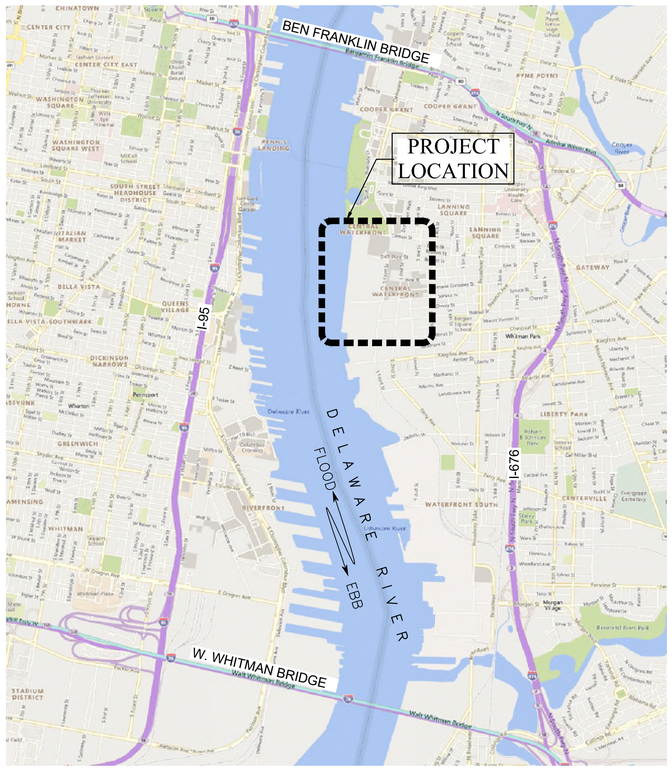
RAIL INFRASTRUCTURE REHABILITATION

AT

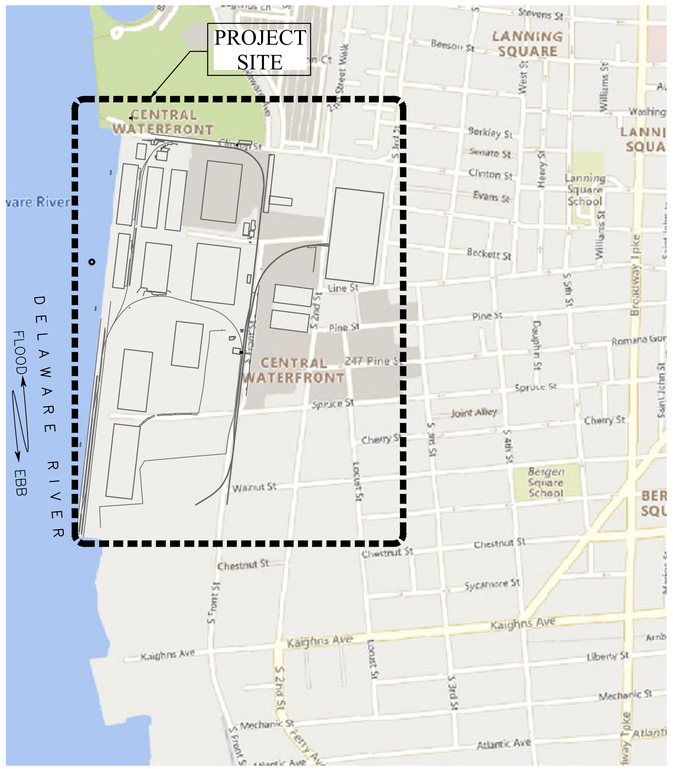
BALZANO MARINE TERMINAL

FOR

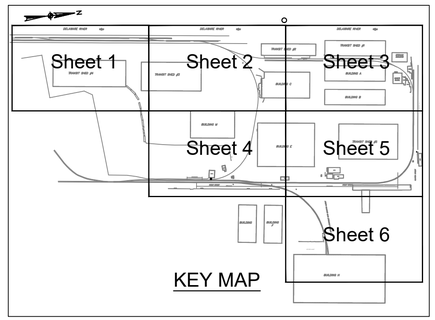
SOUTH JERSEY PORT CORPORATION



VICINITY MAP



LOCATION MAP



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URBAN PROJECT NO. 2021500064.000

REV	BY	DATE	DESCRIPTION

SOUTH JERSEY PORT CORP.
101 JOSEPH A, BALZANO BLVD, CAMDEN, NJ 08103
TEL.: (856) 757-4969

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URBAN ENGINEERS, INC.
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STATE OF NEW JERSEY · MICHAEL W. GOCKLEY · NO. GE50183 · PROFESSIONAL ENGINEER

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
COVER SHEET

DWN: FYC | PROJ #: 2021500064.000 | DRAWING NUMBER: G-000
CHK: MGW | DATE: 06/24/2022

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Structural\G-000 COVER SHEET.dwg

GENERAL NOTES:

1. DESIGN AND CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES AND STANDARDS, THE PROJECT SPECIFICATIONS, AND DRAWINGS. NOTES ON DRAWINGS SHALL TAKE PRECEDENCE OVER PROJECT SPECIFICATIONS. SPECIFIC NOTES ON DETAIL DRAWINGS TAKE PRECEDENCE OVER GENERAL NOTE DRAWINGS. STATE AND LOCAL CODES SHALL TAKE PRECEDENCE OVER PROJECT SPECIFICATIONS AND NOTES ON DRAWINGS.

2. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO MOBILIZING. ALL EXISTING & PROPOSED DIMENSIONS AND ELEVATIONS SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY FABRICATION OR ERECTION. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.

3. THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL WASTE MATERIAL, DEMOLISHED MATERIAL AND DEBRIS GENERATED DURING THE COURSE OF THE WORK, U.N.O. DISPOSAL OF ALL GENERATED WASTE MATERIAL, DEMOLISHED MATERIAL AND DEBRIS IS THE CONTRACTOR'S RESPONSIBILITY. DISPOSE OF ALL MATERIAL IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS.

4. THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE ENVIRONMENTAL PROTECTION STANDARDS, CODES, LAWS, REGULATIONS, AND PERMITS.

5. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO AS TO NOT INTERFERE WITH, OR BE DETRIMENTAL TO, VESSEL AND VEHICULAR TRAFFIC DURING THE COURSE OF THE WORK.

6. ALL STRUCTURES ARE DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER ERECTION IS FULLY COMPLETE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE ERECTION PROCEDURES AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER COMPLETION OF THE PROJECT.

7. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.

8. DESIGN AND CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL CODES AND STANDARDS, PROJECT SPECIFICATIONS AND DRAWINGS.

9. EXISTING TOPOGRAPHIC FEATURES, GRADE CONTOURS, PROPERTY AND RIGHT-OF-WAY LINES SHOWN WERE TAKEN FROM A PLAN ENTITLED "BOUNDARY AND TOPOGRAPHIC SURVEY FOR BALZANO MARINE TERMINAL PORT OF CAMDEN" PREPARED BY COLLIERS ENGINEERING & DESIGN DATED MAY 10TH, 2022.

10. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.

11. HORIZONTAL DATUM IS BASED ON N.J.S.P.C.S NAD'83. VERTICAL DATUM IS BASED ON NAVD 1988.

12. THE CONTRACTOR IS REQUIRED TO NOTIFY THE NEW JERSEY ONE CALL SYSTEM AT 1-800-272-1000 NOT LESS THAN THREE (3) FULL WORKING DAYS PRIOR TO ANY EXCAVATION.

13. THE PROPERTY IS LOCATED WITHIN AN AREA HAVING THE FLOOD ZONE DESIGNATION OF ZONE X ON FLOOD INSURANCE MAP ENTITLED "PANEL 0062E, FIRM, FLOOD INSURANCE RATE MAP, CAMDEN COUNTY, NEW JERSEY (ALL JURISDICTIONS), PANEL 62 OF 305" MAP NUMBER 34007C0062E, EFFECTIVE DATE SEPTEMBER 28, 2007.

14. CONTRACTOR TO ACCOUNT FOR TIDAL WATERS ON SITE DURING CONSTRUCTION. INLETS MAY SURCHARGE ONTO SITE DURING HIGH TIDE.

15. THIS DRAWING WAS MADE WITHOUT THE BENEFIT OF A TITLE REPORT.

16. THE CONTRACTOR SHALL SCHEDULE AND CONDUCT ALL CONSTRUCTION TO MINIMIZE EROSION.

17. APPROVED EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PROVIDED AND MAINTAINED UNTIL ALL WORK IS COMPLETED. E&S PLANS SHALL BE AVAILABLE ON SITE UNTIL CONSTRUCTION IS COMPLETED. THE CONTRACTOR SHALL CONDUCT OPERATIONS TO COMPLY WITH THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN. IF THE APPROVED PLAN(S) CANNOT BE FOLLOWED, THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL OF ALTERNATIVE EROSION AND SEDIMENTATION CONTROLS BY THE APPROPRIATE REGULATORY AGENCY. AT NO TIME SHALL WATER CONTAINING SEDIMENTS OR POLLUTANTS BE DISCHARGED INTO DRAINAGE DITCHES, STORMWATER PIPES OR WATERCOURSES.

18. THE CONTRACTOR IS REQUIRED TO PROVIDE ADEQUATE SHEETING, SHORING AND DEWATERING IN ALL TRENCHES AND EXCAVATIONS AS NECESSARY IN ACCORDANCE WITH OSHA; AND IS SOLELY RESPONSIBLE FOR THE SAFETY OF SHEETING, SHORING AND DEWATERING.

19. THE CONTRACTOR SHALL REMOVE TREES THAT WILL INTERFERE WITH PROPOSED WORK INCLUDING STUMPS THAT ARE WITHIN THE LIMITS OF CONSTRUCTION. BEFORE REMOVAL OF ANYTHING NOT MARKED FOR REMOVAL ON THE PLANS, OBTAIN APPROVAL FROM THE OWNER.

20. CLEAR AND GRUB ALL VEGETATION AND OTHER MISCELLANEOUS ITEMS WITHIN THE LIMITS OF WORK PRIOR TO ANY EARTHMOVING ACTIVITIES.

21. IF DISCREPANCIES IN OR OMISSIONS FROM THE CONTRACT DOCUMENTS ARE FOUND, NOTIFY THE ENGINEER IN WRITING IMMEDIATELY. NO CONSIDERATION OR ALLOWANCES WILL BE GRANTED FOR ANY ALLEGED MISUNDERSTANDING OF MATERIAL TO BE FURNISHED OR WORK TO BE PERFORMED.

UTILITY NOTES:

1. THE LOCATION OF UNDERGROUND UTILITIES IS TAKEN FROM OWNER RECORDS AND FIELD LOCATION OF VENTS, VALVES, MANHOLES, INLETS, ETC. THE EXTENT AND EXACT LOCATION AND DEPTH OF UNDERGROUND UTILITIES HAS NOT BEEN VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXTENT AND EXACT LOCATION AND DEPTH OF ALL EXISTING PRIVATE AND PUBLIC UTILITIES PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

2. THE CONTRACTOR IS REQUIRED TO NOTIFY THE NEW JERSEY ONE CALL SYSTEM AT 1-800-272-1000 NOT LESS THAN THREE (3) FULL WORKING DAYS PRIOR TO ANY EXCAVATION, AND SHALL PROVIDE WRITTEN NOTICE TO THE OWNER THAT CONTACT HAS BEEN MADE. UTILITIES LOCATED WITHIN THE PROJECT MAY BE PRIVATE AND MAY NOT BE LOCATED BY THE ONE CALL SERVICES. THEREFORE THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE THOSE UTILITIES.

3. CAUTION: HIGH VOLTAGE LINES MAY EXIST WITHIN THE PROJECT LIMITS. ALL WORK IS TO BE PERFORMED IN CONFORMITY WITH ALL STATE, FEDERAL, UTILITY AND CONTRACT REQUIREMENTS. URBAN ENGINEERS INC. AND THE OWNER HAVE NO CONTROL OVER THE MEANS, METHODS, CHOICE OF EQUIPMENT, SEQUENCING OF AND SAFETY PRACTICES USED OR NOT USED, IN, ON OR AROUND HIGH VOLTAGE LINES OR OTHER UTILITY STRUCTURES, AS THESE ITEMS ARE THE RESPONSIBILITY OF THE PARTIES PHYSICALLY PERFORMING OR CONTROLLING, THE PERFORMANCE OF THE WORK. EXCEPT WHERE ELECTRICAL DISTRIBUTION AND TRANSMISSION LINES HAVE BEEN DEENERGIZED AND VISIBLY DE-ENERGIZED GROUNDED AT THE POINT OF WORK, ASSUME THAT ALL SUCH LINES ARE ENERGIZED AND CONFORM OPERATIONS TO INTER ALIA, TITLE 29 OF THE CODE OF FEDERAL REGULATIONS, SECTION 1926.550(a)(19).

4. THE CONTRACTOR SHALL NOTIFY THE OWNER IN ADVANCE FOR ANY WATER SHUT-OFF. NO WATER SHUT-OFF WILL BE ALLOWED UNLESS APPROVAL FROM THE OWNER IS OBTAINED.

5. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING UTILITIES AND/OR TEMPORARILY RELOCATE AND PROPERLY SUPPORT EXISTING UTILITIES AS NECESSARY.

6. THE CONTRACTOR SHALL PROVIDE NECESSARY MATERIAL, EQUIPMENT AND MANPOWER IN ORDER TO RESTORE INTERRUPTED OR DAMAGED UTILITY SERVICES 24 HOURS PER DAY UNTIL UTILITY SERVICES HAVE BEEN COMPLETELY RESTORED OR TEMPORARY SERVICES HAVE BEEN DETERMINED SUFFICIENT BY THE ENGINEER.

7. THE CONTRACTOR SHALL OBTAIN FROM THE APPROPRIATE UTILITY COMPANY OR CITY DEPARTMENT, VERIFICATION OF THE CURRENT STATUS OF UTILITIES AND STRUCTURES SHOWN ON THE CONTRACT DOCUMENTS PRIOR TO WORKING ON OR NEAR SUCH STRUCTURES AND UTILITIES.

EXISTING LEGEND

- MAJOR CONTOUR
- MINOR CONTOUR
- EXISTING BUILDING OUTLINE
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING STORM LINE
- EXISTING SANITARY SEWER LINE
- EXISTING FIRE WATER LINE
- EXISTING WATER LINE
- EXISTING UTILITY POLE
- EXISTING FIRE HYDRANT
- EXISTING MANHOLE
- EXISTING STORM INLET
- EXISTING DOWNSPOUT

PROPOSED LEGEND

- 5.0 MAJOR CONTOUR
- 4.5 MINOR CONTOUR
- ST PROPOSED STORMWATER LINE
- FW PROPOSED FIREWATER LINE
- EXISTING UTILITY TO BE REMOVED OR ABANDONED
- PROPOSED STORMWATER INLET
- PROPOSED TRACK DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED BOLLARD
- PROPOSED FLOW ARROW
- PROPOSED CONCRETE
- PROPOSED ASPHALT

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY · MICHAEL J. TOOMEY · NO. GE50867 · PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
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(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION NOTES AND LEGENDS

DWN	PROJ #	DRAWING NUMBER
GJB	2021500064.000	C-001
CHK MJT	DATE 06/24/2022	

CAMDEN COUNTY SOIL EROSION AND SEDIMENT CONTROL NOTES

1. ALL APPLICABLE EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN PLACE PRIOR TO ANY GRADING OPERATION AND/OR INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES.

2. SOIL EROSION AND SEDIMENT CONTROL PRACTICES ON THIS PLAN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.

3. APPLICABLE EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE LEFT IN PLACE UNTIL CONSTRUCTION IS COMPLETED AND/OR THE AREA IS STABILIZED.

4. THE CONTRACTOR SHALL PERFORM ALL WORK, FURNISH ALL MATERIALS AND INSTALL ALL MEASURES REQUIRED TO REASONABLY CONTROL SOIL EROSION RESULTING FROM CONSTRUCTION OPERATIONS AND PREVENT EXCESSIVE FLOW OF SEDIMENT FROM THE CONSTRUCTION SITE.

5. ANY DISTURBED AREA THAT IS TO BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING AND FERTILIZATION IN ACCORDANCE WITH THE NEW JERSEY STANDARDS AND THEIR RATES SHOULD BE INCLUDED IN THE NARRATIVE. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH SALT HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS (I.E. PEG AND TWINE, MULCH NETTING OR LIQUID MULCH BINDER).

6. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO PROVIDE CONFIRMATION OF LIME, FERTILIZER AND SEED APPLICATION AND RATES OF APPLICATION AT THE REQUEST OF THE CAMDEN COUNTY SOIL CONSERVATION DISTRICT.

7. ALL CRITICAL AREAS SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH AT A RATE OF 2 TONS PER ACRE, ACCORDING TO THE NEW JERSEY STANDARDS IMMEDIATELY FOLLOWING ROUGH GRADING.

8. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.

9. ALL SEDIMENTATION STRUCTURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS AND AFTER EVERY STORM EVENT.

10. A CRUSHED STONE, TIRE CLEANING PAD WILL BE INSTALLED WHEREVER A CONSTRUCTION ACCESS EXISTS. THE STABILIZED PAD WILL BE INSTALLED ACCORDING TO THE STANDARD FOR STABILIZED CONSTRUCTION ACCESS

11. ALL DRIVEWAYS MUST BE STABILIZED WITH 2 ½" CRUSHED STONE OR SUBBASE PRIOR TO INDIVIDUAL LOT CONSTRUCTION.

12. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.

13. ALL CATCH BASIN INLETS WILL BE PROTECTED ACCORDING TO THE CERTIFIED PLAN.

14. ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA. THE SEDIMENT FILTER SHOULD BE COMPOSED OF A SUITABLE SEDIMENT FILTER FABRIC.

15. OFFSITE SEDIMENT DISTURBANCE MAY REQUIRE ADDITIONAL CONTROL MEASURES TO BE DETERMINED BY THE EROSION CONTROL INSPECTOR.

16. ANY CONVEYANCE OF THIS PROJECT PRIOR TO ITS COMPLETION WILL TRANSFER FULL RESPONSIBILITY FOR COMPLIANCE WITH THE CERTIFIED PLAN TO ANY SUBSEQUENT OWNERS.

17. METHODS FOR THE MANAGEMENT OF HIGH ACID PRODUCING SOILS SHALL BE IN ACCORDANCE WITH THE STANDARDS. HIGH ACID PRODUCING SOILS ARE THOSE FOUND TO CONTAIN IRON SULFIDES OR HAVE A pH OF 4 OR LESS.

18. TEMPORARY AND PERMANENT SEEDING MEASURES MUST BE APPLIED ACCORDING TO THE NEW JERSEY STANDARDS, AND MULCHED WITH SALT HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE NEW JERSEY STANDARDS (I.E. PEG AND TWINE, MULCH NETTING OR LIQUID MULCH BINDER).

19. MAXIMUM SIDE SLOPES OF ALL EXPOSED SURFACES SHALL NOT BE CONSTRUCTED STEEPER THAN 3:1 UNLESS OTHERWISE APPROVED BY THE DISTRICT.

20. DUST IS TO BE CONTROLLED BY AN APPROVED METHOD ACCORDING TO THE NEW JERSEY STANDARDS AND MAY INCLUDE WATERING WITH A SOLUTION OF CALCIUM CHLORIDE AND WATER.

21. ADJOINING PROPERTIES SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.

22. USE STAGED CONSTRUCTION METHODS TO MINIMIZE EXPOSED SURFACES, WHERE APPLICABLE.

23. ALL VEGETATIVE MATERIAL SHALL BE SELECTED IN ACCORDANCE WITH AMERICAN STANDARDS FOR NURSERY STOCK OF THE AMERICAN ASSOCIATION OF THE NURSERYMEN AND IN ACCORDANCE WITH THE NEW JERSEY STANDARDS.

24. THE SOIL EROSION INSPECTOR MAY REQUIRE ADDITIONAL SOIL EROSION MEASURES TO BE INSTALLED, AS DIRECTED BY THE DISTRICT INSPECTOR.

MAINTENANCE PROGRAM FOR SEDIMENT AND EROSION CONTROL:

THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL FACILITIES DURING CONSTRUCTION. ALL DAMAGED FACILITIES WILL BE REPAIRED WITHIN 24 HOURS. THE CONTRACTOR WILL NOT REMOVE ANY CONTROL FACILITY UNTIL DIRECTED BY THE ENGINEER. MATERIALS USED FOR EROSION CONTROL WILL BE DISPOSED OF OFF-SITE WHEN REMOVED. SUCH MATERIALS ARE CONSIDERED PROPERTY OF THE CONTRACTOR.

STABILIZED CONSTRUCTION ENTRANCE:

1. THE STRUCTURE'S THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL WILL BE MAINTAINED ON THE SITE FOR THIS PURPOSE.

2. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS WILL BE REMOVED BY USE OF A VACUUM TYPE ROAD SWEEPER AND RETURNED TO THE CONSTRUCTION SITE.

COMPOST FILTER SOCK:

1. THE LOG INSTALLATION SHALL BE INSPECTED WEEKLY, BEFORE ANY ANTICIPATED PRECIPITATION EVENT, AND AFTER ALL PRECIPITATION EVENTS. ANY NECESSARY REPAIRS WILL BE MADE IMMEDIATELY.

2. ACCUMULATED SEDIMENTS SHALL BE REMOVED AS REQUIRED TO KEEP THE SOCK FUNCTIONAL. IN ALL CASES REMOVE DEPOSITS WHERE ACCUMULATIONS REACH 1/2 THE ABOVE-GROUND HEIGHT OF THE LOG.

3. ALL UNDERCUTTING OR EROSION OF THE TOE ANCHOR WILL BE REPAIRED IMMEDIATELY WITH COMPACTED BACKFILL MATERIALS.

SOIL STOCKPILES:

1. INSPECT SOIL STOCKPILES MONTHLY.

2. RESEED TO ESTABLISH GRASS COVER.

SEEDING AND MULCHING OF DISTURBED AREAS AND NEW SLOPES:

1. FOLLOW TEMPORARY AND PERMANENT SEEDING SPECIFICATION GUIDELINES.

2. DISTURBED AREAS AND NEW SLOPES SHALL BE INSPECTED WEEKLY AND AFTER EVERY RAIN EVENT.

3. MISSING MULCH SHALL BE REPLACED. RESEED AND MULCH UNTIL THE ESTABLISHMENT OF GOOD GRASS COVER.

PUMPED WATER FILTER BAG:

1. PUMPED WATER FILTERS SHALL BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT.

2. SEDIMENT SHALL BE REMOVED WHEN IT REACHES THE CLEAN-OUT LEVEL ON THE MARKER AND REMOVE OTHER DEBRIS WHICH COULD IMPAIR THE FUNCTION OF THE FILTER.

CIVIL/STRUCTURAL ABBREVIATIONS

ACI	= AMERICAN CONCRETE INSTITUTE	LB	= POUND
ACD	= ADMIRALTY CHART DATUM	LLV	= LONG LEG VERTICAL
AISC	= AMERICAN INSTITUTE OF STEEL CONSTRUCTION	NS	= NEAR SIDE
		LF	= LINEAR FEET
ALT	= ALTERNATE	LG	= LONG
ANSI	= AMERICAN NATIONAL STANDARDS INSTITUTE	M	= METERS
		mm	= MILLIMETERS
APPROX	= APPROXIMATE	MAX	= MAXIMUM
ASTM	= AMERICAN SOCIETY OF TESTING AND MATERIALS	MEA	= MEASURED
		MH	= MANHOLE
AWS	= AMERICAN WELDING SOCIETY	MHHW	= MEAN HIGHER HIGH WATER
B.O.P.	= BOTTOM OF PIPE	MHW	= MEAN HIGH WATER
B/B	= BACK TO BACK	MIN	= MINIMUM
BC	= BOTTOM OF CURB	MISC	= MISCELLANEOUS
BIT.	= BITUMINOUS	MLLW	= MEAN LOWER LOW WATER
BW	= BOTTOM OF WALL	MLW	= MEAN LOW WATER
C	= CHANNEL	MPa	= MEGAPASCALS
C/C	= CENTER TO CENTER	MPH	= MILES PER HOUR
CF	= CUBIC FEET	MSL	= MEAN SEA LEVEL
CIP	= CAST IRON PIPE	N	= NORTH
CJ	= CONSTRUCTION JOINT	NIC	= NOT IN CONTRACT
CLR	= CLEAR	NTS	= NOT TO SCALE
CO	= CLEAN OUT	NO.	= NUMBER
CONC	= CONCRETE	O.C.	= ON CENTER
CONST	= CONSTRUCTION	PVC	= POLYVINYL CHLORIDE
CONT	= CONTINUOUS	R/F	= REINFORCING
D	= DEPTH	R.C.P.	= REINFORCED CONCRETE PIPE
D/R	= DOWN RIVER	REQ'D	= REQUIRED
DC	= DROP CURB	S	= SOUTH
DEG	= DEGREES	SAN	= SANITARY
DETL'S	= DETAILS	SCH	= SCHEDULE
DFM	= DIESEL FUEL MARINE	SECT	= SECTION
DIA	= DIAMETER	SHT	= SHEET
DIST	= DISTANCE	SIM	= SIMILAR
DOD	= DEPARTMENT OF DEFENSE	SPEC	= SPECIFICATION
EA	= EACH	SQ	= SQUARE
EF	= EACH FACE	SS	= STAINLESS STEEL
EHW	= EXTREME HIGH WATER	STRUC.	= STRUCTURE
EL	= ELEVATION (NAVD'88)	SUPP	= SUPPORT
ELEC	= ELECTRICAL	SY	= SQUARE YARD
ETC	= ETCETERA	T&B	= TOP AND BOTTOM
EW	= EACH WAY	T.B.D	= TO BE DETERMINED
EXIST.	= EXISTING	TEMP	= TEMPORARY
EXT	= EXTERIOR	T.O.C	= TOP OF CONCRETE
EXPN	= EXPANSION	T.O.S	= TOP OF STEEL
F.F.	= FINISHED FLOOR	TC	= TOP OF CURB
FDN.	= FOUNDATION	TW	= TOP OF WALL
FL	= FLOOD LIGHT	TYP	= TYPICAL
FRP	= FIBERGLASS REINFORCED PLASTIC	UNO	= UNLESS NOTED OTHERWISE
FS	= FAR SIDE	UHMW	= ULTRA HIGH MOLECULAR WEIGHT
FT	= FEET	U/R	= UP RIVER
FW	= FRESH WATER	W/	= WITH
GALV	= GALVANIZED	W	= WIDTH OR WIDE FLANGE BEAM
GR	= GRADE	W.T.	= WALL THICKNESS
GRTNG	= GRATING	WT	= WEIGHT
GUSS	= GUSSET	℄	= CENTER LINE
H	= HEIGHT	#	= NUMBER
HAT	= HIGHEST ASTRONOMICAL TIDE	%	= PERCENT
HC	= HANDICAPPED	≦	= LESS THAN OR EQUAL TO
I	= I BEAM	ℙ	= PLATE
INV	= INVERT	&	= AND
JT	= JOINT	@	= AT
kg	= KILOGRAMS	x	= BY
KN	= KILONEWTONS	∅	= DIAMETER
L	= LENGTH OR ANGLE	/	= PER
LAT	= LOWEST ASTRONOMICAL TIDE		

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY · MICHAEL J. TUCCI · NO. GE50867 · PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION NOTES AND LEGENDS

DWN	PROJ #	DRAWING NUMBER
GJB	2021500064.000	C-002
CHK MJT	DATE 06/24/2022	

DELAWARE RIVER

EBB

FLOOD

GANTRY CRANE RAIL (TYP.)

STORM INLET
RIM = 6.66

EDGE OF DOCK

UNK. MH
RIM: 7.38'

UNK. MH
RIM: 7.42'

UNK. MH
RIM: 7.67'

PLATE

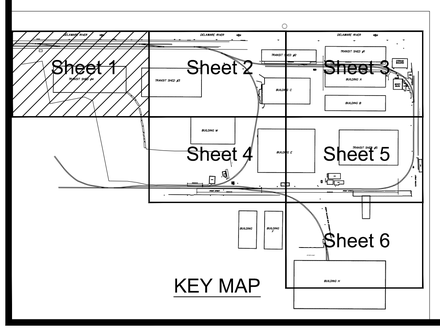
WATER QUALITY CHAMBER

ASPHALT

TRANSIT SHED #4

MATCH LINE

SHEET 2



KEY MAP

GRAPHIC SCALE
1 inch = 30 feet

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
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LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
EXISTING CONDITIONS 1

DWN: GJB | CHK: MJT | PROJ #: 2021500064.000 | DATE: 06/24/2022 | DRAWING NUMBER: C-101

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Civil\DWG\Sheets\SHT-C100-EX.dwg

DELAWARE RIVER

EBB
FLOOD

SHEET 1

MATCH LINE

STORM INLET
RIM = 6.84

EDGE OF DOCK

CANTRY CRANE RAIL (TYP.)

ASPHALT

AREA LIGHT

TRANSIT SHED #3

24" RCP

STORM INLET
(NOT FOUND)

STORM INLET 8
(NOT ACCESSIBLE)

OVERHANG (TYP.)

15" TC

STORM INLET 12
INV(1) = -4.83*
INV(2) = -3.92*
INV(3) = -3.58*

STORM INLET 17
TYPE "E"
GRATE = 3.85
BOTTOM = -1.53

STORM INLET (14)
(NOT FOUND)

STORM INLET 9
INV(1) = -2.25*
INV(2) = -2.25*

CONC. WALL

STORM INLET 13
TYPE "A"
GRATE = 5.23
INV(1) = -1.02
INV(2) = -1.19
INV(3) = 0.40
INV (4) = -0.31

AREA OBSCURED

BUILDIN

STORM INLET 16
BOTTOM = -5.53*
* DEPTH FROM
TOP OF GRATE

STORM INLET 15
RIM = 7.07
INV(1) = 0.99
INV(2) = 0.90
INV(3) = 0.65

9.8" CAST IRON

8.12" CMP

STORM INLET 11
(NO RIM ELEVATION)
INV(1) = -4.92*
INV(2) = -4.67*
* DEPTH FROM TOP OF GRATE

SHEET 3

MATCH LINE

MATCH LINE

SHEET 4

Sheet 1
Sheet 2
Sheet 3
Sheet 4
Sheet 5
Sheet 6

KEY MAP

N

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 feet

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
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LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
EXISTING CONDITIONS 2

DWN GJB | PROJ # 2021500064.000 | DRAWING NUMBER C-102
CHK MJT | DATE 06/24/2022

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DELAWARE RIVER

EBB
FLOOD

SHEET 2

MATCH LINE

HED #2

TRANSIT SHED #1

BUILDING A

BUILDING B

STORAGE BUILDING

MAINT. BLDG.

STORM INLET 6
(NOT FOUND)

STORM INLET
(NOT FOUND)

STORM INLET 5
RIM = 3.97
INV(1) = 1.22
INV(2) = 1.22

STORM INLET
RIM = 3.77

STORM INLET 3
RIM = 4.13
INV(1) = 1.09
INV(2) = 1.13

STORM INLET
BOTTOM = -3.08*
* DEPTH FROM
TOP OF GRATE

STORM INLET 2
INV(1) = -4.00*
INV(2) = -4.00*
* DEPTH FROM
TOP OF GRATE

STORM INLET 1
RIM = 3.42
INV(1) = 2.09
INV(2) = 2.09

STORM INLET
RIM = 3.42
INV(1) = 1.67
INV(2) = 1.54

STORM INLET
BOTTOM = -4.08*
* DEPTH FROM
TOP OF GRATE

STORM INLET 4
RIM = 4.47
INV(1) = 1.22
INV(2) = 1.55

STORM INLET
RIM = 4.66

STORM INLET
(NOT FOUND)

STORM INLET 7
INV(1) = -2.25*
INV(2) = -2.33*
INV(3) = -2.21*

STORM INLET "A"
GRATE = 8.32

~CONCRETE LOADING DOCK~

OVERHANG (TYP.)

BOLLARD (TYP.)

CONC. STEPS

8" CAST IRON

15" TC

18" TC

6" CAST IRON

3" DIP

ASPHALT

CONCRETE

CONC. ISLAND

UNK. MH
RIM: 6.24'

A/C UNIT ON
CONC. PAD
BOLLARD (TYP.)

SWITCH
EQUIPMENT

SHIPPING
CONTAINERS

TRAILER

UNK. MH
RIM: 8.39'

HANDRAIL

DECK

BUILDING

GATE

10" C.L.P.
W/ BARBED WIRE

CLINTON STREET

KEY MAP

Sheet 1
Sheet 2
Sheet 3
Sheet 4
Sheet 5
Sheet 6

MATCH LINE

SHEET 5

GRAPHIC SCALE
1 inch = 30 feet
30 0 15 30 60

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
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LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL
INFRASTRUCTURE REHABILITATION
EXISTING CONDITIONS 3

DWN	GJB	PROJ #	2021500064.000	DRAWING NUMBER
CHK	MJT	DATE	06/24/2022	C-103

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MATCH LINE

SHEET 2

BUILDING M

STORM INLET 10
(NO RIM ELEVATION)
INV(1) = -5.21*
INV(2) = -5.54*
* DEPTH FROM TOP
OF GRATE

SHEET 5

BUILDIN

UNK. MH
RIM: 8.09'

ASPHALT

BUILDING

TRUCK SCALE

SENSOR ON CONC. PAD

100' MAINTAINED BY SJPC

TREE LINE

GATE

STORM INLET "E"
GRATE = 8.04

6' C.L.F. W/ BARBED WIRE

STORM INLET "B"
GRATE = 8.47

AREA LIGHT

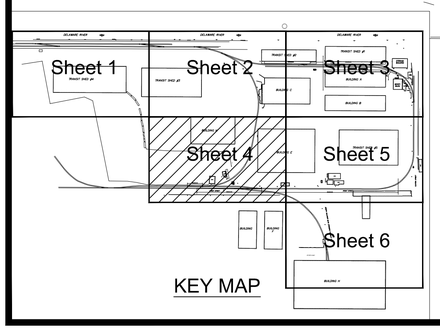
FRONT STREET

428' MAINTAINED BY SJPC

CONC. CURB

6' C.L.F.

MATCH LINE



KEY MAP

GRAPHIC SCALE
1 inch = 30 feet

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
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LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION EXISTING CONDITIONS 4

DWN: GJB | CHK: MJT | PROJ #: 2021500064.000 | DATE: 06/24/2022 | DRAWING NUMBER: C-104

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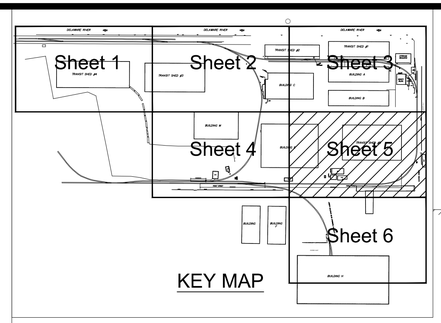

MATCH LINE

SHEET 3

SHEET 4

NG E

TRANSIT SHED #5

STORM INLET "A"
GRATE = 9.07

STORM STRUCTURE
RIM = 9.41

STORM INLET "E"
GRATE = 7.82

SECURITY BOOTH

CONC. ISLAND

BOLLARD (TYP.)

UNK. MH
RIM: 8.53'

AREA LIGHT
UNK. MH
RIM: 8.38'

UNK. MH
RIM: 8.69'

UNK. MH
RIM: 9.43'

UNK. MH
RIM: 9.41'

SAN. MH
RIM: 9.70'

CANOPY

BUILDING

CONC. WALL

OVERHANG (TYP.)

ASPHALT

GATE

SHED

8' C.L.F. W/ BARBED WIRE

8' METAL FENCE

8' C.L.F. FENCE

900' MAINTAINED BY SJPC

AREA OBSCURED

FRONT STREET

CLINTON STREET

MATCH LINE

SHEET 6

GRAPHIC SCALE
1 inch = 30 feet
30 0 15 30 60

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
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LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
EXISTING CONDITIONS 5

DWN	GJB	PROJ #	2021500064.000	DRAWING NUMBER
CHK	MJT	DATE	06/24/2022	C-105

MATCH LINE

SHEET 5

ASPHALT

JOSEPH BALZANO BLVD (FORMERLY BECKETT ST.)

8' METAL FENCE

ONE

8.0

2.5

7.0

6.5

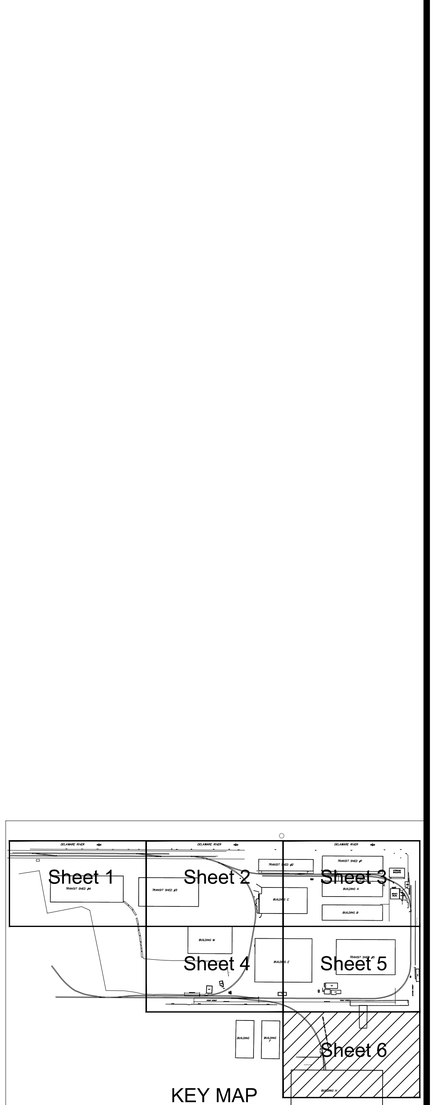
7.5

WHEEL STOP (TYP.)

8' METAL FENCE

SECOND STREET

BUILDING H



KEY MAP

ISSUED FOR BID

GRAPHIC SCALE
1 inch = 30 feet
30 0 15 30 60

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
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TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
EXISTING CONDITIONS 6

DWN	PROJ #	DRAWING NUMBER
GJB	2021500064.000	C-106
CHK MJT	DATE 06/24/2022	

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DELAWARE RIVER

EBB
FLOOD

RESET INLET TO MATCH PROPOSED GRADE

GANTRY CRANE RAIL (TYP.)

STORM INLET RIM = 6.66

EDGE OF DOCK

REFER TO TRACK DRAWINGS FOR SWITCH DRAIN

RESET INLET TO MATCH PROPOSED GRADE

UNK. MH RIM: 7.38'

UNK. MH RIM: 7.42'

UNK. MH RIM: 7.67'

FLATE

WATER QUALITY CHAMBER

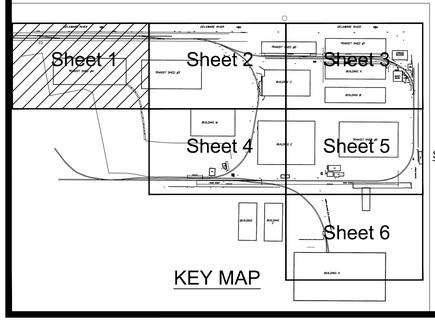
ASPHALT

RESET INLET TO MATCH PROPOSED GRADE

TRANSIT SHED #4

SHEET 2

MATCH LINE



KEY MAP

STORMWATER NOTES:

1. WHERE NEW STORMWATER PIPES ARE TO BE INSTALLED THE CONTRACTOR IS TO FIELD VERIFY EXISTING DOWNSTREAM STORMWATER PIPE SIZE. NEW STORMWATER PIPE TO BE INSTALLED IS TO MATCH THE DOWNSTREAM SIZE.
2. NEW STORMWATER PIPE INVERTS MUST MATCH OR BE BETWEEN UPSTREAM AND DOWNSTREAM PIPE INVERTS WHILE MAINTAINING MINIMUM SLOPE PER NOTE #3.
3. CONTRACTOR TO MAINTAIN MINIMUM 0.50% SLOPE, IN A DOWNSTREAM DIRECTION, ON STORMWATER PIPES.
4. NEW STORMWATER PIPES SHALL MAINTAIN 18" MINIMUM COVER TO CROWN OF PIPE.
5. ALL STORMWATER PIPES SHALL BE CONNECTED TO STORMWATER CONVEYANCE NETWORK AS SHOWN AND SHALL DRAIN TO EXISTING OUTLETS AND OUTFALLS.
6. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO INSTALLATION OF NEW STORMWATER PIPE TO AVOID POTENTIAL CONFLICTS. WHERE UTILITY/PIPE CROSSINGS ARE REQUIRED, CONTRACTOR TO NOTIFY ENGINEER.
7. CONTRACTOR TO INSPECT AND CLEAR ALL EXISTING DOWNSTREAM PIPES IN ACCORDANCE TO SPECIFICATION 330130,11, TELEVISION INSPECTION OF SEWERS.

N

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 feet

REV	BY	DATE	DESCRIPTION

ISSUED FOR BID

STATE OF NEW JERSEY
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LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
PROPOSED STORM & WATER 1

DWN	GJB	PROJ #	2021500064.000	DRAWING NUMBER
CHK	MJT	DATE	06/24/2022	C-201

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DELAWARE RIVER

EBB

FLOOD

SHEET 1

SHEET 3

MATCH LINE

MATCH LINE

TRANSIT SHED #3

BUILDIN

TRANSIT S

REFER TO TRACK DRAWINGS FOR SWITCH DRAIN

STORM INLET RIM = 6.84

RESET INLET TO MATCH PROPOSED GRADE

EDGE OF DOCK

GANTRY CRANE RAIL (TYP.)

ASPHALT

REFER TO TRACK DRAWINGS FOR SWITCH DRAIN

RESET EXISTING STORM INLET GRATE RIM: 5.72'

AREA LIGHT

REFER TO TRACK DRAWINGS FOR SWITCH DRAIN

PROPOSED STORM INLET RIM: 5.05'

24" RCP

STORM INLET (NOT FOUND)

CONFIRM ASSUMED EXISTING STORM INLET LOCATION UNDER PAVEMENT. REMOVE INLET AND ASSOCIATED LINE.

REFER TO TRACK PLANS FOR TRACK DRAIN INLET LOCATIONS AND DETAILS

NEW STORM PIPE. CONNECT INVERTS

REMOVE EXISTING STORM INLET

STORM INLET 8 (NOT ACCESSIBLE)

OVERHANG (TYP.)

PROPOSED STORM INLET RIM: 4.45'

MATCH UPSTRE PIPE SIZE

NEW STORM PIPE. CONNECT INVERTS

REMOVE EXISTING STORM INLET

PROPOSED STORM INLET RIM: 4.30'

EXISTING LINE TO BE ABANDONED IN PLACE, CUT FROM INLET, FILLED, & CAPPED

STORM INLET 17 TYPE "E" GRATE = 3.85 BOTTOM = -1.53

STORM INLET 12 INV(1) = -4.83* INV(2) = -3.92* INV(3) = -3.58*

REMOVE EXISTING STORM INLET

STORM INLET (14) (NOT FOUND)

CONC. WALL

STORM INLET 9 INV(1) = -2.25* INV(2) = -2.25*

REFER TO TRACK PLANS FOR TRACK DRAIN INLET LOCATIONS AND DETAILS

PROPOSED STORM INLET OVER EXISTING LINE RIM: 4.40'

RESET INLET TO MATCH PROPOSED GRADE

RESET INLET TO MATCH PROPOSED GRADE

EXISTING LINE TO BE ABANDONED IN PLACE, CUT FROM INLET, FILLED, & CAPPED

RESET INLET TO MATCH PROPOSED GRADE

STORM INLET 13 TYPE "A" GRATE = 5.23 INV(1) = -1.02 INV(2) = -1.19 INV(3) = 0.40 INV (4) = -0.31

AREA OBSCURED

EXTEND EXISTING DOWNSPOUTS TO NEW LINE

PROVIDE 22.5° CONNECTION MIN. (TYP)

EXISTING LINE TO BE ABANDONED IN PLACE, CUT FROM INLET, FILLED, & CAPPED

RESET INLET TO MATCH PROPOSED GRADE

STORM INLET 16 BOTTOM = -5.53* * DEPTH FROM TOP OF GRATE

EXISTING LINE TO BE ABANDONED IN PLACE, CUT FROM INLET, FILLED, & CAPPED

PROPOSED STORM INLET OVER EXISTING LINE RIM: 6.87'

REMOVE EXISTING STORM INLET

CONTRACTOR TO VERIFY LOCATION OF WATERLINE AND PROVIDE MIN. 18" VERTICAL CLEARANCE BETWEEN UTILITIES

9.0" CAST IRON

8.5" CMP

STORM INLET 15 RIM = 7.07 INV(1) = 0.99 INV(2) = 0.90 INV(3) = 0.65

EXISTING LINE SECTION TO BE REMOVED

STORM INLET 11 (NO RIM ELEVATION) INV(1) = -4.92* INV(2) = -4.67* * DEPTH FROM TOP OF GRATE

ISSUED FOR BID

SHEET 4

Sheet 1
Sheet 2
Sheet 3
Sheet 4
Sheet 5
Sheet 6

KEY MAP

STORMWATER NOTES:

1. WHERE NEW STORMWATER PIPES ARE TO BE INSTALLED THE CONTRACTOR IS TO FIELD VERIFY EXISTING DOWNSTREAM STORMWATER PIPE SIZE. NEW STORMWATER PIPE TO BE INSTALLED IS TO MATCH THE DOWNSTREAM SIZE.
2. NEW STORMWATER PIPE INVERTS MUST MATCH OR BE BETWEEN UPSTREAM AND DOWNSTREAM PIPE INVERTS WHILE MAINTAINING MINIMUM SLOPE PER NOTE #3.
3. CONTRACTOR TO MAINTAIN MINIMUM 0.50% SLOPE, IN A DOWNSTREAM DIRECTION, ON STORMWATER PIPES.
4. NEW STORMWATER PIPES SHALL MAINTAIN 18" MINIMUM COVER TO CROWN OF PIPE.
5. ALL STORMWATER PIPES SHALL BE CONNECTED TO STORMWATER CONVEYANCE NETWORK AS SHOWN AND SHALL DRAIN TO EXISTING OUTLETS AND OUTFALLS.
6. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO INSTALLATION OF NEW STORMWATER PIPE TO AVOID POTENTIAL CONFLICTS. WHERE UTILITY/PIPE CROSSINGS ARE REQUIRED, CONTRACTOR TO NOTIFY ENGINEER.
7. CONTRACTOR TO INSPECT AND CLEAR ALL EXISTING DOWNSTREAM PIPES IN ACCORDANCE TO SPECIFICATION 330130,11, TELEVISION INSPECTION OF SEWERS.

N

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 feet

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
MICHELLE J. TOTH
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LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
PROPOSED STORM & WATER 2

DWN	GJB	PROJ #	2021500064.000	DRAWING NUMBER
CHK	MJT	DATE	06/24/2022	C-202

DELAWARE RIVER

EBB
FLOOD

SHEET 2

MATCH LINE

TRANSIT SHED #1

HED #2

BUILDING A

BUILDING B

MAINT. BLDG.

SHIPPING CONTAINERS

REMOVE EXISTING STORM INLETS AND ASSOCIATED LINES

CONFIRM ASSUMED EXISTING STORM INLET LOCATION UNDER PAVEMENT. REMOVE INLET AND ASSOCIATED LINE.

CONFIRM ASSUMED EXISTING STORM INLET LOCATION UNDER PAVEMENT. REMOVE & CONNECT INVERTS. 7 LF OF 18" DIP

STORM INLET 6 (NOT FOUND)

STORM INLET (NOT FOUND)

PROPOSED STORM INLET RIM: 4.45'

EXISTING CONCRETE ISLAND TO BE REMOVED. UTILITIES TO BE RELOCATED

RESET INLET TO MATCH PROPOSED GRADE

CONTRACTOR TO VERIFY LOCATION OF WATERLINE AND PROVIDE MIN. 18" VERTICAL CLEARANCE BETWEEN UTILITIES AT PROPOSED CROSSING.

PROPOSED FIRE HYDRANT AND 25' LATERAL OFF OF EXISTING 8" FIRE WATER LINE.

STORM INLET 7 INV(1) = -2.25* INV(2) = -2.33* INV(3) = -2.21*

CONTRACTOR TO VERIFY LOCATION OF WATER LINE AND PROVIDE MIN. 18" VERTICAL CLEARANCE BETWEEN UTILITIES AT PROPOSED CROSSINGS.

STORM INLET 5 RIM = 3.97 INV(1) = 1.22 INV(2) = 1.22

STORM INLET RIM = 3.77

PROPOSED STORM INLETS RIM: 4.45'

REMOVE EXISTING STORM INLETS AND ASSOCIATED LINES.

EXISTING CONCRETE STAIRS TO BE REMOVED

STORM INLET RIM = 4.66

CONTRACTOR TO VERIFY LOCATION OF SANITARY LINE AND PROVIDE MIN. 18" VERTICAL CLEARANCE BETWEEN UTILITIES AT PROPOSED CROSSINGS.

REMOVE EXISTING STORM INLETS AND ASSOCIATED LINES.

PROPOSED STORM INLET RIM: 4.45'

REMOVE EXISTING STORM INLET

EXISTING LINE TO BE REMOVED

PROPOSED STORM INLET TO MATCH PROPOSED GRADE

PROTECT EXISTING SANITARY LINE WITHIN CONSTRUCTION AREA

CONTRACTOR TO VERIFY LOCATION OF DOWNSPOUTS AND MAKE SURFACE CONNECTIONS AND RUN PROPOSED SUBSURFACE TO THE NEAREST DOWNSTREAM STORM STRUCTURE/PIPE.

RESET INLET TO MATCH PROPOSED GRADE

PROPOSED STORM INLET RIM: 4.45'

STORM INLET 3 RIM = 4.13 INV(1) = 1.09 INV(2) = 1.13

PROPOSED STORM INLET RIM: 4.40'

STORM INLET 4 RIM = 4.67 INV(1) = 1.22 INV(2) = 1.55

REMOVE EXISTING STORM INLETS AND ASSOCIATED LINES

REMOVE EXISTING CONCRETE PLATFORM AND RELOCATE STEEL PLATFORM AS DIRECTED BY THE OWNER.

REMOVE EXISTING STORM INLET NEW STORM PIPE. CONNECT INVERTS PROPOSED STORM INLET RIM: 3.70'

RESET EXISTING STORM INLET GRATE RIM: 3.88'

REMOVE EXISTING STORM INLETS. ASSOCIATED LINES TO BE REPLACED.

PROPOSED STORM INLET RIM: 3.64'

CONTRACTOR TO VERIFY LOCATION OF SANITARY LINE AND PROVIDE MIN. 18" VERTICAL CLEARANCE BETWEEN UTILITIES AT PROPOSED CROSSINGS.

PROPOSED FIRE HYDRANT AND 40' LATERAL OFF OF EXISTING 8" FIRE WATER LINE.

STORM INLET "A" GRATE = 8.32

STORM INLET 2 INV(1) = -4.00* INV(2) = -4.00* * DEPTH FROM TOP OF GRATE

RESET INLET TO MATCH PROPOSED GRADE

REFER TO TRACK PLANS FOR TRACK DRAIN INLET LOCATIONS AND DETAILS

STORM INLET 1 RIM = 3.42 INV(1) = 2.09 INV(2) = 2.09

REMOVE EXISTING FIRE HYDRANT

RESET EXISTING STORM INLET GRATE RIM: 4.20'

STORM INLET RIM = 3.42 INV(1) = 1.67 INV(2) = 1.54

STORM INLET BOTTOM = -4.08* * DEPTH FROM TOP OF GRADE

RESET EXISTING STORM INLET GRATE RIM: 5.48'

PROPOSED STORM INLET RIM: 4.45'

Sheet 1 Sheet 2 Sheet 3 Sheet 4 Sheet 5 Sheet 6

KEY MAP

STORMWATER NOTES:

1. WHERE NEW STORMWATER PIPES ARE TO BE INSTALLED THE CONTRACTOR IS TO FIELD VERIFY EXISTING DOWNSTREAM STORMWATER PIPE SIZE. NEW STORMWATER PIPE TO BE INSTALLED IS TO MATCH THE DOWNSTREAM SIZE.
2. NEW STORMWATER PIPE INVERTS MUST MATCH OR BE BETWEEN UPSTREAM AND DOWNSTREAM PIPE INVERTS WHILE MAINTAINING MINIMUM SLOPE PER NOTE #3.
3. CONTRACTOR TO MAINTAIN MINIMUM 0.50% SLOPE, IN A DOWNSTREAM DIRECTION, ON STORMWATER PIPES.
4. NEW STORMWATER PIPES SHALL MAINTAIN 18" MINIMUM COVER TO CROWN OF PIPE.
5. ALL STORMWATER PIPES SHALL BE CONNECTED TO STORMWATER CONVEYANCE NETWORK AS SHOWN AND SHALL DRAIN TO EXISTING OUTLETS AND OUTFALLS.
6. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO INSTALLATION OF NEW STORMWATER PIPE TO AVOID POTENTIAL CONFLICTS. WHERE UTILITY/PIPE CROSSINGS ARE REQUIRED, CONTRACTOR TO NOTIFY ENGINEER.
7. CONTRACTOR TO INSPECT AND CLEAR ALL EXISTING DOWNSTREAM PIPES IN ACCORDANCE TO SPECIFICATION 330130.11, TELEVISION INSPECTION OF SEWERS.

MATCH LINE

SHEET 5

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 feet

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
MICHAEL J. THOMAS
NO. GE50867
PROFESSIONAL ENGINEER

ISSUED FOR BID

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION PROPOSED STORM & WATER 3

DWN GJB | PROJ # 2021500064.000 | DRAWING NUMBER C-203
CHK MJT | DATE 06/24/2022

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Civil\DWG\Sheets\SHT-C200-STORM.dwg

MATCH LINE

SHEET 2

BUILDING M

SHEET 5

BUILDIN

MATCH LINE

STORM INLET 10
(NO RIM ELEVATION)
INV(1) = -5.21*
INV(2) = -5.54*
* DEPTH FROM TOP
OF GRATE

UNK. MH
RIM: 8.09'

STORM INLET "E"
GRATE = 8.04

STORM INLET "B"
GRATE = 8.47

6' C.L.F. W/ BARBED WIRE

8' C.L.F W/ BARBED WIRE

100' MAINTAINED BY SJPC

428' MAINTAINED BY SJPC

FRONT STREET

ASPHALT

CONC. CURB

6' C.L.F.

BUILDING

TRUCK SCALE

SENSOR ON CONC. PAD

TREE

GATE

AREA LIGHT

7:5

8:0

8:5

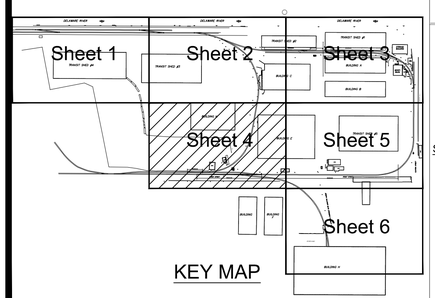
9:0

-7.5

-8.0

-8.5

-9.0



KEY MAP

STORMWATER NOTES:

1. WHERE NEW STORMWATER PIPES ARE TO BE INSTALLED THE CONTRACTOR IS TO FIELD VERIFY EXISTING DOWNSTREAM STORMWATER PIPE SIZE. NEW STORMWATER PIPE TO BE INSTALLED IS TO MATCH THE DOWNSTREAM SIZE.
2. NEW STORMWATER PIPE INVERTS MUST MATCH OR BE BETWEEN UPSTREAM AND DOWNSTREAM PIPE INVERTS WHILE MAINTAINING MINIMUM SLOPE PER NOTE #3.
3. CONTRACTOR TO MAINTAIN MINIMUM 0.50% SLOPE, IN A DOWNSTREAM DIRECTION, ON STORMWATER PIPES.
4. NEW STORMWATER PIPES SHALL MAINTAIN 18" MINIMUM COVER TO CROWN OF PIPE.
5. ALL STORMWATER PIPES SHALL BE CONNECTED TO STORMWATER CONVEYANCE NETWORK AS SHOWN AND SHALL DRAIN TO EXISTING OUTLETS AND OUTFALLS.
6. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO INSTALLATION OF NEW STORMWATER PIPE TO AVOID POTENTIAL CONFLICTS. WHERE UTILITY/PIPE CROSSINGS ARE REQUIRED, CONTRACTOR TO NOTIFY ENGINEER.
7. CONTRACTOR TO INSPECT AND CLEAR ALL EXISTING DOWNSTREAM PIPES IN ACCORDANCE TO SPECIFICATION 330130,11, TELEVISION INSPECTION OF SEWERS.

N

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 feet

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
VICTOR E. J. THOMPSON
NO. GE50867
PROFESSIONAL ENGINEER

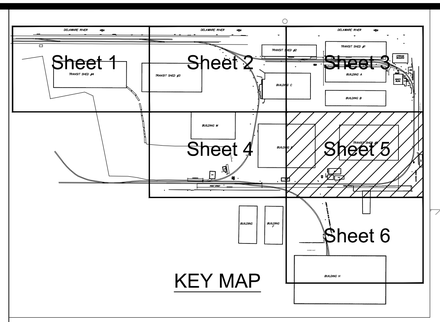
URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
PROPOSED STORM & WATER 4

DWN	GJB	PROJ #	2021500064.000	DRAWING NUMBER
CHK	MJT	DATE	06/24/2022	C-204

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Civil\DWG\Sheets\SHT-C200-STORM.dwg



MATCH LINE

SHEET 3

SHEET 4

NG E

TRANSIT SHED #5

STORM INLET "A"
GRATE = 9.07

4' CONC. WALL

10' C.L.F. W/ BARBED WIRE

ASPHALT

GATE

SAN. MH
RIM: 9.70'

OVERHANG
(TYP.)

SHED

BUILDING

CLINTON STREET

8' METAL FENCE

STORM STRUCTURE
RIM = 9.41

UNK. MH
RIM: 9.41'

AREA
OBSCURED

8' C.L.F. FENCE

FRONT STREET

900' MAINTAINED BY SJPC

AREA
LIGHT

UNK. MH
RIM: 8.38'

8' C.L.F. W/ BARBED WIRE

UNK. MH
RIM: 8.69'

BOLLARD
(TYP.)

SECURITY
BOOTH

CONC.
ISLAND

UNK. MH
RIM: 8.53'

CONC. WALL

CANOPY

BUILDING

UNK. MH
RIM: 9.43'

STORM INLET "E"
GRATE = 7.82

MATCH LINE

SHEET 6

STORMWATER NOTES:

1. WHERE NEW STORMWATER PIPES ARE TO BE INSTALLED THE CONTRACTOR IS TO FIELD VERIFY EXISTING DOWNSTREAM STORMWATER PIPE SIZE. NEW STORMWATER PIPE TO BE INSTALLED IS TO MATCH THE DOWNSTREAM SIZE.
2. NEW STORMWATER PIPE INVERTS MUST MATCH OR BE BETWEEN UPSTREAM AND DOWNSTREAM PIPE INVERTS WHILE MAINTAINING MINIMUM SLOPE PER NOTE #3.
3. CONTRACTOR TO MAINTAIN MINIMUM 0.50% SLOPE, IN A DOWNSTREAM DIRECTION, ON STORMWATER PIPES.
4. NEW STORMWATER PIPES SHALL MAINTAIN 18" MINIMUM COVER TO CROWN OF PIPE.
5. ALL STORMWATER PIPES SHALL BE CONNECTED TO STORMWATER CONVEYANCE NETWORK AS SHOWN AND SHALL DRAIN TO EXISTING OUTLETS AND OUTFALLS.
6. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO INSTALLATION OF NEW STORMWATER PIPE TO AVOID POTENTIAL CONFLICTS. WHERE UTILITY/PIPE CROSSINGS ARE REQUIRED, CONTRACTOR TO NOTIFY ENGINEER.
7. CONTRACTOR TO INSPECT AND CLEAR ALL EXISTING DOWNSTREAM PIPES IN ACCORDANCE TO SPECIFICATION 330130.11, TELEVISION INSPECTION OF SEWERS.

N

30 0 15 30 60

GRAPHIC SCALE
1 inch = 30 feet

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
MICHAEL J. THOMAS
NO. GE50867
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION PROPOSED STORM & WATER 5

DWN GJB | PROJ # 2021500064.000 | DRAWING NUMBER C-205
CHK MJT | DATE 06/24/2022

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Civil\DWG\Sheets\SHT-C200-STORM.dwg

MATCH LINE

SHEET 5

JOSEPH BALZANO BLVD (FORMERLY BECKETT ST.)

ASPHALT

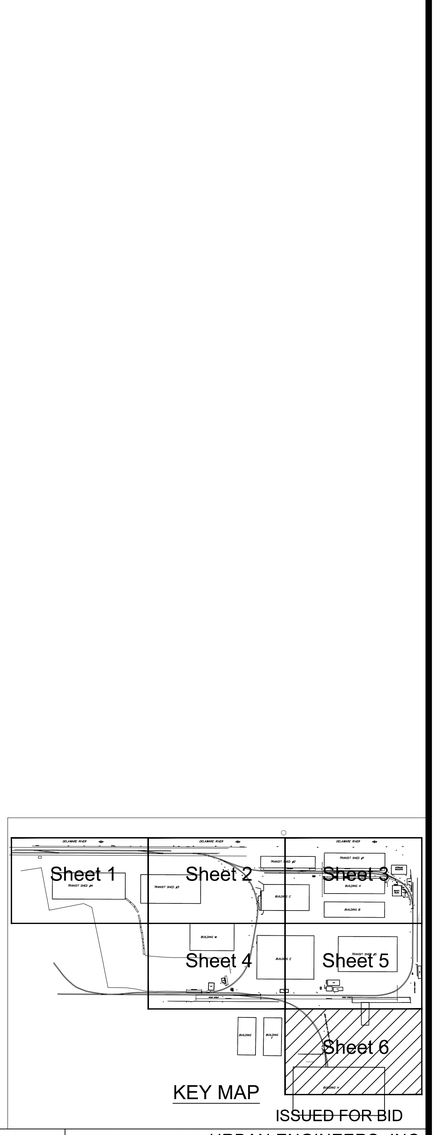
8' METAL FENCE

WHEEL STOP (TYP.)

8' METAL FENCE

SECOND STREET

BUILDING H



KEY MAP

ISSUED FOR BID

STORMWATER NOTES:

1. WHERE NEW STORMWATER PIPES ARE TO BE INSTALLED THE CONTRACTOR IS TO FIELD VERIFY EXISTING DOWNSTREAM STORMWATER PIPE SIZE. NEW STORMWATER PIPE TO BE INSTALLED IS TO MATCH THE DOWNSTREAM SIZE.
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6. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO INSTALLATION OF NEW STORMWATER PIPE TO AVOID POTENTIAL CONFLICTS. WHERE UTILITY/PIPE CROSSINGS ARE REQUIRED, CONTRACTOR TO NOTIFY ENGINEER.
7. CONTRACTOR TO INSPECT AND CLEAR ALL EXISTING DOWNSTREAM PIPES IN ACCORDANCE TO SPECIFICATION 330130.11, TELEVISION INSPECTION OF SEWERS.

GRAPHIC SCALE
1 inch = 30 feet
30 0 15 30 60

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
MICHAEL J. TYLER
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PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION PROPOSED STORM & WATER 6

DWN GJB | PROJ # 2021500064.000 | DRAWING NUMBER C-206
CHK MJT | DATE 06/24/2022

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DELAWARE RIVER

EBB
FLOOD

RESET INLET TO MATCH PROPOSED GRADE

GANTRY CRANE RAIL (TYP.)

STORM INLET RIM = 6.66

EDGE OF DOCK

RESET INLET TO MATCH PROPOSED GRADE

UNK. MH RIM: 7.38'

UNK. MH RIM: 7.42'

FLATE

WATER QUALITY CHAMBER

UNK. MH RIM: 7.67'

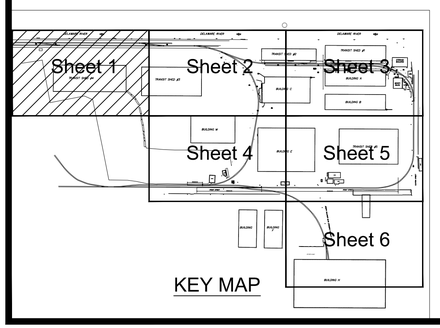
ASPHALT

RESET INLET TO MATCH PROPOSED GRADE

TRANSIT SHED #4

SHEET 2

MATCH LINE



KEY MAP

GRAPHIC SCALE
1 inch = 30 feet

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
MICHAEL J. THOMAS
NO. GE50867
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
PROPOSED GRADING 1

DWN: GJB | PROJ #: 2021500064.000 | DRAWING NUMBER: C-301
CHK: MJT | DATE: 06/24/2022

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DELAWARE RIVER

EBB

FLOOD

SHEET 1

SHEET 3

MATCH LINE

TRANSIT SHED #3

STORM INLET
RIM = 6.84

EDGE OF DOCK

EDGE OF DOCK

GANTRY CRANE RAIL (TYP.)

GANTRY CRANE RAIL (TYP.)

RESET INLET TO MATCH PROPOSED GRADE

ASPHALT

RESET EXISTING STORM INLET GRATE
RIM: 5.72'

AREA LIGHT

PROPOSED STORM INLET
RIM: 5.05'

CONFIRM ASSUMED EXISTING STORM INLET LOCATION UNDER PAVEMENT. REMOVE INLET AND ASSOCIATED LINE.

TRANSIT S

STORM INLET
(NOT FOUND)

REMOVE EXISTING STORM INLET

STORM INLET 8
(NOT ACCESSIBLE)

OVERHANG (TYP.)

PROPOSED STORM INLET
RIM: 4.45'

PROPOSED STORM INLET
RIM: 4.30'

REMOVE EXISTING STORM INLET

STORM INLET 17
TYPE "E"
GRATE = 3.85
BOTTOM = -1.53

STORM INLET 12
INV(1) = -3.83*
INV(2) = -3.92*
INV(3) = -3.58*

REMOVE EXISTING STORM INLET

ASPHALT

STORM INLET (14)
(NOT FOUND)

STORM INLET 9
INV(1) = -2.25*
INV(2) = -2.25*

CONC. WALL

RESET INLET TO MATCH PROPOSED GRADE

PROPOSED STORM INLET
OVER EXISTING LINE
RIM: 4.40'

RESET INLET TO MATCH PROPOSED GRADE

RESET INLET TO MATCH PROPOSED GRADE

ASPHALT

STORM INLET 13
TYPE "A"
GRATE = 5.23
INV(1) = -1.02
INV(2) = -1.18
INV(3) = 0.40
INV (4) = -0.37

AREA OBSCURED

BUILDIN

MATCH LINE

STORM INLET 16
BOTTOM = -5.53*
* DEPTH FROM
TOP OF GRATE

RESET INLET TO MATCH PROPOSED GRADE

PROPOSED STORM INLET
OVER EXISTING LINE
RIM: 6.87'

CONC. WALL

REMOVE EXISTING STORM INLET

STORM INLET 15
RIM = 7.07
INV(1) = 0.99
INV(2) = 0.90
INV(3) = 0.65

STORM INLET 11
(NO RIM ELEVATION)
INV(1) = -4.92*
INV(2) = -4.67*
* DEPTH FROM TOP OF GRATE

Sheet 1
Sheet 2
Sheet 3
Sheet 4
Sheet 5
Sheet 6

KEY MAP

MATCH LINE

SHEET 4

GRAPHIC SCALE
1 inch = 30 feet

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
MICHELLE J. TOTH
NO. GE50867
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA. 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
PROPOSED GRADING 2

DWN	PROJ #	DRAWING NUMBER
GJB	2021500064.000	C-302
CHK MJT	DATE 06/24/2022	

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Civil\DWG\Sheets\SHT-C300-GRADING.dwg

DELAWARE RIVER

EBB

FLOOD

SHEET 2

MATCH LINE

TRANSIT SHED #1

HED #2

BUILDING A

BUILDING B

STORAGE BUILDING

MAINT. BLDG.

SHIPPING CONTAINERS

TRAILER

CLINTON STREET

REMOVE EXISTING STORM INLETS AND ASSOCIATED LINES

CONFIRM ASSUMED EXISTING STORM INLET LOCATION UNDER PAVEMENT. REMOVE & CONNECT INVERTS. 7 LF OF 18" DIP

CONFIRM ASSUMED EXISTING STORM INLET LOCATION UNDER PAVEMENT. REMOVE INLET AND ASSOCIATED LINE.

STORM INLET 6 (NOT FOUND)

STORM INLET (NOT FOUND)

STORM INLET 5
RIM = 3.97
INV(1) = 1.22
INV(2) = 1.22

STORM INLET
RIM = 3.77

REMOVE EXISTING STORM INLETS AND ASSOCIATED LINES.

PROPOSED STORM INLETS
RIM: 4.45'

RESET INLET TO MATCH PROPOSED GRADE

PROPOSED STORM INLET
RIM: 4.45'

STORM INLET 3
RIM = 4.13
INV(1) = 1.09
INV(2) = 1.13

PROPOSED STORM INLET
RIM: 4.40'

REMOVE EXISTING STORM INLET

PROPOSED STORM INLET
RIM: 3.70'

STORM INLET 2
INV(1) = -4.00*
INV(2) = -4.00*
* DEPTH FROM TOP OF GRATE

RESET INLET TO MATCH PROPOSED GRADE

REMOVE EXISTING FIRE HYDRANT

RESET EXISTING STORM INLET GRATE
RIM: 4.20'

STORM INLET
RIM = 3.42
INV(1) = 1.67
INV(2) = 1.54

STORM INLET 1
RIM = 3.45
INV(1) = 2.09
INV(2) = 2.09

STORM INLET
BOTTOM = -4.08*
* DEPTH FROM TOP OF GRATE

RESET EXISTING STORM INLET GRATE
RIM: 5.48'

PROPOSED STORM INLET
RIM: 4.45'

EXISTING CONCRETE ISLAND TO BE REMOVED. UTILITIES TO BE RELOCATED.

RESET INLET TO MATCH PROPOSED GRADE

EXISTING CONCRETE STAIRS TO BE REMOVED

REMOVE EXISTING STORM INLETS AND ASSOCIATED LINES.

STORM INLET
RIM = 4.66

STORM INLET 4
RIM = 4.47
INV(1) = 1.56
INV(2) = 1.56

REMOVE EXISTING STORM INLETS AND ASSOCIATED LINES

RESET EXISTING STORM INLET GRATE
RIM: 3.88'

REMOVE EXISTING STORM INLETS. ASSOCIATED LINES TO BE REPLACED.

REMOVE EXISTING CONCRETE PLATFORM AND RELOCATE STEEL PLATFORM AS DIRECTED BY THE OWNER.

PROPOSED STORM INLET
RIM: 3.64'

STORM INLET 7
INV(1) = -2.25*
INV(2) = -2.33*
INV(3) = -2.21*

PROPOSED FIRE HYDRANT AND 25' LATERAL OFF OF EXISTING 8" FIRE WATER LINE.

PROPOSED STORM INLET
RIM: 4.45'

REMOVE EXISTING STORM INLET

PROPOSED STORM INLET TO MATCH PROPOSED GRADE

PROPOSED FIRE HYDRANT AND 40' LATERAL OFF OF EXISTING 8" FIRE WATER LINE.

STORM INLET "A"
GRATE = 8.32

10" C.L.F. W BARBED WIRE

Sheet 1 Sheet 2 Sheet 3 Sheet 4 Sheet 5 Sheet 6

KEY MAP

MATCH LINE

SHEET 5

N

GRAPHIC SCALE
1 inch = 30 feet
30 0 15 30 60

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
MICHAEL J. THOMAS
NO. GE50867
PROFESSIONAL ENGINEER

ISSUED FOR BID

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION PROPOSED GRADING 3

DWN GJB | PROJ # 2021500064.000 | DRAWING NUMBER C-303
CHK MJT | DATE 06/24/2022

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Civil\DWG\Sheets\SHT-C300-GRADING.dwg

MATCH LINE

SHEET 2

BUILDING M

SHEET 5

BUILDIN

MATCH LINE

ASPHALT

STORM INLET 10
(NO RIM ELEVATION)
INV(1) = -5.21*
INV(2) = -5.54*
* DEPTH FROM TOP
OF GRATE

UNK. MH
RIM: 8.09'

7.5
8.0
8.5
9.0

BUILDING

TRUCK SCALE

SENSOR ON CONC. PAD

TREE

100' MAINTAINED BY SJPC

GATE

6' C.L.F. W/ BARBED WIRE

STORM INLET "E"
GRATE = 8.04

STORM INLET "B"
GRATE = 8.47

AREA LIGHT

8' C.L.F W/ BARBED WIRE

FRONT STREET

428' MAINTAINED BY SJPC

CONC. CURB

6' C.L.F.

Sheet 1
Sheet 2
Sheet 3
Sheet 4
Sheet 5
Sheet 6

KEY MAP

N

GRAPHIC SCALE
1 inch = 30 feet

REV	BY	DATE	DESCRIPTION

ISSUED FOR BID

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

STATE OF NEW JERSEY
MICHAEL J. THOMPSON
NO. GE50867
PROFESSIONAL ENGINEER

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
PROPOSED GRADING 4

DWN	GJB	PROJ #	2021500064.000	DRAWING NUMBER
CHK	MJT	DATE	06/24/2022	C-304

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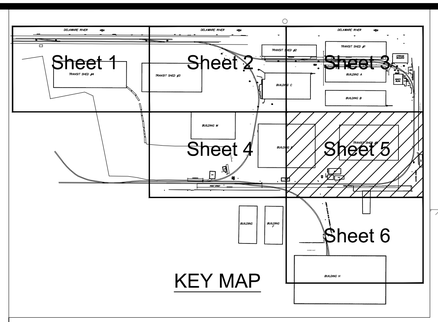


MATCH LINE

SHEET 3

SHEET 4

NG E

TRANSIT SHED #5

STORM INLET "A"
GRATE = 9.07

10' C.L.F. W/ BARBED WIRE

4' CONC. WALL

ASPHALT

GATE

SAN. MH
RIM: 9.70'

OVERHANG
(TYP.)

SHED

BUILDING

CLINTON STREET

8' METAL FENCE

STORM STRUCTURE
RIM = 9.41

UNK. MH
RIM: 9.41'

AREA
LIGHT

UNK. MH
RIM: 8.38'

6' C.L.F. W/ BARBED WIRE

BOLLARD
(TYP.)

SECURITY
BOOTH

CONC.
ISLAND

UNK. MH
RIM: 8.53'

UNK. MH
RIM: 8.69'

CONC. WALL

CANOPY

UNK. MH
RIM: 9.43'

UNK. MH
RIM: 9.16'

FRONT STREET

900' MAINTAINED BY SJPC

AREA
OBSCURED

8' C.L.F. FENCE

STORM INLET "E"
GRATE = 7.82

MATCH LINE

SHEET 6

GRAPHIC SCALE
1 inch = 30 feet
30 0 15 30 60

REV	BY	DATE	DESCRIPTION

ISSUED FOR BID

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION
CAMDEN, NJ

TITLE
SJPC BALZANO MARINE TERMINAL RAIL
INFRASTRUCTURE REHABILITATION
PROPOSED GRADING 5

DWN	GJB	PROJ #	2021500064.000	DRAWING NUMBER
CHK	MJT	DATE	06/24/2022	C-305

STATE OF NEW JERSEY
MICHAEL J. THOMAS
NO. GE50867
PROFESSIONAL ENGINEER

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Civil\DWG\Sheets\SHT-C300-GRADING.dwg

MATCH LINE

SHEET 5

JOSEPH BALZANO BLVD (FORMERLY BECKETT ST.)

ASPHALT

8' METAL FENCE

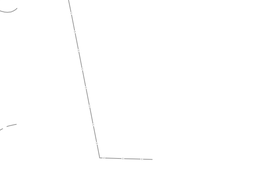
WHEEL STOP (TYP.)

8' METAL FENCE

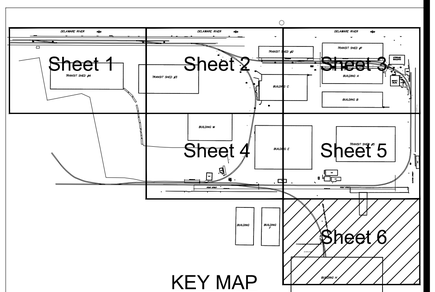
SECOND STREET

BUILDING H

8.5
8.0
7.5
7.0
6.5



GRAPHIC SCALE
1 inch = 30 feet



KEY MAP

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
MICHAEL J. TYLOR
NO. GE50867
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
PROPOSED GRADING 6

DWN	GJB	PROJ #	2021500064.000	DRAWING NUMBER
CHK	MJT	DATE	06/24/2022	C-306

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Civil\DWG\Sheets\SHT-C300-GRADING.dwg

DELAWARE RIVER

EBB
FLOOD

PROPOSED CONC. REFER TO TRACK DRAWINGS FOR EXTENTS

GANTRY CRANE RAIL (TYP.)

STORM INLET RIM = 6.66

EDGE OF DOCK

7.5

7.0

6.5

UNK. MH RIM: 7.38'

UNK. MH RIM: 7.42'

UNK. MH RIM: 7.67'

PLATE

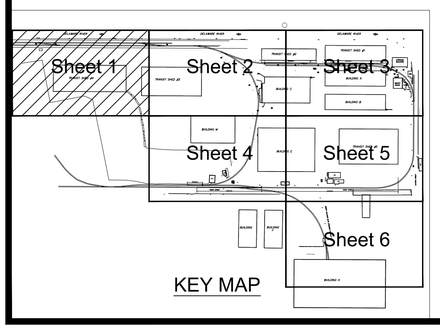
WATER QUALITY CHAMBER

ASPHALT

TRANSIT SHED #4

SHEET 2

MATCH LINE



KEY MAP

GRAPHIC SCALE
1 inch = 30 feet
30 0 15 30 60

REV	BY	DATE	DESCRIPTION

ISSUED FOR BID

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

STATE OF NEW JERSEY
MICHAEL J. THOMAS
NO. GE50867
PROFESSIONAL ENGINEER

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
PROPOSED MATERIALS 1

DWN: GJB | PROJ #: 2021500064.000 | DRAWING NUMBER: C-401

CHK: MJT | DATE: 06/24/2022

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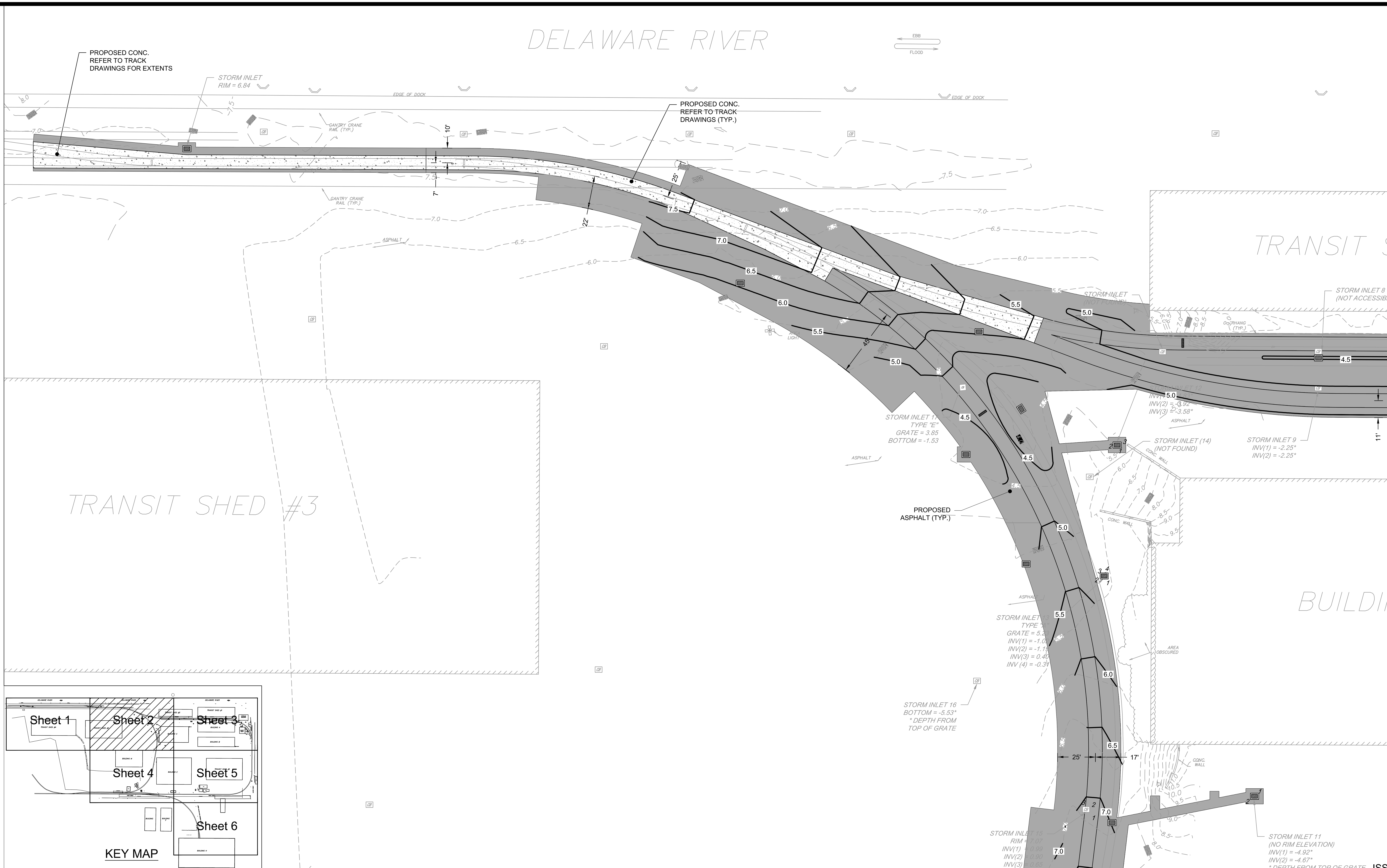

MATCH LINE

SHEET 4

STATE GRID

PLANE NORTH

N

30 0 15 30 60

GRAPHIC SCALE
1 inch = 30 feet

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
MICHAEL J. THOMAS
NO. GE50867
LICENSED
PROFESSIONAL ENGINEER

URBAN ENGINEERS

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530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION
CAMDEN, NJ

TITLE
SJPC BALZANO MARINE TERMINAL RAIL
INFRASTRUCTURE REHABILITATION
PROPOSED MATERIALS 2

DWN GJB	PROJ # 2021500064.000	DRAWING NUMBER
CHK MJT	DATE 06/24/2022	C-402

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Civil\DWG\Sheets\SHT-C400-MATERIALS.dwg

DELAWARE RIVER

EBB
FLOOD

SHEET 2

MATCH LINE

TRANSIT SHED #1

HED #2

BUILDING A

BUILDING B

STORAGE BUILDING

MAINT. BLDG.

CLINTON STREET

~CONCRETE LOADING DOCK~

OVERHANG (TYP.)

BOLLARD (TYP.)

CONC. STEPS

ASPHALT

CONC. PAVING

SHIPPING CONTAINERS

TRAILER

HANDRAIL

BUILDING

UNK. MH
RIM: 8.39'

STORM INLET 6
(NOT FOUND)

STORM INLET
(NOT FOUND)

STORM INLET 5
RIM = 3.97
INV(1) = 1.22
INV(2) = 1.22

STORM INLET
RIM = 3.77

STORM INLET 3
RIM = 4.13
INV(1) = 1.09
INV(2) = 1.13

STORM INLET
BOTTOM = -3.08*
* DEPTH FROM
TOP OF GRADE

STORM INLET 2
INV(1) = -4.00*
INV(2) = -4.00*
* DEPTH FROM
TOP OF GRADE

STORM INLET 1
RIM = 3.45
INV(1) = 2.09
INV(2) = 2.09

STORM INLET
RIM = 3.42
INV(1) = 1.67
INV(2) = 1.54

STORM INLET
BOTTOM = -4.08*
* DEPTH FROM
TOP OF GRADE

STORM INLET 4
RIM = 4.24

STORM INLET
RIM = 4.66

STORM INLET 7
INV(1) = -2.25*
INV(2) = -2.33*
INV(3) = -2.21*

STORM INLET "A"
GRATE = 8.32

A/C UNIT ON
CONC. PAD
BOLLARD (TYP.)

PROPOSED
ASPHALT (TYP.)

PROPOSED ASPHALT
REFER TO TRACK
DRAWINGS (TYP.)

EXISTING CONCRETE
ISLAND TO BE REMOVED.
UTILITIES TO BE
RELOCATED.

EXISTING CONCRETE
STAIRS TO BE REMOVED

PROPOSED CANOPY
REFER TO STRUCTURAL
PLANS (TYP.)

REMOVE EXISTING CONCRETE PLATFORM
AND RELOCATE STEEL PLATFORM AS
DIRECTED BY THE OWNER.

REMOVE EXISTING
FIRE HYDRANT

PROPOSED FIRE HYDRANT AND
25' LATERAL OFF OF EXISTING
8" FIRE WATER LINE.

PROPOSED FIRE HYDRANT AND
40' LATERAL OFF OF EXISTING
8" FIRE WATER LINE.

10" C.L.F. W/ BARBED WIRE

FW

4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5

11' 8' 37' 35' 18' 70' 9.0'

KEY MAP

Sheet 1 Sheet 2 Sheet 3 Sheet 4 Sheet 5 Sheet 6

MATCH LINE

SHEET 5

GRAPHIC SCALE
1 inch = 30 feet
30 0 15 30 60

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
MICHAEL J. THOMAS
NO. GE50867
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
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LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION PROPOSED MATERIALS 3

DWN GJB | PROJ # 2021500064.000 | DRAWING NUMBER C-403
CHK MJT | DATE 06/24/2022

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Civil\DWG\Sheets\SHT-C400-MATERIALS.dwg

MATCH LINE

SHEET 2

BUILDING M

SHEET 5

BUILDIN

MATCH LINE

STORM INLET 10
(NO RIM ELEVATION)
INV(1) = -5.21*
INV(2) = -5.54*
* DEPTH FROM TOP
OF GRATE

PROPOSED ASPHALT
REFER TO TRACK
DRAWINGS (TYP.)

PROPOSED
ASPHALT (TYP.)

UNK. MH
RIM: 8.09'

40'

25'

23'

18'

ASPHALT

BUILDING

TRUCK
SCALE

SENSOR ON
CONC. PAD

100' MAINTAINED BY SJPC

TREE
(TYP.)

BUILDING

GATE

STORM INLET "E"
GRATE = 8.04

6' C.L.F. W/ BARBED WIRE

STORM INLET "B"
GRATE = 8.47

AREA
LIGHT

8' C.L.F. W/ BARBED WIRE

FRONT STREET

428' MAINTAINED BY SJPC

CONC. CURB

6' C.L.F.

7.5

8.0

8.5

9.0

Sheet 1
Sheet 2
Sheet 3
Sheet 4
Sheet 5
Sheet 6

KEY MAP

GRAPHIC SCALE
30 0 15 30 60
1 inch = 30 feet

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
PROPOSED MATERIALS 4

STATE OF NEW JERSEY
MICHAEL J. TOOMEY
NO. GE50867
PROFESSIONAL ENGINEER

DWN	CHK	PROJ #	DATE	DRAWING NUMBER
GJB	MJT	2021500064.000	06/24/2022	C-404

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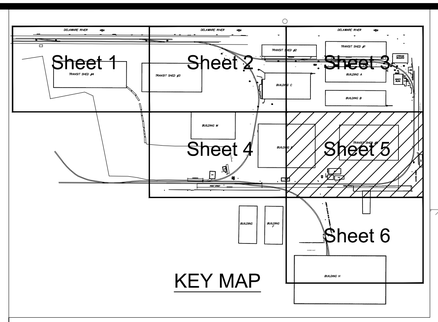

MATCH LINE

SHEET 3

SHEET 4

NG E

TRANSIT SHED #5

PROPOSED PRECAST CONC. CROSSING REFER TO TRACK DRAWINGS (TYP.)

BUILDING

OVERHANG (TYP.)

CONC. WALL

SECURITY BOOTH

CONC. ISLAND

BOLLARD (TYP.)

UNK. MH RIM: 8.53'

CANOPY

BUILDING

ASPHALT

AREA LIGHT

UNK. MH RIM: 8.38'

6' C.L.F. W/ BARBED WIRE

UNK. MH RIM: 8.69'

GATE

8' METAL FENCE

UNK. MH RIM: 9.43'

UNK. MH RIM: 9.16'

STORM STRUCTURE RIM = 9.41

UNK. MH RIM: 9.41'

FRONT STREET

900' MAINTAINED BY SJPC

AREA OBSCURED

8' C.L.F. FENCE

STORM INLET "E" GRATE = 7.82

STORM INLET "A" GRATE = 9.07

10' CLF W/ BARBED WIRE

SAN. MH RIM: 9.70'

OVERHANG (TYP.)

SHED

BUILDING

4' CONC. WALL

CLINTON STREET

MATCH LINE

SHEET 6

GRAPHIC SCALE
1 inch = 30 feet
30 0 15 30 60

REV	BY	DATE	DESCRIPTION

ISSUED FOR BID

STATE OF NEW JERSEY
MICHAEL J. THOMAS
NO. GE50867
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
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Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION PROPOSED MATERIALS 5

DWN GJB | PROJ # 2021500064.000 | DRAWING NUMBER C-405

CHK MJT | DATE 06/24/2022

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Civil\DWG\Sheets\SHT-C400-MATERIALS.dwg

MATCH LINE

SHEET 5

ASPHALT

JOSEPH BALZANO BLVD (FORMERLY BECKETT ST.)

8' METAL FENCE

8.5

8.0

7.0

ASPHALT

6.5

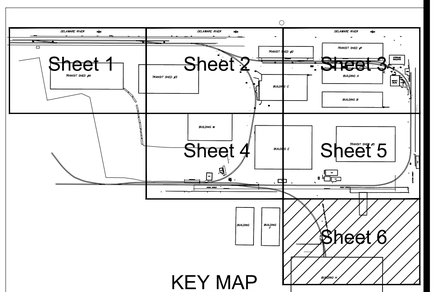
7.0

WHEEL STOP (TYP.)

8' METAL FENCE

SECOND STREET

BUILDING H



KEY MAP

ISSUED FOR BID

GRAPHIC SCALE
1 inch = 30 feet

30 0 15 30 60

REV	BY	DATE	DESCRIPTION

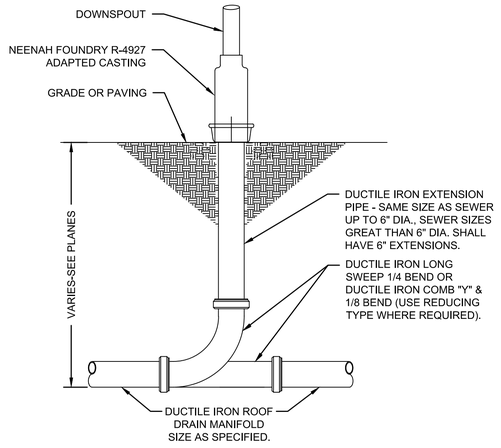
STATE OF NEW JERSEY
MICHAEL J. TYLOR
NO. GE50867
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

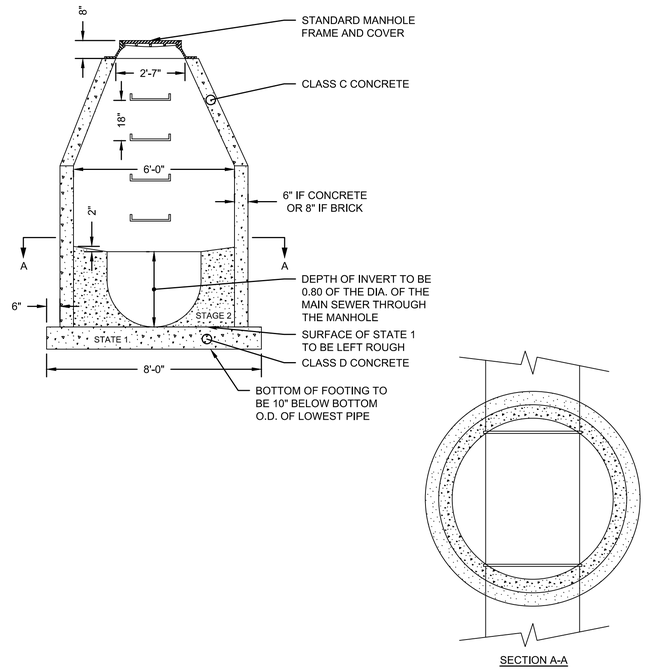
LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
PROPOSED MATERIALS 6

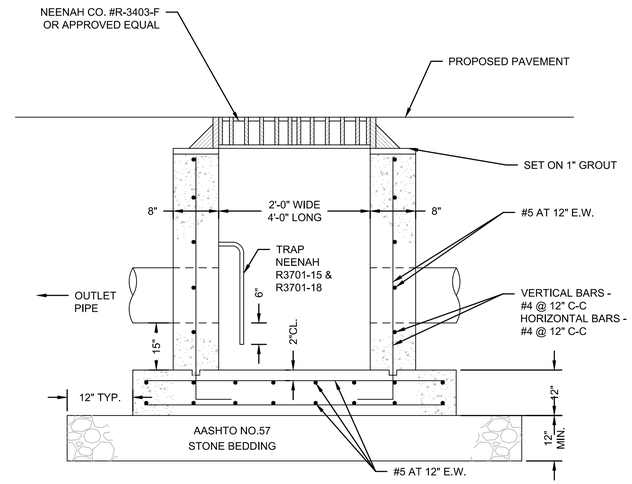
DWN	GJB	PROJ #	2021500064.000	DRAWING NUMBER
CHK	MJT	DATE	06/24/2022	C-406



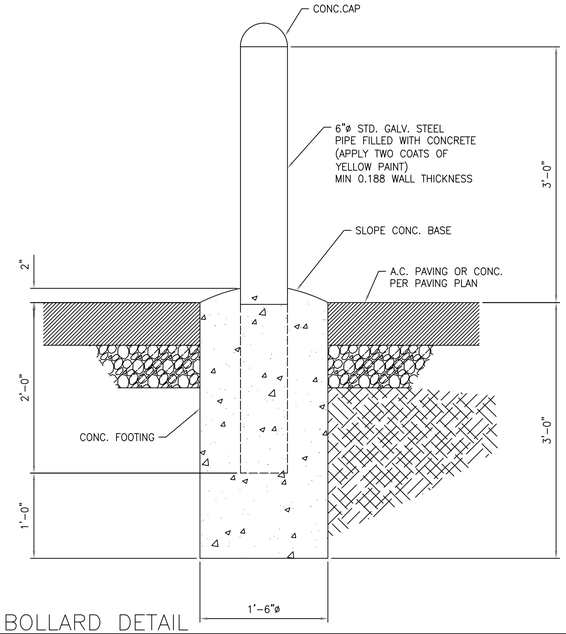
6 DOWNSPOUT MANIFOLD RISER
NOT TO SCALE



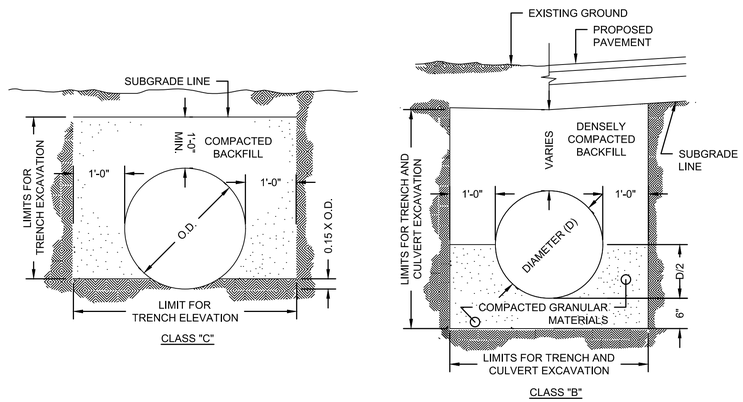
4 STANDARD MANHOLE
NOT TO SCALE



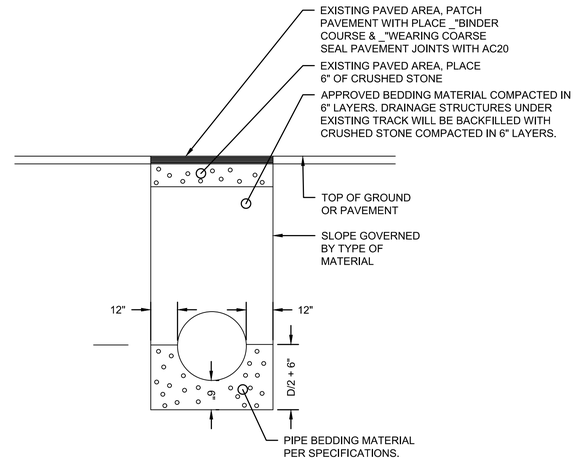
2 NEW INLET DETAIL
NOT TO SCALE



5 PIPE BOLLARD DETAIL
NOT TO SCALE



3 CIRCULAR PIPE TRENCH BEDDING
NOT TO SCALE



1 UTILIITY TRENCHING
NOT TO SCALE

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
MICHAEL J. TYLER
NO. GE50867
PROFESSIONAL ENGINEER

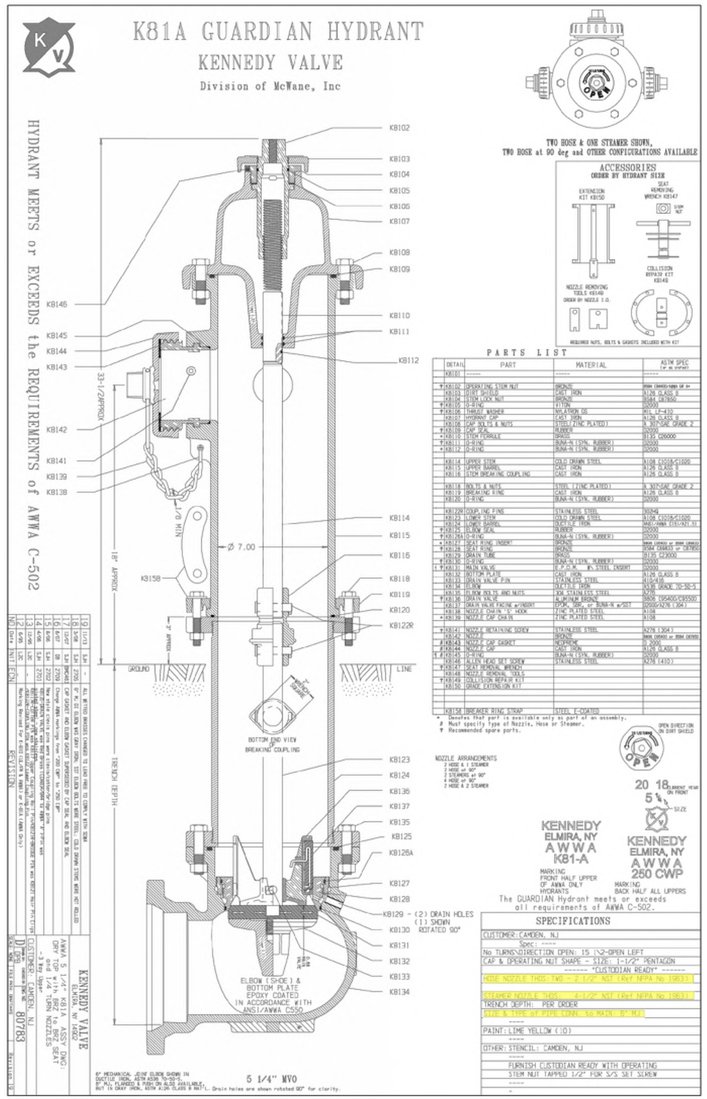
URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

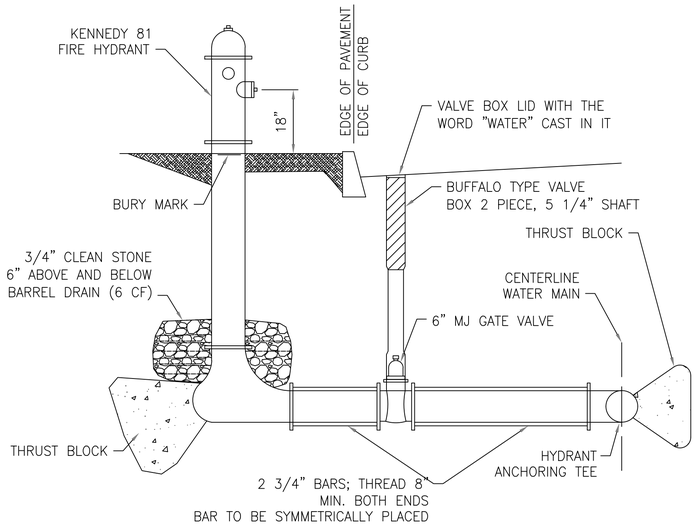
TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
PROPOSED SITE DETAILS 1

DWN	PROJ #	DRAWING NUMBER
GJB	2021500064.000	C-501
CHK MJT	DATE 06/24/2022	

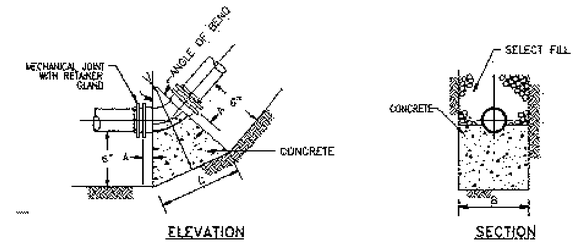
X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Civil\DWG\Sheets\SHT-C500-DTL.dwg



5 HYDRANT DETAIL
NOT TO SCALE



4 FIRE HYDRANT ASSEMBLY DETAIL
NOT TO SCALE

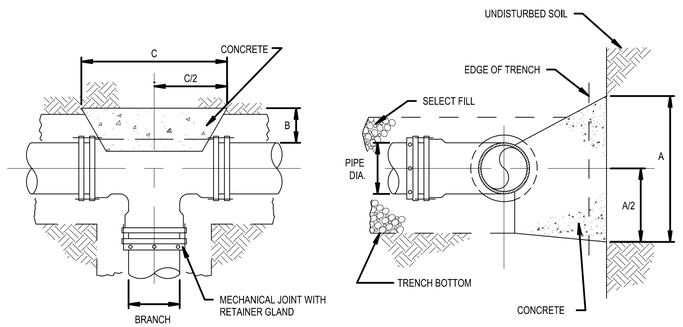


PIPE SIZE	45°(1/8)				22-1/2°(1/16)				11-1/4°(1/32)			
	A	B	C	D	A	B	C	D	A	B	C	D
4", 6"	2.5"	16"	12"	.02	2.5"	18"	9"	.02	2.5"	18"	7"	.02
8"	2.5"	24"	14"	.04	2.5"	24"	11"	.04	2.5"	24"	9"	.03
12"	3.5"	26"	19"	.07	2.5"	38"	16"	.07	2.5"	28"	13"	.06

D=APPROXIMATE VOLUME OF CONCRETE IN CUBIC YARDS

NOTES:
1. WRAP FITTING WITH TAR PAPER BEFORE PLACING CONCRETE.
2. CONCRETE SHALL BE 4,000 psi.
3. CONCRETE SHALL HAVE A 2" MINIMUM CLEARANCE UNDER BELLS AND GLANDS.
4. APPLY COLD BITUMEN COATING AS SPECIFIED.
5. HARNESS TO BE MADE OF A-36 STEEL.
6. RODS TO BE A-193-GRADE B7.
7. NUTS TO BE A-194GRADE 4-HEAVY HEXAGON.
8. CONCRETE MUST BEAR AGAINST UNDISTURBED SOIL.
9. RETAINER GLANDS ON BRANCH OUTLETS ONLY UNLESS OTHERWISE DIRECTED.
10. ALL FITTINGS MUST BE MECHANICAL JOINT.
11. CONTRACTOR SHALL ADHERE TO THE TORQUE REQUIREMENTS PER CAMDEN STANDARDS.

2 CONCRETE ANCHOR FOR VERTICAL BENDS
NOT TO SCALE

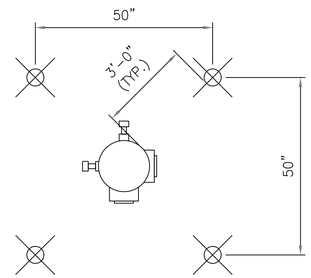


BRANCH PIPE DIAMETER

	4", 6"	8"	12"
A	18"	2'-0"	3'-0"
B	12"	15"	15"
C	18"	2'-0"	3'-0"
D	.1	.2	.4

D=APPROXIMATE VOLUME OF CONCRETE IN CUBIC YARDS

3 CONCRETE ANCHORS FOR TEES
NOT TO SCALE



1 PIPE BOLLARD PLAN VIEW
NOT TO SCALE

CITY OF CAMDEN
DIVISION OF CAPITAL IMPROVEMENTS AND CONSTRUCTION MANAGEMENT
CAMDEN COUNTY, NEW JERSEY

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY · MICHAEL J. TYRRELL · NO. GE50867 · PROFESSIONAL ENGINEER

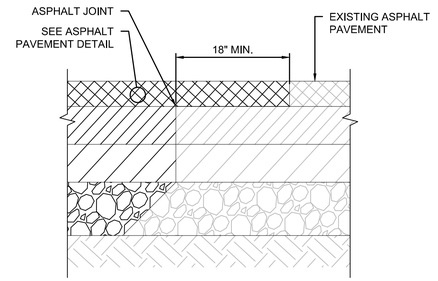
URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA. 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
PROPOSED SITE DETAILS 2

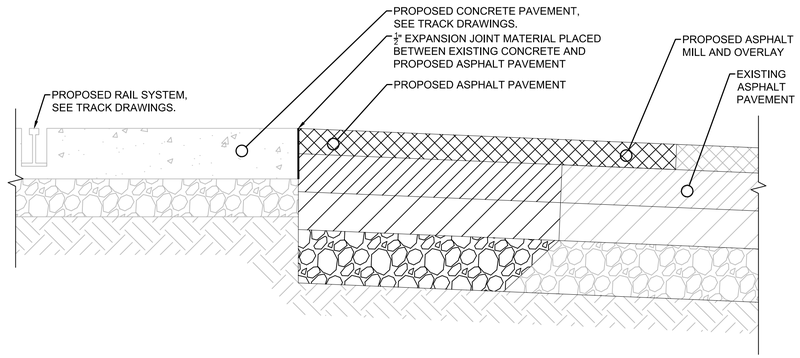
DWN	GJB	PROJ #	2021500064.000	DRAWING NUMBER
CHK	MJT	DATE	06/24/2022	C-502

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Civil\DWG\Sheets\SHT-C500-DTL.dwg

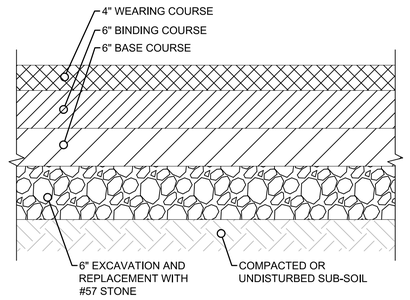


NOTES:
1.) SAW CUT AND MILL 18" MIN. OF EXISTING ASPHALT. TIE INTO EXISTING PATH BY OVERLAY OF WEARING COURSE ONTO EXISTING ASPHALT.

2 ASPHALT MILL AND OVERLAY
NOT TO SCALE



3 TYPICAL PAVEMENT SECTION
NOT TO SCALE



1 ASPHALT PAVEMENT
NOT TO SCALE

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
MICHAEL J. TROOP
NO. GE50867
PROFESSIONAL ENGINEER

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530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL RAIL INFRASTRUCTURE REHABILITATION
PROPOSED SITE DETAILS 3

DWN	PROJ #	DRAWING NUMBER
GJB	2021500064.000	C-503
CHK MJT	DATE 06/24/2022	

GENERAL NOTES:

1. Building Code, Design Reference Codes & Standards
   - 1.1. International Building Code (IBC) 2018
   - 1.2. AISC Manual of Steel Construction - 15th Edition - ASD
   - 1.3. AWS Structural Welding Code D1.4
   - 1.4. Building Code Requirements for Reinforced Concrete - ACI 318-14
   - 1.5. Building Code Requirements for Masonry Structures - TMS 402-16
   - 1.6. Minimum Design Loads for Buildings and Other Structures - ASCE 7-16

2. Design Loads
   - 2.1. Design Live Loads
     - 2.1.1. Floor Live Loads — 150 psf
     - 2.1.2. Roof Live Load (min) — 20 psf
   - 2.2. Design Roof Snow Load (ASCE 7-16)
     - 2.2.1. Ground Snow Load — Pg=25 psf
     - 2.2.2. Flat-Roof Snow Load — Pf=21 psf
     - 2.2.3. Snow exposure factor — Ce=1.0
     - 2.2.4. Importance factor — I=1.0
     - 2.2.5. Thermal factor — Ct=1.2 (Canopy)
   - 2.3. Design Wind Loads (ASCE 7-16)
     - 2.3.1. General
       - 2.3.1.1. Basic Wind Speed — V=112 mph (Ultimate)
       - 2.3.1.2. Risk Category — II
       - 2.3.1.3. Exposure Category — C
   - 2.4. Design Seismic Loads (ASCE 7-10)
     - 2.4.1. Importance Factor — Ie=1.0
     - 2.4.2. Risk Category — II
     - 2.4.3. Mapped Spectral Response Acceleration — Ss=0.179g
     - 2.4.4. Mapped Spectral Response Acceleration — S1=0.047g
     - 2.4.5. Site Class (assumed soil characteristics) — D
     - 2.4.6. Spectral Response Coefficient — SDs=0.191g
     - 2.4.7. Spectral Response Coefficient — SD1=0.075g
     - 2.4.8. Seismic Design Category — B

3. Material Properties
   - 3.1. Concrete minimum compressive strength (28 days) — f'c=4 ksi
     - 3.1.1. Maximum water/cement ratio — w/c=0.40 max.
     - 3.1.2. Slump — 3" +/- 1"
   - 3.2. Reinforcing bars (ASTM A615 Gr 60) — fy=60 ksi
   - 3.3. Welded wire reinforcement (ASTM A1064) — fy=60 ksi
   - 3.4. Non-composite deck (ASTM A653) — fy=33 ksi
   - 3.5. Composite deck (ASTM A653) — fy=33 ksi
   - 3.6. Structural steel W/S Shapes (ASTM A992) — fy=50 ksi
   - 3.7. Structural steel other shapes (ASTM A36) — fy=36 ksi
   - 3.8. Structural steel tubes (ASTM A500 Gr C) — fy=50 ksi
   - 3.9. Structural steel pipe (ASTM A53 Gr B or A501) — fy=35 ksi
   - 3.10. Masonry (ASTM C90) — f'm=1,500 psi
   - 3.11. Masonry units, Type S (N) mortar — 1,900 psi (2,150 psi)
   - 3.12. Masonry grout (ASTM C1019) — 2,000 psi

4. Soil Properties
   - 4.1. Net Allowable Bearing Pressure - Shallow (virgin soil) — 1500 psf
   - 4.2. Net Allowable Bearing Pressure - Shallow (engineered fill) — 1500 psf
   - 4.3. Unit weight of fill — 120 pcf
   - 4.4. Active pressure Coefficient — Ka=0.33
   - 4.5. Pressure at Rest Coefficient — Ko=0.5
   - 4.6. Friction — f=0.3

5. General
   - 5.1. The Contractor shall verify all dimensions in the field prior to commencing any work. The Engineer shall be notified of any discrepancies.
   - 5.2. Any discrepancies between the architectural and structural drawings shall be brought to the attention of the Architect and Structural Engineer for resolution prior to commencing work.
   - 5.3. Shop drawings must be checked and stamped by the Contractor prior to submission. Drawings not first reviewed and approved by the Contractor will be returned with no action taken.

6. Foundations
   - 6.1. Existing foundations
     - 6.1.1. Existing foundations shown on drawings are approximate - exact size and location must be verified during construction.
     - 6.1.2. Unless otherwise noted, the bottom of new footings shall match the bottom of existing footing elevation.
   - 6.2. Locate existing underground utilities in areas of construction before you dig. Coordinate with utility companies for shut off requirements of active lines.
   - 6.3. Contractor shall protect all excavations, including structures which may be involved, with proper safeguards including bracing and shoring as necessary.

7. Concrete
   - 7.1. All concrete construction shall be in accordance with ACI 318 - *Building Code Requirement for Reinforced Concrete*, the *ACI Detailing Manual and Project Specifications Section 033000 Cast-In-Place Concrete.* See Section 1 for governing editions.
   - 7.2. Provide sloped concrete floor surfaces in accordance with ADA code requirements.
   - 7.3. Provide shop drawings which indicate size, spacing, and bend details of all reinforcing.
   - 7.4. Furnish bar and wire mesh supports and chairs where necessary to hold reinforcing in place.
   - 7.5. Welding of reinforcing bars or mesh is not permitted without approval from Structural Engineer.
   - 7.6. Reinforcing for slabs on grade shall be as shown on plans. All reinforcing shall be supported on chairs to maintain position during concrete placement, unless noted otherwise.
   - 7.7. Length of reinforcing splices shall conform to ACI Building code requirements. All reinforcing steel lap splices not detailed on drawings shall be Class B tension splices unless noted otherwise. Where embedment length is not shown use ACI tension development length. All bends or hooks shown shall be ACI standard, unless noted otherwise.
   - 7.8. Contractor has the option to use mechnical splices in place of lap splices. Mechanical splices type and location shall be submitted to engineer for approval.

8. Structural Steel
   - 8.1. All structural steel shall be fabricated and installed in accordance with Project Specifications Section 05 12 00 Structural Steel Framing. All steel detailing, fabrication and erection in accordance with *AISC Specifications and Code of Standard Practice* and the *AWS Structural Welding Code.* See Section 1 for governing edition.
   - 8.2. Fabricator shall be AISC quality certified.
   - 8.3. Shop drawings are required and shall note type of electrodes, size of all welds, and type/size of all bolts. Shop drawings shall be prepared under the supervision of a registered professional engineer.
   - 8.4. Calculations for all moment connections and any non-standard shear connections (ie., skewed, extended or any other connection when designated by the engineer of record) shall be submitted with their corresponding fabrication drawing. Calculations to be sealed by a professional engineer registered in the New Jersey.
   - 8.5. Connections - high strength bolted:
     - 8.5.1. A325-SC with hardened washers for all moment connections, hangers and other connections as noted on the drawings. All slip critical bolting (shop & field) to be inspected by a qualified testing laboratory approved by the Architect/Structural Engineer.
     - 8.5.2. A325-N with hardened washers for all other connections.
     - 8.5.3. Use standard holes unless noted otherwise.
     - 8.5.4. Where reaction is noted, develop same. Where not noted, provide minimum number of bolts per schedule.
   - 8.6. Connections - welded:
     - 8.6.1. Welding electrodes shall be E70xx unless other is required for compatibility with base metal.
     - 8.6.2. A currently certified welder shall perform all welding.
     - 8.6.3. Do not weld to existing steel without approval from Structural Engineer.
     - 8.6.4. All welding (shop & field) to be inspected by a qualified testing laboratory approved by the Architect/Structural Engineer.
   - 8.7. Painting - see specifications.
   - 8.8. Beams bearing on masonry shall have angle wall anchors and bear a minimum of 6" into the wall. Masonry shall be built tightly around the beam.
   - 8.9. Miscellaneous hanging loads shall be applied so that no torsional loading is induced.
   - 8.10. Steel supplier to provide all deck support angles (as required for steel deck) for such cases as changes in joist direction, roof elevation changes, at the ends of each joist, etc.
   - 8.11. The steel supplier shall include an additional 5% of the total contract (deck & red iron) in the bid for miscellaneous use in site conditions.
   - 8.12. Weld masonry anchors (provided by mason) to structural members where masonry abuts or faces structural members on 16" c/c both horizontally and vertically.

9. Steel Deck
   - 9.1. Deck detailing, fabrication and erection in accordance with *SDI Manual of Construction with Steel Deck.* See Section 1 for governing edition.
   - 9.2. Shop drawings are required and shall note type of electrodes, size of all welds and type/size of all fasteners. Shop drawings shall be prepared under the supervision of a registered professional engineer.
   - 9.3. All metal decks shall be securely fastened (welded, screwed or powder-actuated pinned) to steel supports per SDI specifications.
   - 9.4. Provide deck continuous over at least 3 supports and weld to supports as indicated on plans. Limit deflection to L/240 when loaded with wet concrete and provide shoring as required by the Steel Deck Institute.

10. Special Inspection - Structural
    - 10.1. The owner will retain an approved independent testing laboratory that shall provide inspections and testing per ASTM E329. Reports of inspection and testing shall be sent to Architect and Engineer within 48 hours of testing.
    - 10.2. Continuous Inspection -- Contractor shall notify inspection agency and architect prior to work requiring continuous inspection -- any work completed without inspector present shall be removed and replaced at the contractors expense.
    - 10.3. Periodic Inspection -- Contractor shall notify inspection agency and architect when work is ready for inspection. Any work that subsequently hides work to be inspected shall be removed and replaced at the contractors expense.
    - 10.4. Materials Testing -- Contractor shall employ a testing and inspection agency to perform materials testing as required by the Special Inspector.
    - 10.5. Special Inspection Testing shall include:
      - 10.5.1. Concrete: mix data, daily pour reports, cylinder tests, slump, entrained air tests, temperature, etc. per IBC 2018 Section 1705.3 and Table 1705.3.
      - 10.5.2. Structural Steel: Per IBC 2018 Section 1705.2 and AISC 360-16 Section N5.
      - 10.5.3. Cold Formed Steel Deck: Per IBC 2018 Section 1705.2.2.
      - 10.5.4. Masonry: Per IBC 2018 Section 1705.4 and the quality assurance program requirements of TMS 402.
      - 10.5.5. Soils: Per IBC 2018 Section 1705.6 and Table 1705.6.
      - 10.5.6. Foundations: Per IBC 2018 Sections 1705.7-1705.9 and Tables 1705.7 & 1705.8.
      - 10.5.7. Special Inspections for Wind Resistance: Per IBC 2018, Section 1705.11.
      - 10.5.8. Special Inspections for Seismic Resistance: Per IBC 2018, Section 1705.12.

STRUCTURAL ABBREVATIONS & SYMBOLS

ATOR	ABOVE TOP OF RAIL	OC	ON CENTER
BLDG.	BUILDING	OF	OUTSIDE FACE
BM.	BEAM	PEB	PRE-ENGINEERED BUILDING
BOT.	BOTTOM	PG	PLATE GIRDER
B/S	BOTTOM OF STEEL	PJF	PREFORMED JOINT FILLER
BRCG.	BRACING	PROV.	PROVIDE
CCJ	CRACK CONTROL JOINT	REINF.	REINFORCEMENT/REINFORCING
CJ	CONSTRUCTION JOINT	SC	SLIP CRITICAL CONNECTION
CTJ	CONTRACTION JOINT	SLV	SHORT LEG VERTICAL
COL.	COLUMN	STIFF.	STIFFENER
CONC.	CONCRETE	STL	STEEL
CONN.	CONNECTION	T&S	TEMPERATURE AND SHRINKAGE
CONT.	CONTINUOUS	THK	THICK
CONTR.	CONTRACTOR	T/S	TOP OF STEEL
CWR	CONTINUOUS WELDED RAIL	T/C	TOP OF CONCRETE
DET.	DETAIL	T/	TOP OF
DIA.	DIAMETER	T	TOP
DWL.	DOWEL	TYP	TYPICAL
DN.	DOWN	UNO	UNLESS NOTED OTHERWISE
DWG.	DRAWING	WWR	WELDED WIRE REINFORCING
EA	EACH	W/	WITH
EF	EACH FACE	W/O	WITHOUT
EW	EACH WAY		SLOPE DOWN
EL.	ELEVATION		
EJ	EXPANSION JOINT		SPAN OR REINFORCING STEEL DIRECTION
FF	FINISHED FLOOR	℄	CENTER LINE
FDN.	FOUNDATION	@	AT
FRP	FIBERGLASS REINFORCED PLASTIC	℞	PLATE
FS	FAR SIDE	Ⓐ	COLUMN LINE
GALV.	GALVANIZED		
GB	GRADE BEAM		OPENING
HGR.	HANGER		
HORZ.	HORIZONTAL		
HP	HIGH POINT		SECTION OR DETAIL NUMBER
K	KIPS	A / S206	
LB.	POUND		DRAWING ON WHICH DETAIL IS LOCATED
LDCC	LOW DENSITY CONCRETE MATERIAL		
LLV	LONG LEG VERTICAL		
LP	LOW POINT		
MAX.	MAXIMUM		
M.B.M.	METAL BUILDING MANUFACTURER		TOP OF CONCRETE SPOT ELEVATION
MIN.	MINIMUM		
N.A.	NEUTRAL AXIS		
NS	NEAR SIDE		
N.T.S.	NOT TO SCALE		

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY — MICHAEL W. GRIFFIN — NO. GE50183 — PROFESSIONAL ENGINEER

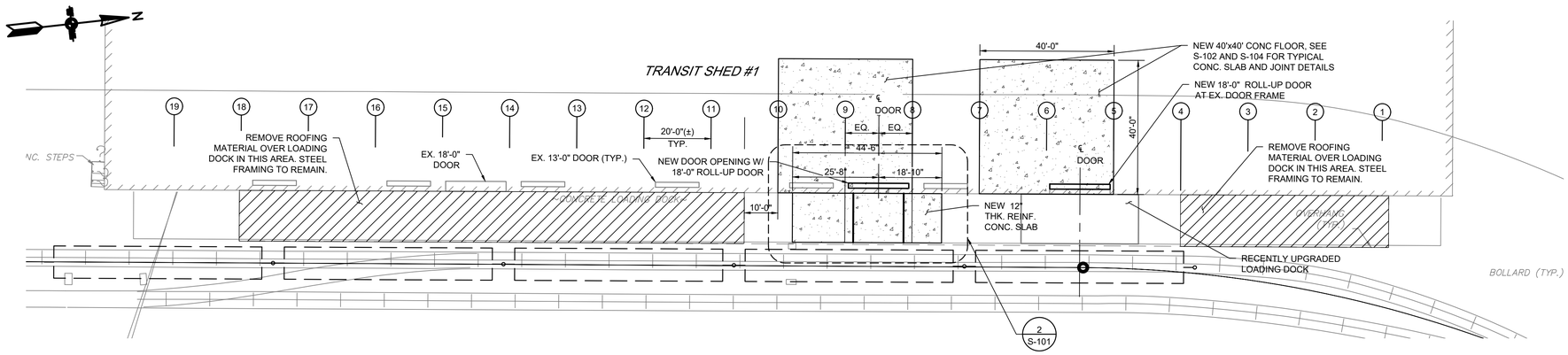
URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
GENERAL STRUCTURAL NOTES

DWN	PROJ #	DRAWING NUMBER
FYC	2021500064.000	S-001
CHK MGW	DATE 06/24/2022	

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Structural\S-001 GENERAL STRUCTURAL NOTES.dwg



1 LOADING DOCK PLAN AT SHED #1

Scale: 1" = 20'-0"

0 20' 40'

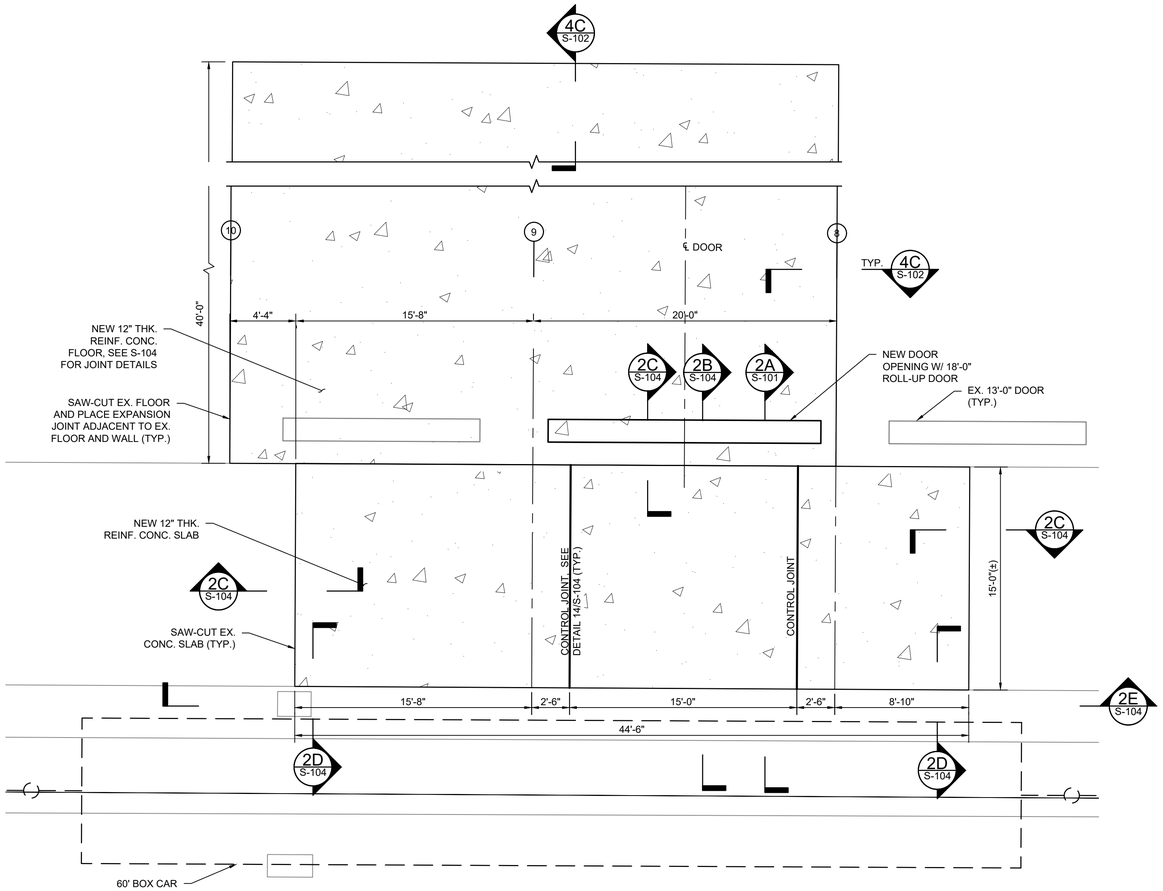
GRAPHIC SCALE

NOTES

1. SEE STRUCTURAL GENERAL NOTES SHEET S-000.

LEGEND

- NEW 18'-0" ROLL-UP DOOR
- EX DOOR (ACCESSIBLE OR NON-ACCESSIBLE)
- 60' BOX CAR
- NEW LOADING DOCK
- DEMOLITION

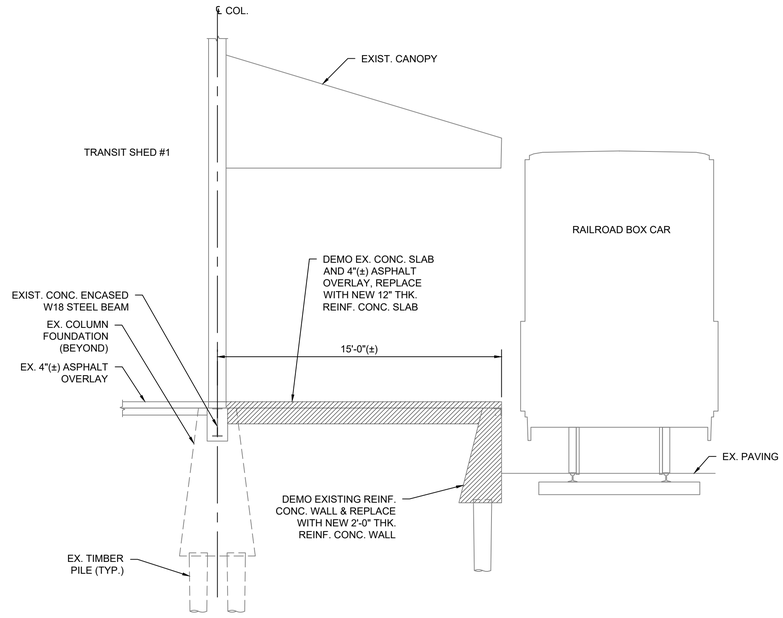


2 LOADING DOCK PLAN

Scale: 1" = 5'-0"

0 5' 10'

GRAPHIC SCALE



2A EX. SECTION

Scale: 1/4" = 1'-0"

0 2' 4' 8'

GRAPHIC SCALE

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY — MICHAEL G. WOLFE — NO. GE50183 — PROFESSIONAL ENGINEER

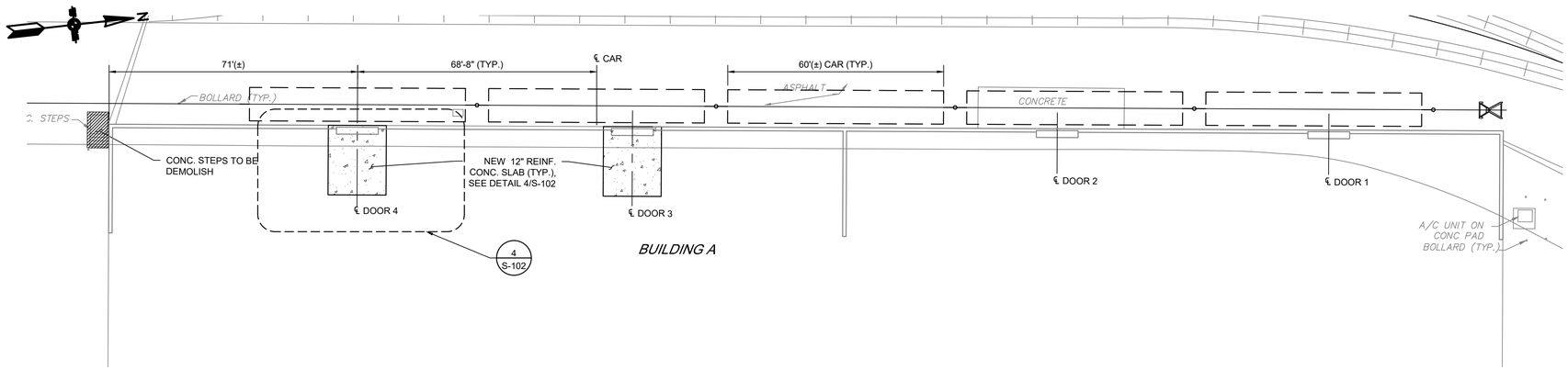
URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
LOADING DOCK PLAN AT SHED 1 -
PLAN AND SECTION

DWN: FYC | PROJ #: 2021500064.000 | DRAWING NUMBER: S-101

CHK: MGW | DATE: 06/24/2022



NOTES

1. SEE STRUCTURAL GENERAL NOTES SHEET S-000.
2. ALL WORK ON THIS SHEET ASSOCIATED WITH ADD ALTERNATE #1.

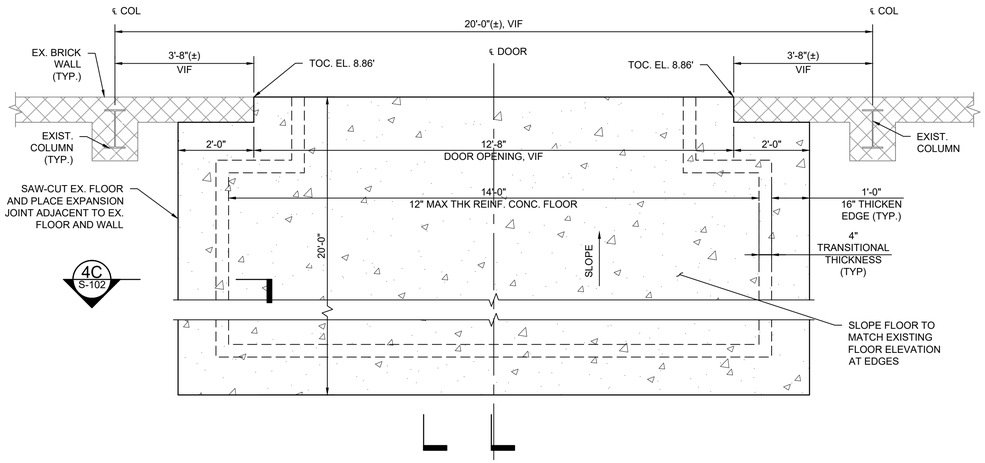
LEGEND

- NEW 18'-0" ROLL-UP DOOR
- EX DOOR (ACCESSIBLE OR NON-ACCESSIBLE)
- 60' BOX CAR
- NEW LOADING DOCK
- DEMOLITION

3 CONC. SLAB PLAN AT BUILDING A

Scale: 1" = 20'-0"

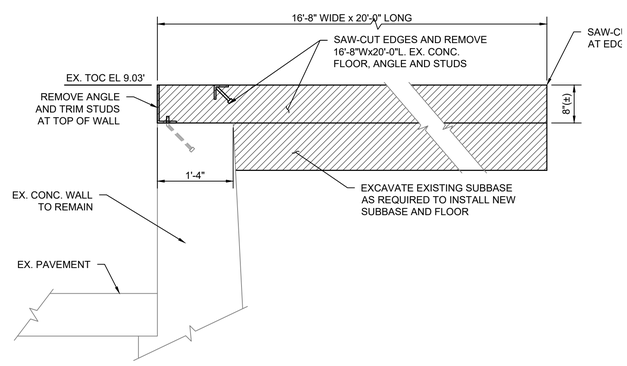
GRAPHIC SCALE 0 20' 40'



4 TYP. CONC. SLAB PLAN

Scale: 1/2" = 1'-0"

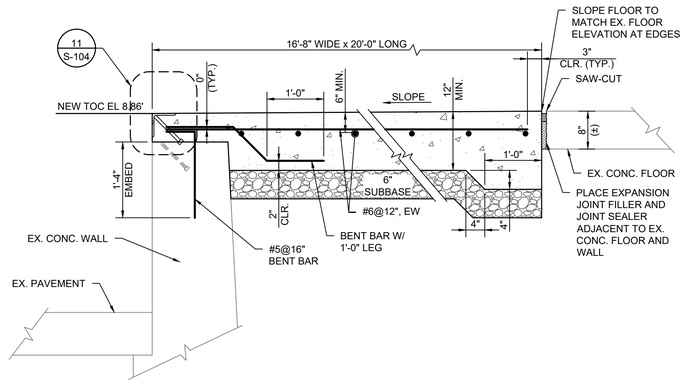
GRAPHIC SCALE 0 1' 2' 4'



4A EX. SECTION & DEMOLITION

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

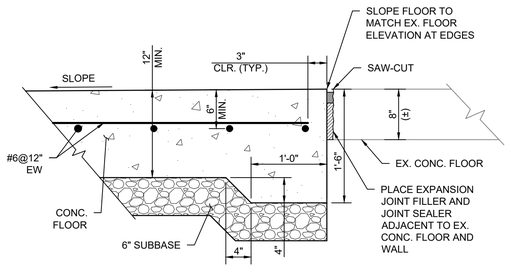
GRAPHIC SCALE 0 1' 2'



4B NEW REINF. CONC SLAB SECTION

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

GRAPHIC SCALE 0 1' 2'



4C TYP. THICKEN EDGE DETAIL

Scale: 1" = 1'-0"

GRAPHIC SCALE 0 1' 2'

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY — MICHAEL W. GIBBONS — NO. GE50183 — PROFESSIONAL ENGINEER

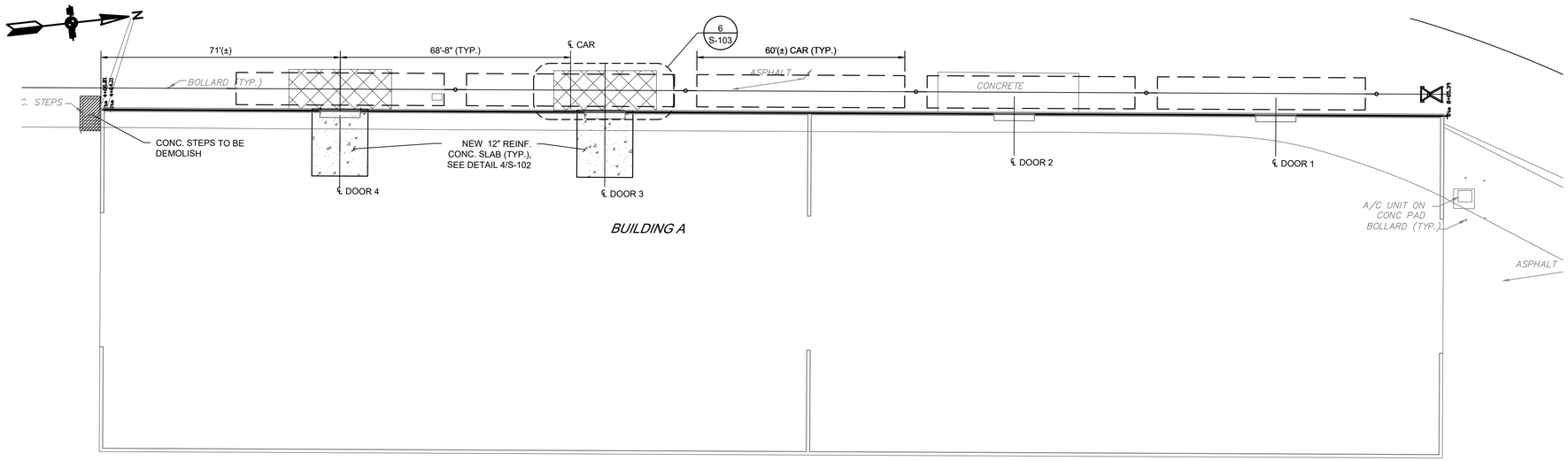
URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
CONC. FLOOR AT BUILDING A
- PLAN, SECTION AND DETAIL

DWN: FYC | PROJ #: 2021500064.000 | DRAWING NUMBER: S-102
CHK: MGW | DATE: 06/24/2022

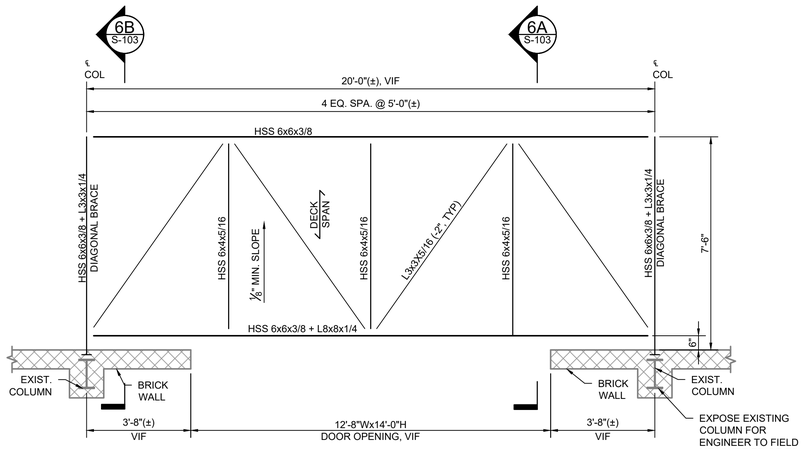
X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Structural\S-102 CONC. FLOOR AT BUILDING A - PLAN, SECTION AND DETAIL.dwg



5 CANOPY PLAN AT BUILDING A

Scale: 1" = 20'-0"

GRAPHIC SCALE 0 20' 40'

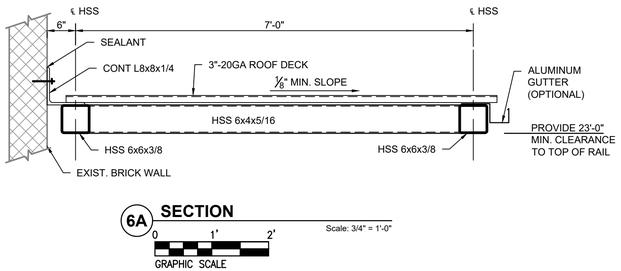


6 TYPICAL CANOPY FRAMING PLAN

Scale: 3/8" = 1'-0"

GRAPHIC SCALE 0 1' 2' 4'

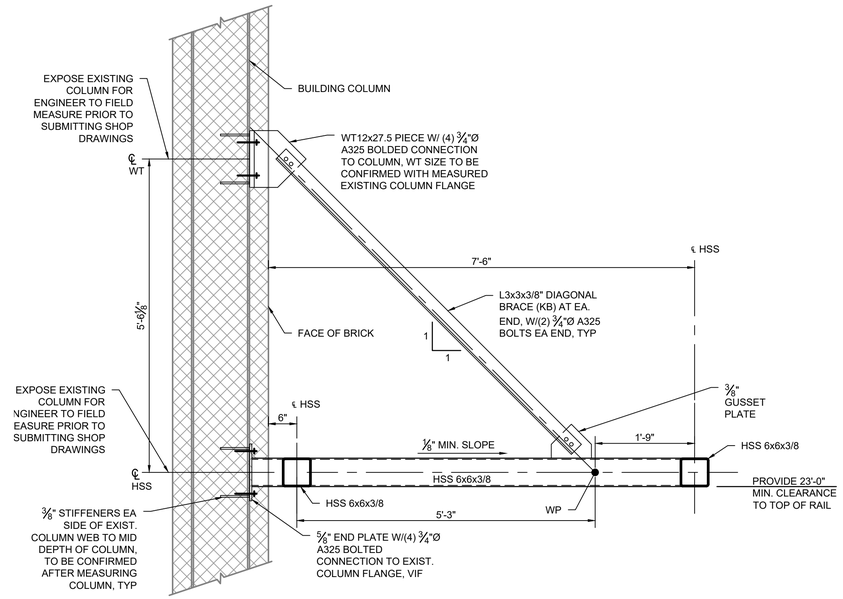
ALL NEW CANOPY STEEL SHALL BE SHOP PRIMED AND PAINTED, UNO



6A SECTION

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

GRAPHIC SCALE 0 1' 2'



6B SECTION

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

GRAPHIC SCALE 0 1' 2'

NOTES

1. SEE STRUCTURAL GENERAL NOTES SHEET S-000.
2. ALL WORK ON THIS SHEET ASSOCIATED WITH ADD ALTERNATE #1.

LEGEND

NEW ROLL-UP DOOR AND CANOPY

60' BOX CAR

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

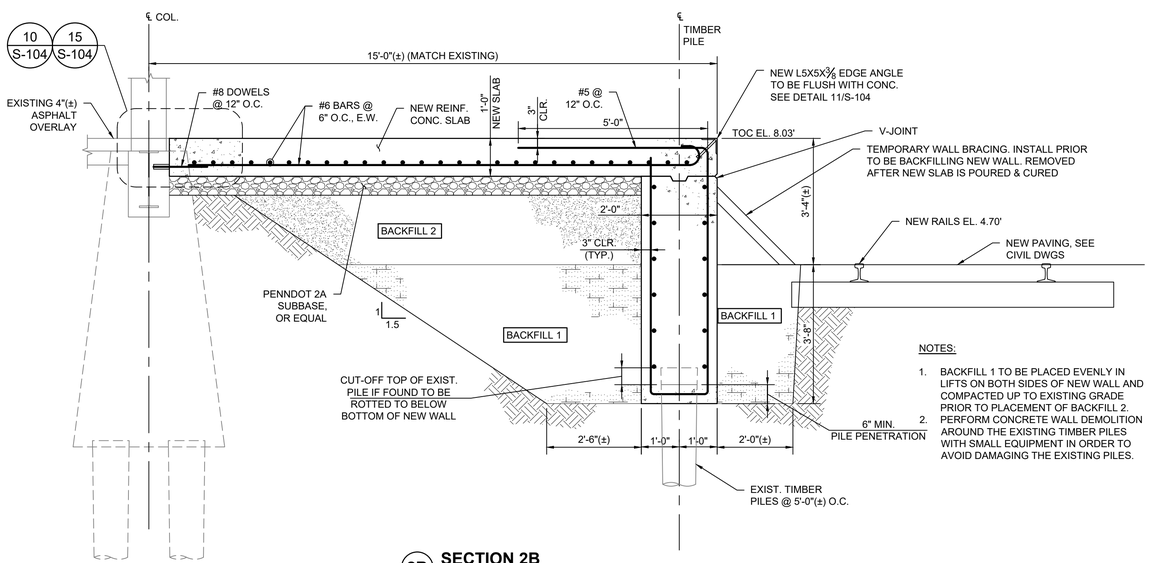
STATE OF NEW JERSEY — NO. GE50183 — MICHAEL W. GARVEY — PROFESSIONAL ENGINEER

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
CANOPY FRAMING PLAN AT BUILDING A
AND SECTIONS

DWN	FYC	PROJ #	2021500064.000	DRAWING NUMBER
CHK	MGW	DATE	06/24/2022	S-103

X:\2021500064.000 - SJPC Balzano Rail Rehab\Technical\Structural\S-103 CANOPY FRAMING PLAN AT BUILDING A AND SECTIONS.dwg



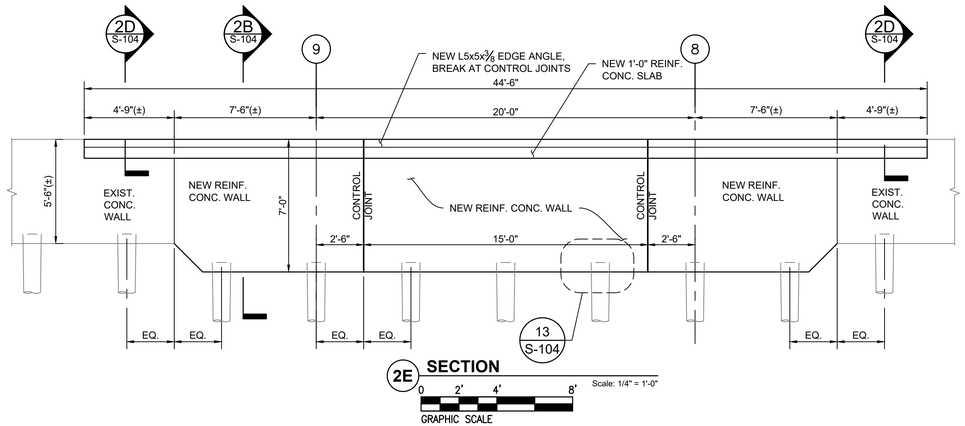
NOTES:

1. BACKFILL 1 TO BE PLACED EVENLY IN LIFTS ON BOTH SIDES OF NEW WALL AND COMPACTED UP TO EXISTING GRADE PRIOR TO PLACEMENT OF BACKFILL 2.
2. PERFORM CONCRETE WALL DEMOLITION AROUND THE EXISTING TIMBER PILES WITH SMALL EQUIPMENT IN ORDER TO AVOID DAMAGING THE EXISTING PILES.

2B SECTION 2B

Scale: 1/2" = 1'-0"

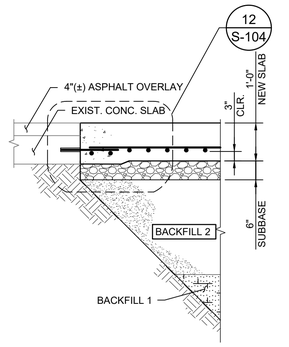
GRAPHIC SCALE 0 1' 2' 4'



2E SECTION

Scale: 1/4" = 1'-0"

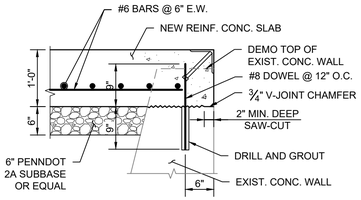
GRAPHIC SCALE 0 2' 4' 8'



2C SECTION 2C

Scale: 1/2" = 1'-0"

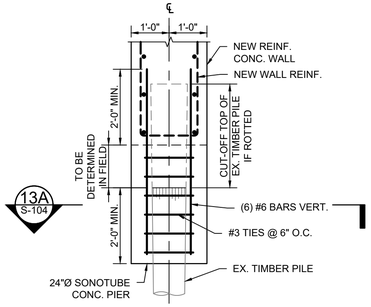
GRAPHIC SCALE 0 1' 2' 4'



2D SECTION 2D

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

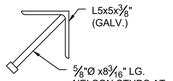
GRAPHIC SCALE 0 1' 2'



ALTERNATE DETAIL IF EX. PILES ARE ROTTED

Scale: 1/2" = 1'-0"

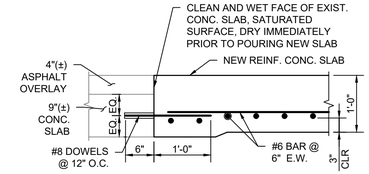
GRAPHIC SCALE 0 1' 2' 4'



11 DETAIL

Scale: 1-1/2" = 1'-0"

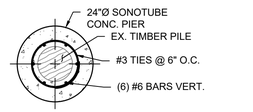
GRAPHIC SCALE 0 1/2' 1' 1 1/2'



12 DETAIL

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

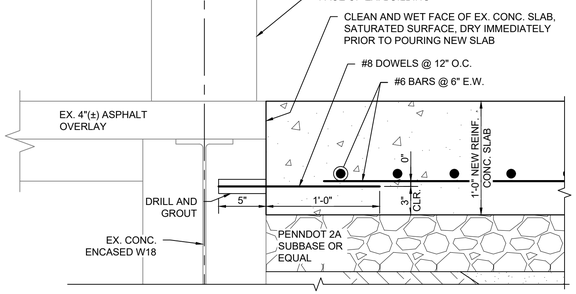
GRAPHIC SCALE 0 1' 2'



13A SECTION 13A

Scale: 1/2" = 1'-0"

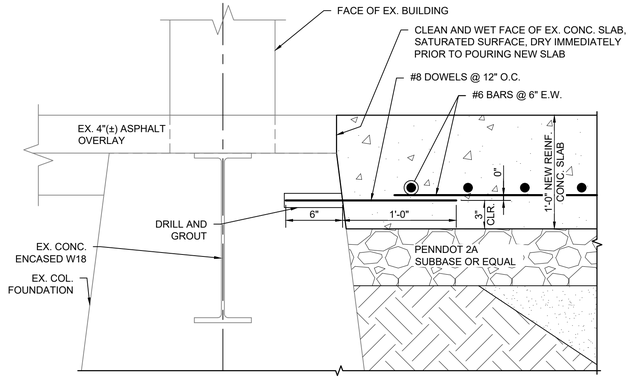
GRAPHIC SCALE 0 1' 2' 4'



10 DETAIL @ GRADE BEAM

Scale: 1-1/2" = 1'-0"

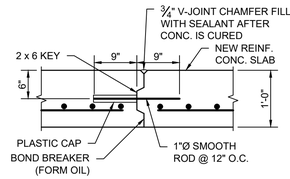
GRAPHIC SCALE 0 1/2' 1' 1 1/2'



15 DETAIL @ CONC. PILE

Scale: 1-1/2" = 1'-0"

GRAPHIC SCALE 0 1/2' 1' 1 1/2'



14 TYPICAL CONTROL JOINT DETAIL

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

GRAPHIC SCALE 0 1' 2'

NOTES

1. SEE STRUCTURAL GENERAL NOTES SHEET S-000.

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

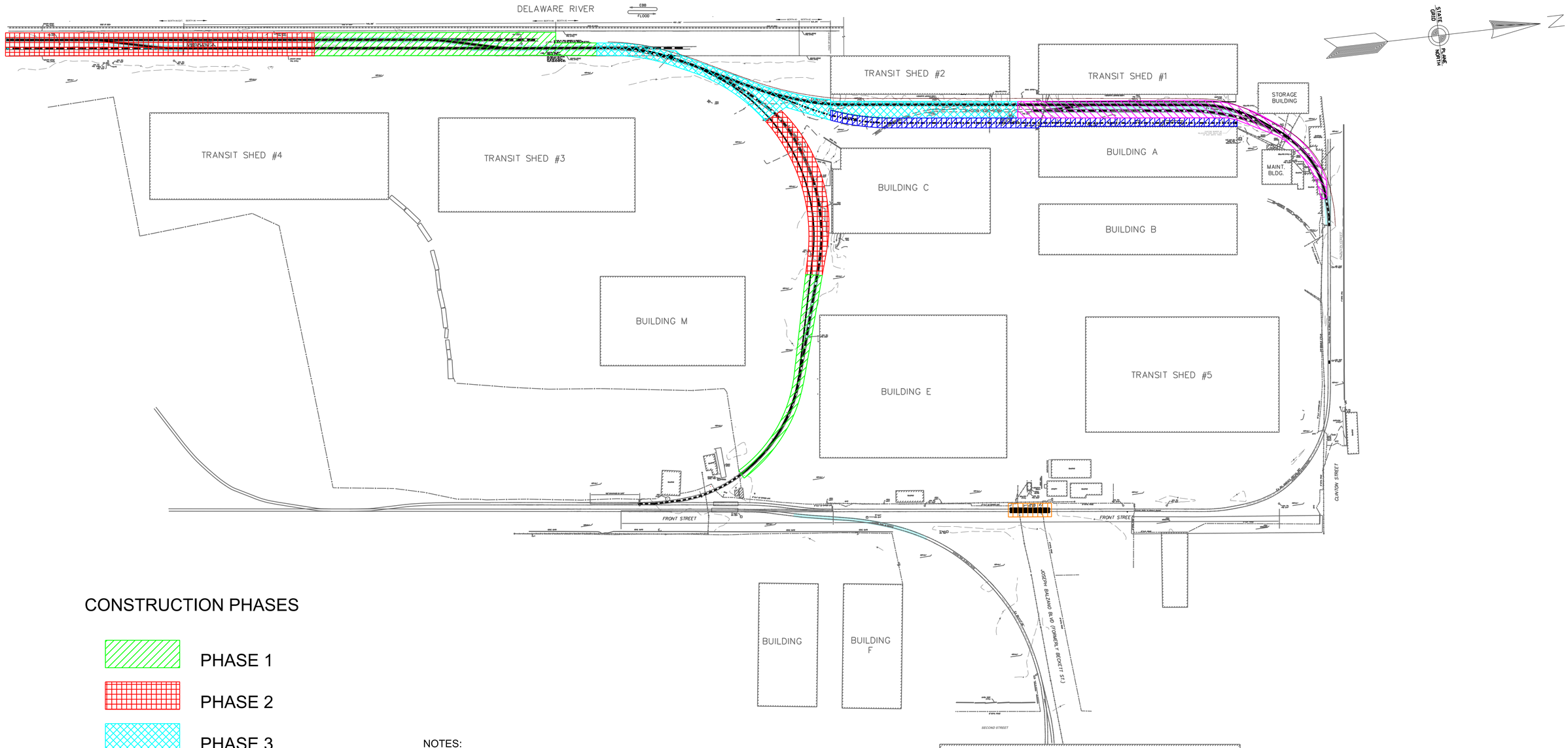
STATE OF NEW JERSEY — MICHAEL W. GWINN — NO. GE50183 — PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
LOADING DOCK DETAILS

DWN: FYC | PROJ #: 2021500064.000 | DRAWING NUMBER: S-104
CHK: MGW | DATE: 06/24/2022



CONSTRUCTION PHASES

- PHASE 1
- PHASE 2
- PHASE 3
- PHASE 4
- PHASE 5
- ALT. EXTRA ITEM

NOTES:

1) EXECUTION OF PHASE 5 WORK CONSISTING OF REMOVAL AND REPLACEMENT OF THE RAILROAD AT-GRADE CROSSING OF JOSEPH BALZANO BLVD. MUST BE PERFORMED AND COMPLETED WITHIN A SINGLE 60 HOUR TIMEFRAME COMMENCING AT 18:00 ON FRIDAY AND CONCLUDING NO LATER THAN 06:00 ON THE FOLLOWING MONDAY.
2) EXECUTION OF ALT. EXTRA ITEM WORK, IF DIRECTED BY THE S.J.P.C., SHALL BE INCORPORATED AS PARTS OF THE WORK OF AREAS DESIGNATED AS THE ADJACENT PHASE 3 AND PHASE 4 WORK ITEMS.

SCALE: 1 in. = 100 ft
0 100 200 300 400
DO NOT SCALE THIS DRAWING FOR DIMENSIONS NOT GIVEN

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY · RYAN T. COLLINS · No. 24GE04337000 · PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
CONSTRUCTION PHASING PLAN

DWN	PROJ #	DRAWING NUMBER
FST		CP-1
CHK	DATE	

GENERAL NOTES:

1) THE INFORMATION SHOWN PERTAINING TO THE PRESENCE OF EXISTING FACILTIES AND INFRASTRUCTURE OF THE SITE AND PROPOSED WORK DEPICTED HEREON, WERE DEVELOPED IN CONJUNCTION WITH INFORMATION PROVIDED BY THE SOUTH JERSEY PORT CORPORATION (SJPC). THIS INFORMATION CONSISTED OF HISTORICAL PLANS, DRAWINGS AND RECORD DOCUMENTS REVIEWED BY URBAN ENGINEERS. THE INFORMATION SHOWN IS BASED ON A CORRELATION OF THESE RECORD PLANS AND OTHER INFORMATION COLLECTED DURING FIELD INSPECTIONS CONDUCTED BY URBAN ENGINEERS DURING THE FALL OF 2020 AND THE SPRING AND SUMMER OF 2021. THE COLLECTED INFORMATION IS BELIEVED TO BE ACCURATE AS OF THE DATE OF PREPARATION OF THESE PLANS, HOWEVER URBAN ENGINEERS ASSUMES NO LIABILITIES FOR INACCURACIES, INCONSISTANCIES, ERRORS OR OMISSIONS RELATING TO INFORMATION CONTAINED IN SUCH RECORD DOCUMENTS.

2) THE BALZANO TERMINAL, FORMERLY KNOWN AS THE BECKETT STREET TERMINAL, IS AN OPERATING PORT FACILITY THAT HAS BEEN IN SERVICE FOR APPROXIMATELY 100 YEARS. CHANGES HAVE OCCURRED OVER TIME THAT MAY NOT HAVE BEEN DOCUMENTED. LOCATIONS OF ON AND OFF-SITE UTILITIES SHOWN ARE APPROXIMATE AND MAY NOT BE COMPLETE. THE NATURE AND EXACT LOCATION OF EXISTING UTILITIES SHOULD BE VERIFIED PRIOR TO INITIATING ANY ACTIVITY THAT MAY AFFECT OR IMPACT THEIR USE OR LOCATION.

3) URBAN ENGINEERS ASSUMES NO LIABILITIES NOR TAKES ANY RESPONSIBILITY FOR IMPACTS TO THE WORK DEPICTED ON THESE DRAWINGS RESULTING FROM SUBSEQUENT CHANGES TO THE EXISTING FACILITIES NOR ANY PROPOSED PLANS OR WORK FOR CONSTRUCTION, MODIFICATION, RETIREMENT OR REMOVAL OF THE EXISTING FACILTIES EITHER OWNED OR CONTROLLED BY SJPC, ITS HEIRS, ASSIGNS, DESIGNEES, LESSORS, TENNANTS, OR OTHER GOVERNMENTAL AUTHORITIES HAVING INTERESTS IN AND ABOUT THE BALZANO TERMINAL SITE.

4) IN ACCORDANCE WITH N.J.S.A. 48:2-73 et seq. and enabling rules - N.J.A.C. 14:2, THE CONTRACTOR SHALL COMPLETE AN 811 ONE-CALL NOTIFICATION BY DIALING 811 FROM WITHIN NEW JERSEY OR BY CALLING (800)272-1000, A MINIMUM OF THREE (3) BUSINESS DAYS PRIOR TO PERFORMING ANY EXCAVATIONS. THE CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTH OF ALL UNDERGROUND UTILITIES AND STRUCTURES AND COORDNATE ACTIVITIES WITH THE WORK OF OTHER TRADES AND CONTRACTORS THAT MAY BE PERFORMING CONSTRUCTION ACTIVITIES CONCURRENTLY, PRIOR TO START OF THE WORK FOR THIS PROJECT.

5) THE TOPOGRAPHICAL INFORMATION ILLUSTRATED HEREIN WAS DEVELOPED FROM GROUND SURVEY PERFORMED BY COLLIERS ENGINEERING AND DESIGN DURING THE SUMMER OF 2021 UTILIZING 3D LASER SCANNING EQUIPMENT AND REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM AND NAVD88 VERTICAL DATUM. UNDERGROUND UTILITIES SHOWN ARE BASED ON BEST AVAILABLE INFORMATION COMPILED FROM DOCUMENTATION PROVIDED BY SJPC, HOWEVER, NEITHER THE SJPC NOR URBAN ENGINEEERS REPRESENTS THAT THE DRAWINGS ARE COMPLETELY ACCURATE. THE LOCATIONS SHOWN MAY BE APPROXIMATE, AND OLDER OR PREVIOUSLY ABANDONED UTILITIES MAY NOT BE SHOWN.

6) THE DRAWINGS SHOW THE PROPOSED SCOPE OF TRACK CONSTRUCTION OR REHABILITATION AND OTHER INFRASTRUCTURE IMPROVEMENTS TO BE INCLUDED WITHIN THE SCOPE OF THIS PROJECT. THE CONTRACTOR SHALL NOTIFY THE SJPC AND THE PROJECT MANAGER IMMEDIATELY UPON DISCOVERY OF THE PRESENCE OF EXISTING UNDERGROUND UTILITIES THAT DO NOT COMPLY WITH THE MINIMUM REQUIREMENTS FOR DEPTH OF COVER BENEATH RAILROAD TRACKS OR ARE NOT SHOWN ON THE PLANS AND WHICH MAY BE IN CONFLICT WITH WORK TO BE PERFORMED UNDER TERMS OF THE CONTRACT WITH THE SJPC.

7) WHERE PROPOSED RAILROAD TRACK CONSTRUCTION OR REHABILITATION IS SHOWN TO PASS OVER EXISTING UNDERGROUND UTILITIES AS INDICATED ON THE PLANS AND THAT ARE NOT PRESENTLY PROTECTED FROM LOADS IMPOSED BY THE MOVEMENT OF RAILROAD LOCOMOTIVES OR ROLLLING STOCK, THE CONTRACTOR MUST INSTALL CASING PIPES TO PROTECT ANY EXISTING UTILTY LINES CARRYING SUBSTANCES UNDER PRESSURE BENEATH TRACKS. THE CONTRACTOR MUST SUBMIT SITE SPECIFIC PLANS FOR EACH SUCH LOCATION IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, TO THE SJPC AND PROJECT MANAGER FOR PRIOR REVIEW AND APPROVAL BEFORE COMMENCING SUCH OPERATIONS.

8) THE QUANTITY FOR "RESTORATION OF PAVEMENT" WILL BE ADJUSTED UP OR DOWN BASED ON FINAL FIELD MEASUREMENTS. UNBALANCING OF THIS BID ITEM ON THE PROPOSAL FORM WILL BE CAUSE FOR REJECTION OF THE BID.

9) SOME LOCATIONS WHERE WORK WILL OCCUR IN THE PROJECT HAVE GROUND SURFACES OTHER THAN PAVEMENT, SUCH AS GRAVEL OR SILTY EARTH. THE CONTRACTOR SHALL RESTORE ALL SUCH LOCATIONS TO THE PRE-CONSTRUCTION CONDITIONS AFTER PERFORMANCE OF THE WORK. PAYMENT FOR SUCH RESTORATION WORK IN THESE AREAS WILL NOT BE MADE DIRECTLY BUT SHALL BE SUBSIDIARY FOR OTHER ITEMS FOR WHICH PAYMENT IS MADE.

10) THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS IN EXCAVATIONS AND SHALL HAND EXCAVATE AS NEEDED TO PROTECT EXISTING UNDERGROUND STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL PLATE OVER TRENCHES AS NECESSARY FOR MAINTAINING PEDESTRIAN AND VEHICULAR TRAFFIC DURING THE WORK.

SURVEY NOTES

1. RAILROAD STATIONING FOR PROJECT PROFILES AND ALIGNMENTS IS BASED ON STATIONS ESTABLISHED FOR CHORD DEFINITION CURVES AT THE CENTERLINE OF THE PROPOSED TRACK UNLESS OTHERWISE NOTED.

2. THE CONTRACTOR IS RESPONSIBLE FOR THE PRESERVATION OF ALL SURVEY CONTROL MONUMENTS. IN THE EVENT MONUMENTS ARE DAMAGED OR DESTROYED BY THE CONTRACTOR, THE ENGINEER WILL REPLACE THE MONUMENT AT THE CONTRACTOR'S SOLE COST AND EXPENSE.

ABBREVIATIONS

MISCELLANEOUS

AC.	ACRES
AVE.	AVENUE
BLVD.	BOULEVARD
BLDG.	BUILDING
C.Y.	CUBIC YARDS
CONC.	CONCRETE
°	DEGREE (S)
DIA.	DIAMETER
DR.	DRIVE
DWG.	DRAWING
E	EAST
ELEV.	ELEVATION
EXIST.	EXISTING
'	FOOT, FEET OR MINUTE (S)
F.S.	FINISHED SURFACE
HORIZ.	HORIZONTAL
"INCH,	INCHES OR SECOND (S)
INV.	INVERT
LT.	LEFT
L	LENGTH
L.F.	LINEAL FEET
MAX.	MAXIMUM
MIN.	MINIMUM
N	NORTH
NAVD	NORTH AMERICAN VERTICAL DATUM
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NTS	NOT TO SCALE
NO.	NUMBER
OH	OVERHEAD
PROP.	PROPOSED
RR	RAILROAD
RWY	RAILWAY
R/W	RIGHT OF WAY
RT.	RIGHT
S	SOUTH
S.F.	SQUARE FEET
STA.	STATION
STD.	STANDARD
ST.	STREET
TWP.	TOWNSHIP
TYP.	TYPICAL
UG	UNDERGROUND
V	VELOCITY
WT.	WEIGHT
W	WEST
X-ING	CROSSING

TRACK

ATR	ABOVE TOP OF RAIL
ALIGN.	ALIGNMENT
BBR	BELOW BASE OF RAIL
CNTRS.	CENTERS
CWR	CONTINUOUS WELDED RAIL
D.F.	DIRECT FIXATION
DSPD	DOUBLE SWITCH POINT DERAIL
EOT	END OF TRACK
HH	HEAD HARDENED
JTD.	JOINTED RAIL
LH	LEFT HAND
LLT	LAST LONG TIMBER
ML	MAIN LINE
MM	MILE MARKER
MP	MILE POST
NSC	NOT SUFFICIENT CLEARANCE
OTM	OTHER TRACK MATERIAL
PCC	POINT OF COMPOUND CURVE
PC	POINT OF CURVE
PCS	POINT OF CURVE TO SPIRAL
POC	POINT ON CURVE
PF	1/2" POINT OF FROG
PI	POINT OF INTERSECTION
PITO	POINT OF INTERSECTION OF TURNOUT
POS	POINT ON SPIRAL
POT	POINT ON TANGENT
PS	POINT OF SWITCH
PSC	POINT OF SPIRAL TO CURVE
PST	POINT OF SPIRAL TO TANGENT
PT	POINT OF TANGENT
PTS	POINT OF TANGENT TO SPIRAL
PVC	POINT OF VERTICAL CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
RBM	RAIL BOUND MANGANESE
RH	RIGHT HAND
SH	SECOND HAND
SM	SOLID MANGANESE
SMSG	SOLID MANGANESE SELF GUARDED
SSPD	SINGLE SWITCH POINT DERAIL
TC	TRACK CENTERS
T.F.	TRACK FEET
TRK.	TRACK
UXO	UNIVERSAL CROSS-OVER

F.W. — EXISTING FIRE WATER LINE
Ex-W- — EXISTING WATER LINE
UD — UNDER DRAIN
SS — EXISTING STORM SEWER
ABN-W- — ABANDONED WATER LINE
SAN — EXISTING SANITARY SEWER
S — EXISTING STEAM LINE
IWW — EXISTING WASTEWATER LINE
EXISTING DUCT BANK
GAS — EXISTING GAS LINE
D — DRAIN LINE
CS — COMBINED SEWER
OHE — OVERHEAD ELECTRIC
E — OTHER ELECTRIC LINE
UGE — UNDERGRADE ELECTRIC
CHAIN LINK FENCE W/BARBED WIRE
CHAIN LINK FENCE
STEEL PIPE HANDRAIL
RESIDENTIAL CHAIN LINK FENCE
FM — FORCE MAIN
SFM — SANITARY FORCE MAIN
JO — JOURNAL OIL LINE
LO — LUBE OIL LINE
WO — WASTE OIL LINE
FUEL — MISC. FUEL LINE
DF — DIESEL FUEL LINE
CA — COMPRESSED AIR LINE
OIL — MISC. OIL LINE
LPG — LPG LINE
MCI — MCI U.G. CABLE
AT&T — AT&T U.G. CABLE
PT&T — SPRINT U.G. CABLE
WU — WESTERN UNION U.G. CABLE
COM — COMMUNICATION LINE
FOC — FIBER OPTIC LINE
E&T&TV — ELECTRIC, TELEPHONE AND TELEVISION
LD/SF — LIMIT OF DISTURBANCE AND SILT FENCE
LD — LIMIT OF DISTURBANCE
SF — SILT FENCE
? — UNKNOWN UTILITY LINE
PL — PROPERTY LINE
SINGLE SIDE GUIDERAIL
DOUBLE SIDE GUIDERAIL
PIPELINE WITH CASING SLEEVE
NOISE BARRIER WALL

CO — CLEANOUT
EXISTING FIRE HYDRANT
MANHOLE
INLET
XXX.XX' — PROPOSED SPOT ELEVATION
MW — MONITORING WELL
EB — ELECTRIC PULL BOX
GV WG — EXISTING WATER VALVE
G — GAS VALVE BOX
M — METER PIT
CONTINUATION ON OTHER SHEET
PROPOSED FIRE HYDRANT
UTILITY POLE
UTILITY POLE w/PULLOFF GUY
UTILITY POLE w/COBRAHEAD LIGHT
AREA DOWN LIGHT
PROPOSED HAYES "WD" BUMPER

EXISTING RAILS
EXISTING TRACK CENTERLINES
PROPOSED TRACK CENTERLINES
EXISTING TRACKS TO BE REMOVED
EXISTING TRACK TO REMAIN IN PLACE INCLUDED IN NEW GEOMETRY
PROPOSED TURNOUT
LIMITS OF CONCRETE FOR PROPOSED FULLY EMBEDDED TRACK CONSTRUCTION
CENTERLINE OF TRACK ALTERNATE ADDITIONAL BID ITEM

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY — IAN COLLINS — No. 24GE04337000 — PROFESSIONAL ENGINEER — LICENSED

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
GENERAL NOTES AND LEGEND

DWN	PROJ #	DRAWING NUMBER
FST		G-02
CHK	DATE	

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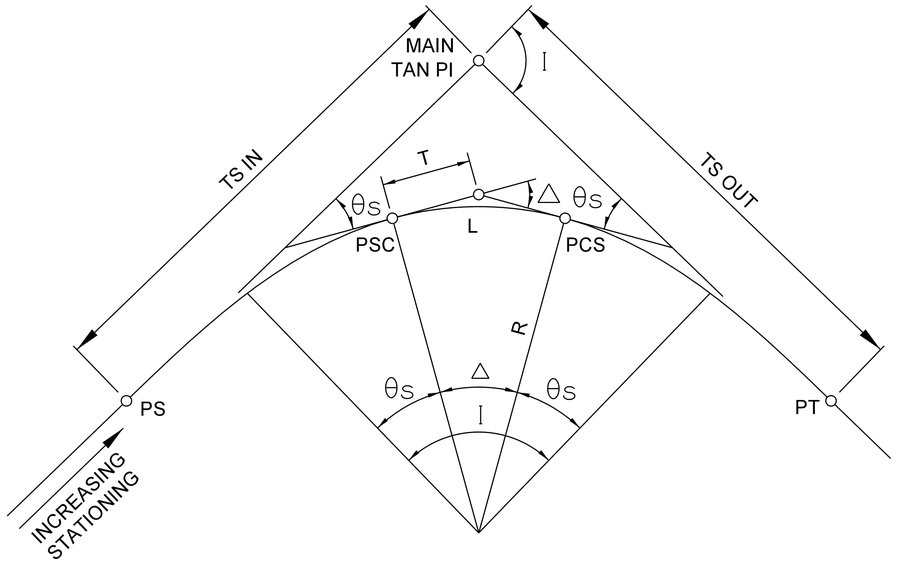

FIGURE A
CIRCULAR CURVES WITH SPIRAL TRANSITION

I - TOTAL INTERSECTION ANGLE

θ_S - SPIRAL ANGLE = $\frac{A L^2}{2}$

△ - CENTRAL ANGLE OF CIRCULAR CURVE = $I - 2\theta_S$

Dc - DEGREE OF CURVE

A - RATE OF CHANGE OF DEGREE OF CURVE PER 100-ft. OF LENGTH = $\frac{Dc}{L}$

R - RADIUS OF CIRCULAR CURVE

T - TANGENT LENGTH OF CIRCULAR CURVE = R TAN $\frac{\triangle}{2}$

L - LENGTH OF CIRCULAR CURVE = $\frac{\triangle}{Dc}$ x 100

PS - TANGENT TO SPIRAL

PSC - SPIRAL TO CURVE

PCS - CURVE TO SPIRAL

PT - SPIRAL TO TANGENT

MAIN TAN PI - POINT OF INTERSECTION OF MAIN TANGENTS

(TS IN)
(TS OUT) - TANGENT LENGTH OF COMPLETE CURVE = (R+o) TAN $\frac{I}{2}$ + t

(WHEN SPIRALS OF EQUAL LENGTH ARE USED ON BOTH SIDES OF CIRCULAR CURVE, SEE FIGURE C. FOR o AND t).

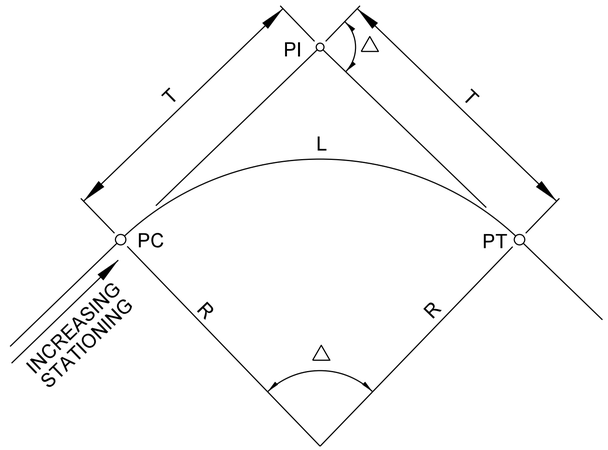

FIGURE B
SIMPLE CIRCULAR CURVE

R = RADIUS OF CIRCULAR CURVE

△ = CENTRAL ANGLE OF CIRCULAR CURVE

T = R TAN $\frac{\triangle}{2}$

L = $\frac{\triangle}{Dc}$ x 100

Dc = 2 SIN^{-1} (50/R) = DEGREE OF CURVE (CHORD DEFINITION)

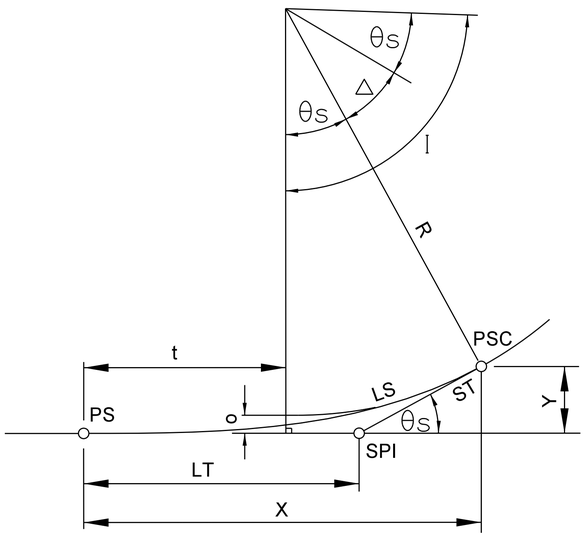

FIGURE C
SPIRAL TRANSITION CURVE

SPIRAL TRANSITION CURVE DATA:
THE SPIRAL USED IS DEFINED BY THE TALBOT SPIRAL.

LS = LENGTH OF SPIRAL (TS TO PSC)

$\theta_S = \frac{A L^2}{2}$

$X = 100 L_1 - 0.000762 A^2 L_1^5$

$Y = 0.291 A L_1^3 - 0.00000158 A^3 L_1^7$

$o = 0.0727 A L_1^3$

$t = 50 L_1 - 0.000127 A^2 L_1^5$

$ST = \frac{Y}{\sin \theta_S}$

$LT = X - \frac{Y}{\tan \theta_S}$

Dc = 2 SIN^{-1}(50/R) = DEGREE OF CURVE (CHORD DEFINITION)

L_1 - TOTAL NO. OF STATIONS IN SPIRAL

SPI - SPIRAL POINT OF INTERSECTION

NOTE: Dc, θ_S, △ AND I ARE IN DEGREES.
ALL OTHERS DIMENSIONS ARE FEET.

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STATE OF NEW JERSEY · ALAN COLLINS · No. 24GE04337000 · LICENSED PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
TRACKWORK GEOMETRY DEFINITIONS

DWN FST | PROJ # | DRAWING NUMBER G-03
CHK | DATE

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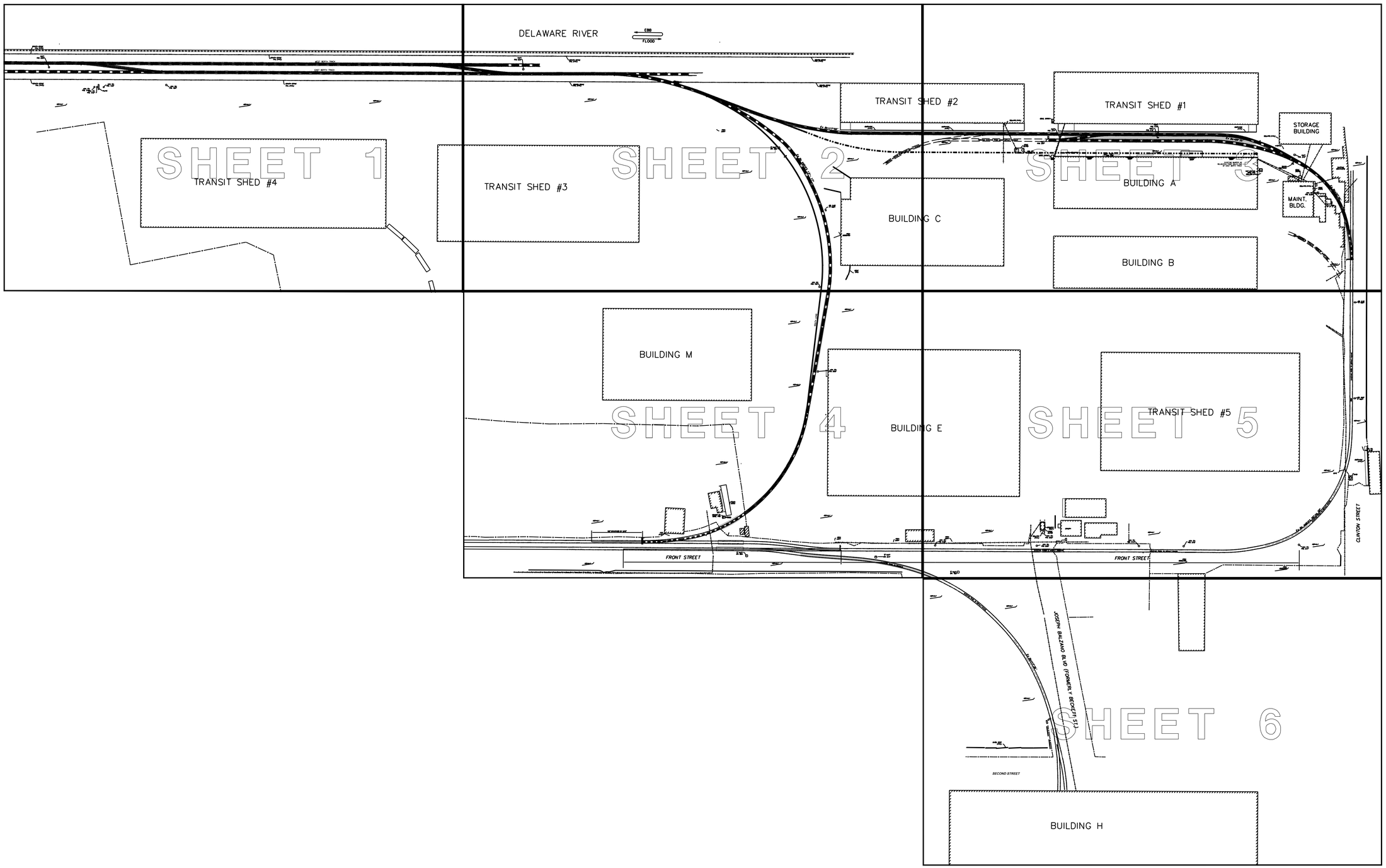

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STATE OF NEW JERSEY
No. 24GE04337000
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
DRAWING SHEET INDEX

DWN	PROJ #	DRAWING NUMBER
FST		G-04
CHK	DATE	

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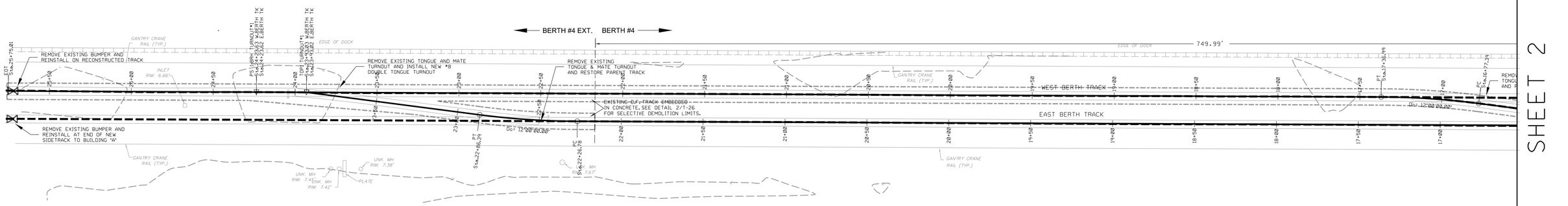
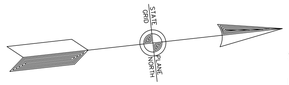


SHEET 2

MATCH LINE



SCALE: 1 in. = 30 ft.

0 30' 60' 90'

DO NOT SCALE THIS DRAWING FOR DIMENSIONS NOT GIVEN

ISSUED FOR BID

REV.	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY · BRIAN COLLINS · No. 24GE04337000 · LICENSED PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
PROPOSED TRACK CONSTRUCTION

DWN	PROJ #	DRAWING NUMBER
FST		T-1
CHK	DATE	

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SHEET 1

SHEET 3

MATCH LINE

MATCH LINE

DELAWARE RIVER

EBB

FLOOD

BERTH #4

BERTH #3

491.00'

BERTH #3

BERTH #2

63.25'

EDGE OF DOCK

EDGE OF DOCK

FACE OF SHED #1

E EXISTING
E & MATE TURNOUT
ESTORE PARENT TRACK

REMOVE EXISTING TONGUE AND
MATE TURNOUT AND INSTALL
NEW #8 DOUBLE TONGUE TURNOUT

EXISTING E/F TRACK EMBEDDED IN CONCRETE.
SEE DETAIL 3/T-26 FOR SELECTIVE DEMOLITION DETAILS.
SEE DETAIL 3/T-26 FOR NEW TRACK CONSTRUCTION DETAILS.

EXISTING EAST BERTH
TRACK ON TIMBER
CROSSTIES IN BALLAST,

SEE SHEET EX-1 FOR RECORD
PLAN DEFINING LIMITS.
SEE DETAILS 1/T-28 AND
2/T-28 FOR APPLICABLE NEW
TRACK CONSTRUCTION DETAILS

REMOVE EXISTING
TONGUE & MATE TURNOUT
AND RESTORE PARENT TRACK

REMOVE EXISTING CROSSING
FROGS & INSTALL TWO (2) NEW CAST
MANGANESE STEEL 135CR-132RE
CRANE RAIL CROSSING FROGS

REMOVE EXISTING TURNOUT
AND INSTALL NEW #8
DOUBLE TONGUE TURNOUT

INSTALL NEW #8
DOUBLE TONGUE
TURNOUT

GANTRY CRANE
RAIL (TYP.)

ASPHALT

AREA
LIGHT

CONC. WALL

OVERHANG
(TYP.)

6.50'

POSSIBLE EXISTING CONCRETE UNDER ASPHALT PAVEMENT

GR: 5.23
"A" INLET

UNK. MH
RIM: 7.07

AREA
OBSCURED

BUILDIN

TRANSIT SHED #3

TRANSIT S

ISSUED FOR BID

SHEET 4

SCALE: 1 in. = 30 ft.
0 30' 60' 90'

DO NOT SCALE THIS DRAWING FOR DIMENSIONS NOT GIVEN

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
No. 24GE04337000
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
PROPOSED TRACK CONSTRUCTION

DWN FST | PROJ #

CHK | DATE

DRAWING NUMBER: T-2

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SHEET 2

MATCH LINE

MATCH LINE

SHEET 5

STATE GRID NORTH PLANE

SCALE: 1 in. = 30 ft.

0 30' 60' 90'

DO NOT SCALE THIS DRAWING FOR DIMENSIONS NOT GIVEN

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY ALAN COLLINS No. 24GE04337000 LICENSED PROFESSIONAL ENGINEER

ISSUED FOR BID

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
PROPOSED TRACK CONSTRUCTION

DWN FST | PROJ # | DRAWING NUMBER T-3
CHK | DATE

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MATCH LINE

SHEET 5

SHEET 4

MATCH LINE

BUILDING M

BUILDIN

SOUTH LEAD

PVT 6+17.28

6+00

PVI Sta. 5+62.15

5+50

UNK. MH
RIM: 8.09'

PVC 5+07.03

5+00

PT
Sta. 4+61.89

4+50

4+00

PVT 3+74.92

PVI Sta. 3+44.46

3+50

PVC 3+14.00

3+00

Dc= 19°00'00.00"

2+50

PC
Sta. 2+22.46

Sta. 2+11.94

PVT 2+04.39

2+00

BEGIN NEW TRACK
Sta. 1+17.94

PVI Sta. 1+75.47

SENSOR ON CONC. PAD

INSTALL HAZEL SLING OR EQ.
Sta. 1+17.25

PVC 1+16.28

1+50

Dc= 22°00'00.00"

1+00

PC
Sta. 0+78.21

0+50

EXIST. TREE TYP.
Sta. 0+31.31

EXIST. TREE
Sta. 0+16.31

0+00

ASPHALT

BUILDING

TRUCK SCALE

GATE

6' C.L.F. W/ BARBED WIRE

AREA LIGHT

100' MAINTAINED BY SJPC

FRONT STREET

428' MAINTAINED BY SJPC

'E' INLET
GR: 8.04

'B' INLET
GR: 8.47

P.S.

EXISTING TRACK IN CONCRETE

CONC. CURB

6' C.L.F.

DATE OF PLANE NORTH

SCALE: 1 in. = 30 ft.

0 30' 60' 90'

DO NOT SCALE THIS DRAWING FOR DIMENSIONS NOT GIVEN

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
WILLIAM COLLINS
No. 24GE04337000
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
PROPOSED TRACK CONSTRUCTION

DWN	FST	PROJ #	DRAWING NUMBER
CHK		DATE	T-4

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MATCH LINE

SHEET 3

SHEET 4

MATCH LINE

MATCH LINE

SHEET 6

STATE PLANE NORTH

SCALE: 1 in. = 30 ft.

0 30' 60' 90'

DO NOT SCALE THIS DRAWING FOR DIMENSIONS NOT GIVEN

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
ALAN COLLINS
No. 24GE04337000
LICENSED PROFESSIONAL ENGINEER

URBAN ENGINEERS
URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
PROPOSED TRACK CONSTRUCTION

DWN	PROJ #	DRAWING NUMBER
FST		T-5
CHK	DATE	

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MATCH LINE

SHEET 5

SCALE: 1 in. = 30 ft.

0 30' 60' 90'

DO NOT SCALE THIS DRAWING FOR DIMENSIONS NOT GIVEN

NO WORK THIS SHEET

ISSUED FOR BID

REV.	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
ADAM COLLINS
No. 24GE04337000
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
PROPOSED TRACK CONSTRUCTION

DWN	FST	PROJ #		DRAWING NUMBER
CHK		DATE		T-6

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Horizontal Alignment Name: Pr-South Lead

	STATION	NORTHING	EASTING
Element: TANGENT			
EXISTING PS	0+01.31	402005.35	315850.76
APPARANT TOPI	0+31.31	402035.16	315854.19
Tangent Direction:	N 6°33′20.23″ E		
Tangent Length:	30.00		
Element: TANGENT			
APPARANT TOPI	0+31.31	402035.16	315854.19
PC	0+78.21	402082.05	315853.70
Tangent Direction:	N 0°35′49.59″ W		
Tangent Length:	46.90		
Element: CURVE			
PC	0+78.21	402082.05	315853.70
PI	1+50.24	402154.08	315852.95
CC		402079.32	315591.67
PT	2+17.94	402215.60	315815.49
Radius:	262.04		
Delta:	30°44′25.51″ Left		
Degree of Curvature Chord :	22°00′00.00″		
Length:	140.59		
Length Chorded :	139.73		
Tangent:	72.03		
Chord:	138.91		
Middle Ordinate:	9.37		
External:	9.72		
Tangent Direction:	N 0°35′49.59″ W		
Radial Direction:	N 89°24′10.41″ E		
Chord Direction:	N 15°58′02.34″ W		
Radial Direction:	N 58°39′44.90″ E		
Tangent Direction:	N 31°20′15.10″ W		
Element: TANGENT			
PT	2+17.94	402215.60	315815.49
PC	2+22.46	402219.47	315813.13
Tangent Direction:	N 31°20′15.10″ W		
Tangent Length:	4.53		
Element: CURVE			
PC	2+22.46	402219.47	315813.13
PI	3+49.47	402327.95	315747.08
CC		402061.92	315554.38
PT	4+61.89	402356.89	315623.42
Radius:	302.94		
Delta:	45°29′25.86″ Left		
Degree of Curvature Chord :	19°00′00.00″		
Length:	240.52		
Length Chorded :	239.42		
Tangent:	127.01		
Chord:	234.26		
Middle Ordinate:	23.56		
External:	25.55		
Tangent Direction:	N 31°20′15.10″ W		
Radial Direction:	N 58°39′44.90″ E		
Chord Direction:	N 54°04′58.03″ W		
Radial Direction:	N 13°10′19.05″ E		
Tangent Direction:	N 76°49′40.95″ W		
Element: TANGENT			
PT	4+61.89	402356.89	315623.42
PC	6+96.35	402410.32	315395.13
Tangent Direction:	N 76°49′40.95″ W		
Tangent Length:	234.46		
Element: CURVE			
PC	6+96.35	402410.32	315395.13
PI	9+43.08	402466.54	315154.88
CC		402060.50	315313.26
PT	11+27.35	402262.50	315016.16
Radius:	359.26		
Delta:	68°57′37.98″ Left		
Degree of Curvature Chord :	16°00′00.00″		
Length:	432.41		
Length Chorded :	431.00		
Tangent:	246.73		
Chord:	406.78		
Middle Ordinate:	63.12		
External:	76.57		
Tangent Direction:	N 76°49′40.95″ W		
Radial Direction:	N 13°10′19.05″ E		
Chord Direction:	S 68°41′30.06″ W		
Radial Direction:	N 55°47′18.93″ W		
Tangent Direction:	S 34°12′41.07″ W		
Element: TANGENT			
PT	11+27.35	402262.50	315016.16
TOPI TURNOUT #3	11+80.01	402218.95	314986.55
Tangent Direction:	S 34°12′41.07″ W		
Tangent Length:	52.66		
Element: TANGENT			
TOPI TURNOUT #3	11+80.01	402218.95	314986.55
PS 1:8RH TURNOUT #3	12+10.61	402191.70	314972.63
Tangent Direction:	S 27°03′31.07″ W		
Tangent Length:	30.61		
Element: TANGENT			
PS 1:8RH TURNOUT #3	12+10.61	402191.70	314972.63
PC	12+16.47	402186.48	314969.96
Tangent Direction:	S 27°03′31.07″ W		
Tangent Length:	5.86		
Element: CURVE			
PC	12+16.47	402186.48	314969.96
PI	12+83.40	402126.88	314939.52
CC		402017.81	315300.16
PT	13+48.49	402060.40	314931.83
Radius:	370.78		
Delta:	20°27′48.21″ Left		
Degree of Curvature Chord :	15°30′00.00″		
Length:	132.43		
Length Chorded :	132.02		
Tangent:	66.93		
Chord:	131.72		
Middle Ordinate:	5.90		
External:	5.99		
Tangent Direction:	S 27°03′31.07″ W		
Radial Direction:	N 62°56′28.93″ W		
Chord Direction:	S 16°49′36.96″ W		
Radial Direction:	N 83°24′17.14″ W		
Tangent Direction:	S 6°35′42.86″ W		
Element: TANGENT			
PT	13+48.49	402060.40	314931.83
MEET E.BERTH TRACK	13+80.00	402029.10	314928.21
Tangent Direction:	S 6°35′42.86″ W		
Tangent Length:	31.51		

Horizontal Alignment Name: Pr-Shed 1-2 Lead

	STATION	NORTHING	EASTING
Element: TANGENT			
EXISTING PS 1:6LH	-2+44.91	403452.07	315454.64
APPARANT TOPI	-2+26.11	403454.25	315435.96
Tangent Direction:	N 83°20′36.52″ W		
Tangent Length:	18.80		
Element: TANGENT			
APPARANT TOPI	-2+26.11	403454.25	315435.96
PC BEGIN NEW CONSTR.	-1+89.00	403452.41	315398.91
Tangent Direction:	S 87°08′54.38″ W		
Tangent Length:	37.10		
Element: CURVE			
PC BEGIN NEW CONSTR.	-1+89.00	403452.41	315398.91
PI	-0+96.22	403447.79	315306.24
CC		403259.46	315408.52
PT	-0+17.98	403372.58	315251.91
Radius:	193.19		
Delta:	51°18′28.45″ Left		
Degree of Curvature Chord :	30°00′00.00″		
Length:	173.00		
Length Chorded :	171.03		
Tangent:	92.78		
Chord:	167.27		
Middle Ordinate:	19.04		
External:	21.13		
Tangent Direction:	S 87°08′54.38″ W		
Radial Direction:	N 2°51′05.62″ W		
Chord Direction:	S 61°29′40.15″ W		
Radial Direction:	N 54°09′34.08″ W		
Tangent Direction:	S 35°50′25.92″ W		
Element: TANGENT			
PT	-0+17.98	403372.58	315251.91
PC	0+19.17	403342.46	315230.16
Tangent Direction:	S 35°50′25.92″ W		
Tangent Length:	37.15		
Element: CURVE			
PC	0+19.17	403342.46	315230.16
PI	0+87.34	403287.20	315190.24
CC		403189.03	315442.58
PT	1+51.74	403219.49	315182.32
Radius:	262.04		
Delta:	29°09′52.00″ Left		
Degree of Curvature Chord :	22°00′00.00″		
Length:	133.38		
Length Chorded :	132.57		
Tangent:	68.17		
Chord:	131.95		
Middle Ordinate:	8.44		
External:	8.72		
Tangent Direction:	S 35°50′25.92″ W		
Radial Direction:	N 54°09′34.08″ W		
Chord Direction:	S 21°15′29.93″ W		
Radial Direction:	N 83°19′26.07″ W		
Tangent Direction:	S 6°40′33.93″ W		
Element: TANGENT			
PT	1+51.74	403219.49	315182.32
PC	8+76.03	402500.11	315098.12
Tangent Direction:	S 6°40′33.93″ W		
Tangent Length:	724.29		
Element: CURVE			
PC	8+76.03	402500.11	315098.12
PI	9+17.69	402458.73	315093.27
CC		402541.88	314741.29
PT	9+58.71	402419.56	315079.09
Radius:	359.26		
Delta:	13°13′47.12″ Right		
Degree of Curvature Chord :	16°00′00.00″		
Length:	82.96		
Length Chorded :	82.69		
Tangent:	41.66		
Chord:	82.77		
Middle Ordinate:	2.39		
External:	2.41		
Tangent Direction:	S 6°40′33.93″ W		
Radial Direction:	N 83°19′26.07″ W		
Chord Direction:	S 13°17′27.49″ W		
Radial Direction:	N 70°05′38.95″ W		
Tangent Direction:	S 19°54′21.05″ W		
Element: TANGENT			
PT	9+58.71	402419.56	315079.09
TOPI TURNOUT #4	10+29.78	402352.74	315054.89
Tangent Direction:	S 19°54′21.05″ W		
Tangent Length:	71.06		
Element: TANGENT			
TOPI TURNOUT #4	10+29.78	402352.74	315054.89
PS 1:8LH TURNOUT #4	10+60.39	402325.49	315040.97
Tangent Direction:	S 27°03′31.07″ W		
Tangent Length:	30.61		
Element: TANGENT			
PS 1:8LH TURNOUT #4	10+60.39	402325.49	315040.97
TOPI TURNOUT #3	11+80.02	402218.95	314986.55
Tangent Direction:	S 27°03′31.07″ W		
Tangent Length:	119.63		
Element: TANGENT			
TOPI TURNOUT #3	11+80.02	402218.95	314986.55
PS 1:8 RH TURNOUT #3	12+10.61	402191.70	314972.63
Tangent Direction:	S 27°03′31.07″ W		
Tangent Length:	30.61		

Horizontal Alignment Name: Pr-West Berth Track Extended

	STATION	NORTHING	EASTING
Element: TANGENT			
PS 1:8RH TURNOUT #2	15+40.15	401870.01	314909.82
TOPI TURNOUT #2	15+70.75	401839.61	314906.30
Tangent Direction:	S 6°35′42.86″ W		
Tangent Length:	30.60		
Element: TANGENT			
TOPI TURNOUT #2	15+70.75	401839.61	314906.30
PC	16+77.39	401736.03	314880.96
Tangent Direction:	S 13°44′52.76″ W		
Tangent Length:	106.63		
Element: CURVE			
PC	16+77.39	401736.03	314880.96
PI	17+07.28	401706.99	314873.86
CC		401622.35	314345.60
PT	17+36.99	401677.29	314870.42
Radius:	478.34		
Delta:	7°09′09.90″ Left		
Degree of Curvature Chord :	12°00′00.00″		
Length:	59.72		
Length Chorded :	59.61		
Tangent:	29.90		
Chord:	59.68		
Middle Ordinate:	0.93		
External:	0.93		
Tangent Direction:	S 13°44′52.76″ W		
Radial Direction:	N 76°15′07.24″ W		
Chord Direction:	S 10°10′17.81″ W		
Radial Direction:	N 83°24′17.14″ W		
Tangent Direction:	S 6°35′42.86″ W		
Element: TANGENT			
PT	17+36.99	401677.29	314870.42
TOPI TURNOUT #1	23+93.03	401025.60	314795.08
Tangent Direction:	S 6°35′42.86″ W		
Tangent Length:	656.03		
Element: TANGENT			
TOPI TURNOUT #1	23+93.03	401025.60	314795.08
PS 1:8RH	24+23.63	400995.20	314791.56
Tangent Direction:	S 6°35′42.86″ W		
Tangent Length:	30.60		
Element: TANGENT			
PS 1:8RH TURNOUT #1	24+23.63	400995.20	314791.56
EOT	25+75.01	400844.82	314774.17
Tangent Direction:	S 6°35′42.86″ W		
Tangent Length:	151.38		

Horizontal Alignment Name: Pr- East Berth Track

	STATION	NORTHING	EASTING
Element: TANGENT			
MEET SOUTH LEAD	13+80.00	402029.10	314928.21
PS 1:8RH TURNOUT #2	15+40.15	401870.01	314909.82
Tangent Direction:	S 6°35′42.86″ W		
Tangent Length:	160.15		
Element: TANGENT			
PS 1:8RH TURNOUT #2	15+40.15	401870.01	314909.82
TOPI TURNOUT #2	15+70.75	401839.61	314906.30
Tangent Direction:	S 6°35′42.86″ W		
Tangent Length:	30.60		
Element: TANGENT			
TOPI TURNOUT #2	15+70.75	401839.61	314906.30
PC	22+26.78	401187.92	314830.96
Tangent Direction:	S 6°35′42.86″ W		
Tangent Length:	656.03		
Element: CURVE			
PC	22+26.78	401187.92	314830.96
PI	22+56.68	401158.22	314827.52
CC		401242.86	314355.78
PT	22+86.39	401129.18	314820.42
Radius:	478.34		
Delta:	7°09′09.75″ Right		
Degree of Curvature Chord :	12°00′00.00″		
Length:	59.71		
Length Chorded :	59.61		
Tangent:	29.90		
Chord:	59.68		
Middle Ordinate:	0.93		
External:	0.93		
Tangent Direction:	S 6°35′42.86″ W		
Radial Direction:	N 83°24′17.14″ W		
Chord Direction:	S 10°10′17.73″ W		
Radial Direction:	N 76°15′07.39″ W		
Tangent Direction:	S 13°44′52.61″ W		
Element: TANGENT			
PT	22+86.39	401129.18	314820.42
TOPI TURNOUT #1	23+93.02	401025.60	314795.08
Tangent Direction:	S 13°44′52.61″ W		
Tangent Length:	106.63		
Element: TANGENT			
TOPI TURNOUT #1	23+93.02	401025.60	314795.08
PS 1:8RH TURNOUT #1	24+23.62	400995.20	314791.56
Tangent Direction:	S 6°35′42.86″ W		
Tangent Length:	30.60		

Horizontal Alignment Name: Pr-Building A Lead

	STATION	NORTHING	EASTING
Element: TANGENT			
BEGIN NEW TRACK	0+67.95	403291.82	315227.07
PC	7+66.32	402598.13	315146.45
Tangent Direction:	S 6°37′44.63″ W		
Tangent Length:	698.37		
Element: CURVE			
PC	7+66.32	402598.13	315146.45
PI	8+52.51	402512.51	315136.50
CC		402653.35	314671.31
PT	9+36.56	402435.75	315097.29
Radius:	478.34		
Delta:	20°25′46.43″ Right		
Degree of Curvature Chord :	12°00′00.00″		
Length:	170.56		
Length Chorded :	170.25		
Tangent:	86.19		
Chord:	169.66		
Middle Ordinate:	7.58		
External:	7.70		
Tangent Direction:	S 6°37′44.63″ W		
Radial Direction:	N 83°22′15.37″ W		
Chord Direction:	S 16°50′37.85″ W		
Radial Direction:	N 62°56′28.93″ W		
Tangent Direction:	S 27°03′31.07″ W		
Element: TANGENT			
PT	9+36.56	402435.75	315097.29
TOPI TURNOUT #4	10+29.78	402352.74	315054.89
Tangent Direction:	S 27°03′31.07″ W		
Tangent Length:	93.21		
Element: TANGENT			
TOPI TURNOUT #4	10+29.78	402352.74	315054.89
PS 1:8LH TURNOUT #4	10+60.39	402325.49	315040.97
Tangent Direction:	S 27°03′31.07″ W		
Tangent Length:	30.61		
Element: TANGENT			
PS 1:8LH TURNOUT #4	10+60.39	402325.49	315040.97
TOPI TURNOUT #3	11+80.02	402218.95	314986.55
Tangent Direction:	S 27°03′31.07″ W		
Tangent Length:	119.63		
Element: TANGENT			
TOPI TURNOUT #3	11+80.02	402218.95	314986.55
PS 1:8 RH TURNOUT #3	12+10.61	402191.70	314972.63
Tangent Direction:	S 27°03′31.07″ W		
Tangent Length:	30.61		

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

STATE OF NEW JERSEY · ALAN COLLINS · No. 24GE04337000 · LICENSED PROFESSIONAL ENGINEER

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
HORIZONTAL TRACK GEOMETRY DATA

DWN	PROJ #	DRAWING NUMBER
FST		T-10
CHK	DATE	

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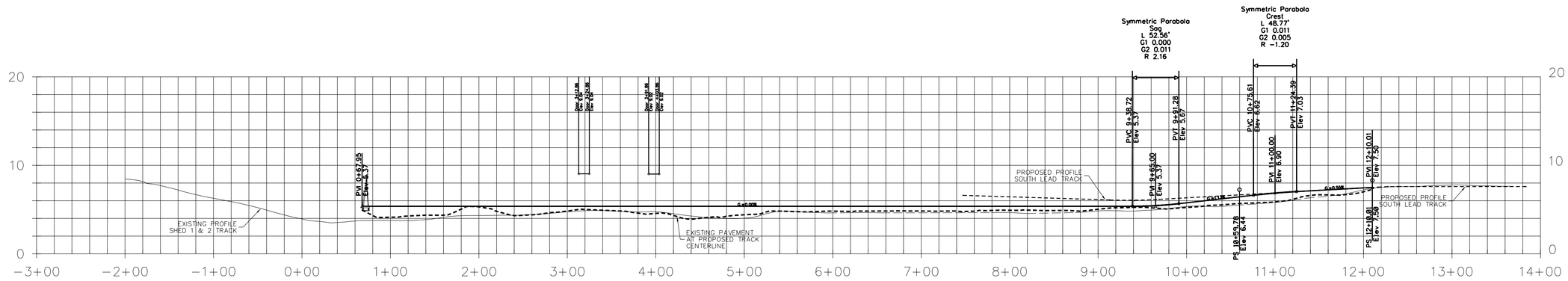
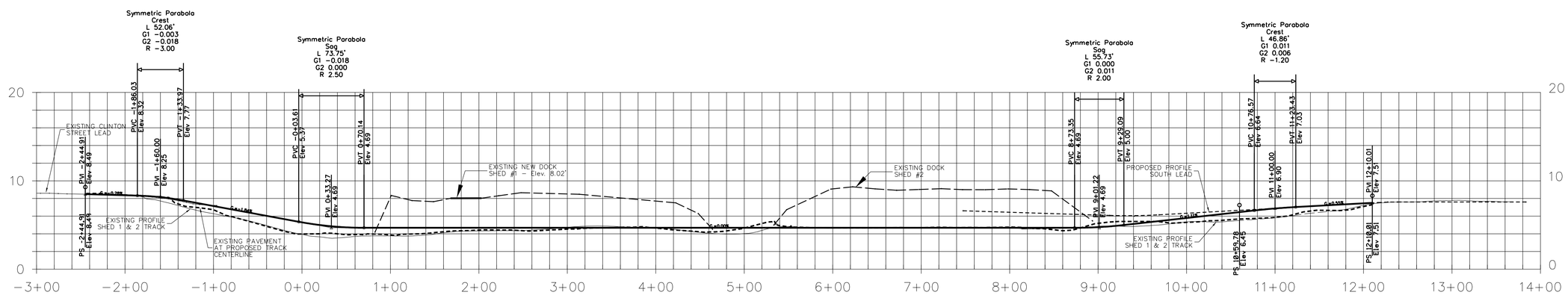


Pr-Building A Track



Pr-Shed 1-2

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
ALAN COLLINS
No. 24GE04337000
LICENSED PROFESSIONAL ENGINEER

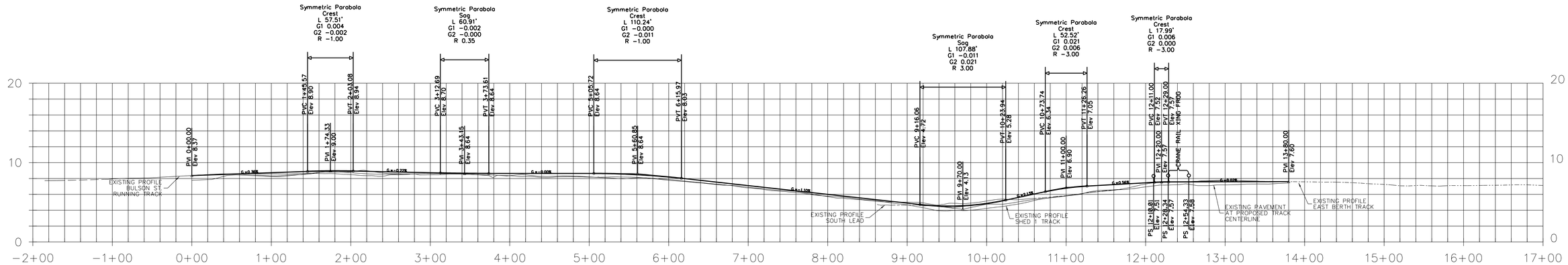
URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

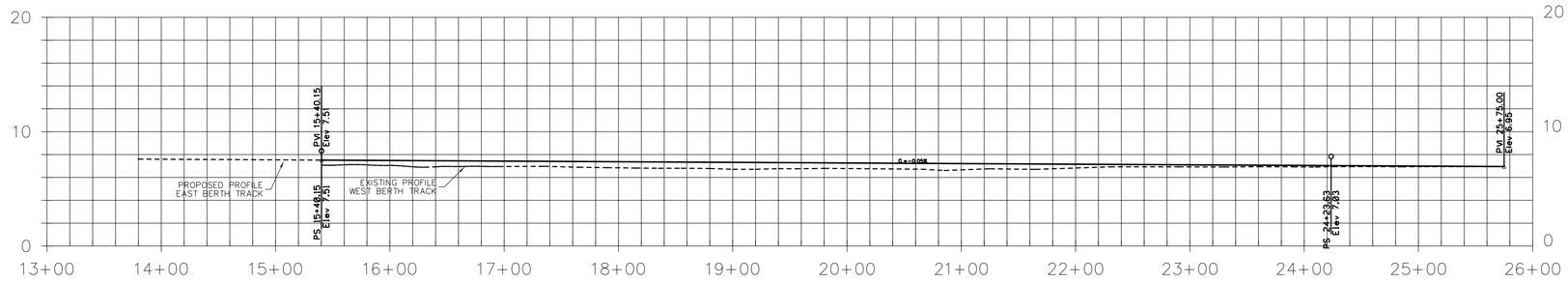
TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
PROPOSED TOP OF RAIL PROFILES - 1 OF 2

DWN	PROJ #	DRAWING NUMBER
FST		T-13
CHK	DATE	

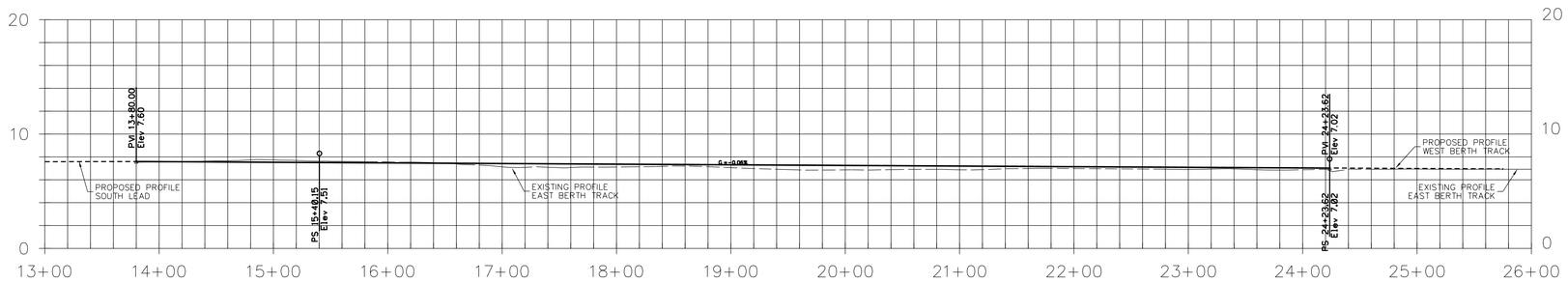
X:\2021500064.000 - sjpc balzano rail rehab\tech\xlcad\civil\dwg\xref\UE8-TITLEBLOCK-24X22.dwg



Pr-South Lead



Pr-West Berth Track



Pr-East Berth Track

ISSUED FOR BID

REV.	BY	DATE	DESCRIPTION

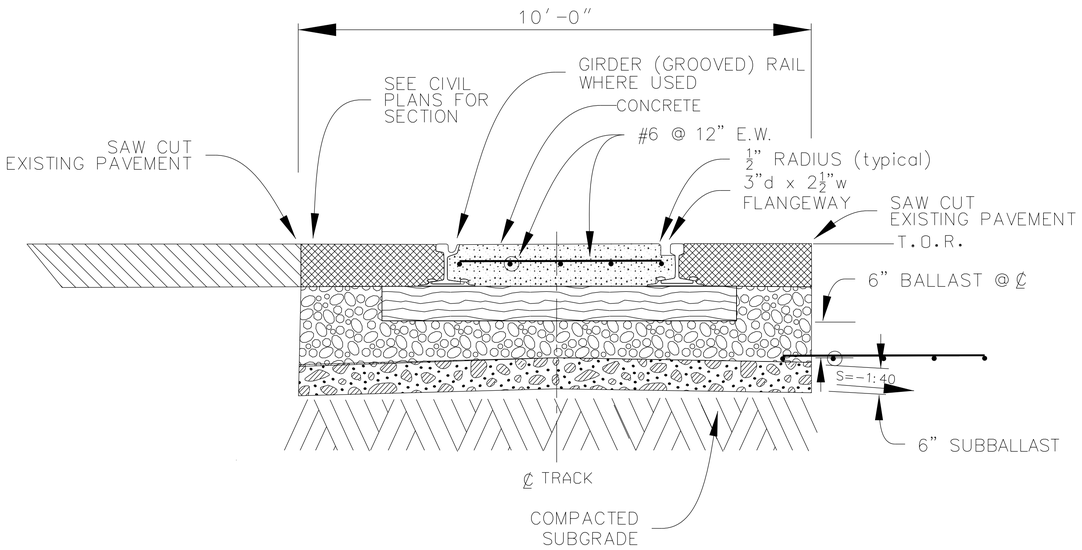
STATE OF NEW JERSEY
BRIAN COLLINS
No. 24GE04337000
LICENSED PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
PROPOSED TOP OF RAIL PROFILES - 2 OF 2

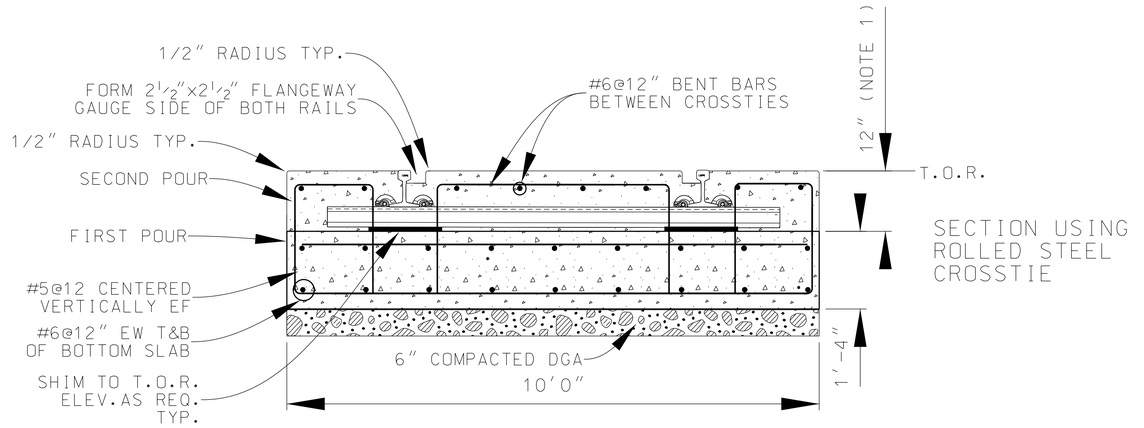
DWN	PROJ #	DRAWING NUMBER
FST		T-14
CHK	DATE	

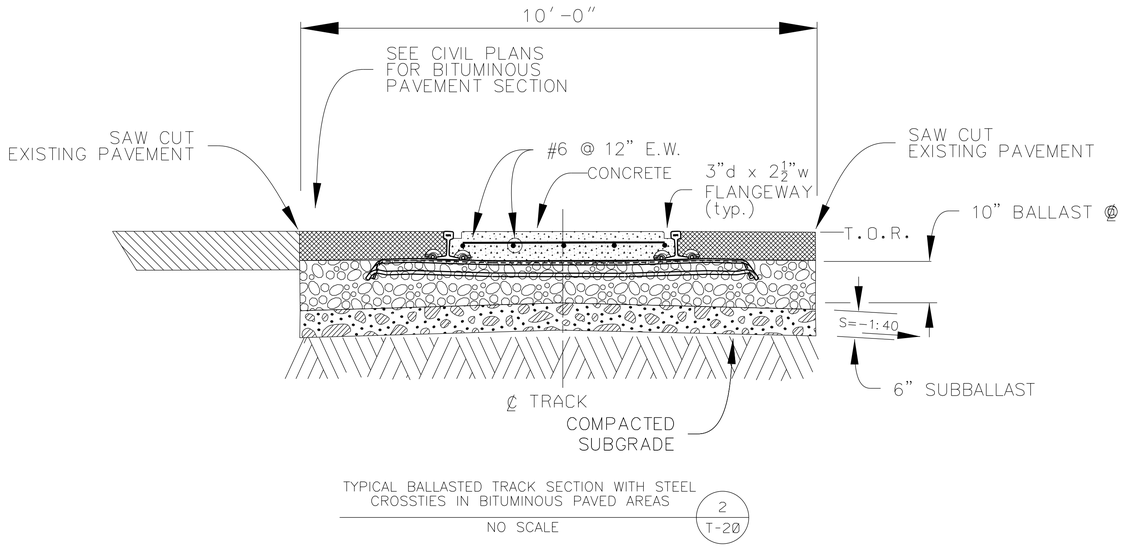


TYPICAL TRACK SECTION WITH TIMBER CROSSTIES IN BITUMINOUS PAVEMENT

NO SCALE

1 / T-20

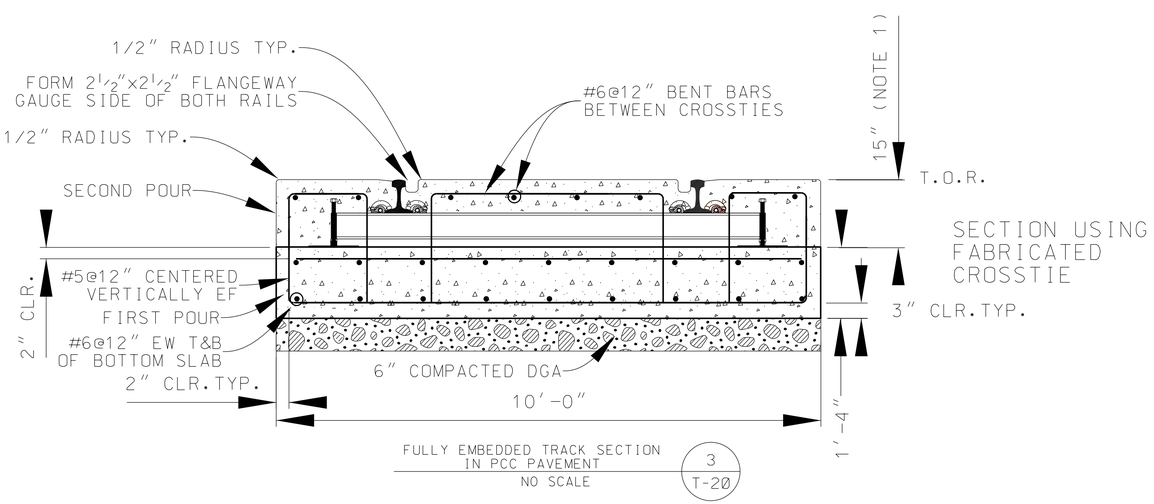




TYPICAL BALLASTED TRACK SECTION WITH STEEL CROSSTIES IN BITUMINOUS PAVED AREAS

NO SCALE

2 / T-20



FULLY EMBEDDED TRACK SECTION IN PCC PAVEMENT

NO SCALE

3 / T-20

1) DIMENSIONS SHOWN FOR USE WITH 136#RE RAIL.

2) FOR DETAILS OF PANDROL SHOULDER ATTACHMENT WELDS, SEE PANDROL DRAWING #USK-1136, SHEET 1 OF 4.

3) CONTRACTOR MAY PROPOSE "TOP DOWN", "BOTTOM UP" OR "BASE SLAB" METHOD OF CONSTRUCTION SUBJECT TO PRIOR APPROVAL OF ENGINEER.

4) CONTRACTOR MAY USE COMMERCIALLY AVAILABLE FIXTURES FOR SETTING RAILS AT PROPER ALIGNMENT, PROFILE AND GAUGE SUBJECT TO PRIOR APPROVAL OF ENGINEER.

5) CONCRETE EMBEDDED TRACK CONSTRUCTION SHOWN IN DETAIL 3 OF THIS SHEET SHALL BE UTILIZED THRUOUT ALL NEW DOUBLE TONGUE TURNOUTS AND PORTIONS OF TRACK AS INDICATED ON PLANS.

6) FOR FABRICATED CROSSTIE DIMENSIONS AND ADDITIONAL INFORMATION SEE DETAIL 1/T-25.

7)CONCRETE MIX FOR ALL EMBEDDED TRACKWORK SHALL HAVE MINIMUM COMPRESSIVE STRENGTH 5000 PSI @ 28 DAYS.

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

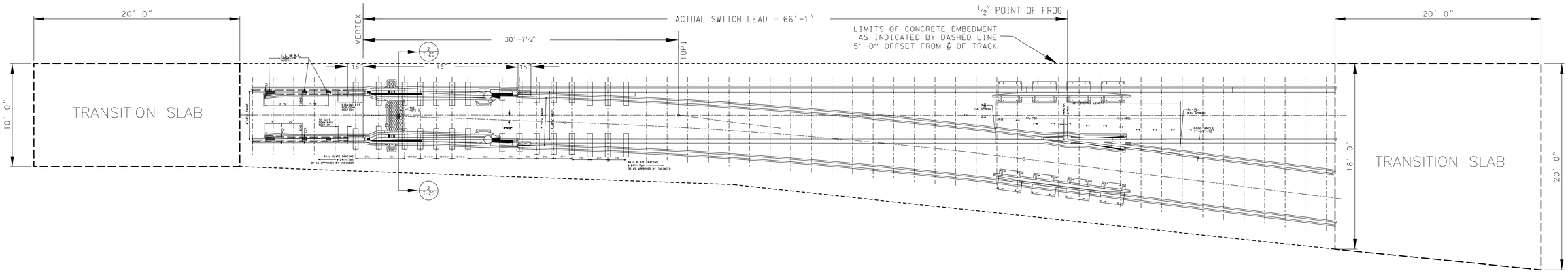
STATE OF NEW JERSEY · ALAN COLLINS · No. 24GE04337000 · PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

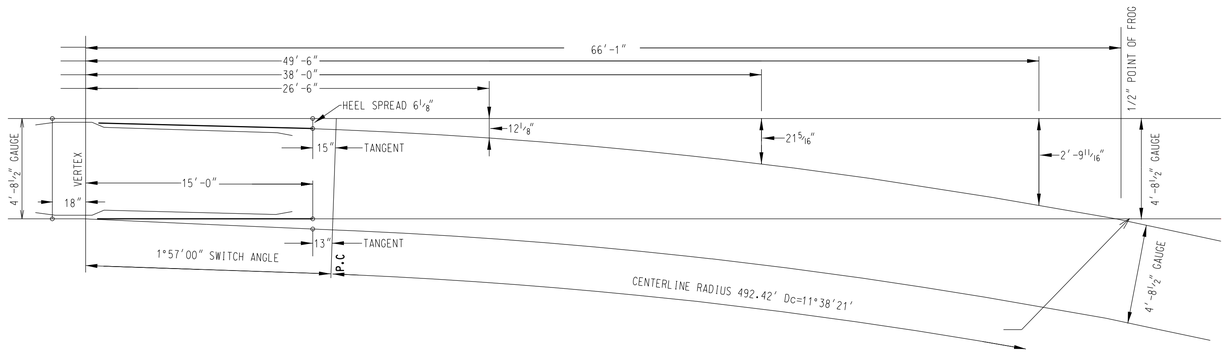
TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
TYPICAL TRACK CONSTRUCTION DETAILS

DWN	PROJ #	DRAWING NUMBER
FST		T-20
CHK	DATE	



GENERAL ARRANGEMENT #8
DOUBLE TONGUE TURNOUT
NO SCALE

1
T-21



OFFSETS FOR #8 DOUBLE
TONGUE TURNOUT
NO SCALE

2
T-21

1) ARRANGEMENT IS SHOWN FOR RECOMMENDED LOCATION AND SPACING OF DOUBLE TONGUE SWITCH FASTENING PLATES THRU TURNOUT. THE CONTRACTOR MAY PROPOSE ALTERNATE MEANS FOR SETTING THE ALIGNMENT AND PROFILE OF THE TURNOUT COMPONENTS. CONTRACTOR SHALL SUBMIT COMPLETE DRAWINGS AND PRODUCT SPECIFICATIONS, INCLUDING PROPOSED LOCATIONS OF REINFORCING STEEL FOR ANY SUCH PROPOSED ALTERNATE METHODS PRIOR TO PROCUREMENT. THE ENGINEER IS UNDER NO OBLIGATION TO APPROVE ALTERNATE MEANS OF SUCH INSTALLATION.

2) RAIL BOUND MANGANESE FROG SHOWN. SOLID MANGANESE FROG CONFORMING TO AREMA STANDARD PLAN 671 MAY BE SUBSTITUTED. SOLID MANGANESE SELF GUARDED FROGS ARE NOT PERMITTED.

3) REFER TO AREMA BASIC PLAN 989 FOR ALTERNATE ARRANGEMENT OF OPERATING MECHANISM LOCATED OUTSIDE OF GAUGE.

4) FOR ADDITIONAL DETAILS OF DOUBLE TONGUE SWITCH NOT SHOWN, REFER TO AREMA PLAN 987.

5) SUPPLIER TO SUBMIT COMPLETE SHOP DRAWINGS AND LAYOUT PLANS FOR TURNOUT AND ALL TURNOUT COMPONENTS INCLUDING TYPE OF POSITIVE RESTRAINT RAIL FASTENING SYSTEM TO BE EMPLOYED, TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCING FABRICATION.

6) REFER TO SHEET T-23 FOR DETAILS OF TRANSITION SLABS.

7) REFER TO DETAIL 2/T-25 FOR SWITCH POINT MECHANISM DRAIN.

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
ALAN COLLINS
No. 24GE04337000
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION

TRACK CONSTRUCTION DETAILS

DWN	PROJ #	DRAWING NUMBER
FST		T-21
CHK	DATE	

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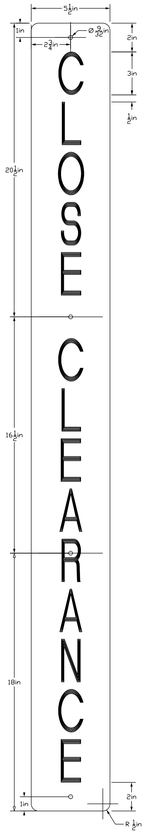
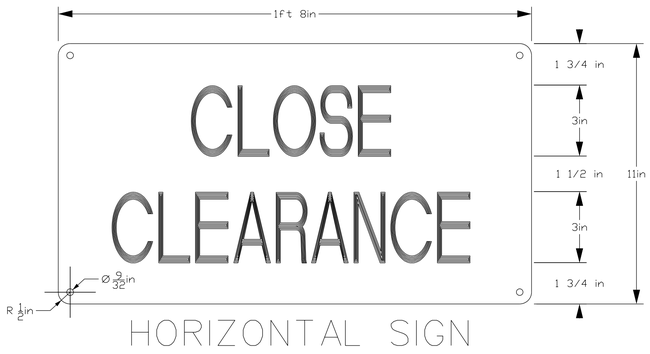


VERTICAL SIGN



HORIZONTAL SIGN

1- THE SIGN SHALL BE 6061-T6 ALUMINUM SHEETING .081" THICK, WITH ONE SIDE COVERED WITH NO.2870 SILVER SCOTCHLITE AND NO. 605 BLACK SCOTCHCAL LETTERS.

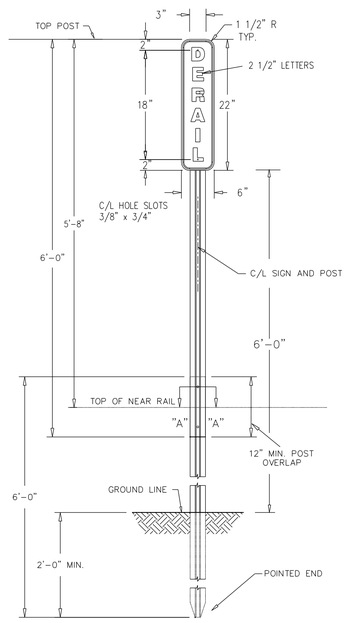
2- "CLOSE CLEARANCE" SIGNS SHALL BE DISPLAYED WHERE OBJECTS DO NOT PROVIDE FOR FULL CLEARANCE PER RAILROAD'S CLEARANCE DIAGRAM. THE SIGNS SHALL BE ATTACHED TO THE SIDE OF A BUILDING OR OTHER FLAT SURFACE AND SHALL BE HELD AWAY FROM THE SURFACE ABOUT 1" WITH FURRING STRIPS OR SPOOLS TO ALLOW FOR VENTILATION. NO.14 STAINLESS STEEL ROUND HEAD WOOD SCREWS OR ½" DIAMETER STAINLESS STEEL BOLTS SHALL BE USED TO ATTACH THE SIGNS. STAINLESS STEEL WASHERS WASHERS SHALL BE USED UNDERTHE HEADS OF BOLTS OR SCREWS.

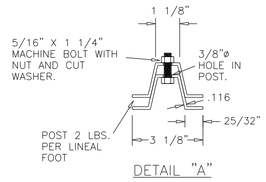
3- "CLOSE CLEARANCE" SIGNS SHALL BE ILLUMINATED DURING THE HOURS OF DARKNESS.

CLOSE CLEARANCE SIGNS

NO SCALE

1
T-22





DETAIL "A"

1) THE SIGN SHALL BE 6061-T6 ALUMINUM SHEETING .081" THICK, WITH ONE SIDE COVERED WITH NO.2870 SILVER SCOTCHLITE AND NO. 605 BLACK SCOTCHCAL LETTERS.

2) SIGN AS SHOWN IS ONE SIDE ONLY. FOR BI-DIRECTIONAL VISIBILITY, MOUNT TWO SIGNS BACK TO BACK.

MATERIAL REQUIRED
2 EA. 2 LB./L.F. GALVANIZED FLANGED CHANNEL STEEL POST 6'-0" LONG W/⅜" MOUNTING HOLES AT 1" CENTERS AND POINTED END.
2 EA. 5/16"x2" GALVANIZED CARRIAGE BOLT WITH LOCK NUT AND NYLON WASHER.
2 EA. MOUNTING BOLTS 5/16"x1 ¼" FOR SECURING THE 2 EA. SIGN POSTS.

ALTERNATE MATERIAL
1 EA. 2 LB./L.F. GALVANIZED FLANGED CHANNEL STEEL POST 8'-0" LONG W/3#8" MOUNTING HOLES AT 1" CENTERS AND POINTED END.
2 EA. 5#16"x2" GALVANIZED CARRIAGE BOLT WITH LOCK NUT AND NYLON WASHER.

DERAIL MARKER POST

NO SCALE

1
T-22

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY · LIAM COLLINS · No. 24GE04337000 · Professional Engineer · LICENSED PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION

TRACK CONSTRUCTION DETAILS

DWN FST | PROJ # | DRAWING NUMBER T-22
CHK | DATE

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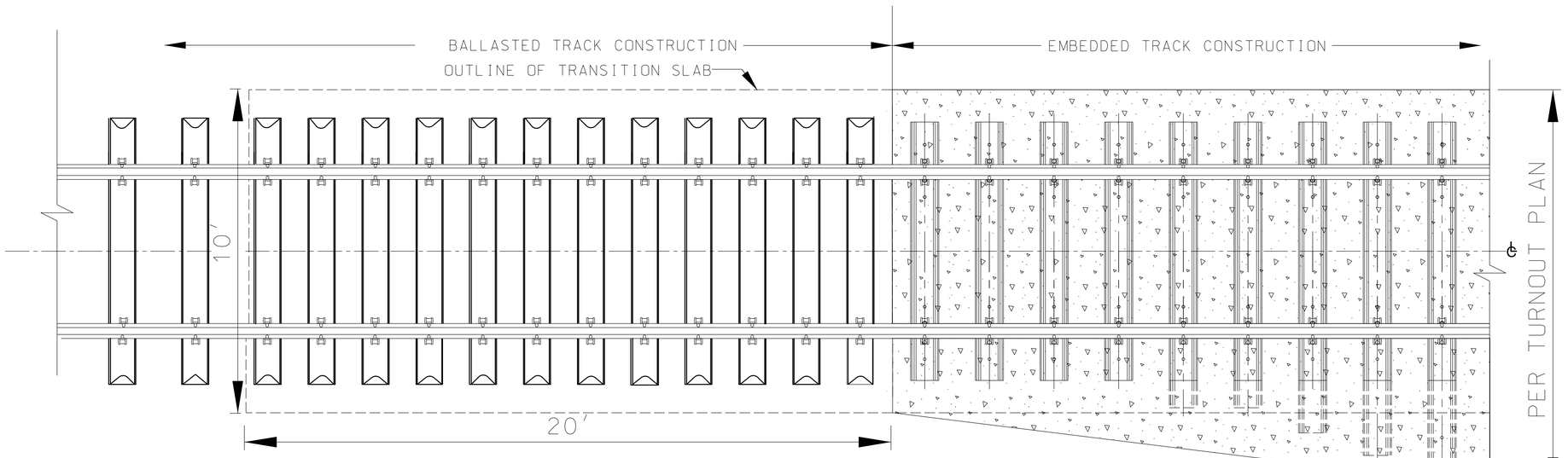
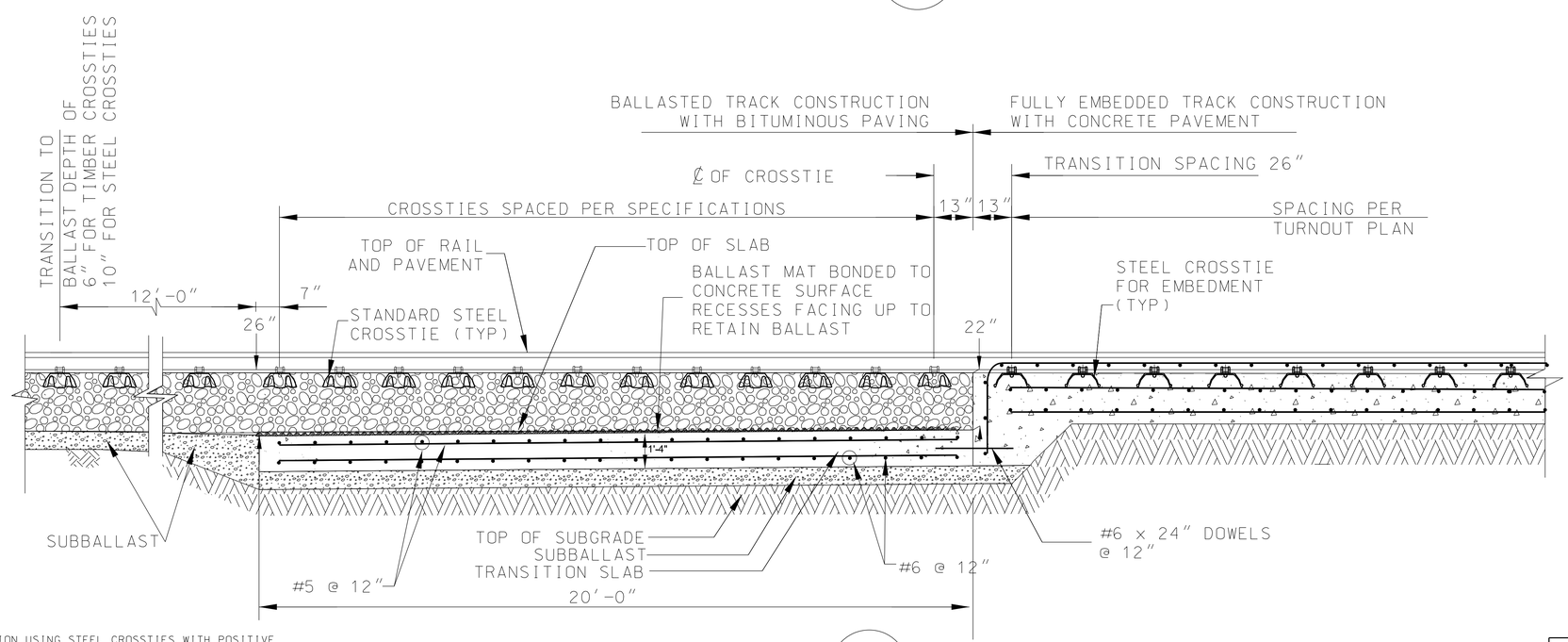


PLAN VIEW 1 / NO SCALE T-23



SECTION VIEW 2 / NO SCALE T-23

1) ARRANGEMENT IS SHOWN FOR INSTALLATION USING STEEL CROSSTIES WITH POSITIVE RESTRAINT RAIL FASTENING SYSTEM FOR APPLICATION IN BALLASTED TRACK AND FOR FULL EMBEDMENT IN REINFORCED CONCRETE PAVEMENT SLAB.
2) ALTERNATE METHODS OR MATERIALS FOR CONSTRUCTING BALLASTED TRACK OR FOR SETTING ALIGNMENT AND GAUGE OF RAILS FOR INSTALLATION OF FULLY EMBEDDED TRACK MAY BE ACCEPTABLE SUBJECT TO PRIOR SUBMISSION TO, AND RECEIPT OF APPROVAL OF ENGINEER.
3) CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR ARANGEMENT OF CONCRETE REINFORCING THRU ENTIRE TURNOUT TO ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
4) CONCRETE FOR ALL TRACK CONSTRUCTION SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 5000 psi @ 28 DAYS.

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

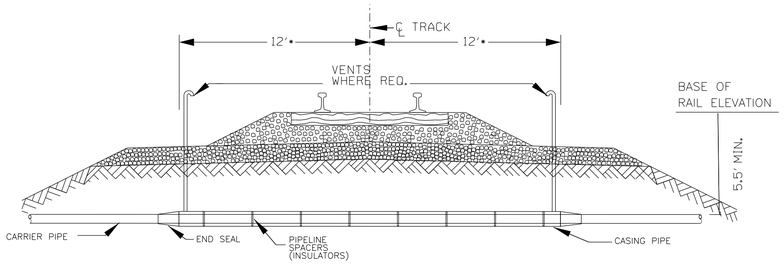
STATE OF NEW JERSEY — No. 24GE04337000 — PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

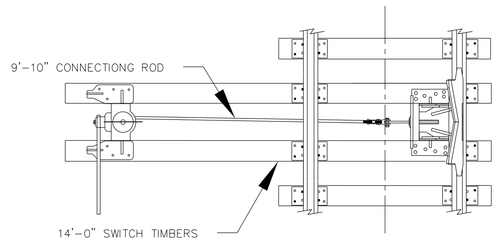
TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
TRACK CONSTRUCTION DETAIL
TRANSITION SLAB

DWN	PROJ #	DRAWING NUMBER
FST		T-23
CHK	DATE	

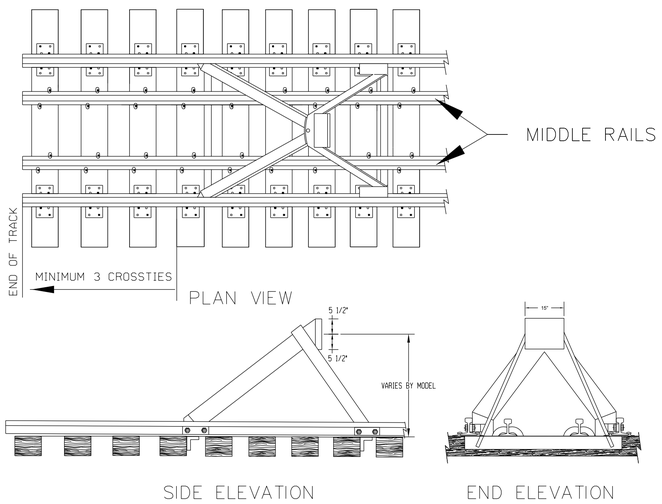


TYPICAL PRESSURIZED PIPELINE TRACK CROSSING — NO SCALE — 2 / T-20

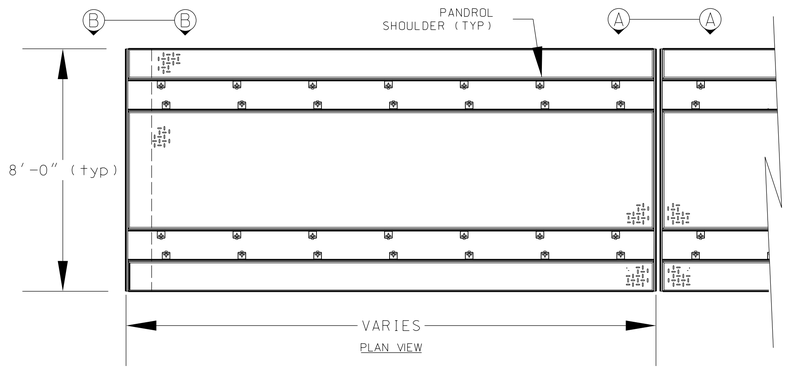
* MEASURED PERPENDICULAR TO TRACK CENTERLINE OR AS OTHERWISE NOTED ON PLANS

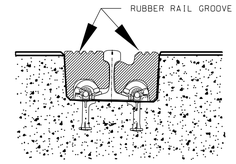


"HAYES" SLIDING DERAIL — NO SCALE — 8 / T-20

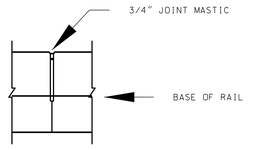


"HAYES" TYPE "WD" BUMPER — NO SCALE — 3 / T-20

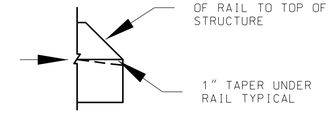




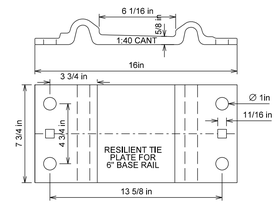
RUBBER RAIL GROOVE FILLER (typ.) DETAIL #1 — NTS

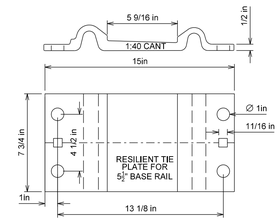


CONNECTION DETAIL SECTION A-A — NTS

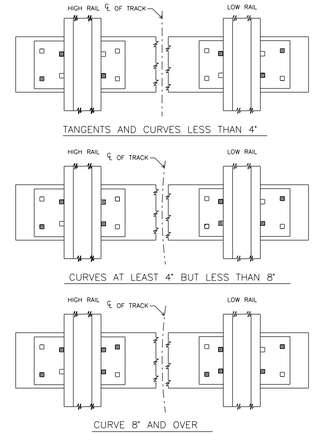


END PANEL DETAIL SECTION B-B — NTS

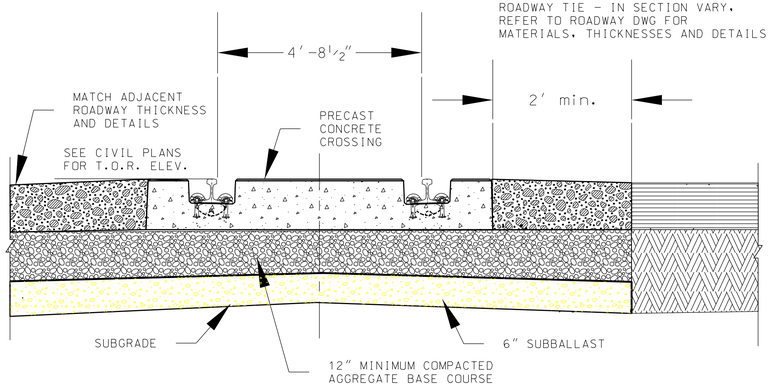




TYPICAL PANDROL TIE PLATE FOR USE WITH TIMBER CROSSTIES — NO SCALE — 7 / T-20



RAIL SPIKING PATTERN FOR 5/8" x 6" CUT SPIKES — NO SCALE — 6 / T-20



RUBBER RAIL GROOVE INSERTS IN ACCORDANCE WITH DETAIL #1 ABOVE, ARE NOT DEPICTED FOR CLARITY BUT SHALL BE INSTALLED FOLLOWING INSTALLATION AND THERMAL ADJUSTMENT OF CWR. APPLICATION OF RAIL FASTENERS AND FIELD WELDING OF CONNECTIONS TO EXISTING TRACK.

TYPICAL PRECAST FULL DEPTH CONCRETE GRADE CROSSING PANEL — NO SCALE — 5 / T-20

1. RUBBER INSERTS SHALL BE INSTALLED TO PROVIDE A 2 1/2" FLANGEWAY. INSERTS AND RAIL FASTENERS MUST BE REMOVABLE AND REUSABLE TO FACILITATE RAIL ACCESS OR REPLACEMENT.
2. RAIL FASTENING SYSTEM INCORPORATED IN PRECAST CONCRETE CROSSING MODULES SHALL PROVIDE 1:40 RAIL CANT THROUGOUT.
3. RESILIENT FASTENING SYSTEM RAIL SHOULDERS AND CLIPS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.
4. GRIND BASE OF RAIL WELDS WHICH FALL WITHIN LIMITS OF CROSSING PANEL MODULES SMOOTH.
5. END MODULES TO HAVE 45 DEGREE SLOPE FROM BOTTOM OF RAIL TO TOP OF MODULE AND 1" TAPPER UNDER RAIL.
6. ALL REINFORCING STEEL INCORPORATED IN CROSSING PANELS SHALL BE EPOXY COATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

ISSUED FOR BID

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

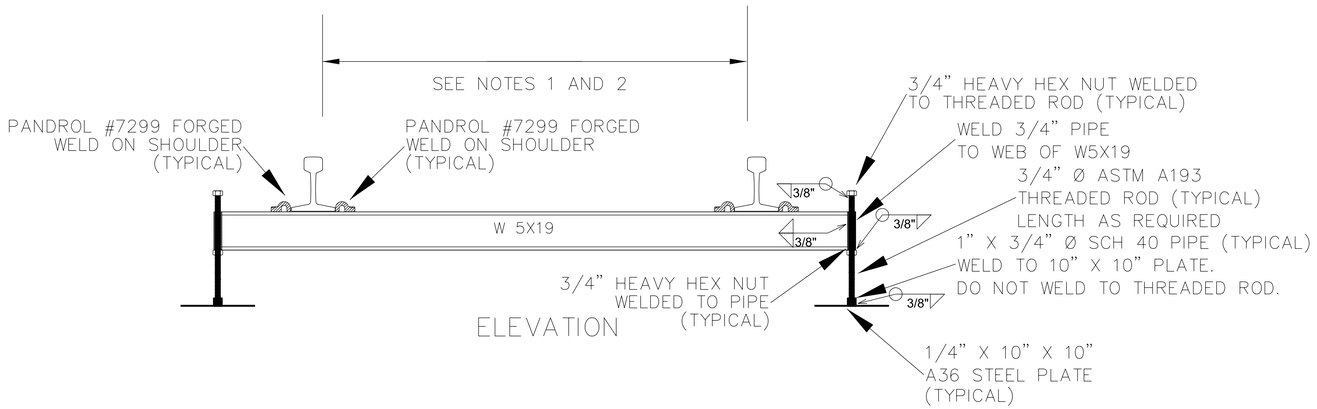
STATE OF NEW JERSEY — ALAN COLLINS — No. 24GE04337000 — LICENSED PROFESSIONAL ENGINEER

LOCATION: CAMDEN, N.J.

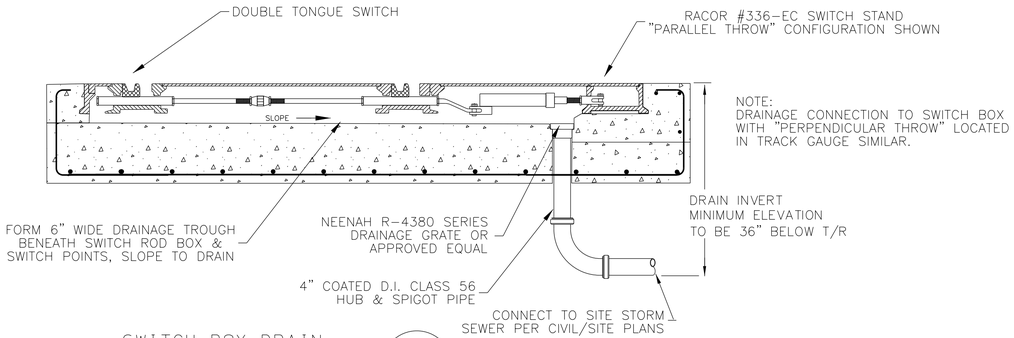
TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
TRACK CONSTRUCTION DETAILS

REV	BY	DATE	DESCRIPTION

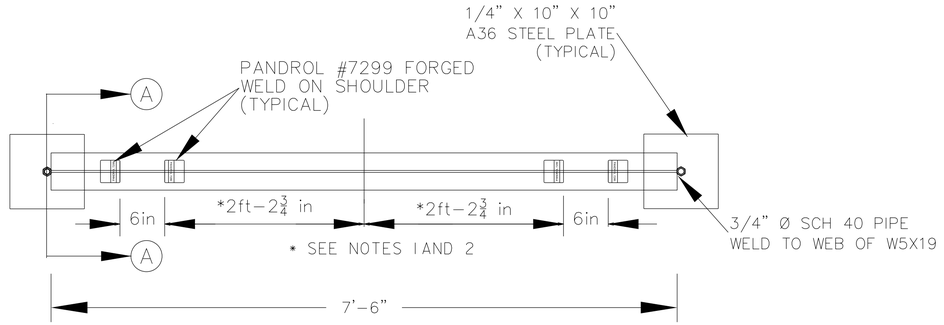
DWN FST | PROJ # | DRAWING NUMBER T-24
CHK | DATE



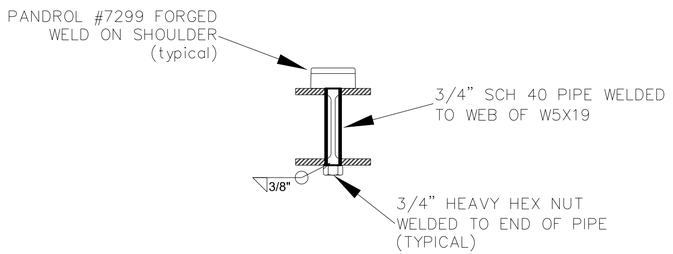
ELEVATION



SWITCH BOX DRAIN — NO SCALE — 2 / T-25

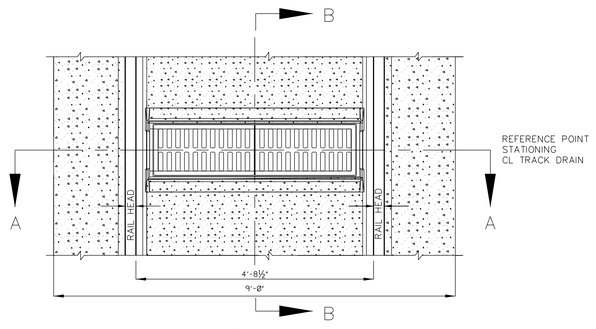


PLAN

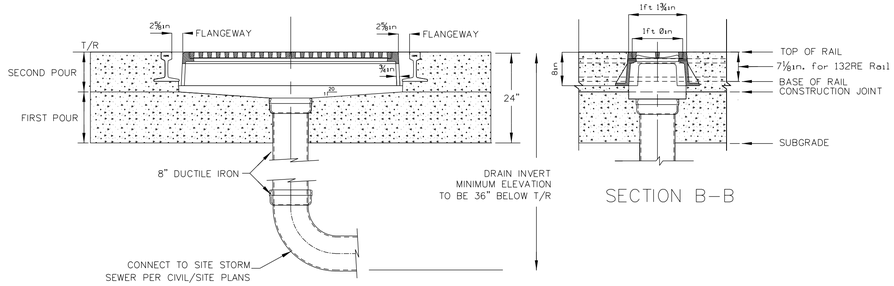


SECTION A-A

FABRICATED STEEL CROSSTIE
FOR FULLY EMBEDDED TRACK — NO SCALE — 1 / T-25



PLAN



SECTION A-A

SECTION B-B

TRACK GAUGE DRAIN — NO SCALE — 3 / T-25

NOTES

1) DIMENSIONS SHOWN FOR 136#RE RAIL.
ADJUST TO PROVIDE CORRECT TRACK GAUGE FOR OTHER RAIL SECTIONS.

2) GAUGE SHALL BE AS FOLLOWS:
4'-8 1/2" ON TANGENTS AND CURVES < 13°
4'-9" ON CURVES >13° AND THRU DIVERGING SIDE OF TURNOUTS < 1:8

3) FOR DETAILS OF PANDROL SHOULDER ATTACHMENT WELDS, SEE PANDROL
DRAWING #USK-1136, SHEET 1 OF 4.

NOTE

1) DETAIL SHOWS NEENAH FOUNDRY #R-3420 GRATE AND FRAME.

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY — ADAM COLLINS — No. 24GE04337000 — PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION

TRACK CONSTRUCTION DETAILS

DWN FST | PROJ # | DRAWING NUMBER T-25
CHK | DATE

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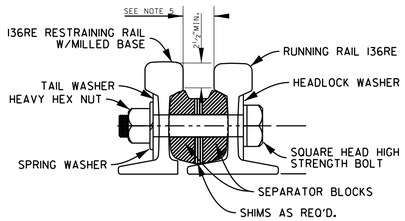
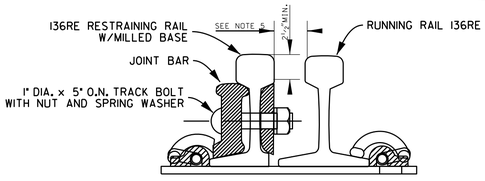
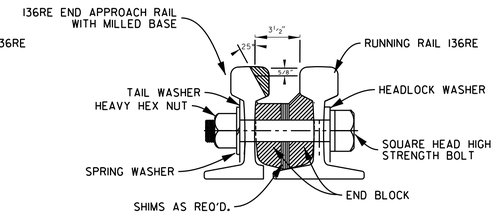


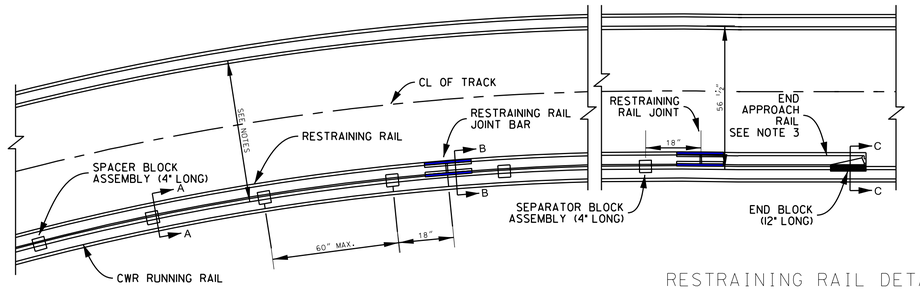
RESTRAINING RAIL SPACER BLOCK DETAIL
SECTION A-A

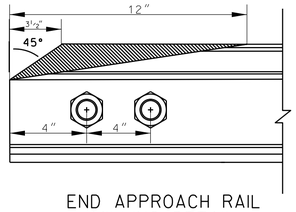


RESTRAINING RAIL JOINT ASSEMBLY
SECTION B-B



END BLOCK DETAIL
SECTION C-C





END APPROACH RAIL
MILLING DETAIL

RESTRAINING RAIL DETAILS — 1 / T-26
NO SCALE

RESTRAINING RAIL INSTALLATION NOTES:

1)RESTRAINING RAIL TO BE PRECURVED WITH SPACER BLOCK HOLES DRILLED IN SHOP. HOLES IN RUNNING RAIL TO BE DRILLED IN FIELD TO MATCH LOCATIONS OF HOLES IN RESTRAINING RAIL.

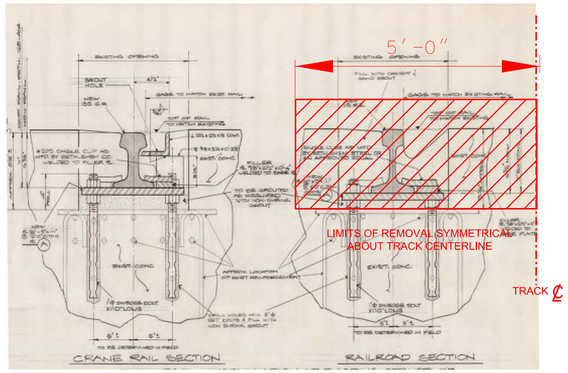
2)RESTRAINING RAIL JOINTS SHALL BE FOUR (4) HOLE JOINT BARS MANUFACTURED TO FIT THE RAIL SECTION USED AND IN ACORDANCE WITH SPECIFICATIONS OF THE A.R.E.M.A. MANUAL, CHAPTER 4, PART 3. IF REQUIRED, THE INSIDE BAR SHALL BE MILLED TO PROVIDE FLANGEWAY DIMENSIONS SHOWN.

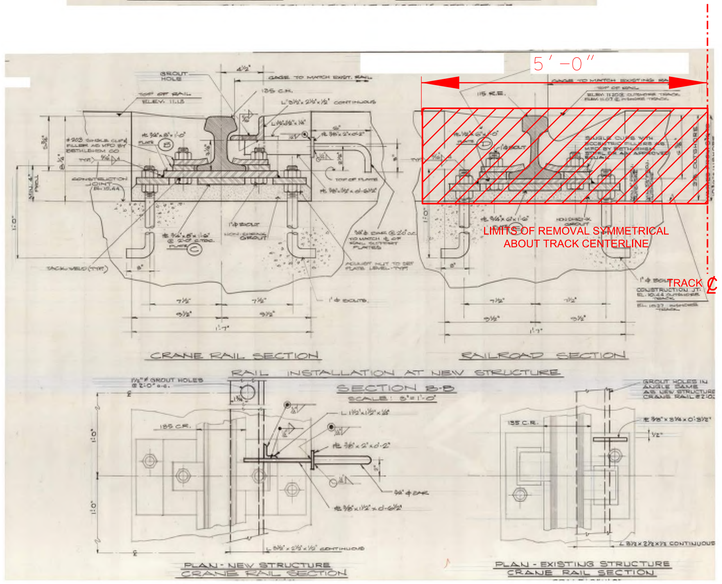
3)END OF APPROACH RAILS TO BE SHOP MILLED AT FACE ANGLE OF 25° FOR A DISTANCE OF TWELVE (12) INCHES FROM END OF RAIL TAPERING FROM FULL WIDTH OF RAIL HEAD TO ZERO AS SHOWN.

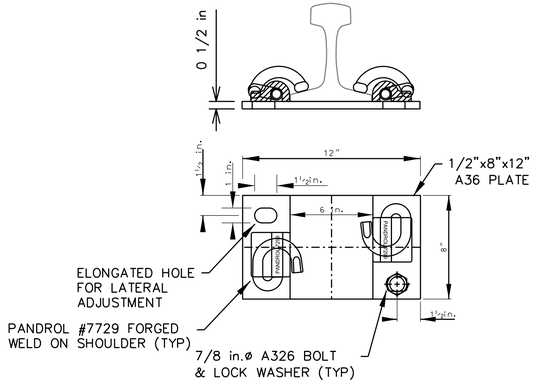
4)END BLOCK TO BE ATTACHED WITH TWO (2) ONE (1) INCH DIAMETER SQUARE HEAD HIGH STRENGTH BOLTS, NUTS & NUTLOCKS AND AT FOUR (4) INCH CENTERS.

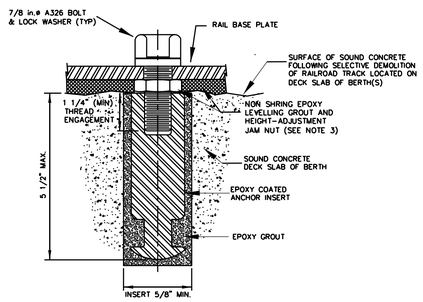
5. REFER TO AREMA PLAN #791 FOR FLANGEWAY WIDTHS REQUIRED AS APPLICABLE TO TRACK CENTERLINE DESIGN DEGREE OF CURVATURE.

6. RAIL CROSSTIE OR FASTENER SPACING SHALL BE ADJUSTED FOR TRACK CURVATURE AS DEFINED IN THE SPECIFICATIONS.

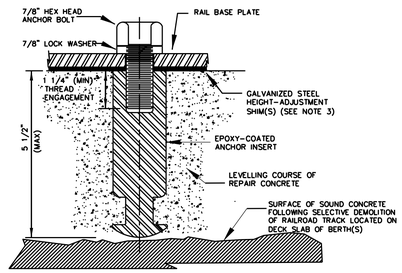








DRILL AND GROUT METHOD
INSTALLATION ALTERNATIVE 1 DETAIL



CAST-IN-PLACE
INSTALLATION ALTERNATIVE 2 DETAIL

RAIL BASE PLATE INSTALLATION DETAIL FOR EMBEDDED TRACK LOCATED ON CONCRETE DECK PORTIONS OF BERTHS #3, #4 AND 4 EXTENSION — 3 / T-26
NO SCALE

RAIL ATTACHEMENT AND BASE PLATE HARDWARE DETAILS FOR TRACK LOCATED ON DECK OF BERTHS:

1) AT THE OPTION OF THE INSTALLATION CONTRACTOR, AND AS POST DEMOLITION SITE CONDITIONS WARRANT, FOR THE FULLY EMBEDDED PORTION OF TRACK STRUCTURE, ANCHOR INSERTS SHALL BE INSTALLED BY EITHER THE "DRILL AND GROUT" METHOD OR, "CAST-IN-PLACE" METHOD, DURING THE PLACEMENT OF THE FINAL POUR OF CONCRETE, WHEN UTILIZING THE "TOP DOWN" METHOD OF TRACK CONSTRUCTION.

2) THE HEIGHT-ADJUSTMENT SHIMS SHALL PROVIDE 1/4 INCH MINIMUM HORIZONTAL PROJECTION BEYOND ALL SIDES OF THE FASTENER AT ANY INSTALLED POSITION.

3) TOTAL NUMBER OF SHIMS PLACED UNDER RAIL BASE PLATES FOR HEIGHT ADJUSTMENT SHALL BE LIMITED TO A MAXIMUM OF TWO SHIMS OR A MAXIMUM TOTAL THICKNESS OF 1/2". THICKNESS OF NON SHRINK GROUT SHALL BE NO MORE THAN RECOMMENDED FOR INSTALLATION BY THE MANUFACTURER OR 2 INCHES, WHICHEVER IS LESS. CONTRACTOR SHALL PLACE REMOVABLE PLASTIC PLUGS IN THE THREADED SOCKET OF ANCHORS TO PREVENT GROUT OR OTHER FOREIGN MATERIALS FROM ENTERING THREADED SOCKETS OF ANCHORS DURING PLACEMENT OF EPOXY GROUT OR LEVELING COURSE OF CONCRETE.

4) WHERE DF RAIL FASTENERS ARE LOCATED UNDER RAIL JOINTS, INSTALL PANDROL TYPE "E-2063" RAIL CLIPS OR APPROVED EQUALS.

5) RAIL PLATE AND FASTENER SPACING SHALL BE NO MORE THAB 24 INCHES CENTER TO CENTER ALONG CENTERLINE LINE OF TRACK.

6) CONTRACTOR MAY UTILIZE NARSTCO #1599 STEEL CROSSTIES OR OTHER MANUFACTURERS PROPRIETARY DESIGN OF APPLICABLE BASE PLATES AND RAIL FASTENING SYSTEM. USE OF SUCH PRODUCTS SHALL BE SUBJECT TO PRIOR APPROVAL OF ENGINEER IN LIEU OF THE DETAILS SHOWN. 7

7) TRACK GAUGE SHALL BE ADJUSTED FOR CURVES AND THRU TURNOUTS IN ACCORDANCE WITH NOTES ON SHEET T-25.

SELECTIVE TRACK DEMOLITION NOTES:

1) REFER TO SHEETS EX-0, EX-1, EX-2 & EX-3 FOR APPLICABLE LIMITS AND CONSTRUCTION DETAILS OF EXISTING PORTIONS OF TRACK LOCATED ON PILE SUPPORTED REINFORCED CONCRETE DECK OF BERTHS #3, #4 AND #4 EXTENSION.

2) CONTRACTOR SHALL SUBMIT TO ENGINEER, THE PROPOSED MEANS AND METHODS TO BE EMPLOYED DURING SELECTIVE DEMOLITION WORK REQUIRED FOR THE REMOVAL OF TRACK LOCATED ON THE REINFORCED CONCRETE DECK OF BERTHS #3, #4 AND #4 EXTENSION FOR PRIOR APPROVAL AND IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS BEFORE COMMENCING ANY SUCH DEMOLITION WORK.

3) CONTRACTOR TO UTILIZE METHODS TO CUT EXPOSED PORTION OF EXISTING RAIL BASE PLATE ANCHOR BOLTS THAT DO NOT RESULT IN COLLATTERAL DAMAGE TO SOUND CONCRETE OF THE DECK OF BERTHS. CONTRACTOR SHALL TAKE CARE TO AVOID DAMAGE TO EXISTING CONCRETE REINFORCING STEEL WHEN PERFORMING ALL SELECTIVE DEMOLITION WORK.

4) INSPECT CONDITION OF EXISTING CONCRETE AND STEEL REINFORCING OF PILE SUPPORTED CONCRETE BERTH DECKS FOR SOUNDNESS. IF DETERIORATION OR EXCESSIVE CORROSION IS DISCOVERED, IMMEDIATELY STOP SELECTIVE DEMOLITION WORK AND REQUEST INSPECTION AND FURTHER DIRECTION FROM ENGINEER.

SELECTIVE DEMOLITION DETAIL FOR RAILS ON BERTH DECK — 2 / T-26
NO SCALE

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

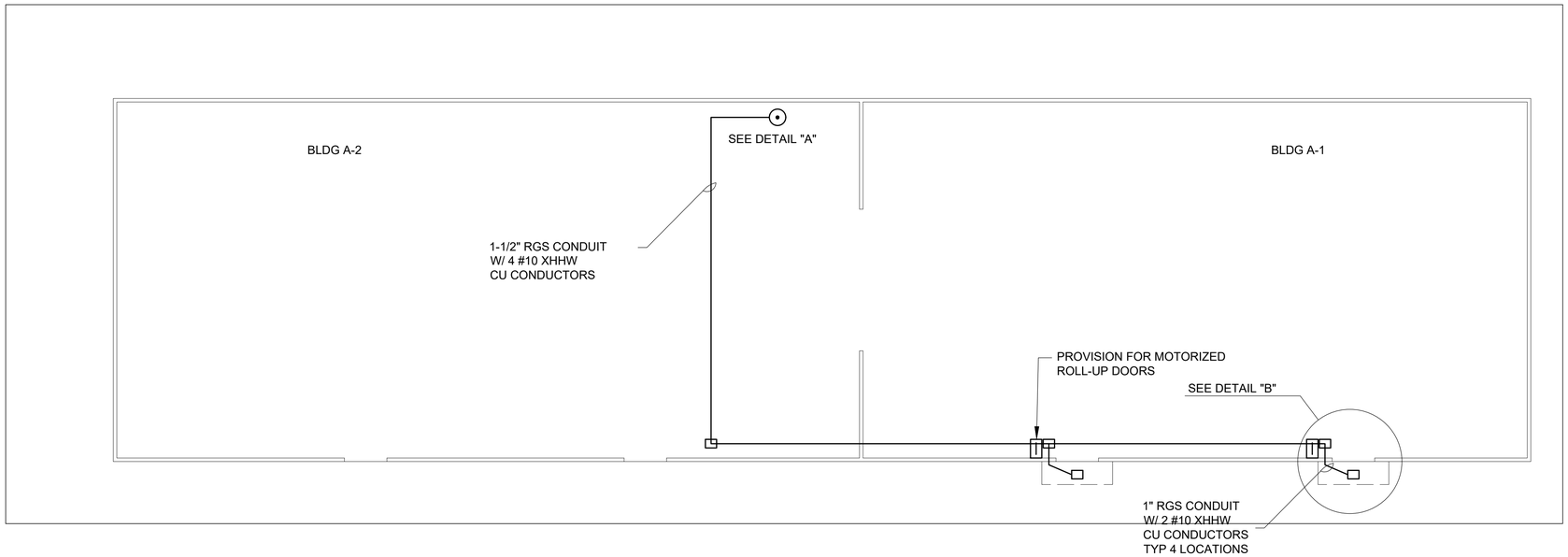
STATE OF NEW JERSEY — BRIAN COLLINS — No. 24GE04337000 — LICENSED PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
MISC.TRACKWORK DETAILS

DWN	PROJ #	DRAWING NUMBER
FST		T-26
CHK	DATE	

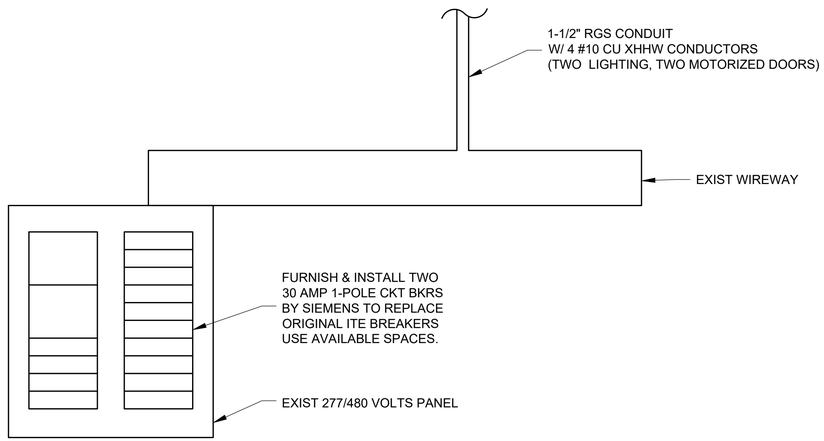


1 BUILDING A CONDUIT SCHEMATIC

Scale: 1" = 20'-0"

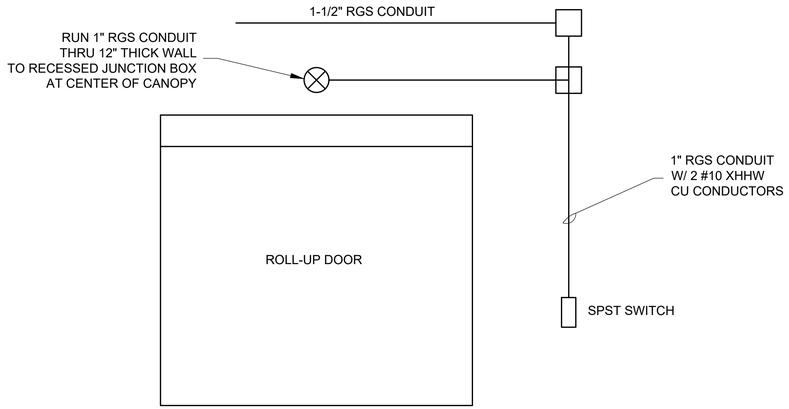
0 20' 40'

GRAPHIC SCALE



2 DETAIL "A"

NOT TO SCALE



3 DETAIL "B"

NOT TO SCALE

NOTES:

1. ALL WORK ON THIS SHEET ASSOCIATED WITH ADD ALTERNATE #1.
2. ALL WIRING IS DIAGRAMMATIC. EXACT DIMENSIONS, LENGTH OF CONDUIT RUNS, ETC TO BE DETERMINED IN FIELD.
3. LIGHT FIXTURE SPECIFIED (TOTAL OF 4) ARE LITHONIA CNYLEDP240KMVOLTDDBM4. THIS SPECIFIED LIGHT FIXTURE INCLUDES A QUICK-MOUNT MECHANISM FOR MOUNTING TO THE RECESSED JUNCTION BOX NOTED IN DETAIL B.
4. 1-1/2" RGS CONDUITS ARE TO BE RUN ON, AND ATTACHED TO, THE BOTTOM CHORDS OF EXISTING ROOF TRUSSES. IF ADDITIONAL INTERMEDIATE SUPPORT IS REQUIRED, IT IS TO BE IN ACCORDANCE WITH TABLE 344.30(B)(2) OF THE NEC, LATEST EDITION.
5. DISABLE POWER TO LIGHTS ON EXISTING FLAGPOLE. TURN OFF CKT. BKR. IN TRANSIT SHED NO. 2 & CUT WIRES AT WEATHERHEAD. FOR LOCATION OF FLAGPOLE, SEE DRAWING T-3. THE WIRING AT THE WEATHER HEAD SHOULD HAVE 12 " PIGTAILS THAT ARE CAPPED AND TAPED. IF THE REPLACEMENT LIGHT IS NOT ADDED IN A TIMELY MANNER, THEN THE CIRCUIT BREAKER SHOULD BE REMOVED, OR TAGGED WITH A NOTE STATING THAT IT SHOULD NOT BE MOVED TO THE CLOSED POSITION.
6. PROVIDE SIMILAR ELECTRICAL CONDUIT AT TWO NEW DOORS AND OVERHEAD LIGHT FIXTURES AT TRANSIT SHED 1.

ISSUED FOR BID

REV	BY	DATE	DESCRIPTION

STATE OF NEW JERSEY
MICHAEL W. KINNEY
NO. GE50183
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, NJ

TITLE: SJPC BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
CONDUIT SCHEMATIC & ELECTRICAL DETAILS

DWN FYC | PROJ # 2021500064.000 | DRAWING NUMBER E-001
CHK JJQ | DATE 06/24/2022

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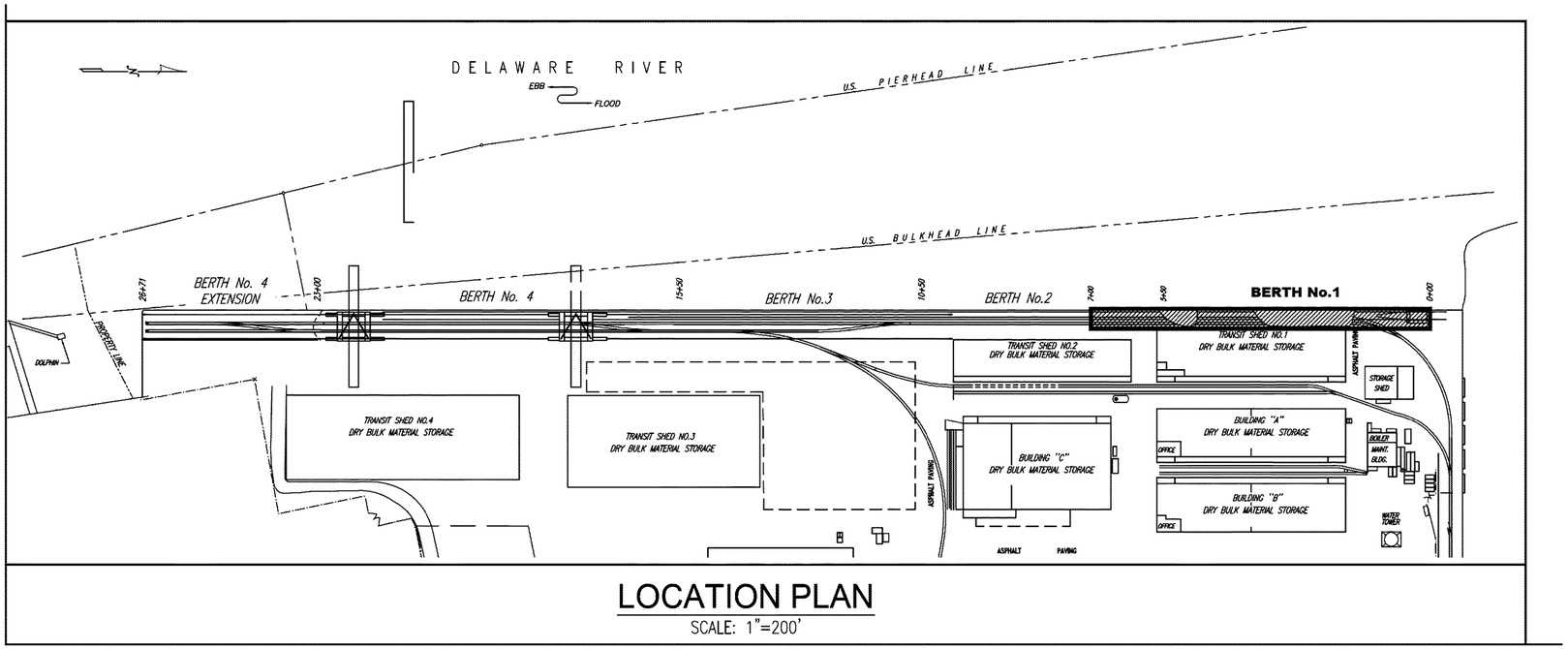
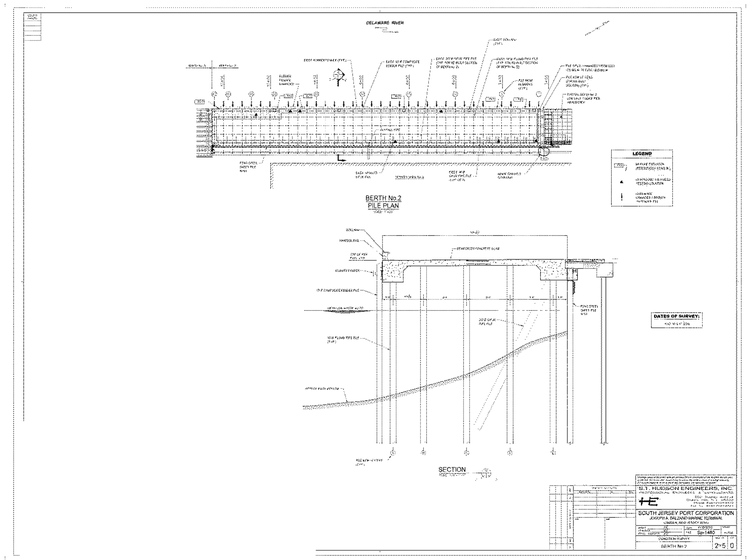
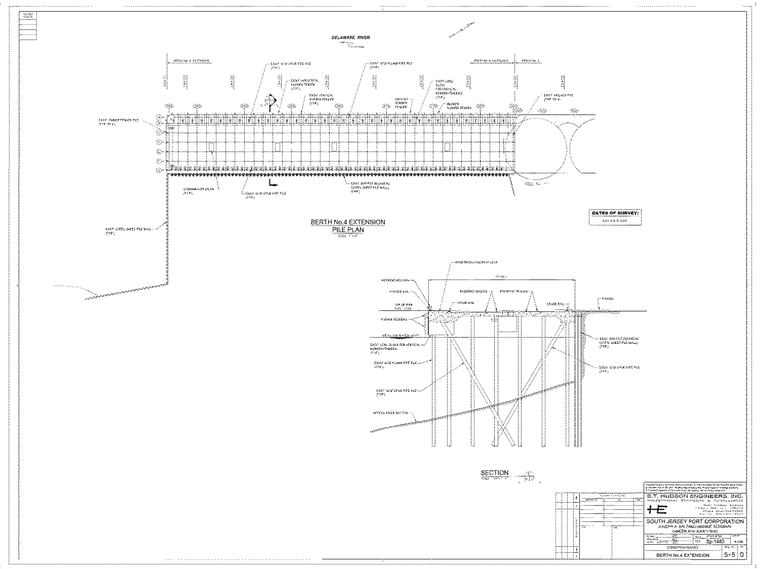
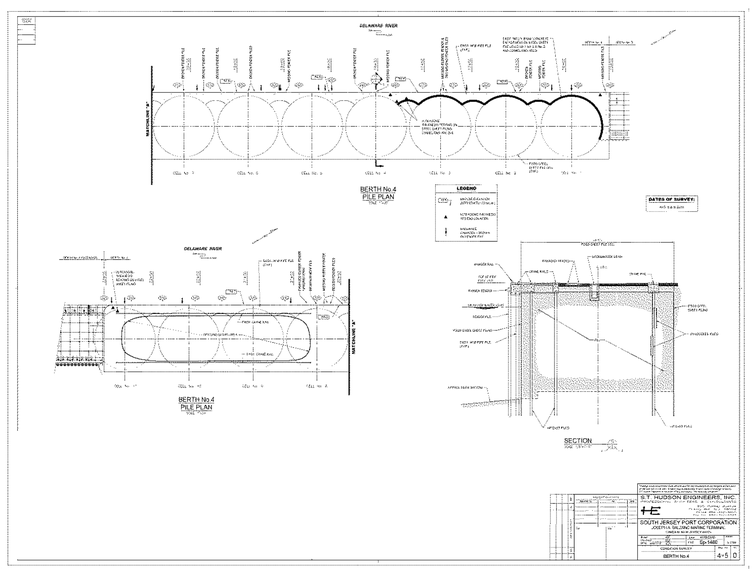


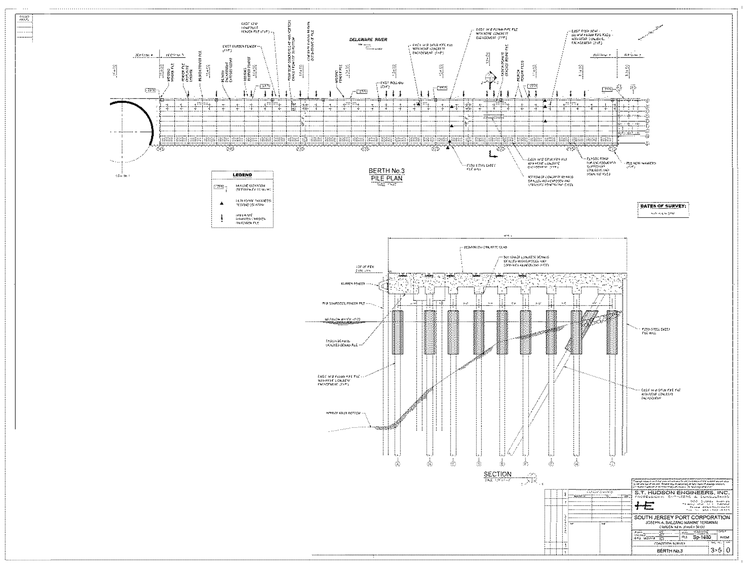
LOCATION PLAN

SCALE: 1"=200'









ISSUED FOR BID

STATE OF NEW JERSEY
MICHAEL W. WAGNER
NO. GE50183
PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
EXISTING BERTH NUMBERING &
CROSS SECTIONS RECORD DRAWINGS

REV	BY	DATE	DESCRIPTION

DWN	PROJ #	DRAWING NUMBER
FST		EX-0
CHK	DATE	

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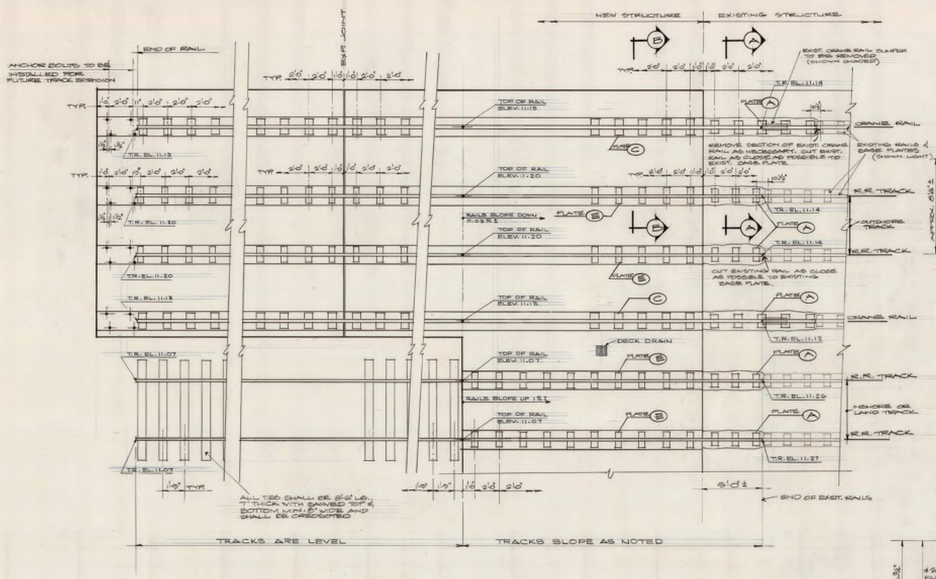
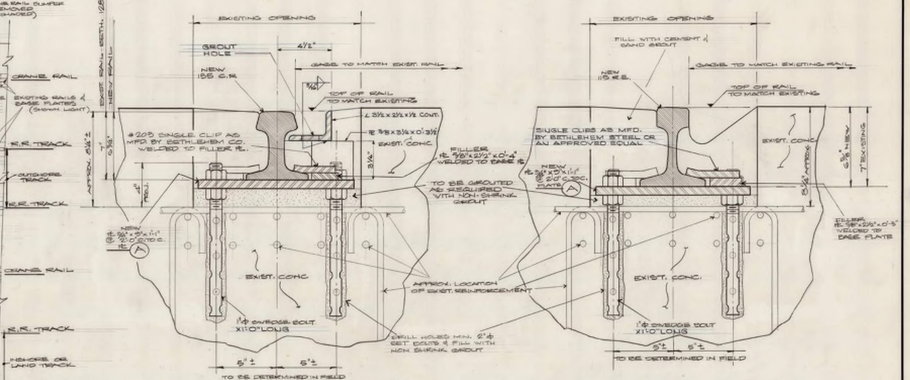
ISSUE PRINTS



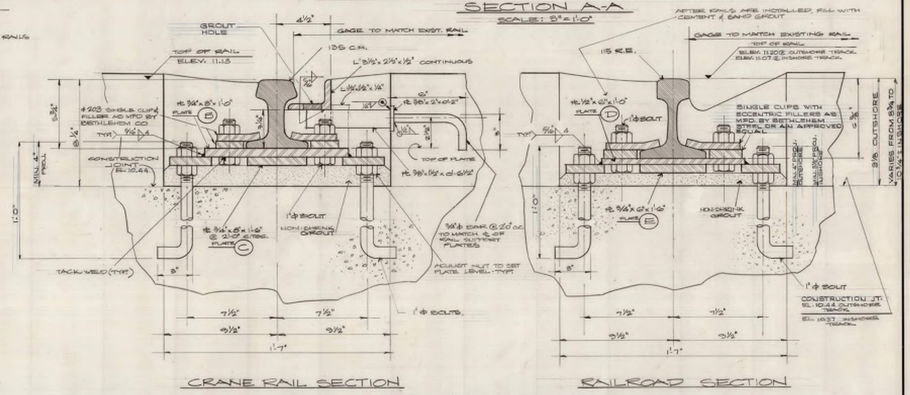
PLAN
SCALE: 1/4" = 1'-0"



CRANE RAIL SECTION

RAILROAD SECTION

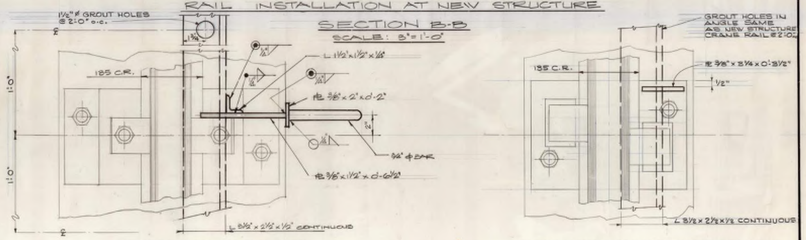
RAIL INSTALLATION AT EXISTING STRUCTURE
SECTION A-A
SCALE: 3" = 1'-0"



CRANE RAIL SECTION

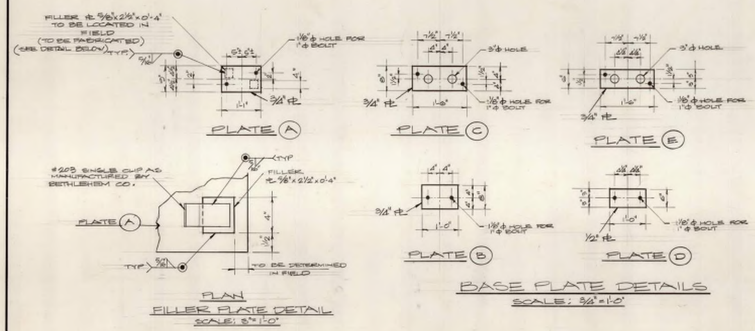
RAILROAD SECTION

RAIL INSTALLATION AT NEW STRUCTURE



PLAN - NEW STRUCTURE
CRANE RAIL SECTION
SCALE: 3"=1'-0"

PLAN - EXISTING STRUCTURE
CRANE RAIL SECTION
SCALE: 3"=1'-0"



PLAN
FILLER PLATE DETAIL
SCALE: 3" = 1'-0"

BASE PLATE DETAILS
SCALE: 3/8" = 1'-0"

issue	description	by	date
0	ISSUED FOR BIDDING	MWC	5-20-78

approvals

approved by	for	date
AP	PROJECT	5-20-78

seal

seal

S. T. HUDSON ENGINEERS, INC.
PROFESSIONAL ENGINEERS & CONSULTANTS
211 South Broad Street
Philadelphia, Pa. 19107

SOUTH JERSEY PORT CORPORATION
BECKETT STREET TERMINAL
CAMDEN, N.J.

drawn H.INGREEGN	date MARCH 20 1978	contract
checked J.V.	FILE Sp-1075	H-1080
drftg. approval		
BERTH NO. 4	dwg. no.	rev.
RAIL INSTALLATION DETAILS	S-6	0

REV	BY	DATE	DESCRIPTION

ISSUED FOR BID

STATE OF NEW JERSEY MICHAEL WAYNE FST NO. GE50183 PROFESSIONAL ENGINEER

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
BERTH 3 - BERTH 4 RAIL CONNECTIONS
CONSTRUCTION RECORD DRAWINGS

DWN	PROJ #	DRAWING NUMBER
FST		EX-1
CHK	DATE	

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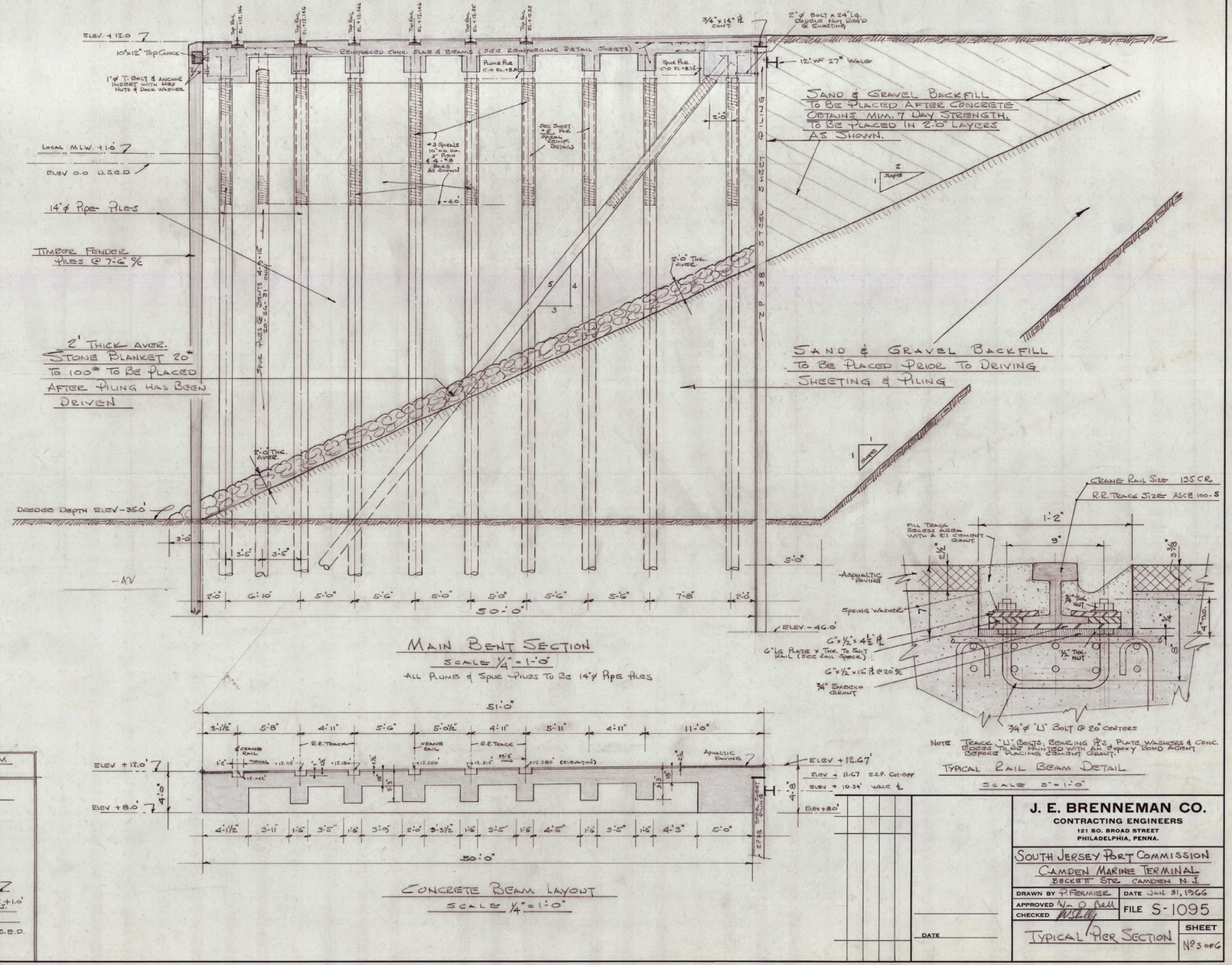

J. E. BRENNEMAN CO.
CONTRACTING ENGINEERS
121 SO. BROAD STREET
PHILADELPHIA, PENNA.

South Jersey Port Commission
Camden Marine Terminal
Beckett Str. Camden N.J.

DRAWN BY P. FERMIER — DATE Jan 31, 1966
APPROVED N.A.P. Bell
CHECKED
FILE S-1095

Typical Pier Section

SHEET No 3 of 6

(M)

DATE

REV	BY	DATE	DESCRIPTION

ISSUED FOR BID

URBAN ENGINEERS, INC.
530 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
EXISTING BERTH 3 SECTION & RAIL DETAILS
CONSTRUCTION RECORD DRAWINGS

DWN FST | PROJ # | DRAWING NUMBER
CHK | DATE | EX-2

STATE OF NEW JERSEY — NO. GE50183 — MICHAEL W. GINTER — PROFESSIONAL ENGINEER

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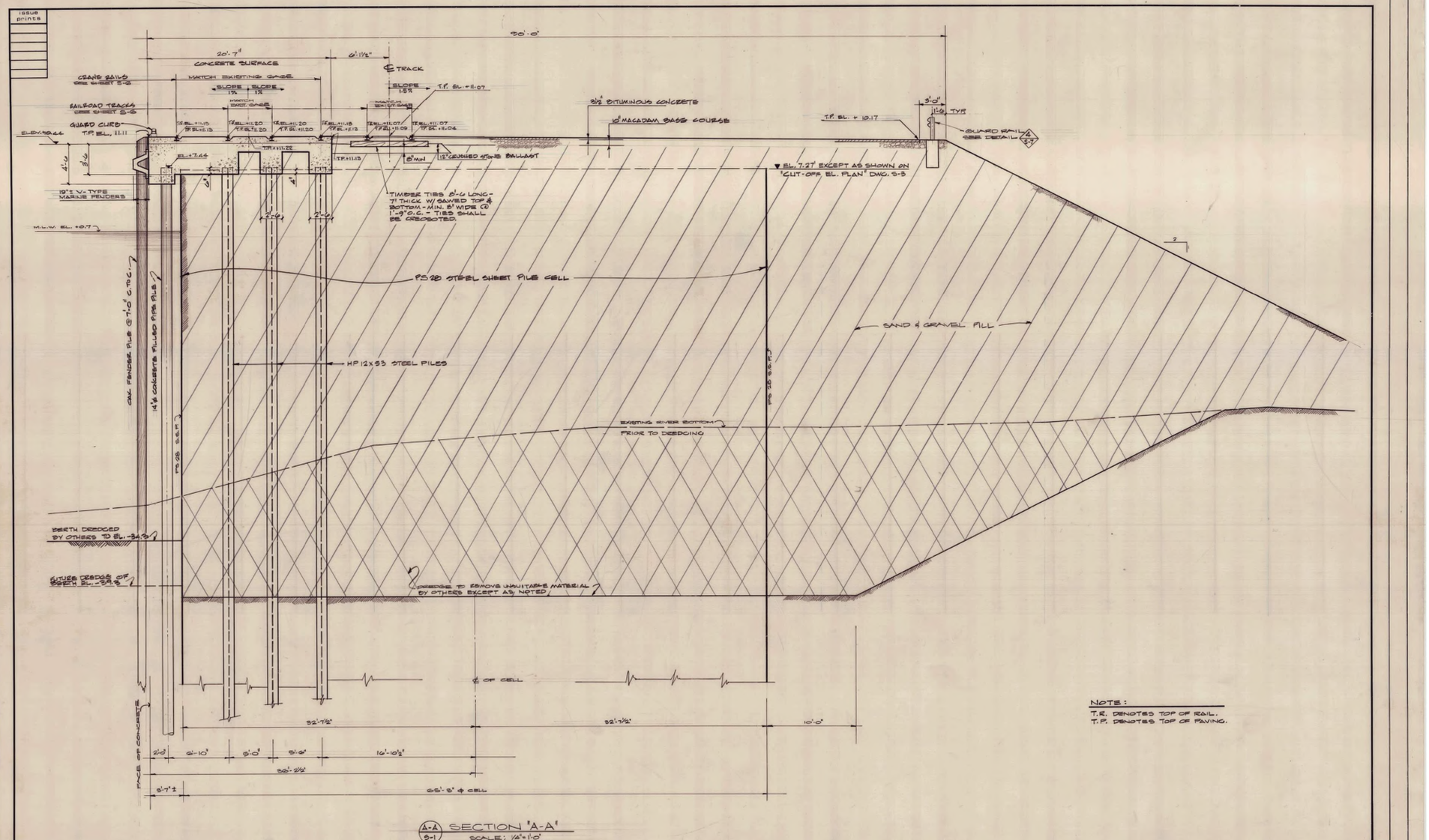
issue prints



A-A / S-1 SECTION 'A-A'
SCALE: 1/4"=1'-0"

NOTE:
T.R. DENOTES TOP OF RAIL.
T.F. DENOTES TOP OF PAVING.

rev.	date	description	by	appr.
0	3-22-78	ISSUED FOR BIDDING	HF	

approvals

approved by	for	date
HF	PROJECT	3-22-78

seal | seal

S. T. HUDSON ENGINEERS, INC.
PROFESSIONAL ENGINEERS & CONSULTANTS
211 South Broad Street
Philadelphia, Pa. 19107

SOUTH JERSEY PORT CORPORATION
BECKETT STREET TERMINAL
CAMDEN, N.J.

drawn H.M. REED	date MARCH 20 1978	contract
checked L.V.	FILE SP-1075	H-1080
drftg. approval [illegible]		
BERTH No. 4	dwg. no.	rev.
TYPICAL CROSS SECTION THRU NEW EXTENSION	S-2	0

REV	BY	DATE	DESCRIPTION

ISSUED FOR BID

STATE OF NEW JERSEY MICHAEL WARNER NO. GE50183 PROFESSIONAL ENGINEER

URBAN ENGINEERS
URBAN ENGINEERS, INC.
630 Walnut Street
Philadelphia, PA 19106
(215) 922-8080 Fax (215) 922-8082

LOCATION: CAMDEN, N.J.

TITLE: S.J.P.C. BALZANO MARINE TERMINAL
RAIL INFRASTRUCTURE REHABILITATION
EXISTING BERTH 4 CROSS SECTION
CONSTRUCTION RECORD DRAWINGS

DWN	PROJ #	DRAWING NUMBER
FST		EX-3
CHK	DATE	

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