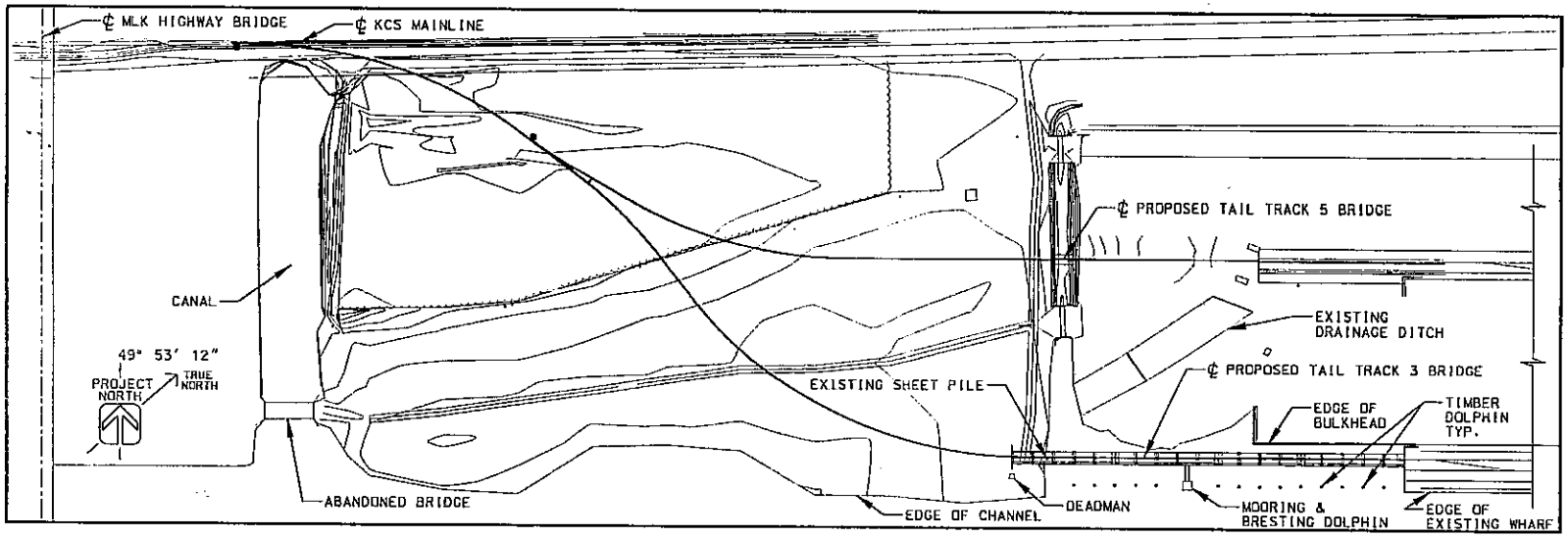
PORT OF PORT ARTHUR

TAIL TRACK PLANS



VICINITY MAP

NO SCALE

TRANSYSTEMS CORPORATION

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INDEX OF SHEETS

SHEET NO.	DRAWING TITLE
C-1	COVER SHEET
I-1	INDEX SHEET
LM-1	LOCATION MAP
PP-1	TRACK PLAN
PP-2	TRACK PROFILES
D-1	DRAINAGE DETAILS

SHEET NO.	DRAWING TITLE
T-1	TYPICAL SECTIONS
CS-1	CROSS SECTIONS
CS-2	CROSS SECTIONS
CS-3	CROSS SECTIONS
CS-4	CROSS SECTIONS
CS-5	CROSS SECTIONS

SHEET NO.	DRAWING TITLE
B-1	GENERAL NOTES & SUMMARY OF QUANTITIES
B-2	GENERAL PLAN & ELEVATION (TRACK 3 BRIDGE)
B-3	GENERAL PLAN & ELEVATION (TRACK 3 BRIDGE)
B-4	GENERAL PLAN & ELEVATION (TRACK 5 BRIDGE)
B-5	MISCELLANEOUS DETAILS
B-6	MISCELLANEOUS DETAILS
B-7	ABUTMENT 1 DETAILS
B-8	ABUTMENT 1 DETAILS
B-9	TYPICAL BENT DETAILS
B-10	TYPICAL BENT DETAILS
B-11	SPECIAL BENT & SLAB DETAILS (SPANS 19 & 20)
B-12	PRESTRESSED CONCRETE PILE DETAILS
B-13	TYPICAL BOX BEAM DETAILS
B-14	TYPICAL BOX BEAM DETAILS
B-15	STRUCTURAL STEEL DETAILS
B-16	HANDRAIL PANEL DETAILS
B-17	TIMBER DOLPHIN DETAILS
B-18	MOORING & BRESTING DOLPHIN DETAILS
B-19	MOORING & BRESTING DOLPHIN DETAILS
B-20	MISCELLANEOUS DOLPHIN DETAILS
B-21	DEADMAN DETAILS

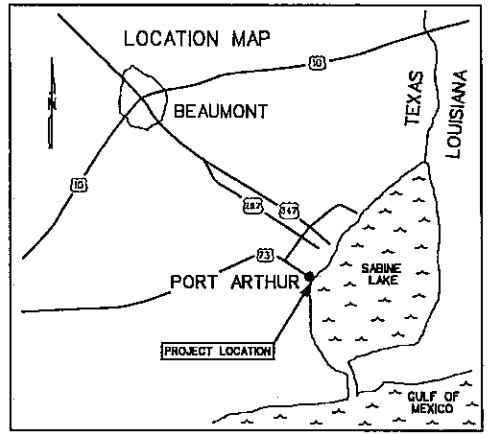
TRANSYSTEMS CORPORATION

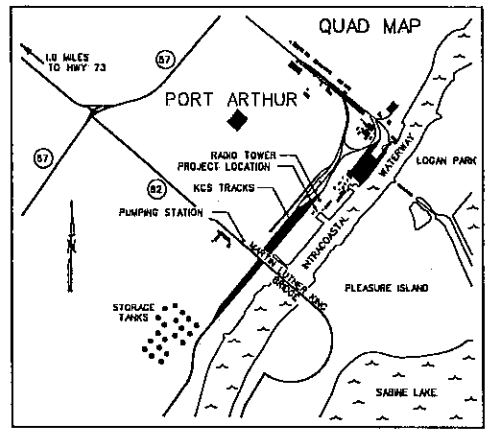
03 JAN 2000

ABBREVIATIONS

A.A.R.	AMERICAN ASSOCIATION OF RAILROADS
A.R.E.A.	AMERICAN RAILWAY ENGINEERING ASSOCIATION
A.S.T.M.	AMERICAN SOCIETY FOR TESTING AND MATERIALS
A.W.G.	AMERICAN WIRE GAUGE
&	AND
APPROX.	APPROXIMATE
ASPH.	ASPHALT
℄	BASE LINE
B.M.	BENCH MARK
BITM.	BITUMINOUS
BLDG.	BUILDING
℄	CENTER LINE
CO	COUNTY
C.O.	CLEANOUT
CONC.	CONCRETE
CONSTR.	CONSTRUCTION
CON'T	CONTINUED
CONTR.	CONTRACTOR
CP	CONTROL POINT WITH ELEVATION
CTRS.	CENTERS
CTRL	CONTROL
CU YDS	CUBIC YARDS
C.M.P.	CORRUGATED METAL PIPE
D	DEGREE OF CURVATURE
DIA. or ⌀	DIAMETER
D.O.T.	DEPARTMENT OF TRANSPORTATION
DWG.	DRAWING
EA.	EACH
ELEV.	ELEVATION
ENE	EAST NORTHEAST
EQ.	EQUAL
EXIST./EX.	EXISTING
FES	FLARED END SECTION
F.L.	FLOW LINE
FT. OR FT	FEET
FT. IN.	FEET INCH
FT. LBS.	FOOT POUNDS
F.V.	FIELD VERIFY
G	GAS
GA.	GAUGE
GD.	GUARD
GRND	GROUND
GV	GAS VALVE
HB	HEADBLOCK
HWY	HIGHWAY
I.D.	INSIDE DIAMETER
I.E.	INVERT ELEVATION
INCL.	INCLUDING
IN	INCHES
JT.	JOINT
KCS	KANSAS CITY SOUTHERN RAILROAD
LB/YD	POUNDS PER YARD
L	LENGTH
LB. or LBS.	POUNDS
L.F.	LINEAR FEET
L.P.	LIGHT POLE
L.S.	LUMP SUM
LT.	LEFT
LH OR L.H.	LEFT HAND
L.O.C.	LIMITS OF CONSTRUCTION
MANG.	MANGANESE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.L.	MAIN LINE
M.P.H.	MILES PER HOUR
M.U.T.C.D.	MANUAL UNIFORM TRAFFIC CONTROL DEVICES
M.H.	MANHOLE
MI	MILES
MP	MILE POST
(N)	NORTH
No.	NUMBER
N.T.S.	NOT TO SCALE
(O.S.H.A.)	OCCUPATIONAL SAFETY AND HEALTH ACT
O.T.M.	OTHER TRACK MATERIALS

P.O.T.	POINT ON TANGENT
P.C.	POINT OF CURVE
P.I.T.O.	POINT OF INTERSECTION OF TURNOUT
P.P.	POWER POLE
PROP.	PROPERTY
P.S.I.	POUNDS/SQUARE INCH
P.T. OR PT	POINT OF TANGENT
P.S.	POINT OF SWITCH
PVC	POINT OF VERTICAL CURVE
PVMT.	PAVEMENT
P.V.I.	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
PERF	PERFORATED PIPE
PI	POINT OF INTERSECTION
P.O.C.	POINT OF CURVE
P.O.T.	POINT ON TANGENT
REF.	REFERENCE
R, R. OR RAD.	RATE OF VERTICAL CHANGE OR RADIUS
R.C.A.P.	REINFORCED CONCRETE ARCH PIPE
R.C.P.	REINFORCED CONCRETE PIPE
RD.	ROAD
R.E.	AMERICAN RAILWAY ENGINEERING ASSOCIATION
R	RATE OF CHANGE
R/W	RIGHT-OF-WAY
RR	RAILROAD
RT.	RIGHT
RH OR R.H.	RIGHT HAND
R.O.W.	RIGHT OF WAY
SHT.	SHEET
SPEC.	SPECIFICATION
SQ.	SQUARE
SNSG	STEEL MANGANESE SELF GUARDED
STA.	STATION
SYM.	SYMMETRICAL
S	SOUTH
SF	SILT FENCE
SSW	SOUTH SOUTHWEST
STD.	STANDARD
TAN.	TANGENT
TELE.	TELEPHONE
THEO.	THEORETICAL
THRU.	THROUGH
T/R	TOP OF RAIL
TRK.	TRACK
T.F.	TRACK FOOTAGE
T.M.	TRACK MILE
T.O.	TURNOUT
TYP.	TYPICAL
V.C.	VERTICAL CURVE
VPI	VERTICAL POINT OF INTERSECTION
VPC	VERTICAL POINT OF CURVE
VPT	VERTICAL POINT OF TANGENCY
W/	WITH
WV	WATER VALVE
XING	RAILROAD CROSSING
YD.	YARD





GENERAL NOTES

1. ALL WORK REQUIREMENTS SHOWN ON THESE DRAWINGS AND NOT OTHERWISE DETAILED SHALL BE ACCOMPLISHED AS SPECIFIED IN THE KCS RAILROAD COMPANY STANDARDS FOR TRACKWORK AND CONSTRUCTION SPECIFICATIONS AND THE MOST CURRENT AMERICAN RAILWAY ENGINEERING ASSOCIATION (A.R.E.A.) MANUAL FOR RAILWAY ENGINEERING. IN THE EVENT OF CONFLICTS BETWEEN THE SPECIFICATIONS, THE MORE RESTRICTIVE WILL APPLY. STANDARD PLANS AND SPECIFICATIONS FROM THE STATE OF TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT), STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION AND THE CITY OF PORT ARTHUR, TX OR JEFFERSON COUNTY, SHALL BE UTILIZED FOR CIVIL AND UTILITY WORK. CONTRACTOR WILL CONDUCT HIS WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, DEPT OF LABOR PART 1926 AND SHALL COMPLY WITH ALL KCS SAFETY REQUIREMENTS WHEN OCCUPYING OR WORKING WITHIN KCS RIGHT-OF-WAY.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL UTILITIES AND PROTECT THEM FROM DAMAGE. THE LOCATION OF ALL AERIAL AND UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND SOME ITEMS MAY NOT BE INDICATED IN THE PLANS. UNDERGROUND UTILITIES, WHETHER INDICATED OR NOT, SHALL BE LOCATED AND FLAGGED BY THE UTILITIES AT THE REQUEST OF THE CONTRACTOR. THE CONTRACTOR SHALL NOT BEGIN EXCAVATION IN THE AREA OF UNDERGROUND UTILITIES UNTIL ALL SUCH UTILITIES HAVE BEEN LOCATED AND IDENTIFIED AND THEN ONLY WITH EXTREME CARE TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY. THE CONTRACTOR SHALL BEAR THE TOTAL EXPENSE OF REPAIR OR REPLACEMENT OF SAID UTILITIES DAMAGED BY OPERATION IN CONNECTION WITH EXECUTION OF THE WORK. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION EFFORTS WITH ALL OTHER LOCAL UTILITY COMPANIES PERTINENT TO PROSECUTION OF THE WORK.
3. THE CONTRACTOR SHALL SUBMIT A PROPOSED CONSTRUCTION SCHEDULE TO THE KCS ENGINEER FOR REVIEW. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL ACTIVITIES WITH THE RAILROAD AND ALL APPROPRIATE AGENCIES WHO HAVE JURISDICTION. THIS SCHEDULE IS SUBJECT TO APPROVAL BY KCS ENGINEER AND NO WORK SHALL BE STARTED UNTIL SAID APPROVAL IS GIVEN. ALL CONSTRUCTION ACTIVITY DURING THE COURSE OF THE CONTRACT IS SUBJECT TO CHANGE IF THE WORK CONFLICTS WITH KCS OPERATIONS. THE CONTRACTOR SHALL COORDINATE HIS SCHEDULE TO CONFORM WITH KCS REQUIREMENTS.
4. AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY AND AT THE EXPENSE OF THE CONTRACTOR TO A CONDITION EQUAL OR BETTER THAN EXISTING, AS APPROVED BY THE KCS ENGINEER OR AUTHORIZED REPRESENTATIVE.
5. THE CONTRACTOR SHALL SUBMIT A PLAN FOR STORAGE, PARKING AND SERVICE AREAS TO KCS FOR REVIEW AND APPROVAL. THE PLAN MUST BE SUBMITTED AND APPROVED PRIOR TO COMMENCING WORK.
6. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE HAUL ROUTES (STATE HIGHWAYS, COUNTY ROADS OR CITY STREETS) WITH THE APPROPRIATE AGENCIES WHO HAVE JURISDICTION OVER THE AFFECTED ROUTE. THE HAUL ROUTE FOR EARTHWORK OPERATIONS SHALL BE LOCATED TO PREVENT INTERFERENCE WITH KCS AND LOCAL COMMERCIAL OPERATIONS. ON-SITE HAUL ROUTES SHALL BE MAINTAINED BY THE CONTRACTOR AND SHALL BE RESTORED TO THE ORIGINAL CONDITIONS UPON COMPLETION OF BEING USED AS A HAUL ROUTE AT THE CONTRACTOR'S EXPENSE.
7. THE CONTRACTOR SHALL APPLY FOR AND OBTAIN ALL NECESSARY PERMITS AND LICENSES AND SHALL COMPLY WITH ANY AND ALL FEDERAL, STATE AND LOCAL ORDINANCES, LAWS OR REGULATIONS APPLICABLE TO PERFORM THE WORK.
8. IN THE EVENT IT BECOMES NECESSARY, THE CONTRACTOR IS RESPONSIBLE TO PROVIDE TEMPORARY SHORING, BRACING AND/OR FALSEWORK REQUIRED TO SUPPORT AND PROTECT ALL ITEMS AFFECTED BY THE WORK. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER DETAILS, DESIGN AND PROCEDURE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS FOR ALL TEMPORARY SHORING, BRACING AND/OR FALSEWORK. SAFETY RAILING SHALL BE PROVIDED AT THE TOP OF THE TEMPORARY SHORING, AS REQUIRED BY OSHA. WHEN THE CONTRACTOR IS NOT WORKING IN THE EXCAVATED AREA, THE AREA SHALL BE ADEQUATELY BARRICADED BY THE CONTRACTOR.
9. ANY MATERIALS TO BE REMOVED FROM THE SITE FOR DISPOSAL SHALL BE HAULED OFF THE SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING AND MAINTAINING AN EFFECTIVE EROSION CONTROL PLAN IN ORDER TO PREVENT UNNECESSARY EROSION OF MATERIALS OF KCS, THE RAILROAD OR ADJACENT PROPERTY OWNERS. THE CONTRACTOR SHALL PROVIDE PERMANENT SIDE SLOPE SEEDING PER KCS CONSTRUCTION SPECIFICATIONS.
11. FENCING, CLEARING, CLEARING & GRUBBING, INSTALLATION OF DRAINAGE STRUCTURES AND PLACEMENT OF SUBBALLAST, AND TRACK INCLUDED IN THIS CONTRACT.
12. WHERE EXISTING CULVERTS ARE TO BE EXTENDED THE CONTRACTOR SHALL EXPOSE EXISTING DRAINAGE STRUCTURES AND VERIFY SIZE BEFORE ORDERING.
13. ALL BARRICADES, WARNING SIGNS, LIGHTS, DEVICES, ETC. FOR THE GUIDANCE AND PROTECTION OF TRAFFIC AND PEDESTRIANS MUST CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
14. EMBANKMENT QUANTITIES SHOWN IN PLANS AND CROSS SECTION SHEETS DO NOT INCLUDE COMPACTION FACTOR AND ARE FOR SOIL ONLY.
15. KCS RAILROAD STATIONING FOR THIS PROJECT IS BASED UPON STATIONS ESTABLISHED FOR THE CENTERLINE OF THE EXISTING KCS INDUSTRY LEAD. UNLESS OTHERWISE NOTED.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND REVIEWING SUBSURFACE INVESTIGATIVE REPORT FROM ENGINEER.

PORT OF PORT ARTHUR TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

LOCATION MAP

RECOMMENDED: _____
DATED: _____
APPROVED: _____
DATED: _____

SUBDIV: _____
LINE SEG: _____ AUTH: _____

DESIGNED BY: JTL	FILE	DATE	SHEET NO.
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DRAWN BY: JTL			

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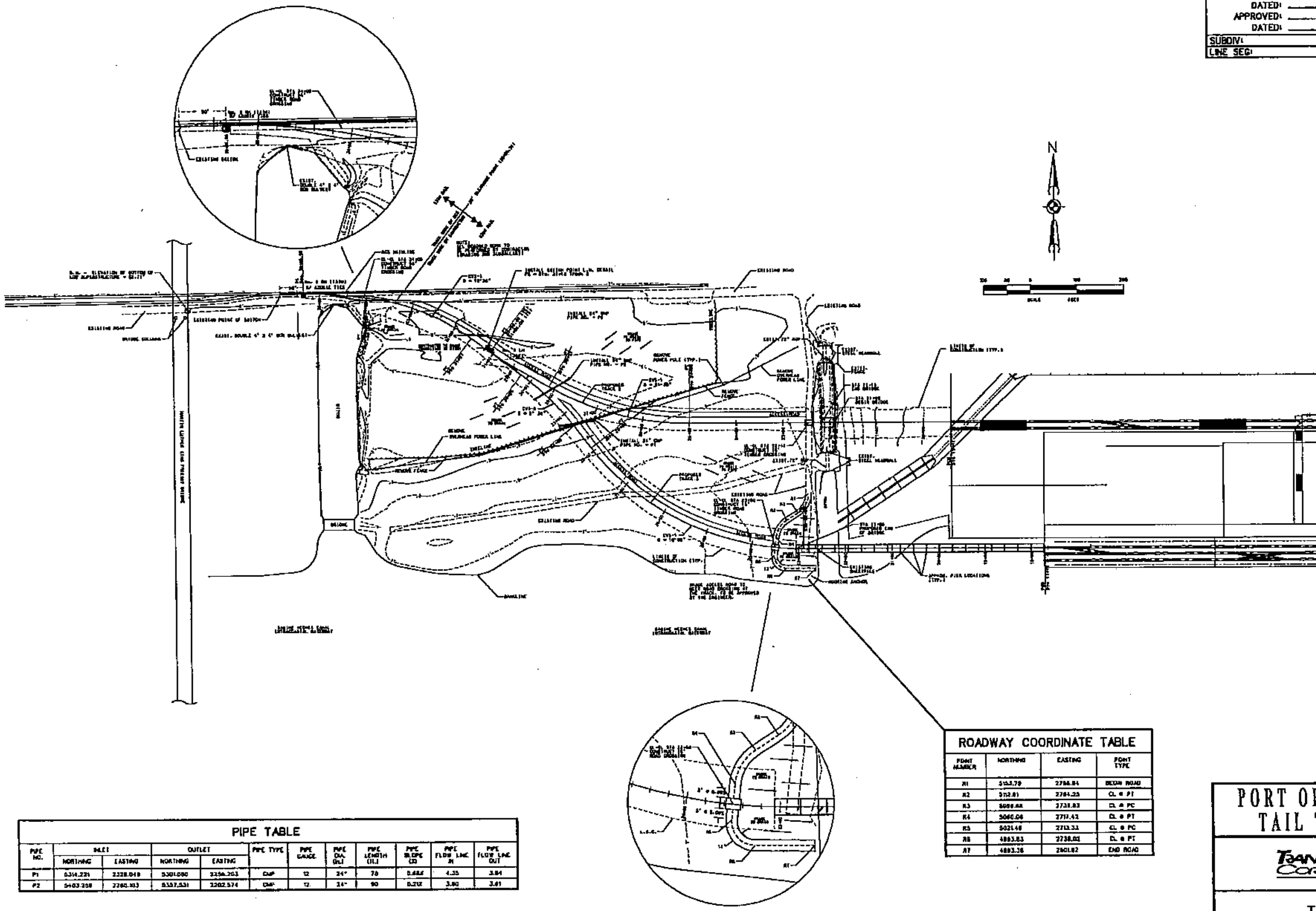

ROADWAY COORDINATE TABLE			
POINT NUMBER	NORTHING	EASTING	POINT TYPE
R1	5153.79	2786.84	BEGIN ROAD
R2	5112.81	2784.25	CL @ PT
R3	5086.44	2731.83	CL @ PC
R4	5060.06	2717.42	CL @ PT
R5	5021.48	2713.31	CL @ PC
R6	4883.83	2738.01	CL @ PT
R7	4883.36	2801.82	END ROAD

PIPE TABLE											
PIPE NO.	INLET		OUTLET		PIPE TYPE	PIPE GAUGE	PIPE DIA. (IN.)	PIPE LENGTH (LF)	PIPE SLOPE (%)	PIPE FLOW LINE IN	PIPE FLOW LINE OUT
	NORTHING	EASTING	NORTHING	EASTING							
P1	5314.221	2328.040	5301.080	2356.203	CMP	12	24"	76	0.68%	4.35	3.84
P2	5403.250	2280.103	5357.531	2302.574	CMP	12	24"	90	0.21%	3.80	3.61

PORT OF PORT ARTHUR TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

TRACK PLAN

DESIGNED BY: JTL	FILE	DATE	SHEET NO.
CHECKED BY: JJD DRAWN BY: JTL	1019901375	01/05/00	PP-1

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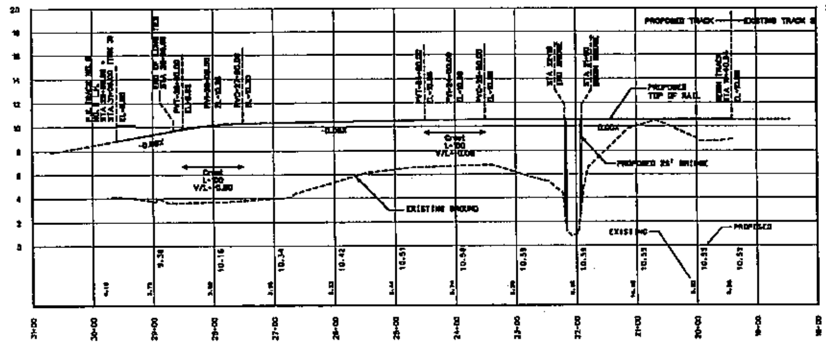
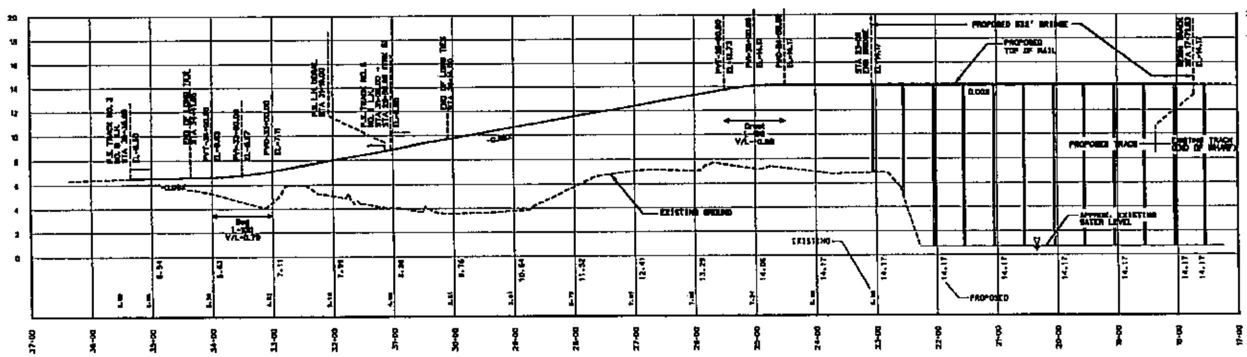


TRACK 5



TRACK 3

PORT OF PORT ARTHUR TAIL TRACK PLANS			
TRANSYSTEMS CORPORATION			
TRACK PROFILE			
DESIGNED BY: JTL	FILE	DATE	SHEET NO.
CHECKED BY: JJO DRAWN BY: JTL	1019901375	01/05/00	PP-2

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DATED: _____

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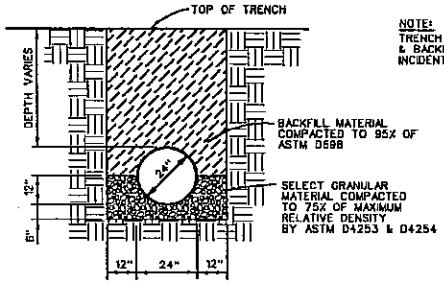
LINE SEG: AUTH:

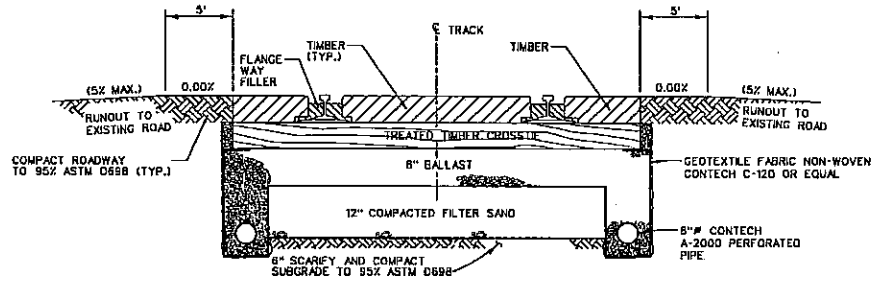


NOTE:
TRENCH EXCAVATION & BACKFILL SHALL BE INCIDENTAL TO BID.

TYPICAL 24" CMP PIPE TRENCH DETAIL
NO SCALE

PIPE TABLE

PIPE NO.	INLET NORTHING	INLET EASTING	OUTLET NORTHING	OUTLET EASTING	PIPE TYPE	PIPE GAUGE	PIPE DIA. (in.)	PIPE LENGTH (ft.)	PIPE SLOPE (ft)	PIPE FLOW LINE IN	PIPE FLOW LINE OUT
P1	5314.331	2338.048	5301.080	2255.303	CMP	12	24"	73	0.66%	4.35	3.84
P2	5463.738	2260.103	5307.531	2202.574	CMP	12	24"	90	0.21%	3.80	3.61



TIMBER ROAD CROSSING SECTION
NO SCALE

NOTE:
WHERE NOT INDICATED IN THE PLANS AND SPECIFICATIONS ROAD CROSSINGS SHALL BE CONSTRUCTED PER CURRENT KCS STANDARDS.

INSTALLATION OF 6" PERFORATED PIPE, GEOTEXTILE SAND AND REQUIRED ROAD CROSSING SIGNS SHALL BE CONSIDERED PART OF THE ROAD CROSSING.

PORT OF PORT ARTHUR TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

DRAINAGE DETAILS

DESIGNED BY: JTL	FILE	DATE	SHEET NO.
CHECKED BY: JJD DRAWN BY: JTL	101990375	01/05/00	D-1

RECOMMENDED: _____
DATED: _____
APPROVED: _____
DATED: _____

SUBDIV: _____
LINE SEG: _____ AUTH: _____

TRACK 3

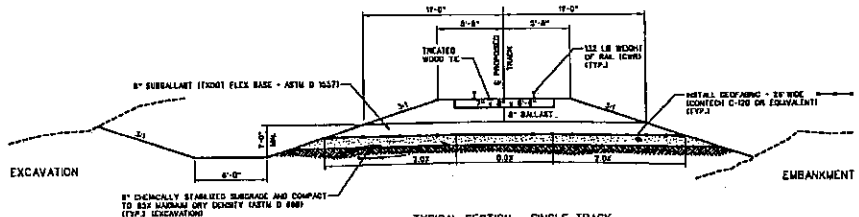
CURVE	CURVE TYPE	POINT	STATION	NORTHING	EASTING	BEARING
BEGIN TRACK 3		POT	17+71.83	5038.384	3383.344	S 88°57'45" W
CV3-1	DELTA = 61°51'22" (R) DEGREE = 10° 00'00" R = 573.69' L = 618.94' T = 278.91'	PC PI PT	22+89.24 25+68.18 28+07.81	5035.066 5034.870 5284.117	2775.630 2498.920 2324.564	S 88°57'45" W N 38°10'52" W
CV3-2	DELTA = 14°54'48" (L) DEGREE = 9°30'00" R = 603.80' L = 156.98' T = 79.03'	PC PI PT	28+87.68 29+46.72 30+24.67	5301.191 5363.310 5410.767	2287.486 2238.630 2175.441	N 38°10'52" W N 53°09'40" W
DERAL	L.H. SWITCH POINT	PS	30+16.00	5488.809	2100.615	N 53°09'40" W
CV3-3	DELTA = 30°36'48" (L) DEGREE = 12°30'00" R = 459.28' L = 244.90' T = 125.70'	PC PI PT	31+57.40 32+83.10 34+02.31	5490.470 5565.950 5578.728	2069.308 1966.796 1843.854	N 53°09'40" W N 83°42'27" W
TRACK 3 *8-RH	DELTA = 7°09'10" (L)	PI TO PS	35+04.18 35+35.85	5581.128 5590.581	1740.515 1710.965	N 83°42'27" W S 86°08'23" W

TRACK 5

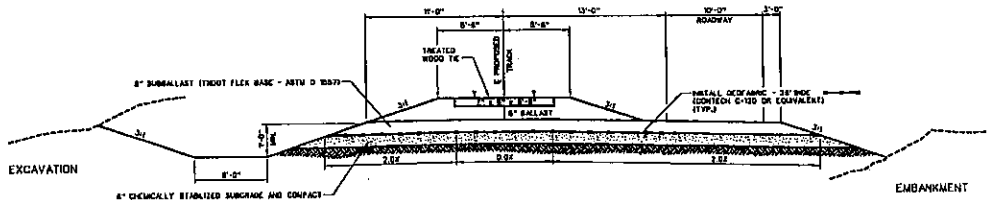
PS 28+99.69- 31+08.00 (TRACK 3)

CURVE	CURVE TYPE	POINT	STATION	NORTHING	EASTING	BEARING
BEGIN TRACK 5		POT	18+40.84	5308.286	3063.178	S 88°58'06" W
CV5-1	DELTA = 28°46'04" (R) DEGREE = 8°30'00" R = 603.80' L = 313.34' T = 160.48'	PC PI PT	24+99.48 26+58.84 28+12.80	5308.148 5305.110 5384.745	2634.259 2373.780 2234.458	S 88°58'06" W N 60°14'50" W
TRACK 5 *8-LH	DELTA = 7°09'10" (R)	PI TO PS	29+30.14 29+58.69	5443.080 5490.804	2132.140 2108.811	N 60°14'50" W N 53°09'40" W

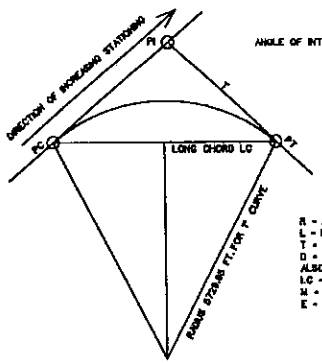
PROJECT B.M.: SEE SHEET PP-1



TYPICAL SECTION - SINGLE TRACK
NOT TO SCALE



TYPICAL SECTION - SINGLE TRACK WITH ROADWAY
NOT TO SCALE



R = RADIUS = 50/SIN (D/2)
L = LENGTH = 100 (I/D)
T = TANGENT = R TAN (I/2)
D = DEGREE OF CURVATURE = 100 (I/L), ALSO SIN (D/2) = 50/R
LC = LONG CHORD = 2R SIN (I/2)
M = MIDDLE ORDINATE = R (1-COS (I/2)
E = EXTERNAL = T TAN (I/4)

USING CHORD DEFINITION

NOTES:

1. TOPSOIL EXCAVATION TO BE STOCKPILED FOR PLACEMENT ON CUT AND FILL SLOPES.
2. SUBGRADE WORK NOT TO TAKE PLACE ANY CLOSER THAN 8'-0" OFFSET FROM THE CENTERLINE OF K.C.S. MAINLINE.
3. 8" MINIMUM SUBBALLAST REQUIRED FOR ALL NEW CONSTRUCTION.
4. SUBBALLAST TO BE ADJUSTED BY LOCATION REQUIREMENTS.
5. BALLAST THICKNESS TO BE 8" BELOW BOTTOM OF TIE FOR WOOD TIES.

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

TYPICAL SECTIONS

DESIGNED BY: JTL	FILE	DATE	SHEET NO.
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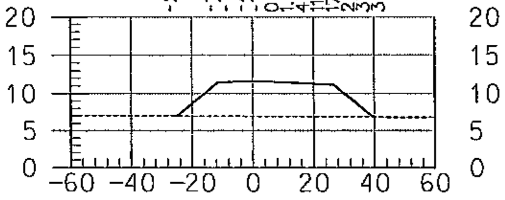
RECOMMENDED:	
DATED:	
APPROVED:	
DATED:	
SUBDIV:	
LINE SEG:	AUTH: -

PROPOSED SUBGRADE (OFFSET/ ELEV.)

-25.02/7.02
-11.60/11.45
-7.41/11.53
-4.00/11.60
-1.12/11.60
0.00/11.60
1.18/11.60
4.00/11.60
11.60/11.45
17.51/11.33
26.60/11.15
37.82/7.45
39.56/6.87

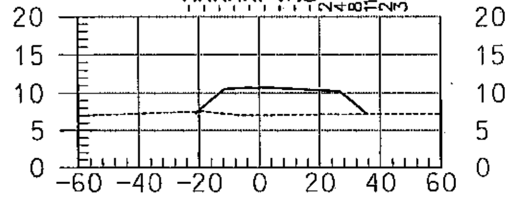


24+00

-60.00/7.08
6.19/6.96
35.39/5.91
47.31/6.81
60.00/6.81

Area Cut : 0.00
Area Fill: 228.65
Volume Cut : 0.00
Volume Fill: 797.03

-21.09/7.38
-21.01/7.43
-20.98/7.44
-20.66/7.57
-20.59/7.60
-11.60/10.57
-4.00/10.72
-3.28/10.72
-0.00/10.72
2.00/10.72
4.00/10.72
8.73/10.62
11.60/10.57
26.60/10.27
35.75/7.24



26+00

-60.00/7.01
-41.68/7.29
-18.57/7.63
-7.20/7.10
2.92/7.09
28.19/7.22
43.65/7.27
44.98/7.27
45.87/7.26
49.63/7.27
60.00/7.27

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-20.21/5.96
-13.10/8.31
-11.60/8.80
-4.00/8.95
-0.00/8.95
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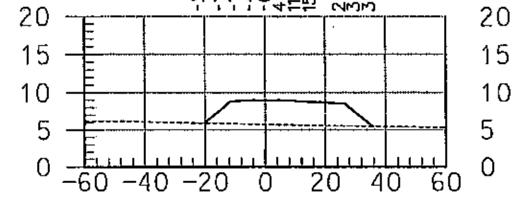
11.60/8.80
15.26/8.73
26.60/8.50
30.52/7.21
35.72/5.49



28+00

-60.00/6.26
-51.83/6.23
-47.20/6.21
-45.89/6.19
-45.00/6.18
22.72/5.57
60.00/5.33

EXIST. GROUND (OFFSET/ ELEV.)

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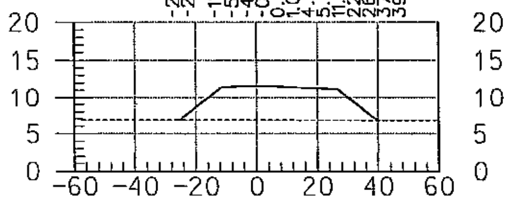
Volume Fill: 486.57

STATIONING ALONG TRACK 3

PROPOSED SUBGRADE (OFFSET/ ELEV.)

-25.38/6.90
-21.87/8.06
-11.60/11.45
-5.88/11.56
-4.00/11.60
-0.99/11.60
-0.00/11.60
1.01/11.60
4.00/11.60
5.92/11.56
11.60/11.45
22.93/11.22
26.60/11.15
37.73/7.48
39.70/6.83



23+07

-57.62/6.89
-20.79/6.90
3.86/6.89
55.59/6.80
60.00/6.80

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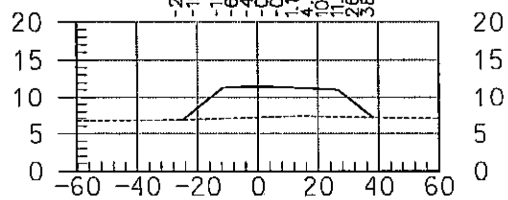
Volume Cut : 0.00
Volume Fill: 0.00

-25.04/6.90
-19.43/8.76
-11.60/11.34
-6.56/11.44
-4.00/11.49
-0.92/11.49
-0.00/11.49
1.10/11.49
4.00/11.49
10.59/11.36
11.60/11.34
26.60/11.04
38.12/7.24



25+00

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-22.97/6.91
17.18/7.49
19.16/7.36
60.00/7.10

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-19.57/7.05
-17.94/7.59
-11.60/9.68
-4.00/9.84
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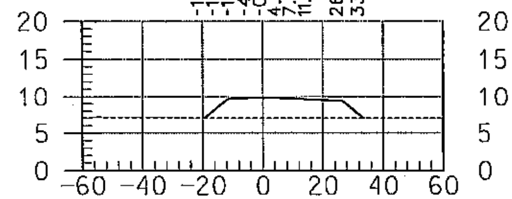
4.00/9.84
7.69/9.76
11.60/9.68
26.60/9.38
33.62/7.07



27+00

-60.00/7.18
-32.45/7.15
-21.46/7.05
-7.34/7.07
56.42/7.06
60.00/7.04

EXIST. GROUND (OFFSET/ ELEV.)

Area Cut : 0.00
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PORT OF PORT ARTHUR TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

CROSS SECTIONS

DESIGNED BY: JTL CHECKED BY: JJD DRAWN BY: JTL	FILE	DATE	SHEET NO.
	1019901375	01/06/00	CS-1

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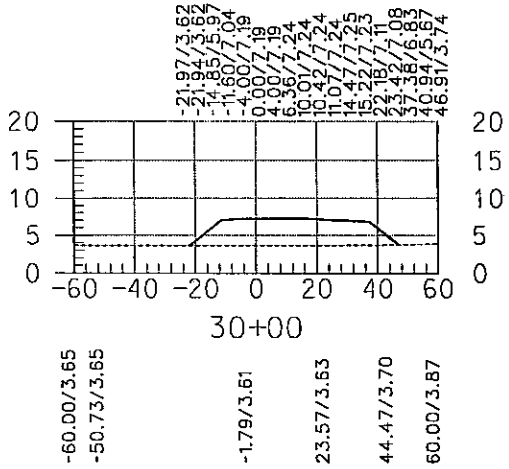
PROPOSED SUBGRADE (OFFSET/ ELEV.)

EXIST. GROUND (OFFSET/ ELEV.)



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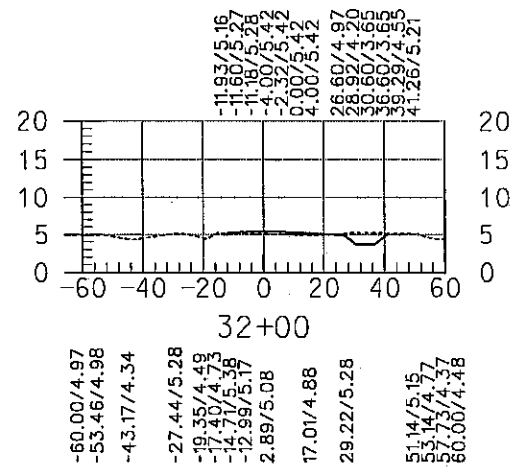

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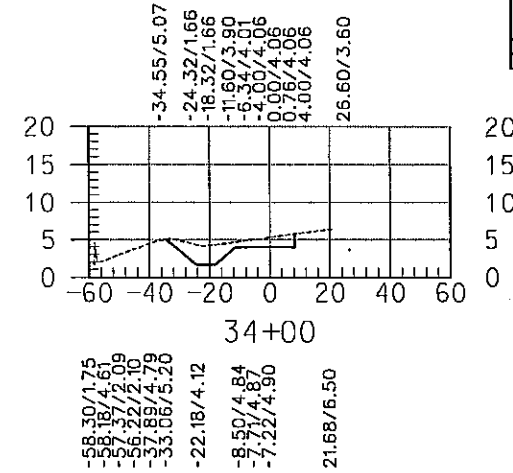

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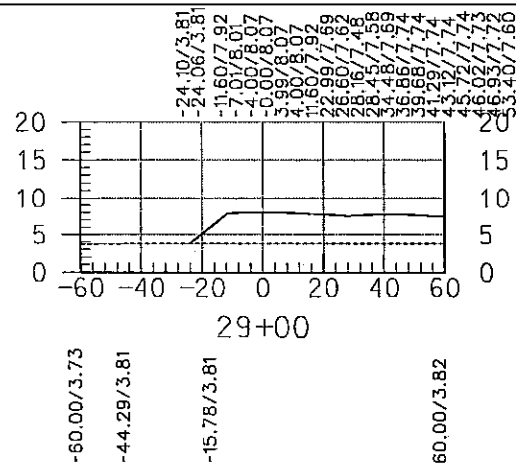
STATIONING ALONG TRACK 3

PROPOSED SUBGRADE (OFFSET/ ELEV.)

EXIST. GROUND (OFFSET/ ELEV.)



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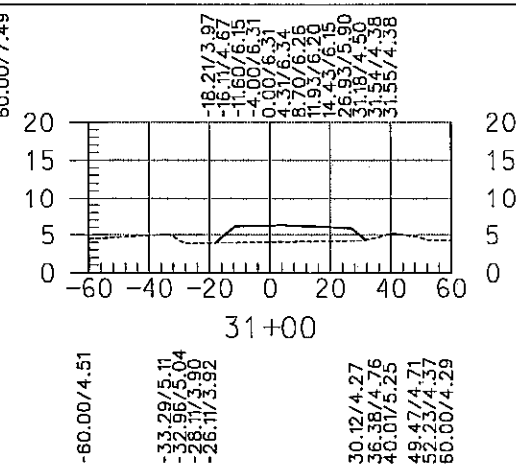

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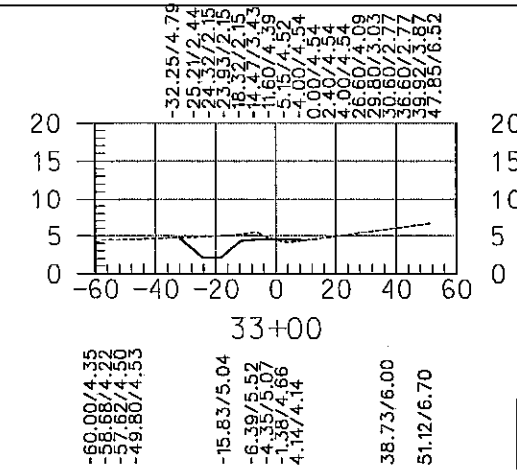

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PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

CROSS SECTIONS

DESIGNED BY: JTL	FILE	DATE	SHEET NO.
CHECKED BY: JJJ DRAWN BY: JTL	101990137S	01/05/00	CS-2

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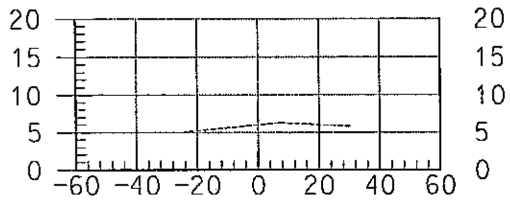
PROPOSED SUBGRADE (OFFSET/ ELEV.)



35+35

-24.91/4.99
-22.07/5.17
-9.09/5.64
7.41/6.34

EXIST. GROUND (OFFSET/ ELEV.)

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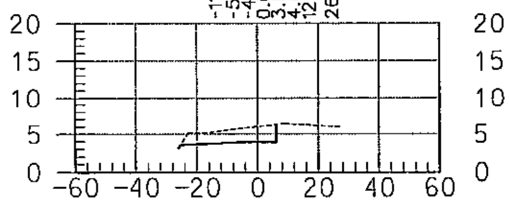
STATIONING ALONG TRACK 3

-11.60/3.81
-5.85/3.93
-4.00/3.97
0.00/3.97
3.05/3.97
4.00/3.97
12.21/3.80
26.60/3.51

PROPOSED SUBGRADE (OFFSET/ ELEV.)



35+00

-22.83/5.22
-15.01/5.27
-7.73/5.73
9.00/6.45

EXIST. GROUND (OFFSET/ ELEV.)

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PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

CROSS SECTIONS

DESIGNED BY: JTL CHECKED BY: JJD DRAWN BY: JTL	FILE	DATE	SHEET NO.
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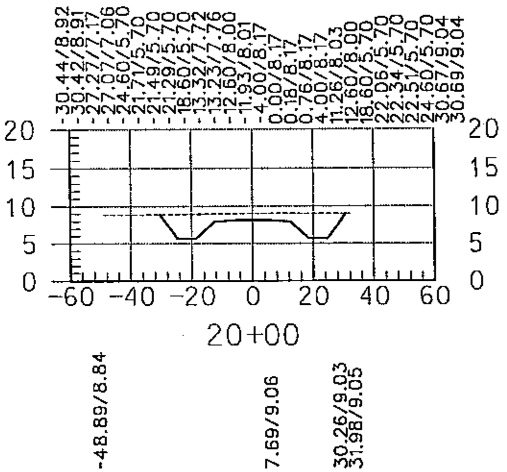

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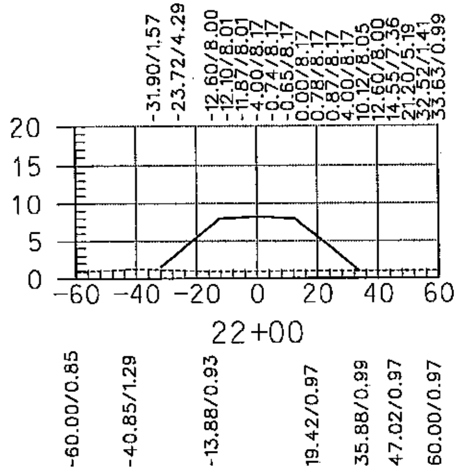

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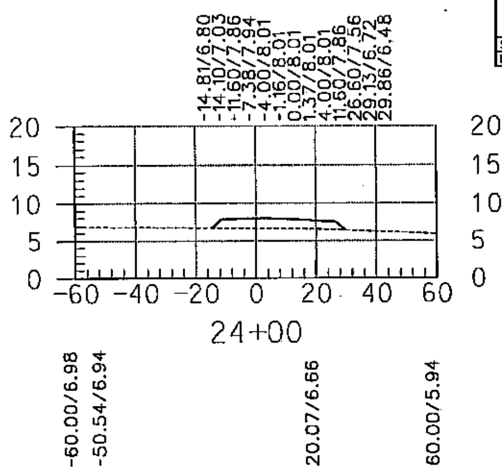

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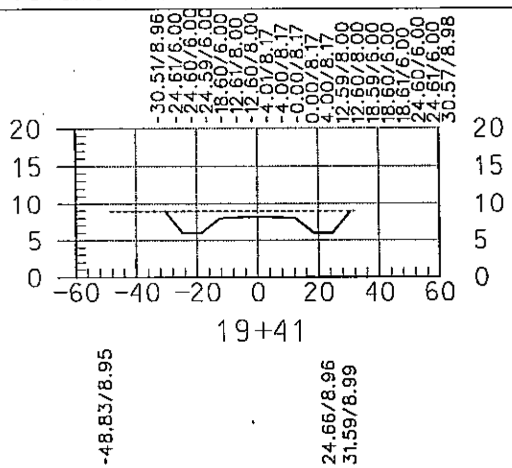
PROPOSED SUBGRADE (OFFSET/ ELEV.)

EXIST. GROUND (OFFSET/ ELEV.)

STATIONING ALONG TRACK 5



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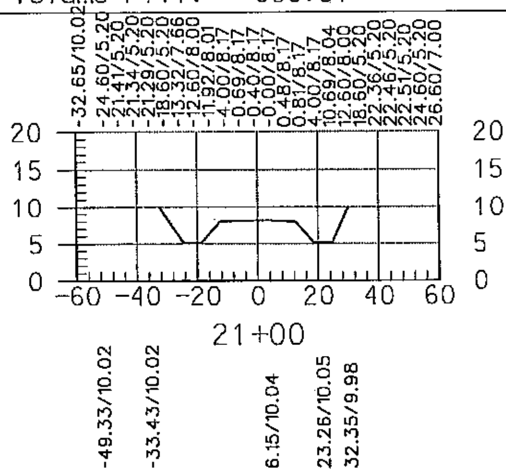

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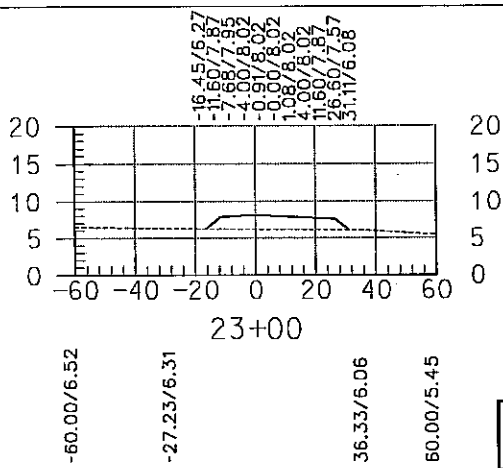

Area Cut : 0.00
Area Fill: 72.13
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Volume Fill: 740.15

PROPOSED SUBGRADE (OFFSET/ ELEV.)

EXIST. GROUND (OFFSET/ ELEV.)

RECOMMENDED:
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PORT OF PORT ARTHUR TAIL TRACK PLANS

TranSystems Corporation

CROSS SECTIONS

DESIGNED BY: JTL	FILE	DATE	SHEET NO.
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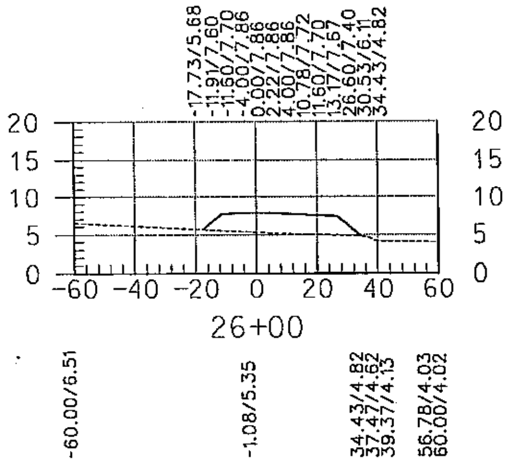
PROPOSED SUBGRADE (OFFSET/ ELEV.)



26+00

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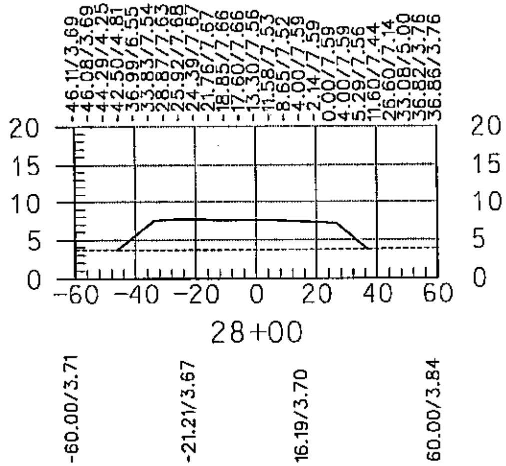

28+00

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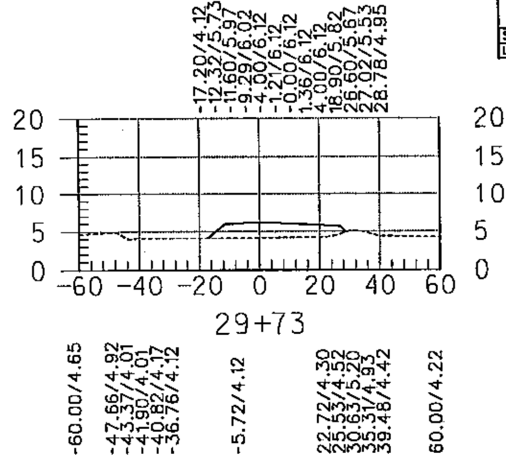

29+73

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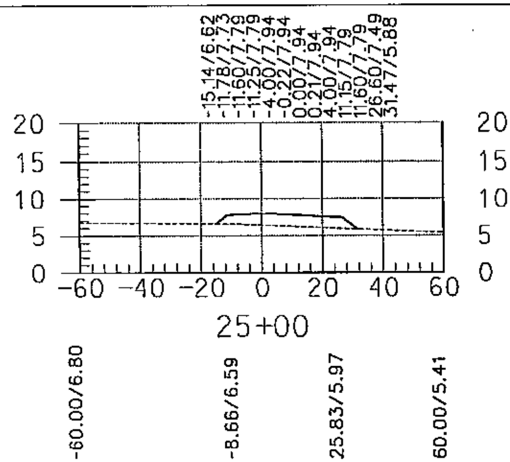
Volume Fill: 276.10

EXIST. GROUND (OFFSET/ ELEV.)

STATIONING ALONG TRACK 5

PROPOSED SUBGRADE (OFFSET/ ELEV.)



25+00

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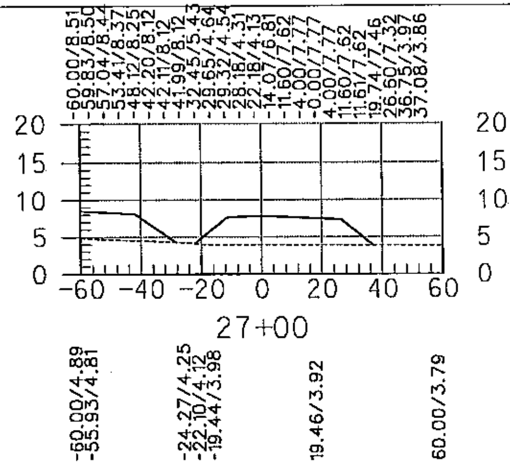

27+00

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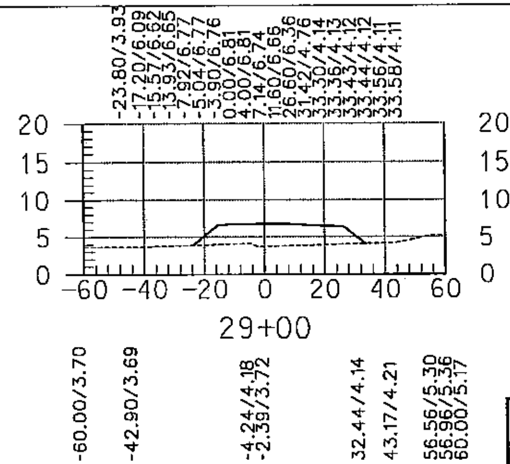

29+00

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EXIST. GROUND (OFFSET/ ELEV.)

PORT OF PORT ARTHUR TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

CROSS SECTIONS

DESIGNED BY: JTL	FILE	DATE	SHEET NO.
CHECKED BY: JJD DRAWN BY: JTL	1019901375	01/05/00	CS-5

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SUMMARY OF ESTIMATED QUANTITIES (TRACK 3)

	ENGLISH	
ITEM	QUANTITY	UNIT
ABUTMENT ROCK BACKFILL	3.3	CU. YDS.
PRECAST BOX BEAM (PB27-11W)	17	EACH
PRECAST BOX BEAM (PB27-11C)	18	EACH
SPECIAL PRECAST BOX BEAM (SPB27-11W)	1	EACH
24" SQUARE PRESTRESSED CONCRETE PILES	7,017	LIN. FT.
7-PILE TIMBER DOLPHIN	14	EACH
MOORING AND BRESTING DOLPHIN	1	EACH
DEADMAN	1	EACH
REINFORCING STEEL - ASTM A615, GRADE 60	32,830	LBS.
CAST-IN-PLACE CONCRETE	277.6	CU. YDS.
HANDRAIL	511	LIN. FT.
STRUCTURAL STEEL - ASTM A36 (MISC.)	4,439	LBS.

SUMMARY OF ESTIMATED QUANTITIES (TRACK 5)

	ENGLISH	
ITEM	QUANTITY	UNIT
ABUTMENT ROCK BACKFILL	6.6	CU. YDS.
CONCRETE SLOPE PAVING	55	SQ. YDS.
PRECAST BOX BEAM (PB27-11)	2	EACH
24" SQUARE PRESTRESSED CONCRETE PILES	426	LIN. FT.
REINFORCING STEEL - ASTM A615, GRADE 60	4,760	LBS.
CAST-IN-PLACE CONCRETE	25.4	CU. YDS.
STRUCTURAL STEEL - ASTM A36 (MISC.)	426	LBS.

GENERAL NOTES:

GENERAL: ALL MATERIAL AND WORKMANSHIP SHALL BE AS PER THE CURRENT (A.R.E.M.A.) AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY ASSOCIATION MANUAL FOR RAILWAY ENGINEERING.

SPECIFICATIONS: THE "PORT OF PORT ARTHUR WHARF EXPANSION PHASE II" SPECIFICATIONS DATED JANUARY 21, 1998 SHALL BE USED ON THIS PROJECT AND THEY SHALL BE SUPPLEMENTED WITH TAIL TRACK SPECIFICATIONS. IN THE EVENT OF CONFLICTS BETWEEN THE PLANS, WHARF EXPANSION SPECIFICATIONS AND TAIL TRACK SPECIFICATIONS, THE PLANS WILL GOVERN FOLLOWED BY THE TAIL TRACK SPECIFICATIONS.

DESIGN LOADING:

LIVE LOAD	COOPER E 80 WITH DIESEL IMPACT FOR BALLAST DECK
DEAD LOAD	
TRACK	200 LBS. PER FOOT OF TRACK
OTHER LOADS AS SPECIFIED BY AREMA	

DESIGN UNIT STRESSES:

CAST-IN-PLACE CONCRETE	F'C = 6,000 PSI
PRESTRESSED CONCRETE PILES	F'C = 8,000 PSI
	F'CI = 4,000 PSI
PRESTRESSED CONCRETE BEAMS	F'C = 8,000 PSI
	F'CI = 4,000 PSI
REINFORCING STEEL (ASTM A615, GRADE 60)	FY = 60,000 PSI
STRUCTURAL STEEL (ASTM A36)	FY = 36,000 PSI

CAST-IN-PLACE-CONCRETE: THE PORTLAND CEMENT USED SHALL BE TYPE I. THE CONCRETE SHALL BE AIR ENTRAINED CONTAINING NOT LESS THAN 5 PERCENT NOR MORE THAN 7 PERCENT AIR BY VOLUME. THE MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE ONE INCH. THE MINIMUM CONCRETE COVER ON REINFORCEMENT SHALL BE TWO INCHES UNLESS INDICATED OTHERWISE. CHAMFER ALL EXPOSED EXTERNAL CORNERS ¾" WITH 45 DEGREE CHAMFER UNLESS OTHERWISE NOTED. ALL CAST-IN-PLACE CONCRETE SHALL BE NORMAL WEIGHT. ALL EMBEDDED ITEMS INCLUDING REINFORCING SHALL BE POSITIVELY SECURED IN PLACE BEFORE CONCRETE PLACEMENT IS COMMENCED.

REINFORCEMENT: STEEL BARS FOR REINFORCEMENT SHALL BE DEFORMED BILLET STEEL BARS CONFORMING TO THE REQUIREMENTS OF ASTM A615, GRADE 60 OR A706. ALL REINFORCEMENT BAR DIMENSIONS ARE OUT TO OUT. FABRICATION OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CHAPTER 7 OF THE CURRENT CRSI MANUAL OF STANDARD PRACTICE. ALL BENT BARS SHALL BE BENT AROUND A 2½" DIAMETER PIN. MINIMUM COVER ON REINFORCEMENT SHALL BE TWO (2) INCHES.

PRESTRESSED CONCRETE PILES: THE CEMENT SHALL BE TYPE I OR MODIFIED ASTM C150 TYPE II. THE MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 1 INCH AND MEET THE REQUIREMENTS OF ASTM C33. THE PRESTRESSING STRANDS SHALL BE ASTM A416 LOW RELAXATION STRANDS WITH A MINIMUM BREAKING STRENGTH OF 270 KSI. SPIRAL WIRE SHALL MEET THE REQUIREMENTS OF ASTM A82 COLD DRAWN WIRE WITH A MINIMUM YIELD STRENGTH OF 70 KSI. THE METAL FLEX TUBING SHALL HAVE A MINIMUM METAL THICKNESS OF 26 GAGE WITH AN INSIDE DIAMETER OF ½ INCHES. THE MINIMUM CONCRETE COVER SHALL BE 3 INCHES UNLESS NOTED OTHERWISE. ALL PORTIONS OF DOWELS SHALL BE EPOXY COATED. THE CAST DOWEL TUBE SHALL BE FILLED WITH SAND, CEMENT, GROUT AND SUPERPLASTICIZER AS REQUIRED BEFORE EMBEDDING THE DOWELS. THE MAXIMUM STRAND TENSION AT RELEASE (MAXIMUM JACKING FORCE BEFORE LOSSES) SHALL BE 28.9 KIPS. THE MINIMUM EFFECTIVE PRESTRESS IN CONCRETE AFTER LOSSES SHALL BE 945 PSI.

FENDERING SYSTEM: THE FENDERING SYSTEM SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL INSTALL THE FENDER, ANCHOR BOLTS AND EMBEDS IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANCHOR BOLT LOCATIONS AND INSTALLATION DETAILS AND FOR MAINTAINING ADEQUATE DISTANCE FOR CORROSION PROTECTION OF REINFORCING. THE FENDERS SHALL HAVE A MINIMUM ENERGY ABSORPTION RATING OF 720 FT-KIPS PER COMBINED UNIT AND A MAXIMUM ENERGY AT ABOVE ENERGY OF 460 KIPS. FOR ADDITIONAL INFORMATION SEE THE SECTION 02466 OF THE WHARF EXPANSION SPECIFICATIONS.

7 - PILE TIMBER DOLPHINS: THE COST OF THE 7 - PILE TIMBER DOLPHIN SHALL INCLUDE THE MATERIAL, TRANSPORTATION, MISCELLANEOUS HARDWARE, ETC. AND INSTALLATION OF THE DOLPHIN AS SHOWN ON THE PLANS.

MOORING AND BRESTING DOLPHIN: THE COST OF THE MOORING AND BRESTING DOLPHIN SHALL INCLUDE THE COST OF ALL MATERIAL, TRANSPORTATION AND INSTALLATION OF THE COMPONENTS AS SHOWN ON THE PLANS. THE DOLPHIN COMPONENTS SHALL INCLUDE CONCRETE, REBAR, PILES, BOLLARD, FENDER, CATWALK, AND THE HARDWARE REQUIRED TO INSTALL THESE COMPONENTS.

STRUCTURAL STEEL: WEIGHT FOR STRUCTURAL STEEL SHOWN IN THE SUMMARY OF ESTIMATED QUANTITIES SHALL INCLUDE PIECES B100, DP100, DP101 AND THE ANGLE JOINT AT THE END OF TRACK 3 BRIDGE. STEEL EMBEDED IN THE CONCRETE SHALL BE CONSIDERED SUBSIDIARY TO THE BID ITEM "CAST-IN-PLACE CONCRETE". THE COST OF THE P100 PLATE SHALL BE SUBSIDIARY TO THE BID ITEM "HANDRAIL".

SETTING PRECAST BOX BEAMS: THE BOX BEAMS SHALL HAVE FULL AND EVEN BEARING UPON THE BRIDGE SEAT AREAS. IF NEEDED, MORTAR CONSISTING OF EQUAL PARTS BY VOLUME OF EPOXY AND DRY SILICA SAND, MIXED IN ACCORDANCE WITH THE MANUFACTURERS DIRECTIONS, SHALL BE SPREAD ON TOP OF THE BEARING PADS TO OBTAIN UNIFORM BEARING. SCRAPE EXCESS MORTAR FROM AROUND BEARING PADS AFTER THE BOX BEAMS ARE SET. THE EPOXY SHALL BE SPEC-BOND 200 EPOXY AVAILABLE FROM CONSPEC MARKETING AND MANUFACTURING, 636 SOUTH TERRACE, KANSAS CITY, KS. 66111 PHONE 931-287-1700, OR APPROVED EQUAL. THE COST OF THE MORTAR SHALL BE INCIDENTAL TO THE COST OF THE PRECAST BOX BEAMS.

DEADMAN: THE COST OF THE DEADMAN SHALL INCLUDE THE COST OF ALL MATERIAL, TRANSPORTATION AND ISTALLATION OF THE COMPONENTS AS SHOWN ON THE PLANS. THE DEADMAN COMPONENTS SHALL INCLUDE CONCRETE, REBAR, PILES, BOLLARD AND THE NEW HARDWARE REQUIRED TO INSTALL THESE COMPONENTS.

STEEL H-PILE INSTALLATION: STEEL H-PILES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE TXDOT CONSTRUCTION SPECIFICATIONS.

TRIM EXISTING SHEET PILING: THE COST TO TRIM THE EXISTING SHEET PILING SHALL BE INCIDENTAL TO THE COST OF THE PRECAST BOX BEAMS.

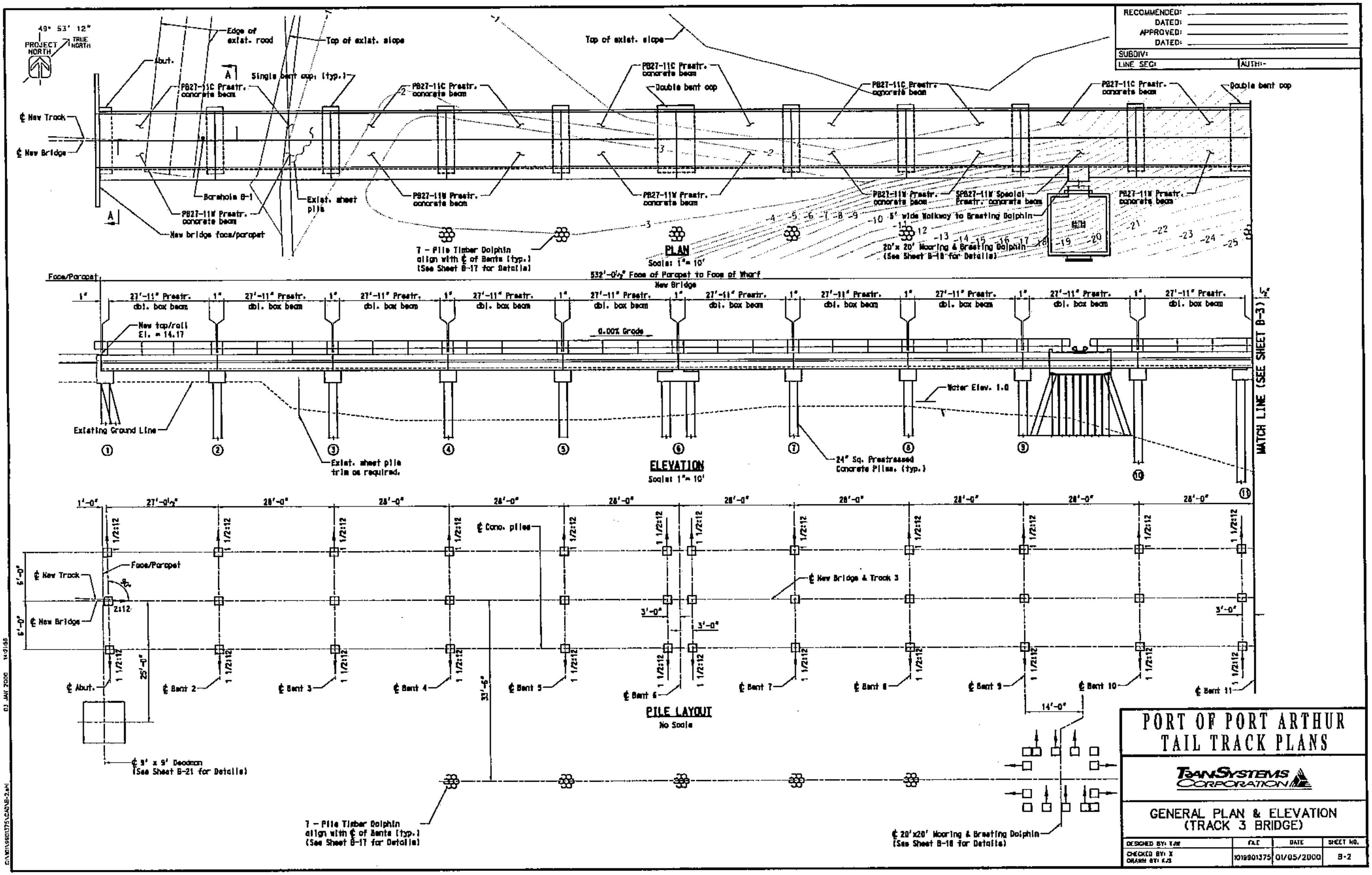
ABUTMENT ROCK BACKFILL: THE ABUTMENT ROCK BACKFILL SHALL BE IN ACCORDANCE WITH COARSE AGGREGATE (SECTION 421) AS SPECIFIED IN THE LATEST EDITION OF THE TXDOT CONSTRUCTION SPECIFICATIONS.

PORT OF PORT ARTHUR
TAIL TRACK PLANS

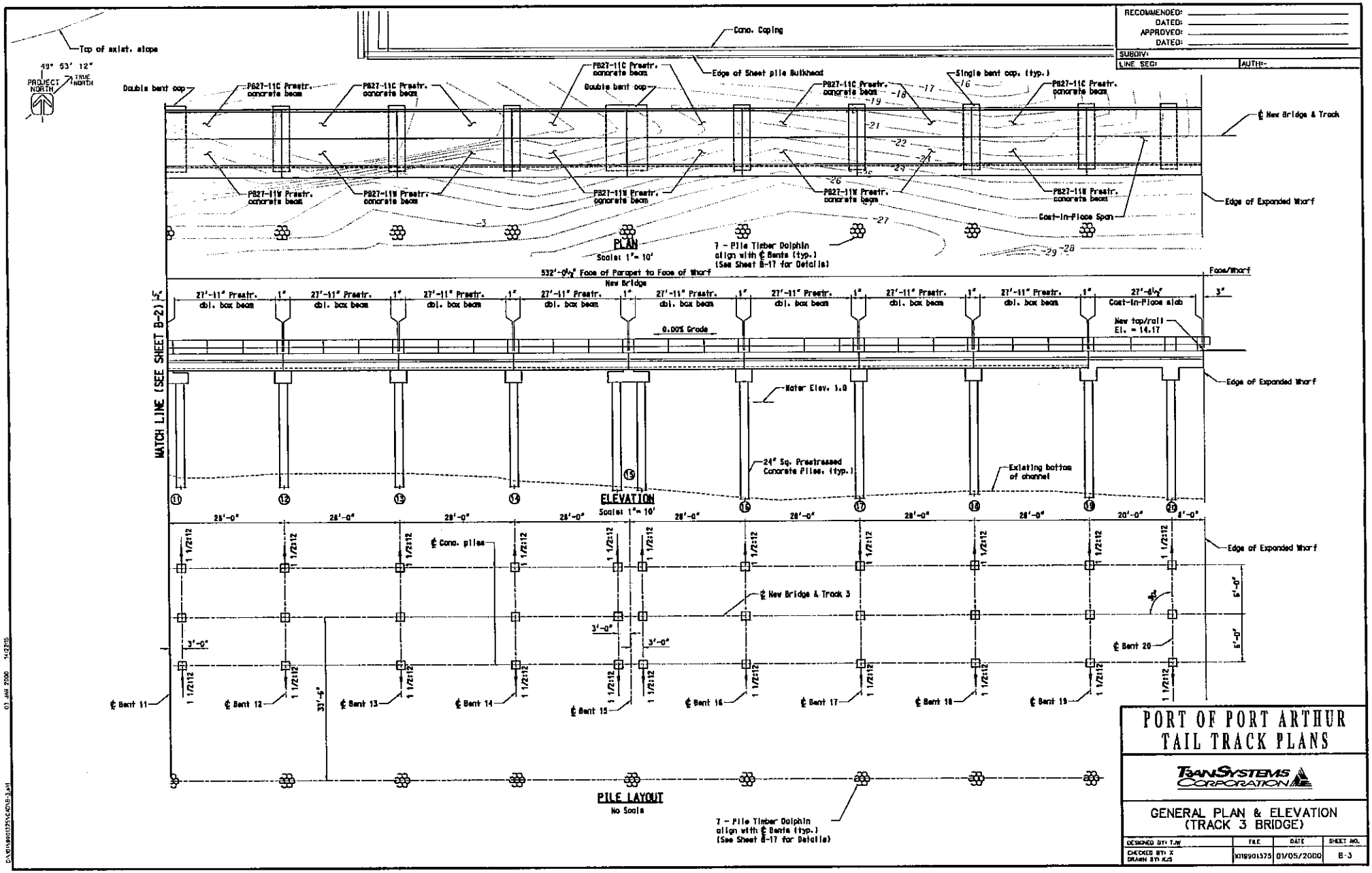
TRANSYSTEMS CORPORATION

GENERAL NOTES AND QUANTITIES

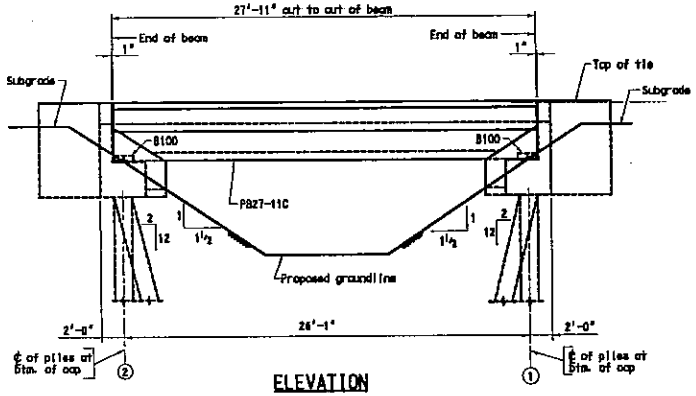
DESIGNED BY: TJW	FILE	DATE	SHEET NO.
CHECKED BY: TJW DRAWN BY: KJS	1019901375	01/05/2000	B-1



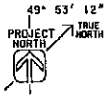
RECOMMENDED:
DATED:
APPROVED:
DATED:
SUBDIV:
LINE SEG:
AUTH:-
49° 53' 12"
PROJECT NORTH
TRUE NORTH
Edge of exist. road
Top of exist. slope
Abut.
Single bent cap (typ.)
PB27-11C Prestr. concrete beam
Double bent cap
PB27-11W Prestr. concrete beam
SPB27-11W Special Prestr. concrete beam
Borehole B-1
Exist. sheet pile
New bridge face/parapet
℄ New Track
℄ New Bridge
5' wide Walkway to Breasting Dolphin
20' x 20' Mooring & Breasting Dolphin (See Sheet B-18 for Details)
7 - Pile Timber Dolphin align with ℄ of Bents (typ.) (See Sheet B-17 for Details)
PLAN
Scale: 1" = 10'
Face/Parapet
532'-0½" Face of Parapet to Face of Wharf
New Bridge
27'-11" Prestr. dbl. box beam
New top/rail El. = 14.17
0.00% Grade
Water Elev. 1.0
Existing Ground Line
Exist. sheet pile trim as required.
24" Sq. Prestressed Concrete Piles. (typ.)
ELEVATION
Scale: 1" = 10'
MATCH LINE (SEE SHEET B-3)
1'-0"
27'-0½"
28'-0"
1 1/2:12
℄ Conc. piles
Face/Parapet
℄ New Track
℄ New Bridge
℄ New Bridge & Track 3
2:12
6'-0"
3'-0"
25'-0"
33'-6"
14'-0"
℄ Abut.
℄ Bent 2
℄ Bent 3
℄ Bent 4
℄ Bent 5
℄ Bent 6
℄ Bent 7
℄ Bent 8
℄ Bent 9
℄ Bent 10
℄ Bent 11
PILE LAYOUT
No Scale
℄ 9' x 9' Deadman (See Sheet B-21 for Details)
7 - Pile Timber Dolphin align with ℄ of Bents (typ.) (See Sheet B-17 for Details)
℄ 20'x20' Mooring & Breasting Dolphin (See Sheet B-18 for Details)
PORT OF PORT ARTHUR
TAIL TRACK PLANS
TRANSYSTEMS CORPORATION
GENERAL PLAN & ELEVATION (TRACK 3 BRIDGE)
DESIGNED BY: TJW
CHECKED BY: X
DRAWN BY: KJS
FILE 1019901375
DATE 01/05/2000
SHEET NO. B-2
03 JAN 2000

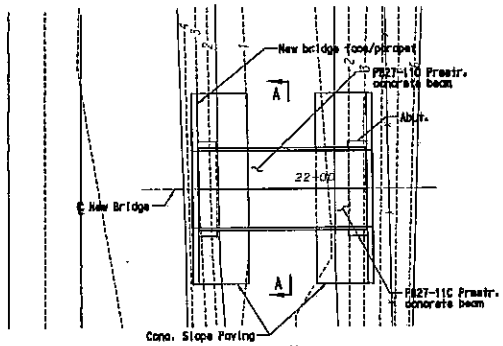

RECOMMENDED:
DATED:
APPROVED:
DATED:
SUBDIV:
LINE SEC:
AUTH:-
Top of exist. slope
49° 53' 12"
PROJECT NORTH
TRUE NORTH
Conc. Coping
Edge of Sheet pile Bulkhead
Double bent cap
Single bent cap. (typ.)
PS27-11C Prestr. concrete beam
PS27-11W Prestr. concrete beam
℄ New Bridge & Track
Edge of Expanded Wharf
Cast-in-Place Span
PLAN
Scale: 1"= 10'
7 - Pile Timber Dolphin align with ℄ Bents (typ.) (See Sheet B-17 for Details)
532'-0½" Face of Parapet to Face of Wharf
New Bridge
Face/Wharf
MATCH LINE (SEE SHEET B-2)
27'-11" Prestr. dbl. box beam
27'-6½" Cast-in-Place slab
0.00% Grade
New top/rail El. = 14.17
Water Elev. 1.0
24" Sq. Prestressed Concrete Piles. (typ.)
Existing bottom of channel
ELEVATION
Scale: 1"= 10'
28'-0"
20'-0"
℄ Conc. piles
℄ New Bridge & Track 3
℄ Bent 11
℄ Bent 12
℄ Bent 13
℄ Bent 14
℄ Bent 15
℄ Bent 16
℄ Bent 17
℄ Bent 18
℄ Bent 19
℄ Bent 20
PILE LAYOUT
No Scale
7 - Pile Timber Dolphin align with ℄ Bents (typ.) (See Sheet B-17 for Details)
PORT OF PORT ARTHUR
TAIL TRACK PLANS
TRANSYSTEMS CORPORATION
GENERAL PLAN & ELEVATION
(TRACK 3 BRIDGE)
DESIGNED BY: TJW
CHECKED BY: X
DRAWN BY: KJS
FILE
X119901375
DATE
01/05/2000
SHEET NO.
B-3

RECOMMENDED: _____
DATED: _____
APPROVED: _____
DATED: _____
SUBDIV: _____
LINE SEG: _____ AUTH: _____

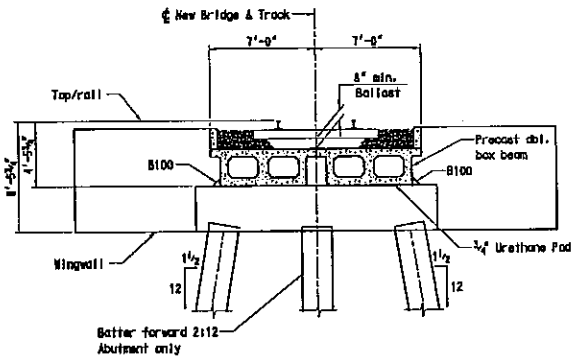


ELEVATION

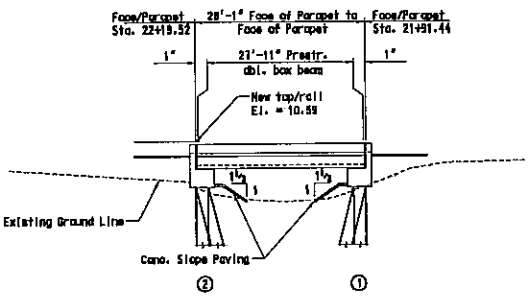




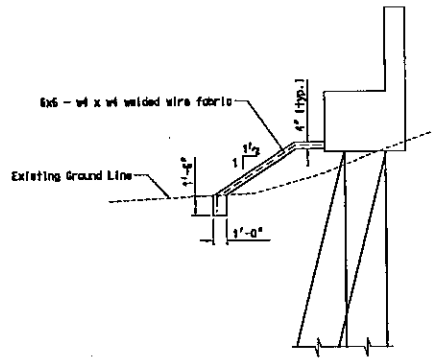
PLAN
Scales 1"= 10'



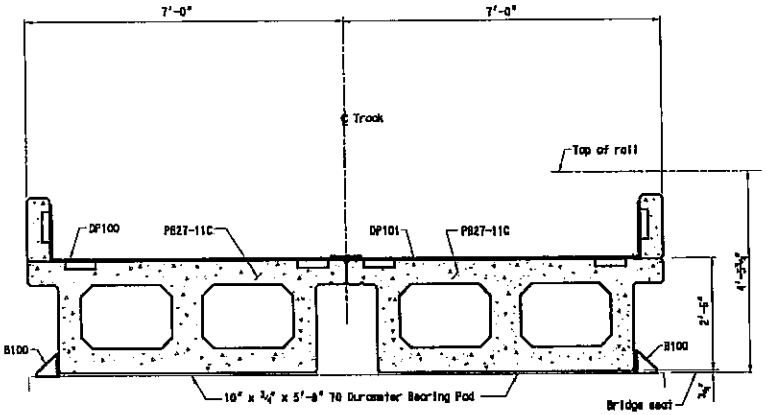
SECTION A-A



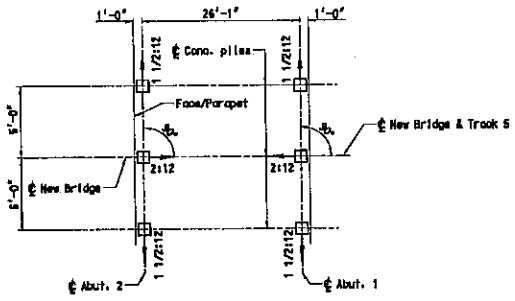
ELEVATION
Scales 1"= 10'



SLOPE PAVING DETAIL
No Scale



TYPICAL SECTION
(Looking West @ Track 5 Bridge)



PILE LAYOUT
No Scale

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

GENERAL PLAN & ELEVATION (TRACK 5 BRIDGE)

DESIGNED BY: TJW	FILE	DATE	SHEET NO.
CHECKED BY: DDH DRAWN BY: KJS	1019901375	01/05/2000	B-4

03 JAN 2000 14:27:43

RECOMMENDED: _____
DATED: _____
APPROVED: _____
DATED: _____

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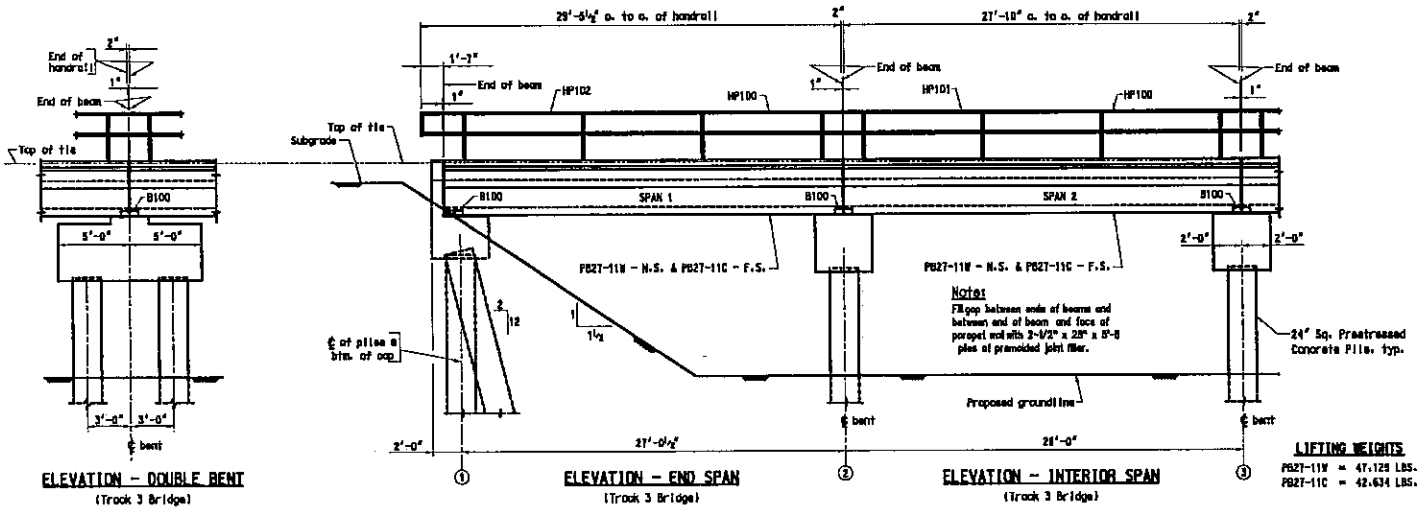
LINE SEG: _____ AUTH: _____

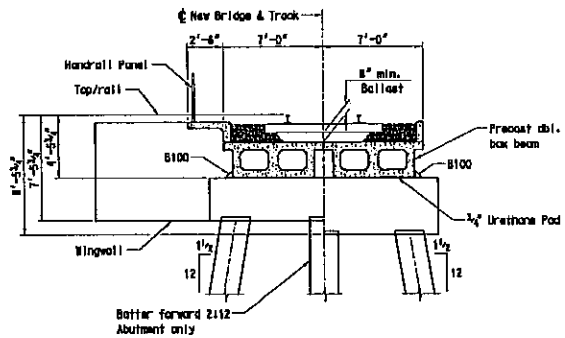


ELEVATION – DOUBLE BENT
(Track 3 Bridge)

ELEVATION – END SPAN
(Track 3 Bridge)

ELEVATION – INTERIOR SPAN
(Track 3 Bridge)

LIFTING WEIGHTS
PB27-11W = 47,128 LBS.
PB27-11C = 42,634 LBS.



SECTION A-A
(See Sheet B-2 for location of section)

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

MISCELLANEOUS DETAILS

DESIGNED BY: TJW	FILE	DATE	SHEET NO.
CHECKED BY: DOH DRAWN BY: KJS	1019901375	01/05/2000	B-5

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APPROVED:
DATED:
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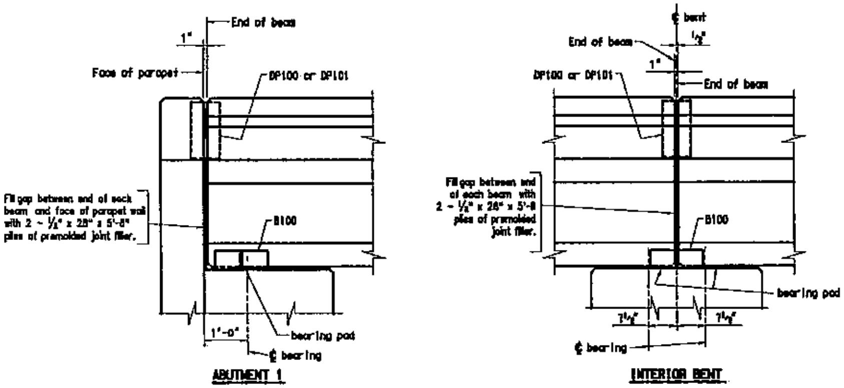
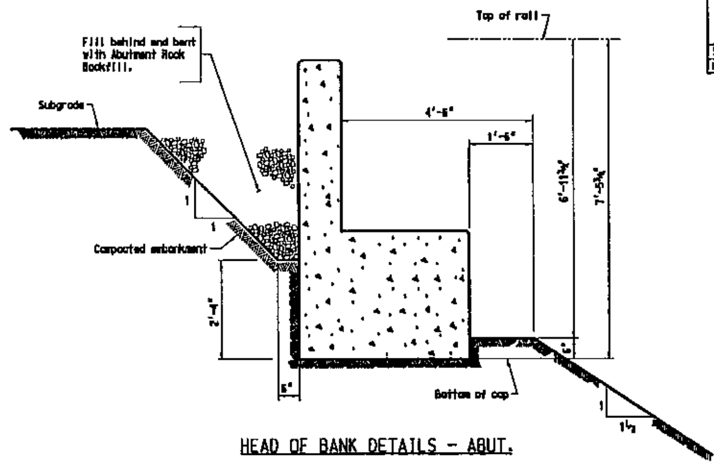
LINE SEG:
AUTH:

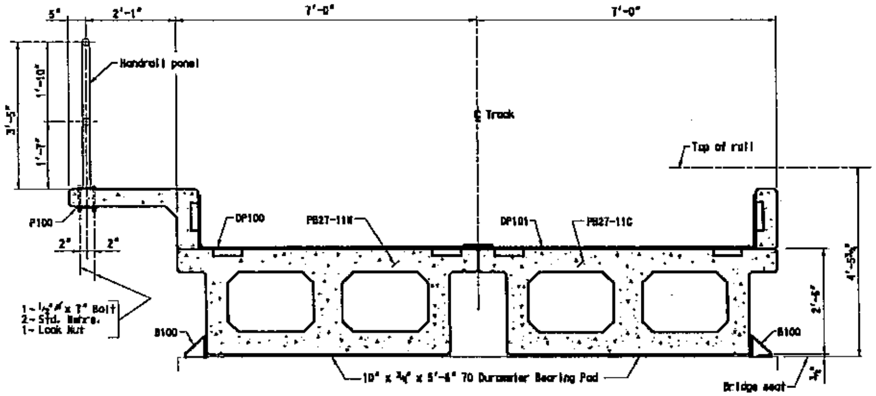


BEARING DETAILS

Handrails are not shown.

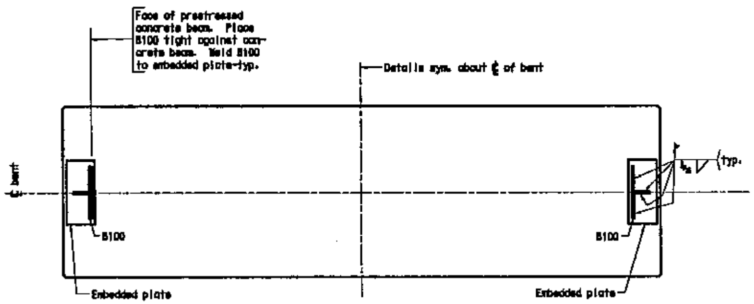


HEAD OF BANK DETAILS - ABUT.



TYPICAL SECTION

(Looking West @ Track 3 Bridge)



WELDING OF LATERAL RESTRAINT B100 ON SINGLE BENT CAP

(Welding for Double Bent Cap, Abutment Cap & Special Bent Cap is similar.)

NOTES:

After erection of beams, burn off lifting loops one inch below surface of concrete and patch resulting recesses with epoxy mortar.

PORT OF PORT ARTHUR TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

MISCELLANEOUS DETAILS

DESIGNED BY: TJW	FILE	DATE	SHEET NO.
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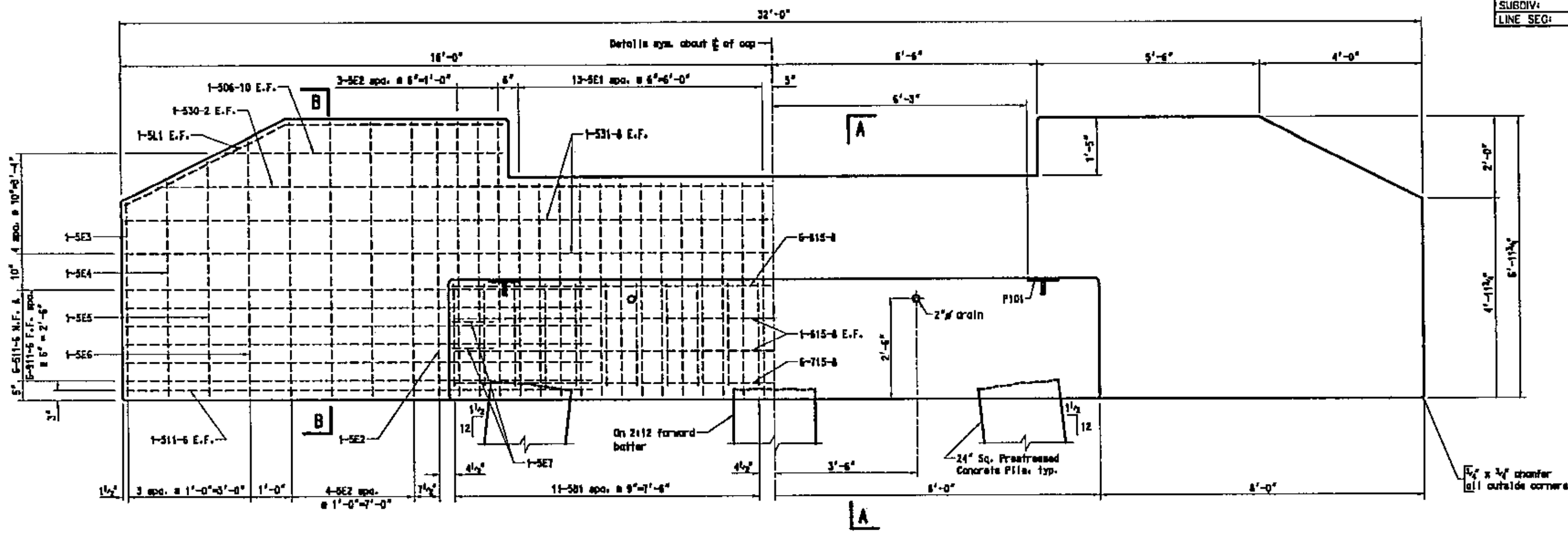
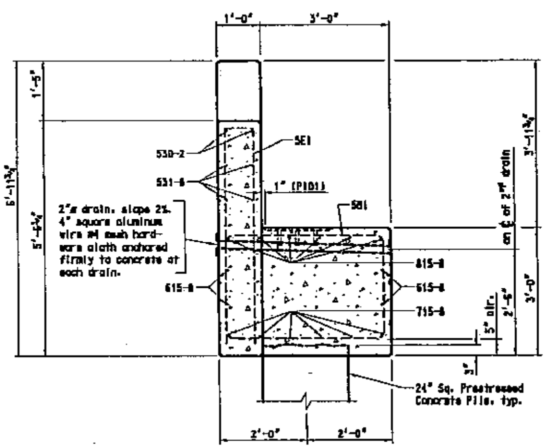
AUTH:

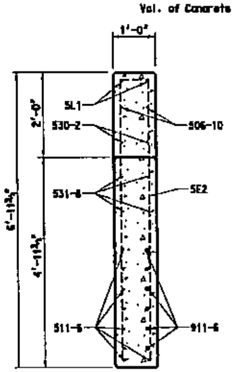


ELEVATION OF ABUTMENT

Vol. of Concrete = 12.7 cu. yds.

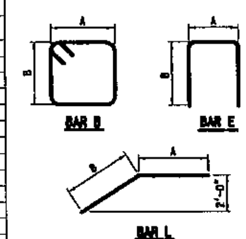


SECTION A-A



SECTION B-B

LIST OF REINFORCING BARS						
QUANTITY	MARK	SIZE	TYPE	A	B	LENGTH
22	5B1	5	B	3'-8"	2'-5"	13'-1"
26	5E1	5	E	8"	5'-2"	11'-0"
16	5E2	5	E	8"	6'-7"	13'-10"
2	5E3	5	E	8"	4'-7"	9'-10"
2	5E4	5	E	8"	5'-3"	11'-2"
2	5E5	5	E	8"	5'-8"	12'-0"
2	5E6	5	E	8"	6'-2"	13'-0"
4	5E7	5	E	3'-8"	1'-0"	5'-8"
4	5L1	5	L	5'-3"	4'-5"	9'-8"
4	506-10	5	STR.	–	–	6'-10"
14	511-6	5	STR.	–	–	11'-6"
4	615-8	6	STR.	–	–	15'-8"
6	715-8	7	STR.	–	–	15'-8"
6	815-8	8	STR.	–	–	15'-8"
2	530-2	5	STR.	–	–	30'-2"
4	531-8	5	STR.	–	–	31'-8"
12	911-6	9	STR.	–	–	11'-6"
2380	WEIGHT OF REINFORCING BARS (LBS)					



REINFORCING STEEL DETAILS

All dimensions shown are out to out of bars.

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TranSystems Corporation

ABUTMENT DETAILS

DESIGNED BY: TJW CHECKED BY: MJJ DRAWN BY: KJS	FILE 1019901375	DATE 01/05/2000	SHEET NO. B-7

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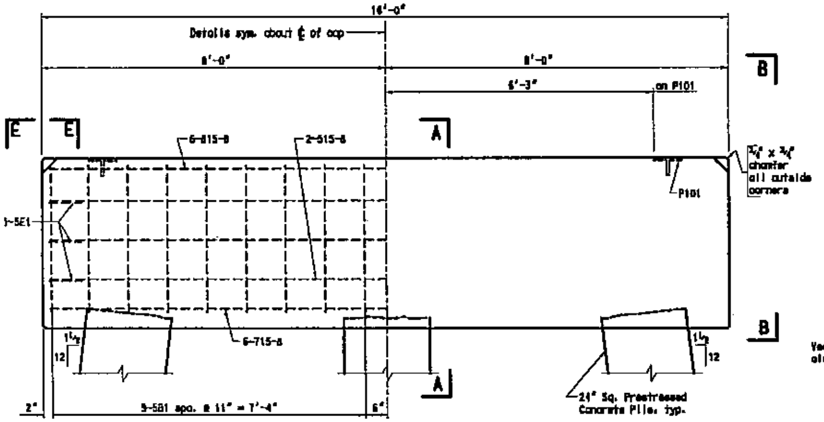
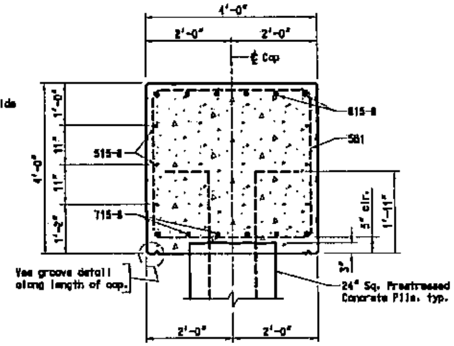
LINE SEC:	AUTH:

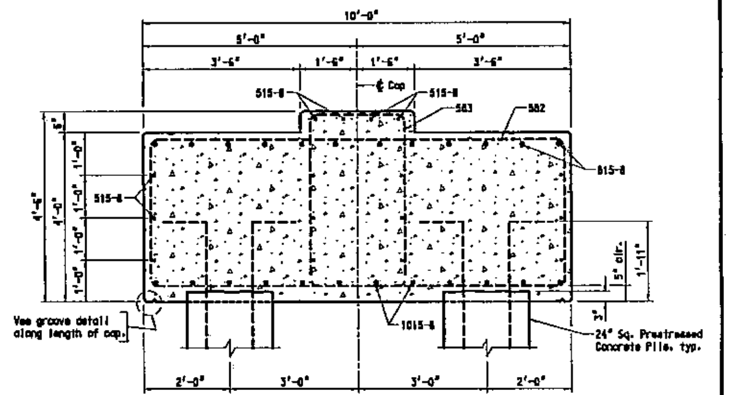


SINGLE BENT CAP

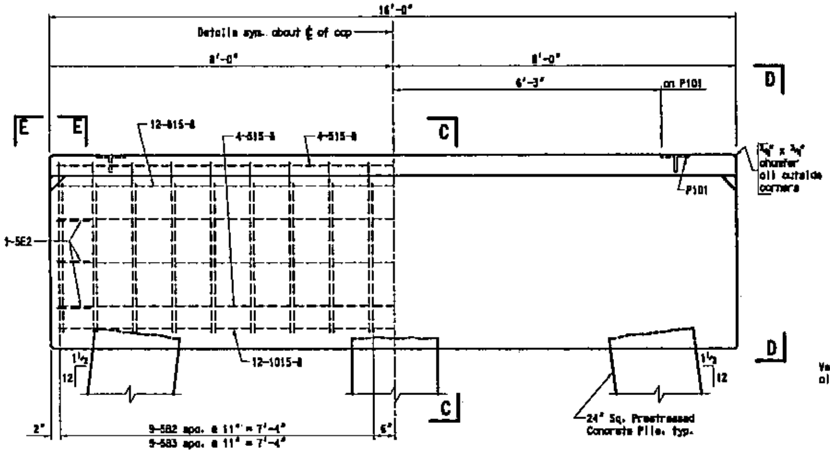
(Bents 2,3,4,5,7,8,9,10,12,13,14,16,17 & 18)
Vol. of Concrete = 9.5 cu. yds. (per cap)



SECTION A-A

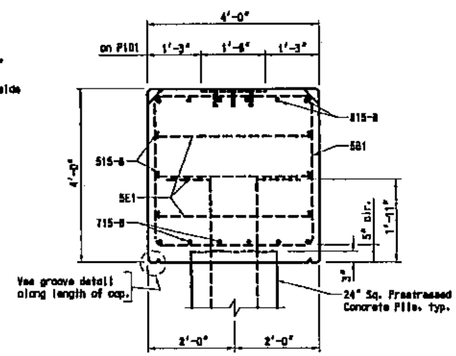


SECTION C-C

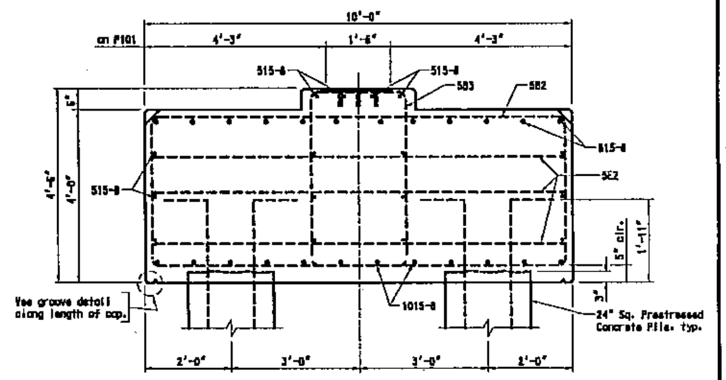


DOUBLE BENT CAP

(Bents 6, 11 & 15)
Vol. of Concrete = 24.6 cu. yds. (per cap)

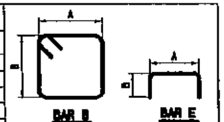


VIEW B-B



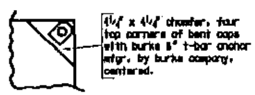
VIEW D-D

LIST OF REINFORCING BARS FOR BENT CAPS							
QUANTITY-SINGLE BENT	QUANTITY-DOUBLE BENT	MARK	SIZE	TYPE	A	B	LENGTH
18	-	5B1	5	B	3'-8"	3'-5"	15'-1"
-	18	5B2	5	B	9'-8"	3'-5"	27'-1"
-	18	5B3	5	B	2'-8"	3'-11"	14'-1"
6	-	5E1	5	E	3'-7"	9"	5'-1"
-	6	5E2	5	E	9'-7"	9"	11'-1"
6	12	515-B	5	STR.	-	-	15'-8"
6	-	715-B	7	STR.	-	-	15'-8"
6	12	815-B	8	STR.	-	-	15'-8"
-	12	1015-B	10	STR.	-	-	15'-8"
860	2350	WEIGHT OF REINFORCING BARS (LBS) (PER CAP)					



REINFORCING STEEL DETAILS

All dimensions shown are out to out of bars.



VIEW E-E

Typical 4 top corners.

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

TYPICAL BENT DETAILS

DESIGNED BY: TJW	FILE	DATE	SHEET NO.
CHECKED BY: MAI DRAWN BY: KJS	1019901375	01/05/2000	B-9

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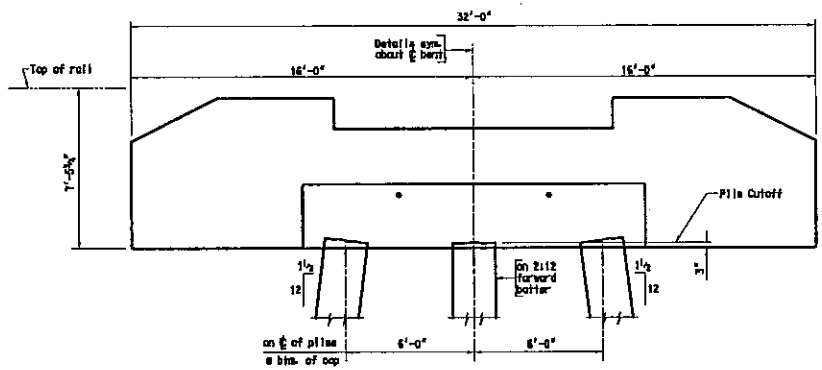
DATED: _____
APPROVED: _____
DATED: _____

SUBDIV: _____
LINE SEG: _____ AUTH: _____



ELEVATION OF ABUTMENT

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

ABUTMENT DETAILS

DESIGNED BY: TJW	FILE	DATE	SHEET NO.
CHECKED BY: MJJ DRAWN BY: KJS	1019901375	01/05/2000	B-5

03 JAN 2000 14:23:50

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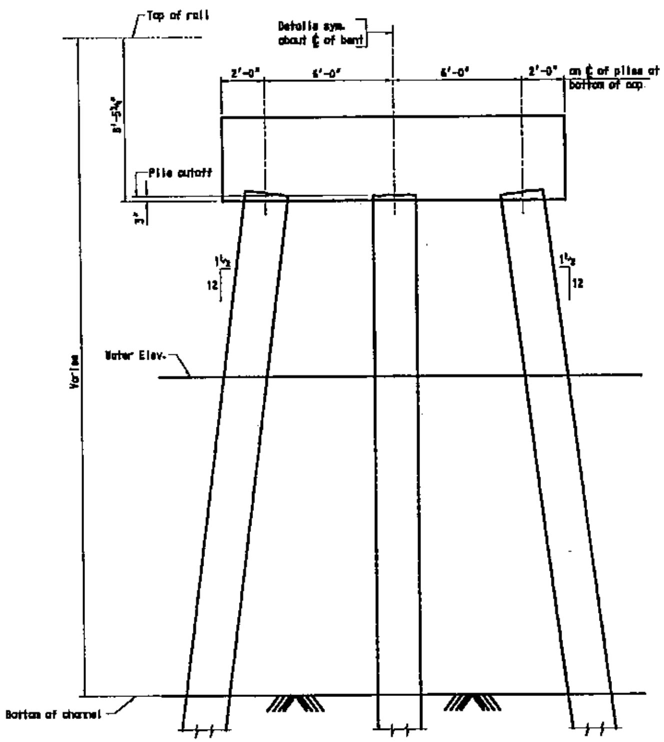
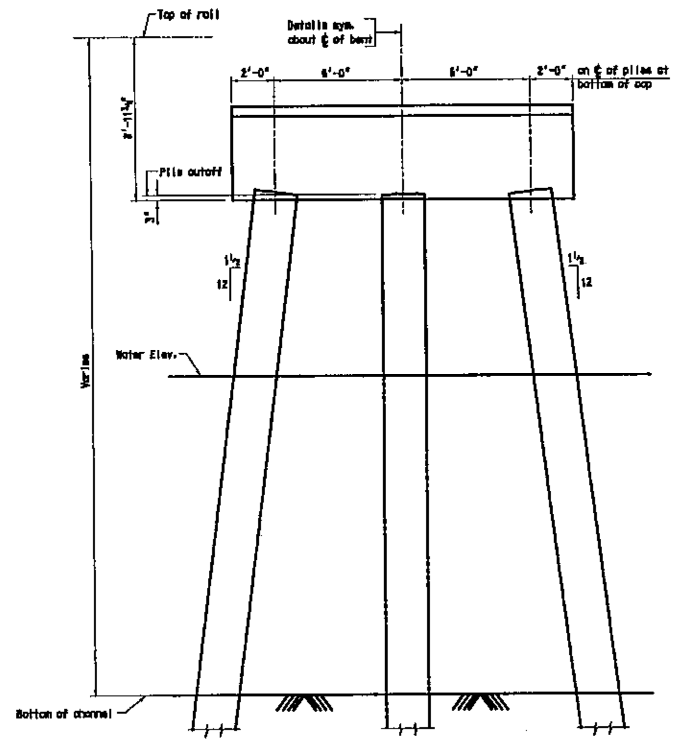
DATED:	
APPROVED:	
DATED:	
SUBDIV:	
LINE SEC:	AUTH:-



SINGLE BENT



DOUBLE BENT

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

TYPICAL BENT DETAILS

	FILE	DATE	SHEET NO.
DESIGNED BY: TJW			
CHECKED BY: MAJ DRAWN BY: KJS	1019901375	01/05/2000	B-10

03 JAN 2000 14:24:17

RECOMMENDED:
DATED:
APPROVED:
DATED:
SUBDIV:
LINE SEG:
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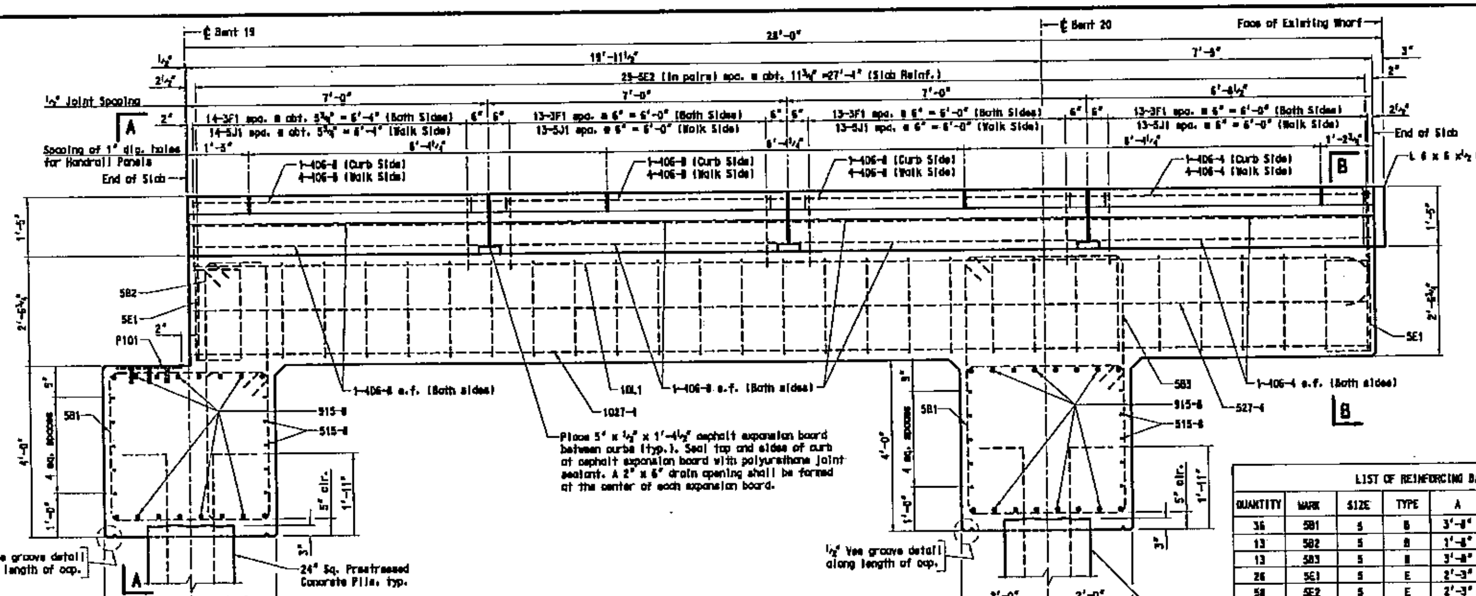
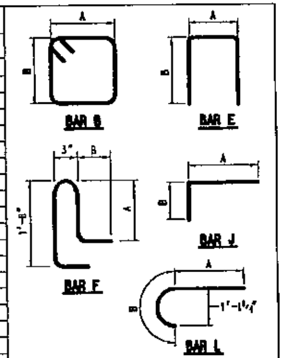


ELEVATION OF SPANS 19 & 20

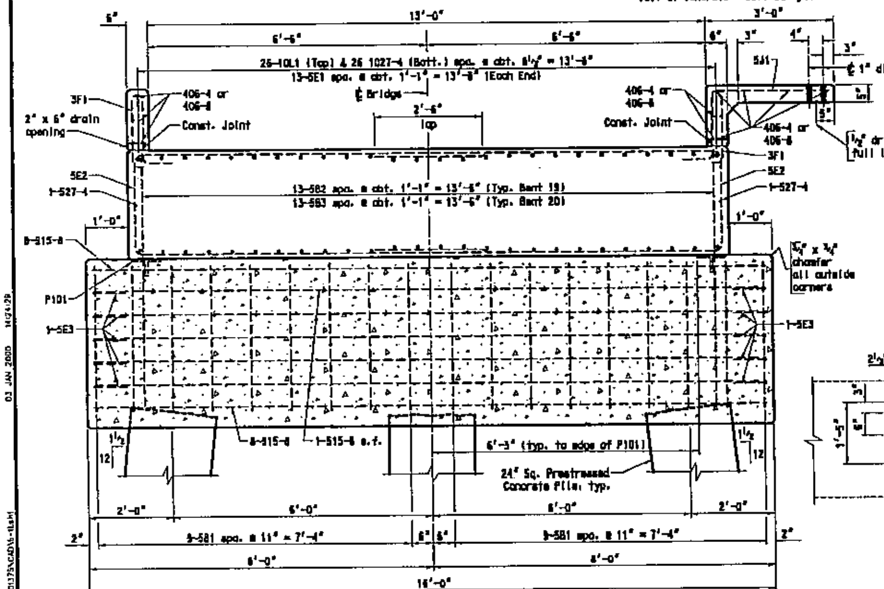
(Looking North)
Vol. of Concrete = 58.1 cu. yds.

LIST OF REINFORCING BARS						
QUANTITY	MARK	SIZE	TYPE	A	B	LENGTH
36	5B1	5	B	3'-8"	3'-5"	15'-1"
13	5B2	5	B	1'-8"	6'-0"	16'-3"
13	5B3	5	B	3'-8"	6'-0"	20'-3"
26	5E1	5	E	2'-3"	1'-0"	4'-3"
58	5E2	5	E	2'-3"	8'-1"	18'-5"
20	5E3	5	E	3'-8"	9"	5'-2"
106	3F1	3	F	1'-7"	8"	4'-6"
53	5J1	5	J	2'-8"	1'-3"	3'-11"
26	10L1	10	L	26'-9"	1'-9"	28'-6"
13	406-4	4	STR.	–	–	6'-4"
39	406-8	4	STR.	–	–	6'-8"
20	515-8	5	STR.	–	–	15'-8"
32	915-8	9	STR.	–	–	15'-8"
2	527-4	5	STR.	–	–	27'-4"
26	1027-4	10	STR.	–	–	27'-4"
11,360	WEIGHT OF REINFORCING BARS (LBS)					

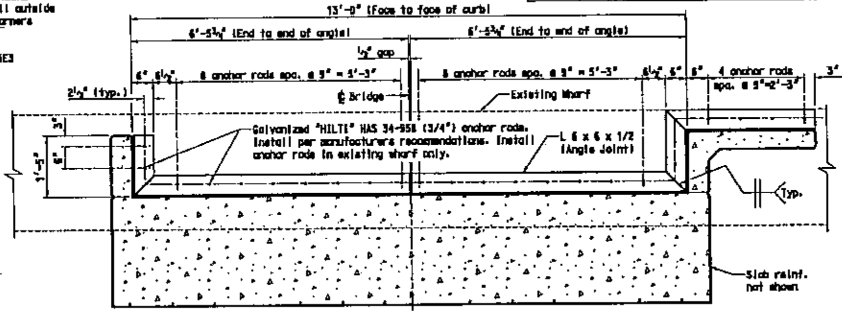


REINFORCING STEEL DETAILS

All dimensions shown are out to out of bars.



SECTION A-A



SECTION B-B

Notes:
Steel shall meet the requirements of ASTM A-36. Galvanize in accordance with ASTM A123.

PORT OF PORT ARTHUR TAIL TRACK PLANS

TranSystems Corporation

SPECIAL BENT & SLAB DETAILS (SPANS 19 & 20)

DESIGNED BY: TJW	FILE	DATE	SHEET NO.
CHECKED BY: DOH / DRAWN BY: KJS	1019901375	01/05/2000	B-11

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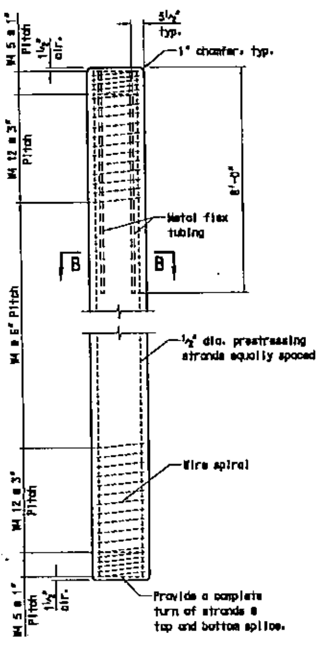
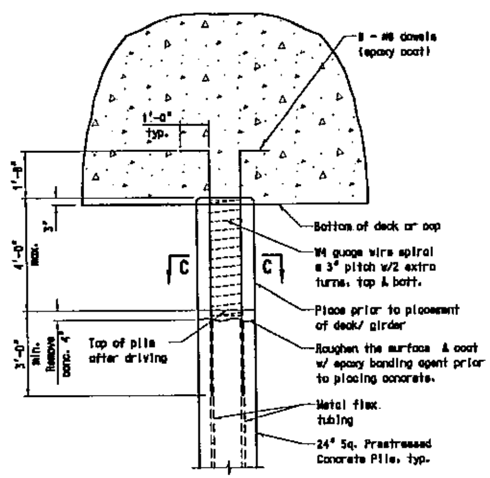
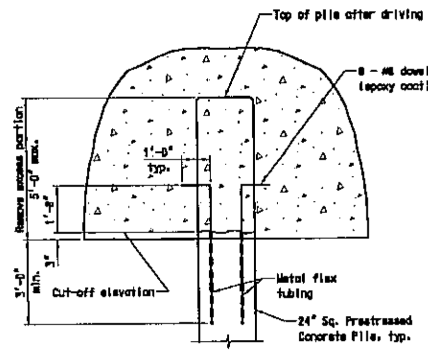


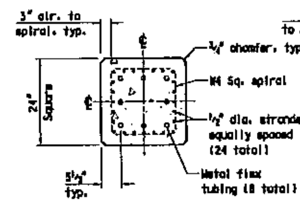
24" SQ. PRESTRESSED CONCRETE PILE



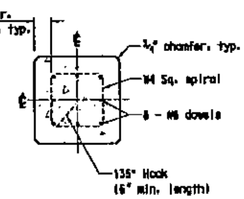
CAST-IN-PLACE PILE EXTENSION DETAIL



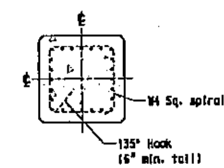
PILE CUT-OFF DETAIL



SECTION B-B



SECTION C-C



SECTION @ ENDS & SPLICE

NOTES:

THE PILE TIP ELEVATIONS ARE BASED ON THE GROUNDLINE ELEVATIONS SHOWN. THE GROUNDLINE ELEVATION IS THE LOWEST GROUNDLINE ELEVATION FOR THE PILES AT THE GIVEN BENT. IF THE ACTUAL GROUNDLINE ELEVATIONS ARE HIGHER THAN THOSE SHOWN, DRIVE THE PILE TO PILE CUTOFF ELEVATION. IF THE ACTUAL GROUNDLINE IS LOWER THAN THAT SHOWN, THE PILE SHALL BE LENGTHENED WITH THE PILE EXTENSION DETAIL TO COMPENSATE FOR THE DIFFERENCE.

THE DL + LL SERVICE LOADS APPLIED TO THE ABUTMENT PILES ARE 87 TONS FOR THE TRACK 3 AND TRACK 5 BRIDGES. THE DL + LL SERVICE LOADS APPLIED TO THE BENT 2 THROUGH BENT 18 PILES ARE 118 TONS FOR THE TRACK 3 BRIDGE. THE DL + LL SERVICE LOADS APPLIED TO THE BENT 19 AND BENT 20 PILES ARE 144 TONS FOR THE TRACK 3 BRIDGE.

6,000 PSI MIX DESIGN. SEE PILE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

TABLE OF ELEVATIONS (TRACK 3 BRIDGE)

LOCATION	NEW TOP/RAIL	TOP/CAP	PILE CUTOFF	PILE TIP	GROUNDLINE	PILE LENGTH (FT.)
ABUT. 1	14.17	9.69	6.94	- 64	6	71
BENT 2	14.17	9.69	5.94	- 78	6	84
BENT 3	14.17	9.69	5.94	- 87	- 3	93
BENT 4	14.17	9.69	5.94	- 87	- 3	93
BENT 5	14.17	9.69	5.94	- 87	- 3	93
BENT 6	14.17	9.69	5.44	- 87	- 3	92
BENT 7	14.17	9.69	5.94	- 87	- 3	93
BENT 8	14.17	9.69	5.94	- 88	- 4	94
BENT 9	14.17	9.69	5.94	- 91	- 7	97
BENT 10	14.17	9.69	5.94	- 97	- 13	103
BENT 11	14.17	9.69	5.44	- 104	- 20	109
BENT 12	14.17	9.69	5.94	- 104	- 20	110
BENT 13	14.17	9.69	5.94	- 106	- 22	112
BENT 14	14.17	9.69	5.94	- 106	- 22	112
BENT 15	14.17	9.69	5.44	- 108	- 24	113
BENT 16	14.17	9.69	5.94	- 110	- 26	116
BENT 17	14.17	9.69	5.94	- 110	- 26	116
BENT 18	14.17	9.69	5.94	- 108	- 24	114
BENT 19	14.17	9.69	5.94	- 114	- 24	120
BENT 20	14.17	9.69	5.94	- 114	- 24	120

TABLE OF ELEVATIONS (TRACK 5 BRIDGE)

LOCATION	NEW TOP/RAIL	TOP/CAP	PILE CUTOFF	PILE TIP	GROUNDLINE	PILE LENGTH (FT.)
ABUT. 1	10.59	6.11	3.36	- 68	2	71
ABUT. 2	10.59	6.11	3.36	- 68	2	71

TABLE OF ELEVATIONS (MOORING BRESTING DOLPHIN)

TOP/DOLPHIN	PILE CUTOFF	PILE TIP	GROUNDLINE	PILE LENGTH (FT.)
13.67	6.42	- 104	- 19	110

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

PRESTRESSED CONCRETE PILE DETAILS

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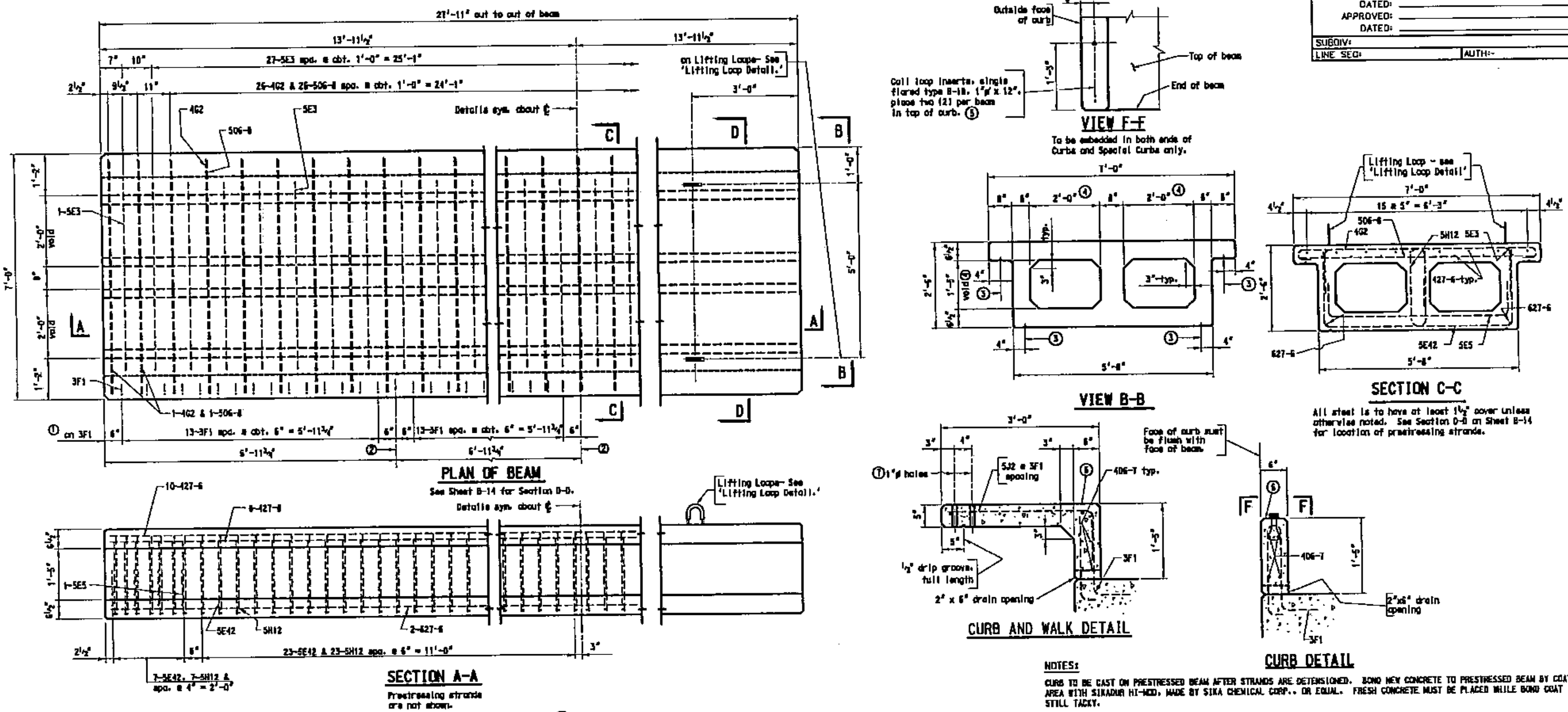

① Adjust as required to miss other reinforcement.

② ℄ 5" x ½" x 1'-4½" asphalt expansion board in curb, ½" open joint in walk and 2" x 6" drain opening. Required for beam with curb or curb and walk only. See 'NOTES' for further instructions.

③ ½" drip groove

④ Void dimensions shown are maximum and must not be exceeded at any point including splices of void forms.

⑤ Coil loop inserts are to be single flared Type B-18, 1"ø x 12" as manufactured by Dayton Superior and have a safe working load of 4,750 lbs. with a factor of safety of 4 to 1. The inserts are to be completely recessed with spiral bolts furnished in the insert.

⑥ 3"x 6" I.D. Plate is to be embedded flush in top of curb and centered 6" from end of curb. Plate shall contain the following information in ½" lettering: item name, length, weight, date manufactured and name of manufacturer.

⑦ Two 1"ø holes shall be located 17", 17"+ A, 17"+ 2A and 17"+ 3A from one end of beam. Holes must be in proper location or handrail will not fit. A = (L-34")/3.

NOTES:

CURB TO BE CAST ON PRESTRESSED BEAM AFTER STRANDS ARE DETENSIONED. BOND NEW CONCRETE TO PRESTRESSED BEAM BY COATING AREA WITH SIKADUR HI-MOD, MADE BY SIKA CHEMICAL CORP., OR EQUAL. FRESH CONCRETE MUST BE PLACED WHILE BOND COAT IS STILL TACKY.

PREFORMED ½" x 5" ASPHALT EXPANSION BOARD TO BE PLACED AS TO DIVIDE CURB INTO FOUR (4) EQUAL SEGMENTS. SEAL TOP AND SIDES OF CURB AT ASPHALT EXPANSION BOARD WITH POLYURETHANE JOINT SEALANT. A 2" x 6" DRAIN OPENING SHALL BE FORMED AT THE CENTER OF EACH EXPANSION BOARD.

FOUR (4) EQUAL LENGTH CURBS ARE TO BE USED IF POSSIBLE.

(PB27-11W) = PRECAST BOX BEAM WITH WALK
(PB27-11C) = PRECAST BOX BEAM WITH CURB
(SPB27-11W) = PRECAST BOX BEAM WITH WALK AND CATWALK BLOCKOUT. (SEE SHEET B-14 FOR DETAILS).

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PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

TYPICAL BOX BEAM DETAILS

DESIGNED BY: TJW	FILE	DATE	SHEET NO.
CHECKED BY: DDH DRAWN BY: KJS	1019901375	01/05/2000	B-13

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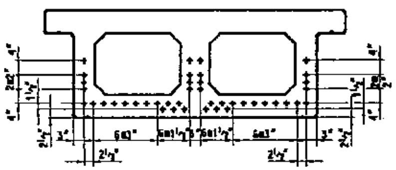
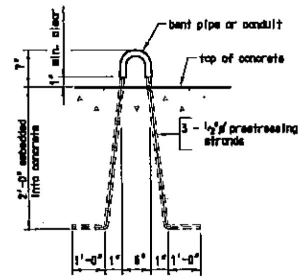
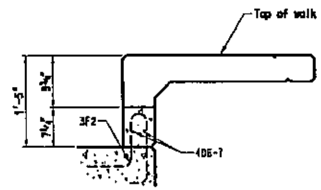


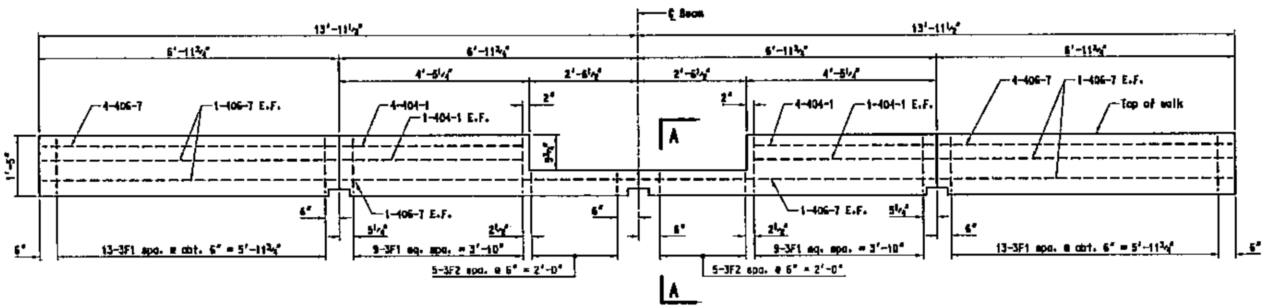
SECTION D-D WITH 42 STRANDS



LIFTING LOOP DETAIL

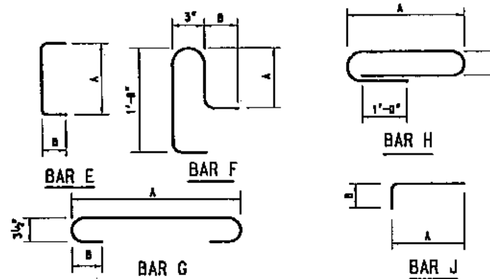


SECTION A-A



ELEVATION OF CATWALK BLOCKOUT DETAIL
LOOKING NORTH @ (SPANS 5 & 13) WALK SIDE
(SPB27-11W)

LIST OF REINFORCING BARS FOR ONE BOX BEAM								
QUANTITY WITH WALK @ CATWALK	QUANTITY WITH WALK	QUANTITY WITHOUT WALK	MARK	SIZE	TYPE	A	B	LENGTH
29	29	29	5E3	5	E	5'-4"	1'-4"	8'-0"
60	60	60	5E42	5	E	5'-4"	2'-1"	9'-6"
14	14	14	5E5	5	E	5'-1¾"	1'-0"	7'-2"
44	52	52	3F1	3	F	1'-7"	8"	4'-6"
10	-	-	3F2	3	F	9"	10"	2'-10"
60	60	60	5H12	5	H	2'-2"	4¾"	5'-10"
30	30	30	4G2	4	G	6'-8"	4½"	7'-3"
44	52	-	5J2	5	J	2'-8"	1'-3"	3'-11"
10	10	10	427-6	4	STR.	-	-	27'-6"
12	-	-	404-1	4	STR.	-	-	4'-1"
20	32	16	406-7	4	STR.	-	-	6'-7"
30	30	30	506-8	5	STR.	-	-	6'-8"
2	2	2	627-6	6	STR.	-	-	27'-6"
2320	2380	2100	WEIGHT OF REINFORCING BARS (LBS)					



REINFORCING STEEL DETAILS
All dimensions shown are out to out of bars.

GENERAL NOTES:

DESIGN, MATERIALS AND CONSTRUCTION OF PRESTRESSED CONCRETE BEAMS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CURRENT A.R.E.M.A. MANUAL FOR RAILWAY ENGINEERING, CHAPTER 8, PART 17 - PRESTRESSED CONCRETE DESIGN.

ULTIMATE COMPRESSIVE CYLINDER STRENGTH OF BEAM CONCRETE SHALL BE NOT LESS THAN 4,000 p.s.i. AT TRANSFER OF PRESTRESSING FORCE, AND 5,000 p.s.i. IN 28 DAYS.

ULTIMATE COMPRESSIVE CYLINDER STRENGTH OF CURB AND WALK CONCRETE SHALL BE NOT LESS THAN 5,000 p.s.i. IN 28 DAYS.

CONCRETE SHALL BE AIR-ENTRAINED CONTAINING 7% PLUS OR MINUS 1% AIR BY VOLUME.

MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE ¾ INCH.

MINIMUM CONCRETE COVER ON REINFORCEMENT SHALL BE 1½ INCHES.

ALL EXPOSED EDGES SHALL BE CHAMFERED ¾ INCH.

ALL PRESTRESSING STRANDS SHALL BE ½"ø 7 WIRE UNCOATED, LOW-RELAXATION, WITH MINIMUM f's = 270,000 p.s.i. AND OTHERWISE MEETING THE REQUIREMENTS OF THE CURRENT A.S.T.M. DESIGNATION: A416.

INITIAL PRESTRESS SHALL BE 0.75 f's = 31,000 LBS. PER STRAND.

NON-PRESTRESSING REINFORCEMENT SHALL BE DEFORMED BARS MEETING THE CURRENT A.S.T.M. DESIGNATION: A615, GRADE 60. FABRICATION OF REINFORCING STEEL SHALL BE AS PER CHAPTER 7 OF THE CURRENT C.R.S.I. MANUAL OF STANDARD PRACTICE.

DEAD LOAD: (ASSUMED - LBS.PER LIN. FT. OF TRACK)

TRACK	350
BALLAST	1560
CURB, WALK & HANDRAIL	560
BEAMS	2850
TOTAL	5320

LIVE LOAD: COOPER'S E80 INCREASED 15 PERCENT TO PROVIDE FOR CENTRIFUGAL FORCE AND OFFSET OF CENTER LINE OF TRACK OF UP TO SIX INCHES FROM CENTER LINE OF BEAMS.

IMPACT: $35-\frac{\ell^2}{500}$ PERCENT (ℓ = L-14")

SPECIAL NOTES TO MANUFACTURER:

PRODUCTION PROCEDURES AND DIMENSIONAL TOLERANCES FOR THE MANUFACTURE OF PRECAST, PRESTRESSED BEAMS SHALL BE IN ACCORDANCE WITH THE PRESTRESSED CONCRETE INSTITUTE'S CURRENT MANUAL MNL-116 FOR QUALITY CONTROL.

AN ALTERNATE STRAND PATTERN BETTER SUITED TO THE MANUFACTURER'S FACILITIES WHICH HAS THE SAME ECCENTRICITY AS THE PATTERN SHOWN ON THIS PLAN WILL BE CONSIDERED FOR APPROVAL PRIOR TO CASTING UPON SUBMISSION BY THE MANUFACTURER OF PLANS AND COMPUTATIONS.

IF REINFORCING BAR SUPPORTS ARE USED, THEY SHALL BE CLASS 1, PLASTIC PROTECTED, IN ACCORDANCE WITH CHAPTER 3 OF THE C.R.S.I. MANUAL OF STANDARD PRACTICE.

MANUFACTURER SHALL CUT PRESTRESSING STRANDS FLUSH WITH ENDS OF CONCRETE BEAMS AND PAINT.

MANUFACTURER TO PROVIDE LIFT POINTS AND SUPPORTING CALCULATIONS.

WEIGHT PER LINEAL FT. OF BEAM:

1527 LBS. WITH CURB

1688 LBS. WITH CURB AND WALK

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

TYPICAL BOX BEAM DETAILS

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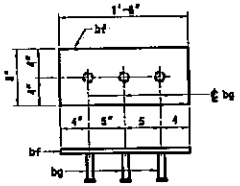


PLATE P101

1-Bar 8" x 3/4" x 1'-6"-bf
3- 7/8"ø x 4" Studs-bg
Weight = 32.7 lbs.

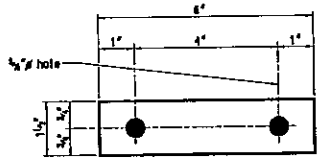
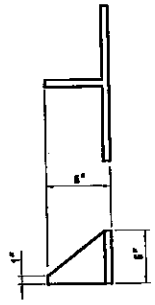


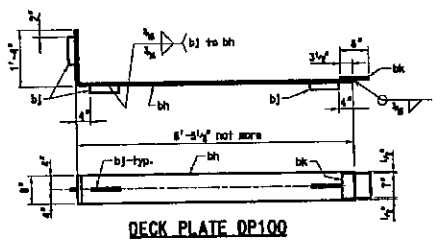
PLATE P100

1-Bar 1½" x ¼" x 0'-6"
Weight = 0.6 lbs.
Galvanize after fabrication.



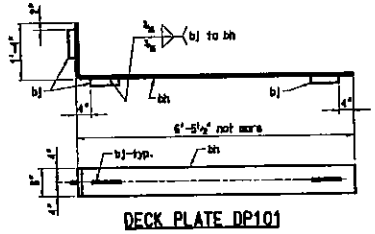
BRACKET B100

Cut from HP14 x 89# Pile
Weight = 19 lbs.



DECK PLATE DP100

1-Bar 8" x ¾" x 7'-5½" (Bent)-bh
2-Bars 2" x ¾" x 0'-5"-bj
1-Bar 7" x ⅜" x 0'-8"-bk
Weight = 80.8 lbs.
Galvanize after fabrication.



DECK PLATE DP101

1-Bar 8" x ¾" x 7'-5½" (Bent)-bh
2-Bars 2" x ¾" x 0'-5"-bj
Weight = 84.5 lbs.
Galvanize after fabrication.

GENERAL NOTES:

MATERIAL: STRUCTURAL STEEL PLATES AND BARS SHALL MEET THE REQUIREMENTS OF THE CURRENT A.S.T.M. DESIGNATION: A36.

SHEAR CONNECTOR STUDS SHALL MEET THE REQUIREMENTS OF SECTION 7 OF THE CURRENT A.W.S. STRUCTURAL WELDING CODE D1.1 FOR GRADE 1020 SEL1B FLUX FILLED HEADED STUDS

FABRICATION NOTES:

SHOP NOTES: FABRICATION AND ARC WELDING OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH CHAPTER 15, PART 3 OF THE CURRENT A.R.E.M.A. MANUAL FOR RAILWAY ENGINEERING. OPEN HOLES: AS NOTED. SHOP PAINT: NONE.

SHEAR CONNECTOR STUDS SHALL BE AUTOMATICALLY END WELDED WITH COMPLETE FUSION IN ACCORDANCE WITH SECTION 7 OF THE CURRENT A.W.S. STRUCTURAL WELDING CODE D1.1.

GALVANIZING: DP100, DP101, P100 AND SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH THE CURRENT A.S.T.M. DESIGNATION: A123 AND A153, AS APPLICABLE.

AFTER GALVANIZING ALL ELEMENTS SHALL BE FREE OF FINS, ABRASIONS, ROUGH OR SHARP EDGES AND OTHER SURFACE DEFECTS.

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

STRUCTURAL STEEL DETAILS

DESIGNED BY: TJW	FILE	DATE	SHEET NO.
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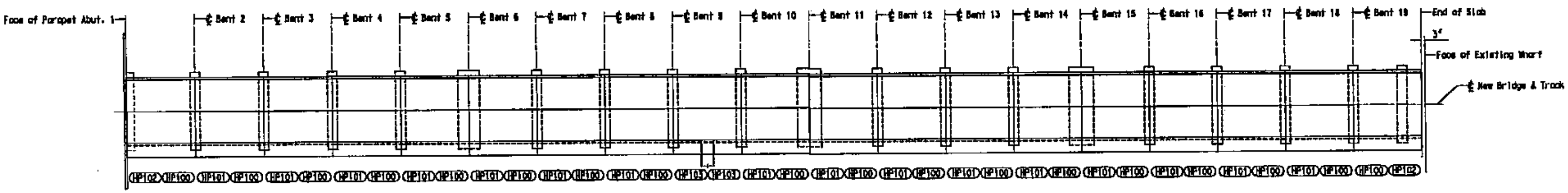
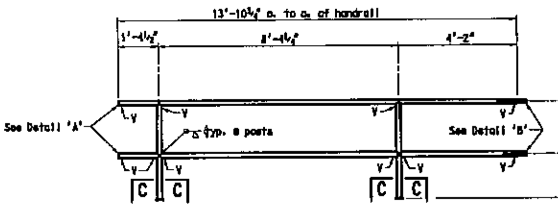


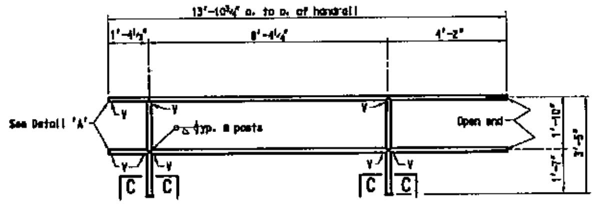
PLAN SHOWING HANDRAIL PANEL LOCATIONS

No Scale



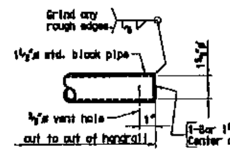
HANDRAIL PANEL HP100

Weight = 103.2 lbs.
18 Req'd. Mk. - HP100

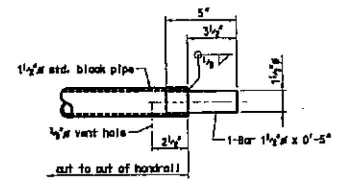


HANDRAIL PANEL HP101

Weight = 98.2 lbs.
16 Req'd. Mk. - HP101

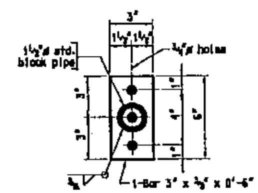


DETAIL 'A'

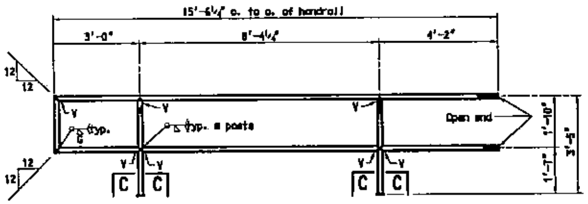


DETAIL 'B'

V = ⅜"ø drilled vent hole 1" from joint, except as dimensioned in Detail 'B'.

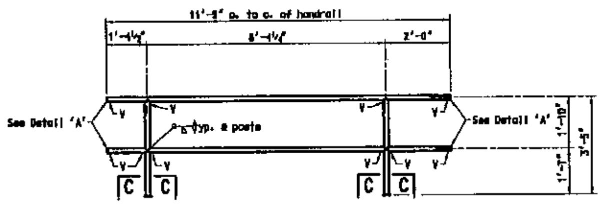


SECTION C-C



HANDRAIL PANEL HP102

Weight = 111.8 lbs.
2 Req'd. Mk. - HP102



HANDRAIL PANEL HP103

Weight = 92.7 lbs.
2 Req'd. Mk. - HP103

NOTES:

MATERIAL: STRUCTURAL STEEL BARS SHALL MEET THE REQUIREMENTS OF THE CURRENT A.S.T.M. DESIGNATION: A36.

HANDRAIL PANELS ARE TO BE FABRICATED USING 1½" DIA. STANDARD BLACK PIPE. THE PIPE SHALL MEET THE REQUIREMENTS OF THE CURRENT A.S.T.M. DESIGNATION: A53. UNCOATED PIPE SHALL BE USED.

SHOP NOTES: FABRICATION AND ARC WELDING OF STRUCTURAL STEEL AND HANDRAIL PANELS SHALL BE IN ACCORDANCE WITH CHAPTER 15, PART 3 OF THE CURRENT A.R.E.M.A. MANUAL FOR RAILWAY ENGINEERING. MIG WELDING SHALL BE USED ON HANDRAIL PANELS. OPEN HOLES: AS NOTED. SHOP PAINT: NONE.

GALVANIZING: HP100, HP101, HP102 AND HP103 SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH THE CURRENT A.S.T.M. DESIGNATION: A123.

AFTER GALVANIZING ALL ELEMENTS SHALL BE FREE OF FINS, ABRASIONS, ROUGH OR SHARP EDGES AND OTHER SURFACE DEFECTS.

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

HANDRAIL PANEL DETAILS

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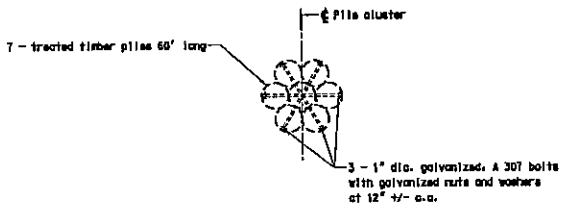
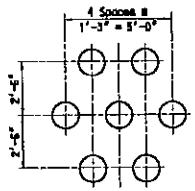
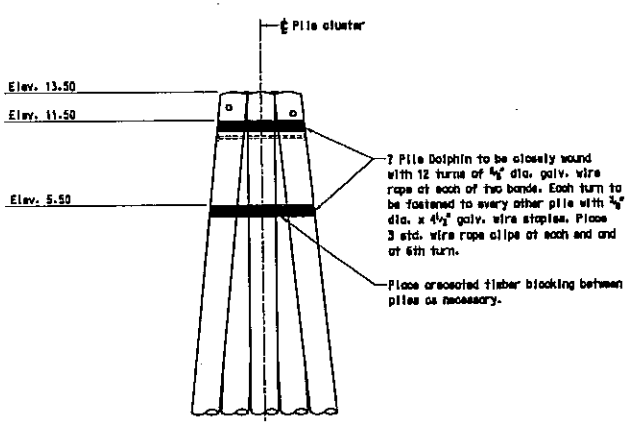


PLAN



DRIVING PLAN @ EL. - 35.00



ELEVATION

7 – PILE DOLPHIN
(14 Dolphins Req'd.)

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

TIMBER DOLPHIN DETAILS

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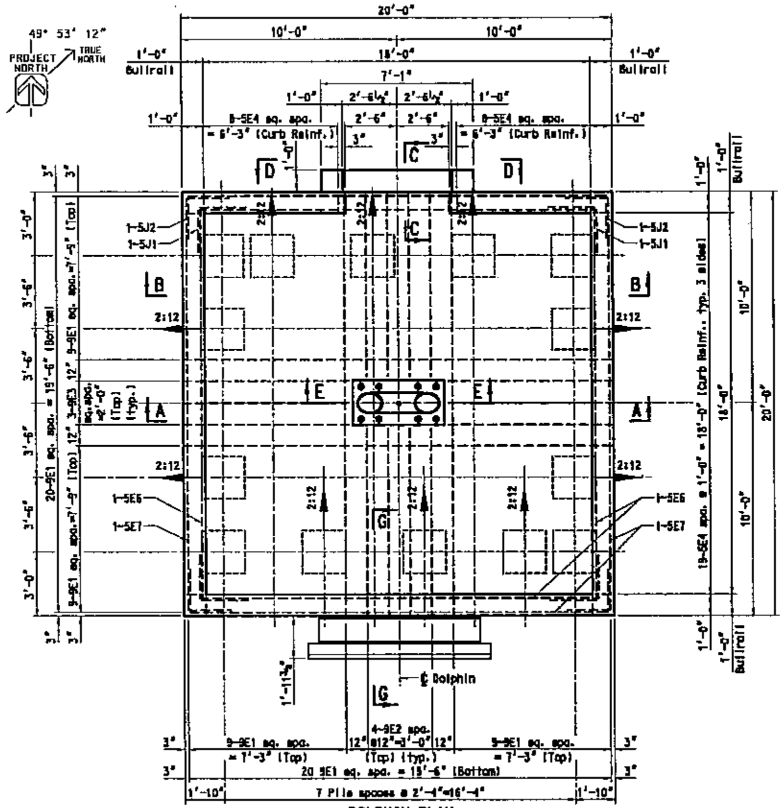
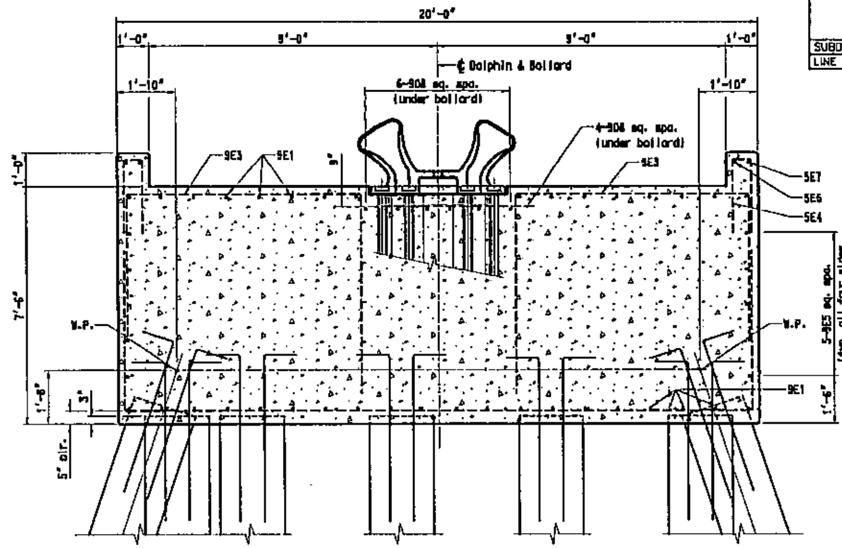
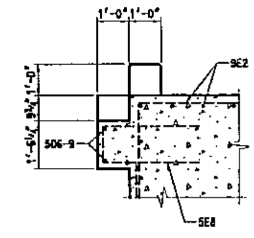


DOLPHIN PLAN

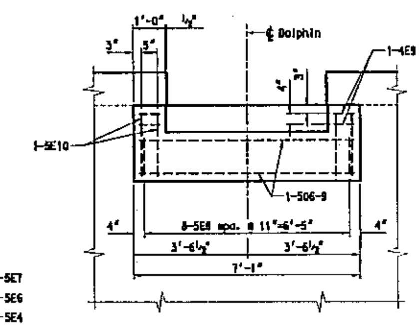
Volume of Concrete = 114.2 cu. yds. (per dolphin)



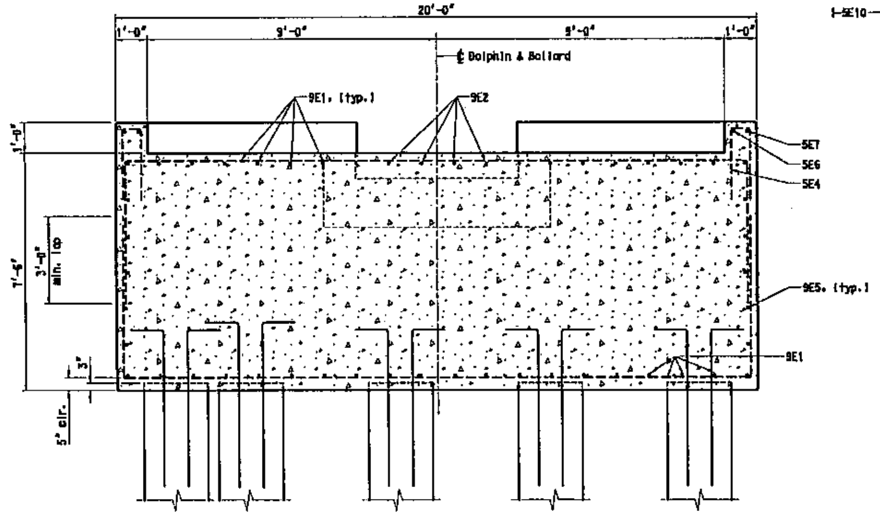
SECTION A-A



SECTION C-C



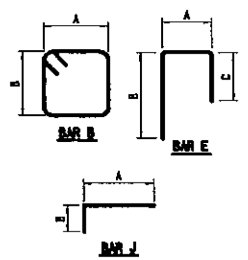
VIEW D-D



SECTION B-B

LIST OF REINFORCING BARS FOR ONE DOLPHIN								
	QUANTITY	MARK	SIZE	TYPE	A	B	C	LENGTH
*	17	3B1	3	B	6"	4'-9"	–	11'-2"
	76	9E1	9	E	19'-6"	5'-0"	5'-0"	29'-6"
	8	9E2	9	E	8'-6"	6'-6"	5'-0"	20'-0"
	6	9E3	9	E	7'-6"	6'-6"	5'-0"	19'-0"
	73	5E4	5	E	6"	2'-6"	2'-6"	5'-6"
	20	9E5	9	E	19'-6"	4'-0"	4'-0"	27'-6"
	3	5E6	5	E	18'-6"	2'-0"	2'-0"	22'-6"
	3	5E7	5	E	19'-6"	2'-0"	2'-0"	23'-6"
	8	5E8	5	E	1'-2"	3'-0"	3'-0"	7'-2"
	4	4E9	4	E	6"	2'-0"	2'-0"	4'-6"
	4	5E10	5	E	2'-0"	3'-0"	3'-0"	8'-0"
	7	8E11	8	E	8'-0"	2'-0"	2'-0"	12'-0"
	9	6E12	6	E	6'-10"	2'-0"	2'-0"	10'-10"
	2	5J1	5	J	6'-6"	2'-0"	–	8'-6"
	2	5J2	5	J	7'-0"	2'-0"	–	9'-0"
	10	605	6	STR.	–	–	–	5'-0"
*	2	506-9	5	STR.	–	–	–	6'-9"
	12	816-6	8	STR.	–	–	–	16'-6"
	10	908	9	STR.	–	–	–	8'-0"
	12,460	WEIGHT OF REINFORCING BARS (LBS) (PER DOLPHIN)						

* Catwalk Reinf.



REINFORCING STEEL DETAILS

All dimensions shown are cut to out of bars.

NOTES:

See Sheet B-19 for additional details.

RECOMMENDED:	
DATED:	
APPROVED:	
DATED:	
SUBDIV:	
LINE SEG:	AUTH:-

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

MOORING & BRESTING DOLPHIN DETAILS

DESIGNED BY: TJW	FILE	DATE	SHEET NO.
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DATED: ______
APPROVED: ______
DATED: ______

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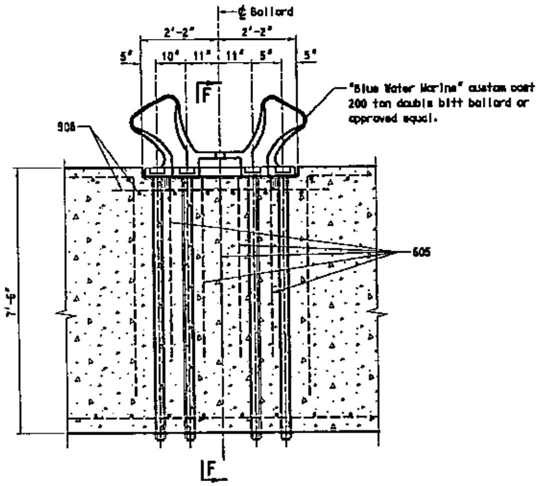
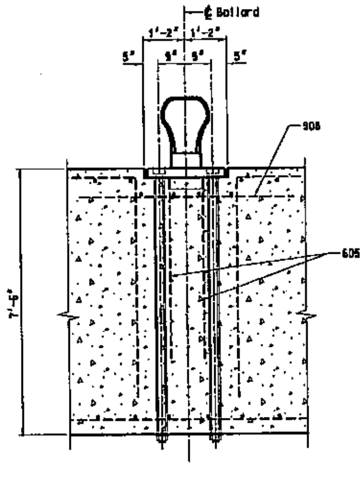
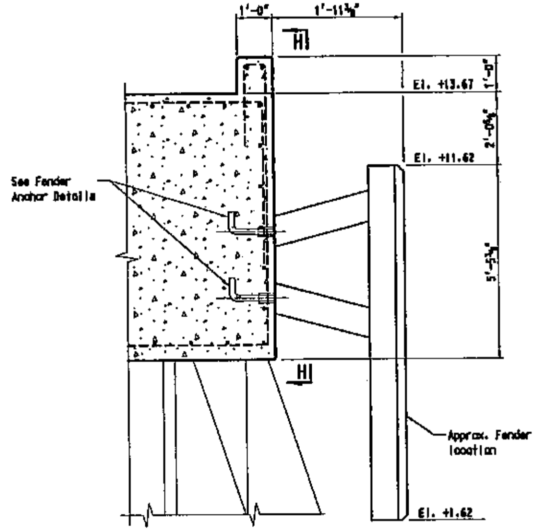
LINE SEG:
AUTH:



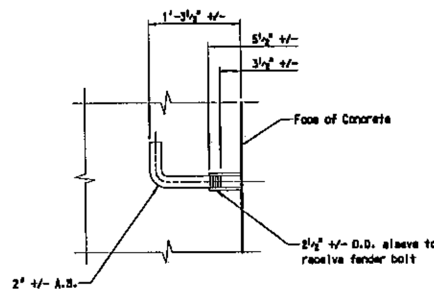
SECTION E-E



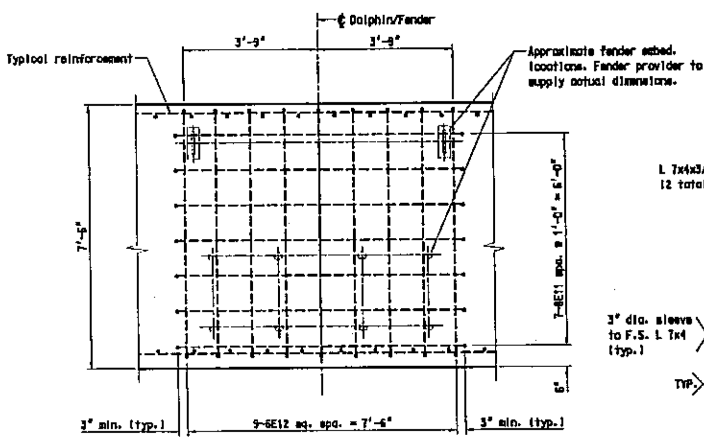
SECTION F-F



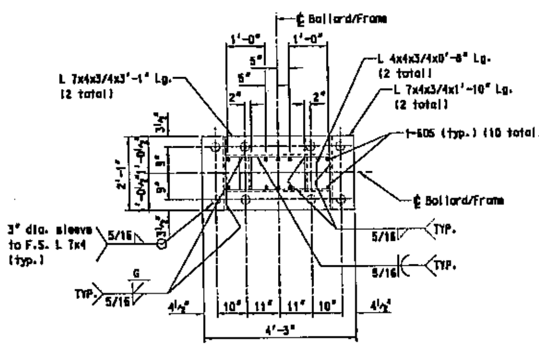
SECTION G-G



FENDER ANCHOR DETAIL



VIEW H-H



PLAN VIEW OF ANCHOR FRAME

FENDER ANCHOR NOTES:

1. Fendering system shall be supplied and installed by contractor for this contract.
2. Contractor shall install fender anchor bolts in strict accordance with manufacturer's recommendation.
3. Contractor shall be responsible for coordinating anchor bolt locations and installation details and for maintaining adequate distance for corrosion protection of dolphin reinforcing.

NOTES:

See Sheet B-18 for location of sections and for reinforcing steel information.

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

MOORING & BRESTING
DOLPHIN DETAILS

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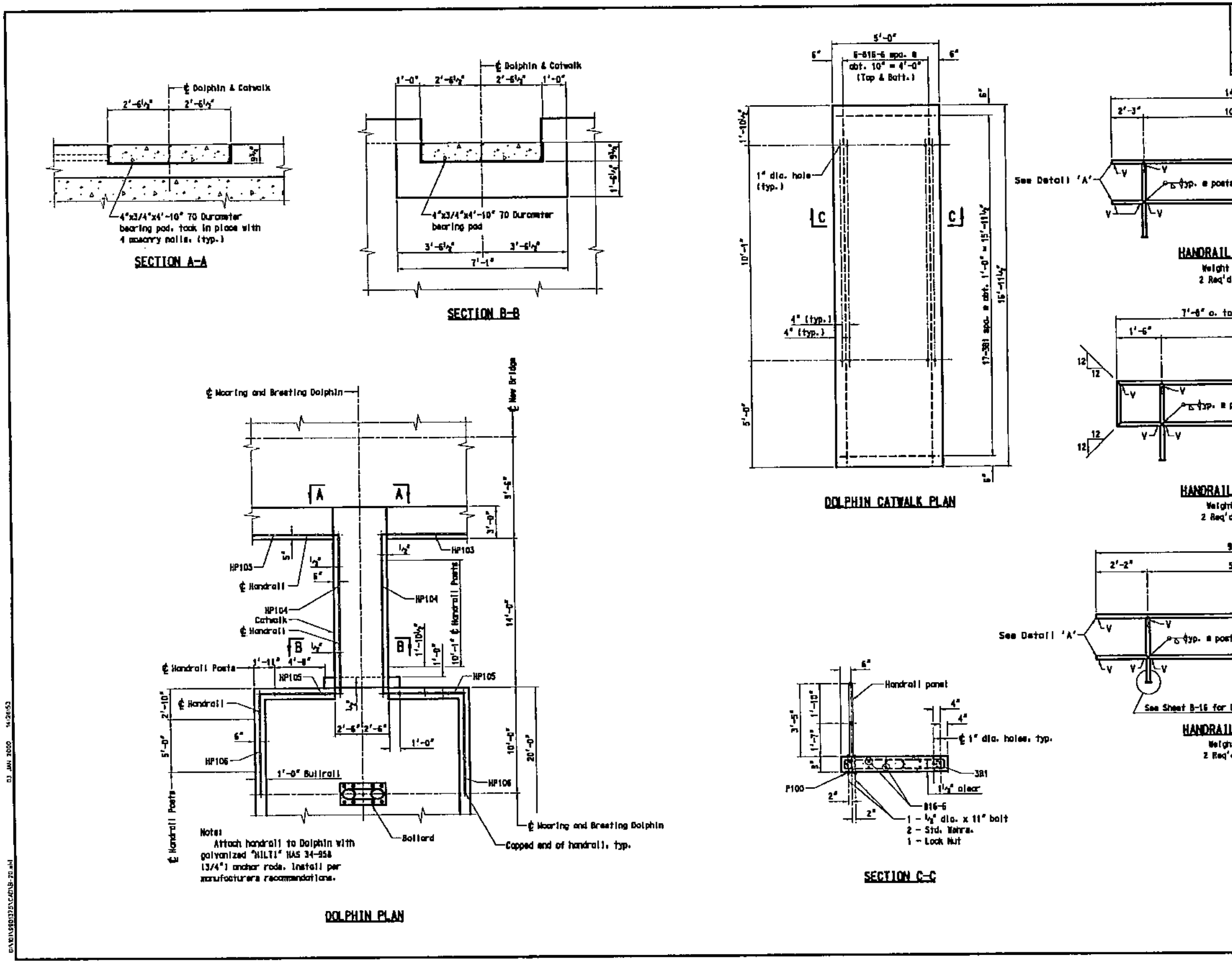


℄ Dolphin & Catwalk
2'-6½"
4"x3/4"x4'-10" 70 Durometer bearing pad, tack in place with 4 masonry nails. (typ.)
SECTION A-A
1'-0"
2'-6½"
1'-6¼"
4"x3/4"x4'-10" 70 Durometer bearing pad
3'-6½"
7'-1"
SECTION B-B
5'-0"
6"
6-B16-6 spa. @ abt. 10" = 4'-0" (Top & Bott.)
1" dia. hole (typ.)
1'-10½"
10'-1"
5'-0"
4" (typ.)
17-3B1 spa. @ abt. 1'-0" = 15'-11½"
15'-11½"
DOLPHIN CATWALK PLAN
14'-5¾"
2'-3"
10'-1"
2'-5¾"
See Detail 'A'
typ. @ posts
1'-10"
2'-5"
7"
HANDRAIL PANEL HP104
Weight = 101.7 lbs.
2 Req'd. Mk. - HP104
7'-8" c. to c. of handrail
1'-6"
4'-8"
HANDRAIL PANEL HP105
Weight = 63.7 lbs.
2 Req'd. Mk. - HP105
9'-4"
2'-2"
5'-0"
See Sheet B-16 for Detail
HANDRAIL PANEL HP106
Weight = 77.7 lbs.
2 Req'd. Mk. - HP106
℄ Mooring and Bresting Dolphin
℄ New Bridge
HP103
℄ Handrail
HP104
Catwalk
℄ Handrail Posts
HP105
HP106
1'-0" Bullrail
Bollard
Capped end of handrail, typ.
3'-0"
14'-0"
10'-1"
10'-0"
20'-0"
2'-10"
5'-0"
Note:
Attach handrail to Dolphin with galvanized "HILTI" HAS 34-958 (3/4") anchor rods. Install per manufacturers recommendations.
DOLPHIN PLAN
Handrail panel
1" dia. holes, typ.
P100
3B1
1½" clear
B16-6
1 - ½" dia. x 11" bolt
2 - Std. Wshrs.
1 - Lock Nut
3'-5"
1'-10"
1'-7"
SECTION C-C

RECOMMENDED:
DATED:
APPROVED:
DATED:
SUBDIV:
LINE SEG:
AUTH:

PORT OF PORT ARTHUR TAIL TRACK PLANS

TranSystems Corporation

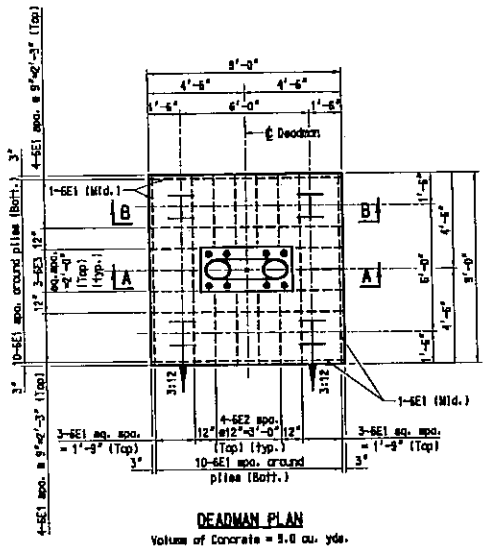
MISCELLANEOUS DOLPHIN DETAILS

DESIGNED BY: TJW / CHECKED BY: DDH / DRAWN BY: KJS	FILE	DATE	SHEET NO.
	1019901375	01/05/2000	B-20

RECOMMENDED: _____
DATED: _____
APPROVED: _____
DATED: _____

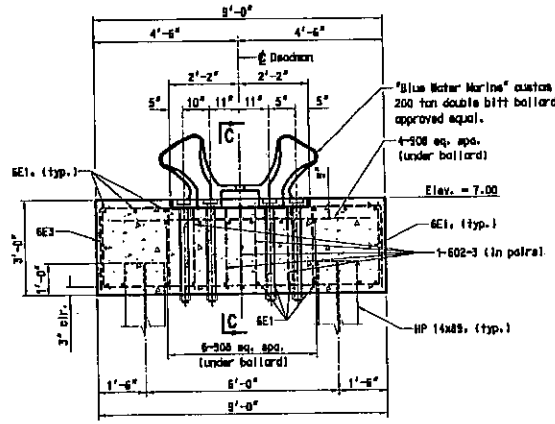
SUBDIV: _____
LINE SEG: _____ AUTH: _____

49° 53' 12"
PROJECT NORTH
TRUE NORTH

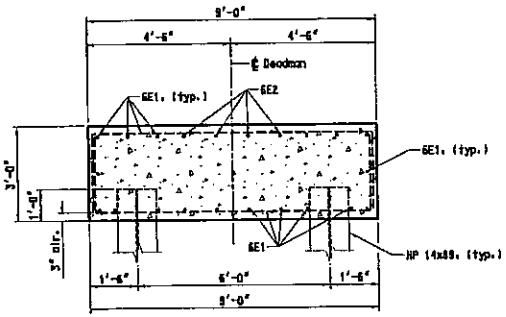


DEADMAN PLAN

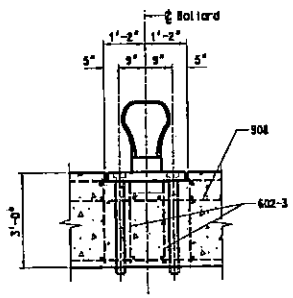
Volume of Concrete = 5.0 cu. yds.



SECTION A-A



SECTION B-B



SECTION C-C

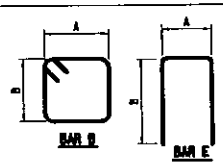
NOTES:

See Sheet B-19 for additional details.

See Sheet B-2 for location of the Deadman.

LIST OF REINFORCING BARS

QUANTITY	MARK	SIZE	TYPE	A	B	LENGTH
36	6E1	6	E	9'-8"	2'-7"	13'-10"
8	6E2	6	E	3'-0"	2'-1"	8'-2"
6	6E3	6	E	2'-0"	2'-1"	7'-2"
10	602-3	6	STR.	-	-	2'-3"
10	908	9	STR.	-	-	8'-0"
1,260	WEIGHT OF REINFORCING BARS (LBS)					



REINFORCING STEEL DETAILS

All dimensions shown are out to out of bars.

PORT OF PORT ARTHUR
TAIL TRACK PLANS

TRANSYSTEMS CORPORATION

DEADMAN DETAILS

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