FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	I-71-4(33)129	

1
68

I-71-4 (33) 129

MEDINA COUNTY
MED-71-22.55
REST AREA NO. 3-39

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

MED-71-22.55
REST AREA NO. 3-39
MEDINA COUNTY
BRUNSWICK HILLS TOWNSHIP & CITY OF BRUNSWICK

CONVENTIONAL SIGNS

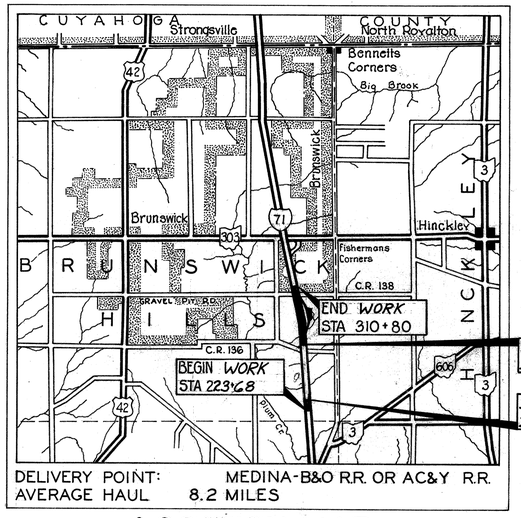
COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CORPORATION LINE
CENTER LINE OR BASE LINE
FENCE LINE
POLE LINE (TELEPHONE & POWER)
GUARD RAIL- EXISTING & PROPOSED
DUMPED ROCK
JUTE MATTING
SEED & MULCH DITCHES
RIGHT OF WAY WITH LIMITED ACCESS — LA
EXISTING RIGHT OF WAY — R/W

INDEX OF SHEETS

TITLE SHEET	1
SCHEMATIC LAYOUT & DESIGN DESIGNATION	2
TYPICAL SECTIONS	3 & 4
GENERAL NOTES	5 & 6
CONSTRUCTION DETAILS	6 & 6A
CALCULATIONS	7
GENERAL SUMMARY	8
PLAN	9
RAMP PROFILES	10
RAMP TERMINAL DETAILS	11 & 12
PARKING AREA DETAILS	13 - 15
ROADWAY CROSS SECTIONS	16 - 23
REST AREA PLAN & DETAILS	24 - 28
REST AREA CROSS SECTIONS	29
MOTORISTS SERVICES BUILDING AND STORAGE UNIT PLANS AND NOTES	30 - 53
WATER SYSTEM DETAILS	54 - 56
SEWAGE TREATMENT PLANT	57 & 58
TRAFFIC CONTROL	59 - 64
LIGHTING	65 - 67
CENTERLINE SURVEY PLAT	68

LINE DATA

	PROJECT	WORK	
BEGIN		STA 223+68	
SUSPEND		STA 224+93	
RESUME		STA 268+04	
END		STA 310+80	
GROSS LENGTH	0.00 FT.		4,401.00 FT.
ADD FOR STA. EQUATIONS			
STA 284+99.16 BACK = STA 284+83.55 AHEAD			+15.61 FT.
STA 289+53 BACK = STA 289+35.36 AHEAD			+17.64 FT.
NET LENGTH	0.00 FT.		4,434.25 FT.
	OR 0.000 MILES	OR	0.839 MILES



LOCATION MAP

Scale of Miles
1 in. = 1 mi.
0 1 2 3 4

PORTION TO BE IMPROVED
STATE & INTERSTATE HIGHWAYS
OTHER ROADS

SCALES

PLAN	VARIABLE
PROFILE-HORIZONTAL	1" 50'
PROFILE-VERTICAL	1" 5'
CROSS SECTIONS	1" 10'

LIMITED ACCESS

THIS IMPROVEMENT HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR OF HIGHWAYS IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02, REVISED CODE OF OHIO, AND IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC.

1967 SPECIFICATIONS

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

The right of way for this improvement will be provided by the State of Ohio.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provision for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved D H Zimmer
Date 6-13-67 Division Deputy Director

Approved _____
Date _____ Engineer of Bridges

Approved R.E. Gatlin
Date 9-5-67 Engineer of Location and Design

Approved R.E. Shultz
Date 9-5-67 Deputy Director of Design and Construction

Approved _____
Date _____ Deputy Director of Right of Way

No PR Hwy 9-27-67
Approved Thomas M Major
Date 9-12-67 Deputy Director of Planning and Programming

Approved E W Nielsen
Date 9-12-67 First Assistant Director

Approved P E Morbitzer
Date 9-12-67 Director of Highways

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS							
BP-1	6-1-65	F-1	6-1-65	HL-1	11-1-65	MC-1	6-1-65
BP-2	1-10-67	F-2	6-1-65	HL-2	11-1-65		
BP-3	1-10-67	F-4	6-1-65	HL-3	11-1-65	MC-3	5-1-66
BP-4	1-10-67	FACI-1	6-1-65	HW-E	6-1-65	MC-4	6-1-65
BP-7	1-1-66	FACI-2	6-1-65	L-1	6-1-65	MC-6	6-1-65
CB-3A	6-1-65	GR-1	1-1-67	L-2	6-1-65	RRA-2	6-1-65
CB-6	6-1-65	GR-2A	1-1-67	CB-3	6-1-65	RRA-3	6-1-65
BP-6	6-1-65	GR-6	6-1-65	I-1	6-1-65		

SUPPLEMENTAL SPECIFICATIONS			
815	1-1-67		
816	8-6-65		
806	1-1-67		
822	8-24-65		
1001	3-21-66		

FILE Nº I-71 (2) 11	MEDINA CO. MED-71-22.55 REST AREA NO. 3-39
	DATE OF LETTING _____ 196
	CONTRACT Nº _____

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

APPROVED:

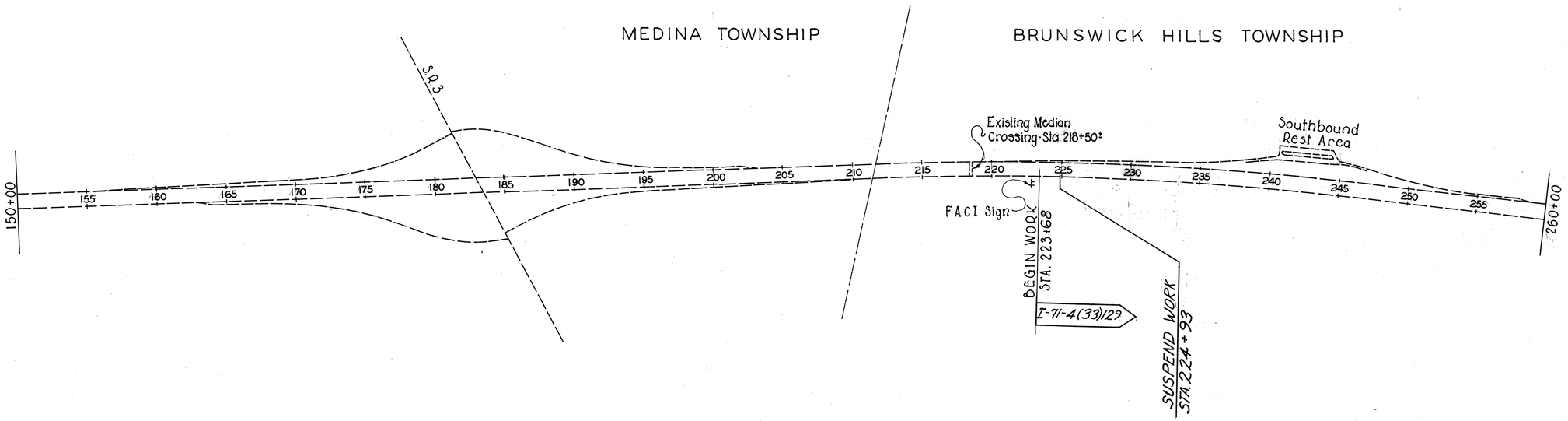
_____ DIVISION ENGINEER

_____ DATE

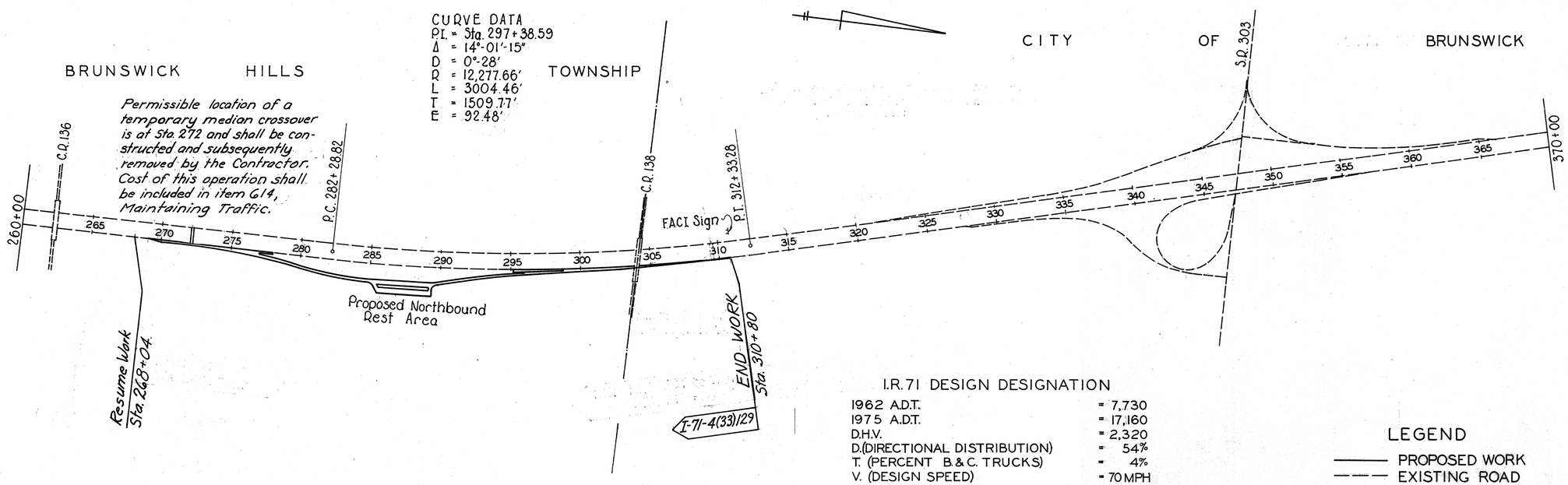
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

2
68

MED-71-22.55



Scale: 1"=400'



I.R. 71 DESIGN DESIGNATION

1962 A.D.T.	= 7,730
1975 A.D.T.	= 17,160
D.H.V.	= 2,320
D.(DIRECTIONAL DISTRIBUTION)	= 54%
T. (PERCENT B.& C. TRUCKS)	= 4%
V. (DESIGN SPEED)	= 70 MPH

LEGEND

——— PROPOSED WORK

– – – EXISTING ROAD

Scale: 1"=400'

SCHEMATIC LAYOUT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

3
68

MEO-71-22.55

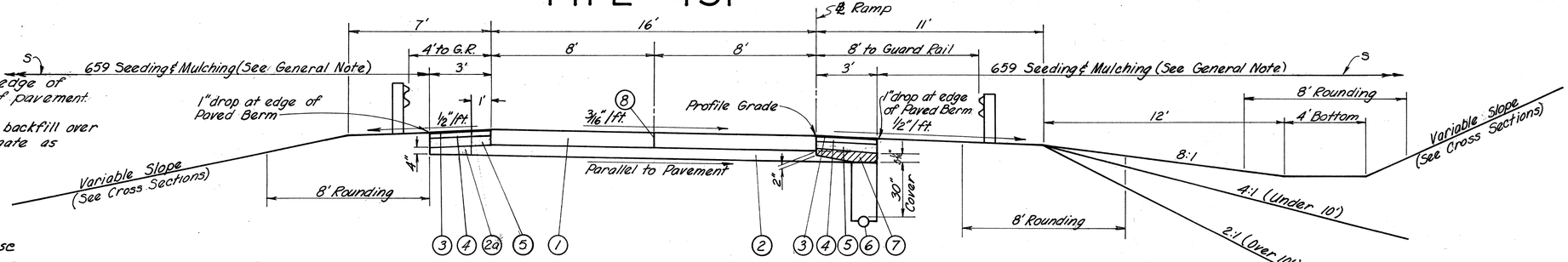
TYPICAL SECTIONS
TYPE 451

NOTE: Details of Shoulders, Slopes and Ditches not shown are to conform with Standard Drawing MC-1 unless otherwise shown.

SEQUENCE OF OPERATIONS

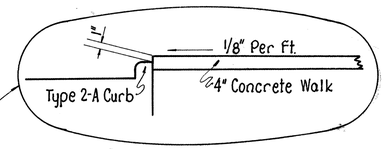
(1.) Install pipe underdrain
* (2.) Place subbase material out to outside edge of underdrain or one foot beyond edge of pavement.
(3.) Construct 451 Concrete Pavement
(4.) Remove subbase and any contaminated backfill over underdrain and replace with No. 8 aggregate as shown by Drainage Connector Detail.
(5.) Complete berm construction

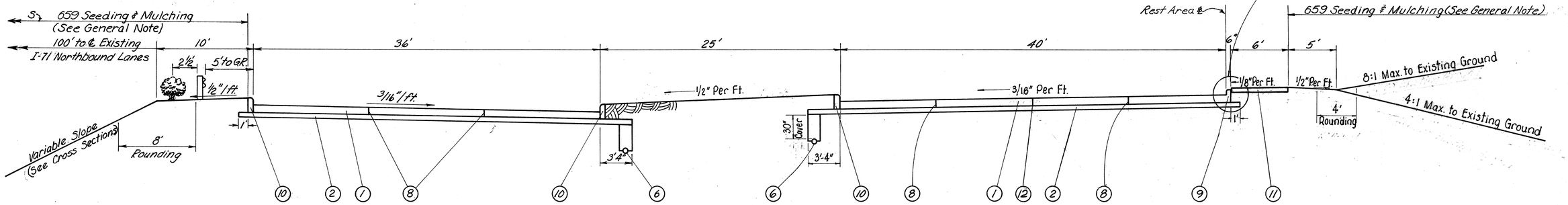
* Payment shall be made for all subbase placed in this operation.



RAMP TYPICAL SECTION

RAMP NA: Sta. 278+03.07 To Sta. 284+99.16
RAMP NB: Sta. 289+76.34 To Sta. 294+30



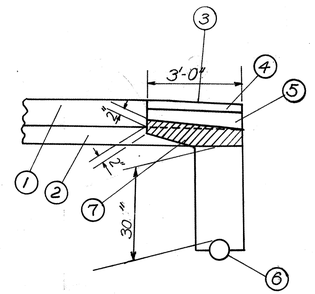


REST AREA TYPICAL SECTION

Sta. 285+67 To Sta. 289+53

LEGEND

(1)	Item	451	9" Reinforced Portland Cement Concrete Pavement
(2)	Item	310	6" Subbase, Grading A or B, as per plan (See General Note)
(2a)	Item	310	Subbase, Regular Grading
(3)	Item	409	Seal Coat, using 0.008 Cu. Yds. No. 8 Aggregate per Sq. Yd. and 0.30 Gal Bituminous Material Per Sq. Yd. (See Note in Proposal)
(4)	Item	301	3" Bituminous Aggregate Base, 702.01 (85-100) or 702.09, RT-10 (See Note in Proposal)
(5)	Item	304	Aggregate Base, 6" Unless otherwise shown
(6)	Item	605	6" Shallow Pipe Underdrain
(7)	Item	Special	Drainage Connector Using No. 8 Aggregate (See Note in Proposal)
(8)			Standard Longitudinal Joint
(9)	Item	609	Concrete Curb, Standard Type 2A
(10)	Item	609	Concrete Curb, Standard Type 7
(11)	Item	608	4" Concrete Sidewalk
(12)			Standard Longitudinal Key Joint without Tie Bars

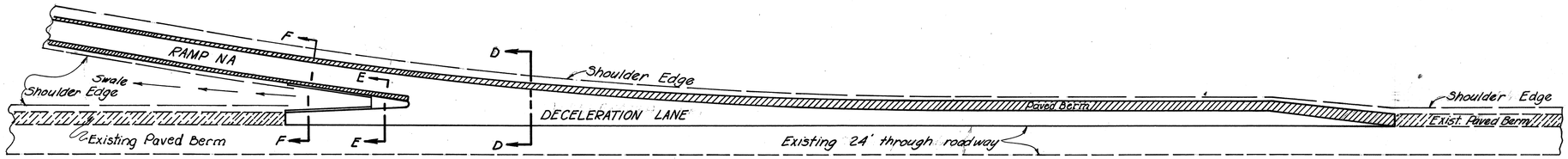


DETAIL OF SPECIAL DRAINAGE CONNECTOR

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

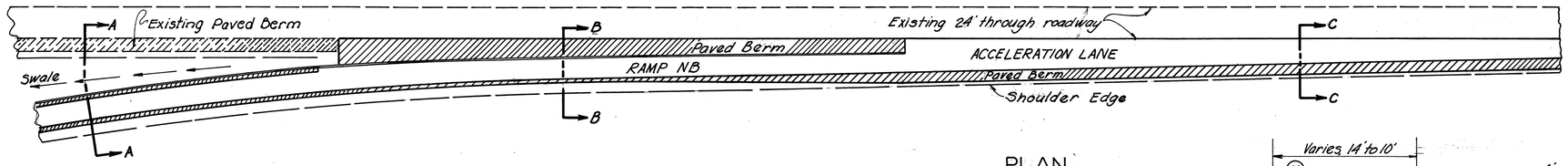
MED-71-22.55

4
68

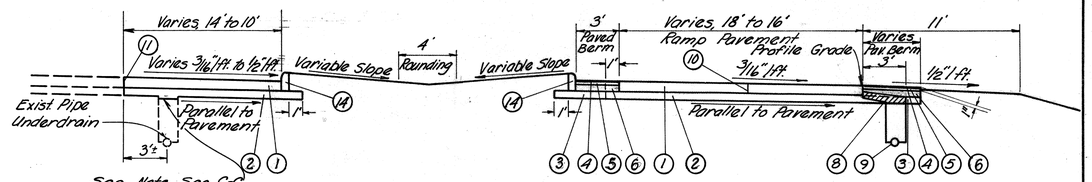


NOTE: For details of pavement, paved berm and shoulder transitions see 'Acceleration Ramp and Deceleration Ramp Details, Sheets No. 11 & 12.

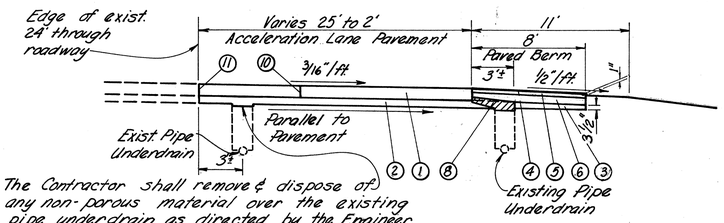
℄ Existing IR 71



PLAN
Scale 1" = 50'

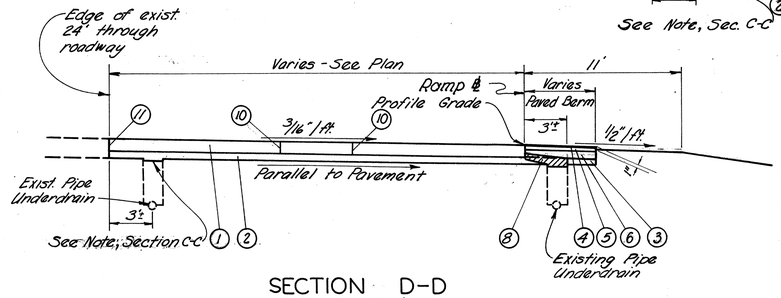


SECTION F-F
Scale 1"=5'



The Contractor shall remove & dispose of any non-porous material over the existing pipe underdrain as directed by the Engineer, and replace with subbase material, grading A or B, as modified by the General Note. Compensation for removing and disposing of the unsuitable material shall be included in the unit price bid for Item 203 Excavation.

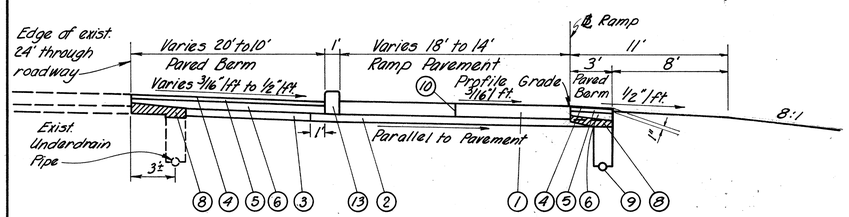
SECTION C-C
Scale 1"=5'



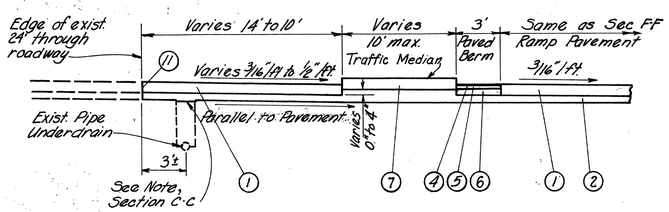
SECTION D-D
Scale 1"=5'

LEGEND

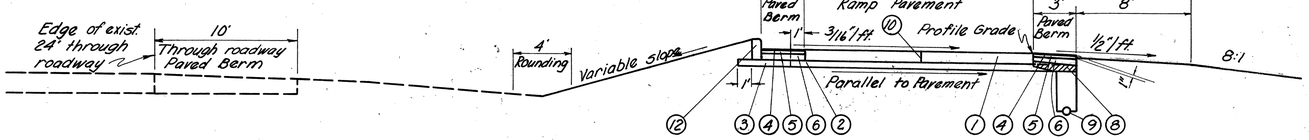
(1)	Item 451	9" Reinforced Portland Cement Concrete Pavement
(2)	Item 310	6" Subbase, Grading A or B, as per plan (See General Note)
(3)	Item 310	Subbase, Regular Grading
(4)	Item 409	Seal Coat using 0.008 Cu. Yds. No. 8 Aggregate per Sq. Yd. and 0.30 Gal. Bituminous Material Per Sq. Yd. (See Note in Proposal)
(5)	Item 301	3" Bituminous Aggregate Base, 702.01 (85-100) or 702.09, PT-10 (See note in proposal)
(6)	Item 304	Aggregate Base, 6" Unless Otherwise Shown, As Per Plan (See General Note)
(7)	Item 612	9" Concrete Median, See Detail Sheet #11
(8)	Special	Drainage Connector, Using No. 8 Aggregate (See Note in Proposal)
(9)	Item 605	6" Shallow Pipe Underdrain
(10)		Standard Longitudinal Joint
(11)		Longitudinal Expansion Bolt Joint (Spaced 5'0" c/c) (See note in proposal)
(12)	Item 609	Concrete Curb, Standard Type 7
(13)	Item 609	Concrete Curb, Standard Type 8
(14)	Item 609	Concrete Curb, Standard Type 6, Modified as per plan (4" Height)



SECTION B-B
Scale 1"=5'



SECTION E-E
Scale 1"=5'



SECTION A-A
Scale 1"=5'

NOTE: For Sequence Of Operations - See Sheet No. 3.

NOTE: For slope treatment of side slopes, see sheet No. 3.

RAMP TERMINALS - TYPICAL SECTIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

5/68

MEO-71-22.55

GENERAL NOTES

FIELD OFFICE:

THE CONTRACTOR SHALL, IN ADDITION TO THE REQUIREMENTS OF 105.152, PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 300 SQ. FT. OF FLOOR SPACE. THE CONTRACTOR SHALL HAVE A TELEPHONE INSTALLED AND MAINTAINED IN THIS FIELD OFFICE DURING THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL ALSO PROVIDE AND MAINTAIN SANITARY PROVISIONS AS PER 107.08. ALL THE ABOVE IS INCLUDED IN THE LUMP SUM PRICE BID FOR FIELD OFFICE.

ELEVATION DATUM:

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS:

THE ROUNDED CORNERS SHOWN ON STANDARD DRAWING MC 1, AS MODIFIED BY THE TYPICAL SECTIONS, APPLY TO ALL CROSS SECTIONS, EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

CONSTRUCTION LAYOUT STAKES:

SEE NOTE IN PROPOSAL DESCRIBING THE WORK INCLUDED IN THIS LUMP SUM PAY ITEM.

ESTIMATED QUANTITIES:

SPECIFIC LOCATIONS AND USAGE OF ESTIMATED QUANTITIES SET UP ON THIS PLAN TO BE USED "AS DIRECTED BY THE ENGINEER" SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS:

THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE FEDERAL AID CONSTRUCTION IDENTIFICATION SIGNS AT EACH OF THE FOLLOWING APPROXIMATE LOCATIONS:

1. STA. 223+00 RT.
2. STA. 310+80 LT.

SIGN DETAILS SHALL BE AS SPECIFIED ON STANDARD DRAWING FACI-1, "CODE-N-58(1) - 120(2)", *modified by deleting reference to "Commerce" appearing in the lower left portion of the sign and inserting therein "Transportation."* The signs shall be erected in accordance with Std. Dwg. FACI-2. Additional requirements shall be in accordance with notes in the proposal.*

TREES AND STUMPS REMOVED:

ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS OF THE RAMPS & PARKING AREA SHALL BE REMOVED UNDER THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING, EXCEPT THAT THOSE TREES FOR WHICH PROTECTION AND PRESERVATION WORK IS INDICATED ELSEWHERE IN THESE PLANS SHALL NOT BE REMOVED.

THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED:

SIZE	NO. TREES	NO. STUMPS
18"	14	7
30"	14	4
48"	1	1
60"	0	0

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. PAYMENT FOR REMOVAL OF THESE ADDITIONAL TREES OR STUMPS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

** and on a line immediately below adding "Federal Highway Admin."*

SEEDING AND MULCHING:

FOR THE RAMPS AND PARKING AREAS, QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN LINES TEN (10) FEET OUTSIDE THE WORK LIMITS, SEEDING LIMITS ARE SHOWN ON THE CROSS SECTIONS BY THE SYMBOL: ⌐ 5.

FOR THE PARK AREA, THE QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN THE RIGHT OF WAY FENCE LINES AND THE BACK OF THE SIDEWALK. AREAS TO BE SEEDED SHALL BE FERTILIZED IN ACCORDANCE WITH 659.08 USING A COMMERCIAL FERTILIZER HAVING A FORMULA OF(12-12-12) AND, IN LIEU OF THE APPLICATION RATE AND SEED MIXTURES LISTED IN 659.09, THE SEED SHALL BE SOWN AT THE RATE OF FOUR (4) POUNDS PER 1000 SQ. FT. WITH THE FOLLOWING SEED MIXTURE:

60% CREEPING RED FESCUE
40% KENTUCKY BLUEGRASS

Crownvetch seed (Coronilla Varia) shall be overseeded on the 2:1 backslopes between Sta. 290+00 & Sta. 296+00 at a rate of 1/2 pound per 1000 Sq.Ft. Inoculation of seed shall conform to item 659.07. The cost of this overseeding shall be included in the unit price bid for Item 659 Seeding & Mulching, as per plan.

ITEM 310 SUBBASE, GRADING A OR B, AS PER PLAN:

MATERIAL FOR THIS ITEM SHALL MEET THE REQUIREMENTS OF GRADING A OR B OF 310.02 EXCEPT THAT FOR EITHER GRADING, NO MORE THAN 10% OF THE MATERIAL SHALL PASS A NO. 200 SIEVE AFTER ALL OPERATIONS OF PLACING AND COMPACTING HAVE BEEN COMPLETED.

CONTRACTION AND EXPANSION JOINTS:

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN EXPANSION AND CONTRACTION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS SHALL IN ALL CASES BE IN ACCORDANCE WITH STANDARD DRAWING BP 4 AND THE SPECIFICATIONS.

WHERE THE NEW PAVEMENT IS PLACED ADJACENT TO THE EXISTING THROUGH ROADWAY PAVEMENT THE EXISTING JOINTS SHALL BE MADE CONTINUOUS ACROSS THE FULL WIDTH OF THE NEW PAVEMENT.

ITEM 304 AGGREGATE BASE, AS PER PLAN:

IN LIEU OF THE REQUIREMENTS OF 304.02 MATERIAL FOR THIS ITEM SHALL BE EITHER CRUSHED LIMESTONE, SLAG, OR SLACKER AGGREGATE. ALL OTHER PROVISIONS OF 304 SHALL REMAIN IN EFFECT.

CONNECTIONS TO EXISTING PIPE UNDERDRAINS:

AT PLACES WHERE THE PLANS PROVIDE FOR PROPOSED PIPE UNDERDRAINS TO BE CONNECTED TO EXISTING UNDERDRAINS, 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 PIPE. THE COST OF THIS OPERATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PIPE UNDERDRAINS.

DUST CONTROL:

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR DUST CONTROL TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 616 WATER	10	M. GAL.
ITEM 616 CALCIUM CHLORIDE	5	TONS

ITEM 656 ROADSIDE CLEANUP:

THIS ITEM IS ESTIMATED FOR PERFORMANCE ON ALL AREAS WITHIN THE PARK AREA AS DIRECTED BY THE ENGINEER. IN ADDITION TO THE SPECIFIED REQUIREMENTS OF 656 THE FOLLOWING WORK SHALL BE PERFORMED: ALL TREES LESS THAN FOUR (4) INCHES IN DIAMETER SHALL BE REMOVED. OTHER TREES AND STUMPS TO BE REMOVED SHALL BE CUT SIX (6) INCHES BELOW THE SURFACE OF THE GROUND.

THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED UNDER THIS ITEM:

SIZES	NO. TREES	NO. STUMPS
12"-24"	85	35
24"-36"	5	12
36"-60"	0	0
60" & OVER	0	0

THE ABOVE ESTIMATE IS APPROXIMATE AND THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES OR STUMPS WITHIN THE REST AREA RIGHT OF WAY. PAYMENT FOR THE REMOVAL OF THESE ADDITIONAL TREES OR STUMPS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 656 ROADSIDE CLEANUP.

THE METHOD FOR MARKING TREES AND SHRUBS TO BE REMOVED WILL BE ESTABLISHED BY THE ENGINEER, LANDSCAPE ARCHITECT, AND THE CONTRACTOR PRIOR TO WORK AROUND ANY EXISTING TREES OR SHRUBS. NO WORK WILL BE PERMITTED WITHIN THE STATION LIMITS OF THE REST AREA PRIOR TO STAKING BY THE CONTRACTOR, OF THE LIMITS OF ALL BUILDINGS, SIDEWALKS, PARKING LOTS, ETC. THE STAKING INTERVAL SHALL BE 50 FEET WHERE APPLICABLE.

GUARD RAIL, MODIFIED AS PER PLAN

Subsequent to the completion of the plans for this project, several modifications to the design & location details of guard rail have become necessary in order to comply with recently inaugurated safety concepts as follows:

Type 4 ~ 1. The post spacing for all Type 4 guard rail shall be at 6'-3" intervals with spacer blocks attached between the posts and rail elements instead of 12'-6" spacing without spacer blocks as indicated on the plans.

2. All approach (entrance) ends of Type 4 guard rail on divided lane highways shall be constructed with the new guard rail approach end assemblies as detailed on Sh. No. GA. The exit (trailing) ends of Type 4 guard rail shall be as detailed on Std. Dwg. GR-2A. Basis of Payment - Type 4 guard rail with post spacing at 6'-3", spacer blocks, and new approach end assemblies will be paid for as 606 Guard Rail, Type 4, modified as per plan, complete in place.

451 PAVEMENT REINFORCING

The 16' maximum length requirement of Std. Dwg. BP-2 dated 1-10-67 is hereby waived. All other provisions of Std. Dwg. BP-2 shall remain in effect.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MED-71-22.55

6/68

GENERAL NOTES (CONT.)

ITEM 666 PRUNING EXISTING TREES IN PARK AREA:

ALL TREES WITHIN THE PARK AREA THAT ARE TO BE SAVED SHALL BE PRUNED IN ACCORDANCE WITH ITEM 666. IN ADDITION TO THE SPECIFIED REQUIREMENTS OF ITEM 666, THE FOLLOWING WORK SHALL BE PERFORMED. LOW BRANCHES SHALL BE REMOVED TO PROVIDE TEN (10) FOOT CLEARANCE ABOVE THE GROUND SURFACE. GRAPE VINES SHALL BE REMOVED FROM ALL TREES. PAYMENT FOR THIS ADDITIONAL WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH EXISTING TREE PRUNED.

JUTE MATTING AS PER PLAN:

THE JUTE MATTING, IN LIEU OF 667.03, SHALL BE PLACED AFTER THE MULCHING MATERIAL. A MINIMUM OF ONE (1) INCH OF MULCHING MATERIAL SHALL BE APPLIED IN THE AREAS TO BE COVERED WITH JUTE MATTING. *Cost of the operation to be included for payment in item 667, Jute Matting, as per plan.*

REST AREA PROTECTION:

AREAS OTHER THAN THE PARKING LOTS, SHALL NOT BE USED FOR STORAGE OF MATERIALS, PARKING OF EQUIPMENT OR VEHICLES, OR FOR THE LOCATION OF CONSTRUCTION BUILDINGS OF ANY KIND DURING CONSTRUCTION. EQUIPMENT SHALL NOT BE OPERATED OVER THE TREE ROOT AREAS WHEN THE GROUND IS SOFT, THEREBY AVOIDING DEEP RUTTING AND DESTRUCTION OF ROOT SYSTEMS. TREES TO BE SAVED THAT ARE DAMAGED BEYOND REPAIR BY DESTRUCTION OF MORE THAN 50 PER CENT OF THE ROOT AREAS OR 30 PER CENT OF THE CIRCUMFERENCE OF BARK AREAS ON INDIVIDUAL TREES SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. REPLACEMENTS SHALL BE IN QUANTITY SUFFICIENT TO COMPENSATE FOR SHADED AREAS LOST AND SHALL BE COMPLETED AS PER ITEM 665 WITH THE CONTRACTOR FURNISHING AND PLANTING TREES OF THE SIZE AND VARIETY DIRECTED BY THE ENGINEER. IN LIEU OF "BOXING FOR TREE PROTECTION" AS REQUIRED BY STANDARD DRAWING L-1, SNOW FENCE SHALL BE USED TO PROHIBIT ACCESS TO TREE ROOT AREAS OF INDIVIDUAL TREES AND TREE GROUPS. THE ROOT AREAS ARE EQUAL IN SIZE TO THE SPREAD OF THE TREE BRANCHES. RIPRAP AND AGGREGATE SHALL BE USED TO PROTECT SALVAGED TREES NEXT TO PARKING LOTS, SIDEWALKS, BUILDINGS, ETC. WITHIN THE PARK AREAS, SPECIFICALLY THE PARKING LOT ISLAND.

MAINTAINING TRAFFIC:

CROSS-OVER MOVEMENTS SHALL BE LIMITED TO EXISTING MEDIAN CROSS-OVERS (SEE SHEET 2) AND MUST BE PROPERLY PROTECTED AND MADE WITH EXTREME CARE.

NO INTERRUPTION OF TRAFFIC ON IR-71 WILL BE PERMITTED BY THE CONTRACTOR'S CONSTRUCTION OPERATION, EXCEPT AS SPECIFICALLY PROVIDED HEREON. THE CONTRACTOR MAY CLOSE THE OUTSIDE LANE OF NORTHBOUND LANES DURING DAYLIGHT HOURS ONLY, ADJACENT TO THE REST AREA CONNECTOR RAMPS, WHILE CONSTRUCTING THE PORTIONS OF SAID CONNECTOR ROADWAY ADJACENT TO THE EXISTING PAVEMENT. THE CONTRACTOR SHALL ARRANGE HIS OPERATIONS SO AS TO PREVENT ANY INTERFERENCE TO THE CONTINUOUS FLOW OF TRAFFIC IN THE AREA OF ONE LANE TRAFFIC. LENGTH OF ONE LANE TRAFFIC SHALL BE KEPT TO A MINIMUM AS DIRECTED BY THE ENGINEER. DURING WEEKENDS, HOLIDAYS, OR ANY OTHER TEMPORARY SUSPENSION OF CONSTRUCTION OPERATIONS, UNINTERRUPTED TWO LANE TRAFFIC SHALL BE MAINTAINED. EQUIPMENT AND MATERIALS SHALL NOT BE STORED WITHIN THE MEDIAN OR WITHIN *THIRTY (30)* FEET OF THE OUTSIDE EDGE OF THE EXISTING IR-71 PAVEMENT IN AREAS NOT CONTROLLED BY TRAFFIC CONTROL DEVICES. ALL TRAFFIC CONTROL DEVICES USED AND THE PLACEMENT THEREOF SHALL BE IN ACCORDANCE WITH CHAPTER 7, CONSTRUCTION AND MAINTENANCE OPERATIONS, OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES 1963 EDITION. NIGHT ILLUMINATION SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER. PAYMENT FOR PROVIDING, ERECTING, MAINTAINING AND MOVING SIGNS, BARRICADES, BARRELS, ETC., SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC. THE COST OF MAINTAINING TRAFFIC AS OUTLINED ABOVE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

TRAFFIC SIGNING NOTES:

GENERAL NOTES PERTAINING T[illegible]E ON SHEET NO. 62.

LIGHTING NOTES:

GENERAL NOTES PERTAINING TO LIGHTING ARE ON SHEET NO. 66.

ITEM SPECIAL-EXPANSION ANCHOR BOLTS:

WHERE NEW CONCRETE PAVEMENT ABUTS EXISTING CONCRETE PAVEMENT, EXPANSION ANCHOR BOLTS AS PER STANDARD DRAWING BR-3, SHALL BE PLACED IN THE EXISTING CONCRETE PAVEMENT AT FIVE (5) FOOT INTERVALS. SEE NOTE IN PROPOSAL. DOWEL HOLES SHALL BE FORMED AND PAID FOR IN ACCORDANCE WITH ITEM 510.

BUILDING PLAN NOTES:

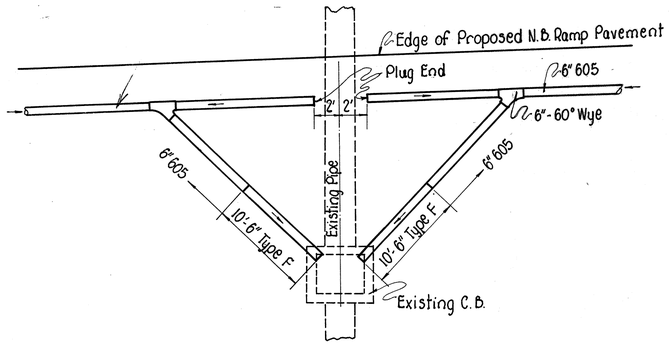
GENERAL NOTES PERTAINING TO THE MOTORISTS SERVICES BUILDING AND STORAGE UNIT ARE ON SHEET NOS. 38 TO 52

REST AREA NOTES:

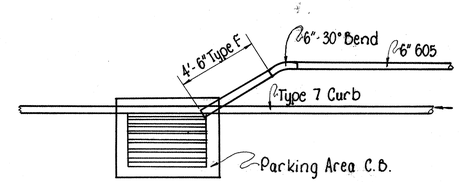
ADDITIONAL GENERAL NOTES PERTAINING TO REST AREA ITEMS ARE ON SHEET NO. 28.

DAMAGED AREAS:

THE CONTRACTOR SHALL USE ALL PRECAUTIONS NECESSARY TO PROTECT THE EXISTING PAVEMENT, DRAINAGE, SLOPES, VEGETATION, ETC. ALL DAMAGED AREAS SHALL BE RESTORED OR REPLACED BY THE CONTRACTOR AS PER 107.12 AT NO COST TO THE STATE.

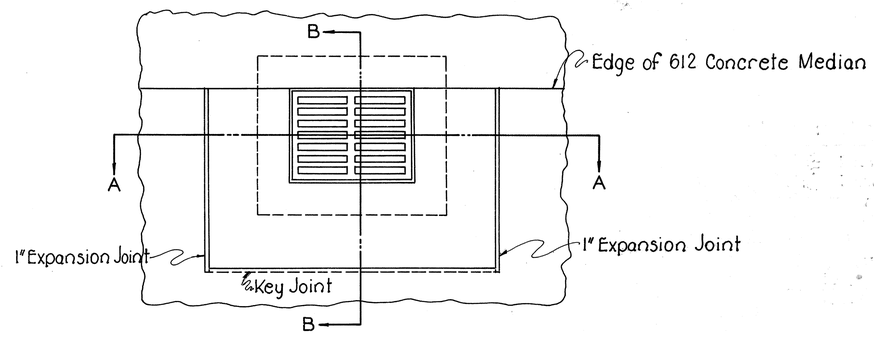


STA. 295+42 ℄ RT.

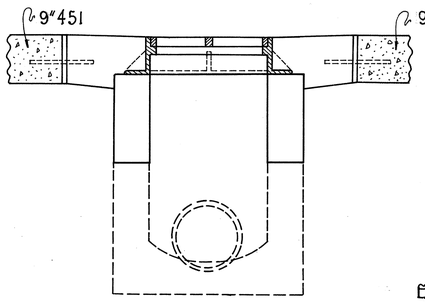


PARKING AREA

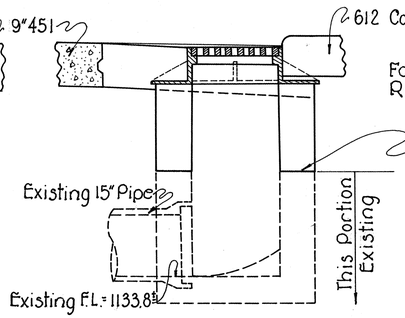
UNDERDRAIN OUTLET DETAILS



PLAN



SECTION A-A



SECTION B-B

For Other Notes and Details Refer to Standard Drawing CB-6

Construction Joint as Directed by the Engineer. Cost of this operation shall be included in the unit price bid for Item 604, Standard No. 6 Catch Basin, As Per Plan.

WORK REQUIRED:
Complete construction of Catch Basin to top of Grate. Elevation = 1138.22. (Existing Catch Basin constructed to 1'± below top of subgrade with metal plate cover.).

DETAILS OF NO. 6 CATCH BASIN
STA. 277+05 - 27' LT. ℄ RAMP N A

ITEM 621 EXISTING PAVEMENT MARKINGS REMOVED:

THIS ITEM SHALL CONSIST OF THE REMOVAL OR OBLITERATION OF PAINTED PAVEMENT MARKINGS FROM THE EXISTING PAVEMENT. THE MARKINGS MAY BE REMOVED EITHER MECHANICALLY OR BY ANY OTHER METHOD APPROVED BY THE ENGINEER EXCEPT THAT THE METHOD SHALL NOT BE INJURIOUS TO THE APPEARANCE, SMOOTHNESS OR STRENGTH OF THE PAVEMENT.

PAYMENT FOR ITEM 621, EXISTING PAVEMENT MARKINGS REMOVED SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER LINEAR FOOT AND SHALL CONSTITUTE FULL PAYMENT FOR ALL WORK INCLUDING MATERIALS, EQUIPMENT, LABOR, INCIDENTALS AND DISPOSAL OF SURPLUS MATERIALS.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MED-71-22.55

6A
68

NOTES

For details not shown, see Standard Drawings GR-1 and GR-2A.

All steel parts shall be galvanized in accordance with ASTM A123, A153 or A525, whichever may apply.

This drawing shall govern where a conflict arises.

APPROACH END ASSEMBLY
6 B 8.5 Steel posts only.

Post spacing 6'-3" center to center.

Round or Square-sawed Wood, or 6 B 8.5 Steel (without concrete encasement).

Post A

Post B

Post C

Post D

Normal face of rail.

1'-9"

SINGLE RAIL ~ PLAN VIEW

APPROACH END ASSEMBLY
6 B 8.5 Steel posts only.

℄ Bolt hole.

6'-3"

℄ Post

1⅛"

12'-3⅞"

See Terminal Anchor Detail.

A single 25'-0" long rail element shall be twisted 90° in 25' care shall be exercised to provide a smooth curve with no kinks.

27" Max.

Post A

Post B

Post C

Post D

See plan views for post type & placement.

3'-6" min.

All concrete shall be Class E, 4" minimum encasement.

SINGLE & BARRIER RAIL ~ ELEVATION

APPROACH END ASSEMBLY
6 B 8.5 Steel posts only.

Post spacing throughout barrier rail shall be 6'-3" center to center.

Post A

Post B

Post C

℄

6½"

Post E or Post A (without concrete encasement).

Post D

BARRIER RAIL ~ PLAN VIEW

NOTES

For details not shown, see Standard Drawings GR-1 and GR-2A.

All steel parts shall be galvanized in accordance with ASTM A123, A153 or A525, whichever may apply.

This drawing shall govern where a conflict arises.

1 1/16" x 15/16" oval hole.

8 Ga.

1 1/16" round hole.

1 9/16"

3"

At shoulder.

At nut.

POST BOLT WASHERS

3/16"

1¼"

POST BOLT: Same except for length.

Button head.

5/8" dia.

1¼

5/8" x 7/8" oval shoulder.

SPLICE BOLT & NUT

7" x 6" x 1'-2" Wood block

7"

1⅛"

Splice bolts.

Post bolt & washers.

Rail.

1"

7⅛"

1"

Alternate methods of placing the spacer block on the round posts may be submitted for consideration and approval by the Engineer.

ROUND WOOD POST *

2⅝"

℄ Post bolt hole in rail.

1'-4¾"

2"

4¼"

4¼"

4¼"

2"

¾" x 2" Slotted holes.

1½

12

3/16

6 B 8.5

ELEVATION

⅝" x 1" Hex head bolts and washers with hex nut.

70°

3½"

1½"

¾"

¼" Steel plate bent & welded.

6 B 8.5

SECTION F-F

TERMINAL ANCHOR DETAIL

⅝" ϕ x 1½" Button head bolt.

Bridge parapet.

5/16

¾" x 4" Slotted holes.

1½" ϕ holes.

PL 5" x ½" x 1'-1"

PL 3" x ½" x 1'-4 5/16"

PL 1¾" x ½" x 1'-4 5/16"

Guard Rail

Face of parapet.

3 11/16"

3 11/16"

7/16

¾"

3¼"

5"

4½"

4½"

2"

1¼" ϕ x 2'-0" galv. anchor bolts & nuts. Bolts are embedded 1'-10".

4"

8½"

℄ Slots & Bolts.

1'-4 5/16"

3 5/16"

½" Min. to 3⅜" Max. Clearance.

GUARD RAIL ~ BRIDGE CONNECTOR

Barrier Rail

Single Rail

7⅜"

5⅛"

7⅜"

Splice bolts.

Post bolt & washers.

2'-0"

7⅛"

1'-2"

8 B 10 x 1'-2" long.

6 B 8.5 x 5'-9" long.

⅝" Hex bolt, hex nut & 2 std. washers (2 per side of post).

1'

4" min.

POST A

Barrier Rail

Single Rail

6"

5⅛"

6"

4"

2"

1⅛"

1'-2"

7"

2¼"

2'-0"

3/16

12

5

⅜" Steel plate ASTM A7 or A36, or two sections of 6 B 8.5 cut in web (see dotted line) and welded together on both sides.

6 B 8.5

1'

4" min.

All steel spacers and posts may be provided with additional holes so that these items will not be required to be made right and left handed.

POST B

Barrier Rail

Single Rail

5⅛"

5⅛"

5⅛"

3/16

1⅛"

1'-2"

7"

2¼"

2'-0"

3/16

12

12

6 B 8.5

1'

4" min.

POST C

1½

12

1'-4¾"

8⅜"

Terminal Anchor 6 B 8.5

1'

4" min.

Provide 4 additional shop holes in end of rail element for attachment to terminal anchor.

Top of rail element shall be flush with existing ground line.

POST D

2½"

2'-0"

Splice bolts.

Post bolt & washers.

7"

8"

7"

7" x 6" Wood block.

6" x 8" Square-sawed post 5'-9" long.

All wood posts and wood spacer blocks shall be pressure treated as per 710.14.

POST E

* Tops of driven posts need not be trimmed.

GUARD RAIL ~ APPROACH END ASSEMBLY

Rev. 7-21-67

CALCULATIONS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

7/68

MED-71-22.55

451 9" Reinforced Portland Cement Concrete Pavement

Ramp NA:
- Sta. 277+03.07 to Sta. 278+03.07 = 1700 Sq.Ft.
- Sta. 278+03.07 to Sta. 284+99.16 = 11,111 Sq.Ft.
- Total = 12,811 Sq.Ft.

Ramp NB:
- Sta. 289+76.34 to Sta. 294+80 = 9769 Sq.Ft.
- Sta. 294+80 to Sta. 298+80 = 4500 Sq.Ft.
- Total = 14,269 Sq.Ft.

Parking Area
- Total = 34,747 Sq.Ft.

Ramp NA Terminal:
- Sta. 269+04.73 to Sta. 277+03.07 = 14,303 Sq.Ft.

Ramp NB Terminal:
- Sta. 298+80 to Sta. 310+80 = 15,096 Sq.Ft.
- Grand Total = 91,226 Sq.Ft.
- 91,226 Sq.Ft. x 1/9 = 10,136 Sq.Yds.

310 Subbase, Grading A or B

Ramp NA Terminal:

Pavement Area	14,303 Sq.Ft. x 0.5 Ft.	= 7152	Cu.Ft.
Berm:	798.34 Lin.Ft. x 1.378 Sq.Ft.	= 1100	Cu.Ft.
Nose Area:	216 Sq.Ft. x 0.85 Ft.	= 184	Cu.Ft.
	30 Lin.Ft. x 1.5 Sq.Ft.	= 45	Cu.Ft.
	70 Lin.Ft. x 0.75 Sq.Ft.	= 53	Cu.Ft.
	Total	= 8534	Cu.Ft.

Ramp NA:

Pavement Area	12,811 Sq.Ft. x 0.5 Ft.	= 6405	Cu.Ft.
Berms	796.09 Lin.Ft. x 1.378 Sq.Ft.	= 1097	Cu.Ft.
	762.77 Lin.Ft. x 0.471 Sq.Ft.	= 359	Cu.Ft.
	Total	= 7861	Cu.Ft.

Parking Area:

Pavement Area	34,747 Sq.Ft. x 0.5 Ft.	= 17,374	Cu.Ft.
Curbs & Underdrains	4052 Sq.Ft. x 0.5 Ft.	= 2026	Cu.Ft.
	Total	= 19,400	Cu.Ft.

Ramp NB:

Pavement Area	14,269 Sq.Ft. x 0.5 Ft.	= 7135	Cu.Ft.
Berms	903.66 Lin.Ft. x 1.378 Sq.Ft.	= 1245	Cu.Ft.
	503.66 Lin.Ft. x 0.50 Sq.Ft.	= 252	Cu.Ft.
	36.0 Lin.Ft. x 0.833 Sq.Ft.	= 30	Cu.Ft.
	364.0 Lin.Ft. x 1.00 Sq.Ft.	= 364	Cu.Ft.
	Total	= 9026	Cu.Ft.

Ramp NB Terminal:

Pavement Area	15,096 Sq.Ft. x 0.5 Ft.	= 7548	Cu.Ft.
Berms	1200 Lin.Ft. x 1.378 Sq.Ft.	= 1654	Cu.Ft.
	Total	= 9202	Cu.Ft.
	Grand Total	= 54,023	Cu.Ft.
	54,023 Cu.Ft. x 1/27	= 2001	Cu.Yds.

310 Subbase, Regular Grading

Ramp NA Terminal:

	100 Lin.Ft. x 2.063 Sq.Ft.	= 206	Cu.Ft.
	245.27 Lin.Ft. x 1.784 Sq.Ft.	= 438	Cu.Ft.
	453.07 Lin.Ft. x 1.077 Sq.Ft.	= 488	Cu.Ft.
	Total	= 1132	Cu.Ft.

Ramp NA:

	100.0 Lin.Ft. x 0.185 Sq.Ft.	= 19	Cu.Ft.
	70.0 Lin.Ft. x 1.75 Sq.Ft.	= 122	Cu.Ft.
	692.76 Lin.Ft. x 0.771 Sq.Ft.	= 534	Cu.Ft.
	Total	= 675	Cu.Ft.

Ramp NB:

	200.0 Lin.Ft. x 0.892 Sq.Ft.	= 178	Cu.Ft.
	303.66 Lin.Ft. x 0.771 Sq.Ft.	= 234	Cu.Ft.
	150.0 Lin.Ft. x 1.833 Sq.Ft.	= 275	Cu.Ft.
	50.0 Lin.Ft. x 1.583 Sq.Ft.	= 79	Cu.Ft.
	Total	= 766	Cu.Ft.

Ramp NB Terminal:

	1104.0 Lin.Ft. x 1.784 Sq.Ft.	= 1970	Cu.Ft.
	96.0 Lin.Ft. x 2.063 Sq.Ft.	= 198	Cu.Ft.
	3351 Sq.Ft. x 0.5 Ft.	= 1675	Cu.Ft.
	Total	= 3843	Cu.Ft.
	Grand Total	= 6416	Cu.Ft.
	6416 Cu.Ft. x 1/27	= 238	Cu.Yds.

409 Seal Coat

Ramp NA Terminal:
- 100' x 9' = 900 Sq.Ft.
- 245.27' x 8' = 1962 Sq.Ft.
- 453.07' x 5.95' = 2696 Sq.Ft.

Ramp NA:
- 100' x 345' + 1488.87 x 3' = 4812 Sq.Ft.

Ramp NB:
- 1157.32' x 3' = 3472 Sq.Ft.
- 50' x 2.5' = 125 Sq.Ft.
- 200' x 5.5' = 1100 Sq.Ft.

Ramp NB Terminal:
- 1104' x 8' = 8832 Sq.Ft.
- 96' x 9' = 864 Sq.Ft.
- Through Roadway Berm = 5040 Sq.Ft.
- Total = 29,803 Sq.Ft.
- 29,803 Sq.Ft. x 1/9 = 3311.4 Sq.Yds.

Cover Aggregate, No.8 @ 0.008 Cu.Yds. Per Sq.Yd.
- 3311.4 Sq.Yd. x 0.008 Cu.Yd./Sq.Yd. = 26 Cu.Yds.

Bituminous Material Applied @ the rate of 0.30 Gal./Sq.Yd.
- 3311.4 Sq.Yd. x 0.30 Gal./Sq.Yd. = 993 GALS.

301 Bituminous Aggregate Base

3" Thickness:
- Total Seal Coat Application Area = 29,803 Sq.Ft.
- Deduct For End Taper Details = (-) 113 Sq.Ft.
- Total = 29,690 Sq.Ft.
- 29,690 Sq.Ft. x 0.25' x 1/27 = 275 Cu.Yds.

304 Aggregate Base, As Per Plan
- Total Application Area = 29,690 Sq.Ft.
- 26,690 Sq.Ft. x 0.5' ÷ 27 = 550 Cu.Yds.

Deductions for Special Drainage Connector:
- Ramp NA Terminal = 798.34 Lin.Ft.
- Ramp NA = 796.09 Lin.Ft.
- Ramp NB = 903.66 Lin.Ft.
- Ramp NB Terminal = 1200.00 Lin.Ft.
- Total = 3698.09 Lin.Ft.
- 3698.0 Ft. x 0.250 Sq.Ft. = 925 Cu.Ft.
- Through Roadway Berm = 364.00 Lin.Ft.
- 364.00 Ft. x 0.303 Sq.Ft. = 110 Cu.Ft.
- (925 + 110) x 1/27 = -38 Cu.Yds.
- Total = 512 Cu.Yds.

Special, Drainage Connector No. 8 Aggregate

From 304 Calculations: Ramps & Terminals = 3698.09 Lin.Ft.
- 3698.09 Lin.Ft. x 1.35 Sq.Ft. = 4992 Cu.Ft.
- Through Roadway = 364.00 Lin.Ft.
- 364.00 Lin.Ft. x 2.12 Sq.Ft. = 772 Cu.Ft.
- Total = 5764 Cu.Ft.
- 5764 Cu.Ft. x 1/27 = 213 Cu.Yds.

203 Subgrade Preparation
- 9" 451 Pavement = 10,136 Sq.Yds.
- Berms = 3311 Sq.Yds.
- Total 203 Subgrade Preparation = 13,447 Sq.Yds.

659 Commercial Fertilizer (12-12-12)

From Seeding Total = 49,134 Sq.Yds.
- 49,134 Sq.Yds. x 9 x 20 ÷ (1000 x 2000) = 4.42 Tons

510 Dowel Holes
- Sta. 269+04.73 to Sta. 278+04.73 = 900 Lin.Ft.
- Sta. 295+80 to Sta. 310+80 = 1,200 Lin.Ft.
- Total = 2,100 Lin.Ft.
- 2,100 Lin.Ft. ÷ 5' Spacing = 420 Dowel Holes

Special Expansion Anchor Bolts
From Dowel Hole Calculations: 420 Bolts

621 PAVEMENT MARKING

Ref. No.	Station	4" Edge Line Lin.Ft.	4" Lane Line Lin.Ft.	Removal Of 4" Edge Line Lin.Ft.	8" Channel Line Lin.Ft.	Broad Transverse Stripes Lump	Curb Island Marking Lump	Parking Stalls Lump
Ramp NA	269+00 to 274+50	550	225	550*				
	274+50 to 278+00	450			600	Lump	Lump	
	278+00 to 285+00	1400						
	285+00 to 289+80						Lump	Lump
Ramp N.B.	289+80 to 298+80	1800					Lump	
	298+80 to 310+80	1200	400	680**	120			
	Sub-Totals (Lin.Ft.)	5400	625 x 15/30	1230	720	Lump	Lump	Lump
	Grand Totals	1.02 Miles	.044 Miles	1230 Lin.Ft.	720	Lump	Lump	Lump

* Sta. 269+00 to Sta. 274+50 N.B. I.R. 71 Rt.
** Sta. 304+00 to Sta. 310+80 N.B. I.R. 71 Rt.

NOTE: See Sheet No. 59 For Pavement Marking Details

DELINEATOR TABLE

STATION	SIDE	SPACING	POST MOUNTED TYPE C-2	POST MOUNTED TYPE C-3
269+00 To 285+00 Ramp NA	Right	100'	17	
290+00 To 310+00 Ramp NB	Right	100'	21	
310+80 I.R.-71	Right			1
Totals			38	1

NOTE: See Sheet No. 60 For Delineator Details.

EARTHWORK & SEEDING TABLE

FROM SHEET NO.	EXCAVATION CU.YDS.	EMBANKMENT CU.YDS.	SEEDING SQ.YDS.
9	15121	9,566	23,421
24			25,311
27	1507		402
29	486	1834	
TOTALS	17,114	11,400	49,134

CALCULATIONS AND DELINEATOR TABLES

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT		8
2	OHIO			68

MED-71-22.55

FROM SHEET NUMBER								ITEM	PLAN TOTAL	TYPE CODE	UNIT	DESCRIPTION
5	7	9	13	15	24	28	61					
												ROADWAY
Lump								201	Lump	Y021	Lump	Clearing and Grubbing
		337.5						202	337.5		Lin.Ft.	Guard Rail, Removed For Re-use
	17,114							203	17,114		Cu.Yds.	Excavation Not Including Embankment Construction, as per plan
	11,400							203	11,400		Cu.Yds.	Embankment
	13,447							203	13,447		Sq.Yds.	Subgrade Preparation
		1,500					250	606	1,750		Lin.Ft.	Guard Rail, Type 4, Modified as per plan
		337.5						606	337.5		Lin.Ft.	Guard Rail, Rebuilt, Type 4 Modified as per plan
10								616	10		M-Gal.	Water
5								616	5	Y021	Tons	Calcium Chloride
												ROADWAY Continued on this sheet
												EROSION CONTROL
		11	1		3			601	15	Y005	Cu.Yds.	Dumped Rock Channel Protection
	4.42							659	4.42		Tons	Commercial Fertilizer (12-12-12)
	49,134							659	49,134		Sq.Yds.	Seeding and Mulching, As per plan
		244						667	244	Y005	Sq.Yds.	Jute Matting, As per plan
												DRAINAGE
			0.30		0.8			602	1.1	Y021	Cu.Yds.	Concrete Masonry
			80					603	80		Lin.Ft.	18" Conduit, Type B, With Class B Bedding
					96			603	96		Lin.Ft.	4" Conduit, Type C, 706.08 E5 With Compression Joints, With Class B Bedding
					338			603	338		Lin.Ft.	6" Conduit, Type C, 706.08 E5 With Compression Joints, With Class B Bedding
			34					603	34		Lin.Ft.	15" Conduit, Type C, With Class B Bedding
			26					603	26		Lin.Ft.	18" Conduit, Type C, With Class B Bedding
		20	8					603	28		Lin.Ft.	6" Conduit, Type F
					34			603	34		Lin.Ft.	8" Conduit, Type C with Class B Bedding, 706.02, Class V
					128			603	128		Lin.Ft.	6" Conduit, Type C, Using Cast Iron Soil Pipe with Cl. B Bedding, As Per Plan
			1					604	1		Each	Catch Basin, Standard No. 3-A
		1						604	1		Each	Catch Basin, Standard No. 6, As per plan
			2					604	2		Each	Catch Basin, Standard No. 3
					1			604	1		Each	Inlet, Standard No. 1 Side Ditch
		1,712	755					605	2467		Lin.Ft.	6" Shallow Pipe Underdrains
												PAVEMENT
275								301	275		Cu.Yds.	Bituminous Aggregate Base, 702.01 (85-100) or 702.09, RT-10, As Per Plan
512								304	512		Cu.Yds.	Aggregate Base, As per plan
2001								310	2001		Cu.Yds.	Subbase, Grading A or B, As per plan
238								310	238		Cu.Yds.	Subbase,
213								Spec.	213		Cu.Yds.	Drainage Connector, No. 8 Aggregate
993								409	993		Gal.	Seal Coat, Bituminous Material, As Per Plan
26								409	26		Cu.Yds.	Seal Coat, Cover Aggregate No. 8
					257			452	257		Sq.Yds.	7" Plain Portland Cement Concrete Pavement
10,136								451	10,136		Sq.Yds.	9" Reinforced Portland Cement Concrete Pavement
420								Spec.	420		Each	Expansion Anchor Bolt
420								510	420		Each	Dowel Hole
			386					609	386		Lin.Ft.	Standard Type 2-A Concrete Curb
	140							609	140		Lin.Ft.	Standard Type 6 Concrete Curb, Modified as per plan
		235	1,521					609	1,756		Lin.Ft.	Standard Type 7 Concrete Curb
		365						609	365		Lin.Ft.	Standard Type 8 Concrete Curb
		24						612	24	Y021	Sq.Yds.	Concrete Median, As per plan

FROM SHEET NUMBER								ITEM	PLAN TOTAL	TYPE CODE	UNIT	DESCRIPTION
5	7	9	13	15	24	28	61					
												ROADWAY continued
					170			607	170	Y021	Lin.Ft.	Fence, Type CL
					1868			607	1868	Y021	Lin.Ft.	Fence, Type 47, as per plan
					1			607	1	Y021	Each	4' Gate, Type CL
					1			607	1	Y021	Each	10' Gate, Type CL., as per plan
				192	1890			608	2082	Y021	Sq.Ft.	4" Concrete Walk
					1019			608	1019	Y021	Sq.Ft.	6" Concrete Walk
					14			Spec.	14	Y022	Each	Picnic Table with Concrete Slab
					5			Spec.	5		Each	Charcoal Grill and Serving Table
					1			Spec.	1		Each	Water Storage System,
					1			Spec.	1		Each	7000 Gallon Aerobic Digestion Sewage Treatment Plant with Trash Trap
					Lump			Spec.	Lump		Lump	Motorists Services Building and Storage Unit
					1			Spec.	1		Each	Incinerator,
					15			Spec.	15	Y022	Each	Garbage Can,
												LANDSCAPING
					22			662	22	Y003	Each	Euonymus Alatus Compacta (Compact Winged Euonymus) 2½ to 3 Ft. B. & B. (12"), as per plan
				395	171			662	566		Each	Rhamnus Frangula Columnaris (Tallhedge Buckthorn) 4 to 5 Ft. B. & B. (15"), as per plan
					21			662	21		Each	Pyracantha Coccinea Lalandi (Laland Firethorn) 2½ to 3 Ft. B. & B. (13"), as per plan
					14			662	14		Each	Taxus Media 'Sebian' (Sebian Anglojap Yew) 2½ to 3 Ft. B. & B. (15"), as per plan
					54			662	54		Each	Cotoneaster Apiculata (Cranberry Cotoneaster) 15 to 18 inch B. & B. (11"), as per plan
				28				662	28		Each	Cornus Amomum, 3 to 4 Ft., B. & B. (13"), as per plan (Silky Dogwood)
				51				662	51		Each	Cornus Mas, 3 to 4 Ft., B. & B. (13"), as per plan (Corneliancherry Dogwood)
					100			662	100		Each	Ligustrum Regelianum (Regel Privet) 2½ to 3 Ft. B. & B. (12"), as per plan
				84				662	84		Each	Viburnum Lentago, 3 to 4 Ft., B. & B. (13") (Nannyberry Viburnum), as per plan
				30				662	30		Each	Border Forsythia Intermedia Spectabilis, 3-4' B&B (13") (Showy Border Forsythia) as per plan
					9			663	9		Each	Acer Platanoides 'Cleveland' (Cleveland Norway Maple) 1¼-1¾" - 6' stem B&B (20"), as per plan
					8			663	8		Each	Malus Radiant (Flowering Crab), 1½ to 1¾ in. 6 Ft. Stems, B. & B. (20"), as per plan
					60			663	60		Each	Pinus Strobus (White Pine), 3 to 4 Ft., B&B (15"), as per plan
						593		651	593		Cu.Yds.	Topsoil Stockpiled
						502		652	502		Cu.Yds.	Placing Stockpiled Topsoil
					182			656	182		M-Sq.Ft.	Roadside Cleanup, As Per Plan
					24			666	24		Each	Pruning Existing Trees, 3 to 8 inch Diameter, As per plan
					39			666	39		Each	Pruning Existing Trees, 8 to 16 inch Diameter, As per plan
					21			666	21		Each	Pruning Existing Trees, 16 to 24 inch Diameter, As per plan
					6			666	6		Each	Pruning Existing Trees, 24 to 36 inch Diameter, As per plan
						60		657	60		Sq.Yds.	Riprap for Tree Protection
						25		658	25	Y003	Cu.Yds.	Tree Root Aeration
												TRAFFIC CONTROL
							201	815	201	Y021	Sq.Ft.	Traffic Sign Erection, Groundmounted Extrusheet Type
							16	815	16		Sq.Ft.	Traffic Sign Erection, Flat Sheet Type
							Lump	815	Lump		Lump	Remove and Re-erect Existing Groundmounted Sign
							50	816	50		Lin.Ft.	Structural Support, 8 Lb. Beam
							37	816	37		Lin.Ft.	Structural Support, 10 & 11.5
							42	816	42		Lin.Ft.	Structural Support, 10 & 17
							44	816	4.4	Y021	Cu.Yds.	Concrete For Sign Support Foundations
	38							620	38	Y021	Each	Mono-Directional Delineators, Type C2, Post Mounted
	1							620	1	Y021	Each	Mono-Directional Delineators, Type C3, Post Mounted
	1.02							621	1.02	Y021	Miles	4" Edge Line
	0.04							621	0.04		Miles	4" Lane Line
	720							621	720		Lin.Ft.	8" Channelizing Line
	Lump							621	Lump		Lump	Broad Transverse Stripes
	Lump							621	Lump		Lump	Curb and Island Marking
	Lump							621	Lump		Lump	Parking Lot Stall Marking
	1230							621	1230	Y021	Lin.Ft.	Removal of 4" Edge Line, As per plan
Lump									Lump	Y021	Lump	Field Office
Lump									Lump	Y021	Lump	Construction Layout Stakes
Lump								614	Lump	Y021	Lump	Maintaining Traffic

FOR ITEM 625 LIGHTING QUANTITIES - SEE SHEET NO. 66

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

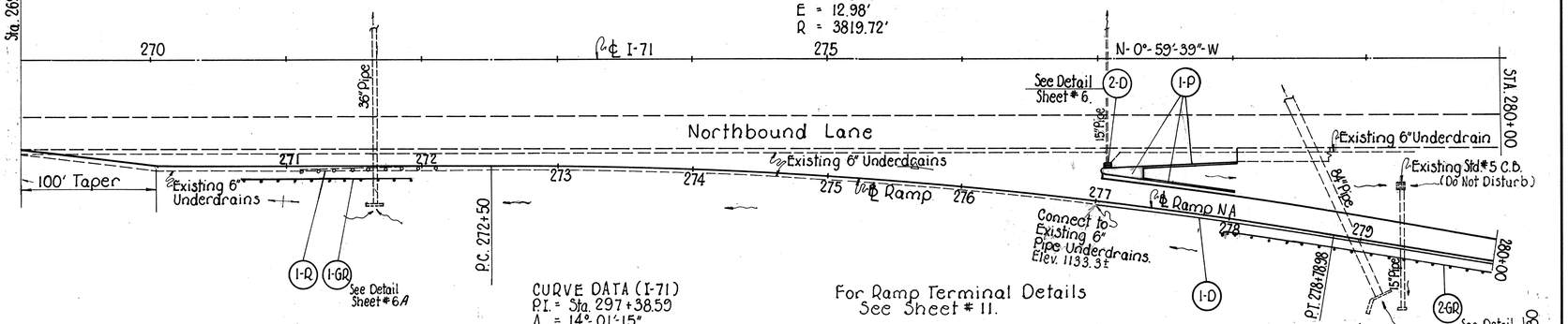
9
68

MED-71-22.55

Ref. No.	Station	202 Guard Rail Removed For Re-use (Lin.Ft.)	603 Conduit Type 1 (Lin.Ft.) 6"	601 Dumped Rock Channel Protection (Cu.Yds.)	604 Std. No. 6 Catch Basin As per plan (Each)	605 Shallow Pipe Underdrains (Lin.Ft.) 6"	606 Guard Rail Rebuilt (Lin.Ft.)	606 Guard Rail Type 4 (Lin.Ft.)	609 Concrete Curb Std. Type 6 (Lin.Ft.)	609 Concrete Curb Std. Type 7 (Lin.Ft.)	609 Concrete Curb Std. Type 8 (Lin.Ft.)	612 Concrete Traffic Median (Sq.Yds.)	667 Jute Matting As Per Plan (Sq.Yds.)	Beads & Branches 6"-60° Wye
1-R	271+10 - 272+10 Rt. ℄ Ramp NA	100												
2-R	302+83 - 304+20 Rt. ℄ Ramp NB	137.5												
3-R	308+80 - 309+80 Rt. ℄ Ramp NB	100												
1-GR	270+65 - 271+90 Rt. ℄ Ramp NA						100	25						
2-GR	277+55 - 284+08 Rt. ℄ Ramp NA							612.5						
3-GR	284+84 ℄ Rest Area - 292+79 ℄ Ramp NB							812.5						
4-GR	302+83 - 304+45.5 Rt. ℄ Ramp NB						137.5	25						
5-GR	308+70 - 309+95 Rt. ℄ Ramp NB						100	25						
1-D	277+00 - 284+98 Rt. ℄ Ramp NA					798								
2-D	277+05 Lt. ℄ Ramp NA				1									
3-D	289+80 - 295+40 Rt. ℄ Ramp NB		10			570								1
4-D	289+83 - 290+00 Rt. ℄ Ramp NB			11									244	
5-D	295+44 - 298+80 Rt. ℄ Ramp NB		10			344								1
1-P	277+01 - 278+03 Lt. ℄ Ramp NA								140			24		
2-P	292+80 - 298+80 Lt. ℄ Ramp NB									235	365			
	Totals	337.5	20	11	1	1712	337.5	1500	140	235	365	24	244	2

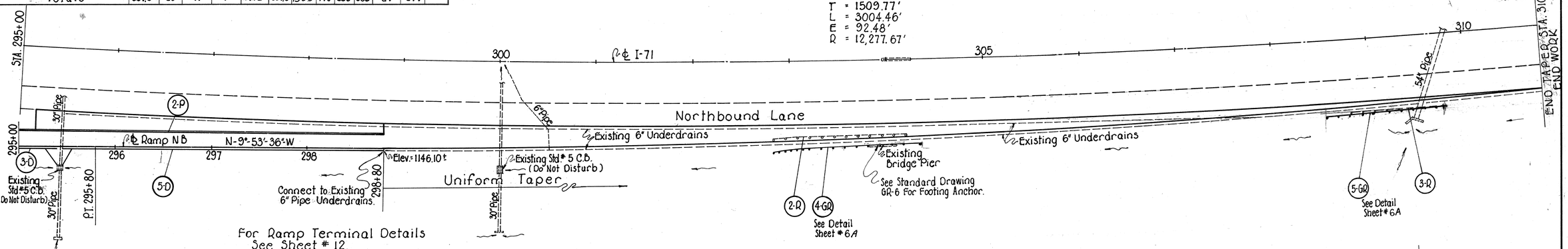
B.M. Spike in W. Side 36" Tree
315' Lt. Sta. 273+70 (℄ I-71)
Elevation 1114.45

CURVE - NA-1
P.I. = Sta. 275+63.78
Δ = 9°-26'-05" Rt.
D = 1°-30'
T = 315.20'
L = 628.98'
E = 12.98'
R = 3819.72'

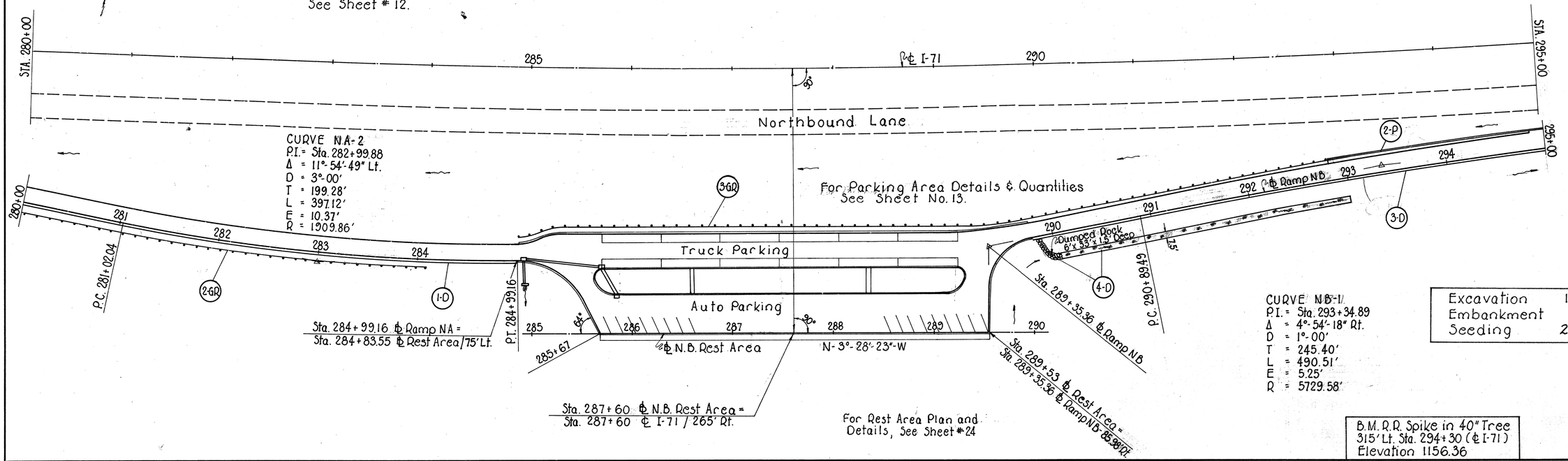


CURVE DATA (I-71)
P.I. = Sta. 297+38.59
Δ = 14°-01'-15"
D = 0°-28'
T = 1509.77'
L = 3004.46'
E = 92.48'
R = 12,277.67'

For Ramp Terminal Details
See Sheet # 11.



For Ramp Terminal Details
See Sheet # 12.



CURVE NB-1
P.I. = Sta. 293+34.89
Δ = 4°-54'-18" Rt.
D = 1°-00'
T = 245.40'
L = 490.51'
E = 5.25'
R = 5729.58'

Excavation	15,121 Cu.Yds.
Embankment	9,566 Cu.Yds.
Seeding	23,421 Sq.Yds.

For Rest Area Plan and Details, See Sheet # 24

B.M. R.R. Spike in 40" Tree
315' Lt. Sta. 294+30 (℄ I-71)
Elevation 1156.36

N.B. ROADSIDE REST AREA - PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

10
68

MED-71-22.55

Sta. 284+99.16 ℄ Ramp NA=
Sta. 284+83.55 ℄ N.B. Rest Area 75' Lt.
Elev.= 1161.56

+1.75 %

Begin 6" 605 Shallow Pipe Underdrain Sta. 284+98

200' V.C.

Ramp Profile Fixed by Profile and Cross Slope of Existing I-71

+3.577%

4.50' Below E.P.

P.V.C. Sta. 277+50

P.V.T. Sta. 279+50

Sta. 277+03.07
Elev. 1137.82

+0.50%

Std. #6 C.B. Sta. 277+05 / 27' Lt.
Top of Grate Elev.= 1138.22
Existing Flow Line = 1133.90

For Details See Sheet #6

Existing 6" Shallow Underdrain 2' Rt.

Rt. 6" 605 Shallow Pipe Underdrain 2' Rt. of Ramp ℄

6" 605 Underdrain 2' Rt.
Sta. 277+00 ℄ Ramp NA
Connect to existing
Underdrain Elev.= 1133.3±

P.V.I. Sta. 278+50
Elev. 1138.50

P.V.C. Sta. 284+50

P.V.I. Sta. 285+00
Elev. 1163.79

100' V.C.

P.V.T. Sta. 285+50

RAMP NA

1137.91 1138.04 1138.21 1138.48 1138.84 1139.31 1139.86 1140.52 1141.27 1142.12 1143.91 1145.70 1147.49 1149.27 1151.06 1152.85 1154.63 1156.42 1158.21 1160.00 1160.84 1161.56 1162.17 1162.67

1136.8 1139.4 1137.2 1139.3 1141.6 1139.8 1144.5 1153.0 1162.7

277 278 279 280 281 282 283 284 285 286

289+35.36 ℄ Ramp NB =
289+53.00 ℄ N.B. Rest Area, 85.98' Lt.
Elev. 1168.04

-2.00%

-4.80%

Rt. 6" 605 = 1163.37, 43.33' Lt.
Sta. 287+75 ℄ Rest Area

-0.45%

-0.70%

-1.75%

Rt. 6" 605 = 1162.54, 2' Rt.
289+76.34 ℄ Ramp NB

Rt. 6" 605 = 1164.20, 43.33' Lt.
289+60, ℄ N.B. Rest Area

Rt. 6" 605 = 1162.37 / 61.27' Lt.
Sta. 287+75 ℄ Rest Area

Rt. 6" 605 = 1163.67 / 61.67' Lt.
289+62, ℄ N.B. Rest Area

P.V.C. Sta. 288+25

P.V.I. Sta. 289+25
Elev. 1169.80

P.V.T. Sta. 290+25

200' V.C.

For Continuation of 6" 605 Underdrains See Sheet #13

P.V.C. Sta. 291+75

400' V.C.

P.V.T. Sta. 295+75

4.5' Below E.P.

P.V.I. Sta. 293+75
Elev. = 1148.30

-4.80%

Rt. 6" 605 = 1147.18, 2' Rt.
293+50 ℄ Ramp NB

Rt. 6" 605 = 1142.40, 2' Rt.
295+40, ℄ Ramp NB

-1.58%

Rt. 6" 603 = 1143.78, 2' Rt.
Sta. 295+46, ℄ Ramp NB

1.10%

Rt. 6" 605 = 1144.36, 2' Rt.
Sta. 295+28, ℄ Ramp NB

Connect 6" 603 Type F Conduit into Exist. C.B. Elev. 1144.16
Exist. Std. No. 5 C.B. Mod.
Sta. 295+41, 22' Rt.
Top Grate = 1148.0±
Bottom ℄ = 1142.75±

Rt. 6" 605 = 1143.60, 2' Rt.
Sta. 295+54, ℄ Ramp NB

Connect 6" 603 Type F Conduit into Exist. C.B., Elev. 1143.40

100' V.C.

P.V.C. Sta. 297+75

P.V.I. Sta. 298+25
Elev. 1152.20

P.V.T. Sta. 298+75

Elev. 1152.57

Sta. 298+80

Ramp Profile Fixed by Profile and Cross Slope of Existing I-71

+0.68%

+0.867%

6" 605 Underdrain 2' Rt.
Sta. 298+80, ℄ Ramp NB
Connect to existing underdrain pipe, Elev. = 1146.1±

Existing 6" Shallow Pipe Underdrain 2' Rt.

RAMP NB

1167.30 1168.20 1168.47 1168.44 1168.20 1167.74 1167.07 1166.13 1165.10 1163.90 1161.50 1159.10 1157.90 1156.74 1155.68 1154.70 1153.81 1153.01 1152.30 1151.68 1151.14 1150.70 1150.33 1150.06 1149.88 1149.78 1149.78 1149.86 1150.03 1150.25 1150.68 1151.12 1151.55 1151.76 1151.97 1152.18 1152.36 1152.54

1173.0 1172.6 1165.5 1158.6 1153.0 1150.6 1149.6 1149.9 1150.6 1151.5 1152.7

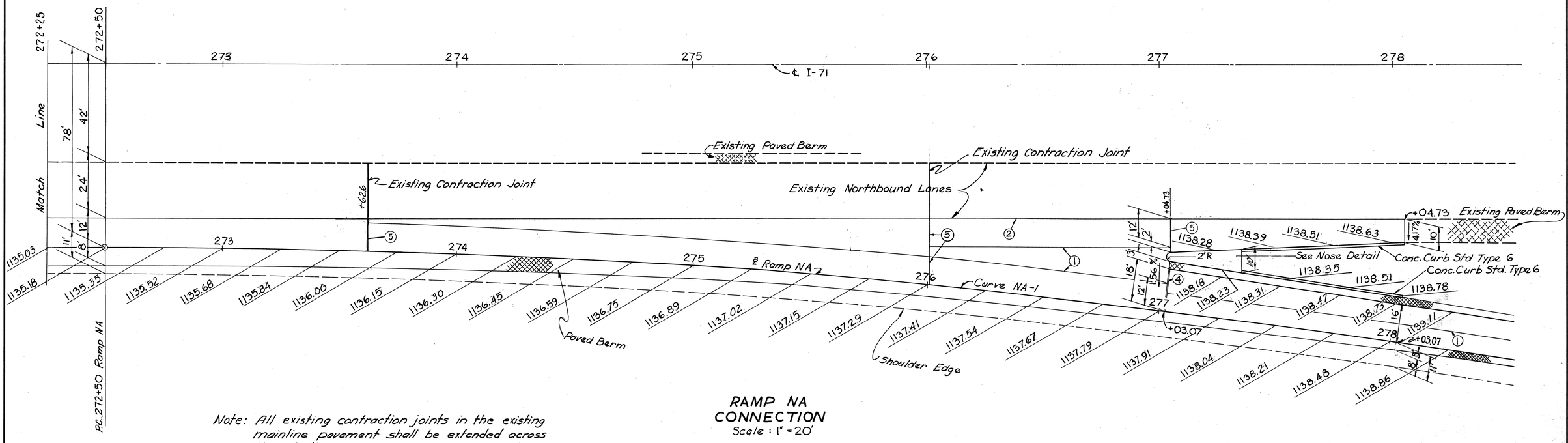
288 289 290 291 292 293 294 295 296 297 298 299

RAMP PROFILES

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

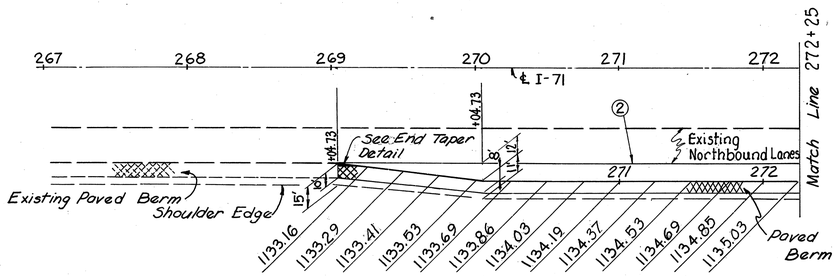
11
68

MED-71-22.55

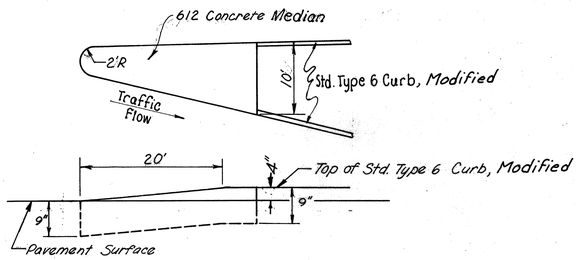


Note: All existing contraction joints in the existing mainline pavement shall be extended across the abutting ramp terminal pavement.

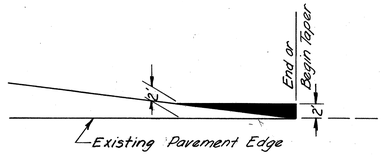
RAMP NA CONNECTION
Scale : 1" = 20'



RAMP NA DECELERATION LANE & TAPER
Scale : 1" = 50'



NOSE DETAIL



NOTE: The shaded area shall be constructed of concrete pavement to an elevation one half inch lower than the adjacent pavement and surfaced with 409 Seal Coat. The shaded area shall be paid for as full depth 451 Reinforced Concrete Pavement and the surface treatment shall be paid for as 409 Seal Coat.

END TAPER DETAIL

JOINT LEGEND

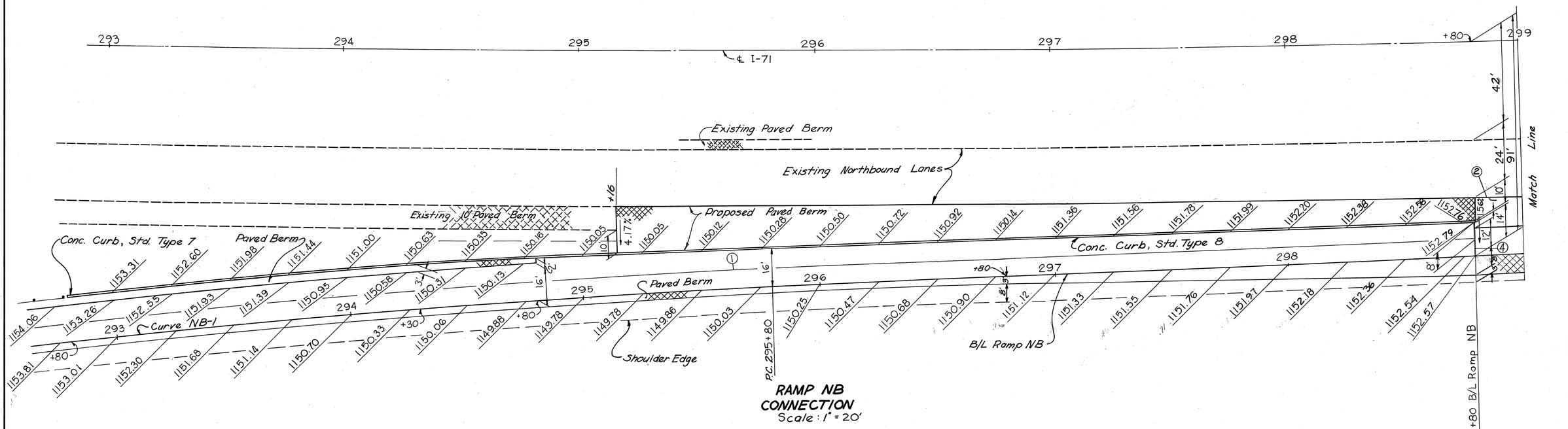
① Standard Longitudinal Joint
② Longitudinal Expansion Bolt Joint (Spaced @ 5'0" C/C)
③ Expansion Joint without Dowels
④ Standard Expansion Joint
⑤ Standard Contraction Joint

REST AREA DECELERATION RAMP DETAILS

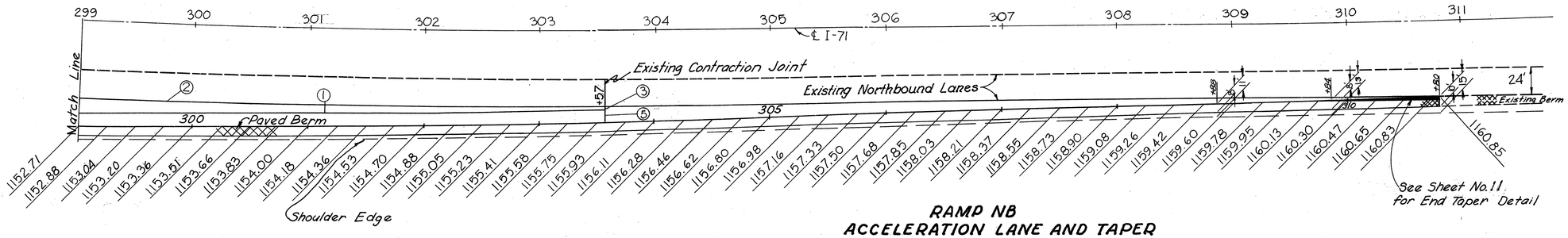
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

12
68

MED-71-22.55



RAMP NB
CONNECTION
Scale: 1" = 20'



RAMP NB
ACCELERATION LANE AND TAPER
Scale: 1"=50'

Note: All existing contraction joints in the existing mainline pavement shall be extended across the abutting ramp terminal pavement.

JOINT LEGEND
① Standard Longitudinal Joint
② Longitudinal Expansion Bolt Joint (5'0"c/c)
③ Expansion Joint without Dowels
④ Standard Expansion Joint
⑤ Standard Contraction Joint

REST AREA ACCELERATION RAMP DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

13
68

MED-71-22.55

Ref. No.	Station *	605 Shallow Pipe Under-drain 6"	603 Conduit Type F 6"	603 Conduit Type C With Class B Bedding 15"	603 Conduit Type C With Class B Bedding 18"	603 Conduit Type B with Class B Bedding 18"	604 Standard Catch Basins No. 3	604 Standard Catch Basins No. 3-A	602 Conc. Masonry	609 Concrete Curb Std. Type 2A	609 Concrete Curb Std. Type 7	601 Dumped Rock Channel Protection	608 Concrete Walk 4"	Bends & Branches 6"-30° Bend
		Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Each	Each	Cu. Yds.	Lin. Ft.	Lin. Ft.	Cu. Yds.	Sq. Ft.	
1-D	285+89 to 289+60 Lt.	367	4											1
2-D	285+70 to 289+62 Lt.	388	4											1
3-D	285+70 to 285+89 Lt.			34			1							
4-D	284+90 to 285+70 Lt.					80	1							
5-D	284+90 Lt.				26			1	0.30 #			1		
1-P	Parking Area										1521			
2-P	285+67 to 289+53									386				
1-W	286+58 Lt.												96	
2-W	288+34 Lt.												96	
	Totals	755	8	34	26	80	2	1	0.30	386	1521	1	192	

* Roadside Rest Area ℄ Stationing.
\# HW-E Endwall.

All elevations shown are top of pavement at face of curb

Ramp NA

Ramp N.B.

Ramp N.B.

Existing N.B. Lanes

℄ Existing I-71

90° to Local Tangent

287 +60 288 289 290

100' R Sta 289+36.61 Rest Area B/L

Sta 289+35.36 Ramp NB Elev = 1168.04

Sta 289+35.36 B/L Rest Area = Sta 289+53 Ramp NB, 85.98 Rt.

Sta 287+60 B/L N.B. Roadside Rest Area = Sta 287+60 ℄ I-71, 265' Rt.

PT. 284+99.16 Ramp NA = 284+83.55 B/L Rest Area 75' Lt

HW-E Endwall +90/49' Lt.

Std. #3 A C.B. +90/76' Lt.

Std. #3 C.B. +70/66' Lt.

Std. #3 C.B. +89/38' Lt.

Sta 285+27.14

60' Dumped Rock 6'x3'x1½' Deep

7" Plain Conc. Drive 6%

284+83.55

B/L N.B. Roadside Rest Area

Parking Lot Stall-Marking Lines

Truck Parking (12 Trucks)

Auto Parking (31 Cars)

Parking Lot Stall-Marking Lines

1.75%

1.75%

For Profile of C.B.& Storm Sewers, See Sheet No. 15.

Drop Curb in front of Drive as per Std. Drawing BP-6.

B/L N.B. Roadside Rest Area

7" Plain Concrete Drive - For Details See Sheet #27

Note: For Parking Lot Stall-Marking Quantity See Sheet #7

Δ = 25°-50'-31"
D = 114°-35'-30"
R = 50.00'
L = 22.55'
T = 11.47'
E = 1.30'

Δ = 11°-19'-31"
D = 57°-17'-45"
R = 100.00'
L = 19.77'
T = 9.92'
E = 0.49'

Δ = 64°-00'-00"
D = 76°-23'-40"
R = 75.00
L = 83.78
T = 46.87
E = 13.44

Δ = 78°-40'-29"
D = 114°-35'-30"
R = 50.00'
L = 68.66
T = 40.98'
E = 14.65

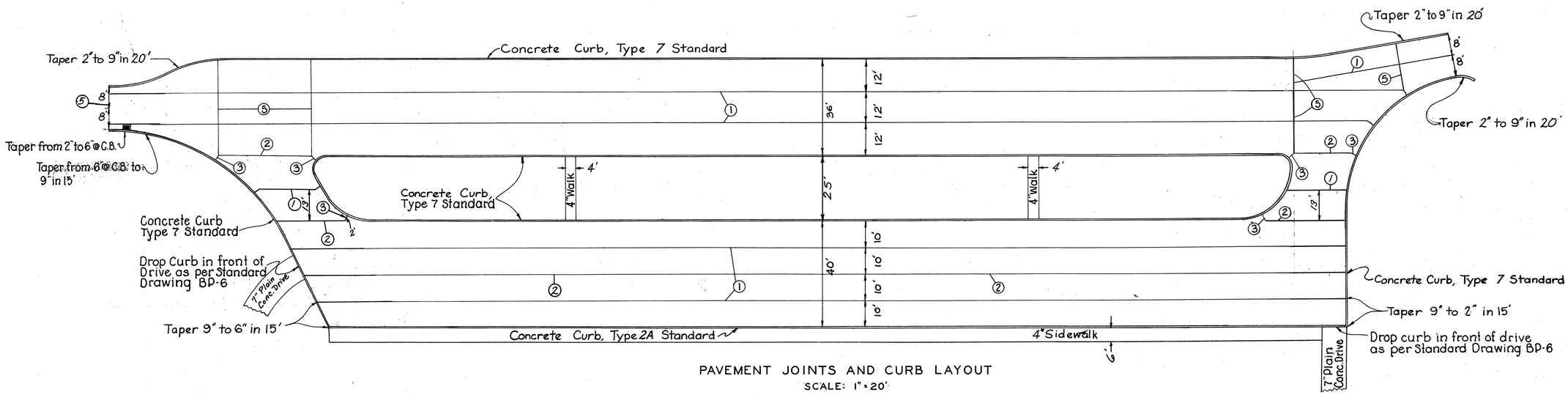
Scale: 1" = 20'

PARKING AREA DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

14
68

MEDINA COUNTY
MED-71-22.55



PAVEMENT JOINTS AND CURB LAYOUT
SCALE: 1" = 20'

LEGEND

① Standard Longitudinal Joint
② Standard Longitudinal Key Joint without Tie Bars
③ Expansion Joint without Dowels
⑤ Standard Contraction Joint

JOINT & CURB LAYOUT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

15
68

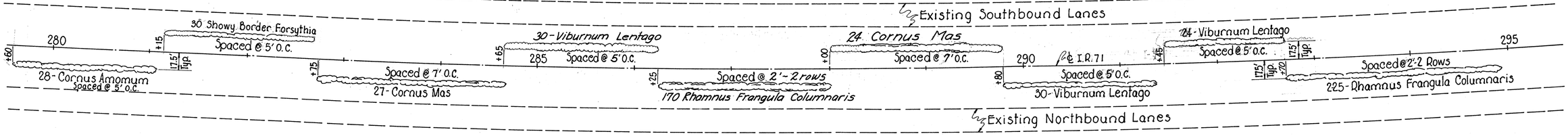
MED-71-22.55

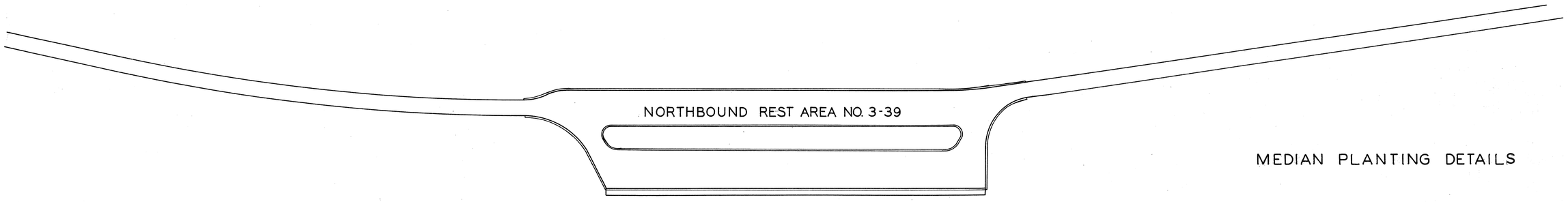
ESTIMATED QUANTITIES

Quantities Carried To General Summary - Sheet No. 8.

ITEM	QUANTITY	UNITS	DESCRIPTION
662	28	Each	Cornus Amomum, 3 to 4 ft., B.& B., 13 in., as per plan
662	51	Each	Cornus Mas, 3 to 4 ft., B.& B., 13 in., as per plan
662	84	Each	Viburnum Lentago, 3 to 4 ft., B.& B., 13 in., as per plan
662	395	Each	Rhamnus Frangula Columnaris, Tallhedge., 4 to 5 ft., B & B., 15 in., as per plan
662	30	Each	Border Forsythia Intermedia Spectabilis, 3 to 4 ft. B.& B. 13 in., as per plan

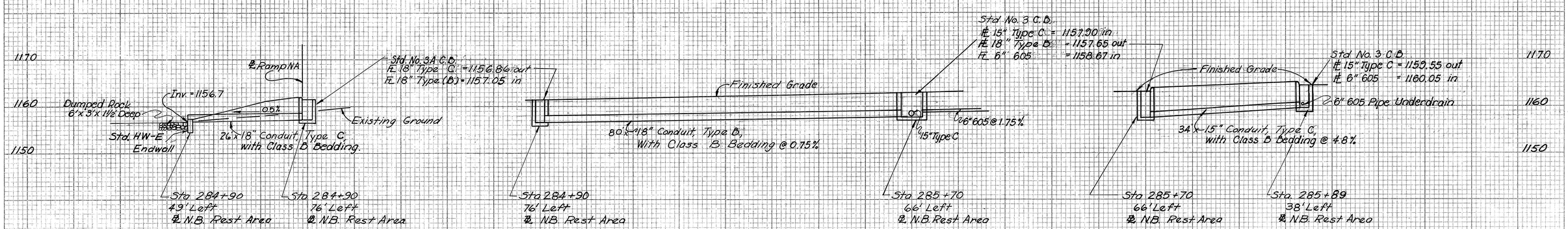
NOTE: Planting beds for shrubbery shall be 3' wide for single row and 5' wide for double row.





Scale : 1" = 50'

MEDIAN PLANTING DETAILS



PARKING AREA STORM SEWER PROFILE

(See Sheet No. 13 For Parking Area Plan)

Scale: 1" = 10'

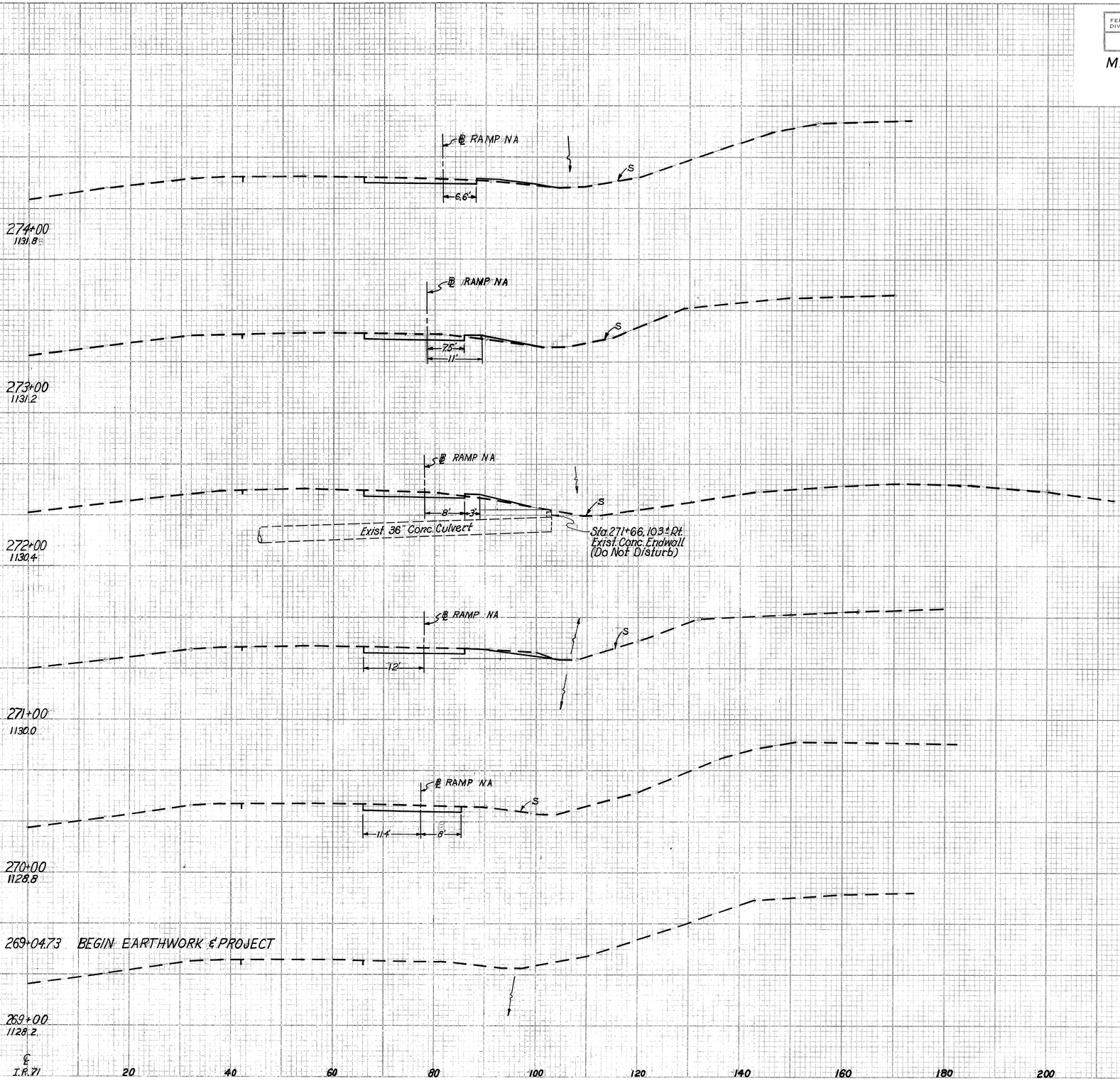
MEDIAN PLANTING DETAILS & PARKING AREA STORM SEWER PROFIL

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

16
68

MED-71-22.55

SEEDING END WIDTH	SEEDING SQ. YDS.
29'	
	311
27'	
	289
25'	
	306
30'	
	233
12'	
	127
12'	AHEAD STA. 269+04.73
0'	BACK

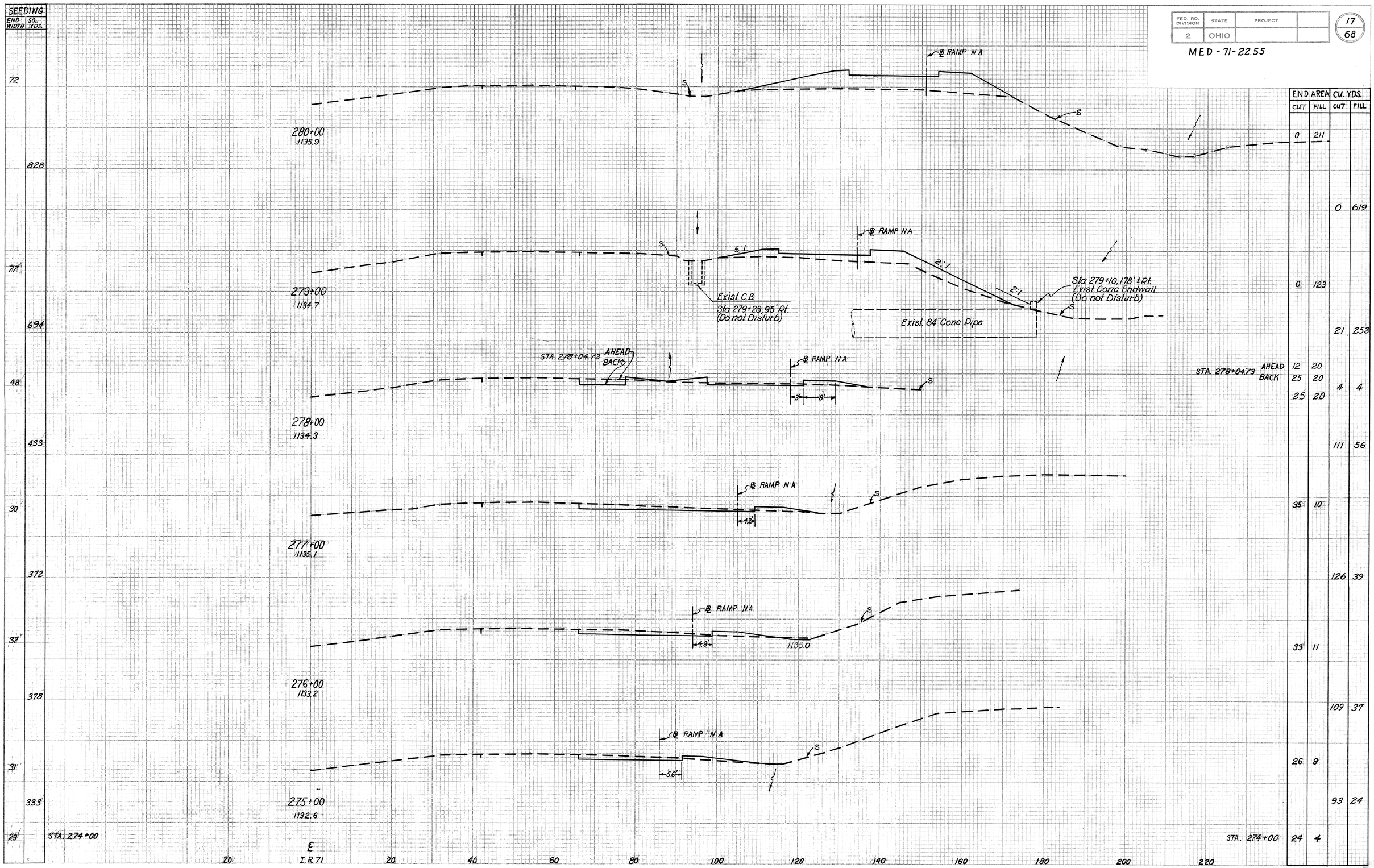


END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
24	4		
		87	15
23	4		
		91	13
26	3		
		98	6
27	0		
		93	0
23	0		
		64	0
STA. 269+04.73 AHEAD	13	0	
BACK	0	0	

STA 269+00 TO STA 274+00

FED. RD. DIVISION	STATE	PROJECT		17
2	OHIO			68

MED - 71 - 22.55



		END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
		0	211		
				0	619
		0	123		
				21	253
STA. 278+04.73	AHEAD	12	20		
	BACK	25	20	4	4
		25	20		
				111	56
		35	10		
				126	39
		33	11		
				109	37
		26	9		
				93	24
STA. 274+00		24	4		

STA 275+00 TO STA 280+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

18
68

MED-71- 22.55

SEEDING END WIDTH	SEEDING SQ. YDS.
127	
	453
120	
	726
75	
	1000
105	
	1289
127	
	1217
92	
	911
72	

285+00
1139.1

Sta. 284+67

284+00
1138.6

283+00
1138.0

282+00
1137.2

281+00
1136.7

STA. 280+00

℄ I-R 71

℄ Rest Area 2 — Match Line 284+67 Ahead

℄ B RAMP N A

℄ B RAMP N A

℄ B RAMP N A

℄ B RAMP N A

3:1 4:1 6:1 4:1 3:1 5:1 3:1 2½:1 2:1 S

END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
0	180		
		0	201
Sta. 284+67 0	149		
		0	419
0	189		
		0	1057
0	382		
		0	1498
		0	1309
0	427		
		0	909
0	280		
STA. 280+00 0	211		

STA 281+00 TO STA 285+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

19
68

MED-71-22.55

SEEDING END AREA SQ. YDS.		END AREA SQ. YDS.	
WIDTH	YDS.	CUT	FILL
		CUT	FILL
73		376	34
372		804	43
61		492	12
389		969	100
79		554	42
872		1111	359
78		46	152
268		85	615
68			
74			
747			
127			

288+00
1141.2

287+50
1140.9

287+00
1140.5

286+00
1139.8

Ahead
Back
STA. 285+67

STA. 285+00

℄
IR 71

Rest Area ℄

M/L

S

2:1

8:1

24:1

NOTE: Quantities for Seeding in Park Area are carried on Rest Area Plan, Sheet No. 24.

STA. 285+00 0 180 20 40 60 80 100 120 140 160 180 200 220 240 260 280

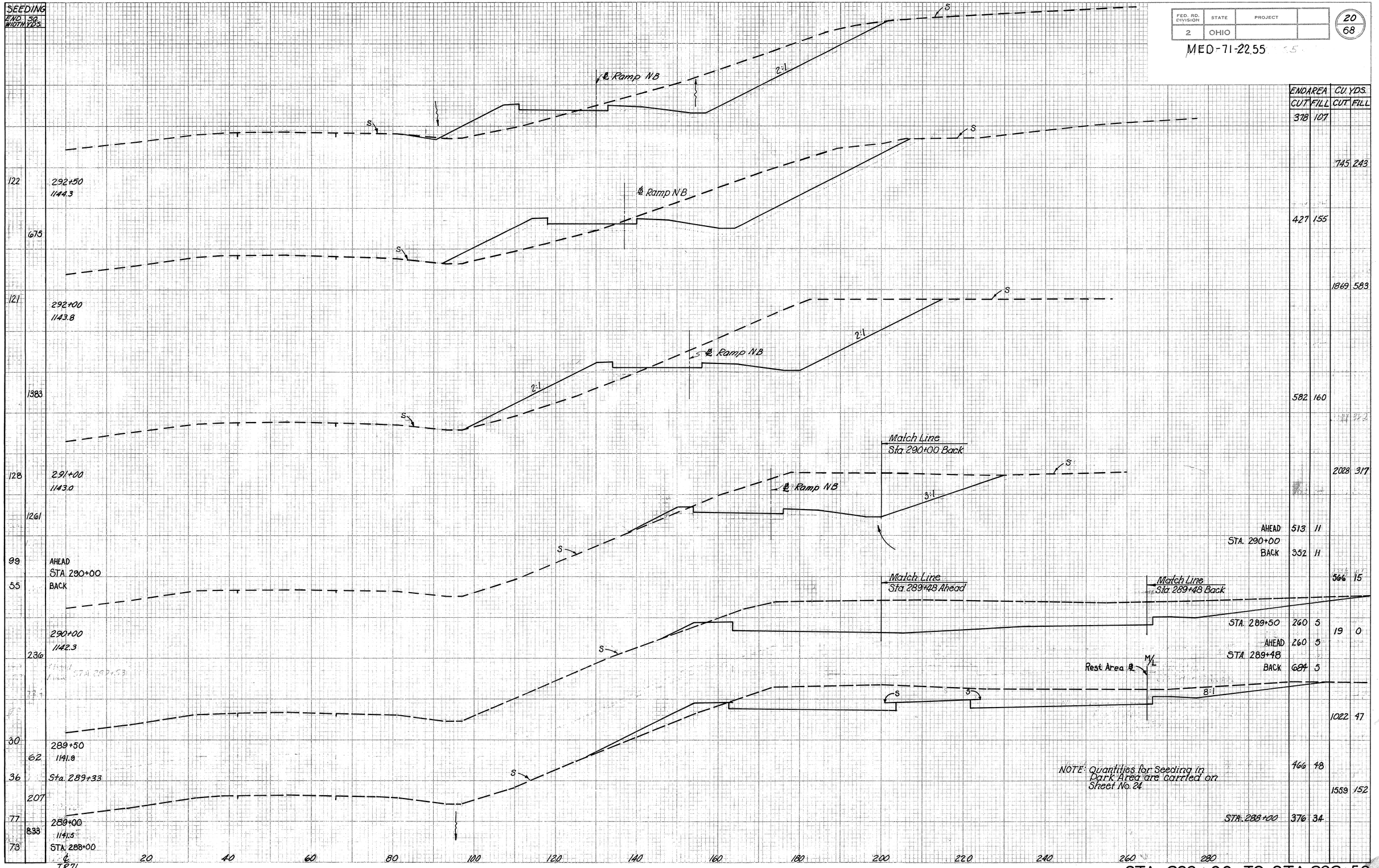
STA 286+00 TO STA 288+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

20
68

MED-71-22.55

SEEDING
END SQ.
WIDTH YDS.



122	292+50	1144.3	
675			
121	292+00	1143.8	
1383			
128	291+00	1143.0	
1261			
99	AHEAD STA. 290+00		
55	BACK		
	290+00	1142.3	
236			
30	289+50	1141.8	
62			
36	Sta. 289+33		
207			
77	289+00	1141.5	
833			
73	STA. 288+00		

	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
	378	107		
			745	243
	427	155		
			1869	583
	582	160		
			2028	317
AHEAD STA. 290+00	513	11		
BACK	352	11		
			566	15
STA. 289+50	260	5	19	0
AHEAD STA. 289+48	260	5		
BACK	684	5		
			1022	47
	466	48		
			1559	152
STA. 288+00	376	34		

NOTE: Quantities for Seeding in Dark Area are carried on Sheet No. 24

℄ I.R.71

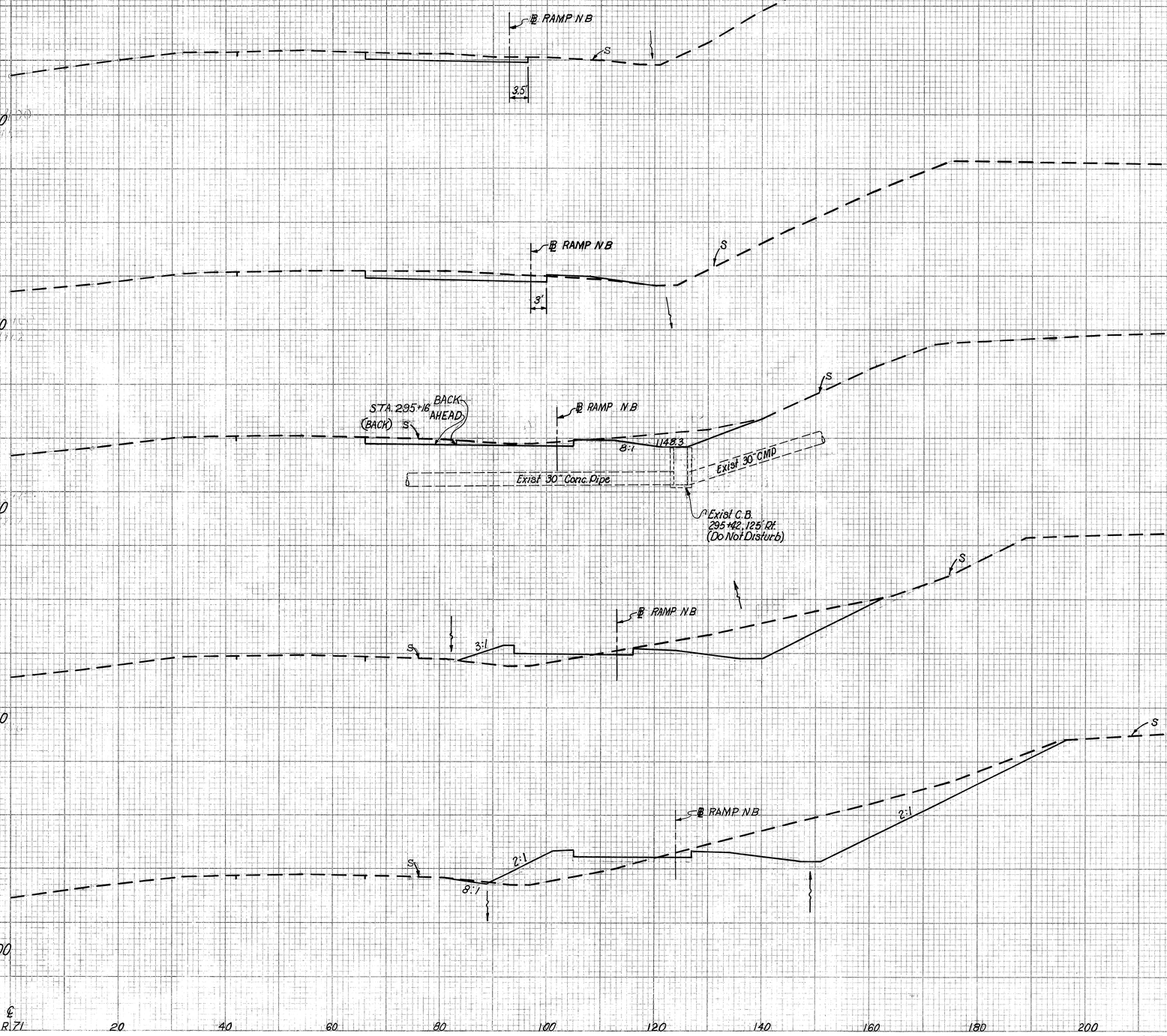
STA 289+00 TO STA 292+50

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

21
68

MED - 71 - 22.55

SEEDING END WIDTH	SEEDING SQ. YDS.
12	
	244
32	373
48	AHEAD
55	BACK STA. 295+16
	98
55	
	750
80	
	1100
118	
	667
122	STA. 292+50



END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
36	0		
		151	4
49	2		
		182	3
68	0		
53	0		
		31	0
53	0		
		387	85
156	46		
		804	252
278	90		
		607	183
STA. 292+50		378	107

STA 293+00 TO STA 297+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

22
68

MED-71-22.55

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
21		30	2		
	217			115	7
18		32	2		
	217			122	7
21		34	2		
	250			130	11
24		36	4		
	256			133	11
22		36	2		
	189			133	4
12	STA. 297+00	STA. 297+00		36	0

℄ RAMP NB
18.3'
S
302+00
1150.8

℄ RAMP NB
20.4'
S
301+00
1150.2

℄ RAMP NB
22.5'
S
Exist. No. 5 C.B.
Sta. 300+00, 114' ± Rt.
(Do not Disturb)
300+00
1149.1

℄ RAMP NB
24.6'
8'
S
299+00
1148.7

℄ RAMP NB
6.5'
S
298+00
1148.1

℄ I.R. 71

20 40 60 80 100 120 140 160 180 200

STA 298+00 TO STA 302+00

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

23
68

MED-71-22.55

		STA. 310+80 AHEAD	STA. 310+80 BACK	STA. 309+00	STA. 308+00	STA. 307+00	STA. 306+00	STA. 305+00	STA. 304+00	STA. 303+00	STA. 302+00
END AREA	CUT	0	0	35	50	59	67	74	87	91	85
	FILL	0	12	0	0	0	0	4	7	9	24
CU. YDS.	CUT	0	12	15	17	19	21	26	30	23	23
	FILL	0	0	0	0	0	2	2	3	10	22

		311+00	310+80 AHEAD	310+80 BACK	310+00	309+00	308+00	307+00	306+00	305+00	304+00	303+00	STA. 302+00
		1156.7	END WORK & PROJECT		1156.1	1155.5	1154.5	1154.1	1155.2	1157.3	1157.5	1155.4	℄ 2.8.71
SEEDING END WIDTH		0	12	106	12	133	12	133	12	133	12	217	27	289	25	278	25	294	28	272	21
SEEDING SQ. YDS.		0	12	106	12	133	12	133	12	133	12	217	27	289	25	278	25	294	28	272	21

℄ RAMP N B

8.33'

17'

8'

32'

5.8'

7.9'

10.01'

12.11'

14.2'

16.2'

6:1

S

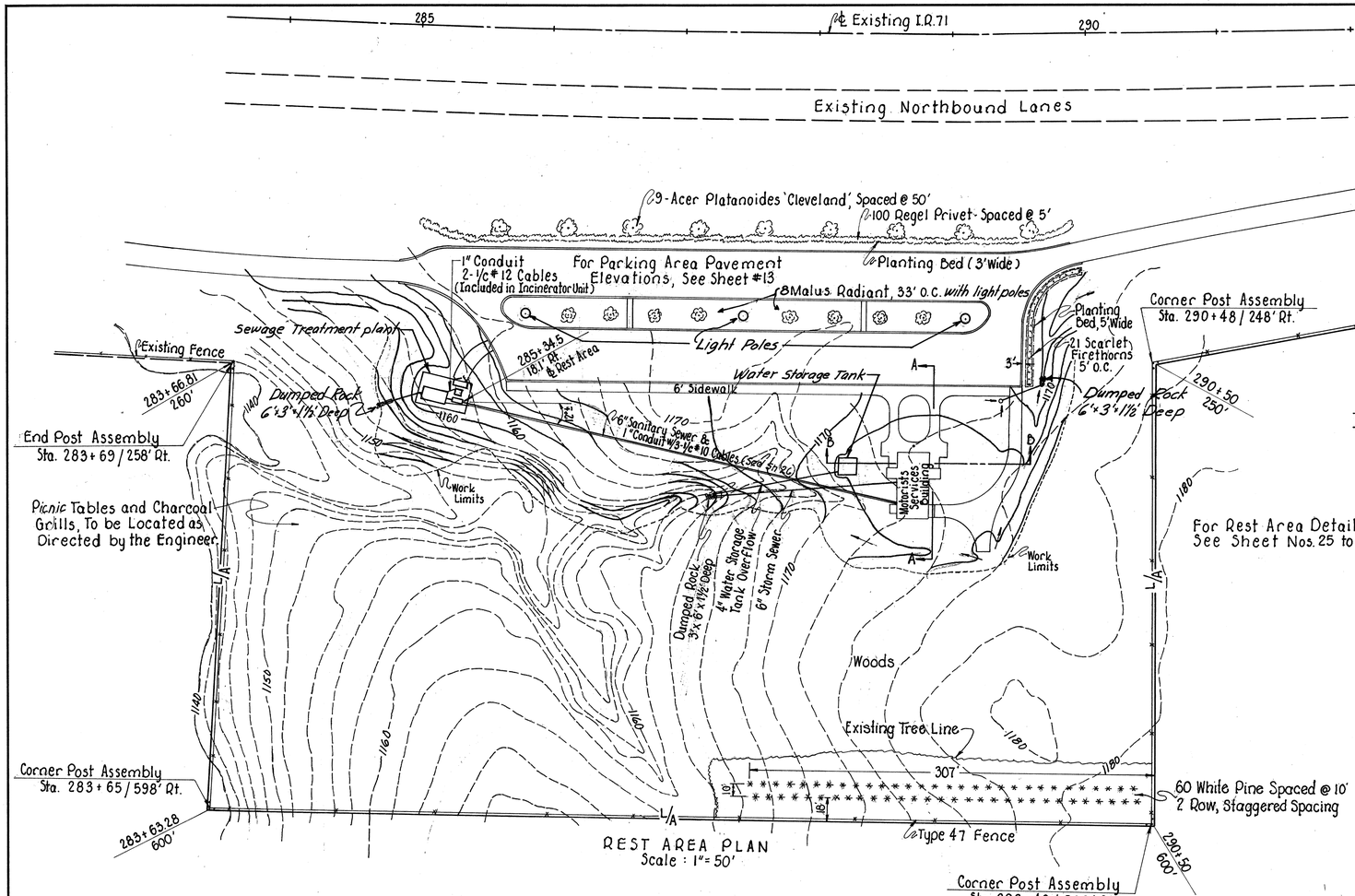
160 140 120 100 80 60 40 20

STA 303+00 TO STA 311+00

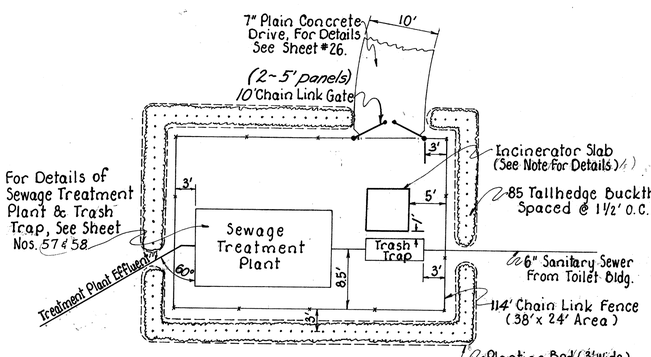
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

24
68

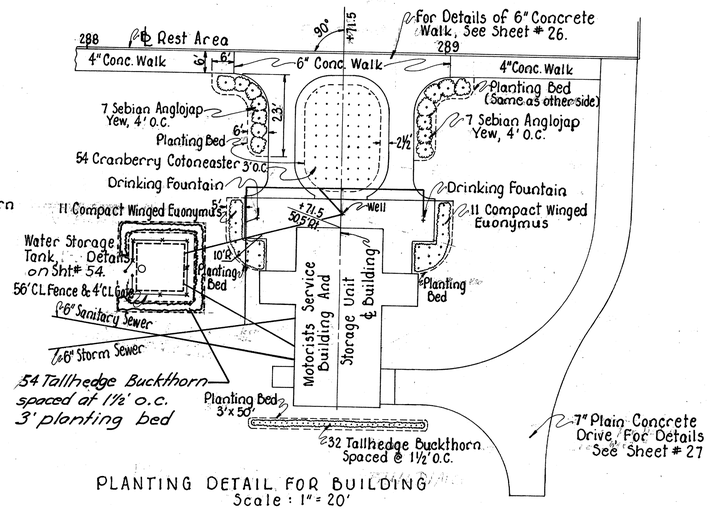
MED-71-22.55



REST AREA PLAN
Scale : 1" = 50'



PLANTING DETAIL SEWAGE TREATMENT PLANT AND INCINERATOR
Scale : 1" = 10'



PLANTING DETAIL FOR BUILDING
Scale : 1" = 20'

ESTIMATED QUANTITIES

Quantities Carried To General Summary, Sheet No. 8.

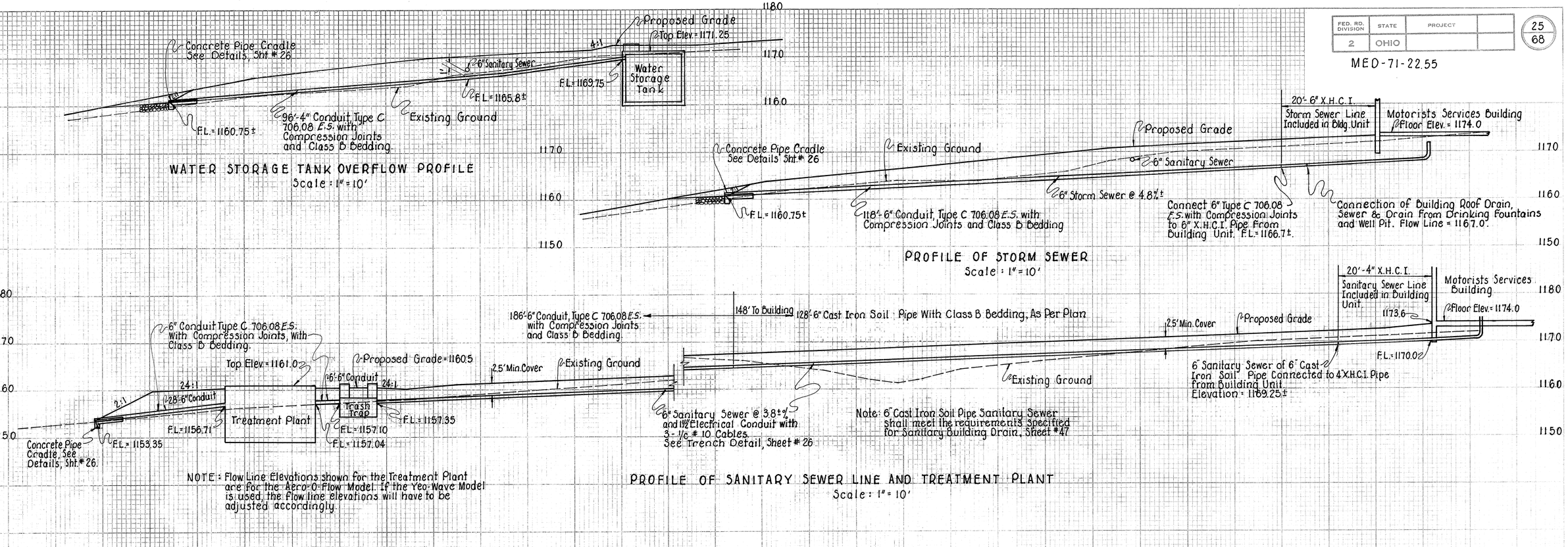
ITEM	QUAN.	UNIT	DESCRIPTION
601	3	Cu. Yds.	Dumped Rock Channel Protection
602	0.78	Cu. Yds.	Concrete Masonry
607	170	Lin. Ft.	Fence, Type CL
607	1	Each	4' Gate, Type CL
607	1	Each	10' Gate, Type CL, as per plan
607	1868	Lin. Ft.	Fence, Type 47, as per plan
608	1890	Sq. Ft.	4" Concrete Walk
608	1019	Sq. Ft.	6" Concrete Walk
452	257	Sq. Yds.	7" Plain Portland Cement Concrete Pavement
656	182	M-Sq. Ft.	Roadside Cleanup, As Per Plan
659	25,311	Sq. Yds.	Seeding and Mulching, As Per Plan
663	8	Each	Malus Radiant - Flowering Crab, 1½" to 1¾", B & B (20') as per plan
663	9	Each	Acer Platanoides 'Cleveland', 1½" to 1¾", B & B (20') as per plan
662	100	Each	Ligustrum Regelianum - Regel Privet, 2½' to 3', B & B (12'), as per plan
662	171	Each	Rhamnus Frangula Columnaris - Tallhedge Buckthorn, 4' to 5' B & B (15'), as per plan
662	21	Each	Pyracantha Coccginea Laland (Laland Firethorn) 2½' to 3', B & B (15"), as per plan
662	14	Each	Taxus Media 'Sebian' - Sebian Anglojap Yew, 2½' to 3' B & B (15") as per plan
662	54	Each	Cotoneaster Apiculata - Cranberry Cotoneaster, 15" to 18" B & B (11")
662	22	Each	Euonymus Alata Compacta - Compact Winged Euonymus 2½' to 3', B & B (15") as per plan
663	60	Each	Pinus Strobus - White Pine, 3' to 4', B & B (15"), as per plan
666	24	Each	Pruning Existing Trees, 3 to 8 inch Diameter, As Per Plan
666	39	Each	Pruning Existing Trees, 8 to 16 inch Diameter, As Per Plan
666	21	Each	Pruning Existing Trees, 16 to 24 inch Diameter, As Per Plan
666	6	Each	Pruning Existing Trees, 24 to 36 inch Diameter, As Per Plan
Spec.	5	Each	Charcoal Grill and Serving Table (Located as Directed by the Engineer)
Spec.	14	Each	Picnic Table with Concrete Slab (Located as Directed by the Engineer)
Spec.	Lump	Lump	Motorists Services Building and Storage Unit
Spec.	1	Each	Water Storage System,
Spec.	1	Each	7000 Gallon Aerobic Digestion Sewage Treatment Plant with Trash Trap
Spec.	1	Each	Incinerator,
Spec.	15	Each	Garbage Can
603	128	Lin. Ft.	6" Conduit, Using Cast Iron Soil Pipe With Class B Bedding, As Per Plan, Type
603	96	Lin. Ft.	4" Conduit, Type C, 706.08 ES with Compression Joints, with Class B Bedding
603	338	Lin. Ft.	6" Conduit, Type C, 706.08 ES with Compression Joints, With Class B Bedding
603	34	Lin. Ft.	8" Conduit, Type C with Class C Bedding, 706.02 cl. IV
604	1	Each	Standard No. 1 Ditch Inlet

REST AREA PLAN

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MED-71-22.55

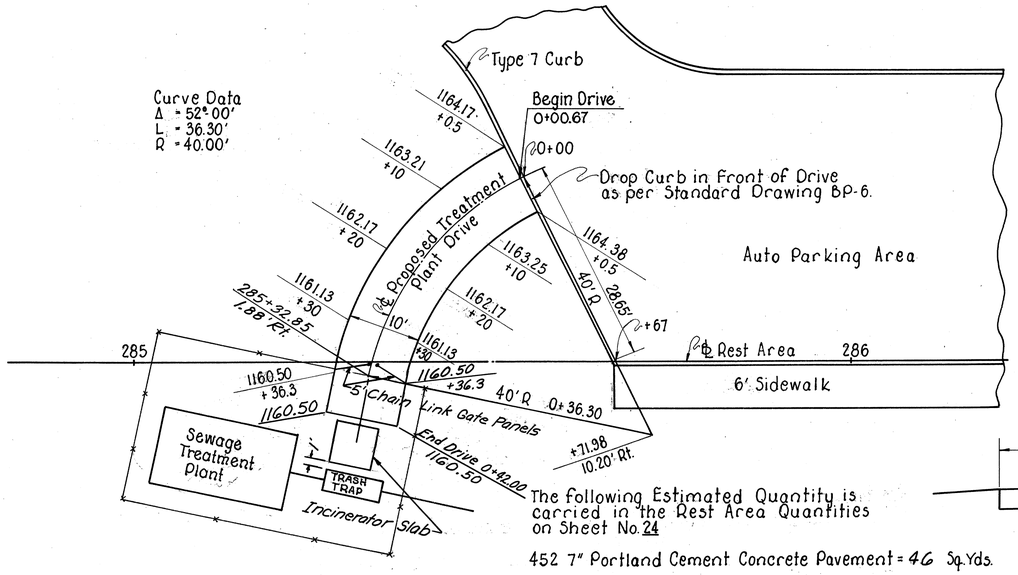
25
68



REST AREA DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MED-71-22.55

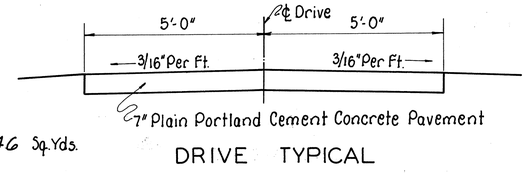


The following Estimated Quantity is carried in the Rest Area Quantities on Sheet No. 24

452 7" Portland Cement Concrete Pavement = 46 Sq. Yds.

TREATMENT PLANT DRIVE DETAIL

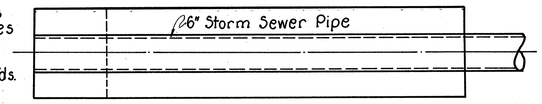
Scale: 1" = 10'



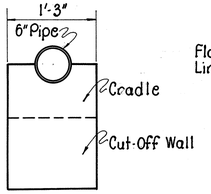
DRIVE TYPICAL

The following Estimated Quantity is carried in the Rest Area Quantities On Sheet No. 24

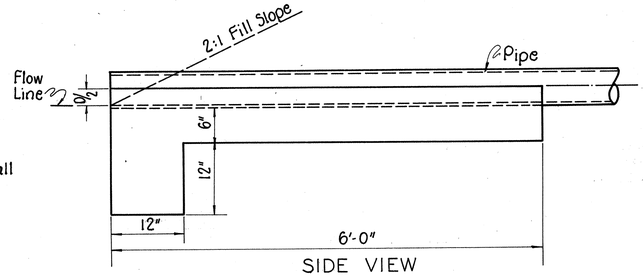
602 Concrete Masonry 0.24 Cu. Yds.



PLAN



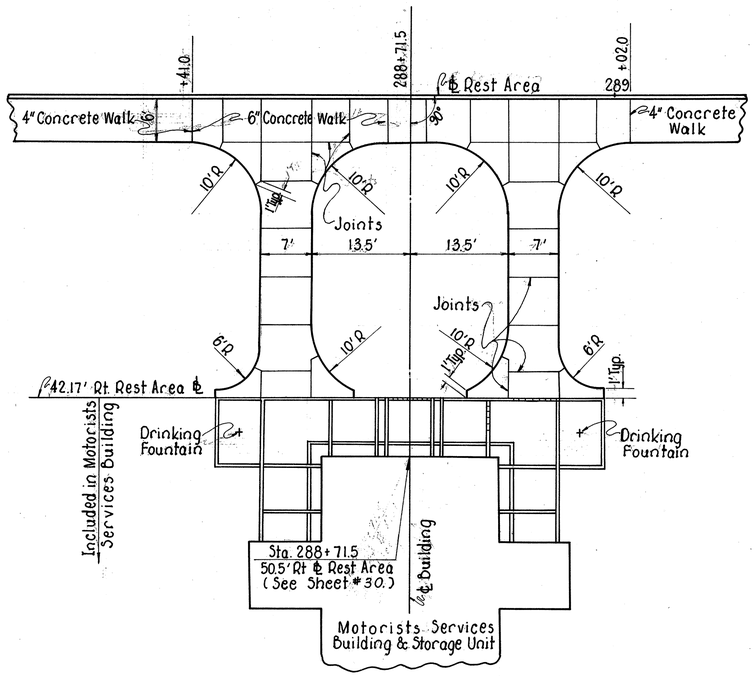
END VIEW



SIDE VIEW

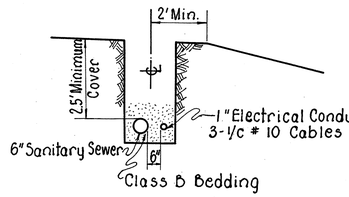
CONCRETE CRADLE DETAIL FOR TREATMENT PLANT EFFLUENT

Scale: 1" = 1'



CONCRETE WALK DETAILS IN FRONT OF SERVICES BUILDING

Scale: 1" = 10'

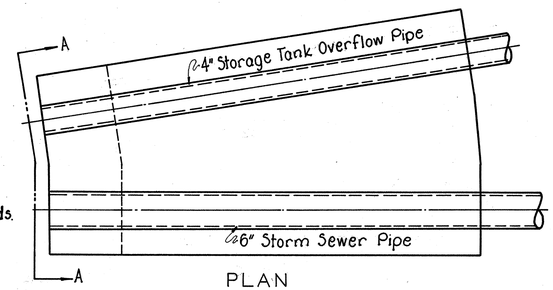


TRENCH DETAIL FOR SANITARY SEWER & ELECTRICAL CONDUIT

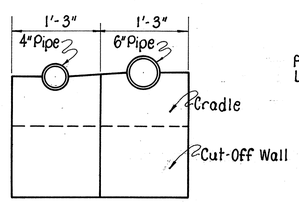
NOTE:
The cost of the electrical conduit and cables and all necessary labor to lay them in the trench shall be included in the unit price bid for Item Special, Sewage Treatment Plant, ... The cost of the trench, bedding and backfill shall be included in the unit price bid for the Sanitary Sewer Conduit.
See Sheet 24

The following Estimated Quantity is carried in the Rest Area Quantities On Sheet No. 24

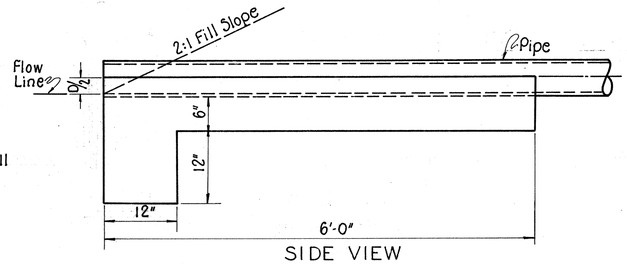
602 Concrete Masonry 0.54 Cu. Yds.



PLAN



VIEW A-A



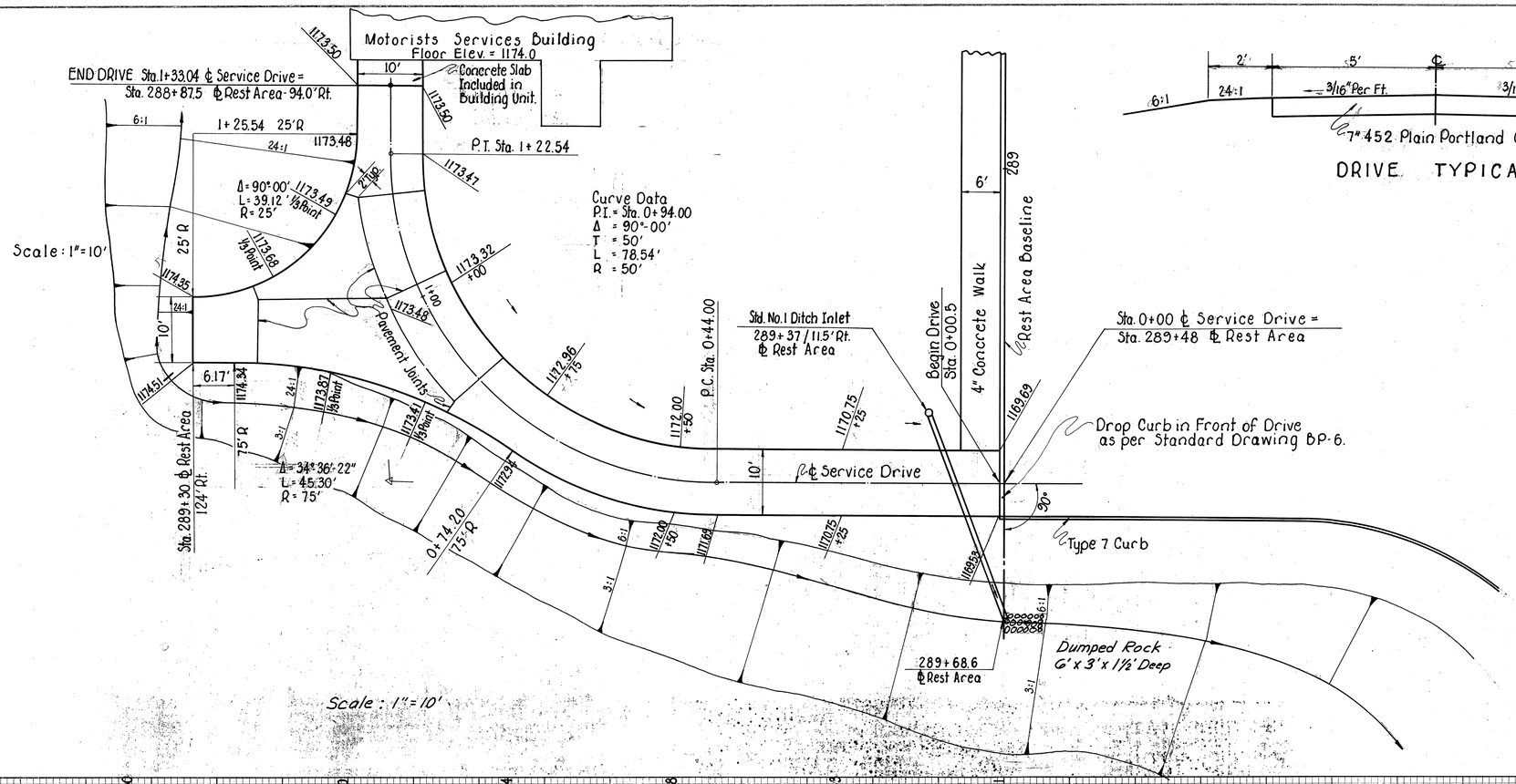
SIDE VIEW

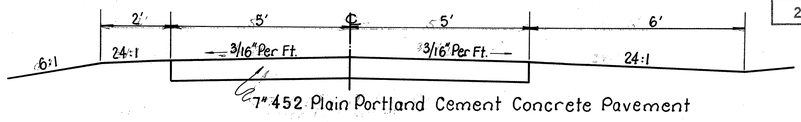
CONCRETE CRADLE DETAIL FOR STORM SEWER & STORAGE TANK OVERFLOW

Scale: 1" = 1'

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MED-71-22.55

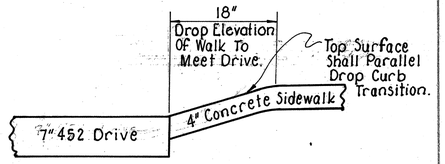




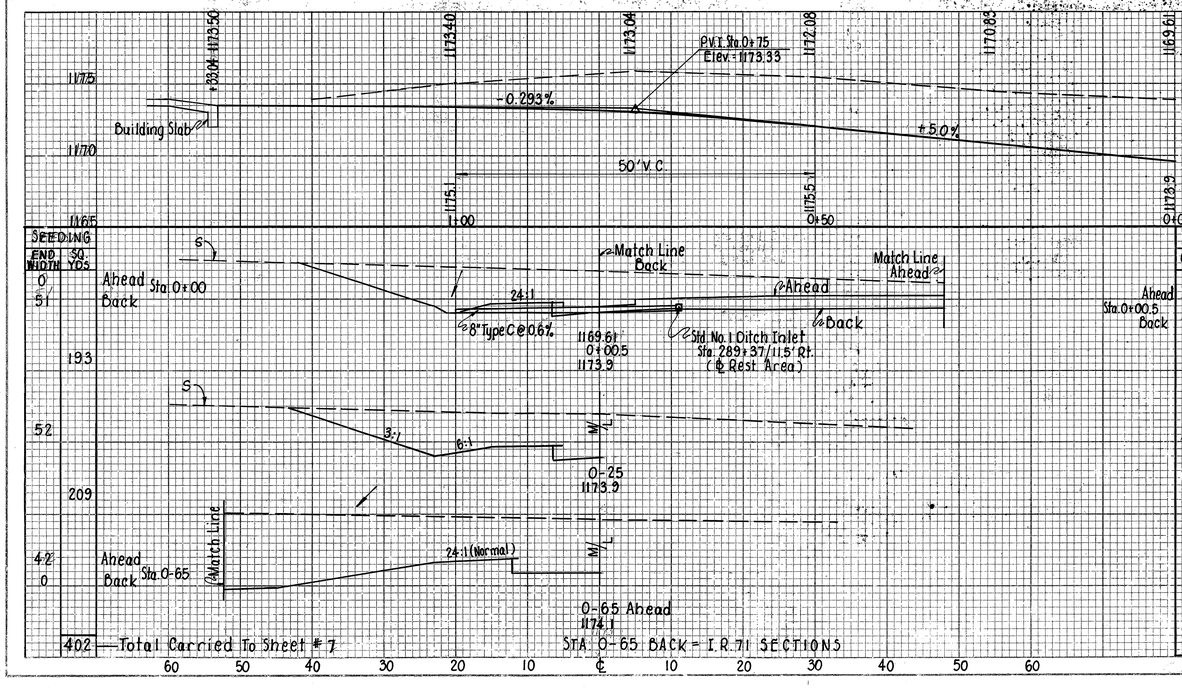
DRIVE TYPICAL

NOTE: The following Estimated Quantities are carried with the Rest Area Quantities on Sheet No. 24.

211 Sq. Yds. 452 7" Plain Portland Cement Concrete
34 Lin. Ft. 603 8" Conduit, Type C with Cl. B Bedding, 706.02 Cl. IV
1 Each 604 Standard No. 1 Ditch Inlet
1 Cu. Yd. 601 Dumped Rock Channel Protection



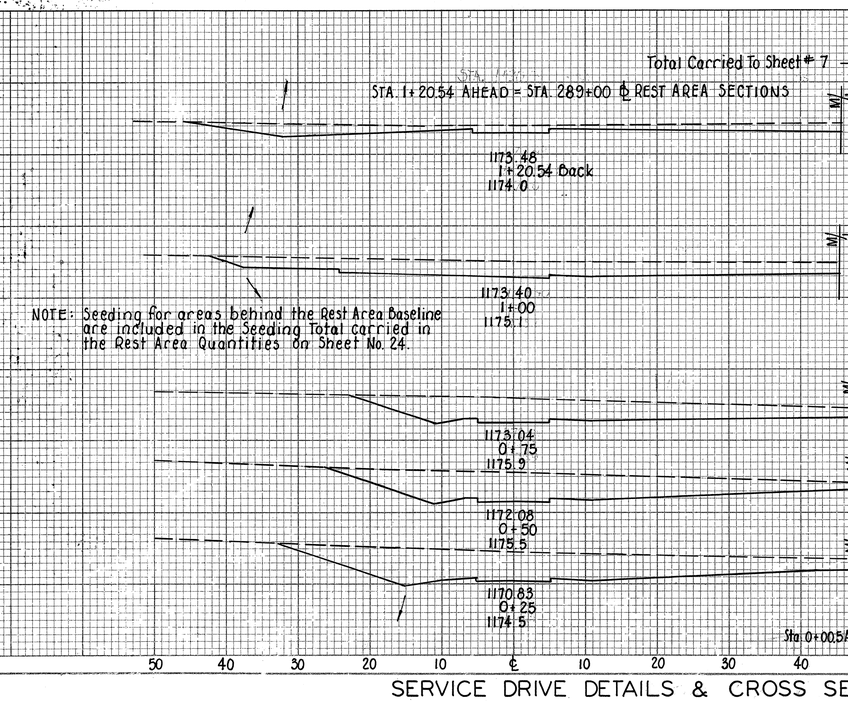
DETAIL OF CONCRETE WALK AT DRIVE



SEEDING END WIDTH	SEEDING SQ. YDS
0	
51	
	193
52	
	209
42	
0	
	402

	END AREA CUT	END AREA FILL	CU YDS CUT	CU YDS FILL
Ahead Sta. 0+00.5	300	0		
Back	188	0		
			174	0
Ahead	180	0		
			444	0
	420			

Total Carried To Sheet # 7



NOTE: Seeding for areas behind the Rest Area Baseline are included in the Seeding Total carried in the Rest Area Quantities on Sheet No. 24.

	END AREA CUT	END AREA FILL	CU YDS CUT	CU YDS FILL
Total Carried To Sheet # 7			1507	0
	86	0		
			94	0
	162	0		
			155	0
	172	0		
			174	0
	204	0		
			214	0
	257	0		
			252	0
Sta. 0+00.5 Ahead	300	0		

SERVICE DRIVE DETAILS & CROSS SECTIONS

GENERAL NOTES

ITEM SPECIAL - AEROBIC DIGESTION SEWAGE TREATMENT PLANT:

FURNISH AND INSTALL ONE FACTORY BUILT WASTE TREATMENT PLANT, COMPLETE, AND READY FOR OPERATION IN ACCORDANCE WITH PLANS AND SPECIFICATIONS STATED HEREIN AND ACCEPTABLE TO THE OHIO DEPARTMENT OF HEALTH. THE PLANT SHALL BE AN AER-O-FLOW MODEL *ACW-70-33-3* OR A YEO-WAVE SYSTEM A-70 OR AN APPROVED EQUAL. THE WASTE TREATMENT PLANT SHALL BE OF THE ACTIVATED SLUDGE TYPE, SPECIFICALLY KNOWN AS "AEROBIC DIGESTION", CAPABLE OF TREATING 7000 GALLONS PER DAY DOMESTIC SEWAGE OF 210 PARTS PER MILLION 5 DAY B.O.D. FROM COMPOSITE SAMPLES OF AVERAGE DAILY FLOW. THE COMPLETE PLANT SHALL INCLUDE TRASH TRAP, AERATION AND SECONDARY SEDIMENTATION AS SHOWN ON THE DETAIL PLANS. *See Sheet 57 or 58*

"METHOD OF MEASUREMENT"

THE AEROBIC TREATMENT PLANT AND ALL APPURTENANCES AS DETAILED AND SPECIFIED ON THE PLANS SHALL BE CONSIDERED AS ONE UNIT. THE NUMBER OF UNITS TO BE PAID FOR SHALL BE THE NUMBER OF EACH UNIT, LISTED AND ESTIMATED SEPARATELY, COMPLETE AND ACCEPTED.

"BASIS OF PAYMENT"

THE WORK INCLUDED IN THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR ITEM SPECIAL, AEROBIC SEWAGE TREATMENT PLANT WITH TRASH TRAP, AS PER PLAN, COMPLETED AND ACCEPTED, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR ALL EXCAVATION, BACKFILL, AND FOR FURNISHING, HAULING AND PLACING ALL MATERIALS, AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM, INCLUDING ALL ELECTRICAL DEVICES, CONDUIT AND WIRING REQUIRED FOR SERVICE TO AND OPERATION OF THE SEWAGE TREATMENT PLANT.

ITEM SPECIAL - INCINERATOR:

1) CAPACITY - 125 POUNDS PER HOUR - FIREBOX SHALL BE LARGE ENOUGH TO HOLD THE CONTENTS OF ONE 55 GALLON DRUM.
2) OUTSIDE CASING SHALL BE CONSTRUCTED OF 12 GUAGE STEEL REINFORCED AND STIFFENED WITH 2 INCH ANGLE IRON, MINIMUM.
3) STACK SHALL BE OF 12 GUAGE STEEL MINIMUM AND AT LEAST 14 FEET HIGH. IT SHALL BE LINED WITH A 2 INCH THICK (MINIMUM) REFRACTORY LINING. INSIDE DIAMETER SHALL BE A MINIMUM OF 10 INCHES.
4) INCINERATOR SHALL BE LINED WITH 1 INCH HIGH TEMPERATURE BLOCK INSULATION AND THREE INCH ABRASION RESISTANT LIGHTWEIGHT INSULATING CASTABLE ANCHORED TO STEEL CASING OR 4 INCH DENSE CASTABLE REFRACTORY STEEL MIX.
5) CLEAN OUT DOORS AND GRATES SHALL BE HEAVY CAST IRON. THE CHARGING DOOR SHALL BE COUNTERWEIGHTED FOR EASE OF OPERATION AND SHALL BE TOP MOUNTED OR INCLINED FOR EASE OF EMPTYING REFUSE CANS DIRECTLY INTO FIRE BOX. CHARGING DOOR SHALL HAVE 3 INCH REFRACTORY LINING OR BE PROVIDED WITH AN INNER FLAME PROTECTION LINER.
6) INCINERATOR SHALL BE PAINTED WITH ONE COAT OF HIGH TEMPERATURE RUST INHIBITING PRIMER AND ONE COAT OF HEAT RESISTANT PAINT OR TWO COATS OF HIGH TEMPERATURE ALUMINUM PAINT.
7) BURNER SHALL BE EQUIPPED TO BURN LIQUID PETROLEUM GAS. IT SHALL HAVE A MINIMUM INPUT OF 600,000 B.T.U. AND PROVIDED WITH A SPARK IGNITION. A STEEL ENCLOSURE TO PROTECT LP GAS AND BURNER CONTROLS SHALL BE PROVIDED AND WELDED TO THE INCINERATOR.
8) INCINERATOR SHALL BE GUARANTEED TO PRODUCE NO OBJECTIONABLE ODORS OR FLY-ASH.
9) A SPRING ACTUATED TIMING DEVICE TO AUTOMATICALLY SHUT OFF THE BURNER AT THE END OF A 60 MINUTE PERIOD.
10) THE UNIT SHALL BE MOUNTED ON A SIX INCH THICK REINFORCED CONCRETE SLAB WHICH SHALL EXTEND A MINIMUM OF 6 INCHES IN ALL DIRECTIONS AROUND THE UNIT AND EXTEND A MINIMUM OF 12 INCHES ON SIDES OF UNIT WHERE CLEANOUT DOORS ARE LOCATED.

"METHOD OF MEASUREMENT"

THE ITEM SPECIAL "INCINERATOR" AND ALL APPURTENANCES AS DETAILED AND SPECIFIED ON THE PLANS SHALL BE CONSIDERED AS ONE UNIT. THE NUMBER OF UNITS TO BE PAID FOR SHALL BE THE NUMBER OF EACH UNIT, LISTED AND ESTIMATED SEPARATELY, COMPLETE AND ACCEPTED.

"BASIS OF PAYMENT"

THE WORK INCLUDED IN THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR EACH "ITEM SPECIAL, INCINERATOR" COMPLETED AND ACCEPTED. WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING, PREPARING, PLACING AND INSTALLING ALL MATERIALS AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM AS SPECIFIED, INCLUDING ALL CONDUIT AND WIRING REQUIRED FOR SERVICE TO AND THE OPERATION OF THE INCINERATOR.

ITEM SPECIAL - WATER SYSTEM,

FURNISH AND INSTALL ONE WATER SYSTEM, COMPLETE AND READY FOR OPERATION IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS STATED HEREIN AND ACCEPTABLE TO THE OHIO BOARD OF HEALTH. THE WATER SYSTEM SHALL INCLUDE ALL THE ITEMS AS DETAILED AND SPECIFIED ON SHEET NOS. 54 TO 56

"METHOD OF MEASUREMENT"

THE WATER SYSTEM AS DETAILED AND SPECIFIED ON THE PLANS SHALL BE CONSIDERED AS ONE UNIT. THE NUMBER OF UNITS TO BE PAID FOR SHALL BE THE NUMBER OF EACH UNIT, LISTED AND ESTIMATED SEPARATELY, COMPLETED AND ACCEPTED.

"BASIS OF PAYMENT"

THE WORK INCLUDED IN THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR EACH "ITEM SPECIAL, WATER SYSTEM, ", COMPLETED AND ACCEPTED, WHICH PRICE SHALL CONSTITUTE FULL COMPENSATION FOR ALL TRENCHING EXCAVATION, BACKFILL AND FOR FURNISHING, PREPARING, PLACING AND INSTALLING ALL MATERIALS, AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM AS DETAILED AND SPECIFIED ON THE PLANS, INCLUDING ALL ELECTRICAL DEVICES, CONDUIT AND WIRING REQUIRED FOR SERVICE TO AND THE OPERATION OF THE WATER SYSTEM.

ITEM SPECIAL-GARBAGE CAN,

THE CONTRACTOR SHALL FURNISH A 32 GALLON CAPACITY GALVANIZED STEEL GARBAGE CAN EQUIPPED WITH A REMOVABLE DOME TOP COVER WITH SELF-CLOSING DOOR. THE MINIMUM WEIGHT SHALL BE 40 POUNDS. EACH UNIT SHALL BE MOUNTED ON A SIX INCH THICK PLAIN CONCRETE SLAB WHICH SHALL EXTEND A MINIMUM OF SIX INCHES IN ALL DIRECTIONS OUT FROM THE BOTTOM OF THE GARBAGE CAN UNIT. EACH GARBAGE CAN UNIT SHALL BE LOCATED AS DIRECTED BY THE ENGINEER.

"BASIS OF PAYMENT"

THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR ITEM SPECIAL, "GARBAGE CAN, ", FURNISHED AND ACCEPTED, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING, PLACING AND INSTALLING ALL MATERIALS AND FOR ALL LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM AS SPECIFIED.

ITEM 662 PLANTING SHRUBS, AS PER PLAN:

IN ADDITION TO THE REQUIREMENTS OF ITEM 662, THE FOLLOWING SHALL BE INCLUDED IN THE PLANTING PROCEDURE:

SOD SHALL BE REMOVED FROM THE ENTIRE PLANTING BED AS DIMENSIONED ON THE PLANS AND THE SOIL CULTIVATED TO A DEPTH OF SIX TO EIGHT INCHES DEEP OVER THE ENTIRE PLANTING BED.

AFTER THE POCKET HOLES HAVE BEEN EXCAVATED TO THE SPECIFIED SIZE, THEY SHALL BE BACK-FILLED WITH A TOPSOIL-CALCINED CLAY MIXTURE TO A MINIMUM DEPTH OF SIX INCHES. THIS TOPSOIL-CALCINED CLAY MIXTURE SHALL CONSIST OF ONE PART CALCINED CLAY SOIL CONDITIONER SUCH AS LUSOIL, TURFACE, TERRAGREEN OR AN APPROVED EQUAL TO THREE PARTS APPROVED TOPSOIL. THE PARTICLE SIZE GRADATION OF THE CONDITIONER SHALL BE AT LEAST 95% PASSING A NO. 6 SIEVE AND NOT MORE THAN 5% PASSING A NO. 50 SIEVE.

THE PLANT SHALL BE SET AND THE HOLE BACKFILLED WITH THE TOPSOIL-CALCINED CLAY MIXTURE AND THE PLANTING OPERATIONS PERFORMED IN ACCORDANCE WITH ITEM 662. AFTER PLANTING THE SHRUBS AND PRIOR TO MULCHING, COMMERCIAL FERTILIZER (12-12-12) SHALL BE APPLIED OVER THE TOP OF THE ENTIRE PLANTING BED AT THE RATE OF *FIVE* (5) POUNDS PER 100 SQ. FT.

THE PLANTING BEDS SHALL BE MULCHED OVER THE ENTIRE AREA WITH MULCH CONSISTING OF WOOD CHIPS APPLIED AT A DEPTH OF SIX INCHES OR SAWDUST, CRUSHED CORN COBS, OR PEAT MOSS APPLIED AT A MINIMUM DEPTH OF FOUR INCHES.

THIS ADDITIONAL WORK AND MATERIALS SHALL BE INCLUDED FOR PAYMENT IN ITEM 662 AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR EACH ITEM 662, PLANTING SHRUBS, AS PER PLAN.

ITEM 663 PLANTING TREES, AS PER PLAN:

IN ADDITION TO THE REQUIREMENTS OF ITEM 663, THE FOLLOWING SHALL BE INCLUDED IN THE PLANTING PROCEDURE:

AFTER THE POCKET HOLES HAVE BEEN EXCAVATED TO THE SPECIFIED SIZE, THEY SHALL BE BACK-FILLED WITH A TOPSOIL-CALCINED CLAY MIXTURE TO A MINIMUM DEPTH OF SIX INCHES. THIS TOPSOIL-CALCINED CLAY MIXTURE SHALL CONSIST OF ONE PART CALCINED CLAY SOIL CONDITIONER SUCH AS LUSOIL, TURFACE, TERRAGREEN OR AN APPROVED EQUAL TO THREE PARTS APPROVED TOPSOIL. THE PARTICLE SIZE GRADATION OF THE CONDITIONER SHALL BE AT LEAST 95% PASSING A NO. 6 SIEVE AND NOT MORE THAN 5% PASSING A NO. 50 SIEVE.

COMMERCIAL FERTILIZER (12-12-12) SHALL BE INCORPORATED INTO THE BACKFILL MIXTURE AT THE RATE OF 1/2 POUND PER INCH CALIPER OF TREE.

THE TREE SHALL THEN BE SET AND THE HOLE BACKFILLED WITH THE TOPSOIL-CALCINED CLAY MIXTURE AND THE PLANTING OPERATIONS PERFORMED IN ACCORDANCE WITH ITEM 663.

TREES SHALL BE BRACED BY THE SINGLE STAKE METHOD.

MULCH MAY CONSIST OF WOOD CHIPS APPLIED AT A MINIMUM DEPTH OF SIX INCHES OR SAWDUST, CRUSHED CORN COBS OR PEAT MOSS APPLIED AT A MINIMUM DEPTH OF FOUR INCHES.

THIS ADDITIONAL WORK AND MATERIALS SHALL BE INCLUDED FOR PAYMENT IN ITEM 663 AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR EACH ITEM 663, PLANTING TREES, AS PER PLAN.

EXISTING TREES AND SHRUBS:

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

ITEMS SPECIAL:

PICNIC TABLES, CHARCOAL GRILLS AND SERVING TABLE, WATER SYSTEM, MOTORISTS SERVICE BUILDING AND STORAGE UNIT, SEWAGE TREATMENT PLANT AND INCINERATOR SHALL INCLUDE ALL EXCAVATION AND BACKFILL, FURNISHING, HAULING AND PLACING ALL MATERIALS AND ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE ITEMS AS DETAILED ON THE PLAN OR AS SHOWN ON THE PERTINENT STANDARD CONSTRUCTION DRAWINGS AND GENERAL NOTES. TABLES AND GRILLS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER.

ITEM 651 TOPSOIL STOCKPILED:

THE TOPSOIL SHALL BE STOCKPILED ACCORDING TO THE REQUIREMENTS OF ITEM 651. THE TOPSOIL STOCKPILED UNDER THIS ITEM SHALL BE USED FOR ITEM 652, PLACING STOCKPILED TOPSOIL, AND FOR BACK FILL MATERIAL FOR ITEMS 662 AND 663, PLANTING SHRUBS AND TREES.

THE FOLLOWING ESTIMATED QUANTITY OF 651 TOPSOIL STOCKPILED, IS REQUIRED FOR THE ABOVE USES:

651 TOPSOIL STOCKPILED	593 CU. YDS.

ITEM 607 FENCE TYPE 47, AS PER PLAN

The barbed wire on the top of the Type 47 fence as shown on Std. Dwg. F-2 shall be deleted.

ITEM 652 PLACING STOCKPILED TOPSOIL:

THE STOCKPILED TOPSOIL SHALL BE PLACED TO A DEPTH OF THREE INCHES ON THE PARKING AREA ISLAND AND ON ALL AREAS BEHIND THE REST AREA BASELINE WHERE GRADING IS REQUIRED, AS SHOWN ON THE CROSS SECTIONS AND BY CONTOURS ON THE REST AREA PLAN. THE TOPSOIL SHALL BE PLACED AT VARIABLE DEPTHS NECESSARY TO OBTAIN SMOOTH GRADES OVER TREE ROOT AREAS AND AREAS WHERE TREES AND STUMPS ARE REMOVED. MAXIMUM DEPTH OVER TREE ROOT AREAS SHALL BE THREE INCHES.

THE WORK INCLUDED IN THIS ITEM SHALL MEET THE REQUIREMENTS OF ITEM 652 AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER CUBIC YARD FOR ITEM 652, PLACING STOCKPILED TOPSOIL.

THE FOLLOWING ESTIMATED QUANTITY IS REQUIRED TO COMPLETE THIS ITEM:

652 PLACING STOCKPILED TOPSOIL	502 CU. YDS.

SPECIAL SEEDING PREPARATION:

THE REFERENCE IN THE FIRST PARAGRAPH OF 659.09 TO PREPARATION OF THE SEED BED IN FRONT OF RESIDENCES, ETC, SHALL ON THIS PROJECT BE CONSIDERED TO BE PARTICULARLY APPLICABLE TO THE PARKING AREA ISLAND AND ALL AREAS BEHIND THE REST AREA BASELINE. IN ADDITION, THE SEEDING BED SURFACE IN THESE AREAS SHALL BE LOOSENED TO A DEPTH OF THREE INCHES BEFORE SEEDING.

TREE PROTECTION:

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR TREE PROTECTION TO BE USED AS DIRECTED BY THE ENGINEER:

657 RIPRAP FOR TREE PROTECTION	60 SQ. YDS.
658 TREE ROOT AERATION	25 CU. YDS.

PLANT SPRAY FOR PREVENTION OF WATER LOSS:

ALL PLANT MATERIAL SHALL BE SPRAYED IN THE STORAGE AREA, BEFORE THEY ARE PLANTED, WITH AN APPROVED ANTI-DESICCANT AT THE RATE OF ONE PART ANTI-DESICCANT TO 5 PARTS WATER.

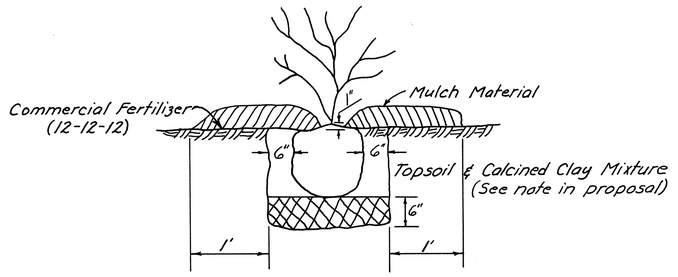
THE SPRAY APPLICATION COVERAGE SHALL BE COMPLETE ON BOTH THE UPPER AND LOWER SURFACES OF THE BRANCHES AND FOLIAGE TO THE POINT OF RUN-OFF. SPRAY NOZZLES SHALL BE THE TYPE TO PRODUCE A FINE SPRAY MIST.

THE ENGINEER WILL MARK ALL PLANTS WHICH HAVE BEEN SPRAYED.

DECIDUOUS TREES, SHRUBS OR VINES, WHICH NORMALLY SHED THEIR LEAVES DURING THE FALL SEASON, NEED NOT BE SPRAYED WITH THE ABOVE DESCRIBED MATERIAL IF PLANTED DURING THE NORMAL FALL PLANTING SEASON, OCTOBER 1 TO DECEMBER 15. WHEN PLANTED DURING ANY OTHER SEASON THE DECIDUOUS MATERIAL SHALL BE SPRAYED AS DESCRIBED. THE COST OF THIS SPRAYING IS TO BE INCLUDED IN THE COST OF THE SPECIFIC PLANTING ITEMS.

SPECIFICATIONS FOR WOOD CHIPS, MULCHING MATERIALS:

WOOD CHIPS SHALL BE A COMBINATION OF WOOD SLIVERS WITH GROUND WOOD OR SAWDUST. AT LEAST 85 PERCENT BY WEIGHT OF THE MATERIAL SHALL PASS A 1-INCH SCREEN AND 90 PERCENT BY WEIGHT OF THE MATERIAL WILL NOT BE OVER 6 INCHES IN LENGTH.



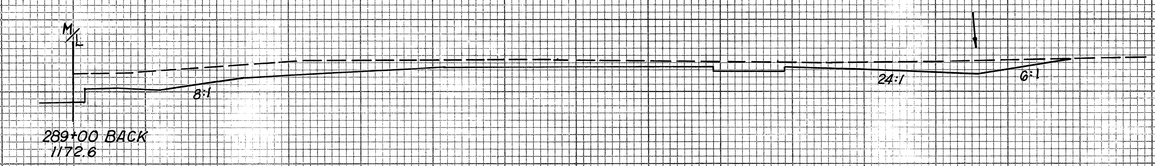
TYPICAL POCKET HOLE DETAIL

Rev. 10-20-67

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL

289+00 Ahead CARRIED ON SERVICE DRIVE SECTIONS

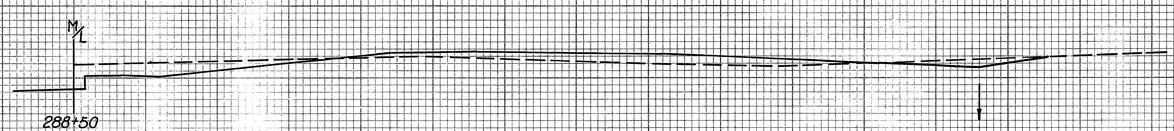
Totals Carried To Sheet # 7 — 486 1834



289+00 BACK
1172.6

Ahead 0 0
Sta. 289+00 Back 186 0

227 51

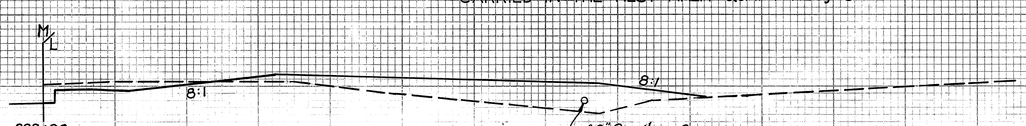


288+50
1171.9

59 55

NOTE: SEEDING FOR THE AREAS BEHIND THE REST AREA BASELINE ARE INCLUDED IN THE SEEDING TOTAL CARRIED IN THE REST AREA QUANTITIES, SHEET # 24

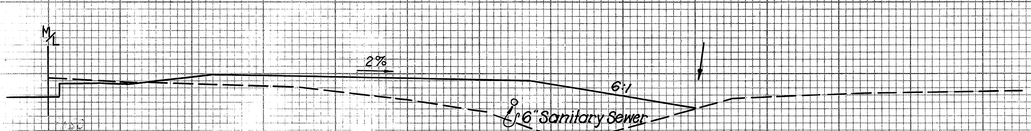
77 190



288+00
1170.1

24 150

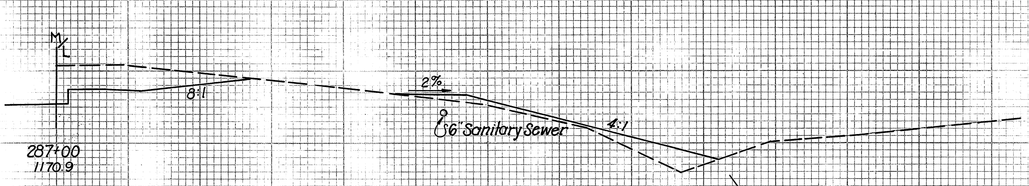
32 368



287+50
1169.2

10 248

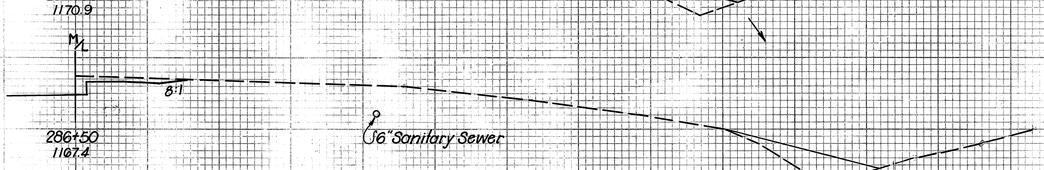
70 274



287+00
1170.9

65 48

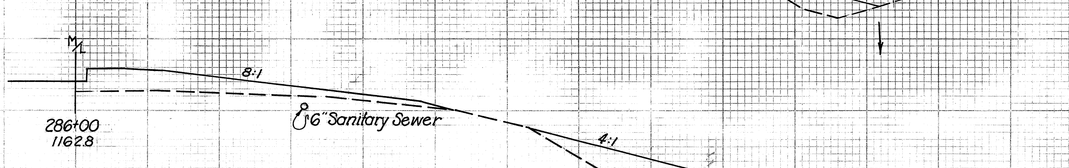
70 81



286+50
1167.4

11 40

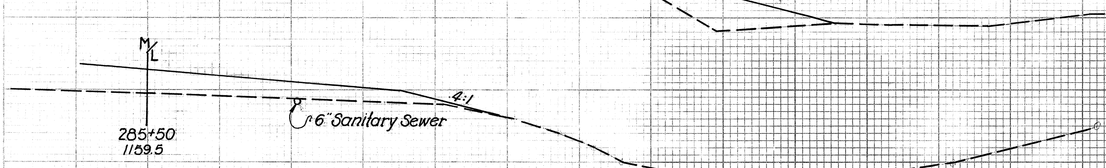
10 194



286+00
1162.8

0 169

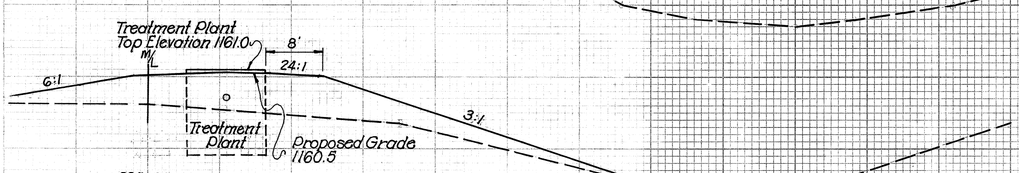
0 249



285+50
1159.5

0 100

Treatment Plant
Top Elevation 1161.0



0 294

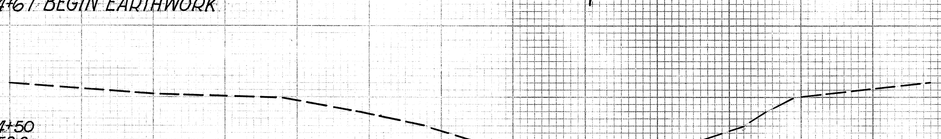
285+00
1156.3

0 217

0 133

Sta. 284+67 0 0

284+67 BEGIN EARTHWORK



284+50
1152.0

Rest Area ℄

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160

REST AREA SECTIONS

FED. RD. DIVISION 2 | STATE OHIO | PROJECT | .

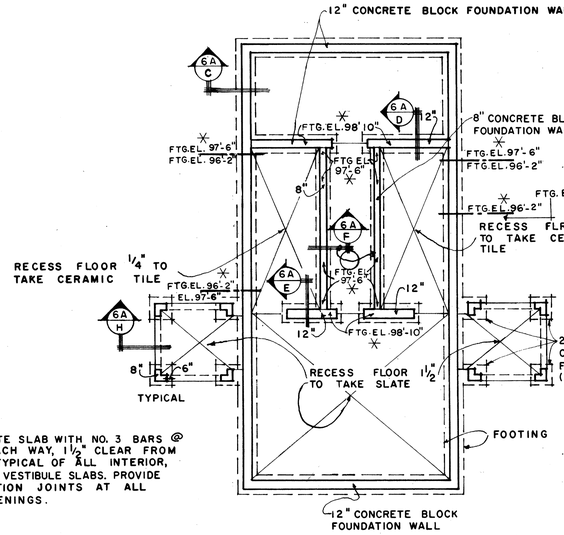
MED-71-22.55

29
68

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MED-71-22.55

30
68



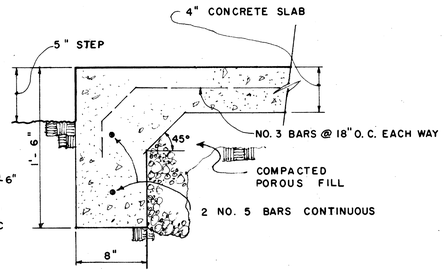
NOTE

4" CONCRETE SLAB WITH NO. 3 BARS @ 18" O.C. EACH WAY, 1 1/2" CLEAR FROM BOTTOM. TYPICAL OF ALL INTERIOR, SERVICE & VESTIBULE SLABS. PROVIDE CONSTRUCTION JOINTS AT ALL DOOR OPENINGS.

DWG. A

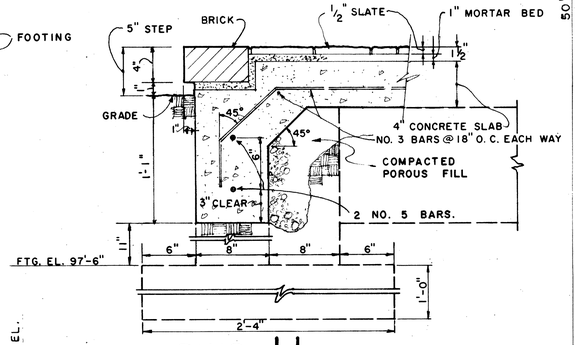
FOUNDATION PLAN

1/8" = 1'-0"



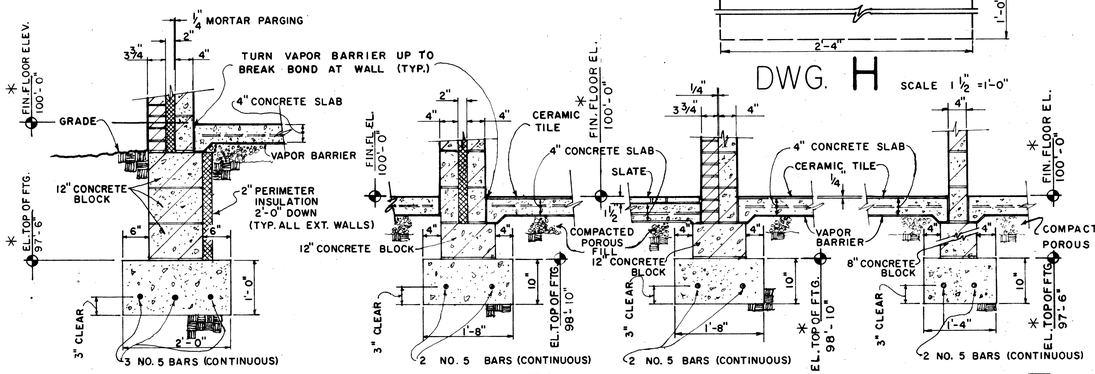
DWG. G

SCALE 1 1/2" = 1'-0"



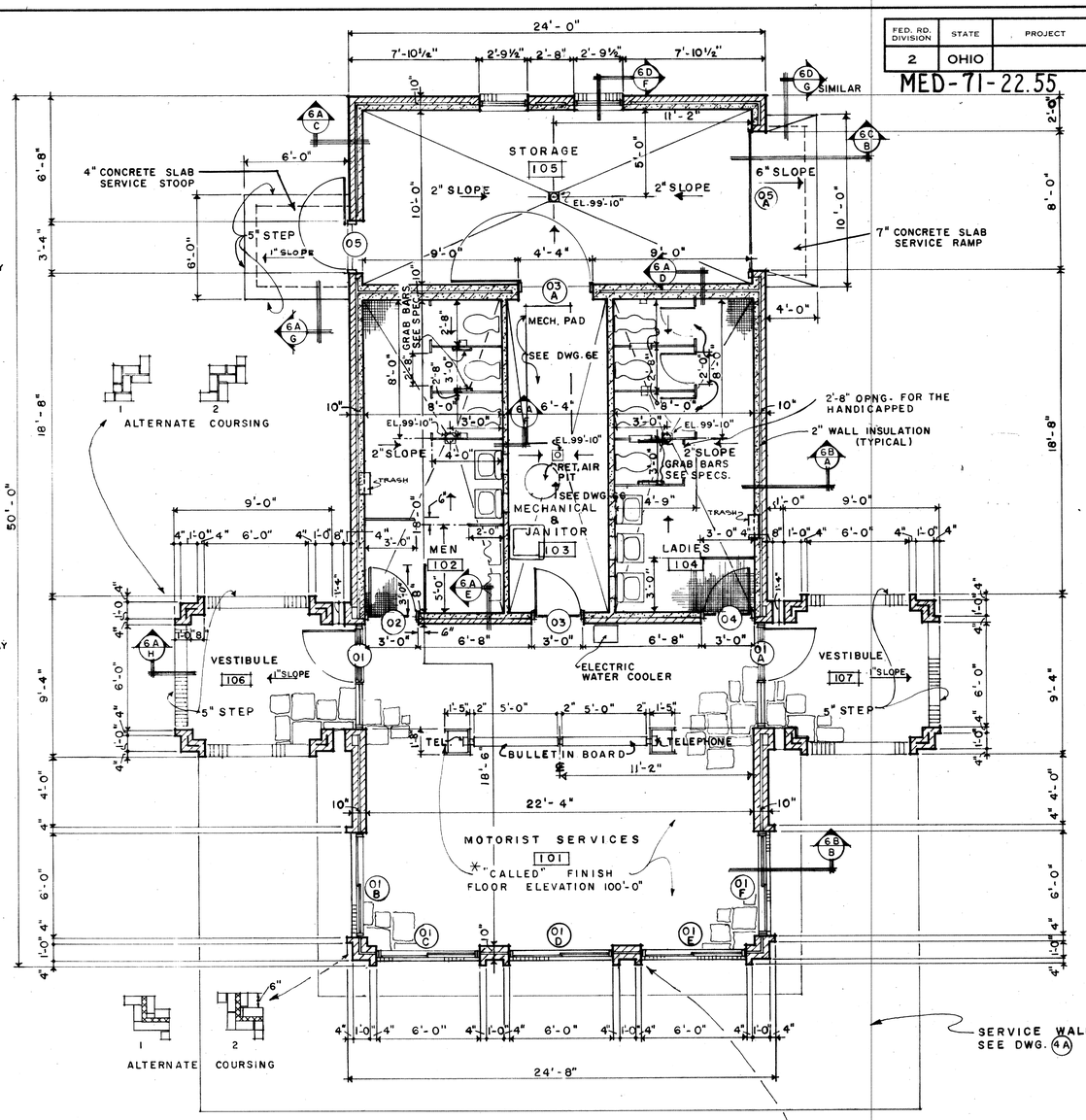
DWG. H

SCALE 1 1/2" = 1'-0"



DWG. C DWG. D DWG. E DWG. F

FOOTING DETAILS 3/4" = 1'-0"



DWG. B

FLOOR PLAN

1/4" = 1'-0"

EXPLANATION OF SECTION SYMBOLS

6A/H SHEET NO. 6-A, DWG. H

6B/B SHEET NO. 6-B, DWG. B

NOTE

* THE ELEVATIONS SHOWN WERE ARBITRARILY SELECTED FOR RELATIVE PURPOSES ONLY.

FINISH SCHEDULE

SPACE DESIGNATION	SPACE NO.	CEILING	WALL	FLOOR	BASE	REMARKS
MOTORIST SERVICES	101	DRYWALL	BRICK	SLATE	NONE	
MEN'S REST ROOM	102	DRYWALL	CERAMIC	CERAMIC	CERAMIC	
MECH. & JANITOR	103	DRYWALL	CONC. BLK. PAINTED	EXPOSED	NONE	
LADIES REST ROOM	104	DRYWALL	CERAMIC	CERAMIC	CERAMIC	
STORAGE	105	DRYWALL	CONC. BLK. PAINTED	EXPOSED	NONE	
VESTIBULE	106	CEMENT PLAST.	——	SLATE & BRICK	——	
VESTIBULE	107	CEMENT PLAST.	——	SLATE & BRICK	——	

MATERIALS INDICATION KEY

- CONCRETE BLOCK
- BRICK
- RIGID INSULATION (WALL & PERIMETER)
- BAT INSULATION
- CONCRETE
- DRYWALL
- PLYWOOD
- SOIL

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

REVISIONS 10-20-67

MOTORIST SERVICES BUILDING & STORAGE UNIT

SHEET NO. RRA 6-A

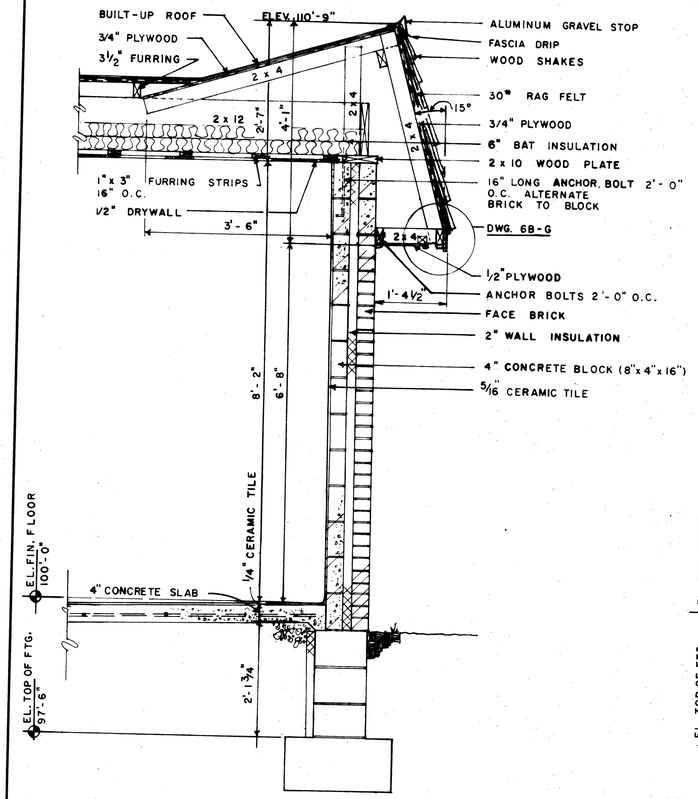
PROJECT ARCHITECT George J. Kontogiannis

DATE 5-19-67

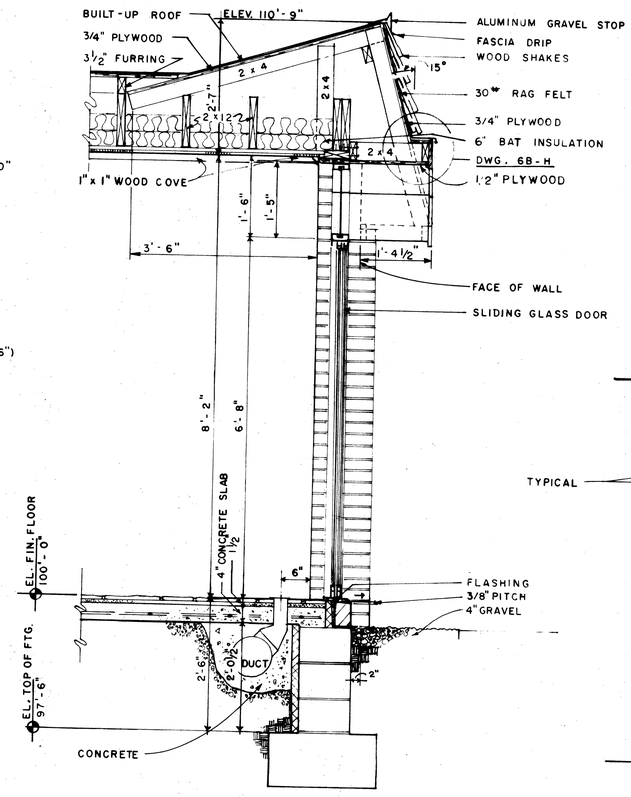
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

31
68

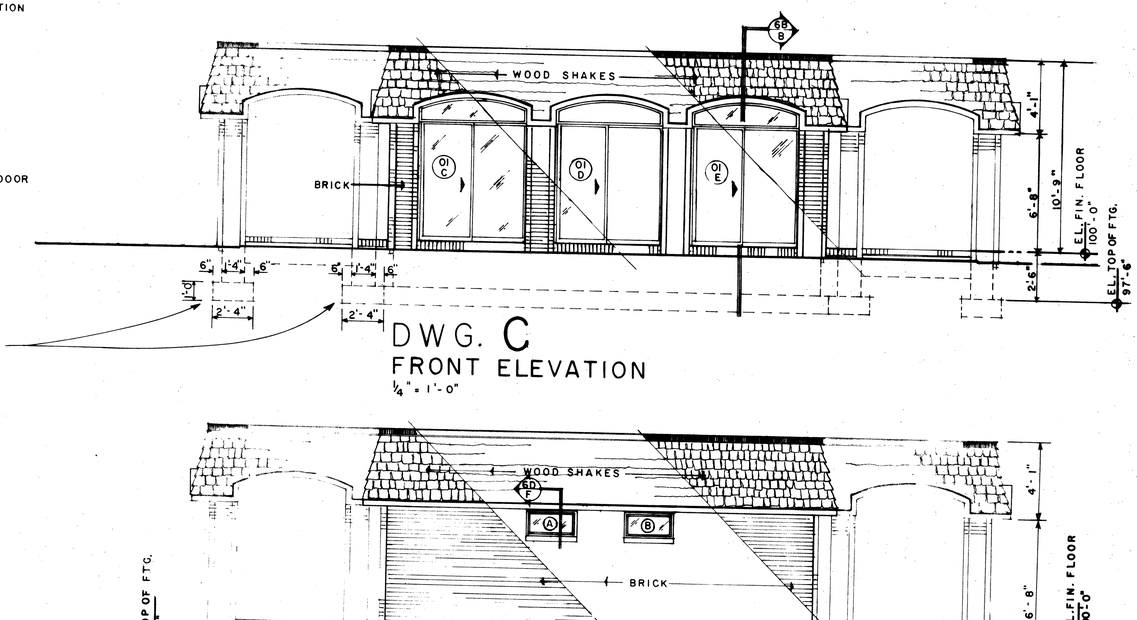
MED-71-22.55



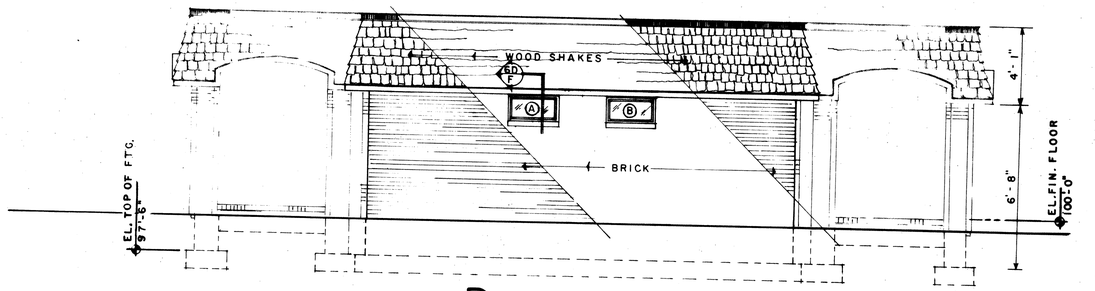
DWG. A
EXT. WALL SECTION
¾" = 1'-0"



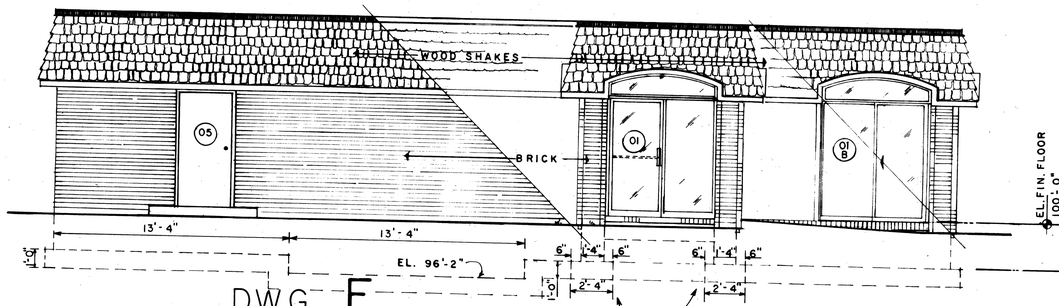
DWG. B
SECTION AT SLIDING GLASS DOOR
¾" = 1'-0"



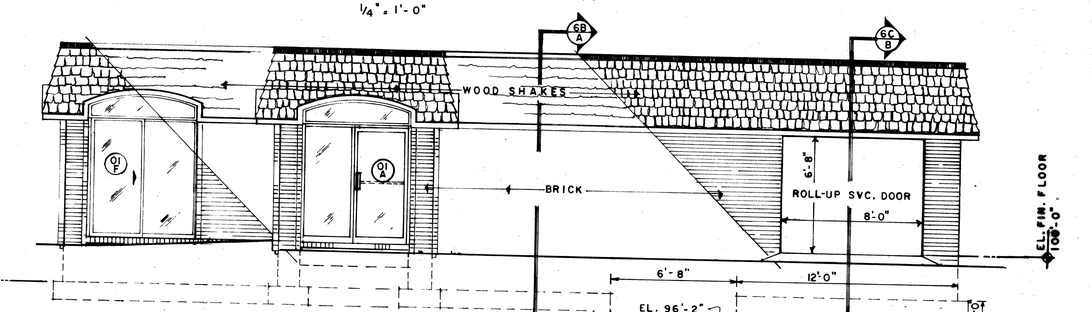
DWG. C
FRONT ELEVATION
¼" = 1'-0"



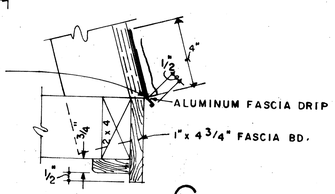
DWG. D
REAR ELEVATION
¼" = 1'-0"



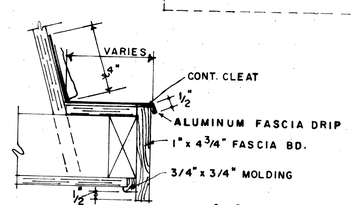
DWG. E
LEFT ELEVATION
¼" = 1'-0"



DWG. F
RIGHT ELEVATION
¼" = 1'-0"



DWG. G



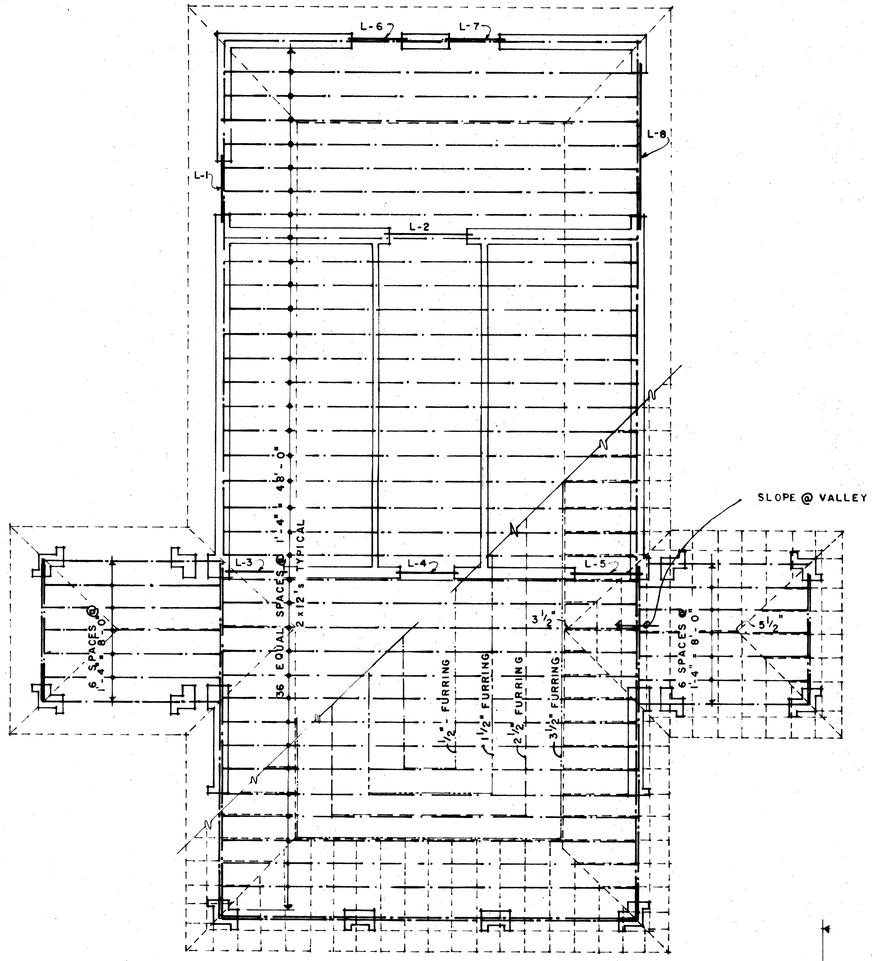
DWG. H
ALUMINUM FASCIA DRIP
NOT TO SCALE

BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF HIGHWAYS		
REVISIONS	MOTORIST SERVICES BUILDING & STORAGE UNIT	SHEET NO. RRA 6-B
	DRAWN BY George J. Koutoginnis	DATE 5-19-67

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

32
68

MED-71-22.55

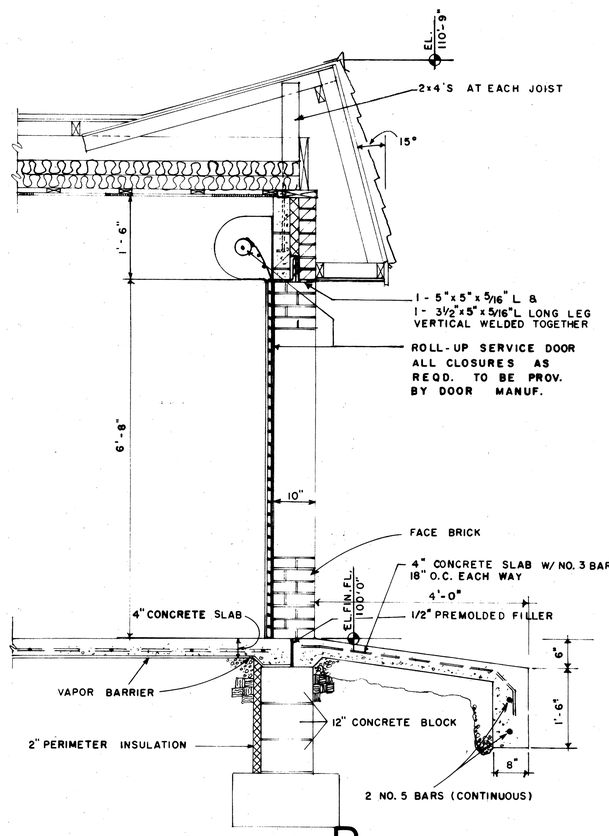


KEY

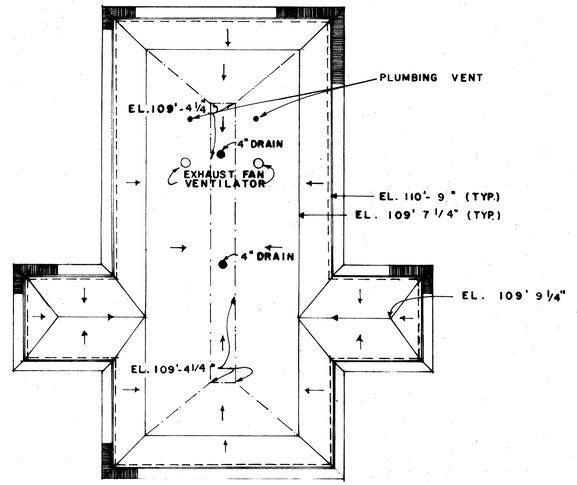
- 2"x 12"'s
- 2"x 12"'s
- ½" FURRING
- 1½" FURRING
- 2½" FURRING
- 3½" FURRING
- LINTEL

DWG. A
STRUCTURAL ROOF PLAN
¼" = 1'-0"

LINTEL SCHEDULE	
L-1 THRU L-7	2-3 1/2" x 4" x 1/4" L's LONG LEG VERTICAL
L-8	1-5"x 5"x 5/16" L's & 1-3 1/2"x 5"x 5/16" L's LONG LEG VERTICAL

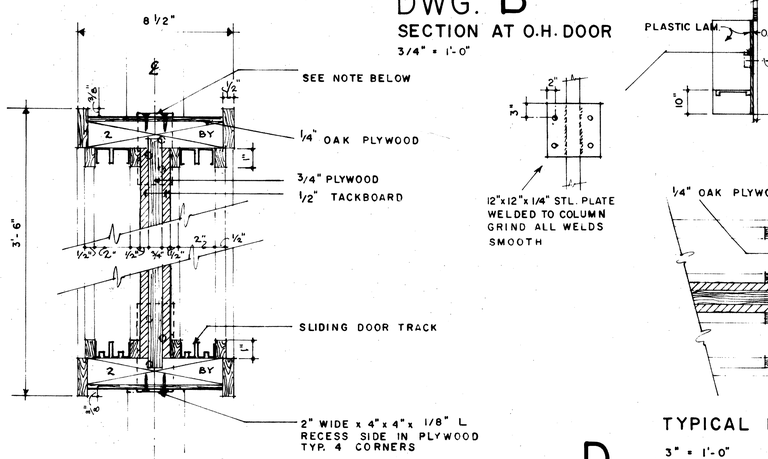


DWG. B
SECTION AT O.H. DOOR
3/4" = 1'-0"

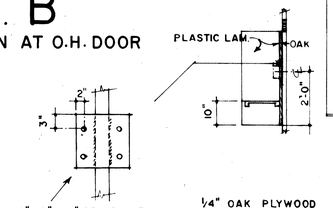


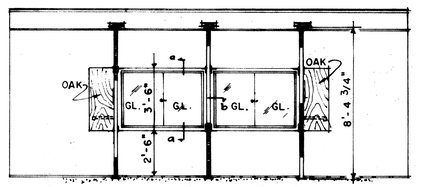
KEY
BUILT-UP ROOF
WOOD SHAKE ROOF

DWG. C
ROOF PLAN
⅛" = 1'-0"

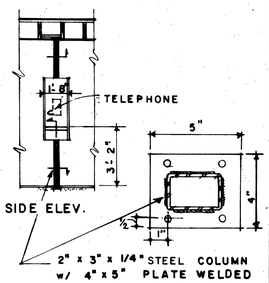


VERTICAL SECTION a
3" = 1'-0"

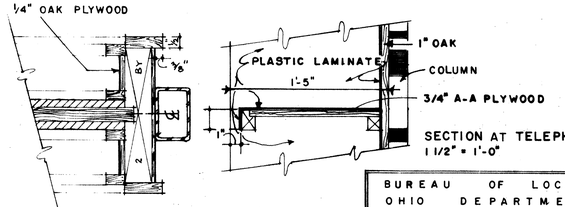




FRONT ELEVATION (REAR SIMILAR)
¼" = 1'-0"



TYP. SIDE ELEV.



SECTION AT TELEPHONE BOOTH c
1 1/2" = 1'-0"

TYPICAL HORIZ. SECTION b
3" = 1'-0"

DWG. D
BULLETIN BOARD DETAILS & ELEVATIONS

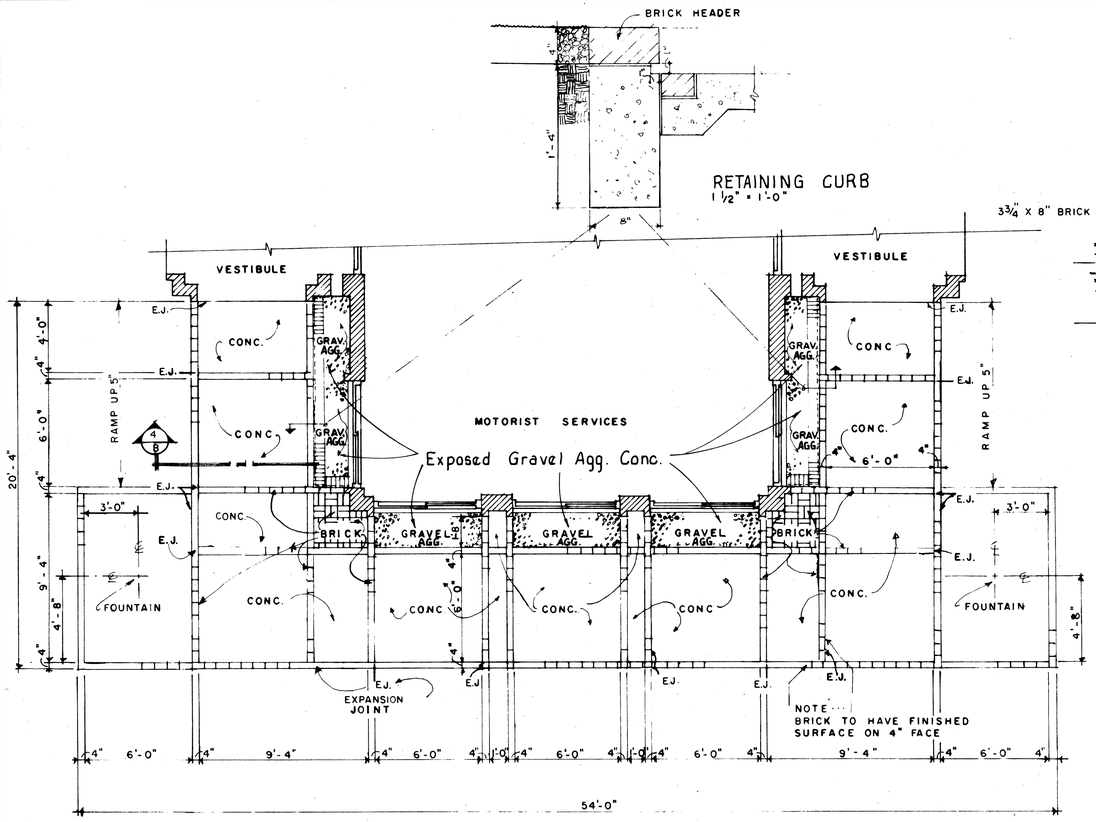
BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

REVISIONS	MOTORIST SERVICES BUILDING & STORAGE UNIT	SHEET NO. RRA 6-C
	DRAWN BY George J. Koutoglannis	DATE 5-19-67

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

33/68

MED-71-22.55

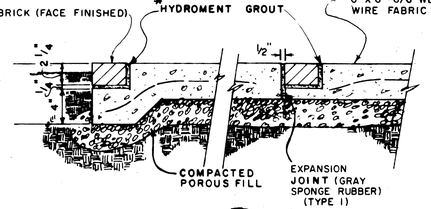


DWG. **A**

SERVICE WALK PLAN

¼" = 1'-0"

* See Sec. 12 of Spec's. for Alternate Material.

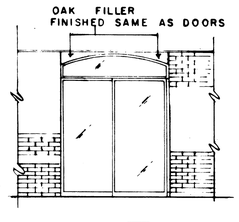


DWG. **B**

SERVICE WALK DETAIL

1½" = 1'-0"

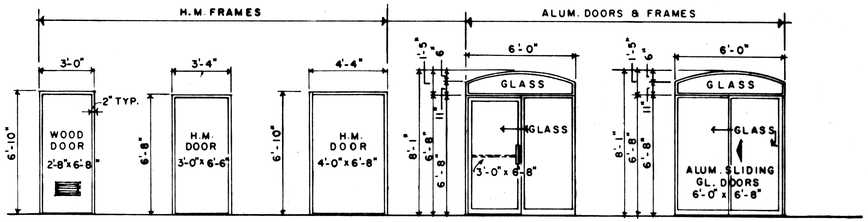
COLOR SCHEDULE					
SPACE DESIGNATION	SPACE NO.	CEILING	WALL & BASE	FLOOR	
MOTORIST SERVICES	101	P&L NO. 6041	BRICK	SLATE	
MEN'S REST ROOM	102	P&L NO. 6041	SUNTILE NO. 612 OLIVE	SUNTILE NO. 144 MAPLE	
MECH. & JANITOR	103	P&L NO. 6041	P&L NO. 4036	EXPOSED	
LADIES REST ROOM	104	P&L NO. 6041	SUNTILE NO. 612 OLIVE	SUNTILE NO. 144 MAPLE	
STORAGE	105	P&L NO. 6041	P&L NO. 4036	EXPOSED	
VESTIBULE	106 107	P&L NO. 6041			
ALL EXTERIOR WOOD TRIM	P&L NO. 3015 WAXEN YELLOW				
ALL MISC. METALS	INTERIOR & EXTERIOR	P&L NO. 2511-3 SPECTRUM BLACK	INCLUDING DOORS, FRAMES, & SVC. DOOR		



DWG. **E**

TYPICAL INTERIOR ELEVATION AT DOORS 01 01A – 01F

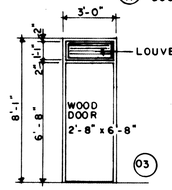
¼" = 1'-0"

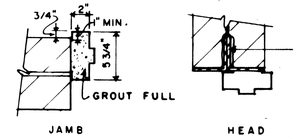


DWG. **C**

DOOR & FRAME ELEVATIONS

¼" = 1'-0"

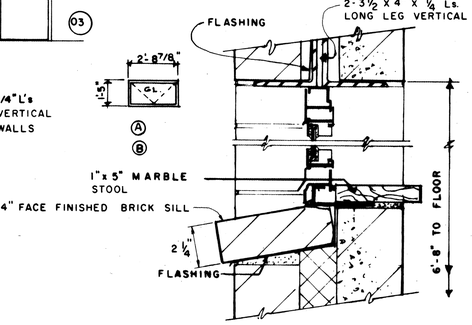




DWG. **D**

TYPICAL H.M. HEAD & JAMB DETAIL

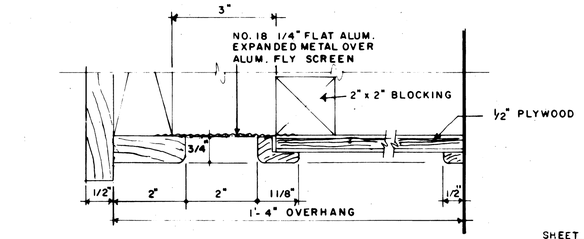
1½" = 1'-0"



DWG. **F**

SECTION AT WINDOW

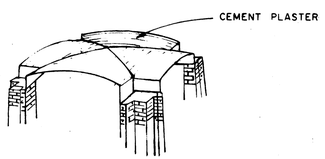
3" = 1'-0"



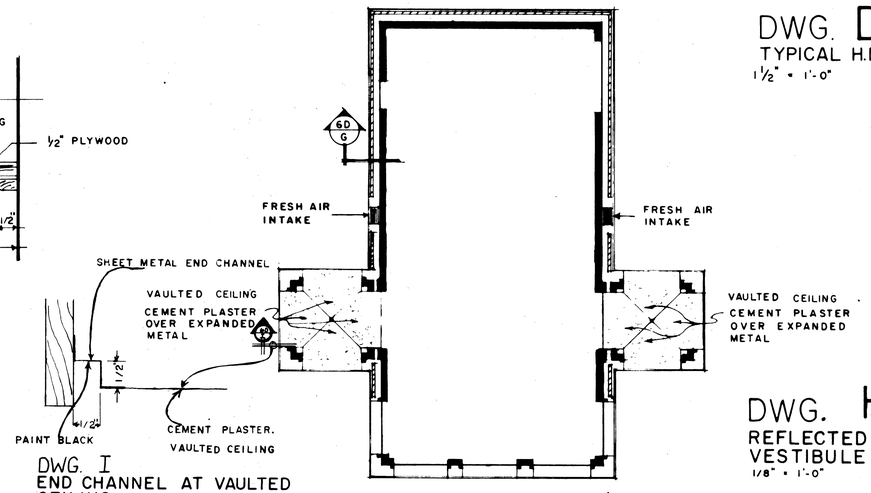
DWG. **G**

TYPICAL EAVE DETAIL

(HALF SIZE)



PERSPECTIVE OF VAULTED CEILING



DWG. **I**

END CHANNEL AT VAULTED CEILING

DWG. **H**

REFLECTED EAVE PLAN & VESTIBULE CLG.

1/8" = 1'-0"

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

REVISIONS 10-20-67	MOTORIST SERVICES BUILDING & STORAGE UNIT	SHEET NO. RRA 6-D
	DRAWN BY George J. Kontogiann	DATE 5-19-67

FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

34
68

MED-71-22.55

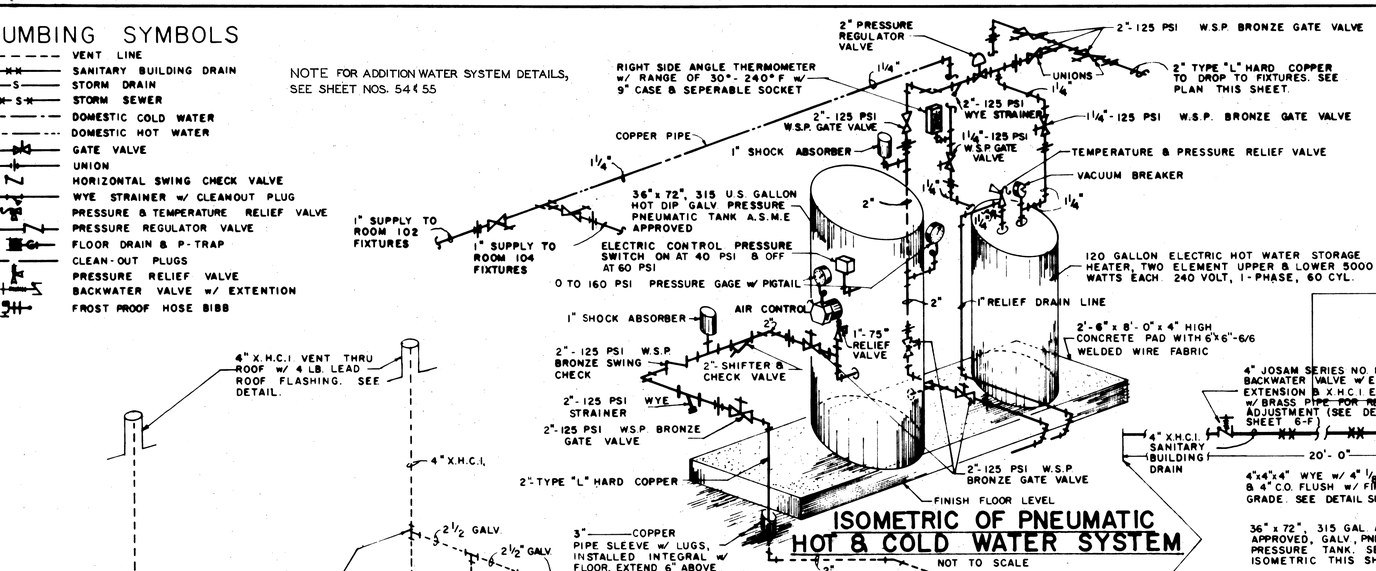
PLUMBING SYMBOLS

- VENT LINE
- SANITARY BUILDING DRAIN
- STORM DRAIN
- STORM SEWER
- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- GATE VALVE
- UNION
- HORIZONTAL SWING CHECK VALVE
- WYE STRAINER w/ CLEANOUT PLUG
- PRESSURE & TEMPERATURE RELIEF VALVE
- PRESSURE REGULATOR VALVE
- FLOOR DRAIN & P-TRAP
- CLEAN-OUT PLUGS
- PRESSURE RELIEF VALVE
- BACKWATER VALVE w/ EXTENTION
- FROST PROOF HOSE BIBB

NOTE FOR ADDITION WATER SYSTEM DETAILS, SEE SHEET NOS. 54 & 55

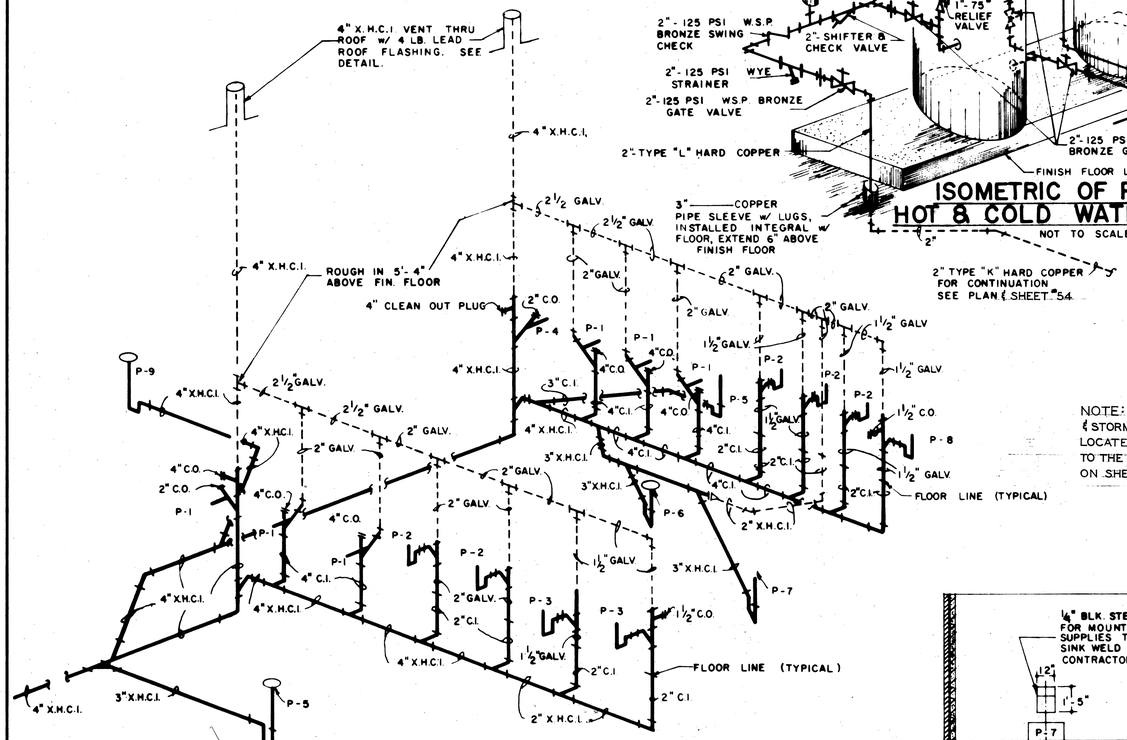
LEGEND-ABBREVIATIONS OF PIPING MATERIALS

X.H.C.I.	EXTRA HEAVY CAST IRON SOIL PIPE
W.S.P.	WORKING STEAM PRESSURE
GALV.	GALVANIZED STEEL PIPE
C.I.	CAST IRON SOIL PIPE
P.S.I.	POUNDS PER SQUARE INCH GAUGE PRESSURE
C.O.	CLEAN-OUT



ISOMETRIC OF PNEUMATIC HOT & COLD WATER SYSTEM

NOT TO SCALE



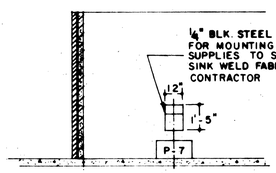
ISOMETRIC OF SOIL-WASTE & VENT PIPING

NOT TO SCALE

3" COPPER PIPE SLEEVE w/ LUGS, INSTALLED INTEGRAL w/ FLOOR, EXTEND 6" ABOVE FINISH FLOOR

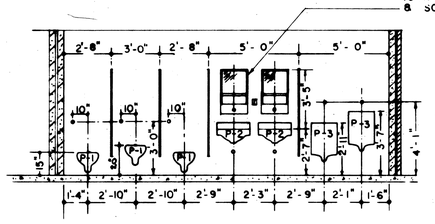
2" TYPE "K" HARD COPPER FOR CONTINUATION SEE PLAN & SHEET 54

NOTE: SANITARY SEWER & STORM SEWER SHALL BE LOCATED WITH REFERENCE TO THE BUILDING AS SHOWN ON SHEET 24



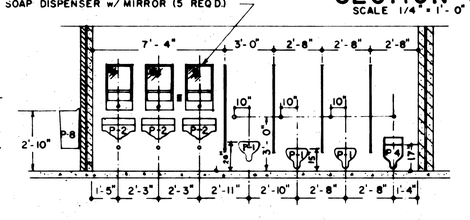
MECH. & JANITOR'S RM. 103 SECTION (A/6E)

SCALE 1/4" = 1'-0"



MEN'S TOILET RM. 102 SECTION (B/6E)

SCALE 1/4" = 1'-0"

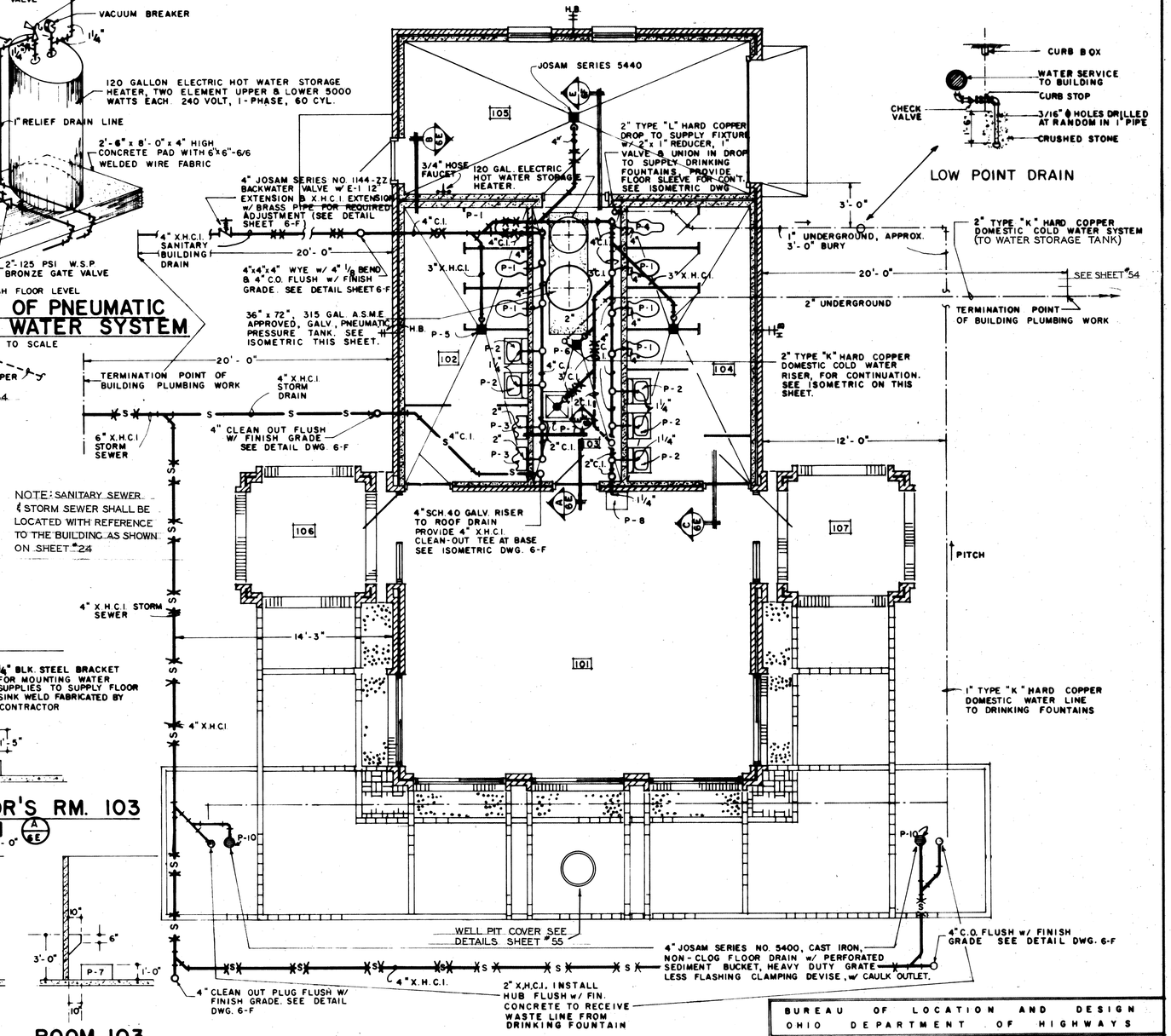


LADIES' TOILET RM. 104 SECTION (C/6E)

SCALE 1/4" = 1'-0"

ROOM 103 SECTION (D/6E)

SCALE 1/4" = 1'-0"



FLOOR PLAN - PLUMBING

SCALE 1/4" = 1'-0"

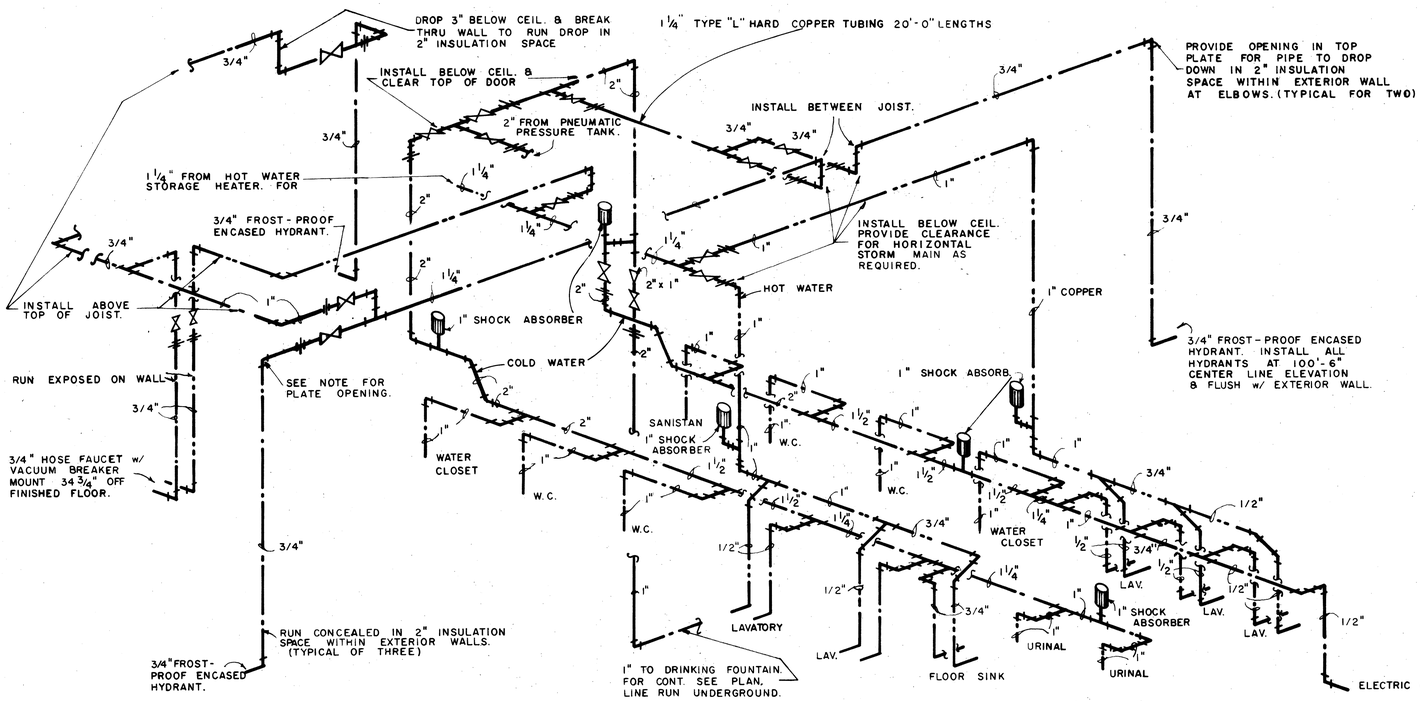
BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

REVISIONS	MOTORIST SERVICES BUILDING & STORAGE UNIT	SHEET NO. RRA 6-E
	DRAWN BY	DATE 5-19-67

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

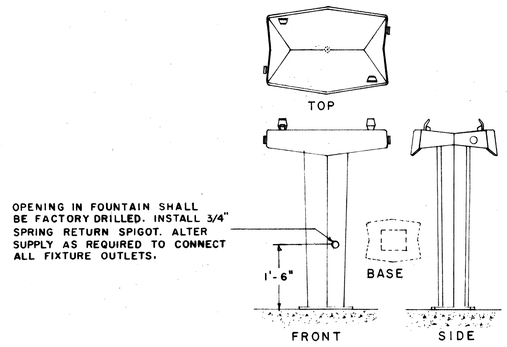
35
68

MED-71-22.55



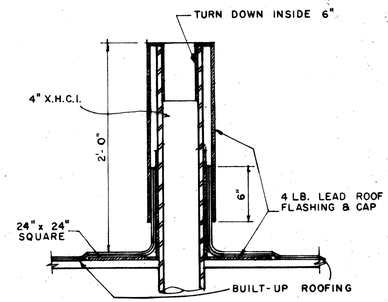
ISOMETRIC OF HOT & COLD DOMESTIC WATER SYSTEM

NOT TO SCALE



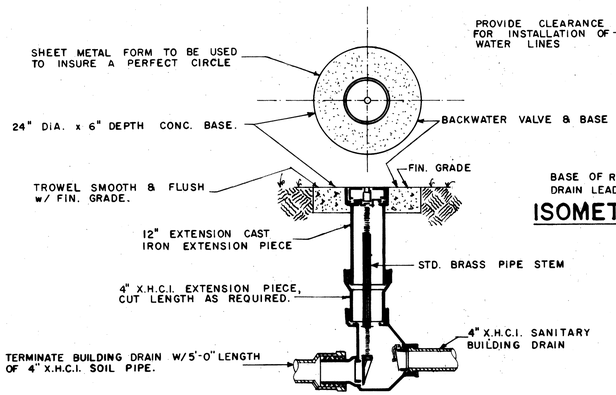
DRINKING FOUNTAIN HYDRANT

NOT TO SCALE



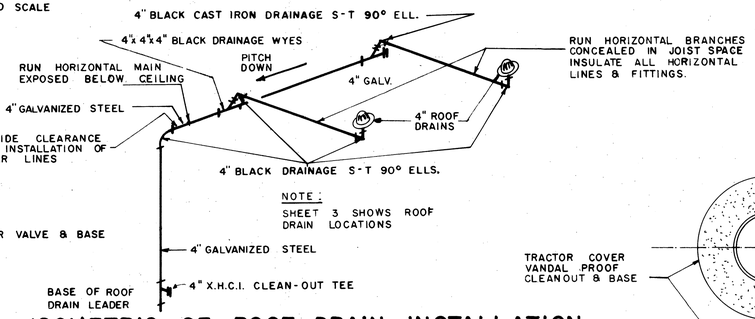
VENT STACK DETAIL THROUGH ROOF

NOT TO SCALE

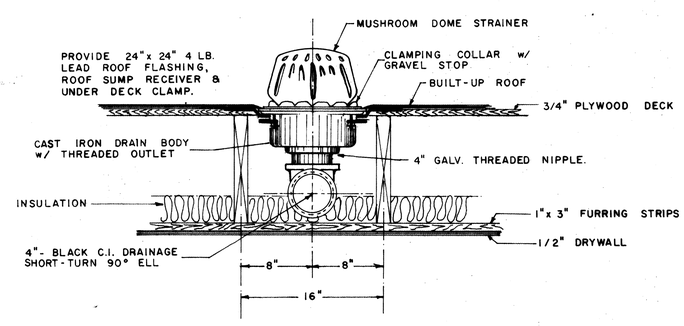


BACKWATER VALVE INSTALLATION DETAIL

NOT TO SCALE

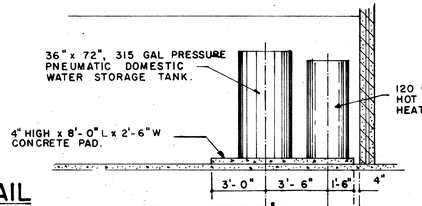


ISOMETRIC OF ROOF DRAIN INSTALLATION



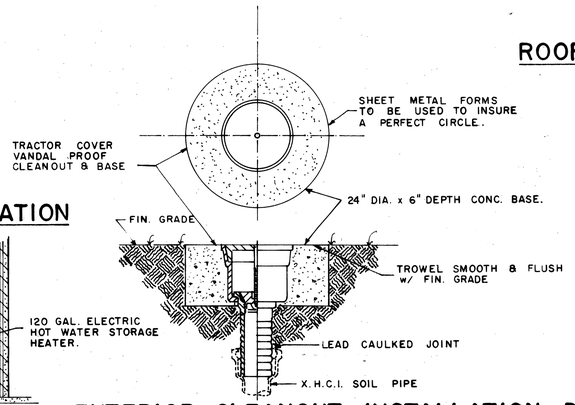
ROOF DRAIN INSTALLATION DETAIL

NOT TO SCALE



MECH. & JANITOR'S RM. 103 SECTION

SCALE 1/4" = 1'-0"



EXTERIOR CLEANOUT INSTALLATION DETAIL

NOT TO SCALE

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

REVISIONS

MOTORIST SERVICES BUILDING & STORAGE UNIT

SHEET NO. RRA 6-F

DRAWN BY

DATE 5-19-67

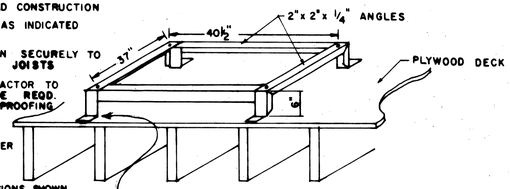
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

36
68

MED-71 – 22.55

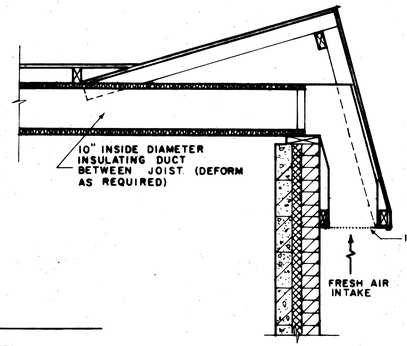
NOTE

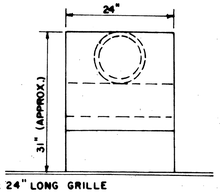
1. WELDED CONSTRUCTION
2. SIZE AS INDICATED
3. FASTEN SECURELY TO WOOD JOISTS
4. CONTRACTOR TO PROVIDE REQD. WATERPROOFING
5. BOLT DIAMETER x 17/32"
6. DIMENSIONS SHOWN ARE CENTER TO CENTER OF BOLT HOLES.



CONDENSING UNIT BASE (ON ROOF)

NOT TO SCALE



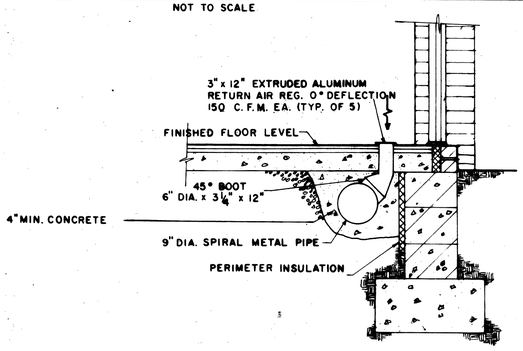


NOTE

1. INTAKE HOODS TO BE FABRICATED FROM 20 GA. GALV. SHEETS.
2. CONTRACTOR TO PROVIDE FRAMING MEMBER HEADERS FOR HOODS AS REQUIRED.
3. BLANK-OFF CONTINUOUS ROOF VENTS 24" EACH END OF INTAKE GRILLE.

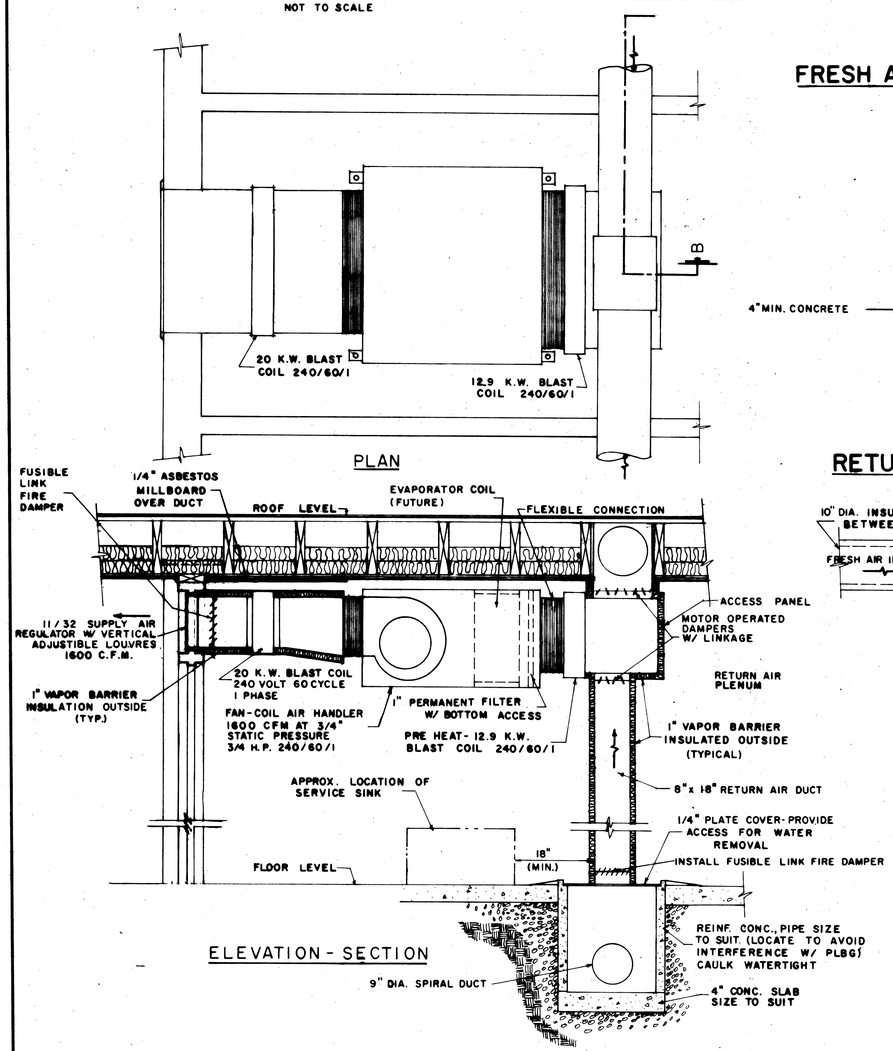
FRESH AIR INTAKE HOOD (TYPICAL OF 2)

NOT TO SCALE



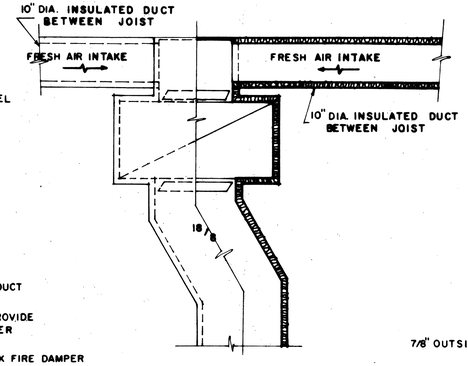
RETURN AIR DUCT DETAIL

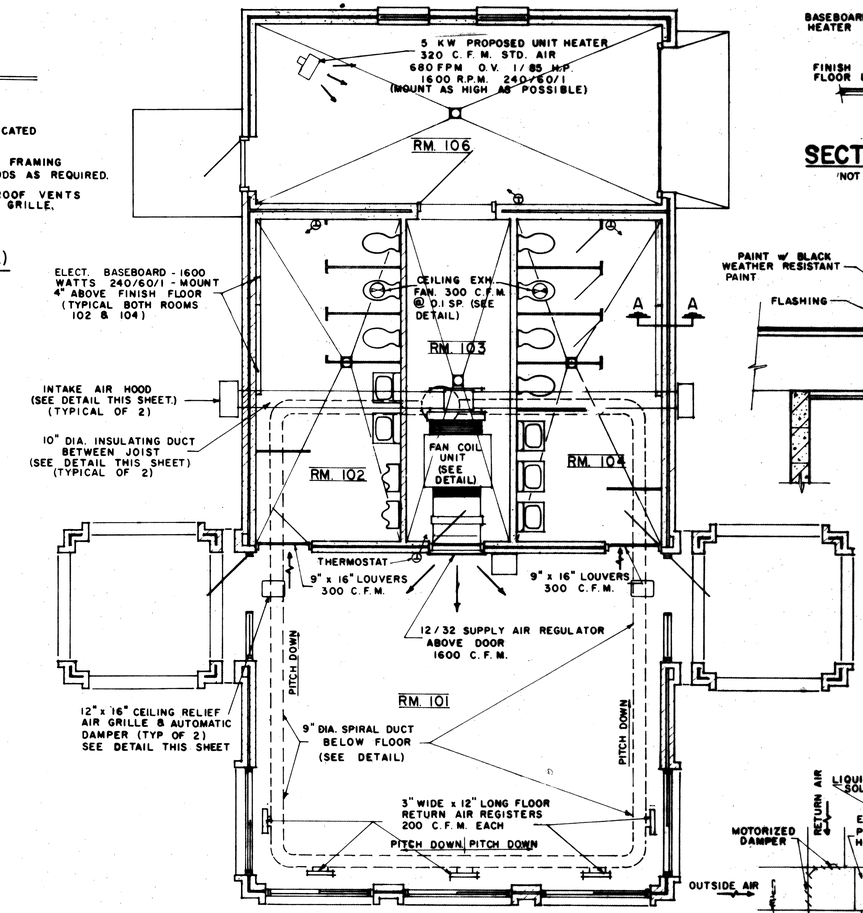
NOT TO SCALE



AIR HANDLING UNIT DETAIL

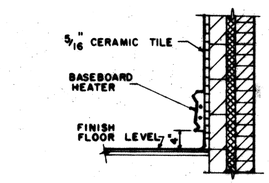
SCALE 3/4" = 1'-0"





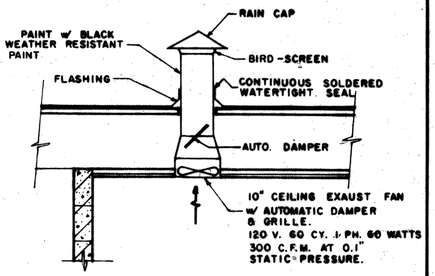
HEATING - VENTILATING EQUIPMENT PLAN

SCALE 1/4" = 1'-0"



SECTION A - A

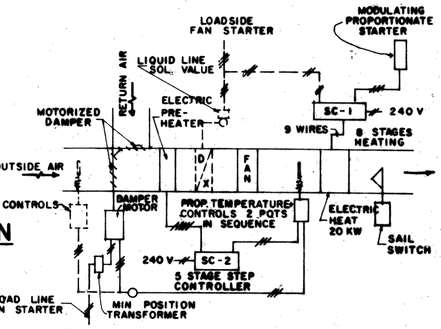
NOT TO SCALE



TOILET EXHAUST FAN (TYPICAL OF 2)

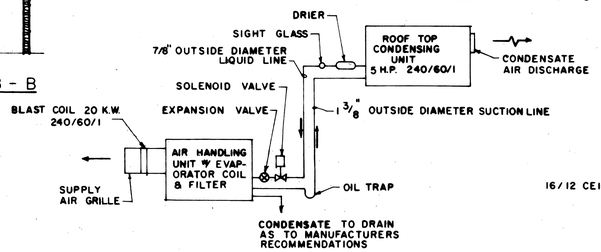
NOT TO SCALE

NOTE
DASHED LINE REPRESENTS FUTURE ADDITIONS.



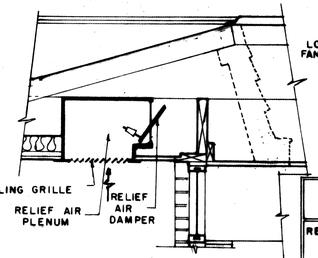
CONTROL SCHEMATIC

NO SCALE



AIR HEATING & COOLING SCHEMATIC

NOT TO SCALE



AIR RELIEF DETAIL

NOT TO SCALE

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

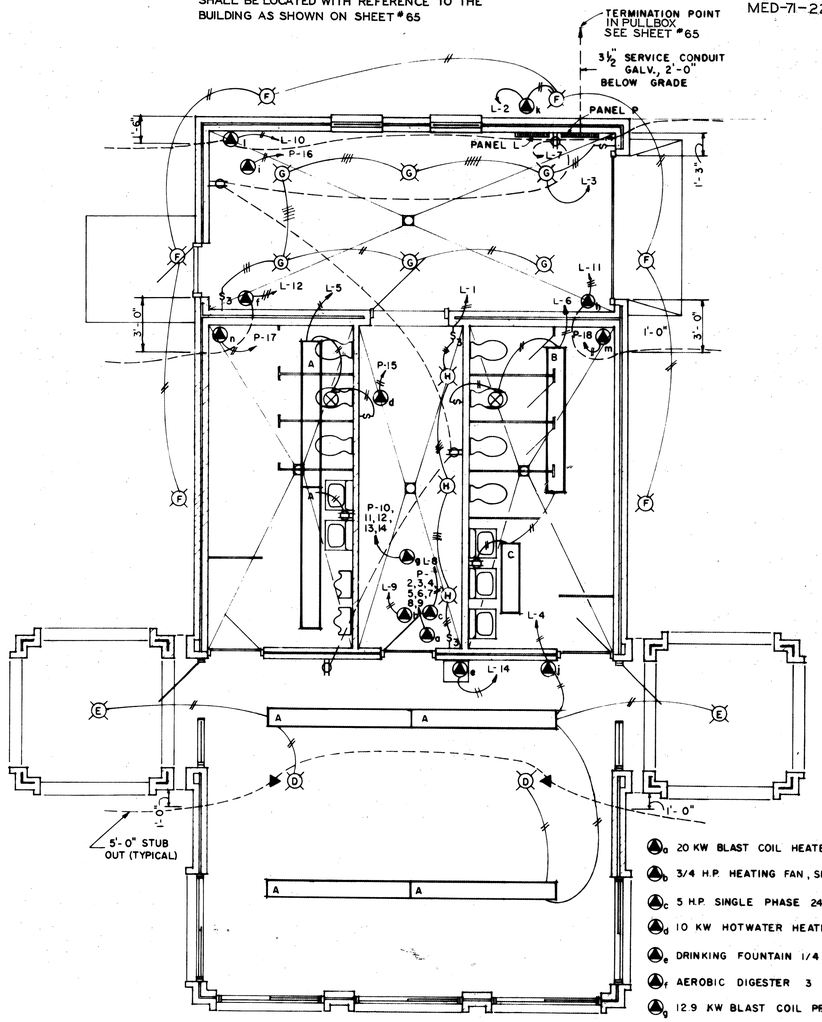
REVISIONS	MOTORIST SERVICES BUILDING & STORAGE UNIT	SHEET NO. RRA 6-G
	DRAWN BY GFS	DATE 5-19-67

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

MED-71-22.35

37
68

NOTE PANALBOARD AND SERVICE ENTRANCE SHALL BE LOCATED WITH REFERENCE TO THE BUILDING AS SHOWN ON SHEET #65



a_g 20 KW BLAST COIL HEATER, 8-20 AMP 240 V CIRCUITS

a_b 3/4 H.P. HEATING FAN, SINGLE PHASE, 60 CYCLE

a_c 5 H.P. SINGLE PHASE 240 VOLT COND. MOTOR

a_d 10 KW HOTWATER HEATER 240 VOLT 1 PHASE 60 CYCLE

a_e DRINKING FOUNTAIN 1/4 H.P. 1 PHASE

a_f AEROBIC DIGESTER 3 H.P. 1 PHASE

a_g 12.9 KW BLAST COIL PRE-HEAT UNIT, 5-20 AMP 240 V CIRCUITS

a_h WELL PUMP CONTROL BOX, 2 H.P. 1 PHASE 60 CYCLE PUMP MOTOR & SAFETY SWITCH.

a_i UNIT HEATER 1/4 H.P. 120 V., 1 PHASE

a_j PHOTO-CELL FOR CONTROL OF INSIDE LIGHTS.

a_k PHOTO-CELL FOR CONTROL OF OUTSIDE LIGHTS.

a_l OUTLET FOR INCINERATOR 1000 WATTS

a_m BASEBOARD HEATER 1600 WATTS

a_n BASEBOARD HEATER 1600 WATTS

▲ TELEPHONE ⊗ EXHAUST FAN $\frac{1}{3}$ THREE-WAY SWITCH

PANEL "P"

120/240 VOLT 3 WIRE S/N - 42 POLE PANELBOARD WITH 400 AMP. MAINS & MAIN CR. BREAKER

CR.	DESCRIPTION	H.P.	POLES	WIRE	AMPS	VOLTS	CR. BRKR	WATTS
	400 AMP MAIN CR. BREAKER							
1	200 AMP BRANCH CR. BREAKER		2	NO. 2	100	240	100	
2 - 9	20 KW BLAST COIL HEATER		2	NO. 12	92	240	20	20000
10-14	12.9 KW PREHEAT BLAST COIL		2	NO. 12	59.5	240	20	12900
15	10 KW WATER HEATER		2	NO. 6	46.2	240	50	10000
16	5 KW UNIT HEATER	1/4	2	NO. 10	23.1	240	25	5000
17	1.6 KW BASEBOARD HEATER		2	NO. 12	7.4	240	20	1600
18	1.6 KW BASEBOARD HEATER		2	NO. 12	7.4	240	20	1600
19 - 24	SPARE BREAKERS		1			120	20	
						TOTAL WATTS		51,100

PANEL "L"

120/240 VOLT 3 WIRE S/N — 26 POLE PANELBOARD WITH 200 AMP. MAINS & S/N BUS

CR.	DESCRIPTION	H.P.	POLES	WIRE	AMPS	VOLTS	CR. BRKR.	WATTS
1	LIGHTS IN MECHANICAL ROOM		1	NO. 12		120	20	600
2	PHOTO-CELL & OUTSIDE LIGHTS		1	NO. 12		120	20	1200
3	STORAGE ROOM LIGHTS		1	NO. 12		120	20	1200
4	PHOTO-CELL FOR DISPLAY ROOM LIGHTS		1	NO. 12		120	20	1200
5	MEN'S TOILET ROOM LIGHTS	1/4	1	NO. 12		120	20	1350
6	WOMEN'S TOILET ROOM LIGHTS	1/4	1	NO. 12		120	20	1250
7	RECEPTACLES		1	NO. 12		120	20	1000
8	CONDENSER MOTOR SPACE ONLY	5	2		28	240		
9	HEATER FAN	3/4	2	NO. 12	6.9	240	20	1500
10	INCINERATOR		1	NO. 12	4.1	120	20	700
11	SPACE ONLY FOR WELL PUMP	2	2		12	240		2600
12	SPACE ONLY FOR AEROBIC DIGESTER	3	2		17	240		3700
13	SPACE ONLY FOR BOOSTER PUMP	5	2		28	240		
14	DRINKING FOUNTAIN	1/4	1	NO. 12	5.8		20	700
15 - 21	SPARE BREAKERS		1			120	20	
						TOTAL WATTS		17,000

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

REVISIONS	MOTORIST SERVICES BUILDING & STORAGE UNIT	SHEET NO. RRA 6-H
	DRAWN BY GFS	DATE 5-19-67

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

38
68

MED-71-22.55

SPECIFICATIONS
AND
INDEX TO GENERAL NOTES

ITEM SPECIAL - MOTORIST SERVICES BUILDING AND STORAGE UNIT

1.01 Description. This work consists of furnishing all material, equipment, services, and labor necessary to complete in all details the construction of the building and appurtenances, together with service walks and slabs, all in reasonably close conformity with the location, dimensions, details and grades as specified, shown on the plans, or established by the Engineer. This work also includes connections to electric, water, storm sewer, and sanitary sewage facilities.

1.02 Codes and Standards. Where codes and standards are referred to, they shall be current approved copies. When required, the contractor shall submit evidence that materials, devices, and construction are in compliance with applicable codes and standards.

1.03 Manufacturers' Specifications. Where materials or operations are to conform to manufacturers' specifications, copies of the specifications shall be furnished the Engineer sufficiently in advance of construction to permit checking without delay in prosecution of the work.

1.04 Clearing Site. Stumps, shrubs, stones, brush and debris shall be cleared from the building construction area.

1.05 Stripping and Storing Topsoil. Topsoil shall be stripped to the determined depth from the building construction area and stored for finish grading.

1.06 Work Layout. The contractor shall establish all necessary grade stakes, corner boards, corners, lines, plumbs, and levels.

1.07 Excavation. The contractor shall excavate to the dimensions and depths required for all below-grade construction. Rough grade around the building shall be six inches below the indicated elevation.

Excess depth of excavation, not ordered by the Engineer, shall be replaced without additional cost by concrete when under footers and by additional depth of porous fill when under slabs or walks.

Unstable bearing material shall be removed and replaced with suitable compacted material as directed.

Footings shall not be placed until subfoundations have been approved by the Engineer.

1.08 Backfill. Backfill material shall be clean and free from wood scrap and other unsuitable material and shall be at proper moisture content, when placed, to permit maximum compaction. Backfill shall be placed in uniform layers, not over eight inches thick loose depth, with each layer tamped to the satisfaction of the Engineer. On exterior, layers shall slope slightly away from building.

1.09 Fill. Fill, of suitable soil, shall be placed and sloped as indicated or directed. Fills in seeded areas shall be placed in eight inch lifts, loose depth, and compacted in accordance with applicable parts of 203.01 thru 203.11, except that compaction tests will not be required.

ITEM SPECIAL - Continued

1.10 Porous Fill. Porous fill shall be No. 8 or 89 clean hard gravel, crushed stone, or slag. It shall be placed at a uniform four-inch compacted thickness over all interior floor slab, exterior apron, and service walk areas after completed subgrades have been thoroughly compacted, leveled and approved. Porous fill shall be compacted to maximum with approved rollers and mechanical tampers.

1.11 Grading. Areas inside building grading limits shall be graded six inches below finish contours with smooth junctions with adjacent areas and slopes that insure surface water drainage. Excess soil shall be disposed of as directed.

Building areas shall be finish graded with a 6-inch layer of topsoil from storage piles or outside sources, if needed.

Disturbed lawn areas outside building grading limits shall be restored.

1.12 Seeding and Mulching. Unless otherwise specified, seeding and mulching of the building construction area shall conform to the requirements of 659.09 for areas in front of residences.

1.13 Exposed Gravel Concrete. The aggregate shall consist of No. 5 washed gravel, and the surface shall be finished so that the uppermost faces of the aggregate are exposed to view.

1.14 Concrete shall conform to 822.01 thru 822.05, Class 1. All exterior exposed concrete shall contain six (6) plus or minus two (2) percent entrained air. Slump shall be between one (1) and four (4) inches, as directed.

1.15 Steel Reinforcement shall conform to pertinent requirements of 509.

1.16 Expansion Joint Materials shall conform to 705.01 and 705.03.

1.17 Masonry shall conform to pertinent requirements of 602.

1.18 Basis of Payment. The accepted work, in place, in satisfactory operating condition and complete in all details as specified will be paid for at the contract price under:

Item	Unit	Description
Special	Lump Sum	Motorist Services Building and Storage Unit

INDEX TO GENERAL NOTES

ITEM OF WORK	SECTION NUMBER
Accessories, toilet room	14
Bulletin Board	6 and 10
Carpentry	6
Caulking	10
Ceilings, Cement plaster	9
drywall	8
Concrete	2
Cooler, electric water	15
Doors, aluminum	5
aluminum sliding	5
steel, hollow metal	4
steel, rolling overhead	6
wood	6
Drains, sanitary	15
storm	15
Drawings, shop or manufacturer's	1
Electrical	16
Fixtures, electrical	16
plumbing	15
Floors, ceramic tile	11
concrete	2
slate	12
Fountain, drinking	15
General Provisions	1
Glass	10
Glazing	10
Heater, electric hot water	15
Heating	17
Hardware, finish	14
Masonry, brick	3
concrete block	3
Miscellaneous	6
Painting	13
Partitions, metal toilet	6
Plumbing	15
Roofing, built-up	7
Roof Shakes, cedar	7
Stools, marble window	11
Stop, gravel	7
Tank, pneumatic pressure	15
Telephone Service	6 and 16
Tile, ceramic	11
Track, bulletin board door	10
Ventilating	17
Walls, masonry	3
Walks, service	2
Water Service	15
Windows, aluminum	5
Work, connecting	18

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF HIGHWAYS

Revision		Sheet
10-20-67	MOTORIST SERVICES BUILDING AND STORAGE UNIT	1/16
	NOTES AND SPECIFICATIONS	5-19-67

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MED-71-22.55

GENERAL NOTES

Section 1 - GENERAL PROVISIONS

1. MANUFACTURER'S OR SHOP DRAWINGS

(a) The Contractor shall submit to the Engineer, for approval, six (6) copies of manufacturer's drawings and/or data for all purchased units required to complete installation of the work, excluding pipe and fittings, conduit, wiring, etc.
(b) 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 for approval which do not bear the Contractor's stamp of approval.
(c) The Engineer's approval of manufacturer's drawings or schedules shall not relieve the Contractor from responsibility for errors or omissions in manufacturer's drawings or schedules and deviations from the plans and specifications.
(d) The Engineer will keep three copies of the drawings and the balance will be returned to the Contractor.

2. CUTTING AND PATCHING

(a) Cutting of concrete, masonry, and other work shall be avoided by use of inserts and sleeves.
(b) Cutting for small openings, when necessary, shall be done with such tools and methods as to prevent unnecessary damage to surrounding areas or equipment.
(c) No structural member shall be cut into without the expressed permission of the Engineer.
(d) If it is necessary to cut into the work, any repairing or patching made necessary by such cutting shall be executed in accordance with the applicable provisions of these notes and specifications.

3. GUARANTEE

(a) All apparatus shall be free from defects of material or workmanship. The Contractor shall replace or repair to the satisfaction of the Engineer, any defects in equipment, workmanship, or materials that may develop prior to acceptance of the building, including any secondary damage or damages to any part of the work that may be caused by defects of another part of the work.

Section 2 - CONCRETE

1. SLABS ON GRADE

(a) Where slabs are to be placed directly on porous fill or earth subgrade, reshape and recompact same as may be required to restore disturbed portions or correct errors in profile or elevation, prior to placing concrete. Avoid damaging perimeter insulation, vapor barrier, piping located in the porous fill, and all other previously installed parts. Make certain that either the fiber bond-breaker strips or the removable temporary forms required to be in place when the principal slab pour is made are in position in all locations where isolation joints are indicated on the floor plan.
(b) Make all floor drains grout-tight with suitable temporary packing.
(c) Typically, reinforce all interior slabs, throughout, as noted on the plans or with No. 3 bars spaced at 18 inches center to center each way.

2. ISOLATION AND CONTROL JOINTS

(a) In the locations indicated, provide isolation joints of type noted, separating the on-grade slab (interior or exterior) from adjacent walls, columns, column bases, or other features of a nature to cause differential settlement of the slab subgrade.
(b) Provide control joints on the lines indicated, and/or herein noted, in all floor slabs of more than 400 square feet, total area; also in smaller slabs, as indicated, when required due to variation in width of slab, an abrupt change in thickness, or other condition hereinafter noted.

Section 2 - CONTINUED

(c) All control joints shall be sawed, to depth equal to one-quarter of the slab thickness, unless otherwise approved. Where indicated, keyed construction joints are to be located on control joint lines, with 3/4 inch deep joints of matching width sawed after the second pour has hardened.
(d) Sawing shall be done as soon as the operation will not cause raveling of the concrete along the edges, or other damage to the surface, and not later than 72 hours after pouring.
(e) The saw shall be electric-powered, self-propelled, and equipped with adequate guides, blade guards, a water cooling system (if required), and means of controlling the depth of cut.
(f) After sawing, all joints shall be flushed clean. Contractor shall take precautions not to spall concrete at joint. Saw cut shall be filled with poured sealer. Filling shall be delayed as long as possible to allow for most of shrinkage to take place.

3. SERVICE WALKS

(a) Construct service walks where indicated, 4 inches thick or as detailed. Rehabilitate and recompact the earth subbase and install 4 inches compacted base of No. 8 or 89 clean hard crushed stone, gravel, or slag.
(b) Provide expansion joints as indicated, 1/2 inch wide, unless otherwise shown. All joints shall have preformed fillers conforming to 705.03.
(c) Between expansion joints, provide sawed or tooled control joints, 7/8 inch deep, as detailed. Tool all joint edges.

4. MOISTURE-VAPOR BARRIER AND SAND CUSHION

(a) Provide moisture-vapor barrier, with sand cushion, over the approved subgrade for floors on ground.

(b) Barrier material shall be a laminate, composed of a face ply of not less than 0.002 inch thick polyethylene film and waterproof reinforced kraft paper backing, the exposed backing being mold-and-rot resistant treated. Joint sealer shall be either the asphaltic sealing compound or the 2 inches wide, waterproof, pressure-sensitive tape recommended by the barrier manufacturer.
(c) Sand cushion shall be composed of clean, well-graded, natural or limestone sand suitable for the purpose.
(d) Installation of barrier and cushion shall be immediately prior to placing concrete. Taping and/or sealing of joints and the execution of flashings at projecting corners and protruding features must be done by workman skilled in such work and to the complete satisfaction of the Engineer.
(e) Spread sand uniformly, to the depth necessary to provide a 1 inch thickness after compaction. Compact with a suitable roller, or hand tamper at edges, small areas, and corners, until a smooth, solid base to receive barrier film is attained. Surface of sand cushion must be in conformity with that of the finished slab, so that the slab will be uniformly of the required thickness throughout.
(f) Vapor barrier material shall be of widest practicable width, to minimize the number of joints. Install with polyethylene face down. Lap all joints at least 6 feet and cement, or tape, "vapor-tight." Lay without wrinkles and overlap in the direction in which placing of concrete will progress. Where pipe, conduit, or other feature protrudes from subgrade, cut barrier material to fit closely, install collar flashing, and cement or tape the joint carefully, to produce a vapor-tight connection. Either cut the material full width and form a lapped and cemented or taped cross-joint, or slit, and apply a 12-inch wide cover strip, centered and sealed on both edges, full length of slit. At enclosing walls, grade beams, and column pedestals, turn up barrier material to line of slab top,

as shown on detail, and cement or tape top edge to concrete or masonry. Form "pan-type" folded corners in turned-up edges of barrier sheet at internal angles; do not notch. At external corners, cut barrier to fit closely and install collar flashing. Seal all laps thoroughly.

Section 2 - CONTINUED

5. GROUTING

(a) Grout all steel bearing plates, columns, and other structural parts set to hardened concrete. Use non-shrink grout such as Master Builders Company's "Embeco" pre-mixed grout, adding only water in the amount recommended by the manufacturer; or a grout composed of 1 sack (94 pounds) Portland cement, 1 bag standard "Embeco", and 100 pounds of coarse, clean, graded sand; or equal non-shrink grout, either pre-mixed or job-mixed, such as "Por Pak" as manufactured by Halle-Mite Corporation.
(b) Generally, use driest practicable mix and pack into place so that no voids remain between steel and the supporting concrete.
(c) When necessary, use sufficient water to produce a flowable mixture, and first pour forming sand dams to retain grout until partially set. When sufficient set is attained, remove dams and shove grout to refusal on all four sides. Pack any resulting edge voids with the drier mix.

6. PERIMETER INSULATION

(a) Install where indicated at all exterior walls per plan details and manufacturer's recommendations.
(b) Material shall be 2-inch styrofoam SB expanded polystyrene as manufactured by the Dow Chemical Company, or equals by Union Carbide or Dupont.

7. FINISHING (FLOOR SLABS AND OTHER HORIZONTAL SURFACES)

(a) Provide integral smooth troweled finish on slabs in areas scheduled to have "Concrete or "Troweled" finish floors. At proper "set", screed and float the fresh concrete to true and even surfaces at the required finish level, with only enough mortar for troweling brought to the surface. If voids develop, work a 1:2 mix, of cement and matching sand, into the mass. Form slopes as required. Troweling shall not begin until all water and water sheen have disappeared from the surface. Water rising to the surface may be removed in a manner approved by the Engineer. No dry cement or sand-cement "dust-coat" shall be used. The finished surfaces shall be smooth, hard, even and free from blemishes of any kind. Finish expansion joint edges with small-radius edging tool. External corners shall be finished with tools of radius as indicated on the plans.
(b) Provide smooth troweled finish, as for slabs, on all minor exposed interior horizontal and sloping surfaces, such as pit and trench floors, stair and step treads, top surface of equipment bases, etc.
(c) Finish slabs in areas scheduled to have thin-set ceramic tile or slate in same manner as exposed slabs, except trowel only as required to remove float marks and insure firm, dense, smooth surfaces.
(d) Provide smooth "Sidewalk" wood-float finish on all exterior slab surfaces not noted on drawings to have smooth troweled finish. Float the fresh concrete per sub-paragraph (a) above; do not use sand-cement "dust-coat".
(e) Score service walks, etc., 1/2 inch deep, as indicated. Finish all scored joints, the outside edges of walks, and all "side-walk finish" areas smooth, using edging tool of width as directed.

BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF HIGHWAYS		
Revision 10-20-67	MOTORIST SERVICES BUILDING AND STORAGE UNIT	Sheet 2/16
	NOTES AND SPECIFICATIONS	5-19-67

GENERAL NOTES - CONTINUED

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

40/68

MED-71-22.55

Section 2 - CONTINUED

8. CURING

(a) All concrete shall be protected from too rapid drying for a period of at least seven days when normal Portland cement is used, and at least three days when High-Early-Strength cement is used.

(b) All slabs, and other concrete surfaces not to be protected by forms, shall be protected during the curing period either by (1) covering of sand, straw, cotton mats, or burlap, maintained in a damp condition throughout the period; (2) covering of smooth-surface, waterproof kraft paper with sealed joints and edges; or (3) by sealing with a transparent waterproof membrane curing material. Method of protection used shall be approved by the Engineer. For surfaces which will be exposed in the completed building, material used shall be non-staining. Floors to be covered with adhered finish flooring shall not be cured with membrane curing material. Wetting of moisture-holding covering materials shall be done as often as required to keep the covering wet throughout the curing period. Membrane curing material shall meet the requirements of 705.07 and shall be sprayed on as a fine mist, using a minimum of one gallon of material for each 200 square feet of surface treated.

(c) When forms are removed before the end of the curing period, exposed vertical surfaces shall be protected from drying out by one of the methods described above.

(d) Wood forms left in place during the curing period shall be kept sufficiently damp at all times to prevent opening at the joints and drying of the concrete.

Section 3 - MASONRY

1. FACE BRICK

(a) Face brick shall be selected clay or shale brick of standard 2 1/4 x 3 3/4 x 8 inch size, meeting the physical requirements of ASTM C 62 for grade MW brick. Brick shall be Wyandot sand mold Cranbrook Buckskin as manufactured by the Claycraft Company of Columbus, Ohio, or equal in both color and texture by Beldon Brick Company or General-Hocking Brick Co.

(b) Note that the brick in the sidewalk is a special brick with the 3 3/4 x 8 inch face finished.

2. MORTAR

(a) Mortar for all below-grade masonry shall conform to the pertinent requirements of 602.

(b) Mortar for all above-grade exterior brick walls and brick lobby wall, and for interior partitions, shall be either:

(1) A cement-lime mortar composed of 1 bag Portland cement, 2 bags type "S" mason's lime, and not more than 9 Cu. Ft. of sand, or

(2) A masonry cement-lime mortar composed of 2 bags masonry cement, 1 bag type "S" mason's lime, and not more than 8 cubic feet of sand.

(c) Mortar for all above-grade exterior brick walls and brick lobby wall shall be tinted with lime-and-light-proof color to match Medusa Custom Color No. 75B.

(d) Mortar for interior partitions need not be tinted.

3. MASONRY JOINT REINFORCEMENT AND METAL TIES

(a) All concrete block masonry, exterior and interior, shall be reinforced with welded wire reinforcing, "regular duty" type, either "Wal-lok" of Adrian Peerless, "BLOK-LOK" of A-A Wire Products Co., or "Dur-O-Wall."

Section 3 - CONTINUED

(b) Basically, provide reinforcement in every second bed joint, throughout the height of all walls and partitions and the backup for exterior face brick work, continuous with all joints properly spliced, and with all corners turned, either by cutting and bending or using prefabricated corners. Above and below openings, install an additional length of reinforcing, centered and extending at least 24 inches beyond opening, each way, in either the first or second bed joint above lintels and below sills, so that both the first and second joints in those locations contain reinforcement in an amount which will insure continuity and not less than 6 inches in any case.

(c) Where interior walls and partitions intersect exterior walls or each other, extend all rows of continuous reinforcing in the abutting partition onto the "far" shell of the block in "running-by" partition or wall, to act as a tie.

4. MASON'S FLASHINGS

(a) Install flashings of 3 oz. "protected copper", at the heads of windows, exterior doors to storage room, service door, sliding glass door sills, and other locations shown on the plans.

(b) Protected copper flashings shall consist of a layer of 3 oz. electro-sheet copper with a heavy protective coating of positively adhered, permanently flexible, non-creeping asphaltic compound on both sides, as made by Mitchell Rand, Ross Flashing Co., or Wasco Flashing Co.

5. WALL INSULATION

(a) Material shall be 2-inch styrofoam SB expanded polystyrene as manufactured by the Dow Chemical Company, or equals by Union Carbide or Dupont.

(b) Install per plan details and manufacturer's recommendations.

6. CONSTRUCTION AND WORKMANSHIP-GENERAL

(a) All walls and partitions shall be built true to dimensions, plumb and square. All work shall be laid to line, in level courses, and plumb bond; double lines shall be used for all multiple-tier work, with each tier kept plumb. All units shall be laid in "centered" running bond, with no bonding courses. Corners shall have full masonry bond except as other tie is described herein. Install reinforcing accurately, so that side rods are fully engaged in mortar, for their full length.

(b) All required cutting of masonry units that will be exposed to view shall be done with equipment which will produce true edges, free of chipping.

(c) The space between masonry and metal door frames shall be packed full of mortar as masonry is laid up.

(d) Interior partitions shall not be anchored by masonry bond, but shall be bonded with reinforcing as described in Paragraph 3(c) above.

(e) Sufficient mortar shall be used to insure water-tight joints. A full bed of mortar shall be laid on both face shells of block and enough head-joint mortar shall be placed on vertical edges, so that it oozes out on both sides when block is set. Joints shall be cut flush and surplus mortar brushed off as the work progresses.

(f) Face brick shall be laid up with approximately 3/8 inch joints, horizontally and vertically, so that vertical coursing of three bricks plus three joints equals eight inches.

(g) Wherever practicable, and expecting corners, face brick work shall contain no piece narrower than a full stretcher; where necessary for closing, several stretchers shall be clipped to avoid "dutch-men".

(h) All bed and head joints in brick work shall be completely filled with mortar. A thick bed of mortar shall be spread on the wall. No furrowing will be permitted unless shallow enough to be completely filled by the excess of mortar. For head joints, plenty of mortar shall be thrown on the end of the brick and the brick "shoved" to place.

Section 3 - CONTINUED

(i) Parge the face of all backup with a 1/2 inch thick coat of mortar, uniformly and carefully applied to act as a moisture stop. Avoid damage to mortar joints in the new masonry from use of too much pressure.

(j) All exposed joints in both face brick work and block work, both exterior and interior, shall be tooled in a manner to insure firm adhesion of mortar to block. Jointer used shall produce a slightly concave joint surface. Tool joints only after mortar has become "thumb-print hard".

(k) The top of all walls and partitions shall be covered with weighted tarpaulins or other stable water-tight cover whenever work is discontinued and after completion, until permanently closed in.

(l) Provide proper wood boxing, throughout construction, to protect window sills and vulnerable corners from damage.

7. CLEANING AND POINTING

(a) All surplus mortar, splatter, dripping, etc., shall be removed from all "face" masonry and cut stone, exterior and interior, as the work progresses.

(b) Clean and point, at end of each working day, all work that is to be exposed. Nailholes must be filled.

(c) Clean all exposed brick and block masonry with water and fiber brushes, without acid, at the completion of the work.

(d) Cut out all defective mortar joints, fill solidly with mortar, and tool to match adjacent work.

(e) No cleaning acids shall be used on any type of masonry except by special permission of the Engineer.

BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF HIGHWAYS		
Revision 10-20-67	MOTORIST SERVICES BUILDING AND STORAGE UNIT	Sheet 3/16
	NOTES AND SPECIFICATIONS	5-19-67

GENERAL NOTES - CONTINUED

Section 4 - HOLLOW METAL DOORS AND FRAMES

1. HOLLOW METAL DOORS

(a) All doors shall be full flush design 1 3/4 inches thick and of sizes and patterns indicated on the drawings.

(b) Doors shall be constructed of two cold-rolled, stretcher-leveled, 18 gauge minimum steel sheets, rigidly connected and reinforced inside with continuous vertical 20 gauge minimum stiffeners, spaced a maximum of 6 inches center to center, or with a permanently bonded structural honey comb core. Doors shall be arc welded where the two outer sheets join. Faces of doors shall be one piece. Panel or tube doors will not be acceptable.

(c) All doors shall have sound deadening material placed between outer sheets to eliminate metallic ring.

(d) Grind all exposed welds smooth, thoroughly clean all units, bonderize and finish with one coat of baked on metal primer.

(e) Hardware reinforcement, conforming to the best practice, shall be provided in accordance with information furnished by the supplier of hardware, for both mortised and surface items. The doors shall be mortised, drilled, and tapped for all mortised parts by the manufacturer. Drilling and tapping for surface parts will be done in the field.

2. HOLLOW METAL DOOR FRAMES

(a) All door frames shall be 16 guage steel and of "unit" type. Profiles shall closely approximate those indicated on the drawings. Frames shall be set to the concrete floor slabs.

(b) Door frames shall be fully assembled units for openings of the heights indicated. All corners shall be accurately mitered, with all miters arc welded continuous, through the entire length of faces, rebates and stops. All exposed welds shall be dressed smooth. Provide suitable temporary spreader.

(c) Door frames may be set up, as specified above, or may be of "knock-down" construction. Knock down frames shall be designed for strong, rigid, field connections with tight neat joints.

(d) All frames shall have adjustable jamb anchors, 3 to each jamb, and a welded-on floor anchor for each jamb. For jambs, provide galvanized corrugated T-anchors, at least No. 14 gauge and 12 inches long, or special anchors, as required to suit conditions. At floor, provide not less than No. 12 gauge clip anchors. Clips shall be not less than 4 inches wide and of same width as adjustable anchors when width of same exceeds 4 inches. Clips shall be welded to inside of frame. Punch floor leg for two 3/8 inch anchor bolts, staggered; provide expansion bolts and lead floor sleeves.

(e) All frames shall be prepared by the manufacturer for finish hardware as described in Section 14 of these notes and specifications. Provide reinforcements for both mortised and surface-applied items; drill and tap for all mortised parts.

(f) After assembly, grind all exposed welds smooth, thoroughly clean all units, bonderize, and follow with one baked-on coat of metal primer.

(g) Rubber door silencers shall be furnished for strike jambs of all single doors, 3 to each door.

3. ACCEPTABLE MANUFACTURERS

(a) Hollow metal doors and frames as furnished by the following manufacturers, when equal in all respects to the above specifications, will be acceptable.

(1) Atlantic Metal Products, Inc.
(2) The Steel Craft Mfg. Co.
(3) Amweld

Section 4 - CONTINUED

4. ERECTION

(a) Erection shall be by experienced and competent workmen. All units shall be accurately located and plumbed and adequately stay braced to insure their retaining proper alignment until solidly incorporated in the masonry.

(b) All floor clips shall be solidly secured to slabs by means of expansion bolts set in lead sleeve inserted in holes drilled in the concrete. Use steel washers when necessary to support clip in proper position.

(c) Jamb anchors shall be solidly bedded in masonry joints without strain.

(d) Jambs shall be solidly filled with mortar.

Section 5 - ALUMINUM DOORS, WINDOWS, AND STORE FRONTS

1. MATERIALS AND FABRICATION

(a) All exposed aluminum surfaces shall be finished in No. 26 Light Bronze Permanodic Color. The Permanodic Color coating shall be given a complete seal as per ASTM B 136.

(b) Door frames shall be cut from a stock 1 3/4 x 4 1/2 inch extruded aluminum tube as detailed.

(c) Wall thickness for door and door frame members shall not be less than 1/8 inch. Trim molding shall be not less than 1/16 inch thick.

(d) Door frames shall be so fabricated that,when field-assembled, all members will fit accurately and be securely jointed with tight, closed, weather-and-water-proof joints. Door shall fit frame accurately.

(e) Provide necessary backing plates at all cutouts, recesses, and mortising or milling operations for door hardware.

(f) All welding on doors shall be on unexposed sides.

2. ALUMINUM DOORS 01 AND 01A

(a) Doors, frame assembly, and store fronts shall be of stock aluminum extrusions, 6063-T5 alloy, as manufactured by the Kawneer Company, the Reliance Art Metal Company, or the Pittsburgh Plate Glass Company.

(b) Doors shall be narrow stile type with stiles and top rail 1 3/4 inches in width and bottom rail not less than 4 inches in height. Completely weather-strip door frame with pile cloth around jamb and head stops.

(c) Doors shall be fabricated of extruded hollow aluminum tubing with hair-line, watertight, milled joints. They shall be square, free of twist, and fully reinforced for the hardware specified.

(d) Hardware finish shall closely match the finish of the door.

(e) Doors shall be equipped with the following hardware by the manufacturer:

One Dead Lock, Adams-Rite Type 1852A, or equal by Yale or Schlage (For cylinder details, see Section 14 of these notes.)

Two solid-bronze, ball-bearing butt hinges.

One concealed, overhead closer with positive adjusting, two-speed, closing action easily regulated after installation.

One floor type stop and hook.

One 4 x 1/2 inch fluted aluminum threshold with mitered and returned interior ends.

Section 5 - CONTINUED

3. ALUMINUM SLIDING DOORS 01B THROUGH 01F

(a) Sliding glass doors shall be Kawneer Series 890 as manufactured by the Kawneer Company, or equals by the Reliance Art Metal Company, or the Pittsburgh Plate Glass Company.

(b) Aluminum extrusions shall be commercial quality 6063-T5 alloy, free from defects impairing strength or durability. Weather-stripping shall be metal-backed, silicone-treated, wool pile, free from residual wetting agents.

(c) Keyed lock shall accommodate five-pin tumbler. Cylinder for lock shall be as described in Section 14 of these notes.

(d) All sliding glass doors shall be provided with aluminum insect screens.

(e) All ventilators shall be carefully adjusted prior to glazing to operate properly and easily after glazing.

4. CONSTRUCTION AND WORKMANSHIP

(a) Door and frames shall be installed rigid, plumb, in true alignment in accordance with the manufacturer's instructions, and securely anchored to supporting work.

(b) Field connections shall be so made as to produce a neat, tight, flush connection with concealed fastening.

(c) No cutting of doors or frames will be permitted on the site.

(d) Provide all anchors, clips, bolts, inserts, etc., required to complete the work.

(e) Where aluminum will be in contact with steel, masonry, concrete or wood, the aluminum shall be back painted before erection with an approved bituminous paint.

(f) After erection, protect door and frame from damage.

(g) Any sticking or binding of door hardware after completion of the work will be cause for rejection of the work by the Engineer.

(h) Clean the aluminum portions of the installation after glazing has been installed and cleaned. Mild soap and water shall be used as a cleaning agent and no abrasive cleaning agent shall be used.

GENERAL NOTES ~ CONTINUED

Section 5 - CONTINUED

5. WINDOWS

(a) Windows shall be Seal-Air Commercial Projected Aluminum with inside bead glazing as indicated on the plans and manufactured by the Kawneer Company, or comparable units by Ceco Products Corp., or Truscon.

(b) Thickness, shape, weather stripping, and dimensions of sections and all features of design and construction shall conform substantially to those described in the Kawneer 1966 catalog of aluminum windows.

(c) Operating hardware shall be of white bronze, with pull ring handles provided on out-of-reach ventilators. All ventilators shall be constructed of tubular sections.

(d) All concealed screens, bolts, anchors and clips required for erection shall be of aluminum, stainless steel, or zinc-coated steel. Screws exposed to view shall be of non-magnetic stainless steel.

(e) Locking handles and keepers, pull rings, gear operators and hinges, and spring latches shall be non-corrosive and non-staining to window members. All handles shall be fastened by screws directly into white bronze or through stainless steel reinforcing inserts and shall be removable for replacement or adjustment without damaging ventilators or frames.

6. ERECTION (WINDOWS)

(a) Windows shall be installed straight, plumb and true, and securely anchored. Units set to masonry shall be positioned so as to provide adequate caulking space, inside as well as outside.

(b) Surfaces which will be in contact with steel or masonry shall be given a protective coat of alkali-resistant asphalt-base paint. The steel surfaces concerned shall receive same coat, applied over shop coat.

(c) At all stationary metal-to-metal contacts, joints shall be effectively sealed by bedding the parts in sufficient mastic to ooze out both sides, promptly removing the surplus.

(d) Surface hardware shall be neatly and securely installed and wrapped to prevent soil until completion of work.

7. INSECT SCREENS

(a) All ventilators shall be equipped with fixed aluminum insect screens designed for easy installation and removal from the inside.

(b) Screens shall be the manufacturer's standard and equal to the screens for aluminum projected windows.

Section 6 - CARPENTRY AND MISCELLANEOUS

1. ROUGH LUMBER AND PRESERVATIVE TREATMENT

(a) Lumber for incidental framing, furring, blocking, nailers, etc., shall be Douglas Fir or Southern Yellow Pine, kiln dried to a moisture content not exceeding 19 percent by weight and surfaced four sides. Two inch material shall be Construction grade or No. 1 Common; 1 inch material shall be Utility grade or No. 2 Common and Better. All 1 and 2 inch nailers shall be selected to eliminate knots which would interfere with nailing in proper locations and any other defects which would render them unsuitable for the purpose used. Furring strips for drywall ceilings shall be White Pine. Roof sheathing shall be Fir plywood grade C-D.

(b) Rough lumber shall not be delivered to the job sooner than is necessary, shall be delivered dry, and shall be protected from the weather until preservative treated.

(c) All exterior lumber shall be pressure treated with a water repellent pentachlorophenol wood preservative to a retention of 0.3 pound dry chemical per cubic foot of wood. Water repellent pentachlorophenol wood preservative shall be in accordance with Federal Specification TT-W-572. Pressure treatment by the Cellon method is acceptable.

Section 6 - CONTINUED

2. ROUGH CARPENTRY - GENERAL

(a) All parts of the building shall be framed in accordance with the plans as to size and spacing of members, etc. All members shall be accurately cut and fitted and installed true to line, plumb, even, and rigidly fastened together.

(b) Anchor wall plates where shown with 5/8 inch anchor bolts on not over 6 foot centers. Provide all other anchor bolts shown on the plans or required for proper anchoring.

(c) Plywood sheathing shall be fastened with nails at 8 inches center to center every bearing and shall have all end joints made over bearings and well staggered.

(d) Install proper and adequate wood blocking, sub-sills, lookouts, nailing blocks, etc., well secured in place, as required to provide back-up or proper nailing base for sheathing and finish items.

(e) All strap anchors as specified herein shall be coated with asphaltum paint.

(f) Provide substantial wood supports back of plumbing, heating, and electric fixtures.

3. FINISH CARPENTRY - GENERAL

(a) Finish carpentry work shall be of the highest quality throughout. All joints shall be smooth, close and straight. Miter corners accurately.

(b) Putty all nail holes and sand all finish work smooth.

4. EXTERIOR WOOD TRIM

(a) All exterior wood trim shall be first grade wood of clear face and smoothly dressed and sanded. Stock patterns, approximately trim detailed, will be acceptable. All woodwork shall be from kiln dried stock. All trim shall be sanded on the bench before being put in place.

5. WOOD SOFFIT

(a) Plywood shall be 1/2 inch plywood A-C exterior grade Fir. Use 8d galvanized casing nails driven flush at 8 inches center to center. Install No. 18, 1/4 inch flat aluminum expanded metal over aluminum insect mesh as detailed on the plans for ventilation of joist space.

6. INSULATION

(a) Blanket type building insulation shall be installed between the ceiling and roof. The insulation shall be 6 inches thick, with a vapor barrier on one side, as manufactured by Owens Corning Fiberglas Corporation, L.O.F. Glass Fibers, Inc., or Johns-Manville. Install with the vapor barrier towards the warm side of the wall. Fasten securely to framing. Lap and cement lateral joints at top and to ceiling and wall system.

7. BACKPAINTING

(a) The back of all new interior millwork shall be prime-coated before such parts are installed.

8. MILLWORK

(a) Room 101 trim shall be White Oak, stained and varnished to match wood doors.

9. BULLETIN BOARD AND PHONE BOOTH ASSEMBLY

(a) All finish lumber shall be White Oak, stained and varnished to match wood doors.

(b) Plywood for bulletin board back face shall be A-A interior grade Fir plywood.

Section 6 - CONTINUED

(c) Laminated to the entire plywood back of the bulletin board as shown on the plans shall be a textured vinyl tackboard. Laminating method shall be approved method of tackboard manufacturer. Tackboard shall be Gotham textured vinyl laminated to 1/2 inch pulp backing, color Straw White No. S-63 as manufactured by the Gotham Educational Equipment Company, Inc., or equal by Congoleum Nairn or Claridge.

(d) Plastic laminate interior face of phone booths shall be Formica, color Chutney 855 or equal by Micarta or G. C. Texolite, Laminate shall be installed as recommended by manufacturer.

(e) Sliding glass door track and lock shall be installed as shown on the plans and as described in Paragraph 4, Section 10, of these notes.

(f) Rectangular steel tubing sizes and anchor shall be as shown on the plans. Provide miscellaneous blocking as needed to anchor top plate to joists. After slate has been installed, paint tubing miscellaneous metals color.

10. INTERIOR WOOD DOORS

(a) All wood doors indicated on the plans or as described in these specifications shall be Roddis doors as manufactured by the Weyerhaeuser Corporation, or equal by U. S. Plywood Corporation, or Architectural Products Manufacturing Company, Inc. Doors shall be solid particle core flush doors, Type DPC-1, thickness 1 3/4 inches, sizes as shown on the plans. Provide premium grade plain sliced White Oak veneer faces of manufacturer's standard thickness, hardwood crossbandings, and solid particleboard core of 28-32 lbs./cu. ft. density. Provide 3/4 inch thickness side edge strips of wood of same species as face veneers; top and bottom edge strips shall be 1 inch in thickness of hardwood or softwood at mill option. Hotpress-bond face veneers and crossbandings to core with water-resistant adhesive. Embed manufacturer's dowel in door edge for permanent identification and to facilitate inspection for specified quality. Furnish to the Engineer the manufacturer's standard certificate guaranteeing doors for lifetime of the installation for interior use.

(b) Door louvers shall be manufacturer's standard round edge slat type, sight-proof construction of hardwood lumber of same species as door face veneer.

(c) Door shall be factory stained to match Weyerhaeuser Mediterranean Oak in color. Apply to door faces, side edges, moulding and louvers the manufacturer's standard Tigaclad II finish consisting of sealer, filler if required for species, stain, and Tigaclad II top coat for a dry film thickness of 3 mils, or equal treatment by the above-named alternate manufacturers.

GENERAL NOTES - CONTINUED

Section 6 - CONTINUED

11. METAL TOILET PARTITIONS

(a) Toilet partitions shall be Sanymetal "Normandie", Mills "Marbl-metal" or Weis "Vitre-Steel". Toilet partitions shall be floor supported type with porcelain enamel finish. Color shall be equal to Sanymetal No. 74 Grey.

(b) All partitions and doors shall be finished with porcelain enamel in accord with the standards of the Porcelain Enamel Institute for Architectural Porcelain Enamel.

(c) Doors (ladies' rest rooms only) and partitions shall be one inch thick made of two sheets of vitreous porcelain sheet steel, (doors a minimum of 18 gauge; partitions a minimum of 16 gauge) with edges formed, assembled over and cemented under pressure to a dense, sound-deadening core insulation. The two face plates on doors and partitions shall have formed edges, sealed with continuous oval crown locking strips of 20 gauge stainless steel. The door edges shall be electrically welded together. Partitions and doors to be vitreous porcelain enameled on all interior and exterior surfaces only. Reinforce partitions to receive hardware. All reinforcing to be concealed. Drill all holes for hardware prior to enamel finishing and provide pre-cut opening to take sanitary napkin dispenser containers.

(d) Pilasters shall be made 1 1/4 inches thick of two sheets of vitreous porcelain 16 gauge sheet steel welded together. Pilaster, when set in place, shall be anchored to floor by means of fittings providing for vertical adjustments.

(e) Dividing partitions shall be attached to pilasters and wall with non-ferrous, chrome-plated stirrup brackets. The base of the pilasters and floor anchorage shall be concealed by a 3 inch polished steel trim.

(f) Doors shall be equipped with concealed, controlled gravity action, door hinges. Each door shall be mounted on hinges consisting of upper and lower brackets of cast alloy non-ferrous metal with chrome-plated finish. Controlled operation of door shall be by a ball bearing roller traveling under spring tension on an inclined cam; hinge shall be adjustable to permit door to come to rest at any angle or position desired to hold door in open or closed position when not latched; all moving hinge parts shall operate in bearings to provide for free movement of all parts. Each door shall be equipped with one cast alloy, chrome-plated, coat hook and bumper, one cast alloy, chrome-plated, combination door stop and latch keeper to be securely attached to the pilaster at a point opposite slide bar latch on the floor. Provide and install one stainless steel roll-type toilet paper holder for each toilet.

12. TOILET ROOM ACCESSORIES INSTALLATION

(a) All items shall be carefully and neatly installed. Provide openings at locations shown on the plans for recessed mirrors, soap and towel dispensers, and trash containers.

13. FINISH HARDWARE- INSTALLATION

(a) All finish hardware shall be carefully and neatly installed and accurately adjusted, so that it operates properly, easily and quietly.

(b) Locks, latches, etc., shall be fitted to all parts but in general, shall not be placed permanently until all painting work is complete. Cover any installed knobs or similar parts , which must remain in place, with heavy cloth bags in place until work is accepted.

14. ROLLING OVERHEAD STEEL DOOR

(a) The steel rolling door, for opening designated in the plans, shall be Kinnear Steel Rolling Door Model FM-10 for push up manual operation, as manufactured by the Kinnear Manufacturing Company, or equal by Overhead Door Co., Crawford Door Co., or Quincy Door Co.

(b) Provide necessary angles, brackets, plates, bolts and connectors required to install this door in the opening provided and close tight to the curtain wall and structural columns.

(c) Slats of doors when closed shall give a flat surface appearance similar to Slat Design No. 13 as furnished by the Kinnear Manufacturing Company. Slats shall be 16 gauge zinc-coated, dual-protected steel, and have a final phosphate coating to prepare the surface for paint.

Section 6 - CONTINUED

15. FIRE EXTINGUISHERS (2 TO BE SUPPLIED)

(a) Fire extinguishers shall be portable carbon dioxide type of 10 lb. size UL approved by Fyr-Fyter, Elkart, or General Fire Extinguisher Corporation.

(b) Extinguishers shall be equipped with quick release cradle and brackets complete with anchors for mounting to surface of masonry.

(c) Install in Rooms 103 and 105.

16. LINTELS

(a) Lintels shall be sized so they are 8 inches longer than the required masonry opening.

Section 7 - BUILT-UP ROOFING, CEDAR ROOF SHAKES, AND ALUMINUM GRAVEL STOP

1. APPROVED ROOFER

(a) Roofing shall be installed by a firm approved by the roofing manufacturer, and an authorized representative of the manufacturer shall inspect the deck before roofing is applied and make a final inspection at the completion of the work.

2. BUILT-UP ROOF

(a) The entire roof shall be Barrett No. 420 A-W smooth surface roofing, or equal by Johns-Manville, or Koppers. Subsequent mention of Barrett products shall be considered in the same context with reference to alternate materials.

(b) Lay one ply of sheathing paper weighing not less than 5 lbs. per 100 sq. ft. Lap each ply at least 2 inches. Nail sufficiently to hold in place. In lieu of sheathing paper, polyethylene, polyvinyl chloride, or other acceptable plastic sheeting may be substituted.

(c) Starting at low point of roof, lay one ply of Barrett "Vaprobar" or equal coated base sheet. Lap each ply 4 inches over preceding ply. Lap ends 6 inches. Nail along lap at intervals not exceeding 9 inches. Stagger nail through center of sheet at 18 inches center to center.

(d) Over entire surface, mop a uniform coating of Barrett or equal cement (approx. 20 lbs. per 100 sq. ft.) into which, while hot , embed three plies of Barrett No. 15 or equal asphalt-asbestos perforated felt. Use starting strips of felt cut 12 and 24 inches wide, followed by full width sheets. Lap each ply 24 2/3 inches over preceding ply. Mop full width of lap with a continuous coating of Barrett or equal cement (approx. 20 lbs. per 100 sq. ft.) so that felt does not touch felt. Broom each ply to assure complete embedment. On inclines 1/2 inch per foot or greater, nail each sheet 2 inches from top edge at 12 inches center to center. Extend all plies up face of cant and cut off evenly at wall line. If cant strip is not provided, turn up all plies 1 inch at walls and curbs.

(e) Over entire surface brush or spray a uniform top coating of approx. 3 gal. per 100 sq. ft.of Barrett "Weatherbar" or equal emulsion.

(f) Nails shall be 1/2 inch annular threaded shank nails. All nails shall be driven through flat tin caps if nails do not have integral caps.

3. WESTERN RED CEDAR HANDSPLIT ROOF SHAKES

(a) Roof shakes shall be Weyerhaeuser Western Red Cedar handsplit type, bearing the "Certi-Split" label of the Red Cedar Shingle and Handsplit Shake Bureau, No. 1 grade, 4 to 14 inches wide, 18 inches long, 1/2 to 3/4 inches thick, of handsplit and resawn back type, or equal by Colonial Hand Split Shingles, Inc., or E. C. Miller Cedar Lumber Co.

(b) Shingles shall be treated with Koppers Company "Non-Com NL (R)", a leach-resistant treatment. This treatment must be rendered by the Koppers Company in their plant with the resulting wood shakes having a Class "C" roof rating approved by Fire Underwriters.

(c) For hips and ridges, use handsplit and resawn back units. Use hot-dipped zinc-coated nails or aluminum flat-head nails of length to penetrate at least 1/2 inch minimum into roof sheathing. Roofing felt shall be asphalt-saturated rag, weighing 30 lbs. per 100 sq. ft.

Section 7 - CONTINUED

(d) Shakes shall be installed in strict accordance with the latest issue of the "Certi-Split Manual of Handsplit Red Cedar Shakes."

The following is a generalized summary of methods to be used:

Lay Shakes over 3/4 inch plywood sheathing as shown on the plans. Lay a 36 inch wide strip of saturated roofing felt over plywood sheathing along eave line and place a 20 inch wide strip of saturated roofing felt in valleys before valley metal is placed. Double bottom or first course at eaves using handsplit shakes as under layer of 18 inch length. Lay shakes 6 inches to the weather, nailing each shake with two nails placed approximately 1 inch above butt line of next higher course and approximately 1 inch in from each edge, 2 ply construction. Drive nails flush with shake surface, but no further. After each course is nailed in place, apply an 18 inch wide strip of 30 lb. saturated roofing felt over top portion of installed course with bottom edge of felt located at a distance above the butt equal to twice the weather exposure. Space shakes 1/4 to 3/8 inches apart with joints offset at lap joints in course below not less than 1 1/2 inches. Do not "line-up" joints in alternate courses. Use one full width miter-sawn shake, each side, each course, at valleys, over 20 inch minimum width valley metal. At hips and ridges, apply a 12 inch wide strip of saturated roofing felt centered over hip and ridge. Double first course of hip and ridge units and apply at exposure equal to roof shakes. Lay ridge units starting at each end so that units meet at the middle of ridge. Cover intersection with small section of unit as a "saddle".

(e) Use aluminum flat-head .040 inch aluminum valleys, color Alumalure Satin Black. Valleys manufactured by Alcoa, Reynolds, or Kaiser shall be considered equally acceptable.

4. GRAVEL STOP AND FASCIA DRIP

(a) Gravel Stop shall be No. 450-H5 with Fascia Drip in No. 12 Matte Black Color, as manufactured by Construction Specialties, Inc., or equal by Cheney Flashing Co., or Dawson Metal Co., Inc. All fascia drip shall be E-5 Pattern, in the same color and by the same manufacturer.

(b) The finished coat thickness shall be a minimum of .0015 inch. Gravel stop shall be modified at factory to fit details shown in the plans. Gravel stop shall be installed with integral slip-type expansion joints, 12 feet center to center, with a 3 inch overlap allowing a full 1 inch for expansion. Fasteners shall be No. 11 x 1 3/4 inch screw shank aluminum nails. Hold-down cleats shall be installed at 16 inches center to center. Field formed 30 gauge aluminum flashing shall be supplied at all expansion joints.

(c) Fascia drip shall be installed as shown on the plans.

(d) The completed installation shall be straight and true and shall be erected in strict accordance with installation procedures recommended by the manufacturer.

GENERAL NOTES - CONTINUED

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MED-71-22.55

44/68

Section 8 - DRYWALL CEILINGS

1. DRYWALL MATERIALS, ACCESSORIES, AND FASTENERS

(a-1) Alternate materials are indicated in Sub-Paragraph (h) below.
(a-2) Drywall 1/2 inch tapered edge regular gypsum wall board: Federal Specifications SS-W-51a and SS-W-0051b; ASTM C 36.

(b) No. 200-A Metal Trim

(c) No. 100 Perf-A-Bead

(d) 1 x 3 inch wood furring strips or DWC drywall furring channels at 16 inches center to center.

(e) 1 inch drywall, screw type "S", self-drilling, self-tapping screws.

(f) Perf-a-tape reinforcement for joint treatment.

(g) Perf-a-tape all-purpose ready-mixed compound for joint treatment.

(h) All materials indicated, except wood furring strips, are as manufactured by United States Gypsum. Equals by National Gypsum (Gold Bond) or the Cel-o-Tex Corporation will be accepted.

2. ERECTION OF GYPSUM WALLBOARD

(a) Use basic single-layer system with treated joints.

(b) All ends and edges of all gypsum wallboard shall occur over nailing members, except when joints are at right angles to framing members as in horizontal application or when the end joints are to be backblocked

(c) Wallboard shall be attached to framing supports by power-driven drywall screws. Fasteners shall be spaced not less than 3/8 inch from edges and ends of wallboard. Fasteners on all framing members shall be spaced and driven as recommended by the manufacturer. Screws shall be staggered on adjoining edges or ends. While the fasteners are being driven, the wallboard shall be held in firm contact with the underlying support. Attachment should proceed from central portion of the wallboard toward ends and edges.

(d) When necessary to cut ends or edges, scribe or make cut-outs within the field of the wallboard.

(e) All joints and screw head or other depressions in the surface of the wallboard shall be treated as recommended by the manufacturer with a "ready-mixed" type joint material.

(f) All internal and external angles formed by the intersection of either wallboard surfaces or other surfaces shall be treated with "Perf-a-Tape" type joint system in accordance with the plan details.

3. WORKMANSHIP

(a) Quality of workmanship throughout shall be the best.

(b) All surfaces shall be straight and true, free from waves, bumps and depressions.

(c) All drywall, throughout, shall be free of checks, dirt, nail pops, streaks, trowel marks, blotches, or other imperfections.

(d) Drywall areas showing cracks, checks, blisters or jointing shall be respackled or replaced with new materials as recommended by the material manufacturer. Patching will be permitted, when specifically approved by the Engineer, for minor imperfections. Patched areas shall match adjacent work.

Section 9 - CEMENT PLASTER VAULTED CEILINGS

1. CORNER BEADS AND ACCESSORIES

(a) At all external angles in plaster work, both horizontal and vertical, provide regular expansion type, 26 gauge, galvanized corner bead, such as Milcor No. 1, or equal by Truscon or Knapp.

(b) Install both corner beads and casing beads rigidly and accurately with true mitres and without intermediate joints at all edges and corners.

2. MATERIALS

(a) Lath: Copper bearing steel, 3/8 inch rib, 3.4 pounds per square yard. Furring as needed and recommended by manufacturer.

(b) Water: Clean, potable.

(c) Sand: Clean, sharp, free from impurities, well-graded, all to pass through a No. 6 mesh screen.

(d) Portland Cement: ASTM C 150 or C 175, manufactured for use in stucco.

3. WORKMANSHIP

(a) Erect lath, supported at 16 inches center to center.

(b) Scratch Coat: Apply in accordance with manufacturer's directions.

(c) Finish Coat: Allow scratch coat to set not less than 2 days, then follow procedure recommended by manufacturer for finish coat, sand float finish.

4. MIXING AND APPLYING

(a) Mixing and application of all plaster shall be done in accordance with the best practice and the printed directions of the manufacturer whose materials are used.

(b) All mixing shall be done in clean, tight boxes or approved properly cleaned mixer.

(c) No plastering shall be done in freezing weather except as approved by the Engineer and with all necessary protective measures continuously in effect. Plaster damaged by frost or freezing shall be replaced.

(d) After all other work has been completed, patch as required in a neat and careful manner. Defective plastering shall be removed and re-executed.

Section 10 - GLASS, GLAZING, CAULKING, AND BULLETIN BOARD

1. GLASS

(a) All glass in building, including sliding glass doors, entrance doors, store fronts, and windows, shall be Parallel-O-Bronze 1/4 inch Tuf-Flex, and glass for bulletin board shall be clear 1/4 inch Tuf-Flex, as manufactured by the Libbey-Owens-Ford Company, or equal by the Pittsburgh Plate Glass Company or Perma-Glass Company.

(b) Each light of glass shall bear its manufacturer's printed label, certifying as to weight and quality. The sheet glass shall be packed with paper separators and delivered to the job in the original unopened packages.

2. CAULKING

(a) Caulk closed window openings at masonry jambs, interior and exterior joints at masonry and hollow-metal door frames with Acrylic sealant. All caulking exposed to view adjacent to aluminum surfaces shall be light bronze in color to match aluminum frames. Caulking on other surfaces shall be light in color unless otherwise specified.

(b) For work in general, compound used shall be the first quality gun grade compound made by Dicks-Armstrong-Pontius, Tremco, Sonneborn, Kuhls, or David E. Long and shall conform with requirements of Fed. Spec. TT-C-598.

Section 10 - CONTINUED

(c) All caulking shall be applied in the best possible manner with all surfaces receiving caulking cleaned and prepared according to the compound manufacturer's recommendations. Apply suitable primer to masonry surfaces, with brush, prior to applying caulking.

(d) All caulking shall be done by gun method, with size of nozzle selected to suit conditions and a full bead provided, throughout, with all joints made wind-tight. At windows, caulk on inside as well as outside. Follow with hand tool, where required, to produce a neat appearance.

(e) Remove all misplaced and/or surplus caulking at once, to avoid staining masonry or painted surfaces. Remove any stains which do develop.

(f) Completely seal the building according to best practice to make it water- and weather-tight.

(g) Pack joints in excess of 3/4 inches deep with oakum, to within 3/4 inches of exposed surface.

(h) Joints shall be solidly filled, run in true straight lines free from lumps and irregular edges, and finished clean, with smooth and neat surfaces. Do not permit compound to sag or "lump-up".

(i) Caulk all hollow metal door frames to form a neat, sharp joint between metal and masonry.

(j) Caulk joints before final coat of paint is applied to adjacent work.

3. GLAZING

(a) Compound for glazing store front and aluminum entrance doors and windows shall be a knife grade, non-hardening, elastic glazing compound, meeting Fed. Spec. TT-P-781a, Type 1, and shall be Dicks, Armstrong, Pontius Inc.'s "DAP 1012", or Tremco Manufacturing Company's "Tremglaze."

(b) Glazing compound shall be light bronze in color, specially formulated for use on aluminum, and not requiring paint for protection.

(c) All glass shall be installed according to the current best practice. Clips in aluminum sash must be of metal compatible with aluminum.

(d) Glaze units held by stops for application to the stop as recommended by the unit manufacturer.

(e) Leave all glass clean and in perfect condition at completion of the building.

4. BULLETIN BOARD DOOR TRACK AND LOCK MATERIALS

(a) Four pairs of KV-992 sliding glass door track. For size and location, see plan details.

(b) Four KV-963 locks. All locks shall be keyed alike and four keys shall be furnished.

(c) Materials indicated are as manufactured by the Knape and Vogt Manufacturing Co. Equals by the Garcy Mfg. Co. or the S. Parker Hardware Co. shall be accepted.

(d) See also Paragraph 9, Section 6, of these notes and specifications.

BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF HIGHWAYS		
Revision 10-20-67	MOTORIST SERVICES BUILDING AND STORAGE UNIT	Sheet 7/16
	NOTES AND SPECIFICATIONS	5-19-67

GENERAL NOTES ~ CONTINUED

Section 11 - CERAMIC TILE WORK AND MARBLE WINDOW STOOLS

1. MATERIALS

(a) Tile shall be standard grade "Suntile", as manufactured by the Cambridge Tile Manufacturing Company, or equal in both color and texture by the Mosaic Tile Company, U.S. Ceramic Tile Company, or the American Olean Tile Company. Colors indicated below are for "Suntile."

(b) Include cove pieces, bullnose pieces, and such other trim pieces as are required for a complete and workmanlike job.

(c) Floors: 1/4 inch thick, 2 inch squares, natural clay, unglazed, cushion edge, Color No. 144 Maple.

(d) Walls and Base: 5/16 inch thick, 4 1/4 inch squares, cushion edge, crystalline glaze, Color No. 612 Olive.

2. INSTALLATION

(a) Finish work is to be plumb, true, and level. On walls at banks of water closets, provide cement plaster for proper leveling.

(b) Install ceramic tile by the thin-set method. Mortar adhesive shall be a dry-set, Portland cement mortar licensed by the Tile Council of America. Mixing, application, and setting shall follow recommendations of the manufacturer. Provide marble transition at door openings. Acceptable mortar materials are "Tile Mate" by Upco or equals by Macco Chemical Co. or Syracuse Adhesives Co.

(c) Grout glazed tile with "Tile Mate" dry grout, or equals by Macco Chemical Co., or Syracuse Ad.. Grout unglazed tile with "U-poxy" grout as manufactured by the Upco Company, or equal by the Macco Chemical Co., or Summitville Tiles, Inc.

3. GENERAL

(a) Protect ceramic tile work against abrasion and stain. Clean all ceramic tile at completion of job.

(b) Completed work shall contain no broken or chipped tile.

4. MARBLE WINDOW STOOLS

(a) Furnish two marble window stools at two windows in Room 105.

(b) Marble shall match, and be similar and equal to Vermarco "Mottled White".

Section 12 - SLATE FLOOR

1. MATERIAL

(a) Slate shall be 1/2 inch thick, Grade "A", unfading Buckingham Slate, blue-black in color, with natural cleft surface as furnished by Buckingham Virginia Slate Corporation, or equal by the Vermont Structural Slate Company or the Structural Slate Company.

(b) Pattern shall be similar to Buckingham Slate Floor Tile Company Pattern No. 7.

2. INSTALLATION

(a) Slate shall be laid in a 1 inch mortar bed. Mortar shall consist of three parts sand to one part cement.

(b) Joints shall be filled with "Hydroment", (color-black) joint filler as manufactured by the Upco Company, applied as recommended by the manufacturer. Equal joint filler as manufactured by the Macco Chemical Co. or the Syracuse Adhesives Co., will be acceptable.

Section 13 - PAINTING AND FINISHING

1. MATERIALS AND ACCEPTABLE MANUFACTURERS

(a) Painter's materials, throughout, shall be as made or furnished by the Pratt and Lambert Company, or equals by Dean and Barry, DeVoe and Raynolds, Pittsburgh Plate Glass Co., or Sherwin-Williams. Subsequent reference to Pratt and Lambert products is to be considered in the same context.

(b) All materials used on the work shall be the manufacturer's "first and best" line product of the types as hereinafter specified.

(c) All painters goods shall arrive on the job in the original unopened packages as sent out by the manufacturer.

(d) All materials shall be used only as specified by the manufacturer's direction label on the container.

(e) Paint shall be thinned no more than specifically recommended and thinners shall be the highest quality of the type recommended in the manufacturer's printed directions. No driers shall be added at the job.

(f) All painting materials, such as linseed oil, shellac, turpentine, etc., shall be pure, of highest quality, and approved by the Engineer. Such materials shall bear identifying labels on the containers.

2. COLOR AND MATERIAL APPROVAL AND SAMPLES

(a) Immediately after the Contract has been awarded, a complete list of the materials to be used in the various locations, including the brand, type, and trade name, shall be submitted for approval by the Engineer.

3. WORKMANSHIP

(a) Quality of workmanship shall be first class throughout. Completed work shall be free of runs, sags, blocked angles, raised grain, brush marks, dust, checks, bubbles, and all other evidence of poor or careless workmanship.

(b) All surfaces shall be cleaned and otherwise prepared in accordance with the best practice before painting. Before painting metal surfaces, remove all rust and scale by wire brushing and sanding, and wash all metal surface with mineral spirits to remove any dirt, oil, or grease. Clean and touch up any shop coats of paint that become marred, chipped, or abraded with appropriate matching primer.

(c) All necessary puttying of nail holes, cracks, etc., shall be done after the first coat. Putty shall be brought flush with the adjoining surface in a neat workmanlike manner.

(d) Exterior painting shall not be done while the surface is damp, or during cold, rainy, or frosty weather, or when the temperature is likely to drop to freezing. Avoid painting surfaces while they are exposed to hot sun.

(e) Interior work shall be done only when the work area is properly heated and ventilated and dust free.

(f) All surfaces shall be thoroughly dry prior to application of any paint and all coats shall be fully dry before applying succeeding coats.

(g) All surfaces shall be properly smooth prior to start of work. Enamel or varnish finish applied to wood or metal shall be sanded with fine sandpaper and then cleaned, between coats, to produce a smooth, even finish.

(h) All priming coats and under coats shall be tinted to the approximate shade of the final coat to assure uniformity of color in the finish, except that each coat of primer and finish shall be sufficiently different from preceding coat for ready identification.

(i) At least one priming coat and one finish coat shall be applied to top and bottom edges of doors and other similar surfaces sometimes counted as "concealed."

(j) After the application of the first coat, all suction spots or "hot spots" shall be touched-up prior to application of the second coat to produce an even result in the finish coat.

Section 13 - CONTINUED

(k) Each coat of material must be inspected and approved by the Engineer before the application of the succeeding specified coat. Prior to application of the final coat the Engineer will inspect the base coats, as specified above, and order any color or sheen revisions he deems necessary to properly finish the work.

4. EXTERIOR WOOD TREATMENT

(a) This treatment applies to all exterior wood surfaces, including wood soffit, fascia board, and miscellaneous wood trim.

(b) Prime with one coat Pratt and Lambert "Vapex" exterior primer.

(c) Apply second coat of "Vapex" house paint in color as selected.

(d) Apply finish coat of "Vapex" house paint.

5. MISCELLANEOUS FERROUS METAL TREATMENT

(a) This treatment applies to exterior overhead door and exterior surfaces of hollow metal doors and window frames.

(b) Prime all items, not shop primed, with one coat of metal primer.

(c) Touch-up all damaged or abraded portions of prime coats of all items with a compatible metal primer.

(d) Apply two finish coats of alkyd base satin trim and shutter paint, except that overhead doors and the exterior surfaces of hollow metal doors and frames shall receive one coat of compatible enamel primer and one finish coat of high gloss exterior alkyd enamel.

6. INTERIOR ENAMEL TREATMENT

(a) This treatment applies to interior surfaces of hollow metal doors and frames and miscellaneous metal items.

(b) Prime all items, not shop primed, with one coat of metal primer.

(c) Touch-up all damaged or abraded portions of primed coats of all items with a compatible metal primer.

(d) Apply one coat of enamel primer tinted to finish color.

(e) Finish with one coat of semi-gloss interior alkyd enamel, miscellaneous metals color.

7. INTERIOR MASONRY TREATMENT

(a) This treatment applies to interior walls as indicated in the finish schedule shown on the plans.

(b) Prime all surfaces with one coat of Pratt and Lambert "Primafil" poly-vinyl acetate, alkali-resistant, primer-sealer tinted to finish color.

(c) Finish with one coat of satin or eggshell finish, highly scrubbable, alkyd wall paint.

GENERAL NOTES - CONTINUED

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MED-71-22.55

46/68

Section 13 - CONTINUED

8. WOODWORK TREATMENT

(a) This treatment applies to bulletin board assembly, wood filler above sliding glass doors, and wood cove in Room 101.

(b) Stain all exposed wood to match color of pre-finished wood doors.

(c) Follow with two coats of clear satin varnish.

9. DRYWALL - INTERIOR TREATMENT

(a) This treatment applies to all drywall ceilings.

(b) Apply one coat of the drywall manufacturer's "Sealer-Coater" and two coats of semi-gloss wall paint, Pratt and Lambert Cellu-Tone Satin.

10. PLASTER - EXTERIOR SOFFIT TREATMENT

(a) Apply prime coat of Pratt and Lambert "Aklatite", unthinned. If brushing is difficult due to porosity or heat, reduce with up to one pint of water per gallon of paint.

(b) Apply second coat when surface is dry to touch.

11. WORK NOT INCLUDED

(a) The following areas and items are not to be painted:

(1) All aluminum items.

(2) Any item with a factory or shop applied finish treatment such as metal toilet partitions, mechanical fixtures and cabinets, and wood doors.

(3) Light Bronze colored caulking and glazing compounds.

Section 14 - FINISH HARDWARE AND TOILET ROOM ACCESSORIES

1. STANDARDS AND QUALIFICATIONS

(a) Numbers indicated are taken from catalogs of the following manufacturers:

ITEM	MANUFACTURER	EQUALS
Thresholds	Reese	Sager, Lusterline
Butts	Stanley	Soss,McKinney,Hager
Locks	Schlage	Yale,Corbin,Russwin
Closers	Norton	Yale, LCN
Door Trim	Brookline	Cipco, Trego
Stops and Holders	Glynn Johnson	Ives, Baldwin

2. FINISH

(a) Locks and door trim shall be stainless steel. Door closers shall be silver bronze. Butts shall be as detailed.

3. LOCK DESIGN AND KEYING

(a) Schlage Plymouth design with functions as noted.

(b) Key all locks alike x 10 keys total.

4. DOOR TRIM

(a) Kick plates shall be 1/8 inch laminated plastic.

5. DOOR SILENCERS

(a) Furnish three GJ64 silencers for each frame.

Section 14 - CONTINUED

6. HARDWARE TO BE FURNISHED

(a) DOOR 01, 01A, EACH TO HAVE:

One	Cylinder 900-1 inch 26D (Exterior) KA
One	Turn Knob Cylinder 900 TK 26D (Interior)

(b) DOOR 01B, 01C, 01D, 01E, 01F, EACH TO HAVE:

One	Cylinder, Schlage B-2274 or similar KA, with function or cam to operate the lock provided with aluminum sliding door.

(c) DOOR 02

Three	Butts FBB 179 CMD 4-1/2 x 4
One	Push Plate 63 - Suede Black Formica
One	Pull 905 US 32D
One	Closer 6123 Positive Stop at 90 degrees
One	Kickplate 8 x 31-1/2 Suede Black Formica
One	Sign "Best" type 40-B Size 10 x 4, Suede Black with White letters, screw-attached
One	Deadlock B 262 P 26D (Install at height of 60 inches)

(d) DOOR 05A

All hardware to be furnished by door manufacturer.

(e) DOOR 04

Same as Door 02 except use Closer 1603, Wall Bumper GJ50X and Sign 40C.

(f) DOOR 05

Three	Butts FBB 193 STSD 4-1/2 x 4-1/2
One	Lockset D52PD 32D x 965
One	Threshold S258A 36 inch
One	Stop and Holder W-20X-28

(g) DOOR 03, 03A, EACH TO HAVE:

Three	Butts F179 CMD
One	Lockset D52PD 32D x 965
One	Stop FB13X - 28

7. TOILET ROOM ACCESSORIES

(a) All numbers hereinafter indicated under toilet room accessories are taken from the Bobrick Corporation's catalog. Equals by D. J. Alexander Corporation, Watrous Incorporated, or Miami Carey will be accepted.

(b) Key all accessories alike x 10 keys total.

8. MEN'S TOILET ROOM ACCESSORIES TO BE FURNISHED

(a) Two recessed mirror, soap, and towel dispensers No. B-330, with tempered glass mirror.

(b) One large capacity waste receptacle No. B-3644. Height off floor to be 44 inches to top of receptacle.

(c) Three surface mounted multi-roll toilet tissue dispensers No. B-288.

(d) Two grab bars as described in Sub-Paragraph 9(e) below.

9. LADIES' TOILET ROOM ACCESSORIES TO BE FURNISHED

(a) Three recessed mirror, soap, and towel dispensers No. B-330, with tempered glass mirror.

(b) One large capacity waste receptacle No. B-3644. Height off floor to be 40 to 44 inches to top of receptacle.

(c) Four surface mounted multi-roll toilet tissue dispensers No. B-288.

(d) Two partition mounted napkin disposal for toilet compartments, No. B-354.

(e) Two stainless steel grab bars No. B-550 x 30 mounted 33" high and parallel to the floor. For location, see floor plan.

Section 15 - PLUMBING

1. GENERAL

(a) The layout shown on the plans is based on a particular make of equipment. If another make of equipment is used which requires modification or changes of any description from the plans or specifications, drawings showing such modifications and changes shall be submitted for approval by the Engineer prior to starting work.

(b) Vertical stacks shall rest on firm masonry footings.

(c) Piping shall be concealed as specified or indicated on the plans and elsewhere whenever possible without altering the building.

(d) The lump sum price bid for the building and storage unit shall include payment for furnishing and placing of the domestic cold water service to the termination point (20 feet from building wall) shown on the plans.

2. PERMITS AND INSPECTIONS

(a) When the work is completed, the Contractor shall furnish to the Engineer a certificate of inspection and approval from the Ohio Department of Health.

(b) All plumbing work within the scope of the Plumbing Code of the State of Ohio shall be installed in compliance with the code. Nothing contained in these notes and specifications shall be construed to conflict with the code, and it is hereby made a part of these specifications.

3. EXCAVATION AND BACKFILL

(a) Trench widths shall be of sufficient size to permit proper installation of the work and the bottom of trenches shall be evenly graded. Bell holes shall be provided to insure uniform bearing for pipes. Excavations below required depths shall be refilled with sand or gravel firmly compacted. Rock encountered shall be excavated 3 inches below the lowermost part of the pipe, and the space so formed shall be refilled with sand or gravel well compacted.

(b) Trenches shall be sheathed or braced, and pumping or bailing shall be performed, as necessary, to protect workmen and adjacent structures and to permit proper execution of the work. After piping is installed and has been tested, inspected, and approved by the Engineer, excavation shall be backfilled with earth in 6 inch layers using hand operations and tamping compactly into place to a point 12 inches above top of pipe. The remainder of the backfill shall be earth and may be placed by machine filling in 12 inch layers which shall be tamped compactly into place at each 12 inch interval. Backfill all trenches within building area, in paved areas, or areas to be paved, with granular material.

(c) Any excavation within five (5) feet of and below the elevation of the bottom of any footing shall be backfilled with 1: 2.5; 5 concrete to the level of the bottom of the footing.

BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF HIGHWAYS		
Revision 10-20-67	MOTORIST SERVICES BUILDING AND STORAGE UNIT	Sheet 9/16
	NOTES AND SPECIFICATIONS	5-19-67

GENERAL NOTES - CONTINUED

Section 15 - CONTINUED

4. SANITARY BUILDING DRAIN

(a) The lump sum bid price for the building and storage unit shall include payment for furnishing and placing of the sanitary building drain to the termination point (20 feet from building wall) shown on the plans.

(b) The drain shall be constructed of extra heavy weight cast iron soil pipe and fittings, coated inside and out, labeled with the Cast Iron mark of quality and permanence as illustrated in Commercial Standard CS 188 and conforming to this standard. Pipe shall be laid with spigot end pointing in direction of flow and shall be laid straight to line with uniform grade.

(c) Joints in extra heavy cast iron soil pipe shall be made with white oakum caulking yarn and not less than 3/4 inch of virgin lead fill as the remainder of the joint. Lead shall not exceed 1/8 inch below level of hub rim after joint has been thoroughly caulked.

(d) Provide cleanouts and backwater valves as shown on the plans and where required by code.

5. STORM DRAIN AND STORM SEWER

(a) The lump sum bid price for the building and storage unit shall include payment for furnishing and placing of the storm drain and sewer to the termination point (20 feet from building wall) shown on the plans.

(b) Materials and construction of storm drains and sewers shall be the same as specified under Paragraph 4 above.

(c) Install a 4 inch non-clog floor drain with sediment bucket at drinking fountain along with 2 inch waste line to receive drinking fountain waste.

(d) Furnish and install cleanouts as shown or as required by code.

6. INTERIOR ROOF LEADER AND HORIZONTAL RUNOUT PIPING

(a) Roof leader and horizontal runout piping shall be continuous weld, Schedule 40, galvanized, plain end, conforming to 707.11. Contractor shall make threads on pipe; factory threads will not be acceptable.

(b) Black, cast iron drainage fittings shall be used throughout. Provide 4 inch heavy cast iron clean-out tee at base of roof leader and brass raised head plug in fitting at end of run for cleanout access.

(c) All horizontal roof leader and runout piping and fittings shall be insulated per Paragraph 31 of this section. Pitch lines 1/8 inch per foot toward roof leader riser.

(d) Provide escutcheon plates to conceal elliptical openings in ceiling where runouts piping passes through ceiling and run horizontal between joists to connect to roof drains.

7. SOIL, WASTE, AND VENT PIPING

(a) All soil, waste, and vent piping 3 inches and larger shall be extra heavy cast iron soil pipe and fittings, coated inside and out, labeled with the Cast Iron mark of quality and permanence as illustrated in Commercial Standard CS 188 and conforming with this standard.

(b) All soil and waste piping 2 1/2 inches and smaller shall be standard weight galvanized plain end 707.11 pipe with cast iron drainage fittings, except all underground fittings shall be extra heavy cast iron.

(c) Vent piping 2 1/2 inches and smaller shall be standard weight galvanized plain end 707.11 pipe with 150 lb. galvanized malleable iron banded type fittings.

(d) Joints in soil pipe shall be caulked with oakum and lead as specified in Paragraph 4.

(e) Provide a cleanout at the base of stacks, at the end of each horizontal run, and elsewhere as shown on the plans or required by code. Distance between cleanouts shall not exceed 50 feet. Cleanouts shall be accessible for rodding.

(f) Pipe shall be laid straight to line with uniform grade; pitch lines not less than 1/8 inch per foot.

Section 15 - CONTINUED

8. DRAINS AND CLEANOUTS

(a-1) Alternate materials are indicated in Sub-Paragraph (m) below.

(a-2) Cleanouts in walls of finished areas: Use cleanout tee and provide cleanout and access cover similar to Josam Series Y-130-BB with round polished cast brass access cover and threaded brass plug. Size to suit cleanout.

(b) Cleanouts in floors of finished areas: Provide frame and access cover similar to Josam Series Y-620-FV with round polished bronze access cover and vandal-proof screw.

(c) All cleanouts outside building shall be flush with finished grade and shall be similar to Josam Series YL-620-FV with round polished bronze access cover or Zurn Series Z-1326-12. See plan details for method of installation.

(d) Cleanouts at base of all stacks or roof leaders in unfinished areas shall be similar to Josam Series YL-150. Size as required.

(e) Cleanouts in screwed fittings of soil, waste, vent or roof leader runouts shall be similar to Josam Series Y-10 raised head brass plug. Size as shown on drawings.

(f) Floor drain P-9 (Room 105): Josam Series No. 5440, cast iron non-clog triple drainage floor drain with double drainage flange and weep holes, 4 inch caulk bottom outlet, heavy duty polished bronze grate and round perforated medium sediment bucket with integral auxiliary drainage rim so designed that grate cannot be set in place unless bucket is in position.

(g) Floor drain P-10 at drinking fountain: Josam Series No. 5400, cast iron polished bronze top non-clog floor drain, with 4 inch caulk bottom outlet, and round perforated shallow sediment bucket with integral auxiliary drainage rim so designed that grate cannot be set in place unless bucket is in position.

(h) Floor drains P-5 (Rooms 102 & 104): Josam Series No. 300-35 CVP cast iron floor drain with double drainage flange and weepholes, 3 inch caulk bottom outlet, and 5 inch polished bronze non-clog adjustable strainer with vandal-proof screws.

(i) Floor Drain P-6 (Room 103): Josam Series No. 510, cast iron floor drain with double drainage flange and weepholes, 4 inch caulk bottom outlet, loose set anti-tilting grate, cast iron lacquer top.

(j) Roof Drains: Zurn Series Z-121-CR, dura-coated cast iron high velocity drain body with removable, bayonet-locking 84 sq. in. area mushroom dome strainer, clamping collar with integral gravel guard, corrosion-resistant clamping bolts, with underdeck clamp and roof sump receiver. Provide and install as detailed on the plans and as required the 4 lb. lead roof flashing for roof drains.

(k) Furnish and install a cast iron P-trap with each floor drain.

(l) All floor drains and cleanouts shall be flush and level with finish floor.

(m) Equivalent drains and cleanouts, by Wade, Josam, or Zurn, may be furnished.

9. ROOF VENT FLASHINGS

(a) Roof vent flashings shall be 4 lb. lead. Solder type joints shall be continuous throughout construction of flashing. Lead cap must be formed; peened cap will not be acceptable.

10. BACKWATER VALVE

(a) Install one Josam No. 1144-ZZ-E-1 cast iron drainage control valve with 4 inch hub inlet and spigot outlet, manually operated gate valve, brass non-rising stem and spade-shaped gate, automatic swing check valve with all-brass working parts. A 12 inch cast iron soil pipe extension and standard brass pipe shall be furnished and installed as required to allow installation to be flush with finished grade. Equal valve by Wade, Zurn, or A. O. Smith will be acceptable.

(b) Provide sheet metal forms for concrete base surrounding the cap and install as shown on the plans.

(c) Provide and install concrete as indicated on the plans.

Section 15 - CONTINUED

11. DOMESTIC COLD WATER SERVICE

(a) Install 2 inch type "K" hard, 20 foot straight lengths, copper tubing into building equipment room. Extend riser up through floor as shown and terminate with valve and union. Use 95-5 solder and cast brass or wrought copper fittings.

(b) Piping shall have an approximate 36 inch bury.

12. DOMESTIC COLD AND HOT WATER

(a) Run a 2 inch water line to the pressure tank and provide a system of water piping to all plumbing fixtures and to other points indicated on the plans.

(b) From water heater, construct systems of hot water piping to all plumbing fixtures requiring same and to other points as indicated on the plans.

(c) Materials and construction for water piping outside building or underground shall conform to Paragraph 11 above.

(d) All water pipe inside building shall be Type "L" hard drawn copper tubing, furnished in 20 foot straight lengths. Fittings shall be cast brass or wrought copper, solder type. Use 95-5 solder joints only.

(e) Pitch all water lines to low points in the systems and provide 3/4 inch drain valves at low points of systems to permit complete drainage, or as otherwise noted on the plans.

(f) Provide gate and check valves, strainers, shifter valve, unions and shock absorbers where indicated.

(g) Provide a union in piping connections to each valve, device or item of equipment, and elsewhere as required to make-up or disconnect piping. Each union shall be so installed as to permit the removal of parts and equipment for inspection or cleaning, and shall be installed in a position which will permit the valve, device or part to be removed without disconnecting any piping except unions. Use bronze unions in copper lines. Unions shall be downstream of valves.

(h) Branches to fixtures shall be of the following sizes unless otherwise indicated.

1. Water closets - 1 inch
2. Electric water coolers - 1/2 inch
3. Lavatories - 1/2 inch
4. Sink - 3/4 inch
5. Hose bibbs (exterior) - 3/4 inch
6. Hose bibbs (interior) - 3/4 inch
7. Drinking fountain - 3/4 inch
8. Sanistan - 1 inch
9. Hot water tank - 1 1/4 inches

(i) Run all water piping at uniform level and conceal wherever indicated.

(j) Valves shall not be installed with the stems in less than a horizontal position.

(k) Install dielectric unions at all connections between copper-and-iron or steel pipe.

(l) Provide 3/4 inch shock absorbers where shown on the plans. Use Zurn Fig. No. 200. For use in runs of 25 to 75 feet in length, use Bellows type only. Equals by Josam or Wade will be accepted.

GENERAL NOTES ~ CONTINUED

Section 15 - CONTINUED

13. INSERTS, PIPE HANGERS, AND SUPPORTS

(a-1) Alternate materials are indicated in Sub-Paragraph (h) below.

(a-2) Furnish and install necessary pipe hangers and supports to properly support all piping and to maintain uniform elevation.

(b) Hangers for copper lines, 2 inches and smaller, shall be similar to Grinnell Fig. CT-99, adjustable wrought pipe ring, copper plated, with 3/8 inch hanger rods. Galvanized hangers and strap hangers will not be permitted for supporting copper lines. Wire and metal strap hangers will not be permitted for supporting any pipe or apparatus.

(c) Hangers for copper lines 2 1/2 inches and larger shall be similar to Grinnell Fig. CT-65, adjustable wrought clevis, copper plated, with proper size rods. Unplated clevis may be used if lead sleeves 2 inches wider than the clevis are secured to the pipe at each hanger.

(d) Hangers for steel and wrought iron lines 2 1/2 inches and smaller shall be similar to Grinnell Fig. 97, adjustable wrought pipe ring, galvanized.

(e) Hangers for steel and wrought iron lines 3 inches and larger shall be similar to Grinnell Fig. 260, adjustable wrought clevis, heavy duty, with proper size rods.

(f) Support copper, steel, and wrought iron pipe at intervals not to exceed 8 feet, and elsewhere as required in accordance with good workmanship.

(g) Horizontal soil pipe shall be supported at hub of each 5 foot joint, base of each riser, at each floor, and elsewhere as required, using Grinnell Fig. 260, adjustable wrought clevis with proper size rods.

(h) Elcen, Penn or Modern hangers of same type and size may be used.

(i) Wall bracket pipe supports shall be installed where required.

(j) All copper piping is to be shielded from steel pipes or electrical conduit with sheet lead or electrical tape wherever pipes would touch each other.

(k) Hangers shall be of a size to fit the saddles.

(l) Provide insulated and shielded "multi-purpose" pipe saddles at all hangers except in pipe chase.

(m) All piping in pipe spaces shall be located so as to insure maximum accessibility with crossovers made at the floor or over 6 feet above the floor.

14. SLEEVES, COLLARS, AND ESCUTCHEONS

(a) Where pipes pass through walls or floors, provide 22 gauge Schedule 40 Black steel pipe sleeves large enough to allow 1/4 inch clearance all around outside diameter of insulation on raw water and cold water pipe, except use copper sleeves for copper pipes.

(b) Sleeves in partitions shall have length equal to the thickness of finished partitions.

(c) In exposed locations, bare pipes shall be provided with chromium plated collars or escutcheons at floor and ceiling and at partitions.

(d) Where service lines enter the building below grade, seal the space between pipe and sleeve with resilient compressible packing and seal face of joint with permanently flexible caulking material.

(e) In locations other than pipe chases, all insulated pipe shall be provided with chromium plated escutcheon plates at floor, ceilng, walls and partitions.

15. PRESSURE PNEUMATIC TANK

(a) Furnish and install one ASME approved, Adamson welded, galvanized steel vertical pressure tank. Tank shall have four legs. Size: 36 inches dia. x 72 inches long. Capacity: 330 Actual gallons.

SECTION 15 - CONTINUED

(b) Tank shall be constructed in accordance with the State of Ohio Rules for Construction of Unfired Pressure Vessels and shall be stamped for 75 psi working pressure.

(c) Tank shall be equipped with tappings as indicated including gauge glass tappings. Tank shall have a 11 x 15 inch manhole in side. Secure tank to concrete base.

(d) Furnish and install 30 inch gauge glass with shut-off cocks at each end. Cocks shall have ball checks to prevent loss of water in case of glass breakage. Provide two Marsh Type 1, 3-1/2 inch diameter, gauges, 0 to 160 psi pressure with tee handle cock, Marsh type 1900 with pig-tail as shown on the plans, or equal gauges by Marshalltown, or the H.O. Trerice Co., Inc.

(e) Richmond Engineering, Patterson-Kelley, or approved equal tank meeting capacity and other specification requirements above may be furnished at the Contractor's option.

(f) Provide and install as shown the following items for the pressure pneumatic tank:

(1) One 2 inch shifter and check valve, Deming Fig. No. 1328-T.

(2) One 1 inch relief valve, factory set at 75 psi, Myers Fig. No. 6430 B-12.

(3) One Air volume control with 1-1/4 inch threaded body, Penn Fig. No. 5857A2 for 65 psi maximum operating pressure.

(4) One Square "D" Class 9013-FYG-3 pressure switch for 2 hp motor, 120/240 volt single phase, 60 cycle, set for on at 40 psi and off at 60 psi.

(5) One B/W Controller Corp. Type 2-LH relay submersible pump control in NEMA Type I enclosure for 2 hp, 240 volt, single phase, 60 cycle, with B/W Type No. SE-2 electrode holders and two E-1S "Low-level cut-off" electrodes suspended on SW wire (Length to fit depth of well).

(g) Equals to the items listed in the above paragraph, as manufactured by the F. E. Myers & Bros. Co., Rapidayton Tait Pump Co., or Deming Division of Crane Co. will be accepted.

16. VALVES, HOSE BIBBS, AND UNIONS

(a-1) Alternate valve materials are indicated in Sub-Paragraph (g) below.

(a-2) Gate valves 3/4 inches and smaller shall be bronze, screwed type, taper solid wedge disc, rising stem, union bonnet, 125 lb. SWP (Steam Working Pressure), Wm. Powell Co. Fig. 2700S, conforming to ASTM B 62.

(b) Gate valves 1 through 2-1/2 inches shall be bronze, screwed type, taper double wedge disc, rising stem, union bonnet, 125 lb. SWP, Wm. Powell Co. Fig. 2700, conforming to ASTM B 62.

(c) Globe Valves 2-1/2 inches and smaller shall be bronze, screwed type, regrindable bronze disk, rising stem, union bonnet, 200 lb. SWP, Wm. Powell Co. Fig. 110, conforming to ASTM B 61.

(d) Swing Check valves 2-1/2 inches and smaller shall be bronze, screwed type, renewable bronze disc, Y-design, 200 lb. SWP, Wm. Powell Co. Fig. 560-Y, conforming to ASTM B 61.

(e) All low-point drain gate valves above ground (2-1/2 inches and smaller) shall be bronze, screwed type, rising stem, solid wedge, male hose thread outlet with chain and cap, 200 lb. non-shock cold water, Wm. Powell Co. Fig. 502 HS, conforming to ASTM B 62.

(f) Straightway cocks 2 inches and smaller (for drain lines on low points underground) shall be bronze, screwed type, flat heat, 150 lb. W.O.G., Wm. Powell Co. Fig. 947.

(g) Equal valves, as manufactured by Crane, Lunkenheimer, Kennedy, Walworth, or Fairbanks, will be accepted. All shall be of the same manufacturer.

SECTION 15 - CONTINUED

(h) Furnish and install James B. Clow and Sons Fig. F-4660 enlarged base for 2 inch stop, Fig. F-4615 screw type service box, with Fig. 393 box extension 30-42 inches, complete with stationary rod and ring guide and Fig. F-4620 combination key. Equals for items mentioned in this sub-paragraph, by Mueller, Alabama Pipe Co., Kennedy, Walworth, or Darling will be accepted.

(i) No sweat valves shall be used on any piping system required in this section.

(j) Adapters for all screwed valves in copper lines shall be used.

(k) Unions: See paragraph 12 of these notes above. Provide Dielectric unions at all connections between dissimilar metals. Unions shall be all-bronze, ground joint, cast type.

(l) Outside hose bibbs: Zurn Fig. Z-1493-1, encased hydrant, 3/4 inch size, with hinged locking cover, non-turning, advancing-retracting valve operating rod, and free-floating compression-closure valve, or equal by Josam or Wade.

(m) Self-closing single faucet (Located on drinking fountain outside building): American Standard Fig. R-4442 "Re-nu", self closing plain end, integral flange, threaded 1/2 inch inside, indexed four arm handle with "C" marking, or equal by Crane or Kohler. Opening in base of drinking fountain for the faucet shall be factory drilled as shown on the plans or as required.

17. PLUMBING FIXTURE NOTES (APPLY TO PARAGRAPHS 18 THROUGH 22 FOLLOWING.)

(a) Plumbing fixtures indicated on the plans are as manufactured by American Standard. Equal type fixtures by Eljer, Kohler, or Crane may be furnished at the Contractor's option. Sloan flush valves are specified although Delaney or Watrous materials may be used. Carriers indicated as Josam may, at the Contractor's option, be of equal type manufactured by Zurn or J. R. Smith. Toilet seats by Beneke Corporation or Crane Co. equal to the Church type specified, may be used.

(b) All exposed metal parts and fittings shall be chrome plated.

(c) Provide loose key stop valves on all hot and cold water supplies to each plumbing fixture.

18. WATER CLOSETS (P-1)

(a) "Glenco" F-2488, vitreous china, siphon jet, elongated bowl, 1-1/2 inch back spud wall hung bowl. Sloan "Royal" 143 YVL, for 4 inch wall, concealed push button flush valve, with vacuum breaker, 1 inch wheel handle stop and flush connection, roughed in 36 inches above finished floor. Church No. 7500 Black open front seat less cover for elongated bowl, with extended back and self-sustaining hinge. Closet shall be supported by either Josam Series C-835-W or C-834-W carrier, according to position of fixture, for single wall hung installation.

GENERAL NOTES - CONTINUED

Section 15 - CONTINUED

19. LAVATORIES (P-2)

(a) "Lucerne" F-350, 20 x 18 inch vitreous china lavatory with bowl off center to right hand side, wide ledge at left, splash back, front overflow, anti-splash rim, cast-in soap dish, drilled on 8 inch centers for installation of "Heritage" trim (chromard finish). Fig. 2133 combination lavatory supply with self-closing faucet four arm handle indexed "H" or "C", and drain fitting, coupling nuts, 4-3/4 inch spout with aerator, drain plug with integral perforated grid with 1-1/4 inch tail piece. Lavatory shall be drilled for concealed arm supports.

(b) Provide American Standard Fig. R-7013-44, 1-1/4 x 1-1/4 inch chromard cast brass P-trap with cleanout plug, slip inlet and outlet to wall female N.P.T., American Standard Fig. R-7034-44, 1-1/4 x 6 inch chromard pipe nipple, thread both ends, cast brass escutcheon.

(c) Provide American Standard Fig. R-2607 3/8 inch rigid wall supplies, loose key stop, escutcheon, reducing coupling, tail pieces, with chromard finish.

(d) Concealed arm supports for all lavatories shall be Josam Fig. C-300 Unitron single lavatory carrier with concealed arms, leveling and securing screws, steel pipe uprights, and block bases.

20. URINALS (P-3)

(a) "Lynbrook" F-6536 vitreous china blowout urinal with extended shields, integral flush spreader, 1-1/4 inch backspud wall hangers, outlet connection threaded 2 inches inside. Sloan "Royal" concealed flush valve No. 190 YVL for a 4 inch wall with metal push button, 1 inch wheel handle stop and coupling for 1-1/4 inch back spud, wall and spud flanges, roughed in 36 inches above finished floor.

(b) Provide Josam Type No. C-228 Unitron urinal carrier with hanger plate, bearing plate, steel pipe uprights and block bases, punch plate for use with back supply fixture.

21. SANISTAN (P-4)

(a) "Sanistan" F-5835, vitreous china wall hung women's urinal, siphon vortex action with jet 1-1/2 inch back spud.

(b) Provide Sloan "Royal" 192-YVL concealed rough brass flush valve for left hand supply, 1 inch wheel handle stop, with adjustable tailpiece, elbow flush connection and couplings for 1-1/2 inch concealed back spud, metal push button for 4 inch wall, roughed in 36 inches above finished floor.

(c) Provide Josam Type No. C-835-WU Unitron bulldog carrier and single vertical closet fitting, left hand offset with invertible face plate, 4 inch soil pipe connection and 2 inch hub vent.

22. TRU-SET POSITIONING FRAMES

(a) Provide and install on all wall hung water closets and Sanistan carriers Josam Series M-150 Tru-Set positioning frame. Frame must be installed with carriers before walls are laid up.

23. CONCRETE INSERTS FOR SECURING FIXTURE CARRIERS

(a) Provide and install integral with poured concrete floor, as required, Unistrut Corp. Fig. P-3269, 18 foot length of 12 gauge continuous insert. Provide P-3280 caps where cuts are necessary. This shall be so installed that all fixture carriers may be securely bolted to the floor and in alignment in a continuous run; use Unistrut nuts with spring and of size as required. Equal inserts by Steel City or Grinnell may be used at the option of the Contractor.

Section 15 - CONTINUED

24. MOP SERVICE BASIN AND TRIM (P-7)

(a) Mop service basin shall be standard size 24 x 24 x 12 inches high monolithic precast genuine Terrazzo deep type as manufactured by Cutler Metal Products Co., Model No. MSB24T-12. Shoulders shall be at least 4 inches high inside and 3 inches wide. Stainless steel protective cap shall be cast integral on exposed three sides. Drain body shall be brass, cast integral, and shall provide for a caulked lead connection to a 3 inch pipe. Removable strainer plate shall be of chrome-plated brass. Terrazzo shall be composed of genuine black marble chips cast in white portland cement to produce a compressive strength of not less than 3,000 psi, seven days after casting. Terrazzo surfaces shall be ground smooth and polished with all air holes and pits grouted and any excess removed. Equal service basins by Fiat, Ellsmere, or Granitine may be furnished at the Contractor's option.

(b) Provide grout as required to level mop service basin.

(c) Provide and install 1/4 inch black steel bracket of welded construction, located and sized as shown on the plans. Use lead expansion bolts to secure to wall.

(d) Provide Chicago Faucet Co. Fig. No. 897 "Quarturn" combination service sink fitting with vacuum breaker, 3/4 inch hose thread on spout, No. 369 handles, with adjustable wall brace, pail hook and No. "R" 1/2 inch flanged female adjustable arms with integral stops, polished chromium plated. Equal faucets by American Standard, Eljer, Crane, or Kohler may be furnished at the Contractor's option.

25. ELECTRIC WATER COOLER (P-8)

(a-1) Alternate materials are indicated in Sub-Paragraph (e) below.

(a-2) Furnish and install "Westinghouse" on-the-wall water cooler, Model WLC-15-GG, 1/4 hp., 120 volt motor, supplying 15 gph. at inlet water temperature of 80 degrees F. and cooled to 50 degrees F. at 90 degrees F. ambient temperature.

(b) Cooler cabinet shall be of heavy sheet steel with "Grey Beige" vinyl covered cabinet. Top shall be highly polished, stainless steel with vandal-proof bubbler guard to meet all standard conditions, cooling chamber to be burst proof, made of brass with heavily tin-plated interior surface.

(c) Insulate all cold water surfaces.

(d) The unit shall have a full 5-year guarantee against defective material or workmanship on hermetically-sealed refrigeration system and other functional parts.

(e) Equal coolers, as manufactured by Oasis or the Halsey W. Taylor Co., may be furnished. Color must conform to the above.

26. TWIN BUBBLER PEDESTAL DRINKING FOUNTAIN

(a) Provide and install Haws Company Model 36DY twin bubbler pedestal drinking fountain or fountains where shown on the plans.

(b) Fountain shall have receptor of cast tenzaloy aluminum, hard anodized to a permanent, abrasion-resistant, muted bronze color, vandal-proof bottom plate.

(c) Bubblers shall be Haws Model "J", satin chrome plated, vandal-proof locked to receptor.

(d) Valves shall be self-closing, satin chrome plated, push-button operated, Haws Model 4 PB with Model 4PR2 automatic stream control regulator, 1-1/4 inch (iron pipe size) waste strainer integral with receptor.

(e) Supply shall be 1 inch as shown on the plans and adapted to fit the 1/2 inch (iron pipe size) concealed screwdriver stop, copper tubing with unions and inlet water strainer with cleanout. Refer to Section 16 above to adapt to faucet outlet.

(f) Pedestal mounting and base shall be of same material as receptor above.

Section 15 - CONTINUED

27. ELECTRIC HOT WATER HEATER

(a) Furnish and install one A. O. Smith Corporation, 120 gallon deluxe Model PEN permaglass electric hot water heater, vertical type, with double upper and lower elements of 5000 watts each, wired for 240 volt, 1 phase, 60 cycles and for simultaneous operation with two single-throw thermostats.

(b) Heater must have magnesium anode rod, glass lined tank, thick blanket fiberglass insulation and over temperature reset protector which automatically cuts off the electrical current if excessive water temperature situations occur. Warranty shall be 10 years in conformance with ASA standards.

(c) Equal electric hot water heaters, as manufactured by Ruud Manufacturing Co., Lochinvar, or Wagoner Corp. may be used at the Contractor's option.

(d) Provide and install as shown on the plans Watts Type No. 40XL self-closing pressure and temperature (ASME Rated - AGA listed) relief valve and Watts No. 288A vacuum relief valve, 1 inch size. Equals by A. W. Cash, McDonnel and Miller, Crane Co., or Mueller Brass Co. will be accepted.

28. WATER PRESSURE REDUCING VALVE

(a) Provide and install one Watts Type No. 223, high performance capacity water pressure reducing valve, 2 inch size factory set for 50 lbs. delivery pressure, or equal by A. W. Cash, McDonnell and Miller, Crane Co., or Mueller Brass Co.

29. WATER PRESSURE RELIEF VALVE

(a) Provide and install one Watts No. 174A series, ASME water pressure relief valve with pressure range 30-160 lbs., factory set at 75 lbs. pressure relief, or equal as manufactured by A. W. Cash, McDonnell & Miller, or Crane Co.

30. THERMOMETERS

(a) Provide and install Trerice Catalog No. B43403 1/2, 9 inch scale case, right side form, industrial thermometer with brass separable socket with scale range of 30 degrees F. to 240 degrees F., marks at 2 degrees and figures at each 10 degree interval, red mercury tubing, 3/4 inch (National pipe thread), or equal as manufactured by Albert A. Weiss & Son, Inc., Palmer Instrument, Inc., United States Gauge, or Marsh Instrument Co.

31. INSULATION

(a) Cover cold water piping with 3/4 inch thick "Fiberglass" insulation with white vapor barrier type cover. Fittings shall be covered with insulating cement and one coat vapor barrier sealer cement canvased to same thickness as adjacent pipe covering. Butt all edges of insulation and seal all joints with vapor barrier sealer cement. Butt joints shall be wrapped with 4 inch wide vapor barrier cover strips and cemented with vapor barrier cement. No insulation is required on above pipes which are underground or buried under floor slabs.

(b) Insulate hot water supply lines with 3/4 inch "Fiberglass" insulation. Fittings shall be covered with insulating cement to same thickness as adjacent pipe covering. Trowel to a smooth finish and apply canvas as specified below.

GENERAL NOTES ~ CONTINUED

Section 15 - CONTINUED

(c) Use 8 ounce canvas jacket on all hot water pipe insulation. All exposed canvas shall be given two coats of tinted sizing such as "Arabol", by the Arabol Manufacturing Co.,"Lagfas", by the Foster Manufacturing Co.,or an approved equal.

(d) Short connections above the floor to individual fixtures need not be insulated.

(e) Same thickness Pittsburgh, Johns-Manville, or Gustin-Bacon glass fiber insulation may be used at the Contractor's option.

(f) See insulation requirements for pipe hangers in Paragraph 13 above.

(g) Domestic Water Pressure Pneumatic Tank: Insulate exposed surfaces of tank with one layer of 3/4 inch thick glass fiber blocks wired on or otherwise secured to the tank. Insulation for manhole shall be assembled and installed in removable sections. Cover insulation on manhole with sheet metal covers. Fill all joints and gaps with insulating cement to same thickness as adjacent insulation. Cover insulation with vapor barrier of 30-30-30 duplex kraft paper adhered to the insulation with vapor barrier sealer cement. All seams shall be lapped at least 3 inches and sealed with vapor barrier sealer cement. Paste on 8 ounce canvas jacket and apply two coats of tinted "Arabol","Lagfas," or an approved equal.

(h) Insulate all parts of roof drains exposed below roof, and horizontal runs of interior storm water drainage system, the same as described above for cold water piping.

(i) No insulation is required on pipes which are underground or buried under floor slab.

(j) Insulation shall not be applied until the general construction has progressed sufficiently to insure against physical or moisture damage to the insulation. All damaged insulation shall be replaced.

32. TESTS

(a) The sanitary building drainage system shall be tested as required by the State of Ohio Plumbing Code.

(b) A water test shall be placed on all water lines. A 125 lb. pressure shall be left on all water lines for 24 hours and no leaks shall appear during that time. If leaks appear, they shall be repaired by tightening the joints or replacing defective materials, but no caulking will be permitted. Tests shall then be repeated.

33. PROTECTION AND CLEANING

(a) After all fixtures have been set, thoroughly clean all fixtures, removing all stickers, rust stains, and other foreign matter and leave every part in acceptable condition, clean and ready for use.

(b) Clean all hangers, rods, supports, etc. Paint with metal protective primer and one coat of finish paint, color Black. Clean all iron work, pipe insulation, etc., in exposed areas as necessary for painting.

Section 16 - ELECTRICAL

1. GENERAL

(a) Where a material or method is described by performance data only, any product or method meeting such requirements may be used. Where more than one brand name is specified, the first named is the product whose dimensions and performance characteristics were used in the design. Other products may be used but with the understanding that if changes to the building are required because of dimensions or characteristics of that product, no additional payment will be allowed.

(b) In most instances, an attempt has been made to mention three manufacturers. However, generally, only one manufacturer's figure number is given. If the Contractor chooses to furnish a product listed, but without figure number, it shall be the contractor's responsibility to furnish an item equivalent in design and quality to that specified by number and the selections shall meet with the Engineer's approval.

(c) Conduit layout is schematic only. Conduit shall be run as shown on the drawings unless structural or other conditions make it impossible to do so. For any such case, the Engineer shall be consulted and any change necessary shall be approved by him.

(d) The electrical work shall include the connection electrically, ready to operate, of all motor driven equipment installed under the "Heating and Ventilating" and "Plumbing" sections of these notes and specifications. This shall include wiring and connections of line voltage from panel boards, etc., to switches, motor starters and motors, and the furnishing and installing of disconnect switches and starters for all motors and equipment requiring same.

(e) All work shall be done in strict accordance with the latest edition of the National Electrical Code and Special Regulations of the State Fire Marshal and the State Department of Workshops and Factories.

(f) All material shall be new and conform with the standards of the Underwriters Laboratories, Inc. wherever such standards have been established and shall fulfill the normal requirements for satisfactory workmanship.

2. INSPECTION

(a) All work shall be inspected by the Electrical Inspection Bureau, Inc. or an approved electrical agency which guarantees its work.

(b) Upon completion of the work the Contractor shall furnish to the Engineer a certificate of inspection and approval from said bureau or agency before final payment on contract will be allowed.

3. SERVICE

(a) Service shall be 1 phase, 3 wire, 60 cycles, 120/240 volts alternating current 3 to 2 wire distribution for lights and motors.

4. SERVICE ENTRANCE

(a) Service entrance shall consist of a 3-1/2 inch galvanized rigid conduit extending from Panel Board to 24 inches below grade, to top of conduit, and then 5 feet out from building foundation. Conduit shall be capped below grade and location marked with marker stone at finished grade, if electrical service is not installed concurrently.

(b) For underground portion of service, furnish and install 4 inches of concrete all around conduit. Concrete shall be 5-1/2 bag mix. Backfill trench to finished grade utilizing 12 inch lifts well compacted.

5. DISTRIBUTION PANEL "P"

(a) Distribution Panel "P" shall be for 1 phase, 3 wire, 120/240 volt service and shall contain a 400 amp. main circuit breaker (J Frame), 400 amp. lugs and spare spaces for the following circuit breakers:

1-200 amp. 2 pole (F Frame)
17- 20 amp. 2 " (E Frame)
6- 20 amp. 1 " (E Frame)

(b) Circuit Breakers shall be thermal magnetic type ambient compensated and shall be connected to buss bars with bolts. Multipole breakers shall be common trip-type and as shown on the plans.

Section 16 - CONTINUED

6. LIGHTING PANEL BOARD

(a) Lighting panel board shall be designed for connection to a 120/240 volt, 1 Phase, 3 wire, solid neutral distribution system. Refer to plans for type of mounting (surface or flush), and size and number of branch circuits required.

(b) Branch circuit breakers shall be single or multipole as indicated. Where multipole breakers are required they shall be common trip type. All branch circuit breakers shall be individually removable and interchangeable. Breakers shall be thermal magnetic type employing quick-break mechanism for manual as well as automatic operation. Breakers shall have non-corroding contacts and shall be encased in mounded bake lite enclosures. Breakers shall be fastened to buss bars by means of screws, bolts or an approved equally effective means other than plug-in contact. Breakers shall be ambient compensated. All breakers through 100 amp. shall be E frame.

(c) Buss bars shall be solid copper construction rated at not greater than 1000 amp. per square inch density. All pressure joints shall be silver plated. A full size neutral connecting bar shall be provided. Furnish lugs for all buss bars.

7. DISTRIBUTION PANEL AND LIGHTING PANEL CABINETS

(a) Cabinets shall provide adequate gutter space on all sides, top and bottom. Box shall be heavy code gauge galvanized steel construction. Front of cabinet shall be designed for flush or surface mounting as shown and shall be provided with flush hinged door, chromium plated bronze flush type cylinder locks, all keys alike. Inside of door shall have a directory frame and card. All cards shall be filled in to indicate the service of each branch circuit. Directory cards must be typed.

(b) Panel Boards shall bear the UL label and meet Federal Specifications W-P-131a as well as specified conditions.

8. PHOTO ELECTRIC CELLS

(a) Photoelectric cells shall be G.E. Cat. No. C402G200 with C403G001 bracket, or equals by Westinghouse or Fisher-Pierce. Mount bracket on sidewall and aim photocell to the north if possible.

(b) Outlets for photo electric cells shall be a flush mounted switch box with Arrow Hart Catalog No. 73181 tel-plate (white). Connect from switch box to photocell bracket with No. 14 SO card. Photocell bracket shall be mounted on side wall in all applications. Equal tel-plates by Hubbell, or Bryant may be used.

9. EXHAUST FANS TO BE FURNISHED

(a) Two fractional horsepower exhaust fans to connect direct to toilet room lighting circuit. Install remote disconnect switch in mechanical equipment Room 103.

10. AEROBIC DIGESTER, WELL PUMP, CONDENSER, FUTURE BOOSTER PUMP AND UTILITIES

(a) For circuit breaker, conduit and wire sizes, see continuation of these items on the plans.

GENERAL NOTES ~ CONTINUED

Section 16 - CONTINUED

11. CONDUIT

(a) Conduit shall be made of rigid standard weight mild steel, hot dipped galvanized or sheradized. Each length shall bear the UL label.

(b) Minimum size conduit shall be 3/4 inch trade size.

(c) Conduit shall be securely supported by one hole pipe clamp hangers, to be approved by the Engineer, and spaced not more than 5 feet apart.

(d) The use of scrap iron or wire for hangers will not be approved.

(e) Bends and offsets shall be avoided where possible. However, when bends are made, an approved hickey or conduit bending machine shall be used.

(f) Conduit deformed or crushed shall not be installed.

(g) Conduit shall be cut square and securely fastened to outlet boxes with approved locknuts and bushings. Care shall be exercised to see that a full number of threads project through to allow the bushing to butt up tight against the ends of the conduit, after which the locknut shall be screwed tight enough to draw the bushing into firm contact with the box. Conduits shall be joined by approved couplings. Where conduits cannot be joined by standard couplings, approved unions shall be used. All couplings and unions shall be mechanically strong and shall make perfect electric grounds between the conduits connected.

(h) Each length of conduit shall be carefully inspected on the inside and all mud, concrete, plaster and other objects shall be entirely removed before the conduit is installed.

(i) Capped bushings shall be used throughout to prevent foreign objects from entering conduit.

(j) All conduits shall be run parallel with the building walls and must be systematically and neatly arranged and supported in a neat and substantial manner by means of pipe hangers. Fittings and outlet boxes on exposed conduits shall be of condulet type.

(k) All joints below grade and in concrete in contact with the earth shall be painted with red lead.

(l) All conduit shall be concealed.

(m) Ends of conduit shall be reamed to remove all burrs.

(n) Where the location of heating and plumbing lines conflict with the location of lines of conduit, the former shall have preference.

(o) All conduit shall be swabbed free of moisture before wire is installed.

(p) Conduits shall be sized in accordance with the National Electric Code to take the number of wires shown or required.

(q) All feeder conduits to main switch, automatic transfer switch, panels, etc., buried in earth below slabs inside building and buried below grade outside building shall be encased all around with 4 inches of concrete as specified in Paragraph 4 above.

12. WIRING SYSTEM

(a) Minimum wire size shall be No. 12 AWG.

(b) Home runs over 100 feet long shall be No. 10 AWG.

(c) The splicing of wires in other than outlet or junction boxes is prohibited.

(d) Where wires are spliced in outlet boxes and where fixture wires are connected to supply and switch wires, all joints shall be carefully made, properly cleaned, and soldered and taped with Scotch No. 33 electrical tape.

(e) Scotchlock pre-insulated spring connectors may be used for fixture connections.

(f) Care shall be exercised in installing wires in conduit so that insulation will not be damaged. Nothing except UL approved wire lubricant shall be used to assist in wire installation.

Section 16 - CONTINUED

(g) At each outlet box leave 12 inches of wire projecting for future connections. Exposed ends of wires shall be taped.

(h) All conduits, in which conductors are not required, shall have fish wires No. 14 or larger to facilitate pulling in future wires.

(i) Furnish cord and plugs of proper size and type and hook-up all equipment.

13. FLEXIBLE STEEL CONDUIT

Flexible steel conduit shall be full weight standard interlocking equal to Federal Specification WW-C-566, minimum size 1/2 inch. Use of flexible conduit shall be limited to making motor connections and/or use as approved by the Engineer.

14. OUTLET BOXES AND FITTINGS

(a) All light receptacles and switch outlet boxes shall be of heavy pressed steel galvanized of a standard make and of a size and shape for the usage and conduit connections.

(b) Outlet boxes for light fixtures shall be 4 inches, square or octagonal, and shall be provided with plaster rings in plastered ceilings and with fixture studs.

(c) Where conduit fittings are specified, same shall be Crouse-Hinds, Appleton, or Adapti Co. fittings, or approved equal.

15. WIRE

(a) All wire shall be Type THW bearing the UL label.

(b) Feeders shall be Type THW.

(c) All wire No. 8 or larger shall be stranded.

(d) All wire shall be brought to the job in new rolls.

16. SWITCHES

(a) All switches shall be flush type tumbler switches with "T" rating.

(b) Single pole switches shall be Hubbell 1221 or equal by Pass and Seymour, or Arrow Hart.

(c) Three or four way switches shall be of same series as single pole switches.

(d) Fused safety type switches shall meet a Federal Specification W-S-8 65-C for normal duty switches.

17. RECEPTACLES

(a) All receptacles shall be flush duplex grounding type, except one in Room 101 which shall be floor type, Pass and Seymour 6200 series, or equal by Hubbell or Arrow Hart.

18. PLATES

(a) All plates for switches and receptacles shall be .06 inch thick metal plates, stainless steel satin finish.

(b) At points where two or more switches are indicated, gang switch plates shall be used.

(c) Where receptacles, telephone and audio outlets are shown together, a gang plate with the proper openings shall be used.

19. HEIGHTS OF OUTLETS

(a) The center of switches shall be 54 inches above the floor and receptacles 18 inches above the floor, except receptacles in toilet rooms.

(b) Height of toilet room receptacles shall be 48 inches to bottom from finished floor.

Section 16 - CONTINUED

20. ELECTRIC LIGHTING FIXTURES

(a) The contractor shall furnish and install everything necessary to insure a complete installation of lighting fixtures for each and every outlet in accordance with the requirements of these notes and specifications and schedule shown below. The material shall be of the very best quality, delivered as needed, carefully fabricated and installed and shall be left in perfect condition. All fixtures shall be manufactured and installed in accordance with the National Electric Code and all fixtures shall bear the UL label. Incandescent fixtures shall be wired with Rockbestos, or Dalfabeston, or approved equal, type AF fixture wire. Standard base sockets shall utilize No. 14 wire, Mogul base sockets shall utilize No. 12 wire.

(b) All fluorescent fixtures shall have CBM, certified by Electrical Testing Laboratory, rated rapid start ballasts with a minimum "A" sound rating or better and shall be a minimum of 95 percent efficient. All ballasts that are not internally fused or protected shall be protected on the line side with a Buss Type GMF slow blow fuse rated in accordance with the manufacturer's recommendations. Ballasts shall be Jefferson Dri-Lok, Advance Solid-Fil or G. E. Bonus Line.

(c) Each fixture shall be tested as it is installed and any grounds or shorts removed. All fixtures shall be left in perfect operating condition.

(d) The Contractor shall furnish and install all lamps as called for in the schedule and shall replace any burned out or broken lamps before final acceptance. Fluorescent lamps shall have a minimum 3000 Lumen rating and shall be standard cool white F 40/CW. Incandescent lamps shall be 120 volt inside frost.

(e) All recessed fixtures shall be furnished with plaster frames.

(f) Furnish any and/or all stems, canopies, hangers and fastening devices necessary to install fixtures.

(g) Fixture Schedule: The style of fixtures shall be as follows:

Style "A" - 16 foot row consisting of one Wakefield THR-218-52 BTSS and one THR 218-52-ET SS

Style "B" - 8 foot row Wakefield PSR - 218 TSS

Style "C" - 4 foot Wakefield fixture PSR-214 SS

Style "D" - McPhilbin Catalog No. 3-13-B-Q

Style "E" - "Habitat" Fig. No. 5110, 8 inch Lumacryl, non-breakable, with 6 inch polished brass stem, weather proof socket and neoprene gaskets.

Style "F" - Art Metal Catalog No. 1-3440AA

Style "G" - Art Metal Catalog No. 9312

Style "H" - Bryant porcelain receptacle, Catalog No. 5228

(h) Equal fixtures by Daybrite, Guth, Holophane, or Miller will be acceptable.

GENERAL NOTES ~ CONTINUED

Section 16 - CONTINUED

21. TELEPHONE SERVICE

(a) Furnish and install two telephone outlets complete with bushed stainless steel covers as shown on plans. Stub 1 inch conduit 24 inches below grade and 5 feet out from building foundation wall. For continuation of telephone service see plan details. Provide permanent identification marker at termination point of telephone conduit outside building wall for easy location of conduit.

Section 17 - HEATING AND VENTILATING

1. GENERAL

(a) Duct layout is schematic only. Exact locations shall be determined by structural and other conditions. This shall not be construed to mean that the design of the system may be changed, but refers only to the location of ducts fitting into the building as constructed and to coordination of ductwork with other phases of the work.

(b) In general, three manufacturers will be named for each item of equipment specified. The layout shown on the drawings is based on a particular make of equipment. Other manufacturers of equipment of equally high quality and capacity may be used, providing such equipment will not require building modifications and is approved by the Engineer.

2. DESCRIPTION OF SYSTEMS

(a) Motorist Services Area system shall consist of forced air with electric blast coils. Dampers and controls provided for 100 percent fresh air with 37.5 percent fresh air minimum at design temperature. Provision is made for addition of "DX" coil for cooling.

(b) Toilets are heated by electric baseboard heaters and storage room is heated by an electric propeller unit heater.

3. AIR HANDLING UNIT

(a) Description: Dunham-Bush Model CC-2000 Comfort Conditioner with centrifugal blower and adjustable V-belt drive sized for 1600 CFM against 3/4 inch ESP with 1750 RPM, 3/4 hp, 240/60/1 motor or units of equally high quality and capacity, manufactured by Trane, Buffalo, American Standard, Carrier, or Worthington, providing space limitations are adequate for installation with required clearances.

(b) Cabinet shall be for horizontal ceiling mounting and shall have interior factory installed insulation, 1 inch permanent filters, removable from bottom, and space for a 4-row "DX" coil.

(c) Unit shall be suspended from roof structural elements by use of angle iron hangers and rubber-in-shear anti-vibration mountings. Provide heat-proof, rot-proof and vermin-proof flexible connections for ductwork.

Section 17 - CONTINUED

4. ELECTRIC BLAST COILS

(a) Electric heating coils shall consist of open coils of highest grade resistance wire insulated by lava insulators in aluminized steel brackets and supported in a heavy gauge aluminized steel frame. Terminal bolts, nuts and washers shall be of corrosion-resistant materials. Heaters shall be constructed so that installation may be accomplished in accordance with the National Electric Code and National Fire Protection Association.

(b) A thermal cut-out shall be furnished to protect each heater against failure. Line terminals shall be clearly marked in accordance with an accompanying wiring diagram. Each heater shall be subjected to a 2000 volt dielectric test. Heaters shall be furnished complete with factory pre-wired terminal strips for line and control connections in the field.

(c) Pre-heat blast coil shall be rated at 12,900 watts, 240 volts, 1 phase. The heater shall be divided into five circuits, each rated 2580 watts. Air flow shall be horizontal.

(d) Reheat blast coil shall be rated at 20,000 watts, 240 volts, 1 phase. The heater shall be divided into eight circuits, each rated 2,500 watts. Air flow shall be horizontal.

(e) Blast coil heaters shall be as manufactured by Indeeco. Heaters of equally high quality and capacity by Chromalox, Federal Pacific, Markel, Fasco, or Electromode may be used providing size limitations are adequate for installation.

5. REGISTERS, GRILLES AND DAMPERS

(a-1) Alternate materials are indicated in Sub-Paragraph (a-2) below.

(a-2) Furnish and install above door in Room 101 a 12 x 32 inch single deflection supply air register with extruded aluminum frame, vertical extruded aluminum adjustable blades, and Allen wrench-operated opposed-blade damper. Register shall be Waterloo Model No. X1V0 with satin finish.

(b) Furnish and install in Room 101 five 3 x 12 inch extruded aluminum return air floor registers with one set fixed zero degree bars, and opposed blade dampers. Return air registers shall be Waterloo Model No. FGO with satin finish.

(c) Furnish and install in soffit where indicated on the plans two 12 x 24 inch fresh air intake grilles with extruded aluminum frames and core of 1/2 x 1/2 x 1/2 inch interlocked aluminum vanes. Fresh air intake grilles shall be Waterloo Model No. GC5.

(d) Furnish and install in ceiling where indicated on the plans two 12 x 16 inch relief air grilles with extruded aluminum frames and core of 1/2 x 1/2 x 1/2 inch interlocked aluminum vanes. Grilles shall be Waterloo Model No. GC5.

(e) Grilles and registers of equally high quality, kind and capacity by Tuttle and Bailey, Titus, or Barber-Coleman may be used.

(f) Motorized dampers used shall be as manufactured by the controls manufacturer. Airolite, Carnes, Barber-Coleman, Honeywell, Johnson Service, or Powers shall be considered equal.

6. DUCTS AND DUCTWORK

(a) All sheet metal ducts and ductwork shown on drawings shall be fabricated from galvanized No. 20 gauge sheets and shall be of substantially air-tight construction. Ductwork with any dimension 18 inches or more shall be cross-broken. Sheet metal ductwork shall comply with Sheet Metal and Air Conditioning Contractors National Association's recommendations for low velocity systems.

(b) All round above-ground ducts shall be prefabricated air duct made entirely from molded high density glass fibers encased in a noncombustible aluminum vapor barrier. Nominal sizes shown on drawings shall be inside diameter. All joints shall be tightly sealed with 2 inch wide pressure sensitive aluminum tape. Ducts shall be installed in accordance with manufacturer's instructions.

(c) Round insulating duct by Gustin-Bacon, Johns-Manville, Owens Corning, or Pittsburgh Plate Glass Company may be used at the Contractor's option.

Section 17 - CONTINUED

(d) Furnish and install above ceiling at each outside door where shown on drawings relief air dampers. Relief air shall empty into space above ceiling and exhaust through existing soffit vents. Damper shall be single blade type with counterbalance adjustable from 0.01 inch to 0.05 inch water column. Provide sheet metal plenum as shown on drawings with 1 inch thick rigid glass fiber insulating material with vapor barrier.

(e) Provide 1 inch thick glass fiber insulation with vapor barrier for all sheet metal ducts shown. Sides and bottom of duct insulation shall be held with mechanical clips. Top shall be held with adhesive.

(f) Insulation by Gustin-Bacon, Johns-Manville, Owens-Corning, or Pittsburgh Plate Glass may be used at the option of the contractor.

(g) Provide and install all flexible connections as required and/or as shown on the plans.

(h) Provide fire dampers where ducts pass through walls as shown on the plans and/or required by code. Fire dampers shall be installed and constructed in accordance with the recommendations of the National Fire Protection Association's Pamphlet No. 90A.

(i) Sheet Metal and Air Conditioning Contractor's National Association approved methods of duct and ductwork hangers and supports shall be permissible with the exception of wire and/or strap hangers.

7. BASEBOARD HEATERS

(a) Furnish and install in Toilet Rooms 102 and 104, where shown on the plans, commercial grade electric baseboard heaters of 1600 watts capacity for use with 240/60/1 service. Heaters shall be mounted on wall with bottom elevation at 4 inches above finished floor and shall be complete with all necessary heating elements, brackets, end closures, splice plates and factory applied, bonderized prime coat finish. Finish coat shall be applied after installation. Color shall be as selected and/or specified by the Engineer. Installation shall be as recommended by the manufacturer.

(b) Removable front panel shall be No. 18 gauge steel with front and top supported every six inches. Heating elements shall be steel sheathed without fins and shall be mounted with terminal end fixed and other end swing-supported to provide for expansion. Elements shall be free from expansion noises and shall not produce 60 cycle hum.

(c) Electric baseboard heaters meeting the above specifications by Federal Pacific, Markel, Fasco, Electromode, or Chromalox may be used.

8. PROPELLOR UNIT HEATER

(a) Furnish and install in Room 105, where shown on the plans, a Chromalox, Model A, Catalog No. LUH-50 electric unit heater (propellor type) of 5000 watts heating capacity 240/60/1. Heater shall deliver 320 CFM Std. air outlet velocity FPM with a 1/85 hp., 1600 RPM, 240/60/1 motor. Furnish with adjustable louvers.

(b) Heater shall be suspended from building structural elements with bottom elevation not less than 78 inches above finished floor level and a minimum of 24 inches from any wall.

(c) Propellor unit heaters of equally high quality and capacity, manufactured by Markel, Fasco, or Electromode may be used.

GENERAL NOTES - CONTINUED

Section 17 - CONTINUED

9. TOILET EXHAUST FANS

(a) Furnish and install, as shown on the plans, in Toilet Rooms 102 and 104, ceiling mounted, vertical outlet, 10-inch exhaust fans with auto damper and ceiling grille. Provide galvanized duct through roof with galvanized flashing, rain cap and birdscreen. Paint with Black weather-resistant paint. Solder-tight construction throughout exhaust ductwork shall be required. Make same weather-proof as required.

(b) Exhaust fans shall be I.L.G. Catalog No. 1594 or fans of equally high quality and capacity by Trade-Wind, Nu Tone, or Miami-Carey.

10. TEMPERATURE CONTROLS

(a) Furnish and install a complete electric temperature control system as specified herein, including wiring, conduit, fittings and devices, as manufactured by Honeywell, Johnson Service, Powers or Barber-Coleman. The system shall be installed, adjusted and placed in operation by an experienced controls installer under the supervision of a full-time field engineer employed by the controls manufacturer.

(b) The air handling unit control system shall function as follows:

(1) Economiser and Pre-Heat Control - The outside air and return air dampers shall be controlled by a remote bulb, dual potentiometer controller with bulb located in fan discharge. The high side potentiometer shall modulate the dampers to maintain 60 degrees F. mixed air temperature. When mixed air temperature drops below 60 degrees F., the low side potentiometer shall control a modulating five stage step controller to sequence the electric pre-heat coil circuits. A minimum position switch shall be set to allow 600 CFM outside air into system when outside air damper is at minimum position. The outside air damper shall close on power failure. All controllers shall have field adjustable control points.

(2) Re-Heat Control - A modulating room thermostat shall control eight stages of a 10-stage modulating step controller which will control eight circuits of electric heating coil in sequence. Throttling range of thermostat shall be adjustable for full heat at 70 degrees F. room temperature.

(3) A sail switch in discharge air duct shall shut off all power to electric heating coils if air flow is lost.

(c) Furnish and install all control devices and control wiring for electric baseboard heaters and electric propeller unit heater. Control devices shall be line voltage thermostats with tamper-proof set points and with ambient thermometers. Thermostats shall be wall mounted at 60 inches above floor.

11. ELECTRICAL WORK

(a) Furnish all motors, starters and electric heating equipment with integral factory wiring. For power wiring, wired junction boxes, safety switches, and disconnects, see Electrical Section of these notes and specifications.

(b) All temperature control wiring, including wire, junction boxes, conduit, fittings, etc., shall be furnished and installed as part of the Controls work. See Paragraph 10 above.

12. OPERATING AND MAINTENANCE INSTRUCTIONS

(a) The Contractor shall provide instruction in the proper operation of the heating and ventilating system and equipment until the State's representatives thoroughly understand the system. The instructional period shall not last over 3 days and the Engineer shall be notified at least 7 days in advance of the date the instruction is to begin.

(b) Provide operating and maintenance instructions under glass and secured to equipment room wall where same can be viewed with relative ease and are accessible.

(c) Provide additional sets of operating and maintenance instructions along with manufacturers' instructions, data sheets, shop drawings, etc., including a system wiring diagram as installed, to the Engineer.

Section 17 - CONTINUED

13. CONDENSING UNIT BASE

(a) Furnish and install an angle iron support, as detailed on the plans, for future installation of a remote air-cooled condensing unit.

Section 18 - ADJOINING AND CONNECTING WORK

1. UNIT BID ITEMS

(a) Payment for sidewalks and driveways outside of the limits of the service walks and exterior aprons shown on the building plans shall be at the unit prices bid for:

608 Concrete walk
452 Plain portland cement concrete pavement

(b) Payment for storm sewers and sanitary drains outside the termination points shown on the building plans shall be at the unit prices bid for:

603 Conduit, Cast Iron SOIL PIPE with Class B Bedding, as per plan

603 Conduit, Type C, 706.08 C.S. WITH COMPRESSION JOINTS, WITH CLASS B BEDDING

(c) Materials and jointing for cast iron conduit shall conform to details indicated for "Sanitary Building Drain" under "Plumbing" section above.

(d) Payment for the water service line outside the termination point shown on the building plans shall be included in other items of work as indicated on the plans.

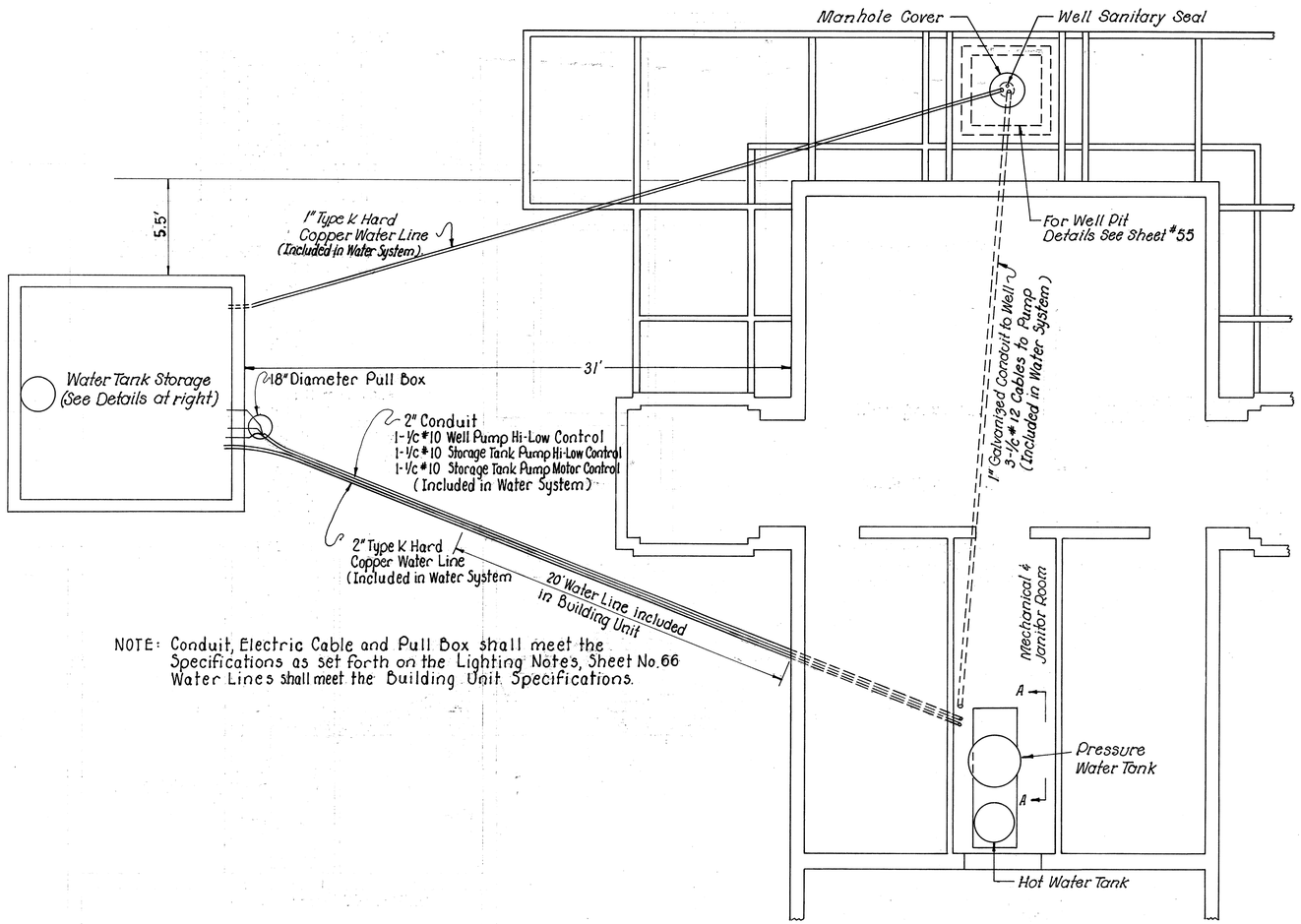
(e) For electrical and telephone service conduit beyond the termination points shown on the building plans, and for required wiring and electric service, see "Lighting Plans."

(f) Payment for commercial fertilizer and agricultural liming, where specified, shall be at the unit price bid for these items.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

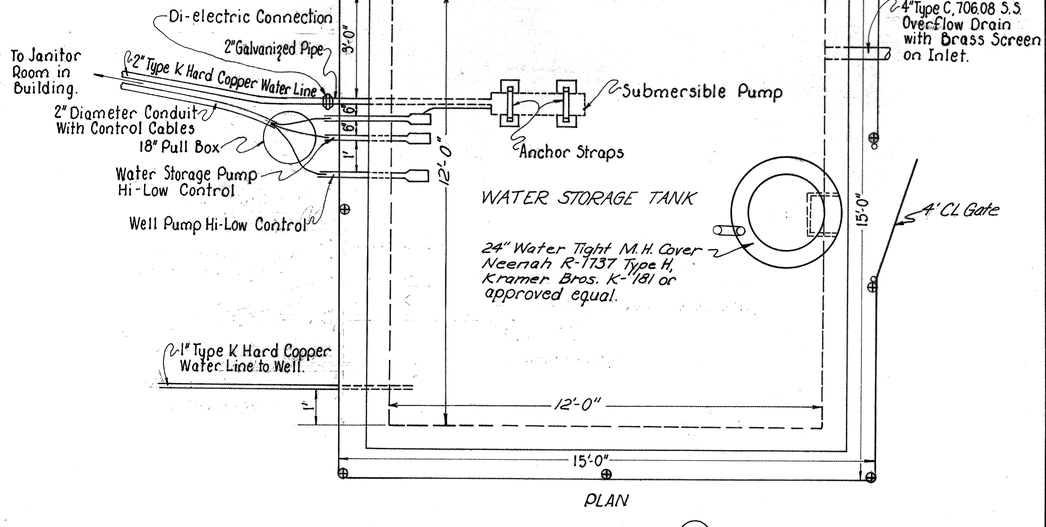
54
68

MED-71-22.55

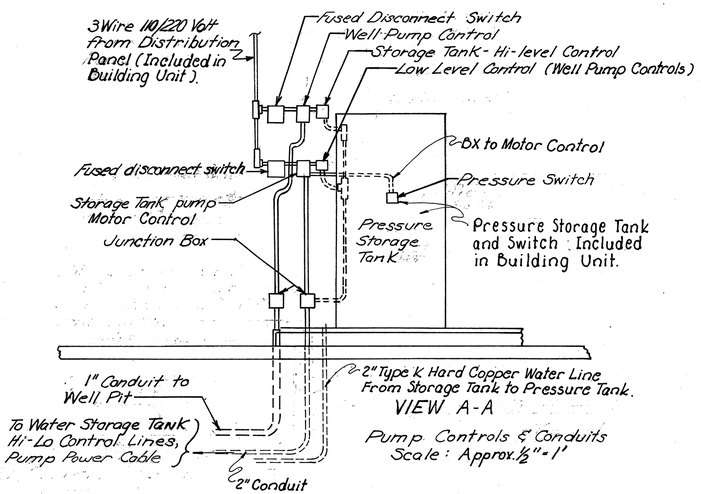


NOTE: Conduit, Electric Cable and Pull Box shall meet the Specifications as set forth on the Lighting Notes, Sheet No. 66
Water Lines shall meet the Building Unit Specifications.

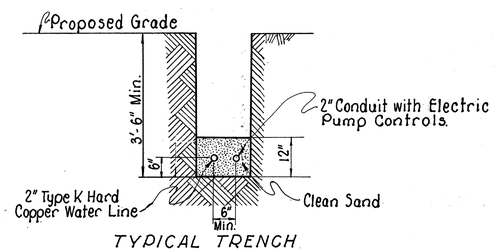
WATER SYSTEM PLAN
Scale: 1" = 4'



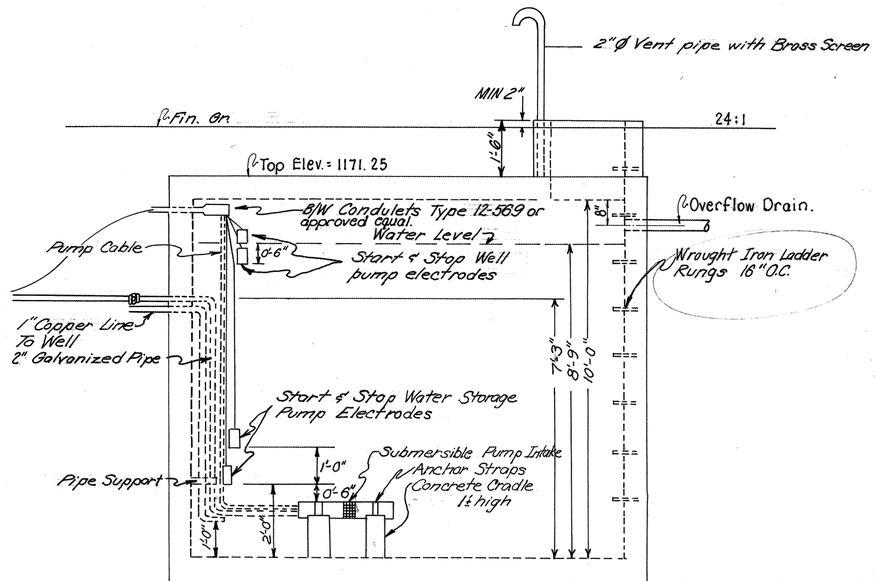
PLAN



VIEW A-A
Pump Controls & Conduits
Scale: Approx. 1/2" = 1'



TYPICAL TRENCH



ELEVATION
WATER STORAGE TANK
For Reinforcing Steel Details See Sheet No. 56

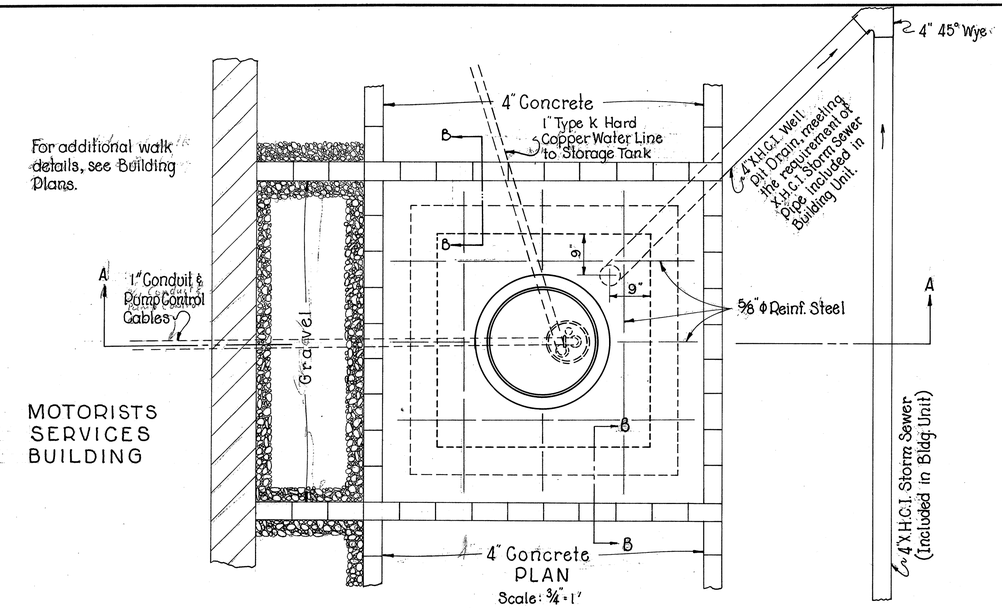
NOTE: Storage Tank shall be orientated according to the Plan at Left.

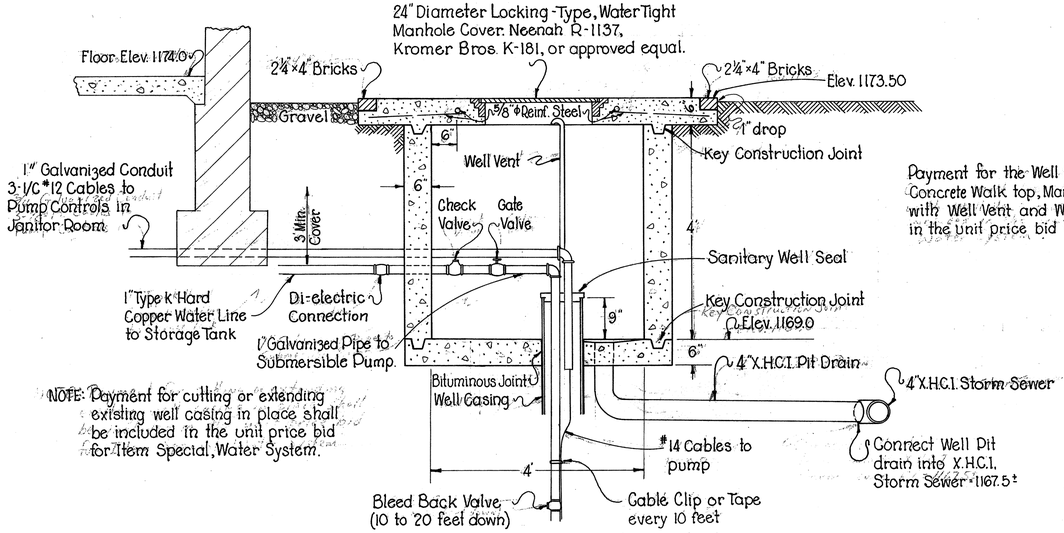
WATER SYSTEM DETAILS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

55
68

MED-71-22.55

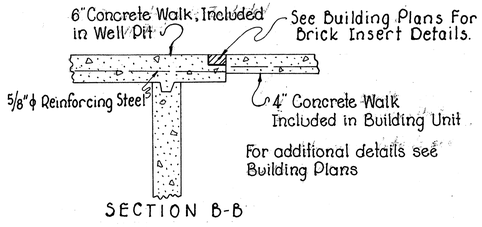




Payment for the Well Pit, including the 6" Reinforced Concrete Walk top, Manhole Cover, Sanitary Well Seal with Well Vent and Well Pit Drain shall be included in the unit price bid for Item Special, Water System.

NOTE: Payment for cutting or extending existing well casing in place shall be included in the unit price bid for Item Special, Water System.

Scale: 3/4" = 1'



WELL PIT DETAILS

WATER SYSTEM SPECIFICATIONS:

SUBMERSIBLE PUMP AND MOTOR ASSEMBLY FOR WELL COMPLETE, SHALL BE MYERS MODEL NO. SD-3A-21, 7 STAGES, 1/3 H.P., 230 VOLTS, SINGLE PHASE; DEMING MODEL NO. 6700 ZALF4, 7 STAGES, 1/3 H.P., 230 VOLTS, SINGLE PHASE WITH SYSTEMS FITTING PACKAGE AND LOW WATER LEVEL SAFETY SWITCH OR APPROVED EQUAL.

SUBMERSIBLE PUMP AND MOTOR ASSEMBLY FOR STORAGE TANK COMPLETE, SHALL BE MYERS MODEL NO. SE-15A-21, 8 STAGES, 1 1/2 H.P., 230 VOLTS, SINGLE PHASE; DEMING MODEL NO. 6708-6XH7, FITTING 7 STAGES, 1 1/2 H.P. 230 VOLTS, SINGLE PHASE WITH SYSTEMS FITTING PACKAGE OR APPROVED EQUAL.

WELL AND STORAGE PUMP LIQUID LEVEL CONTROLS SHALL BE B & W CONTROLS 15-508A TYPE LH RELAY, 15-509A TYPE E-IS ELECTRODES (2 REQUIRED) AND 15-510A TYPE S.W. SUSPENSION WIRE OR APPROVED EQUAL.

ITEM SPECIAL, WATER SYSTEM AS PER PLAN, SHALL INCLUDE ALL THE FOLLOWING:

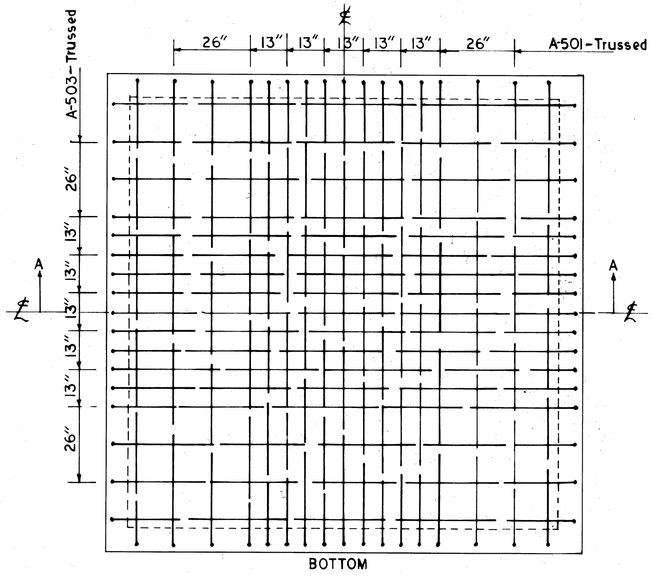
1. WELL PIT WITH ALL APPURTENANCES AS DETAILED AND SPECIFIED.
2. WATER STORAGE TANK WITH ALL APPURTENANCES AS DETAILED AND SPECIFIED.
3. WATER LINE FROM WELL PIT TO WATER STORAGE TANK.
4. CONDUIT WITH WELL PUMP CONTROL CABLES FROM JANITOR ROOM TO WELL.
5. CONDUIT WITH PUMP AND LIQUID LEVEL CONTROL CABLES FROM JANITOR ROOM TO WATER STORAGE TANK.
6. WELL PUMP, WATER STORAGE TANK PUMP, LIQUID LEVEL CONTROLS INCLUDING ALL ELECTRICAL DEVICES, CONDUIT AND WIRING REQUIRED FOR SERVICE AND THE OPERATION OF THE WATER SYSTEM.
7. WATER LINE FROM BUILDING TERMINATION POINT (20 FEET FROM BUILDING WALL) TO WATER STORAGE TANK.

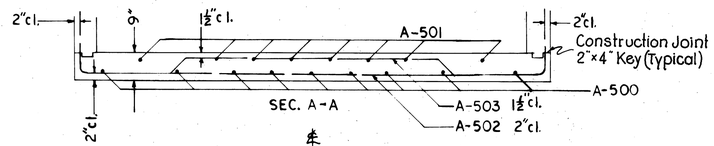
WATER SYSTEM DETAILS

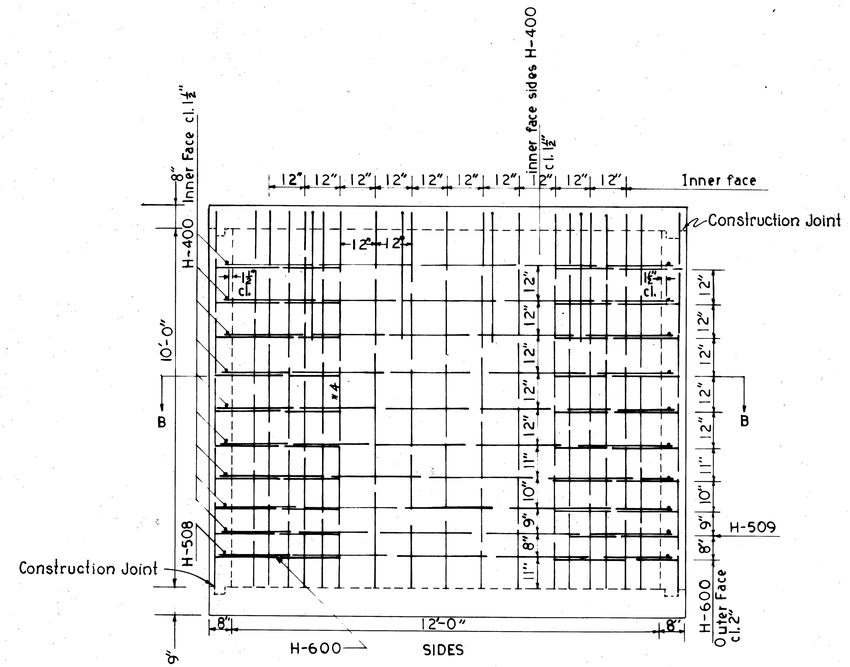
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

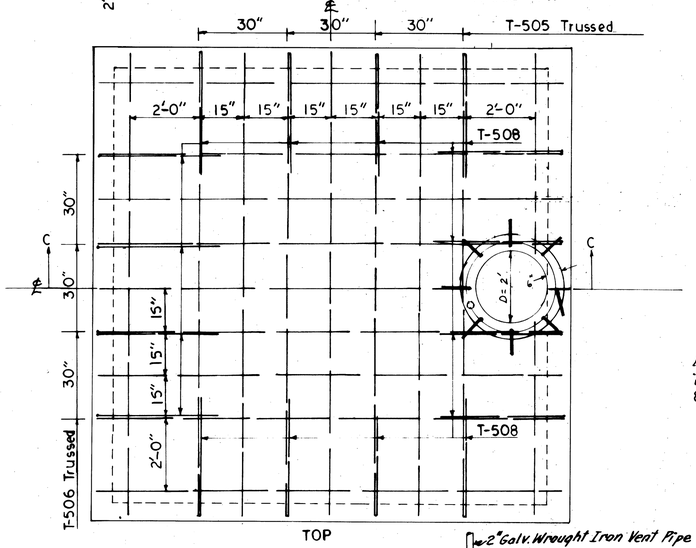
MED-71-22.55

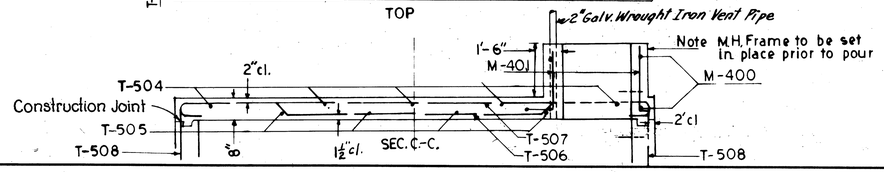
56
68

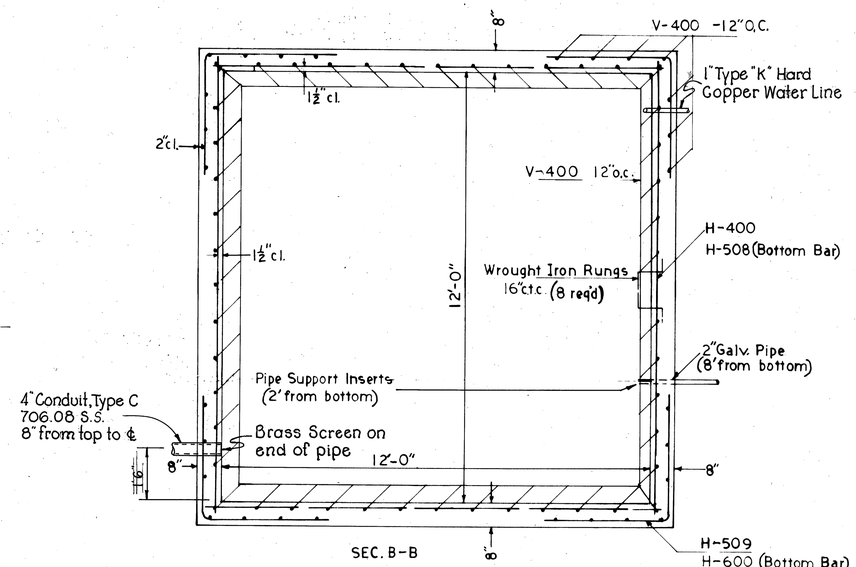








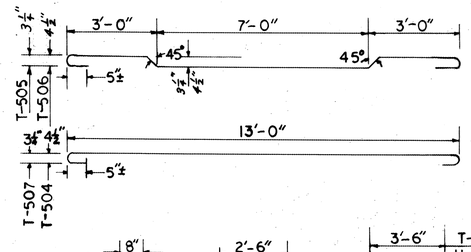


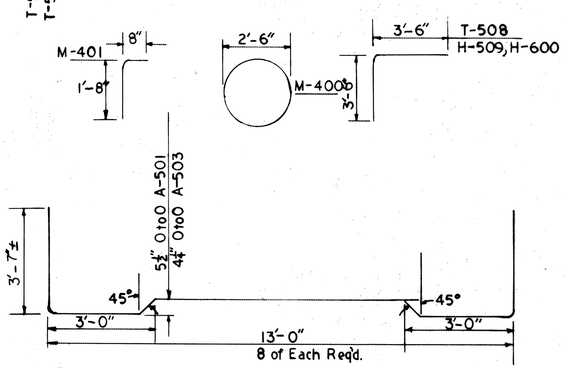


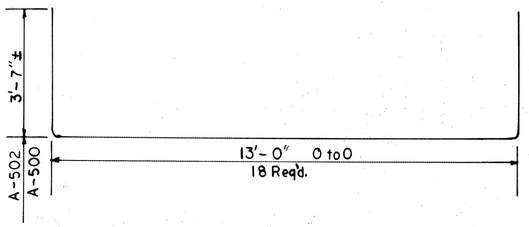
NOTE: Orientation of the Water Storage Tank shall be according to the plan, Sheet #54

STEEL LIST

Mark	Size	Shape	Spacing	No. Reqd.	Length	Weight
A-500	5/8" ℄			9	20'-2"	189.34
A-501				8	20'-6"	171.05
A-502				9	20'-2"	189.34
A-503				8	20-6	171.05
T-504				5	13'-7⅛"	71.03
T-505				4	13'-9⅜"	57.53
T-506				4	13'-11⅛"	58.16
T-507	5/8"			5	13'-6⅜"	70.72
M-400	½"	Bent		3	7'-10"	15.69
M-401	½"	Bent		8	2'-4"	12.47
H-400	½"	Strt		36	12'-8"	304.69
H-508	5/8"	Strt		4	12'-8"	52.86
V-400	½"	Strt		76	10'-6"	53.306
H-509	5/8"	Bent		36	6'-11½"	26.133
H-600	¾"	Bent		4	6'-11½"	41.81
T-508	5/8"	Bent		16	7'-0"	116.82
Reinforcing Steel						2317 lbs.
Concrete Class "C"						22 C.Y.







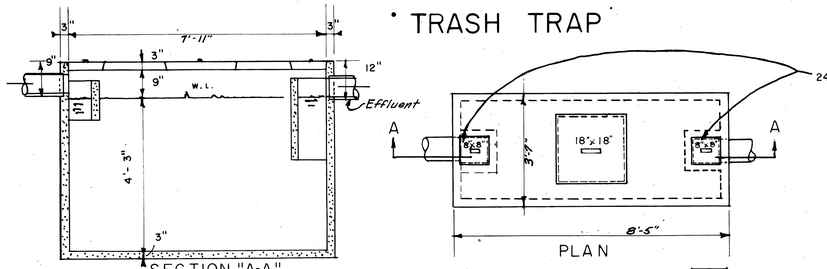
WATER STORAGE TANK RE-STEEL DETAILS

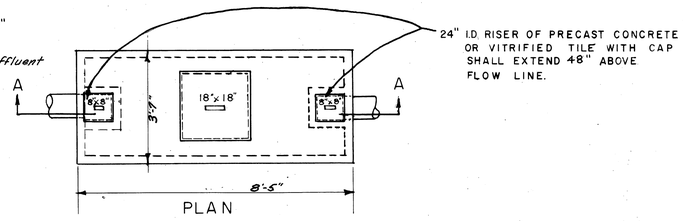
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

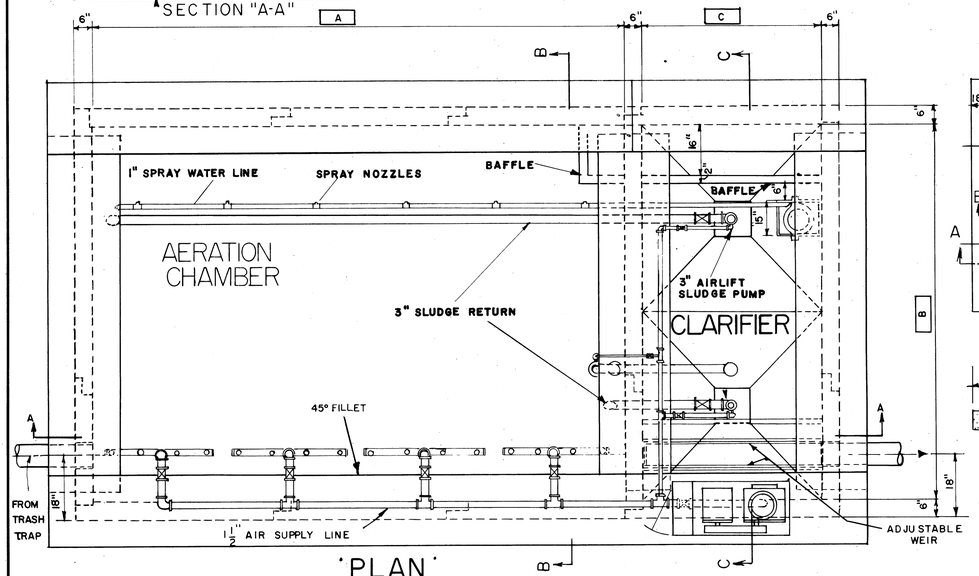
57
68

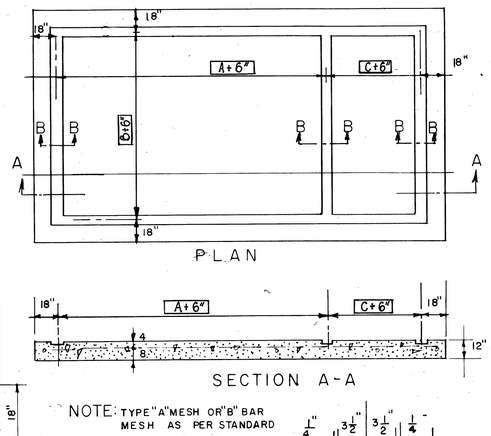
MED-71-22.55

TRASH TRAP

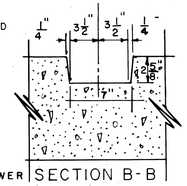




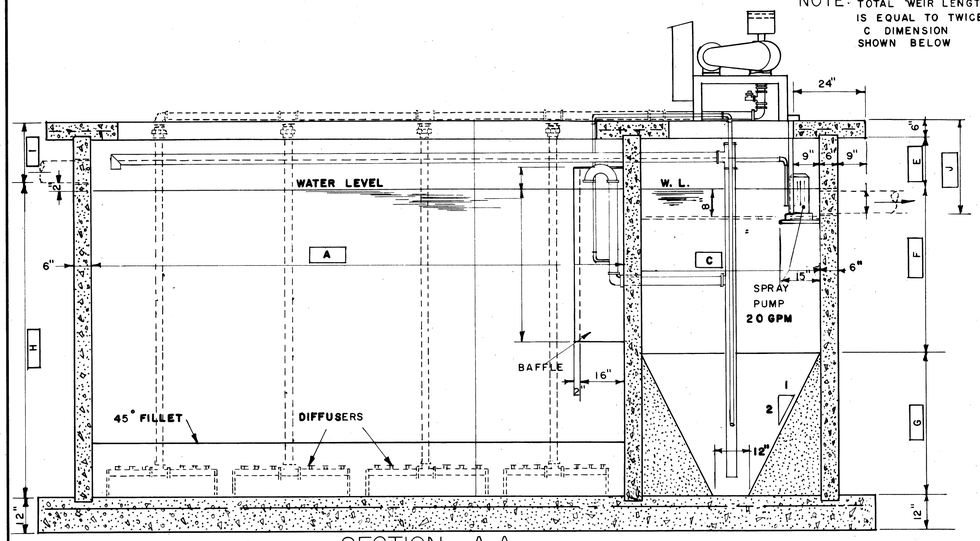


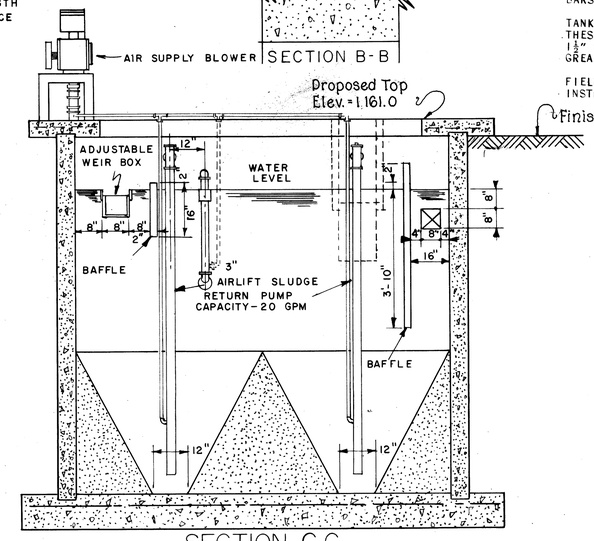


NOTE: TYPE "A" MESH OR "B" BAR MESH AS PER STANDARD DRAWING B-T-71R



NOTE: TOTAL WEIR LENGTH IS EQUAL TO TWICE C DIMENSION SHOWN BELOW





MODEL NO.	DESIGN FLOW GPD	AERATION VOL. GAL.	CLARIFIER VOL. GAL.	BLOWER CFM	BLOWER HP	DIMENSIONS A	B	C	D	E	F	G	H	I	J	K
PCW-70-33-3	7000	7000	1500	40	3	12'-3"	10'-0"	4'-9"	8'-0"	3'-7½"	4'-0"	4'-0"	8'-2"	3'-11½"	4'-9½"	

AER-O-FLO AEROBIC SEWAGE TREATING PLANT

GENERAL: FURNISH AND INSTALL ONE FACTORY BUILT WASTE TREATMENT PLANT, COMPLETE AND READY FOR OPERATION IN ACCORDANCE WITH PLANS AND SPECIFICATIONS STATED HEREIN. THE PLANT SHALL BE AN AER-O-FLO MODEL PCW-70-33-3 AS MANUFACTURED BY CENTRAL STATES SEWAGE SYSTEMS, INC. THE WASTE TREATMENT PLANT SHALL BE OF THE ACTIVATED SLUDGE TYPE, SPECIFICALLY KNOWN AS "AEROBIC DIGESTION," CAPABLE OF TREATING 7000 GALLONS PER DAY DOMESTIC SEWAGE OF 210 PARTS PER MILLION 5 DAY B.O.D. FROM COMPOSITE SAMPLES OF THE AVERAGE DAILY FLOW. THE COMPLETE PLANT SHALL INCLUDE SCREENING, AERATION, AND SECONDARY SEDIMENTATION.

SCREENING: ALL RAW WASTE TRIBUTARY TO THE PLANT SHALL PASS THROUGH A 800 GALLON TRASH TRAP.

AIR SUPPLY: DIFFUSER AIR SHALL BE SUPPLIED BY A POSITIVE DISPLACEMENT BLOWER OF AMPLE SIZE TO PROVIDE A MINIMUM OF 2100 CUBIC FEET OF AIR FOR EACH POUND OF B.O.D. APPLIED, AND A MINIMUM OF 3 CUBIC FEET OF AIR PER LINEAR FOOT OF AERATION TANK LENGTH. ITS RATED CAPACITY SHALL BE BASED UPON THE HOURLY RATE OF B.O.D. APPLICATION AND TANK SIZE TO MAINTAIN CLEANSING VELOCITIES. THE BLOWER SHALL HAVE A 24 HOUR TIME CLOCK TO VARY THE AIR SUPPLY WITH THE DEMAND AND SHALL DELIVER 40 CFM @ 4 PSI.

DIFFUSERS: THERE SHALL BE A MINIMUM OF ONE AER-O-FLO NON-CLOG DIFFUSER FOR EVERY 6" OF AERATION TANK LENGTH. THESE DIFFUSERS SHALL BE PARALLEL TO AND NEAR THE BASE OF THE FILLET AND AT AN ELEVATION WHICH WILL PROVIDE THE OPTIMUM ROLL OF THE TANK CONTENT.

AERATION TANK: THE AERATION TANK SHALL BE OF SUFFICIENT CAPACITY TO PROVIDE A 24 HOUR PERIOD OF RETENTION AND A MINIMUM VOLUME OF 80 CUBIC FEET PER POUND OF B.O.D. THE BOTTOM OF THE TANK SHALL BE FILLETED ON TWO SIDES TO PREVENT SLUDGE ACCUMULATION.

BLOWER, MOTOR DRIVE AND CONTROLS: UNIT SHALL CONSIST OF ONE 3 HP, 1750 RPM, 220 VOLT, SINGLE PHASE, 60 CYCLE, WEATHERPROOF MOTOR, WITH WEATHERPROOF V-BELT DRIVE, MAGNETIC STARTER WITH H.O.A. SELECTOR SWITCH. CONTROLS SHALL BE MOUNTED IN WEATHERPROOF ENCLOSURE EQUIPPED WITH LOCKING DEVICE.

FINAL SETTLING AND SLUDGE RETURN: THE FINAL TANK SHALL BE OF AMPLE SIZE TO PROVIDE A MINIMUM OF FOUR HOURS RETENTION, BASED UPON THE SAME FLOW RATE GOVERNING THE AERATION TANK AND SHALL HAVE PROPER BAFFLING. THE TOTAL SETTLING VOLUME SHALL INCLUDE THE VOLUME OF THE UPPER 1/3 OF THE SLUDGE HOPPER. THE SLOPE OF THE HOPPER WALLS SHALL NOT BE LESS THAN 1.73 VERTICAL TO 1.0 HORIZONTAL. SETTLED SLUDGE SHALL BE RETURNED FROM THE FINAL SETTLING TANK TO THE AERATION CHAMBER BY DUPLICATE AIR LIFT ASSEMBLIES CONSISTING OF TWO AIR LIFT PUMPS ACTUATED BY THE BLOWER. EACH AIR LINE SUPPLYING AIR TO THE SLUDGE PUMP SHALL BE EQUIPPED WITH A NEEDLE VALVE TO VARY THE CAPACITY OF THE AIR LIFT PUMPS. EACH PUMP SHALL HAVE A MINIMUM CAPACITY OF 20 GPM.

SKIMMING DEVICE: AN AIRLIFT SKIMMING DEVICE SHALL BE LOCATED NEAR THE OUTLET WEIR TO RETURN FLOATING MATERIAL TO THE AERATION TANK. THE AIR LINE SUPPLYING AIR TO THE SKIMMING DEVICE SHALL BE EQUIPPED WITH A NEEDLE VALVE TO REGULATE THE AMOUNT OF RETURN.

FROTH CONTROL: A ½ HP, 220 VOLT, SINGLE PHASE, 20 GPM FROTH CONTROL PUMP SHALL BE PROVIDED IN CLARIFIER AND SUFFICIENT SPRAYS ATTACHED TO THE DISCHARGE SIDE OF THE PUMP TO INSURE CONTROL OF FROTHING OR FOAMING IN THE AERATION CHAMBER. THE SPRAY NOZZLES SHALL HAVE A MINIMUM ¼" OPENING TO PREVENT CLOGGING AND SHALL PRODUCE A SHARP SPRAY PATTERN ALONG ENTIRE LENGTH OF AERATION TANK. A HOSE BIB SHALL BE FURNISHED BETWEEN THE DISCHARGE SIDE OF PUMP AND SPRAY NOZZLES SHUT OFF VALVE TO PROVIDE WASH UP WATER IF REQUIRED.

PREFABRICATED CONCRETE TANKS: THE PREFABRICATED CONCRETE TANKS SHALL BE COMPRISED OF 6" MINIMUM THICKNESS REINFORCED CONCRETE SLABS, BOLTED AT THE JOINTS AND KEYED INTO THE POURED CONCRETE FOUNDATION SLAB. JOINTS SHALL BE GASKETED AND SEALED AND BE MINIMUM IN NUMBER TO PROVIDE WATERTIGHT WALLS. STRUCTURAL STABILITY SHALL BE OBTAINED BY USE OF PRECAST, KEYED, WALL CAP BEAMS AND STRUTS AS REQUIRED. THE POURED AND KEYED FOUNDATION SLAB SHALL BE PROVIDED IN THE FIELD. ALL PREFABRICATED CONCRETE SHALL HAVE A 5000 LBS. 28 DAY COMPRESSION STRENGTH AND BE REINFORCED WITH CONTINUOUS SPECIAL WELDED WIRE FABRIC CONSISTING OF NO. 3 BARS @ 6" CTS. LONGITUDINALLY AND NO. 3 BARS @ 12" CTS. TRANSVERSELY. WITH ADDITIONAL NO. 6 BARS WHERE REQUIRED.

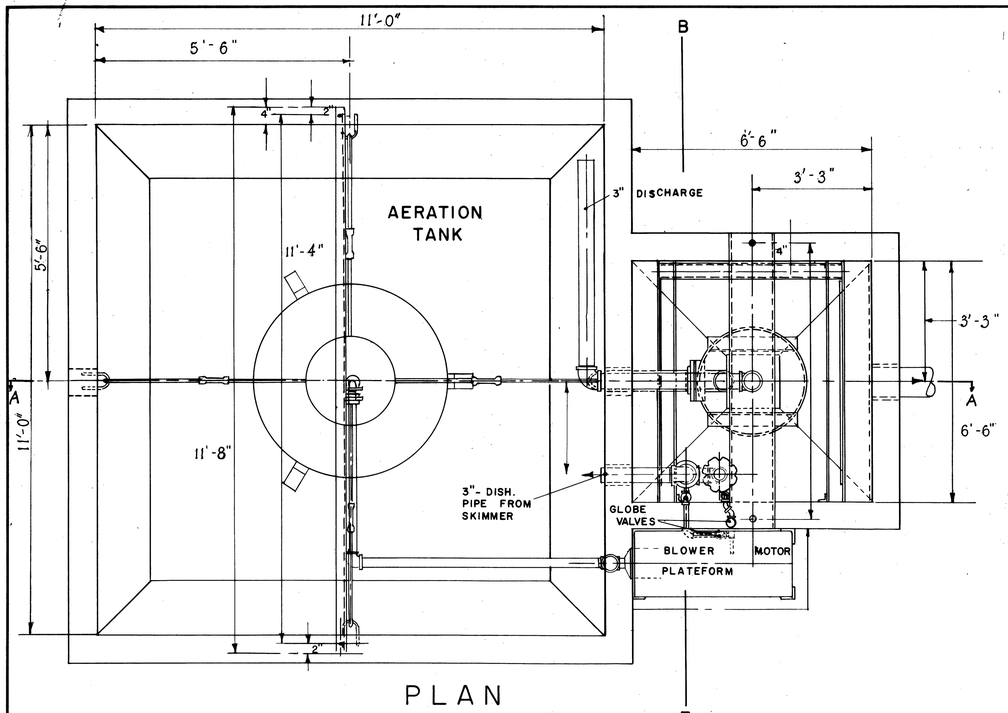
TANK COVER GRATING: EXPANDED METAL GRATING PANELS SHALL BE PROVIDED FOR ALL TANK OPENINGS. THESE PANELS SHALL CONSIST OF 3/4" X NO. 9 EXPANDED METAL GRATING (NOT FLATENED) WELDED TO 1½" X 1½" X 3/16" ANGLE FRAMES. THE UNIT SHALL BE HOT DIP GALVANIZED AFTER MILL SCALE AND GREASE IS REMOVED.

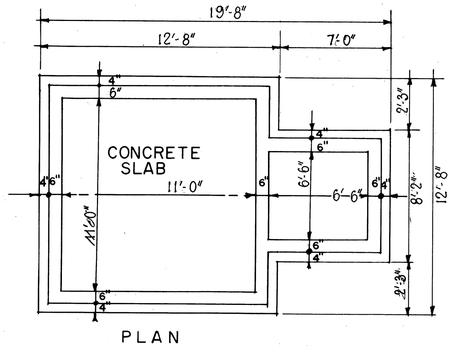
FIELD SERVICE: A FACTORY TRAINED REPRESENTATIVE SHALL BE PROVIDED TO START THE PLANT, INSTRUCT THE OPERATOR, AND MAKE PERIODIC INSPECTIONS FOR A PERIOD OF ONE YEAR.

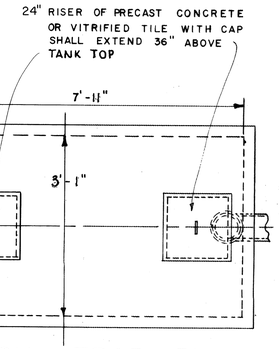
SEWAGE TREATMENT PLANT

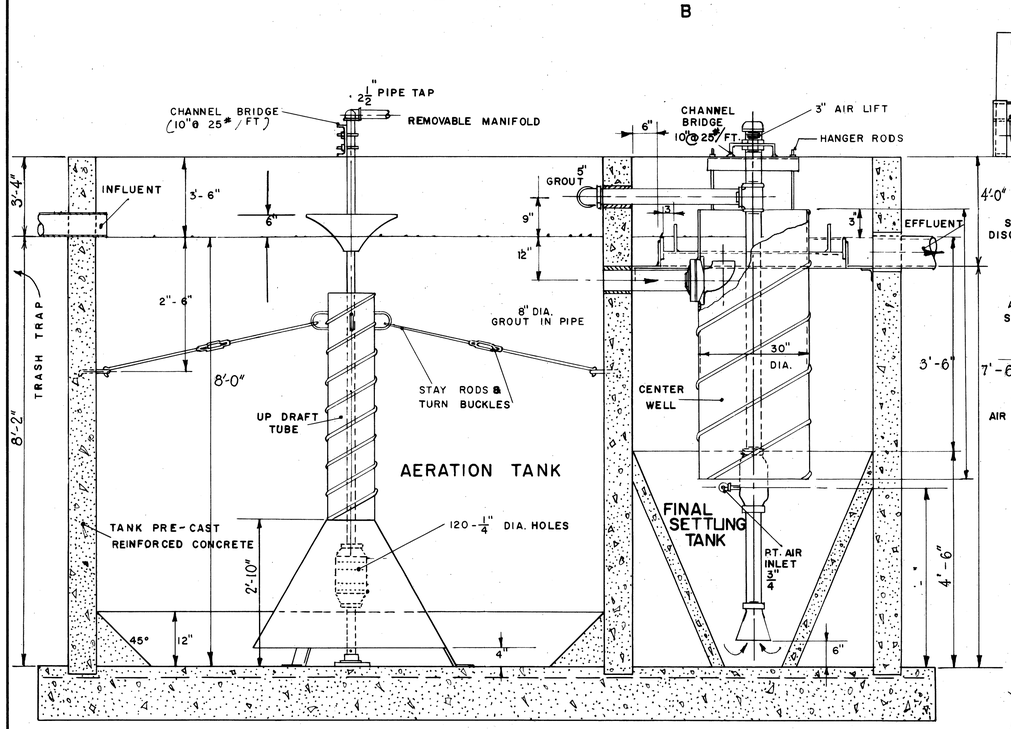
FED. RD. DIVISION	STATE	PROJECT		58
2	OHIO			68

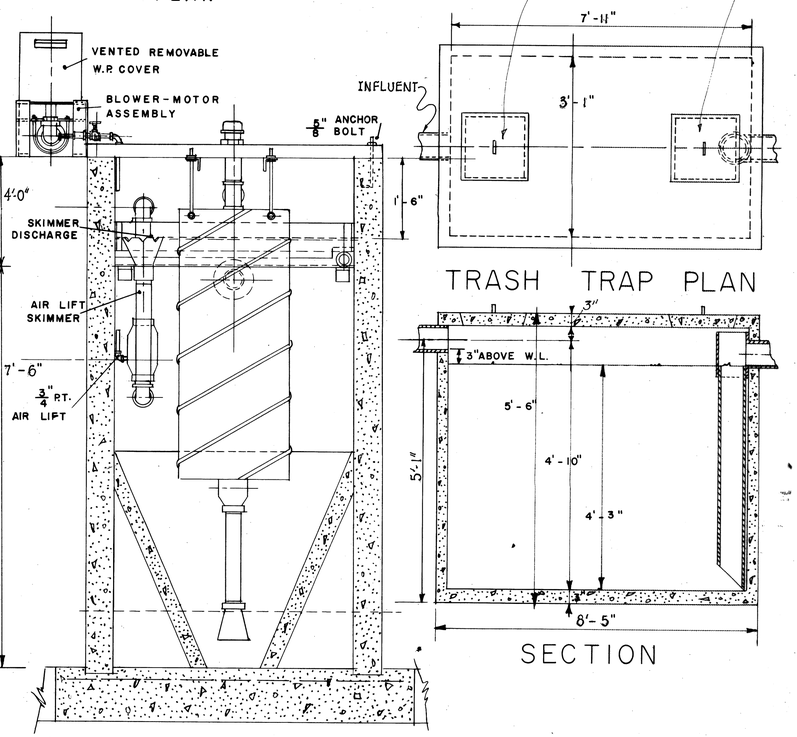
MED-71-22.55

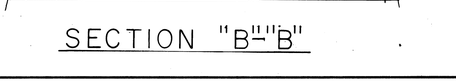












YEO-WAVE AEROBIC SEWAGE TREATING PLANT

GENERAL: FURNISH AND INSTALL ONE FACTORY BUILT WASTE TREATMENT PLANT COMPLETE AND READY FOR OPERATION IN ACCORDANCE WITH PLANS AND SPECIFICATIONS STATED HEREIN. THE PLANT SHALL CONSIST OF YEO-WAVE MODEL A-70 AS MANUFACTURED BY YEOMANS BROTHERS COMPANY, OF MELROSE PARK, ILLINOIS, AND PRE-CAST AERATION, AND SETTLING TANKS AS MANUFACTURED BY ASHLAND VAULT INC., OF ASHLAND, OHIO. THE WASTE TREATMENT PLANT SHALL BE OF THE ACTIVATED SLUDGE TYPE, SPECIFICALLY KNOWN AS "AEROBIC DIGESTION", CAPABLE OF TREATING 7000 GALLONS PER DAY DOMESTIC SEWAGE OF 210 PARTS PER MILLION 5 DAY B.O.D. FROM COMPOSITE SAMPLES OF THE AVERAGE DAILY FLOW. THE COMPLETE PLANT SHALL INCLUDE SCREENING, AERATION, AND SECONDARY SEDIMENTATION.

SCREENING: ALL RAW WASTE TRIBUTARY TO THE PLANT SHALL PASS THROUGH A 800 GALLON TRASH TRAP.

PLANT CONSTRUCTION AND ERECTION: FURNISH AND COMPLETELY INSTALL ON THE REINFORCED CONCRETE BASE POURED BY CONTRACTOR, A PREFABRICATED REINFORCED CONCRETE TANK, CONSISTING OF AN AERATION CHAMBER AND A FINAL SETTLING CHAMBER. TANK TO BE CONSTRUCTED OF PRE-CAST REINFORCED CONCRETE PANELS, SIX INCHES THICK, WITH SEALING GASKET IN HORIZONTAL TONGUE AND GROVE JOINTS, GASKETS AND GALVANIZED BOLTS IN VERTICAL JOINTS, KEYED INTO BASE.

AERATION TANK: THE AERATION TANK SHALL BE OF SUFFICIENT CAPACITY TO PROVIDE A 24 HOUR PERIOD OF RETENTION AND A MINIMUM VOLUME OF 80 CUBIC FEET PER POUND OF B.O.D. THE BOTTOM OF THE TANK SHALL BE FILLETED AROUND THE PERIMETER OF THE WALLS TO PREVENT SLUDGE ACCUMULATION. VERTICAL OF 1.73 TO 1.0 HORIZONTAL MIN.

AERATION EQUIPMENT: SHALL CONSIST OF MODEL A-70 YEO-WAVE SURFACE AERATOR AS MANUFACTURED BY YEOMANS BROTHERS COMPANY, THE SURFACE AERATOR SHALL BE OF THE VERTICAL UPDRAFT TYPE, AND SHALL HAVE SUFFICIENT AERATION CAPACITY TO TURN OVER THE ENTIRE CONTENTS OF THE TANK AT LEAST FOUR TIMES PER HOUR. THE AERATOR SHALL CONSIST OF AN UPDRAFT TUBE, MANIFOLD AND AIR LINE, DEFLECTOR AND ALL NECESSARY APPURTENANCES. THE UPDRAFT TUBE SHALL BE SUPPORTED BY VERTICAL LEGS, RESTING ON THE TANK FLOOR AND ANCHORED WITH ADJUSTABLE GUY RODS AND TURNBUCLES. THE DEFLECTOR SHALL BE CENTERED OVER THE UPDRAFT TUBE, AT A LEVEL IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, TO INSURE MAXIMUM AERATION. IT SHALL BE SUSPENDED FROM A BRIDGE ACROSS THE AERATION TANK.

BLOWER, MOTOR DRIVE AND CONTROLS: UNIT SHALL CONSIST OF ROTARY POSITIVE BLOWER, POWERED BY A 1½ H.P., 1750 R.P.M., 220 VOLT, SINGLE PHASE, 60 CYCLE 40° C RISE MOTOR, WITH V-BELT DRIVE, MAGNETIC STARTER IN NEMA 1 ENCLOSURE. AIR SUPPLY FOR THE PUMPING ACTION OF THE YEO-WAVE SURFACE AERATOR, THE AIR-LIFT SLUDGE PUMP, AND THE AIR-LIFT SKIMMING DEVICE, WILL BE SUPPLIED FROM THIS BLOWER. THE BLOWER UNIT, WITH STARTER SHALL BE MOUNTED ON TANK ABOVE GROUND LEVEL, AND EQUIPPED WITH WEATHER TIGHT COVER.

FINAL SETTLING TANK: THE FINAL SETTLING TANK SHALL BE OF AMPLE SIZE TO PROVIDE FOUR HOURS RETENTION, BASED UPON THE SAME FLOW RATES GOVERNING THE AERATION TANK. IT SHALL BE EQUIPPED WITH A YEOMANS CENTER WELL, TO FACILITATE SEPARATION OF THE SOLIDS FROM THE LIQUID. THE SETTLED SOLIDS TO BE RETURNED TO THE AERATION TANK BY AN AIR-LIFT SLUDGE PUMP. AIR FOR THE AIR-LIFT SLUDGE PUMP WILL BE SUPPLIED BY THE BLOWER, CONTROLLED BY A NEEDLE VALVE. THE YEOMANS CENTER WELL AND AIR-LIFT SLUDGE PUMP SHALL BE SUSPENDED FROM A BRIDGE ACROSS THE FINAL SETTLING CHAMBER.

SKIMMING DEVICE: THE FINAL SETTLING TANK SHALL BE EQUIPPED WITH A MANUALLY CONTROLLED AIR-LIFT SKIMMING DEVICE TO RETURN SOLIDS TO AERATION TANK. THE AIR SUPPLY IS FROM THE BLOWER THROUGH A MANUALLY OPERATED VALVE.

FROTH CONTROL: A FROTH CONTROL PUMP OF 20 GPM CAPACITY SHALL BE PROVIDED IN CLARIFIER AND SUFFICIENT SPRAYS ATTACHED TO THE DISCHARGE SIDE OF THE PUMP TO INSURE CONTROL OF FROTHING OR FOAMING IN THE AERATION CHAMBERS. THE SPRAY NOZZLE SHALL HAVE MINIMUM OPENING OF ¼" TO PREVENT CLOGGING AND SHALL PRODUCE A SHARP SPRAY PATTERN ALONG ENTIRE LENGTH OF AERATION TANK. A HOSE BID SHALL BE FURNISHED BETWEEN THE DISCHARGE SIDE OF PUMP AND SPRAY NOZZLES SHUT OFF VALVE TO PROVIDE WASH UP WATER IF REQUIRED.

TANK COVER GRATING: EXPANDED METAL GRATING PANELS SHALL BE PROVIDED FOR ALL TANK OPENINGS. THESE PANELS SHALL CONSIST OF 3/4" X NUMBER 9 EXPANDED METAL GRATING (NOT FLATENED), WELDED TO 1½" X 1½" x 3/16" ANGLE IRON-FRAMES. THE UNIT SHALL BE HOT DIP GALVANIZED AFTER MILL SCALE AND GREASE IS REMOVED.

FIELD SERVICE: A FACTORY TRAINED REPRESENTATIVE SHALL BE PROVIDED TO START THE PLANT, INSTRUCT THE OPERATOR, AND MAKE PERIODIC INSPECTIONS FOR A PERIOD OF ONE YEAR.

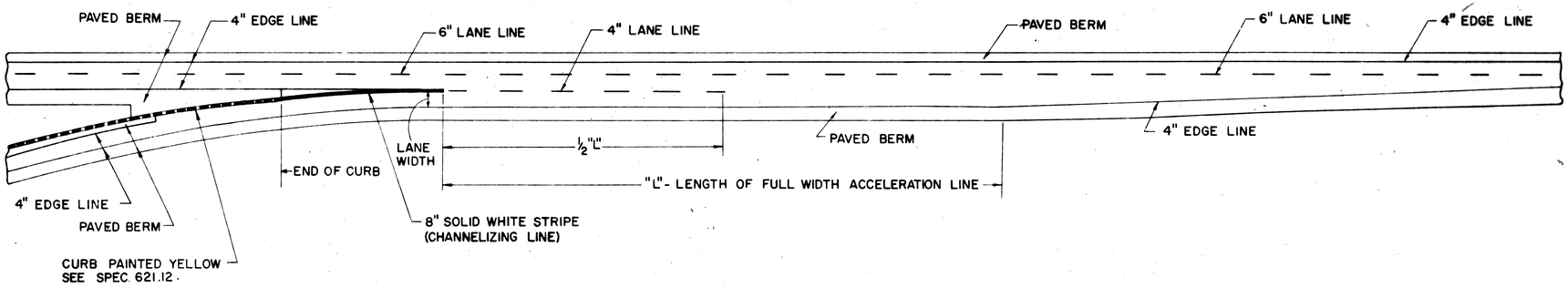
SEWAGE TREATMENT PLANT

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

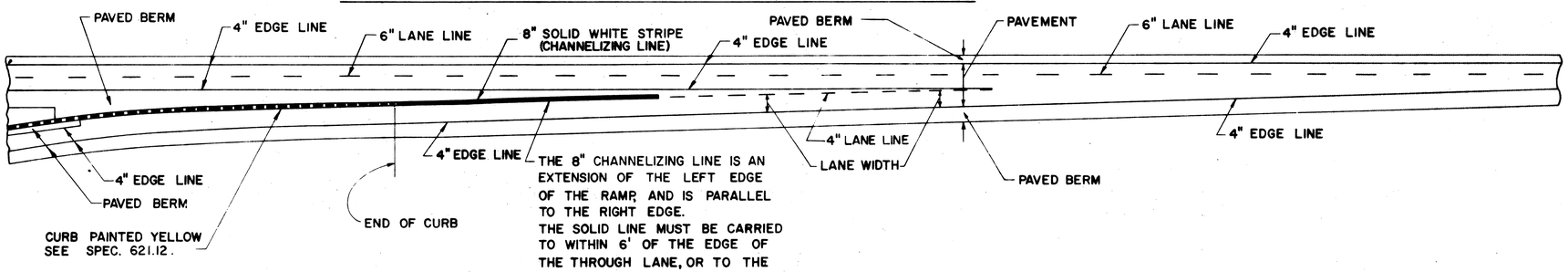
59
68

MEO-71-22.55

ENTRANCE TERMINAL - PARALLEL ACCELERATION LANE

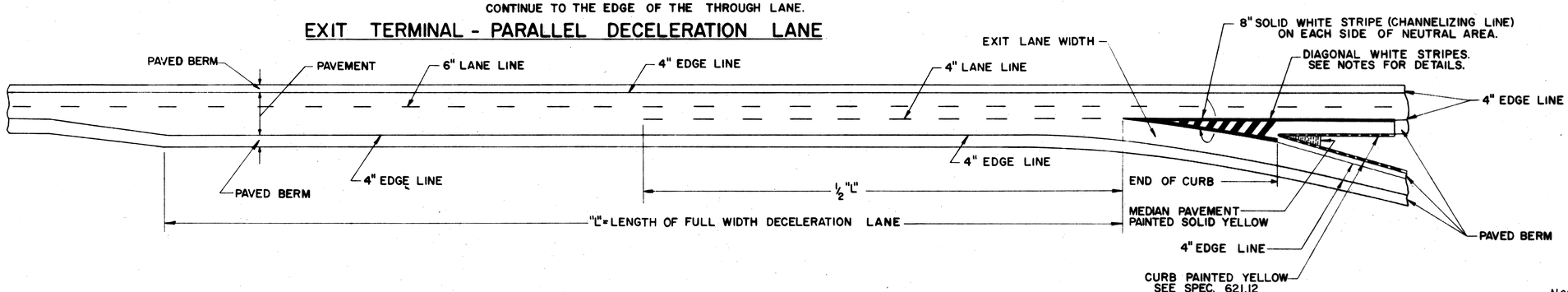


ENTRANCE TERMINAL - TAPERED ACCELERATION LANE

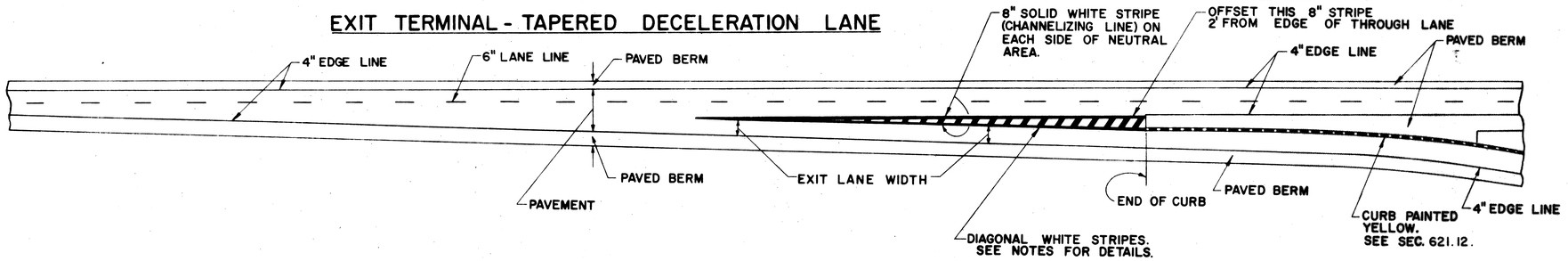


THE 8" CHANNELIZING LINE IS AN EXTENSION OF THE LEFT EDGE OF THE RAMP, AND IS PARALLEL TO THE RIGHT EDGE. THE SOLID LINE MUST BE CARRIED TO WITHIN 6' OF THE EDGE OF THE THROUGH LANE, OR TO THE END OF THE RAMP CURVE IF CLOSER. THE 4" DASHED LINE SHOULD CONTINUE TO THE EDGE OF THE THROUGH LANE.

EXIT TERMINAL - PARALLEL DECELERATION LANE



EXIT TERMINAL - TAPERED DECELERATION LANE



NOTES

EDGE LINES SHALL BE PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO ITEM No. 621 AND DEFINED IN SECTION 621.06.

LANE LINES SHALL BE PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO ITEM No. 621 AND DEFINED IN SECTION 621.07.

CHANNELIZING LINES SHALL BE CONTINUOUS WHITE BEADED STRIPES 8" IN WIDTH PLACED IN THE LOCATIONS AS SHOWN TO CONFORM TO ITEM No. 621 AND DEFINED IN SECTION 621.09.

DIAGONAL STRIPES IN EXIT RAMP MARKINGS SHALL BE 2' WIDE WHITE BEADED STRIPES SET AT A 45° ANGLE TO THE CENTER LINE OF THE THROUGH PAVEMENT AND SLANTED IN THE DIRECTION OF THE FLOW OF TRAFFIC ON SAID PAVEMENT. SPACE BETWEEN THE 2' DIAGONAL STRIPES SHALL BE 6' AS MEASURED PARALLEL TO THE CENTER LINE OF THE THROUGH PAVEMENT. PAINT ON THE DIAGONAL STRIPES SHALL BE APPLIED AT THE RATE OF ONE GALLON TO EACH 100 SQUARE FEET AND GLASS BEADS SHALL BE APPLIED AT THE RATE OF SIX POUNDS PER GALLON OF PAINT. DIAGONAL WHITE STRIPES SHALL BE PLACED BETWEEN THE TWO 8" WHITE CHANNELIZING LINES AT EXIT RAMPS AS SHOWN TO CONFORM TO ITEM No. 621 AND DEFINED IN SECTION 621.11.

NOTE: See Sheet #7 For Pavement Marking Quantities.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

PAVEMENT MARKING	621	DATE 7-17-61 4-6-62 5-24-65

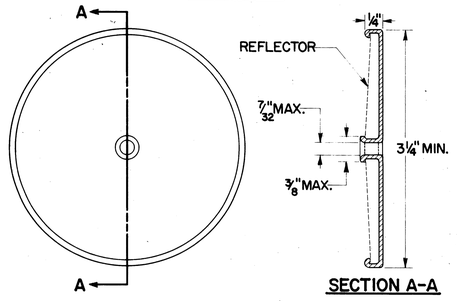
APPROVED Robert E. Lowder
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

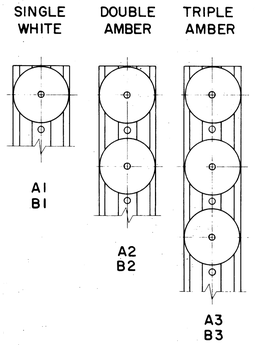
60
68

MED-71-22.55

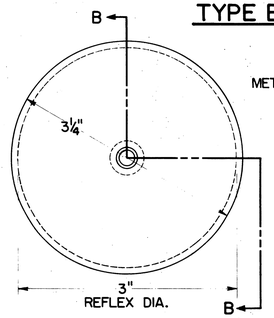
TYPE A

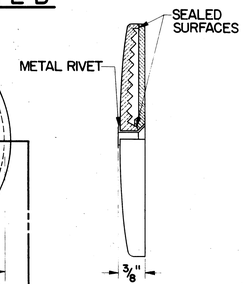


SECTION A-A



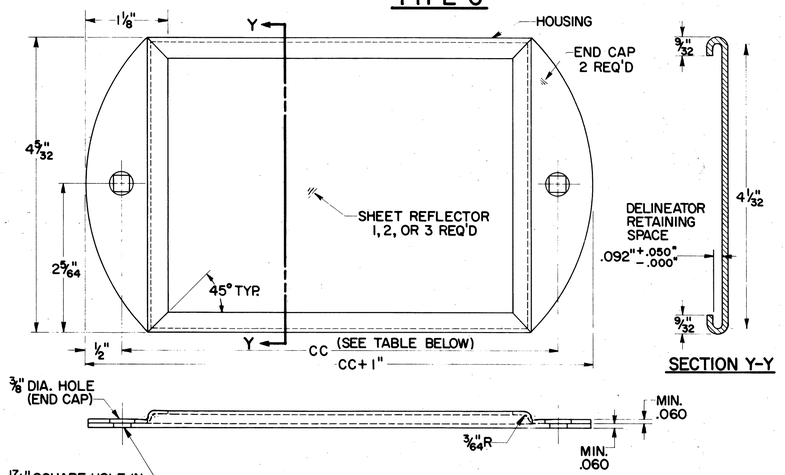
TYPE B





SECTION B-B

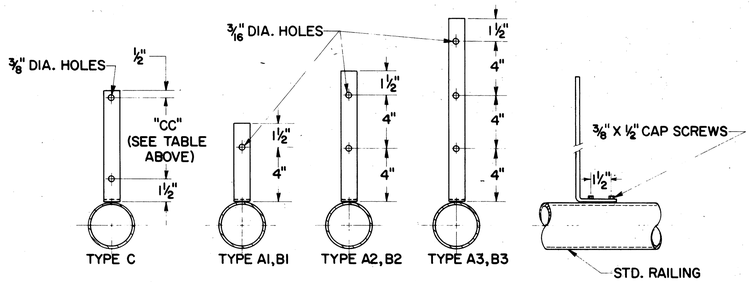
TYPE C



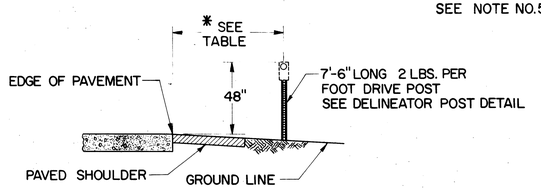
SECTION Y-Y

TYPE	DIM. CC
C1-SINGLE WHITE	6"
C2-DOUBLE AMBER	11"
C3-TRIPLE AMBER	16"

ALL BRACKETS 1/4" X 1 1/4" STAINLESS STEEL



BRIDGE RAIL BRACKET

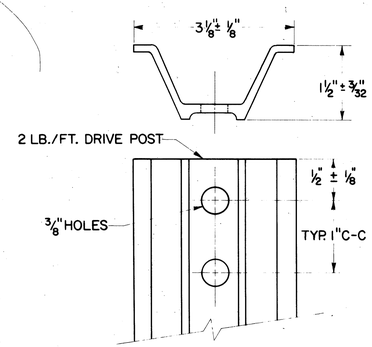


LATERAL PLACEMENT OF DELINEATORS

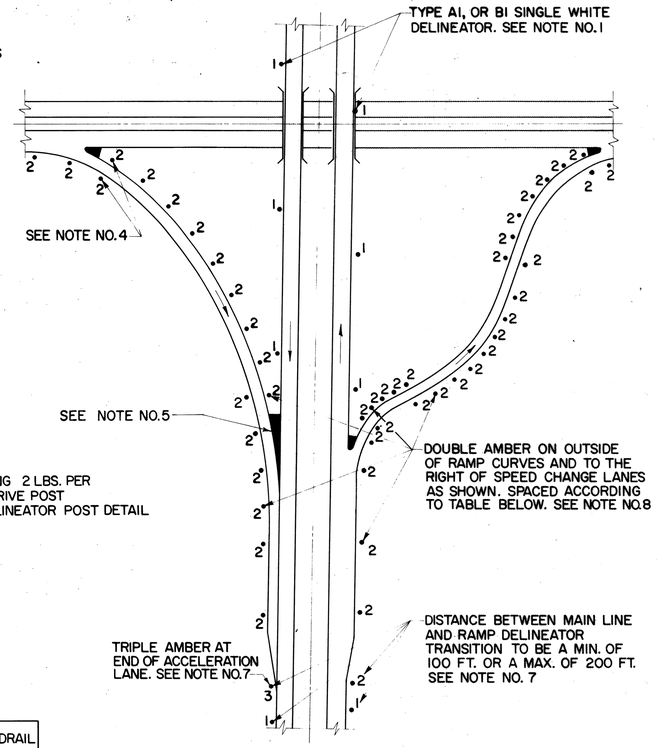
* TABLE

TYPE DELINEATOR	NO GUARDRAIL	GUARDRAIL
SINGLE WHITE	12'-6"	6" OUTSIDE
DOUBLE AMBER RIGHT SIDE	** 8'-6"	6" OUTSIDE
DOUBLE AMBER LEFT SIDE	4'-6"	6" OUTSIDE
TRIPLE AMBER	12'-6"	6" OUTSIDE

** THIS DIMENSION SHALL VARY ON SPEED CHANGE LANES TO MAINTAIN MINIMUM DISTANCE OF 2'-6" FROM EDGE OF PAVED SHOULDER.



DELINEATOR POST



TYPICAL DELINEATOR PLACEMENT

NOTES

1. TYPE A1 OR B1 DELINEATORS ON THE RIGHT OF THE THROUGH ROADWAY ARE TO BE SPACED AT 200 FT. INTERVALS THROUGHOUT, REGARDLESS OF CURVES, BEGINNING AT STA. +00, +25, +50, OR + 75.
2. DELINEATORS SHALL BE FURNISHED AND ERECTED IN ACCORDANCE WITH ITEM NO. 620, (5-1-65).
3. PAYMENT FOR SUPPORTS (DRIVEPOST OR BRACKET) SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH FOR "ITEM 620 DELINEATORS".
4. WHEN CROSSING FROM LEFT TO RIGHT OR FROM RIGHT TO LEFT ON THE RAMPS THE DELINEATORS AT THE POINT OF CROSSOVER ARE TO BE AT THE SAME STATION ON EACH SIDE.
5. NO DELINEATORS ARE TO BE PLACED IN PAVED BERM
6. WHEN RADII OF CURVE ON RAMPS REQUIRE 100' SPACING THE DELINEATORS SHALL BE PLACED ON THE RIGHT IN RELATION TO THE FLOW OF TRAFFIC.
7. RAMP DELINEATOR AT END OF ACCELERATION & BEGINNING OF DECELERATION LANES TO BE A MAXIMUM OF 5' FROM POINT OF TANGENCY AT MAIN LINE.
8. ALL RAMP DELINEATORS SHALL BE PLACED TO THE NEAREST 5' INCREMENTS, SUCH AS +05, +10, +15, +20 AND SO ON.

DELINEATOR SPACING ON RAMP HORIZONTAL CURVES

RADII, FT. FROM	RADII, FT. TO	SPACING ON CURVE	* TRANSITION SPACING	
TANGENT	1,801	100'	100'	100'
1,800	1,401	80'	100'	100'
1,400	1,001	70'	100'	100'
1,000	751	60'	100'	100'
750	551	50'	80'	100'
550	326	40'	70'	100'
325	———	30'	60'	100'

* SUCH AS 40' TO 70' TO 100' OR 100' TO 80' TO 50' OR ANY OTHER COMBINATION SHOWN ABOVE.

NOTE: See Sheet No.7 for Locations and Spacing of Ramp Delineators.

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

DELINEATOR DETAILS

620

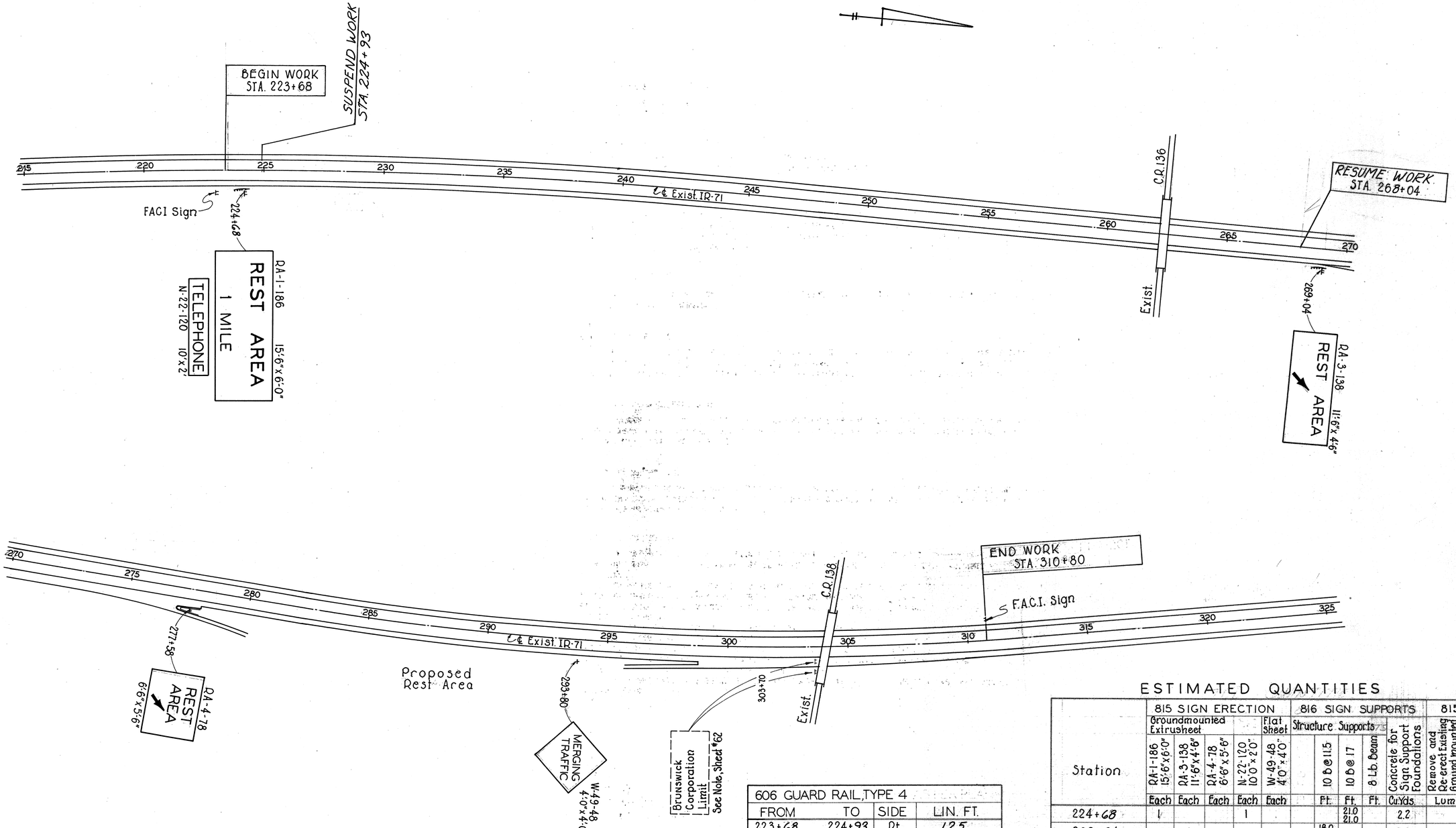
DATE
9-25-62
5-24-65

APPROVED Robert A. Lomax
ENGINEER OF TRAFFIC

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

61
68

MED-71-22.55



NOTE: All Signs on this Project will be Furnished by *others. See note on sheet No. 62.*

606 GUARD RAIL, TYPE 4			
FROM	TO	SIDE	LIN. FT.
223+68	224+93	Rt.	125
268+04	269+29	Rt.	125
	Total		250

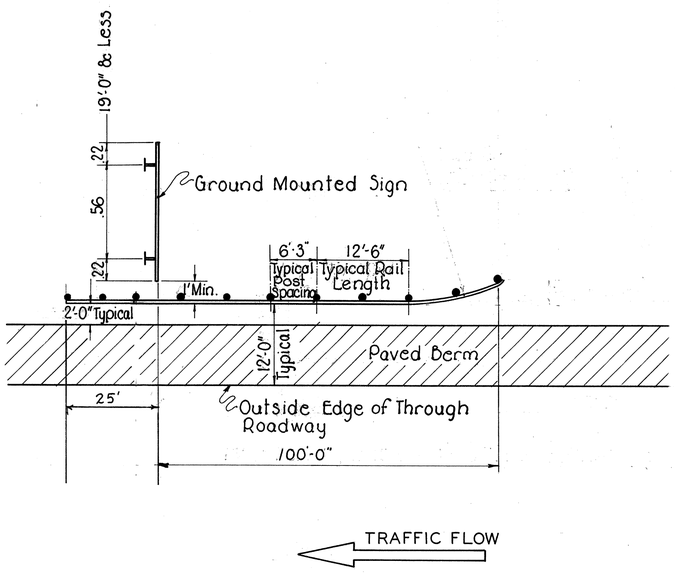
NOTE: Quantities Carried to General Summary, Sheet No. 8.

SCALE: 1"=200'

ESTIMATED QUANTITIES

Station	815 SIGN ERECTION					816 SIGN SUPPORTS				815
	Groundmounted Extrusheet				Flat Sheet	Structure Supports				
	RA-1-186 15'-6"x 6'-0"	RA-3-138 11'-6"x 4'-6"	RA-4-78 6'-6"x 5'-6"	N-22-120 10'-0"x 2'-0"	W-49-48 4'-0"x 4'-0"	10 B @ 11.5	10 B @ 17	8 Lb. Beam	Concrete for Sign Support Foundations	Remove and Re-erect Existing Ground mounted Sign
	Each	Each	Each	Each	Each	Ft.	Ft.	Ft.	Cu Yds.	Lump
224+68	1			1			21.0 21.0		2.2	
269+04		1				18.0 19.0			1.9	
277+58			1					16.5 16.5	0.2	
293+80					1			17.0	0.1	
303+70										Lump
Totals	1	1	1	1	1	37	42	50	4.4	Lump
Area-Sq.Ft.	93	52	36	20	16					
Type	Groundmounted Extrusheet				Flat Sheet					
Type Total-Sq.Ft.	201				16					

TRAFFIC SIGNING PLAN



DETAIL OF GUARD RAIL PROTECTION FOR GROUND MOUNTED SIGNS

See Sh. No. 6A for additional details

TRAFFIC SIGNING NOTES

SIGN SUPPORT SYMBOLS:

SIGN ON ONE SUPPORT T
SIGN ON TWO SUPPORTS TT

IDENTIFICATION OF TRAFFIC SIGNS:

IDENTIFICATION OF ALL SIGNS IS BY CODE NUMBER. NUMBERS REFER TO THE SIGN DESIGN BEARING THE SAME NUMBER.

ORIENTATION OF SIGN FACES:

SIGNS SHALL BE ERECTED SO THAT THE FACE OF THE SIGN IS VERTICAL AND AT A RIGHT ANGLE TO THE CENTER OF THE LANE WHICH THE SIGN SERVES EXCEPT WHERE OTHERWISE NOTED. WHERE LANES DIVIDE AND ON SHARP HORIZONTAL CURVES, SIGN FACES SHALL BE PLACED PERPENDICULAR TO THE TANGENT POINT OF THE CURVE AT THE STATION LOCATION, SO AS TO BE MOST EFFECTIVE BOTH DAY AND NIGHT.

DIMENSIONS:

DIMENSIONS OF SIGNS ARE INDICATED ON THE PLANS WITH HORIZONTAL WIDTH DIMENSION SHOWN FIRST, THEN THE VERTICAL DIMENSION.

GALVANIZED SUPPORTS:

THE STRUCTURAL STEEL BEAM SUPPORTS INCLUDING THE 8# BEAM SHALL BE GALVANIZED (AFTER PUNCHING) IN ACCORDANCE WITH ASTM A-123. ALL BOLTS, NUTS AND WASHERS, BOTH PLAIN AND LOCK, SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-123, EXCEPT WHERE ALUMINUM OR STAINLESS STEEL IS REQUIRED.

STRUCTURAL SIGN SUPPORT QUANTITIES:

QUANTITIES FOR SS-816 STRUCTURAL BEAM SUPPORTS APPEARING IN THE SUMMARY TABLES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT SUPPORT LENGTHS PRIOR TO FABRICATION AND GALVANIZING OF SUPPORTS.

CONCRETE FOUNDATIONS:

PAYMENT FOR SS-816, CONCRETE FOUNDATIONS SHALL BE PER CUBIC YARD BASED ON PLAN DIMENSIONS OR DIMENSIONS AS MODIFIED BY THE ENGINEER. FOUNDATIONS SHALL BE CONSTRUCTED IN THE MANNER CALLED FOR UNDER SS-816, CONCRETE SHALL BE CLASS C.

TRAFFIC SIGN ERECTION:

THE CONTRACTOR SHALL ERECT SIGN PANELS FURNISHED BY OTHERS AS NOTED ON THE TRAFFIC SIGNING PLAN, SHEET NO. 61 THE PANELS SHALL BE MOUNTED ON THE BRACKETS OR BEAM SUPPORTS PROVIDED IN THE PLANS.

A SCHEDULE FOR SIGN ERECTION SHALL BE SUBMITTED TO THE DIVISION TRAFFIC ENGINEER AND THE BUREAU OF TRAFFIC, 450 EAST TOWN STREET, COLUMBUS, OHIO 43216, 60 CALENDAR DAYS PRIOR TO THE START OF ANY SCHEDULED ERECTION WORK. THE SCHEDULE SHALL INCLUDE PROPOSED DATES, TIME, SIGN NUMBERS AND DELIVERY POINT.

THE PRICE BID PER SQUARE FOOT FOR "SS-815 SIGN ERECTION BY TYPE", SHALL INCLUDE ALL NECESSARY EQUIPMENT, LABOR, AND TOOLS TO ERECT THE SIGNS. ALL SIGN MATERIAL AND ACCESSORIES WILL BE FURNISHED AND TRANSPORTED TO A DESIGNATED DELIVERY POINT, ON OR NEAR THE PROJECT, BY OTHERS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE HANDLING AND STORAGE OF THE SIGN PANELS AND ACCESSORIES FROM THE TIME OF ARRIVAL AT THE DELIVERY POINT.

ANY UNUSED MATERIALS SHALL BE RETURNED TO THE STATE HIGHWAY GARAGE IN ASHLAND COUNTY AT ASHLAND, OHIO.

REMOVE AND RE-ERECT EXISTING GROUND MOUNTED SIGN

THE EXISTING GROUND MOUNTED SIGN AT STA 303+70 NB SHALL BE REMOVED AND RE-ERECTED OUTSIDE THE ACCELERATION RAMP AT STA 303+70 NB. THIS WORK WILL BE PAID FOR AS A LUMP SUM ITEM. THE COST OF THIS ITEM SHALL INCLUDE THE CAREFUL DISMANTLING OF THE SIGN, CLEANING THE FOUNDATION CONCRETE FROM THE BEAM SUPPORTS, BACKFILLING THE OLD FOUNDATION HOLES, DIGGING NEW FOUNDATION HOLES, ENCASING THE BEAM SUPPORTS IN NEW FOUNDATION CONCRETE AND COMPLETING THE SIGN ERECTION IN THE NEW LOCATION IN A MANNER SATISFACTORY TO THE ENGINEER.

THE CONTRACTOR MAY AT HIS DISCRETION SUBMIT ALTERNATE METHODS FOR APPROVAL TO THE ENGINEER FOR MOVING OR REPLACING THE BEAM SUPPORTS FOR THE SIGN PRIOR TO THE START OF WORK ON THIS ITEM. ANY METHOD SUBMITTED WHICH INVOLVES ADDITIONAL COST TO THE STATE WILL NOT BE CONSIDERED.

DELINEATORS REMOVED AND DISPOSED OF

THE EXISTING DELINEATORS WITHIN THE FOLLOWING PROPOSED RAMP CONNECTION AREAS SHALL BE REMOVED AND DISPOSED OF:

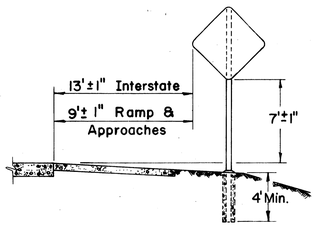
STA 268+50 TO STA 277+00 NB
STA 295+16 TO STA 311+00 NB

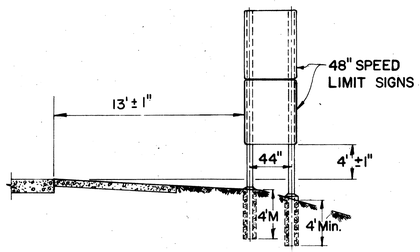
THE COST OF REMOVING AND DISPOSING OF THESE DELINEATORS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203, ROADWAY EXCAVATION.

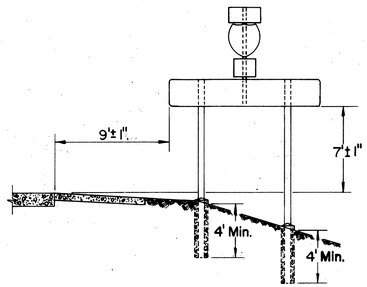
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

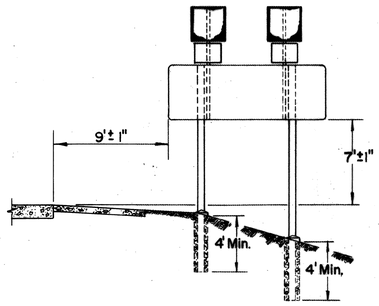
63
68

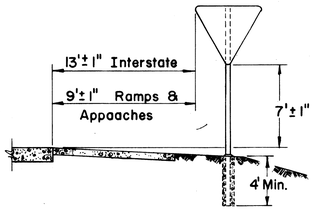
MED-71-22.55

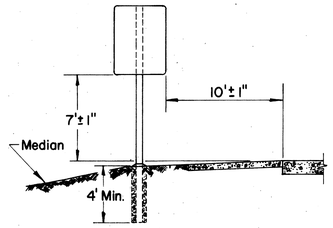


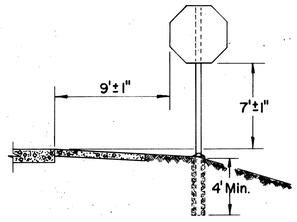


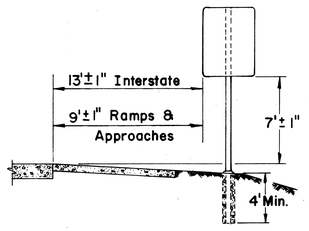


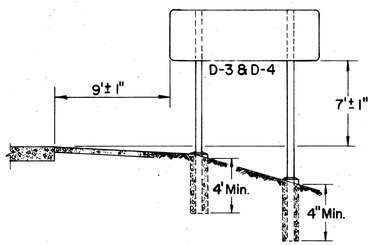


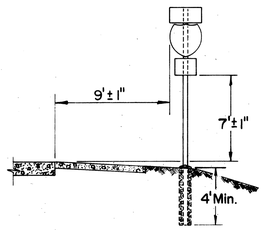


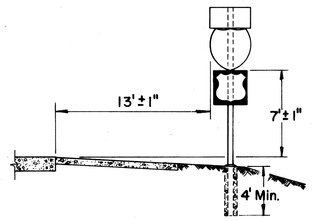


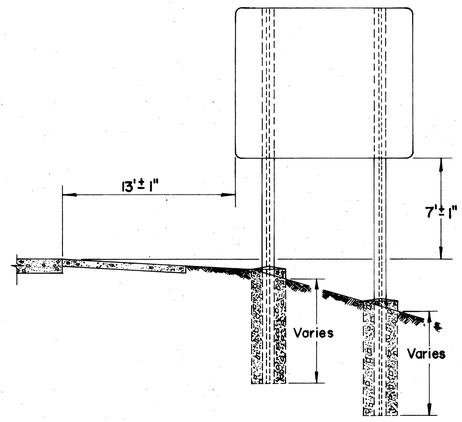


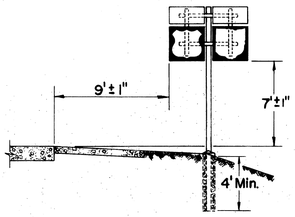


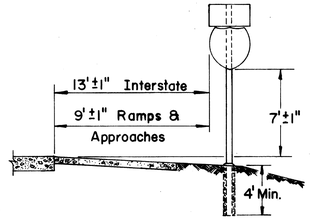


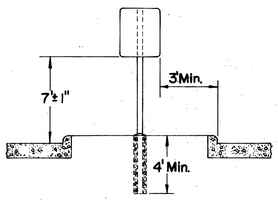


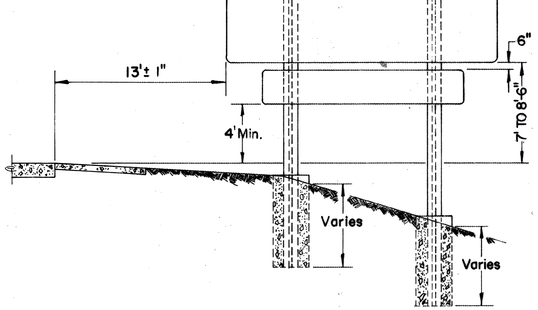












NOTES

1. BOLT HOLE LOCATIONS ARE INDICATED ON THE SIGN DESIGN SHEETS NO. N/A.

2. HORIZONTAL BACK BRACING SHALL ALWAYS BE MOUNTED ON THE FRONT FLANGE OF THE SUPPORT EXCEPT WHERE SIGNS ARE MOUNTED BACK TO BACK. BACK BRACING SHALL NEVER EXTEND ABOVE TOP EDGE OF UPPERMOST SIGN PLATE AND SHALL BE ATTACHED TO SUPPORTS USING 5/16" GALVANIZED STEEL BOLTS.

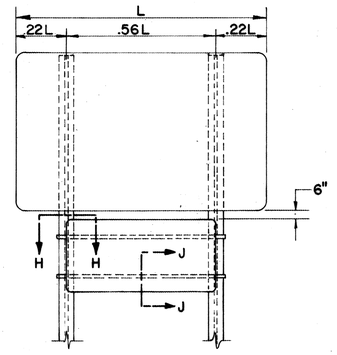
3. SCREWS, NUTS, AND WASHERS FOR SIGN ERECTION SHALL BE ALUMINUM EXCEPT AS NOTED ABOVE. 5/16" TRUSS HEAD SLOTTED MACHINE SCREWS WITH HEX. NUTS PLAIN AND LOCKWASHERS SHALL BE USED. PLAIN WASHERS SHALL BE 5/16" "WIDE", USED ON SIGN FACE ONLY.

4. SIGN INSTALLATIONS SHALL BE PLACED SO THAT SUPPORTS ARE NOT PLACED IN DRAINAGE DITCHES.

5. HORIZONTAL CLEARANCES SHOWN PERTAIN TO NON-CURBED SECTIONS. SECTIONS WITH UNMOUNTABLE CURB SHALL HAVE A HORIZONTAL CLEARANCE OF 3'-0" MINIMUM FROM THE CURB FACE TO THE SIGN EDGE. ALL SIGN SHALL BE ERECTED 1'-0"±1" BEHIND EXISTING GUARD RAIL UNLESS OTHERWISE SPECIFIED ON PLANS OR BY THE ENGINEER.

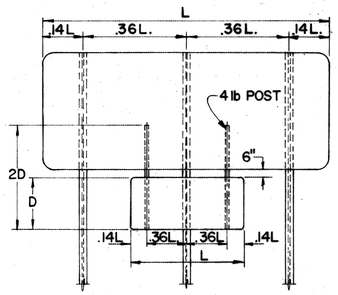
6. VERTICAL AND HORIZONTAL CLEARANCE BETWEEN SIGNS ON ONE ASSEMBLY SHALL BE A MAXIMUM OF 2" AND A MINIMUM OF 1".

7. GALVANIZED STEEL BEARING PLATES SHALL BE INCLUDED BETWEEN ALL SHEET ALUMINUM SIGNS ATTACHED TO VERTICAL SUPPORTS AT EACH SIGN BOLT LOCATION. FOR BEARING PLATE DETAILS SEE SHEET NO. 64.



ERECTION OF SECONDARY SIGN WHEN "L" IS 13'-0" AND 14'-0".

FOR SECTIONS "J-J" & "H-H" SEE DETAIL SHEET NO. _____.



BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

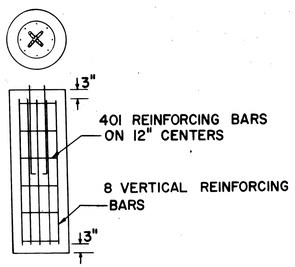
TYPICAL PLACEMENT OF SIGNS	TPS-1	DATE 10-12-65 2-28-66

APPROVED Fred C. Farlow
ENGINEER OF TRAFFIC

TYPICAL PLACEMENT OF SIGNS . .

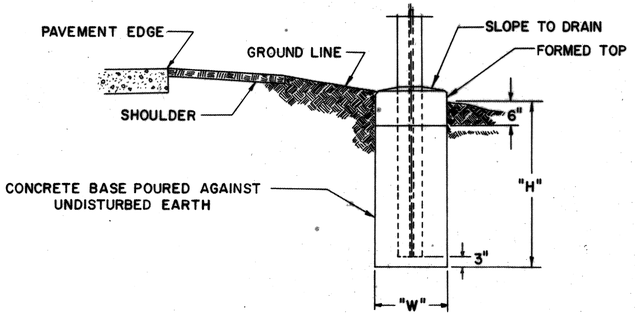
BEAM SIZE	ANCHOR BOLTS DIA.	ANCHOR BOLTS LENGTH	BASE PLATE	HOLE SIZE	DIM. M	DIM. N	DIM. P	WELD SIZE	DIM. H	DIM. W	CU. YDS. FOR 2 POST
10 B11.5	3/4"	3'-0"	7/8"x6"x18"	7/8"	3 1/2"	14"	3 1/2"	1/4"	5.25'	2'-6"	1.9
10 B17	1"	3'-6"	7/8"x6"x18"	1 1/8"	3 3/4"	14"	4 1/4"	1/4"	6.0'	2'-6"	2.2
12 B22	1"	4'-0"	1"x9"x19"	1 1/8"	5 1/2"	15"	4 1/4"	1/4"	6.75'	2'-6"	2.5
12 WF 27	1 1/4"	4'-0"	1"x9"x19"	1 3/8"	5 1/2"	15"	5 1/4"	1/4"	8.0'	2'-6"	2.9
14 WF 30	1 1/4"	4'-0"	1"x11"x20"	1 3/8"	7 1/2"	16"	5 1/4"	5/16"	8.25'	2'-6"	3.0
14 WF 34	1 1/4"	4'-0"	1" x12"x22"	1 3/8"	9"	18"	5 1/4"	5/16"	9.0'	2'-6"	3.3
16 WF 36	1 1/2"	5'-0"	1 1/4"x14"x23"	1 5/8"	10"	19"	6"	5/16"	9.75'	2'-6"	3.5
16 WF 40	1 1/2"	5'-6"	1 1/4"x14"x24"	1 5/8"	10"	20"	6"	5/16"	10.0'	2'-6"	3.6
16 WF 45	1 1/2"	6'-0"	1 1/4"x14"x24"	1 5/8"	10"	20"	6"	5/16"	10.5'	2'-6"	3.8
18 WF 50	1 3/4"	7'-6"	1 1/2"x14"x26"	1 7/8"	10"	22"	6 3/4"	5/16"	11.5'	2'-6"	4.2

MARK	TYPE	NO.	LENGTH	WEIGHT FOR 1 POST
401	101	6	7'-6"	45
402	STR.	8	5'-0"	
401	101	7	7'-6"	52
403	STR.	8	5'-9"	
401	101	8	7'-6"	61
404	STR.	8	7'-0"	
401	101	9	7'-6"	94
501	STR.	8	8'-0"	
401	101	10	7'-6"	101
502	STR.	8	8'-6"	
401	101	10	7'-6"	103
503	STR.	8	9'-9"	
401	101	11	7'-6"	145
601	STR.	8	9'-3"	
401	101	11	7'-6"	148
602	STR.	8	9'-6"	
401	101	11	7'-6"	155
603	STR.	8	10'-0"	
401	101	12	7'-6"	164
604	STR.	8	10'-6"	

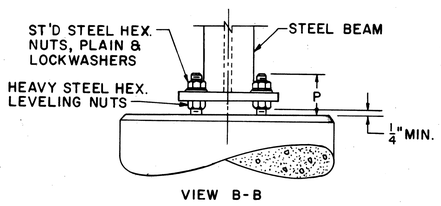


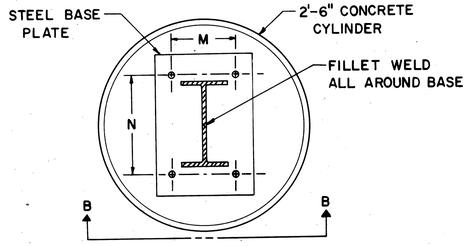
REINFORCING FOR ALTERNATE ANCHOR BASE

BEAM SIZE	DIM. W	DIM. H	CU. YDS. CONC. 2 POST
4# POST	1'-0"	4.0'	0.2
4#BEAM	1'-0"	4.0'	0.2
6#BEAM	1'-0"	4.0'	0.2
8#BEAM	1'-0"	4.0'	0.2
10B11.5	2'-6"	5.25'	1.9
10B17	2'-6"	6.0'	2.2
12B22	2'-6"	6.75'	2.5
12WF27	2'-6"	8.0'	2.9
14WF30	2'-6"	8.25'	3.0
14WF34	2'-6"	9.0'	3.3
16WF36	2'-6"	9.75'	3.5
16WF40	2'-6"	10.0'	3.6
16WF45	2'-6"	10.5'	3.8
18WF50	2'-6"	11.5'	4.2

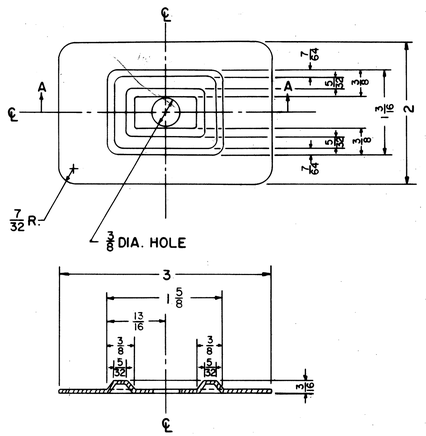


FOUNDATION DETAILS FOR EMBEDDED POSTS AND BEAMS



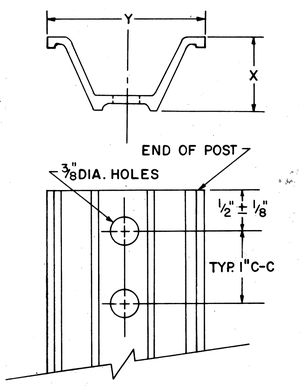


ALTERNATE ANCHOR BASE DETAILS



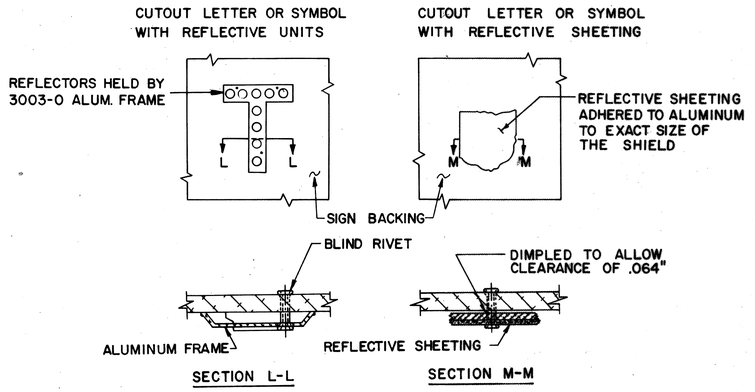
NOTE:
THE PLATE IS SYMMETRICAL ABOUT EITHER CENTERLINE.
METAL SHALL BE 16 GAUGE STEEL.
ALL DIMENSIONS ARE IN INCHES.

BEARING PLATE DETAIL

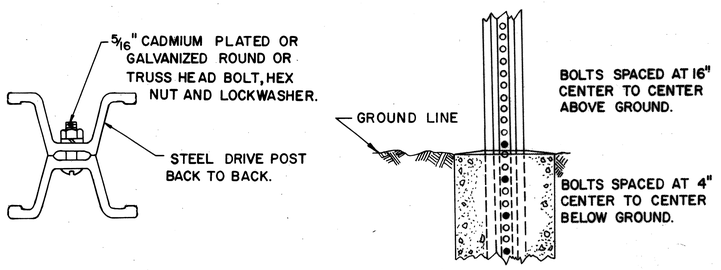


WEIGHT PER FOOT	X ± 3/32"	Y ± 1/8"
2.00 #	1 15/32"	3 1/16"
3.00 #	1 7/8"	3 1/2"
4.00 #	2"	3 5/8"

DRIVE POST DETAILS



DEMOUNTABLE LETTERS & SYMBOLS



4#,6#& 8# BEAM DETAILS

NOTES

PLAN QUANTITIES FOR POSTS AND STRUCTURAL SUPPORTS ARE BASED UPON THE "FOUNDATION DETAILS FOR EMBEDDED POSTS AND BEAMS".

IF THE CONTRACTOR ELECTS TO USE THE METHOD SHOWN FOR "ALTERNATE ANCHOR BASE DETAILS", THE PLAN QUANTITY OF EMBEDDED BEAM ONLY WILL BE ALLOWED IN EXCHANGE AND FULL PAYMENT FOR THE BASE PLATE, ANCHOR BOLTS AND REINFORCING STEEL.

WHERE ANCHOR BASES ARE USED, THE BEAM SIZE SHALL DETERMINE THE ANCHOR BOLT AND BASE PLATE SIZE.

DEMOUNTABLE UNITS SHALL BE ATTACHED TO THE ALUMINUM PANELS WITH ALUMINUM BLIND RIVETS. CARE SHALL BE TAKEN TO INSURE THAT ALL SEGMENTS OF EACH LETTER OR SYMBOL ARE SECURELY AFFIXED TO THE BACKING. LETTERS CONTAINING REFLECTIVE UNITS SHALL BE FASTENED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

DEMOUNTABLE SHIELDS SHALL BE AFFIXED TO THE BACKING UTILIZING 5/16" TRUSS HEAD BOLTS, PLAIN AND LOCKWASHERS.

IN LIEU OF THE .040" THICK FRAME SPECIFIED IN SUPPLEMENTAL SPECIFICATION 815.08, THE FRAMES FOR THE REFLECTIVE UNITS IN THE SIGN OUTLINES ONLY, MAY BE .032" THICK ALUMINUM. (A.S.T.M. B209GSIIA-T6).

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

64
68

MED-71-22.55

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

MISCELLANEOUS SIGNING ITEMS

MS1

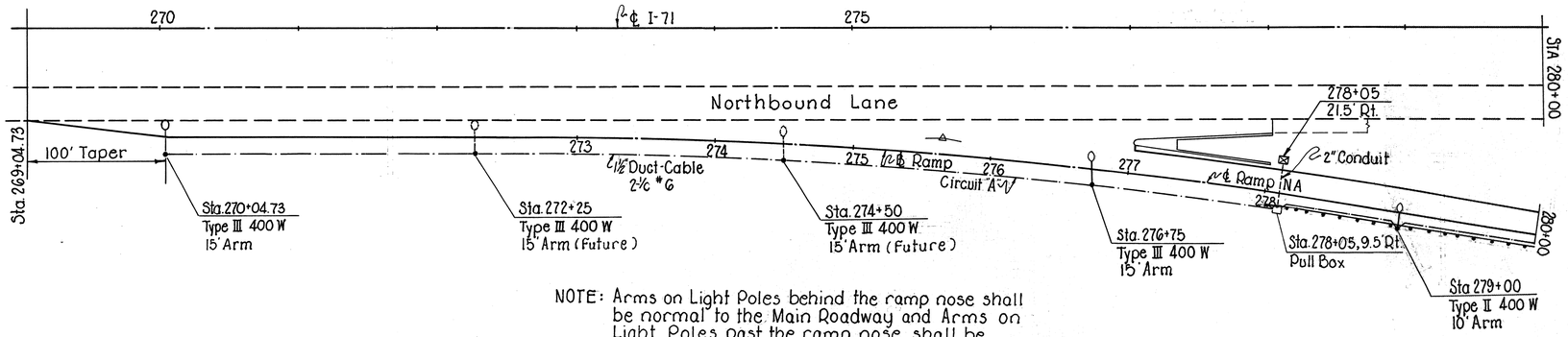
DATE
10-29-63
8-19-64
10-13-65

APPROVED Fred C. Tasbok
ENGINEER OF TRAFFIC

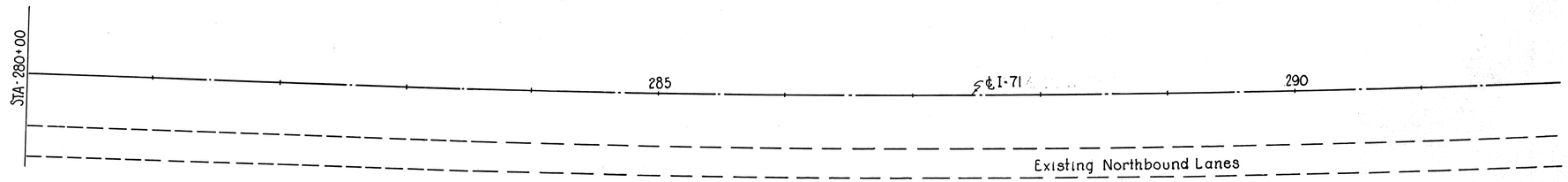
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

MED-71-22.55

65
68

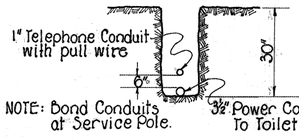


NOTE: Arms on Light Poles behind the ramp nose shall be normal to the Main Roadway and Arms on Light Poles past the ramp nose shall be normal to the Ramp Baseline.

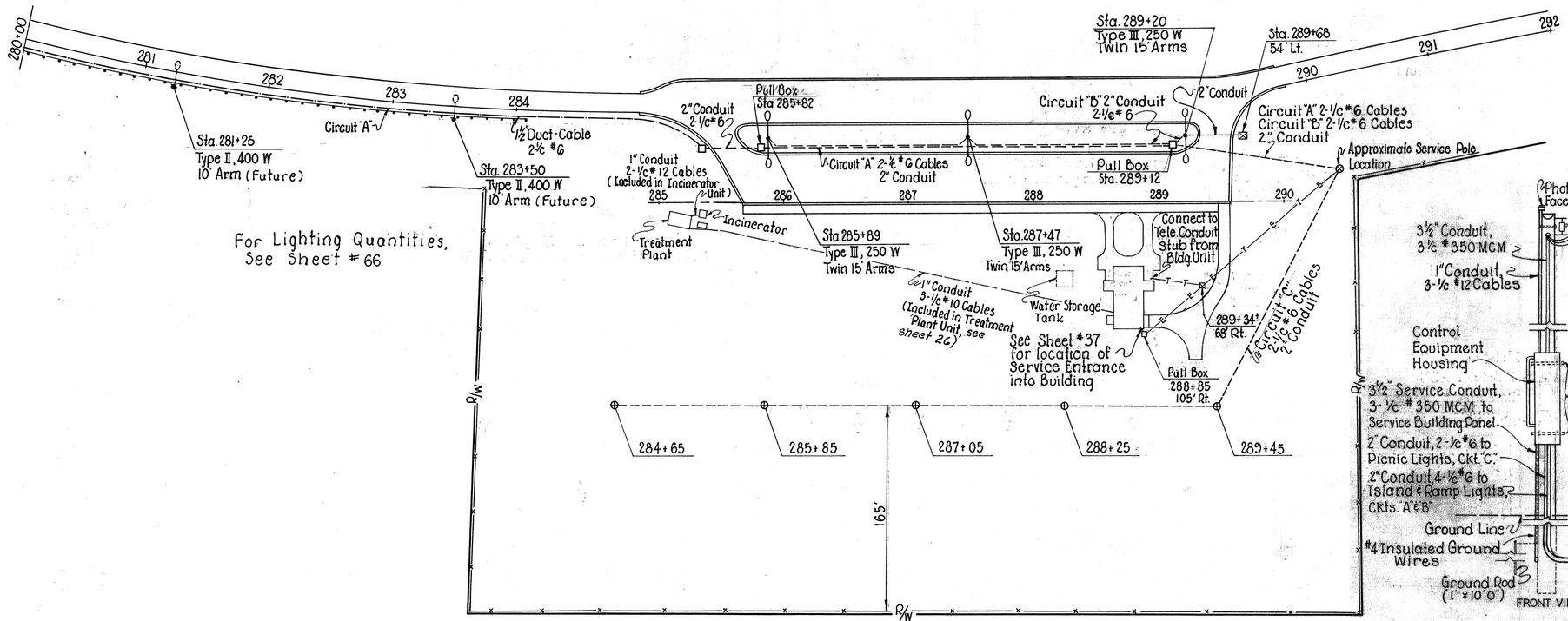


LEGEND

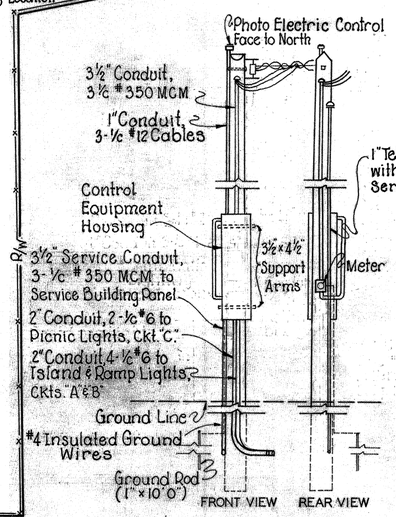
- Conduit Marker
- Pull Box
- Service Pole
- Post Top Picnic Area Light, 250 Watt (250 Watt Integral Regulator Ballast)
- Pole-Bracket Arm Light, 10' or 15' Arm, 400 Watt (400 Watt Regulator Ballast)
- Pole-Bracket Arm Light, Twin 15' Arms, 250 Watt (250/400 Watt Dual Regulator Ballast)
- Lighting Circuit Conduit
- —E—E— 3½" Service Conduit, 3-½c# 350 MCM Cables
- —T—T— 1" Telephone Conduit w/Pull Wire-100% State
- 1½ Duct Cable
- Future Light Pole



SPECIAL COMBINATION CONDUIT TRENCH

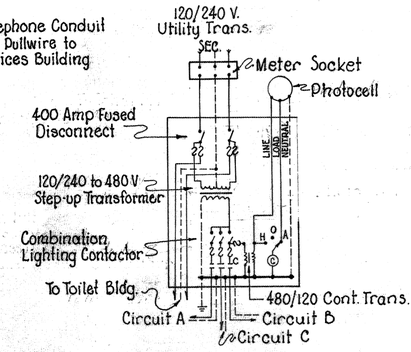


LIGHTING PLAN
SCALE: 1"=50'



* Provide Padlock For Switch and Contactor.

SERVICE POLE



SCHEMATIC CONTROL & WIRING DIAGRAM

SERVICE POLE DETAILS

LIGHTING PLAN AND DETAILS

FED. RD. DIVISION	STATE	PROJECT		66 / 68
2	OHIO			

MED-71-22.55

LIGHTING NOTES

625.03 GENERAL

ALL CONSTRUCTION METHODS, MATERIALS AND WORKMANSHIP, EXCEPT AS MODIFIED OR SUPPLEMENTED HEREIN OR ON THE DRAWINGS, SHALL CONFORM TO THE GENERAL REQUIREMENTS OF ITEM 625, ITEM 713, AND OTHER APPLICABLE ITEMS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

UTILITIES:

THE FOLLOWING UTILITIES WILL BE AFFECTED BY THIS PROJECT:

NORTHERN OHIO TELEPHONE COMPANY	BELLEVUE, OHIO
OHIO EDISON POWER COMPANY	AKRON, OHIO

625.05 LIGHTING POLES:

THE TERM "LIGHTING STANDARDS" OR "LIGHT STANDARDS" WHEN USED IN THE 1967 CONSTRUCTION AND MATERIAL SPECIFICATIONS AS A SUPPORT FOR LUMINAIRES IS HEREBY MODIFIED TO READ "LIGHTING POLES" OR "LIGHT POLES".

SHOP AND FIELD PAINTING OF LIGHT POLES (OTHER THAN THAT REQUIRED FOR CORRECTING MINOR SCRATCHES TO THE GALVANIZED SURFACE) IS NOT REQUIRED.

ALL METAL SHIMS USED FOR PLUMBING LIGHT POLES SHALL BE GALVANIZED STEEL SHIMS.

ALL LIGHT POLE HARDWARE SHALL BE STAINLESS STEEL, EXCEPT THAT BOLTS AND NUTS 5/8" AND OVER MAY BE HOT DIPPED GALVANIZED AS PER ASTM SPEC. A-53.

BRACKET ARMS AS PER 713.01-6 (A) SHALL CONFORM TO ASTM A-53, SCHEDULE 40 OR ALTERNATE ASTM A-36.

625.07 LUMINAIRES:

LUMINAIRES FOR ROADWAY AND RAMP SHALL BE MERCURY VAPOR TYPE WITH 400 WATT INTEGRAL DUAL 240/480 VOLT REGULATOR BALLAST.

LUMINAIRES FOR TRAFFIC ISLAND SHALL BE MERCURY VAPOR TYPE WITH INTEGRAL REGULATOR TYPE BALLAST WHICH IS DUAL VOLTAGE RATED FOR 240/480 VOLT OPERATION, AS WELL AS DUAL WATTAGE RATED FOR 250 OR 400 WATT LAMPS. THE LIGHT DISTRIBUTION PATTERNS SHALL BE EQUIVALENT TO THE ASA-IES TYPES CALLED FOR ON THE PLANS. THESE LUMINAIRES SHALL BE GENERAL ELECTRIC M-400, WESTINGHOUSE OV-25, LINE MATERIAL UNISTYLE OR OTHER APPROVED EQUAL.

THE PICNIC-AREA POST TOP LUMINAIRES SHALL BE MERCURY VAPOR TYPE, INTEGRAL BALLAST, DUAL RATED 240/480 VOLT AND CONNECTED FOR 250 WATT OPERATION. THE LIGHT DISTRIBUTION PATTERN SHALL BE EQUIVALENT TO ASA-IES TYPE V. THESE LUMINAIRES SHALL BE LINE MATERIAL "STYLEKING", GENERAL ELECTRIC PMA-115, WESTINGHOUSE "PROMENADE", OR OTHER APPROVED EQUAL.

625.08 LAMPS

ALL LAMPS FOR THIS PROJECT SHALL BE FIRST-LINE MERCURY VAPOR TYPE AND SHALL BE GENERAL ELECTRIC BONUS LINE, WESTINGHOUSE LIFEGUARD, SYLVANIA BANNER LINE, OR APPROVED EQUALS. LAMPS FOR RAMP LUMINAIRES SHALL BE 400 WATT AND LAMPS FOR TRAFFIC ISLAND AND PICNIC AREA LUMINAIRES SHALL BE 250 WATT.

625.11 PULL BOXES:

PULL BOXES SHALL BE 18" DIAMETER, 0.37" MINIMUM WALL THICKNESS CIRCULAR BITUMINOUS FIBER WITH A 19" DIAMETER X 3/8" MINIMUM THICKNESS CAST IRON COVER CONFORMING TO 711.12 OR 711.13. THE COVER SHALL BE ASPHALTUM PAINT FINISHED WITH THE WORD "ELECTRIC" CAST IN 1" TO 2" HEIGHT LETTERS.

625.12 TRENCH:

PAYMENT FOR TRENCHING ITEMS SHALL BE FOR ALL WIDTHS AND MATERIALS ENCOUNTERED.

SERVICE CABLE:

SERVICE CABLE IN CONDUIT SHALL BE STRANDED, COPPER, 1/C #350 MCM, 600 VOLT AND SHALL CONFORM TO IPCEA-NEMA STD. S-19-81, PARAGRAPHS 3.15 AND 4.13.5; ASTM D-1352, 574 AND 1047 MAY ALSO BE USED.

MIN. INSULATION THICKNESS IN 64 THS = 6
MIN. JACKET THICKNESS IN INCHES = .065
MIN. AMPERES PER CONDUCTOR = 384 @ 40 C AMBIENT, 90 C COPPER TEMPERATURE (BASED ON THREE-INSULATED CONDUCTORS IN CONDUIT.)

GENERAL ELECTRIC CO. CABLE NO. SI-58244 OR APPROVED EQUIVALENTS AS MANUFACTURED BY ROME, SIMPLEX, PHELPS-DODGE, GENERAL CABLE, OR OTHER APPROVED MANUFACTURERS.

625.13 CONDUIT

ALL CONDUIT SHALL BE RIGID FERROUS METAL ELECTRICAL CONDUIT, 713.04 TYPE III OR IIII. ALL CONDUIT SHALL BE PLUGGED OR CAPPED UNTIL THE CABLE IS INSTALLED.

FERROUS METAL CONDUIT USED IN FOUNDATIONS OR ENDING IN PULL BOXES SHALL BE EQUIPPED WITH INSULATING BUSHINGS.

625.14 CABLE:

ALL CIRCUIT CABLE IN CONDUIT AND DUCT CABLE SHALL BE SINGLE CONDUCTOR, STRANDED COPPER, CROSS LINKED POLYETHYLENE INSULATION. THE CABLE SHALL BE GENERAL ELECTRIC COMPANY CABLE NO. SI-58073 OR APPROVED EQUIVALENTS AS MANUFACTURED BY ROME, SIMPLEX, PHELPS DODGE, KAISER OR OTHER APPROVED MANUFACTURERS PRODUCT.

POLE AND BRACKET CABLE SHALL BE SINGLE CONDUCTOR, 10 AWG STRANDED COPPER, TYPE "THHN" OR "THHN/THWN", 600 VOLT, UNDERWRITERS LABORATORY APPROVED, 90°.

CABLE SHALL BE IN CONTINUOUS LENGTHS WITHOUT SPLICES EXCEPT IN PULL BOXES AND LIGHTING UNITS.

ALL CIRCUIT AND GROUND CABLE AND DUCT CABLE SHALL BE TAGGED IN EACH PULL BOX WITH A MINIMUM OF TWO TAGS PER CIRCUIT. TAGS SHALL BE A MINIMUM OF 1⅜" DIAMETER x .031" THICK COPPER, BRASS OR PLASTIC. LETTERING DIES, ¼" MINIMUM SIZE, OR EQUIVALENT ENGRAVING OR BANDING METHODS, SHALL BE USED TO MARK THE TAG. MARKING OF TAGS SHALL CONSIST OF "GN'D" FOR GROUND WIRES AND "CK'T A", ETC. FOR CIRCUIT DESIGNATION. THE TAGS SHALL BE ATTACHED TO THE CABLE WITH SIZE AWG #16 OR LARGER BARE WIRE. COST OF TAGGING INCLUDED IN COST OF CABLE.

625.17 CONNECTOR KITS:

EACH LIGHT POLE SHALL BE EQUIPPED WITH A TYPE III, FUSED "Y" CONNECTOR WITH 6 AMP. CURRENT LIMITING HIGH INTERRUPTING 600 VOLT FUSE AND A TYPE IIII UNFUSED "Y" CONNECTOR KIT.

PULL BOXES SHALL BE EQUIPPED WITH TYPE I INLINE OR TYPE IV UNFUSED "Y" CONNECTOR KITS.

625.18 SERVICE POLE:

THE SERVICE POLE SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR AT THE LOCATION SHOWN ON THE PLANS. THE POLE SHALL BE 35 FEET, CLASS 4 PRESSURE TREATED WITH CREOSOTE OR PENTACHLOROPHENOL IN ACCORDANCE WITH ITEM 712.06 TO 8 LBS. RETENTION.

THE DISTRIBUTION TRANSFORMER, SERVICE DROP AND SERVICE CONNECTIONS TO THE SERVICE POLE WILL BE DONE BY THE UTILITY COMPANY. THE METER SOCKET IF REQUIRED, WILL BE FURNISHED BY THE UTILITY COMPANY AND INSTALLED BY THE CONTRACTOR.

THE FOLLOWING EQUIPMENT WILL BE FURNISHED BY THE CONTRACTOR AND INSTALLED ON THE SERVICE POLE AS DETAILED ON THE PLANS:

1. THE PHOTOELECTRIC CONTROLLER SHALL BE 120 VOLT, 1000 WATT, CONDUIT MOUNTED TYPE EQUAL TO G.E. #C402G200 W/#C403G001 RECEPTACLE AND MOUNTING BRACKET OR EQUAL EQUIPMENT BY TABET, FISHER-PIERCE OR OTHER APPROVED EQUAL. SET TURN ON AT 1.0 F.C. AND TURN OFF AT 5.0 F.C.
2. LIGHTING AND POWER CONTROL CENTER:

(a) ENCLOSURE HOUSING SHALL BE STAINLESS STEEL, CODE GAUGE FOR NEMA 4, FULL WELDED SEAMS, WITH TWO MOUNTING PADS AT BOTH TOP AND BOTTOM. APPROXIMATE SIZE = 48" HIGH, 30" WIDE X 14" DEEP OR AS REQUIRED.

THE ENCLOSURE DOOR SHALL BE SO CONSTRUCTED THAT IT MAY NOT BE OPENED WHEN THE DISCONNECT IS "ON" BUT PROVISION SHALL BE MADE FOR OPENING THE DOOR INTENTIONALLY WHILE THE DISCONNECT IS "ON". THIS PROVISION SHALL BE OF A LOCKABLE DOUBLE DEFEATER OPENING HANDLE WHEREBY A SCREWDRIVER IS NECESSARY FOR ENTRANCE INTO THE ENCLOSURE WITH THE DISCONNECT "ON".

(b) THE FUSED SAFETY DISCONNECT SWITCH ASSEMBLY SHALL BE RATED 2 POLE, 400 AMP, 250 VOLT WITH LUGS SIZED FOR SPECIFIED WIRE SIZES: BOTH LINE & LOAD.

THE DISCONNECT HANDLE SHALL BE EXTERNALLY MOUNTED SO AS TO REMAIN WITH THE HOUSING WHEN THE DOOR IS OPEN OR CLOSED. THE DISCONNECT HANDLE SHALL HAVE PROVISIONS FOR PADLOCKING IN EITHER THE "ON" OR THE "OFF" POSITION.

DUAL FUSE CLIPS SHALL BE PROVIDED AT SWITCH TERMINALS TO HOUSE BOTH 400 AMP RENEWABLE CARTRIDGE FUSES AND 60 AMP RENEWABLE CARTRIDGE FUSES.

(c) PROVIDE 400 AMP COPPER NEUTRAL BUSS BAR CAPABLE OF TERMINATING 350 MCM AND #4 COPPER CABLES.

(d) LIGHTING CONTROL STEP-UP TRANSFORMER SHALL BE OF AN INDOOR/OUTDOOR DRY TYPE: RATED 7.5 KVA, 120/240 TO 480 VOLTS, 60 CYCLE, TAPS ARE NOT REQUIRED.

(e) LIGHTING FUSED SAFETY DISCONNECT SWITCH ASSEMBLY SHALL BE RATED 3 POLE, 30 AMP, 600 VOLT WITH INTERNAL MOUNTED OPERATING HANDLE. SWITCH TO BE FUSED WITH RENEWABLE 30 AMP FUSES.

(f) LIGHTING CONTACTOR SHALL BE RATED 3 POLE, 30 AMP, 600 VOLT CLASS, OPEN TYPE, ELECTRICAL MAGNETICALLY HELD W/120 VOLT, 60 CYCLE COIL.

(g) CONTROL CIRCUIT TRANSFORMER SHALL BE RATED 480/120 VOLT, 100 VA, OPEN TYPE, 60 CYCLE, W/FUSE BLOCK ON LINE SIDE.

(h) 3-POSITION SELECTOR SWITCH; HAND-OFF-AUTO SHALL BE INSTALLED IN PHOTO-ELECTRIC CELL CIRCUIT FOR CONTROL OF THE LIGHTING CONTACTOR.

(i) SCHEMATIC WIRING DIAGRAM DECAL SHALL BE INSTALLED ON THE INSIDE OF ENCLOSURE DOOR.

(j) EQUIPMENT WARNING SIGN SHALL BE STENCILED ON OUTSIDE OF ENCLOSURE DOOR WITH RED WEATHER RESISTANT PAINT: "DANGER-HIGH VOLTAGE."

(k) ENCLOSURE SHALL BE GROUNDED TO EARTH GROUND ROD AT POLE BASE.

GENERAL LIGHTING QUANTITIES

ITEM	100% STATE	TYPE CODE Y022	TOTAL	UNIT	DESCRIPTION
625		1	1	Each	Light Pole W/10'-0" Bracket Arm Design 11AT10 B 34.2
625		2	2	Each	Light Pole W/15'-0" Bracket Arm, Design 11AT15 B 34.2
625		3	3	Each	Light Pole W/15'-0" Twin Bracket Arms, Design 11A15 BB 32.5
625		5	5	Each	Light Pole W/ Tenon for Post Top Luminaire, Design 11 TON 20
625		11	11	Each	Light Pole Foundation, 24"x 24"x 6' Deep
625		6	6	Each	Luminaire, Type III, 400 Watt Mercury W/250-400 Watt Regulator Ballast
625		1	1	Each	Luminaire, Type II, 400 Watt Mercury W/400 Watt Regulator Ballast
625		5	5	Each	Luminaire, 250 Watt Mercury, Type V, Post Top W/250 Watt Integral Ballast
625		11	11	Each	Mercury Vapor Lamp, 250 Watt (H-37-5KB)
625		3	3	Each	Mercury Vapor Lamp, 400 Watt (H-33-1CD)
625		2	2	Each	Luminaire, Type III, 400 Watt Mercury W/400 Watt Regulator Ballast
625		11	11	Each	Ground Rod Unit
625		5	5	Each	Pull Box, Bituminous Fiber, 18" I.D.
625		3	3	Each	Conduit Marker
625	43	2976	3019	Lin.Ft.	Trench, 24" Deep
625		145	145	Lin.Ft.	Trench, Special Combination, 30" Deep
625		1621	1621	Lin.Ft.	Conduit, 2" Rigid Ferrous Metal, Type II or III
625		210	210	Lin.Ft.	Conduit, 3½" Rigid Ferrous Metal, Type II or III
625	188		188	Lin.Ft.	Telephone Conduit, 1" Rigid Ferrous Metal, Type II or III with Pull Wire
625		3564	3564	Lin.Ft.	Circuit Cable, 600 Volt, 1/c No. 6
625		860	860	Lin.Ft.	Pole and Bracket Cable, 600 Volt, 1/c No. 10-AWG
625		630	630	Lin.Ft.	Service Cable, 600 Volt, 1/c No. 350 MCM
625		1590	1590	Lin.Ft.	1½" Duct-Cable, 600 Volt, Two Insulated 1/c No. 6
625		4	4	Each	Connector Kit, Type I
625		11	11	Each	Connector Kit, Type II
625		11	11	Each	Connector Kit, Type III
625		2	2	Each	Connector Kit, Type IV
625		Lump	Lump	Lump	Service Pole and Control Center
625		Lump	Lump	Lump	Circuit and Light Pole Identification

MECHANICAL PROPERTIES FOR ANCHOR BASE LIGHT POLES

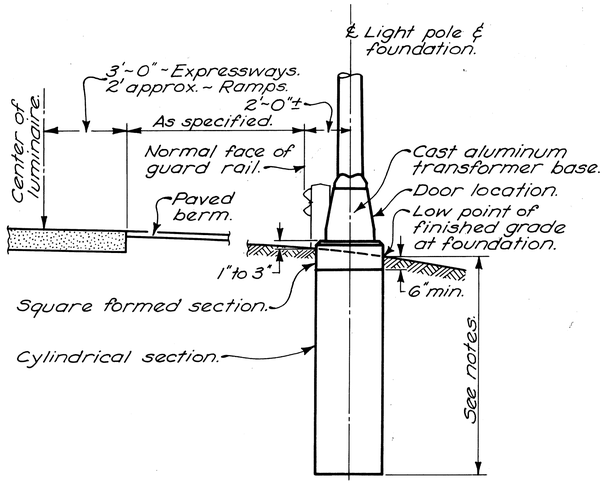
Pole Design No.*	Shaft Size (11 Gage)	Anchor Bolt		Arm Length	Mounting Height Above Pavement	Elastic Deflection Rate in Inches Per 100 Lbs.	At 2/3 Of Yield Stress			At Yield Stress		
		Diameter Bolt Circle	Projection Above Foundation				Load 18" Down From Top in Lbs.	Total Deflection in Inches	Permanent Set in Inches	Load 18" Down From Top in Lbs.	Total Deflection in Inches	Permanent Set in Inches
11AT10 B 34.2	8.0"x3.87"x29'-6"	15.0"	3½"	10'-0"	32'-6"	3.32	517	17.66	.50	776	28.84	3.08
11AT15 B 34.2	9.0"x4.87"x29'-6"	15.0"	3½"	15'-0"	32'-6"	2.16	659	14.73	.50	989	24.00	2.64
(11A15 BB 32.5)	9.0"x4.87"x29'-6"	12.5"	3"	15'-0"	32'-6"	2.16	659	14.73	.50	989	24.00	2.64
11 TON 20	6.6"x3.94"x18.3"	15.0"	3"	–	20'-0"	1.16	564	7.04	.50	845	11.28	1.48

* 11 AT 10 B 34.2 Light Pole.
11 = Pole Shaft Gage
AT = Aluminum Transformer Base, Type AT-A
10 B = Length of Bracket Arm
34.2 = Mounting Height-Vertical Distance from Top of Foundation to Luminaire End of Bracket Arm.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

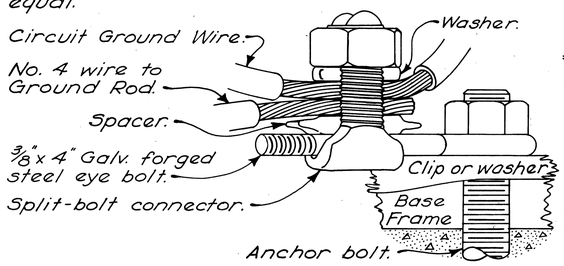
67
68

MED-71-22.55

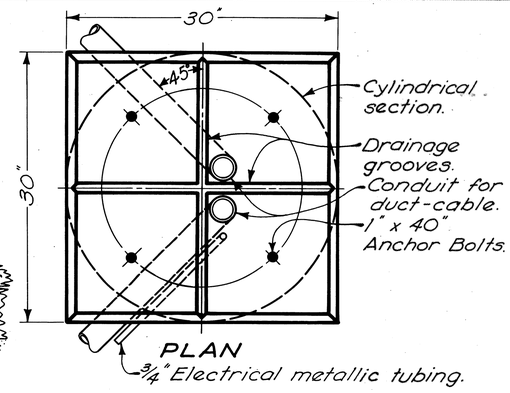


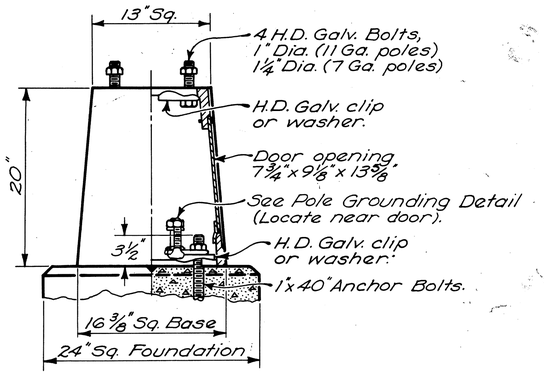
LOCATION OF POLE WITH ALUMINUM TRANSFORMER BASE

NOTE: Split-bolt Connector shall be made of tin plated copper alloy with tin plated spacer. Acceptable models are: Blackburn #10HPS, Burndy #KSU-25, Line Material #DK-5B-10, Kearney #118109-02 or an approved equal.

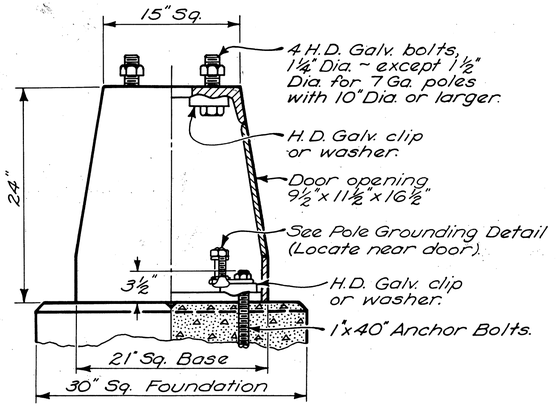


POLE GROUNDING DETAIL

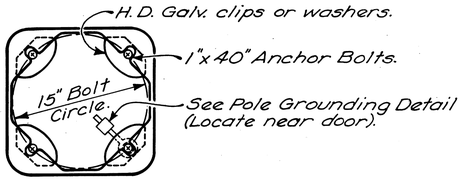




ELEVATION

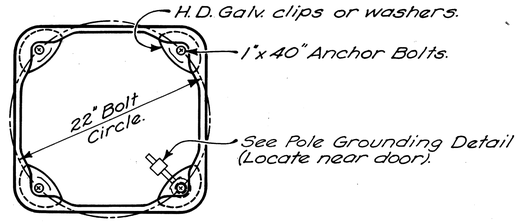


ELEVATION



BASE FRAME

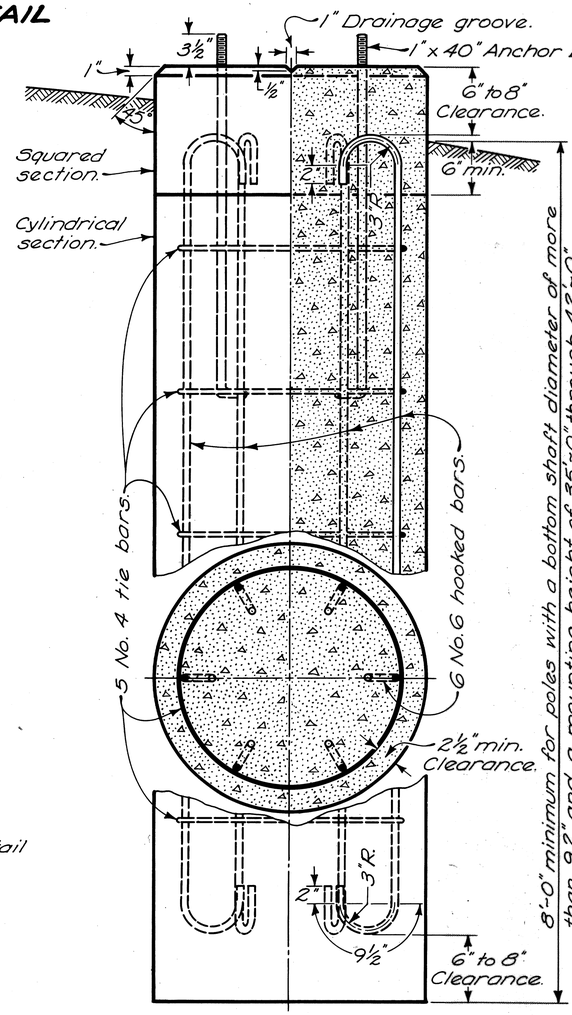
BASE AT-A



BASE FRAME

BASE AT-B

CAST ALUMINUM TRANSFORMER BASES



ELEVATION

30" FOUNDATION

NOTES

FOUNDATION: Foundations for light poles shall be poured-in-place concrete (vibrated and spaded 511.09). Each foundation must meet minimum depths as specified, but additional depth may be required by the Engineer because of existing soil conditions. The 30" foundation (detailed hereon) shall be used for light poles having a bottom shaft diameter of more than 9.2" through 11." The 24" foundation (detailed on Standard Drawing HL-1) shall be used for all light poles having a bottom shaft diameter of 6.0" through 9.2".

Rotate reinforcing bars to clear conduit.

Drainage grooves on foundation top, as detailed hereon, shall be required on all foundations even though they do not appear on Standard Drawing HL-1.

ALUMINUM TRANSFORMER BASES: All bases shall be cast from ASTM B-26 or B-108 Alloy SG 70A-T6.

Base AT-A shall be used with anchor base poles of 6" through 9.2" diameter inclusive. Base AT-B shall be used for anchor base poles above 9.2" through 11" diameter. A pole with 37'-6" shaft and 18' arm is max. size for use with Base AT-B.

The transformer bases shall be capable of resisting the following moments in foot pounds applied to the top of the base without collapsing or rupturing.

Base Height	Moment-Foot Pounds
20"	40,000
24"	52,000

Both the bottom of the cast steel pole base and the top of the aluminum transformer base shall be coated or painted with a heavy film of zinc rich paint (Federal Specification TT-P-641-Type II) to reduce galvanic action between the two dissimilar metals.

PAYMENT: 30" Light Pole Foundations shall be paid for at the unit price bid per each foundation.

Aluminum base complete with hardware, eye bolt and connector, zinc rich paint, and installation shall be included with ground-mounted poles for payment.

Issued: 3-29-67

Design Services Sketch No. RL-SK-153

ALUMINUM TRANSFORMER BASE DETAILS

CENTER LINE SURVEY PLAT

OHIO INTERSTATE 71

MED-71-22.55

MEDINA COUNTY, OHIO

BRUNSWICK HILLS TOWNSHIP AND CITY OF BRUNSWICK

T-4N R-14W

THIS IMPROVEMENT HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY BY ACTION OF THE DIRECTOR OF HIGHWAYS AND RECORDED IN VOLUME 45 PAGE 974 OF THE DIRECTOR'S JOURNAL PURSUANT TO LAW.

ESTIMATED QUANTITIES
Reference Monuments - 30

79156
Received ___ 19__
Recorded Oct 3, 1962
Book 10 Page 55
Elsie L. Phillips Fetzer
County Recorder
11x17 = 4.37 ea

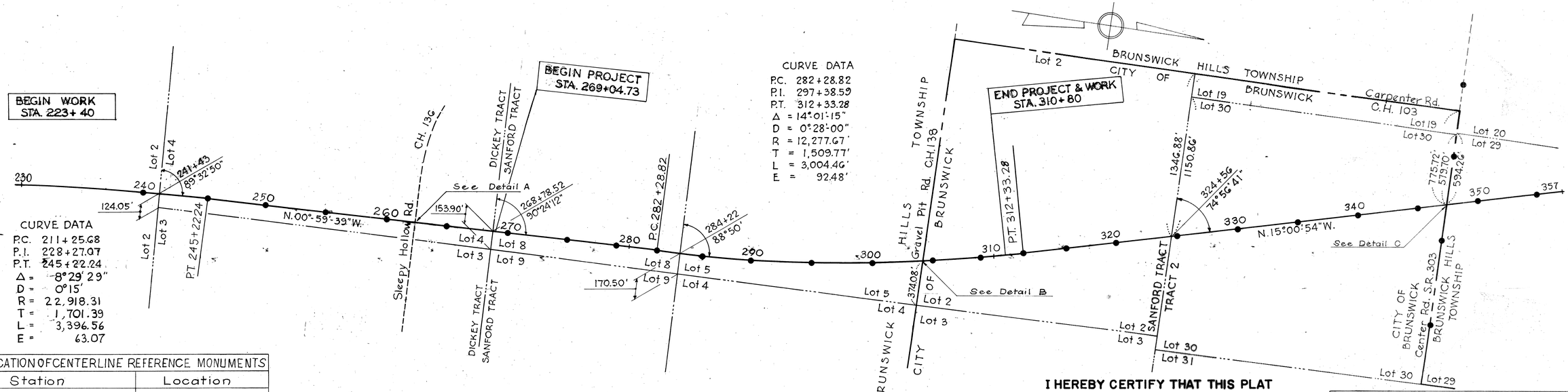
FED. RD. DIVISION	STATE			
2	OHIO			

68
68

MEDINA COUNTY
MED-71-22.55
LIMITED ACCESS

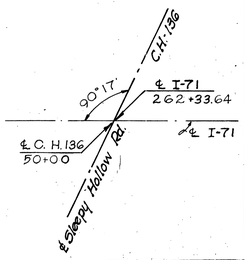
Signed E. L. Foberm
Date 9/17/62 Division Deputy Director, Div. No. 3
Registered Engineer No. 6311

0 400 800 1200
SCALE IN FEET

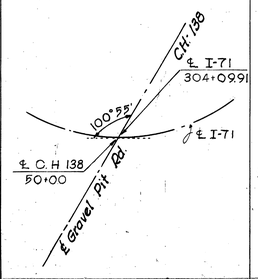


LOCATION OF CENTERLINE REFERENCE MONUMENTS		
Station		Location
240+00		℄ of Median
245+22.24	P.T.	"
250+00		"
255+00		"
260+00		"
265+00		"
270+00		"
275+00		"
279+00		"
282+28.82	P.C.	"
286+00		"
290+00		"
295+00		"
300+00		"
305+00		"
309+00		"
312+33.28	P.T.	"
316+00		"
320+00		"
325+00		"
330+00		"
335+00		"
340+00		"
345+00		"
350+00		"
355+00		"
40+00	S.R. 303	℄ of median S.R. 303
46+00	S.R. 303	℄ of median S.R. 303
53+00	S.R. 303	℄ of median S.R. 303
60+00	S.R. 303	℄ of median S.R. 303

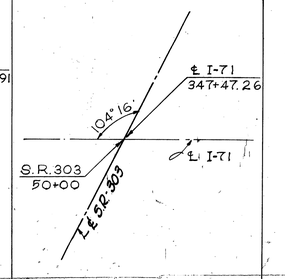
DETAIL A
Highway Tie



DETAIL B
Highway Tie



DETAIL C
Highway Tie

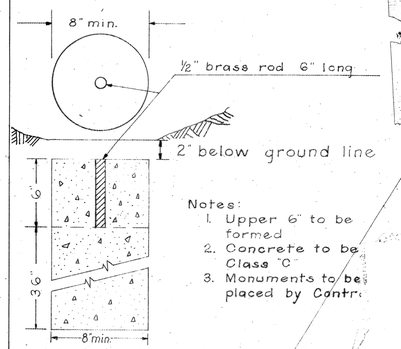


I HEREBY CERTIFY THAT THIS PLAT IS A TRUE DELINEATION OF A SURVEY MADE FOR THE OHIO DEPARTMENT OF HIGHWAYS IN MEDINA COUNTY BY Thomas Henry. DATE 9-4-62

REGISTERED SURVEYOR NO. 4622

SYMBOLS
- Reference Monument
- Road
- Lot or Tract Line
- Township Line

CENTERLINE REFERENCE MONUMENT DETAIL



Notes:
1. Upper 6" to be formed
2. Concrete to be Class "C"
3. Monuments to be placed by Contr

REVISIONS

MED.-42-21.94 ℄ Plot 1/2

CENTERLINE SU