREAD CONNECTIONS SHALL BE FURNISHED WITH NON-REMOVABLE VACUUM BREAKERS.



BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT	DATE 8-22-86 4-13-92
MSB-4 SCHEMATIC WATER	
APPROVED _____ Engr. of Design Services	4P-2

CALC. BY		MAH-11-3.31	OHIO	49
DATE			FHWA REGION 5	73
CHKD. BY				
DATE				



BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

DATE 8-20-86 4-13-92

MSB-4

SCHEMATIC WASTE & VENT PIPING

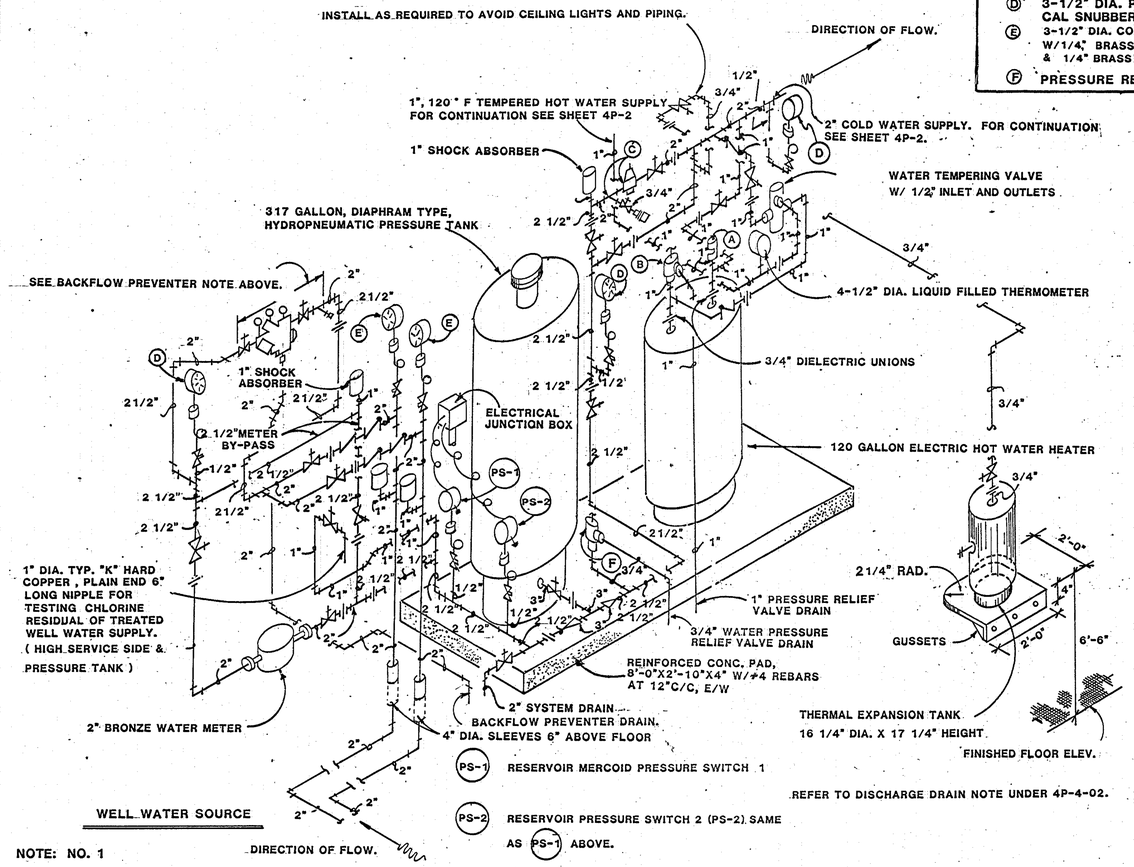
MAH-11-3.31

APPROVED _____ Engr. of Design Services

4P-3

WATTS REGULATOR CO. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER NO. 909S SERIES, SIZE 2" DIA. W/ AIR-IN/WATER-OUT DESIGN PRINCIPAL, W/ BRONZE STRAINER, (NRS) GATE VALVES, BRONZE BODY, BALL VALVE TEST COCKS, MODULAR DESIGN REPLACEABLE SEATS, HORIZONTAL INSTALLATION, NPT CONNECTIONS& MEETING THE FOLLOWING STANDARDS: A.S.S.E. NO. 1013, AWWA C506, CSA B64.4, FCCCHR OF USC MANUAL SECTION 10, U.L. CLASSIFIED FILE NO. EX 3185. ACCEPTED BY IAPMO (UPC), SBCCI (STANDARD PLUMBING CODE) OR AN APPROVED EQUAL. FURNISH W/ A WATTS NO. 909 SERIES AIR-GAP, WATTS NO. 909-AG-F, 2" DIA. DRAIN OUTLET SIZE.

- (A) 1" DIA. VACUUM RELIEF VALVE
- (B) PRESSURE & TEMP. RELIEF VALVE
- (C) 2" DIA. WATER PRESSURE REDUCING VALVE
- (D) 3-1/2" DIA. PRESSURE GAUGE W/TYPICAL SNUBBER ASSEMBLY
- (E) 3-1/2" DIA. COMPOUND PRESSURE GAUGE W/1/4" BRASS PIGTAIL 1/4" SNUBBER, & 1/4" BRASS TEE HANDLE COCK
- (F) PRESSURE RELIEF VALVE



(PS-1) RESERVOIR MERCOID PRESSURE SWITCH 1

(PS-2) RESERVOIR PRESSURE SWITCH 2 (PS-2) SAME AS (PS-1) ABOVE.

REFER TO DISCHARGE DRAIN NOTE UNDER 4P-4-02.

WELL WATER SOURCE

NOTE: NO. 1

AMTROL INC. AST EXTROL THERMAL EXPANSION ABSORBER TANK CONSTRUCTED PER ASME - CODE - SECTION VIII (LATEST ADDITION), W/ MAX. ALLOWABLE WORKING PRESSURE 125 PSI , CAT. NO. AST - 30 W/ MAX. ACCEPTED VOLUME = 10.0 GALS. AND TOTAL VOLUME = 12.5 GALS., FACTORY AIR CHARGED AT 55 PSIG, TOTAL TANK VOLUME REQUIRED = 7.86 GALS., OR APPROVED EQUALS. THIS SHALL BE INSTALLED TO COMPLY TO OHIO BASIC BUILDING CODE, CHAPTER 4101 : 2 - 51 PLUMBING, ITEM 4101 : 2 - 51 - 30 SAFETY DEVICES, PARAGRAPH (E).

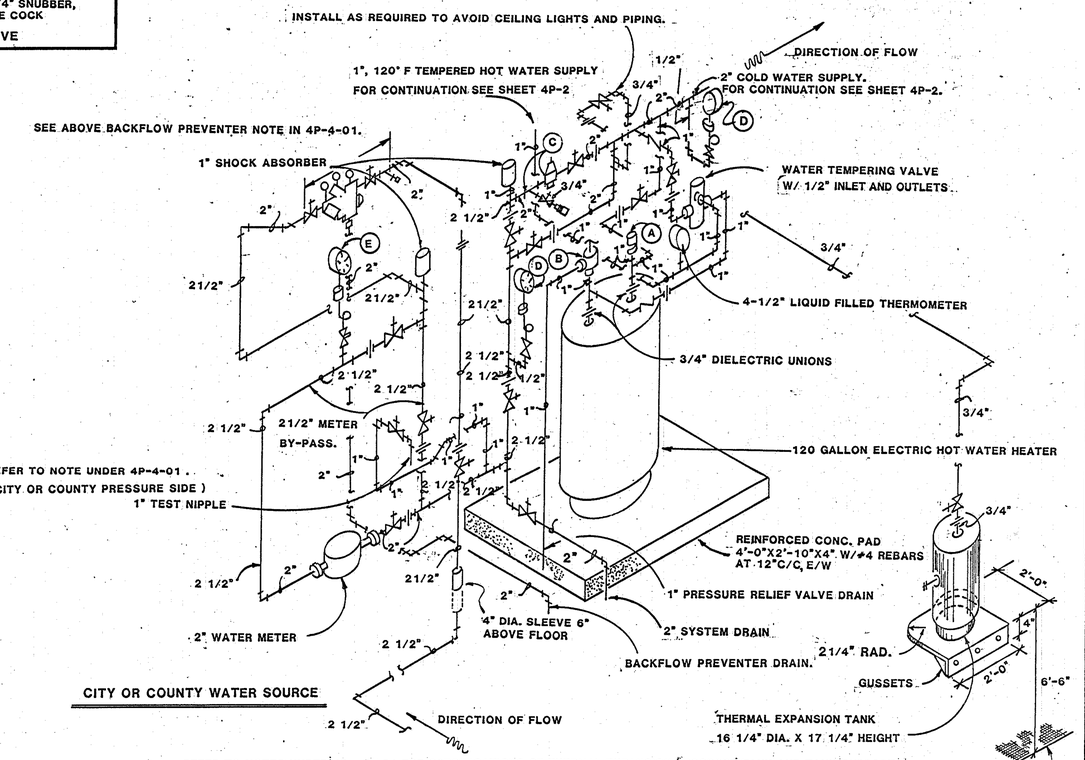
NOTE: NO. 2

TANK SUPPORT SHALL BE WELD FABRICATED FROM HOT ROLLED 1/4" STEEL PLATE , 10.20 LBS./SQ. FT. W/ 24" X 24" SQUARE TOP SURFACE W/ 2 1/4" RADIUS CORNERS ON THE FRONT AND A 24" X 4" MOUNTING BACK W/ 1/4" STEEL GUSSET PLATES AT EACH SIDE . GROUND ALL WELDS SMOOTH. FURNISH BACK PLATE W/ (3) EQUALLY SPACED 1/2" DIA. HOLES. MOUNT TO WALL W/ HILTI SLEEVE ANCHORS ITEM NO. 000660266 SLV ANCHOR HX 1/2 - 2 1/4, BOLT DIA. 3/8" - HEX HEAD. USE TE - C 1/2 -6 DRILL BIT FOR HOLES IN TILE WALL.

4P-4-01
WELL WATER SYSTEM

NOTES:

1. FOR NAMES OF APPROVED MANUFACTURERS FOR ITEMS NOTED HEREON REFER TO SPECIFICATIONS.
2. REVERSE POSITION OF PLUMBING LINES MAY BE REQUIRED DUE TO DOOR RELOCATION & EQUIPMENT REPLACEMENT . ALSO SITE CONDITIONS. CHECK SITE PLANS & MAKE ALL CORRECTIONS AS REQUIRED.
3. ALL UNVENTED FLOOR DRAINS SHALL NOT EXCEED 10 '-0" IN DEVELOPED LENGTH.



CITY OR COUNTY WATER SOURCE

REFER TO NOTES UNDER 4P - 4 -01 FOR SPECIFICATIONS OF THERMAL EXPANSION ABSORBER TANK AND TANK SUPPORT.

NOTE : ALL DISCHARGE DRAIN LINES SHALL HAVE AMINIMUM 2" AIR-GAP BETWEEN END OF DISCHARGE & TOP ELEV. OF FLOOR DRAIN. ALL DISCHARGE DRAIN LINES SHALL BE SECURELY ANCHORED.

4P-4-02
PUBLIC WATER SYSTEM

SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

MSB-4
PUBLIC & WELL WATER SYSTEMS

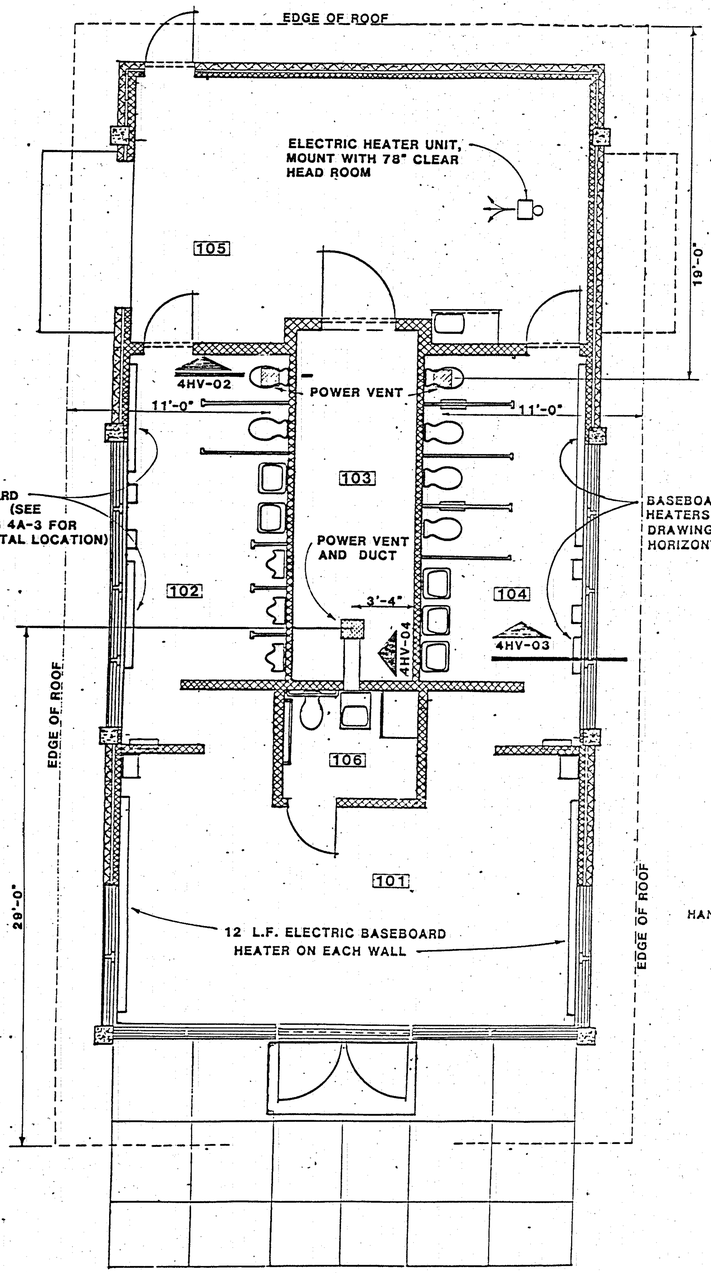
MAH-11-3.31

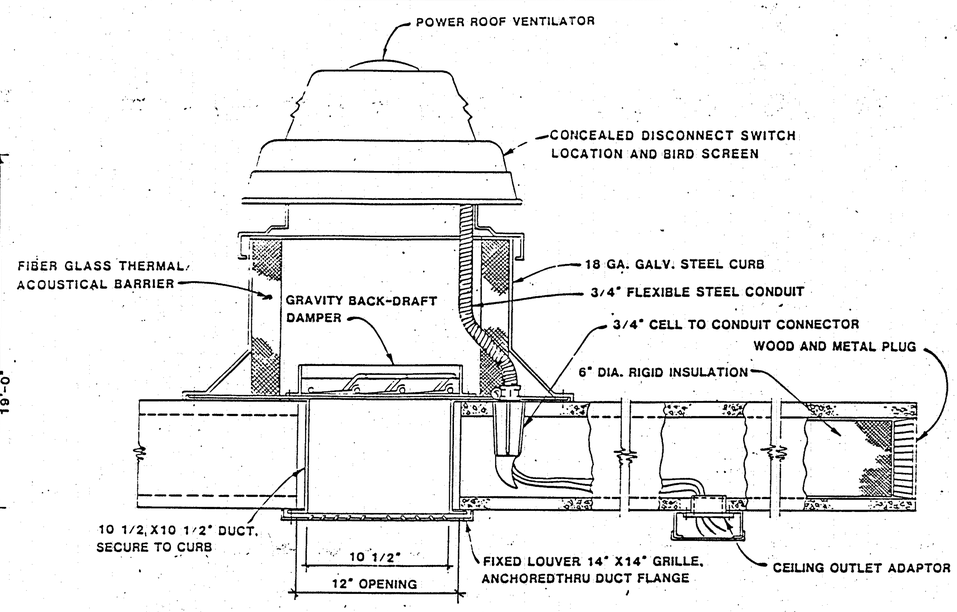
DATE 5/2/85, 8/26/86, 12-12-89, 4-13-92

4P-4

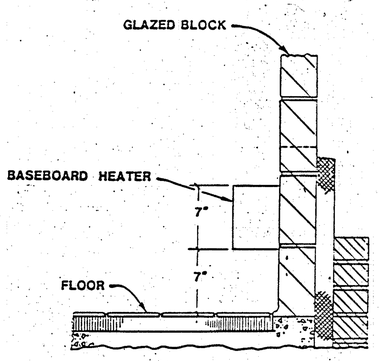
APPROVED Engr. of Design Services

CALC. BY / DATE	MAH-11-3.31	OHIO	51
CHKD. BY / DATE		FHWA REGION 5	73

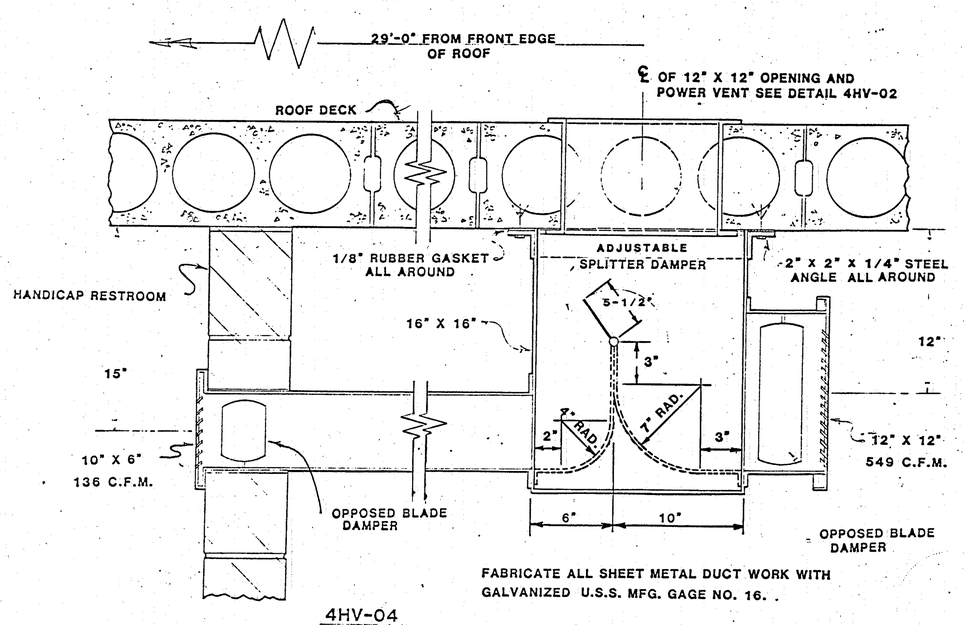




4HV-02
POWER VENTILATOR ROOMS 102 & 104
SCALE: 3/16"=1"

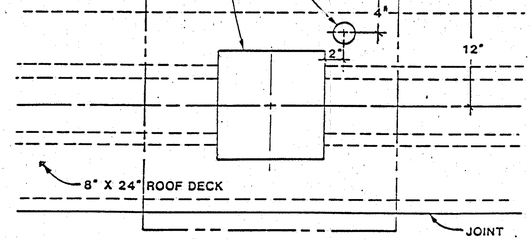


4HV-03
SECTION THRU WALL
SCALE: 1 1/2"=1'-0"



FABRICATE ALL SHEET METAL DUCT WORK WITH GALVANIZED U.S.S. MFG. GAGE NO. 16. .

4HV-04
POWER VENT AND DUCT
ROOMS 103 AND 106 SCALE 3/16" = 1"



4HV-01
VENTILATOR OPENING
SCALE: 1 1/2"=1'-0"

SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

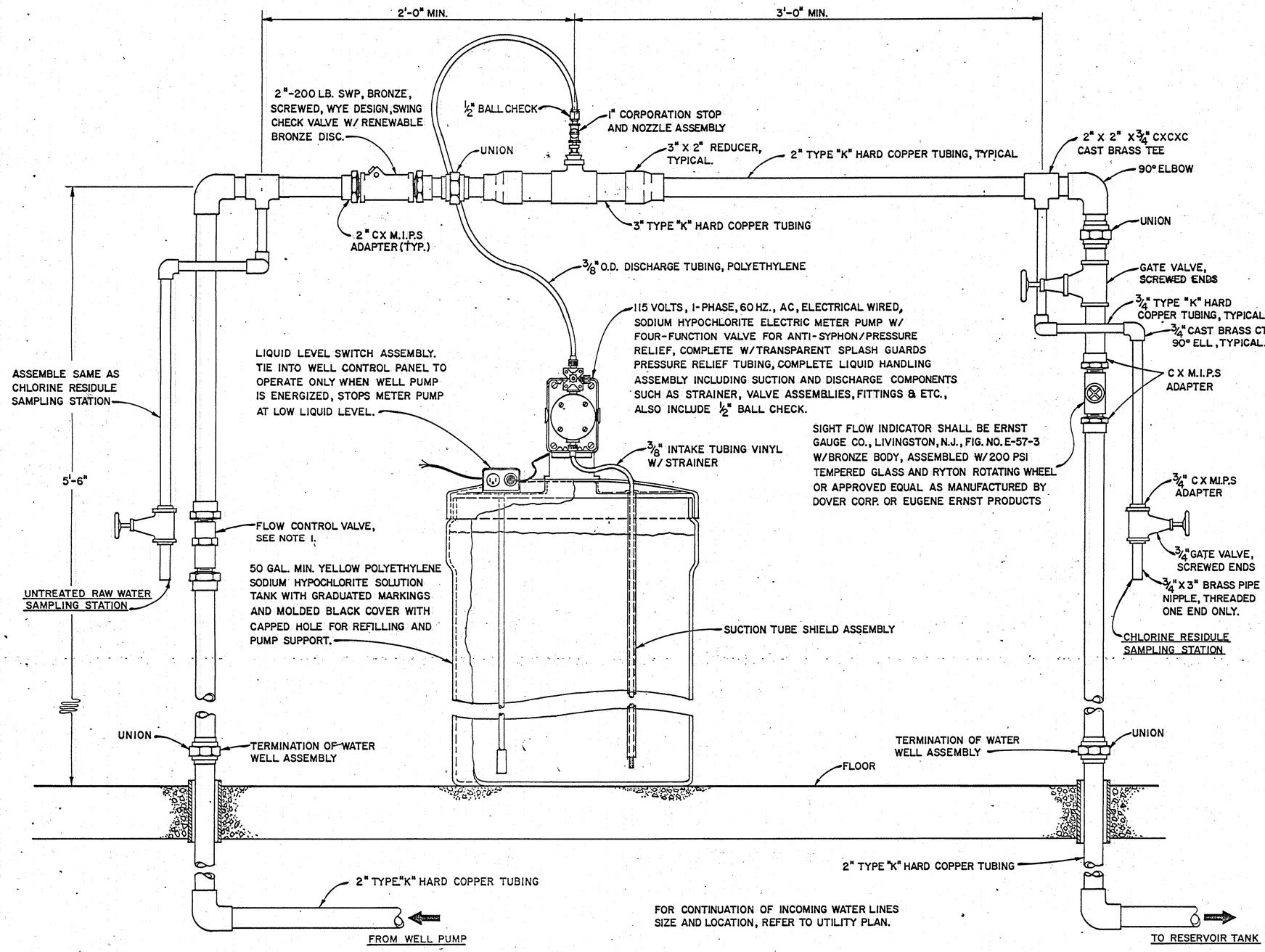
ROADSIDE DEVELOPMENT

DATE 5/2/85 8/11/86 3/2/87

MSB-4
HEATING AND VENTILATION

APPROVED _____ Engr. of Design Services

4 HV



NOTES

1. NORTH BOUND REST AREA - INSTALL A DOLE VALVE CO. FLOW CONTROL VALVE NO. 6V-15 WITH 15 G.P.M. FLOW, 1" F.N.P.T. INLET AND OUTLET, FOR GENERAL USE, NICKEL PLATED.
   SOUTH BOUND REST AREA - INSTALL A DOLE VALVE CO. FLOW CONTROL VALVE NO. 6V-15 WITH 15 G.P.M. FLOW, 1" F.N.P.T., FOR GENERAL USE, NICKEL PLATE.
   APPROVED EQUAL SHALL BE AS MANUFACTURED BY GRISWOLD CONTROLS OR AN APPROVED EQUAL.
2. ONLY 5¼% OR 15% UNDILUTED LIQUID, SODIUM HYPOCHLORITE SOLUTION SHALL BE USED IN THIS SYSTEM. THE SYSTEM MUST BE MAINTAINED AT A MINIMUM OF ⅓ FULL OR COMPLETLY FILLED (17 TO 50 GALLONS) TO FUNCTION PROPERLY.
3. THE PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL 50 GALLONS OF UNDILUTED SODIUM HYPOCHLORITE SOLUTION AND REGULATE METER AND TEST FOR REQUIRED CHLORINE RESIDULE PER ENGINEERS APPROVAL.
4. THE SODIUM HYPOCHLORITE CHLORINATOR SYSTEM IS BASED ON ALL EQUIPMENT AND APPURTENANCES AS SPECIFIED AND/OR SHOWN ON PLANS, AS MANUFACTURED BY LIQUID METRONIC INCORPORATED. LIKE EQUIPMENT AND APPURTENANCES AS MANUFACTURED BY HVC COMPANY OF CINCINNATI (PROMINENT PUMP UNIT) OR APPROVED EQUAL MAY BE SUBMITTED, SUBJECT TO TO ENGINEERS APPROVAL.
5. M.I.P.S. X C. ADAPTER SHALL BE ADJACENT TO ALL VALVES, UNIONS AND SPECIAL DEVICES.
6. REFER TO PLAN SHEET RRA-7 FOR RELOCATION AND INSTALLATION OF DOLE FLOW CONTROL VALVE (S) SHOWN ON THIS PLAN SHEET.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

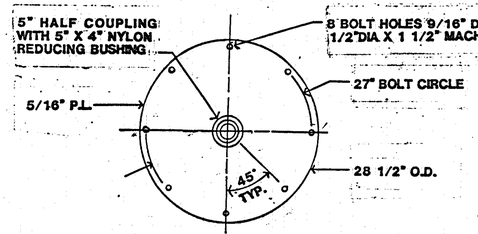
ROADWAY DEVELOPMENT

DATE: 8-14-84, 6/4/91

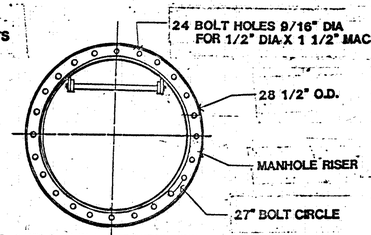
WATER SYSTEM
HYPOCHLORINATOR

RRA-8

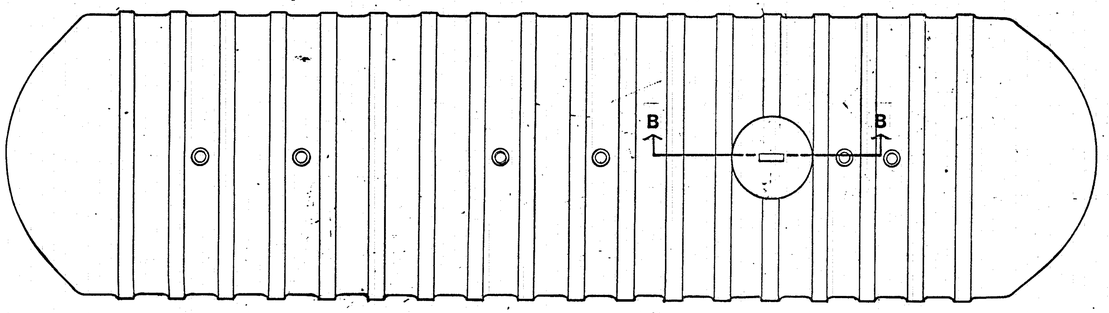
APPROVED _____ Engr. of Design Services



MANHOLE COVER

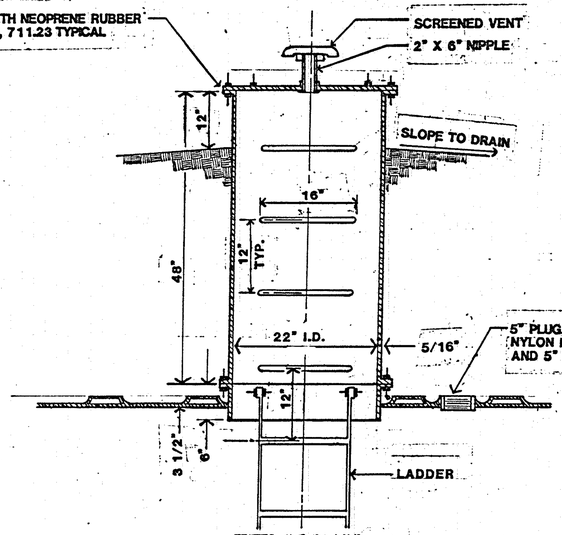


MANHOLE NECK RING

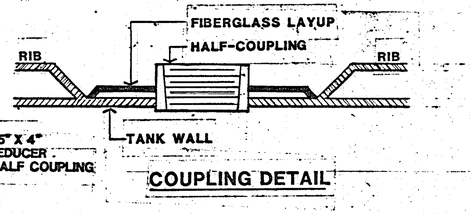


TANK PLAN VIEW

GUY CABLES, CONCRETE PAD AND TRENCH DETAILS ARE OMITTED FROM THIS VIEW.

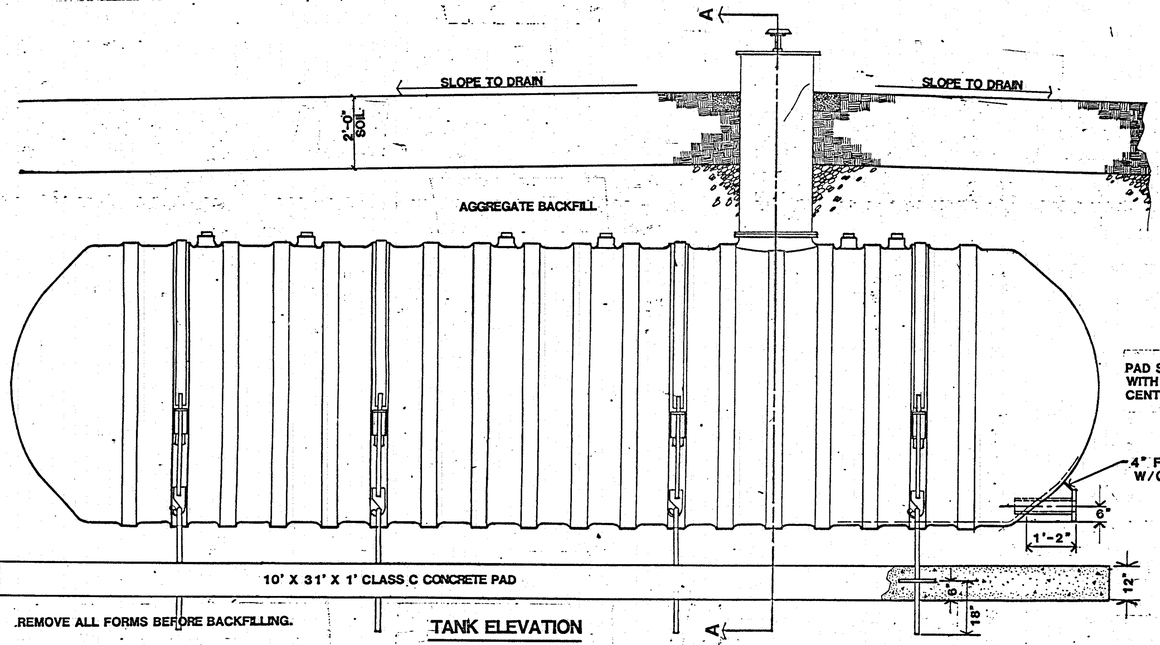


SECTION B-B



COUPLING DETAIL

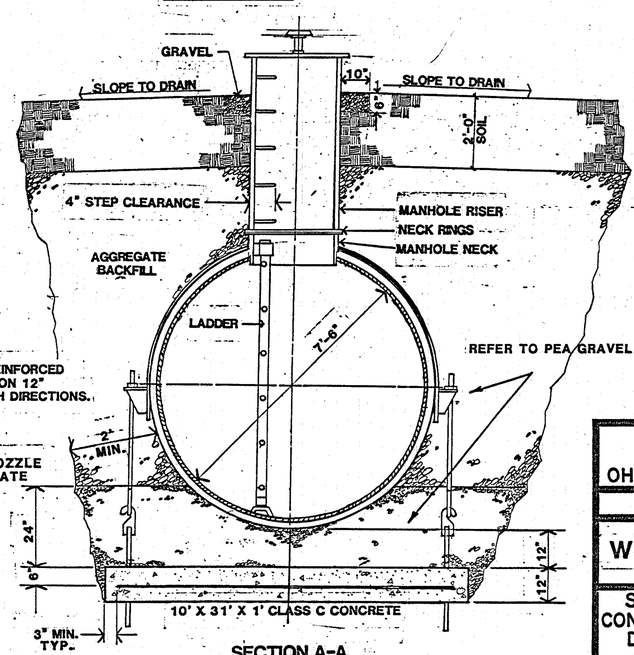
5" PLUG, 5" X 4" NYLON REDUCER AND 5" HALF COUPLING



REMOVE ALL FORMS BEFORE BACKFILLING.

TANK ELEVATION

PAD SHALL BE REINFORCED WITH NO. 4 BARS ON 12" CENTERS IN BOTH DIRECTIONS.



SECTION A-A

REFER TO PEA GRAVEL BACKFILL SPECIFICATIONS ON PLAN SHEET RRA-10

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

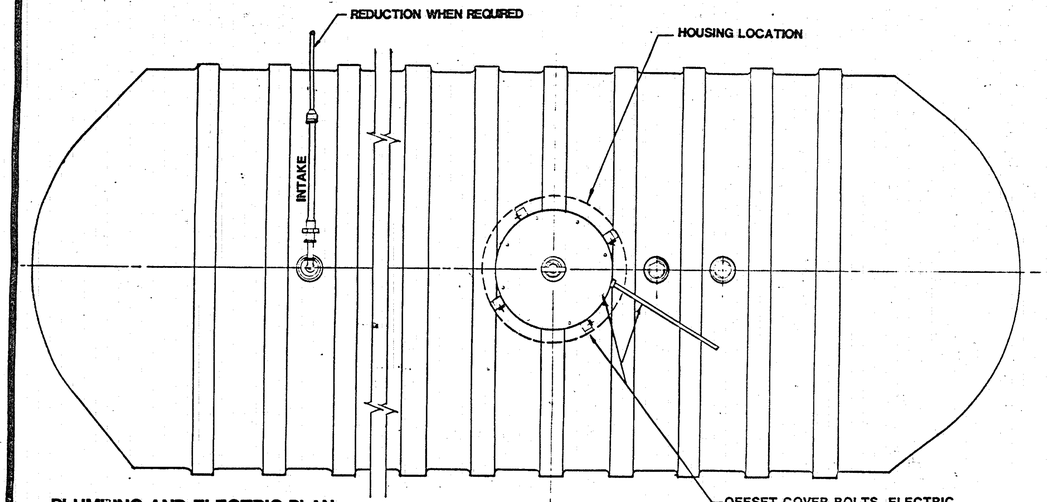
DATE 10-2-90

WATER RESERVOIR TANK

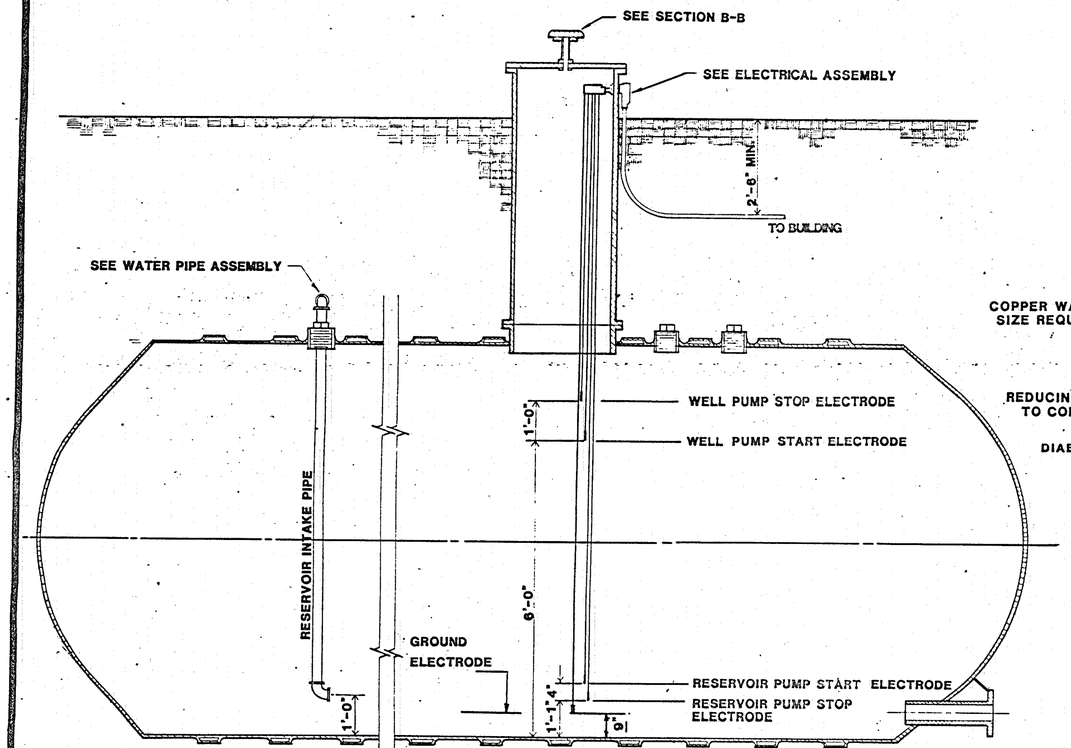
STANDARD CONSTRUCTION DRAWING

RRA-9B
SHEET 1 OF 2

APPROVED _____ Engr. of Design Services



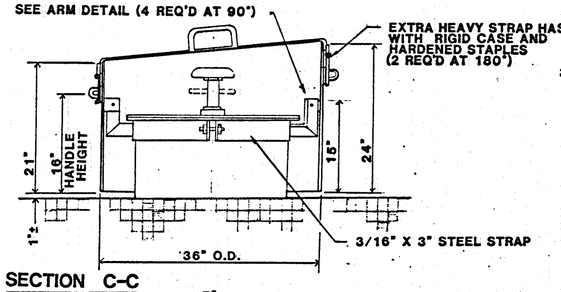
PLUMBING AND ELECTRIC PLAN



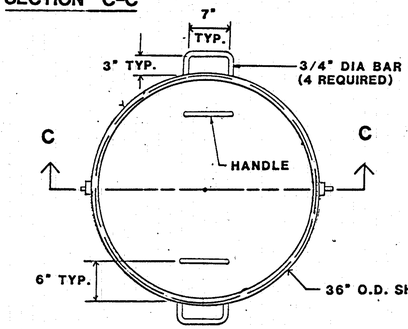
PLUMBING AND ELECTRICAL SECTION

MANHOLE HOUSING DETAILS

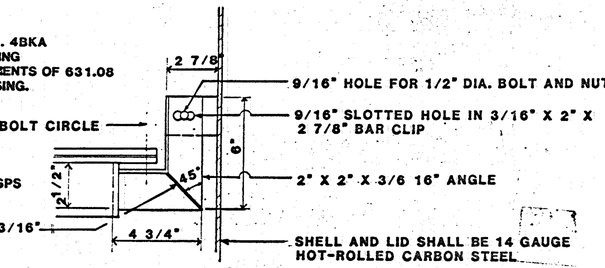
- WELDS: ARMS , BARS CLIPS, HANDLES, HASPS AND STAPLES SHALL BE FILLET WELDED ALL AROUND.
- SHELL AND LID SHALL BE COATED INSIDE AND OUTSIDE WITH RED OXIDE PRIMER (708.19) AND GREEN FINISH PAINT (708.19)
- ARMS SHALL BE COVERED BY THE SAME OUTSIDE COATING REQUIRED ON THE MANHOLE AND MANHOLE COVER.
- TWO PADLOCKS EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNON 660 AND MEETING THE CORROSION AND KEYING REQUIREMENTS OF 631.08 SHALL BE FURNISHED WITH EACH HOUSING.



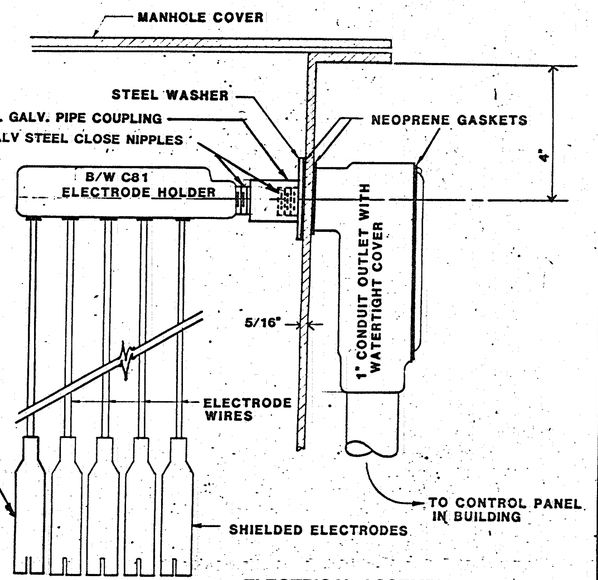
SECTION C-C



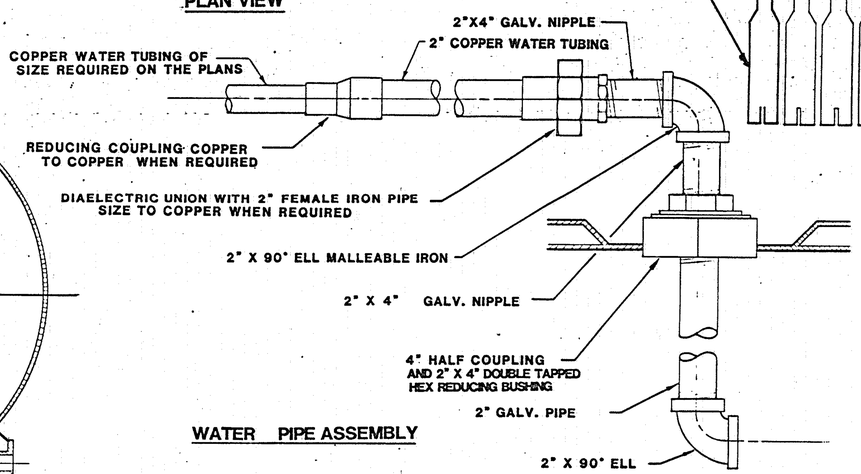
PLAN VIEW



ARM DETAIL



ELECTRICAL ASSEMBLY



WATER PIPE ASSEMBLY

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

DATE 10-2-90

WATER RESERVOIR TANK

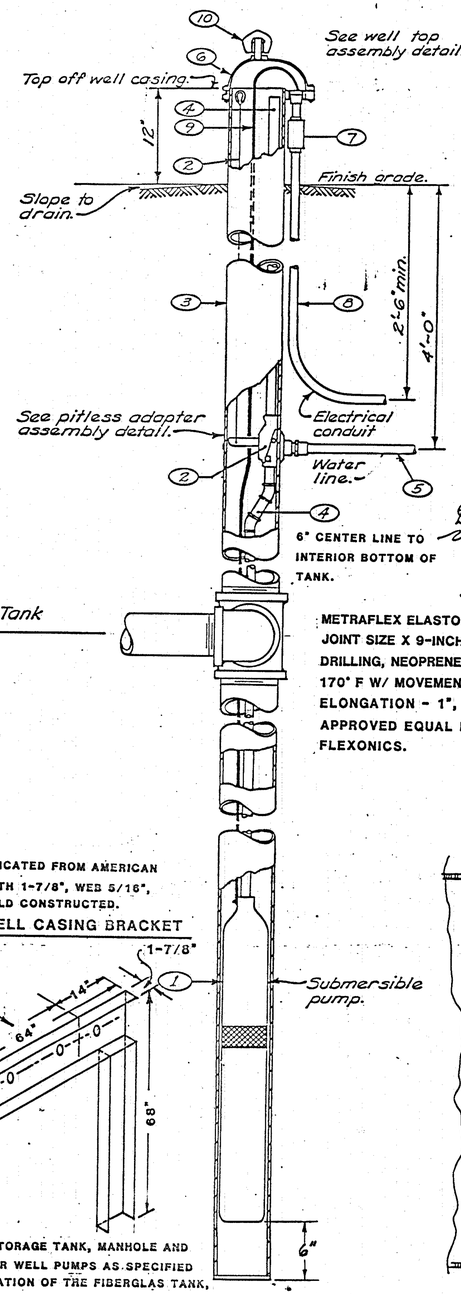
STANDARD CONSTRUCTION DRAWING

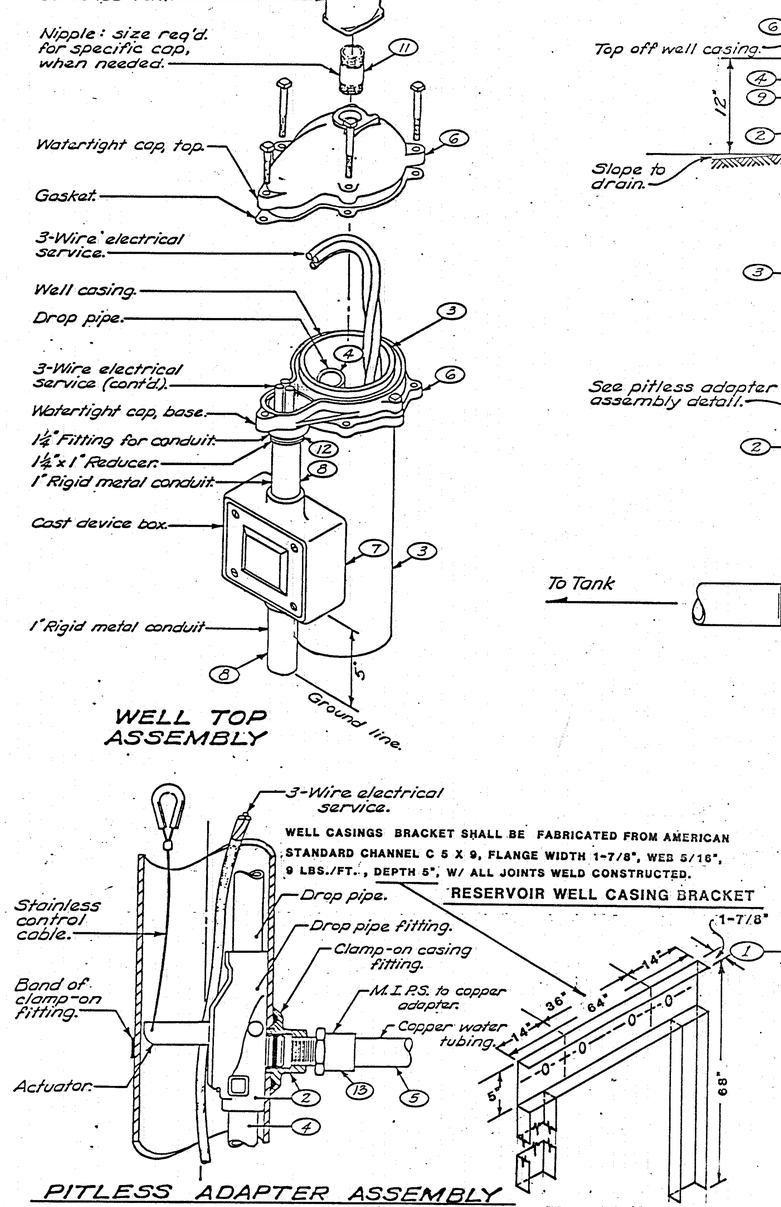
RRA-9C
SHEET 2 OF 2

APPROVED _____ Engr. of Design Services

FURNISH & INSTALL TWO (2) STEEL, PLAIN FINISH, ELCEN NO. 43, 6" PIPE SIZE PIPE CLAMP HOLD-DOWNS, STOCK SIZE 1/4" X 1-1/2" W/ 9/16" DIA. BOLT HOLES 9-1/4" ON CENTERS, COMPLETE W/ AMERICAN STANDARD STEEL, CADMIUM PLATED HEXAGON HEAD, GRADE-5 BOLTS, SIZE 3/4" DIA. X 2-1/4" LONG W/ STEEL, CADMIUM PLATED NUTS & FLAT WASHERS. EACH BOLT SHALL BE DOUBLE NUTTED. 9/16" DIA. BOLT HOLES SHALL BE ENLARGED TO 13/16" DIA. APPROVED EQUALS SHALL BE AS MANUFACTURED BY FEE & MASON OR ITT GRINNELL.

WELL TOP ASSEMBLY



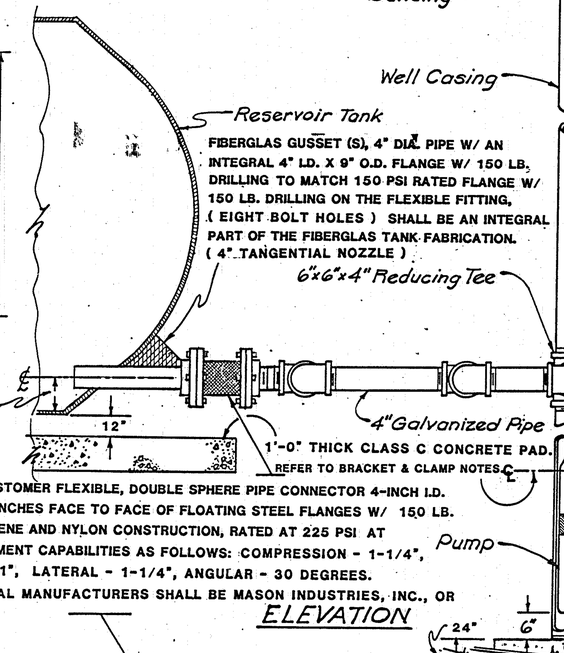


WELL CASINGS BRACKET SHALL BE FABRICATED FROM AMERICAN STANDARD CHANNEL C 5 X 9, FLANGE WIDTH 1-7/8", WEB 5/16", 9 LBS./FT., DEPTH 5", W/ ALL JOINTS WELD CONSTRUCTED.

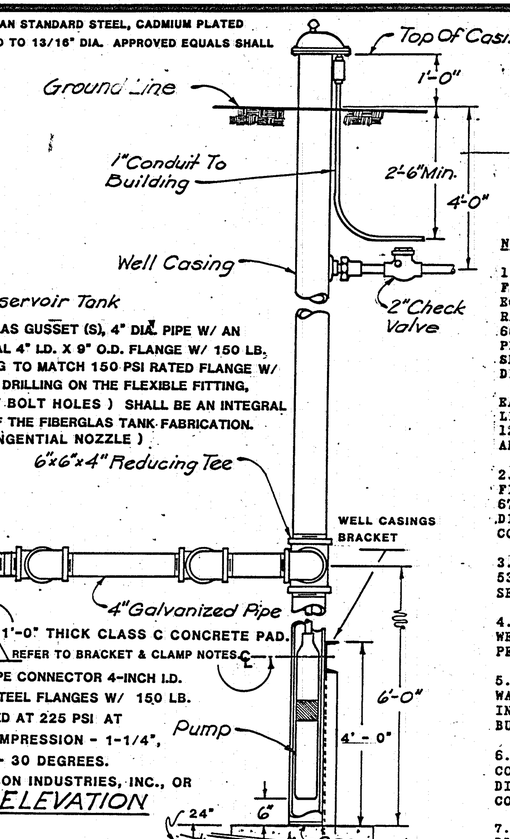
RESERVOIR WELL CASING BRACKET

PITLESS ADAPTER ASSEMBLY

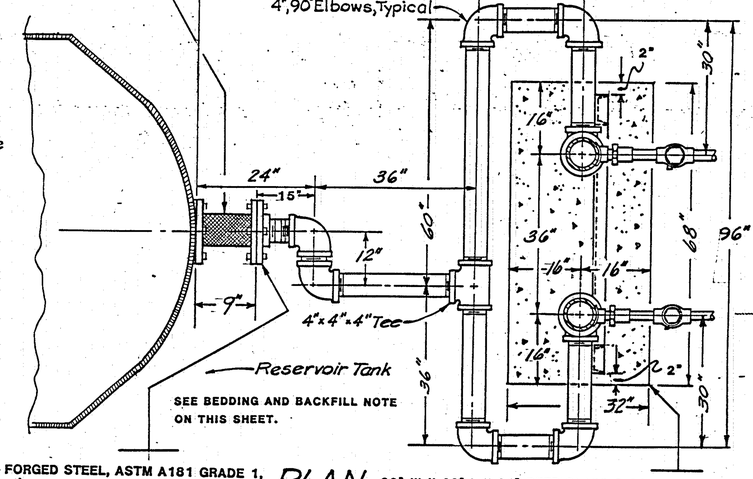
THE GENERAL CONTRACTOR SHALL FURNISH AND INSTALL THE FIBERGLAS UNDERGROUND STORAGE TANK, MANHOLE AND MANHOLE COVER AND ETC., AND CLASS C CONCRETE BASE PADS FOR TANK AND RESERVOIR WELL PUMPS AS SPECIFIED AND/OR SHOWN ON PLANS. ALL EXCAVATION AND BACKFILL REQUIRED FOR THE INSTALLATION OF THE FIBERGLAS TANK, CONCRETE BASE PADS FOR THE TANK AND ADJACENT PIPE ASSEMBLY SHALL BE PERFORMED BY THE GENERAL CONTRACTOR. BEDDING AND BACKFILL SHALL BE PEA-GRAVEL TYPE MATERIAL. A WASHED CLEAN NATURALLY ROUNDED AGGREGATE OF 1/4" NOMINAL SIZE, RANGING FROM 1/8" TO 1/2" DIAMETER, MEETING ASTM C-33, 3 % PASSING A NO. 8 SEIVE,, MAY BE USED. DO NOT USE SAND OR DIRT BACKFILL.



METRAFLEX ELASTOMER FLEXIBLE, DOUBLE SPHERE PIPE CONNECTOR 4-INCH I.D. JOINT SIZE X 9-INCHES FACE TO FACE OF FLOATING STEEL FLANGES W/ 150 LB. DRILLING, NEOPRENE AND NYLON CONSTRUCTION, RATED AT 225 PSI AT 170° F W/ MOVEMENT CAPABILITIES AS FOLLOWS: COMPRESSION - 1-1/4", ELONGATION - 1", LATERAL - 1-1/4", ANGULAR - 30 DEGREES. APPROVED EQUAL MANUFACTURERS SHALL BE MASON INDUSTRIES, INC., OR FLEXONICS.



ELEVATION



SEE BEDDING AND BACKFILL NOTE ON THIS SHEET.

4" I.D. X 9" O.D. 150 PSI RATED, FORGED STEEL, ASTM A181 GRADE 1, RAISED FACE, N.P.S. THREADED W/ 3/4" DIA. MACHINE BOLTS AND NUTS (EIGHT (8) PER FLANGE)

PLAN

32" W X 68" L X 24" DEEP CLASS C CONCRETE BASE PAD FOR RESERVOIR WELL SUPPORT. SET TOP OF CONCRETE PAD AT PROPER ELEVATION.

MAH-11-3.31

55
73

NOTES

1. SUBMERSIBLE PUMP (2 REQ'D. PER REST AREA) SHALL BE F. E. MYERS COMPANY MODEL #SJF3021J3050 OR APPROVED EQUAL BY CRANE COMPANY, DEMING DIVISION, TATE AND RAPIDAYTON, PUMP SHALL BE 3 H.P., 230V, SINGLE PHASE, 60HZ, AND HAVE 3-WIRE MOTOR. THE MOTOR SHALL BE PROVIDED WITH A MAGNETIC ACROSS-THE-LINE STARTER AND SHALL BE INCLUDED IN THE CIRCUITRY OF THE WIRING DIAGRAM.

EACH PUMP INSTALLATION SHALL BE EQUIPPED WITH A LIGHTING ARRESTOR, SUCH AS F.E. MYERS COMPANY, NO. 12149A10; GENERAL ELECTRIC COMPANY, NO. 9L15BCC003 OR APPROVED EQUAL. GROUND SHALL BE CONNECTED TO CASING.

2. PITLESS ADAPTER ASSEMBLY WITH COMPRESSION SEAL FITTING BY BAKER MFG. CO., MONITOR DIVISION, NO. 4PS-67BN-S4-C4 (FOR 2" DROP PIPE) OR APPROVED EQUAL BY DICKEN MFG. CO.; DUPLEX MFG. CO. OR WILLIAMS PRODUCT COMPANY.

3. SIX INCH I.D. (6-5/8" O.D.) WELL CASING, ASTM A 53, GRADE B, STANDARD WEIGHT, SCHEDULE 40, GALVANIZED SEAMLESS STEEL PIPE AS PER 707.11.

4. 2 I.D. DROP PIPE, ASTM A 53, GRADE B, STANDARD WEIGHT, SCHEDULE 40, GALVANIZED SEAMLESS STEEL PIPE AS PER 707.11. INCREASERS AS REQUIRED.

5. 2 INCH (NOMINAL SIZE) TYPE "K" HARD DRAWN COPPER WATER TUBING PRESSURE LINE CONFORMING TO ASTM B88, RUN IN 20 FOOT LENGTHS TO HYDROPNEUMATIC PRESSURE TANK IN BUILDING.

6. WATER-TIGHT CAP FOR 6" WELL CASING BY BAKER MFG. CO., MONITOR DIVISION NO. 6W; OR APPROVED EQUAL BY DICKEN MFG. CO.; DUPLEX MFG. CO. OR WILLIAMS PRODUCT CO..

7. CAST DEVICE BOX WITH FULL-FACE NEOPRENE GASKET AND BLANK COVER BY APPLETON ELECTRIC CO., NO. FDCC-1-100; OR APPROVED EQUAL BY KILLARK ELECTRIC MFG. CO., CROUSE-HINES CO., KODU CORP. OR ADALET MFG. CO..

8. 1 INCH DIAMETER RIGID FERROUS METAL ELECTRICAL CONDUIT PER 713.04.

9. THREE-WIRE ELECTRICAL SERVICE.

10. SCREENED WELL VENT TO MATCH CHOSEN FROM NOTE 6 ABOVE.

11. NIPPLE, ASTM A 53, GRADE B, STANDARD WEIGHT, SCHEDULE 40, GALVANIZED SEAMLESS STEEL PIPE AS PER 707.11; IF REQUIRED FOR SPECIFIC CAP USED.

12. REDUCER (OF SIZE REQ'D), IF NEEDED FOR FERROUS METAL ELECTRICAL CONDUIT AS PER 713.04.

13. CAST BRASS MALE IRON PIPE SIZE TO COPPER ADAPTER AS PER ASTM B 16.18.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

DATE 10-2-90

RESERVOIR PUMP DETAILS

RRA-10

APPROVED _____ Engr. of Design Services

PLANT CAPACITY	TRASH TRAP	DETENTION FLOW EQUALIZATION TANK	SLUDGE STORAGE TANK	AERATION TANK	FINAL SETTLING TANK		FIX MEDIA CLARIFIER		DOSING TANK PUMP		SAND FILTER	CHLORINATION TANK
					SURFACE AREA	EFFECTIVE VOLUME	VOLUME	AREA	VOLUME	RATE		
GPD.	GAL.	GAL.	GAL.	GAL.	S.F.	GAL.	GAL.	S.F.	GAL.	G.P.M.	S.F.	VOLUME GALS.
4,000	650	2480	1000	4000	40	1000	647	18	304	83	162	341
5,000	750	3100	1000	5000	50	1250	1294	36	374	83	200	420
6,000	900	3720	1000	6000	60	1500	1294	36	454	83	242	509
7,000	1050	4340	1050	7000	70	1750	1294	36	524	83	280	588
8,000	1200	4960	1200	8000	80	2000	1294	36	600	83	321	673
9,000	1350	5580	1350	9000	90	2250	1294	36	682	83	365	764
10,000	1500	6200	1500	10000	100	2500	1294	36	760	83	406	851
12,000	1750	7440	1800	12000	105	3000	1294	36	900	83	481	1010
14,000	1950	8680	2100	14000	112	3500	1294	36	1060	83	567	1188
16,000	2100	9920	2400	16000	116	4000	1294	36	1212	83	648	1358
18,000	2250	11160	2700	18000	120	4500	1294	36	1350	83	722	1514
20,000	2400	12400	3000	20000	126	5000	1486	40	1496	83	800	1678

NOTE: THESE MINIMUM ACCEPTABLE CAPACITIES APPLY TO BOTH THE STEEL AND CONCRETE WASTEWATER TREATMENT PLANTS.

NOTE: ALL COMPONENTS OF THE PLANT SHALL BE AS DESCRIBED IN THE SPECIFICATIONS.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

MINIMUM ACCEPTABLE CAPACITIES

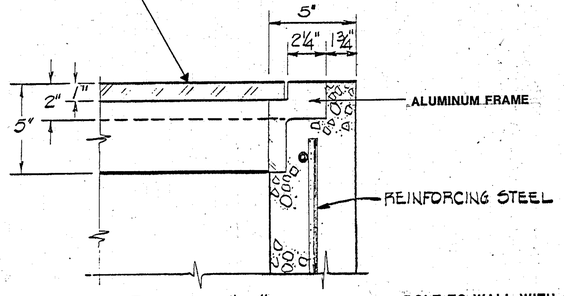
WWTP-1

DATE: 10/30/87, 4-17-91

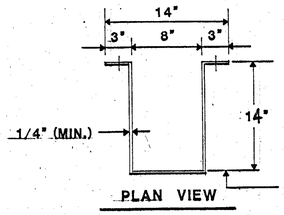
APPROVED _____ ENGR OF DESIGN SERVICES

1/13

ALUMINUM FRAME W/ ALUMINUM SOLID LID (30" CLEAR OPENING), NEENAH FOUNDRY CO. CAT. NO. R - 1799-0 OR LIKE KIND AND QUALITY BY APPROVED EQUAL MANUFACTURERS AS SPECIFIED. (TWO (2) EACH REQUIRED)

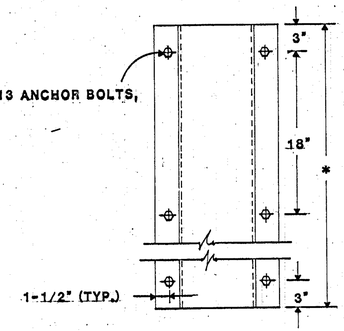


DETAIL "A"



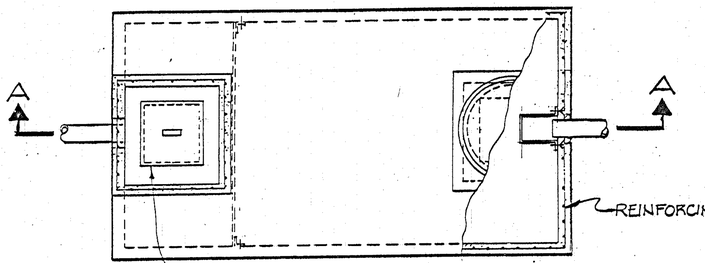
PLAN VIEW

BOLT TO WALL WITH 1/2" DIA. - 13 ANCHOR BOLTS, MIN. SIX (6) REQ.

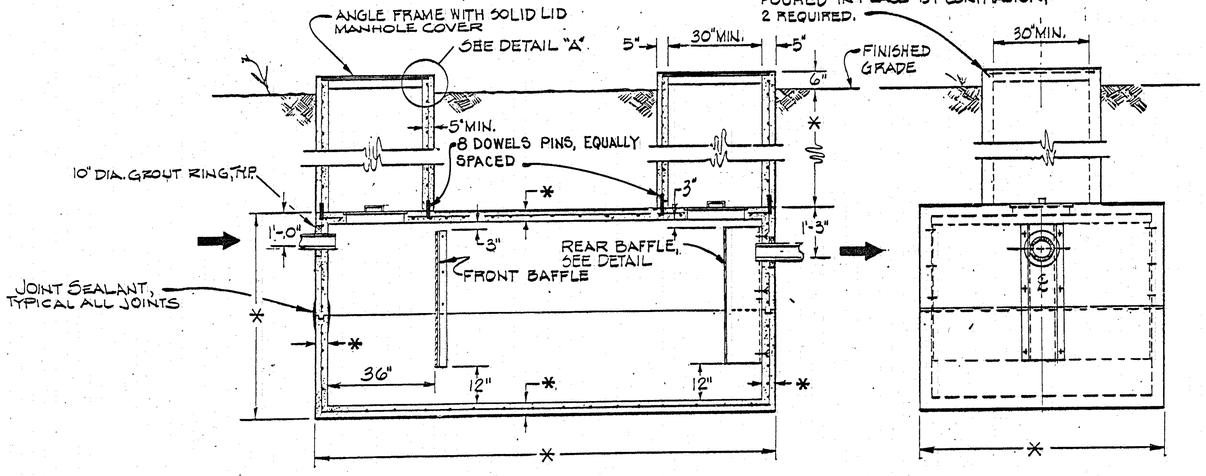


FRONT VIEW

REAR BAFFEL



REINFORCED CONCRETE MANHOLE RISER SHALL BE FORMED AND POURED IN PLACE BY CONTRACTOR, 2 REQUIRED.



SECTION A-A

NOTE: ALL COMPONENTS OF THE PLANT SHALL BE AS DESCRIBED IN THE SPECIFICATIONS.

*-DIMENSION TO BE SHOWN ON MANUFACTURERS SHOP DRAWINGS. FOR TANK CAPACITIES SEE SHEET WWTP-1

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

CONCRETE TRASH TRAP

WWTP-2

DATE 8/25/86, 12/11/86, 10/30/87, 11/21/88, 6/4/91

APPROVED _____ Engr. of Design Services

2/13

FINAL

WASTEWATER TREATMENT PLANT

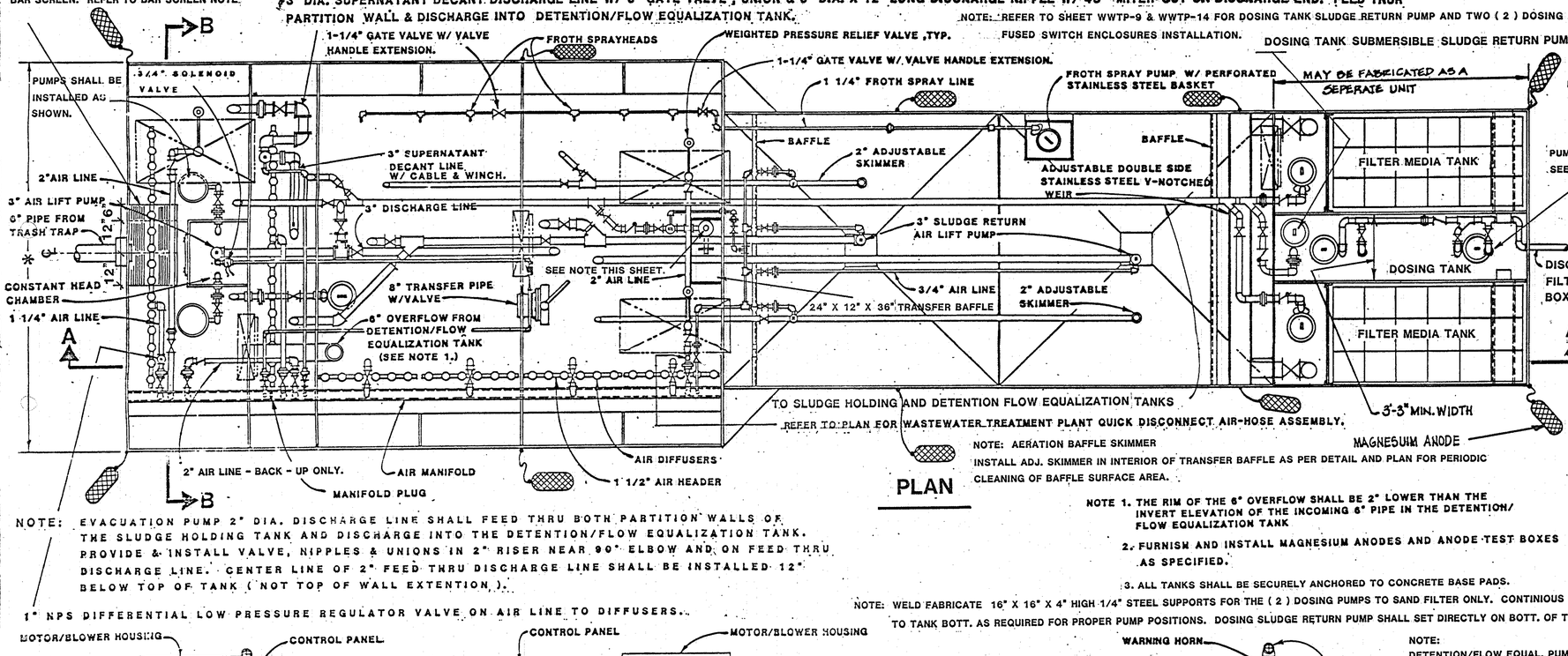
BAR SCREEN: REFER TO BAR SCREEN NOTE.

3" DIA. SUPERNATANT DECANT DISCHARGE LINE W/ 3" GATE VALVE, UNION & 3" DIA. X 12" LONG DISCHARGE NIPPLE W/ 45° MITER-CUT ON DISCHARGE END. FEED THUR PARTITION WALL & DISCHARGE INTO DETENTION/FLOW EQUALIZATION TANK.

NOTE: REFER TO SHEET WWTP-9 & WWTP-14 FOR DOSING TANK SLUDGE RETURN PUMP AND TWO (2) DOSING PUMP NEMA 4 FUSED SWITCH ENCLOSURES INSTALLATION.

DOSING TANK SUBMERSIBLE SLUDGE RETURN PUMP.

CHK'D BY		OHIO	58
DATE	MAH-11-3.31	FHWA REGN. 5	73
CHK'D BY			
DATE			



PLAN

NOTE: AERATION BAFFLE SKIMMER
INSTALL ADJ. SKIMMER IN INTERIOR OF TRANSFER BAFFLE AS PER DETAIL AND PLAN FOR PERIODIC CLEANING OF BAFFLE SURFACE AREA.

NOTE: EVACUATION PUMP 2" DIA. DISCHARGE LINE SHALL FEED THRU BOTH PARTITION WALLS OF THE SLUDGE HOLDING TANK AND DISCHARGE INTO THE DETENTION/FLOW EQUALIZATION TANK. PROVIDE & INSTALL VALVE, NIPPLES & UNIONS IN 2" RISER NEAR 90° ELBOW AND ON FEED THRU DISCHARGE LINE. CENTER LINE OF 2" FEED THRU DISCHARGE LINE SHALL BE INSTALLED 12" BELOW TOP OF TANK (NOT TOP OF WALL EXTENTION).

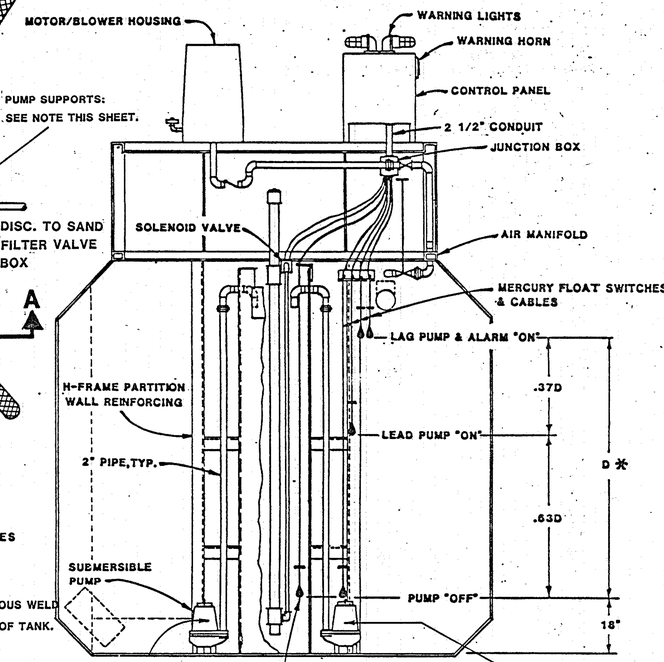
1" NPS DIFFERENTIAL LOW PRESSURE REGULATOR VALVE ON AIR LINE TO DIFFUSERS..

NOTE 1. THE RIM OF THE 6" OVERFLOW SHALL BE 2" LOWER THAN THE INVERT ELEVATION OF THE INCOMING 6" PIPE IN THE DETENTION/ FLOW EQUALIZATION TANK

2. FURNISH AND INSTALL MAGNESIUM ANODES AND ANODE TEST BOXES AS SPECIFIED.

3. ALL TANKS SHALL BE SECURELY ANCHORED TO CONCRETE BASE PADS.

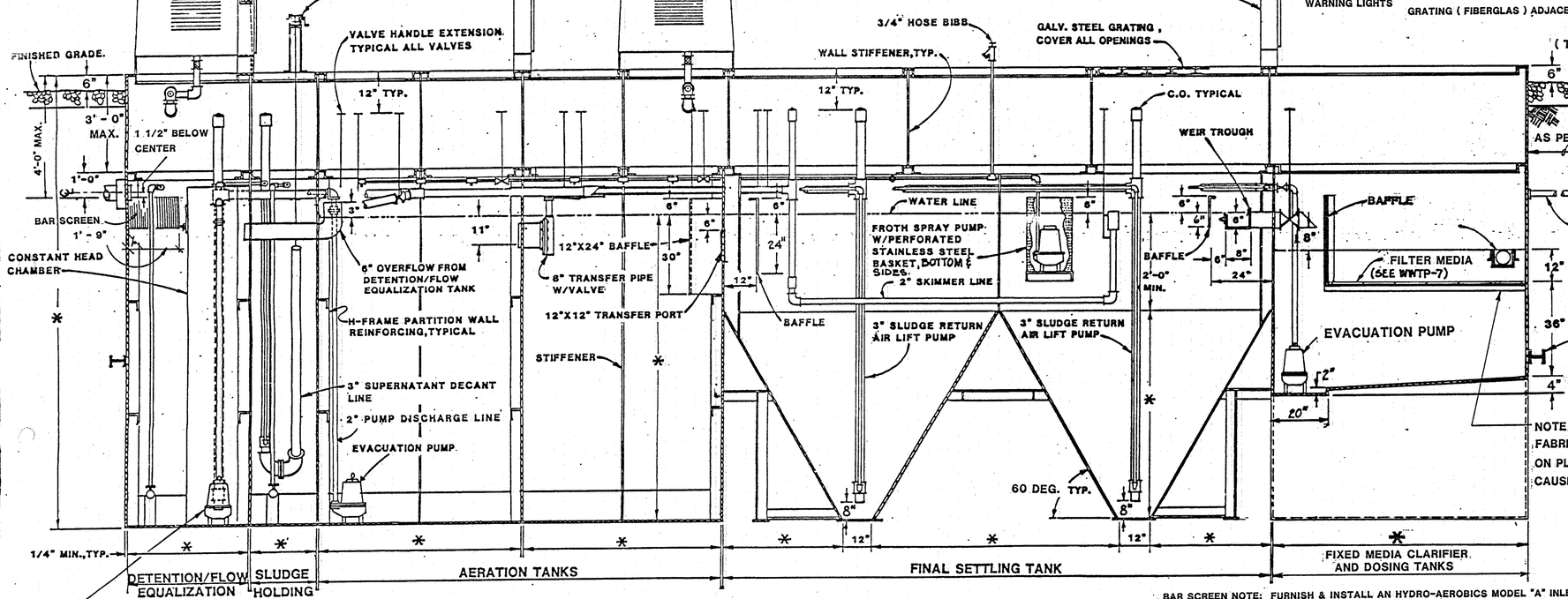
NOTE: WELD FABRICATE 16" X 16" X 4" HIGH 1/4" STEEL SUPPORTS FOR THE (2) DOSING PUMPS TO SAND FILTER ONLY. CONTINIOUS WELD TO TANK BOTT. AS REQUIRED FOR PROPER PUMP POSITIONS. DOSING SLUDGE RETURN PUMP SHALL SET DIRECTLY ON BOTT. OF TANK.



NOTE:
DETENTION/FLOW EQUAL. PUMPS SHALL BE INSTALLED AS INDICATED ON PLAN FOR EASE OF ACCESS & MAINTENANCE. PROVIDE SERVICE GRATING (FIBERGLAS) ADJACENT TO EACH PUMP.

RELOCATE PIPES & PUMPS IN SECTION " A-A " & " B-B " TO COMPLY WITH PLAN.

SECTION B-B

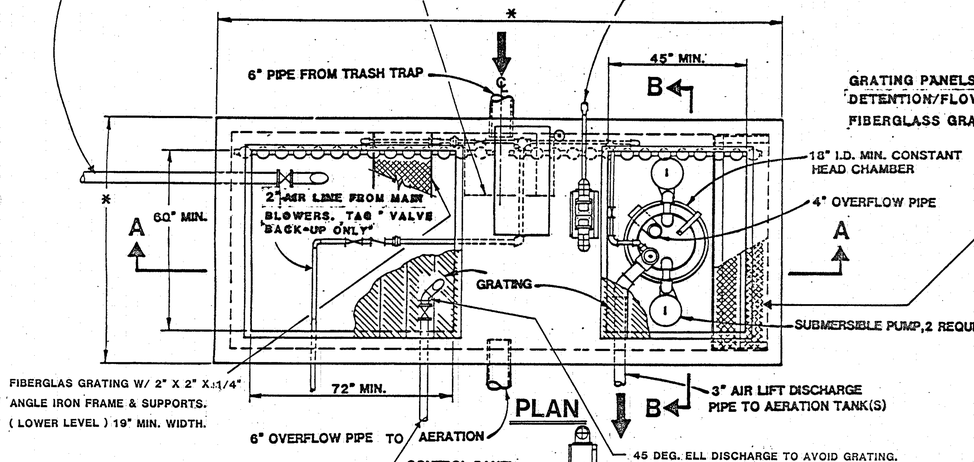

MOTOR/BLOWER HOUSING
CONTROL PANEL
DECANT WINCH
VALVE HANDLE EXTENSION TYPICAL ALL VALVES
CONTROL PANEL
MOTOR/BLOWER HOUSING
3/4" HOSE BIBB
GALV. STEEL GRATING, COVER ALL OPENINGS
WALL STIFFENER,TYP.
C.O. TYPICAL
WEIR TROUGH
FINISHED GRADE.
6"
3'-0" MAX.
4'-0" MAX.
1 1/2" BELOW CENTER
12" TYP.
12" TYP.
1'-0"
BAR SCREEN 1'-9"
CONSTANT HEAD CHAMBER
3"
11"
6"
6"
6

CHK BY		MAH-11-3.31	OHIO	59
DATE			FHWA REGION 5	73
CHKD BY				
DATE				

2" DIA GALV. STEEL SLUDGE RETURN AND / OR SUPERNATANT RETURN LINE FROM SLUDGE HOLDING TANK TO DETENTION FLOW EQUALIZATION TANK.

BAR SCREEN: REFER TO BAR SCREEN NOTE.

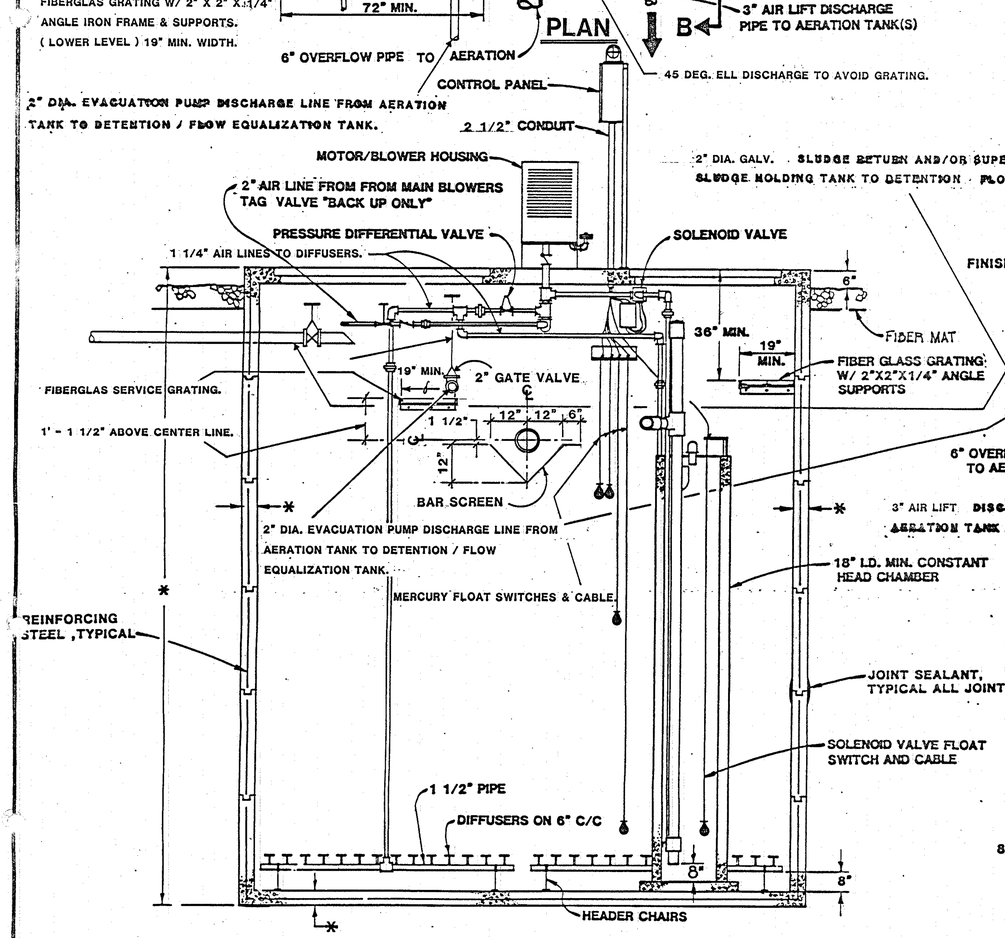
2 1/2" ELECTRICAL FEED TO CONTROL PANEL



*=DIMENSION TO BE SHOWN ON MANUFACTURERS SHOP DRAWINGS. FOR TANK CAPACITIES SEE SHEET WWTP-1

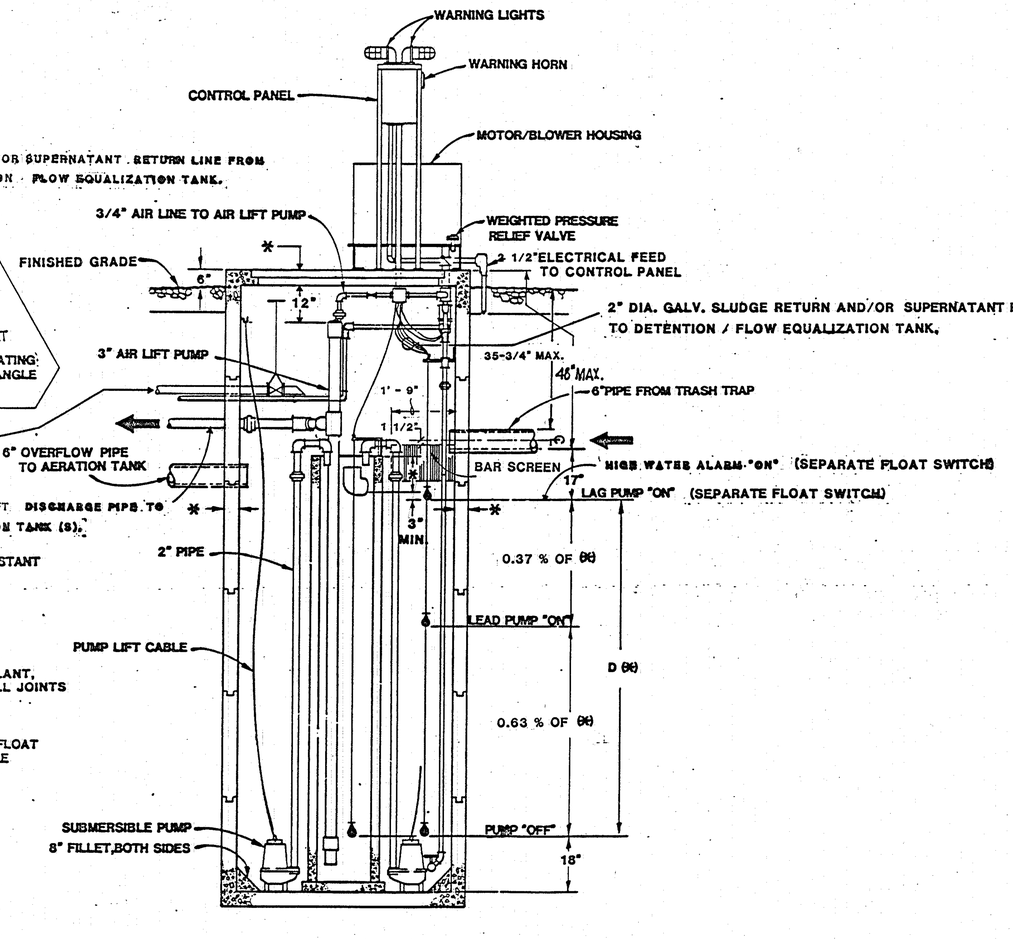
BAR SCREEN NOTE :

FURNISH & INSTALL AN HYDRO - AEROBICS MODEL " A " INLET BAR SCREEN OR APPROVED EQUAL, SIZE 24" L X 1' - 9" W X 12" DEEP W/ INTERGRAL 6" L X 1' - 9" W DRYING DECK, 1/2" DIA. BARS SLOPED & SPACED 1" APART. PROTECTIVE COATING SHALL BE SAME AS SPECIFIED FOR STEEL TANKS . SECURE TO CONCRETE WALL AS REQUIRED.



SECTION A-A

2" DIA. GALV. SLUDGE RETUEN AND/OR SUPERNATANT RETURN LINE FROM SLUDGE HOLDING TANK TO DETENTION FLOW EQUALIZATION TANK.



SECTION B-B

NOTE: ALL COMPONENTS OF THE PLANT SHALL BE AS DESCRIBED IN THE SPECIFICATIONS.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

CONCRETE DETENTION/ FLOW EQUALIZATION TANK

WWTP-4

APPROVED _____ Engr. of Design Services

DATE
8/25/86
12/15/90
CANCELLED
11/21/08
12-12-89
6/4/91
4-21-92

4/13

NOTE: IN LIEU OF THE TWO (2) FINAL SETTLING TANKS SHOWN ON PLANS, THE GENERAL CONTRACTOR SHALL HAVE THE OPTION TO PROVIDE ONE (1) TANK. THE ONE TANK SHALL MEET OR EXCEED THE SPECIFIED SQUARE FEET OF USABLE SURFACE AREA AND GALLONS OF EFFECTIVE VOLUME. THE ONE TANK SHALL BE FURNISHED WITH TWO (2) SLOPED HOPPERS IN THE BOTTOM OF THE TANK.

CALC BY | DATE | CHKD BY | DATE

MAH-11-3.31

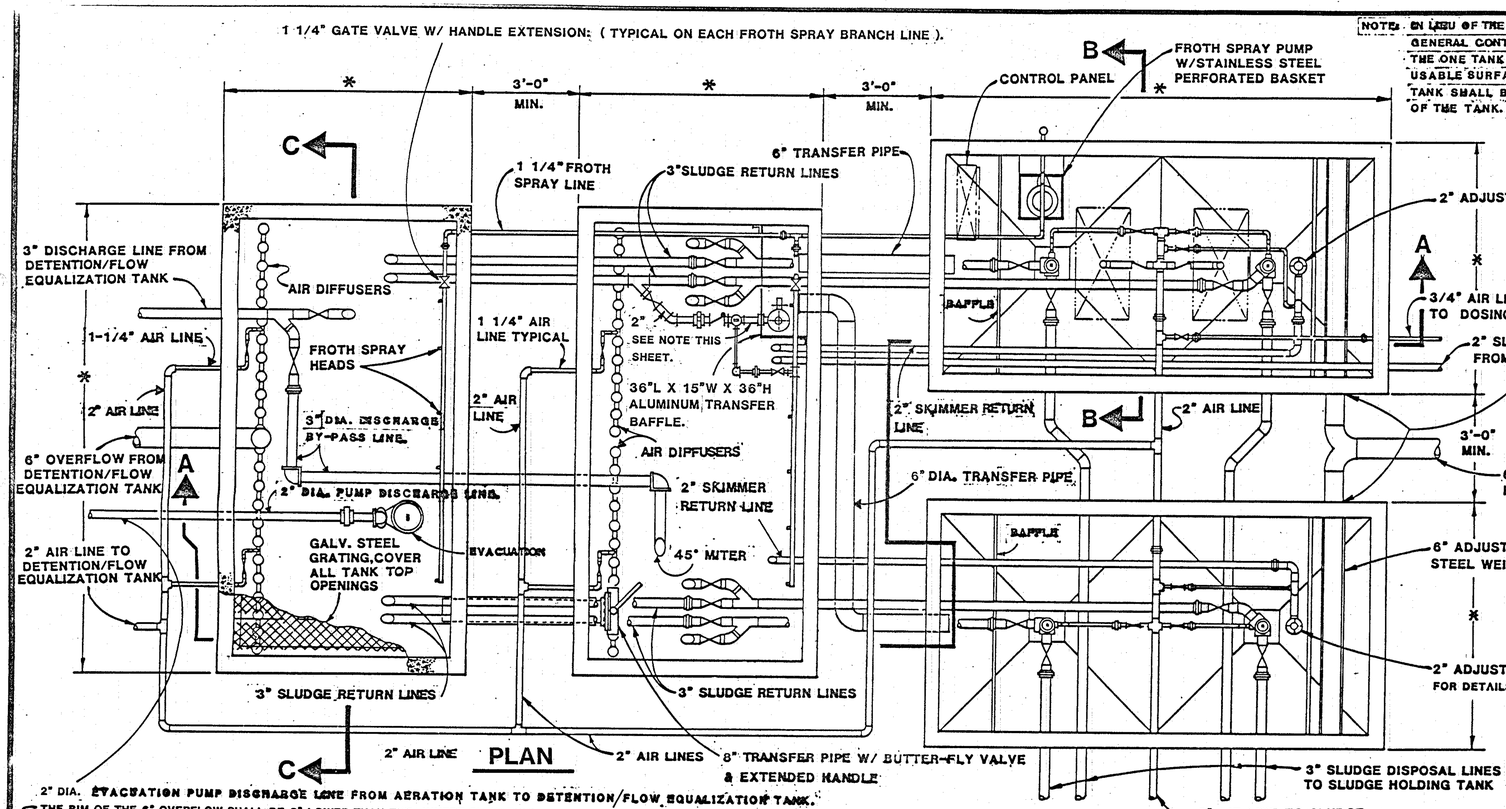
OHIO | FHWA REGION 5

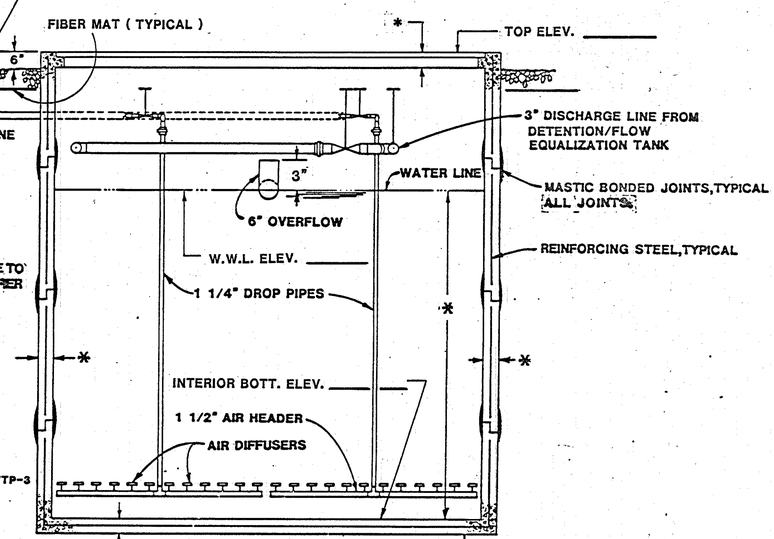
60 / 73

NOTE: AERATION BAFFLE SKIMMER - INSTALL ADJ. SKIMMER IN INTERIOR OF BAFFLE AS PER DETAIL ON SHEET WWTP - 3 AND PER PLAN FOR PERIODIC CLEANING OF BAFFLE SURFACE AREA.

INV. ELEVATIONS OF EACH 6" DIA. TRANSFER PIPE LINE OUTLET SHALL BE IDENTICAL.

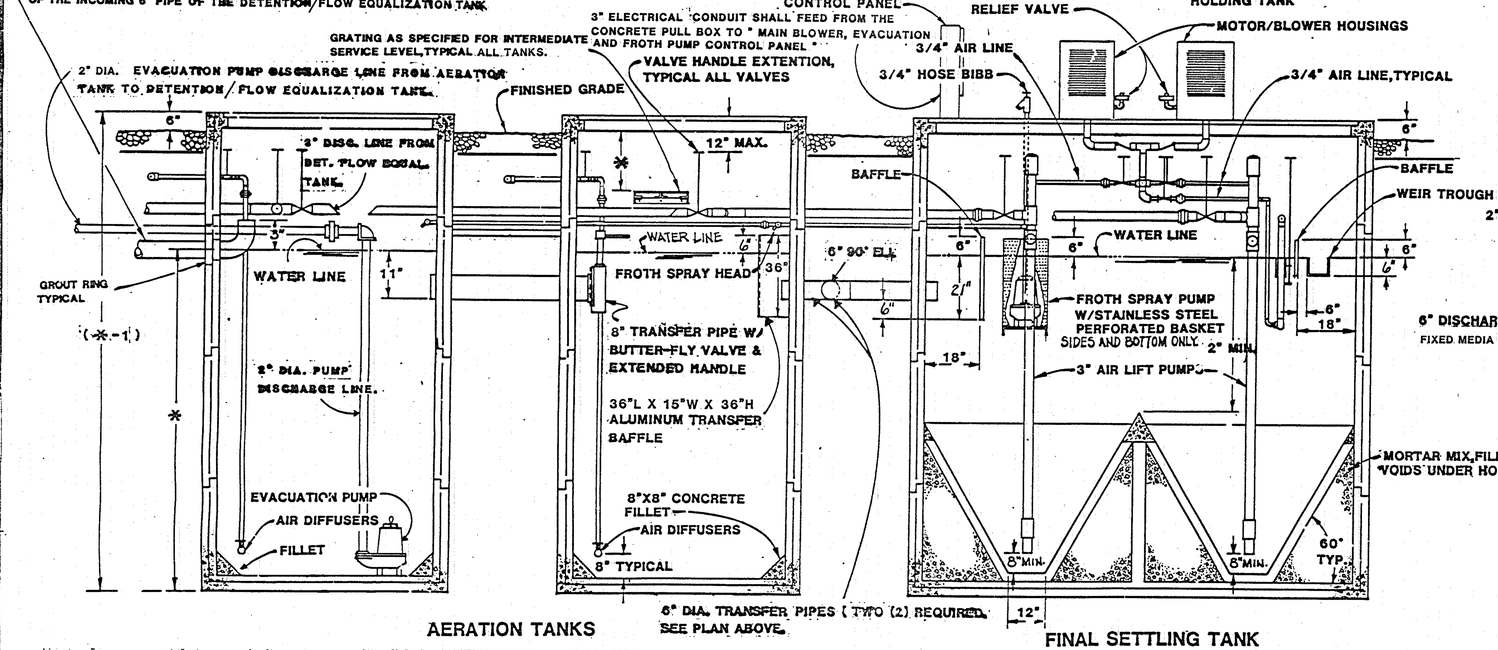
ALL INLET & OUTLET PIPE INV. ELEVATIONS SHALL BE SHOWN ON SHOP DRAWING SUBMITTALS.





SECTION C-C
AERATION TANK

*=DIMENSION TO BE SHOWN ON MANUFACTURERS SHOP DRAWINGS. FOR TANK CAPACITIES SEE SHEET WWTP-1 ELEVATIONS INDICATED SHALL BE SHOWN ON ALL TANKS.

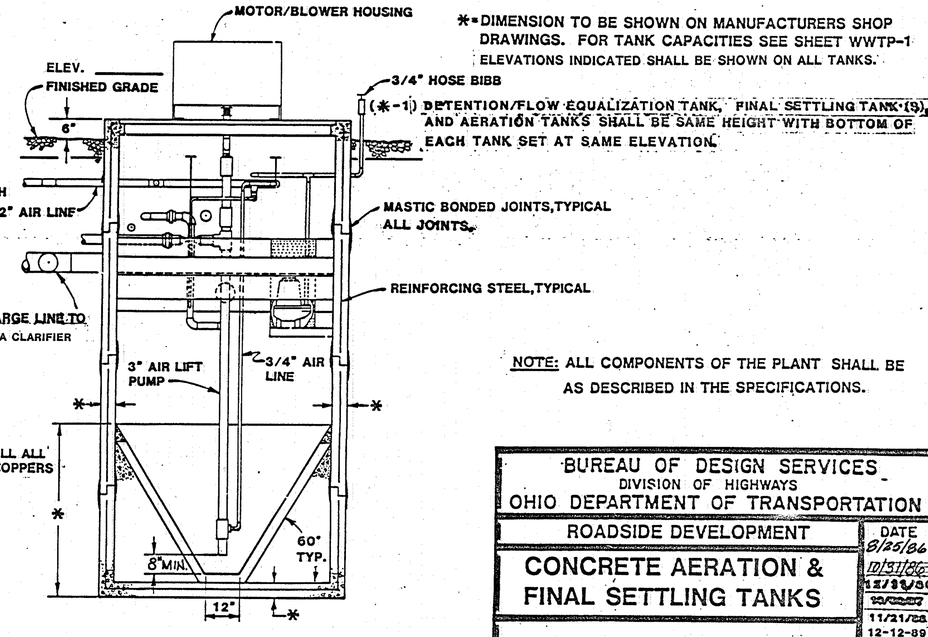


AERATION TANKS

FINAL SETTLING TANK

SECTION A-A

NOTE: ALL CONCRETE TANKS SHALL REQUIRE A 4-INCH SAND BED BETWEEN THE BOTTOM OF TANKS AND TOPS OF CONCRETE BASE PADS.



SECTION B-B
FINAL SETTLING TANK

NOTE: ALL COMPONENTS OF THE PLANT SHALL BE AS DESCRIBED IN THE SPECIFICATIONS.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

CONCRETE AERATION & FINAL SETTLING TANKS

WWTP-5

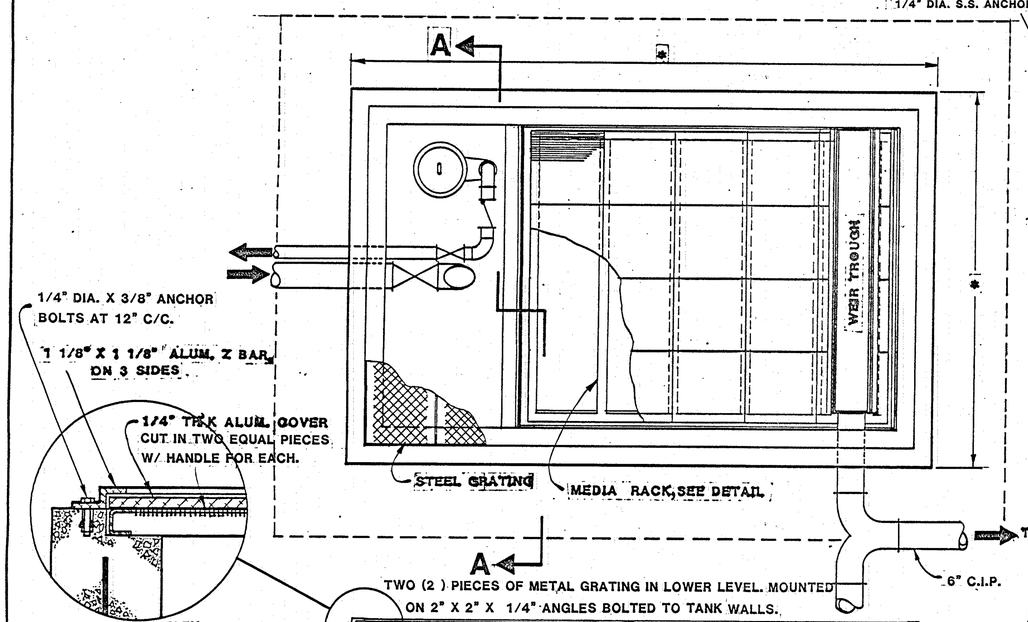
APPROVED _____ Engr. of Design Services

DATE: 8/25/86; 10/31/86; 12/31/86; 11/21/88; 12-12-89; 4-21-92

5/13

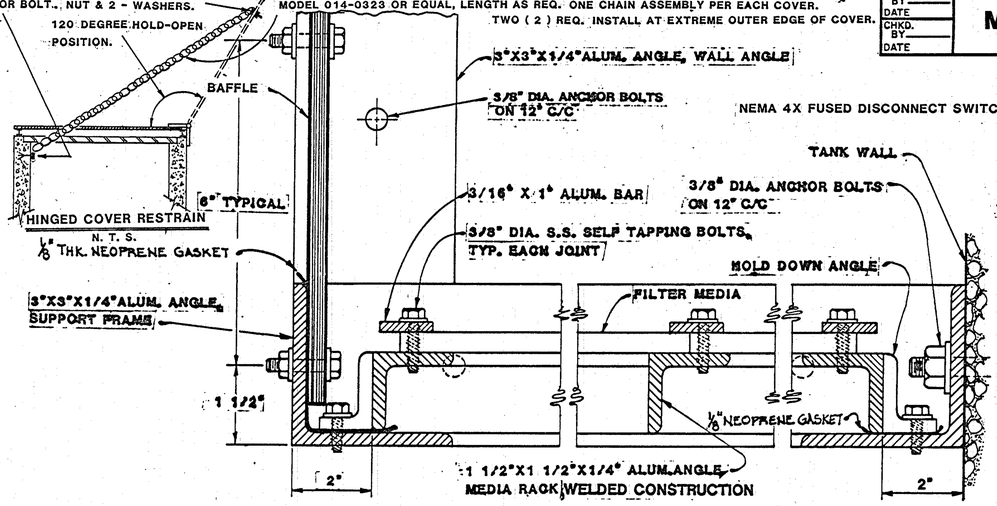
WASTEWATER TREATMENT PLANT

CALC. BY		MAH-11-3.31	OHIO	61
DATE			FHWA REGION 5	73
CHKD. BY				
DATE				

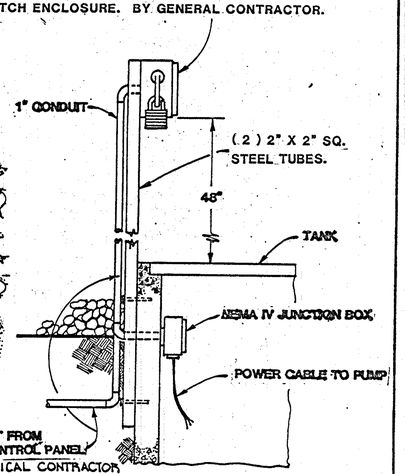


STEP NOTE :

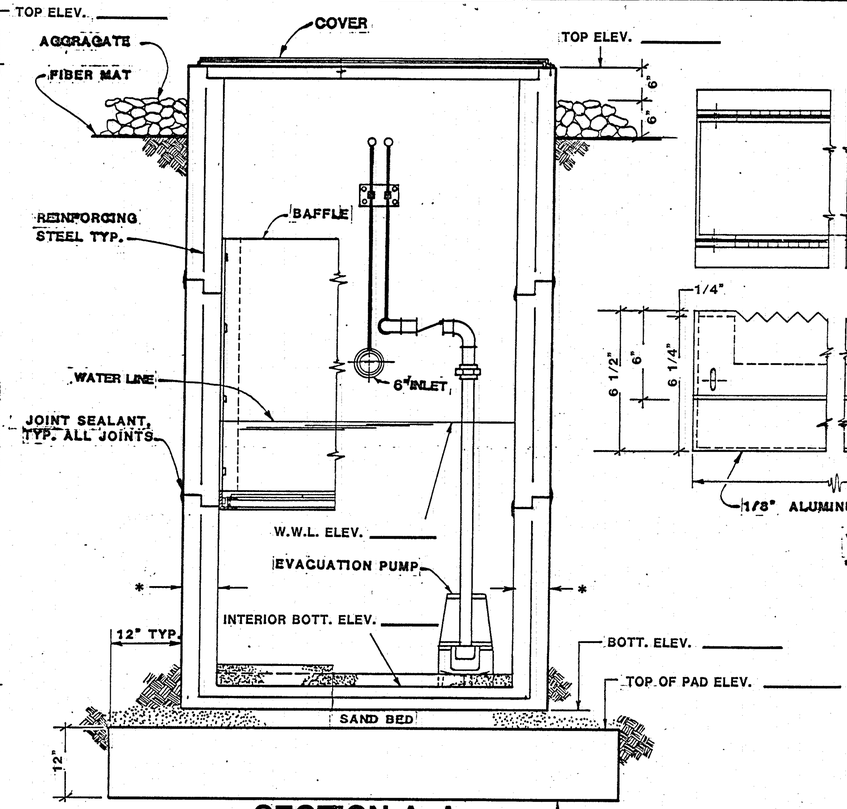
STEPS SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF CMS 604 & CMS 711.31 - REINFORCED PROPYLENE PLASTIC MANHOLE STEPS.



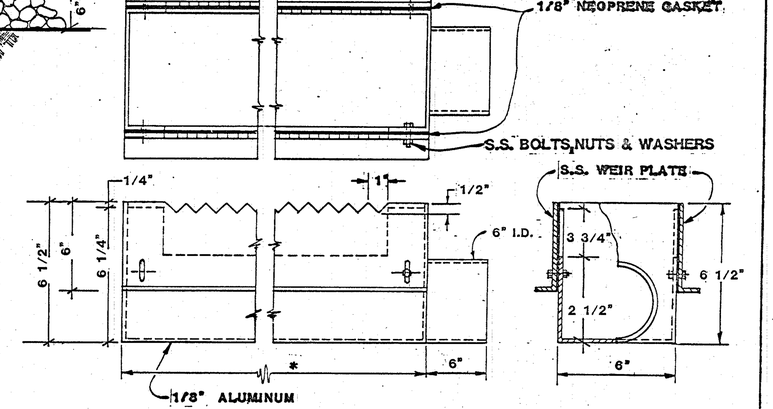
FILTER MEDIA RACK DETAILS



ELECTRICAL DETAILS



SECTION A-A



WEIR TROUGH DETAILS

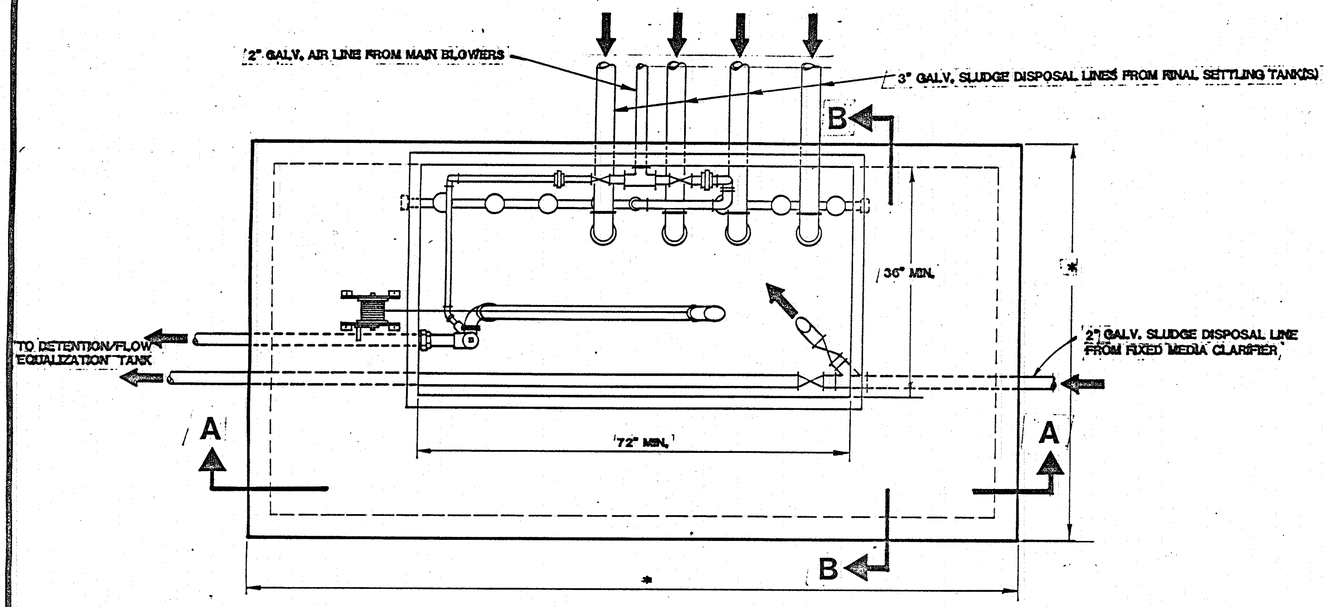
NOTE: ALL COMPONENTS OF THE PLANT SHALL BE AS DESCRIBED IN THE SPECIFICATIONS.

[*] DIMENSIONS TO BE SHOWN ON MANUFACTURERS SHOP DRAWINGS. FOR TANK CAPACITIES SEE SHEET WWTP-1

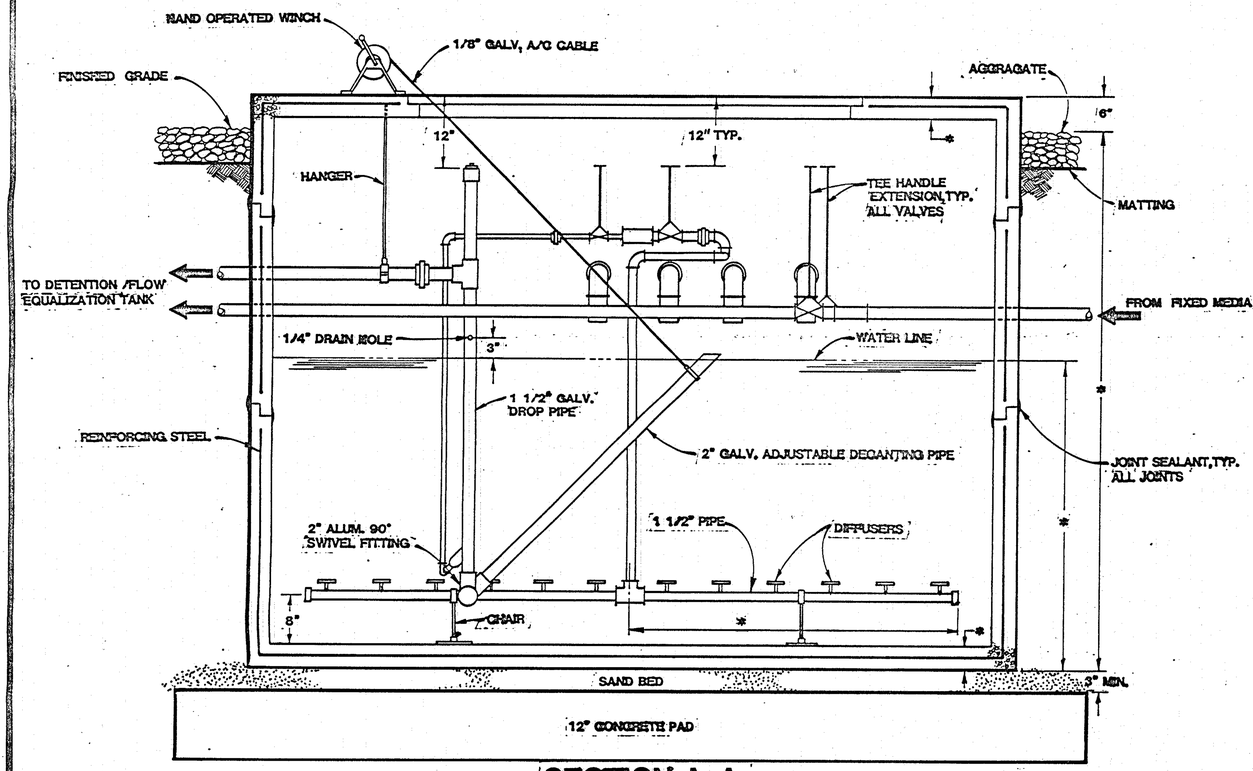
BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADWAY DEVELOPMENT	DATE
FIXED MEDIA CLARIFIER	~~10/3/07~~ 11/21/08 4-21-92
WWTP-6	6/13

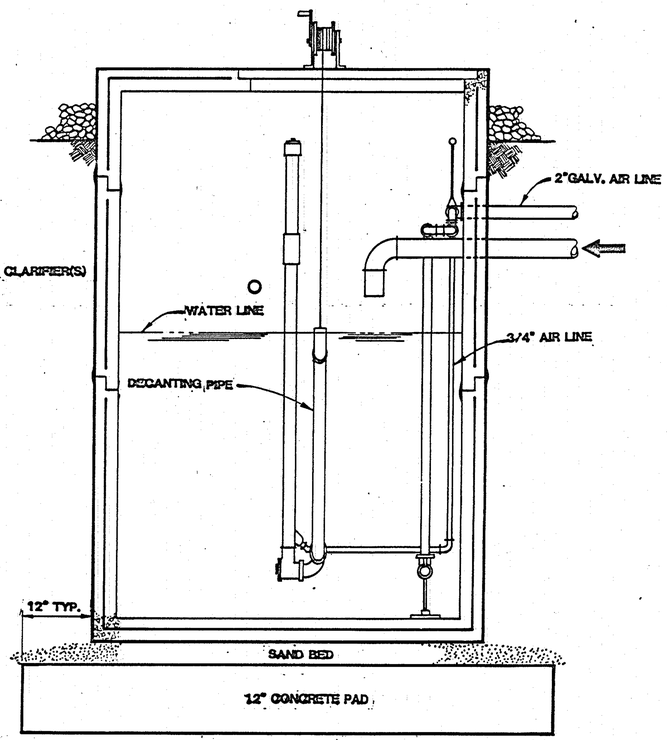
APPROVED Bill Hentzen ENGR. OF DESIGN SERVICES



* = DIMENSIONS TO BE SHOWN ON MANUFACTURERS SHOP DRAWINGS
FOR TANK CAPACITIES SEE SHEET WWTP-1



SECTION A-A



SECTION B-B

NOTE: ALL COMPONENTS OF THE PLANT SHALL BE AS DESCRIBED IN THE SPECIFICATIONS

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

DATE
11/21/86

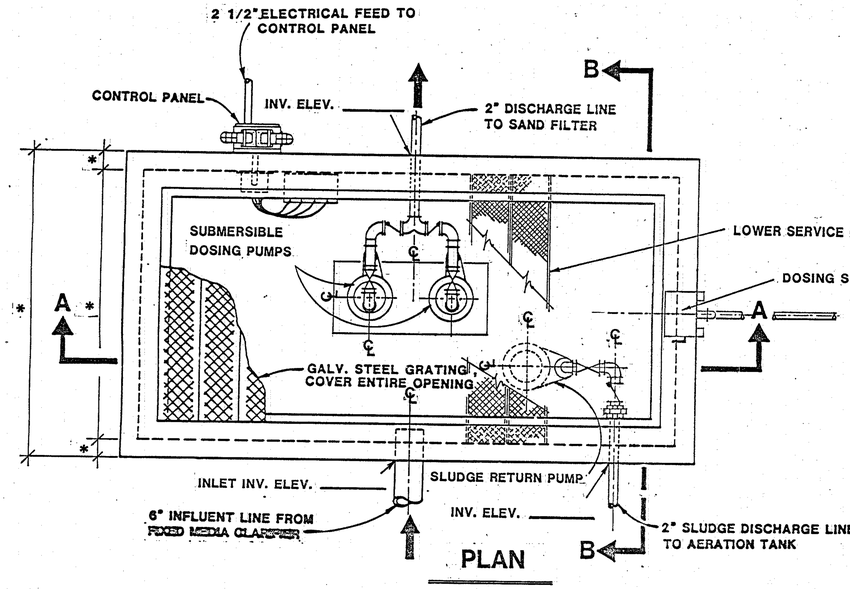
CONCRETE
SLUDGE HOLDING TANK

WWTP-7

APPROVED _____ CHIEF, OFFICE OF DESIGN SERVICES

7/13

CALC. BY / DATE	MAH-11-3.31	OHIO / FHWA REGION 5	63 / 73
CHKD BY / DATE			



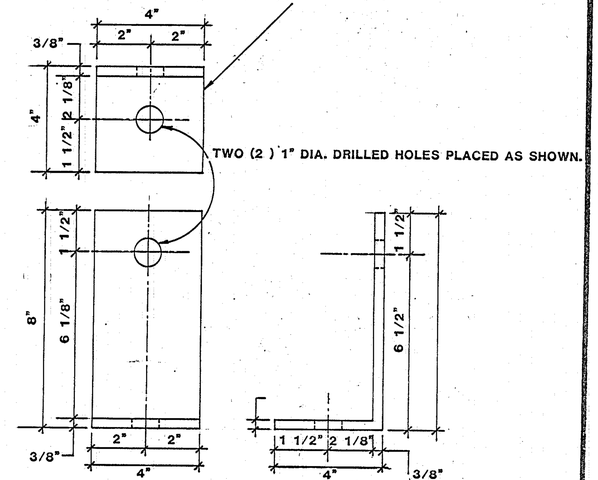
PLAN

NOTE:
FORM & POUR-IN-PLACE ONE (1) 16" W X 2' - 10" L X 4" H CLASS " C " CONCRETE BASE SUPPORT, 4500 PSI AT 28 DAYS, AS PER CMS 511" CONCRETE FOR STRUCTURES ", TO SUPPORT THE TWO (2) DOSING PUMPS TO SAND FILTER ONLY. DOSING SLUDGE RETURN PUMP SHALL SET DIRECTLY ON BOTT. OF TANK.
TO STABILIZE CONCRETE PAD FURNISH & INSTALL FOUR (4) 1/2" DIA. ANCHOR SHIELDS & FOUR (4) 1/2" DIA. STEEL RODS W/THREADS ON ONE (1) END ONLY. BEND RODS TO FORM 9" LONG LEG & THREADED END TO PROVIDE 2" FROM TOP OF CONCRETE PAD TO CENTER-LINE OF ROD.

NOTE:
ALL W.W.T.P. TANKS , INCLUDING TRASH TRAP (S) SHALL BE PROVIDED W/ A 12" THICK REINFORCED CONCRETE BASE PAD W/ A 4" THICK SAND BED BETWEEN THE BOTTOM OF ALL TANKS & TOP OF CONCRETE PADS. ALL TANKS SHALL BE SECURELY ANCHORED TO PREVENT FLOATATION. TIE-DOWN STRAPS SHALL BE AS DETAILED ON THIS SHEET.

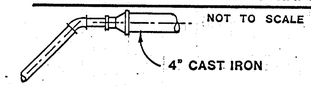
*=DIMENSION TO BE SHOWN ON MANUFACTURERS SHOP DRAWINGS. FOR TANK CAPACITIES SEE SHEET WWTP-1

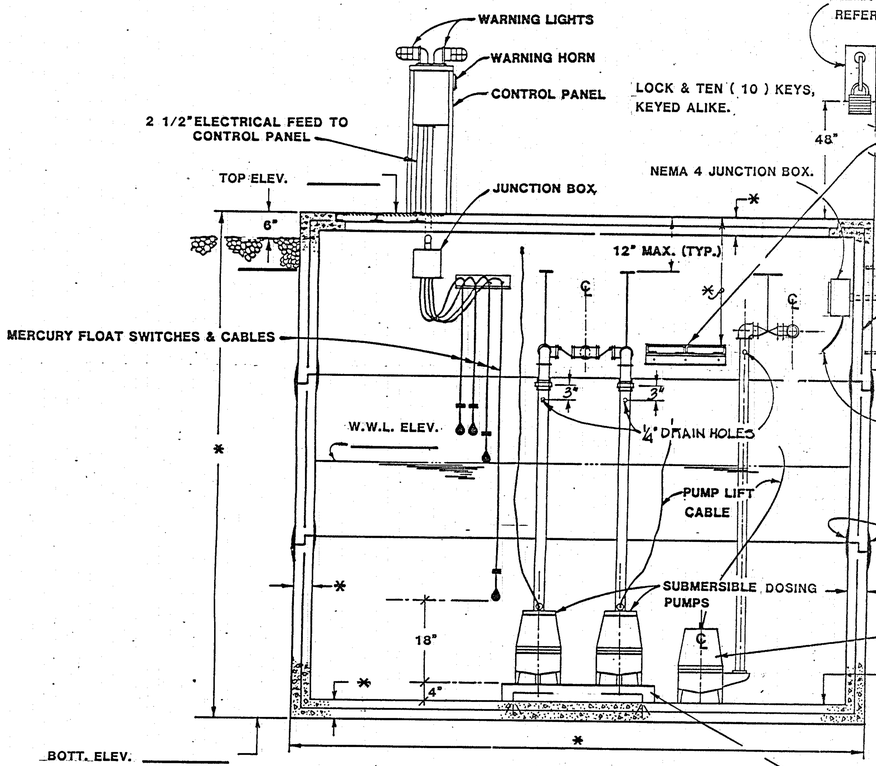
FABRICATE FROM SIZE 3/8" THICK X 4" WIDE TYPE 304 STAINLESS STEEL FLATS, HOT ROLLED, ANNEALED & PICKLED - (5.100 LBS./FT.)



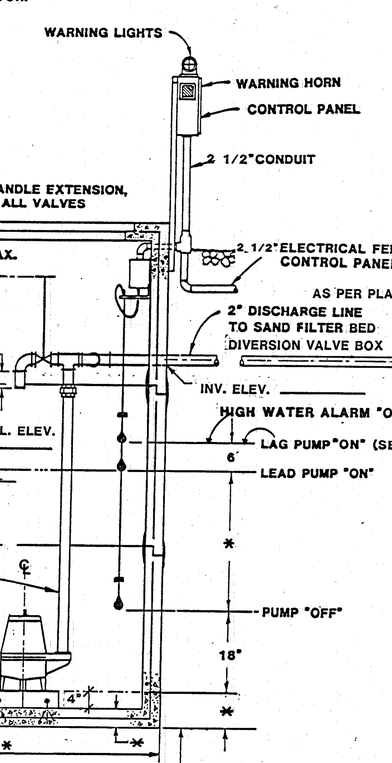
DETAIL OF ALL TIE-DOWN STRAPS

NOT TO SCALE





SECTION A-A



SECTION B-B

NOTE: ALL COMPONENTS OF THE PLANT SHALL BE AS DESCRIBED IN THE SPECIFICATIONS.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

CONCRETE DOSING TANK

WWTP-8

APPROVED _____ Engr. of Design Servs.

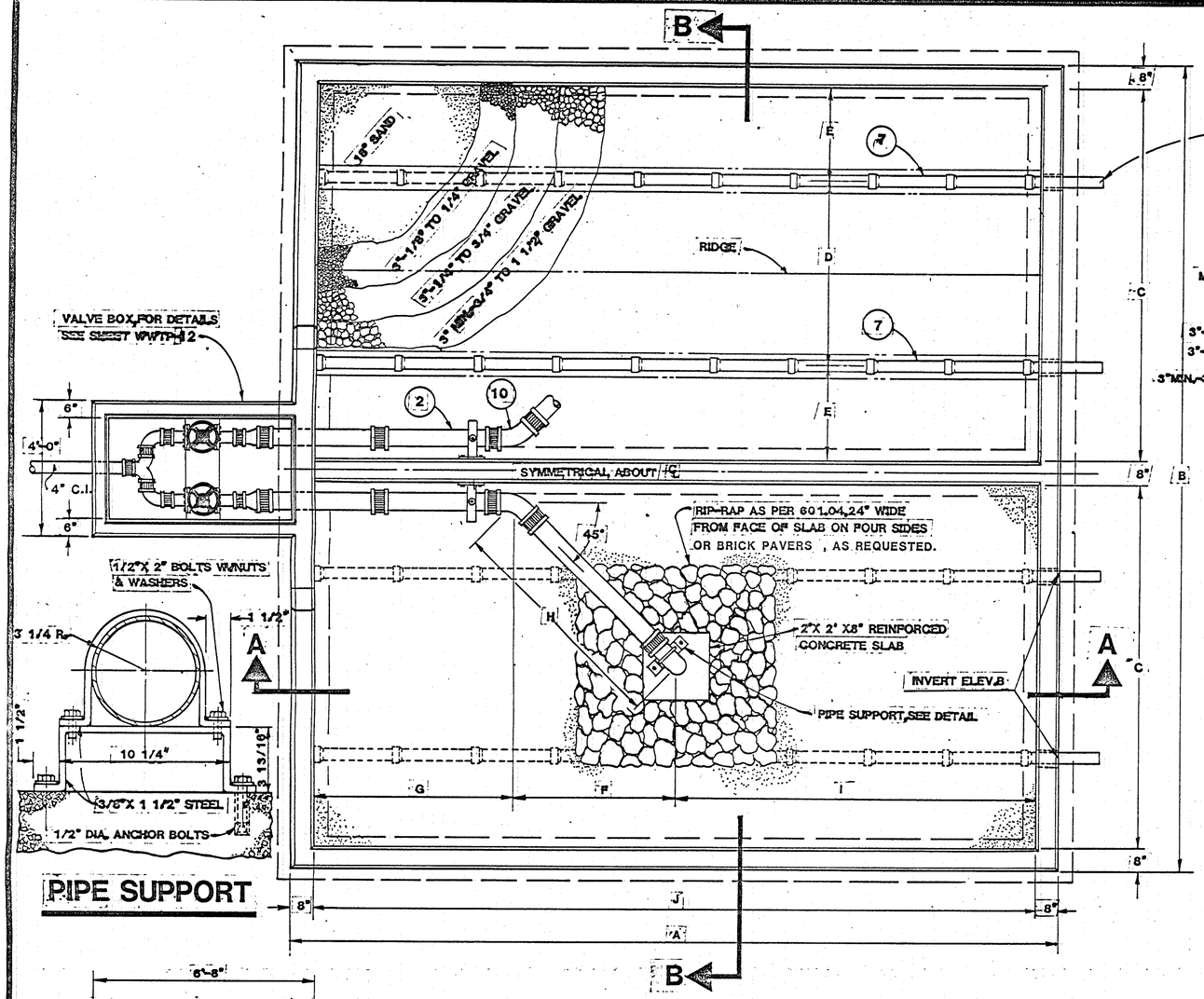
DATE
8/25/86
12/15/86
10/30/87
11/21/88
12-12-89
4-21-92

8/13

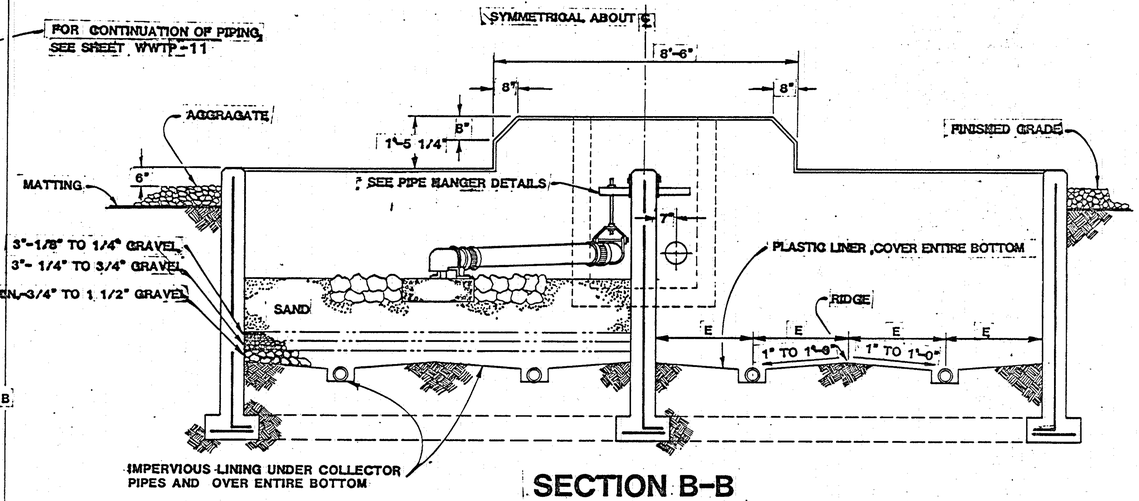
WASTEWATER TREATMENT PLANT

MAH-11-3.31

64
73

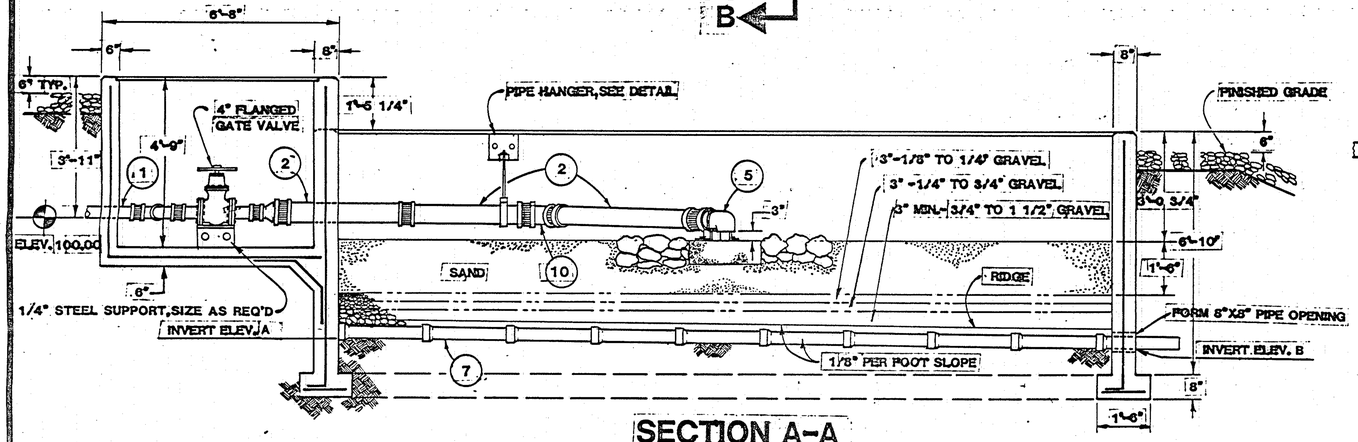


PIPE SUPPORT

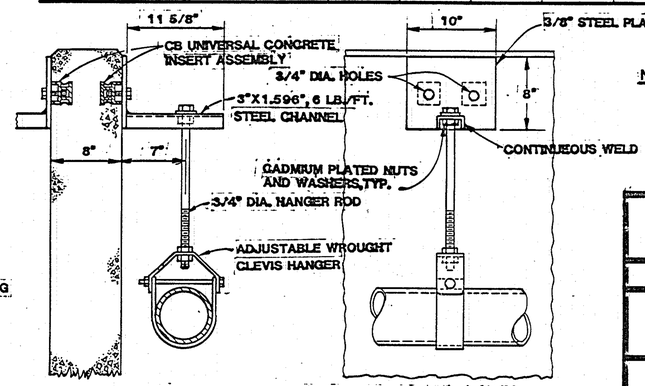


SECTION B-B

SAND FILTER												
PLANT CAPACITY G.P.D.	DIMENSIONS										INVERT A	INVERT B
	A	B	C	D	E	F	G	H	I	J		
4000	10'-4"	20'-0"	9'-0"	4'-6"	2'-3"	3'-11"	7"	5'-6 1/2"	4'-6"	9'-0"	96.26	96.17
5000	11'-4"	22'-0"	10'-0"	5'-0"	2'-6"	4'-5"	7"	6'-3"	5'-0"	10'-0"	96.26	96.16
6000	12'-4"	24'-0"	11'-0"	5'-6"	2'-9"	4'-11"	7"	6'-11 1/2"	5'-6"	11'-0"	96.26	96.15
7000	13'-2"	25'-6"	11'-10"	5'-11"	2'-11 1/2"	5'-4"	7"	7'-6 1/2"	5'-11"	11'-10"	96.26	96.14
8000	14'-0"	27'-4"	12'-6"	6'-4"	3'-2"	5'-9"	7"	8'-1 5/8"	6'-4"	12'-6"	96.26	96.13
9000	14'-10"	29'-0"	13'-6"	6'-9"	3'-4 1/2"	6'-2"	7"	8'-8 5/8"	6'-9"	13'-6"	96.26	96.12
10000	15'-7"	30'-6"	14'-3"	7'-1 1/2"	3'-6 3/4"	6'-6 1/2"	7"	9'-3"	7'-1 1/2"	14'-3"	96.26	96.11
12000	21'-4"	26'-0"	12'-0"	6'-0"	3'-0"	5'-5"	4'-7"	7'-8"	10'-0"	20'-0"	96.26	96.05
14000	21'-7"	30'-0"	14'-0"	7'-0"	3'-6"	6'-5"	3'-8 1/2"	9'-1"	10'-1 1/2"	20'-3"	96.26	96.05
16000	24'-6"	30'-0"	14'-0"	7'-0"	3'-6"	6'-5"	5'-2"	9'-1"	11'-7"	23'-2"	96.26	96.02
18000	27'-2"	30'-0"	14'-0"	7'-0"	3'-6"	6'-5"	6'-6"	9'-1"	12'-11"	25'-10"	96.26	95.99
20000	29'-11"	30'-0"	14'-0"	7'-0"	3'-6"	6'-5"	7'-10 1/2"	9'-1"	14'-3 1/2"	28'-7"	96.26	95.96



SECTION A-A



PIPE HANGER DETAIL

NOTE: ALL COMPONENTS OF THE PLANT SHALL BE AS DESCRIBED IN THE SPECIFICATIONS

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

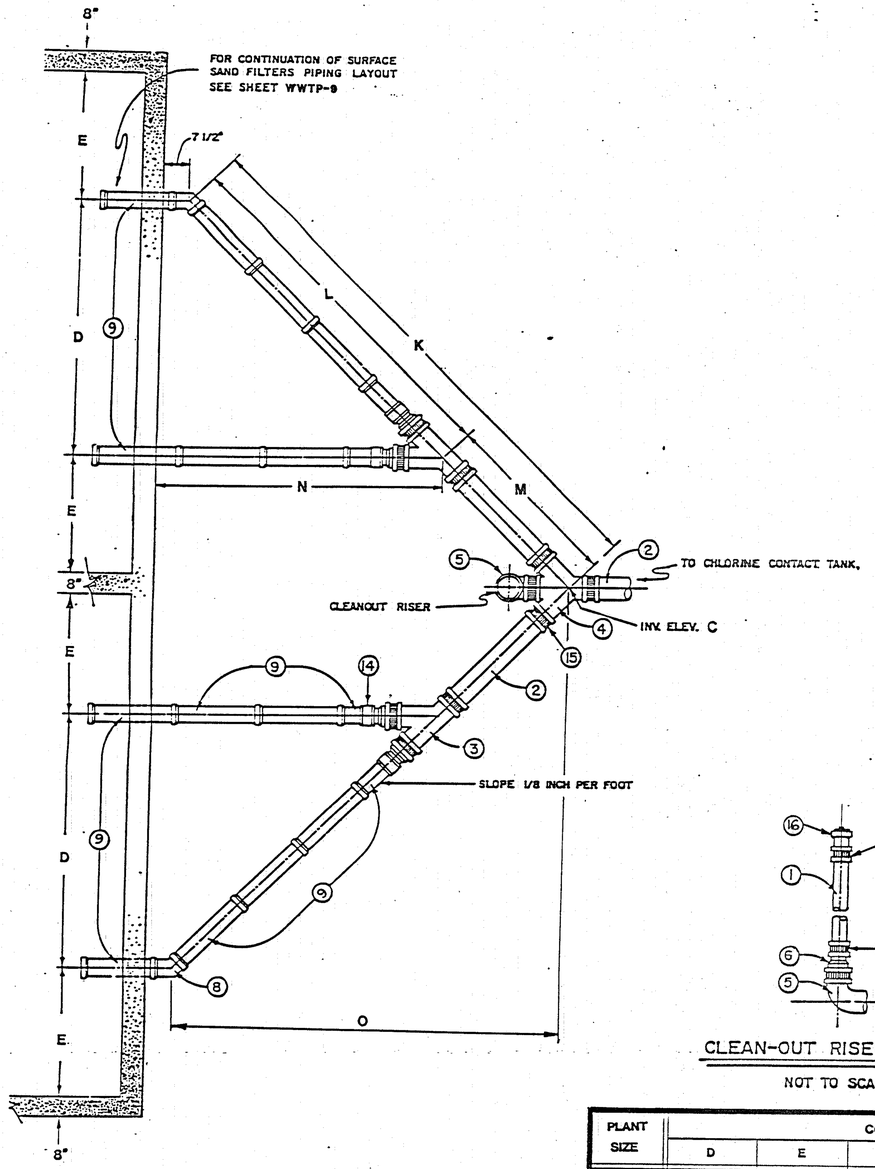
DATE: 12/20/67, 11/21/68, 4-17-91

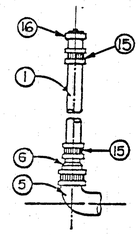
SAND FILTER

WWTP-9

APPROVED _____ CHIEF OF DESIGN SERVICES

9/13





CLEAN-OUT RISER DETAIL

NOT TO SCALE

PIPE AND FITTING LEGEND

1. 4-INCH NO HUB CAST-IRON SOIL PIPE
2. 6-INCH, SAME AS ABOVE
3. 6-INCH x 6-INCH NO HUB CAST-IRON SOIL 45° WYE
4. 6-INCH x 6-INCH NO HUB CAST-IRON SOIL DOUBLE WYE BRANCH
5. 6-INCH NO HUB CAST-IRON SOIL 1/4 BEND
6. 6-INCH x 4-INCH NO HUB CAST-IRON SOIL REDUCER
7. 4-INCH EXTRA STRENGTH PERFORATED VITRIFIED CLAY PIPE 706.08 WITH 706.12 RESILIENT AND FLEXIBLE JOINTS.
8. 4-INCH EXTRA STRENGTH VITRIFIED CLAY PIPE FITTING 45° CUT CURVE 706.08 WITH 706.12 RESILIENT AND FLEXIBLE JOINTS.
9. 4-INCH EXTRA STRENGTH VITRIFIED CLAY PIPE 706.08 WITH 706.12 RESILIENT AND FLEXIBLE JOINTS
10. 6-INCH NO HUB CAST-IRON SOIL 1/8 BEND
11. 4-INCH x 2-INCH NO HUB CAST-IRON SOIL 45° WYE AND 1/8 BEND
12. 4-INCH NO HUB CAST IRON SOIL 1/4 BEND
13. 2-INCH NO HUB CAST-IRON SOIL PIPE
14. 4-INCH VITRIFIED CLAY TO 4-INCH CAST-IRON PIPE CONNECTOR
15. NO HUB CAST-IRON SOIL PIPE CONNECTOR
16. 4"x8" NO HUB EXTENSION W/3½" BRASS CLEANOUT PLUG

PLANT SIZE	COLLECTOR PIPING EXTENSION DIMENSIONS							
	D	E	K	L	M	N	O	INVERT C
4000	4'-6"	2'-3"	10'-0 1/8"	6'-4 21/64"	3'-7 13/16	5'-1 29/64	7'-1"	95.97
5000	5'-0"	2'-6"	11'-31/32"	7-27/32	4'-0"	5'-7 29/64"	7'-10"	95.95
6000	5'-6"	2'-9"	12'-1 11/16"	7'-9 3/3"	4'-0 21/64"	6'-1 29/64"	8'-7"	95.93
7000	5'-11"	2'-11 1/2"	13'-0 1/4"	8'-4 29/64"	4'-7 59/64"	6'-6 31/64"	9'-2 1/2"	95.91
8000	6'-4"	3'-2"	13'-10 13/16"	8'-11 17/32	4'-11 13/32	6'-11 17/32"	9'-10"	95.89
9000	6'-9"	3'-4 1/2	14'-9 31/64"	9'-6 39/64	5'-3"	7'-4 29/64"	10'-5 1/2"	95.87
10000	7'-1 1/2"	3'-6 3/4"	15'-5 41/64"	10'-0 31/32"	5'-4 11/16"	7'-9"	10'-11 1/4"	95.85
12000	6'-0"	3'-0"	13'-2 13/32"	8'-5 57/64	4'-8 17/32"	6'-7 29/64"	9'-4"	95.82
14000	7'-0"	3'-6"	15'-3 27/32"	9'-10 13/16"	5'-5 3/64"	7'-7 29/64"	10'-10"	95.79
16000	7'-0"	3'-6"	15'-3 27/32"	9'-10 13/64"	5'-5 3/64"	7'-5 29/64	10'-10"	95.76
18000	7-0"	3'-6"	15'-3 27/32"	9'-10 13/16"	5'-5 3/64"	7'-7 29/64"	10'-10"	95.73
20000	7'-0"	3'-6"	15'-3 27/32"	9'-10 13/16"	5'-5 3/64"	7'-7 29/64"	10'-10"	95.70

NOTE: ALL COMPONENTS OF THE PLANT SHALL BE AS DESCRIBED IN THE SPECIFICATIONS.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

DATE 8/25/86, 12/11/86, 10/30/87, 11/21/88

SAND FILTER

WWTP-10

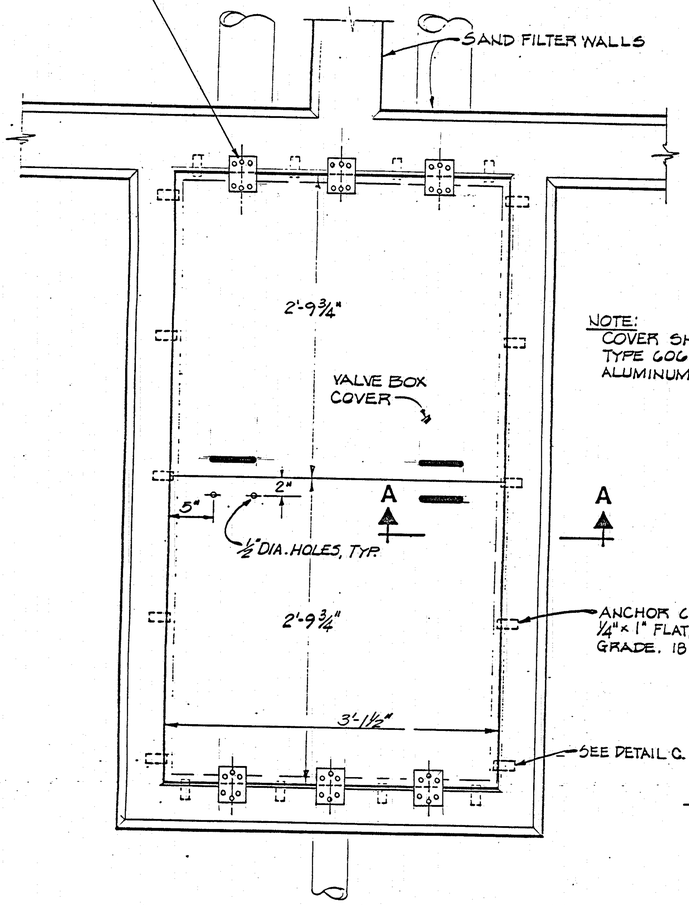
10/13

APPROVED _____ Engr. of Design Services

WASTEWATER TREATMENT PLANT

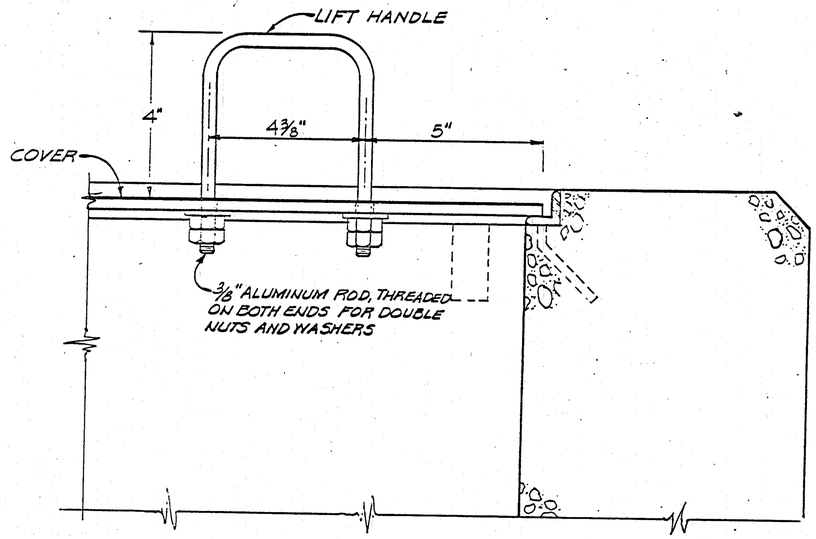
CALC. BY / DATE	MAH-11-3.31	OHIO	66
C.K.D. BY / DATE		FHWA REGION 5	73

FULL MORTISE HINGES, BALL BEARING, REGULAR WROUGHT STAINLESS STEEL, SATIN FINISH, STANLEY CAT. NO. FBB191 (US32D) OR APPROVED EQUAL, SIZE 41/2" X 41/2", 0.134 METAL GAUGE. A TOTAL OF SIX (6) HINGES REQUIRED. FURNISH & INSTALL ANCHOR BOLTS AND STAINLESS STEEL BOLTS, NUTS & WASHERS.

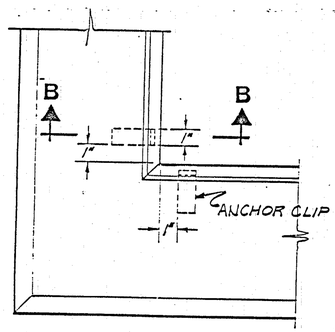


NOTE:
COVER SHALL BE CONSTRUCTED OF TYPE 6061, 3/8" PATTERN C-102, 5.6 PSF ALUMINUM DIAMOND PLATE.

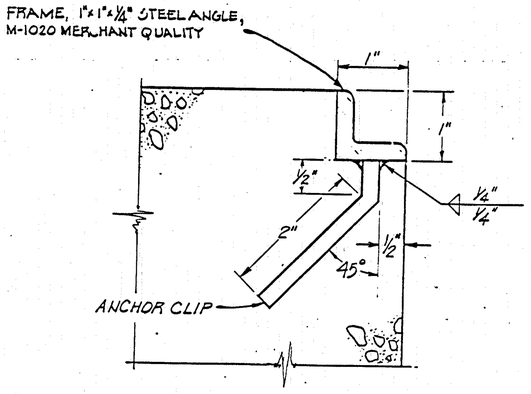
ANCHOR CLIPS, SHALL BE CONSTRUCTED OF 1/4" x 1" FLAT, COLD DRAWN STEEL C1018 COMMERCIAL GRADE. 18 REQUIRED.



SECTION A-A



DETAIL C



SECTION B-B

NOTE: ALL COMPONENTS OF THE PLANT SHALL BE AS DESCRIBED IN THE SPECIFICATIONS.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

SAND FILTER
VALVE BOX DETAILS

WWTP-11

DATE
8/25/86
12/11/86
10/30/87
4-21-92

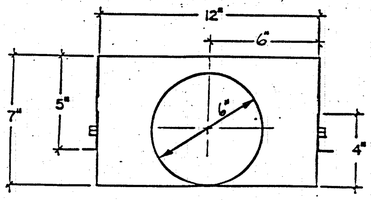
APPROVED _____ Engr. of Design Services

11/13

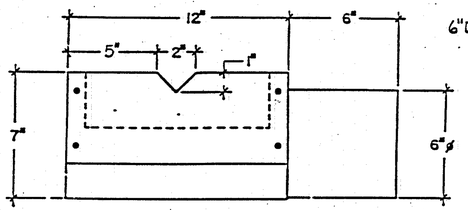
CALC BY		MAH-11-3.31	OHIO	67
DATE			FHWA REGION 5	73
CHKD BY				
DATE				

NOTE: ALL COMPONENTS OF THE PLANT SHALL BE AS DESCRIBED IN THE SPECIFICATIONS.

*=DIMENSION TO BE SHOWN ON MANUFACTURERS SHOP DRAWINGS. FOR TANK CAPACITIES SEE SHEET WWTP-1

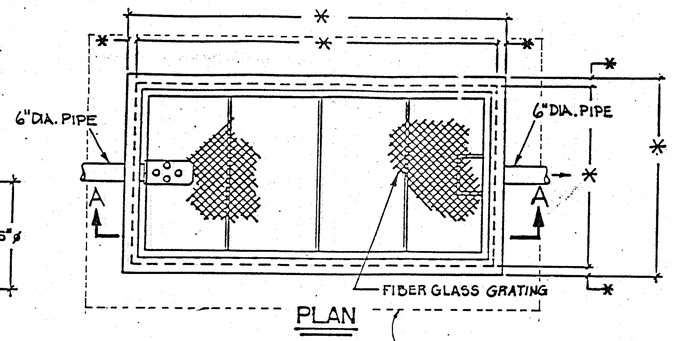


SECTION

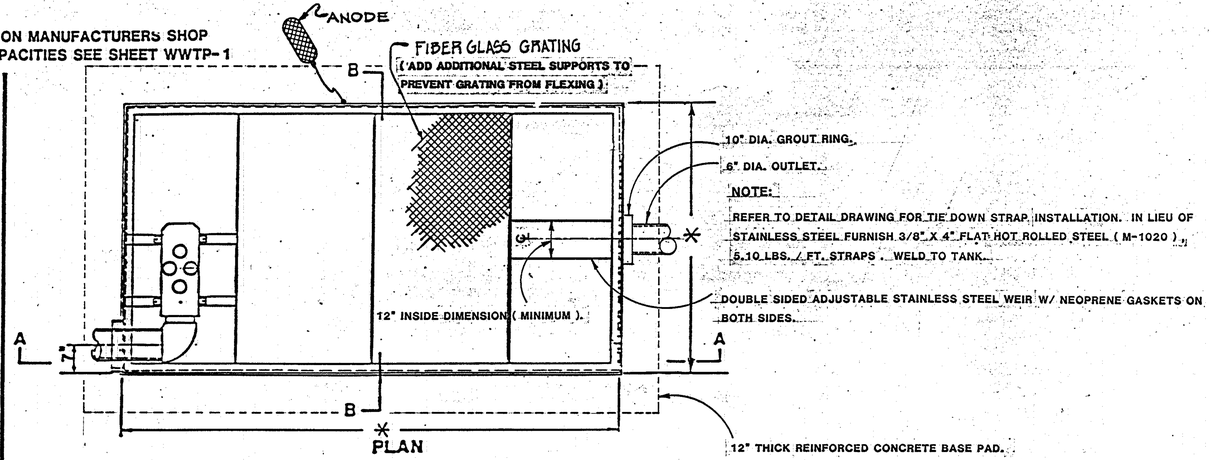


SIDE

NOTE:
REFER TO DETAIL DRAWING FOR TIE DOWN STRAP INSTALLATION REQUIREMENTS.

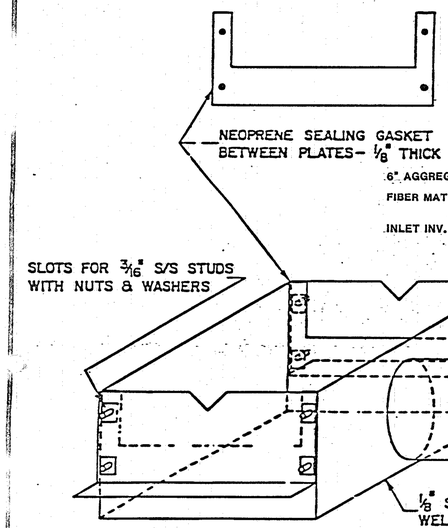


PLAN



PLAN

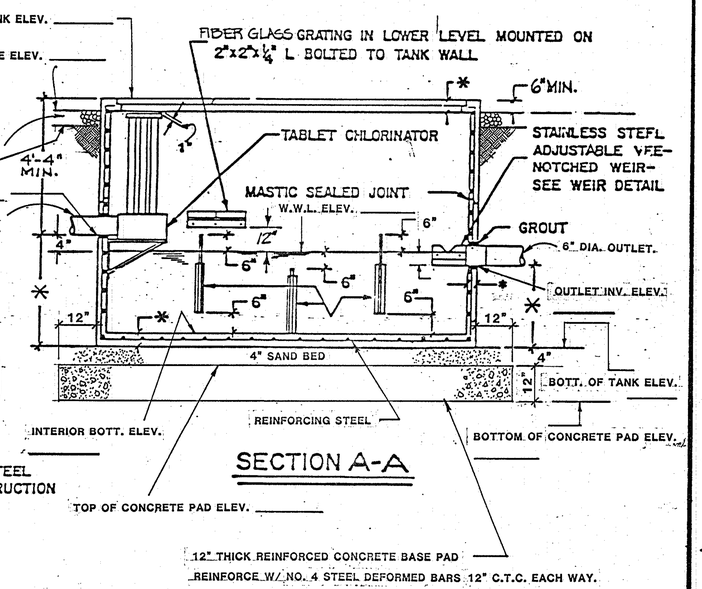
NOTE: FURNISH AND INSTALL MAGNESIUM ANODES AND ANODE TEST BOXES AS SPECIFIED.



OBLIQUE

WEIR DETAIL

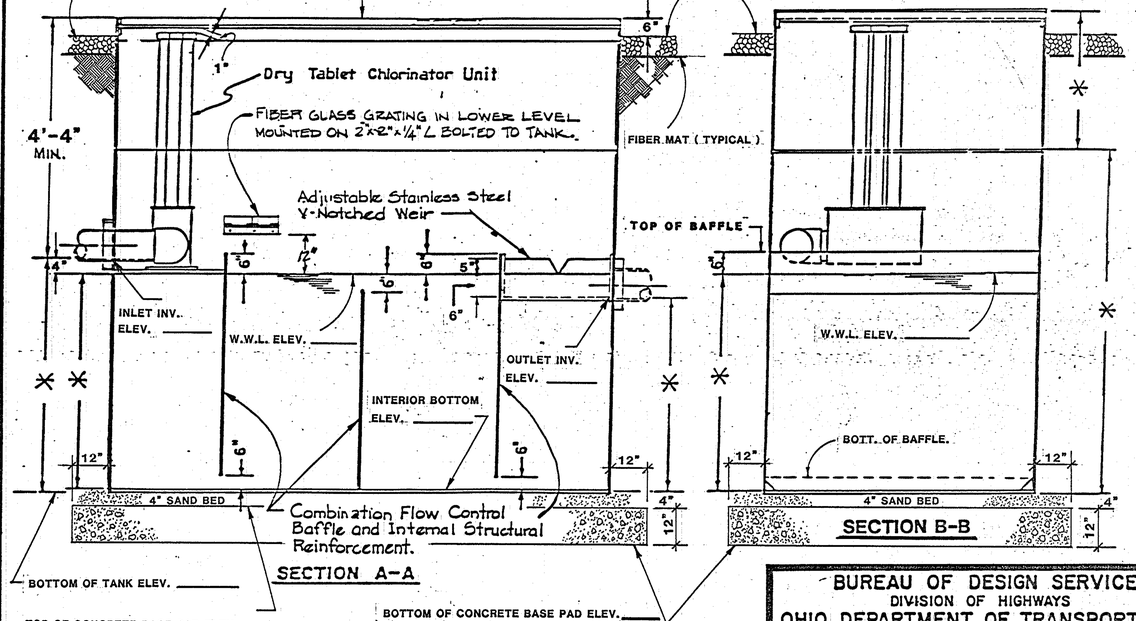
NOT TO SCALE



SECTION A-A

CONCRETE CHLORINE CONTACT TANK

NOT TO SCALE



SECTION A-A

SECTION B-B

STEEL CHLORINE CONTACT TANK

NOT TO SCALE

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

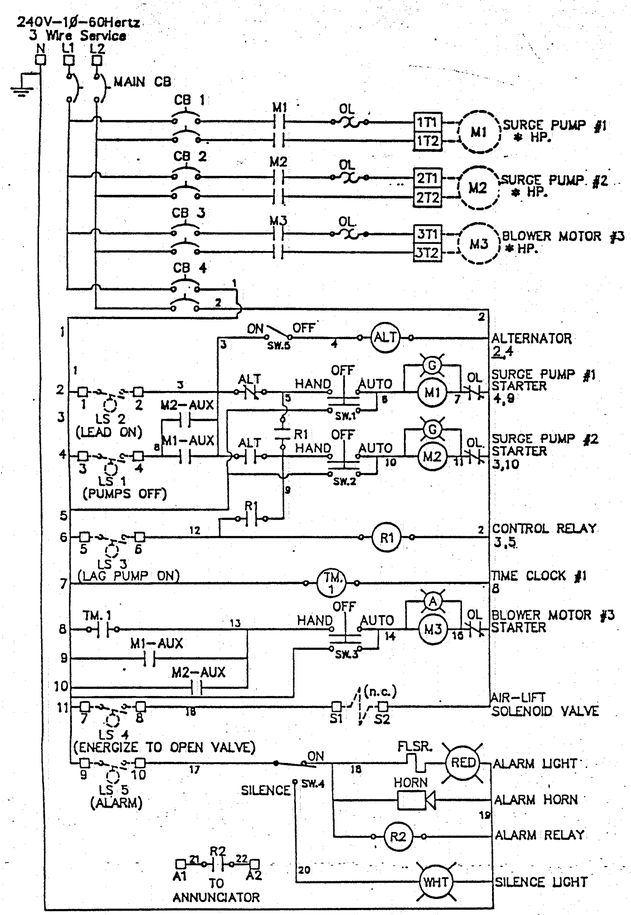
CHLORINE CONTACT TANKS

WWTP-12

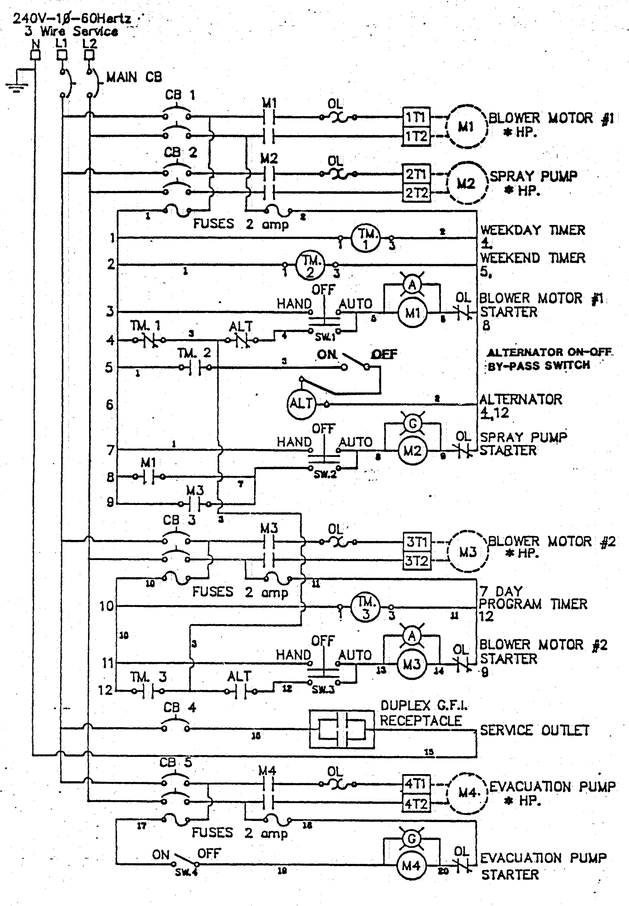
DATE
8/25/86
12/11/00
11/21/00
11/27/89
4-21-92

APPROVED _____ Engr. of Design Services 12/13

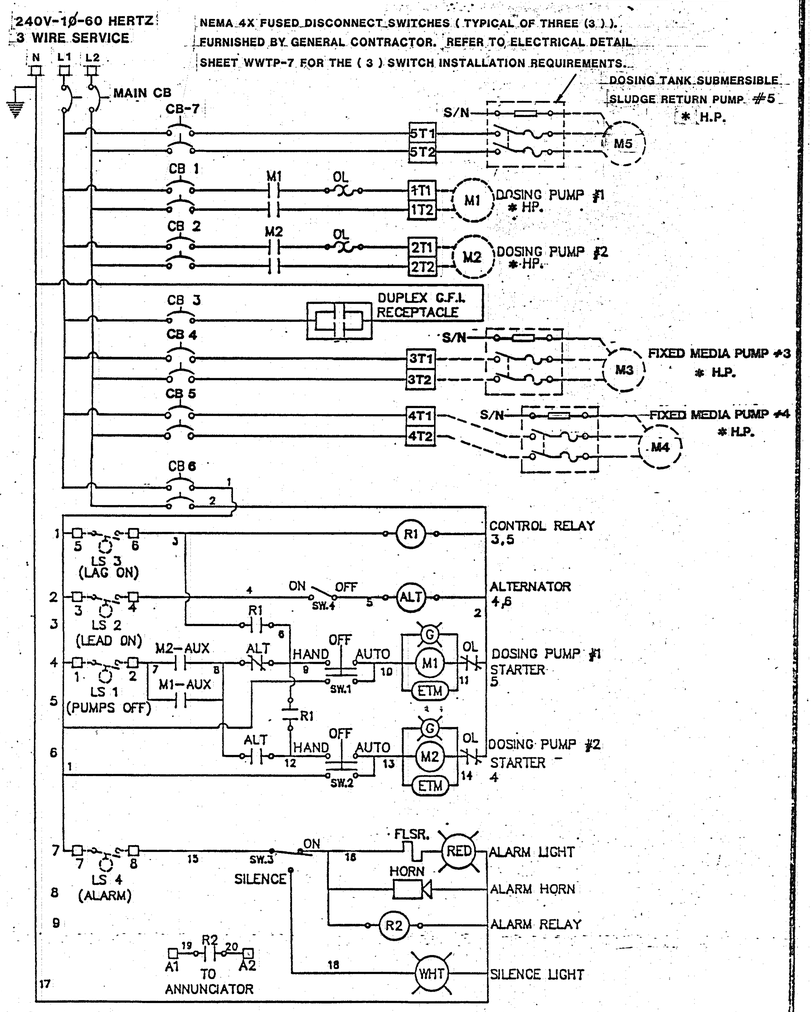
WASTEWATER TREATMENT PLANT



DETENTION/FLOW EQUALIZATION TANK CONTROL PANEL



MAIN BLOWER,EVACUATION AND FROTH PUMP CONTROL PANEL



DOSING PUMP CONTROL PANEL

* SEE SPECIFICATIONS FOR REQUIRED MOTOR HORSE POWER RATING

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

ROADSIDE DEVELOPMENT

DATE

ELECTRICAL WIRING DIAGRAM

10/30/87
11/21/88
11/27/89
4-21-92

WWTP-13

APPROVED _____ ENGR. OF DESIGN SERVICES

13/13

NOTES

LIFT STATION AND VALVE BOX ASSEMBLY
SHALL INCLUDE THE FOLLOWING ITEMS;

1. 72" C-478 CONCRETE WET WELL W/REINFORCED CONCRETE FOUNDATIONS AND CAST IN PLACE SLAB.
2. REINFORCED VALVE PIT.
3. DUPLEX CONTROL PANEL AND CONTROL PANEL SUPPORT.
4. 3" X 3" X 1/4" ANGLE IRON GATE VALVE SUPPORT BRACKET W/ANCHOR BOLTS, NUTS AND WASHERS.
5. QUICK LIFT ASSEMBLY, (TWO (2) REQUIRED).
6. VALVE PIT CONCRETE SLOPE BUILD-UP.
7. CAST IRON REGULAR REDUCING FLANGE, SIZE 2" X 7 1/2", (TWO (2) REQUIRED).
8. CAST IRON FLANGED 4" CROSS (ONE (1) REQUIRED).
9. 4" MAKEUP D.I. PIPING FLANGE TO FLANGE, (D.I.= DUCTILE IRON).
10. CAST IRON FLANGED 4" 90 DEGREE ELBOWS (FOUR (4) REQUIRED).
11. CAST IRON FLANGED 4" X 3" CONCENTRIC REDUCER (TWO (2) REQUIRED).
12. 3" TRAP DRAIN.
13. 3/8" HIGH TEST LIFT CHAIN ASSEMBLY U.L. LISTED. (TWO (2) REQUIRED).
14. FOUR INCH DUCTILE IRON FLANGED JOINT PIPE AND FITTINGS PER ANSI/AWWA C115/A21.15 AND C151/A21.51 STANDARDS FOR PIPE BARREL REQUIREMENTS, CLASS A53 AND CLASS 125 CAST IRON FLANGED FITTINGS, COMPLETE W/FULL FACED RED RUBBER GASKETS, BOLTS, NUTS PER CLASS 125 ANSI B16.1 OR ANSI/AWWA C110/A21.10 STANDARD AS REQUIRED.
15. 3" VENT PIPE.
16. WET WELL CONCRETE SLOPE BUILD-UP.
17. CAST-IN-PLACE METAL GROUT RINGS, ONE (1) FOR 6" PIPE AND FIVE (5) FOR 4" PIPE AND ONE (1) FOR 3" PIPE.
18. GROUND ROD, 1" DIAMETER AS PER CMS 625.10 AND 713.16, (ONE (1) REQUIRED).
19. 2 EA. SUBMERSIBLE SEWAGE GRINDER PUMPS AS DESCRIBED IN THE "SUBMERSIBLE PUMPS" NOTES ON THIS SHEET.
20. CLASS 125, P.S.I. IRON BODY, BRONZE MOUNTED, DOUBLE DISC, PARALLEL SEAT, FLANGED ENDS, NON-RISING STEM (NRS) W/WHEEL HANDLE, CLOW CORPORATION, FIG. NO. 5280, GATE VALVE OR APPROVED EQUAL BY CRANE, NIBCO, OR W.M. POWELL CO., (THREE (3) REQUIRED) SIZE 4" DIAMETER.
21. DOVER CORPORATION/OPW DIVISION, CAT. NO. OPW 23, SIZE 3" VENT W/40-MESH BRASS SCREEN, OR APPROVED EQUAL, (ONE (1) REQUIIRED).
22. CLASS 175 P.S.I. IRON BODY, BRONZE MOUNT, HORIZONTAL SWING CHECK VALVE, FLANGED ENDS 2/OUTSIDE SPRING & LEVER, CLOW FIG. NO. 5381 OR APPROVED EQUAL BY CRANE, NIBCO OR WM. POWELL CO., (TWO (2) REQUIRED), SIZE 4" DIAMETER.
23. CAST IRON 4" CONNECTOR MJ/FLANGED, (ONE (1) REQUIRED).
24. FULL FACED RED RUBBER SHEET GASKETS, BOLTS, NUTS AND WASHERS AS REQUIRED.
25. CAST IRON BLIND FLANGE, (ONE (1) REQUIRED).
26. NEMA 4X JUNCTION BOX FOR FLOAT SENSOR CABLES. MERCURY LIQUID LEVEL SENSOR SWITCHES AND 30-FEET CORD ATTACHMENTS, (ONE (1) REQUIRED).
27. 30-FEET, 3-WIRE, POWER LEAD CABLES TO EACH SUBMERSIBLE GRINDER PUMP MOTOR.
28. 2" X 1 1/4", 125 LB. STANDARD, SCREWED, CONCENTRIC REDUCER W/2" DIAMETER X 6" LONG, THREADED AS PER ASTM A-53, SCHEDULE 40, GALVANIZED STEEL NIPPLE, (TWO (2) REQUIRED).
29. 1 1/4" GALVANIZED STEEL PIPE AS PER ASTM A-53, THREAD AND COUPLING (LENGTH AS REQUIRED).
30. 2'-6" X 4'-0" DOUBLE-LEAF, ALUMINUM CONSTRUCTED ACCESS DOORS W/TORSION BAR SPRINGS TO HOLD DOORS IN OPEN POSITION, (TWO (2) REQUIRED).
31. TYLER PIPE, SUBSIDIARY OF TYLER CORPORATION, CAT. NO. S-136 CAST IRON MECHANICAL JOINT REDUCER (MJ SMALL END BELL REDUCER) SIZE 4" X 2" W/APPROPRIATE FLEXIBLE NEOPRENE GASKET FOR CONNECTION FROM 2" MJ TO 2" PVC PIPE OR APPROVED EQUAL (REQUIRED ONLY WHEN 2" FORED MAIN IS SPECIFIED). IF 3" PVC RING-TITE PIPE IS SPECIFIED, ONE (1) MECHANICAL JOINT CAST IRON CONCENTRIC REDUCER, SIZE 4" X 3" (4" P.E. X 3" M.J.) CLOW CAT. NO. F-965 OR APPROVED EQUAL SHALL BE USED IN LIEU OF THE ABOVE AND FURNISHED W/TRANSITION GASKETS FOR THE PVC CONNECTORS.
32. EXCAVATION FOR LIFT STATION WET WELL AND VALVE PIT SHALL CONFORM TO CMS 503, DISPOSAL OF EXCAVATED MATERIAL SHALL CONFORM TO CMS 203.05, AGGREGATE BACKFILL SHALL CONFORM TO CMS 703.05, OMITTING THE USE OF AIR-COOLED SLAG. SIEVE SIZE SHALL BE 3/8", 100% PASSING, FOREIGN MATTER SUCH AS ROCK, CINDERS, LUMBER, ETC. SHALL NOT BE ALLOWED IN BACKFILL. EXCAVATION AND BACKFILL FOR SEWER LINES SHALL CONFORM TO CMS 603 W/CLASS B BEDDING.
33. LIFT STATION WET WELL AND VALVE PIT SHALL BE CLEANED AND THE WET WELL FILLED WITH NECESSARY WATER AS SOON AS POSSIBLE TO PREVENT FLOTATION. WET WELL MUST REMAIN PROPERLY FILLED AT ALL TIMES TO PREVENT FLOATATION. LIFT STATION SHALL BE CHECKED FOR LEAKS AND REPAIRS MADE TO THE SATISFACTION AND APPROVAL OF THE ENGINEER. PRIOR TO FINAL ACCEPTANCE AND APPROVAL OF THE LIFT STATION WET WELL AND VALVE PIT INSTALLATION, WET WELL SHOULD BE PUMPED OUT AND CLEANING AND WATER FILLING REPEATED TO ENABLE FURTHER TESTING PROCEDURES THAT SHALL BE PERFORMED AND APPROVED BEFORE FINAL ACCEPTANCE. THIS SHALL BE CONDUCTED WHEN DIRECTED BY THE ENGINEER.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR LIFT STATION AND VALVE BOX ASSEMBLY. PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR EACH ITEM FURNISHED IN PLACE AND ALL CONNECTIONS COMPLETE AND ACCEPTED.

ELEVATION DATUM
ALL ELEVATIONS ARE BASED ON DISTRICT SURVEY DATUM.

PERMITS
THE OHIO DEPARTMENT OF TRANSPORTATION SHALL OBTAIN THE FOLLOWING PERMITS:

1. PERMIT TO CONSTRUCT - OHIO ENVIRONMENTAL PROTECTION AGENCY, WATER AND WASTEWATER UNITS.

ALL OTHER PERMITS SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR.

GUARANTEES AND WARRANTIES
THE FOLLOWING GUARANTEES AND/OR WARRANTIES SHALL BE REQUIRED FOR THE LIFT STATION AND VALVE BOX ASSEMBLY.

MANUFACTURER'S WARRANTIES OR GUARANTEES ON ALL ELECTRICAL AND MECHANICAL EQUIPMENT AS WELL AS STRUCTURES CONSISTENT WITH THOSE PROVIDED AS CUSTOMARY TRADE PRACTICE.

CONTRACTOR'S WARRANTIES OR GUARANTEES PROVIDING FOR SATISFACTORY IN SERVICE OPERATION OF THE MECHANICAL AND ELECTRICAL EQUIPMENT AND RELATED COMPONENTS FOR A PERIOD NOT TO EXCEED TWELVE (12) MONTHS FOLLOWING PROJECT ACCEPTANCE.

THE OHIO ADMINISTRATIVE CODE (OAC) FOR BUILDING APPROVAL COMPLIANCE
ALL ELECTRICAL WORK WILL CONFORM TO THE REQUIREMENTS OF ARTICLE 20 (OAC 4101:2-20) AND NEC, NFPA STANDARD NO. 70 AND IS SUBJECT TO THE APPROVAL OF THE DISTRICT ELECTRICAL INSPECTOR ASSIGNED BY THE DIVISION OF FACTORY AND BUILDING INSPECTION.

SHOP DRAWINGS
THE CONTRACTOR SHALL SUBMIT FOR APPROVAL, PRIOR TO INSTALLATION, 7 SETS OF SHOP DRAWINGS, WIRING DIAGRAMS AND DESCRIPTIVE LITERATURE OF ALL EQUIPMENT AND THEIR COMPONENT PARTS WHICH CONSTITUTE THE MAKE-UP OF AN EQUIPMENT UNIT. THIS SHALL INCLUDE ITEMS SUCH AS INDIVIDUAL MOTORS, CONTROLS, PUMPS, BLOWERS AND/OR ELECTRICAL ENCLOSURES OR HOUSINGS OR ELECTRICAL SAFETY DEVICES CONSTITUTING AN INDIVIDUAL PIECE OF EQUIPMENT SOLD AS A PACKAGE UNIT.

THE ELECTRICAL WIRING DIAGRAM SHALL BE SUBMITTED IN THE FOLLOWING MANNER:

1. ONE (1) DRAWING SHALL BE PRESENTED IN THE FORM ACTUAL "WIRING DIAGRAM" WHICH SHALL INCLUDE ALL OF THE DEVICES IN THE SYSTEM AND SHOW THEIR PHYSICAL RELATIONSHIP TO EACH OTHER. ALL POLES, TERMINALS, COILS, ETC., SHALL BE SHOWN IN THE PROPER PLACES ON EACH DEVICE.
2. THE DRAWING DESCRIBED ABOVE SHALL BE SUPPLEMENTED BY THE ADDITION OF ONE (1) "LINE DIAGRAM", SOMETIMES REFERRED TO AS A "SCHEMATIC DIAGRAM", WHICH IS A REPRESENTATIVE OF THE SYSTEM SHOWING EVERYTHING IN THE SIMPLEST FORM. ALL CONTROL DEVICES ARE SHOWN BETWEEN VERTICAL LINES WHICH REPRESENT THE SOURCE OF CONTROL POWER AND CIRCUITS ARE SHOWN CONNECTED AS DIRECTLY AS POSSIBLE FROM ONE OF THESE LINES TO THE OTHER. THIS SHALL SHOWN THE EFFECT THAT OPENS AND CLOSES VARIOUS CONTACTS OR DEVICES IN THE CIRCUIT.
3. A COPY OF EACH OF THE ABOVE APPROVED DRAWINGS SHALL BE PLACED IN THE CONTROL PANEL OF EACH INDIVIDUAL SYSTEM REQUIRED OR SHOWN ON THE DRAWINGS FOR READY REFERENCE FOR MAINTENANCE. THIS SHALL BE IN ADDITION TO THE OPERATION MANUALS WHICH SHALL ALSO INCLUDE THE ABOVE SPECIFIED DRAWINGS.

MANUFACTURER'S SHOP DRAWINGS
THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, SEVEN (7) COPIES OF MANUFACTURER'S DRAWINGS AND/OR DATA FOR ALL PRECAST CONCRETE STRUCTURAL WORK REQUIRED AND FOR ALL PURCHASED UNITS REQUIRED TO COMPLETE INSTALLATION OF THE WORK, INCLUDING PIPE, CONDUIT, WIRING, ETC..

THE CONTRACTOR SHALL CHECK ALL MANUFACTURER'S DRAWINGS FOR CONFORMANCE TO THE PLANS AND SPECIFICATIONS AND SHALL INDICATE HIS APPROVAL OF THE DRAWINGS BEFORE FORWARDING THEM TO THE ENGINEER. THE ENGINEER WILL NOT CONSIDER ANY MANUFACTURER'S DRAWINGS OR SCHEDULES SUFFICIENT TO RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS OR OMISSIONS IN MANUFACTURER'S DRAWINGS OR SCHEDULES OR DEVIATIONS FROM THE PLANS AND SPECIFICATIONS.

AFTER THE CONTRACTOR RECEIVES CORRECTED APPROVED SHOP DRAWINGS AND MANUFACTURER'S SHOP DRAWINGS HE SHALL SUBMIT TO THE ENGINEER (13) COPIES OF APPROVED DRAWINGS AND DATA. THE ENGINEER WILL RETAIN FOUR (4) COPIES OF THE DRAWINGS SUBMITTED FOR APPROVAL AND NINE (9) COPIES OF THE APPROVED DRAWINGS.

SUBMERSIBLE PUMPS
THE CONTRACTOR SHALL FURNISH AND INSTALL TWO (2) PIRANNA GRINDER, VERTICAL MOUNT, NOE-2SUBMERSIBLE SEWAGE PUMPS DESIGNED FOR A CAPACITY OF :

2 H.P.
50 FOOT TOTAL DYNAMIC HEAD @35 GPM
95 T.D.H., PUMP SHUT OFF HEAD _____
43 MAX. U.S. GPM @15 FOOT T.D.H.

OR APPROVED EQUAL AS MANUFACTURED BY ABS PUMPS, INC., GORMAN - RUPP COMPANY OR FLYGT CORPORATION.

EACH PUMP SHALL HAVE A U.L. LISTED, HERMETICALLY SEALED, SUBMERSIBLE TYPE, ELECTRIC MOTOR OF 3450 R.P.M. FOR OPERATION ON 3-WIRE, 230 VOLT, SINGLE PHASE, 60 HERTZ POWER DESIGNED TO CLASS F, INSULATION AND MOTOR SHALL BE AIR-FILLED SPECIFICATIONS FOR GENERAL USE IN PUMPING WATER AND SEWAGE. THE MOTOR NAME PLATE HORSE-POWER RATING SHALL NOT BE EXCEEDED BY THE BRAKE HORSEPOWER REQUIREMENT OF THE PUMP FOR THE DESIGN CONDITION OF SERVICE SPECIFIED AND FOR THE IMPELLER DIAMETER FURNISHED. THE MOTOR SHAFT SHALL BE 420 STAINLESS STEEL, IMPERVIOUS TO THE LIQUID AND WASTE MATTER WHICH IS BEING PUMPED. THERMAL OVERLOAD PROTECTION AND A MOISTURE DETECTION SYSTEM SHALL BE BUILT INTO THE MOTOR. BIMETALLIC THERMAL SWITCHES SHALL BE EMBEDDED IN EACH PHASE OF WINDING TO SENSE HIGH TEMPERATURES. TWO MECHANICAL SEALS SHALL BE USED TO CONTAIN THE OIL IN THE PROBE AND DETECTION CHAMBER. TWO PROBES SHALL BE SUPPLIED IN THIS CHAMBER FOR MOISTURE DETECTION. THE MECHANICAL SEALS SHALL HAVE CARBON AND CERAMIC MATING FACES, STAINLESS STEEL METAL PARTS AND BUNA N ELASTOMERS.

THIRTY FEET OF U.L. APPROVED, EXTRA HARD USAGE, MULTI-CONDUCTOR CABLE WITH GROUND WIRE SHALL BE SUPPLIED WITH THE MOTOR. (NEC CODE 501-11) FURNISH W/STRAIN RELIEF POSITIVE CABLE CLAMP.

LIFTING EYES SHALL BE CAST INTO THE MOTOR HOUSING ADEQUATELY DESIGNED TO LIFT THE PUMP-MOTOR ASSEMBLY. THE PUMP SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM A48-64, CLASS 30, WHICH SHALL INCLUDE CAST IRON FOR INTEGRAL SUPPORT LEGS, PUMP, CASING AND IMPELLER. ALL PIPE FLANGES SHALL BE FACED AND TO THE THICKNESS REQUIRED FOR COMPLIANCE WITH 125 LB. AMERICAN STANDARD. BOLT SLOTS ARE ACCEPTABLE IN LIEU OF DRILLED HOLES.

THE PUMP CASING SHALL BE OF THE VOLUTE TYPE AND MADE OF CAST IRON. THE CASING SHALL BE OF ONE PIECE CONSTRUCTION AND OF CENTER LINE DISCHARGE DESIGN TO MINIMIZE CLOGGING OR FLOW INTERFERENCE. THE EXTERIOR SHALL BE FACTORY FINISH, ALL FASTENERS SHALL BE 304 STAINLESS STEEL.

THE IMPELLER SHALL BE CAST IN ONE PIECE AND DIRECTLY MOUNTED TO A ONE PIECE STAINLESS STEEL PUMP-MOTOR SHAFT. IT SHALL NOT REQUIRE SEPARATE PUMP SHAFT OR COUPLING. EACH IMPELLER SHALL BE A MULTIPLE VANE CENTRIFUGAL TYPE. THE CUTTER MATERIAL SHALL BE SIMILAR TO AN ANSI 440C STAINLESS STEEL W/THE ADDITION OF COBALT, VANADIUM AND MOLYBDENUM FOR SUPERIOR ABRASION RESISTENCE AND A HARDNESS OF 58-62 ROCKWELL C 420. IMPELLER SHALL PASS A SHEARED, REDUCED FINE SLURRY OF ALL WASTE MATERIALS ENTERING PUMPS AND CAPABLE OF

LIFT STATION NOTES

NOTES

FREELY PASSING THROUGH A 1 1/4" PIPING SYSTEM INTO A 4" FORCED MAIN TO PREVENT CLOGGING.

THE IMPELLER HUB SHALL BE PROVIDED WITH A KEYWAY AND KEY AND WILL BE LOCKED TO THE PUMP SHAFT AND MAINTAINED IN THIS POSITION BY A WASHER AND SELF-LOCKING IMPELLER SCREW OR NUT.

BEARINGS SHALL BE IN ACCORDANCE WITH ELECTRIC MOTOR SPECIFICATION B-10 LIFT OF 15,000 HOURS. THE BOTTOM BEARING IS TO BE A LOCKED SHELF, HIGH THRUST, ANTI-FRICTION BEARING WHICH PREVENTS SHAFT MOVEMENT.

QUICK LIFT ASSEMBLY

THE CONTRACTOR SHALL FURNISH TWO SLIDE RAIL ASSEMBLIES TO GUIDE SUBMERSIBLE PUMPS FROM UPPER LEVEL TO ITS OPERATIONAL LOCATION IN THE SUMP BASIN, PER ABS GUILD RAIL SYSTEM OR EQUIVALENT. ALL SLIDE MECHANISMS TO LINK UP THE PUMP WITH THE BASE ELBOW, MOUNTING OR RAILS, ETC. SHALL BE INCLUDED AND SHALL BE U.L. LISTED EQUIPMENT. PUMP SHALL BE FURNISHED W/BALL CHECKS PER ABP PUMP CO. SPECIFICATIONS OR APPROVED EQUAL.

DUPLEX SUBMERSIBLE PUMP CONTROL PANEL

THE CONTRACTOR SHALL FURNISH AND INSTALL A 36" X 30" X 8" FREE STANDING MOUNTING DEAD FRONT CONTROL PANEL ENCLOSURE, FABRICATED OF 14 GAUGE, TYPE 304 STAINLESS STEEL WITH FULLY GASKETED HINGED DOOR AND STAINLESS STEEL LOCKABLE DOOR HANDLE. THE PANEL SHALL BE WEATHERPROOF AND CONFORM TO NEMA 4 X STAINLESS STEEL CONSTRUCTION MAIN DISCONNECT SWITCH. ENCLOSURE SHALL BE FURNISHED W/HOFFMAN TYPE L24 QUICK-RELEASE LATCHES APPROVED FOR NEMA 4 ENCLOSURES. THE CONTROLS WILL BE MOUNTED TO A REMOVABLE SUBPANEL, WIRED AND SPACED IN ACCORDANCE WITH NATIONAL ELECTRIC CODE. EACH PUMP WILL BE SUPPLIED WITH A PROPERLY SIZED MAGNETIC TYPE CIRCUIT BREAKER TO PROVIDE SHORT CIRCUIT PROTECTION AND ACT AS A MAIN DISCONNECT FOR EACH PUMP. MAGNETIC ACROSS-THE-LINE STARTER TO PROVIDE UNDER VOLTAGE RELEASE AND THERMAL OVERLOAD RELAYS IN ALL THREE PHASES TO INSURE COMPLETE SINGLE PHASE PROTECTION. CONTROLS SHALL INCLUDE CONTACTS FOR FOUR LEVEL SENSORS, AN ALTERNATOR RELAY, TWO GREEN RUNNING LIGHTS AND TWO HAND-OFF AUTO SELECTOR SWITCHES. ALL CONTROLS EXCEPT THE LEVEL SENSORS ARE TO BE MOUNTED INSIDE THE CONTROL CABINET UNLESS SHOWN OTHERWISE.

AN AUTOMATIC ALTERNATOR IS TO PROVIDE OPERATIONAL SEQUENCE OF LEAD AND LAG PUMPS TO EQUALIZE WEAR AND USAGE OF THE PUMPS.

CONTROL CENTER ENCLOSURE WILL BE FOR 115 / 230 VOLTS, SINGLE PHASE, 60 HERTZ, 3 WIRE POWER SUPPLY. A 120 VOLT CONTROL CIRCUIT WITH 1-POLE, 20 AMP. BREAKER ALSO CONTROL RELAY AND CONTACTS FOR HIGH WATER ALARM TO REMOTE ALARM IN BUILDING, DISCONNECT AND OVERLOAD PROTECTION SHALL BE INCLUDED. ALL ITEMS SHALL BE WIRED TO TERMINAL STRIPS FOR CONNECTION TO EXTERNAL WIRING. CONTROL PANEL SHALL CONFORM TO ENCLOSED DRAWING OF "SUBMERSIBLE DUPLEX PUMP LIFT STATION CONTROL PANEL" WIRING DETAIL PUMP CONTROL CENTER OR EQUIVALENT BY GORMAN-RUPP COMPANY, FLYGT CORP., OR APPROVED EQUAL.

IN ADDITION TO THE CONTROL CENTER, THE FOLLOWING OPTIONS SHALL BE INCLUDED: CONTROL RELAY WITH HIGH WATER ALARM, ALARM HORN, RED ALARM (FLASHING) AND WHITE SILENT LIGHT SILENCING SWITCH. UTILITY LIGHT OUTLET FOR USE OF TROUBLE LIGHT AND SMALL MAINTENANCE TOOLS W/GROUND FAULT 2-POLE, 3 WIRE GROUND, 20 AMP., 125 VOLT A.C., HOSPITAL GRADE DUPLEX G.F.I.C. RECEPTACLE PROTECTION. FLOAT SWITCH TEST PUSH-BUTTONS. AUXILIARY CONTACTS WIRED TO TERMINAL BLOCKS. LIGHTENING ARRESTOR MAIN DISCONNECT SWITCH ON INCOMING LINES. 120 VOLT CONTROL WIRING FOR SAFE PANELS AND AUDIBLE ALARM AND SWITCH AND GROUND ROD (1" DIAMETER) AS PER 625.10 (713.16).

LEVEL SENSORS

FOUR MERCURY LIQUID LEVEL SENSORS SHALL BE FURNISHED AND INSTALLED. THEY SHALL BE SHOCK RESISTANT, MERCURY SWITCH, SEALED IN A VINYL BALL AND SHALL EACH HAVE THE DESIGNED LENGTH PLUS AN ADDITIONAL 15 FEET OF CORD ATTACHED. THE MERCURY SWITCH LEVEL CONTROL SHALL SENSE THE LIQUID LEVEL AND PROVIDE THE SIGNAL TO THE CONTROL PANEL.

THREE SWITCHES ARE REQUIRED FOR NORMAL OPERATION OF A DUPLEX PUMP INSTALLATION, PROVIDING THE FOLLOWING SIGNAL: ONE SHALL STOP ALL PUMPS, THE SECOND STARTS THE LEAD PUMP AND THE THIRD OPERATES THE LAG PUMP. ONE ADDITIONAL SWITCH SHALL PROVIDE A SIGNAL FOR HIGH WATER ALARM. FURNISH AND INSTALL A NEMA 3X JUNCTION BOX FOR FLOAT CABLES PER ABS PUMPS, INC. OR APPROVED EQUAL. EACH BRACKET SHALL PROVIDE HANGING POSITIONS FOR FOUR SENSORS.

ELAPSE TIME METER AND MOISTURE DETECTOR

EACH DUPLEX SUBMERSIBLE PUMP WILL BE EQUIPPED WITH A METER WHICH TOTALS ITS OPERATIONAL TIME IN HOURS, 115 VOLTS, 60 HERTZ, MAXIMUM READING 99999.9 HOURS, NON-RESET, 8" WIRE LEAD TERMINALS, WITH DUST COVER EQUAL TO GRAINGER'S (CRAWER MFR'S MODEL 635G), ENGLER INSTRUMENTS 200 SERIES, CAT. NO. AC200 190 N-L27, CRAWER MODEL NO. 635K OR APPROVED EQUAL.

EACH DUPLEX SUBMERSIBLE PUMP WILL BE EQUIPPED WITH A MOISTURE DETECTOR ALARM LIGHT AND SHUTDOWN. EACH MOTOR SHALL BE EQUIPPED WITH TWO SEALS AND AN OIL CHAMBER BETWEEN THEM IF WATER GETS PAST THE LOWER SEAL, IT WILL ACTUATE THE MOISTURE PROBE AND ALARM LIGHT.

72" PRECAST REINFORCED CONCRETE PIPE WET WELL

THE 72" PRE-CAST CONCRETE CONDUIT FOR THE LIFT STATION WASTEWATER RECEIVER SHALL CONFORM TO REINFORCED CONCRETE CIRCULAR PIPE ASTM C-478 WITH RESILIENT AND FLEXIBLE GASKET JOINTS FOR CONCRETE PIPE ASTM C-443-LATEST ADDITION.

VOIDS AND JOINTS

ALL VOIDS AND JOINTS IN THE 72" PRE-CAST REINFORCED CONCRETE WET WELL AND VALVE BOX SHALL BE SEALED WITH A NON-SHRINK, NON-METALLIC GROUT OR MORTAR.

ACCESS DOORS

LIFT STATION AND VALVE BOX ACCESS DOORS ARE TO BE DOUBLE DOOR, ALUMINUM CONSTRUCTION. THEY ARE TO BE EQUIPPED WITH CONCRETE ANCHORS FOR SETTING IN CONCRETE AND TORSION BAR SPRINGS TO HOLD THE DOORS IN THE OPEN POSITION WHILE WORK IS BEING PERFORMED AND SHALL BE DOUBLE-LEAFED.

OUTSIDE ENTRANCE SHALL BE OBTAINED WITH A REMOVABLE KEY WRENCH. A HANDLE SHALL BE PROVIDED INSIDE THE ACCESS DOORS TO PERMIT OPENING THE DOOR FROM THE INSIDE. DOORS SHALL BE CHECKERED PLATE 2'-6" X 4'-0" IN SIZE.

THE ACCESS DOORS SHALL BE CONSTRUCTED INTEGRALLY WITH THE LIFT STATION PRE-CAST COVER SLAB AND THE VALVE BOX COVER SLAB.

ELECTRICAL CIRCUITS SHALL BE JOINTED TO THE MANHOLE WITH A GASKETED FLEXIBLE WATERTIGHT CONNECTION ON A WATERTIGHT RESILIENT CONNECTOR CONFORMING TO ASTM C-923 OR SEALED WITH A NON-SHRINK NON-METALLIC GROUT.

ELECTRICAL ITEMS

THE POWER CONTROL PANEL SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AS SHOWN ON THE PLANS.

POWER SERVICE TO THE DUPLEX CONTROL PANEL SHALL BE SUPPLIED FROM THE MOTORIST SERVICES BUILDING WHICH SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AS PER SECTION 625 OF THE SPECIFICATIONS.

THE CONTRACTOR SHALL CONNECT THE POWER SERVICE TO THE INPUT SIDE OF THE CONTROL PANEL AND CONNECT THE VARIOUS PANEL LEADS TO THE PUMPS AND LEVEL CONTROLS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AT THE DIRECTION OF THE ENGINEER. CONTRACTOR SHALL ALSO INSTALL AND MAKE CONNECTION TO THE GROUND ROD AS REQUIRED.

GROUND ROD

THE EQUIPMENT GROUND ROD SHALL BE FURNISHED AND INSTALLED AND TESTED AS PER CONSTRUCTION AND MATERIAL SPECIFICATIONS, ITEM 625.10 AND 713.16 AND SHALL ALSO COMPLY TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC). THE EQUIPMENT INTENDED BEING THE LIFT STATION CONTROL PANEL AND ALL RELATED COMPONENTS.

IDENTIFICATION

THE CONTRACTOR SHALL PROVIDE LAMINATED NAMEPLATES FOR ALL DISCONNECT SWITCHES, PANELS, MOTOR STARTERS, CONTACTORS, CABINET TRANSFORMERS AND SIMILAR ITEMS OF EQUIPMENT STATING THE PURPOSE OF EACH SWITCH SIZE AND TRANSFORMER. DESIGNATION OF EACH CONTROL UNIT, CONTACTOR, ETC., PLATES SHALL BE LAMINATED PHENOLIC WITH WHITE CORE AND BLACK SURFACE, 1/16" THICK FOR SIZE UP TO 2" X 4" AND 1/8" THICK FOR LARGER SIZES. ENGRAVED LETTERING SHALL BE CONDENSED GOTHIC 1/4" LETTERS AT FOUR LETTERS PER INCH, WITH 3/4" HIGH LETTERS ON THE LARGEST PLATES. PLATES SHALL BE SECURED TO EQUIPMENT WITH GRASS SCREWS AND NUTS. PANEL SCHEDULES SHALL BE TYPEWRITTEN.

PADLOCKS

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL PADLOCKS REQUIRED FOR ACCESS DOORS AND CONTROL PANELS. PADLOCKS SHALL BE MASTER LOCK NO. 4 BKA, W/BRASS SHACKLES, KEYED-ALIKE AND FURNISHED WITH 10 KEYS. WILSON BOHANNON 660 OR APPROVED EQUAL, SUBJECT TO THE ENGINEER'S APPROVAL.

HYDROSTATIC TESTING

IN LIEU OF THE HYDRAULIC (WATER), TEST AS IN 603.06 OF THE CONSTRUCTION AND MATERIALS SPECIFICATION AN AIR PRESSURE TEST SHALL BE PERFORMED BY THE CONTRACTOR. THE AIR PRESSURE TEST OF THE PIPE JOINTS SHALL BE MADE AFTER THE COMPLETION OF THE SEWER.

ALL JOINTS SHALL BE FREE AND CLEAR OF ANY BACKFILL TO ALLOW FOR INSPECTION.

THE AIR PRESSURE TEST FOR LEAKAGE SHALL BE PERFORMED ON ALL SANITARY SEWER LINES WHICH SHALL INCLUDE THE 6"Ø SEWER PIPE GRAVITY SECTION AND THE 4" SEWER PIPE FORCED MAIN SECTION OF THE SYSTEM. THE AIR PRESSURE TEST SHALL MEET THE REQUIREMENTS OF THE ENVIRONMENTAL PROTECTION AGENCY AND THE APPROPRIATE COUNTY SANITARY DISTRICT.

SHOULD ANY SECTION OF THE SEWER LINE FAIL TO MEET THE TEST REQUIREMENTS, CORRECTIONS SHALL BE MADE UNTIL THE TEST REQUIREMENTS FOR THE SECTION ARE MET.

THE ENVIRONMENTAL PROTECTION AGENCY AND THE APPROPRIATE SANITARY DISTRICT SHALL BE NOTIFIED BY O.D.O.T. A MINIMUM OF 48 HOURS PRIOR TO PERFORMING ANY AIR TESTS.

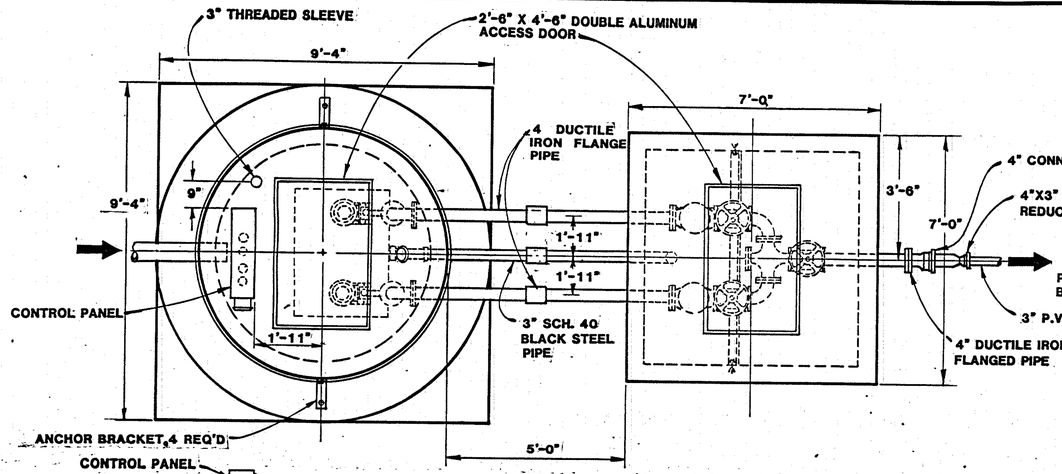
THE COST OF ALL MATERIALS, EQUIPMENT, LABOR AND INCIDENTALS NECESSARY FOR PERFORMING THE TESTS AND MAKING ANY NECESSARY CORRECTIONS AND REPLACEMENTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PERTINENT SEWER LINE.

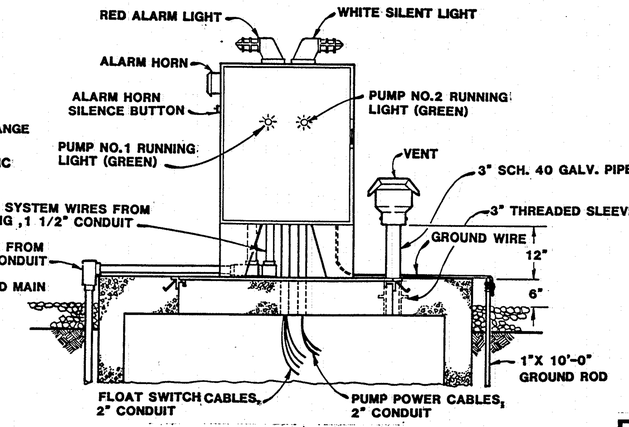
FIELD SERVICE

AT THE TIME THE LIFT STATION IS FILLED WITH WATER BY THE CONTRACTOR, POWER CONNECTIONS ARE COMPLETED AND ALL EQUIPMENT IS APPROVED FOR SERVICE, THE CONTRACTOR SHALL PROVIDE THE SERVICES OF A MANUFACTURER'S REPRESENTATIVE WHO SHALL INSTRUCT THE STATE'S REPRESENTATIVES IN THE PROPER START-UP, MAINTENANCE AND OPERATION OF THE LIFT STATION, INCLUDING INSTRUCTIONS IN CONDUCTING ALL REQUIRED OPERATIONAL TESTS. THE MANUFACTURER'S REPRESENTATIVE SHALL TURN OVER TO THE STATE'S REPRESENTATIVES, AT THAT TIME, EIGHT (8) SETS OF SERVICE MANUALS OUTLINING IN DETAIL ALL OPERATIONAL INSTRUCTIONS AND PROCEDURES. THE MANUFACTURER'S REPRESENTATIVE SHALL ALSO MAKE INSPECTIONS EVERY OTHER MONTH AND PROVIDE REPORTS TO THE DISTRICT DEPUTY DIRECTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE OHIO DEPARTMENT OF HEALTH AND OHIO DEPARTMENT OF TRANSPORTATION FOR A PERIOD OF ONE (1) YEAR. AN ADDITIONAL COPY OF EACH REPORT SHALL BE FORWARDED TO BUREAU OF DESIGN SERVICES, 25 SOUTH FRONT STREET, COLUMBUS, OHIO, 43215.

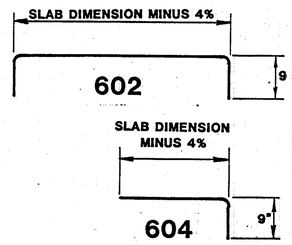
CALC BY / DATE	MAH-11-3.31	OHIO
CHKD BY / DATE		FHWA REGION 5

71 / 73

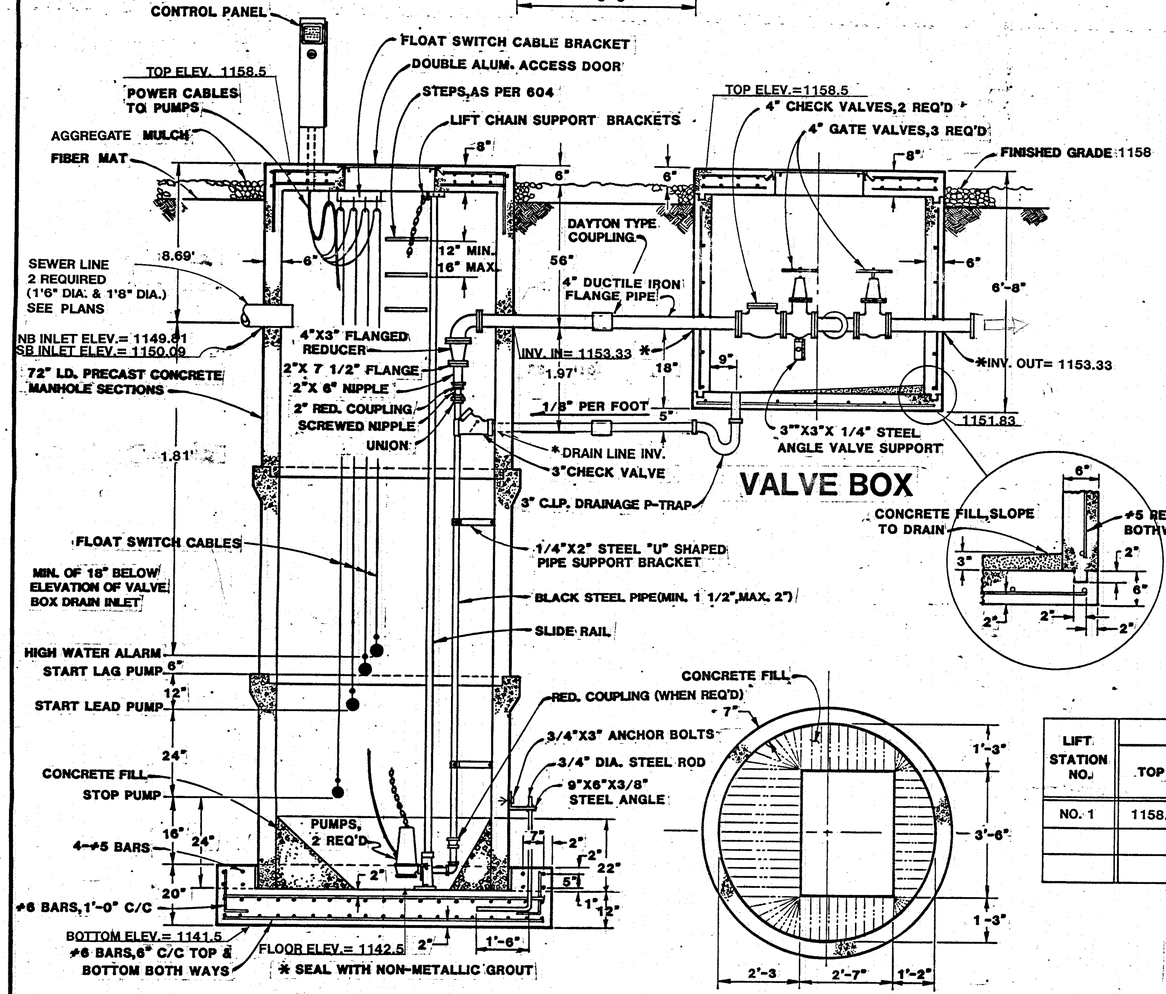




CONTROL PANEL



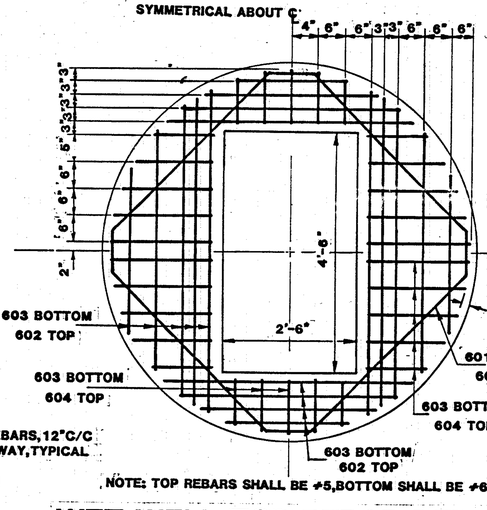
REBAR BENDING DIAGRAM



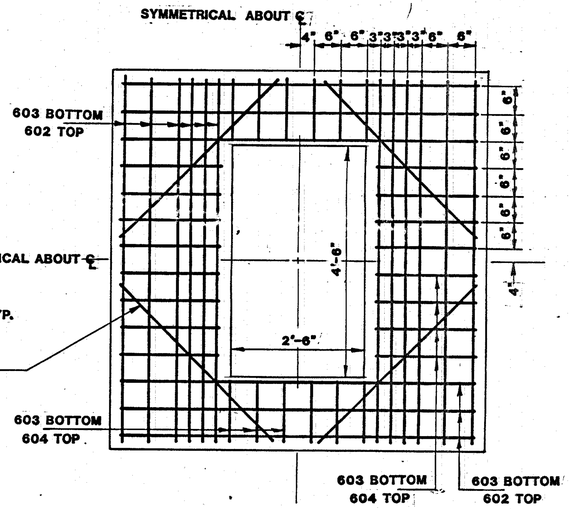
WET WELL

VALVE BOX

WET WELL FLOOR DETAIL



WET WELL TOP REBAR DETAILS



VALVE BOX TOP REBAR DETAILS

REQUIRED ELEVATIONS

LIFT STATION NO.	WET WELL										VALVE BOX		
	TOP	SEWER LINE INVERT IN	SEWER LINE INVERT OUT	VALVE BOX DRAIN LINE INV.	HIGH WATER ALARM	START LAG PUMP	START LEAD PUMP	STOP PUMP	FLOOR	BOTTOM OF FOOTER	TOP	BOTTOM	SEWER LINE INV. IN & OUT
NO. 1	1158.5	1149.81	1153.33	1151.36	1148.00	1147.50	1146.50	1144.50	1142.50	1141.50	1158.5	1151.83	1153.33
		1150.09											

FOR PUMP SIZE AND TYPE,SEE "LIFT STATION NOTES" SHEET 1 OF 4, AND 2 OF 4

NOTE: ALL COMPONENTS OF THE LIFT STATION SHALL BE AS DESCRIBED IN THE "LIFT STATION NOTES".

* WET WELL WALL SHALL BE FOR 7" THICK

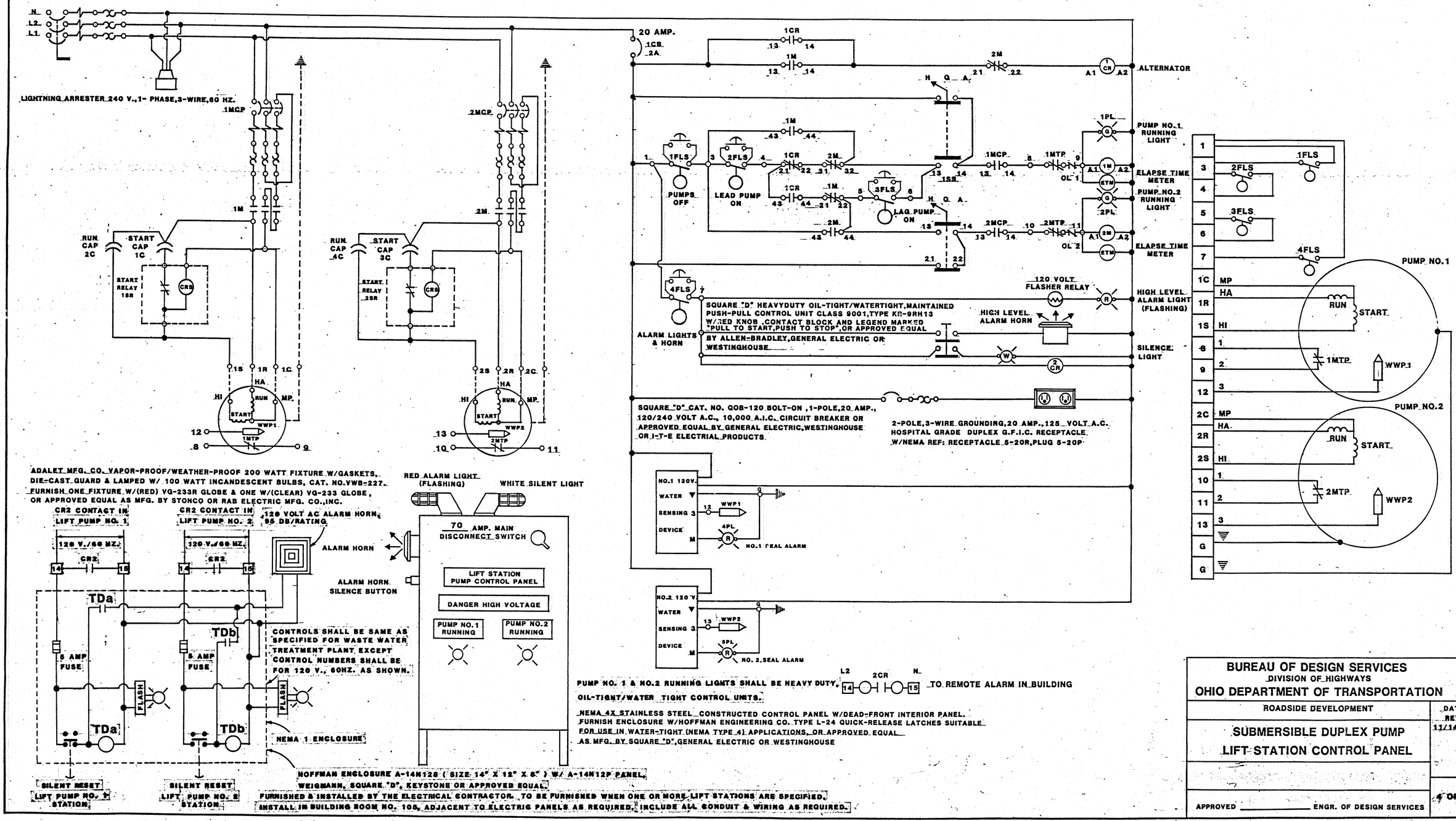
REV. 8-10-90

3 OF 4

LIFT STATION DETAILS

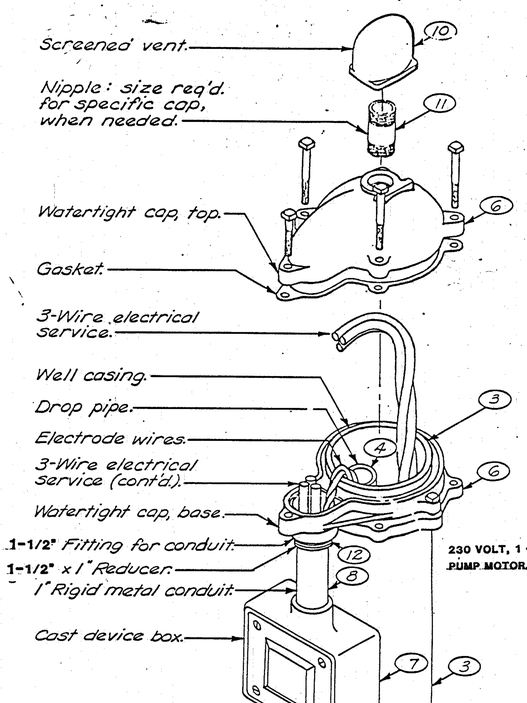
70 AMP. MAIN CIRCUIT BREAKER DISCONNECT SWITCH,3-POLE,240 VOLTS,A.C., W/STANDARD-(NO INTERNAL LOCKOFF) MECHANISM,HANDLE KIT FOR NEMA 4 ENCLOSURE AND STANDARD SHAFT AS MANUFACTURED BY WESTINGHOUSE, SQUARE "D" OR GENERAL ELECTRIC

CALC. BY		MAH-11-3.31	OHIO	72
CHKD. BY			FHWA REGION 5	73
DATE				

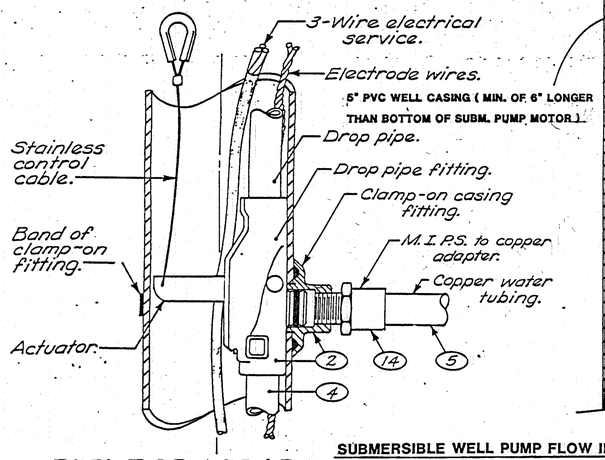


BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

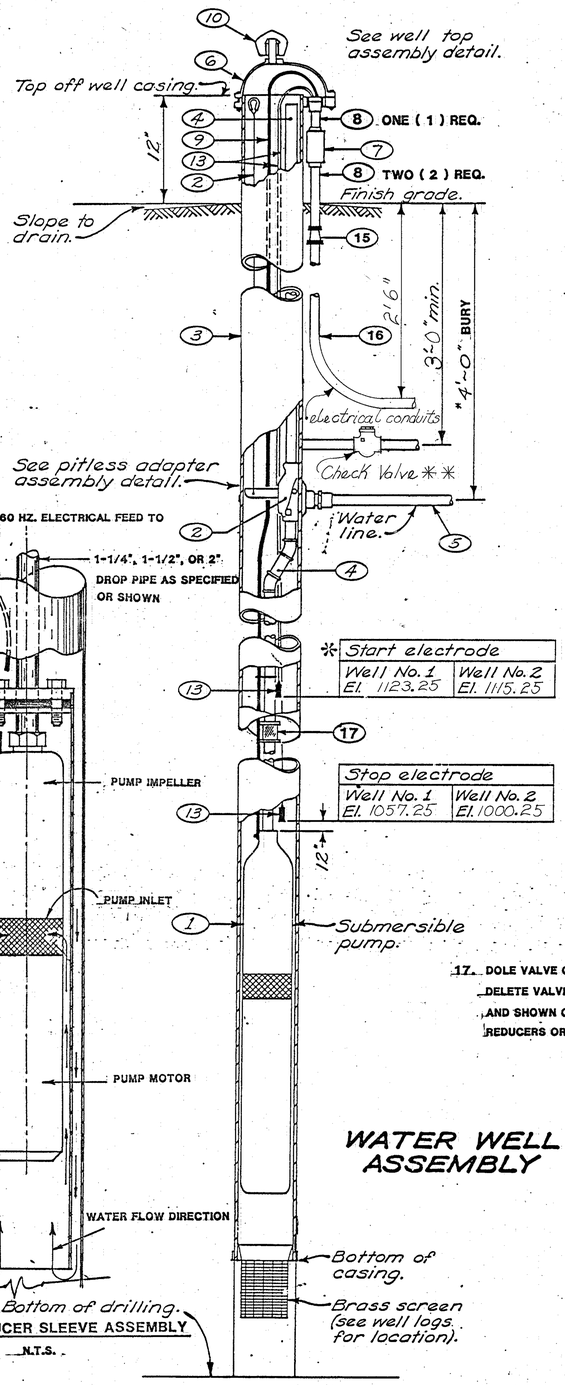
ROADSIDE DEVELOPMENT	DATE REV. 11/14/86
SUBMERSIBLE DUPLEX PUMP LIFT STATION CONTROL PANEL	
APPROVED _____ ENGR. OF DESIGN SERVICES	4 OF 4



WELL TOP ASSEMBLY



PITLESS ADAPTER ASSEMBLY



WATER WELL ASSEMBLY

* Start electrode	
Well No. 1	Well No. 2
El. 1123.25	El. 1115.25

Stop electrode	
Well No. 1	Well No. 2
El. 1057.25	El. 1000.25

17. DOLE VALVE COMPANY FLOW CONTROL VALVE. REFER TO NOTES ON PLAN SHEET RRA-8, DELETE VALVE (S) FROM HYPOCHLORINATOR SYSTEM AND INSTALL IN DROP (S) AS SPECIFIED AND SHOWN ON PLAN TO PREVENT NOISE PROBLEM IN BUILDING. FURNISH AND INSTALL REDUCERS OR INCREASERS ON EACH SIDE OF FLOW CONTROL (S) AS REQUIRED.

WELL LOGS

WELL No. 1

north bound Rest Area No. —.
Sta. 186+50, 351 ft. Rt. of ℄ Rte. 11.
Field rate 40 GPM., by bail ( )/pump ( )
Casing length 74 ft.
Strata at full depth gray sandy shale
Recommended sieve size —

Item		Elevation	Depth in feet below original grade
Top of casing		1174.25	
Original grade		1173.25	
Finish grade		1173.25	
Static water level *		1128.25	45
Drawdown			50
Bottom of casing		1100.25	
Brass screen	Top	—	
	Bottom	—	
Total drilled depth		1053.25	120

WELL No. 2

south bound Rest Area No. —.
Sta. 186+50, 342 ft. Lt. of ℄ Rte. 11.
Field rate 8 GPM., by bail ( )/pump ( )
Casing length 70 ft.
Strata at full depth sandy shale
Recommended sieve size —

Item		Elevation	Depth in feet below original grade
Top of casing		1156.5	
Original grade		1155.5	
Finish grade		1155.5	
Static water level *		Flowing	40
Drawdown			
Bottom of casing		1086.5	
Brass screen	Top	—	
	Bottom	—	
Total drilled depth		995.5	160

* If actual static water level is not as indicated, the start electrodes are to be set 5'-0" below measured level.

** Well no. 2 is an artesian well flowing at 8 G.P.M. Provide a 2" type K hard copper with a check valve as an overflow. Overflow to tie in with storm sewer as shown on southbound grading plan. Check valves, 120' of piping, clean outs and connection to st. sewer included in well assembly bid item. (see page 13 For additional quantities)

NOTES

1. SUBMERSIBLE PUMP SHALL BE F.E. MYERS CO., NO. 5T7Z - J7J8 OR APPROVED EQUAL BY CRANE CO, DEMING DIVISION: RED JACKET PUMPS-A. MARLEY CO. PUMP SHALL BE 3/4 H.P., 230 VOLTS, SINGLE PHASE, 60 HZ., AND HAVE A 3-WIRE MOTOR. EACH WELL PUMP INSTALLATION SHALL BE EQUIPPED WITH A LIGHTNING ARRESTOR, SUCH AS RED JACKET COMPANY, NO. 104 - 018, OR APPROVED EQUAL. MUST BE 3 - PHASE TYPE W/ 4 - WIRE LEADS. CONNECT GROUND TO WELL CASING.

   WELL PUMPS NOT HAVING A CAPACITOR (3/4 H.P. & LARGER MOTOR) SHALL BE PROVIDED WITH A MAGNETIC ACROSS-THE-LINE STARTER AND SHALL BE INCLUDED IN THE CIRCUITRY OF THE WIRING DIAGRAM.

2. PITLESS ADAPTER ASSEMBLY WITH CLAMP-ON DISCHARGE FITTING BY BAKER MFG. CO., MONITOR DIVISION, NO. 8PL61UC5 (FOR 1" DROP PIPE) OR NO. 8PL61.2UC5 (FOR 1-1/4" DROP PIPE); OR APPROVED EQUAL OF LIKE KIND AND QUALITY.

3. SIX INCH I.D. (6-5/8" O.D.) WELL CASING, ASTM A 53, GRADE B, STANDARD WEIGHT, SCHEDULE 40, GALVANIZED SEAMLESS STEEL PIPE AS PER 707.11.

4. 1-1/4" INCH I.D. DROP PIPE, ASTM A 53, GRADE B, STANDARD WEIGHT, SCHEDULE 40, GALVANIZED SEAMLESS STEEL PIPE AS PER 707.11.

5. TWO (2") INCH (NOMINAL SIZE) TYPE "K" HARD DRAWN COPPER WATER TUBING PRESSURE LINE CONFORMING TO ASTM B 88. RUN IN 20 FOOT LENGTHS TO HYPO-CHLORINATOR IN BUILDING, THEN EXTEND TO RESERVIOR TANK IN LIKE MANNER. (SEE DRAWINGS RRA-8 AND RRA-9).

6. WATER-TIGHT CAP FOR 6" WELL CASING BY BAKER MFG. CO., MONITOR DIVISION. NO. 6.6W OR APPROVED EQUAL OF LIKE KIND AND QUALITY.

7. CAST DEVICE BOX WITH FULL-FACE NEOPRENE GASKET AND BLANK COVER BY APPLETON ELECTRIC CO., NO. FDCC-1-100; OR APPROVED EQUAL BY KILLARK ELECTRIC MFG. CO., CROUSE-HINES CO., KONDU CORP. OR ADALET MFG. CO.

8. ONE INCH DIAMETER RIGID FERROUS METAL ELECTRICAL CONDUITS PER 713.04.

9. THREE-WIRE ELECTRICAL SERVICE.

10. SCREENED WELL VENT TO MATCH CAP CHOSEN FROM NOTE 6 ABOVE.

11. NIPPLE, ASTM A 53, GRADE B, STANDARD WEIGHT, SCHEDULE 40, GALVANIZED SEAMLESS STEEL PIPE AS PER 707.11; IF REQUIRED FOR SPECIFIC CAP USED.

12. REDUCER (OF SIZE REQ'D.), IF NEEDED FOR FERROUS METAL ELECTRICAL CONDUITS AS PER 713.04.

13. ELECTRODES SHALL BE B/W CONTROLLER CORP., TYPE E-1P-SHIELDED, OR APPROVED EQUAL.

14. CAST BRASS MALE IRON PIPE SIZE TO COPPER ADAPTER AS PER ASTM B 16.18.

15. RIGID STEEL CONDUIT COUPLING W/ REQUIRED SIZE STEEL REDUCED BUSHINGS (M.I.P.S. TO F.I.P.S.)

16. REFER TO UTILITY AND ELECT. BLD'G PLANS FOR RIGID GALV. CONDUIT SIZES REQUIRED. TWO (2) CONDUITS REQUIRED. 1 - FOR SUBM. PUMP ELECT. FEED AND 1 - FOR LIQUID LEVEL SENSOR CONDUCTORS.

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

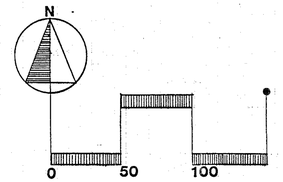
WATER WELL ASSEMBLY

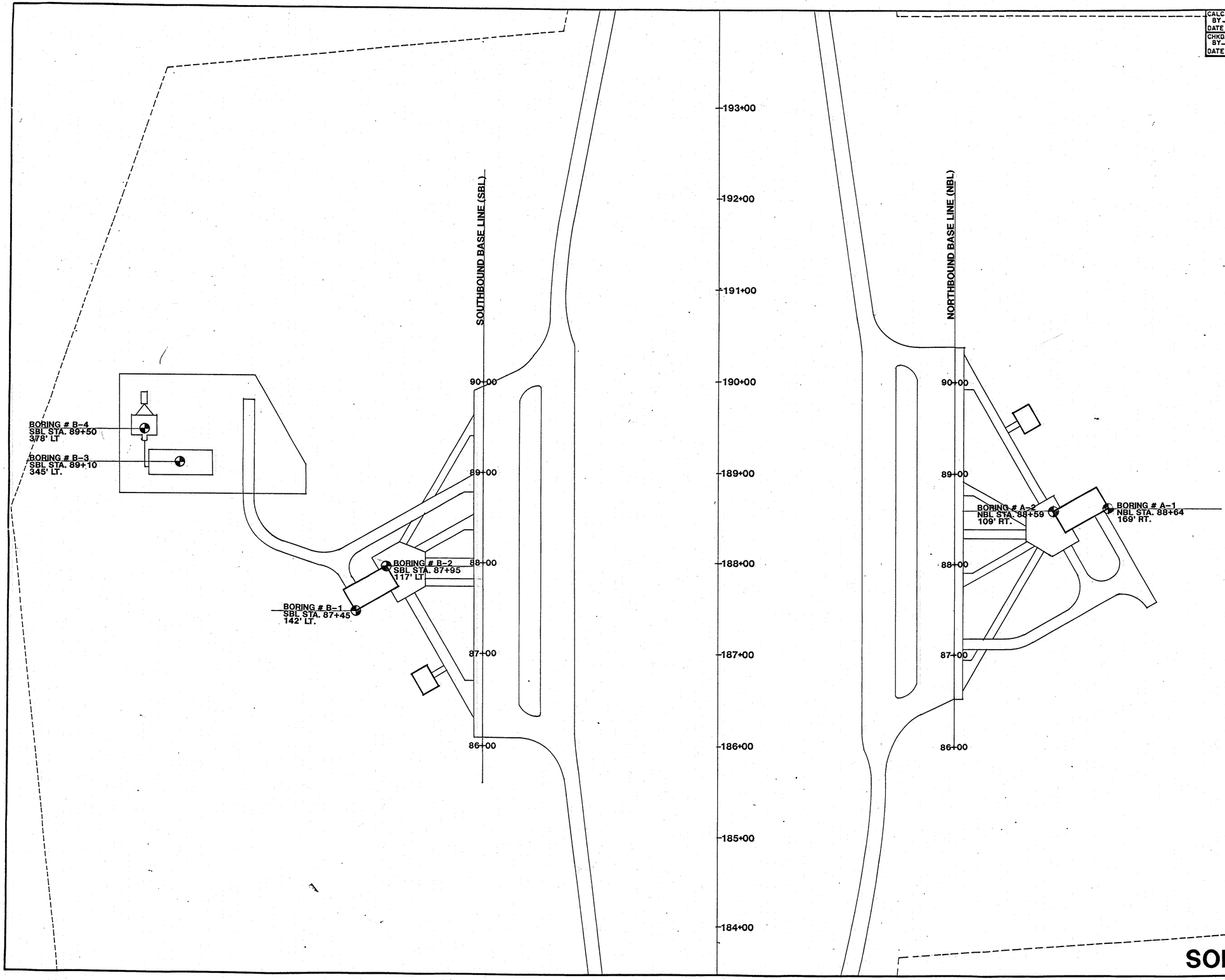
DATE 9/2/82 *2-12-86 6/4/91

MAH-11-3.31 RRA-7

APPROVED E. J. Asbach Engr. of Design Services

CALC. BY		MAH-11-3.31	OHIO	1 / 3
DATE			FHWA REGION 5	
CHKD. BY				
DATE				





SOIL BORING LOCATIONS

CALC. BY / DATE			
CHKD. BY / DATE	**MAH-11-3.31**	OHIO FHWA REGION 5	2 / 3

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 3/5/91 Sampler: Type SS Dia. 2 3/8" Water Elev. 1159.0'
Date Completed 3/5/91 Casing: Length ____ Dia. ____
Boring No. ____ Station & Offset 88+64.1 169' RT. (N.B.L.) Surface Elev. 1178.0'
Project Identification: MAHONING, MAH-11-3.56, 1 REST AREA, SUBSURFACE INVESTIGATION

Elev.	Depth	Std. Pen. (N)	Description	Allowable Bearing Cap. TSF	Field No.	Lab. Nos. So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
1178.0	0														
1173.5	2	AUGERED	SOD AND TOPSOIL												VISUAL
1171.5	4	PRESS	GRAYISH BROWN SILT AND CLAY	*	1	65649	0	4	13	53	30	33	11	27	A-6A
1169.0	6		GRAY AND BROWN GRAVELLY SANDY CLAY	*	1A	65649A	22	14	13	35	16	31	13	31	A-6A
1166.5	8	5/13/15	BROWN SANDY SILT	2.8	2	65591	8	6	21	30	35	23	6	15	A-4A
1164.0	10	PRESS	BROWN SANDY SILT	*	3	65650	11	7	19	42	21	23	6	16	A-4A
1161.5	12	15/28/30	BROWN SANDY SILT	4.4	4	65592	11	4	12	47	26	24	5	15	A-4A
1159.0	14	12/16/30	BROWN SANDY GRAVELLY SILT	3.8	5	65593	12	5	12	22	29	23	7	14	A-4A
1156.5	16	6/8/10	GRAY GRAVELLY SANDY SILT	2.0	6	65594	16	8	20	26	30	NP	NP	17	A-4A
1154.0	18	5/10/11	GRAY GRAVELLY SANDY SILT	2.0	7	65595	19	9	19	32	21	NP	NP	11	A-4A
1151.5	20	5/11/13	GRAY GRAVELLY SANDY SILT	2.3	8	65596	24	9	22	30	15	NP	NP	10	A-4A
1149.0	22	6/19/16	GRAY GRAVELLY SANDY SILT	3.3	9	65597	27	11	16	38	8	NP	NP	17	A-4A
1146.5	24	28/10/13	GRAY GRAVELLY SANDY SILT	2.2	10	65598	20	9	13	41	17	NP	NP	11	A-4A
1144.0	26	24/30/24	GRAY GRAVELLY SANDY SILT	4.1	11	65599	18	8	24	35	15	NP	NP	11	A-4A
1142.5	28	14/28/30	GRAY GRAVELLY SANDY SILT	4.4	12	65600	18	9	23	34	16	NP	NP	10	A-4A
	30		BOTTOM OF BORING												
	32		* SOIL STRENGTH TEST												
	34														
	36														

Form TE-153 Particle Sizes: Agg= >2.00mm, Coarse Sand=2.00-0.42mm, Fine Sand=0.42-0.074mm, Silt=0.074-0.005mm, Clay=< 0.005mm

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

Date Started 3/5/91 Sampler: Type SS Dia. 1 3/8" Water Elev. ____
Date Completed 3/7/91 Casing: Length ____ Dia. ____
Boring No. 1 Station & Offset 88+59.1 109' RT. (N.B.L.) Surface Elev. 1174.0'
Project Identification: MAHONING, MAH-11-3.56, 1 REST AREA, SUBSURFACE INVESTIGATION

Elev.	Depth	Std. Pen. (N)	Description	Allowable Bearing Cap. TSF	Field No.	Lab. Nos. So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	SHTL Class
1174.0	0														
1173.5	2	AUGERED	SOD AND TOPSOIL												VISUAL
1171.5	4	7/8/8	BROWN GRAVELLY SILT	4.7	13	65601	20	3	10	46	22	28	7	20	A-4A
1169.0	6	10/14/18	BROWN GRAVELLY SANDY SILT	3.0	14	65602	21	6	17	36	20	24	7	12	A-4A
1166.5	8	7/9/12	BROWN WITH GRAY SANDY SILT	2.1	15	65603	11	5	23	43	18	NP	NP	20	A-4A
1164.0	10	12/21/28	BROWN GRAVELLY SANDY SILT	3.7	16	65604	16	8	20	38	18	NP	NP	13	A-4A
1161.5	12	8/9/13	GRAYISH BROWN GRAVELLY SANDY SILT	2.2	17	65605	22	7	18	37	16	22	7	12	A-4A
1159.0	14	6/7/12	GRAY SANDY GRAVELLY SILT	2.0	18	65606	25	7	13	33	22	25	9	10	A-4A
1156.5	16														
1154.0	18														
1151.5	20	8/9/10	BROWN AND GRAY GRAVELLY SANDY SILT	2.0	19	65607	19	7	16	35	23	24	7	15	A-4A
1149.0	22														
1146.5	24														
1144.0	26	5/10/13	GRAY GRAVELLY SANDY SILT	2.3	20	65608	20	7	18	35	20	22	7	14	A-4A
1142.5	28														
	30														
	32	5/10/16	GRAY SANDY SILT	2.7	21	65609	12	9	24	39	16	20	4	13	A-4A
	34		BOTTOM OF BORING												
	36														

Form TE-153 Particle Sizes: Agg= >2.00mm, Coarse Sand=2.00-0.42mm, Fine Sand=0.42-0.074mm, Silt=0.074-0.005mm, Clay=< 0.005mm

NORTHBOUND SOIL BORINGS

CALC. BY		MAH-11-3.31	OHIO	3
DATE			FHWA REGION 5	3
CHKD. BY				
DATE				

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

(1/9)

Date Started 3/5/91 Sampler: Type SS Dia. 1 3/8" Water Elev. 1150.0
Date Completed 3/11/91 Casing: Length ____ Dia. ____

Project Identification: MAHONING
MAH-11-3.49
REST AREA
SUBSURFACE INVESTIGATION

Boring No. B-1 Station & Offset 87+85, 182' LT. (S.B.L.) Surface Elev. 1157.0'

Elev.	Depth	Std. Pen. (N)	Description	Allowable Bearing Cap. TSF	Field No.	Lab. Nos. So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	PI	W.C.	SHTL Class
1157.0	0														
1156.5	2	AUGERED	SOD AND TOPSOIL												VISUAL
1154.5	4	3/4/6	BROWN AND GRAY SANDY SILT	1.0	13	65642	0	10	26	44	20	24	8	15	A-4A
1152.0	6	4/4/7	BROWN SANDY SILT	1.1	14	65643	14	6	16	46	18	23	6	12	A-4A
1149.5	8	2/3/4	BROWN SILT	0.5	15	65644	4	4	11	60	21	24	6	21	A-4B
1147.0	10	6/12/15	GRAY GRAVELLY SANDY SILT	2.7	16	65645	18	9	25	36	12	NP	NP	10	A-4A
1144.5	12	4/6/9	GRAY GRAVELLY SANDY SILT	1.7	17	65646	23	11	23	39	4	NP	NP	19	A-4A
1142.0	14	5/7/11	GRAY SILTY SAND	3.5	18	65647	14	22	51	12	1	NP	NP	20	A-3A
1139.5	16														
1137.0	18														
1134.5	20	15/11/15	BROWN SILTY GRAVELLY SAND	4.1	19	65648	40	24	17	16	3	NP	NP	11	A-1-B
1132.0	22														
1129.5	24														
1127.0	26	11/14/24	GRAY SANDY SILT	3.2	20	65655	12	7	16	39	26	24	8	13	A-6A
1124.5	28														
	30														
	32	7/14/18	GRAY SILTY SANDY GRAVEL	6.1	21	65656	39	15	20	12	14	0	0	12	A-2-4
	34		BOTTOM OF BORING												
	36														

Form TE-153 Particle Sizes: Agg= >2.00mm, Coarse Sand=2.00-0.42mm, Fine Sand=0.42-0.074mm, Silt=0.074-0.005mm, Clay=< 0.005mm

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

(2/9)

Date Started 3/5/91 Sampler: Type SS Dia. 1 3/8" Water Elev. 1150.5'
Date Completed 3/5/91 Casing: Length ____ Dia. ____

Project Identification: MAHONING
MAH-11-3.49
REST AREA
SUBSURFACE INVESTIGATION

Boring No. B-2 Station & Offset 87+95, 117' LT. (S.B.L.) Surface Elev. 1156.0'

Elev.	Depth	Std. Pen. (N)	Description	Allowable Bearing Cap. TSF	Field No.	Lab. Nos. So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	PI	W.C.	SHTL Class
1156.0	0														
1155.5	2	AUGERED	SOD AND TOPSOIL												VISUAL
1153.5	4	2/3/4	BROWN SILTY GRAVELLY SAND	1.5	1	65631	24	11	27	25	13	NP	NP	24	A-4A
1151.0	6	PRESS	BROWNISH GRAY SANDY SILT	*	2	65653	0	11	26	42	21	23	6	14	A-4A
1148.5	8	3/4/7	GRAYISH BROWN SANDY SILT	1.1	3	65632	0	11	17	47	25	26	8	16	A-4A
1146.0	10	3/5/9	GRAY SILTY SANDY GRAVEL	3.7	4	65633	39	12	23	23	3	NP	NP	13	A-2-4
1143.5	12	AUGERED	GRAY SILTY GRAVELLY SAND (GRADING ONLY)	-	5	65634	18	42	18	20	2	NP	NP	13	A-1-B
1141.0	14	9/18/21	BROWN SILTY GRAVELLY SAND	5.2	6	65635	38	16	31	72	3	NP	NP	15	A-1-B
1138.5	16	9/17/17	BROWN SILTY SANDY GRAVEL	6.1	7	65636	46	20	19	13	2	NP	NP	14	A-1-B
1136.0	18	17/19/24	BROWN SILTY SAND	5.5	8	65637	11	56	19	13	1	NP	NP	14	A-1-B
1133.5	20	13/15/13	BROWN SILTY GRAVELLY SAND	4.3	9	65638	33	37	11	18	1	NP	NP	12	A-1-B
1131.0	22	13/17/25	BROWN SILTY GRAVELLY SAND	5.5	10	65639	36	18	18	23	5	NP	NP	9	A-1-B
1128.5	24	12/15/24	GRAY SILTY GRAVELLY SAND	5.2	11	65640	19	31	37	12	1	NP	NP	15	A-1-B
1126.0	26	5/10/17	GRAY SILTY SAND	4.2	12	65641	0	30	55	13	2	NP	NP	17	A-3A
1123.5	28		BOTTOM OF BORING												
	30		* SOIL STRENGTH DATA												
	32														
	34														
	36														

Form TE-153 Particle Sizes: Agg= >2.00mm, Coarse Sand=2.00-0.42mm, Fine Sand=0.42-0.074mm, Silt=0.074-0.005mm, Clay=< 0.005mm

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

(4/9)

Date Started 3/5/91 Sampler: Type SS Dia. 1 3/8" Water Elev. 1147.0'
Date Completed 3/5/91 Casing: Length ____ Dia. ____

Project Identification: MAHONING
MAH-11-3.49
REST AREA
SUBSURFACE INVESTIGATION

Boring No. B-3 Station & Offset 89+10, 345' LT. (S.B.L.) Surface Elev. 1155.0'

Elev.	Depth	Std. Pen. (N)	Description	Allowable Bearing Cap. TSF	Field No.	Lab. Nos. So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	PI	W.C.	SHTL Class
1155.0	0														
1154.5	2	AUGERED	SOD AND TOPSOIL												VISUAL
1152.5	4	1/1/2	BROWN AND GRAY SANDY SILT	0.0	1	65610	0	5	29	45	21	25	8	23	A-4A
1150.0	6	4/7/8	BROWNISH GRAY GRAVELLY SANDY SILT	1.7	2	65611	17	9	18	38	18	26	8	14	A-4A
1147.5	8	3/5/5	GRAY GRAVELLY SANDY SILT	1.0	3	65612	16	7	18	38	21	NP	NP	14	A-4A
1145.0	10	7/6/8	GRAYISH BROWN GRAVELLY SANDY SILT	1.5	4	65613	17	7	21	40	15	22	6	14	A-4A
1142.5	12	6/8/10	GRAY SANDY SILT	2.4	5	65614	0	9	20	47	24	22	6	14	A-4A
1140.0	14	7/10/11	GRAY GRAVELLY SANDY SILT	2.2	6	65615	22	9	25	25	19	20	5	10	A-4A
1137.5	16	8/10/13	GRAY SANDY SILT	2.3	7	65616	14	12	28	29	17	NP	NP	12	A-4A
1135.0	18	6/12/12	GRAY GRAVELLY SANDY SILT	2.4	8	65617	15	10	28	32	15	NP	NP	10	A-4A
1132.5	20	7/12/17	GRAY GRAVELLY SANDY SILT	3.1	9	65618	22	10	23	30	15	NP	NP	15	A-4A
1130.0	22	3/7/9	GRAY GRAVELLY SANDY SILT	1.7	10	65619	16	9	22	30	23	20	6	15	A-4A
1127.5	24	7/10/12	GRAY GRAVELLY SANDY SILT	2.3	11	65620	15	9	21	35	20	22	6	17	A-4A
1125.0	26	7/13/15	GRAY GRAVELLY SANDY SILT	2.8	12	65621	21	9	25	27	18	NP	NP	13	A-4A
1122.5	28		BOTTOM OF BORING												
	30														
	32														
	34														
	36														

Form TE-153 Particle Sizes: Agg= >2.00mm, Coarse Sand=2.00-0.42mm, Fine Sand=0.42-0.074mm, Silt=0.074-0.005mm, Clay=< 0.005mm

State of Ohio
Department of Transportation
Division of Highways
Testing Laboratory

LOG OF BORING

(5/9)

Date Started 3/7/91 Sampler: Type SS Dia. 1 3/8" Water Elev. 1144.0'
Date Completed 3/7/91 Casing: Length ____ Dia. ____

Project Identification: MAHONING
MAH-11-3.49
REST AREA
SUBSURFACE INVESTIGATION

Boring No. B-4 Station & Offset 89+50, 378' LT. (S.B.L.) Surface Ele. 1154.0

Elev.	Depth	Std. Pen. (N)	Description	Allowable Bearing Cap. TSF	Field No.	Lab. Nos.So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	PI	W.C.	SHTL Class
1154.0	0														
1152.0	2	AUGERED	BLACK SANDY SILTY CLAY W/HOOFS (DRILLER'S DESCRIPTION)	-	-	-	-	-	-	-	-	-	-	-	VISUAL
1151.5	4	PRESS	BROWNISH GRAY SILT AND CLAY	*	13	65651, A+B	0	0	4	54	42	30	11	21	A-6A
1149.0	6	6/7/8	BROWN GRAVELLY SANDY SILT	1.7	14	65622	15	11	23	36	15	NP	NP	13	A-4A
1142.5	8		GRAY W/ BROWN GRAVELLY SANDY SILT (GRADING ONLY)	-	15	65652	23	11	18	33	15	21	4	21	A-4A
1144.0	10	PRESS	GRAY SANDY SILT	*	15A	65652A	6	15	12	34	33	20	5	11	A-4A
1141.5	12	31/14/14	GRAY GRAVELLY SANDY SILT WITH COBBLES	3.0	16	65623	23	10	21	33	13	21	6	14	A-4A
1139.0	14	3/4/7	GRAY GRAVELLY SANDY SILT (SAND HEAVED IN FLIGHT AUGERS)	1.1	17	65624	23	10	18	32	17	21	5	14	A-4A
	16	5/10/17	GRAY GRAVELLY SANDY SILT	2.7	18	65625	18	10	22	29	21	21	4	12	A-4A
	18														
1134.0	20														
1131.5	22	5/7/10	GRAY GRAVELLY SANDY CLAY	2.1	19	65626	22	9	22	32	15	20	14	13	A-4A
1129.0	24	9/10/15	GRAY GRAVELLY SANDY SILT	2.5	20	65627	16	8	21	38	17	20	5	12	A-4A
	26	8/12/24	GRAY GRAVELLY SANDY SILT	3.4	21	65628	27	10	19	28	16	21	7	12	A-4A
1124.0	28														
	30														
	32	3/5/7	GRAY GRAVELLY SANDY SILT	1.8	22	65629	19	13	27	30	11	NP	NP	13	A-4A
1119.0	34														
	36	1/2/3	GRAY SILTY GRAVELLY SAND	0.5	23	65630	27	13	33	20	7	NP	NP	8	A-2-4

Form TE-153 Particle Sizes: Agg= >2.00mm, Coarse Sand=2.00-0.42mm, Fine Sand=0.42-0.074mm, Silt=0.074-0.005mm, Clay=< 0.005mm
* SOIL STRENGTH DATA

(6/9)

Boring No. B-4 Station & Offset 89+50, 378' LT. Surface Elev. 1154.0' Project: MAH-11-3.49

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Field No.	Lab. Nos. So.	% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	PI	W.C.	SHTL Class
	38															
1114.0	40	AUGERED			NO SAMPLE - SAND HEAVED 2.0' IN FLIGHTS	-	-	-	-	-	-	-	-	-	-	VISUAL
	42				BOTTOM OF BORING											
	44				* SOIL STRENGTH DATA											
	46															
	48															
	50															
	52															
	54															
	56															
	58															
	60															
	62															
	64															
	66															
	68															
	70															
	72															
	74															
	76															
	78															
	80															

SOUTHBOUND SOIL BORINGS