# NOTES APPLYING TO STANDARD PLANS

Where the following items are called for on plans, they are to be constructed according to the standard plan given below opposite each item unless otherwise indicated.

<table>
<thead>
<tr>
<th>Title</th>
<th>Road</th>
<th>Plan No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAINAGE STRUCTURES</td>
<td>ROAD</td>
<td>R-1 G</td>
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<tr>
<td>COVER K</td>
<td></td>
<td>R-15 G</td>
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<tr>
<td>CURB RAMP AND DETECTABLE WARNING DETAILS</td>
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<td>R-28 K</td>
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<tr>
<td>DRIVEWAY OPENINGS &amp; APPLIANCES, AND CONCRETE SIDEWALK</td>
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<td>R-29 J</td>
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<tr>
<td>CONCRETE CURB AND CONCRETE CURB &amp; GUTTER</td>
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<td>R-30 G</td>
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<td>ISOLATION JOINT DETAILS</td>
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<td>R-37 B</td>
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<tr>
<td>LOCATION OF TRANSVERSE JOINTS IN PLAIN CONCRETE PAVEMENT</td>
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<td>R-43 J</td>
</tr>
<tr>
<td>GRANULAR BLANKET UNDERDRAINAGES, OUTLET ENDINGS FOR UNDERDRAINAGES, AND SEWER BULKHEADS</td>
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<td>R-60 F</td>
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<tr>
<td>UTILITY TRENCHES</td>
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<td>R-83 C</td>
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<td>BOX CULVERT JOINT SET ASSEMBLIES</td>
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<td>R-84 A</td>
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<td>PRECAST CONCRETE END SECTION FOR PIPE CULVERT</td>
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<td>R-88 F</td>
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<td>SOIL EROSION &amp; SEDIMENTATION CONTROL MEASURES</td>
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<td>CHAIN LINK FENCE (SSW TENSION WIRE)</td>
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<td>SEEDING AND TREE PLANTING</td>
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<td>R-100 U</td>
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<tr>
<td>LIGHT STANDARD DETAILS</td>
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<td>R-130 A</td>
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</table>

# BRIDGE

| MOLDING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND PLATE DETAILS | | B-103 F |

# PAVEMENT MARKINGS

| LONGITUDINAL LINE TYPES & PLACEMENT | PAVE-995 E |
| INTERSECTION, STOP BAR & CROSSWALK MARKINGS | PAVE-985 D |

# SIGNING

| STANDARD SIGN INSTALLATIONS | SIGN-100 G |
| SIGN SUPPORT SELECTION CHARTS | SIGN-102 D |
| STEEL Posts | SIGN-200 E |
| MISCELLANEOUS SIGN CONNECTION DETAILS | SIGN-740 B |

* Indicates a Special Detail which is included in this plan set.
The railroad will furnish all ties, ballast, rails, and all necessary materials and labor for all track work on a force account basis.

The train movement and speed information shown in the proposal does not represent a commitment by the Amtrak railroad and is subject to change without notice.

The ground adjacent to the tracks and structure shall be graded by the contractor to provide drainage.

Design and construction must comply with Amtrak EP3005 – Pipeline Occupancy and EP3014 (available from Amtrak). Prior to construction operations, contractor must submit, at a minimum, the following to Amtrak for review and approval: construction procedure means and methods, material handling system, and calculations; as applicable. All calculations must be signed and stamped/sealed by a licensed engineer registered in the State of Michigan.

All underground utilities, cable, and facilities must be located and protected before any excavating, drilling, boring, or directional drilling, ground penetrating activities, or construction takes place. This includes railroad and commercial utilities, cables, duct lines, and facilities that are not seen on the railroad right-of-way but are not necessary to the railroad right-of-way not only the on-site Amtrak Communications and Signal (CAS) department personnel. Hand digging may be required, as directed by Amtrak through the on-site Amtrak CAS support personnel. Amtrak maintains the right to access all existing cable and conduits throughout construction. Amtrak also reserves the rights to upgrade and install new cables and conduits in the affected area. The “MISS DIG” process must be followed. Please note that Amtrak is not a part of the MISS DIG process; contact Amtrak Engineering to have all railroad underground utilities and assets located. If requested by Amtrak, existing depths of utilities being crossed must be verified through test holes performed by the Contractor as directed by and under the direct supervision of Amtrak CAS support personnel. Precautions must be taken to prevent any interruption to MDOT Michigan Line operations.

All contractors must execute the current version of Amtrak’s “Temporary Permit to Enter Upon Property” which requires all persons that are on or adjacent to MDOT Michigan Line property successfully complete the Contractor Orientation Training. All Contractors must carry their “Amtrak Contractor Roadway Worker Protection” card with them at all times while on or adjacent to MDOT Michigan Line property. This will not be paid for separately.

Any work (or equipment being staged onsite during construction) performed at or near a railroad crossing must not obstruct the view of flashing light units or gates to oncoming traffic.

Any debris or damage resulting from work shall be immediately reported to the railroad. Railroad shall be repaired by railroad forces at project expense. Track removal and installation to be performed by Amtrak forces.

Track removal and installation to be performed in coordination with Amtrak forces. Contractor equipment and labor to be used as directed by Amtrak forces. This will not be paid for separately.

If work shall be performed on Railroad property that involves heavy trucks, equipment, or machinery along the right-of-way, duct lines and pull boxes shall be inspected by onsite Amtrak personnel. The Contractor’s equipment operator to ensure they can withstand the appropriate weight as outlined in the Amtrak Tier Table Document.

Amtrak AMT-23 Section 5 Track Circuits Part 153: Before the tracks are returned to service, track circuits shall be adjusted and tested in accordance with Amtrak instructions (or appropriate manufacturer’s instructions for audio frequency overlap circuits and/or proximity type detectors). As applicable. A check must be made of relay status and CAS signal alarm current (in CAS signal territory) when tracks are raised, cleaned, or welded rail is installed, to prevent over energized condition, loss of shunting sensitivity and decrease in broken rail protection.

Amtrak AMT-23 Section 5 Wire and Cable Part 211: Cable and wire installed within the track structure must be a minimum depth of 30 inches below the bottom of the tie and within conduit where possible and practical unless otherwise shown on plans. The ballast contours must be maintained during an excavation adjacent to or parallel to track structure.

All signal equipment to be reviewed by the Division Engineer to ensure that relocated equipment is satisfactory to both Amtrak & the designer.

The Division Engineer shall contact John Marchetti, Senior Manager Engineering, signal design and standards for support during the design phase.

Amtrak CAS personnel must field-verify that there is no signal equipment in the way of the project and that signal preview is not being obstructed.

Signal preview must not be obstructed. Contractor/Consultant performing work on railroad property must show that there is adequate signal preview. In addition, all temporary structures, forwork, equipment, etc. must comply during construction.

The railroad will permit the contractor to utilize the maintenance of way on the north side of the tracks for transacting materials and equipment to the site with access at Lake Shore Drive located ¼ mile to the southeast. Use of the railroad R/W must be coordinated with Amtrak, requires flagging, and may have restrictions based on Amtrak operations.

The design calculations for the box culvert and wingwalls shall be submitted to Amtrak for review and approval in addition to the reviews performed by the Engineer. The calculations must be stamped by a registered Engineer in the State of Michigan. This will not be paid for separately.

PROPERTY CORNERS

Any property corners within the front or back slope shall be staked and protected by ribbon. The replacement of any property corners that are damaged unnecessarily by the Contractor’s operations will be the responsibility of the Contractor. Re-statement of all property corners will be performed by a Michigan licensed professional surveyor at the Contractor’s expense.

BENCHMARK ELEVATIONS

Benchmark elevations shown on these plans are based on NAVD 1988.

CONSTRUCTION & SOIL EROSION CONTROL PROGRAM

Please sit fence and inert protection as indicated on the plans or as directed by the Engineer.

Remove existing pavement and storm sewers. Grade construction areas. Install new storm sewer and construct curb and gutter. Immediately after construction, finish grade construction area to provide positive drainage; then topsoil and seed all disturbed grassed areas. Place seeding as shown in Typical.

Remove inert filters as pavement is installed. After paving, reinstal stone filters at all pavement storm inlets structures, and clean storm sewer of all accumulated debris and sediment.

Remove temporary erosion controls after the site is approved by the Engineer.

It shall be the Contractor’s responsibility to insure that temporary erosion controls are maintained as required throughout construction and that the roadways are kept free of mud and construction debris.

UTILITIES

For protection of underground utilities and in conformance with Public Act 74, 2013, the Contractor will be liable 1-500-462-7171 (or 81) and a minimum of three full working days, excluding Saturdays, Sundays, and Holidays prior to beginning each excavation in areas where public utilities have not been previously located. Members will be thus notified and responsible for checking the Contractor of the Responsibility of notifying utility owners who may not be a part of the “Miss Dig” start system such as fiber optic carriers and Amtrak utilities in the railroad right-of-way.

The location of all public utilities shown on the plans are taken form the best available data. The Washtenaw County Parks and Recreation Commission will not be responsible for any omission or variations from the locations shown.

Construction operations shall be conducted in a manner to ensure that those utilities not requiring relocation will not be disturbed. Repairs of utilities damaged during construction by the Contractor shall be the full responsibility of the Contractor in accordance with the affected utility owners’ requirements.

All private utility structures will be adjusted to grade by the owner of the facility. The Contractor shall provide the Engineer with three (3) working days notice prior to the start of such work.

CONSTRUCTING RIPRAP

Riprap shall be placed in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction Subsection 313.03.03 and shall include furnishing and placing a geotextile liner as specified. This liner will be included in the contract unit price bid for the riprap item(s). All riprap shall be natural cobble. Crushed concrete is prohibited.

COVERS AND CASTINGS

Castings damaged by the Contractor shall be replaced at the expense of the Contractor, with material approved by the Engineer.

CULVERTS AND SEWERS

Culvert and sewer lengths shown on the plans are approximate lengths needed for placement. The pay quantity is less the “C” dimension (see Standard Plan R-86-Series). Payment shall be measured in the field.

FINISH EARTH GRAVING

Construction of earth grades shall be Class “A”. Refer to Section 205.03 of the 2020 MDOT Standard Specifications for Construction.

LANDSCAPING

The Contractor shall not disturb any landscaping features protected by fencing or located outside of the slope state limits. Any landscaping that is damaged or destroyed during construction will become the financial responsibility of the Contractor.

OPEN EXCAVATIONS

The placement of protective fencing meeting MIOSHA Standards is required around all open excavations. This will not be paid for separately but will be considered as having been included in the Contract unit price bid for the item under construction.

PROPERTY OWNERS

Property owners’ names, shown on the plans, are for information only and their accuracy is not guaranteed.
TREE STUMP REMOVAL
The Contractor shall remove tree stumps and backfill holes that are within the grading limits. This work is included in the item "Shared use Path, Grading, Modified". Numerous trees were removed as part of another project and any remaining stumps to be removed are included in this contract with the pay item "Shared use Path, Grading, Modified".

AGGREGATE BASE
Aggregate bases for trail, road, and gravel path construction shall use aggregate 21AA limestone, unless otherwise specified. The use of crushed concrete is prohibited. Compact all aggregate bases to at least 95% of the maximum unit weight at a moisture content no greater than optimum moisture content.

SIDEWALK AND CURB RAMPS GRADES
All sidewalk and curb ramp grades shall be staked according to standard plan R-28 Series and as shown on the plans. It is the Contractor’s responsibility to install sidewalks to ADA standards and to ensure ADA standards are met after sidewalk placement. Any sidewalk or ramps not in compliance shall be replaced at the Contractor’s expense.

CLEARING
Clear and remove all brush, debris, stumps, and trees less than six (6) inches DBH as shown within the grading limits or as directed by the Engineer. Paid for as "Shared use Path, Grading, Modified".

SITE ACCESS
Site access to the proposed tunnel and pathway construction is limited by the Huron River and the existing MDOT Rail-Right-of-Way. Use of the Bandemer Park bridge over the Huron River is limited to weight restrictions posted for this bridge. Use of the pedestrian bridge(s) over the Huron River is not permitted.

SOIL BORINGS
Soil borings on the construction sheets represent point information. Presentation of this information in no way infers that subsurface conditions are the same at locations other than the exact location of the boring.

EXISTING SIGN RELOCATION
All permanent signs requiring relocation due to Contractor operations shall be salvaged and reset by the Contractor at locations determined by the Engineer. Signs and posts damaged during the removal and storage operations shall be replaced with new signs and posts. The cost of this work shall be borne by the Contractor.

SIGN INSTALLATION
When attaching signs to supports, tighten the nut, not the bolt head.

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NOTE: SEE TUNNEL ALIGNMENT PLAN FOR CURVE INFORMATION FROM STA 138+00 TO P.O.E.
GENERAL PLAN OF SITE
POB TO STA 137+79

NOTES:
The work covered by these plans includes excavating all
materials and construction of the proposed project.
Concrete deck slabs with curbsides, sidewalks, aprons,
curb and gutter, and interior concrete are shown. All
drainage work is included in the plans.
Locate all active underground utilities prior to starting
work and consult contractor in such a manner as to
determine that these locations not requiring relocation
will not be disturbed.
WHERE LINE IS SUBJECT TO CHANGE, MAKE DETERMINATION OF
WATER LEVELS THAT MAY EXIST DURING CONSTRUCTION.

LEGEND

Concrete Slabs 8" wide
12" of总体 concrete
Reconstructed Concrete Deck
Concrete Apron 8"
Gravel base aggregate surface course
Concrete Deck 8"
Aggregate Surface 8", Unfounded
SECTION APPLIES TO:
STA 140+18.33 TO STA 140+32 AND
STA 140+92 TO STA 141+5.66
CULVERT APRON SECTION

SECTION APPLIES TO:
STA 140+32 TO STA 140+92
CULVERT SECTION
SHOULDER EDGE DETAIL
APPLIES TO STA 135+38 TO 137+66
(NOT TO SCALE)
MISCELLANEOUS QUANTITIES

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<tr>
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<th>Description</th>
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<tr>
<td>450</td>
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<tr>
<td>680</td>
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CONST002

Items 16 of 80

NOTE: SEE GENERAL SHEET 1 FOR SITE, EXCAVATION, AND STRUCTURAL COSTS ASSOCIATED WITH SITE IMPROVEMENT.
MISCELLANEOUS QUANTITIES

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<td>Turf Grass, Performance</td>
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<td></td>
<td>Erosion Control, Silt Fence</td>
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<tr>
<td></td>
<td>Erosion Control, Inlet Protection, Fabric Drop</td>
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* BID ITEM "HMA Surface, Rem" INCLUDES PARTIAL CURB REMOVAL TO THE LIMITS SHOWN ON THE DETAILS. ADDITIONAL REMOVALS SHALL BE APPROVED BY OWNER.

LEGEND

- Tree, Rem.
- Erosion Control, Inlet Protection, Fabric Drop
- Erosion Control, Silt Fence
- Turf Establishment
MISCELLANEOUS QUANTITIES

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<td>165</td>
<td>Shared use Path, Aggregate, 8 inch</td>
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<td>166</td>
<td>Shared use Path, Concrete, 6 inch</td>
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<td>167</td>
<td>Shared use Path, Concrete, 8 inch, Decorative</td>
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</table>
SECTION B-B

**CHECK DAM COBBLESTONE**

**RESERVED PARKING**

ONLY

1.5" Radius, 0.4" Border, 0.4" Inset, Green on White; "RESERVED", C 2K 50% spacing; "PARKING", C 2K 66% spacing; Rounded Rectangle 0.5" Radius Blue; "ONLY", C 2K.

**VAN ACCESSIBLE**

1.5" Radius, 0.4" Border, White on Blue; "VAN", D 2K specified length; "ACCESSIBLE", D 2K specified length.

---

**GENERAL NOTES FOR CONSTRUCTION**

1. COBBLESTONE CHECK DAMS SHOWN ON CONSTRUCTION SHEETS ARE PERMANENT.
2. DETAIL DESIGNS SIMULATING COBBLE DAMS AS DESCRIBED BY ENGINEER TO MANAGE LOCAL STORMWATER.
3. BASE OF GAME WILL BE 12'-0" BELOW GW niveau.
4. DOWNSPOUT MUST BE CONSTRUCTED TO LEVEL GROOVED BOLDOORS BEING FIXED TO THE CEMENT SURFACE OF THE TANK. SMALLER BOLDOORS MUST BE EXCESS LENGTH REMOVED.
5. STEPS SHALL BE ALLOWED IN A MANOR THAT ELIMINATES A LOW POINT AT THE CENTER OF THE ROAD TO INFECT DRAIN TO THE CENTER OF CHANNEL.
6. FOR COMPLETION OF THAN MUST BE CONSTRUCTED PON TO REQUIRE PROPOSED DRAINAGE. BID.
SHARED USE PATH PLAN IN BOX CULVERT

NOTE 1: IN-LINE WITH CULVERT BOX JOINTS
NOTE 2: IN-LINE WITH CULVERT JOINTS
NOTE 3: IN-LINE WITH TRUNK DRN (SEE NOTE 4)
NOTE 4: SEE drain_001.dgn FOR PAY LIMITS AND QUANTITY.

SECTION A-A
TYPICAL PATH SECTION INSIDE CULVERT WITH SLOTTED DRAIN

SECTION B-B
TYPICAL PATH SECTION ON APRON

SECTION C-C
TYPICAL PATH SECTION ON APRON

SECTION D-D
TYPICAL PATH SECTION ON APRON

SECTION E-E
TYPICAL PATH SECTION ON APRON

SECTION F-F
TYPICAL PATH SECTION ON APRON

NOTE 3: DIMENSIONS SYMMETRICAL ABOUT LONGITUDINAL JOINT

NOTE 4: EB04 BAR @ 1'-0" (SEE NOTE 4)

CONCRETE WINGWALL (TYP) REF LINE B

DETAIL B
TRANSVERSE JOINT (NOTE 3)

TRANSVERSE JOINT (NOTE 3) 1'-8" MAX TO 1'-0" MIN

DETAIL A
TRANSVERSE JOINT (NOTE 3) 1'-6" MAX TO 1'-2" MIN

DETAIL C
TRANSVERSE JOINT (NOTE 3) 1'-6" MAX TO 1'-2" MIN

DETAIL D
TRANSVERSE JOINT (NOTE 3) 1'-6" MAX TO 1'-2" MIN

DETAIL E
TRANSVERSE JOINT (NOTE 3) 1'-6" MAX TO 1'-2" MIN

DETaira F
TRANSVERSE JOINT (NOTE 3) 1'-6" MAX TO 1'-2" MIN

CONCRETE WINGWALL (TYP) REF LINE B

SHARED USE PATH, CONCRETE, 6 INCH, DECORATIVE SLAB, SEE NOTE 3

NOTE 2: IN-LINE WITH PROP CULVERT & CONST
NOTE 3: IN-LINE WITH CULVERT BOX JOINTS
NOTE 1: IN-LINE WITH CULVERT JOINTS

NOTE 4: EB04 BAR @ 1'-0" (SEE NOTE 4)

CONCRETE WINGWALL (TYP) REF LINE B

SHARED USE PATH, CONCRETE, 6 INCH, DECORATIVE SLAB, SEE NOTE 3

NOTE 2: IN-LINE WITH PROP CULVERT & CONST
NOTE 3: IN-LINE WITH CULVERT BOX JOINTS
NOTE 1: IN-LINE WITH CULVERT JOINTS

NOTE 4: EB04 BAR @ 1'-0" (SEE NOTE 4)
ORNAMENTAL ALUMINUM FENCE, 72 INCH
(TYPICAL AT END OF CULVERT)

CULV, PRECAST CONCRETE BOX, 14 FOOT BY 12 FOOT, MODIFIED
MEASURED PERP TO BOX CULVERT
MEASURED ALONG FENCE

CONCRETE FOOTINGS *

FENCE POST ANCHORAGE *

PIECE (TYP)
(SEE FENCE POST BASE PLATE DETAIL)

FENCE POST ANCHORAGE *
SEE FENCE POST BASE PLATE DETAIL (TAIL)

ANCHOR BOLT DETAIL

SECTION A-A

NOTES:
ALL CONCRETE ANCHORS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
ALL HARDWARE (BOLTS, BRACKETS, ETC.) TO MATCH THE RAIL COLOR.
THE FABRICATOR SHALL DESIGN ALL CONNECTIONS AND MEMBERS NOT PROVIDED ON THESE PLANS.

INSTALL GROUND MOUNTED FENCE BEHIND WINGWALL WITH CONCRETE FOOTINGS FOR MANUFACTURER'S RECOMMENDATIONS WHILE TAKING PRECAUTIONS TO AVOID WINGWALL ANCHORAGE.

CONCRETE ANCHORS *
GENERAL REQUIREMENTS:
1. FRAME - 2" O.D.
2. BRACE - 3/8" ROD. (SEE NOTE 9)
3. 9 GA. 2" TIN CHAIN LINK FABRIC, BARBED SEAM VERTICAL TOP & BOTTOM.
4. ADJUSTABLE RELEASE AND FITTING.
5. FRAME 1 1/2" O.D.
6. BRACE RAIL 1 1/4" O.D. AT 2 1/2" R.I.
7. CORNER POST OR END POST 2 7/8" O.D. PIPE AT 5.79 #/LF.
8. TENSION WIRE - 7 GA.
9. HOE RINGS 1/2 GA. FREE AT 1 1/4" O.C. X
10. LINE POST 2 3/8" O.D. PIPE AT 3.65 #/LF.
11. SINGLE GATE POSTS - 2 3/8" O.D. PIPE AT 3.65 #/LF.
12. DOUBLE GATE POSTS - 4" O.D. PIPE AT 8.10 #/LF.

NOTES:
1. AMTRAK TO PROVIDE TWO 20" LONG CHAINS AND PADLOCK. ONE END OF THE CHAIN SHALL BE SECURELY BOLTED TO THE FACE OF THE GATE FRAME.
2. ALL FENCE COMPONENTS SHALL BE GALVANIZED AND POWDER COATED BLACK.
3. ALL LINE POSTS SHALL BE SAME LENGTH UNLESS OTHERWISE SPECIFIED.
4. TENSION WIRE CLIPS AT 1'-6" O.C. 12 GA. WIRE.
5. CORNER POST SHALL BE INSTALLED WHERE CHANGE IN FENCE HORIZONTAL ALIGNMENT EXCEEDS 15 DEGREES.
6. THE STRUCTURAL FRAMEWORK IN EACH FENCE CONTRACT SECTION SHALL BE UNIFORM AND SHALL CONSIST OF ROUND TUBULAR SHAPES FOR LINE, END, AND CORNER POSTS AS INDICATED.
7. ALL CONCRETE SHALL BE GRADE S2.
8. GRAVEL AT THE BOTTOM OF THE TUBULAR POSTS SHALL BE AGGREGATE, 6A.
9. DIAGONAL BRACING FOR TWO PANELS ON EACH SIDE OF GATE OPENING AND CORNERS.
10. DETAILS ARE BASED ON AMTRAK STANDARDS FOR RIGHT-OF-WAY FENCING CHAIN LINK 6' HIGH-NO BARBED WIRE. SEE AMTRAK DRAWING SP3003.

ELEVATION OF FENCE (72" CHAINLINK & 14'-0" GATE)
FROM NEW CULVERT WINGWALL TO M-14 FREEWAY BREEZE PIER

MISCELLANEOUS QUANTITIES

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<th>Item Description</th>
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<tr>
<td>Ornamental Aluminum Fence, 72 inch</td>
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<td>Ornamental Aluminum Fence, Rustic Split Rail</td>
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<td>Fence, 45 foot, 72 inch</td>
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SHEET NUMBER: SHEET 30 OF 80

PROJ. MGR: JAH
ENG: JAH
CITY/VILLAGE/TOWNSHIP: CITY OF ANN ARBOR PRS & WARREN COUNTY PRC
BARTON/BANDEMER PARK PEDESTRIAN TUNNEL PROJECT
DATE: 4/12/2024
SCALE: 1" = 20' OR WINGWALL OF EXISTING PIER AT M-14 FREEWAY BRIDGE
EX OR PROP GROUND
STAGE 1 - PLAN (ALTERNATIVE A)
WORK PERFORMED BETWEEN TRAINS PRIOR TO TRAIN OUTAGE

STAGE 2A (TRACK OUTAGE) - PLAN (ALTERNATIVE A)
WORK PERFORMED DURING TRAIN OUTAGE

STAGE 2B (TRACK OUTAGE) - PLAN (ALTERNATIVE A)
WORK PERFORMED DURING TRAIN OUTAGE

MISCELLANEOUS QUANTITIES

NOTES:

CONTRACTOR SHALL SUBMIT A WRITTEN WORK PLAN FOR DRIVING SHEETING ADJUNCT TO THE WORKS IN ACCORDANCE WITH AMTRAK'S EP3014 AND OBTAIN APPROVAL PRIOR TO MOBILIZING EQUIPMENT AND DRIVING SHEETING.

VIBRATORY HAMMERS ARE NOT PERMITTED.

ALTERNATIVE A AND B ARE PROVIDED HEREIN WHICH THE CONTRACTOR CAN CHOOSE FOR HIS OPERATIONS. QUANTITIES WILL BE BASED ON ALTERNATIVE A REGARDLESS OF THE METHOD USED BY THE CONTRACTOR.

THE SEQUENCE SHOWN IS INDICATED BY NUMBERS IN PARENTHESIS AND IS ANTICIPATED ORDER OF THE METHOD USED BY THE CONTRACTOR.

ENGINEERING PRACTICES EP3014. NO ADDITIONAL TIME WILL BE GRANTED DUE TO CALCULATIONS FOR ANY DEVIATIONS TO AMTRAK IN ACCORDANCE WITH AMTRAK APPROVAL BY AMTRAK. THE CONTRACTOR MUST SUBMIT UPDATED PLANS AND FOR EACH STEP OF CONSTRUCTION. DEVIATIONS FROM THIS PLAN REQUIRES THE SEQUENCE SHOWN IS INDICATED BY NUMBERS IN PARENTHESIS AND IS ANTICIPATED ORDER OF THE METHOD USED BY THE CONTRACTOR.

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STEEL SHEETING PILING - ELEVATION (ALTERNATIVE A)

TYPICAL NORTH SIDE AND SOUTH SIDE SHEETING LINES AFTER SHEETING IS PULLED AND SHEETING LEFT IN PLACE IS CUT.

81'-0" LIMITS OF HAND RAIL FENCE SYSTEM AS FALL PROTECTION
ALL COSTS INCLUDED IN OTHER BID ITEMS AND WILL NOT BE PAID FOR SEPARATELY

APPROX TOP OF TRACK EL 789.96

31'-0" LIMITS OF STEEL SHEET PLATING, TEMP. LEFT IN PLACE, SPECIAL

CUT TO EL 789.96 SHOWN WHEN NO LONGER NEEDED

STEEL SHEETING PILING - ELEVATION (ALTERNATIVE A)

TYPICAL NORTH SIDE AND SOUTH SIDE SHEETING LINES AFTER SHEETING IS PULLED AND SHEETING LEFT IN PLACE IS CUT.
**STEEL SHEETING PILING - ELEVATION (ALTERNATIVE B)**

Typical North Side and South Side Sheeting Lines After Sheeting is Pulled and Sheeting Left-In-Place is Cut.
SECTION THRU RR TRACKS - STAGE 1

- Excavation Limits of Excavation EL 769.29
- Box Culvert (1' thick)
- Culvert Bedding, 1 on 1
- Walls (EL 783.30)
- Section through RR Tracks
- Top of Sheeting (EL 789.96)

SECTION THRU RR TRACKS - STAGE 2A

- Excavation Limits of Excavation EL 769.29
- Box Culvert (1' thick)
- Culvert Bedding, 1 on 1
- Walls (EL 774.00)
- Section through RR Tracks
- Top of Sheeting (EL 789.96)

SECTION THRU RR TRACKS - STAGE 2B

- Excavation Limits of Excavation EL 769.29
- Box Culvert (1' thick)
- Culvert Bedding, 1 on 1
- Walls (EL 774.00)
- Section through RR Tracks
- Top of Sheeting (EL 789.96)
NOTES:

1. The South Barton Nature Trail Pedestrian Structure shall be closed to all traffic during construction.
2. The contractor may use an area of the parking lot immediately south of the Barton Nature Trail structure for equipment, material, storage, and employee parking. The use of any trails or grass areas for these purposes is strictly prohibited.
3. The contractor shall not restrict access to the designated work area with chain link fence and locked gate access.
4. The contractor shall not erect, place, or maintain barricades, gates, or fences without the written approval of the City of Ann Arbor and Washtenaw County Parks and Recreation.
5. All work and permits for the temporary fencing of public roads or trails shall be permitted in accordance with Michigan and Federal law.
6. Retain all existing roadside signage, covers any conflicting roads or trails, and uses.
7. Placement of chain link fencing to limit impact to trees and existing signs. All tree removal or clearing is anticipated for construction of temporary fencing.
8. All traffic control devices to be used on Huron River Drive when work cannot be performed outside of the shoulder or behind curb are not limited to delivering materials, traffic control setup, and paving. See MDOT Traffic Regulator Control to be used on Huron River Drive.

Temporary Traffic Control Details

- **Plastic Drums**
  - Fence, protective (5' chain link)
- **Type II Pedestrian Barriers/Channelizer**
- **Temporary Traffic Control Signs**

Traffic Control Details

- **Distance from Work Zone**: 250'
- **Operating Signage**
  - **Speed Limit**: 35 mph
  - **Work Zone Limit**: 250'
- **Closest to Work Zone**: 250'

CONTRACTOR TEMP ACCESS GATE

FURNISH AND INSTALL BARBED WIRE FENCING TO LIMIT IMPACT TO TREES AND EXISTING SIGNS. NO TREE REMOVAL OR CLEARING IS ANTICIPATED FOR RETAIN ALL EXISTING ROADSIDE SIGNS.

FINES AND PENALTIES FOR UNAUTHORIZED CROSSING OF RAILROAD TRACKS SHALL BE POSTED IN ACCORDANCE WITH MICHIGAN AND FEDERAL LAW.

THE CONTRACTOR SHALL RESTRICT ACCESS INTO THE DESIGNATED WORK AREA WITH 8' CHAIN-LINK FENCE AND LOCKED GATE ACCESS.

THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING AND PROPOSED DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION OF PROPOSED WORK.

MATERIAL STORAGE, AND EMPLOYEE PARKING. THE USE OF ANY TRAILS OR GRASS AREAS FOR THESE PURPOSES IS STRICTLY FORBIDDEN.

THE SOUTH BARTON NATURE TRAIL PEDESTRIAN STRUCTURE SHALL BE CLOSED TO ALL TRAFFIC DURING CONSTRUCTION.

TRAFFIC REGULATOR CONTROL TO BE USED ON HURON RIVER DRIVE WHERE WORK CANNOT BE PERFORMED OUTSIDE OF THE SHOULDER OR BEHIND CURB. WORK ITEMS INCLUDE, BUT ARE NOT LIMITED TO, DELIVERY OF MATERIALS, TRAFFIC CONTROL SETUP, AND PAVING. SEE MOST MAINTAINING TRAFFIC TYPICAL R9-3 (18") FOR SIGN SEQUENCE.
NOTES:
1. THE BANDEMER PARK BRIDGE SHALL BE CLOSED TO VEHICLE TRAFFIC DURING PATHWAY CONSTRUCTION IMPACTING EXISTING PAVED TRAIL. SPECIAL CONSIDERATION WILL ONLY BE MADE FOR AUTHORIZED VEHICLES AND CONTRACTOR ACCESS.
2. THE CONTRACTOR SHALL RESTRICT ACCESS INTO THE DESIGNATED WORK AREA WITH 8' CHAIN-LINK FENCING AND LOCKED GATE ACCESS.
3. FINES AND PENALTIES FOR UNAUTHORIZED CROSSING OF RAILROAD TRACKS SHALL BE POSTED IN ACCORDANCE WITH MICHIGAN AND FEDERAL LAW.
4. RETAIN ALL EXISTING ROAD AND TRAIL SIGNS. COVER ANY CONFLICTING ROAD OR TRAIL SIGNS.
5. PLACE W20-1 "ROAD WORK AHEAD" SIGN AT THE NORTH DRIVEWAY ENTRANCE INTO BANDEMER PARK

TRAFFIC CONTROL DEVICE LEGEND:
- PLASTIC DRUMS
- FENCE, PROTECTIVE (8' CHAIN-LINK)
- TYPE III PEDESTRIAN BARRICADE/CHANNELIZER
- TEMPORARY TRAFFIC CONTROL SIGN

MICHIGAN LINE AMTRAK

PLCER LINES AMTRAK
TRAFFIC CONTROL DEVICE LEGEND:

- Plastic Drums
- Fencing (Protective of Chain-Link)
- Type II Pedestrian Barricade/Channelizer
- Type II Railing
- Temporary Traffic Control Sign

NOTES:

1. The Barton/Bannder Park Bridge shall remain open to vehicle and pedestrian traffic during this stage of construction with work activities taking place outside of the paved pathway.
2. Monitor a minimum of forty (40) minutes daily adjacent to the temporary chain-link fence.
3. The contractor shall field verify all existing and proposed dimensions prior to fabrication and installation of proposed work.
4. The contractor shall restrict access into the designated work area with 8' chain-link fence and locked gate access.
5. Fines and penalties for unauthorized crossing of railroad tracks shall be posted in accordance with Michigan and Federal Law.
6. Retain all existing road and trail signs. Cover any conflicting road or trail signs.
7. Fences and protective barricades shall remain at the start and end of construction fencing and on temporary contractor/railroad access as shown on this sheet.

ACTIVITIES TAKING PLACE OUTSIDE OF THE PAVED PATHWAY:

1. The Barton/Bannder Park Bridge shall remain open to vehicle and pedestrian traffic during this stage of construction with work activities taking place outside of the paved pathway.
2. Activities taking place outside of the paved pathway.
3. A minimum of forty (40) minutes daily adjacent to the temporary chain-link fence.
4. Monitor a minimum of forty (40) minutes daily adjacent to the temporary chain-link fence.
5. Fines and penalties for unauthorized crossing of railroad tracks shall be posted in accordance with Michigan and Federal Law.
6. Retain all existing road and trail signs. Cover any conflicting road or trail signs.
7. Fences and protective barricades shall remain at the start and end of construction fencing and on temporary contractor/railroad access as shown on this sheet.

TRAFFIC CONTROL DEVICES:

- Temporary Traffic Control Sign
- Type II Pedestrian Barricade/Channelizer
- Type II Railing
- Plastic Drums
- Fencing (Protective of Chain-Link)

PLACEMENT:

1. Place "No Access to Huron River Dr" sign at the start and end of construction fencing and on temporary contractor/railroad access.
2. Place "No Access to Huron River Dr" sign at the start and end of construction fencing and on temporary contractor/railroad access.
3. Extend temp chain-link fencing behind bridge approach railing.
4. Contractor temporary access gate included in temp fence fortifications.
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EXTENDED TEMP CHAIN-LINK FENCING:

- Behind Bridge Approach Railing
- Temporary Contractor/Railroad Access

BANNER PROVIDED BY OWNER:

- Temporary Chain-Link Fencing
- Contractor/Amtrack

MINOR TRAFFIC DEVICES:

- Banner supplied by owner
- Using common tethering methods
- Commission banners on temp chain-link fencing
- Furnish and operation included in item: Banner provided by owner

ACCESS AS SHOWN ON THIS SHEET.

FINES AND PENALTIES FOR UNAUTHORIZED CROSSING OF RAILROAD TRACKS SHALL BE POSTED IN ACCORDANCE WITH MICHIGAN AND FEDERAL LAW.

THE CONTRACTOR SHALL RESTRICT ACCESS INTO THE DESIGNATED WORK AREA WITH 8' CHAIN-LINK FENCE AND LOCKED GATE ACCESS.

THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING AND PROPOSED DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION OF PROPOSED WORK.

MAINTAIN A MINIMUM 5' PAVED WALKING PATHWAY ADJACENT TO THE TEMPORARY CHAIN-LINK FENCE.

PLACE "NO ACCESS TO HURON RIVER DR" SIGN AT THE START AND END OF CONSTRUCTION FENCING AND ON TEMPORARY CONTRACTOR/RAILROAD ACCESS AS SHOWN ON THIS SHEET.
SPECIAL SIGN 1

1.5" Radius, 0.4" Border, 0.4" Indent, Black on Orange;
“DO NOT CROSS TRACKS”, C;
“FULLY ENFORCED FINES”, C;
“INCLUDE UP TO $10,000”, C;

SPECIAL SIGN 2

1.5" Radius, 0.4" Border, 0.4" Indent, Black on Orange;
“NO ACCESS TO”, C;
“HURON RIVER DR”, C;

SPECIAL SIGN 3

1.5" Radius, 0.4" Border, 0.4" Indent, Black on White;
“PARK CLOSED”, C;
“TO VEHICLES”, C;

SPECIAL SIGN 4

1.5" Radius, 0.4" Border, 0.4" Indent, Black on Orange;
“TRAIL”, C;
“CLOSED”, C;

SPECIAL SIGN 5

1.5" Radius, 0.4" Border, 0.4" Indent, Black on Orange;
“TRAIl”, C;
“CLOSED”, C;

SPECIAL SIGN 6

1.5" Radius, 0.4" Border, 0.4" Indent, Black on Orange;
“0.53”, C; “MILES”, C; “AHEAD”, C;

SPECIAL SIGN 7

1.5" Radius, 0.4" Border, 0.4" Indent, Black on Orange;
“0.25”, C; “MILES”, C; “AHEAD”, C;

SPECIAL SIGN 8

1.5" Radius, 0.4" Border, 0.4" Indent, Black on Orange;
“0.83”, C; “MILES”, C; “AHEAD”, C;

SPECIAL SIGN 9

1.5" Radius, 0.4" Border, 0.4" Indent, Black on Orange;
“0.29”, C; “MILES”, C; “AHEAD”, C;
SOIL EROSION AND SEDIMENTATION CONTROL

KEY | PAY ITEM | HORIZ DATUM | DATUM | REVISIONS |
---|----------|------------|------|----------|
06 | Erosion Control, Gravel Access Approach | NAVD88 | JAH | 2400 |
07 | Erosion Control, Pile Bag | NAVD88 | JAH | 2400 |
09 | Erosion Control, Silt Fence | NAVD88 | JAH | 2400 |

MISCELLANEOUS QUANTITIES

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NOTES:

- THE DESIGN OF THE PEDESTRIAN CULVERT IS BASED ON THE CURRENT AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY REQUIREMENTS. COORDINATE DESIGN REQUIREMENTS, SEE SUBSECTION 10.01 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- WHEN CASTING ITEMS INTO STRUCTURAL FREESTAND CONCRETE TO FACILITATE CULVERT CONSTRUCTION (FORMING, PAVING, ETC.) USE ITEMS THAT ARE GALVANIZED IN ACCORDANCE WITH ASTM B633 SERVICE CONDITION 4 OR EPOXY COATED. INSERTS SHALL BE CAST WITH THE CULVERT.
- WHERE UNUSABLE SOIL IS ENCOUNTERED BENEATH FOUNDATIONS, IT SHALL BE REMOVED AND REPLACED WITH STRUCTURAL BACKFILL, CIP, COMPACTED TO 95 PERCENT IN THE LOAD BEARING AREA AS DESCRIBED IN THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. AN ESTIMATED AMOUNT IS INCLUDED IN THE QUANTITY FOR "STRUCTURAL BACKFILL, CIP" AND "EXCAVATION, TF." WHEN CASTING ITEMS INTO STRUCTURAL FREESTAND CONCRETE TO FACILITATE CULVERT CONSTRUCTION (FORMING, PAVING, ETC.) USE ITEMS THAT ARE GALVANIZED IN ACCORDANCE WITH ASTM B633 SERVICE CONDITION 4 OR EPOXY COATED. INSERTS SHALL BE CAST WITH THE CULVERT.
- THE ENTIRE AREA OF EXCAVATION AROUND THE CULVERT SHALL BE BACKFILLED WITH "STRUCTURAL BACKFILL, CIP".
- IT IS THE CONTRACTOR’S RESPONSIBILITY TO AVOID BOX CULVERT REINFORCEMENT WHEN DRILLING HOLES FOR MOUNTING THE ELECTRICAL CONDUIT, FENCING, AND AESTHETIC TREATMENT SUPPORTS.
- JOINT FILLER AND JOINT MATERIALS ARE INCLUDED IN THE RESPECTIVE CONTRACT ITEMS FOR FURNISHING CULVERT MATERIALS. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL INCLUDED IN THE PAY ITEM CONTRACT ITEMS OF THE CULVERT.
- CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL INCLUDED IN THE RESPECTIVE CONTRACT ITEMS OF THE CULVERT.
- FIBER OPTIC LINES WILL REMAIN. CONTRACTOR TO TEMPORARILY SUPPORT THE FIBER OPTIC LINES WHILE EXCAVATING AND PLACE CULVERT. ONCE CULVERTS ARE IN PLACE, FIBER OPTIC DROPS WILL BE PLACED IN THE WORK BORNS, SPLIT STEEL CONDUIT.
- THE RAILROAD WILL PERMIT THE CONTRACTOR TO UTILIZE THE MANHOLE, WITHIN THE NORTH SIDE OF THE TRACKS FOR TRANSPORTING MATERIAL AND EQUIPMENT TO THE SITE WITH ACCESS TO THE BOX CULVERT LOCATED 0.5 MILE TO THE SEAT-END. USE OF THE R/W MUST BE COORDINATED WITH AMTRAK, REQUIRED PLACING, AND MAY HAVE RESTRICTIONS BASED ON AMTRAK OPERATIONS.
PROFILE THROUGH PROPOSED CULVERT

1" = 8' VERTICAL
1" = 80' HORIZONTAL

CITY OF ANN ARBOR PRS & WASHTENAW COUNTY PRC
BARTON/BANDEMER PARK PEDESTRIAN TUNNEL PROJECT

7050 W. SAGINAW HWY, SUITE 200
LANSING, MI 48917
P (517) 272-9835  |  F (517) 272-9836

O:\WCPRC\015514.00 WCPRC - Bandemer Barton Trail Design\4.0 Dwgs\4.3 Bridge\xxxxx_site_002.dgn
FIBER OPTIC CABLE OVER CULVERT DETAIL

- 22 2 DEG TO 45 DEG BEND IN STEEL PROTECTION PIPE (TYP)
- STEEL PIPE PLACED INSIDE SPLIT EX FIBER OPTIC CABLE
- FENCE, PROTECTIVE, SPECIAL PLACED 8" ABOVE TOP OF PIPE
- FINISHED GRADE
- PROPOSED BOX CULVERT PIPE SET ON TOP OF PROPOSED BOX CULVERT
- CAST CONCRETE BOX, 14'-0" FOOT BY 12'-0" MODIFIED

FIBER OPTIC CABLE OVER CULVERT DETAIL
AESTHETIC TREATMENT DETAILS

VIEW A-A

SOUTH ELEVATION

(MISSPELLING OF TUNNEL)

THE STONE FACADE.
GRADE TO SUPPORT 8" BELOW FINISHED CMU STEPPED UP TO 9".

ORNAMENTAL ALUMINUM FENCE, 72 INCH (TYP)

LIGHT FIXTURE TYPES A, B, C (SEE LIGHTING PLANS)

BANDEMER

ART PANEL (OWNER SUPPLIED AND CONTRACTOR TO INSTALL)
LIGHT FIXTURE TYPE A (SEE LIGHTING PLANS)

THE STONE FACADE.
GRADE TO SUPPORT 8" BELOW FINISHED CMU STEPPED UP TO 9"

MISCELLANEOUS QUANTITIES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>UNIT</th>
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</thead>
<tbody>
<tr>
<td>Limestone Sign, &quot;2024&quot;</td>
<td>2</td>
<td>Ea</td>
</tr>
<tr>
<td>Limestone Sign, &quot;Barton&quot;</td>
<td>1</td>
<td>Ea</td>
</tr>
<tr>
<td>Limestone Sign, &quot;Bandemer&quot;</td>
<td>1</td>
<td>Ea</td>
</tr>
<tr>
<td>Split Field Stone</td>
<td>520</td>
<td>Sft</td>
</tr>
<tr>
<td>Limestone Block</td>
<td>210</td>
<td>Sft</td>
</tr>
<tr>
<td>Limestone Cap</td>
<td>100</td>
<td>Ft</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>CAT 0001</th>
<th>JN 123456</th>
</tr>
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<tbody>
<tr>
<td>#1      #2</td>
<td></td>
</tr>
<tr>
<td>2024</td>
<td></td>
</tr>
</tbody>
</table>
**AESTHETIC TREATMENT DETAILS**

**BANDEMER STONE DETAIL**

- **BOLD FONT** 7" EB GARMOND
- **SCALE** 1" = 4'
- **HORIZ. (FT)** 12'-0"  72 INCH (TYP)
- **VERT. (FT)** 0 3/8 "±

**BARTON STONE DETAIL**

- **BOLD FONT** 7" EB GARMOND
- **SCALE** 1" = 4'
- **HORIZ. (FT)** 11 1/2 "±
- **VERT. (FT)** 4"±

**2024 STONE DETAIL**

- **ART PANEL (OWNER SUPPLIED AND CONTRACTOR TO INSTALL)**
- **SPLIT FIELD LIMESTONE INDIANA**
- **UNION AGRGATE TUNNEL**
- **ORNAMENTAL ALUMINUM FENCE, 72 INCH (TYP)**
- **COMMON STEPPED UP TO 9" BELOW FINISHED GRADE TO SUPPORT THE STONE FACES**
- **CAP STONE (TYP) 1'-6"± x 4'-0"± x 3"±**
- **PRECAST APRON**
- **LIGHT FIXTURE TYPE A (SEE LIGHTING PLANS)**
- **LIGHT FIXTURE TYPE B (SEE LIGHTING PLANS)**
- **LIGHT FIXTURE TYPE C (TYP) (SEE LIGHTING PLANS)**
- **ART PANEL (OWNER SUPPLIED AND CONTRACTOR TO INSTALL)**
- **Shared USE PATH CONCRETE & INCH DECORATIVE**
- **Shared USE PATH AGGREGATE TUNNEL**
- **INDEANA LIMESTONE (TYP)**
- **Precast Apron**

**2024 STONE DETAIL**

- **NORTH ELEVATION (LOOKING SOUTH)**
- **STONE (TYP)**
- **GRADE TO SUPPORT 8" BELOW FINISHED CMU STEPPED UP TO 9"**
- **1'-10"± (TYP)**
- **1'-0 1/8 "± (TYP)**
- **1'-6"± (TYP)**
- **2024 STONE DETAIL**
- **1'-1"± (TYP)**
**LINTEL PLATE DETAIL ELEVATION**

STONE LEDGE, PLATES AND ANCHORS ARE SYMMETRICAL ACROSS CULVERT CENTRILINE

---

### Notes:
- Stone anchors, (2) per piece, at bed joint
- Stone fabricator's standard quary
- Standard Miter Corner
- Decorative metal plating on hood (not metal, painted stone designed by artist)

---

**SECTION A-A**

- PRECAST CONCRETE APRON
- PRECAST CONCRETE BOUNDARY WALL
- PRECAST CONCRETE CULVERT
- PRECAST CONCRETE HEATH WALL
- STONEAnchor (2) per piece, minimum
- LIPSED LEDG & CONTINUOUS DRIP AT BOTTOM OF LIMESTONE
- LIMESTONE PER ELEVATIONS; GROUT ALL LIMESTONE PER ELEVATIONS, GROUT SOIL BEHIND

---

**BASE DETAIL**

- JAMB DETAIL
- PRECAST CONCRETE APRON
- PRECAST CONCRETE BOUNDARY WALL
- PRECAST CONCRETE CULVERT
- PRECAST CONCRETE HEATH WALL
- STONEAnchor (2) per piece, minimum
- LIPSED LEDG & CONTINUOUS DRIP AT BOTTOM OF LIMESTONE
- LIMESTONE PER ELEVATIONS; GROUT ALL LIMESTONE PER ELEVATIONS, GROUT SOIL BEHIND

---

**CAP DETAIL**

- JAMB DETAIL
- PRECAST CONCRETE APRON
- PRECAST CONCRETE BOUNDARY WALL
- PRECAST CONCRETE CULVERT
- PRECAST CONCRETE HEATH WALL
- STONEAnchor (2) per piece, minimum
- LIPSED LEDG & CONTINUOUS DRIP AT BOTTOM OF LIMESTONE
- LIMESTONE PER ELEVATIONS; GROUT ALL LIMESTONE PER ELEVATIONS, GROUT SOIL BEHIND

---

**LINTEL PLATE DETAIL ELEVATION**

STONE LEDGE, PLATES AND ANCHORS ARE SYMMETRICAL ACROSS CULVERT CENTRILINE

---

**Sheets**
- Sheet Date
- CAD
- Project Manager
- Engineer
- Project Number
- Revisions
- County
- City / Village / Township
- Scale
- Horizontal Datum
- Vertical Datum
- Design & Engineering

---

**Contact Information**
- 7050 W. SAGINAW HWY, SUITE 200
- LANSING, MI 48917
- P (517) 272-9835  |  F (517) 272-9836
AESTHETIC TREATMENT DETAILS

ELEVATION INSIDE TUNNEL - SHOWING PANEL SUPPORTS

COORDINATE DETAILS SO CULVERT JOINTS ARE LOCATED AT JOINTS BETWEEN ADJACENT PANELS.

10 DECORATIVE PANELS TO BE INSTALLED

ALIGN PANEL JOINTS WITH CULVERT JOINTS AND PATHWAY JOINTS

ELEVATION INSIDE TUNNEL - PANELS INSTALLED

TYPICAL EACH SIDE OF THE TUNNEL (LIGHTING NOT SHOWN)

MISCELLANEOUS QUANTITIES

<table>
<thead>
<tr>
<th>Item</th>
<th>#1</th>
<th>#2</th>
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<tr>
<td>Decorative Panel, Furn</td>
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</tr>
<tr>
<td>Decorative Panel, Install</td>
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<td>(All)</td>
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<tr>
<td>(All)</td>
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</tr>
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</table>

DET006

SHEET DATE CADD PROJ MGR ENG PROJ NUMBER

10/15/2024

JAH

WASHTENAW CITY OF ANN ARBOR

NAD83

NAVD88
**ELECTRICAL SITEPLAN**

**1. ELECTRICAL SITEPLAN**

**2. TUNNEL SECTION**

**3. TYPICAL LIGHT POLE BASE - GRASS DETAIL**

**MISCELLANEOUS QUANTITIES**

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Unit</th>
<th>Description</th>
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<td></td>
<td>Electrical Utility Service</td>
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<tr>
<td>Ea</td>
<td>20000</td>
<td></td>
<td>Light Pole, Type D Pole</td>
</tr>
<tr>
<td>Ea</td>
<td>13</td>
<td></td>
<td>Light Pole Foundation</td>
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<tr>
<td>Ea</td>
<td>28</td>
<td></td>
<td>Luminaire, Pole Mount, Type D</td>
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<tr>
<td>Ea</td>
<td>28</td>
<td></td>
<td>Luminaire, Linear, Type C</td>
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<tr>
<td>Ea</td>
<td>2</td>
<td></td>
<td>Luminaire, Wall Mount, Type A</td>
</tr>
<tr>
<td>Ea</td>
<td>13</td>
<td></td>
<td>Lighting Control Panel</td>
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<td>Ea</td>
<td>13</td>
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<td>Cable, Equipment Grounding Wire, 1/C#8</td>
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<td>Cable, 3/4&quot; PVC</td>
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<td>Ea</td>
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<td>Cable, Grounding Wire, 1/C#2</td>
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<tr>
<td>Ea</td>
<td>55 of 80</td>
<td></td>
<td>(All)</td>
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</table>

**GENERAL NOTES**

- Turn off sheet template to central contractor prior to issuance.
- Provide schedule of work areas.

**KEYNOTES:**

1. Refer to structural and architectural drawings for size and other requirements.
2. Coordinate dimension with architect.
### Calculation Summary

<table>
<thead>
<tr>
<th>AREA</th>
<th>UNITS</th>
<th>AVG</th>
<th>MAX</th>
<th>MIN</th>
<th>AVG/MIN</th>
<th>MAX/MIN</th>
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<tr>
<td>E PATH</td>
<td>Ft</td>
<td>3.5</td>
<td>16.0</td>
<td>0.1</td>
<td>33.9</td>
<td>168.0</td>
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<tr>
<td>TUNNEL/WALKWAY</td>
<td>Ft</td>
<td>21.75</td>
<td>30.0</td>
<td>16.0</td>
<td>1.33</td>
<td>1.88</td>
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<tr>
<td>W PATH</td>
<td>Ft</td>
<td>3.89</td>
<td>15.0</td>
<td>0.4</td>
<td>9.75</td>
<td>34.50</td>
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</table>
LIGHTING CONTROL PANEL SLAB - PLAN

SECTION A-A

EX GROUND

4X4 TREATED POST (TYP)

SIDEWALK, CONC, 4 INCH

EXACT LOCATION AS DIRECTED BY THE ENGINEER

STA 44+26.00 (42.8 FT RIGHT)

SIDEWALK, CONC, 4 INCH

FENCE, RUSTIC SPLIT RAIL

EDGE OF EX PATHWAY

EDGE OF EX PATHWAY

4X4 TREATED POST (11 FT)

LIGHTING CONTROL PANEL

5'-0" MAX

2'-6" MIN

5'-0"

2'-6"

2'-6"

SIDEWALK, CONC, 4 INCH

4X4 TREATED POST

EX GROUND

MIN EMBED IN CONC

MIN

EXACT LOCATION AS DIRECTED BY THE ENGINEER

STA 141+20.50 (42.8 FT RIGHT)

3'-0" MIN

6'-0"

6" SUBBASE, CIP (4 INCH)

5'-0"

1'-3"

1'-3"

4x4 TREATED POST (TYP)

MISCELLANEOUS QUANTITIES

<table>
<thead>
<tr>
<th>Unit</th>
<th>Sidewalk, Conc, 4 inch</th>
<th>Subbase, CIP</th>
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</thead>
<tbody>
<tr>
<td>Sft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyd</td>
<td></td>
<td></td>
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<tr>
<td>Item</td>
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<td></td>
</tr>
<tr>
<td>#1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Cat  Sunbelt C.P.  
25 58  Sidewalk Conc 4 inch
**ELECTRICAL DETAILS**

None

**PROJECT INFORMATION**

**CITY OF ANN ARBOR PRS &Washtenaw County PRC**

**BARTON/BANDEMER PARK PEDESTRIAN TUNNEL PROJECT**

4/12/2024

**JAH**

**WASHTENAW**

**CITY OF ANN ARBOR**

NAD83

NAVD88

7050 W. SAGINAW HWY, SUITE 200

LANSING, MI 48917

P (517) 272-9835  |  F (517) 272-9836

**SHEET**

**DATE**

**CADD**

**PROJ MGR**

**ENG**

**PROJ NUMBER**

**REVISIONS:**

**CITY/VILLAGE/TOWNSHIP**

**SCALE**

**HORIZ DATUM**

**VERT DATUM**

**7050 W. SAGINAW HWY, SUITE 200**

**LANSING, MI 48917**

**P (517) 272-9835  |  F (517) 272-9836**

**SECTION A-A**

**PLAN**

SHOWING EXISTING AND PROPOSED TOPOGRAPHY

**PLAN**

**SECTION A-A**

**MISCELLANEOUS QUANTITIES**

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<tr>
<td>1</td>
<td>Hand Patching</td>
<td>Ea</td>
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<tr>
<td>1</td>
<td>13&quot;x24&quot; Pull Box</td>
<td>Hh, Round, 3 foot dia</td>
</tr>
<tr>
<td>800</td>
<td>Conduit, Schedule 40, 2 inch</td>
<td>Ft</td>
</tr>
<tr>
<td>10</td>
<td>HMA Surface</td>
<td>Ton</td>
</tr>
</tbody>
</table>

**ATTACH 12' 4" FULL BOX TO EXISTING ABUTMENT WALL, FOR PROP 2" CONDUIT (TYP EA ABUT)**

**ATTACH PROP 2" CONDUIT TO UNDERBED OF EXISTING DECKING PER MANUFACTURES RECOMMENDATIONS, CONNECTION HARDWARE INCLUDED IN ISD ITEM "Conduit, 2 Inch"
GENERAL

1. The Contractor shall implement and maintain the soil erosion control measures as shown on the plans and as directed by the Engineer at all times during construction. The Contractor shall design, implement, and maintain all erosion control measures to prevent soil erosion or damage of existing structures on or adjacent to the Project site as specified and approved by the Engineer.

2. All the erosion and sedimentation control work shall conform to the permit requirements of the City of Ann Arbor, the State of Michigan, and the requirements of the permit documents.

3. Daily or after any storm event, inspections of erosion control measures shall be made by the Contractor. Erosion control measures may be made by the Contractor to determine the effectiveness of erosion and sedimentation control measures. Any necessary controls shall be made without delay and without additional cost to the City.

4. Erosion and sedimentation control work on the site shall be performed on the site and not allowed to collect on any off-site area, adjacent to the construction project.

5. All materials spilled due to construction shall be promptly removed by the Contractor. If soil erosion spreads or extends beyond the project boundaries, additional costs to the City may be incurred.

6. Retention of all disturbed areas, including placement of topsoil, seeds, microseded, and other approved soil shall be performed within five (5) days of the completion of final grading.

7. Contraction equipment shall be stored and stored so that the presence of erosion control measures are in place prior to erosion in areas and temporary erosion control measures are in place immediately following backfilling operations.

8. Special precautions will be taken in the use of construction equipment to prevent situations that promote erosion.

9. Proper dust control shall be maintained during construction by use of water trucks and other means as approved by the Engineer.

10. The Contractor shall be responsible for maintaining all temporary soil erosion control measures and devices on the site. Measures taken authorized completion of the project. Final completion of Project will not be approved until all site work and utility construction is complete and all soils are stabilized.

11. The Contractor shall not grade into adjacent properties. Soil and protective fence shall be installed and maintained to prevent grading, erosion and sedimentation into the adjacent properties.

12. Erosion protection fences must withstand until completion of the site is complete.

EJECTION OF DESIGN CONTROL MEASURES

1. The Contractor is to submit to the Engineer a sequence of construction with respect to the soil erosion control measures for the project. The Contractor shall be responsible for the proper timing of erosion control measures and shall be held harmless for any loss due to the proper timing of erosion control measures until and within 24 hours of a storm event.

2. Change in design or construction methods requires additional erosion control measures to maintain the appropriate erosion control measures. All changes in design or construction shall be made in writing to the Engineer and approved by the Engineer.

3. Strip and revegetation, site development restrictions, and all other temporary erosion control measures shall be in place prior to any grading or earth moving operation.

4. Install water main and storm and sanitary sewer and other approved drainage features. Rich topsoil shall be placed immediately following installation of new drainage facilities.

5. Perform magnetic survey operations and construct pedestrian (easements, sidewalks, driveways, etc.).

6. Controllably maintain erosion and sedimentation control measures. All erosion and sedimentation control measures, as required to allow drainage and sediment removal. Remove any accumulated sediment immediately.

7. Complete all fine grading.

8. Temporary erosion control blanket in all disturbed areas.

9. Refer to landscape planting plans for permanent site stabilization.

10. Clean out storm drain systems.

11. Remove any notes, signs, or other noise associated with the construction of the site of our vehicles and equipment and sedimentation control system.

12. All temporary erosion control measures must be removed with engineered approval prior to final inspection.

NOTE: This drawing is for information only. It is intended to show the sequence of construction with regard to the soil erosion and sedimentation control measures. The Contractor is responsible for the correct timing of erosion control measures. The Contractor shall be held harmless for any loss due to the proper timing of erosion control measures until and within 24 hours of a storm event.
SOIL BORING DATA

PROJECT NAME: Bandemer Barton Trail and Tunnel
PROJECT NUMBER: 080118.00
PROJECT LOCATION: Ann Arbor, Michigan

CLINICAL ENGINEERING & DESIGN

CLIENT: Bergmann Associates

DATE: 3/10/2020
HAMMER EFFICIENCY: 83%

DEPTH (FT) ELEV (FT)
0 775
5 770
10 765
15 760
20 755
25 750
30
40
50
60
70
80
90
100

ELEVATION (FEET)
775
770
765
760
755
750
745
740
735
730
725
720
715
710
705
700
695
690
685
680
675
670
665
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65
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45
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35
30
25
20
15
10
5
0

SAMPLE TYPE/NO.
BOTT/CULVERT
EL 770.29
BOTT/TEMP SHEETING
EL 749.29

REMARKS
TRIAXIAL (UU)
VANE SHEAR (REM)
VANE SHEAR (PK)
SHEAR STRENGTH (KSF)
TORVANE SHEAR HAND PENE.
UNC. COMP.

DRY DENSITY (pcf)
90
100
110
120

MOISTURE & ATTBERG LIMITS (%)
10
20
30
40

LATITUDE: 42.30229
LONGITUDE: -83.74706
ELEVATION: 778 FT

GROUNDWATER & BACKFILL INFORMATION

DATE STARTED: 3/21/22
COMPLETED: 3/21/22
LOGGED BY: KJT
CHECKED BY: PDF

BORING METHOD:
HSA 0' to 50', Fluid 22' to 50'
RIG NO.: 531 (CME55LCX)
DRILLER: RM

NOTES:
1. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
2. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
3. West sand was observed at 22 feet below ground surface and trapped groundwater was under pressure. The water level rose approximately 10 to 13 feet in the hollow-stem augers and we lost the integrity of the borehole. We offset 8 feet south, re-drilled to 23.5 feet, and continued sampling with drilling mud in the hollow-stem augers.
4. Latitude and longitude obtained with a Geode GNS2 Submeter GPS unit. Estimated ground surface elevation is based on available project drawings.

AT END OF BORING:
777.0
2.5
1.0
DURING BORING:
775.5

BACKFILL METHOD:
Auger Cuttings

PROJECT LOCATION:
Ann Arbor, Michigan
PROJECT NAME:
Bandemer Barton Trail and Tunnel
PROJECT NUMBER:
080118.00
CLIENT:
Bergmann Associates
**SOIL BORING DATA**

CITY OF ANN ARBOR PRS & WASHTENAW COUNTY PRC

BARTON/BANDEMER PARK PEDESTRIAN TUNNEL PROJECT

4/12/2024

JAH

WASHTENAW CITY OF ANN ARBOR NAD83 NAVD88

7050 W. SAGINAW HWY, SUITE 200

LANSING, MI 48917

P (517) 272-9835  |  F (517) 272-9836

**BORING B5**

**BORING B6**

**PROJECT NUMBER:** 080118.00

**PROJECT LOCATION:** Ann Arbor, Washtenaw County, Michigan

**DATE STARTED:** 1/19/23

**COMPLETED:** 1/19/23

**BORING METHOD:** Hollow-atom Augers

**DRILLER:** RM

**RIG NO.:** 531 (CME50LCX)

**LOGGED BY:** TAG

**CHECKED BY:** STR

**PROJECT NAME:** Barton-Bandemer Tunnel

**CLIENT:** Colliers Engineering & Design

**ELEVATION (FT):**

**PROFILE DESCRIPTION**

**DRAINING WATER**

**PROFILE DESCRIPTION**

**END OF BORING AT 30.5 FEET.**

**GROUNDWATER & SACKFILL INFORMATION**

**NOTES:**

1. The indicated stratification lines are approximate. The in-situ transmissive between materials may be gradual.

2. The colors depicted on the symbols profile are only for visualization purposes and do not necessarily represent the in-situ colors encountered.

3. Latitude and longitude obtained with a Trimble GPS unit. Estimated ground surface elevation is based on available project drawings.

**DURING BORING:** 5.5 775.5

**AT END OF BORING:** 24.0 757.0

**BACKFILL METHOD:** Auger Cutting to 5 feet, Sandstone Chips and Cement to 10 feet

**REMARKS:**

**BORING B5**

**ELEVATION (FT):**

**PROFILE DESCRIPTION**

**DRAINING WATER**

**PROFILE DESCRIPTION**

**END OF BORING AT 30.5 FEET.**

**GROUNDWATER & SACKFILL INFORMATION**

**NOTES:**

1. The indicated stratification lines are approximate. The in-situ transmissive between materials may be gradual.

2. The colors depicted on the symbols profile are only for visualization purposes and do not necessarily represent the in-situ colors encountered.

3. Latitude and longitude obtained with a Trimble GPS unit. Estimated ground surface elevation is based on available project drawings.

**DURING BORING:** 2.5 779.5

**AT END OF BORING:** 2.5 779.5

**BACKFILL METHOD:** Auger Cutting to 5 feet, Sandstone Chips and Cement to 10 feet
NOTES:

DETAILS SPECIFIED ON THIS PLAN APPLY TO ALL CONSTRUCTION, RECONSTRUCTION, OR EXTENSION OF STREETS, CURBS, OR SIDEWALKS IN THE PUBLIC RIGHT OF WAY.

CURB RAMPS ARE TO BE LOCATED AS SPECIFIED ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

RAMPS SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS A CHANGE IN PROPOSED GRADE ELEVATION. RAMPS ARE NOT REQUIRED AT INTERSECTIONS WHERE THERE IS NO CHANGE IN PROPOSED GRADE ELEVATION.

SURFACE TEXTURE OF THE RAMPS SHALL BE THOSE THAT ARE ATTAINABLE BY A COARSE SLOPPING, TRANSFERRED TO THE RUNNING SLOPE.

SIDEWALKS SHALL BE RAMPS WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE ROAD.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMPS WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMPS BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.

RAMPS WITHIN A RUNNING SLOPE 6% DO NOT REQUIRE A TOP LANDER, HOWEVER, ANY CONTINUOUS SIDEWALK ON PROPOSED GRADE ELEVATION IN THE ROADWAY SHOULD INDEPENDENTLY MAINTAIN A CROSS SLOPE NOT GREATER THAN 3.5% PERPENDICULAR TO ITS OWN DIRECTION OF TRAVEL.

DETECTABLE WARNING SURFACE COVERED 24" MINIMUM IN THE DIRECTION OF RAMPS AND TRAVEL, AND THE FULL WIDTH OF THE RAMPS AND TRAVEL EXCLUDING CURB TRANSITION DEVICES. MARKERS ARE TO BE PLACED AT APPROXIMATELY 6" INTERVALS, EQUIDISTANTLY SPACED. DETECTABLE WARNING MARKERS SHOULDN'T BE LOCATED AT THE EDGES OF THE DETECTABLE WARNING IS ADDITIONAL FOR CURB RAMPS.

FOR NEW ROADWAY CONSTRUCTION, THE RAMPS CROSS SLOPE MAY NOT EXCEED 1.5% FOR TRANSITIONS TO EXISTING ROADWAYS, THE CROSS SLOPE SHALL BE ATTAINABLE. THE CROSS SLOPE TRANSITION SHALL BE ATTAINABLE.

THE MAXIMUM RUNNING SLOPE OF 2.5% IS RELATIVE TO A FLAT (9%) REFERENCE. HOWEVER, IT IS NOT REQUIRED TO INSTALL RAMPS ON SEES OF RAMPS EXCEED 15 FEET IN LENGTH OR INCLUDING LANDINGS OR RAMPS W/ INCLINATIONS GREATER THAN 4.5%.

DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN-LINE WITH RAMPS. THE LOCATION OF THE RAMPS SHOULD TAKE PRECEDENCE OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES MUST BE IN-LINE WITH RAMPS, MANUFACTURERS' ADA-COMPATIBLE GRATES (OPENINGS SHALL NOT BE GREATER THAN 3/4") ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDECRAL TO THE DOMINANT DIRECTION OF TRAVEL.

THE TOP OF THE JOINT-FILLER FOR ALL RAMPS TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

CROSSWALKS AND STOP LINE MARKINGS, IF USED, SHALL BE LOCATED SUCH TO STOP TRAFFIC SHORT OF RAMPS CROSSINGS. SPECIFIC DETAILS FOR INSTALLATION ARE HANDLED IN THE "SIDEWALK RAMPS" DEPARTMENT.

FLARED SIDES OF RAMPS 10% MAXIMUM, MEASURED ALONG THE ROADSIDE CURB LINE, SHALL BE PROVIDED WHERE AN UNABSTRAINED CIRCULATION TUNNEL LATERALLY EXCEEDS THE CURB RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMPS ARE BARRIERED BY LANDSCAPING, UNABSTRAINED SURFACE OR PERMANENT FIXED OBJECTS IN ORDER TO AVOID SHARP CURB RETURNS AT RAMPS CROSSINGS.

DETECTABLE WARNING MARKERS MUST BE INSTALLED USING BRACKETS OR FIELD CUT UNITS AND/OR ANCHORED IN THE MOUNTING TO RESIST SHIFTS OR HEAVINGS.
SPECIAL DETAILS
CITY OF ANN ARBOR PRS & WASHTENAW COUNTY PRC
BARTON/BANDEMER PARK PEDESTRIAN TUNNEL PROJECT
4/12/2024

LOCATION OF JOINTS IN CONCRETE SIDEWALK

SIDEWALK INTERSECTIONS SHALL BE CAST POPULARLY AT RIGHT ANGLES TO EACH OTHER AS NEAR TO PERPENDICULAR AS POSSIBLE WITH SIDEWALK EDGES. TO AVOID WASHOUT OR POINTEED PIECES OF CONCRETE.

WHERE A PERMANENT STRUCTURE IS LOCATED IN SIDEWALK, PLACE EXPANSION MATERIAL AROUND STRUCTURE AND ADJUST JOINT PATTERN TO MATCH STRUCTURAL ILLUSTRATIONS.

TYPICAL SIDEWALK JOINT LAYOUTS

4" CONCRETE SIDEWALK

CONCRETE DRIVEWAY OPENING, DETAIL L

REINFORCEMENT AS ADJACENT CURB & GUTTER

SECTION A - A

CONCRETE DRIVEWAY OPENING, DETAIL M

NOTE:

FOR MOWINGS WITH CONCRETE PAVEMENTS, CONCLUDING LANE 1B WILL BE CONTINUOUS AND THE EXPANSION JOINT SPACING OF THE 10' 6" BARS IN CONCRETE DRIVEWAYS SHALL BE ADJUSTED TO AVOID CONTACT WITH THE LONGITUDINAL LANE TRIB.

NOTE:

"W" MINIMUM WIDTH OF THICKENED CONCRETE SIDEWALK. (H - 1) SHALL NOT BE LESS THAN DRIVEWAY WIDTH. THE "W" DIMENSIONS ARE SPECIFIED IN THE PUBLICATION "ADMINISTRATIVE RULES REGULATING DRIVEWAYS, BARRIERS AND PARAPETS ON OR OVER HIGHWAYS".

CONCRETE DRIVEWAY OPENING LAYOUT

CONTINUOUS JOINT SHALL BE PLACED BETWEEN SIDEWALK AND ROOF STRUCTURE. WHEN DIRECTED BY THE ENGINEER THE JOINT SHALL BE PLACED 1'-0" FROM PROPERTY LINE.

INDOOR AS POSSIBLE, SIDEWALK SHALL BE DIVIDED INTO SEGMENTS THAT ARE AVOID OF THE JOINTS NOT MORE THAN 30 FT OR LESS THAN 18 FT.

SYMBOLS FOR USE ON PLAN:

2.7% MAXIMUM TOWARD STREET

SEE NOTES

"W" EXPANSION JOINT FOR CURB & GUTTER NOT TIED TO CONCRETE PAVEMENT.

"W" EXPANSION JOINT FOR CURB & GUTTER NOT TIED TO CONCRETE PAVEMENT.

SEE SPECIAL DETAILS FOR DIMENSIONS, MATERIALS, AND FINISHES.

CONCRETE DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

STANDARD PLAN FOR

DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

CONTRACTED DRAWING DATE: 4/12/2024

APPORVED BY:

DIRECTOR OF ENGINEERING

DIRECTOR OF PUBLIC WORKS

REVISIONS:

COUNTY

CITY/ VILLAGE/TOWNSHIP

SCALE

HORIZ DATUM

VERT DATUM
PLAN VIEW SHOWING TRANSVERSE JOINT LOCATIONS

NOTE:
SEE SHEET FOR DETAIL OF JOINT SPACING
WITH INTERVALS FOR INTEGRAL, ABUTMENTS
AND SLEEPER SLABS

JOINT LEGEND
ACCORDING TO STANDARD PLAN H-36 SERIES

R1 TRANSVERSE EXPANSION JOINT WITH LOAD TRANSFER ASSEMBLY
R2 TRANSVERSE EXPANSION JOINT WITHOUT LOAD TRANSFER ASSEMBLY
R3 TRANSVERSE CONTRACTION JOINT
R4 TRANSVERSE JOINT IN STRUCTURE AT GRADE
R5 REINFORCED CONCRETE PAVEMENT ADJACENT TO BRIDGE REFERENCE LINE OR SLEEPER SLAB

REINFORCED CONCRETE APPROACH SLAB
AS DETAILED ON THE BRIDGE PLAN

SLEEPER SLAB

Provide aดาวน์ cent to slope the 8" SLEEPER SLAB (SEE BRIDGE PLAN)

<20 TYPICAL DRAWINGS ON THE BRIDGE PLAN

JOINT SPACING WITH INTEGRAL / SEMI-INTEGRAL ABUTMENTS AND SLEEPER SLABS

12" OR LESS PER SKETCHES OF SHEET 1

12" OR MORE

1/2" OR MORE

REINFORCED CONCRETE PAVEMENT ADJACENT TO BRIDGE REFERENCE LINE OR SLEEPER SLAB

JOINTED PLAN CONCRETE PAVEMENT

PAVEMENT THICKNESS

JOINT SPACING

12" OR MORE

1/2" OR MORE

1/2" TO 1½"
SPECIAL DETAILS
CITY OF ANN ARBOR PRS & WASHTENAW COUNTY PRC
BARTON/BANDEMER PARK PEDESTRIAN TUNNEL PROJECT

4/12/2024

WASHTENAW CITY OF ANN ARBOR NAD83 NAVD88
7050 W. SAGINAW HWY, SUITE 200
LANSING, MI 48917
P (517) 272-9835  |  F (517) 272-9836

SHEET DATE
CADD PROJ MGR ENG
PROJ NUMBER
REVISIONS:

COUNTY CITY/VILLAGE/TOWNSHIP
SCALE HORIZ DATUM VERT DATUM

& Design
Engineering

O:\WCPRC\015514.00 WCPRC - Bandemer Barton Trail Design\4.0 Dwgs\4.3 Bridge

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WEEPER UNDERDRAIN AND BULKHEADING SEVERED SEWER

GRANULAR BLANKET TYPE 2

NOTE: OPTIONS 1, 2, OR 3 WILL BE DETERMINED BY THE ENGINEER BASED ON THE PROJECT CONDITIONS.

BANK UNDERDRAIN PIPE WITH A GEOTEXTILE WRAP NOT PROVIDED SEPARATELY BUT INCLUDED IN UNDERDRAIN OUTLET.

LENGTH OF BULKHEAD SHALL EQUAL 1/2 DIAMETER OF EXISTING SEWER BUT NOT LESS THAN 1'-0".

EXISTING DRAINAGE STRUCTURE

GRANULAR BLANKET TYPE 1

NATURAL GROUND WITH SEEPAGE LAYERS AND OR PERVERSE SOIL CAP

PROPOSED DITCH

BANK UNDERDRAIN (PIPE SHALL BE WRAPPED WITH GEOTEXTILE)

GRANULAR MATERIAL CLASS II 2" MINIMUM DEPTH

THE BOTTOM EDGE OF THE PRE-FABRICATED DRAINAGE GEOMEMBRANES SHALL BE FLUSH WITH THE SURFACE AT A MINIMUM OF 4" ABOVE DITCH BOTTOM.

PRE-FABRICATED DRAINAGE GEOMEMBRANES WITH GEOTEXTILE ON BOTH SIDES

BANK UNDERDRAIN PIPE WITH A GEOTEXTILE WRAP NOT PROVIDED SEPARATELY BUT INCLUDED IN UNDERDRAIN OUTLET.

LENGTH OF BULKHEAD SHALL EQUAL 1/2 DIAMETER OF EXISTING SEWER BUT NOT LESS THAN 1'-0".

EXISTING DRAINAGE STRUCTURE

GRANULAR BLANKET TYPE 2

NATURAL GROUND WITH SEEPAGE LAYERS AND OR PERVERSE SOIL CAP

PROPOSED DITCH

BANK UNDERDRAIN (PIPE SHALL BE WRAPPED WITH GEOTEXTILE)

GRANULAR MATERIAL CLASS II 2" MINIMUM DEPTH

THE BOTTOM EDGE OF THE PRE-FABRICATED DRAINAGE GEOMEMBRANES SHALL BE FLUSH WITH THE SURFACE AT A MINIMUM OF 4" ABOVE DITCH BOTTOM.

PRE-FABRICATED DRAINAGE GEOMEMBRANES WITH GEOTEXTILE ON BOTH SIDES

BANK UNDERDRAIN PIPE WITH A GEOTEXTILE WRAP NOT PROVIDED SEPARATELY BUT INCLUDED IN UNDERDRAIN OUTLET.

LENGTH OF BULKHEAD SHALL EQUAL 1/2 DIAMETER OF EXISTING SEWER BUT NOT LESS THAN 1'-0".

EXISTING DRAINAGE STRUCTURE

GRANULAR BLANKET, UNDERDRAINS, OUTLET ENDINGS FOR UNDERDRAINS, AND SEWER BULKHEADS

STANDARD PLAN FOR
GRANULAR BLANKET UNDERDRAINS, OUTLET ENDINGS FOR UNDERDRAINS, AND SEWER BULKHEADS

APPROVED BY:

DIRECTOR OF PUBLIC SERVICES

DEPARTMENT DIRECTOR

SPECIAL REQUIREMENTS AND STANDARDS OF ENGINEERING: 05/02/2021

R-80-F SHEET 1 OF 6

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## BASE AND POLE DATA TABLE

<table>
<thead>
<tr>
<th>LIGHT STANDARD FOR</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>PLATFORM POLES SIZE (MIN)</th>
<th>POLE DIAMETERS AT BASE</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 FT NOMINAL MOUNTING HEIGHT (WITHOUT TRANSFORMER BASE)</td>
<td>11'</td>
<td>7'</td>
<td>2'</td>
<td></td>
<td></td>
<td>10' x 4' x 4'</td>
<td>1 1/4&quot;</td>
<td>12'</td>
</tr>
<tr>
<td>35 FT NOMINAL MOUNTING HEIGHT</td>
<td>11'</td>
<td>7'</td>
<td>2'</td>
<td></td>
<td></td>
<td>10' x 4' x 4'</td>
<td>1 1/4&quot;</td>
<td>12'</td>
</tr>
<tr>
<td>40 FT MOUNTING HEIGHT</td>
<td>11'</td>
<td>7'</td>
<td>2'</td>
<td></td>
<td></td>
<td>10' x 4' x 4'</td>
<td>1 1/4&quot;</td>
<td>12'</td>
</tr>
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<td>11'</td>
<td>7'</td>
<td>2'</td>
<td></td>
<td></td>
<td>10' x 4' x 4'</td>
<td>1 1/4&quot;</td>
<td>12'</td>
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<tr>
<td>45 FT MOUNTING HEIGHT</td>
<td>11'</td>
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<td>2'</td>
<td></td>
<td></td>
<td>10' x 4' x 4'</td>
<td>1 1/4&quot;</td>
<td>12'</td>
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<tr>
<td>45 FT MOUNTING HEIGHT</td>
<td>11'</td>
<td>7'</td>
<td>2'</td>
<td></td>
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<td>10' x 4' x 4'</td>
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</tr>
<tr>
<td>50 FT MOUNTING HEIGHT</td>
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<td>1 1/4&quot;</td>
<td>12'</td>
</tr>
<tr>
<td>50 FT MOUNTING HEIGHT</td>
<td>11'</td>
<td>7'</td>
<td>2'</td>
<td></td>
<td></td>
<td>10' x 4' x 4'</td>
<td>1 1/4&quot;</td>
<td>12'</td>
</tr>
</tbody>
</table>

* The 1" box circle shall apply for both the pole to transformer base and for the transformer base to foundation.

** Final design plates widths for aluminum structures are per manufacturer (A) dimension corresponds to aluminum (S) dimension corresponds to steel.

### FOUNDATION DATA TABLE

<table>
<thead>
<tr>
<th>SINGLE ARM MAXIMUM LUMBER STRUCTURE SIZE</th>
<th>HORIZONTAL</th>
<th>L (FT)</th>
<th>L (FT)</th>
<th>L (FT)</th>
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<tbody>
<tr>
<td>35 FT MOUNTING HEIGHT (8 FT ARM)</td>
<td>8.5</td>
<td>9</td>
<td>10</td>
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<tr>
<td>40 FT MOUNTING HEIGHT (11 FT ARM)</td>
<td>16.6</td>
<td>17.5</td>
<td>18.3</td>
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<table>
<thead>
<tr>
<th>DOUBLE ARM MAXIMUM LUMBER STRUCTURE SIZE</th>
<th>HORIZONTAL</th>
<th>L (FT)</th>
<th>L (FT)</th>
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<tbody>
<tr>
<td>35 FT MOUNTING HEIGHT (8 FT ARM)</td>
<td>8</td>
<td>10</td>
<td>11</td>
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</table>

### BRACKET LENGTH L

<table>
<thead>
<tr>
<th>MEMBER O.D.</th>
<th>2' O.D.</th>
<th>2 1/2' O.D.</th>
<th>3' O.D.</th>
<th>3 1/2' O.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP MEMBER O.D.</td>
<td>2' O.D.</td>
<td>2 1/2' O.D.</td>
<td>3' O.D.</td>
<td>3 1/2' O.D.</td>
</tr>
<tr>
<td>BOTTOM MEMBER O.D.</td>
<td>2' O.D.</td>
<td>2 1/2' O.D.</td>
<td>3' O.D.</td>
<td>3 1/2' O.D.</td>
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</table>

** SHEET 3 OF 3

## REINFORCEMENT DATA TABLE

<table>
<thead>
<tr>
<th>MAXIMUM LUMBER STRUCTURE SIZE</th>
<th>FOUNDATION DIAMETER (IN)</th>
<th>VERTICAL REINFORCEMENT</th>
<th>COMPONENT REINFORCEMENT</th>
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<tbody>
<tr>
<td>35 FT MOUNTING HEIGHT (8 FT ARM)</td>
<td>12</td>
<td>3</td>
<td>5</td>
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<tr>
<td>40 FT MOUNTING HEIGHT (11 FT ARM)</td>
<td>17</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>45 FT MOUNTING HEIGHT (12 FT ARM)</td>
<td>18</td>
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### MATERIALS TABLE (ANCHOR BASE)

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>SPECIFICATION</th>
<th>DIMENSIONS</th>
<th>QUANTITY (PER FOUNDATION)</th>
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</thead>
<tbody>
<tr>
<td>ANCHOR BOLTS</td>
<td>MDOT 908.14</td>
<td>DETERMINED BY LIGHT STANDARD CHART</td>
<td>4</td>
</tr>
<tr>
<td>ANCHOR NUTS</td>
<td>MDOT 908.14</td>
<td>DETERMINED BY ANCHOR BOLT DIAMETER</td>
<td>8</td>
</tr>
<tr>
<td>PLATE WASHERS (1/2&quot; DIA ANCHOR BOLT)</td>
<td>MDOT 908.14</td>
<td>1/2&quot; x 1/2&quot; x 1/2&quot; THICK</td>
<td>4</td>
</tr>
<tr>
<td>PLATE WASHERS (7/8&quot; DIA ANCHOR BOLT)</td>
<td>MDOT 908.14</td>
<td>7/8&quot; x 1/2&quot; x 1/2&quot; THICK</td>
<td>4</td>
</tr>
<tr>
<td>PLATE WASHERS (1&quot; DIA ANCHOR BOLT)</td>
<td>MDOT 908.14</td>
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<td>4</td>
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<tr>
<td>PLATE WASHERS (1 1/4&quot; DIA ANCHOR BOLT)</td>
<td>MDOT 908.14</td>
<td>1 1/4&quot; x 1/2&quot; x 1/2&quot; THICK</td>
<td>4</td>
</tr>
<tr>
<td>PLATE WASHERS (1 1/2&quot; DIA ANCHOR BOLT)</td>
<td>MDOT 908.14</td>
<td>1 1/2&quot; x 1/2&quot; x 1/2&quot; THICK</td>
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### MATERIALS TABLE (FRANGIBLE BASE)

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<th>MATERIAL</th>
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<th>QUANTITY (PER FOUNDATION)</th>
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<tr>
<td>ANCHOR BOLTS</td>
<td>MDOT 908.14</td>
<td>DETERMINED BY LIGHT STANDARD CHART</td>
<td>4</td>
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<tr>
<td>ANCHOR NUTS</td>
<td>MDOT 908.14</td>
<td>DETERMINED BY ANCHOR BOLT DIAMETER</td>
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</tr>
<tr>
<td>PLATE WASHERS (1/2&quot; DIA ANCHOR BOLT)</td>
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<tr>
<td>PLATE WASHERS (7/8&quot; DIA ANCHOR BOLT)</td>
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<td>7/8&quot; x 1/2&quot; x 1/2&quot; THICK</td>
<td>12</td>
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<tr>
<td>PLATE WASHERS (1&quot; DIA ANCHOR BOLT)</td>
<td>MDOT 908.14</td>
<td>1&quot; x 1/2&quot; x 1/2&quot; THICK</td>
<td>12</td>
</tr>
<tr>
<td>PLATE WASHERS (1 1/4&quot; DIA ANCHOR BOLT)</td>
<td>MDOT 908.14</td>
<td>1 1/4&quot; x 1/2&quot; x 1/2&quot; THICK</td>
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</tr>
<tr>
<td>PLATE WASHERS (1 1/2&quot; DIA ANCHOR BOLT)</td>
<td>MDOT 908.14</td>
<td>1 1/2&quot; x 1/2&quot; x 1/2&quot; THICK</td>
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<tr>
<td>PLATE WASHERS (2&quot; DIA ANCHOR BOLT)</td>
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<td>12</td>
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</table>

** SHEET 3 OF 3

## STANDARD PLAN FOR LIGHT STANDARD DETAILS

### Sheets 3 of 3

** SHEET 3 OF 3

### STANDARD PLAN FOR LIGHT STANDARD DETAILS

<table>
<thead>
<tr>
<th>SHEET</th>
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<tr>
<td>130-A</td>
<td>130-A</td>
<td>130-A</td>
<td>130-A</td>
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</table>
ANCHOR BOLT ASSEMBLY DIMENSIONS

<table>
<thead>
<tr>
<th>BOLT</th>
<th>STUD</th>
<th>PLATE</th>
<th>STUD</th>
<th>PLATE</th>
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<tbody>
<tr>
<td>30'</td>
<td>1/2&quot;</td>
<td>5/16&quot;</td>
<td>1/2&quot;</td>
<td>5/32&quot;</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>5/16&quot;</td>
<td>1/2&quot;</td>
<td>5/32&quot;</td>
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</tr>
</tbody>
</table>

* Up to 1/2" Single or Double Bracket Arm

** Up to 1 1/4" Single or Double Bracket Arm

ANCHOR BOLTS (AS REQUIRED)
1/2" DIA. X 1 1/2" THREADED ROD AND 9/16" DIA. X 1" STUD WITH 4 NUTS, 4 WASHERS, AND 9" COUPLING.

(A) = DIMENSION CORRESPONDS TO ALUMINUM
(B) = DIMENSION CORRESPONDS TO STEEL

SEE DETAIL B

LIGHT STANDARD ANCHOR BOLT ASSEMBLY

NOTES:
- NAME PLATE
- CENTER NUMBER ON PLATE
- STRUCTURE NUMBER
- YEAR BUILT
- ALUMINUM PLATE 6061-T6 (T8)

SPECIAL DETAILS

BEVEL DETAILS

MOLDING DETAILS

NOTES:
- DETAIL SHOWN USE ACCORDING TO THE ABOVE SPECIFICATIONS.
- LIGHT STANDARD ANCHOR BOLT ASSEMBLY STEEL PLATE SHALL BE ASTM A325.
- ALL STEEL SHALL BE HOT-DIP GALVANIZED ACCORDING TO THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- ANCHOR BOLTS, WASHERS, COUPLED NUTS AND NUT LIGHT STANDARDS SHALL BE ACCORDING TO THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- THE COUPLING SHALL BE REAMPED AFTER GALVANIZING IN THE SAME MANNER AS SPECIFIED FOR NUTS.
- ALUMINUM PLATE SHALL MEET THE REQUIREMENTS OF ASTM B209.
- ALUMINUM BOLT SHALL MEET THE REQUIREMENTS OF ASTM F53.
- INTERNAL DAMPERS FOR LIGHT STANDARDS SHALL BE EXCLUDED AS RECOMMENDED BY THE MANUFACTURER.