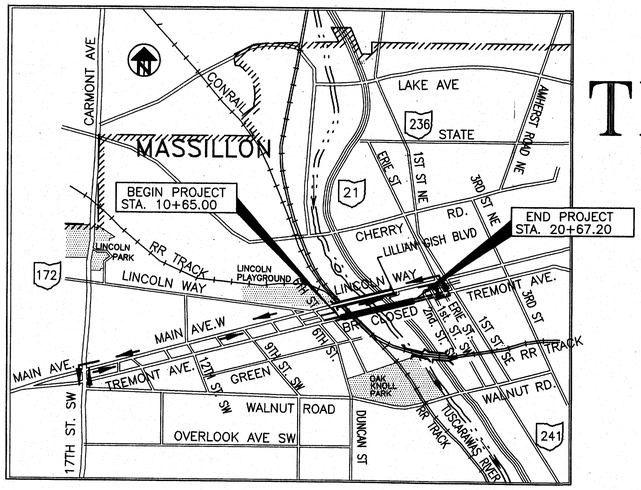
CITY OF MASSILLON
BRIDGE REHABILITATION

TREMONT AVE. BRIDGE

RECONSTRUCTION OF EXISTING SEPARATED CROSSING WITH STATE ROUTE 21, THE NORFOLK SOUTHERN RAILWAY CO., R.J. CORMAN RAILROAD CO. AND THE TUSCARAWAS RIVER.
STARK COUNTY
OHIO DEPT. OF TRANSPORTATION



LOCATION MAP

LATITUDE: N40°47'36" LONGITUDE: W81°31'32"

0 0.25 0.50 0.75
SCALE IN MILES

PORTION TO BE IMPROVED
STATE AND FEDERAL ROUTES
OTHER ROADS
EXISTING DETOUR ROUTE

DESIGN DESIGNATION

CURRENT YEAR ADT (2010)	6700
DESIGN YEAR ADT (2030)	7400
DESIGN HOURLY VOLUME (2030)	740
DIRECTIONAL DISTRIBUTION	60%
TRUCK (24 HOUR B&C)	3%
TD	2%
DESIGN SPEED	30 MPH
LEGAL SPEED	25 MPH
DESIGN FUNCTIONAL CLASSIFICATION	URBAN COLLECTOR

DESIGN EXCEPTIONS

NONE

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

ENGINEERS SEAL
STATE OF OHIO SCOTT A. VUNA E-63375 REGISTERED PROFESSIONAL ENGINEER
SIGNED:
DATE: 3.19.2008

PLANS PREPARED BY
OSBORN
THE OSBORN ENGINEERING COMPANY
CLEVELAND, OHIO 44114

INDEX OF SHEETS

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PROJECT DESCRIPTION

REHABILITATION OF TREMONT AVENUE STRUCTURE OVER S.R. 21, TUSCARAWAS RIVER AND EXISTING SEPARATED CROSSING OVER NORFOLK SOUTHERN AND R.J. CORMAN TRACKS INCLUDING STRUCTURE LIGHTING AND ASSOCIATED APPROACH ROADWAY WORK, ALL WITHIN A PROJECT LENGTH OF 0.190 MILES.

2005 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

EARTH DISTURBED AREAS:

1. PROJECT EARTH DISTURBED AREA	0.78 ACRES
2. ESTIMATED CONTRACTOR EARTH DISTURBED AREA	0 ACRES
3. NOTICE OF INTENT EARTH DISTURBED AREA	0.78 ACRES

U.S. ARMY CORPS OF ENGINEERS PERMIT No.
2004-01372-TUSCARAWAS RIVER.

STANDARD CONSTRUCTION DRAWINGS

								SUPPLEMENTAL SPECIFICATIONS	
BP-3.1	07-16-04	CB-2.1	07-15-05	HL-60.11	1-19-07	TC-73.10	01-19-01		
BP-5.1	07-28-00	DM-4.3	7-19-02	HL-60.12	1-19-07	MT-35.10	04-20-01	800	07-20-07
		DM-4.4	7-19-02			MT-95.30	09-05-06	802	04-15-05
GR-1.1	07-16-04			TC-16.20	1-19-07	MT-101.60	09-05-06	832	04-25-06
GR-2.1	01-16-04	HL-10.11	01-16-04	TC-21.20	1-19-07	MT-101.70	10-18-02		
GR-3.1	1-19-07	HL-10.12	1-19-07	TC-22.20	1-19-01	MT-105.10	10-18-02		
GR-3.2	1-19-07	HL-10.13	1-17-03	TC-41.20	1-19-01	MT-105.11	10-18-02		
GR-4.1	04-18-03	HL-20.11	1-19-07	TC-41.40	07-16-04				
		HL-20.14	01-21-05			A-1-69	7-19-02		
GR-4.2	1-19-07			TC-42.20	07-16-04	AS-1-81	7-19-02		
RM-1.1	04-21-06	HL-30.11	01-21-05	TC-52.10	1-19-07	BR-2-98	7-19-02		
RM-4.3	1-19-07	HL-30.21	1-19-07	TC-52.20	1-19-07	EXJ-4-87	7-19-02		
RM-4.5	1-19-07	HL-30.22	01-21-05	TC-61.10	1-19-01	GSD-1-96	7-19-02		
		HL-30.31	01-21-05	TC-65.11	1-21-05	SBR-1-99	7-19-02		
RM-4.6	01-16-04	HL-50.21	1-19-07	TC-71.10	1-19-07	VPF-1-90	7-19-02		

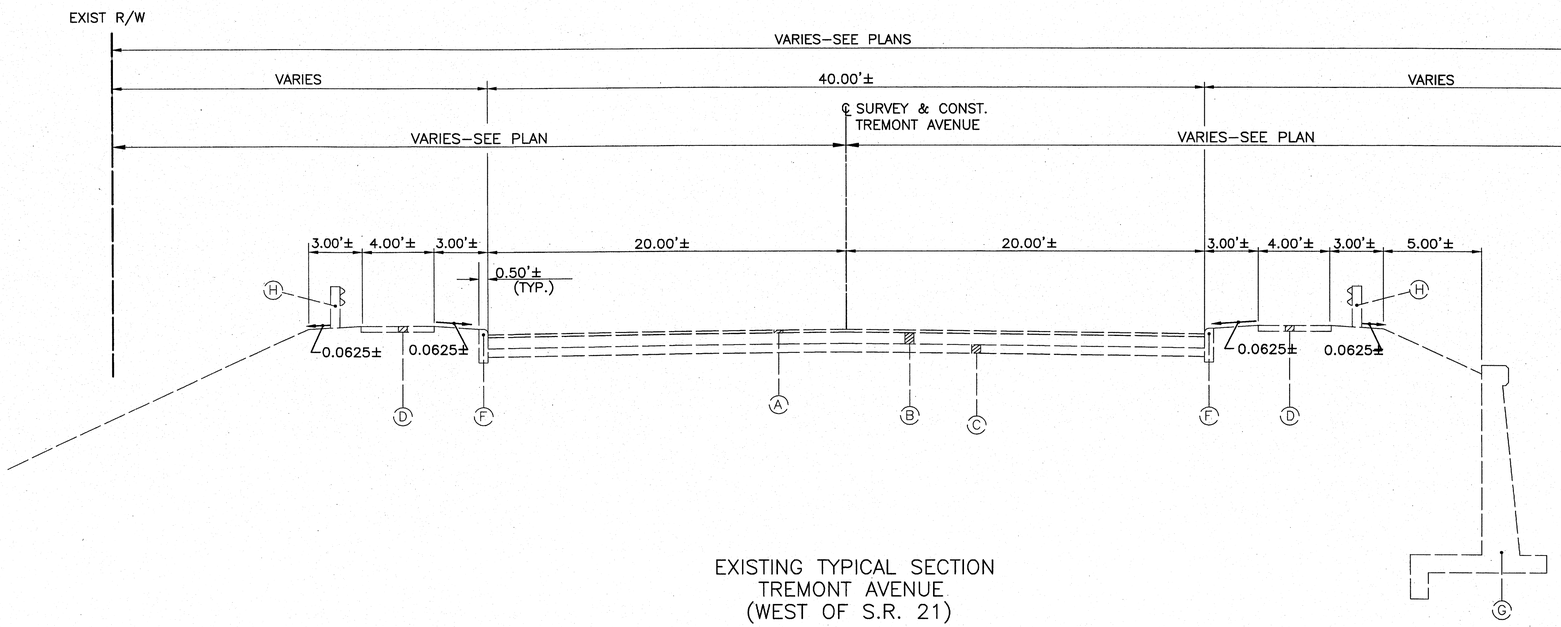
I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT THE EXISTING DETOURS WILL BE MAINTAINED AS INDICATED ON THE TITLE SHEET (SHEET 1).

APPROVED Michael J. Rehfus DATE 3/21/2008
MICHAEL J. REHFUS P.E., P.S,
STARK COUNTY ENGINEER

ADOPTED BY THE STARK COUNTY BOARD OF COMMISSIONERS PER RESOLUTION DATED JANUARY 17, 2008 .

FEDERAL PROJECT NO. XXXX
PID NO. 80669
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NS AND RJ CORMAN
TREMONT AVE. BRIDGE
1 / 63

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225sGT1.dwg
Plot Scale : 1
Drawn By/Date : TCooper / 12-19-05 (09:46)

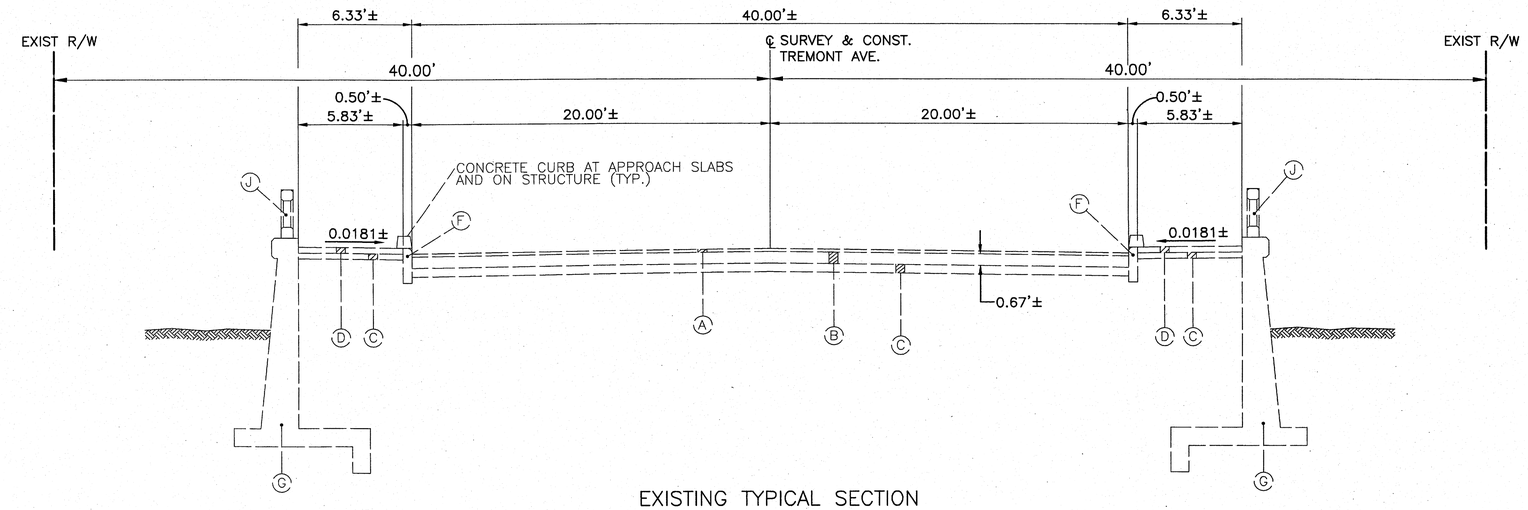


EXISTING TYPICAL SECTION
TREMONT AVENUE
(WEST OF S.R. 21)

STA. 10+65.00 TO STA. 11+52.14 = 87.14 FT.

LEGEND

- (A) ASPHALT CONCRETE SURFACE – 1 1/2"± to 3"±
- (B) REINFORCED CONCRETE PAVEMENT
- (C) BASE/SUBBASE
- (D) CONCRETE WALK
- (E) NOT USED
- (F) CONCRETE AND/OR STONE CURB
- (G) CONCRETE RETAINING WALL
- (H) GUARDRAIL
- (J) RAILING



EXISTING TYPICAL SECTION
TREMONT AVENUE
(EAST OF S.R. 21)

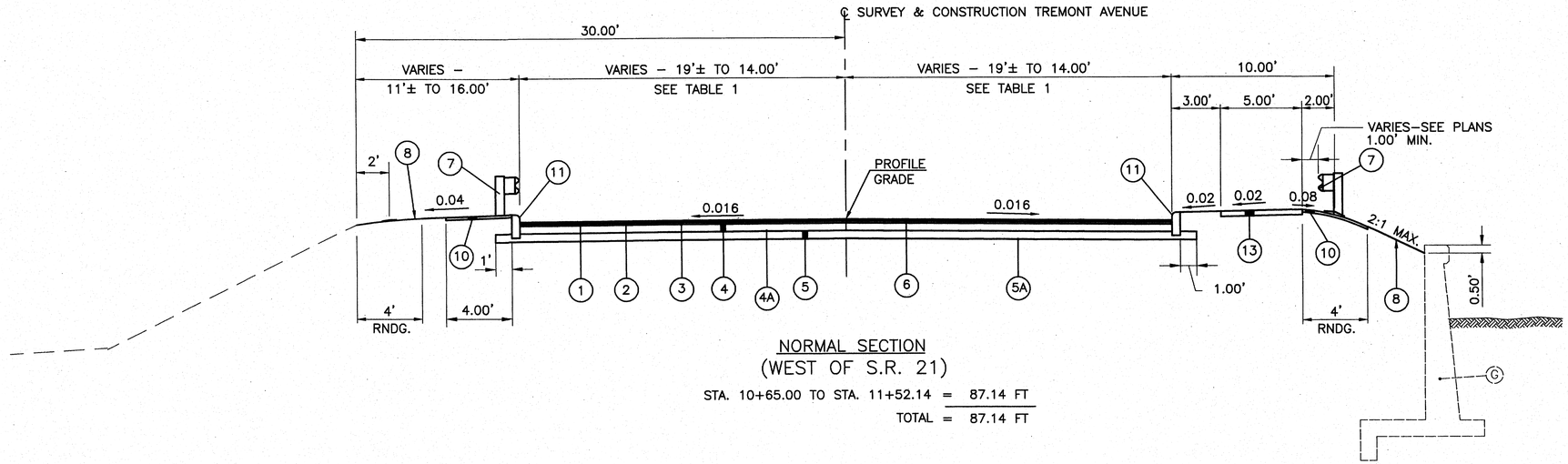
STA. 19+72.20 TO STA. 22+25.00 = 252.80 FT.

CALCULATED SMS
CHECKED GTA

TYPICAL SECTIONS

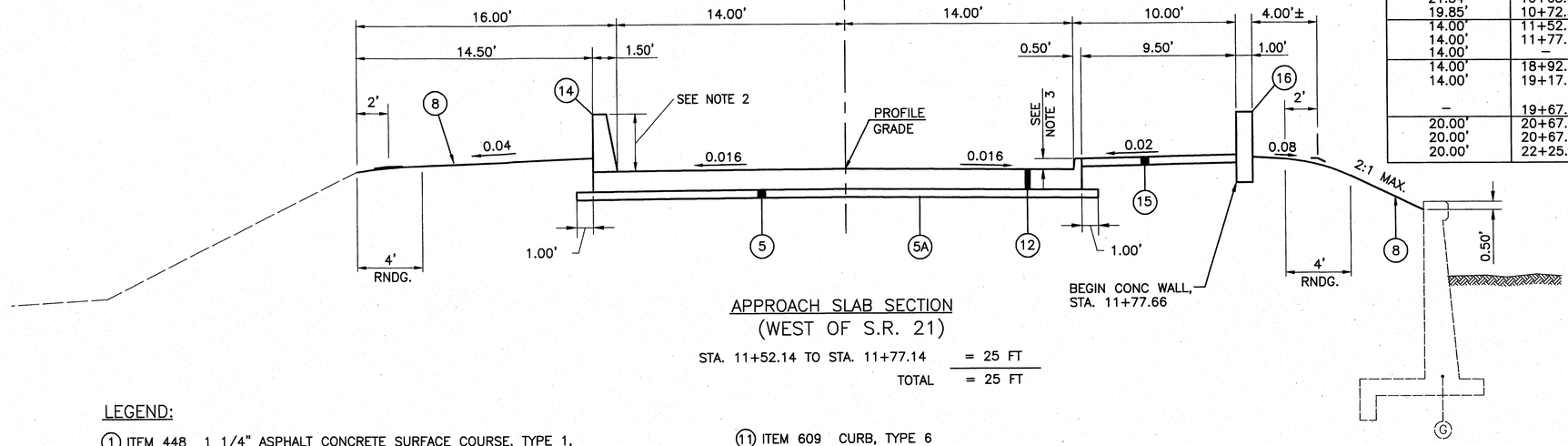
TREMONT AVENUE BRIDGE

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Plot Scale : 1 = 1
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NORMAL SECTION
(WEST OF S.R. 21)

STA. 10+65.00 TO STA. 11+52.14 = 87.14 FT
TOTAL = 87.14 FT



APPROACH SLAB SECTION
(WEST OF S.R. 21)

STA. 11+52.14 TO STA. 11+77.14 = 25 FT
TOTAL = 25 FT

TABLE 1

LEFT PAVEMENT WIDTH	STATION	RIGHT PAVEMENT WIDTH	REMARKS
–	10+60.41	19.01'	END CURB RADIUS, RT.
21.34'	10+65.00	18.77'	BEGIN FULL DEPTH PAVEMENT
19.85'	10+72.36	–	END CURB RADIUS, LT.
14.00'	11+52.14	14.00'	BEGIN REAR APPROACH SLAB
14.00'	11+77.14	14.00'	END REAR APPROACH SLAB
14.00'	–	14.00'	BRIDGE
14.00'	18+92.20	14.00'	BEGIN FORWARD APPROACH SLAB
14.00'	19+17.20	14.00'	END FORWARD APPROACH SLAB, BEGIN CURB TAPER, LT. & RT.
–	19+67.20	20.00'	END CURB TAPER, RT.
20.00'	20+67.20	–	END CURB TAPER, LT.
20.00'	20+67.20	20.00'	END FULL DEPTH PAVEMENT
20.00'	22+25.00	20.00'	END PAVEMENT RESURFACING

LEGEND:

(1) ITEM 448 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64–28, AS PER PLAN
(2) ITEM 448 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64–28
(3) ITEM 407 TACK COAT
(4) ITEM 301 8" ASPHALT CONCRETE BASE, PG64–22
(4A) ITEM 408 PRIME COAT
(5) ITEM 304 6" AGGREGATE BASE
(5A) ITEM 204 SUBGRADE COMPACTION
(6) ITEM 407 TACK COAT FOR INTERMEDIATE COURSE
(7) ITEM 606 GUARDRAIL, TYPE 5
(8) ITEM 659 SEEDING AND MULCHING
(9) NOT USED
(10) ITEM 448 2" ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64–22, AS PER PLAN
(11) ITEM 609 CURB, TYPE 6
(12) ITEM 526 REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN
(13) ITEM 608 4" CONCRETE WALK
(14) TRAFFIC BARRIER – (PART OF ITEM 526 AS PER PLAN)
(15) ITEM 608 6" CONCRETE WALK
(16) BRIDGE WING WALL – FOR DETAILS AND LIMITS, SEE STRUCTURAL DRAWINGS
(17) RETAINING WALL TOP EXTENSION – FOR DETAILS AND LIMITS, SEE STRUCTURAL DRAWINGS
(18) ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE, (3"±)

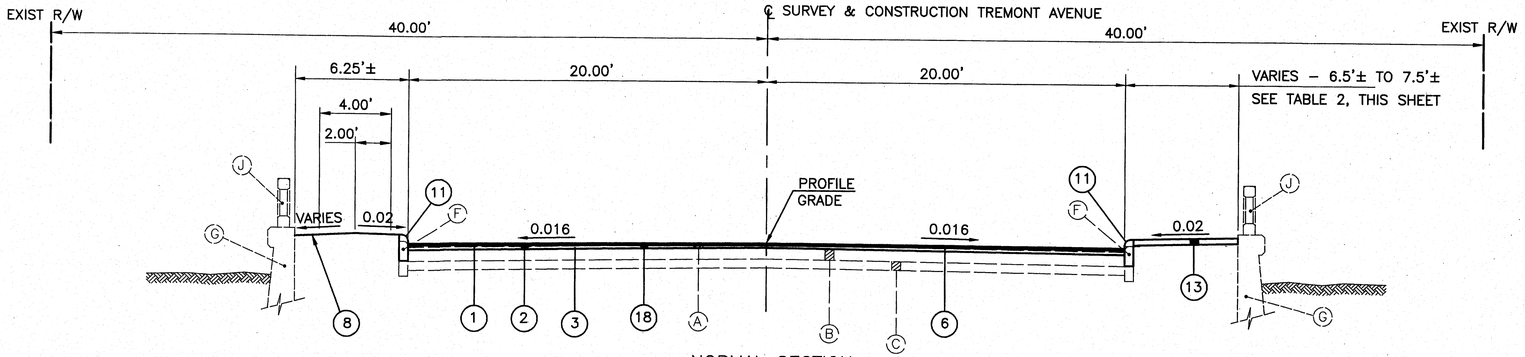
NOTES:
1. FOR GUARD RAIL LIMITS, SEE PLAN AND PROFILE DRAWINGS.
2. FOR BARRIER HEIGHT TRANSITIONS AND DETAILS, SEE APPROACH SLAB DETAIL ON SHEETS 42 AND 60.
3. CURB HEIGHT TRANSITIONS FROM 6" AT STA. 11+52.14 TO 8" AT STA. 11+77.14

CALCULATED SMS CHECKED GTA

TYPICAL SECTIONS

TREMONT AVENUE BRIDGE

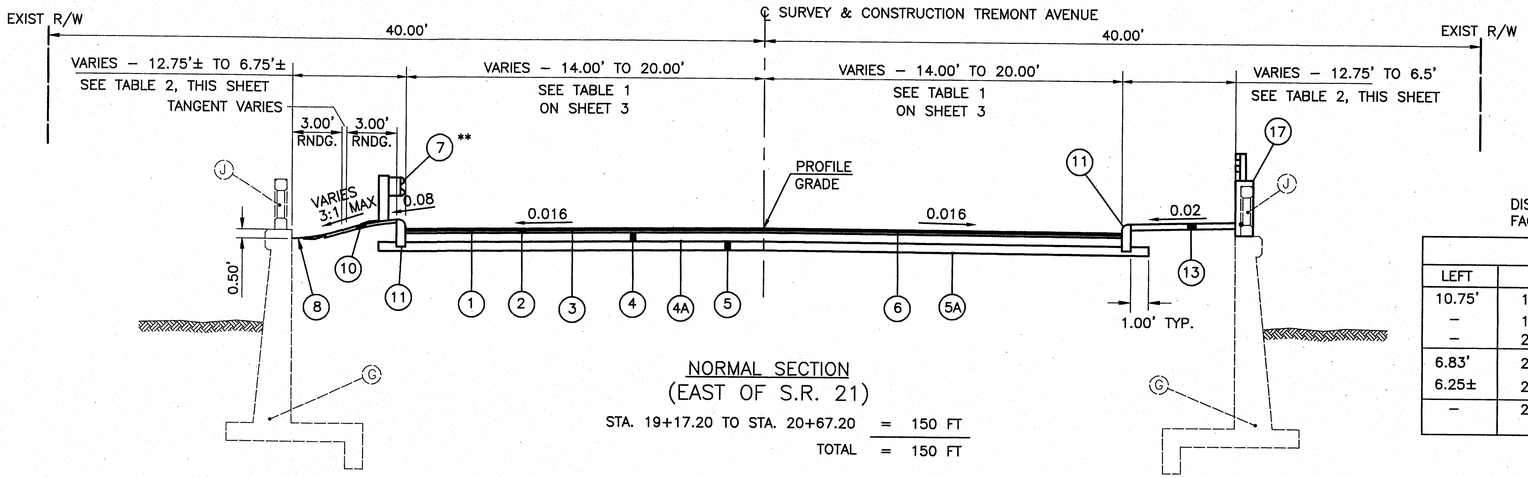
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Plot By/Date = TCooper / 12-19-05 (09:48)



NORMAL SECTION
(EAST OF S.R. 21)

STA. 20+67.20 TO STA. 22+25.00 = 157.8 FT

TOTAL = 157.8 FT



NORMAL SECTION
(EAST OF S.R. 21)

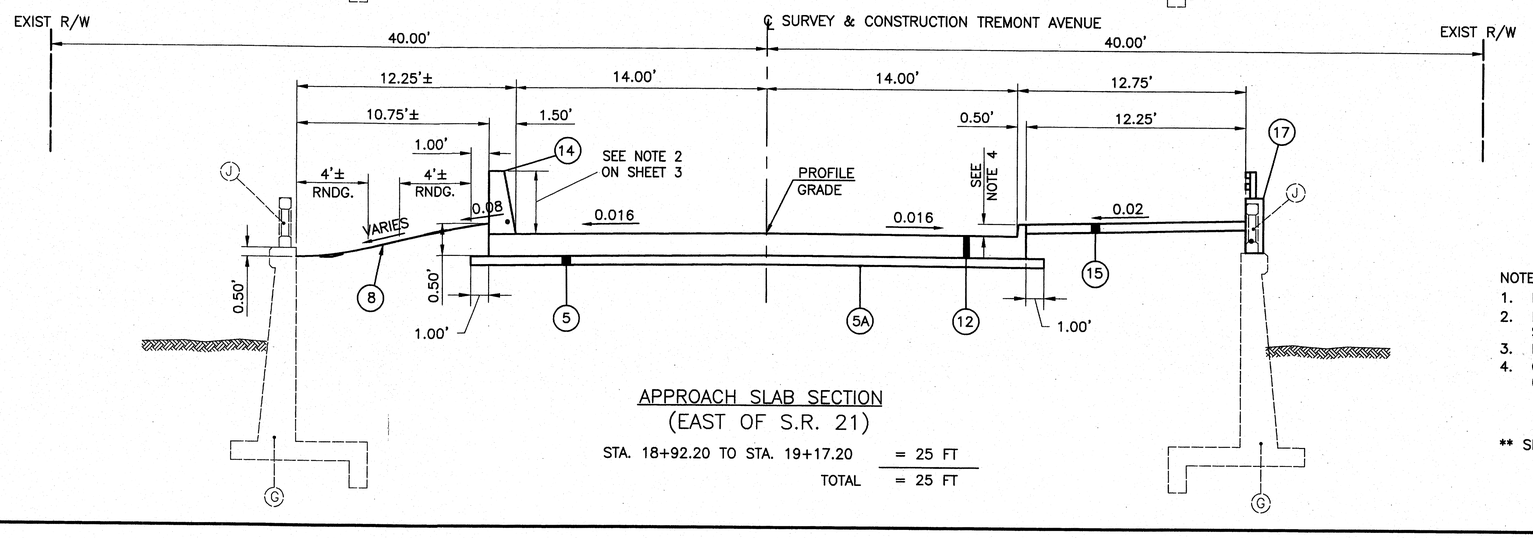
STA. 19+17.20 TO STA. 20+67.20 = 150 FT

TOTAL = 150 FT

DISTANCE FROM FACE OF CURB TO
FACE OF RAILING ON RETAINING WALL / BACK OF WALK

TABLE 2

LEFT	STATION	RIGHT	REMARKS
10.75'	19+17.20	12.75'	END FORWARD APPROACH SLAB
–	19+67.20	6.75'	END CURB TAPER, RT.
–	20+03.10	6.50'	END RETAINING WALL EXTENSION, RT.
6.83'	20+67.20	–	END CURB TAPER, LT.
6.25±	21+84.10	6.50'±	END EX. RETAINING WALL, LT. & RT.
–	22+25.00	7.50'	END PAVEMENT RESURFACING, END WALK, RT.



APPROACH SLAB SECTION
(EAST OF S.R. 21)

STA. 18+92.20 TO STA. 19+17.20 = 25 FT

TOTAL = 25 FT

NOTES:

1. FOR EXISTING TYPICAL SECTIONS, SEE SHEET 2.
2. FOR PROPOSED TYPICAL SECTION LEGEND AND NOTES, SEE SHEET 3.
3. FOR TABLE 1, SEE SHEET 3.
4. CURB HEIGHT TRANSITIONS FROM 8" AT STA. 18+92.20 TO 6" AT STA. 19+27.20

** SEE PLAN AND PROFILE SHEETS FOR GUARDRAIL LOCATIONS

CALCULATED SMS
CHECKED GTA

TYPICAL SECTIONS

TREMONT AVENUE BRIDGE

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225sCY3.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 12-19-05 (09:48)

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS SECTIONS EVEN THOUGH OTHERWISE SHOWN.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

ELECTRIC:
OHIO EDISON COMPANY
1910 WEST MARKET STREET
BLDG. 1
AKRON, OHIO 44313-6912
ATTN.: MR. MICHAEL JANSON
(330) 740-7635

TELEPHONE:
AT & T
50 WEST BOWERY STREET, 4TH FLOOR
AKRON, OHIO 44308
ATTN.: GARY COOPER
(330) 384-3228

NATURAL GAS:
DOMINION EAST OHIO GAS
7015 FREEDOM AVENUE NW
NORTH CANTON, OHIO 44720
ATTN.: MR. HARVEY YERGIN
(330) 478-3140

WATER LINES:
AQUA OHIO INC.
870 3RD. STREET NW
MASSILLON, OHIO 44647
ATTN.: MR. DON SNYDER
(330) 832-7600 EXT. 205

CABLE T.V.:
MASSILLON CABLE TV AND SUPERNET
814 CABLE COURT NW
MASSILLON, OHIO 44647
ATTN.: MR. JEFF CAMPBELL
(330) 833-4134

STORM & SANITARY:
CITY OF MASSILLON
151 LINCOLN WAY EAST
MASSILLON, OHIO 44646
ATTN.: MR. KEITH DYLEWSKI
(330) 830-1722

UTILITIES

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM. (NAD83)

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

EXISTING PLANS

EXISTING PLANS ENTITLED:

STA-241-7.63 TREMONT AVENUE VIADUCT (APRIL, 1947)
STA-241-7.63 TREMONT AVENUE VIADUCT (4-16-1965)

MAY BE INSPECTED IN THE STARK COUNTY ENGINEER'S OFFICE AT 5165 SOUTHWAY S.W., CANTON, OHIO 44706.

CLEARING AND GRUBBING, AS PER PLAN

THIS ITEM SHALL ALSO INCLUDE REMOVAL AND SATISFACTORY DISPOSAL OF ALL DEBRIS IN FRONT OF ABUTMENTS AND ALL PIERS.

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING, AS PER PLAN.

SEEDING AND MULCHING

QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS. FOR QUANTITY CALCULATIONS, SEE SHEET 10.

PAVING UNDER GUARDRAIL

THIS OPERATION SHALL INCLUDE PREPARATION OF THE GRADED SHOULDER USING 209, LINEAR GRADING, AND PAVING UNDER THE GUARDRAIL USING 448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG 64-22, UNDER GUARDRAIL, AS PER PLAN.

ITEM 209, LINEAR GRADING, SHALL CONSIST OF EXCAVATING TOPSOIL, PLACING GRANULAR MATERIAL AND APPLYING HERBICIDE AS SPECIFIED IN THE PLANS AND IN ACCORDANCE WITH THE FOLLOWING:

ALL COLLECTED DEBRIS AND TOPSOIL, INCLUDING RHIZOMES, ROOTS AND OTHER VEGETATIVE PLANT MATERIAL SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED IN 105.17.

THE REMOVED MATERIAL SHALL BE REPLACED WITH COMPACTABLE GRANULAR MATERIAL CONFORMING TO 703.16 PLACED TO GRADE AS DETAILED ON THE TYPICAL SECTION OR AS APPROVED BY THE ENGINEER.

HERBICIDE SHALL BE EPA APPROVED FOR PAVING UNDER GUARDRAIL. IT SHALL BE APPLIED TO THE PREPARED AREA AFTER FINAL LEVELING AND GRADING HAS BEEN COMPLETED. THE APPLICATION SHALL BE JUST PRIOR TO PAVING AND SHALL STRICTLY ADHERE TO THE MANUFACTURER'S INSTRUCTIONS.

EACH SUCCESSFUL BIDDER MUST BE LICENSED BY THE OHIO DEPARTMENT OF AGRICULTURE AS A COMMERCIAL APPLICATOR AND ALL PERSONS INVOLVED IN THE ACTUAL SPRAYING SHALL BE LICENSED AS COMMERCIAL OPERATORS IN THE APPROPRIATE SPRAY CATEGORY.

HERBICIDE LABEL, MATERIAL SAFETY DATA SHEET AND COPY OF APPLICATORS LICENSES SHALL BE SUBMITTED TO THE ENGINEER FOR VERIFICATION PRIOR TO COMMENCING WORK.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 209, LINEAR GRADING, AS PER PLAN.

PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 448 TO THE DEPTH SPECIFIED USING ONE OF THE FOLLOWING METHODS:

METHOD A: 1) SET GUARDRAIL POSTS

2) PLACE ITEM 448

METHOD B: 1) PLACE ITEM 448

2) BORE ASPHALT AT POST LOCATIONS (MAY BE OMITTED IF STEEL POSTS ARE USED)

3) SET GUARDRAIL POSTS

4) PATCH AROUND POSTS. THE MATERIALS USED FOR PATCHING SHALL BE AN ASPHALT CONCRETE APPROVED BY THE ENGINEER. PATCHED AREAS SHALL BE COMPACTED USING EITHER HAND OR MECHANICAL METHODS. FINISHED SURFACES SHALL BE SMOOTH AND SLOPED TO DRAIN AWAY FROM THE POSTS.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE, WITH THE EXCEPTION OF SETTING GUARDRAIL POSTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 448, ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 1, PG 64-22, UNDER GUARDRAIL, AS PER PLAN.

ITEM 448 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-28, AS PER PLAN

THE REQUIREMENTS OF 441 AND 448 SHALL APPLY; DEVIATIONS FROM THESE ARE AS FOLLOWS:

THE COMBINATION OF NEW AGGREGATES, NEW ASPHALT BINDER AND RECLAIMED MATERIAL SHALL BE AS REQUIRED TO PRODUCE A COMPOSITION CONTAINING A MINIMUM OF 5.0% NEW ASPHALT BINDER.

ANY PERCENTAGE OF RECLAIMED MATERIAL PROPOSED FOR SHALL BE INCLUDED IN THE MIX DESIGN PROCESS TO ESTABLISH THE JOB MIX FORMULA (JMF) IN ACCORDANCE WITH 441.02.

ENDANGERED SPECIES HABITAT

THIS PROJECT IS WITHIN THE RANGE OF THE FEDERALLY ENDANGERED INDIANA BAT (MYOTIS SODALIS) AND MAY IMPACT SUMMER ROOSTING HABITAT FOR THIS SPECIES. THE SUMMER ROOSTING HABITAT FOR THE INDIANA BAT CONSISTS OF LIVING OR DEAD TREES OR SNAGS WITH EXFOLIATING, PEELING OR LOOSE BARK, SPLIT TRUNKS AND/OR BRANCHES OR CAVITIES. THEREFORE, ANY UNAVOIDABLE CUTTING OF SUCH TREES WILL BE PERFORMED ONLY AFTER SEPTEMBER 15 AND BEFORE APRIL 15.

PRIOR TO ANY REMOVAL, THE UNDERSIDE OF REMAINING PORTION OF BRIDGE SHALL BE CAREFULLY EXAMINED FOR THE PRESENCE OF BATS, ESPECIALLY FROM APRIL 15 TO SEPTEMBER 15. IF ANY BATS ARE FOUND ROOSTING ON THE UNDERSIDE OF THE BRIDGE, THE USFWS, ECOLOGICAL SERVICES DIVISION SHOULD BE CONTACTED OR PROVIDED WITH INFORMATION.

BEST MANAGEMENT PRACTICES

WATER COLUMN AND SEDIMENTATION IMPACTS SHALL BE KEPT TO A MINIMUM THROUGH THE USE OF BEST MANAGEMENT PRACTICES FOR SOIL EROSION AND SEDIMENTATION CONTROL. DISTURBANCE TO THE BED AND/OR BANKS OF THE TUSCARAWAS RIVER SHALL BE KEPT TO THE MINIMUM NECESSARY TO COMPLETE THE PROJECT.

404/401 PERMIT COMPLIANCE NOTE

THE 404/401 WATERWAY PERMITS FOR THIS PROJECT HAVE BEEN AUTHORIZED BY THE US ARMY CORPS OF ENGINEERS AND/OR THE OHIO ENVIRONMENTAL PROTECTION AGENCY. THE COMPLETE/AUTHORIZED 404/401 PERMITS WILL BE PROVIDED TO THE CONTRACTOR.

PROJECT COORDINATION

THE CONTRACTOR WILL BE REQUIRED TO CLOSELY COORDINATE THE REHABILITATION WORK TO BE PERFORMED ON THE BRIDGE WITH THE APPROPRIATE CITY OF MASSILLON PERSONNEL AND ODOT.

CALCULATED TWC
CHECKED GTA

GENERAL NOTES

TREMONT AVENUE BRIDGE

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225sGN1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 12-19-05 (09:42)

EXISTING DETOUR DURATION

THE EXISTING BRIDGE IS CLOSED TO THE TRAFFIC. THE BRIDGE TRAFFIC IS ALREADY DETOURED.

THE MAXIMUM LENGTH OF TIME FOR THE EXISTING DETOUR ROUTE TO BE IN EFFECT SHALL BE THREE HUNDRED AND SIXTY FIVE (365) CONSECUTIVE DAYS. CONSTRUCTION WORK MAY BE PERFORMED AFTER THE DETOUR LIMITATION DATES, BUT THERE SHALL BE NO RESTRICTIONS (LANE WIDTH REDUCTIONS, TEMPORARY ROADWAYS, OR ONE WAY TRAFFIC) TO THROUGH OR LOCAL TRAFFIC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE AND PERFORM THE CONSTRUCTION WORK WITHIN THE DETOUR LIMITATION TIME. THE FAILURE OF THE CONTRACTOR TO MEET THE DETOUR LIMITATION DATES WILL CAUSE SEPARATE LIQUIDATED DAMAGES OF $ 1250.00 PER CALENDAR DAY OF OVERRUN OF DETOUR LIMITATION TIME TO BE ASSESSED. THE CONTRACTOR WILL COMPLY WITH ALL PROVISIONS OF 108.07 OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

SIGNS AT ADJACENT ROAD INTERSECTIONS

THE CONTRACTOR SHALL, IN ADDITION TO THE GENERAL REQUIREMENTS OF ITEM 614 ON THE PROJECT PERFORM THE FOLLOWING: PROVIDE, ERECT, AND MAINTAIN STANDARD 48"X30" SIZE "ROAD CLOSED" SIGNS, SIGN SUPPORTS, BARRICADES, GATES AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIOD(S) IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC:

R11-2	48"X30" (ROAD CLOSED) SIGNS AT W. 4TH. STREET SW.	2 EACH

SIGN SUPPORTS FOR "ROAD CLOSED" SIGNS SHALL BE AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR PROVIDING, ERECTING, MAINTAINING, AND REMOVING SIGNS, AND SIGN SUPPORTS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

MAINTENANCE OF TRAFFIC AND LANE RESTRICTIONS FOR S.R. 21

TWO LANES OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED FOR S.R. 21 DURING PEAK PERIODS. LANE CLOSURE IN ACCORDANCE WITH THE STANDARD DRAWING MT-95.30, SHALL BE PERMITTED DURING OFF PEAK PERIODS. THE OFF PEAK IS DEFINED AS ANY PERIOD OTHER THAN 7-9 AM AND 4-6 PM MONDAY TO FRIDAY, EXCEPT HOLIDAYS. HOLIDAYS WILL BE CONSIDERED PEAK PERIOD.

ONLY DURING THE OFF PEAK PERIODS, THE CONTRACTOR SHALL INSTALL AND SUBSEQUENTLY REMOVE AND RESET ALL TRAFFIC CONTROL DEVICES FOR EACH CONSTRUCTION STAGE.

LANE CLOSURE SHALL ONLY BE PERMITTED DURING ACTUAL REHABILITATION WORK OVER AND ADJACENT TO S.R. 21 LANES. AT ALL OTHER TIMES, THE EXISTING LANES OF TRAFFIC SHALL BE MAINTAINED.

NO FULL DEPTH BRIDGE REPAIR, REMOVAL OR PLACEMENT OF NEW COMPONENTS SHALL BE PERFORMED OVER AN OPEN LANE AND SHOULDER. PROTECTIVE STRUCTURES SHALL BE INSTALLED AS DESCRIBED IN THE STRUCTURAL GENERAL NOTES ON SHEETS 30-32A .

LANE CLOSURE WILL BE REQUIRED DURING REMOVAL OF EXISTING SUPERSTRUCTURE AND PORTIONS OF SUBSTRUCTURE ELEMENTS INCLUDING CONCRETE PIER CAP COMPONENTS. LANE CLOSURE WILL ALSO BE REQUIRED DURING PLACEMENT OF NEW CONCRETE OVER S.R. 21 SPANS, DURING STRUCTURE PAINTING AND REHABILITATION OF THE S.R. 21 MEDIAN PIER.

IN ADDITION, ALL LANES OF S.R. 21 MAY BE CLOSED FOR ERECTION OF THE STRUCTURAL STEEL, PROVIDED THE DURATION OF THE CLOSURES DOES NOT EXCEED TEN (10) MINUTES INTERVALS. TO INSURE THE CLOSURES DO NOT EXCEED THE SPECIFIED INTERVALS, THE CONTRACTOR SHALL COORDINATE WITH ALL CONCERNED PARTIES INVOLVED. LAW ENFORCEMENT OFFICER WITH PATROL CAR SHALL BE UTILIZED FOR COMPLETE BLOCKAGE OF TRAFFIC OPERATION. THE ABOVE STATED ERECTION REQUIREMENTS SHALL APPLY UNLESS ALTERNATE PROCEDURES ARE APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL MEASURE AND ERECT WORK ZONE LOW CLEARANCE SIGNS TO INDICATE THE MINIMUM CONSTRUCTION VERTICAL CLEARANCE. THE CLEARANCE SHALL BE TO THE LOW POINT OF FALSEWORK USED FOR THE TRAFFIC PROTECTION. THE SIGN SHALL BE W12-2 36"X36" SHOWING ACTUAL MEASURED CLEARANCE.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY.

W12-2	36"X36" (LOW CLEARANCE) SIGNS	2 EACH

ALL OTHER ITEMS OF WORK INCLUDING WORK ZONE PAVEMENT MARKINGS, WHERE REQUIRED, ASSOCIATED WITH CLOSING RIGHT OR LEFT LANE OF A MULTI-LANE DIVIDED HIGHWAY WITH DRUMS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 614- MAINTAINING TRAFFIC.

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR

IN ADDITION TO THE REQUIREMENTS OF CMS 614 AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD), A UNIFORMED LAW ENFORCEMENT OFFICER AND OFFICIAL PATROL CAR WITH WORKING TOP-MOUNTED EMERGENCY FLASHING LIGHTS SHALL BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED FOR S.R. 21 TRAFFIC DURING ERECTION OF STRUCTURAL BEAMS FOR THE NEW STRUCTURE.

LAW ENFORCEMENT OFFICERS WITH PATROL CAR REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR	32 HOURS

THE HOURS PAID SHALL INCLUDE MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

IF CONTRACTORS WISH TO UTILIZE LEOS FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, THEY MAY DO SO AT THEIR OWN EXPENSE. PAYMENT FOR THE EXCESS ABOVE THE CONTRACT REQUIREMENTS WILL BE INCLUDED UNDER ITEM 614, MAINTAINING TRAFFIC.

ITEM 614 - MAINTAINING TRAFFIC

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

CALCULATED TWC
CHECKED GTA

GENERAL NOTES

TREMONT AVENUE BRIDGE

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225sGN2.dwg
Plot Scale : 1 = TCooper / 12-19-05 (09:44)
Drawn By/Date :

ITEM 202 – LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LIGHT POLE INCLUDING THE BRACKET ARM(S), TRANSFORMER BASE (IF ANY) AND PROPERLY STORING THIS ASSEMBLY ON THE PROJECT SITE UNTIL PICKED UP BY THE CITY OF MASSILLON OR BY OTHERS

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 202, "LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN" FOR EACH POLE REMOVED AND STORED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 – LUMINAIRE, CONVENTIONAL, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS SHALL BE AS FOLLOWS:

LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS WITH AN IES II– M–SC DISTRIBUTION AND 150 WATT HIGH PRESSURE SODIUM LAMPS SHALL BE AMERICAN ELECTRIC "SERIES 126" WITH PHOTOMETRIC DISTRIBUTION AE3849I, COOPER "OVD" WITH PHOTOMETRIC DISTRIBUTION OVD2S2F, GENERAL ELECTRIC "M– 400" WITH PHOTOMETRIC DISTRIBUTION 1014, OR EQUAL AS APPROVED BY THE ENGINEER.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH CMS ITEM 625, LUMINAIRE, CONVENTIONAL, AS PER PLAN (150 WATTS HPS 120V WITH INTEGRAL FUSING AND PHOTOCELL) FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 – LIGHT POLE ANCHOR BOLTS ON STRUCTURE

WHEN A LIGHT POLE IS MOUNTED ON A PILASTER ON A BRIDGE PARAPET OR ON A RETAINING WALL, THE REQUIRED ANCHOR BOLTS MAY DIFFER IN LENGTH AND/OR SHAPE FROM THOSE REQUIRED WHEN THE POLE IS MOUNTED ON A CAST–IN–PLACE DRILLED SHAFT FOUNDATION. THE COST DIFFERENTIAL FOR FURNISHING SUCH BOLTS IS INCLUDED HEREIN.

IN ADDITION, THERE IS NO FOUNDATION CONSTRUCTION ITEM IN WHICH TO INCLUDE THE SETTING OF THE ANCHOR BOLTS. THUS, THE SETTING OF THE ANCHOR BOLTS INTO THE PILASTER IS ALSO PART OF THIS WORK.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR EACH INDIVIDUAL ANCHOR BOLT. THE UNIT PRICE BID FOR ITEM 625 –LIGHT POLE ANCHOR BOLTS ON STRUCTURE SHALL INCLUDE THE ANCHOR BOLT, TWO HEX NUTS, WASHERS AND ALL LABOR, MATERIAL, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO PLACE THE BOLTS AND COMPLETE THIS ITEM OF WORK IN PLACE. PAYMENT SHALL ONLY BE MADE FOR ACTUAL NUMBER OF ANCHOR BOLTS INSTALLED.

UNDERDRAINS FOR PULL BOXES

REFERENCE IS MADE TO THE STANDARD DRAWINGS FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 18 FEET. AN ANIMAL GUARD SHALL BE INCLUDED AT THE OUTLET END OF THE DRAIN. AN ESTIMATED QUANTITY OF CMS ITEM 603, "4" CONDUIT, TYPE E" IS INCLUDED AT EACH PULL BOX FOR THIS PURPOSE.

CONDUIT EXPANSION AND DEFLECTION

EXPANSION FITTINGS SHALL BE OZ TYPE AX, CROUSE HINDS TYPE XJG, APPLETON TYPE AX, OR EQUAL APPROVED BY THE ENGINEER. EACH EXPANSION FITTING SHALL PROVIDE EITHER 4" OR 8" TOTAL MOVEMENT AS SPECIFIED BY THE PLAN DETAILS AND SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

DEFLECTION COUPLINGS SHALL BE OZ TYPE DX, CROUSE HINDS TYPE XD, APPLETON TYPE DF, OR EQUAL APPROVED BY THE ENGINEER. EACH DEFLECTION COUPLING SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

ITEM SPECIAL – PLASTIC CAUTION TAPE

THE LOCATION OF CONDUIT IN TRENCH SHALL BE MARKED BY THE USE OF A CONTINUOUS IDENTIFYING TAPE BURIED IN THAT TRENCH ABOVE THE CONDUIT LINE. THE IDENTIFYING TAPE SHALL BE AN INERT MATERIAL APPROXIMATELY 6" WIDE COMPOSED OF POLYETHYLENE PLASTIC AND SHALL BE HIGHLY RESISTANT TO ALKALIS, ACIDS OR OTHER CHEMICAL COMPONENTS LIKELY TO BE ENCOUNTERED IN SOILS. THE TAPE SHALL BE RED WITH THE WORDS "ELECTRIC LINE BURIED BELOW" PRINTED IN BLACK LETTERS ON ONE SIDE ONLY. IT SHALL BE SUPPLIED IN CONTINUOUS ROLLS WITH THE IDENTIFYING LETTERING REPEATED FOR THE FULL LENGTH OF THE TAPE.

THE CONTRACTOR SHALL BURY THE TAPE IN THE TRENCH WITH ONE STRIP PLACED APPROXIMATELY DOWN THE CENTER LINE AND 8" TO 12" BELOW THE FINAL GRADE. IT SHALL BE PLACED IN THE TRENCH WITH THE PRINTED SIDE UP AND SHALL BE ESSENTIALLY PARALLEL TO THE FINISHED SURFACE. THE CONTRACTOR SHALL TAKE ANY NECESSARY PRECAUTIONS TO INSURE THAT THE TAPE IS NOT PULLED, DISTORTED OR OTHERWISE MISPLACED IN COMPLETING THE TRENCH BACKFILLING. THE TAPE SHALL BE "TERRA TAPE", "ALLEN SYSTEM'S", OR AN EQUAL AS APPROVED BY THE ENGINEER IN ADVANCE.

PAYMENT FOR ITEM SPECIAL – PLASTIC CAUTION TAPE, WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER LINEAR FEET, COMPLETE AND IN PLACE.

ITEM 625 – POWER SERVICE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING IS ADDED.

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

OHIO EDISON COMPANY
1910 WEST MARKET STREET, BLDG. NO. 1
AKRON, OHIO 44313
ATT: MR. JEFF KNAPP
(330) 384–4653

SERVICE: 120 VOLTS, SINGLE PHASE, TWO WIRES WITH GROUND

THIS ITEM OF WORK SHALL INCLUDE MODIFICATIONS TO THE EXISTING POWER SOURCE TO THE STRUCTURE LIGHTING AS A RESULT OF THE STRUCTURE REHABILITATION THAT WILL INCLUDE REMOVAL OF EXISTING LIGHT POLES. THE AERIAL SERVICE SHALL BE DISCONNECTED AT BOTH ENDS OF THE STRUCTURE. THE POWER SERVICE SHALL BE FROM AN EXISTING POLE LOCATED ON THE SOUTH WEST CORNER OF THE STRUCTURE LOCATED AT STA. 10+73±, RIGHT. THE EXISTING POLE SHALL BE UTILIZED FOR THE POWER SERVICE. THE POWER SERVICE SHALL NOT BE METERED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CHARGES MADE BY THE POWER COMPANY FOR WORK BY THE COMPANY IN CONJUNCTION WITH THE ESTABLISHMENT OF THE REQUIRED SERVICE.

ELECTRICAL ENERGY FROM EXISTING POWER SERVICES SHALL CONTINUE TO BE CHARGED TO THE MAINTAINING AGENCY. THE CONTRACTOR SHALL PAY ELECTRICAL ENERGY CHARGES FOR NEW POWER SERVICES ESTABLISHED BY THIS PROJECT. AFTER ACCEPTANCE OF THE LIGHTING, THE POWER SERVICE ELECTRICAL ENERGY ACCOUNT SHALL BE TRANSFERRED TO THE MAINTAINING AGENCY NOTED IN THE PLANS.

THIS SHALL INCLUDE NEW POWER SERVICE ESTABLISHED BY THIS PROJECT AS WELL AS REASSIGNMENT OF EXISTING SERVICE DUE TO WORK PERFORMED BY THIS PROJECT.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH CMS ITEM 625, "POWER SERVICE, AS PER PLAN" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 630 – COMBINATION OVERHEAD SIGN SUPPORT, TYPE TC–16.20, DESIGN 1, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING IS ADDED:

THE POLE SHALL INCLUDE A TRANSFORMER BASE AND ANCHOR BOLTS ON STRUCTURE FOUNDATION. THE POLE, THE TRANSFORMER BASE, THE LUMINAIRE BRACKET AND SIGN SUPPORT MAST ARM SHALL MATCH OTHER LIGHT POLES ON THE STRUCTURE PER APPLICABLE REQUIREMENTS OF ITEM 625 – LIGHT POLE , DESIGN ST10B40.

UNLESS NOTED OTHERWISE AND SEPARATELY LISTED AS A PAY ITEM, ALL REQUIRED ITEMS TO INSTALL SIGNS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS PAY ITEM. THE ANCHOR BOLTS SHALL MEET THE GENERAL REQUIREMENTS LISTED UNDER ITEM 625 – LIGHT POLE ANCHOR BOLTS ON STRUCTURE, HOWEVER, THE ANCHOR BOLTS WILL BE INCLUDED WITH THE COMBINATION POLE AND WILL NOT BE PAID SEPARATELY.

ITEM 630 – LUMINAIRE SUPPORT ASSEMBLY, MISC.; (10' BRACKET ARM) OR (20' BRACKET ARM)

THE LUMINAIRE BRACKET ARM AND SUPPORT ASSEMBLY HARDWARE SHALL MATCH OTHER LIGHT POLES ON STRUCTURE, REQUIRED UNDER ITEM 625 – LIGHT POLE DESIGN ST10B40 OR ST20B40.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR LUMINAIRE SUPPORT ASSEMBLY, MISC.; (10' BRACKET ARM OR 20' BRACKET ARM) AND SHALL INCLUDE ALL LABOR, MATERIAL, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO PLACE THE LUMINAIRE SUPPORT ASSEMBLY, COMPLETE IN PLACE.

ITEM 630 – SIGN, DOUBLE FACED, STREET NAME, AS PER PLAN

FABRICATE THE STREET NAME SIGN (D3–1) ON VARIABLE LENGTH BY 8 INCH TALL EXTRUDED ALUMINUM BLANKS. USE FEDERAL SERIES C LETTER SPACING AND 6 INCH LETTER HEIGHT. OMIT THE OUTLINE. USE TYPE J SHEETING FOR THE BLUE BACKGROUND AND WHITE LEGEND.

PAYMENT FOR ITEM 630, SIGN, DOUBLE FACED, STREET NAME, AS PER PLAN WILL BE MADE AT THE CONTRACT PRICE OF EACH, AND WILL INCLUDE MOUNTING FITTINGS AND HARDWARE UNLESS SEPARATELY ITEMIZED IN THE PLAN.

CALCULATED TWC
CHECKED GTA

GENERAL NOTES

TREMONT AVENUE BRIDGE

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225sGN3.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 12–19–05 (09:45)

ITEM	SHEET NUMBER								OFFICE CALC.	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	5	6	7	10	11	13	24	27							
														ROADWAY	
201										201	11001	1	LUMP	CLEARING AND GRUBBING, AS PER PLAN	5
202									1054	202	23000	1054	SQ YD	PAVEMENT REMOVED	
202									5483	202	30000	5483	SQ FT	WALK REMOVED	
202									821	202	32000	821	FT	CURB REMOVED	
202					5					202	35100	5	FT	PIPE REMOVED, 24" AND UNDER	
202					187					202	38000	187	FT	GUARDRAIL REMOVED	
202					1					202	58100	1	EACH	CATCH BAIN REMOVED	
203					275					203	10000	275	CU YD	EXCAVATION	
203					250					203	20000	250	CU YD	EMBANKMENT	
204									1114	204	10000	1114	SQ YD	SUBGRADE COMPACTION	
606					224.50					606	13000	224.50	FT	GUARDRAIL, TYPE 5	
606					1					606	25000	1	EACH	ANCHOR ASSEMBLY, TYPE A	
606					2					606	26500	2	EACH	ANCHOR ASSEMBLY, TYPE T	
606					2					606	35000	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
606					1					606	35100	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
626					9					626	00100	9	EACH	BARRIER REFLECTOR, TYPE A	
626					9					626	00200	9	EACH	BARRIER REFLECTOR, TYPE B	
														EROSION CONTROL	
659				114						659	00300	114	CU YD	TOPSOIL	
659				1140						659	10000	1140	SQ YD	SEEDING AND MULCHING	
659				57						659	14000	57	SQ YD	REPAIR SEEDING AND MULCHING	
659				0.15						659	20000	0.15	TON	COMMERCIAL FERTILIZER	
659				12.31						659	35000	12.31	MGAL	WATER	
832						1				832	15000	1	LUMP	STORM WATER POLLUTION PREVENTION PLAN	
832									3000	832	30000	3000	EACH	EROSION CONTROL	
														DRAINAGE	
603					5					603	04400	5	FT	12" CONDUIT, TYPE B	
604					1					604	00400	1	EACH	CATCH BASIN NO. 3	
														PAVEMENT	
254									701	254	01000	701	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE	
301									190.4	301	46000	190.4	CU YD	ASPHALT CONCRETE BASE, PG64-22	
304									186	304	20000	186	CU YD	AGGREGATE BASE	
407									156	407	10000	156	GAL	TACK COAT	
408									94	408	10000	94	GAL	PRIME COAT	
448									75.7	448	46040	75.7	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-28	
448									6.81	448	46061	6.81	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, UNDER GUARDRAIL, PG64-22, AS PER PLAN	5
448									54.1	448	47011	54.1	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-28, AS PER PLAN	5
608									2850	608	10000	2850	SQ FT	4" CONCRETE WALK	
608									250	608	13000	250	SQ FT	6" CONCRETE WALK	
608									166	608	52000	166	SQ FT	CURB RAMP	
608									400	608	52001	400	SQ FT	CURB RAMP, AS PER PLAN	23
609									834	609	26000	834	FT	CURB, TYPE 6	

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GENERAL SUMMARY

TREMONT AVENUE BRIDGE

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Filename : i:\CADFiles\13225 Tremont Ave\Struct\3225sGG1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 12-19-05 (09:31)

ITEM	SHEET NUMBER								OFFICE CALC.	ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	5	6	7	10	11	13	24	27							
														TRAFFIC CONTROL	
620								11		620	103000	11	EACH	DELINEATOR TYPE C, POST MOUNTED	
621								16		621	10000	16	EACH	RPM, LOW PROFILE, YELLOW/YELLOW	
621								32		621	10010	32	EACH	RPM, LOW PROFILE, WHITE	
630								187		630	02100	187	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
630								14		630	08510	14	FT	STREET NAME SIGN SUPPORT, NO. 2 POST	
630								1		630	75150	1	EACH	LUMINAIRE SUPPORT ASSEMBLY, MISC.; (10' BRACKET ARM)	7
630								2		630	79604	2	EACH	SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED, TYPE 2	
630								111.75		630	80100	111.75	SQ FT	SIGN, FLAT SHEET	
630								2		630	80501	2	EACH	SIGN, DOUBLE FACED, STREET NAME, AS PER PLAN	7
630								6		630	84900	6	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
630								5		630	86002	5	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
630								1		630	15101	1	EACH	COMBINATION OVERHEAD SIGN SUPPORT, TYPE TC-16.20, DESIGN 1, AS PER PLAN	7
644								0.15		644	00100	0.15	MILE	EDGE LINE	
644								0.03		644	00200	0.03	MILE	LANE LINE	
644								0.22		644	00300	0.22	MILE	CENTER LINE	
644								239		644	00400	239	FT	CHANELLIZING LINE	
644								52		644	00500	52	FT	STOP LINE	
644								310		644	00600	310	FT	CROSSWALK LINE	
644								7		644	01300	7	EACH	LANE ARROW	
644								1		644	01400	1	EACH	WORD ON PAVEMENT, 72"	
														MAINTENANCE OF TRAFFIC	
614		32								614	11100	32	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
614		2								614	12460	2	EACH	WORK ZONE MARKING SIGN	
														LIGHTING	
202								3		202	75403	3	EACH	LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN	7
603								336		603	00400	336	FT	4" CONDUIT, TYPE E	
625								20		625	00500	20	EACH	CONNECTOR KIT, TYPE II	
625								21		625	01500	21	EACH	CABLE SPLICING KIT	
625								5		625	10500	5	EACH	LIGHT POLE, MISC.; DESIGN ST10B40	
625								4		625	10500	4	EACH	LIGHT POLE, MISC.: DESIGN ST20B40	
625								12		625	10600	12	EACH	LIGHT POLE ANCHOR L-BOLTS	
625								24		625	10614	24	EACH	LIGHT POLE ANCHOR BOLTS ON STRUCTURE	7
625								3		625	14150	3	EACH	LIGHT POLE FOUNDATION, 24"X9' DEEP	
625								6363		625	23302	6363	FT	NO. 6 AWG 5000 VOLT DISTRIBUTION CABLE	
625								1222		625	23410	1222	FT	NO. 12 AWG POLE AND BRACKET CABLE	
625								1985		625	25400	1985	FT	CONDUIT, 2", 725.04	
625								48		625	25802	48	FT	CONDUIT, CONCRETE ENCASED (3", 725.04)	
625								10		625	26251	10	EACH	LUMINAIRE, CONVENTIONAL, AS PER PLAN (150 WATT HPS 120V WITH INTEGRAL FUSING AND PHOTOCELL)	7
625								474		625	29000	474	FT	TRENCH	
625								10		625	29920	10	EACH	STRUCTURE JUNCTION BOX	
625								7		625	30706	7	EACH	PULLBOX, 725.08, 24"	
625								6		625	32000	6	EACH	GROUND ROD	
625								1		625	33000	1	EACH	STRUCTURE GROUNDING SYSTEM	
625								1		625	34001	1	EACH	POWER SERVICE, AS PER PLAN	7
SPECIAL								474		SPECIAL	625E36000	474	FT	SPECIAL - PLASTIC CAUTION TAPE	7
														FOR STRUCTURE GENERAL SUMMARY, SEE SHEET NO. 33	
614										614	11000	1	LUMP	MAINTAINING TRAFFIC	
619										619	16010	12	MONTH	FIELD OFFICE, TYPE B	
623										623	10000	1	LUMP	CONSTRUCTION LAYOUT STAKES	
624										624	10000	1	LUMP	MOBILIZATION	

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GENERAL SUMMARY

TREMONT AVENUE BRIDGE

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Filename : I:\CADFiles\13225 Tremont Ave\Struct\13225sGG1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 12-19-05 (09:31)

ITEM 659 – SEEDING AND MULCHING

STA. 10+65 TO STA. 11+77.14

(10'X87.14' + 14.5'X26' + 13'X23'
+ 9.5'X74' + 8'X35') /9 = 281 SQ. YARD

STA. 18+92.20 TO STA. 22+25

(11'X25' + (8'+2')/2X150' + 2'X43'
+ 6'X115' + 8'X40' + 5'X40') /9 = 258 SQ. YARD

NEAR REAR ABT. (25'X65' + 6'X65')/9 = 224 SQ. YARD
NEAR FORWARD ABT. (30'X80')/9 = 267 SQ. YARD
MISC. AREA INCULDING INTERSEEDING = 110 SQ. YARD

TOTAL CARRIED TO GENERAL SUMMARY **1140 SQ. YARD**

ITEM 659 – TOP SOIL

QUANTITY ESTIMATED AT 0.10 CU. YARD PER SQ. YARD OF PERMANENT SEEDED AREA
0.10X1140 = 114 CU. YARD

TOTAL CARRIED TO GENERAL SUMMARY **114 CU. YARD**

ITEM 659 – REPAIR SEEDING AND MULCHING

QUANTITY ESTIMATED AT 5 % OF PERMANENT SEEDED AREA
0.05X1140 = 57 SQ. YARD

TOTAL CARRIED TO GENERAL SUMMARY **57 SQ. YARD**

ITEM 659 – COMMERCIAL FERTILIZER

QUANTITY ESTIMATED AT 1 TON PER 7410 SQ. YARD OF PERMANENT SEEDED AREA
1X1140/7410 = 0.15 TON

TOTAL CARRIED TO GENERAL SUMMARY **0.15 TON**

ITEM 659 – WATER

QUANTITY ESTIMATED AT TWO APPLICATIONS AT 0.0054 M GALLLONS PER SQ. YARD OF PERMANENT SEEDED AREA
2 APPLICATIONS X 1140 X 0.0054 = 12.31 MGAL

TOTAL CARRIED TO GENERAL SUMMARY **12.31 MGAL**

CALCULATED TCM
CHECKED GTA

CALCULATIONS

TREMONT AVENUE BRIDGE

10
63

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225sGC2.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 12-19-05 (10:20)

GUARDRAIL AND BARRIER REFLECTOR

	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	202 GUARDRAIL REMOVED FT.	606 GUARDRAIL, TYPE 5 FT.	606 ANCHOR ASSEMBLY, TYPE A EACH	606 ANCHOR ASSEMBLY, TYPE T EACH	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1 EACH	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2 EACH	626 BARRIER REFLECTOR, TYPE A EACH W	626 BARRIER REFLECTOR, TYPE A EACH Y	626 BARRIER REFLECTOR, TYPE B EACH W	626 BARRIER REFLECTOR, TYPE B EACH Y
	G1	LT.	10+70	11+49.90	87	68.75		1		1				
	G2	RT.	10+77	11+78.00	100	75	1		1					
	G3	LT.	19+17.20	20+08	–	81.25		1	1					
	–	L,R&C	9+88	22+44									9	
SUB TOTAL					187	224.50	1	2	2	1	9		9	

BARRIER REFLECTOR, TYPE A SHALL BE SPACED AT ONE HALF THE SPACING SPECIFIED IN 626.03. (50' NOMINAL)
BARRIER REFLECTOR, TYPE B SHALL BE SPACED IN ACCORDANCE WITH 626.03.(100' NOMINAL)

DRAINAGE

	REFERENCE NO.	LOCATION	STATION FROM	STATION TO	202 PIPE REMOVED, 24" AND UNDER FT.	202 CATCH BASIN REMOVED EACH	603 12" CONDUIT, TYPE B FT.	604 CATCH BASIN NO. 3 EACH	
	D1	RT.	10+65	10+69	5	1	5	1	
SUB TOTAL					5	1	5	1	

EARTHWORK TABULATION

SHEET	EXCAVATION CU. YD.	EMBANKMENT CU. YD.
16	107	32
17	19	18
18	12	101
19	23	37
20	81	28
21	26	26
22	7	8
TOTAL	275	250
CARRIED TO GENERAL SUMMARY		

CALCULATED TMC
CHECKED GTA

SUB-SUMMARIES

TREMONT AVENUE BRIDGE

11
63

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225sGC1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 12-19-05 (10:15)

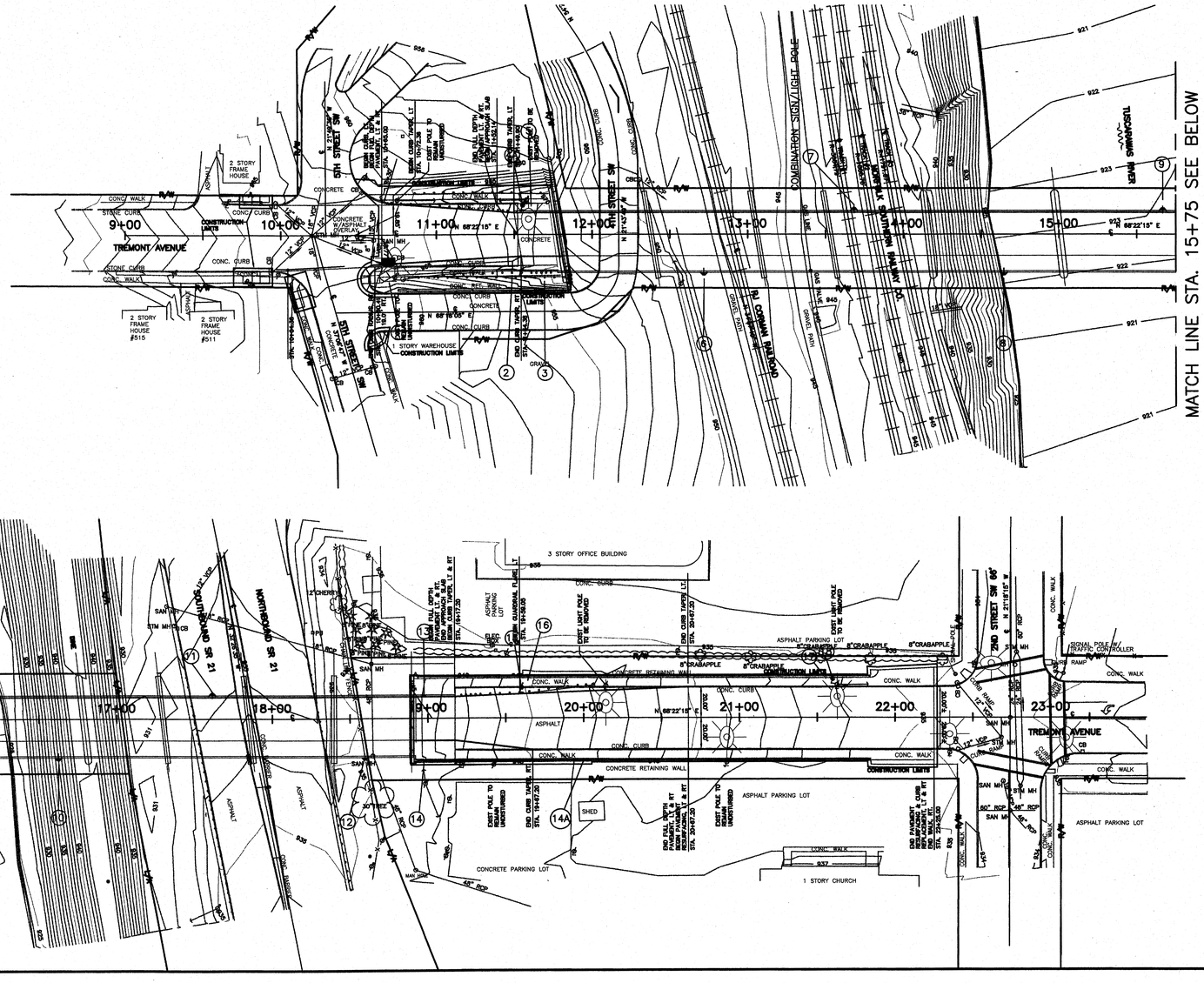
PROJECT DESCRIPTION

BRIDGE REHABILATION AND BRIDGE APPROACH
ROADWAY IMPROVEMENTS

USGS 7.5 MINUTE QUADANGLE MAP: MASSILLON, OHIO (N4045 W 8130/7.5)

LATITUDE : N 40°47'36"
LONGITUDE : W 81°31'32"

PROJECT DATA	
TOTAL AREA (RIGHT OF WAY) WITHIN MAJOR CONSTRUCTION	2.02 AC.
AREA TO UNDERGO EXCAVATION, FILLING OR GRADING	0.78 AC.
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.80
RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE	0.74
SOIL DATA	AS SHOWN IN THE COUNTY SOIL MAP
IMMEDIATE RECEIVING WATER	TUSCARAWAS RIVER
SUBSEQUENT RECEIVING WATER	TUSCARAWAS RIVER



CALCULATED TMC
CHECKED GTA

HORIZONTAL SCALE IN FEET
40 20 0 40

SITE PLAN FOR SWPPP

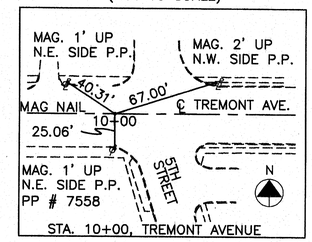
TREMONT AVENUE BRIDGE

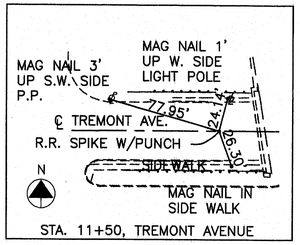
12
63

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225ssSWPPP.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 7-26-07 (08:05)

BENCHMARK NO.1
CHISELED "X" ON NORTHWEST CORNER OF BRIDGE WINGWALL.
STA. 11+75.2, 29.3' LT.
ELEV. 970.50

CENTERLINE REFERENCES
(NOT TO SCALE)





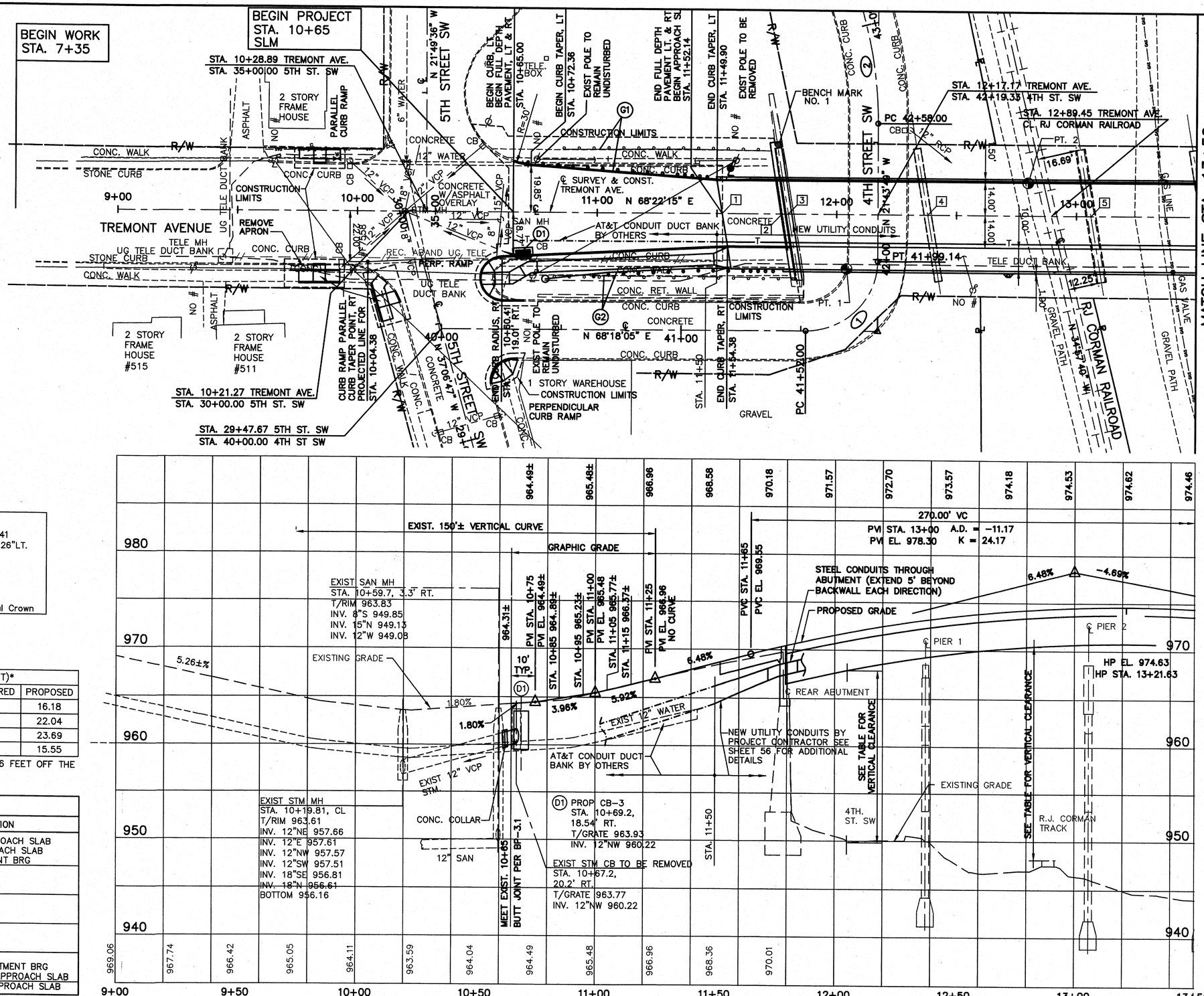
C.L. CURVE DATA
4TH. ST. SW

CURVE ①	CURVE ②
PI STA. 42+82.02	PI STA. 43+09.41
DELTA = 90°01'54"LT.	DELTA = 32°44'26"LT.
R = 30.00'	R = 175.00'
T = 30.02'	T = 51.41'
L = 47.14'	L = 100.00'
C = 42.44'	C = 98.65'
E = 12.44'	E = 7.39'
emax. = Normal Crown	emax. = Normal Crown

MINIMUM VERTICAL CLEARANCE (FT)*		
LOCATION	MIN. REQUIRED	PROPOSED
4TH STREET (PT 1)	14.50	16.18
RJ CORMAN RR (PT 2)*	22.00	22.04
NORFOLK SOUTHERN RR (PT 3)*	22.00	23.69
S.R. 21 (PT 4)	15.50	15.55

*MINIMUM VERTICAL CLEARANCE IS MEASURED 6 FEET OFF THE CENTERLINE OF TRACK

STRUCTURE STATIONING ☒		
ID	STATION	DESCRIPTION
1	11+52.14	BEGIN REAR APPROACH SLAB
2	11+77.14	END REAR APPROACH SLAB
3	11+79.79	℄ REAR ABUTMENT BRG
4	12+37.93	℄ PIER 1
5	13+05.96	℄ PIER 2
6	13+52.97	℄ PIER 3
7	14+15.89	℄ PIER 4
8	15+00.03	℄ PIER 5
9	15+94.96	℄ PIER 6
10	16+78.77	℄ PIER 7
11	17+29.70	℄ PIER 8
12	17+84.73	℄ PIER 9
13	18+39.69	℄ PIER 10
14	18+89.58	℄ FORWARD ABUTMENT BRG
15	18+92.20	BEGIN FORWARD APPROACH SLAB
16	19+17.20	END FORWARD APPROACH SLAB



HORIZONTAL SCALE IN FEET
0 10 20 20

CALCULATED TWC
CHECKED GTA

PLAN AND PROFILE
STA. 9+00 TO STA. 13+50

TREMONT AVENUE BRIDGE

13
63

Filename : M:\3225sGP1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 7-20-06 (08:55)

MATCH LINE STA. 13+50
SEE SHEET 13

MATCH LINE STA. 18+50
SEE SHEET 15

36" RCP
TUSCARAWAS RIVER
DIKE
SAN MH
STM MH
CB
12"CHERRY
PB
18" RCP
CHAIN LINK FENCE
SOUTHBOUND SR 21
NORTHBOUND SR 21
℄ TRACK #1 R=3664.79'
℄ TRACK #2 R=1906.76'
℄ TRACK #3 R=1791.67'
NORFOLK SOUTHERN RAILWAY CO.
11.67'
R/W
18.04'
STA. 13+97.39 TREMONT AVE.
CL N-S RAIL #3
℄ SURVEY & CONST. TREMONT AVE.
N 68°22'15" E
N 32°26'35" W
576+66
BENCH MARK NO. 3
14+00
15+00
16+00
17+00
18+00
PT. 3
NEW UTILITY CONDUITS
TELE. M.H.
TELE DUCT BANK
CONC. BARRIER
PT. 4
12.42'
13.50'
EXIST. MIN. HORIZONTAL CLEARANCE
18" VCP
STA. 13+82.03 TREMONT AVE.
CL N-S RAIL #2
STA. 13+66.50 TREMONT AVE.
CL N-S RAIL #1
.50'
14.00'
10.00'
1.00'
STA. 17+87.11 TREMONT AVE.
CL SR 21 576+17.79
ASPHALT

BENCHMARK NO.1
CHISELED "X" ON NORTHWEST CORNER OF BRIDGE WINGWALL.
STA. 11+75.2, 29.3' LT.
ELEV. 970.50

BENCHMARK NO.3
CHISELED SQUARE ON TOP CONCRETE BARRIER CL SR21 ⊙NORTHEAST CORNER OF PIER NO.9 BASE.
STA. 17+85.0, 19.6' LT.
ELEV. 935.70

974.04 | 973.36 | 972.42 | 971.26 | 970.09 | 968.92 | 967.75 | 966.57 | 965.40 | 964.23 | 963.06 | 961.88 | 960.71 | 959.54 | 958.37 | 957.19 | 956.02 | 954.85 | 953.68 | 952.49

℄ PIER 3
℄ PIER 4
℄ PIER 5
℄ PIER 6
℄ PIER 7
℄ PIER 8
℄ PIER 9
℄ PIER 10

970
960
950
940
930

PROPOSED GRADE
-4.69%
270.00' VC
50.00' VC
PVT. STA. 14+35
PVT. EL. 971.97
PVC STA. 18+40
PVC EL. 952.97
SEE TABLE FOR VERTICAL CLEARANCE ON SHEET 13
NORFOLK SOUTHERN TRACKS
EXISTING GRADE
TUSCARAWAS RIVER
OBSERVED DRY WEATHER TOP OF WATER EL. 923± (JULY, 2006)
S.R. 21 SOUTH BOUND
S.R. 21 NORTH BOUND

13+50 | 14+00 | 14+50 | 15+00 | 15+50 | 16+00 | 16+50 | 17+00 | 17+50 | 18+00 | 18+50

HORIZONTAL SCALE IN FEET
0 10 20
20

CALCULATED TWC
CHECKED GTA

PLAN & PROFILE
STA. 13+50 TO STA. 18+50

TREMONT AVENUE BRIDGE

14
63

Filename : M:\3225sGP1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 7-20-06 (08:54)

BENCHMARK NO.3
CHISELED SQUARE ON TOP CONCRETE BARRIER CL SR21 @NORTHEAST CORNER OF PIER NO.9 BASE.
STA. 17+85.0, 19.6' LT.
ELEV. 935.70

BENCHMARK NO.2
T/RIM STORM MANHOLE IN PAVEMENT OF 2ND STREET NORTH OF TREMONT AVENUE.
STA. 22+79.1, 43.6' LT.
ELEV. 934.47

MATCH LINE STA. 18+50
SEE SHEET 14

BEGIN FULL DEPTH PAVEMENT LT. & RT.
END APPROACH SLAB
BEGIN CURB TAPER, LT. & RT
STA. 19+17.20

BEGIN GUARDRAIL FLARE, LT
STA. 19+59.05

EXIST LIGHT POLE TO BE REMOVED

END PROJECT
STA. 20+67.20
SLM

END CURB TAPER, LT.
STA. 20+67.20

EXIST LIGHT POLE TO BE REMOVED

END WORK
STA. 23+50

2ND STREET SW 66'
N 21°18'15" W

TREMONT AVENUE

CONSTRUCTION LIMITS

CONCRETE RETAINING WALL

ASPHALT PARKING LOT

CONCRETE PARKING LOT

1 STORY CHURCH

SHED

NEW UTILITY CONDUITS BY PROJECT CONTRACTOR

℄ SURVEY & CONST. TREMONT AVE.

AT&T CONDUIT DUCT BANK AND MH RECONSTRUCTION BY OTHERS

EXIST POLE TO REMAIN UNDISTURBED

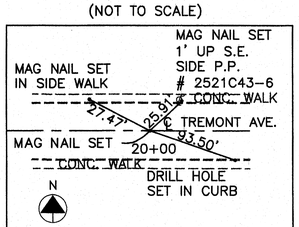
END FULL DEPTH PAVEMENT, LT & RT
BEGIN PAVEMENT RESURFACING, LT & RT
STA. 20+67.20

END PAVEMENT RESURFACING & CURB REPLACEMENT, LT & RT
END WALK, RT.
STA. 22+25.00

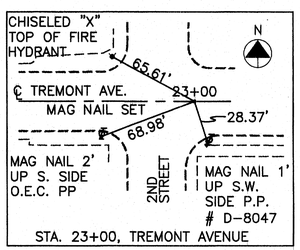
STA. 22+74.02 TREMONT AVE.
2ND ST SW STA. 50+00.00

LEGEND
PAVEMENT PLANING AND RESURFACING

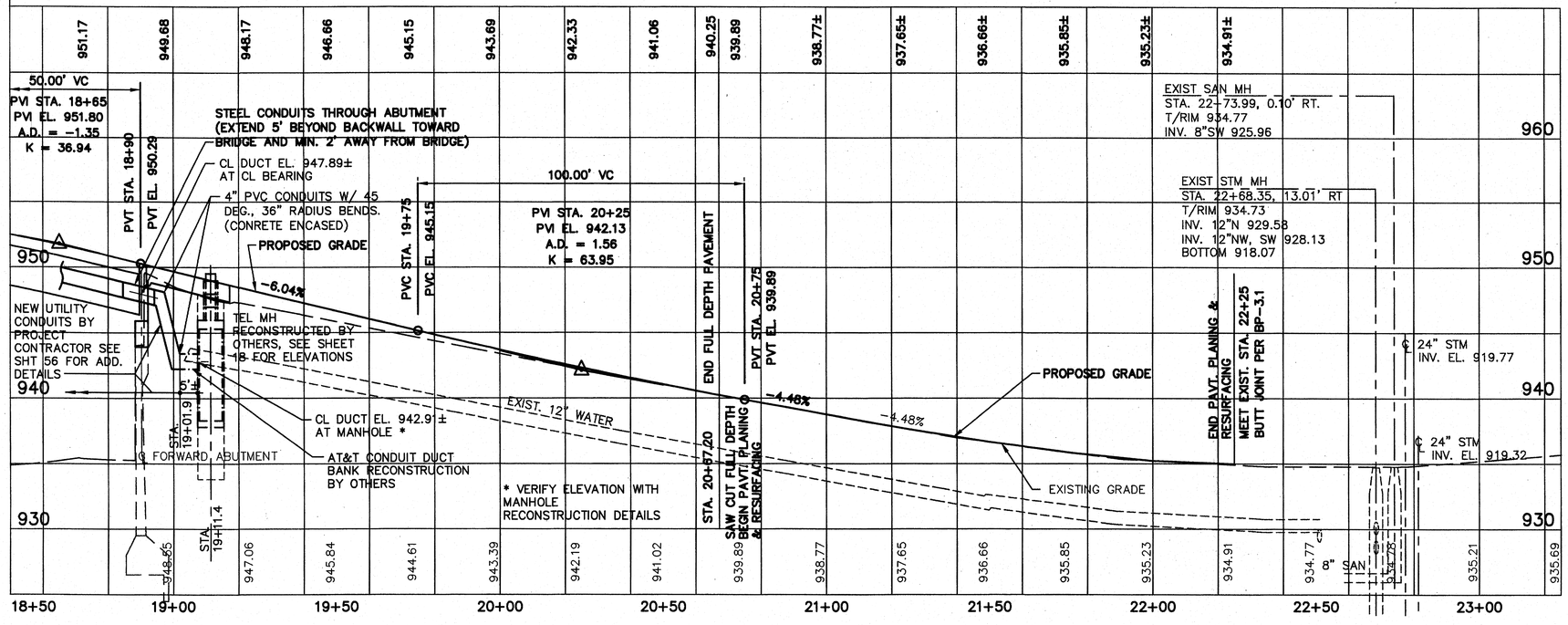
CENTERLINE REFERENCES
(NOT TO SCALE)



STA. 20+00, TREMONT AVENUE



STA. 23+00, TREMONT AVENUE



PLAN AND PROFILE
STA. 18+50 TO STA. 23+50

TREMONT AVENUE BRIDGE

CALCULATED TWC
CHECKED GTA

HORIZONTAL SCALE IN FEET
20 0 10 20

15
63

Filename : M:\3225sGP1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 7-20-06 (08:55)

SEEDING		END AREA		CU. YDS.	
LIN. FT.	SQ.YDS.	CUT	FILL	CUT	FILL
				2	2
		27.5	14.8		
				57	22
		34	9		
				48	8
		39.8	3.5		
				107	32

60 50 40 30 20 10 ℄ 10 20 30 40 50 60

975 970 965 960 955 950

0.04

STA. 11+50 (AHEAD)
BEGIN NEW 9-4" DIA. CONDUITS, CONCRETE ENCASED DUCT BANK
STA. 11+50 (BACK)
CONDUIT DUCT BANK BY OTHERS

TELE DUCT BANK

RETAINING WALL

4TH ST. SW

CURB CONCRETE ROADWAY

3:1

968.58
11+50
968.36

0.02

12" WATER

AT&T CONDUIT DUCT BANK BY OTHERS

ABANDONED TELE DUCT BANK (FROM RECORD DRAWING)

TELE DUCT BANK

RETAINING WALL 4TH ST. SW

CURB CONCRETE ROADWAY

965.48
11+00
965.48

(D1) PROP CB-3
STA. 10+69.2, 18.54' RT.
T/GRATE 963.93
INV EXIST 12"NW 960.22

0.02

VARIES

0.06%

0.02%

5' - 12" CONDUIT, TYPE B

TELE DUCT BANK

4TH ST. SW

CURB CONCRETE ROADWAY

12" WATER

EXIST SAN MH
STA. 10+59.7, 3.3' RT.
T/RIM 963.83
INV 8"SE 949.85
INV 15"NW 949.13
INV 12"SW 949.08

AT&T CONDUIT DUCT BANK BY OTHERS

ABANDONED TELE DUCT BANK (FROM RECORD DRAWING)

EXIST CATCH BASIN
STA. 10+67.2, 20.2' RT.
T/GRATE 963.77
INV 12"NW 960.22
TO BE REMOVED

PAVEMENT AND/OR SIDEWALK REMOVED

APPROACH SLAB REMOVED

BEGIN FULL DEPTH PAVEMENT

15" SAN. 964.31 8" SAN.

10+65
964.31

60 50 40 30 20 10 ℄ 10 20 30 40 50 60 SHEET TOTAL

CALCULATED TWC
CHECKED GTA

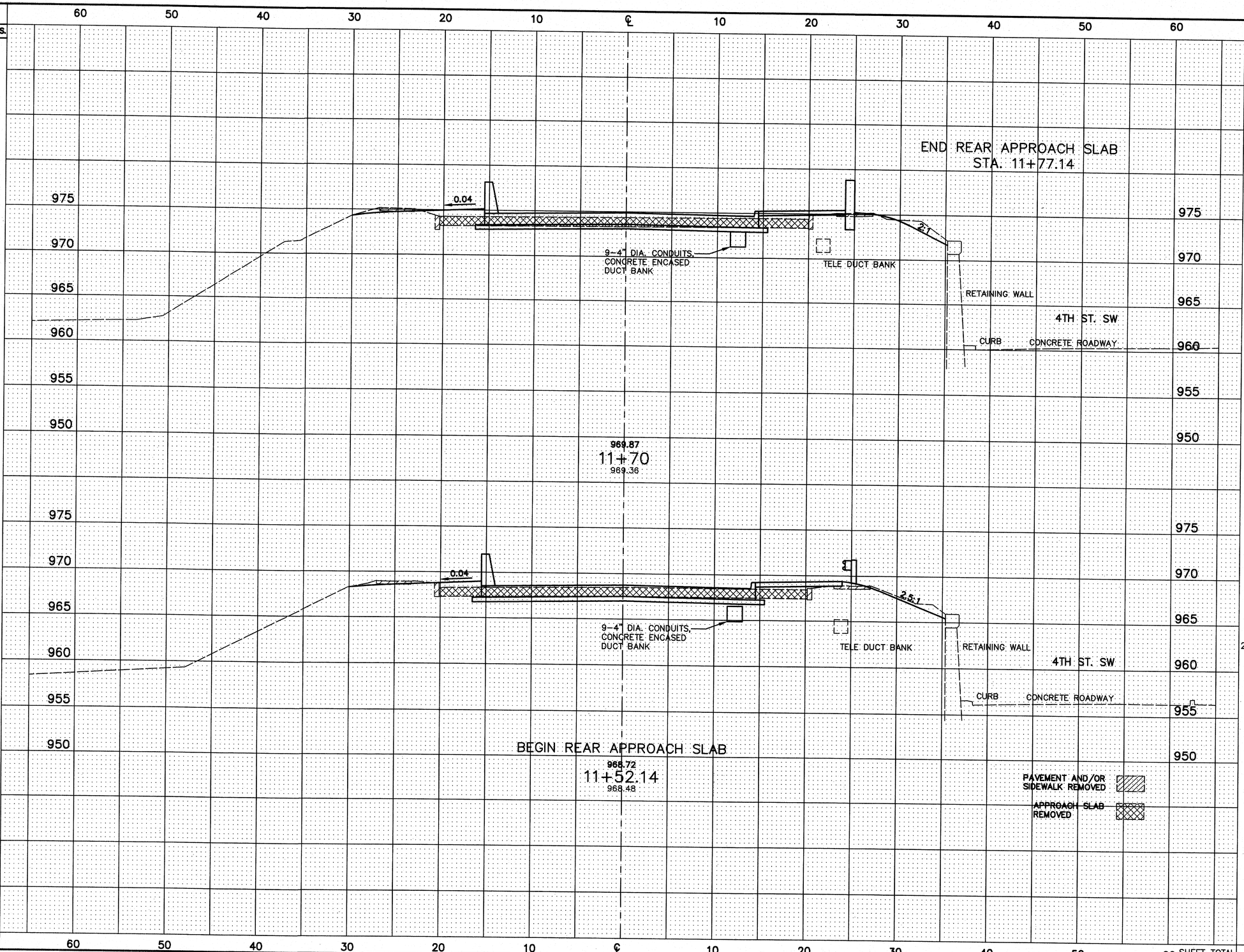
CROSS SECTIONS STA. 10+65 TO STA. 11+50

TREMONT AVENUE BRIDGE

16
63

Filename : M:\3225sXS1.dwg
Plot Scale : 1" = 1
Drawn By/Date : TCooper / 7-13-06 (15:57)

SEEDING	
LIN. FT.	SQ.YDS.



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
16.7	19.4		
		5	5
16.7	19.4		
		14	13
23.4	18.3		
		19	18

CALCULATED TWC
CHECKED GTA

CROSS SECTIONS
STA. 11+52.14 TO STA. 11+70

TREMONT AVENUE BRIDGE

Filename : M:\3225eXS1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 7-13-06 (15:57)

SEEDING		60	50	40	30	20	10	℄	10	20	30	40	50	60	END AREA		CU. YDS.		CALCULATED TWC / CHECKED GTA
LIN. FT.	SQ.YDS.														CUT	FILL	CUT	FILL	
																	9	55	
															7	59			
															0	43.2			
															0	43	3	33	
																	0	13	
																	12	101	

955
950
945
940
935
930

EXIST R/W
EXIST R/W
7:1
6:1
RETAINING WALL
12" WATER
RETAINING WALL
TELE DUCT BANK
DEPTH UNKNOWN
ASPHALT PARKING
CONCRETE PARKING
END FORWARD APPROACH SLAB
948.64
19+17.20
947.34

PROP. TELE MH
BY OTHERS
STA. 19+11.4, 16.9' RT.
T/RIM 949.37
EXIST R/W
TELE MH
STA. 19+11.4, 23.9'± RT.
T/RIM 947.99
M.H. COVER ADJUSTED
TO GRADE & NEW
SLAB TOP BY OTHERS
PROP T/RIM 949.52
TELE MH
RECONSTRUCTION
BY OTHERS
RETAINING WALL
PAVEMENT AND/OR
SIDEWALK REMOVED
APPROACH SLAB
REMOVED
948.99
19+11.4
947.59

EXIST R/W
EXIST R/W
6:1
8:1
12" WATER
RETAINING WALL
9-4" DIA. CONDUITS,
CONCRETE ENCASED
DUCT BANK
EX DUCT BANK
RETAINING WALL
ASPHALT PARKING
PAVEMENT AND/OR
SIDEWALK REMOVED
APPROACH SLAB
REMOVED
949.68
19+00
948.55
BEGIN FORWARD APPROACH SLAB
STA. 18+92.20

60 50 40 30 20 10 ℄ 10 20 30 40 50 60 SHEET TOTAL

CROSS SECTIONS
STA. 19+00 TO STA. 19+17.20

TREMONT AVENUE BRIDGE

18
63

Filename : M:\3225s\XS1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 7-13-06 (15:57)

SEEDING	
LIN. FT.	SQ.YDS.

60 50 40 30 20 10 ℄ 10 20 30 40 50 60

955 950 945 940 935 930 925

EXIST R/W

10:1

8:1

RETAINING WALL

12" WATER

ASPHALT PARKING

TELE DUCT BANK
DEPTH UNKNOWN

RETAINING WALL

CONCRETE PARKING

EXIST R/W

END CURB TAPER, RT

945.62

19+67.20

944.94

955 950 945 940 935 930 925

EXIST R/W

8:1

RETAINING WALL

12" WATER

ASPHALT PARKING

TELE DUCT BANK
DEPTH UNKNOWN

RETAINING WALL

CONCRETE PARKING

EXIST R/W

PAVEMENT AND/OR
SIDEWALK REMOVED

APPROACH SLAB
REMOVED

946.66

19+50

945.84

955 950 945 940 935 930 925

60 50 40 30 20 10 ℄ 10 20 30 40 50 60

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
		18	20
6.8	20		
		5	17
6.5	31.5		
		23	37

SHEET TOTAL

CALCULATED TWC

CHECKED GTA

CROSS SECTIONS
STA. 19+50 TO STA. 19+67.20

TREMONT AVENUE BRIDGE

19
63

Filename : M:\...\225sXS1.dwg
Plot Scale : 1=1
Drawn By/Date : TCooper / 7-13-06 (15:57)

SEEDING		END AREA		CU. YDS.		
LIN. FT.	SQ.YDS.	CUT	FILL	CUT	FILL	
				10	7	
		AHEAD 8	4.1			
		BACK 32.5	6.3			
				21	4	
		32.5	6.3			
				50	17	
		21.5	12			
				81	28	

60 50 40 30 20 10 ℄ 10 20 30 40 50 60

950 945 940 935 930 925

EXIST R/W

30:1

RETAINING WALL

ASPHALT PARKING

12" WATER

TELE DUCT BANK
DEPTH UNKNOWN

END CURB TAPER, LT
END FULL DEPTH PAVEMENT
BEGIN PAVEMENT PLANING AND RESURFACING

940.25
20+67.20 (AHEAD)
940.19

11:1

941.06
20+50
941.02

16:1

943.69
20+00
943.39

SHED

PAVEMENT AND/OR SIDEWALK REMOVED

APPROACH SLAB REMOVED

SHEET TOTAL

CALCULATED TWC

CHECKED GTA

CROSS SECTIONS
STA. 20+00 TO STA. 20+67.20

TREMONT AVENUE BRIDGE

20
63

Filename : M:\3225sXS1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 7-13-06 (15:57)

SEEDING	
LIN. FT.	SQ.YDS.

60 50 40 30 20 10 ℄ 10 20 30 40 50 60

945 940 935 930 925

EXIST R/W

ASPHALT PARKING

0.08 0.02

TELE DUCT BANK

12" WATER

935.23
22+00
935.23

END EXIST. RETAINING WALL
STA. 21+81.13'±, LT.

30:1

RETAINING WALL

TELE DUCT BANK
DEPTH UNKNOWN

936.66
21+50
936.66

END GUARD RAIL STA. 21+09

938.77
21+00
938.77

0.02 0.02

END EXIST. RETAINING WALL
STA. 21+81.13'±, RT.

PAVEMENT AND/OR SIDEWALK REMOVED

APPROACH SLAB REMOVED

	END AREA CUT	END AREA FILL	CU. YDS. CUT	CU. YDS. FILL
	6.8	8.9		
	7	5.9	13	14
	7	6.2	13	12
SHEET TOTAL			26	26

CALCULATED TWC
CHECKED GTA

CROSS SECTIONS
STA. 21+00 TO STA. 22+00

TREMONT AVENUE BRIDGE

21/63

Filename : M:\3225sXS1.dwg
Plot Style : TCooper
Drawn By/Date : TCooper / 7-13-06 (15:57)

SEEDING		60	50	40	30	20	10	℄	10	20	30	40	50	60	END AREA		CU. YDS.		CALCULATED TWC	CHECKED GTA
LIN. FT.	SQ.YDS.														CUT	FILL	CUT	FILL		

945
940
935
930
925

EXIST R/W

ASPHALT PARKING

TELE. DUCT BANK

12" WATER

TELE. DUCT BANK DEPTH UNKNOWN

0.02 0.02

EXIST R/W

ASPHALT PARKING

PAVEMENT AND/OR SIDEWALK REMOVED

APPROACH SLAB REMOVED

END PAVEMENT PLANING AND RESURFACING

934.91
22+25
934.91

60	50	40	30	20	10	℄	10	20	30	40	50	60	SHEET TOTAL		6.8	7.5	7	8		

CROSS SECTIONS
STA. 22+25

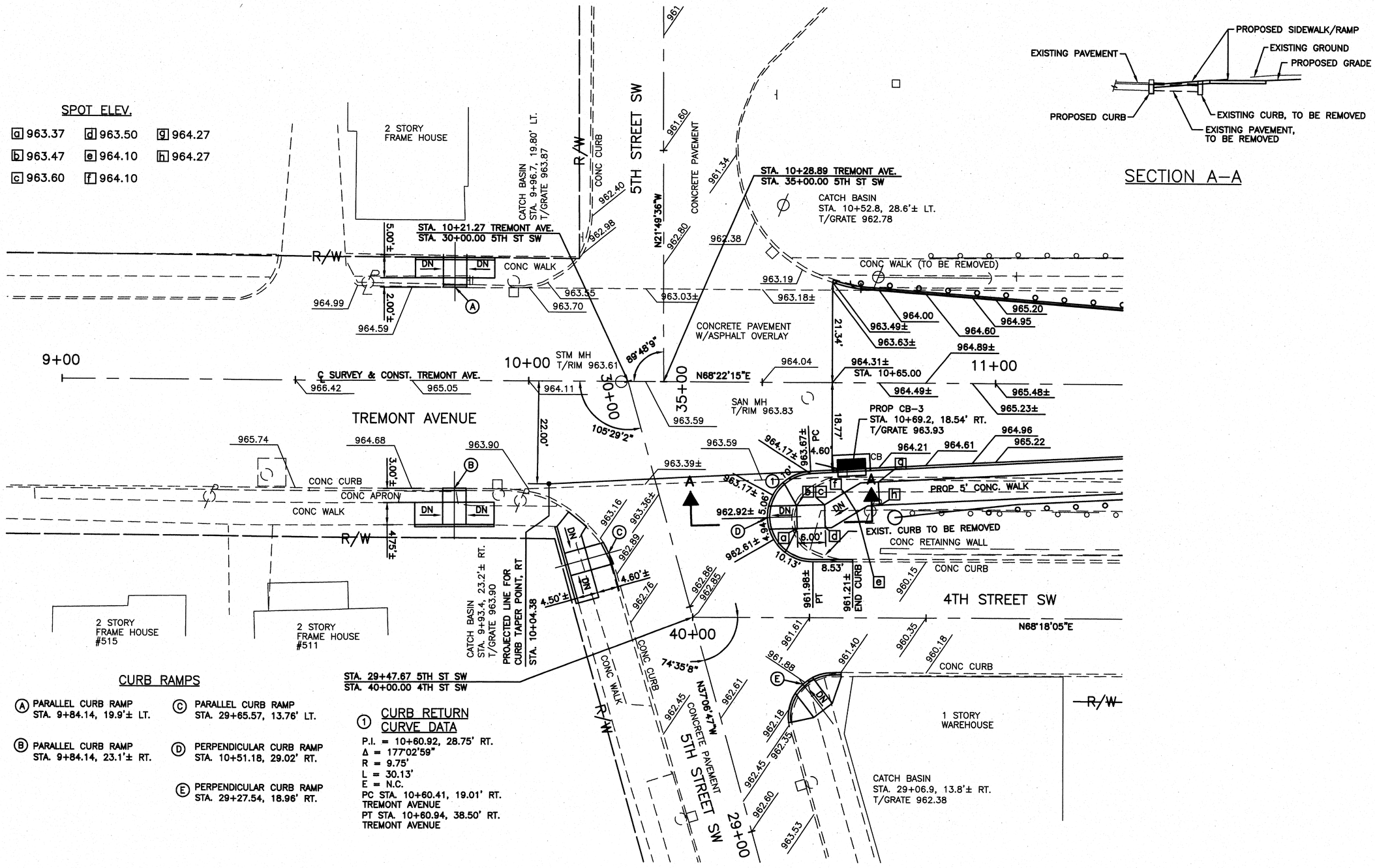
TREMONT AVENUE BRIDGE

22
63

Filename : M:\3225s\XS1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 7-13-06 (15:57)

SPOT ELEV.

a 963.37	d 963.50	g 964.27
b 963.47	e 964.10	h 964.27
c 963.60	f 964.10	



SECTION A–A

CURB RAMPS

- (A) PARALLEL CURB RAMP STA. 9+84.14, 19.9'± LT.
- (B) PARALLEL CURB RAMP STA. 9+84.14, 23.1'± RT.
- (C) PARALLEL CURB RAMP STA. 29+65.57, 13.76' LT.
- (D) PERPENDICULAR CURB RAMP STA. 10+51.18, 29.02' RT.
- (E) PERPENDICULAR CURB RAMP STA. 29+27.54, 18.96' RT.

(1) CURB RETURN CURVE DATA

P.I. = 10+60.92, 28.75' RT.
Δ = 177°02'59"
R = 9.75'
L = 30.13'
E = N.C.
PC STA. 10+60.41, 19.01' RT. TREMONT AVENUE
PT STA. 10+60.94, 38.50' RT. TREMONT AVENUE

HORIZONTAL SCALE IN FEET
10 0 5 10

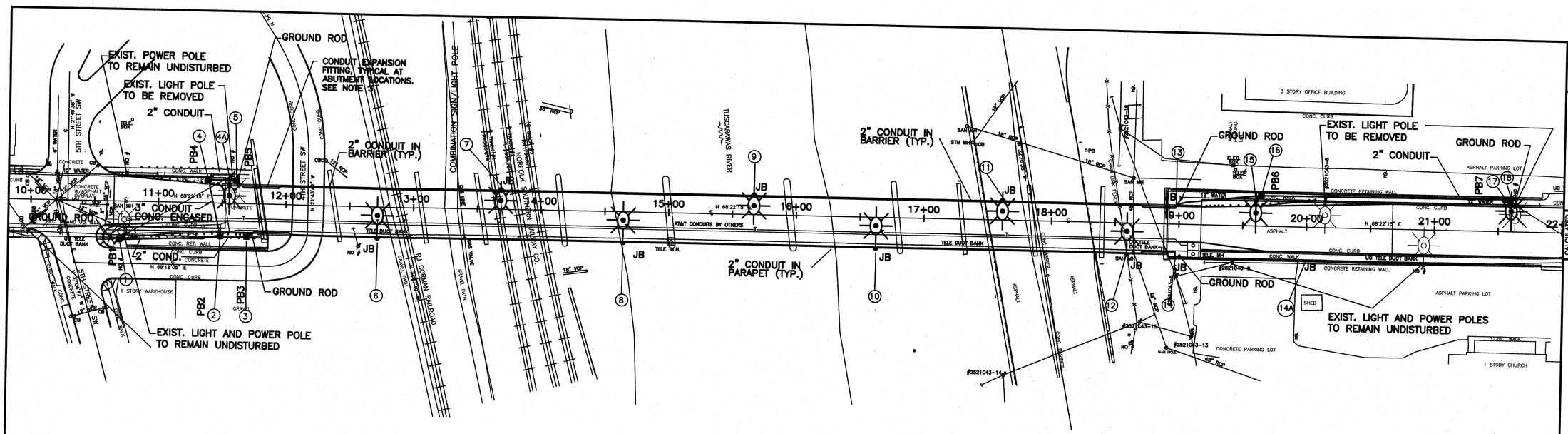
CALCULATED TWC
CHECKED GTA

INTERSECTION DETAIL TREMONT AVE. & 5TH STREET SW

TREMONT AVENUE BRIDGE

23
63

Filename : M:\3225s011.dwg
Plot Scale : 1.0000
Drawn By/Date : TCooper / 7-28-06 (14:12)



LIGHTING PLAN

LIGHTING LEGEND

	PROPOSED	EXISTING
PULL BOX	■ PB	□
JUNCTION BOX	▬ JB	▭
SERVICE POLE	⊙	
SERVICE POLE WITH LIGHT	⊙	⊙
POWER POLE		
LUMINAIRE		

LIGHT POLE DESIGN NUMBER

ST 20 B 40

- ST — STEEL POLE W/ TRANSFORMER BASE
- 20 — ARM LENGTH IN FEET 20'
- B — SINGLE ARM BRACKET
- 40 — SUPPORT HEIGHT IN FEET 40'

NOTES:

1. AT PB3 AND PB4 NO SPLICES ARE PERMITTED IN THE PULL BOXES. ROUTE LIGHTING CABLES THROUGH CONDUIT IN THE BRIDGE PARAPET.
2. AT PB2 AND PB5 CABLE SPLICES MAY BE PERMITTED. ALL SPLICES SHALL BE MADE USING APPROVED CABLE SPLICING KITS.
3. CONDUIT EXPANSION FITTINGS SHALL BE PROVIDED AT BOTH ABUTMENT EXPANSION JOINT LOCATIONS.
4. TERMINATE LIGHTING CONDUITS IN PARAPET JUNCTION BOXES AT LOCATION 14 AND 14A. THE CONDUIT FROM 12 TO 14 AND FROM 14 TO 14A SHALL HAVE NO LIGHTING CABLES, PROVIDE ONLY PULL WIRES/STRING FOR FUTURE USE AND TERMINATE IN THE JUNCTION BOXES.

*NOTE – POLE AT THE REFERENCED LOCATION 7 IS A COMBINATION SIGN/LIGHT POLE. THIS POLE IS LISTED IN THE SUB-SUMMARY TABLE ON SHEET 27.

LOCATION DATA

REFERENCE NO.		STATION	OFFSET
1	PB1	10+69.42	31.11± RT.
2	PB2	11+48.61	27.85± RT.
3	PB3	11+69.37	27.00± RT.
4	PB4	11+38.89	18.54± LT.
4A		11+55.51	19.24± LT.
5	PB5	11+60.86	18.54± LT.
6		12+71.70	PARAPET RT.
7		13+68.24	BARRIER LT.
8		14+64.45	PARAPET RT.
9		15+66.66	BARRIER LT.
10		16+62.54	PARAPET RT.
11		17+61.46	BARRIER LT.
12		18+59.45	PARAPET RT.
13		18+97.57	BARRIER LT.
14		18+97.50	PARAPET RT.
14A		20+00	PARAPET RT.
15		19+60.00	20.15± LT.
16	PB6	19+64.04	24.33± LT.
17	PB7	21+55.72	25.42± LT.
18		21+60.00	25.37± LT.

LIGHTING SUB-SUMMARY

REFERENCE NO.	SIDE	202	603	625																						SPECIAL	
		LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN	4" CONDUIT, TYPE E	CONNECTOR KIT, TYPE II	CABLE SPLICING KIT	LIGHT POLE, CONVENTIONAL (DESIGN ST10B40)	LIGHT POLE, CONVENTIONAL (DESIGN ST20B40)	LIGHT POLE ANCHOR L-BOLT	LIGHT POLE ANCHOR BOLTS ON STRUCTURE	LIGHT POLE FOUNDATION, 24"X9' DEEP		NO. 6 AWG 5000 VOLT DISTRIBUTION CABLE	NO. 12 AWG POLE AND BRACKET CABLE		CONDUIT, 2", 725.04	CONDUIT, CONCRETE ENCASED (3", 725.04)	LUMINAIRE, CONVENTIONAL, AS PER PLAN(150 WATT HPS 120V WITH INTEGRAL FUSING AND PHOTOCELL)		TRENCH	STRUCTURE JUNCTION BOX	PULLBOX, 725.08, 24"	GROUND ROD	STRUCTURE GROUNDING SYSTEM	POWER SERVICE, AS PER PLAN	PLASTIC CAUTION TAPE	
		EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH		FT	FT		FT	FT	EACH		FT	EACH	EACH	EACH	EACH	EACH	FT	
1 TO 2	RT.		69		6																						
2 TO 3	RT.		21									534	–		79				79		2	1		1	79		
3 TO 14A	RT.			8	3		4		16			93	–		21				21		1				21		
2 TO 4	LT. & RT.											2253	544		852			4	15	6		2			15		
4 TO 5	LT.		18									174	–		–	48			48		1				48		
5 TO 4A	LT.	1		2	3	1		4		1		96	–		22				22		1				22		
5 TO 13*	LT.		18	6	3	2			8			45	110		5				5			1			5		
13 TO 16	LT.			2	3	1		4		1		2331	348		737			3	15	4					15		
16 TO 18	LT.	2	210	2	3	1		4		1		231	110		72			1	72		1	1			72		
BR. NO. CR510-0000	LT.& RT.											606	110		197			1	197		1	1			197		
SUB TOTAL		3	336	20	21	5	4	12	24	3		6363	1222		1985	48	10		474	10	7	6	1	1	474		

CALCULATED TMC
CHECKED GTA

HORIZONTAL SCALE IN FEET
40 20 0 40

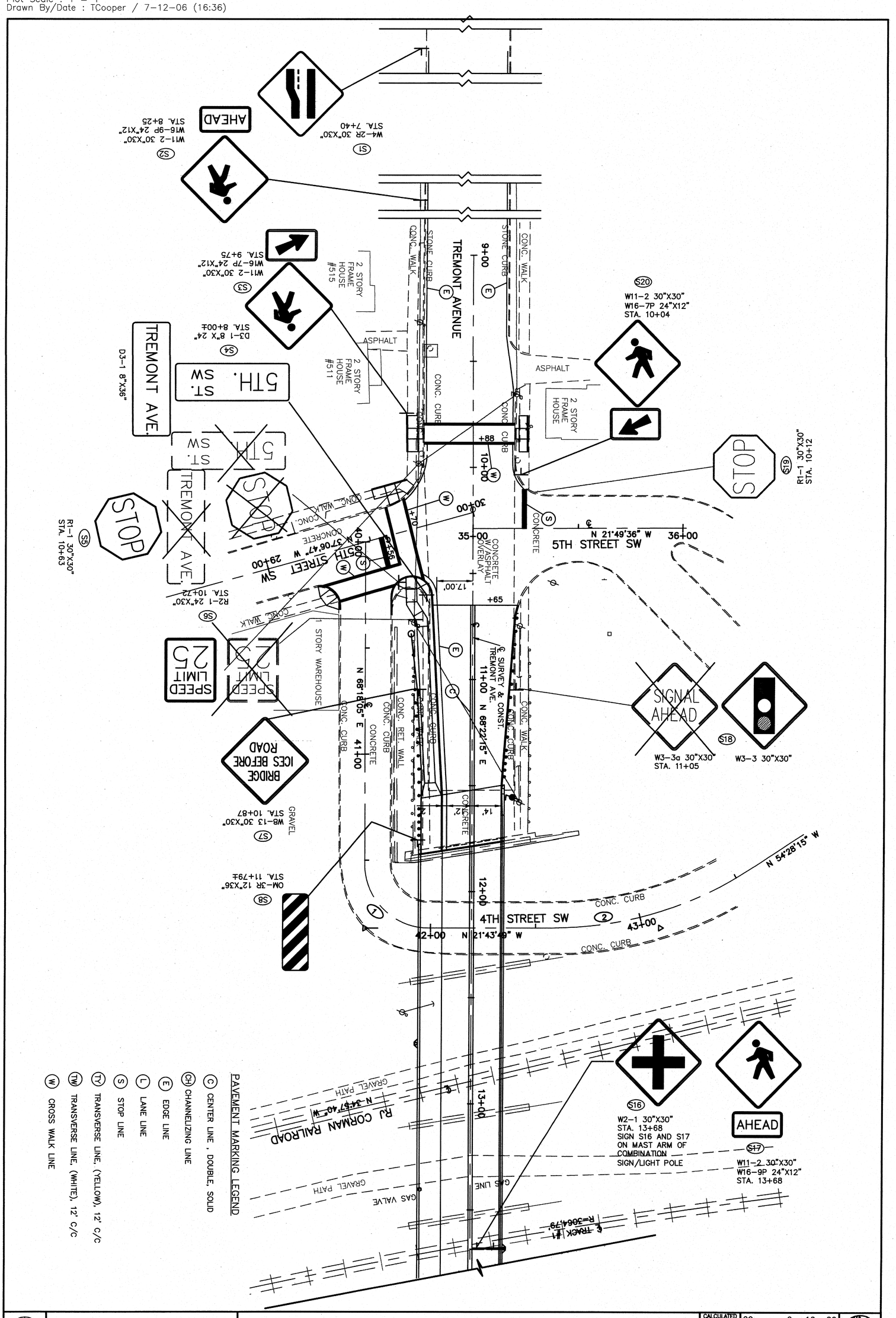
LIGHTING PLAN AND DETAILS

TREMONT AVENUE BRIDGE

24
63

Filename : M:\3225sLP1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 8-1-06 (11:01)

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Drawn By/Date : TCooper / 7-12-06 (16:36)

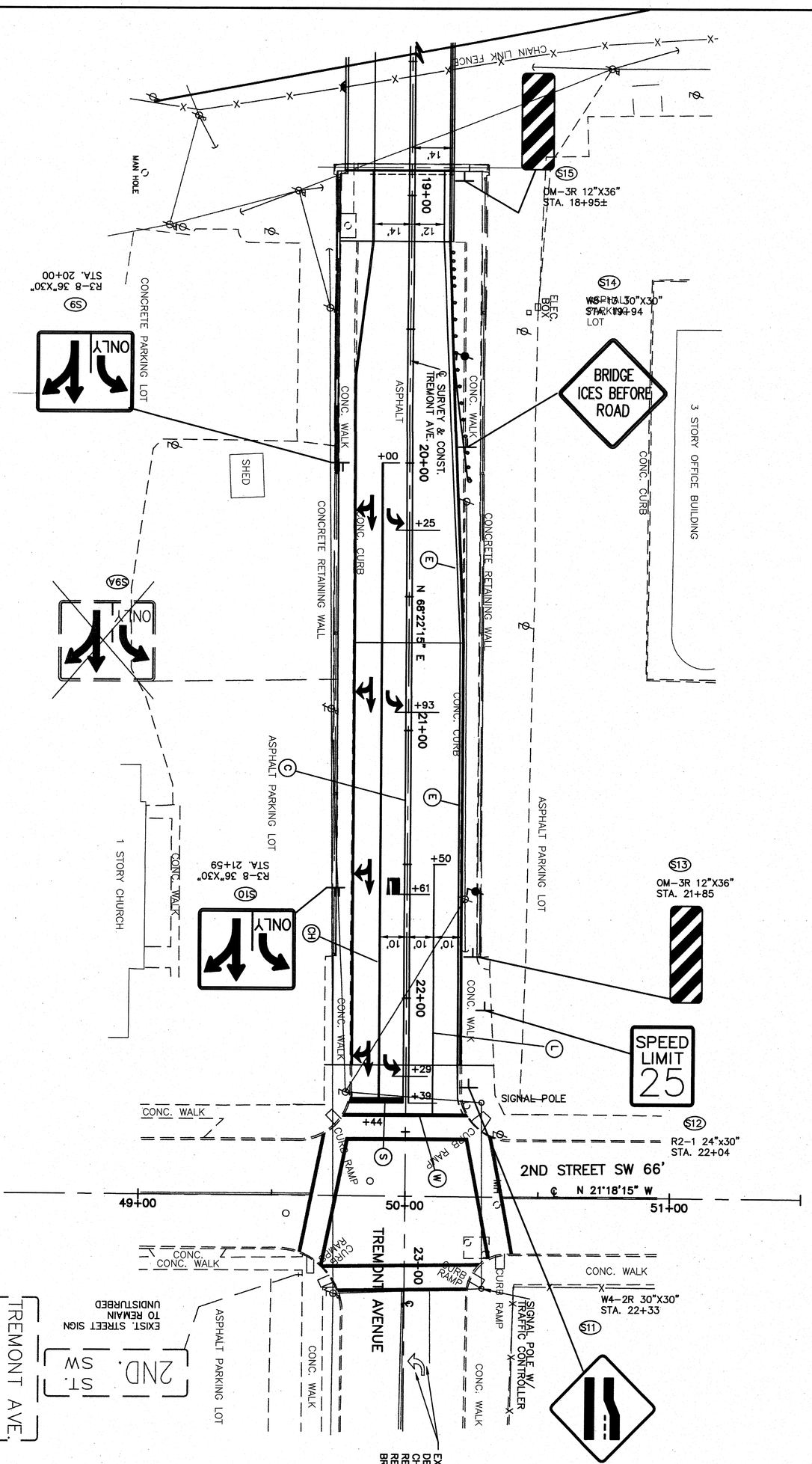


PAVEMENT MARKING LEGEND

- (C) CENTER LINE, DOUBLE, SOLID
- (CH) CHANNELIZING LINE
- (E) EDGE LINE
- (L) LANE LINE
- (S) STOP LINE
- (TY) TRANSVERSE LINE, (YELLOW), 12' C/C
- (TW) TRANSVERSE LINE, (WHITE), 12' C/C
- (W) CROSS WALK LINE

25/63	TREMONT AVENUE BRIDGE	PAVEMENT MARKING AND SIGNING PLAN	CALCULATED TWC / CHECKED GTA	20 0 10 20 HORIZONTAL SCALE IN FEET

Filename : I:\3225sTP1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 7-12-06 (16:36)



NOTES:

1. FOR PAVEMENT MARKING LEGEND, SEE SHEET 25.

26/63	TREMONT AVENUE BRIDGE	PAVEMENT MARKING AND SIGNING PLAN	CALCULATED TWC / CHECKED GTA	20 0 10 20 HORIZONTAL SCALE IN FEET

SIGNING AND PAVEMENT MARKING SUB-SUMMARIES

CALCULATED TMC
CHECKED GTA

SHEET NO.	REFERENCE NO.	STATION	SIDE	CODE	SIZE (INCHES)		630 GROUND MOUNTED SUPPORT, NO.2 POST FT	630 STREET NAME SIGN SUPPORT, NO.2 POST FT		630 SIGN, FLAT SHEET SQ FT	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH	630 SIGN SUPPORT ASSEMBLY BRIDGE MOUNTED, TYPE 2 EACH	630 SIGN, DOUBLE FACED, STREET NAME, AS PER PLAN EACH		630 COMBINATION OVERHEAD SIGN SUPPORT, TYPE TC-16.20, DESIGN 1, AS PER PLAN EACH	630 LUMINARIRE SUPPORT ASSEMBLY, MISC; (10' BRACKET ARM) EACH	
25	S1	7+40	RT	W4-2R	30X30		14.0			6.25								
25	S2	8+25	RT	W1-2	30X30		14.5			6.25								
	–			W16-9P	24X12		–			2.00								
25	S3	9+75	RT	W1-2	30X30		14.5			6.25								
	–			W16-7P	24X12		–			2.00								
25	S4	8+00	RT	D3-1	8X24		–	14.0		–		1		1				
	–			D3-1	8X36		–			–				1				
25	S5	10+63	RT	R1-1	30X30		14.0			6.25	1	1						
				D3-1	–						1							
				D3-1	–						1							
25	S6	10+72	RT	R2-1	24X30		14.0			6.00	1	1						
25	S7	10+87	RT	W8-13	30X30		14.0			6.25								
25	S8	11+79	RT	OM-3R	12X36		10.5			3.00								
26	S9	20+00	RT	3R-8	36X30		–			7.50			1					
26	S9A	20+90	RT	–	–		–				1	1						
26	S10	21+59	RT	3R-8	36X30		–			7.50			1					
26	S11	22+33	LT	W4-2R	30X30		14.0			6.25								
26	S12	22+04	LT	R2-1	24X30		14.0			5.00								
26	S13	21+85	LT	OM-3R	12X36		10.5			3.00								
26	S14	19+94	LT	W8-13	30X30		14.0			6.25								
26	S15	18+95	LT	OM-3R	12X36		10.5			3.00								
25	S16	13+68	LT	W2-1	30X30		–			6.25		ON MAST ARM COMBINATION POLE				1	1	
25	S17	13+68	LT	W11-2	30X30		–			6.25		ON MAST ARM COMBINATION POLE						
				W16-9P	24X12		–			2.00		ON MAST ARM COMBINATION POLE						
25	S18	11+05	LT	W3-3	30X30		14.0			6.25	1	1						
25	S19	10+12	LT	R1-1	–							EXIST STOP SIGN TO REMAIN UNDISTURBED						
25	S20	10+04	LT	W11-2	30X30		14.50			6.25								
				W16-7P	24X12		–			2.00								
TOTALS CARRIED TO GENERAL SUMMARY							187	14		111.75	6	5	2	2		1	1	

SHEET NO.	STATION FROM	STATION TO	SIDE	644 EDGE LINE MILE	LANE LINE MILE	CENTER LINE MILE	CHANNELIZING LINE FT	STOP LINE FT	CROSSWALK LINE FT	LANE ARROW EACH	WORD ON PAVEMENT, 72" EACH	
25, 26	10+65	22+39	C			0.22						
25	7+40	11+80	R	0.03								
25, 26	7+40	22+55	–	0.12					176			
26	18+92	22+44	L & R		0.03		239	20		7	1	
25	5TH. ST. SW		–					32	134			
TOTALS CARRIED TO GENERAL SUMMARY				0.15	0.03	0.22	239	52	310	7	1	

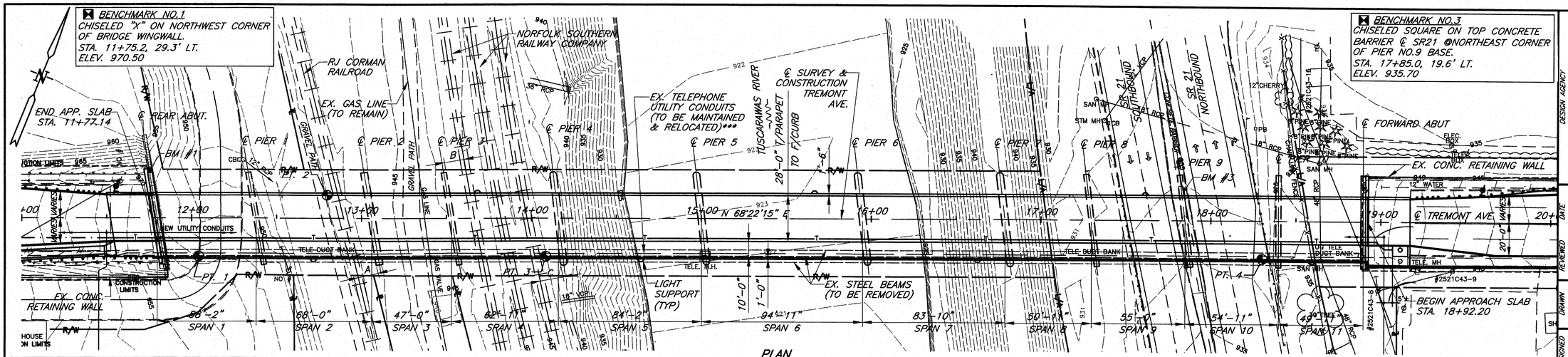
DELINEATORS AND RPMS

SHEET NO.	STATION FROM	STATION TO	LOCATION	620 DELINEATOR TYPE C, POST MOUNTED EACH	621 RPM, LOW PROFILE, YELLOW/YELLOW EACH	621 RPM, LOW PROFILE, WHITE EACH		
25	10+70	11+49.90	LT.	3				
25	10+77	11+78.00	RT.	3				
26	19+17.20	21+09	LT.	5				
–	9+88	22+44	L,R&C		16	32		
TOTALS CARRIED TO GENERAL SUMMARY				11	16	32		

DELINEATOR SHALL BE SPACED IN ACCORDANCE WITH 620.03/TC-61.10, BUT NOT MORE THAN 50' SPACINGS.
RPM SHALL BE SPACED IN ACCORDANCE WITH 620.03/TC-65.11. (80' NOMINAL)

TREMONT AVENUE BRIDGE

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Plot Scale : 1 = 1
Drawn By/Date : TCooper / 12-19-05 (10:15)



PLAN

*** EXISTING TELEPHONE UTILITY CONDUITS SHALL BE MAINTAINED AND RELOCATED BY UTILITY COMPANY DURING CONSTRUCTION

NOTE:
THE EARTHWORK LIMITS SHOWN ARE APPROXIMATE, ACTUAL SLOPES SHALL CONFORM TO THE PLAN CROSS SECTIONS.

LEGEND

BRG = BEARING
RA = REAR ABUTMENT
FA = FORWARD ABUTMENT

ITEM 202–PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

RAILROAD TRAFFIC DATA		
	NUMBER OF TRAINS PER DAY	MAX. AUTHORIZED OPERATING SPEED
RJ CORMAN RAILROAD	4	10 mph
NORFOLK SOUTHERN RAILWAY CO.	18	50 mph

TRAFFIC DATA

CURRENT ADT (2010) = 6,700
DESIGN YEAR ADT (2030) = 7,400
DESIGN YEAR ADTT (2030) = 222

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND WALL TYPE ABUTMENTS, WALL TYPE PIERS AND CAP AND COLUMN PIERS.

SPAN LENGTH: 58'–0"±, 68'–1"±, 46'–10"±, 63'–0"±, 84'–0"±, 95'–0"±, 84'–0"±, 51'–0"±, 55'–0"±, 55'–0"±, 50'–0"± C/C SUBSTRUCTURES

ROADWAY WIDTH: 40'–0"± F/F CURB WITH (2) 6'–6" SIDEWALKS (1947)

SKEW: WEST ABUTMENT, PIERS 1, 2 AND 3 = 9'–8'–46"± RIGHT FORWARD
PIER 4 THRU PIER 9 = 6'–24'–08"± RIGHT FORWARD
PIER 10 AND EAST ABUTMENT = NONE

LOADING: H–20–33
WEARING SURFACE: ASPHALT OVERLAY
ALIGNMENT: TANGENT
APPROACH SLABS: 25'–0"± LONG
SUPERELEVATION: NONE
YEAR BUILT: 1947, REHAB 1966
STRUCTURE FILE NO.: 7606184

PROPOSED STRUCTURE

PROPOSED STRUCTURE: CONTINUOUS STEEL BEAM WITH COMPOSITE REINFORCED CONCRETE DECK, WALL TYPE ABUTMENTS, WALL TYPE PIERS AND CAP AND COLUMN PIERS.

SPAN LENGTHS: 58'–2", 68'–0", 47'–0", 62'–11", 84'–2", 94'–11", 83'–10", 50'–11", 55'–0", 54'–11", 49'–11" C/C BEARINGS

ROADWAY WIDTH: 28'–0" F/PARAPET TO F/CURB WITH (1) 10'–0" SIDEWALK

SKEW: VARIES (SEE TABLE)

LOADING: HS20 LOADING & ALTERNATE MILITARY LOADING
FUTURE WEARING SURFACE 60psf
WEARING SURFACE: 1" MONOLITHIC CONCRETE WEARING SURFACE
ALIGNMENT: TANGENT
APPROACH SLABS: 25'–0" LONG (AS–1–81)
SUPERELEVATION: NONE
COORDINATES: LATITUDE: N 40°47'35"
LONGITUDE: W 81°31'42"

SUBSTRUCTURE STATION & SKEW TABLE		
LOCATION	℄ STATION	SKEW ANGLE
RA	STA. 11+79.79	8°54'36" RF
PIER 1	STA. 12+37.93	9°13'25" RF
PIER 2	STA. 13+05.96	9°08'16" RF
PIER 3	STA. 13+52.97	9°13'52" RF
PIER 4	STA. 14+15.89	6°26'06" RF
PIER 5	STA. 15+00.03	6°19'55" RF
PIER 6	STA. 15+94.96	6°19'55" RF
PIER 7	STA. 16+78.77	6°23'12" RF
PIER 8	STA. 17+29.70	6°26'53" RF
PIER 9	STA. 17+84.73	6°25'19" RF
PIER 10	STA. 18+39.69	0°08'59" LF
FA	STA. 18+89.58	0°04'11" LF

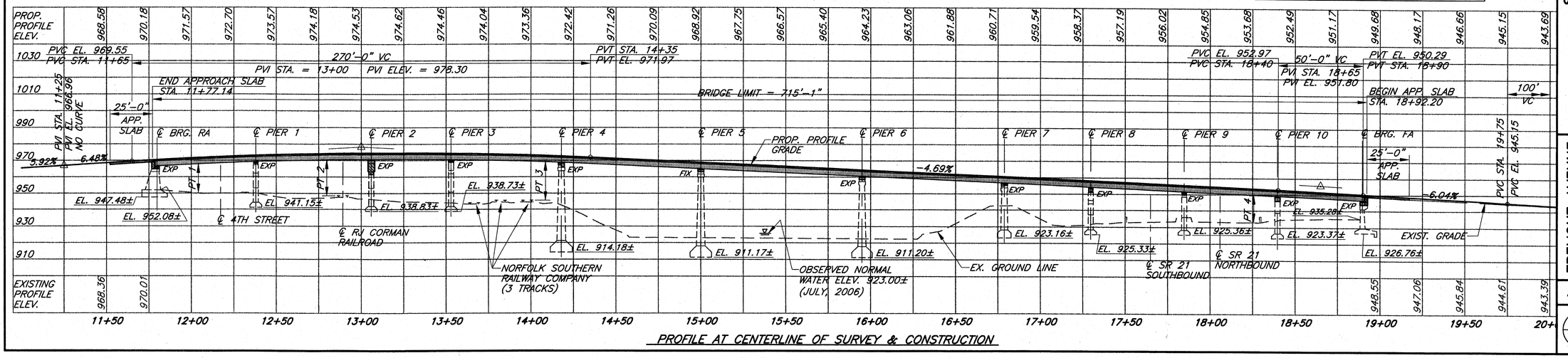
MINIMUM VERTICAL CLEARANCE (FT)		
LOCATION	MIN. REQUIRED	PROPOSED
4th STREET (PT 1)	14.50	16.18
RJ CORMAN RR (PT 2)*	22.00	22.04
NORFOLK SOUTHERN RR (PT 3)*	22.00	23.69
S.R. 21 (PT 4)	15.50	15.55

*MINIMUM VERTICAL CLEARANCE IS MEASURED 6 FEET OFF THE CENTERLINE OF TRACK

MINIMUM HORIZONTAL CLEARANCE (FT)**		
TRACK LOCATION	MIN. REQUIRED	EXISTING
RJ CORMAN RR (DIM A)	9.00	12.25
NORFOLK SOUTHERN RR (DIM B)	9.00	11.67
NORFOLK SOUTHERN RR (DIM C)	9.00	13.50

** MINIMUM HORIZONTAL CLEARANCE IS MEASURED FROM ℄ OF THE TRACKS TO FACE OF THE PIER

GUARDRAIL FIRST POST STATIONS & OFFSET	
	REAR ABUTMENT
NORTH	STA. 11+45.74, OFFSET 14.00' L
SOUTH	STA. 11+73.02, OFFSET 24.00' R



PROFILE AT CENTERLINE OF SURVEY & CONSTRUCTION

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	GTA	8/31/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

STARK COUNTY
STA 11+77.14
STA 18+92.20

SITE PLAN
BRIDGE NO. PE–23; TREMONT AVENUE OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN RAILWAY AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

1 / 36

28 / 63

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225ssSP1.dwg
Plot Scale = TCooper / 2-22-07 (14:02)
Drawn By/Date :

STRUCTURE GENERAL NOTES

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

A-1-69	REVISED	07-19-02
AS-1-81	REVISED	07-19-02
BR-2-98	REVISED	07-19-02
EXJ-4-87	REVISED	07-19-02
GSD-1-96	REVISED	07-19-02
SBR-1-99	REVISED	07-19-02
VPF-1-90	REVISED	07-19-02

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002, SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING:

HS20, CASE I AND THE ALTERNATE MILITARY LOADING.

FUTURE WEARING SURFACE (FWS) OF 60 Lbs/ft².

DESIGN DATA:

CONCRETE CLASS S – COMPRESSIVE STRENGTH 4500 psi (SUPERSTRUCTURE)

CONCRETE CLASS C – COMPRESSIVE STRENGTH 4000 psi (SUBSTRUCTURE)

REINFORCING STEEL–ASTM A615 OR A996 GRADE 60 MINIMUM YIELD STRENGTH 60,000 psi

STRUCTURAL STEEL – ASTM A709 GRADE 50
YIELD STRENGTH 50,000 psi

DECK PROTECTION METHOD:

–EPOXY COATED REINFORCING STEEL
–2 1/2" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE REMAINING SUPERSTRUCTURE, EXISTING UTILITY SUPPORTS, EXISTING UTILITY CLAY TILE DUCT, EXISTING UTILITY MANHOLE ON THE BRIDGE, PORTIONS OF SUBSTRUCTURES AND THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. ALL REMOVED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY REMOVED FROM THE SITE BY THE CONTRACTOR.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT ALL PACK AND LOOSE RUST SHALL BE REMOVED. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

SUBSTRUCTURE CONCRETE REMOVAL:

REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS, UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

FOR REMOVAL LIMITS OF ABUTMENT AND PIER CONCRETE, SEE SHEETS 8 / 36 THRU 11 / 36 .

TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES:

A. GENERAL

THIS WORK SHALL CONSIST OF CONSTRUCTING AND REMOVING RIGID TEMPORARY CONSTRUCTIONS REQUIRED TO COMPLETE THE WORK IN ADDITION TO THE FORMWORK AND ITEMS WHICH ARE SPECIFICALLY INCLUDED ELSEWHERE. THE WORK INCLUDES TEMPORARY PLATFORMS OR OTHER MEANS TO PREVENT LOOSE MATERIALS FROM FALLING DURING THE REMOVAL AND CONSTRUCTION OF THE SUPERSTRUCTURE, PORTIONS OF THE SUBSTRUCTURE AND SUPPORTS FOR NEW AND EXISTING AT&T CONDUITS. PAYMENT FOR ANY FALSEWORK/PROTECTIVE STRUCTURES ONLY NECESSARY DUE TO AT&T LINES WILL BE AT&T RESPONSIBILITY.

B. REQUIREMENTS

IN ORDER TO PROTECT AGAINST DAMAGE FROM FALLING MATERIALS, DEBRIS AND WHILE SUPERSTRUCTURE CONCRETE IS BEING REPLACED OR WHILE WORK IS IN PROGRESS OVERHEAD AND DURING WORK ON AT&T CONDUITS, THE CONTRACTOR SHALL FURNISH AND ERECT TEMPORARY PROTECTIVE STRUCTURES. PAYMENT FOR ANY FALSEWORK/PROTECTIVE STRUCTURES ONLY NECESSARY DUE TO AT&T LINES WILL BE AT&T RESPONSIBILITY. THE FLOORING AND SIDING OF THE STRUCTURES SHALL HAVE NO CRACKS OR OPENINGS THROUGH WHICH MATERIAL PARTICLES AND WATER USED FOR SAWING OPERATIONS OR CURING MAY FALL. THE PROTECTION IN ALL CASES SHALL EXTEND BEYOND THE EXTERIOR STRINGERS A SUFFICIENT DISTANCE TO PROTECT THE AREA UNDER THE BRIDGE RAILINGS. AFTER THE TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES HAVE SERVED THEIR PURPOSE, AND WHEN SO DIRECTED BY THE ENGINEER, THEY SHALL BE REMOVED. ALL MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR AT HIS OWN EXPENSE. THE PROTECTIVE STRUCTURE OVER RAILROAD TRACKS SHALL BE DESIGNED IN ACCORDANCE WITH AREMA 8.28.6 AND SHALL HOLD A MINIMUM LOAD OF FIFTY (50) POUNDS PER SQUARE FOOT PLUS THE WEIGHT OF EQUIPMENT, DEBRIS AND ANY OTHER LOAD TO BE CARRIED. DETAILS OF THE TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES, INCLUDING THE PROPOSED TEMPORARY UNDER CLEARANCES TO SR 21 AND RR TRACKS, SHALL BE SUBMITTED FOR APPROVAL FROM APPROPRIATE AGENCY OR COMPANY. THE REDUCTION OF VERTICAL CLEARANCE ON SR 21 DUE TO THE INSTALLATION OF FALSEWORK SHALL NOT ALLOW THE VERTICAL CLEARANCE TO BE LESS THAN 14'-0". THE CONTRACTOR SHALL NOTIFY MR. CHRIS MESSENGER, ODOT DISTRICT 4 PERMIT COORDINATOR, IN WRITING AT LEAST 18 DAYS PRIOR TO INSTALLING TEMPORARY FALSEWORK WHICH WILL REDUCE THE VERTICAL CLEARANCE ON S.R. 21. THE MINIMUM TEMPORARY CONSTRUCTION CLEARANCES TO EXISTING TRACKS SHALL BE AS LISTED UNDER NORFOLK SOUTHERN NOTES AND R.J. CORMAN NOTES ON SHEET 4 / 36 . THIS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.

C. TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED WITH THE UNIT PRICE BID FOR ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

UTILITY LINES

THE UTILITY(IES) SHALL BORE ALL EXPENSE INVOLVED IN RELOCATION OF (INSTALLING) THEIR AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PRE BID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED IN THE FIELD.

ITEM 509 – REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

ITEM 509 – EPOXY COATED REINFORCING STEEL, AS PER PLAN

IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND /OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00.

ITEM 517–RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING), AS PER PLAN

TWIN STEEL TUBE RAILINGS AND ALL OF ITS HARDWARE SHALL BE GALVANIZED STEEL AND CONFORM TO 517.04, 707.10 AND THE FOLLOWING:

FINISH: AFTER ALL STEEL COMPONENTS HAVE BEEN GALVANIZED, CLEAN AND PREPARE THE SURFACE OF ALL COMPONENTS TO ASSURE COMPLETE ADHESION OF FINISH COAT. FIELD PAINT AND COST SHALL BE INCLUDED WITH ITEM 514 – FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN. COLOR LIGHT BLUE (FEDERAL STANDARD NO. 15526).

FOR RAILING DETAILS SEE STD. DRAWING BR-2-98.

CONCRETE PARAPETS:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, SAW CUT 1 1/4" DEEP CONTROL JOINTS INTO THE PERIMETER OF THE CONCRETE PARAPET STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. PLACE THE SAW CUTS AT A MINIMUM OF 6 FEET AND A MAXIMUM OF 10 FEET CENTERS. USE AN EDGE GUIDE, FENCE, OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 1/4 INCH. SEAL THE PERIMETER OF THE DEFLECTION CONTROL JOINT TO A MINIMUM DEPTH OF 1 INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM 1/2 INCH OF THE INSIDE AND OUTSIDE FACE UNSEALED TO ALLOW WATER TO ESCAPE.

ITEM 519 – PATCHING CONCRETE STRUCTURES, AS PER PLAN:

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

ITEM 513 – STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN

GALVANIZED COATING SYSTEM FOR STRUCTURAL STEEL:

1.0 DESCRIPTION

IN ADDITION TO THE REQUIREMENTS OF ITEM 513, THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT TO CLEAN AND GALVANIZE ALL STRUCTURAL STEEL SURFACES, AS SPECIFIED HEREIN. THE GALVANIZED COATING SYSTEM MAY BE APPLIED BY A GALVANIZER NOT QUALIFIED AS A FABRICATION SHOP UNDER ITEM 513, BUT THE APPROVED FABRICATOR OF THE STRUCTURAL STEEL SHALL BE RESPONSIBLE FOR THE QUALITY OF THE APPLIED GALVANIZED COATING SYSTEM AND ANY REPAIRS, RE-FABRICATING, ADDITIONAL LAYDOWNS REQUIRED TO ASSURE THE FABRICATED STEEL MEETS ALL REQUIREMENTS OF THIS SPECIFICATION. SECTIONS 513.27 AND 513.28 SHALL NOT APPLY.

THIS ITEM SHALL INCLUDE GALVANIZING, PER 711.02, OF ALL STRUCTURAL STEEL SHAPES, PLATES, NUTS, WASHERS, BOLTS, ANCHOR BOLTS.

ANY SHEAR STUDS, SECTION 513.22, MAY BE INSTALLED IN THE FABRICATOR'S SHOP BEFORE GALVANIZING. IF THE CONNECTORS ARE FIELD INSTALLED, REMOVE THE GALVANIC COATING BY GRINDING AT EACH CONNECTOR LOCATION PRIOR TO WELDING

2.0 PRE-FABRICATION MEETING

IN ADDITION TO THE PRE-FABRICATION MEETING REQUIREMENTS UNDER 513.07, BOTH THE FABRICATOR'S QUALITY CONTROL SPECIALIST, (QCPS) AND GALVANIZED COATING APPLICATOR SHALL BE PRESENT AND DISCUSS METHODS OF OPERATION, QUALITY CONTROL, INCLUDING REPAIRS, TRANSPORTATION, ERECTION METHODS TO ACCOMPLISH ALL PHASES OF THE PREPARATION AND COATING WORK REQUIRED BY THIS SPECIFICATION.

3.0 QUALITY CONTROL

3.1 QUALITY CONTROL SPECIALIST

THE QCPS (QUALITY CONTROL PAINT SPECIALIST) REQUIRED UNDER ITEM 513, IS RESPONSIBLE FOR ALL QUALITY CONTROL REQUIREMENTS OF THIS SPECIFICATION. THE QCPS SHALL HAVE THE TESTING EQUIPMENT SPECIFIED IN 513.27.

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	GTA	8/31/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

STRUCTURE GENERAL NOTES
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

2 / 36

29 / 63

Filename : i:\CADFiles\13225 Tremont Ave\Struct\3225sGN4.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 2-22-07 (14:05)

STRUCTURE GENERAL NOTES

ITEM 513 – STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN (CONTINUED)

3.2 QUALITY CONTROL POINTS (QCP)

QUALITY CONTROL POINTS (QCP) ARE POINTS IN TIME WHEN ONE PHASE OF THE WORK IS COMPLETE AND READY FOR INSPECTION BY THE FABRICATOR'S QCPS AND THE DEPARTMENT'S QA REPRESENTATIVE. THE NEXT OPERATIONAL STEP MUST NOT PROCEED UNLESS THE QCP HAS BEEN ACCEPTED OR QA INSPECTION WAIVED BY THE DEPARTMENT'S QA REPRESENTATIVE. AT THESE POINTS THE FABRICATOR MUST AFFORD ACCESS TO INSPECT ALL AFFECTED SURFACES. IF INSPECTION INDICATES A DEFICIENCY, THAT PHASE OF THE WORK MUST BE CORRECTED IN ACCORDANCE WITH THESE SPECIFICATIONS PRIOR TO BEGINNING THE NEXT PHASE
OF WORK. DISCOVERY OF DEFECTIVE WORK OR MATERIAL AFTER A QUALITY CONTROL POINT IS PAST OR FAILURE OF THE FINAL PRODUCT BEFORE FINAL ACCEPTANCE, MUST NOT IN ANY WAY PREVENT REJECTION OR OBLIGATE THE
DEPARTMENT TO FINAL ACCEPTANCE.

QUALITY CONTROL POINTS	
QUALITY CONTROL POINTS (QCP)	**PURPOSE**
A. SOLVENT CLEANING	REMOVE ASPHALTIC CEMENT, OIL GREASE, SALT, DIRT, ETC.
B. GRINDING EDGES	REMOVE SHARP CORNERS PER AWS.
C. ABRASIVE BLASTING	BLAST SURFACES, INCLUDING REPAIR FINS, TEARS, SLIVERS OR SHARP EDGES.
D. GALVANIZING	CHECK COATING THICKNESS
E. FAYING SURFACE CLEANING	CHECK FAYING SURFACE ROUGHNESS. CHECK BOLT HOLE CLEARANCE. CHECK FOR OTHER FIELD CONNECTIONS UNIFORM COATING THICKNESS.
F. SECOND LAY DOWN	CHECK SWEEP AND CAMBER TOLERANCES OF EACH STRUCTURAL MEMBER.
G. FIELD REPAIR OF DAMAGE AREAS	CHECK FOR DAMAGE AREAS AFTER ERECTION OF STRUCTURE. PERFORM DAMAGE REPAIRS.
H. FINAL REVIEW	CLEAN STRUCTURE AS PER QCP#1. VISUALLY INSPECT SYSTEM FOR ACCEPTANCE.

A. SOLVENT CLEANING (QCP #1)

THE STEEL MUST BE SOLVENT CLEANED WHERE NECESSARY TO REMOVE ALL TRACES OF ASPHALTIC CEMENT, OIL, GREASE, DIESEL FUEL DEPOSITS, AND OTHER SOLUBLE CONTAMINANTS PER SSPC–SP 1 SOLVENT CLEANING. UNDER NO CIRCUMSTANCES MUST ANY ABRASIVE BLASTING BE DONE TO AREAS WITH ASPHALTIC CEMENT, OIL, GREASE, OR DIESEL FUEL DEPOSITS. STEEL MUST BE ALLOWED TO DRY BEFORE BLAST CLEANING BEGINS. THE QCPS SHALL INSPECT AND DOCUMENT THAT THE CLEANING CONFORMS TO SSPC–SP1 AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

B. GRINDING EDGES (QCP #2)

ALL CORNERS OF THERMALLY CUT OR SHEARED EDGES MUST HAVE A 1/16 INCH RADIUS OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE. THERMALLY CUT MATERIAL THICKER THAN 1 ½ INCH MUST HAVE THE SIDES GROUND TO REMOVE THE HEAT EFFECTED ZONE, AS NECESSARY TO ACHIEVE THE SPECIFIED SURFACE CLEANING. THE QCPS MUST VISUALLY INSPECT AND DOCUMENT THAT THE GRINDING CONFORMS TO THIS SPECIFICATION AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

C. ABRASIVE BLASTING (QCP #3)

BEAMS AND GIRDERS MUST BE PREPARED BY THE FABRICATOR TO STEEL STRUCTURES PAINTING COUNCIL (SSPC) GRADE SIX(6) COMMERCIAL BLAST CLEANING PRIOR TO GALVANIZING. ALL MATERIAL MUST BE FREE OF PAINT MARKS. SECONDARY ANGLE, PLATES, BARS AND SHAPES NEED NOT BE BLAST CLEANED.

ABRASIVES MUST ALSO BE CHECKED FOR OIL CONTAMINATION BEFORE USE. A SMALL SAMPLE OF ABRASIVES MUST BE ADDED TO ORDINARY TAP WATER. ANY DETECTION OF A OIL FILM ON THE SURFACE OF THE WATER MUST BE CAUSE FOR REJECTION. THE QCPS MUST PERFORM AND RECORD THIS TEST AT THE START OF EACH SHIFT.

ALL FINS, TEARS, SLIVERS AND BURRED OR SHARP EDGES THAT ARE PRESENT ON ANY STEEL MEMBER OR THAT APPEAR AFTER THE BLASTING OPERATION MUST BE CONDITIONED PER ASTM A6. WELDING REPAIRS MUST ONLY BE PERFORMED BY THE SS863 FABRICATOR.

THE QCPS MUST VISUALLY INSPECT AND DOCUMENT THAT THE BLAST CONFORMS TO SSPC–SP6, THAT ALL CONDITIONING IS PERFORMED PER ASTM A5 , AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER
INSPECTED.

D. GALVANIZING (QCP #4)

GALVANIZED PER 711.02 AND THIS SPECIFICATION. COATING THICKNESS MUST BE A MINIMUM OF 4 MILS MEASURED AS SPECIFIED.

MATERIAL MUST BE FREE OF IMPERFECTIONS OR DEPRESSIONS CAUSED BY MATERIAL HANDLING. THE FABRICATOR, GALVANIZER AND ERECTOR MUST USE LIFTING CLAMPS OR SOFTENERS FOR HANDLING. PRIOR TO GALVANIZING, SURFACE IMPERFECTIONS MAY BE REPAIRED BY THE FABRICATOR IN CONFORMANCE WITH ASTM A6. IMPERFECTIONS GREATER THAN THE LIMITS ALLOWED BY ASTM A6 MUST BE DOCUMENTED. REPAIR OR REPLACEMENT OF THIS MEMBER WILL BE AT THE DISCRETION OF THE DEPARTMENT.

ALL DAMAGED GALVANIZING MUST BE REPAIRED IN ACCORDANCE WITH ASTM A780, METHOD A1 OR A3.

DOCUMENTATION OF COATING THICKNESS MUST BE PERFORMED BY THE QCPS. THE QCPS MUST RECORD THE GAGE READINGS AND PROVIDE A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

E. FAYING SURFACE CLEANING (QCP #5)

AREAS OF FIELD CONNECTIONS MUST HAVE A UNIFORM GALVANIZED COATING THICKNESS FREE OF LOCAL EXCESSIVE ROUGHNESS WHICH WOULD PREVENT SPLICE PLATES, BEARINGS OR OTHER FIELD CONNECTIONS FROM
MAKING INTIMATE CONTACT.

FAYING SURFACES OF THE BOLTED SPLICES MUST BE ROUGHENED IN THE SHOP AFTER GALVANIZING BY HAND WIRE BRUSHING. POWER WIRE BRUSHING IS NOT PERMITTED. ALL FIELD SPLICE BOLT HOLES MUST BE FREE OF ZINC BUILD UP. AFTER GALVANIZING, EACH HOLE MUST BE CHECKED IN THE SHOP BY USING A DRIFT PIN WITH A DIAMETER 1/16 INCH GREATER THAN THE DIAMETER OF THE BOLT TO BE USED IN THAT HOLE. CONSIDERATION WILL BE GIVEN TO OTHER METHODS OF TREATING THE FAYING SURFACES IF A WRITTEN REQUEST IS SUBMITTED TO THE OFFICE OF STRUCTURAL ENGINEERING (OSE) IN ACCORDANCE WITH CMS 108.05.

INSPECTION OF THE ROUGHENING OF THE FAYING SURFACES AND CHECKING OF HOLES WITH DRIFT PINS MUST BE PERFORMED BY THE QCPS. ACCEPTANCE OF THE FAYING SURFACES AND HOLES SHALL BE DOCUMENTED BY THE QCPS.

F. SECOND LAY DOWN (QCP # 6)

AFTER GALVANIZING, MATERIALS MUST BE PLACED IN A SECOND SHOP ASSEMBLY PER CMS 513.24 TO CHECK ALIGNMENT OF HOLES, SWEEP AND CAMBER AGAINST THE FABRICATORS ORIGINAL RECORDED LAY DOWN DIMENSIONS. THIS SHOP ASSEMBLY MAY BE PERFORMED AT THE GALVANIZERS FACILITY, BY THE FABRICATORS PERSONNEL, IF APPROVED BY THE OSE. THE SECOND LAY DOWN MAY BE WAIVED BY THE OSE IF THE FABRICATOR RECORDS INDIVIDUAL BEAM CAMBERS AND SWEEPS DURING THE FIRST LAY DOWN, AND THE NEW INDIVIDUAL BEAM CAMBERS AND SWEEPS, AFTER GALVANIZING, COMPARED TO THE FIRST LAY DOWN ARE WITHIN THE FOLLOWING TOLERANCES:

BEARING POINTS AFTER GALVANIZING, MUST BE WITHIN +/– 1/8 INCH OF THE APPROVED SHOP DRAWING LAY DOWN.

CAMBER POINTS AFTER GALVANIZING MUST BE + 1/4 INCH OR – 0 INCH FROM THE FIRST LAY DOWN.

SWEEP POINTS AFTER GALVANIZING MUST BE +/– 3/8 INCH FROM THE FIRST LAY DOWN.

INDIVIDUAL BEAMS THAT EXCEED THE LISTED TOLERANCES MUST BE PLACED WITH AT LEAST TWO ADJACENT BEAMS IN LAY DOWN FOR CHECKING AGAINST THE RECORDED SHOP ASSEMBLY RECORDS PER 513.04. DOCUMENTATION OF THE SECOND LAY DOWN OR INDIVIDUAL MEMBER CAMBERS MUST BE RECORDED BY THE
QCPS PER 513.24.

G. FIELD REPAIR OF DAMAGED AREAS (QCP #7)

MATERIAL MUST BE FREE OF IMPERFECTIONS OR DEPRESSIONS CAUSED BY MATERIAL HANDLING. THE CONTRACTOR MUST USE LIFTING CLAMPS OR SOFTENERS FOR HANDLING. IMPERFECTIONS MAY BE REPAIRED BY GRINDING AS ALLOWED BY ASTM A6 BY THE CONTRACTOR. IMPERFECTIONS THAT ARE GREATER THAN THE
GRINDING LIMITS ALLOWED BY ASTM A6, MUST BE DOCUMENTED. REPAIR OR REPLACEMENT OF THIS MEMBER WILL BE AT THE DISCRETION OF THE OSE.

ALL DAMAGED GALVANIZING MUST BE REPAIRED IN ACCORDANCE WITH ASTM A780, METHOD A1 OR A3.

DAMAGED GALVANIZING WHICH WILL BE INACCESSIBLE FOR REPAIR AFTER ERECTION MUST BE REPAIRED PRIOR TO ERECTION.

IN ORDER TO MINIMIZE DAMAGE TO THE GALVANIZED STEEL, CONCRETE SPLATTER AND FORM LEAKAGE MUST BE WASHED FROM THE SURFACE OF THE STEEL SHORTLY AFTER THE CONCRETE IS PLACED AND BEFORE IT IS DRY. IF THE CONCRETE DRIES, IT MUST BE REMOVED.

TEMPORARY ATTACHMENTS, SUPPORTS FOR SCAFFOLDING AND FINISHING MACHINE OR FORMS MUST NOT DAMAGE THE COATING SYSTEM. IN PARTICULAR, SUFFICIENT SIZE SUPPORT PADS MUST BE USED ON THE FASCIAS WHERE BRACING IS USED.

DOCUMENTATION OF GALVANIZING REPAIRS MUST BE PERFORMED BY THE QCPS BY A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

H. FINAL REVIEW (QCP # 8)

AFTER THE ERECTION WORK HAS BEEN COMPLETED, INCLUDING ALL CONNECTIONS AND THE APPROVED REPAIR OF ANY DAMAGED BEAMS, GIRDERS OR OTHER STEEL MEMBERS, AND THE DECK HAS BEEN PLACED, THE CONTRACTOR AND ENGINEER MUST INSPECT THE STRUCTURE FOR DAMAGED COATING. (QCP #8).
DAMAGED AREAS MUST BE REPAIRED BY QCPS #7. AT THE COMPLETION OF CONSTRUCTION, THE GALVANIZING MUST BE UNDAMAGED AND THE SURFACES FREE FROM GREASE, OIL, CHALK MARKS, PAINT, CONCRETE SPLATTER OR OTHER SILAGE. SUCH SILAGE WILL BE REMOVED BY SOLVENT CLEANING PER SSPCSP1(QCP #1).

DOCUMENTATION OF FINAL REVIEW MUST BE PERFORMED BY THE QCPS BY A COVER LETTER LISTING EACH MAIN MEMBER INSPECTED.

4.0 TESTING EQUIPMENT

THE FABRICATOR MUST PROVIDE THE QCPS INSPECTOR THE FOLLOWING TESTING EQUIPMENT IN GOOD WORKING ORDER FOR THE DURATION OF THE PROJECT.

ONE (POSITECTOR 2000 OR 6000, QUANIX 2200, OR ELCOMETER A345FBI1) AND THE CALIBRATION PLATES, 38–200 MM AND 250–625 MM [1.5 –8 MILS AND 10–25 MILS] AS PER THE NBS CALIBRATION STANDARDS IN ACCORDANCE WITH ASTM D–1186.

5.0 COATING THICKNESS

GALVANIZED THICKNESS MUST BE DETERMINED BY USE OF TYPE 2 MAGNETIC GAGE IN ACCORDANCE WITH THE FOLLOWING:

FIVE SEPARATE SPOT MEASUREMENTS MUST BE MADE, SPACED EVENLY OVER ONE(1) RANDOMLY SELECTED, 100 SQUARE FEET OF SURFACE AREA ON EACH STRUCTURAL MEMBER. THREE GAGE READINGS MUST BE MADE FOR EACH SPOT MEASUREMENT. THE PROBE MUST BE MOVED A DISTANCE OF 1 TO 3 INCHES FOR EACH NEW GAGE READING. ANY UNUSUALLY HIGH OR LOW GAGE READING THAT CANNOT BE REPEATED CONSISTENTLY MUST BE DISCARDED. THE AVERAGE (MEAN) OF THE 3 GAGE READINGS
MUST BE USED AS THE SPOT MEASUREMENT. THE AVERAGE OF FIVE SPOT MEASUREMENTS FOR EACH SUCH 100 SQUARE FOOT AREA MUST NOT BE LESS THAT THE SPECIFIED THICKNESS. NO SINGLE SPOT MEASUREMENT IN ANY 100 SQUARE FOOT AREA MUST BE LESS THAN 80% OF THE SPECIFIED MINIMUM THICKNESS. ANY ONE OF 3 READINGS WHICH ARE AVERAGED TO PRODUCE EACH SPOT
MEASUREMENT, MAY UNDER–RUN OR OVER–RUN BY A GREATER AMOUNT. THE 5 SPOT MEASUREMENTS MUST BE MADE FOR ONE(1) RANDOMLY SELECTED, 100 SQUARE FEET OF AREA ON EACH STRUCTURAL MEMBER. ALL SPLICE MATERIAL AND SECONDARY MEMBERS MUST HAVE AT LEAST ONE SPOT MEASURED ON
EACH PIECE. THE PROBE MUST BE MOVED SO THAT ONE READING IS TAKEN AT EACH END AND MIDDLE OF THE PIECE FOR A TOTAL OF THREE READINGS.

THE QCPS MUST INSPECT AND PROVIDE DOCUMENTATION OF ACTUAL DATA, THE GALVANIZED THICKNESS CHECKS WERE PERFORMED PER SPECIFICATION, AND THE
COATING THICKNESS MEETS SPECIFICATION REQUIREMENTS.

6.0 HANDLING AND SHIPPING

REASONABLE CARE MUST BE EXERCISED IN HANDLING THE GALVANIZED STEEL DURING SHIPPING, ERECTION, AND SUBSEQUENT CONSTRUCTION OF THE BRIDGE. THE STEEL MUST BE INSULATED FROM THE BINDING CHAINS BY SOFTENERS. HOOKS AND SLINGS USED TO HOIST STEEL MUST BE PADDED. DIAPHRAGMS AND SIMILAR PIECES MUST BE SPACED IN SUCH A WAY THAT NO RUBBING WILL OCCUR DURING SHIPMENT THAT
MAY DAMAGE THE GALVANIZING. THE STEEL MUST BE STORED ON PALLETS AT THE JOB SITE, OR BY OTHER MEANS, SO THAT IT DOES NOT REST ON THE GROUND OR SO THAT COMPONENTS DO NOT FALL OR REST ON EACH OTHER.

7.0 SAFETY REQUIREMENTS AND PRECAUTIONS

THE CONTRACTOR MUST MEET THE SAFETY REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), IN ADDITION TO THE SCAFFOLDING REQUIREMENTS BELOW.

THE CONTRACTOR IS REQUIRED TO MEET THE APPLICABLE SAFETY REQUIREMENTS OF THE OHIO INDUSTRIAL COMMISSION IN ADDITION TO THE SCAFFOLDING REQUIREMENTS SPECIFIED BELOW.

8.0 SCAFFOLDING

RUBBER ROLLERS, OR OTHER PROTECTIVE DEVICES MEETING THE APPROVAL OF THE ENGINEER, MUST BE USED ON SCAFFOLD FASTENINGS. METAL ROLLERS OR CLAMPS AND OTHER TYPES OF FASTENINGS WHICH WILL MAR OR DAMAGE COATED SURFACES MUST NOT BE USED.

9.0 INSPECTION ACCESS FOR FIELD REPAIR

IN ADDITION TO THE REQUIREMENT OF 105.10, THE CONTRACTOR MUST FURNISH, ERECT, AND MOVE SCAFFOLDING AND OTHER APPROPRIATE EQUIPMENT, TO PERMIT THE INSPECTOR THE OPPORTUNITY TO INSPECT (CLOSELY OBSERVE), ALL AFFECTED SURFACES. THIS OPPORTUNITY MUST BE PROVIDED TO THE INSPECTOR DURING ALL PHASES OF THE WORK AND CONTINUE FOR A PERIOD OF AT LEAST TEN (10) WORKING DAYS AFTER THE TOUCH–UP WORK HAS BEEN COMPLETED. WHEN SCAFFOLDING IS USED, IT MUST BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS. WHEN SCAFFOLDING, OR THE HANGERS ATTACHED TO THE SCAFFOLDING ARE SUPPORTED BY HORIZONTAL WIRE ROPES, OR WHEN SCAFFOLDING IS PLACED DIRECTLY UNDER THE SURFACE TO BE PAINTED, THE FOLLOWING REQUIREMENTS MUST BE COMPLIED WITH:

WHEN SCAFFOLDING IS SUSPENDED 43" OR MORE BELOW THE COATED SURFACE TO BE REPAIRED, TWO ROWS OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF THE SCAFFOLDING. ONE ROW OF GUARDRAIL MUST BE PLACED AT 42" ABOVE THE SCAFFOLDING AND THE OTHER ROW AT 20" ABOVE THE SCAFFOLDING.

WHEN THE SCAFFOLDING IS SUSPENDED AT LEAST 21", BUT LESS THAN 43" BELOW THE COATED SURFACE TO BE REPAIRED, A ROW OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF THE SCAFFOLDING AT 20" ABOVE THE SCAFFOLDING.

TWO ROWS OF GUARDRAIL MUST BE PLACED ON ALL SIDES OF SCAFFOLDING NOT PREVIOUSLY MENTIONED. THE ROWS OF GUARDRAIL MUST BE PLACED AT 42" AND 20" ABOVE SCAFFOLDING, AS PREVIOUSLY MENTIONED.

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

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BCK		7606184	

STRUCTURE GENERAL NOTES
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

3 / 36

30
63

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STRUCTURE GENERAL NOTES

ITEM 513 – STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN (CONTINUED)

9.0 INSPECTION ACCESS FOR FIELD REPAIR (CON'T)

ALL SCAFFOLDING MUST BE AT LEAST 24" WIDE WHEN GUARDRAIL IS USED AND 28" WIDE WHEN THE SCAFFOLDING IS SUSPENDED LESS THAN 21" BELOW THE COATED SURFACE TO BE REPAIRED AND GUARDRAIL IS NOT USED. IF TWO OR MORE SCAFFOLDING ARE LAID PARALLEL TO ACHIEVE THE PROPER WIDTH, THEY MUST BE RIGIDLY ATTACHED TO EACH OTHER TO PRECLUDE ANY DIFFERENTIAL MOVEMENT.

ALL GUARDRAIL MUST BE CONSTRUCTED AS A SUBSTANTIAL BARRIER WHICH IS SECURELY FASTENED IN PLACE AND IS FREE FROM PROTRUDING OBJECTS SUCH AS NAILS, SCREWS AND BOLTS. THERE MUST BE AN OPENING IN THE GUARDRAIL, PROPERLY LOCATED, TO ALLOW THE INSPECTOR ACCESS ONTO THE SCAFFOLDING.

THE RAILS AND UPRIGHTS MUST BE EITHER METAL OR WOOD. IF PIPE RAILING IS USED, THE RAILING MUST HAVE A NOMINAL DIAMETER OF NO LESS THAN ONE AND ONE HALF INCHES. IF STRUCTURAL STEEL RAILING IS USED, THE RAILS MUST BE 2 X 2 X 3/8 INCH STEEL ANGLES OR OTHER METAL SHAPES OF EQUAL OR GREATER STRENGTH. IF WOOD RAILING IS USED, THE RAILING MUST BE 2 X 4 INCH (NOMINAL) STOCK. ALL UPRIGHTS MUST BE SPACED AT NO MORE THAN 8 FEET ON CENTER. IF WOOD UPRIGHTS ARE USED, THE UPRIGHTS MUST BE 2 X 4 INCHES (NOMINAL) STOCK.

WHEN THE SURFACE TO BE INSPECTED IS MORE THAN 15 FEET ABOVE THE GROUND OR WATER, AND THE SCAFFOLDING IS SUPPORTED FROM THE STRUCTURE BEING PAINTED, THE CONTRACTOR MUST PROVIDE THE INSPECTOR WITH A SAFETY BELT AND LIFELINE. THE LIFELINE MUST NOT ALLOW A FALL GREATER THAN 6 FEET. THE CONTRACTOR MUST PROVIDE A METHOD OF ATTACHING THE LIFELINE TO THE STRUCTURE INDEPENDENT OF THE SCAFFOLDING, CABLES, OR BRACKETS SUPPORTING THE SCAFFOLDING.

WHEN SCAFFOLDING IS MORE THAN TWO AND ONE HALF FEET ABOVE THE GROUND, THE CONTRACTOR MUST PROVIDE A LADDER FOR ACCESS ONTO THE SCAFFOLDING. THE LADDER AND ANY EQUIPMENT USED TO ATTACH THE LADDER TO THE STRUCTURE MUST BE CAPABLE OF SUPPORTING 250 POUNDS WITH A SAFETY FACTOR OF AT LEAST FOUR (4). ALL RUNGS, STEPS, CLEATS, OR TREADS MUST HAVE UNIFORM SPACING AND MUST NOT EXCEED 12" ON CENTER. AT LEAST ONE SIDE RAIL MUST EXTEND AT LEAST 36" ABOVE THE LANDING NEAR THE TOP OF THE LADDER.

AN ADDITIONAL LANDING MUST BE REQUIRED WHEN THE DISTANCE FROM THE LADDER TO THE POINT WHERE THE SCAFFOLDING MAY BE ACCESSED, EXCEEDS 12". THE LANDING MUST BE A MINIMUM OF AT LEAST 24" WIDE AND 24" LONG. IT MUST ALSO BE OF ADEQUATE SIZE AND SHAPE SO THAT THE DISTANCE FROM THE LANDING TO THE POINT WHERE THE SCAFFOLDING IS ACCESSED DOES NOT EXCEED 12". THE LANDING MUST BE RIGID AND FIRMLY ATTACHED TO THE LADDER; HOWEVER, IT MUST NOT BE SUPPORTED BY THE LADDER. THE SCAFFOLDING MUST BE CAPABLE OF SUPPORTING A MINIMUM OF 1000 LBS.

IN ADDITION TO THE AFOREMENTIONED REQUIREMENTS, THE CONTRACTOR IS STILL RESPONSIBLE TO OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS, ORDINANCES, REGULATIONS, ORDERS AND DECREES.

THE CONTRACTOR MUST FURNISH ALL NECESSARY TRAFFIC CONTROL TO PERMIT INSPECTION DURING AND AFTER ALL PHASES OF THE PROJECT.

10.0 PROTECTION OF PERSONS AND PROPERTY

THE CONTRACTOR MUST INSTALL AND MAINTAIN SUITABLE SHIELDS OR ENCLOSURES TO PREVENT DAMAGE TO ADJACENT BUILDINGS, PARKED CARS, TRUCKS, BOATS, OR VEHICLES TRAVELING ON, OVER, OR UNDER STRUCTURES HAVING GALVANIZED REPAIRS. THEY MUST BE SUITABLY ANCHORED AND REINFORCED TO PREVENT INTERFERING WITH NORMAL TRAFFIC OPERATIONS IN THE OPEN LANES. PAYMENT FOR THE SHIELDS MUST BE INCLUDED AS INCIDENTAL TO THE APPLICABLE FIELD COATING OPERATION. WORK MUST BE SUSPENDED WHEN DAMAGE TO ADJACENT BUILDINGS, MOTOR VEHICLES, BOATS, OR OTHER PROPERTY IS OCCURRING.

WHEN OR WHERE ANY DIRECT OR INDIRECT DAMAGE OR INJURY IS DONE TO PUBLIC OR PRIVATE PROPERTY, THE CONTRACTOR MUST RESTORE, AT HIS OWN EXPENSE, SUCH PROPERTY, TO A CONDITION SIMILAR OR EQUAL TO THAT EXISTING BEFORE SUCH DAMAGE OR INJURY WAS DONE.

11.0 POLLUTION CONTROL

THE CONTRACTOR MUST TAKE ALL NECESSARY PRECAUTIONS TO COMPLY WITH POLLUTION CONTROL LAWS, RULES OR REGULATIONS OF FEDERAL, STATE OR LOCAL AGENCIES.

12.0 METHOD OF MEASUREMENT

THE COST OF ALL LABOR, MATERIALS, EQUIPMENT NECESSARY TO GALVANIZE AND TO FABRICATE THE STRUCTURAL STEEL IN ACCORDANCE WITH 513 AND PERFORM ANY NECESSARY FIELD REPAIR SHALL BE INCLUDED IN THIS 513, AS PER PLAN ITEM.

13.0 BASIS OF PAYMENT

PAYMENT WILL BE MADE AT CONTRACT PRICES FOR ITEM 513: STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN.

ITEM 514 – FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN

ONLY THE GALVANIZED FASCIA BEAMS AND TWIN STEEL TUBE RAILING ARE TO BE PAINTED (IZEU PER CMS 514). COLOR SHALL BE LIGHT BLUE (FEDERAL STANDARD NO. 15526).

LIMITS OF PAINTING BEAMS SHOWN ON SHEET 31/36. THIS ITEM SHALL BE PAID FOR UNDER ITEM 514 – FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN.

ASBESTOS NOTE

THE CONTRACTOR SHALL BE AWARE THAT THE COATING PAINT OF THE EXISTING STEEL BEAMS CONTAINS ASBESTOS.

THE CONTRACTOR SHALL FOLLOW THE LATEST LAWS, RULES, GUIDELINES AND REGULATIONS AS STIPULATED BY THE OHIO EPA, THE CANTON HEALTH DEPARTMENT AND OSHA FOR ANY WORK RELATED TO THE REMOVAL AND DISPOSAL OF THE EXISTING STRUCTURAL STEEL AND BEARINGS. THE DEMOLITION SHALL BE PERFORMED BY AN OHIO EPA CERTIFIED ASBESTOS ABATEMENT CONTRACTOR.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE ASBESTOS SURVEY REPORT CONTAINED IN THE BID PACKAGE DOCUMENTS FOR THIS PROJECT.

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

NORFOLK SOUTHERN NOTES:

REFER TO THE SPECIAL CLAUSES IN THE PROPOSAL REQUIREMENT REGARDING WORK ON OR ABOVE RAILWAY PROPERTY.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER AND THE RAILWAY DETAILED EXCAVATION PLANS, TEMPORARY SHORING PLANS AND CALCULATIONS ALL PREPARED AND SIGNED BY A REGISTERED OHIO PROFESSIONAL ENGINEER SHOWING SIZES OF ALL TEMPORARY SHORING STRUCTURAL MEMBERS, DETAILS OF CONNECTIONS, AND EMBEDMENT DEPTH. THE PLANS SHALL INCLUDE A PLAN VIEW SHOWING ALL THE PROPOSED EXCAVATION AND THE DISTANCES FROM THE CENTERLINE OF TRACK. THE PLANS MUST BE COMPLETE AND ACCURATELY DESCRIBE THE WORK. THE PLANS AND CALCULATIONS MUST BE APPROVED BY THE RAILWAY AND THE ENGINEER BEFORE EXCAVATION BEGINS.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER AND THE RAILWAY DEMOLITION PLANS AND PROCEDURES FOR ALL DEMOLITION WORK ABOVE OR ADJACENT TO THE TRACKS OF THE RAILWAY. THE PLAN AND PROCEDURE SHALL INDICATE THE METHOD OF PROTECTING THE TRACK STRUCTURE, THE SEQUENCE OF DEMOLITION, AND THE PROCEDURES AND EQUIPMENT TO BE USED. NO DEBRIS SHALL BE ALLOWED TO INTENTIONALLY FALL ONTO THE RAILWAY PROPERTY.

A TEMPORARY MINIMUM VERTICAL CLEARANCE OF 22'–0" (OR THE EXISTING CLEARANCE IF LESS THAN 22'–0") ABOVE THE TOP OF RAIL ELEVATION AND A TEMPORARY MINIMUM HORIZONTAL CLEARANCE OF 13'–0" (OR THE EXISTING CLEARANCE IF LESS THAN 13'–0") AS MEASURED FROM THE TRACK CENTERLINE SHALL BE MAINTAINED TO ANY TEMPORARY FORM WORK, FALSE WORK, STOCKPILED MATERIALS, OR OTHER OBSTRUCTION WHICH WILL BE LEFT IN PLACE DURING TRAIN MOVEMENTS THROUGH THE JOB SITE.

DURING REMOVAL OF THE EXISTING STRUCTURE, THE EXISTING HORIZONTAL AND VERTICAL CLEARANCES SHALL NOT BE REDUCED.

UPON COMPLETION OF THE WORK ON RAILROAD PROPERTY, THE CONTRACTOR SHALL REQUEST THE ENGINEER TO ARRANGE A FINAL INSPECTION OF THE PROJECT WITH THE RAILWAYS DIVISION ENGINEER OR HIS AUTHORIZED REPRESENTATIVE.

R.J. CORMAN NOTES:

REFER TO THE SPECIAL CLAUSES IN THE PROPOSAL REQUIREMENT REGARDING WORK ON ABOVE RAILWAY PROPERTY.

THE CONTRACTOR SHALL SUBMIT, TO THE ENGINEER AND THE RAILWAY, DETAILED EXCAVATION PLANS, TEMPORARY SHORING PLANS AND CALCULATIONS ALL PREPARED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER SHOWING SIZES OF ALL TEMPORARY SHORING STRUCTURAL MEMBERS, DETAILS OF CONNECTIONS, AND EMBEDMENT DEPTH. THE PLANS SHALL INCLUDE A PLAN VIEW SHOWING ALL THE PROPOSED EXCAVATION AND THE DISTANCES FROM THE CENTERLINE OF TRACK. THE PLANS MUST BE COMPLETE AND ACCURATELY DESCRIBE THE WORK. THE PLANS AND CALCULATIONS MUST BE APPROVED BY THE RAILWAY AND THE ENGINEER BEFORE EXCAVATION BEGINS.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER AND THE RAILWAY DEMOLITION PLANS AND PROCEDURES FOR ALL DEMOLITION WORK ABOVE OR ADJACENT TO THE TRACKS OF THE RAILWAY. THE PLAN AND PROCEDURE SHALL INDICATE THE METHOD OF PROTECTING THE TRACK STRUCTURE, THE SEQUENCE OF DEMOLITION, AND THE PROCEDURES AND EQUIPMENT TO BE USED. NO DEBRIS SHALL BE ALLOWED TO INTENTIONALLY FALL ONTO THE RAILWAY PROPERTY.

THE CONTRACTOR SHALL SUBMIT, TO THE ENGINEER AND THE RAILWAY, DETAILED PLANS FOR THE ERECTION PROCEDURE OF THE BRIDGE SUPERSTRUCTURE. THE PLANS SHALL INCLUDE THE METHOD OF PROTECTING THE TRACK STRUCTURE (I.E. TIMBER MATS AND FILTER FABRIC), THE ERECTION SEQUENCE AND THE PROCEDURES AND EQUIPMENT TO BE USED.

CONSTRUCTION CLEARANCE OF 13'–0" HORIZONTALLY (OR THE EXISTING CLEARANCE IF LESS THAN 13'–0") FROM THE CENTER OF TRACKS AND 22'–0" VERTICALLY (OR THE EXISTING CLEARANCE IF LESS THAN 22'–0") FROM A POINT LEVEL WITH THE TOP OF THE HIGHER RAIL, AND WITHIN 8'–0" FROM THE CENTER OF TRACKS, SHALL BE MAINTAINED AT ALL TIMES.

DURING REMOVAL OF THE EXISTING STRUCTURE, THE EXISTING HORIZONTAL AND VERTICAL CLEARANCES SHALL NOT BE REDUCED.

UPON COMPLETION OF THE WORK ON RAILROAD PROPERTY, THE CONTRACTOR SHALL REQUEST THE ENGINEER TO ARRANGE A FINAL INSPECTION OF THE PROJECT WITH THE RAILWAYS DIVISION ENGINEER OR HIS AUTHORIZED REPRESENTATIVE.

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THE OSBORN ENGINEERING CO.
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CLEVELAND, OHIO 44114

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STRUCTURE GENERAL NOTES
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

4 / 36

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STRUCTURE GENERAL NOTES

WORK RELATED TO UTILITY

GENERAL

AT&T HAS UNDERGROUND AND BRIDGE SUPPORTED FACILITIES WITHIN THE PROJECT LIMITS. THE COMPANY HAS UNDERGROUND DUCTS ON BOTH APPROACHES OF THE BRIDGE. THE UNDERGROUND DUCT IS IN A 9 MTD (3X3) FORMATION. THE 9 MTD CLAY TILE DUCT CARRIES SEVEN (7) CABLES. THE DUCT RUN IS FROM A MANHOLE AT APPROXIMATE STA. 9+40 ON THE WEST SIDE OF THE BRIDGE TO A MANHOLE AT APPROXIMATE STA. 19+11 ON THE EAST SIDE OF THE BRIDGE. THE DUCT THEN CONTINUES FURTHER EAST TO A MANHOLE AT APPROXIMATE STA. 22+94 NEAR THE PROJECT WORK LIMIT.

THE EXISTING DUCT BANK IS SUPPORTED ON THE BRIDGE BY THE REMAINING THREE (3) EXISTING STEEL BEAMS THAT ARE TO BE REMOVED AS PART OF THE BRIDGE REHABILITATION WORK. ALSO THERE IS AN EXISTING MANHOLE ON THE BRIDGE AT APPROXIMATE STA. 15+02.

THE EXISTING AT&T FACILITY MUST REMAIN IN SERVICE AT ALL TIME. IT WILL REQUIRE CONTINUED SUPPORT FROM EXISTING BRIDGE MEMBERS AND EXISTING MISCELLANEOUS STEEL. NEW 9 – 4" CONDUITS IN ADJACENT BAY OF THE NEW BRIDGE MUST BE INSTALLED AND CABLE WORK COMPLETED FROM MANHOLE TO MANHOLE. THEN EXISTING SERVICE WILL BE TRANSFERRED TO THE NEW DUCT BANK AND CABLE SYSTEM ON THE NEW BRIDGE MEMBERS. THE EXISTING MTD DUCT, CABLES, MISCELLANEOUS AND STRUCTURAL STEEL WILL BE REMOVED AND REMAINING BRIDGE MEMBERS INSTALLED.

THE PROJECT CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:

NEW CONDUITS:

1. CONSTRUCTION OF NEW 9–4" FIBERGLASS CONDUITS ON THE BRIDGE, INCLUDING ANY NECESSARY FALSEWORK.
2. CONSTRUCTION OF NEW CONCRETE ENCASED 9–4" STEEL CONDUITS THROUGH THE BRIDGE ABUTMENT BACKWALLS AND TIE–INS TO THE NEW FRE CONDUITS ON THE BRIDGE AND TIE–INS TO THE NEW PVC CONDUITS AT THE BRIDGE APPROACHES.
3. CONSTRUCTION OF NEW CONCRETE ENCASED 9–4" PVC CONDUITS AT THE BRIDGE APPROACHES AND TIE–INS TO AT&T CONDUITS AT APPROACHES.
4. CONSTRUCTION TASKS 1 THROUGH 3 ARE TO BE PAID UNDER ITEM 625–CONDUIT, MISC.: 9–4" NEW CONDUITS, AS PER PLAN

EXISTING CONDUITS:

1. TEMPORARY PROTECTION OF EXISTING CABLES DURING CONSTRUCTION.
2. REMOVAL OF MTD TILE DUCT, WOOD PLANKING AND DEBRIS RELATED TO TILE DUCT.
3. REMOVAL OF STRUCTURAL DEBRIS RELATED TO THE SUPPORT OF TILE DUCT.
4. REMOVAL OF EXISTING MANHOLE ON BRIDGE AT STA. 15+02.
5. REMOVAL OF EXISTING ABUTMENT BACKWALL AROUND EXISTING CONDUITS.
6. FALSE WORK NEEDED TO COMPLETE REMOVAL OF THE EXISTING MTD AND CABLES. THE FALSE WORK SHALL BE EXTENDED TO COVER AT&T UTILITY WORK
7. CONSTRUCTION TASKS 1 THROUGH 6 ARE TO BE PAID UNDER ITEM 202–PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

AT&T AND THEIR CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:

NEW CONDUITS:

1. AT&T SHALL PLACE 9 NEW CONDUITS (CONCRETE ENCASED) IN A 3X3 FORMATION FROM EXISTING MANHOLE AT STA. 9+40 ON WEST SIDE TO APPROXIMATE STA. 11+50 BEFORE BRIDGE ABUTMENT.
2. AT&T SHALL RECONSTRUCT EXISTING MH ON EAST SIDE OF BRIDGE AND EXTEND 9 NEW CONDUITS IN A 3X3 FORMATION 5' TO 7' FROM NEW MH. (CONCRETE ENCASED).
3. AT&T SHALL INSTALL NEW CABLES IN CONDUITS FROM MANHOLE TO MANHOLE INCLUDING ON THE NEW BRIDGE.

EXISTING CONDUITS:

1. ONCE ABUTMENT BACKWALL REMOVAL WORK BY BRIDGE CONTRACTOR IS COMPLETE, AT&T WILL EXPOSE THE EXISTING MTD DUCT FROM BRIDGE TO THE EXISTING MH ON EAST SIDE OF BRIDGE. SIMILARLY, AT&T SHALL EXPOSE 20'–30' OF MTD ON WEST END.

2. AT&T WILL REMOVE THE EXISTING CABLES FROM THE DUCTS IMMEDIATELY AFTER THE SERVICE HAS BEEN TRANSFERRED TO THE NEW CABLES.

ADDITIONAL REQUIREMENTS:

AT&T SHALL BE NOTIFIED AT LEAST 3 WORKING DAYS IN ADVANCE TO HAVE INSPECTORS PRESENT AT TIME OF TIE–IN.

NO WORK SHALL BE STARTED WITH THE REMOVAL OF EXISTING CONDUIT / CABLE RUN UNTIL NEW CONDUIT RUN IS PLACED, CABLES INSTALLED AND IN SERVICE.

ALL FALSEWORK FOR AT&T UTILITY WORK SHALL MEET ODOT STANDARDS AND INSPECTIONS BEFORE AT&T WILL WORK OFF IT.

ANY AND ALL WORK INVOLVING AT&T FACILITIES DONE BY BRIDGE CONTRACTOR SHALL MEET ODOT SPECIFICATIONS AND AT&T APPROVAL AND PASS AT&T INSPECTIONS.

ADDITIONAL REQUIREMENTS (CONTINUED):

BRIDGE CONTRACTOR SHALL EXERCISE EXTREME CARE DURING ALL CONSTRUCTION OPERATIONS TO ENSURE AT&T LINES ARE PROTECTED, SUPPORTED, AND IN SERVICE AT ALL TIMES.

AT&T SHALL BE CONTACTED AT LEAST 4 WORKING DAYS PRIOR TO ANY WORK INVOLVING AT&T's NEW OR EXISTING FACILITIES TO HAVE AN INSPECTOR PRESENT.

CONTACT INFORMATION FOR AT&T: GARY COOPER (330) 384–3228

IF A CONFLICT OR DAMAGE SITUATION SHOULD ARISE, IMMEDIATELY CONTACT AT&T SO PROPER ACTIONS CAN BE TAKEN TO PREVENT DELAY OF CONSTRUCTION.

BEFORE START OF PROJECT, CONTRACTOR SHOULD HAVE OUPS NOTIFIED TO MARK ALL UNDERGROUND UTILITIES TO PREVENT DAMAGE AND CUSTOMER OUTAGES.

IF AT ANY TIME CONTRACTOR IS UNSURE OF THE LOCATION OF AT&T's FACILITIES, IMMEDIATELY NOTIFY AT&T TO HELP RESOLVE THE ISSUE.

IF ANY DAMAGE TO AT&T's FACILITIES DOES OCCUR, AT&T SHALL BE NOTIFIED SO REPAIRS CAN BE MADE.

ANY DAMAGES TO AT&T FACILITIES THAT OCCURS, WILL BE BILLED FOR REPAIR COST, ALL TIME INVOLVED, AND ALL MATERIAL EXPENSE.

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TREMONT AVENUE BRIDGE

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ESTIMATED QUANTITIES

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	AS PER PLAN SHEET NO. #/63
202		LUMP	LUMP	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	29, 31, 32, 34 THRU 38
503	11100	LUMP	LUMP	COFFERDAMS, CRIBS AND SHEETING				LUMP	
503	21300	LUMP	LUMP	UNCLASSIFIED EXCAVATION, AS PER PLAN				LUMP	37, 38
509	10001	273148	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN	6557	15,272	251,319		29, 61, 62, 63
509	20001	250	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	50	200			29
510	10000	1050	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	378	672			
511	31504	1060	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE			1060		
511	43200	110	CU YD	CLASS C CONCRETE, PIER ABOVE FOOTING		115			
511	44100	58	CU YD	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING	58				
512	10050	795	SQ YD	SEALING OF CONCRETE SURFACES (NON-EPOXY)			795		
512	10100	5480	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	720	3100	1660		
512	10600	600	FT	CONCRETE REPAIR BY EPOXY INJECTION	180	420			
512	44400	50	SQ YD	TYPE B WATERPROOFING	30				
513	10201	5500	POUND	STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN *			5500		29, 30, 31, 32, 54, 55
513	10241	904,000	POUND	STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN			904,000		29, 30, 31
513	20000	11460	EACH	WELDED STUD SHEAR CONNECTORS			11460		
514	00401	LUMP	LUMP	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN				LUMP	29
516	11210	90	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL			90		
516	44301	24	EACH	16"x16"x4.28" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (17"x17"x2.00") (NEOPRENE), AS PER PLAN		24			53
516	44301	18	EACH	18"x17"x4.79" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (18"x19"x2.38") (NEOPRENE), AS PER PLAN		18			53
516	44401	6	EACH	18"x18"x5.27" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (19"x19"x2.44") (NEOPRENE), AS PER PLAN		6			53
516	44401	6	EACH	20"x19"x5.27" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (20"x21"x2.50") (NEOPRENE), AS PER PLAN		6			53
516	44401	6	EACH	20"x19"x5.27" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (25"x21"x2.50") (NEOPRENE), AS PER PLAN		6			53
516	44401	12	EACH	17"x17"x5.60" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (18"x18"x2.06") (NEOPRENE), AS PER PLAN	12				53
517	63000	20	FT	RAILING, MISC.: BRIDGE RETAINING WALL RAILING REPAIRED				20	41
517	73200	765	FT	RAILING (DEFLECTOR PARAPET TYPE)	45		720		57, 58, 60
517	74501	720	FT	RAILING, CONCRETE, AS PER PLAN			720		57, 58
517	75121	126	FT	RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING), AS PER PLAN	126				29, 43
518	21200	52	CU YD	POROUS BACKFILL WITH FILTER FABRIC	52				
519	11101	1980	SQ FT	PATCHING CONCRETE STRUCTURE, AS PER PLAN	410	1570			29
526	25001	167	SQ YD	REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN				167	60
625	25921	LUMP	LUMP	CONDUIT, MISC.: 9-4" NEW CONDUITS, AS PER PLAN **				LUMP	13, 15, 32, 34, 56
SPECIAL	60739900	715	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC			715		
SPECIAL	60739930	715	FT	VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC			715		
SPECIAL	90017000	LUMP	LUMP	RAIL ITEM, MISC.: PREMIUM ON RAILROAD'S PROTECTIVE PUBLIC LIABILITY AND PROPERTY DAMAGE LIABILITY INSURANCE (SEE PROPOSAL NOTE)					

* THE STRUCTURAL STEEL QUANTITY SHOWN IS TO BE PAID FOR BY THE AT&T UTILITY COMPANY FOR THE UTILITY CONDUIT SUPPORTS.

** ITEM TO BE PAID 100% BY AT&T UTILITY COMPANY. ITEM ALSO INCLUDES ALL APPROACH CONDUITS AND THEIR ACCESSORIES.

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

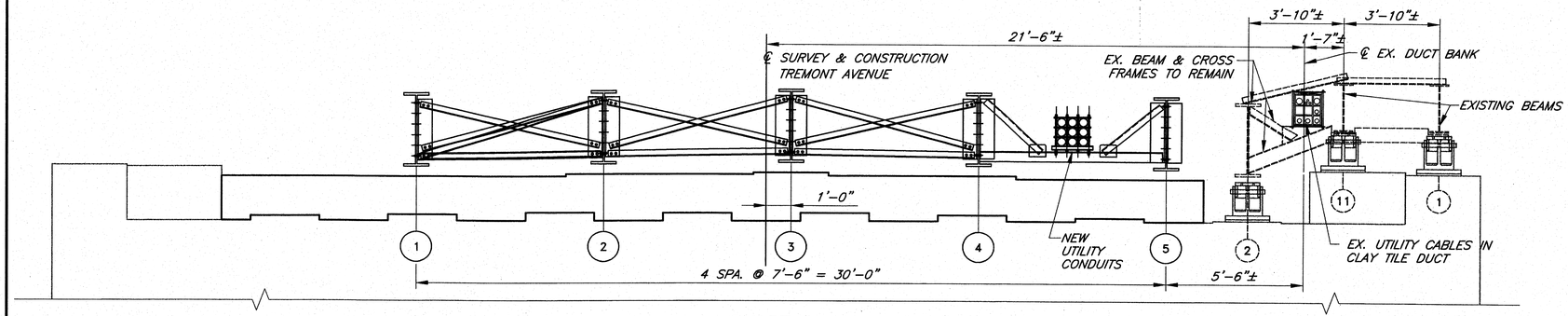
ESTIMATED QUANTITIES
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

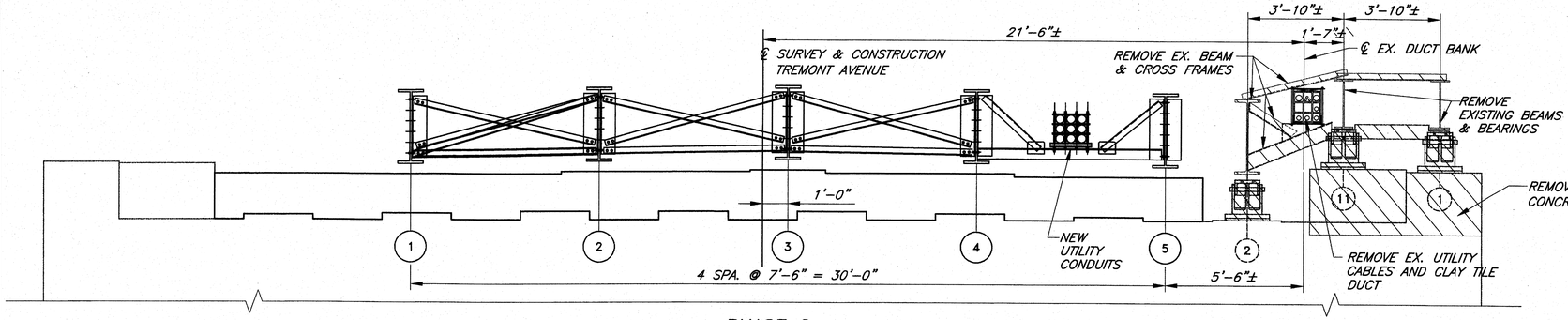
6 / 36

33 / 63

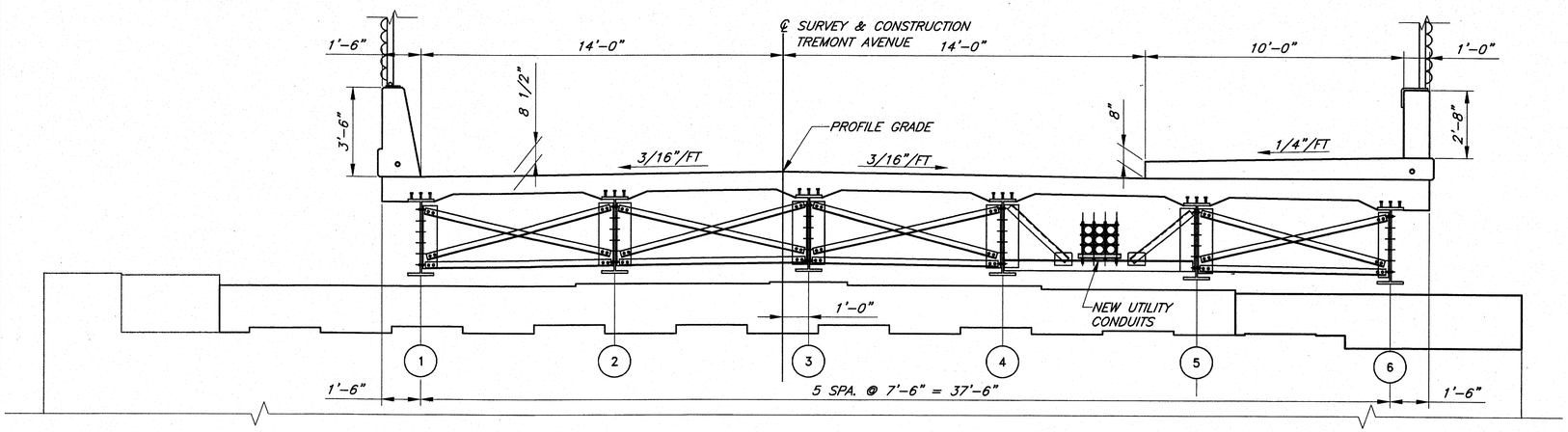
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Drawn By/Date : TCooper / 6-6-07 (15:08)



PHASE 1



PHASE 2



PHASE 3

SUGGESTED SEQUENCE OF CONSTRUCTION:

PHASE 1
- *INSTALL PORTIONS OF SUBSTRUCTURE AS SHOWN, BEAMS 1 THROUGH 5, CROSS FRAMES AND NEW UTILITY CONDUITS.*
- *ALLOW AT&T CONTRACTOR TO INSTALL CABLES IN THE NEW CONDUITS AND CONNECT THEM TO MANHOLES ON EACH APPROACH.*
- *THE NEW UTILITY LINES SHALL BE IN SERVICE PRIOR TO ANY REMOVAL OF THE EXISTING CLAY TILE DUCT SUPPORT SYSTEM AND PORTIONS OF THE SUBSTRUCTURE.*

PHASE 2
- *ALLOW AT&T CONTRACTOR TO REMOVE CABLES.*
- *CAREFULLY REMOVE EXISTING CLAY TILE DUCT INCLUDING SUPPORTS.*
- *CAREFULLY REMOVE EXISTING BEAMS 1, 2 & 11, CROSS FRAMES, BEARINGS AND PORTION OF SUBSTRUCTURE CONCRETE (AS REQUIRED).*

PHASE 3
- *CONSTRUCT REMAINDER OF THE SUBSTRUCTURE AS REQUIRED.*
- *INSTALL NEW BEAM 6 AND CROSS FRAMES.*
- *INSTALL REMAINING SUPERSTRUCTURE.*

NOTES:

1. *FOR NEW UTILITY CONDUIT AND SUPPORT DETAILS SEE SHEET 27/36 AND 28/36.*

2. *SEE STRUCTURAL GENERAL NOTES SHEET 2/36 AND 5/36 FOR DETAILED DESCRIPTION OF WORK RELATED TO SUPPORT AND MAINTENANCE OF THE EXISTING UTILITY, WORK TO BE PERFORMED BY PROJECT CONTRACTOR AND THAT BY A UTILITY CONTRACTOR.*

ITEM 202 – PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	GTA	8/31/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

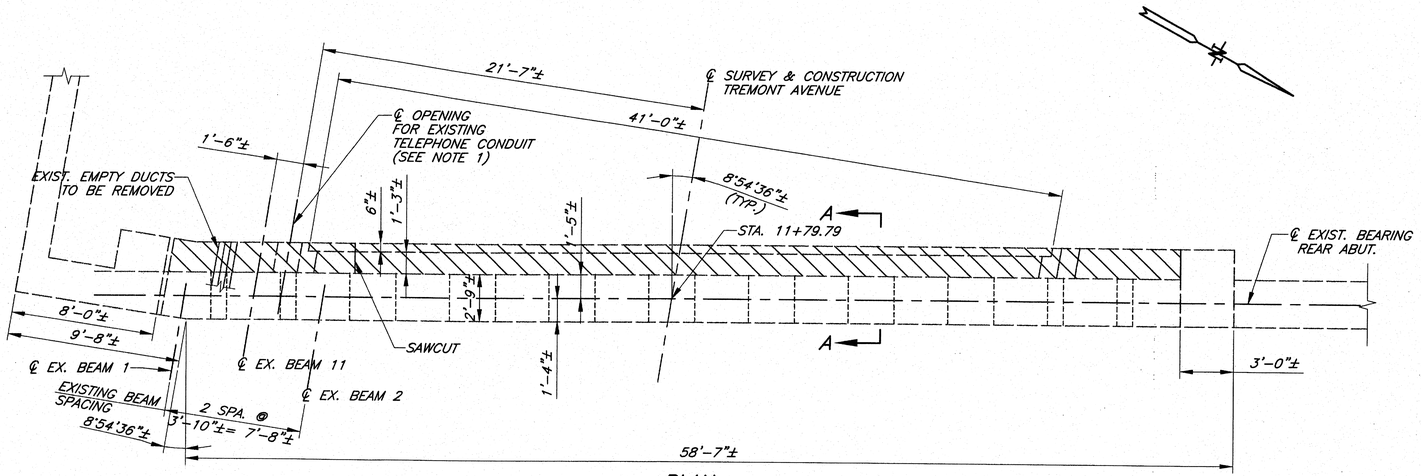
PHASES OF UTILITY AND STRUCTURE CONSTRUCTION
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

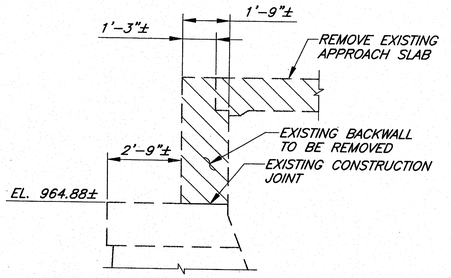
7 / 36

34 / 63

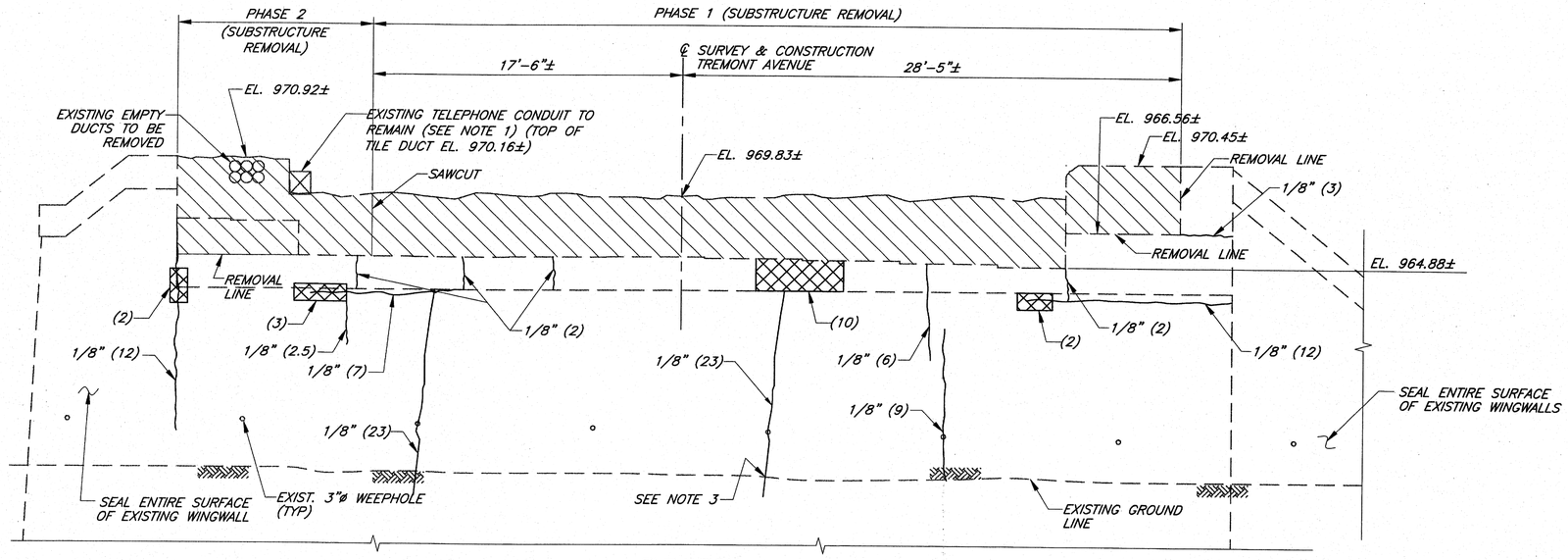
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PLAN



SECTION A–A



ELEVATION

LEGEND

1/8"(30) = 1/8" CRACK, 30 FT LONG

(20) = 20 SQ FT SPALL AREA

ITEM 202 – PORTIONS OF STRUCTURE REMOVED OVER 20 FOOT SPAN, AS PER PLAN

ITEM 512 – CONCRETE REPAIR BY EPOXY INJECTION

ITEM 519 – PATCHING CONCRETE STRUCUTRE, AS PER PLAN

NOTES:

1. THE CONTRACTOR SHALL PROTECT THE EXISTING TELEPHONE CONDUIT DURING THE PHASE 1 REMOVAL OPERATIONS. FOR ADDITIONAL NOTES, SEE SHEET 4 136.

2. ALL EXISTING DIMENSIONS (±) SHALL BE FIELD VERIFIED BY THE CONTRACTOR.

3. EXCAVATION WILL BE REQUIRED TO EXPOSE THE EXTENT OF DETERIORATION FOR COMPLETE REPAIR. EXCAVATION SHALL NOT EXCEED TWO (2) FEET DEEP. THE PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 503–UNCLASSIFIED EXCAVATION.

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	GTA	8/31/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
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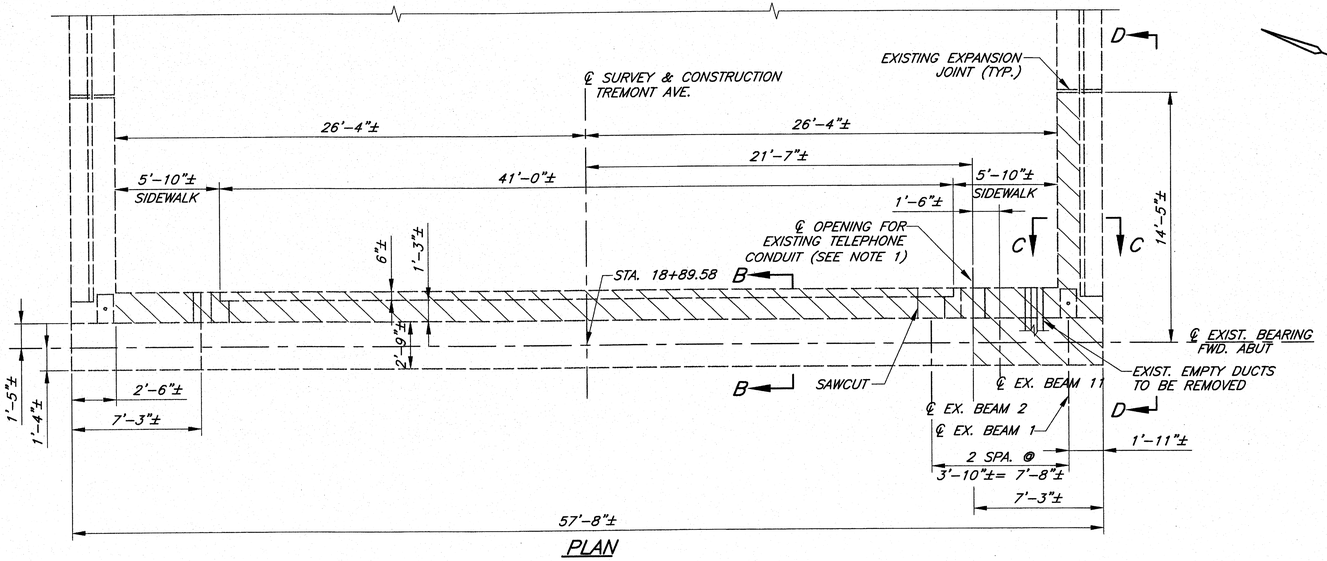
REAR ABUTMENT REMOVAL
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE
BRIDGE

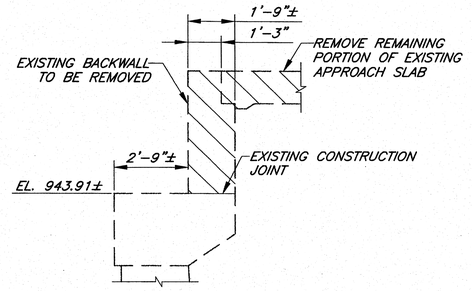
8 / 36

35
63

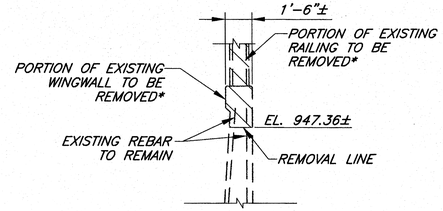
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PLAN

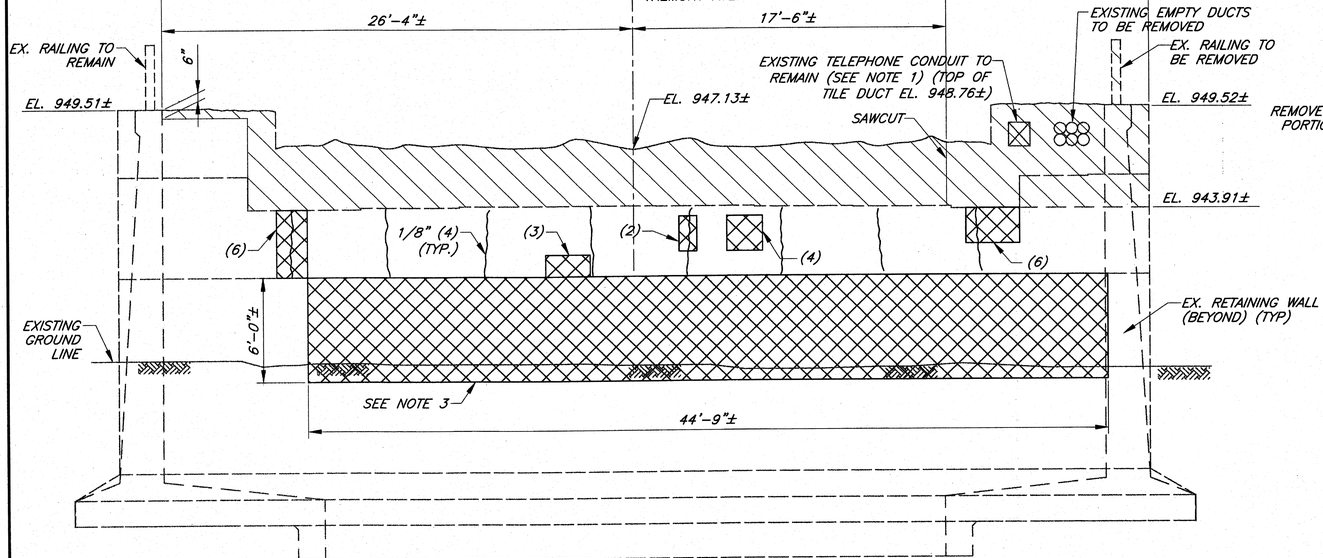


SECTION B–B

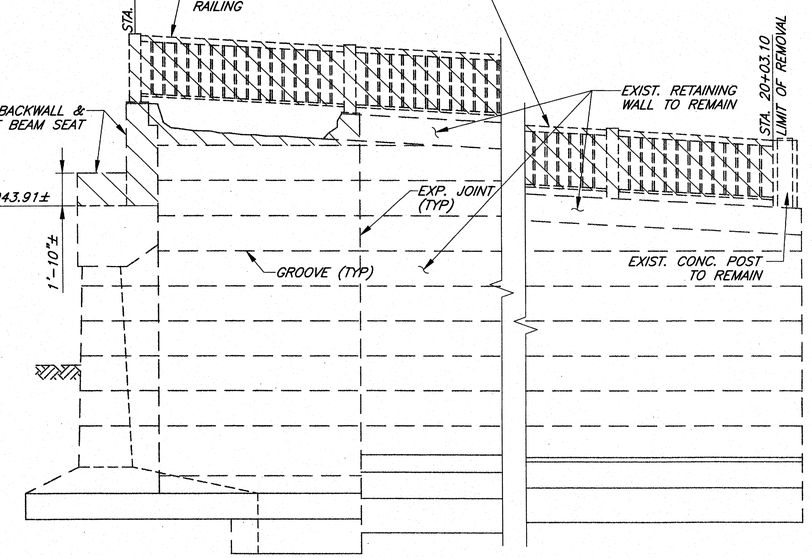


SECTION C–C

*FOR LIMIT OF REMOVAL SEE SECTION D–D



ELEVATION



SECTION D–D

NOTES:

1. THE CONTRACTOR SHALL PROTECT THE EXISTING TELEPHONE CONDUIT DURING THE PHASE 1 REMOVAL OPERATIONS. FOR ADDITIONAL NOTES, SEE SHEET 4 | 36.
2. ALL EXISTING DIMENSIONS (±) SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
3. EXCAVATION WILL BE REQUIRED TO EXPOSE THE EXTENT OF DETERIORATION FOR COMPLETE REPAIR. EXCAVATION SHALL NOT EXCEED TWO (2) FEET DEEP. THE PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 503–UNCLASSIFIED EXCAVATION, AS PER PLAN.

LEGEND:

1/8"(30) = 1/8" CRACK, 30 FT LONG

(20) = 20 SQ FT SPALL AREA

ITEM 202 – PORTIONS OF STRUCTURE REMOVED OVER 20 FT SPAN, AS PER PLAN

ITEM 519 – PATCHING CONCRETE STRUCTURE, AS PER PLAN

ITEM 512 – CONCRETE REPAIR BY EPOXY INJECTION

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

REVIEWED GTA | DATE 8/31/07 | STRUCTURE FILE NUMBER 7606184

DRAWN SMK | REVISED

DESIGNED SMK | CHECKED BCK

FORWARD ABUTMENT REMOVAL

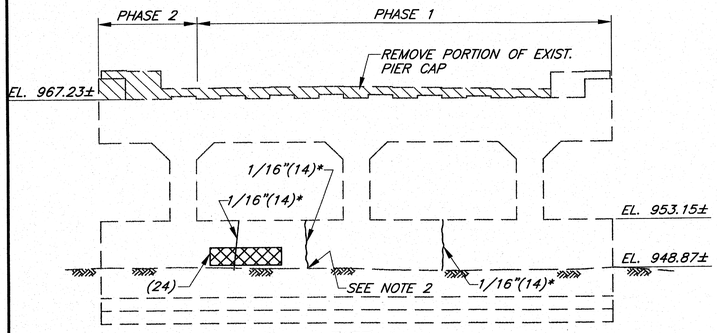
TREMONT AVENUE OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

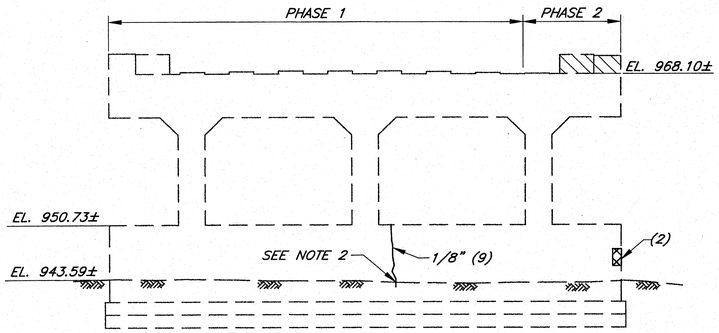
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36 / 63

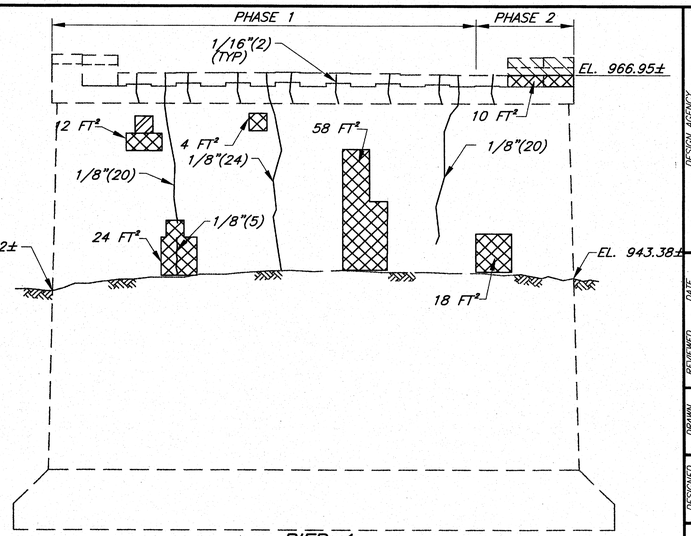
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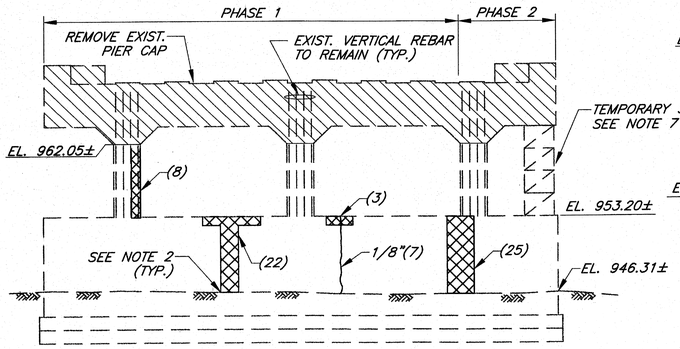
PIER 1
(LOOKING WEST)
* TOTAL LENGTH INCLUDING TOP & OPPOSITE SIDE



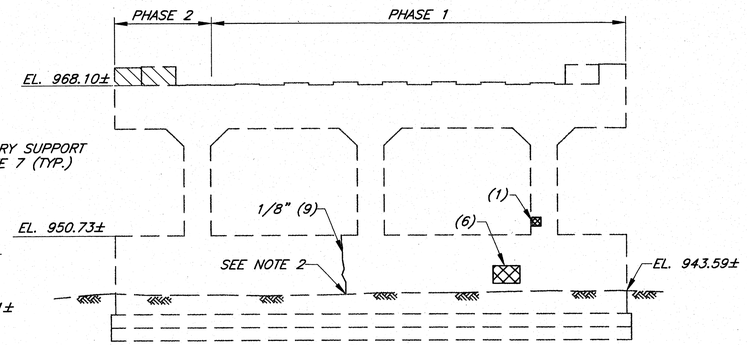
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(LOOKING EAST)



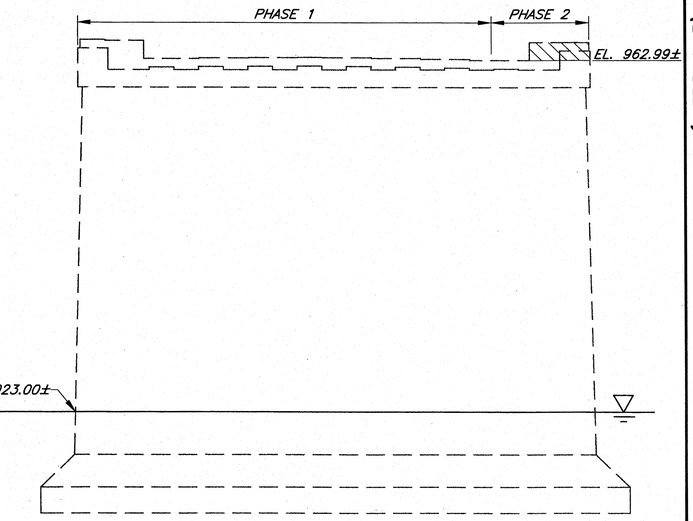
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(LOOKING EAST)



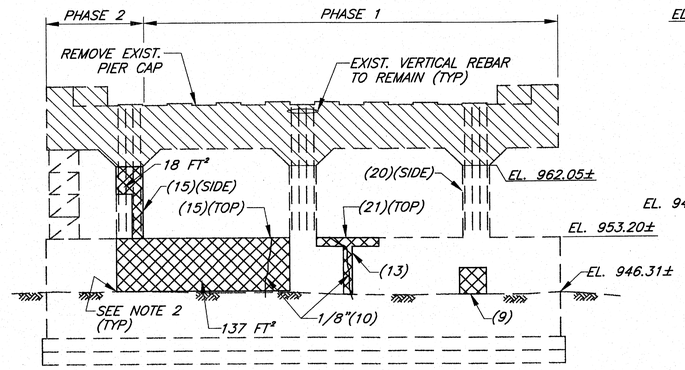
PIER 2
(LOOKING EAST)



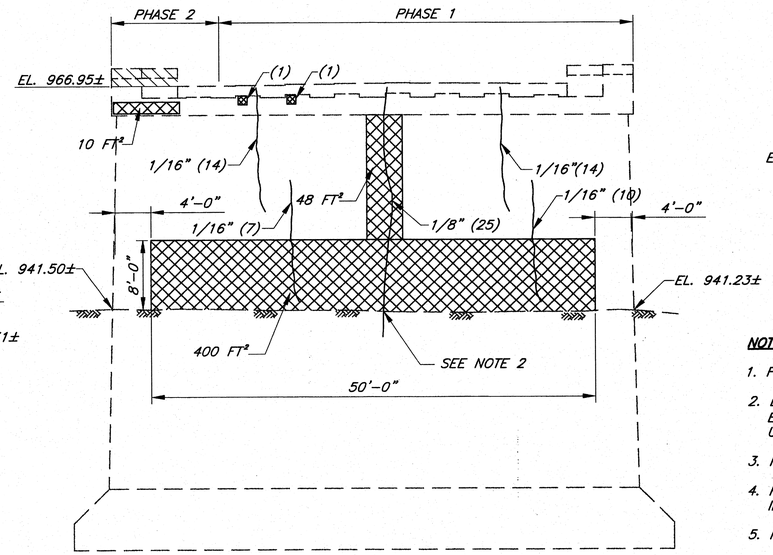
PIER 3
(LOOKING WEST)



PIER 5
(LOOKING EAST)



PIER 2
(LOOKING WEST)



PIER 4
(LOOKING WEST)

LEGEND:

1/8"(30) = 1/8" CRACK, 30 FT LONG

(20) OR 20 FT² = 20 SQ FT SPALL AREA

NOTES:

1. FOR ADDITIONAL NOTES AND TABLE OF ESTIMATED REPAIR QUANTITIES SEE SHEET 12/36.
2. EXCAVATION WILL BE REQUIRED TO EXPOSE THE EXTENT OF DETERIORATION FOR COMPLETE REPAIR. EXCAVATION SHALL NOT EXCEED TWO (2) FEET DEEP. THE PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 503–UNCLASSIFIED EXCAVATION, AS PER PLAN.
3. FOR REPAIR LEGEND SEE SHEET 11/36.
4. REMOVAL OF DEBRIS IN FRONT OF PIERS 5 AND 6 MAY BE REQUIRED. PAYMENT SHALL BE INCLUDED IN ROADWAY ITEM 201 – CLEARING AND GRUBBING, AS PER PLAN.
5. FOR NEW PIER CAP DETAILS AND SEALING LIMITS SEE SHEETS 17/36 THRU 22/36.
6. PORTION OF PIER CAPS TO BE REMOVED WILL BE DONE IN PHASES. SEE SHEET 7/36 FOR PHASE CONSTRUCTION DETAILS.
7. PRIOR TO ANY REMOVAL WORK, PROVIDE A TEMPORARY SUPPORT AT THE END OF EXISTING PIER CAP AS SHOWN. PAYMENT SHALL BE INCLUDED WITH ITEM 202 PORTION OF STRUCTURE REMOVED, AS PER PLAN.

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	GTA	8/31/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
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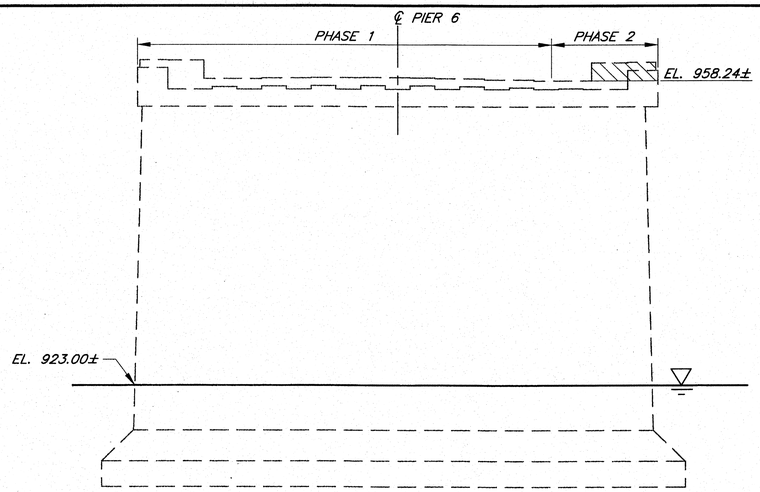
PIER REMOVAL AND REPAIR DETAILS (PIERS 1–5)
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

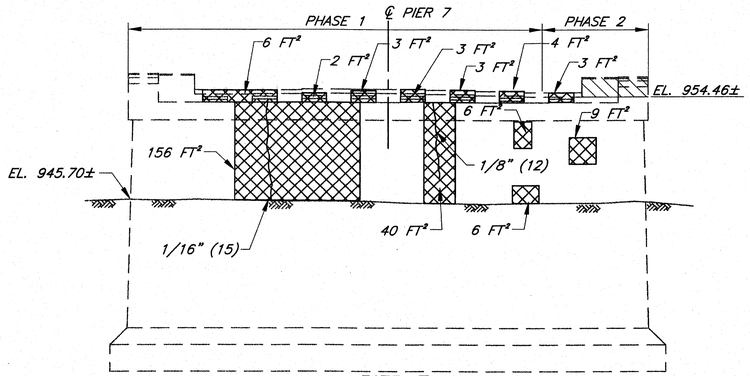
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37/63

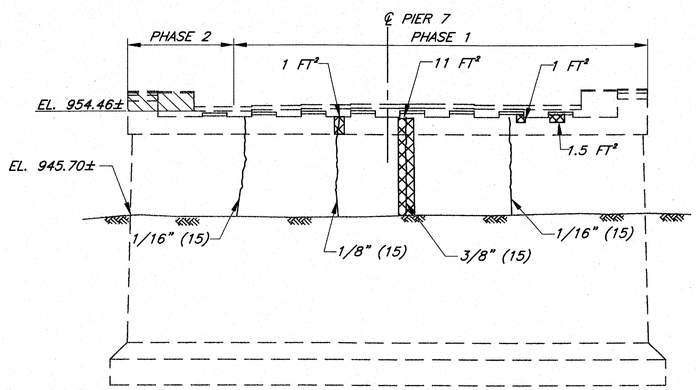
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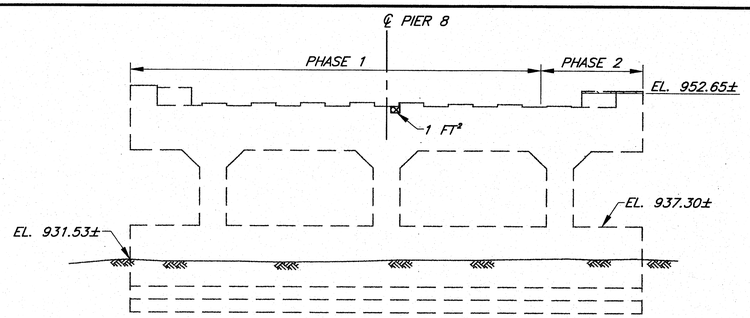
PIER 6
(LOOKING EAST)



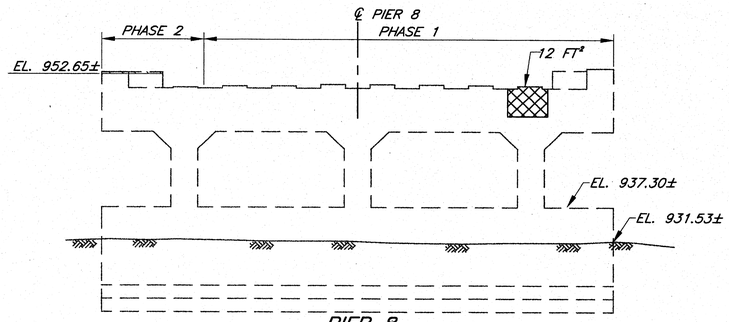
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(LOOKING EAST)



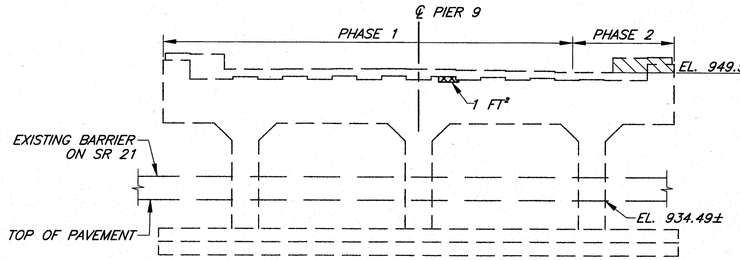
PIER 7
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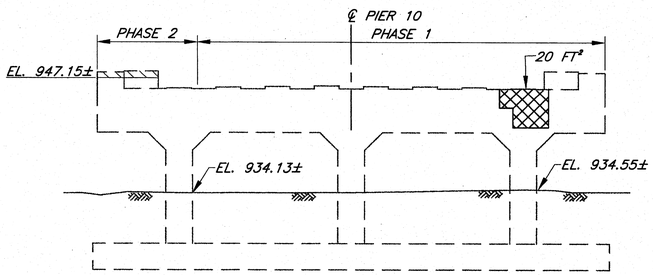
PIER 8
(LOOKING EAST)



PIER 8
(LOOKING WEST)



PIER 9
(LOOKING EAST)



PIER 10
(LOOKING WEST)

LEGEND:

1/8"(30) = 1/8" CRACK, 30 FT LONG

(20) OR 20 FT² = 20 SQ FT SPALL AREA

LEGEND:

- ITEM 202 – PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
- ITEM 519 – PATCHING CONCRETE STRUCTURE, AS PER PLAN
- ITEM 512 – CONCRETE REPAIR BY EPOXY INJECTION

NOTES:

1. FOR ADDITIONAL NOTES AND TABLE OF ESTIMATED REPAIR QUANTITIES SEE SHEET 12|36.
2. EXCAVATION WILL BE REQUIRED TO EXPOSE THE EXTENT OF DETERIORATION FOR COMPLETE REPAIR. EXCAVATION SHALL NOT EXCEED TWO (2) FEET DEEP. THE PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 503–UNCLASSIFIED EXCAVATION, AS PER PLAN.
3. PORTION OF PIER CAPS TO BE REMOVED WILL BE DONE IN PHASES. SEE SHEET 7|36 FOR PHASE CONSTRUCTION DETAILS.
4. CONCRETE REPAIR AND PATCHING WORK CAN BE PERFORMED ALL AT ONE TIME.

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	GTA	8/31/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

PIER REMOVAL AND REPAIR DETAILS (PIERS 6–10)

TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

11 / 36

38 / 63

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225sPI2.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 2-22-07 (16:16)

ESTIMATED REPAIR QUANTITIES

ITEM	DESCRIPTION	PIER 1		PIER 2		PIER 3		PIER 4		PIER 5		PIER 6		PIER 7		PIER 8		PIER 9		PIER 10	
		MEASURED*	ESTIMATED	MEASURED*	ESTIMATED	MEASURED*	ESTIMATED	MEASURED*	ESTIMATED	MEASURED*	ESTIMATED	MEASURED*	ESTIMATED	MEASURED*	ESTIMATED	MEASURED*	ESTIMATED	MEASURED*	ESTIMATED	MEASURED*	ESTIMATED
519	PATCHING CONCRETE STRUCTURE, AS PER PLAN (SQ. FOOT)	24.00	31.00	306.00	395.00	9.00	12.00	586.00	762.00	--	--	--	--	256.00	332.00	13.00	17.00	1.00	2.00	20.00	26.00
512	CONCRETE REPAIR BY EPOXY INJECTION (LINEAR FEET)	42.00	55.00	27.00	35.00	18.00	23.00	147.00	191.00	--	--	--	--	87.00	113.00	--	--	--	--	--	--

ESTIMATED REPAIR QUANTITIES

ITEM	DESCRIPTION	REAR ABUTMENT		FORWARD ABUTMENT	
		MEASURED*	ESTIMATED	MEASURED*	ESTIMATED
519	PATCHING CONCRETE STRUCTURE, AS PER PLAN (SQ. FOOT)	17.00	22.00	290.00	377.00
512	CONCRETE REPAIR BY EPOXY INJECTION (LINEAR FEET)	106.00	138.00	32.00	42.00

* MEASURED REPAIR QUANTITIES WERE MEASURED AND RECORDED DURING THE BRIDGE INSPECTION IN 2006.

NOTES:

1. ALL ELEVATIONS SHOWN WITH REFERENCE TO THE EXISTING PIERS ARE APPROXIMATE.

2. SEAL ALL EXPOSED SURFACES OF PIERS AS INDICATED ON SHEETS 17/36 THRU 22/36 AFTER COMPLETION OF PATCHING REPAIRS.

THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGN AGENCY

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	GTA	8/31/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

R.J. CORMAN R.R. TRACKS

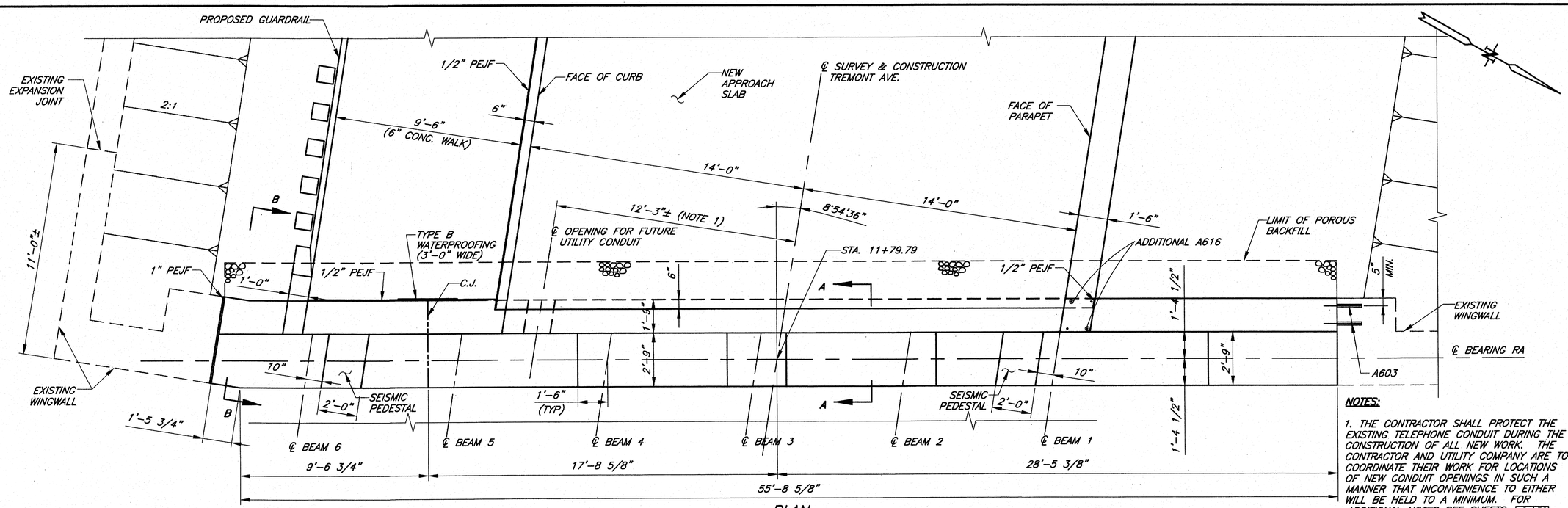
ESTIMATED REPAIR QUANTITIES
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

12/36

39/63

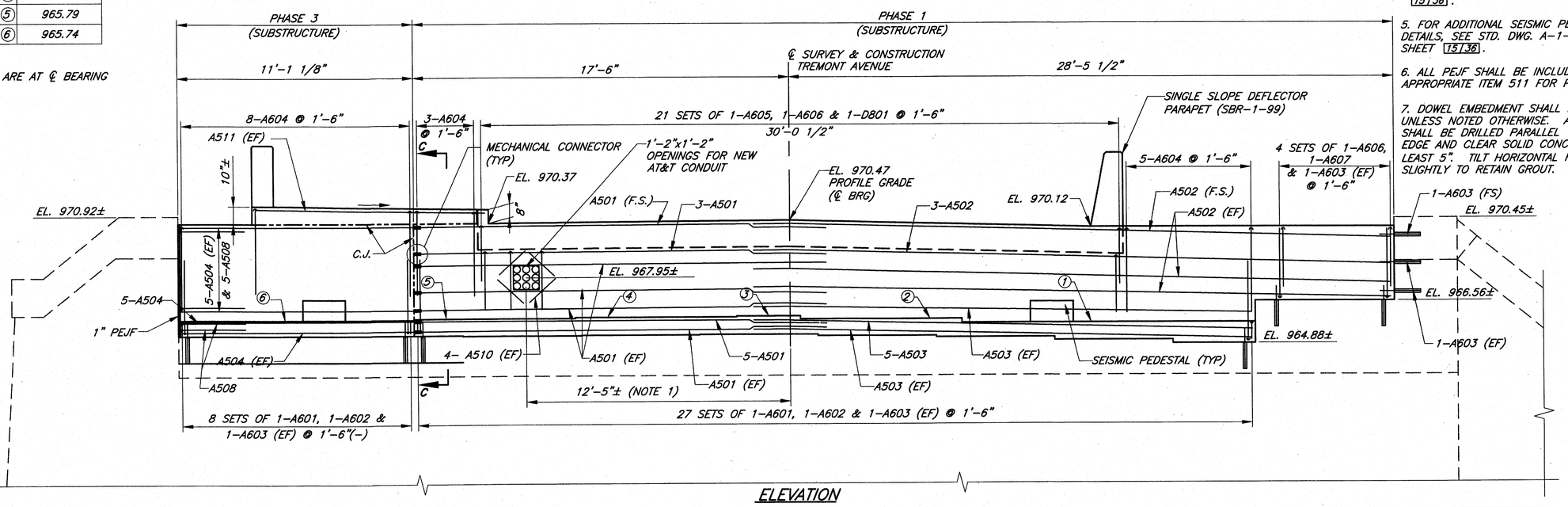
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PLAN

BEAM SEAT ELEV. TABLE*	
	REAR ABUT.
BEAM ①	965.55
BEAM ②	965.74
BEAM ③	965.88
BEAM ④	965.84
BEAM ⑤	965.79
BEAM ⑥	965.74

* ELEV. ARE AT ℄ BEARING



ELEVATION

NOTES:

1. THE CONTRACTOR SHALL PROTECT THE EXISTING TELEPHONE CONDUIT DURING THE CONSTRUCTION OF ALL NEW WORK. THE CONTRACTOR AND UTILITY COMPANY ARE TO COORDINATE THEIR WORK FOR LOCATIONS OF NEW CONDUIT OPENINGS IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM. FOR ADDITIONAL NOTES SEE SHEETS 2|36 & 4|36.
2. FOR SECTION A-A, B-B & C-C SEE SHEET 15|36.
3. FOR APPROACH SLAB DETAILS SEE SHEET 33|36.
4. FOR ADDITIONAL NOTES SEE SHEET 15|36.
5. FOR ADDITIONAL SEISMIC PEDESTAL DETAILS, SEE STD. DWG. A-1-69 AND SHEET 15|36.
6. ALL PEJF SHALL BE INCLUDED WITH APPROPRIATE ITEM 511 FOR PAYMENT.
7. DOWEL EMBEDMENT SHALL BE 1'-3" UNLESS NOTED OTHERWISE. ALL DOWELS SHALL BE DRILLED PARALLEL TO FREE EDGE AND CLEAR SOLID CONCRETE BY AT LEAST 5". TILT HORIZONTAL HOLE SLIGHTLY TO RETAIN GROUT.

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	GTA	8/31/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

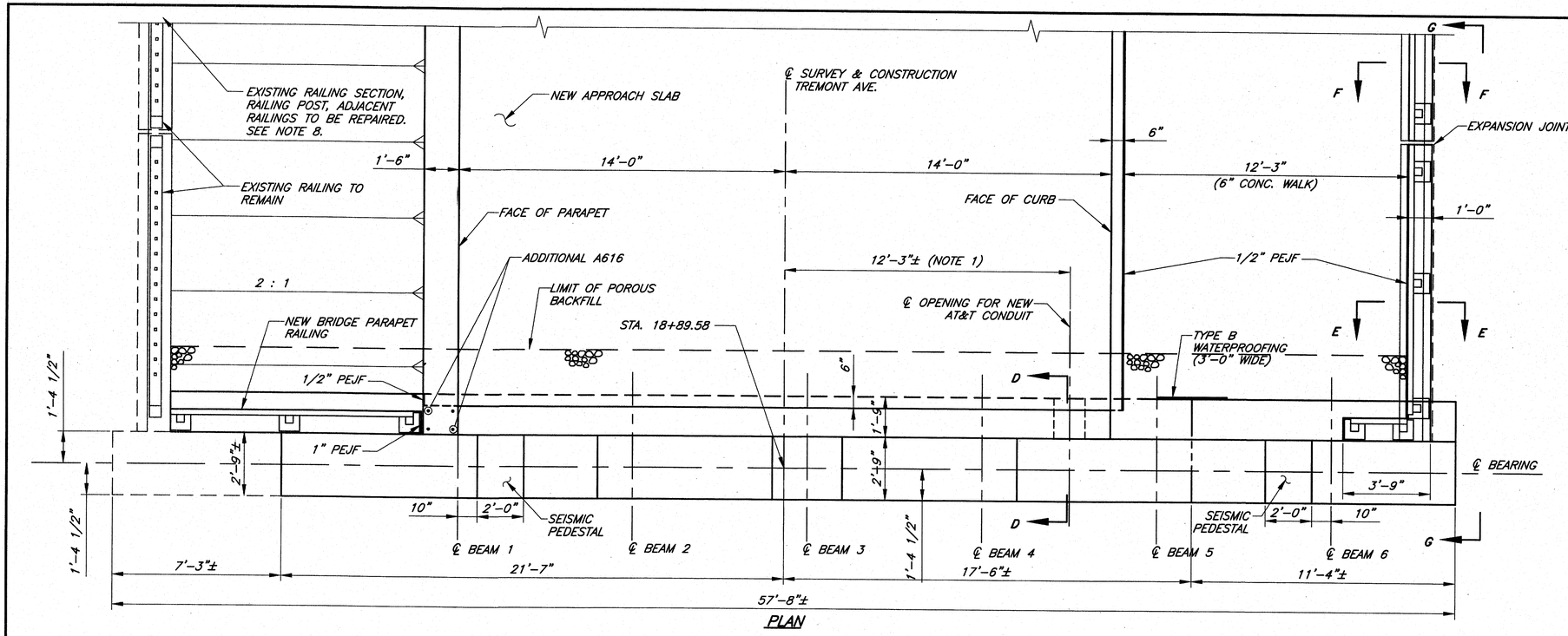
REAR ABUTMENT PLAN & ELEVATION
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

13 / 36

40
63

Filename : i:\CADFiles\13225 Tremont Ave\Struct\3225srRA1.dwg
Display Scale : 1=1
Drawn By/Date : TCooper / 2-22-07 (13:49)



NOTES:

1. THE CONTRACTOR SHALL PROTECT THE EXISTING TELEPHONE CONDUIT DURING THE CONSTRUCTION OF ALL NEW WORK. THE CONTRACTOR AND UTILITY COMPANY ARE TO COORDINATE THEIR WORK FOR LOCATIONS OF NEW CONDUIT OPENINGS IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM. FOR ADDITIONAL NOTES SEE SHEETS 2|36 & 4|36.
2. FOR SECTION D–D, E–E, F–F & G–G SEE SHEET 16|36.
3. FOR APPROACH SLAB DETAILS SEE SHEET 31|34.
4. FOR ADDITIONAL NOTES SEE SHEET 15|36.
5. FOR ADDITIONAL SEISMIC PEDESTAL DETAILS, SEE STD. DWG. A–1–69 AND SHEET 15|36.
6. ALL PEJF SHALL BE INCLUDED WITH APPROPRIATE ITEM 511 FOR PAYMENT.
7. DOWEL EMBEDMENT SHALL BE 1'–3" UNLESS NOTED OTHERWISE. ALL DOWELS SHALL BE DRILLED PARALLEL TO FREE EDGE AND CLEAR SOLID CONCRETE BY AT LEAST 5". TILT HORIZONTAL HOLE SLIGHTLY TO RETAIN GROUT.
8. REPLACE DAMAGED RAILINGS WITH THE EXISTING RAILINGS REMOVED FROM THE SOUTH SIDE. CONTRACTOR TO CONTACT STARK COUNTY ENGINEERS OFFICE AND SCHEDULE AN ON–SITE INSPECTION OF THE EXISTING RAILING WITH AN AUTHORIZED REPRESENTATIVE OF THE STARK COUNTY ENGINEER TO DETERMINE ANY DAMAGED OR DEFECTIVE RAILING SECTIONS. PAYMENT SHALL BE INCLUDED WITH ITEM 517 – RAILING, MISC.: BRIDGE RETAINING WALL RAILING REPAIRED.

BEAM SEAT ELEV. TABLE*	
	FWD. ABUT.
BEAM ①	945.62
BEAM ②	945.73
BEAM ③	945.83
BEAM ④	945.71
BEAM ⑤	945.59
BEAM ⑥	945.48

* ELEV. ARE AT ℄ BEARING

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

FORWARD ABUTMENT PLAN & ELEVATION

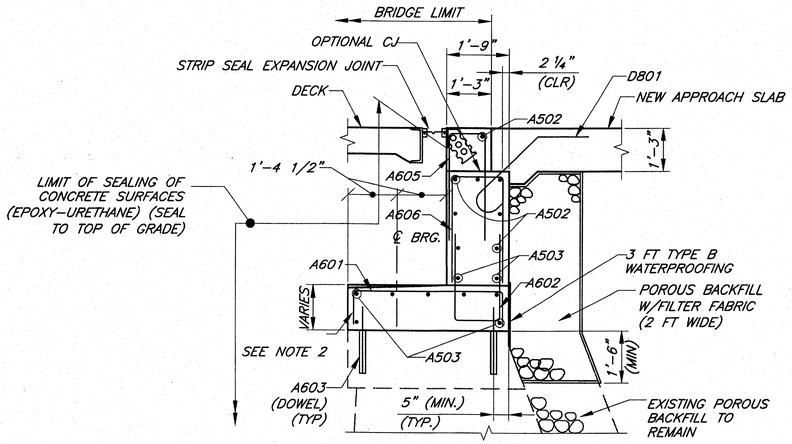
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

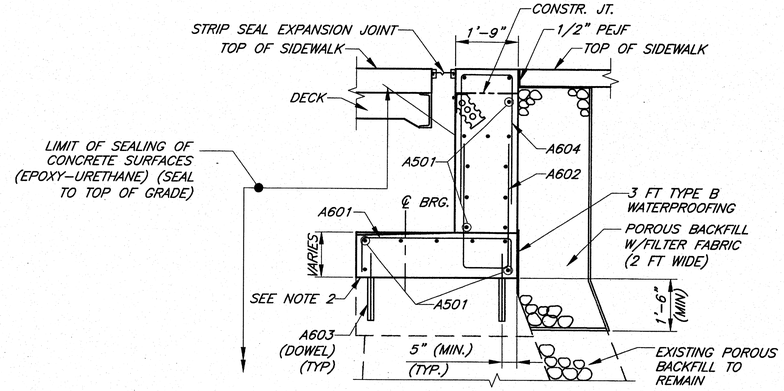
14 / 36

41 / 63

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225sFA1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 2-22-07 (15:01)



SECTION A-A



SECTION C-C

NOTES:

1. FOR ADDITIONAL NOTES AND LOCATION OF SECTION CUTS SEE SHEET 13/36.

2. ALL EXISTING SURFACES WHICH ARE TO ABUT NEW CONCRETE SHALL BE SCARIFIED 1/4 INCH (MIN.) OR SUITABLY ROUGHENED. PAYMENT SHALL BE INCLUDED WITH ITEM 511 – CLASS C CONCRETE, ABUTMENT, NOT INCLUDING FOOTING.

3. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.

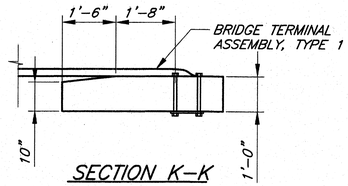
4. BACKWALL CONCRETE: IN ADDITION TO 511.10, DO NOT PLACE BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.

5. FOR ADDITIONAL SEISMIC PEDESTAL DETAILS SEE STD. DRAWING A-1-69.

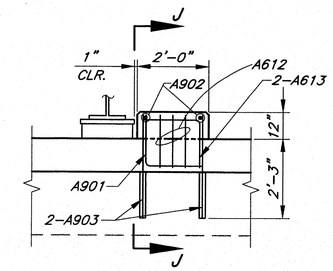
6. SEALING OF BEAM SEATS: IF THE BEAM SEATS ARE SEALED WITH AN EPOXY OR NON-EPOXY SEALER PRIOR TO SETTING THE BEARINGS, DO NOT APPLY SEALER TO THE CONCRETE SURFACES UNDER THE PROPOSED BEARING LOCATIONS. IF THESE LOCATIONS ARE SEALED, REMOVE THE SEALER TO THE SATISFACTION OF THE ENGINEER PRIOR TO SETTING THE BEARINGS. THERE WILL BE NO PAY FOR THIS REMOVAL.

7. ALL PEJF SHALL BE INCLUDED WITH APPROPRIATE ITEM 511 FOR PAYMENT.

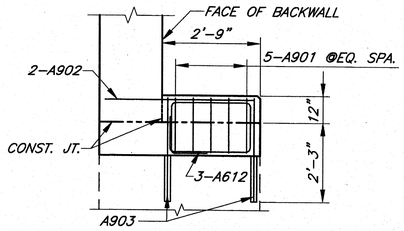
8. DOWEL EMBEDMENT SHALL BE 1'-3" UNLESS NOTED OTHERWISE. ALL DOWELS SHALL BE DRILLED PARALLEL TO FREE EDGE AND CLEAR SOLID CONCRETE BY AT LEAST 5". TILT HORIZONTAL HOLE SLIGHTLY TO RETAIN GROUT.



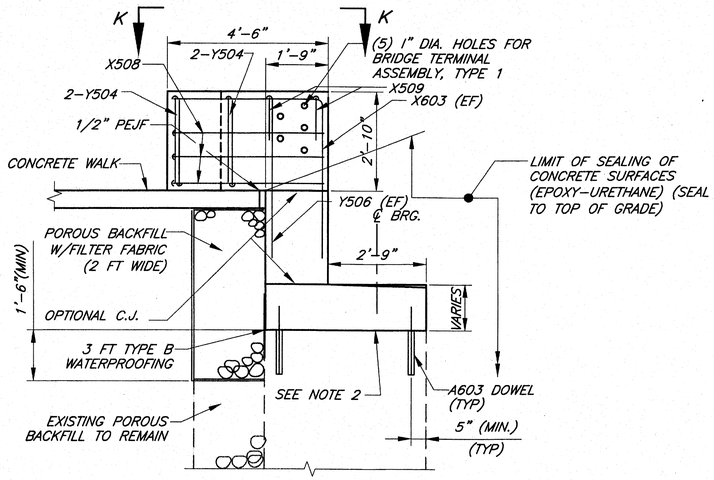
SECTION K-K



SEISMIC PEDESTAL DETAIL

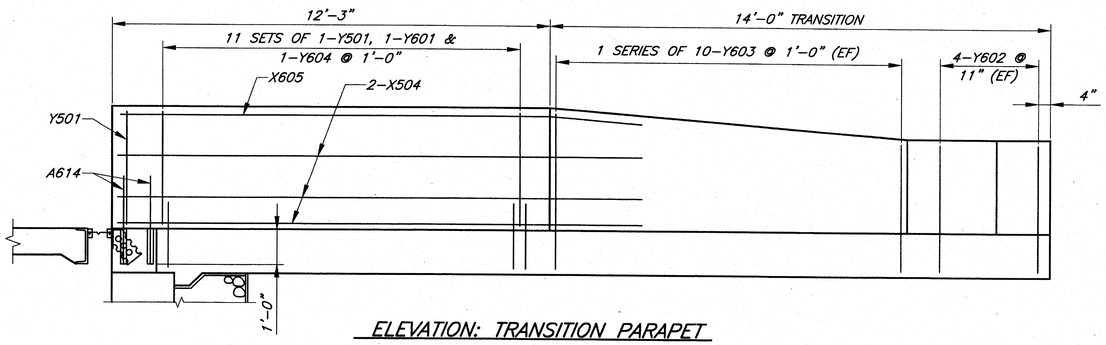


SECTION J-J



SECTION B-B

THE WINGLET PARAPET FOR G.R. ASSEMBLY ATTACHMENT SHALL BE PAID WITH ITEM 517-RAILING, AS PER PLAN
(REBARS IN ABUTMENT NOT SHOWN)



ELEVATION: TRANSITION PARAPET

REAR ABUTMENT SHOWN, FORWARD ABUTMENT SIMILAR
NOTE: FOR ADDITIONAL REBARS, SECTION AND DETAILS SEE STD. DRAWING SBR-1-99 AND SHEET 31/34

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

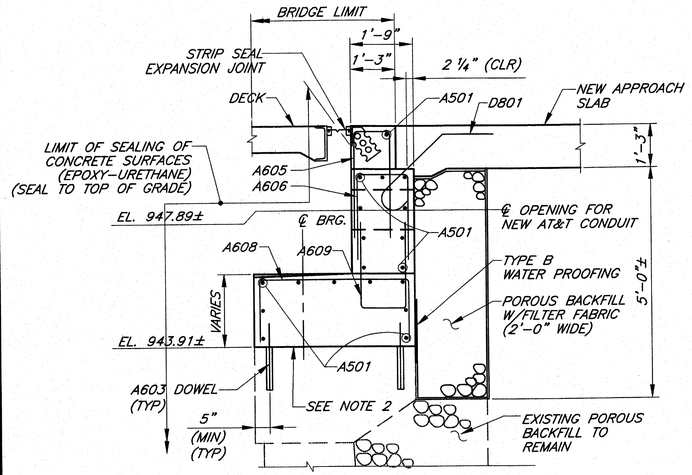
REAR ABUTMENT DETAILS
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

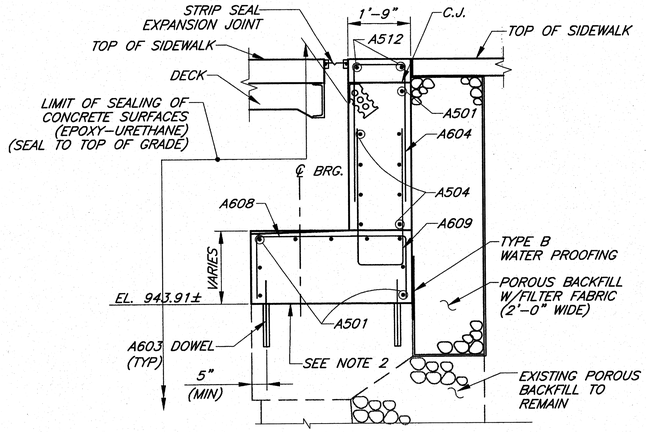
15/36

42/63

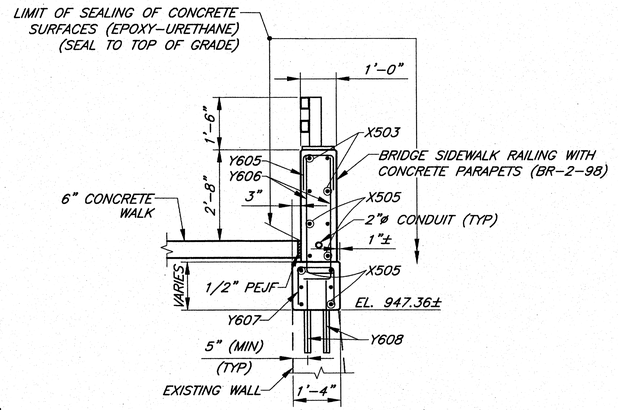
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Plot Scale : 1 = 1
Drawn By/Date : TCooper / 2-22-07 (13:57)



SECTION D-D



SECTION H-H



SECTION E-E

NOTES:

1. FOR ADDITIONAL NOTES AND LOCATION OF SECTION CUTS SEE SHEET 14|36.

2. ALL EXISTING SURFACES WHICH ARE TO ABUT NEW CONCRETE SHALL BE SCARIFIED 1/4 INCH (MIN.) OR SUITABLY ROUGHENED. PAYMENT SHALL BE INCLUDED WITH ITEM 511 - CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING.

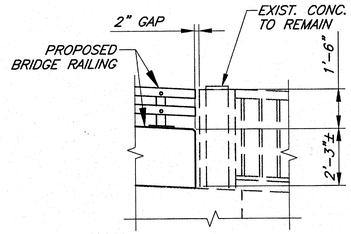
3. FILL EXPANSION JOINT WITH 1" PEJF. PAYMENT SHALL BE INCLUDED WITH ITEM 517 BRIDGE RAILING.

4. FOR ADDITIONAL DETAILS OF CONCRETE PARAPET SEE STANDARD DRAWING BR-2-98. SLOPE THE CONCRETE PARAPET ON THE RETAINING WALL FROM 2'-8" (MEASURED FROM THE TOP OF SIDEWALK) AT THE EXPANSION JOINT TO 2'-3"± AT STA. 20+03.10. STEEL PORTIONS OF RAILING TO BE FIELD PAINTED OVER GALVANIZING.

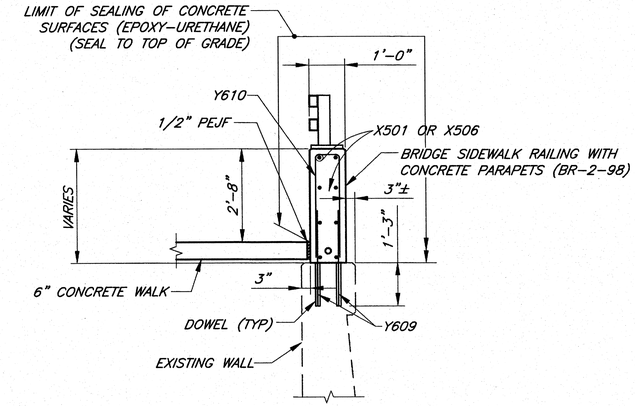
5. POROUS BACKFILL WITH FILTER FABRIC, 2 FEET THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FOOT BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS.

6. BACKWALL CONCRETE: IN ADDITION TO 511.10, DO NOT PLACE BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.

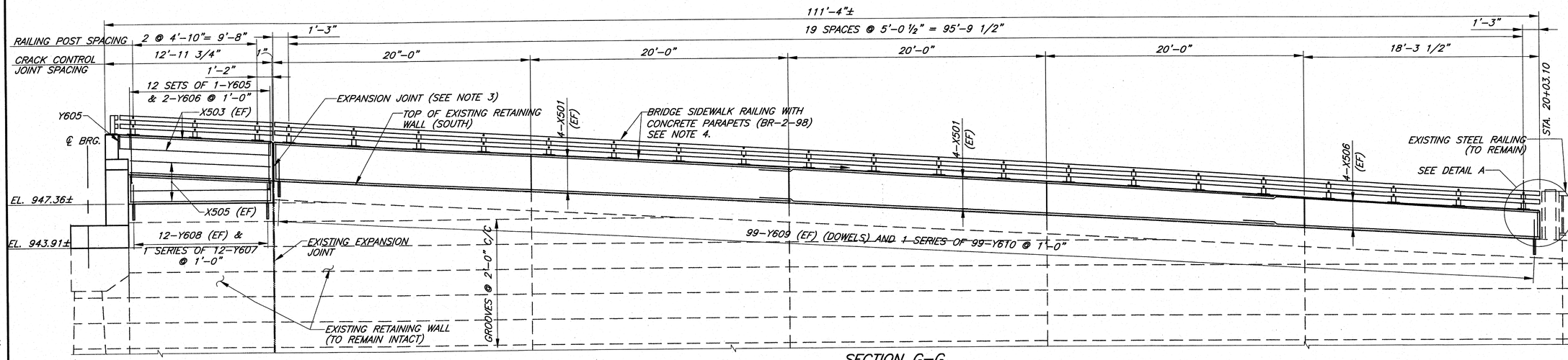
7. DOWEL EMBEDMENT SHALL BE 1'-3" UNLESS NOTED OTHERWISE. ALL DOWELS SHALL BE DRILLED PARALLEL TO FREE EDGE AND CLEAR SOLID CONCRETE BY AT LEAST 5". TILT HORIZONTAL HOLE SLIGHTLY TO RETAIN GROUT.



DETAIL A



SECTION F-F



SECTION G-G

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

REVIEWED GTA | DATE 8/31/07 | STRUCTURE FILE NUMBER 76061184
DRAWN SMK | REVISED
DESIGNED SMK | CHECKED BCK

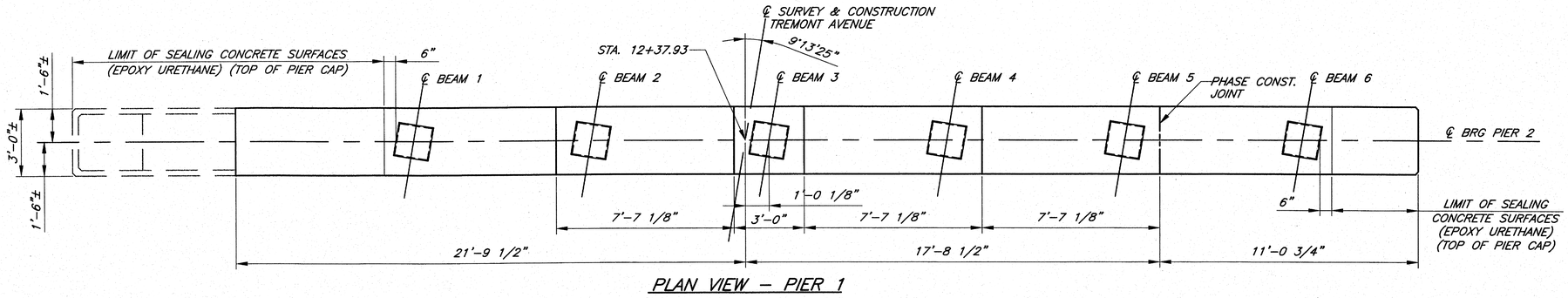
FORWARD ABUTMENT DETAILS
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

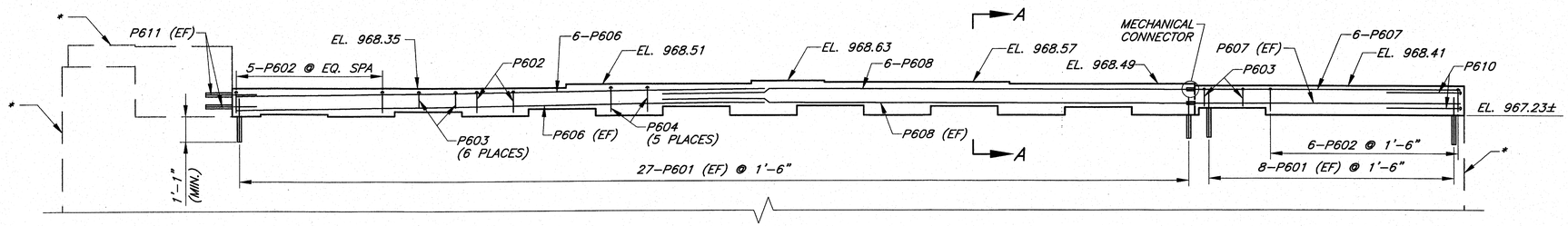
16 / 36

43 / 63

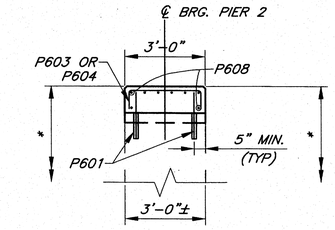
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PLAN VIEW – PIER 1



WEST ELEVATION – PIER 1

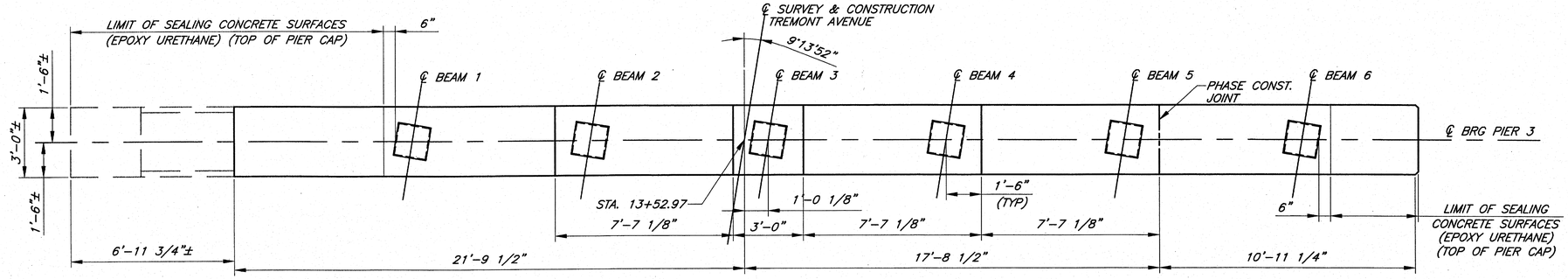


SECTION A–A

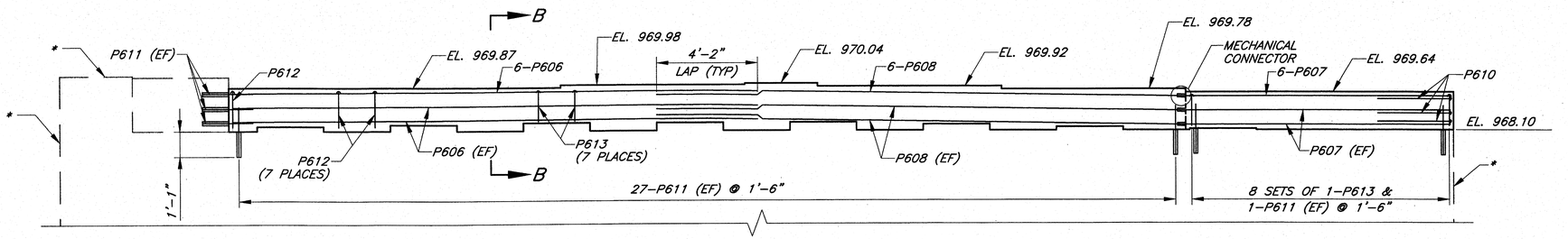
* LIMIT OF SEALING CONCRETE SURFACES (EPOXY URETHANE). SEAL ALL EXPOSED CONCRETE SURFACES DOWN TO THE GROUND LINE.

NOTE:

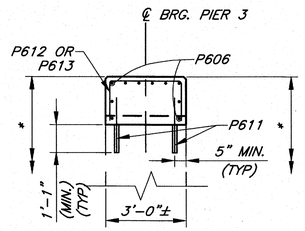
1. SEE SHEET 22|36 FOR ADDITIONAL NOTES.
2. ALL DOWELS SHALL BE DRILLED PARALLEL TO FREE EDGE AND CLEAR SOLID CONCRETE BY AT LEAST 5". TILT HORIZONTAL HOLE SLIGHTLY TO RETAIN GROUT.



PLAN VIEW – PIER 3



WEST ELEVATION – PIER 3



SECTION B–B

* LIMIT OF SEALING CONCRETE SURFACES (EPOXY URETHANE). SEAL ALL EXPOSED CONCRETE SURFACES DOWN TO THE GROUND LINE.

DESIGN AGENCY
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CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
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CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

PIER 1 AND 3; PLAN & ELEVATION

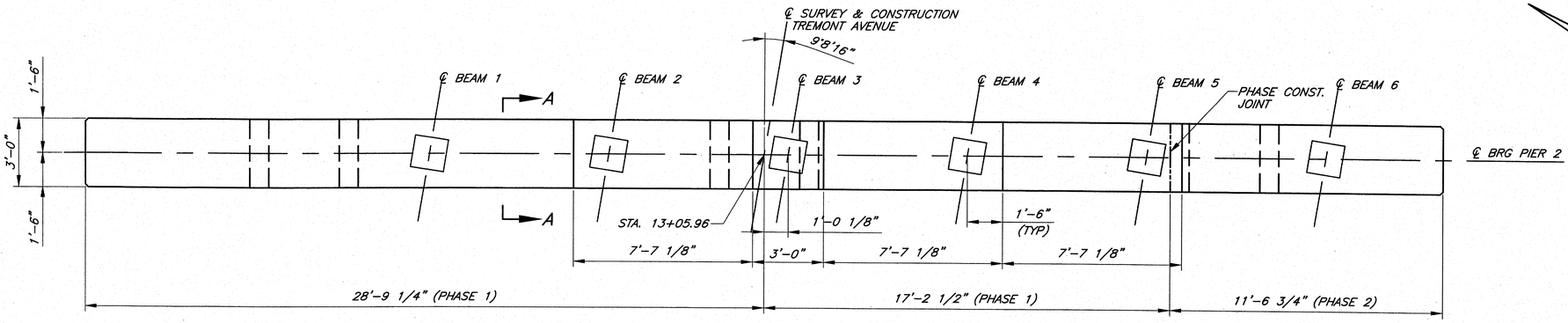
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

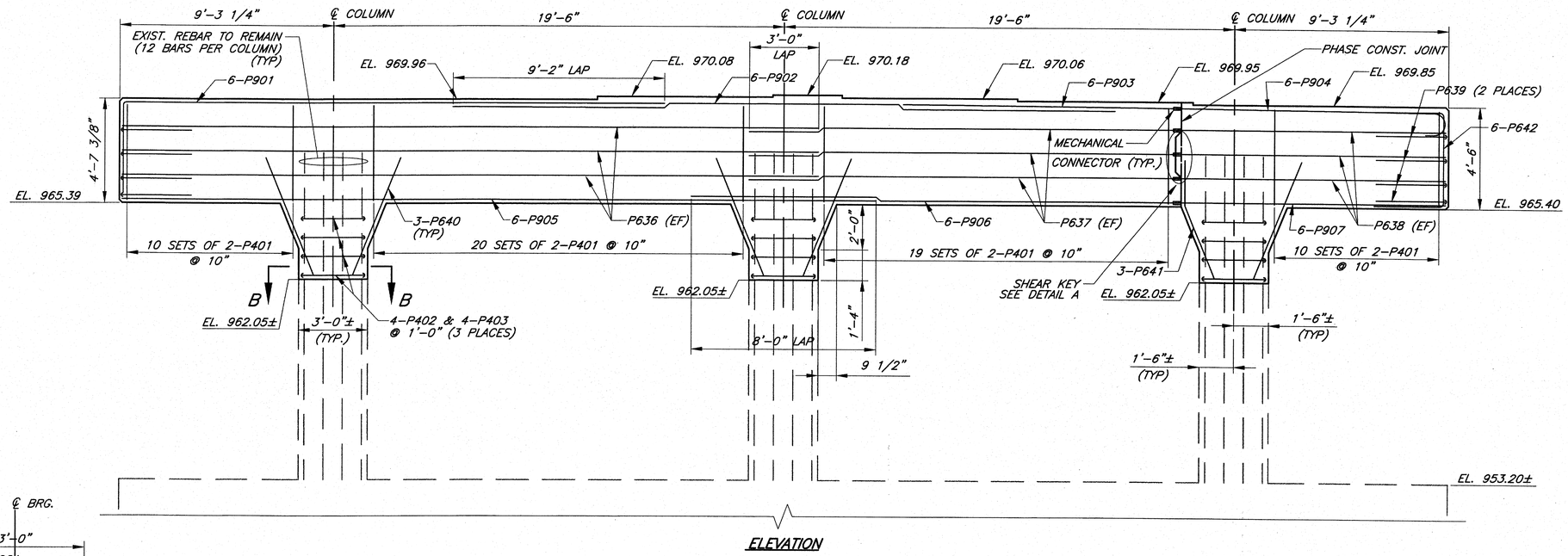
17 | 36

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63

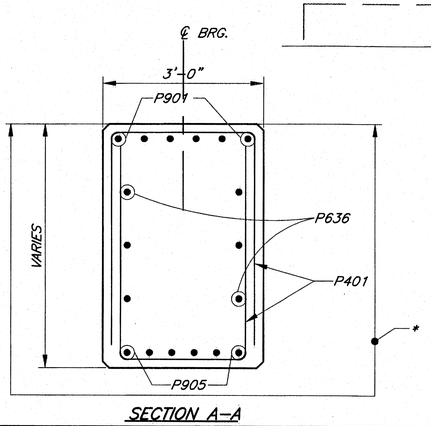
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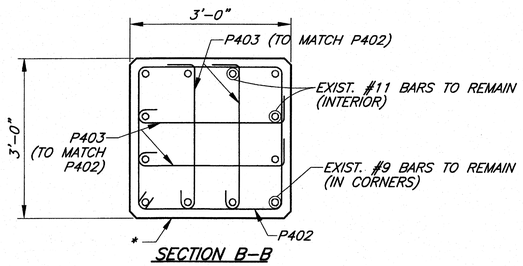
PLAN



ELEVATION

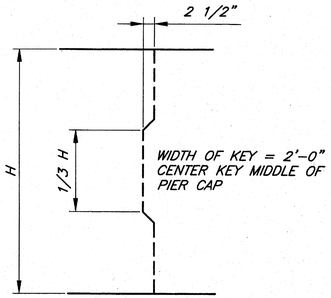


SECTION A-A



SECTION B-B

* SEAL ALL EXPOSED SURFACES OF NEW CONCRETE WITH EPOXY URETHANE SEALER, EXCEPT TOP OF PIER CAP



DETAIL A

NOTES:

1. REINFORCING STEEL SHALL BE EPOXY COATED REINFORCING STEEL, GRADE 60.
2. EXISTING REINFORCING STEEL TO BE REUSED SHALL BE CLEANED. COST OF THIS WORK IS INCIDENTAL TO ITEM 509 – REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN.
3. ALL EXISTING SURFACES WHICH ARE TO ABUT NEW CONCRETE SHALL BE SCARIFIED ¼ INCH (MIN.) OR SUITABLY ROUGHENED. PAYMENT SHALL BE INCLUDED WITH ITEM 511 – CLASS C CONCRETE, SUBSTRUCTURE.
4. SEAL CONCRETE SURFACES WITH AN EPOXY URETHANE SEALER.
5. FOR PHASE CONSTRUCTION DETAILS SEE SHEET 7 / 36 .

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED SMK | DRAWN SMK | REVIEWED GTA | DATE 8/31/07
CHECKED BCK | REVISED | STRUCTURE FILE NUMBER 7606184

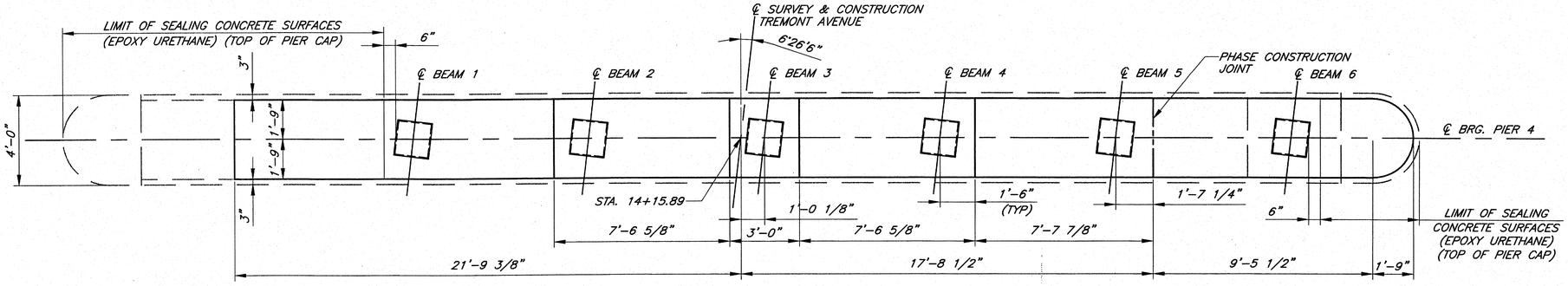
PIER 2: PLAN AND ELEVATION
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

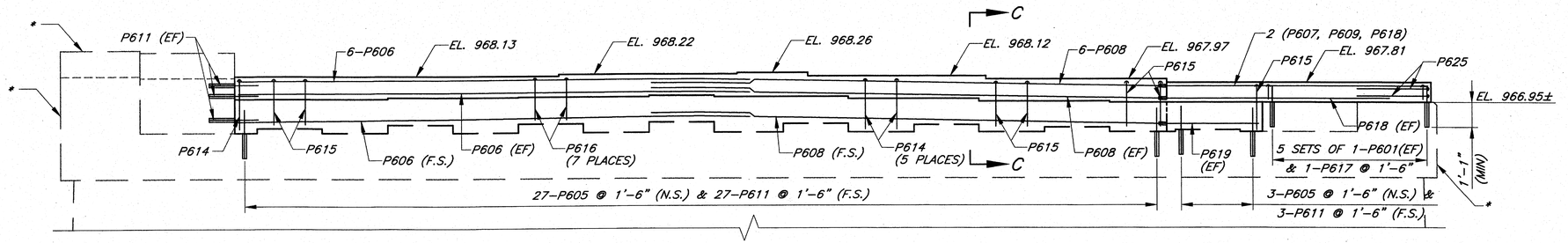
18 / 36

45 / 63

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Drawn By/Date : TCooper / 2-22-07 (16:17)



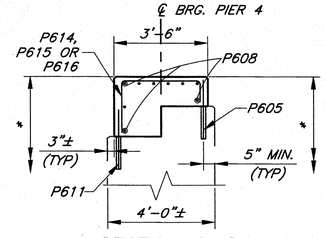
PLAN VIEW – PIER 4



WEST ELEVATION – PIER 4

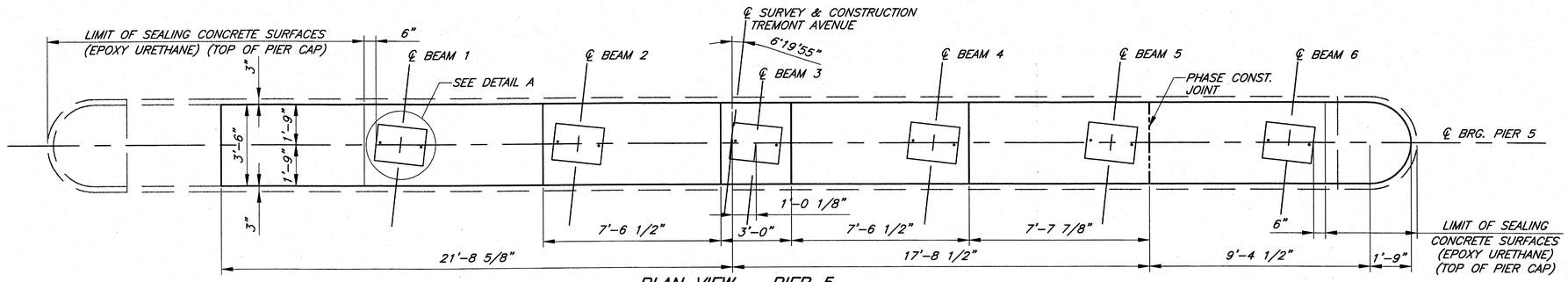
NOTES:

1. REINFORCING STEEL IN THE VICINITY OF THE BEAM SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
2. SEE SHEET 22|36 FOR ADDITIONAL NOTES.
3. ALL DOWELS SHALL BE DRILLED PARALLEL TO FREE EDGE AND CLEAR SOLID CONCRETE BY AT LEAST 5". TILT HORIZONTAL HOLE SLIGHTLY TO RETAIN GROUT.

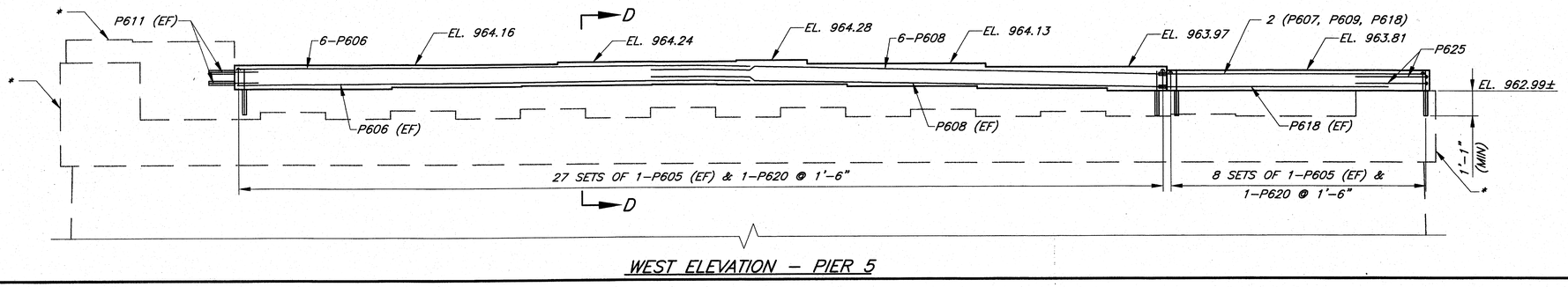


SECTION C-C

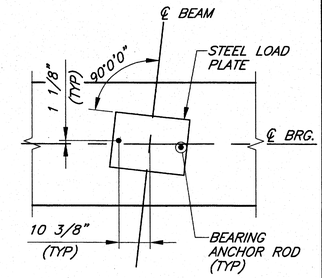
* LIMIT OF SEALING CONCRETE SURFACES (EPOXY URETHANE). SEAL ALL EXPOSED CONCRETE SURFACES DOWN TO THE GROUND LINE.



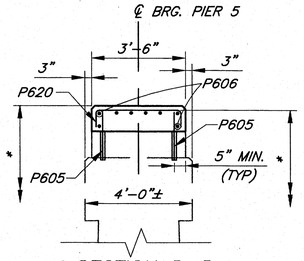
PLAN VIEW – PIER 5
(FIXED PIER)



WEST ELEVATION – PIER 5



DETAIL A



SECTION D-D

* LIMIT OF SEALING CONCRETE SURFACES (EPOXY URETHANE). SEAL ALL EXPOSED CONCRETE SURFACES DOWN TO 10" ABOVE THE DRY SEASONAL FLOW LINE.

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	GTA	8/31/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

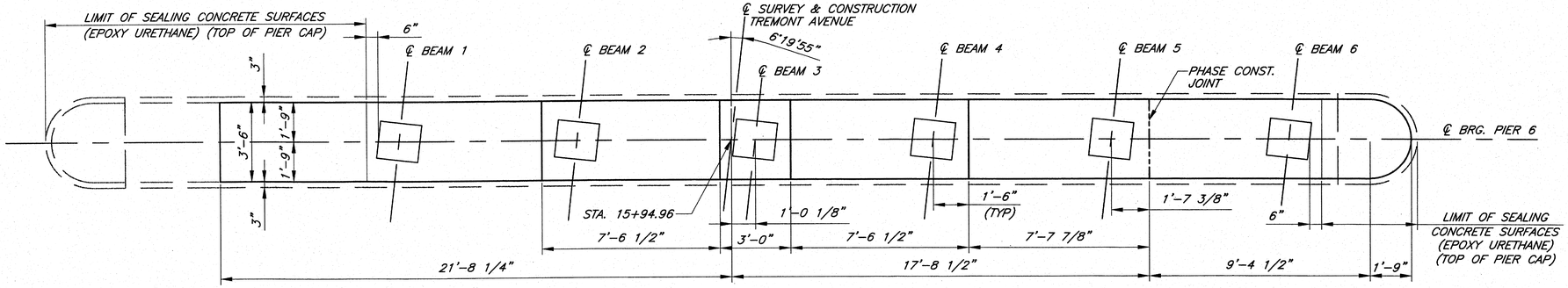
PIER 4 & 5: PLAN AND ELEVATION
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

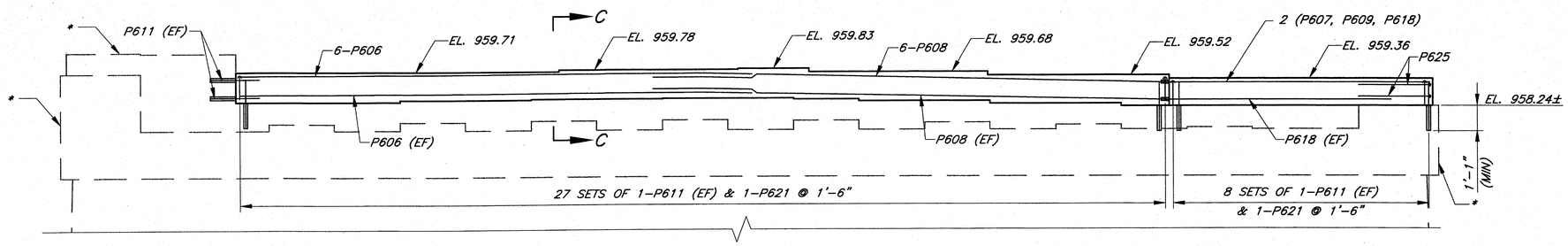
19 | 36

46
63

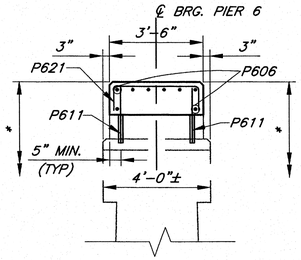
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PLAN VIEW – PIER 6



WEST ELEVATION – PIER 6

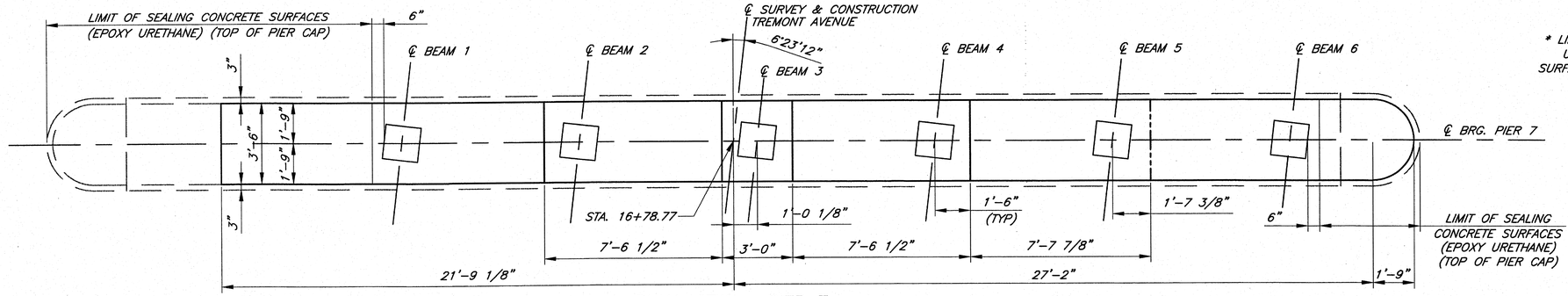


SECTION C–C

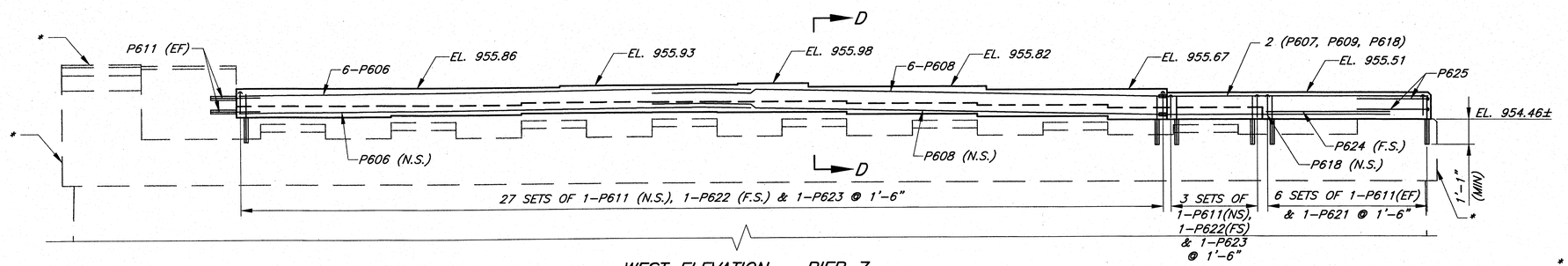
* LIMIT OF SEALING CONCRETE SURFACES (EPOXY URETHANE). SEAL ALL EXPOSED CONCRETE SURFACES DOWN TO 10" ABOVE THE DRY SEASONAL FLOW LINE.

NOTES:

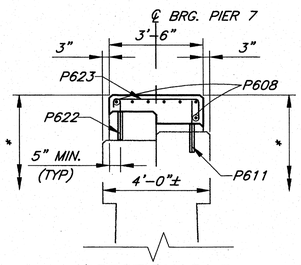
1. REINFORCING STEEL IN THE VICINTY OF THE BEAM SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
2. SEE SHEET 22 | 36 FOR ADDITIONAL NOTES.
3. ALL DOWELS SHALL BE DRILLED PARALLEL TO FREE EDGE AND CLEAR SOLID CONCRETE BY AT LEAST 5". TILT HORIZONTAL HOLE SLIGHTLY TO RETAIN GROUT.



PLAN VIEW – PIER 7



WEST ELEVATION – PIER 7



SECTION D–D

* LIMIT OF SEALING CONCRETE SURFACES (EPOXY URETHANE). SEAL ALL EXPOSED CONCRETE SURFACES DOWN TO THE GROUND LINE.

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	GTA	8/31/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
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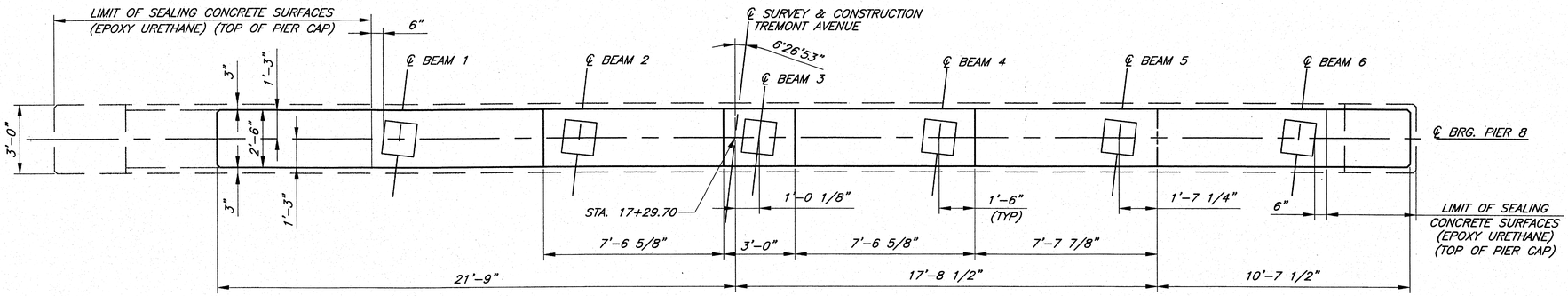
PIER 6 & 7: PLAN AND ELEVATION
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

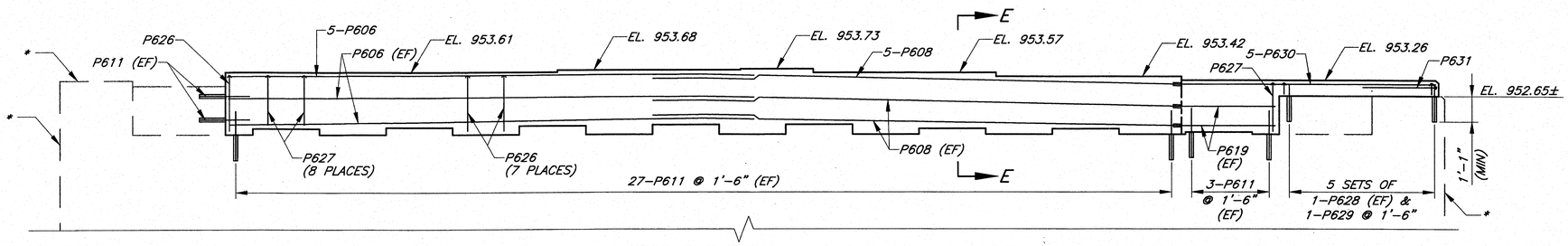
20 | 36

47 | 63

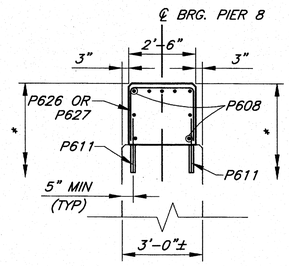
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Drawn By/Date :



PLAN VIEW – PIER 8

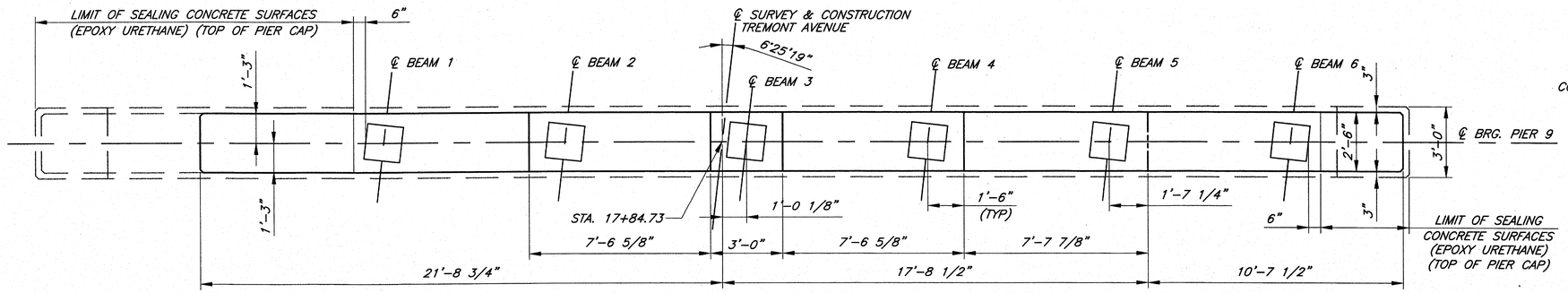


WEST ELEVATION – PIER 8

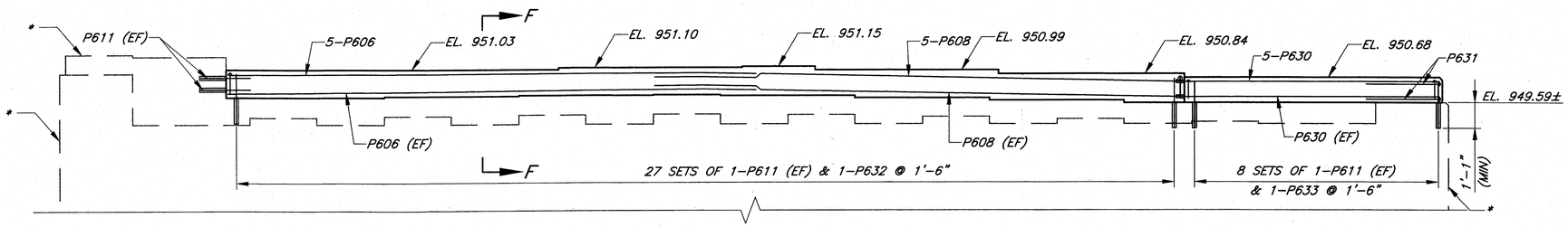


SECTION E–E

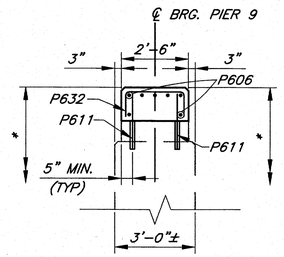
* LIMIT OF SEALING CONCRETE SURFACES (EPOXY URETHANE). SEAL ALL EXPOSED CONCRETE SURFACES DOWN TO THE GROUND LINE.



PLAN VIEW – PIER 9



WEST ELEVATION – PIER 9



SECTION F–F

* LIMIT OF SEALING CONCRETE SURFACES (EPOXY URETHANE). SEAL ALL EXPOSED CONCRETE SURFACES DOWN TO THE GROUND LINE.

NOTES:

1. REINFORCING STEEL IN THE VICINITY OF THE BEAM SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE–SETTING OF BEARING ANCHORS.
2. SEE SHEET 22|36 FOR ADDITIONAL NOTES.
3. ALL DOWELS SHALL BE DRILLED PARALLEL TO FREE EDGE AND CLEAR SOLID CONCRETE BY AT LEAST 5". TILT HORIZONTAL HOLE SLIGHTLY TO RETAIN GROUT.

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED SMK
DRAWN SMK
CHECKED BCK
REVISED
REVIEWED GTA
DATE 8/31/07
STRUCTURE FILE NUMBER 7606184

PIER 8 & 9: PLAN AND ELEVATION

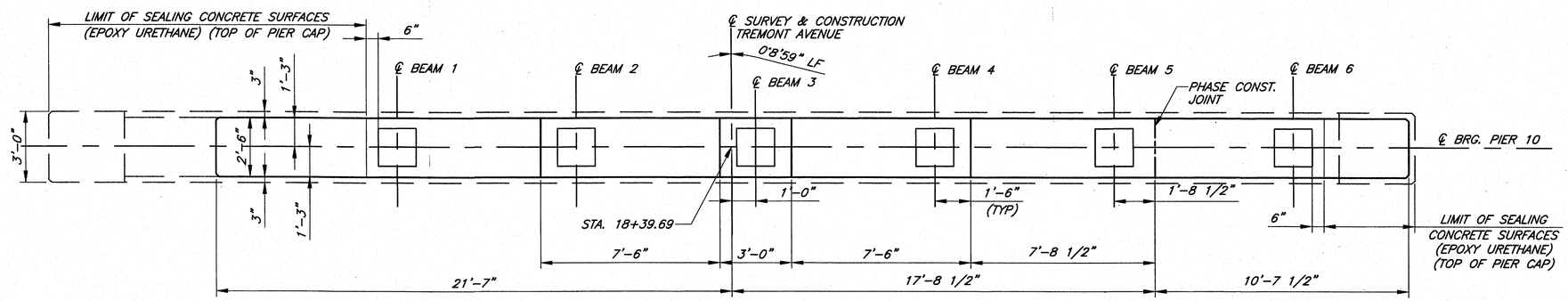
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

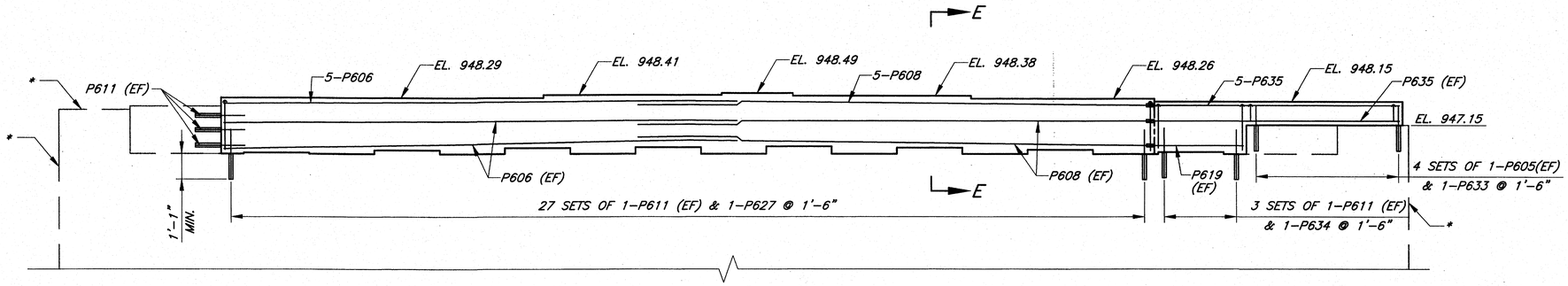
21 | 36

48
63

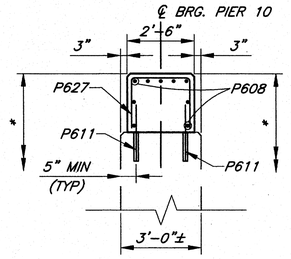
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PLAN VIEW – PIER 10



WEST ELEVATION – PIER 10



SECTION F–F

* LIMIT OF SEALING CONCRETE SURFACES (EPOXY URETHANE). SEAL ALL EXPOSED CONCRETE SURFACES DOWN TO THE GROUND LINE.

NOTES:

1. FOR PIER CAP REMOVAL LIMITS SEE SHEET 10/36 AND 11/36.
2. ALL EXISTING SURFACES WHICH ARE TO ABUT NEW CONCRETE SHALL BE SCARIFIED ¼ INCH (MIN) OR SUITABLY ROUGHENED. PAYMENT SHALL BE INCLUDED WITH ITEM 511–CLASS C CONCRETE, SUBSTRUCTURE, AS PER PLAN.
3. FOR PHASE CONSTRUCTION DETAILS SEE SHEET 7/36 .
4. ALL DOWELS SHALL BE DRILLED PARALLEL TO FREE EDGE AND CLEAR SOLID CONCRETE BY AT LEAST 5". TILT HORIZONTAL HOLE SLIGHTLY TO RETAIN GROUT.

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	GTA	8/31/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

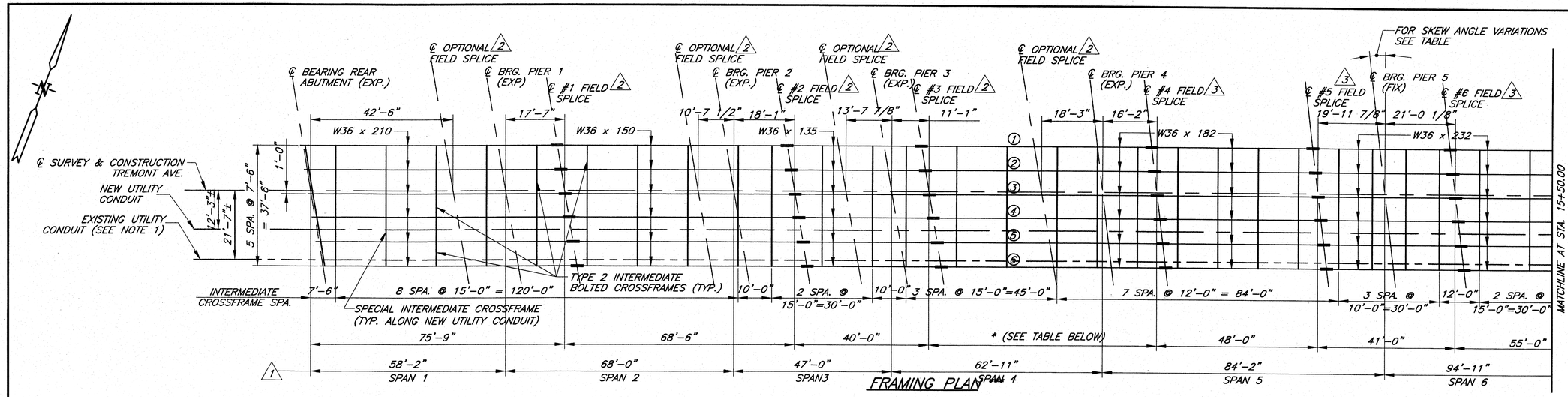
PIER 10: PLAN AND ELEVATION
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

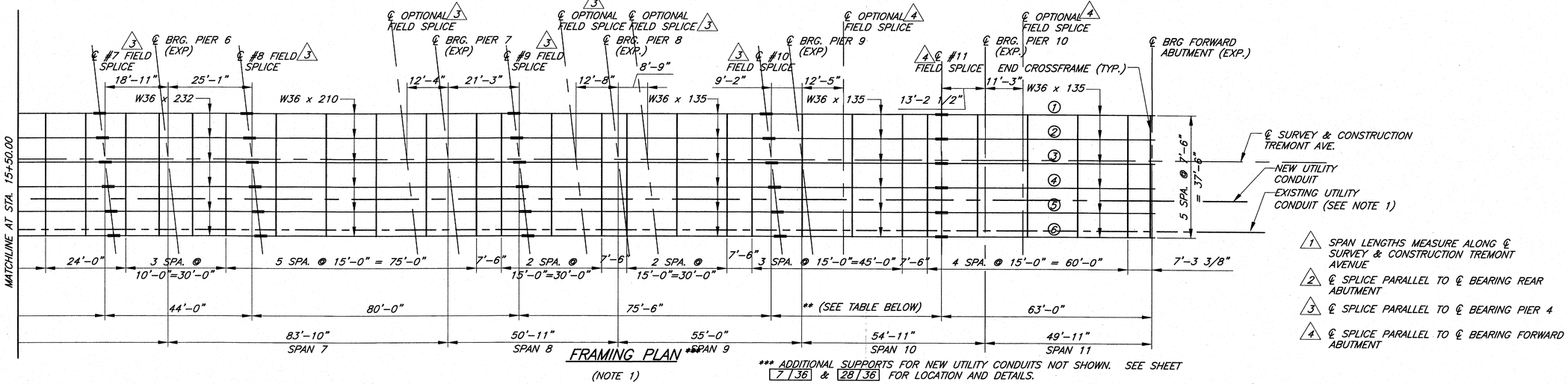
22 / 36

49 / 63

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225sPl7.dwg
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Drawn By/Date : TCooper / 6-11-07 (14:48)



FRAMING PLAN



FRAMING PLAN (NOTE 1)

*** ADDITIONAL SUPPORTS FOR NEW UTILITY CONDUITS NOT SHOWN. SEE SHEET 7 | 36 & 28 | 36 FOR LOCATION AND DETAILS.

1. SPAN LENGTHS MEASURE ALONG ℄ SURVEY & CONSTRUCTION TREMONT AVENUE
2. ℄ SPLICE PARALLEL TO ℄ BEARING REAR ABUTMENT
3. ℄ SPLICE PARALLEL TO ℄ BEARING PIER 4
4. ℄ SPLICE PARALLEL TO ℄ BEARING FORWARD ABUTMENT

SUBSTRUCTURE STATION & SKEW TABLE		
LOCATION	℄ STATION	SKEW ANGLE
RA	STA. 11+79.79	8'54'36" RF
PIER 1	STA. 12+37.93	9'13'25" RF
PIER 2	STA. 13+05.96	9'08'16" RF
PIER 3	STA. 13+52.97	9'13'52" RF
PIER 4	STA. 14+15.89	6'26'06" RF
PIER 5	STA. 15+00.03	6'19'55" RF
PIER 6	STA. 15+94.96	6'19'55" RF
PIER 7	STA. 16+78.77	6'23'12" RF
PIER 8	STA. 17+29.70	6'26'53" RF
PIER 9	STA. 17+84.73	6'25'19" RF
PIER 10	STA. 18+39.69	0°08'59" LF
FA	STA. 18+89.58	0°04'11" LF

NOTES:

1. STRUCTURAL STEEL FRAMING WILL BE BUILT IN STAGES. SEE SHEET 7 | 36 FOR DETAILS. THE EXISTING UTILITY LINE SHALL BE MAINTAINED DURING PHASE 1 CONSTRUCTION.
2. ALL SUPPORT BEARINGS ARE TO BE ELASTOMERIC BEARINGS WITH INTERNAL LAMINATES AND LOAD PLATE. FOR DETAILS SEE SHEET 26 | 36 .
3. FOR SPECIAL INTERMEDIATE AND END CROSSFRAME DETAILS SEE SHEET 27 | 36 .
4. FOR ADDITIONAL NOTES SEE SHEET 24 | 36 .
5. FOR TYPE 2 INTERMEDIATE BOLTED CROSSFRAME AND END CROSSFRAME DETAILS SEE STD. DWG. GSD-1-96 & EXJ-4-87.
6. FOR UTILITY SUPPORT PLAN & DETAILS SEE SHEET 28 | 36
7. OPTIONAL FIELD SPLICE LOCATIONS SHOWN ARE PROVIDED FOR RELOCATION OR ADDITION OF FIELD SPLICES. COST OF THE ADDITIONAL FIELD SPLICES SHALL BE THE CONTRACTOR RESPONSIBILITY.

BEAM LENGTH BETWEEN FIELD SPLICES		
BEAM	* (FT.)	** (FT.)
①	68'-7 3/8"	52'-7"
②	68'-3 3/8"	51'-8 3/4"
③	67'-11 1/2"	50'-10 5/8"
④	67'-7 1/2"	50'-0 1/2"
⑤	67'-3 1/2"	49'-2 3/8"
⑥	66'-11 5/8"	48'-4 1/4"

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	GTA	8/31/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

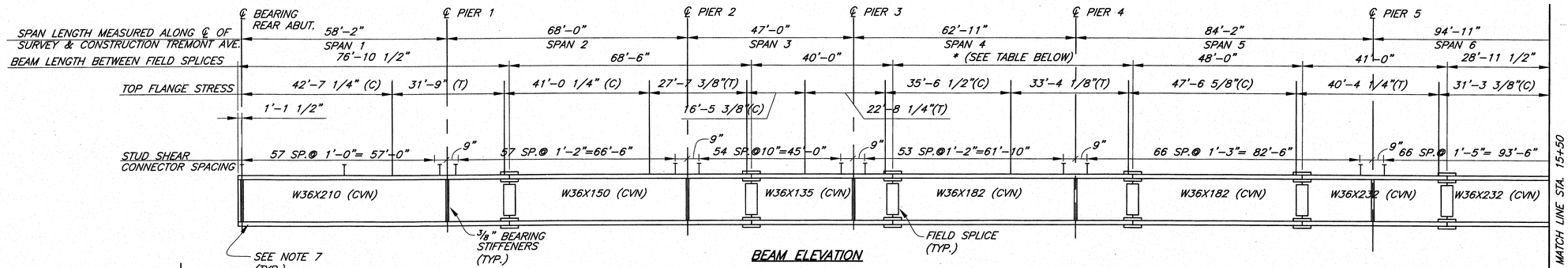
TREMONT AVENUE BRIDGE

FRAMING PLAN
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

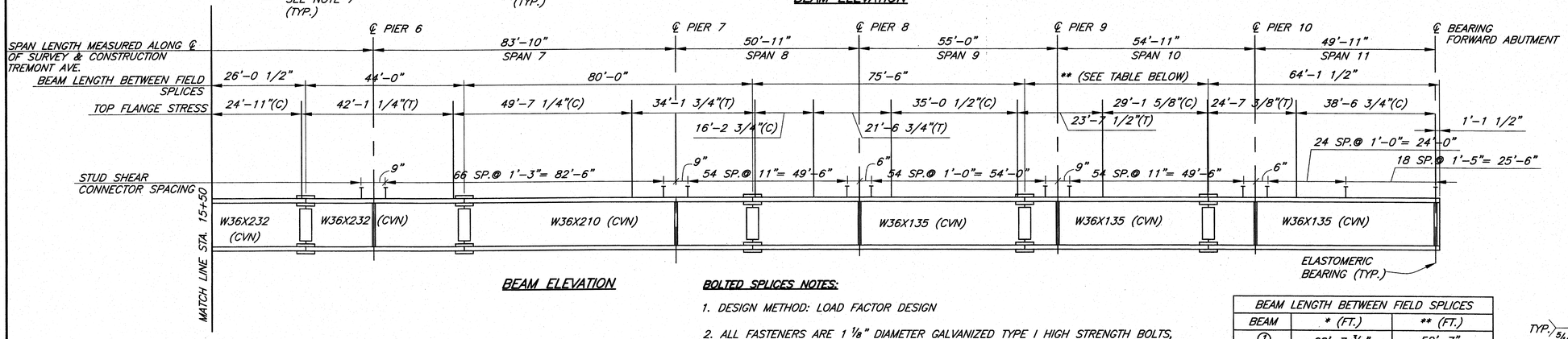
23 | 36

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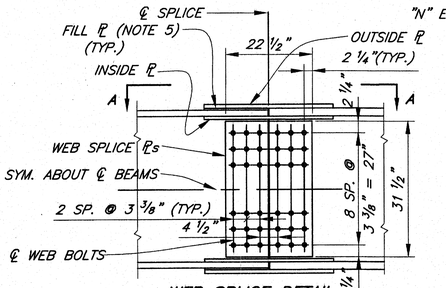
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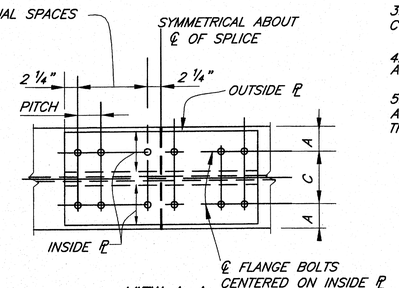
BEAM ELEVATION



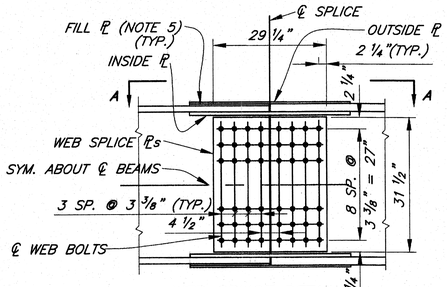
BEAM ELEVATION



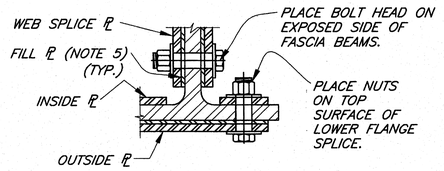
WEB SPLICE DETAIL TYPE B



VIEW A–A FLANGE SPLICE DETAIL



WEB SPLICE DETAIL TYPE C



PARTIAL BEAM SPLICE SECTION
(AT ℄ OF BEAM SPLICE)

BOLTED SPLICES NOTES:

1. DESIGN METHOD: LOAD FACTOR DESIGN

2. ALL FASTENERS ARE 1 1/8" DIAMETER GALVANIZED TYPE I HIGH STRENGTH BOLTS, ASTM A-325.

3. BOLT ALLOWABLE STRESS IS BASED ON AASHTO'S VALUES FOR CLASS C, GALVANIZED CONTACT SURFACE, OVERSIZED HOLE TYPE.

4. BOLT HOLE SIZE SHALL BE A 1/16 INCH INCREASE OVER STANDARD HOLE SIZE TO ALLOW FOR THE ADDITIONAL THICKNESS OF THE ZINC COATING.

5. IF REQUIRED, PROVIDE FILL PLATES TO COMPENSATE FOR THE MISALIGNMENT OF ABUTTING ELEMENTS DUE TO DIFFERENCES IN THICKNESS OF FLANGES AND WEBS AT THE SPLICE LOCATIONS PER CMS 513.14

BEAM SPLICE DETAILS

BEAM	FLANGE PLATES		FLANGE BOLTS						WEB SPLICE		
	OUTSIDE 2 REQ'D	INSIDE 4 REQ'D	MIN.	N SPA.	PITCH	A	B	C	TYPE	WEB PLATES 2 REQ'D	WEB BOLTS NO.
W36X232	12 X 1 1/16 X 4'-3"	4 1/2X1 1/16X4'-3"	56	6	3 1/2	2 9/16	–	7	C	31 1/2X3/16X29 1/4	72
W36X210	12 X 5/8 X 3'-8"	4 1/2X5/8X3'-8"	48	5	3 1/2	2 9/16	–	7	C	31 1/2X3/16X29 1/4	72
W36X182	12 X 9/16 X 3'-1"	4 1/2X9/16X3'-1"	40	4	3 1/2	2 5/8	–	6 7/8	C	31 1/2X1/16X29 1/4	72
W36X150	1 7/8 X 1/2 X 2'-6"	4 1/2X1/2X2'-6"	32	3	3 1/2	2 5/8	–	6 3/4	B	31 1/2X9/16X22 1/2	54
W36X135	1 7/8 X 7/16X2'-6"	4 1/2X7/16X2'-6"	32	3	3 1/2	2 5/8	–	6 3/4	B	31 1/2X1/2X22 1/2	54

BEAM LENGTH BETWEEN FIELD SPLICES		
BEAM	* (FT.)	** (FT.)
①	68'-7 3/8"	52'-7"
②	68'-3 3/8"	51'-8 3/4"
③	67'-11 1/2"	50'-10 5/8"
④	67'-7 1/2"	50'-0 1/2"
⑤	67'-3 1/2"	49'-2 3/8"
⑥	66'-11 5/8"	48'-4 1/4"

STUD SHEAR CONNECTOR BEARING STIFFENER DETAILS

NOTES:

1. CVN: WHERE SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.

2. ALL FASTENERS ARE 1 1/8" DIAMETER GALVANIZED TYPE I HIGH STRENGTH BOLTS, ASTM A-325.

3. IF NECESSARY, WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.

4. WELDED SHEAR CONNECTORS: INSTALL THE WELDED SHEAR CONNECTORS IN THE SHOP OR IN THE FIELD. IF THE CONNECTORS ARE SHOP INSTALLED PRIOR TO GALVANIZING, PROVIDE FALL PROTECTION ACCORDING TO OSHA STANDARDS FOR ALL WORKERS, INCLUDING THOSE ENGAGED IN CONNECTING AND IN DECKING. IF THE CONNECTORS ARE FIELD INSTALLED, REMOVE THE GALVANIC COATING BY GRINDING AT EACH CONNECTOR LOCATION PRIOR TO WELDING.

5. ALL SHAPES AND PLATES OF SPLICES SHALL BE DESIGNATED (CVN), AND SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01 OF CMS.

6. ALL STRUCTURE STEEL SHAPES AND PLATES SHALL BE A709 GRADE 50 AND SHALL HAVE A SHOP GALVANIZED COATING PER 711.02 AND AS SPECIFIED IN THE GENERAL NOTE.

7. REMOVE GALVANIZED COATING BY GRINDING PRIOR TO FIELD WELDING TO THE GALVANIZED COATED STEEL. THE AWS/ANSI Z49:1, SAFETY AND CUTTING IN WELDING SHALL BE FOLLOWED. RESTORE THE CORROSION RESISTANCE AT WELDS BY APPLYING HIGH ZINC CONCENTRATION PAINT OVER THE WELD AREAS. PAYMENT SHALL BE INCLUDED WITH ITEM 513 STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN.

8. FOR ADDITIONAL NOTES SEE SHEETS 23/36 , 25/36 AND 26/36 .

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
BCK	SMS	GTA	8/31/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SMK		7606184	

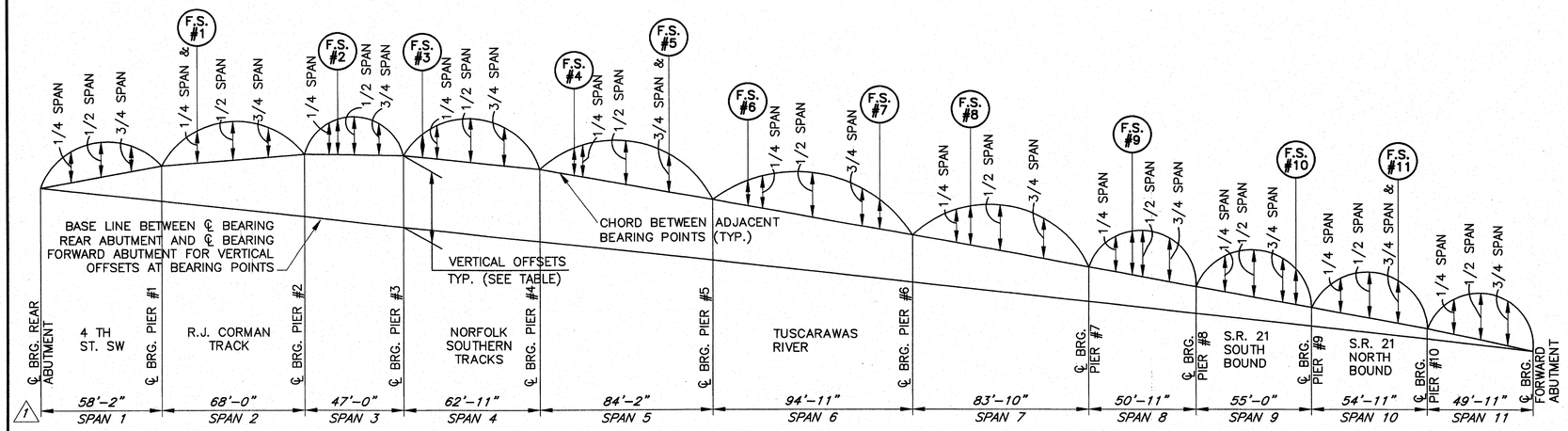
BEAM DETAILS
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

24 / 36

51 / 63

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225sFR2.dwg
Plot Scale : 1.0000 '/ Inch
Drawn By/Date : TCooper / 7-27-07 (10.09)



CAMBER DIAGRAM

VERTICAL OFFSETS AT BEARING POINTS	
BEARING POINT	BEAM ① THRU ⑥
REAR ABUT.	0
PIER 1	4'-4 3/8"
PIER 2	7'-8 1/4"
PIER 3	8'-10 1/2"
PIER 4	9'-0"
PIER 5	7'-6 1/2"
PIER 6	5'-9 1/2"
PIER 7	4'-2 7/8"
PIER 8	3'-3 1/2"
PIER 9	2'-3 1/4"
PIER 10	1'-3 1/8"
FWD. ABUT.	0

REFERENCES:

1. FOR FRAMING PLAN, SEE SHEET 23/36.
   FOR BEAM DETAILS, SEE SHEET 24/36.
   FOR BEAM SPLICE DETAILS, SEE SHEET 24/36.
   FOR BEARING DETAILS, SEE SHEET 26/36.

1 SPAN LENGTHS MEASURED ALONG ℄ SURVEY & CONST. TREMONT AVE.

DEFLECTION AND CAMBER

BEAM MARK	SPAN	SPAN 1				SPAN 2				SPAN 3				SPAN 4				SPAN 5				SPAN 6					SPAN 7					SPAN 8					SPAN 9					SPAN 10			SPAN 11			
	POINT	1/4	1/2		3/4	1/4 & F.S.#1	1/2		3/4	1/4	F.S.#2	1/2	3/4	F.S.#3	1/4	1/2	3/4	F.S.#4	1/4	1/2	3/4 & F.S.#5	F.S.#6	1/4	1/2	3/4	F.S.#7	1/4	F.S.#8	1/2	3/4	1/4	F.S.#9	1/2	3/4		1/4	1/2	3/4	F.S.#10	1/4	1/2	3/4 & F.S.#11	1/4	1/2		3/4
① THRU ⑥	DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/8"		1/16"	1/16"	1/8"		1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/8"	3/16"	5/16"	3/16"	1/8"	1/8"	1/8"	3/16"	1/8"	1/16"	1/16"	1/16"	1/16"		1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"		1/16"
	DEFLECTION DUE TO REMAINING DEAD LOAD	3/8"	7/16"		1/4"	7/16"	3/4"		1/2"	1/8"	1/8"	1/8"	1/8"	1/4"	5/16"	7/16"	3/16"	5/8"	1 1/16"	1"	9/16"	3/4"	7/8"	1 7/16"	1 3/16"	1 1/16"	9/16"	9/16"	1 1/16"	3/4"	1/8"	1/8"	1/8"	1/8"		5/16"	7/16"	1/4"	3/16"	1/8"	1/4"	1/8"	5/16"	1/2"		7/16"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1 9/16"	2 1/8"		1 9/16"	2 1/8"	2 7/8"		2 1/8"	1 1/16"	1 1/4"	1 3/8"	1 1/16"	1 3/8"	1 15/16"	2 5/8"	1 15/16"	9/16"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		–	–	–	–	–	–	–	3/4"	1"		3/4"
	REQUIRED SHOP CAMBER	2"	2 1/16"		1 7/8"	2 5/8"	3 3/4"		2 1/16"	1 1/4"	1 7/16"	1 9/16"	1 1/4"	1 1/16"	2 5/16"	3 3/8"	2 3/16"	1 5/16"	1 3/16"	1 1/8"	5/8"	7/8"	1 1/16"	1 3/4"	1"	1 3/16"	1 1/16"	1 1/16"	1 1/4"	7/8"	3/16"	3/16"	3/16"	3/16"		3/8"	1/2"	5/16"	1/4"	3/16"	5/16"	3/16"	1 1/8"	1 9/16"		1 1/4"

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Drawn By/Date : TCooper / 7-27-07 (10:14)

DESIGN AGENCY
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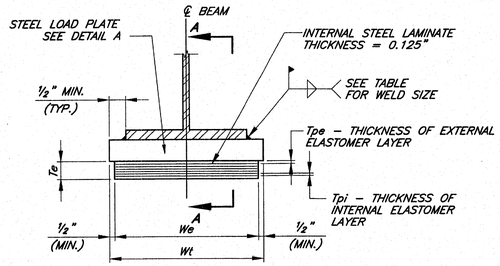
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CHECKED SMK
DESIGNED BCK
REVISED
REVIEWED GTA

DEFLECTION & CAMBER
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

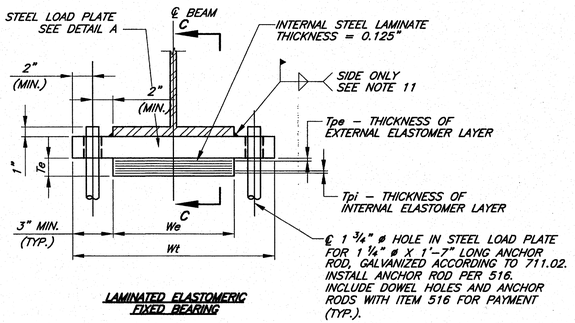
TREMONT AVENUE BRIDGE

25/36

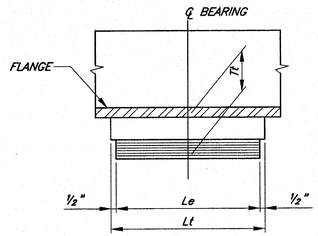
52/63



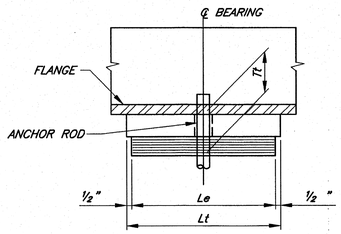
LAMINATED ELASTOMERIC EXPANSION BEARING



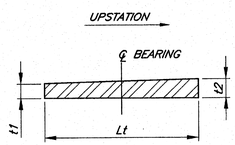
LAMINATED ELASTOMERIC FIXED BEARING



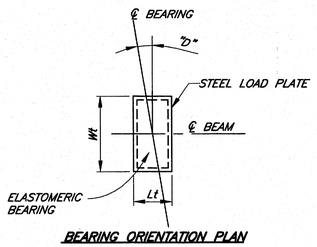
SECTION A–A



SECTION C–C



DETAIL "A"
STEEL LOAD PLATE



BEARING ORIENTATION PLAN

BEAM BEARING INFORMATION

BEARING LOCATION	BEARING TYPE	BEARING ORIENTATION " D "	NO. REQ'D.	DEAD LOAD kip	LIVE LOAD kip	TOTAL LOAD (DL+LL) kip	Le (in)	We (in)	Tpi (in)	NO. OF Tpi'S	Tpe (2 EA.)	NUMBER OF INTERNAL LAMINATES (0.125")	Te (in)	STEEL LOAD PLATE (in) Wt	Lt	t1	t2	Tt (in)	FILLET WELD SIZE (in)
REAR ABUTMENT	EXPANSION	8°54'36" RF	6	54	61	115	17	17	0.63	7	0.31	8	5.60	18	18	1 1/2"	2 5/8"	7.66	5/16"
PIER 1	EXPANSION	9°13'25" RF	6	185	98	283	18	17	0.44	8	0.30	8	4.79	18	19	2.00"	2 3/4"	7.17	5/16"
PIER 2	EXPANSION	9°08'16" RF	6	140	95	235	16	16	0.44	7	0.30	8	4.28	17	17	2.00"	2.00"	6.28	½"
PIER 3	EXPANSION	9°13'52" RF	6	121	94	215	16	16	0.44	7	0.30	8	4.28	17	17	2.00"	2.00"	6.28	½"
PIER 4	EXPANSION	6°26'06" RF	6	188	110	298	18	17	0.44	8	0.30	9	4.79	18	19	2 3/4"	2.00"	7.17	5/16"
PIER 5	FIXED	6°19'55" RF	6	234	125	359	20	19	0.50	8	0.30	9	5.27	25	21	3.00"	2.00"	7.77	5/16"
PIER 6	EXPANSION	6°19'55" RF	6	240	125	365	20	19	0.50	8	0.30	9	5.27	20	21	3.00"	2.00"	7.77	5/16"
PIER 7	EXPANSION	6°23'12" RF	6	171	106	277	18	17	0.44	8	0.30	9	4.79	18	19	2 7/8"	2.00"	7.23	5/16"
PIER 8	EXPANSION	6°26'53" RF	6	117	90	207	16	16	0.44	7	0.30	8	4.28	17	17	2 7/8"	2.00"	6.72	½"
PIER 9	EXPANSION	6°25'19" RF	6	137	89	226	16	16	0.44	7	0.30	8	4.28	17	17	2 7/8"	2.00"	6.72	½"
PIER 10	EXPANSION	0°08'59" LF	6	146	89	235	18	18	0.50	8	0.30	9	5.27	19	19	2 7/8"	2.00"	7.71	½"
FORWARD ABUTMENT	EXPANSION	0°04'11" LF	6	49	57	106	17	17	0.63	7	0.31	8	5.60	18	18	2 5/8"	1.50"	7.66	½"

NOTES:

1. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

2. WELDING SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.

3. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/6 OF THE BEARING HEIGHT AT 60°F (±10°F), THE GIRDERS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F (±10°F).

4. THE STEEL LOAD PLATE SHALL BE ASTM A572 GRADE 50 AND SHALL BE GALVANIZED IN ACCORDANCE WITH 711.02.

5. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.

6. TOTAL DESIGN LOAD FOR BEARINGS EQUALS THE SUM OF THE DEAD LOADS AND LIVE LOADS TABULATED IN THE BEARING TABLE.

7. ELASTOMER SHALL BE 50 DUROMETER HARDNESS.

8. BEARING ANCHOR RODS: AT THE OPTION OF THE CONTRACTOR, THE BEARING ANCHOR RODS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST–IN–PLACE. IF ANCHOR RODS ARE NOT CAST–IN–PLACE THEY SHALL BE DRILLED AND GROUTED IN ACCORDANCE WITH ITEM 511.

9. ANCHOR RODS SHALL BE GALVANIZED AS PER O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATION 711.02.

10. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, ANCHOR RODS AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS, EITHER FIXED OR EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516, EACH, ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATES (NEOPRENE), AS PER PLAN.

11. REMOVE GALVANIZED COATING BY GRINDING PRIOR TO FIELD WELDING TO THE GALVANIZED COATED STEEL. THE AWS/ANSI Z49:1, SAFETY AND CUTTING IN WELDING SHALL BE FOLLOWED. RESTORE THE CORROSION RESISTANCE AT WELDS BY APPLYING HIGH ZINC CONCENTRATION PAINT OVER THE WELD AREAS. PAYMENT SHALL BE INCLUDED WITH ITEM 513 STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN. .

12. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATIONS ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP–STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
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CHECKED	REVISED	STRUCTURE FILE NUMBER	
SMK		7606614	

BEARING DETAILS
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

26 / 36

53 / 63

Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225sBR1.dwg
Plotted : 08/31/2007 - 10:22
Drawn By/Date : TCooper / 7-27-07 (10:22)

	DIM "A" INCH	
TEMP. °F	REAR ABUTMENT (4" STRIP SEAL GLAND)	FORWARD ABUTMENT (5" STRIP SEAL GLAND)
30	2 5/8	3 1/4
40	2 3/8	2 7/8
50	2 1/8	2 5/8
60	1 7/8	2 1/4
70	1 5/8	2
80	1 3/8	1 3/4
90	1 1/8	1 3/8

DIM "A" WILL BE DETERMINED AT THE TIME OF CONSTRUCTION USING PROCEDURE IN SHEET 5/5 OF STANDARD BRIDGE DRAWING EXJ-4-87.

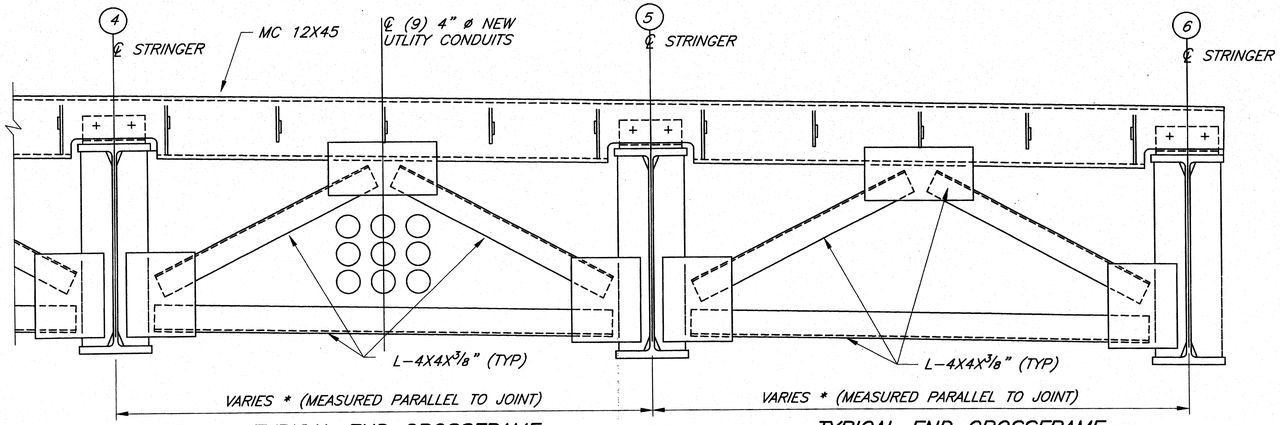
MINIMUM EXPANSION JOINT OPENING DIMENSION "A"

NOTES:

1. FOR ADDITIONAL DETAILS SEE STANDARD DRAWINGS GSD-1-96 AND EXJ-4-87.

2. REMOVE GALVANIZED COATING BY GRINDING PRIOR TO FIELD WELDING TO THE GALVANIZED COATED STEEL. THE AWS/ANSI Z49:1, SAFETY AND CUTTING IN WELDING SHALL BE FOLLOWED. RESTORE THE CORROSION RESISTANCE AT WELDS BY APPLYING HIGH ZINC CONCENTRATION PAINT OVER THE WELD AREAS. PAYMENT SHALL BE INCLUDED WITH ITEM 513 STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN.

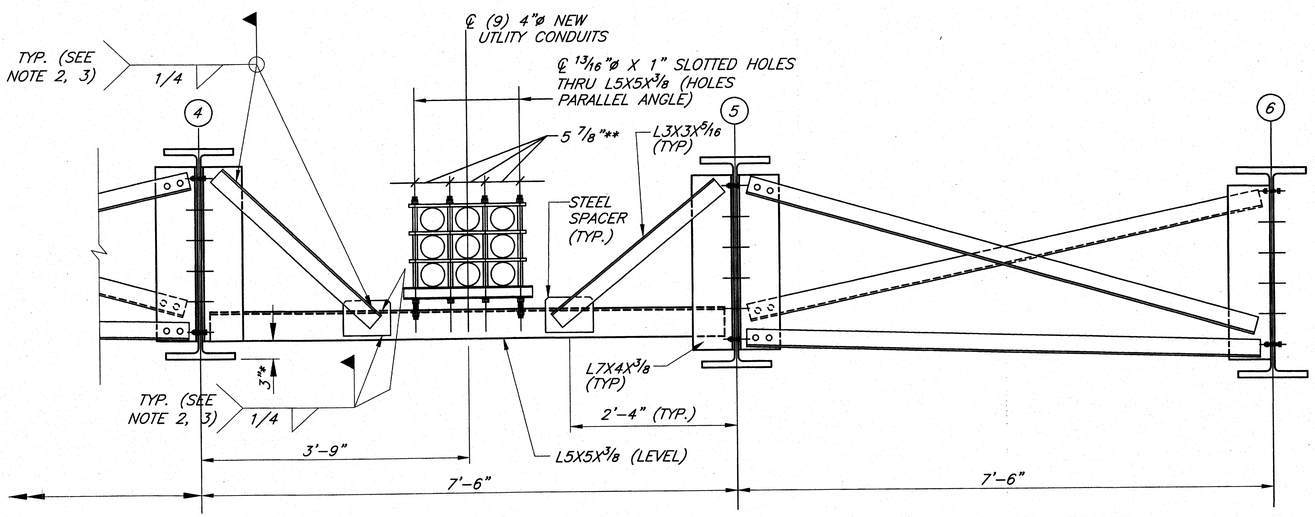
3. WITH THE APPROVAL OF THE COUNTY, THE CONTRACTOR HAS AN OPTION TO USE BOLTED CONNECTIONS. A MINIMUM OF TWO BOLTS ARE REQUIRED PER CONNECTION.



TYPICAL END CROSSFRAME

TYPICAL END CROSSFRAME

* 7'-7 1/8" REAR ABUTMENT
7'-6" FORWARD ABUTMENT



TYPE 2 INTERMEDIATE BOLTED CROSSFRAME

SPECIAL INTERMEDIATE CROSSFRAME NEW UTILITY CONDUITS SUPPORTS

TYPE 2 INTERMEDIATE BOLTED CROSSFRAME

* FIELD ADJUST WITH ELEVATION OF THE CONDUIT.
** TO BE VERIFIED WITH MANUFACTURER

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

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SMK		7606184	

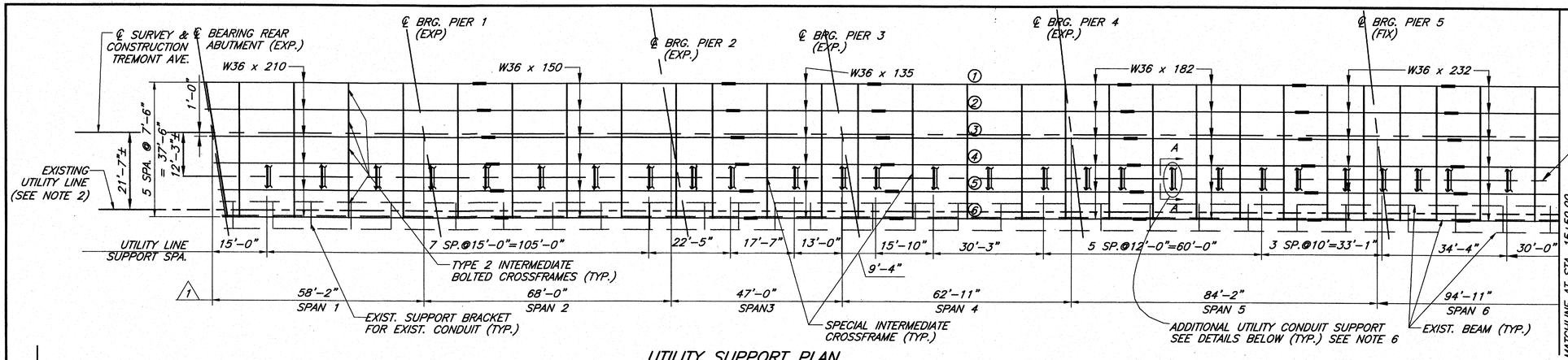
SUPERSTRUCTURE & EXPANSION JOINT DETAILS
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

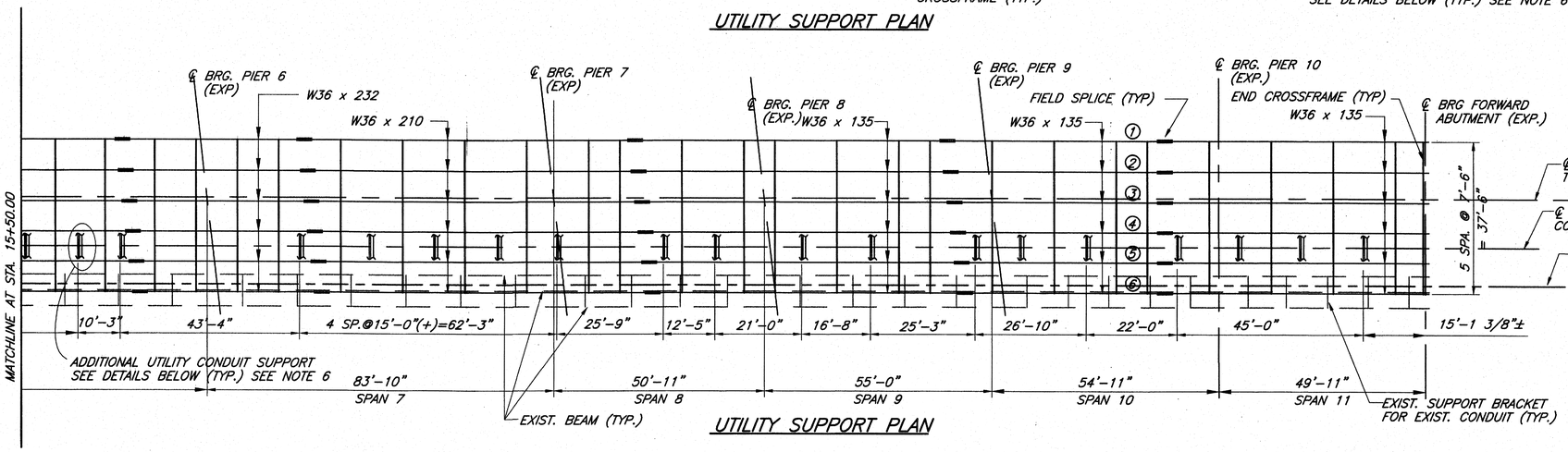
27 / 36

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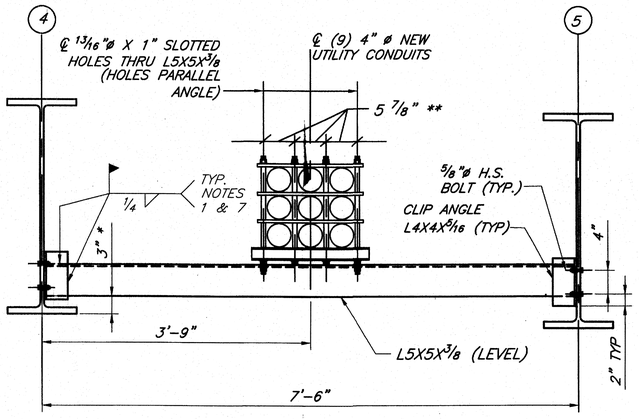
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UTILITY SUPPORT PLAN



UTILITY SUPPORT PLAN



SECTION A–A

ADDITIONAL UTILITY CONDUIT SUPPORT DETAILS

* FIELD ADJUST WITH ELEVATION OF THE CONDUIT
** TO BE VERIFIED WITH MANUFACTURER

NOTES:

1. REMOVE GALVANIZED COATING BY GRINDING PRIOR TO FIELD WELDING TO THE GALVANIZED COATED STEEL. THE AWS/ANSI Z49:1, SAFETY AND CUTTING IN WELDING SHALL BE FOLLOWED. RESTORE THE CORROSION RESISTANCE AT WELDS BY APPLYING HIGH ZINC CONCENTRATION PAINT OVER THE WELD AREAS. PAYMENT SHALL BE INCLUDED WITH ITEM 513 – STRUCTURAL STEEL MEMBERS, LEVEL 2, AS PER PLAN.

2. TO MAINTAIN THE EXISTING UTILITY LINE, STRUCTURAL STEEL FRAMING WILL BE BUILT IN STAGES. SEE SHEET 7/36 FOR DETAILS.

3. FOR SPECIAL INTERMEDIATE AND END CROSSFRAME DETAILS SEE SHEET 27/36

4. FOR FRAMING PLAN AND ADDITIONAL NOTES SEE SHEET 23/36.

5. FOR TYPE 2 INTERMEDIATE BOLTED CROSSFRAME AND STD. END CROSSFRAME DETAILS SEE STD. DWG. GSD–1–96 AND EXJ–4–87.

6. ADDITIONAL UTILITY CONDUIT SUPPORT SHALL BE GALVANIZED PER 711.02 AND INCLUDED WITH ITEM 513 – STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN FOR PAYMENT.

7. WITH THE APPROVAL OF THE COUNTY, THE CONTRACTOR HAS AN OPTION TO USE BOLTED CONNECTIONS. A MINIMUM OF TWO BOLTS ARE REQUIRED PER CONNECTION.

DESIGN AGENCY: THE OSBORN ENGINEERING CO. CONSULTING ENGINEERS CLEVELAND, OHIO 44114

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BCK		7606184	

UTILITY SUPPORT PLAN & DETAILS

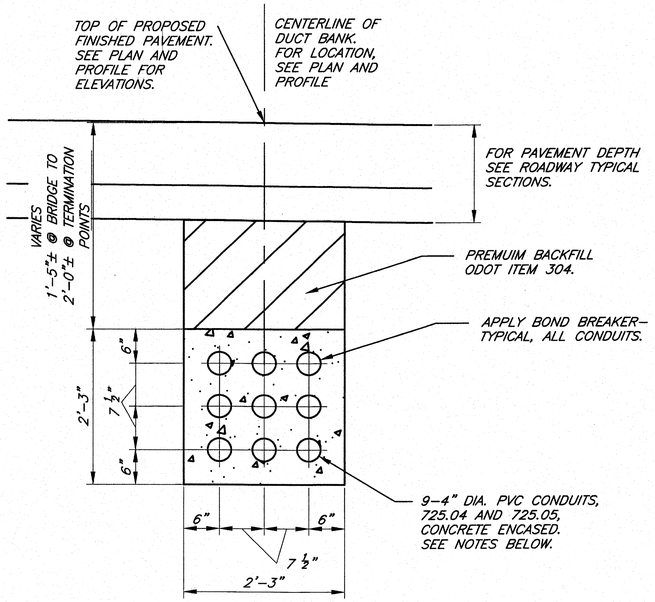
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

28 / 36

55 / 63

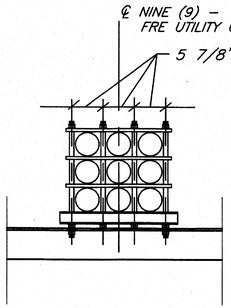
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Plot Scale : 1 = 1
Drawn By/Date : TCooper / 6-7-07 (08:18)



DUCT BANK SECTION UNDER PROPOSED ROADWAY

NOTES:

A. AT BOTH ENDS OF THE BRIDGE, STEEL CONDUITS (725.04) SHALL BE CARRIED THROUGH THE ABUTMENT BACKWALL AND APPROXIMATELY 5'± BEYOND TO AN EXPANSION JOINT COUPLER/ADAPTOR TO TRANSITION TO FRE CONDUITS ON THE BRIDGE AND TO TRANSITION TO PVC CONDUITS UNDER THE APPROACH ROADWAY.
B. AT TERMINATION POINTS, THE CONDUITS SHALL BE TIED TO EXISTING PVC CONDUITS WITH STEEL/PVC ADAPTER.
C. THE CONTRACTOR SHALL ENCASE THE CONDUITS WITH CONCRETE ONLY AFTER THE CABLE INSTALLATION HAS BEEN COMPLETED BY THE UTILITY COMPANY.



FOR CONDUIT SUPPORT DETAILS, SEE SHEETS 27 | 36 AND 28 | 36 .

NEW UTILITY CONDUITS ON BRIDGE STRUCTURE

** TO BE VERIFIED WITH MANUFACTURER

NOTES:

1. THE NEW CONDUITS AND DUCT BANK CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF ODOT ITEM 625 AND THE PROJECT SPECIFICATIONS.

2. THE CONTRACTOR SHALL PROVIDE PULL WIRES IN ALL CONDUITS AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

4. WIRING AND CABLING SHALL BE PERFORMED BY AT&T UTILITY CONTRACTOR.

5. THE NEW CONDUITS SHALL BE TERMINATED AT THE FOLLOWING LOCATIONS:
   STA. 11+50±, NEAR BEGIN APPROACH SLAB ON THE WEST SIDE
   STA. 19+02±, 5' FROM THE EXISTING RECONSTRUCTED TELEPHONE MANHOLE ON THE EAST SIDE. FOR LOCATIONS, SEE PLAN AND PROFILE SHEETS.

6. THE CONTRACTOR SHALL COORDINATE EXACT LOCATION OF CONDUIT TERMINATIONS WITH THE UTILITY (AT&T) OWNER.

ITEM 625, CONDUIT, MISC.: 9–4" NEW CONDUITS, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING NINE (9) – 4" DIAMETER FRE CONDUITS IN A 3X3 DUCT FORMATION ON THE BRIDGE STRUCTURE AND NINE (9) – 4" DIAMETER CONCRETE ENCASED STEEL CONDUITS AT ABUTMENTS AND CONCRETE ENCASED PVC CONDUITS ON THE BRIDGE APPROACHES TO THE LIMITS SHOWN ON THE PROJECT PLANS.

THE NEW CONDUITS FROM THE BRIDGE ABUTMENTS TO THE TERMINATION POINTS SHALL BE ENCASED IN CONCRETE AS SHOWN ON THE PROJECT PLANS AND SHALL BE CONNECTED TO CONDUIT BANK CONSTRUCTED BY OTHERS.

THIS ITEM OF WORK SHALL INCLUDE FRE (FIBERGLASS REINFORCED EPOXY) AND STEEL CONDUITS AND FITTINGS, SPACERS, SLEEVES, COUPLINGS, ADAPTERS, EXPANSION JOINTS, SUPPORT HARDWARE, BRACINGS REQUIRED FOR CABLE PULLS, PULL STRINGS IN THE CONDUITS, CONCRETE FOR ENCASEMENT, TRENCH EXCAVATION, PREMIUM BACKFILL TO PAVEMENT SUBGRADE AND ALL NECESSARY INCIDENTAL ITEMS REQUIRED FOR A COMPLETE AND SATISFACTORILY INSTALLED CONDUIT SYSTEM. THE EXPANSION JOINT IN THE CONDUITS SHALL BE IN ACCORDANCE WITH THE CONDUIT MANUFACTURER'S RECOMMENDATIONS. THE CONDUIT SYSTEM SHALL BE SECURED TO PREVENT LOOSENING DUE TO BRIDGE VIBRATIONS AND MOVEMENTS.

THE FIBER REINFORCED RESIN (FRE) CONDUITS, FITTINGS AND COMPONENTS SHALL MEET THE MINIMUM REQUIREMENTS OF NEMA TC–14 AND SHALL BE FOR ABOVE GROUND USE. THE STEEL CONDUITS USED THROUGH THE ABUTMENTS SHALL MEET THE REQUIREMENTS OF ODOT SECTION 725.04. PVC CONDUITS USED ON APPROACHES SHALL MEET THE REQUIREMENTS OF ODOT SECTION 725.05.

ALL STEEL COMPONENTS OF CONDUIT SYSTEM HARDWARE (THREADED RODS, NUTS, FLAT AND LOCK WASHERS ETC.) SHALL BE HOT DIPPED GALVANIZED.

THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR LAYOUT, SUPPORT ATTACHMENTS, DETAILS, EXPANSION JOINTS, BRACING AND INSTALLATION PROCEDURE TO AT&T AND ENGINEER FOR APPROVAL.

THE FRE CONDUIT PRODUCTS FROM THE FOLLOWING ARE ACCEPTABLE:

1. FRE COMPOSITES – MANUFACTURE'S REP.
   R.C. CHILDS COMPANY
   6933 WESTWOOD RD. SUITE 300,
   WESTLAKE, OHIO 44145
   PHONE: 440–835–3500

2. OSBURN ASSOCIATES, INC.
   P.O. BOX 912
   LOGAN, OHIO 43138
   PHONE: 1–800–523–8917

3. AMERICAN U–TEL INC.
   9760 SMITH RD.
   WILLOUGHBY, OHIO 44094
   PHONE: 216–946–6027

THE WORK SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND TOOLS NECESSARY TO COMPLETE THE CONDUIT SYSTEM IN PLACE AS SHOWN IN PLANS AND CONSTRUCTED AS RECOMMENDED BY THE CONDUIT MANUFACTURER. THE PAYMENT FOR THIS ITEM SHALL BE CONSIDERED ON A LUMP SUM BASIS UNDER ITEM 625, CONDUIT, MISC.: 9–4" NEW CONDUITS, AS PER PLAN

DESIGN AGENCY
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CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7806184	

NEW UTILITY CONDUITS DETAILS

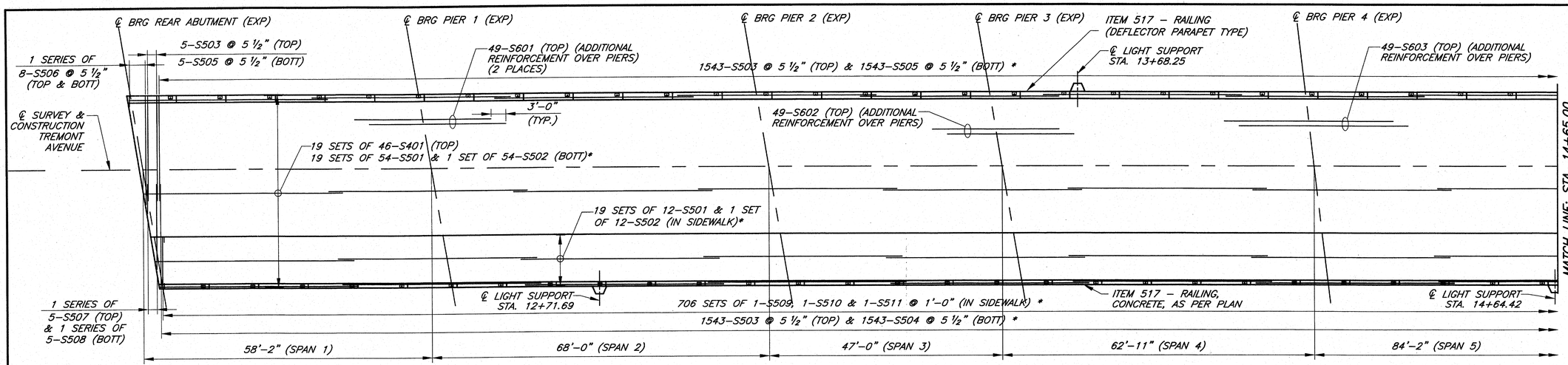
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

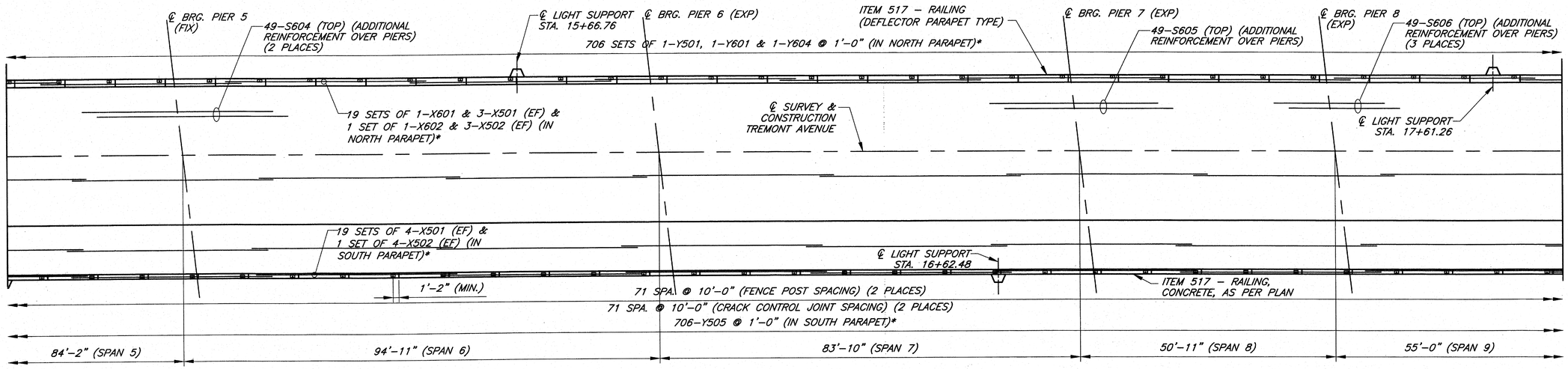
TREMONT AVENUE BRIDGE

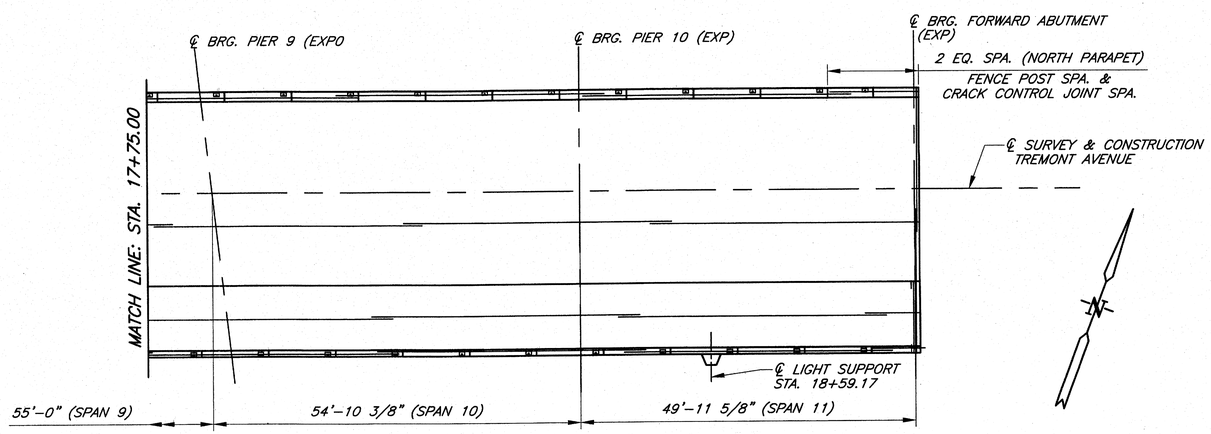
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Plot Scale : 1 = 2
Drawn By/Date : tCooper / 6-7-07 (08:34)







NOTES:

1. FOR LIGHTING SUPPORT DETAILS SEE SHEET 31/36 .
2. FOR ADDITIONAL NOTES SEE SHEET 31/36 .
3. FOR DECK SCREED ELEVATION TABLE SEE SHEET 32/36 .

LEGEND:

* REBARS SHOWN APPLY FOR THE ENTIRE LENGTH OF THE STRUCTURE.

SUBSTRUCTURE STATION & SKEW TABLE		
LOCATION	℄ STATION	SKEW ANGLE
RA	STA. 11+79.79	8°54'36" RF
PIER 1	STA. 12+37.93	9°13'25" RF
PIER 2	STA. 13+05.96	9°08'16" RF
PIER 3	STA. 13+52.97	9°13'52" RF
PIER 4	STA. 14+15.89	6°26'06" RF
PIER 5	STA. 15+00.03	6°19'55" RF
PIER 6	STA. 15+94.96	6°19'55" RF
PIER 7	STA. 16+78.77	6°23'12" RF
PIER 8	STA. 17+29.70	6°26'53" RF
PIER 9	STA. 17+84.73	6°25'19" RF
PIER 10	STA. 18+39.69	0°08'59" LF
FA	STA. 18+89.58	0°04'11" LF

DESIGN AGENCY
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DESIGNED SMK | DRAWN SMK | REVIEWED GTA | DATE 8/31/07
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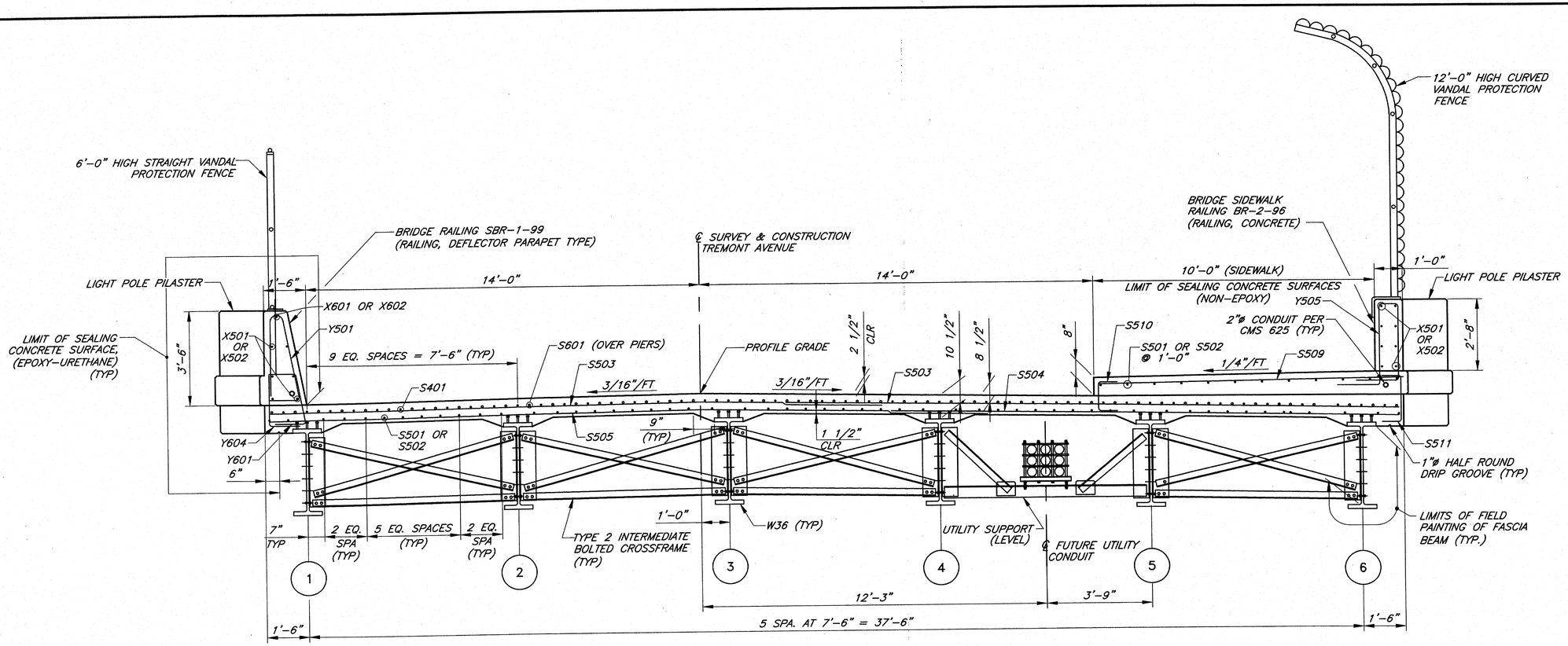
DECK PLAN
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

30 / 36

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Plot Scale : 1.0000 '/ Unit
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NOTES:

1. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM FLANGE IS ±3 INCHES.

   THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.

2. FOR TYPE 2, INTERMEDIATE BOLTED CROSSFRAME DETAILS, SEE ODOT STD. DRAWING GSD-1-96.

3. FOR CROSSFRAMES WITH UTILITY SUPPORT DETAILS, SEE SHEET 27/36 & 28/36 .

4. FOR REINFORCING STEEL LAYOUT IN THE DECK, PARAPETS AND SIDEWALK SEE SHEET 30/36.

5. FOR FENCE POST & CONTROL JOINT SPACING IN THE PARAPETS AND LIGHT POLE PILASTER LOCATIONS, SEE SHEET 30/36 .

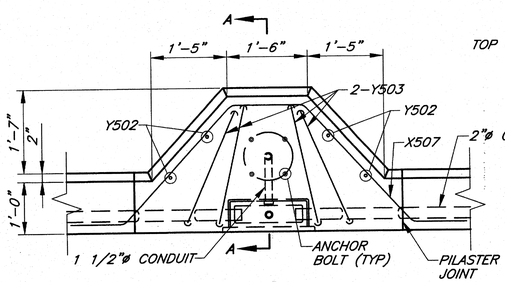
6. FOR VANDAL PROTECTION CURVED FENCE AND STRAIGHT FENCE DETAILS SEE ODOT STD. DRAWING VPF-1-90.

7. FOR ADDITIONAL PARAPET DETAILS SEE ODOT STD. DRAWINGS BR-2-98 AND SBR-1-99. LIGHT POLE PILASTERS AND REINFORCING STEEL IN THE BRIDGE RAILING SHALL BE INCLUDED WITH ITEM 517 RAILING, AS PER PLAN FOR PAYMENT.

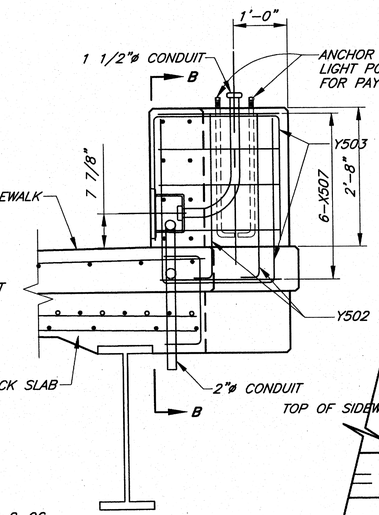
8. DRIP GROOVES SHALL TERMINATE 2'-6" FROM THE FACE OF ABUTMENTS.

9. FOR UTILITY RELOCATION PHASE WORK SEE SHEET 7/36 .

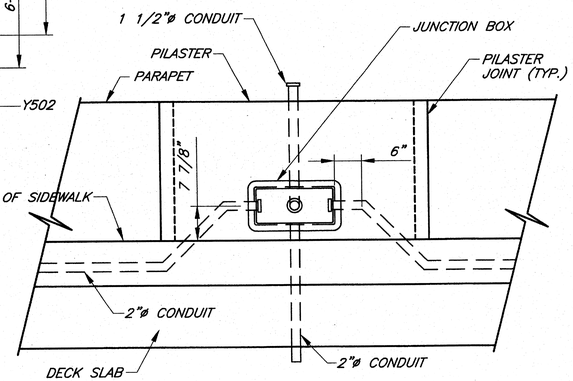
10. SEE FRAMING PLAN ON SHEET 23/36 FOR BEAM SIZES.



PLAN



SECTION A-A



SECTION B-B

LIGHT SUPPORT DETAILS

NOTES
1. PILASTER PLAN AND SECTION CUTS ARE AT RAILING BR-2-96. PILASTER AT SBR-1-99 SIMILAR, FOLLOW STD. CONSTRUCTION DWG. HL-20.14 FOR CONDUIT LOCATION.
2. FOR ADDITIONAL DETAILS, SEE STD. CONSTRUCTION DWG. (HIGHWAY LIGHTING) HL-20.14, HL-10.13 & HL-30.31
3. PAYMENT FOR PILASTER REINFORCING STEEL AND CONCRETE SHALL BE INCLUDED IN ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN AND ITEM 511 - CLASS S CONCRETE, SUPERSTRUCTURE.

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BCK		7606184	

TRANSVERSE SECTION AND SUPERSTRUCTURE DETAILS
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

31/36

58/63

Filename : i:\CADFiles\13225 Tremont Ave\Struct\13225sDP1.dwg
Plot Scale : 1 = 1
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DECK SCREED ELEVATION TABLE

		LEFT TOE OF PARAPET	℄ BEAM 1	℄ BEAM 2	CENTERLINE	℄ BEAM 3	℄ BEAM 4	RIGHT CURB LINE	℄ BEAM 5	℄ BEAM 6
SPAN 1	℄ REAR ABUT. STA. 11+79.79	970.12	970.12	970.31	970.47	970.45	970.41	970.37	970.36	970.31
	1/2 SPAN STA. 12+08.86	971.71	971.71	971.88	972.04	972.02	971.96	971.92	971.90	971.84
SPAN 2	℄ PIER 1 STA. 12+37.93	972.88	972.88	973.04	973.18	973.16	973.10	973.04	973.02	972.94
	1/2 SPAN STA. 12+71.95	973.91	973.91	974.05	974.18	974.17	974.07	974.00	973.98	973.89
SPAN 3	℄ PIER 2 STA. 13+05.96	974.34	974.34	974.47	974.58	974.56	974.45	974.37	974.34	974.23
	1/2 SPAN STA. 13+29.46	974.41	974.41	974.53	974.62	974.60	974.49	974.40	974.36	974.24
SPAN 4	℄ PIER 3 STA. 13+52.97	974.23	974.23	974.34	974.42	974.40	974.28	974.17	974.14	974.00
	1/2 SPAN STA. 13+84.43	973.69	973.69	973.77	973.85	973.83	973.68	973.57	973.53	973.38
SPAN 5	℄ PIER 4 STA. 14+15.89	972.63	972.63	972.72	972.79	972.76	972.62	972.51	972.47	972.31
	1/4 SPAN STA. 14+36.92	971.79	971.79	971.87	971.94	971.92	971.76	971.64	971.60	971.45
	1/2 SPAN STA. 14+57.96	970.83	970.83	970.91	970.98	970.96	970.80	970.68	970.64	970.49
	3/4 SPAN STA. 14+78.99	969.81	969.81	969.89	969.95	969.93	969.78	969.66	969.62	969.46
SPAN 6	℄ PIER 5 STA. 15+00.03	968.77	968.77	968.85	968.92	968.90	968.74	968.63	968.59	968.43
	1/4 SPAN STA. 15+23.76	967.73	967.73	967.81	967.88	967.86	967.70	967.59	967.55	967.39
	1/2 SPAN STA. 15+47.49	966.67	966.67	966.75	966.81	966.79	966.64	966.52	966.48	966.32
	3/4 SPAN STA. 15+71.23	965.50	965.50	965.58	965.65	965.63	965.47	965.36	965.32	965.16
SPAN 7	℄ PIER 6 STA. 15+94.96	964.32	964.32	964.40	964.47	964.45	964.29	964.18	964.13	963.98
	1/4 SPAN STA. 16+15.91	963.39	963.39	963.46	963.53	963.51	963.36	963.24	963.20	963.04
	1/2 SPAN STA. 16+36.86	962.45	962.45	962.52	962.59	962.57	962.41	962.30	962.26	962.10
	3/4 SPAN STA. 16+57.82	961.44	961.44	961.51	961.58	961.56	961.41	961.29	961.25	961.09
SPAN 8	℄ PIER 7 STA. 16+78.77	960.39	960.39	960.47	960.54	960.52	960.36	960.24	960.20	960.05
	1/2 SPAN STA. 17+04.24	959.21	959.21	959.29	959.35	959.33	959.18	959.06	959.02	958.86
SPAN 9	℄ PIER 8 STA. 17+29.70	958.00	958.00	958.08	958.15	958.13	957.97	957.86	957.81	957.66
	1/2 SPAN STA. 17+57.22	956.75	956.75	956.83	956.89	956.87	956.72	956.60	956.56	956.40
SPAN 10	℄ PIER 9 STA. 17+84.73	955.42	955.42	955.50	955.57	955.55	955.39	955.27	955.23	955.08
	1/2 SPAN STA. 18+12.22	954.15	954.15	954.23	954.30	954.28	954.12	954.01	953.96	953.81
SPAN 11	℄ PIER 10 STA. 18+39.69	952.77	952.77	952.89	952.99	952.97	952.86	952.77	952.74	952.63
	1/2 SPAN STA. 18+64.63	951.55	951.55	951.67	951.78	951.77	951.65	951.56	951.53	951.41
	℄ FWD. ABUT STA. 18+89.58	950.09	950.09	950.21	950.32	950.30	950.19	950.10	950.07	949.95

NOTE:

1. SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

DESIGN AGENCY
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BCK		7606184	

DECK SCREED ELEVATION TABLE

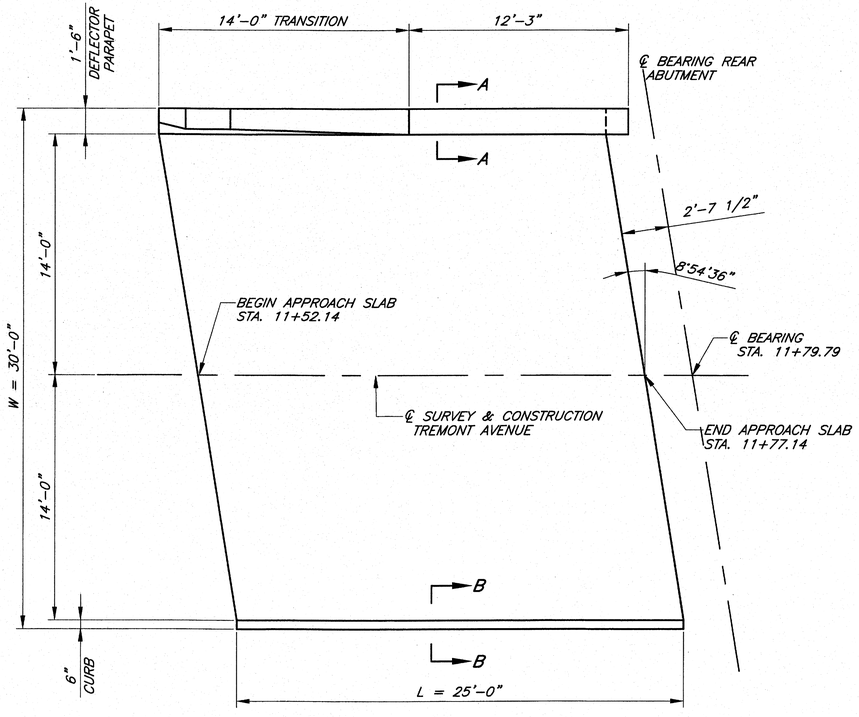
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

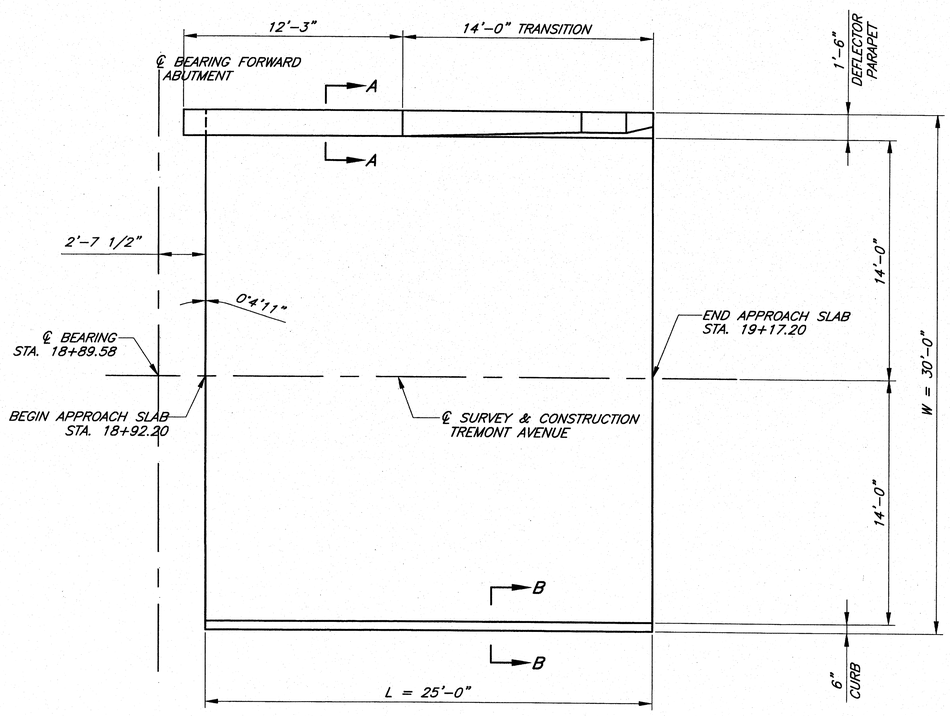
TREMONT AVENUE BRIDGE

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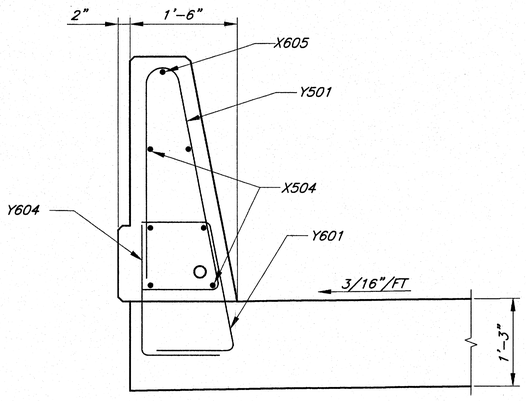
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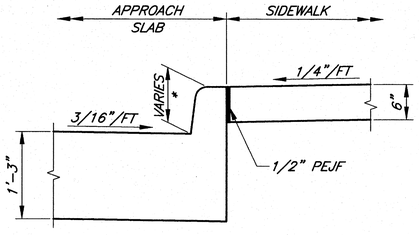




PLAN



SECTION A–A



SECTION B–B

* CURB HEIGHT SHALL TRANSITION FROM 8" AT THE BRIDGE TO 6" AT THE ROADWAY

NOTES:

1. FOR ADDITIONAL DETAILS SEE STANDARD DRAWING AS–1–81.
2. PAYMENT FOR THE DEFLECTOR PARAPET ON THE APPROACH SLAB SHALL BE INCLUDED WITH ITEM 517–RAILING (DEFLECTOR PARAPET TYPE). SEE STANDARD DRAWING SBR–1–99 AND SHEET 15 / 36 .
3. PAYMENT FOR CURB SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 526 – REINFORCED CONCRETE APPROACH SLAB, (T=15"), AS PER PLAN.

DESIGN AGENCY
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CLEVELAND, OHIO 44114

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APPROACH SLAB PLAN AND DETAILS

TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

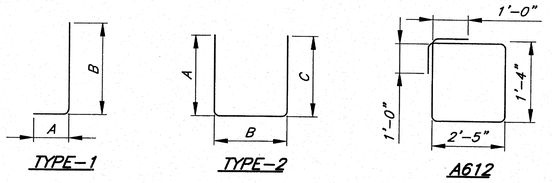
TREMONT AVENUE BRIDGE

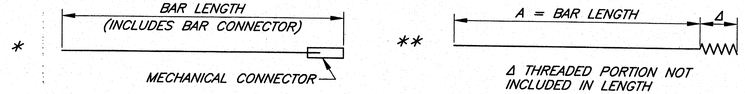
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Plot Scale : 1 = 1
Drawn By/Date : TCooper / 7-27-07 (12:43)

MARK	NUMBER			LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS						
	REAR	FWD	TOTAL				A	B	C	D	E	R	INC.
ABUTMENTS													
A501	17	19	36	19'-6"	732	STR*							
A502	8		8	30'-0"	250	STR							
A503	9		9	23'-6"	221	STR							
A504	17	19	36	11'-0"	413	STR**							
A505		1	1	17'-10"	19	STR							
A506		18	18	23'-1"	433	STR							
A507		2	2	10'-6"	22	STR							
A508	7	8	15	7'-2"	112	2	3'-0"	1'-5"	3'-0"				
A509		6	6	2'-10"	18	1	1'-6"	1'-6"					
A510	16	16	32	1'-8"	56	STR							
A511	2		2	10'-3"	21	STR							
A512		2	2	13'-0"	27	STR							
A601	35		35	5'-6"	290	2	10"	4'-2"	10"				
A602	35		35	9'-1"	478	2	4'-0"	1'-5"	4'-0"				
A603	83	70	153	1'-11"	440	STR							
A604	16	11	27	9'-1"	368	2	4'-0"	1'-5"	4'-0"				
A605	21	21	42	6'-7"	415	2	3'-0"	11"	3'-0"				
A606	25	21	46	6'-7"	455	2	2'-9"	1'-5"	2'-9"				
A607	4		4	7'-7"	46	2	3'-3"	1'-5"	3'-3"				
A608		35	35	6'-4"	333	2	1'-3"	4'-2"	1'-3"				
A609		35	35	11'-6"	610	2	5'-3"	1'-5"	5'-3"				
A610		1 SERIES OF 5	1 SERIES OF 5	8'-3" / 8'-11"	64	2	3'-7" / 3'-11"	1'-5"	3'-7" / 3'-11"				1"
A611		2 SERIES OF 4	2 SERIES OF 4	2'-7" / 2'-9"	32	1	1'-5"	1'-4" / 1'-6"					1/2"
A612	6	6	12	8'-8"	156	BT							
A613	4	4	8	2'-9"	33	1	1'-7"	1'-4"					
A614	4	4	8	2'-6"	30	STR							
A901	10	10	20	2'-7"	176	1	1'-7"	1'-4"					
A902	4	4	8	4'-2"	113	STR							
A903	8	8	16	3'-0"	163	STR							
				TOTAL WEIGHT =	6557								





MECHANICAL CONNECTOR DETAILS
(NON-PROTRUDING TYPE)

MECHANICAL CONNECTORS

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM TO MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE FURNISHED WITH THE CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "A" SHOWN ON PLANS.

CONNECTORS AND DOWEL BARS SHALL BE EPOXY COATED. COATING FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS.

CONNECTORS AND DOWEL BARS SHALL CONFORM TO AND BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 509.

NOTES:

1. ALL REINFORCING BARS SHALL BE EPOXY COATED.

2. ALL BAR DIMENSIONS ARE GIVEN OUT-TO-OUT, UNLESS OTHERWISE INDICATED.

3. ALL BARS OF A GIVEN SERIES VARY BY A CONSTANT AMOUNT.

4. BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, A501 IS A #5 BAR.

5. A = ABUTMENT
   P = PIER
   S = SUPERSTRUCTURE
   X, Y = PARAPET

DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

DESIGNED	DRAWN	REVIEWED	DATE
SMK	SMK	GTA	2/23/07
CHECKED	REVISED	STRUCTURE FILE NUMBER	
BCK		7606184	

REINFORCING SCHEDULE
TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

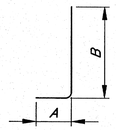
TREMONT AVENUE BRIDGE

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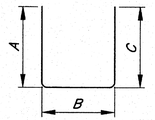
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Plot Scale : 1 = 1
Drawn By/Date : TCooper / 6-7-07 (09:19)

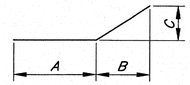
MARK	NUMBER											LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS						
	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	PIER 7	PIER 8	PIER 9	PIER 10	TOTAL				A	B	C	D	E	R	INC.
PIERS																					
P401		118									118	10'-6"	828	2	4'-0"	2'-8"	4'-0"				
P402		12									12	11'-2"	90	3	2'-8"	2'-8"					
P403		12									12	3'-5"	27	29	2'-8"	6"					
P601	70			10							80	1'-9"	210	STR							
P602	13										13	4'-0"	78	2	10"	2'-8"	10"				
P603	14										14	3'-8"	77	2	8"	2'-8"	8"				
P604	10										10	4'-4"	65	2	1'-0"	2'-8"	1'-0"				
P605				30	70					8	108	1'-11"	311	STR							
P606	8		10	9	8	8	7	9	7	9	75	21'-10"	2460	STR							
P607	8		10	2	2	2	2				26	10'-11"	426	STR**							
P608	8		10	9	8	8	7	9	7	9	75	21'-10"	2459	STR*							
P609				2	2	2	2				8	10'-7"	127	STR**							
P610	2		3								5	8'-4"	63	2	3'-0"	2'-8"	3'-0"				
P611	4		76	36	4	74	46	64	74	66	444	2'-1"	1389	STR							
P612			15								15	5'-4"	120	2	1'-6"	2'-8"	1'-6"				
P613			14								14	4'-10"	102	2	1'-3"	2'-8"	1'-3"				
P614				11							11	5'-8"	94	2	2'-2"	3'-2"	8"				
P615				7							7	5'-5"	57	2	1'-11"	3'-2"	8"				
P616				14							14	5'-3"	110	2	1'-9"	3'-2"	8"				
P617				5							5	4'-0"	30	2	7"	3'-2"	7"				
P618				4	4	4	3				15	9'-4"	210	STR**							
P619				2				4		2	8	3'-10"	46	STR**							
P620					35						35	4'-2"	219	2	8"	3'-2"	8"				
P621						35	6				41	4'-8"	287	2	11"	3'-2"	11"				
P622							30				30	1'-6"	68	STR							
P623							30				30	4'-2"	188	2	11"	3'-2"	5"				
P624							1				1	5'-2"	8	STR							
P625				2	2	2	2				8	10'-11"	132	24	3'-2"	3'-0"				1'-7"	
P626								15			15	6'-4"	143	2	2'-3"	2'-2"	2'-3"				
P627								17		27	44	5'-10"	386	2	2'-0"	2'-2"	2'-0"				
P628								10			10	1'-7"	24	STR							
P629								5			5	2'-8"	20	2	5"	2'-2"	5"				
P630								5	7		12	10'-6"	189	STR**							
P631								1	2		3	7'-10"	35	2	3'-0"	2'-2"	3'-0"				
P632									27		27	3'-6"	142	2	10"	2'-2"	10"				
P633									8	4	12	3'-2"	57	2	8"	2'-2"	8"				
P634										3	3	5'-4"	24	2	1'-9"	2'-2"	1'-9"				
P635										7	7	10'-4"	109	STR**							
P636		6									6	30'-2"	272	STR							
P637		6									6	18'-9"	169	STR*							
P638		6									6	11'-5"	103	STR**							
P639		8									8	8'-4"	100	2	3'-0"	2'-8"	3'-0"				
P640		15									15	5'-7"	126	STR							
P641		3									3	5'-4"	24	19	3'-5"	1'-10"	9"				
P642		6									6	9'-10"	89	2	3'-0"	4'-2"	3'-0"				
P901		6									6	27'-4"	558	1	4'-2"	23'-6"					
P902		6									6	28'-8"	585	STR							
P903		6									6	12'-0"	245	STR*							
P904		6									6	12'-8"	258	16**	11'-5"						
P905		6									6	32'-8"	666	STR							
P906		6									6	21'-3"	434	STR*							
P907		6									6	11'-5"	233	STR**							
											TOTAL WEIGHT =		15272								



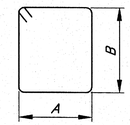
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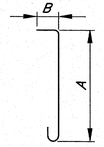
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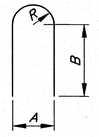
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TYPE-3



TYPE-29

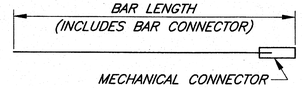


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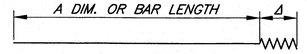


TYPE-16

*



**



Δ THREADED PORTION NOT INCLUDED IN LENGTH

MECHANICAL CONNECTOR DETAILS
(NON-PROTRUDING TYPE)

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DESIGN AGENCY
THE OSBORN ENGINEERING CO.
CONSULTING ENGINEERS
CLEVELAND, OHIO 44114

REVIEWED GTA | DATE 2/23/07 | STRUCTURE FILE NUMBER 7606184
DRAWN SMK | REVISED
DESIGNED SMK | CHECKED BCK

REINFORCING SCHEDULE

TREMONT AVENUE
OVER S.R. 21, TUSCARAWAS RIVER, NORFOLK SOUTHERN AND R.J. CORMAN R.R. TRACKS

TREMONT AVENUE BRIDGE

35 / 36

62
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Filename : I:\CADFiles\13225 Tremont Ave\Struct\3225sRL1.dwg
Plot Scale : 1 = 1
Drawn By/Date : TCooper / 6-7-07 (09:21)

MARK	NUMBER	LENGTH	WEIGHT (LBS)	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC.
SUPERSTRUCTURE											
S401	874	40'-0"	23353	STR							
S501	1254	40'-0"	52317	STR							
S502	66	13'-6"	929	STR							
S503	3091	21'-10"	70389	STR							
S504	1543	18'-0"	28968	STR							
S505	1548	25'-7"	41306	STR							
S506	2 SERIES OF 8	2'-2" / 22'-8"	207	STR							
S507	1 SERIES OF 5	6'-2" / 18'-11"	65	STR							
S508	1 SERIES OF 5	2'-5" / 15'-2"	46	STR							
S509	706	10'-8"	7854	STR							
S510	706	2'-2"	1595	2	8"	1'-1"	8"				
S511	706	2'-9"	2025	2	8"	1'-8"	8"				
S601	98	27'-6"	4048	STR							
S602	49	25'-6"	1877	STR							
S603	49	34'-0"	2502	STR							
S604	98	38'-0"	5593	STR							
S605	49	33'-6"	2466	STR							
S606	147	22'-0"	4857	STR							
X507**	42	9'-3"	404	21	1'-4"	2'-0"	1'-0"	2'-3"			
Y502**	28	3'-10"	112	1	10"	3'-2"					
Y503**	56	6'-11"	404	2	2'-4"	2'-6"	2'-4"				
	TOTAL WEIGHT =		251,319								

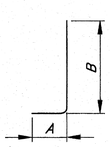
** REBARS IN LIGHTING PILASTERS.

MARK	NUMBER	LENGTH	WEIGHT* (LBS)	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC.
PARAPET											
X501	282	40'-0"	11765	STR							
X502	14	13'-6"	197	STR							
X503	4	11'-8"	49	STR							
X504	12	14'-8"	184	STR							
X505	10	10'-11"	114	STR							
X506	8	23'-0"	192	STR							
X508	3	4'-11"	15	2	6"	4'-2"	6"				
X509	2	2'-5"	5	2	1'-0"	8"	1'-0"				
X601	19	40'-0"	1142	STR							
X602	1	10'-0"	15	STR							
X603	2	8'-0"	24	1	4'-2"	4'-0"					
X604	NOT USED										
X605	2	14'-7"	44	19	12'-0"	2'-7"	3"				
Y501	730	7'-5"	5847	23	1'-1"	3'-2"	3'-0"			2 3/4"	
Y504	4	3'-3"	13	2	6"	2'-6"	6"				
Y505	706	9'-0"	6627	BT							
Y506	2	4'-0"	8	STR							
Y601	728	3'-10"	4192	BT	1'-10"						
Y602	16	3'-7"	86	STR							
Y603	4 SERIES OF 10	3'-7" / 4'-3"	235	STR							1"
Y604	728	2'-9"	3007	1	1'-1"	1'-10"					
Y605	13	2'-4"	46	2	1'-0"	8"	1'-0"				
Y606	24	4'-3"	153	1	9"	3'-8"					
Y607	1 SERIES OF 12	3'-6" / 4'-8"	74	2	1'-5" / 2'-0"	1'-0"	1'-5" / 2'-0"				
Y608	24	2'-1"	75	STR							
Y609	198	2'-9"	818	STR							
Y610	1 SERIES OF 99	4'-2" / 5'-10"	743	2	1'-11" / 2'-9"	8"	1'-11" / 2'-9"				

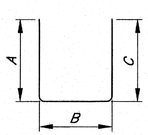
* FOR INFORMATION ONLY

NOTES:

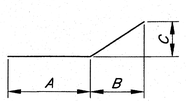
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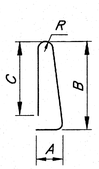
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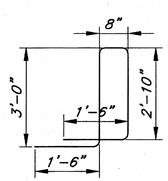
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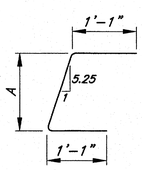
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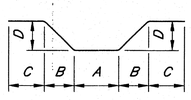
TYPE-23



Y505



Y601



TYPE-21

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Plot Scale : 1 = 1
Drawn By/Date : TCooper / 6-7-07 (09:22)

DESIGN AGENCY
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DESIGNED SMK | DRAWN SMK | REVIEWED GTA | DATE 2/23/07
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REINFORCING SCHEDULE

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36 / 36

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