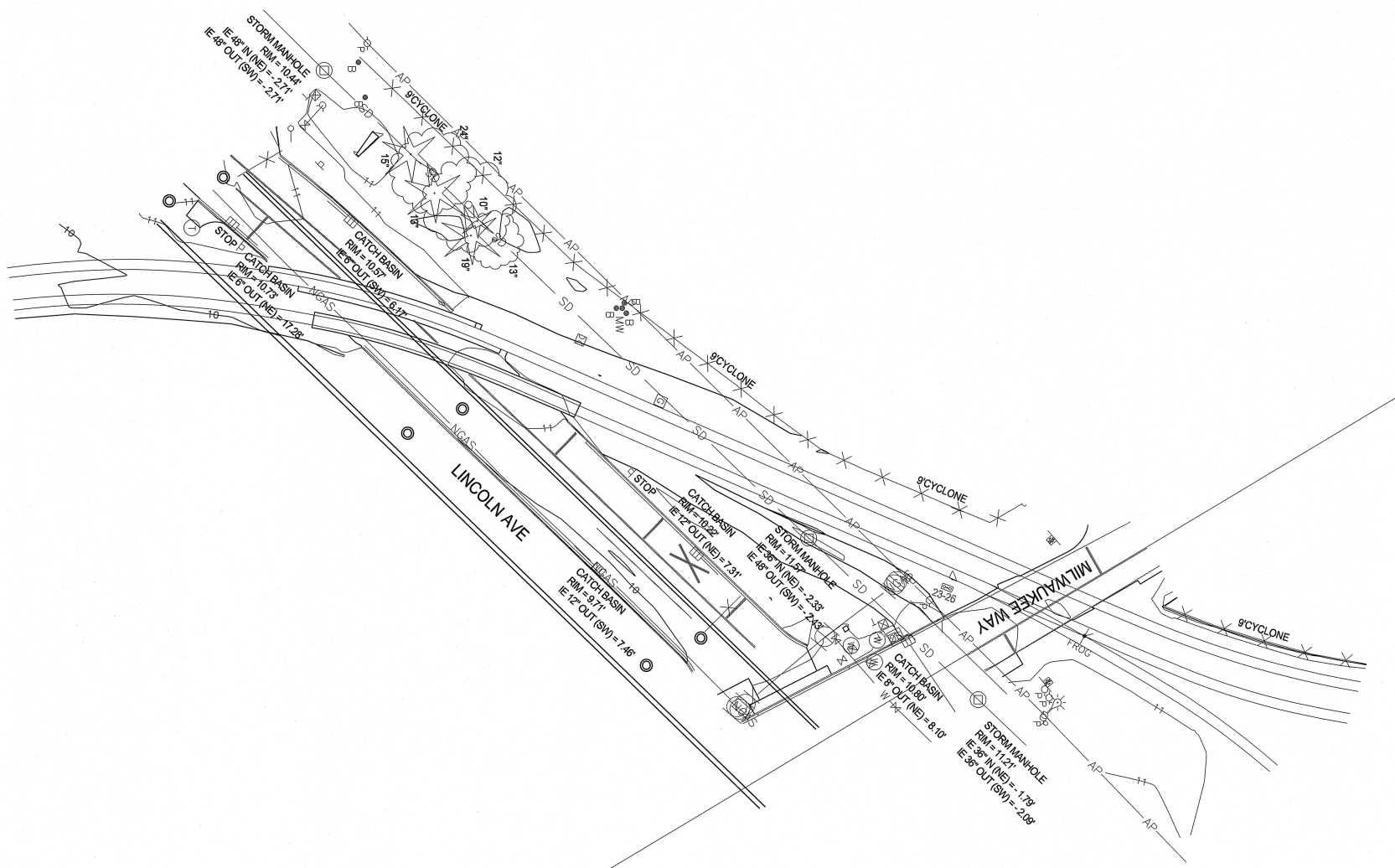


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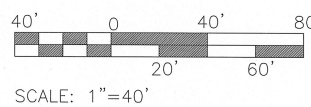
- 1) VERTICAL DATUM: CITY OF TACOMA (NGVD 29)
BENCHMARK: 3 INCH BRASS DISK ON MILWAUKEE WAY, SOUTH OF E. 11TH AVENUE.
BENCHMARK NO. 2863
ELEVATION = 12.117'
- 2) BASIS OF BEARINGS FOR THIS SURVEY IS THE CITY OF TACOMA DATUM, NAD 83(91)
WASHINGTON SOUTH ZONE (3602).
- 3) UTILITY LOCATIONS SHOWN ARE PER FIELD LOCATED UTILITY PAINT MARKS & REFERENCE MAPS MADE AVAILABLE BY THE VARIOUS UTILITY PROVIDERS. UNLESS INDICATED, DEPTHS OF UTILITY LINES ARE NOT AVAILABLE. ALL UTILITY LOCATIONS SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.

LEGEND:

- ===== CURB LINE
===== EDGE OF ASPHALT
----- BFO ----- FIBER OPTIC LINE
----- BP ----- ELECTRICAL LINE
----- BT ----- TELECOMMUNICATIONS LINE
----- SD ----- STORM LINE
----- SS ----- SANITARY SEWER LINE
----- W ----- WATER LINE
----- GAS LINE
----- CYCLONE FENCE LINE
----- AP ----- OVERHEAD UTILITY LINES
----- SIGN
----- BOLLARD
----- ELECTRICAL METER
----- LIGHT J-BOX
----- OVERHEAD LIGHT
----- POWER POLE/OVERHEAD LIGHT
----- POWER POLE
----- GAS VALVE
----- SANITARY MANHOLE WITH STRUCTURE
----- STORM MANHOLE WITH STRUCTURE
----- CATCH BASIN/AREA DRAIN
----- STORM CLEAN OUT
----- TELECOMMUNICATIONS MANHOLE
----- TELECOMMUNICATIONS RISER
----- TRAFFIC SIGNAL BOX
----- TRAFFIC SIGNAL CABINET
----- FIRE HYDRANT
----- WATER VALVE
----- MONITORING WELL
----- WATER MANHOLE
----- POST INDICATOR VALVE
----- DECIDUOUS TREE
----- CONIFEROUS TREE
----- RAILROAD GREASEBOX
----- RAILROAD MANUAL SWITCH/NUMBER
----- RAILROAD FROG
----- RAILROAD SIGN



4/10/17

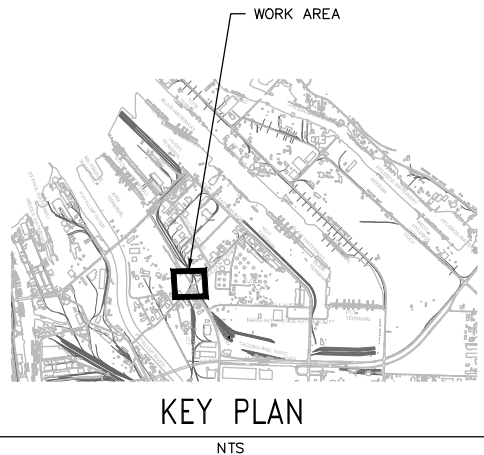
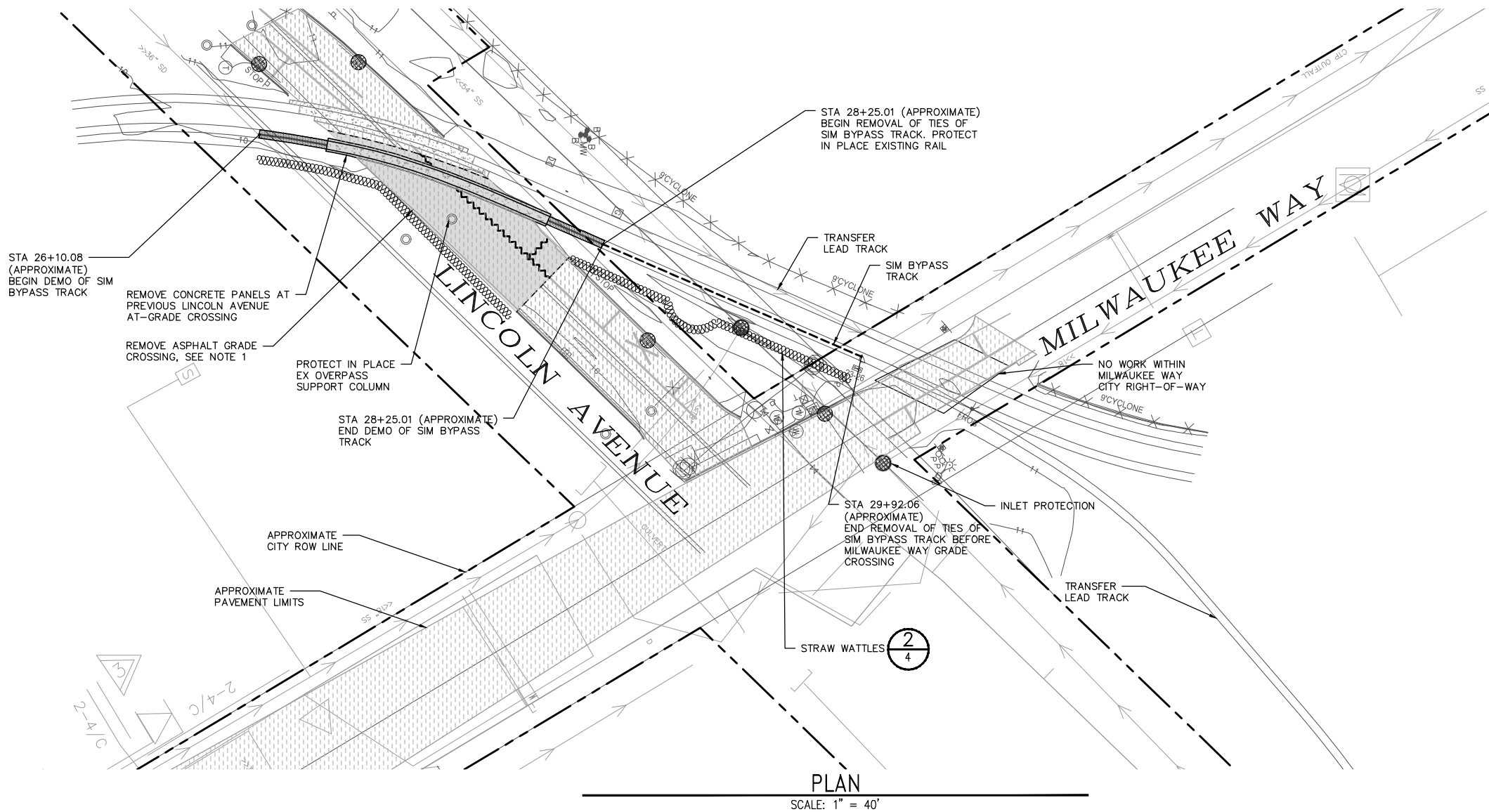


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NO	REVISION	DATE	APPD	FINAL CONSTRUCTION CHECKED	DATE 04/10/2017	SCALE AS NOTED	CITY OF TACOMA DEPARTMENT OF PUBLIC WORKS	WO17-0051
				BY DATE	DESIGNED RLO	CHECKED SWK	REPLACEMENT OF RAILWAY TRACK UNDER LINCOLN AVE. OVERPASS SURVEY	SHEET NO.
				FIELD BOOKS	DRAWN NLN	PROJECT NAME	PLANNING & DEVELOPMENT SERVICES	SHEET 2 OF 10
					DRAWING NAME			



LEGEND



EXISTING CONCRETE PANELS
EXISTING ASPHALT ROADWAY
REMOVE CONCRETE PANELS AND RAILROAD TRACK
REMOVE ASPHALT
REMOVE RAILROAD TRACK

--- CITY ROW LINE, SEE NOTE
--- SEE NOTE 7

~~~~~ REMOVE PAVEMENT MARKING  
- - - - - REMOVE RAILROAD TIES  
- - - - - SAWCUT ASPHALT PAVEMENT

CATCH BASIN INLET PROTECTION. CONTRACTOR TO ENSURE ANY CATCH BASIN DOWNSTREAM OF THE PROJECT LIMITS (WITHIN 500') HAS INLET PROTECTION FOR THE DURATION OF CONSTRUCTION.

STRAW WATTLES

#### DEMOLITION NOTES:

1. EXTENTS OF ASPHALT REMOVAL ARE APPROXIMATE, ACTUAL REMOVAL LIMITS WILL BE DELINEATED BY A CITY INSPECTOR. SEE SECTION A ON SHEET 6 FOR EXTENTS OF REMOVAL AND REPLACEMENT.
2. ALL LOCATIONS OF EXISTING IMPROVEMENTS AND UTILITIES SHOWN ARE FROM AVAILABLE GIS RECORDS AND FIELD SURVEY AND SHOULD BE CONSIDERED APPROXIMATE AND NOT NECESSARILY COMPLETE.
3. CONTRACTOR SHALL COORDINATE ANY RELOCATION OF HYDRANTS AND ASSOCIATED WATER SERVICES WITH TACOMA WATER, INCLUDING PAYMENT OF ASSOCIATED FEES AND WORK COSTS, AND SCHEDULING OF WORK.
4. ALL START AND END REPLACEMENT TRACK LOCATIONS, WHICH MATCH INTO EXISTING TRACK, ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD LOCATE NEAREST EXISTING JOINT AT OR BEYOND MATCH POINT INDICATED, VERIFY VERTICAL AND HORIZONTAL ALIGNMENT AND TIE INTO EXISTING TRACK AT EXISTING JOINT.
5. SAWCUT OF CURB AND GUTTER IS NOT ALLOWED. ALL REMOVAL MUST BE LOCATED AT NEAREST JOINTS. COORDINATE WITH CITY OF TACOMA INSPECTOR.
6. CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SITE IMPROVEMENTS NOT OTHERWISE NOTED FOR DEMOLITION. CONTRACTOR SHALL REPAIR OR REPLACE ALL ITEMS DAMAGED BY CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
7. CITY RIGHT OF WAY LINES APPROXIMATED BY AVAILABLE RECORD DATA AND COORDINATES FROM CITY OF TACOMA GOVME WEBSITE.
8. RESTORATION SHALL BE IN ACCORDANCE WITH THE CITY OF TACOMA POLICY AS ADOPTED JUNE 2, 2009. THE CITY INSPECTOR SHALL HAVE FINAL SAY FOR LIMITS OF RESTORATION.
9. ALL EXCAVATED SOIL AND BALLAST MATERIAL SHALL BE REUSED OR REMOVED PER THE CONTRACT SPECIFICATIONS.

#### EROSION & SEDIMENT CONTROL NOTES:

1. APPROVAL OF THIS EROSION/SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).
2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM OR ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
7. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A STORM EVENT.
8. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
9. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.



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REVISION

DATE

APPD

FINAL  
CONSTRUCTION  
CHECKED

BY

DATE

FIELD BOOKS

DATE  
06/14/2017

DESIGNED  
RLO

DRAWN  
NLM

DRAWING NAME

SCALE  
AS NOTED

CHECKED  
SWK

PROJECT NAME

REGISTERED  
PROFESSIONAL ENGINEER  
NO. 32781  
6/14/17



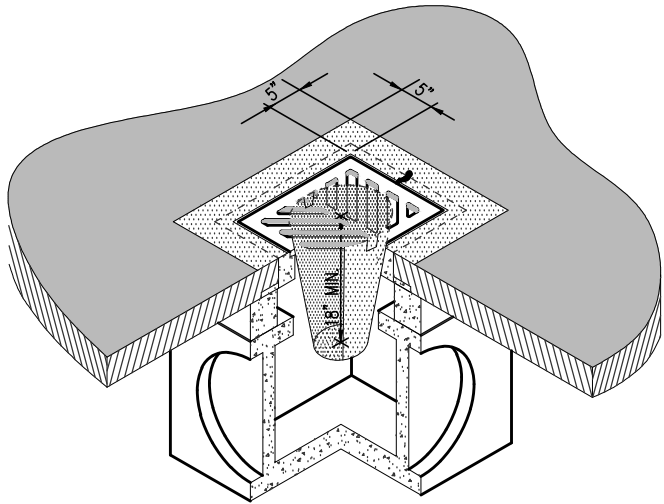
CITY OF TACOMA  
DEPARTMENT OF PUBLIC WORKS

REPLACEMENT OF RAILWAY TRACK  
UNDER LINCOLN AVE OVERPASS  
DEMOLITION & TESC PLAN

WO17-0051

SHEET NO.

SHEET 3 OF 10



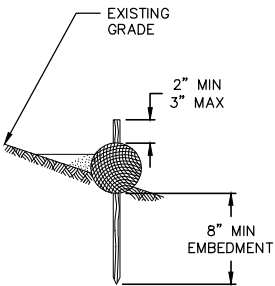
INLET PROTECTION DETAIL

SCALE: NTS

1  
3

NOTES:

1. INSERT SHALL BE INSTALLED IN ALL OPERATIONAL CATCH BASINS WITHIN 500 FEET OF WORK LIMITS PRIOR TO CLEARING AND GRADING ACTIVITY, OR UPON PLACEMENT OF A NEW CATCH BASIN.
2. FILTERS SHALL BE INSPECTED AFTER EACH STORM EVENT AND CLEANED OR REPLACED WHEN IT IS 1/3 FULL.
3. SEDIMENT REMOVAL SHALL BE ACCOMPLISHED BY REMOVING THE INSERT, EMPTYING INTO APPROPRIATE DISPOSAL LOCATION, AND REINSERTING IT INTO THE CATCH BASIN.



STRAW WATTLE DETAIL

SCALE: NTS

2  
3



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BY

DATE

FIELD BOOKS

DATE

DESIGNED

RLO

DRAWN

DRAWING NAME

SCALE

CHECKED

SWK

PROJECT NAME



CITY OF TACOMA  
DEPARTMENT OF PUBLIC WORKS

REPLACEMENT OF RAILWAY TRACK  
UNDER LINCOLN AVE OVERPASS  
DEMOLITION & TESC DETAILS

WO17-0051

SHEET NO.

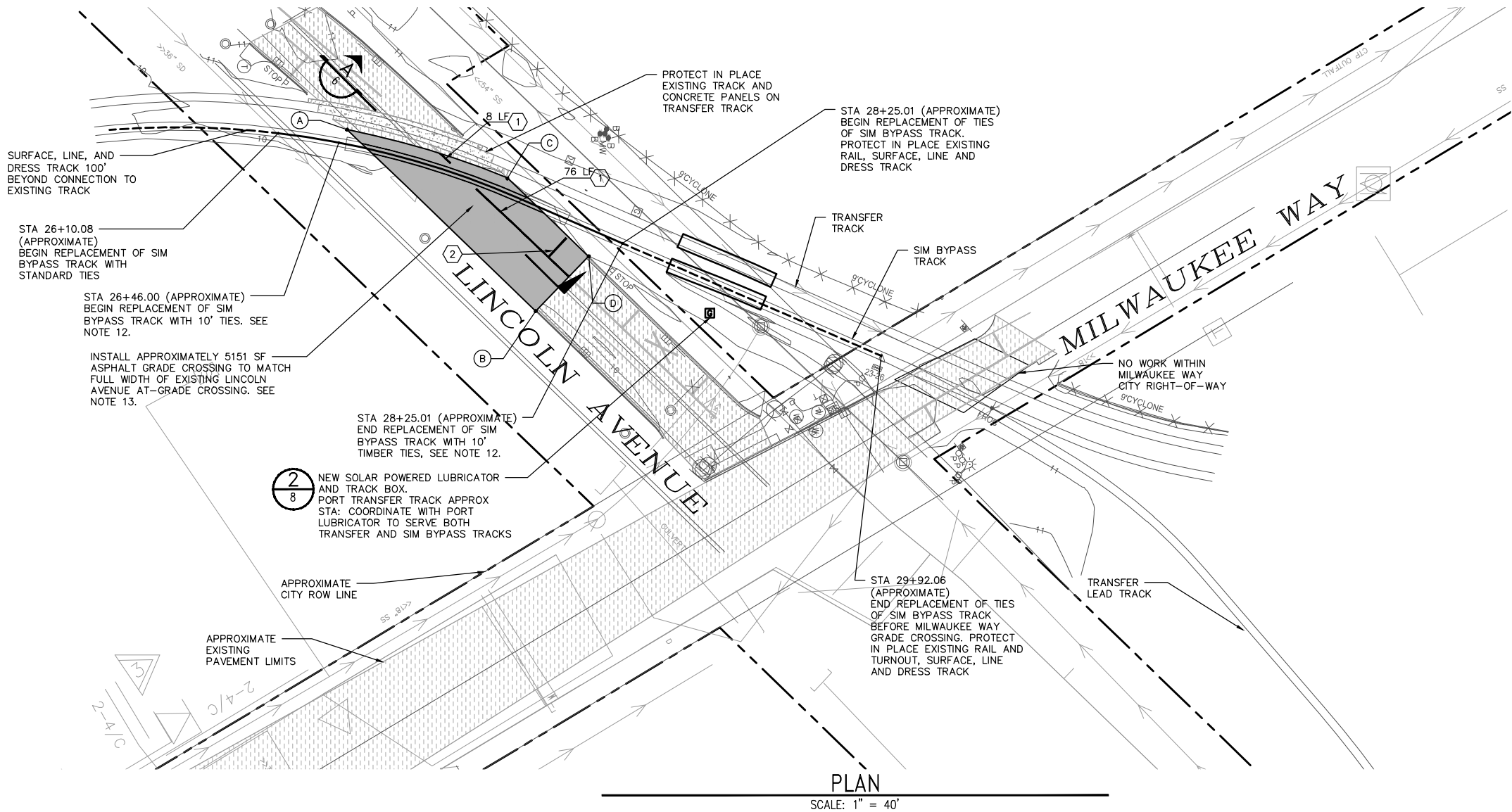
SHEET

4

OF

10

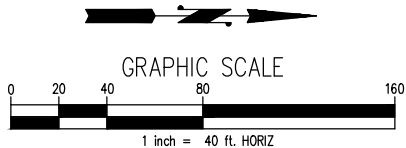
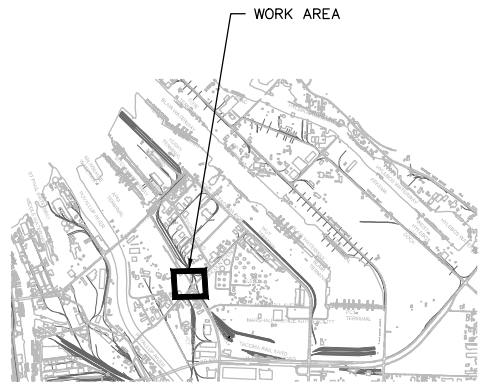




| GRADING TABLE |           |            |                 |
|---------------|-----------|------------|-----------------|
| POINT         | NORTHING  | EASTING    | FG              |
| A             | 706524.60 | 1167083.74 | TIE IN EXISTING |
| B             | 706636.23 | 1167191.24 | TIE IN EXISTING |
| C             | 706619.46 | 1167112.28 | TIE IN EXISTING |
| D             | 706667.48 | 1167158.85 | TIE IN EXISTING |

- NOTES:
- SEE SHEETS 6-9 FOR TRACK PROFILE AND DETAILS.
  - SEE SHEET 3 FOR DEMOLITION PLAN.
  - CONTRACTOR SHALL MATCH EXISTING GRADE AT SAWCUT LINE.
  - RAILWAY TRACK REPLACEMENTS ARE WITHIN ACTIVE TRACKS AND YARDS. CONTRACTOR SHALL CONFINE OPERATIONS AND STAGING TO THE LAYDOWN AREA PER ON-SITE PLANS. CONTRACTOR SHALL YIELD TO RAIL TRAFFIC AT ALL TIMES.
  - NOT USED.
  - FOR AT-GRADE CROSSING PAVEMENT SECTIONS SEE SHEET 6.
  - FOR TYPICAL BALLASTED TRACKBED SECTION, SEE 1  
8
  - NEW TIMBER TIES AT NEW ASPHALT CROSSING SHALL BE 10' TIES.
  - ALL NEW RAIL SHALL BE 136 LB JOINTED RAIL, EXCEPT WHERE NOTED.
  - ALL NEW TRACK TIES ARE TIMBER, SEE SHEET 7 FOR STANDARD DETAILS.
  - ALL START AND END REPLACEMENT TRACK LOCATIONS, WHICH MATCH INTO EXISTING TRACK, ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD LOCATE NEAREST EXISTING JOINT AT OR BEYOND MATCH POINT INDICATED, VERIFY VERTICAL AND HORIZONTAL ALIGNMENT AND TIE INTO EXISTING TRACK AT EXISTING JOINT.
  - THE CONTRACTOR SHALL USE A MINIMUM OF (10) 10' TIES TO BUILD TRACK JUST BEYOND ASPHALT CROSSING IN PLACE OF STANDARD TIES.
  - EXISTING CONCRETE PANELS EXTEND BEYOND EDGE OF ASPHALT. NEW ASPHALT PAVING SHALL BE TO THE APPROXIMATE LIMITS SHOWN. SEE DEMOLITION NOTE 1 ON SHEET 3 AND NOTE 7, THIS SHEET.
  - CONTRACTOR LAYDOWN AREA FOR WORK ON TRANSFER LEAD TRACK SHALL BE AS SHOWN ON ON-SITE PLANS, BETWEEN TRANSFER YARD WORK AND LINCOLN AVENUE LOOP. ALL LAYDOWN AREA MUST BE OFFSET MINIMUM 15' FROM CENTERLINE OF ACTIVE TRACKS AND OUTSIDE OF LINCOLN AVE LOOP ROW.
  - ALL LOCATIONS OF EXISTING IMPROVEMENTS SHOWN ARE FROM AVAILABLE GIS RECORDS AND FIELD SURVEY AND SHOULD BE CONSIDERED APPROXIMATE AND NOT NECESSARILY COMPLETE.
  - CONTRACTOR SHALL MAINTAIN AND PROTECT ALL SITE IMPROVEMENTS NOT OTHERWISE NOTED FOR DEMOLITION. CONTRACTOR SHALL REPAIR OR REPLACE ALL ITEMS DAMAGED BY CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
  - RESTORATION SHALL BE IN ACCORDANCE WITH THE CITY OF TACOMA POLICY AS ADOPTED JUNE 2, 2009. THE CITY INSPECTOR SHALL HAVE FINAL SAY FOR LIMITS OF RESTORATION.

- KEY NOTES:
- 1 4" WIDE THERMOPLASTIC DOUBLE YELLOW STRIPING
  - 2 12" THERMOPLASTIC STOP BAR, APPROX 15 LF



| LEGEND |                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | EXISTING CONCRETE PANELS                                                                                                                                                                                                                                                                                                                                                                                                    |
|        | EXISTING ASPHALT ROADWAY                                                                                                                                                                                                                                                                                                                                                                                                    |
|        | HMA CROSSING PAVEMENT, FOR TYPICAL SECTIONS AND LIMITS, SEE <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">A<br/>6</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">1<br/>9</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">2<br/>9</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">3<br/>9</span> |
|        | SURFACE, LINE, AND DRESS TRACK, SEE SPECIFICATIONS                                                                                                                                                                                                                                                                                                                                                                          |
|        | REPLACEMENT TRACK, CENTERLINE                                                                                                                                                                                                                                                                                                                                                                                               |
|        | APPROXIMATE CITY ROW LINE                                                                                                                                                                                                                                                                                                                                                                                                   |

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DESIGNED  
RLO  
DRAWN  
NLM  
DRAWING NAME

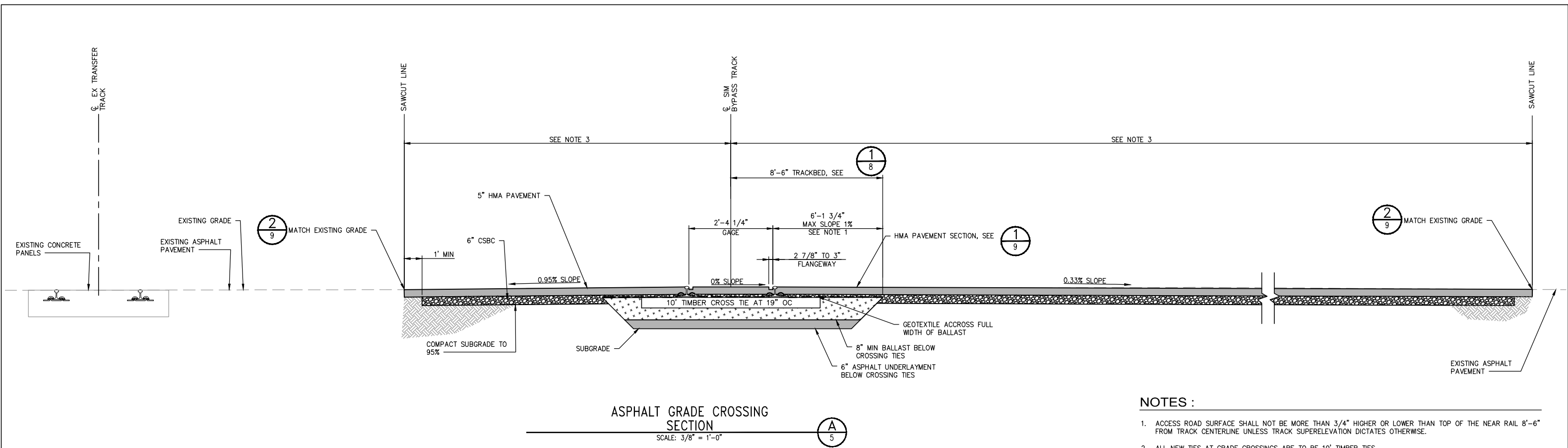
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AS NOTED  
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PROJECT NAME



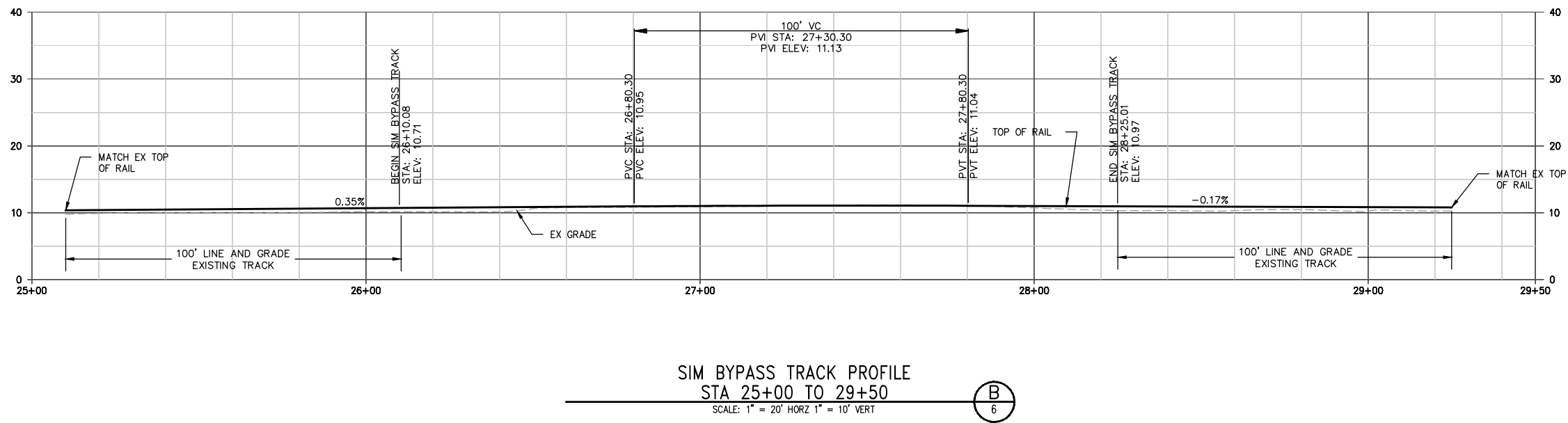
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DEPARTMENT OF PUBLIC WORKS

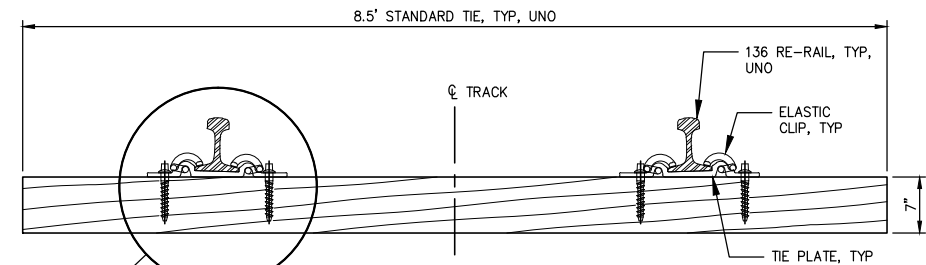
REPLACEMENT OF RAILWAY TRACK  
UNDER LINCOLN AVE OVERPASS  
RAIL & PAVING PLAN

WO17-0051  
SHEET NO.  
SHEET 5 OF 10

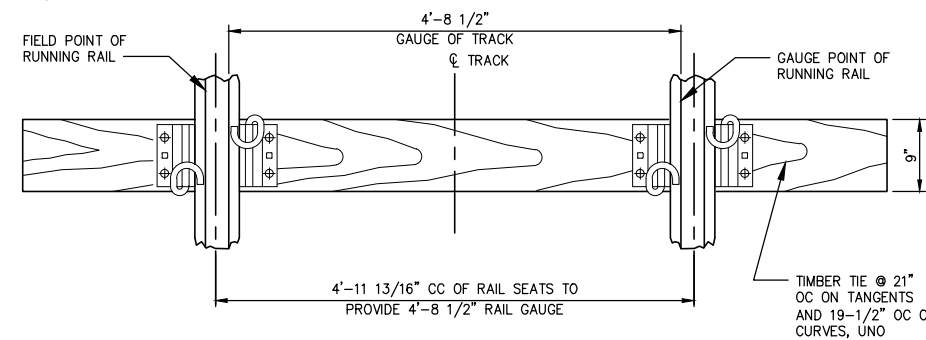


- NOTES :
1. ACCESS ROAD SURFACE SHALL NOT BE MORE THAN 3/4" HIGHER OR LOWER THAN TOP OF THE NEAR RAIL 8'-6" FROM TRACK CENTERLINE UNLESS TRACK SUPERELEVATION DICTATES OTHERWISE.
  2. ALL NEW TIES AT GRADE CROSSINGS ARE TO BE 10' TIMBER TIES.
  3. NEW ASPHALT PAVING SHALL EXTEND APPROXIMATELY 8.5' WEST OF  $\mathcal{C}$  (DIMENSION IS MEASURED PERPENDICULAR TO TRACK  $\mathcal{C}$ ) TO THE MIDPOINT BETWEEN SIM BYPASS TRACK  $\mathcal{C}$  AND TRANSFER TRACK  $\mathcal{C}$ , AND APPROXIMATELY 45' EAST OF SIM BYPASS TRACK  $\mathcal{C}$  AT THE NORTHERN EDGE OF THE PAVEMENT AND EXTEND PERPENDICULAR ACROSS THE ROAD, PER PLAN. SEE NOTE 17 ON SHEET 5.



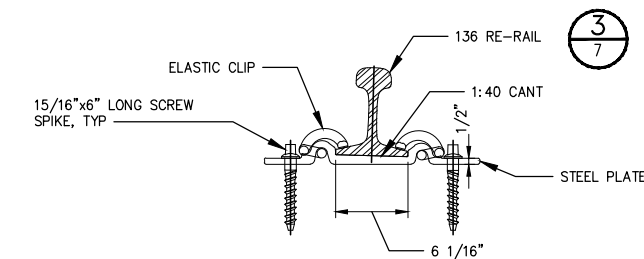


ELEVATION

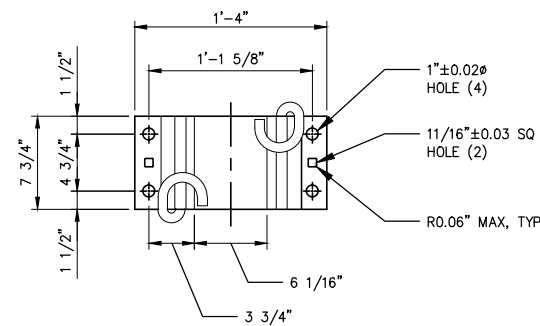


PLAN

TIMBER TIE  
SCALE: 1" = 1'-0"

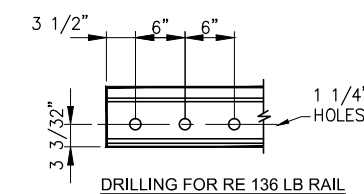
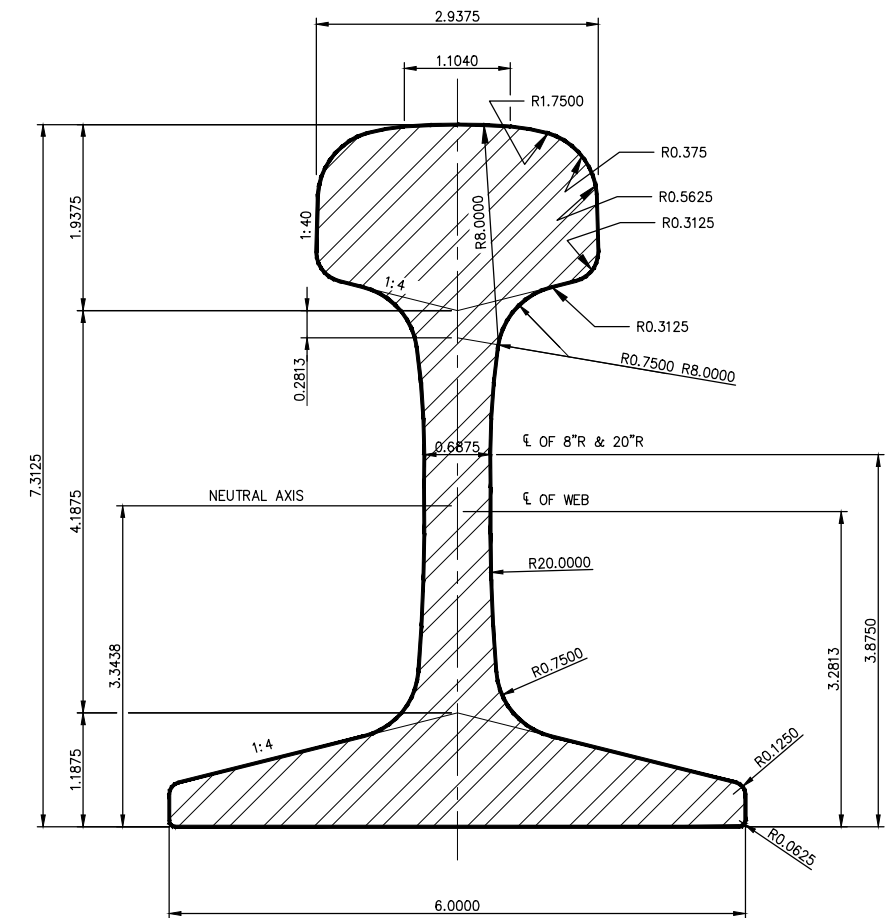


ELASTIC CLIPS  
ON TIMBER TIES



TYPICAL STANDARD PLATE  
FOR ELASTIC CLIP

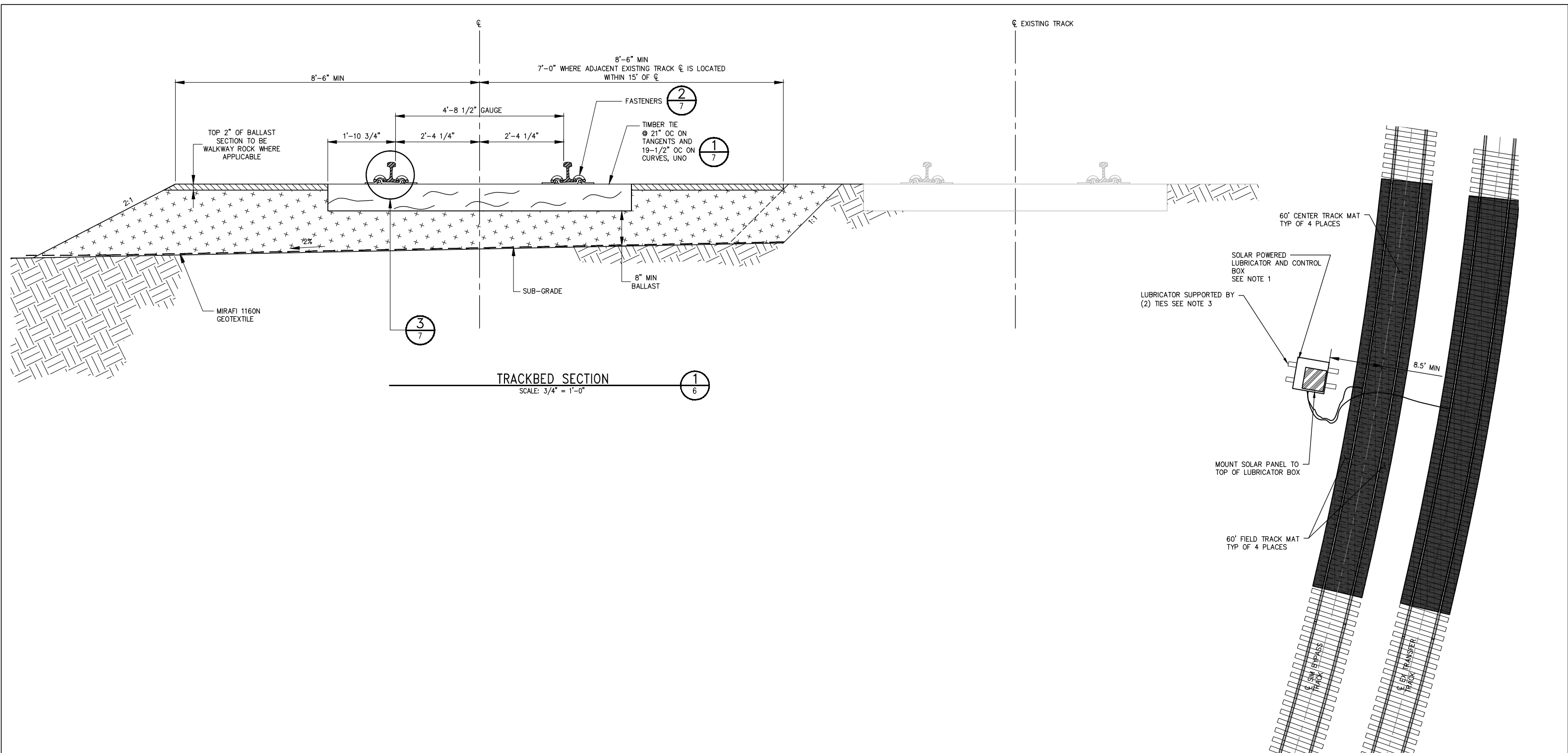
TIMBER FASTENERS W/136# RAIL  
SCALE: 1 1/2" = 1'-0"



| PROPERTIES            |                       |        |
|-----------------------|-----------------------|--------|
| AREA OF HEAD          | 4.8187 SQ. IN.        | 36.2%  |
| AREA OF WEB           | 3.6375 SQ. IN.        | 27.3%  |
| AREA OF BASE          | 4.8702 SQ. IN.        | 36.5%  |
| TOTAL AREA            | 13.3263 SQ. IN.       | 100.0% |
| MOMENT OF INERTIA     | 94.20                 |        |
| SECTION MODULUS, HEAD | 23.70                 |        |
| SECTION MODULUS, BASE | 28.20                 |        |
| WEIGHT                | 135.8826 LBS PER YARD |        |

DETAIL - RAIL  
SECTION 136#

SCALE: 1" = 1'-0"

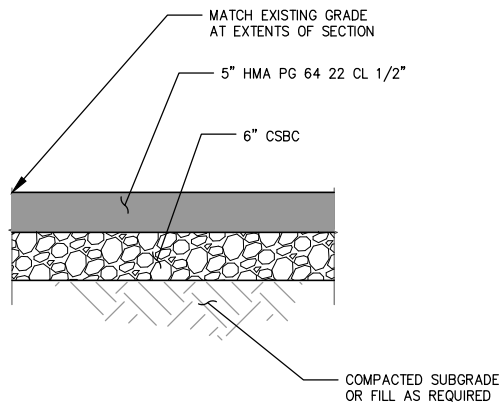


- NOTES :
1. CONTRACTOR SHALL INSTALL TRACK LUBRICATOR EQUIPMENT PER PROJECT SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS.
  2. POSITION TRACK LUBRICATOR CONTROL BOX ACCORDING TO TRACK ALIGNMENT NOTED ON SHEET 5.
  3. SUPPORT TRACK LUBRICATOR CONTROL BOX ON MIN (2) TIES. TIE SIZE, SPACING, AND ORIENTATION SHALL FOLLOW MANUFACTURER'S RECOMMENDATIONS.

TRACK LUBRICATOR DETAIL  
SCALE: NTS

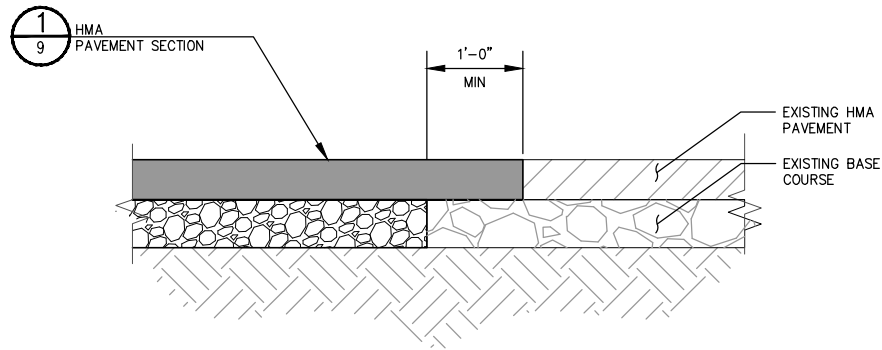
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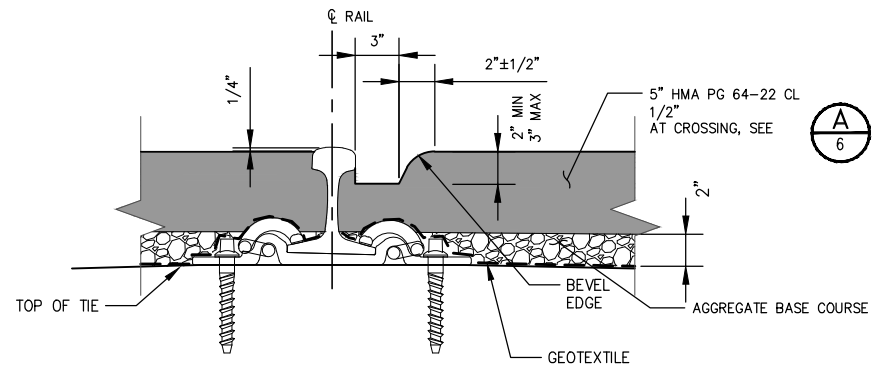
HMA PAVEMENT  
SECTION  
SCALE: 1" = 1'-0"

1  
6



MATCH EXISTING  
PAVEMENT DETAIL  
SCALE: 1" = 1'-0"

2  
6



HMA CROSSING PAVEMENT  
AND ASPHALT FLANGEWAY  
SCALE: 1" = 6"

3  
5



GENERAL

- A. The following special provisions are to be used in conjunction with the City of Tacoma Special Provisions, City of Tacoma Standard Plans and City of Tacoma Right-of-Way Design Manual, "2014 Standard Specifications for Road, Bridge and Municipal Construction" and "Standard Plans for Road, Bridge and Municipal Construction" as prepared by the Washington State Department of Transportation (WSDOT).
- B. Any inconsistency between these work order drawings and the 2014 Standard Specifications or the WSDOT Standard Plans shall be resolved by the following order of precedence (e.g., 1 prevailing over 2, 3, and so forth):
1. Approved Work Order Drawings
  2. City of Tacoma Special Provisions, Including APWA General Special Provisions, as applicable
  3. City of Tacoma Right-of-Way Design Manual
  4. 2014 Standard Specifications
  5. City of Tacoma Standard Plans
  6. WSDOT Standard Plans
- C. Any revisions to these plans must be reviewed and approved by the City of Tacoma prior to any implementation in the field.
- D. Contractors shall familiarize themselves with the site and shall bring any discrepancies to the attention of the Engineer prior to undertaking the affected work.
- E. Any discrepancy in these drawings, specifications, these notes, and the site conditions shall be reported to the Engineer, who shall correct such discrepancy in writing after reviewing any changes. Any work done by the Contractor after the discovery of such discrepancy shall be done at the Contractor's risk. The Contractor shall verify and coordinate the dimensions among all drawings prior to proceeding with any work.
- F. A pre-construction meeting shall be held at the City of Tacoma with the applicant, contractor, and City Inspectors prior to issuance of a permit.

ADDITIONAL PERMITS

- A. Separate permits are required for on-site work including all retaining walls, grading, and erosion control. Adherence to all conditions of these permits is required as a part of this plan.
- B. Separate permits are required for sidewalk installation as well as curb and gutter removal and driveway construction when constructed at building permit stage.
- C. Separate storm and sanitary sewer connection permits are required for connections to the wastewater or stormwater systems.

UTILITIES

- A. The existing underground utilities shown hereon are based upon existing record drawings and are not guaranteed to be accurate, nor all-inclusive.
- B. All utilities must be verified prior to construction. If the project requires any excavation, the developer/contractor is required to call the Utility Underground Location Center at (800) 424-5555 at least two days before starting such excavation in accordance with RCW 19.122.
- C. It shall be the Contractor's responsibility to protect, in place, all utilities and/or structures whether shown or not shown on this plan. Damage due to the Contractor's operations shall be repaired at the Contractor's expense.

EXCAVATION

- A. If workers enter any trench or other excavation four feet or more in depth that does not meet the open pit requirements of Section 2-09.3(3)B, it shall be shored and cribbed. All trench safety systems shall meet the requirements of the Washington Industrial Safety and Health Act, Chapter 49.17 RCW. The Contractor alone shall be responsible for all worker safety, and neither the City of Tacoma nor the Engineer of record assumes any responsibility.

PAVEMENT PREPARATION / RESTORATION

- A. Additional removal and replacement of pavement may be required to provide proper transition/crown as directed by the City of Tacoma Inspector in the field.
- B. The street sections shown on this plan are designed to be placed upon a firm and unyielding base.
- C. Subgrade compaction shall be tested by a professional geotechnical consultant prior to placing base material.
- D. Pavement restoration shall be constructed in accordance with the City of Tacoma Restoration policy and applicable Standard Plans.
- E. All permanent traffic channelization, such as but not limited to legends, raised pavement markings, paint, and signage, shall be restored to current Tacoma Standards.
- F. Final restoration limits shall be determined in the field by the City of Tacoma Inspector.
- G. Pavement Preparation and Restoration shall meet all applicable requirements of City of Tacoma Right-of-Way Design Manual Chapter 4 Sections 5.4 and 5.5.

PERMEABLE PAVEMENTS

- A. Permeable Pavements including pavers, porous asphalt and pervious concrete may be approved for use within the right of way.
- B. Installation shall be in accordance with the approved permit documents and all applicable requirements as outlined in the documents referenced in the GENERAL section above.
- C. Permeable pavers shall be designed and installed in accordance with manufacturer's recommendations, per approved permit drawings and the requirements of the City of Tacoma Right-of-Way Design Manual.
- HOT MIX ASPHALT**
- A. Standard hot mix asphalt shall be HMA CL 1/2 Inch PG 64-22.
- B. Porous asphalt shall be Class 2<sup>nd</sup> PG 70-22ER polymer modified or higher grade.
- C. Mix design shall be based on Standard Plan PD-01-Pavement Design Standards and PD-02 Pavement Design Worksheet.
- D. Section 5-04.3(9)A "Acceptance Sampling and Testing" of the Standard Specifications is deleted.
- E. All standard hot mix asphalt shall be compacted to a minimum of 92 percent of the maximum density as determined by AASHTO T209. All standard hot mix asphalt utilized shall be considered compactable. The level of compaction attained will be determined as the average of not less than 5 nuclear density gauge tests taken on the day the mix is placed (after completion of the finish rolling) at randomly selected locations within each lot. The quantity represented by each lot will be no greater than a single day's production or approximately 400 tons, whichever is less.
- F. All testing results shall be provided to the City within 48 hours of the test.
- G. Control lots not meeting the minimum density standard shall be removed and replaced with satisfactory material.
- H. In addition to the randomly selected locations for test of the control lot, the City Inspector reserves the right to test any area which appears defective and to require further compaction of areas that fail below acceptable density readings. These additional tests shall not impact the compaction evaluation of the entire control lot.
- I. Hot mix asphalt pavement shall not be placed on any traveled way between October 1 and April 1 without written approval from a Science & Engineering Assistant Division Manager.
- J. No traffic shall be allowed on any newly placed pavement without the approval of the City Inspector.

CONCRETE

- A. Concrete pavement mix design shall be based on Standard Plan PD-01-Pavement Design Standards.
- B. Cold Weather Concrete Work. The following requirements for placing concrete shall be in effect from November 1 to April 1:
1. The Engineer shall be notified at least 24 hours prior to any concrete placement.
  2. Weather permitting, all concrete placement shall be completed no later than 2:00 p.m. each day.
  3. Where forms have been placed and the subgrade has been subjected to severe frost, no concrete shall be placed until the ground is completely thawed. At that time, the forms shall be adjusted and subgrade repaired as determined by the Engineer.
- C. Curing of concrete shall be in accordance with Section 5-05.3(13) of the Standard Specifications.
- D. The slump for standard concrete used for sidewalks shall not exceed four inches +/- one inch.
- E. Sidewalks and curb ramps shall be constructed in accordance with ADA Standards for Accessible Design, 28 CFR, Part 35 and as supplemented by the Public Works Right of Way Accessibility Guidelines (PROWAG).

RIGHT-OF-WAY PERMITTING GENERAL NOTES

SANITARY AND STORM SEWERS

- A. 7-08.3(2)G Jointing of Dissimilar Pipe:  
Dissimilar pipe shall be joined by use of rigid couplings manufactured by Romac Industries, Inc., or City of Tacoma approved equal.
- B. 7-08.3(2)F Plugs and Connections:  
Rigid Couplings, manufactured by Romac Industries, Inc., or City of Tacoma approved equal, shall be used at any pipe joint in which bell and spigot or fused joints are not used. Flexible couplings are not permitted.  
C. Section 7-04 of the Standard Specification is deleted. Storm sewers shall meet all the requirements of sanitary sewers.
- D. Sewers and appurtenances shall be cleaned and tested after backfilling by either exfiltration or low-pressure air method at the option of the Contractor, except where the ground water table is such that the Engineer may require the infiltration test.
- E. All wastewater and stormwater pipes shall be video inspected by City Forces prior to paving where paving occurs over sewers. All other sewers will be video inspected prior to final acceptance.
- F. All abandoned pipes encountered during construction and new stormwater and wastewater stub outs shall be sealed with a watertight pipe plug.
- G. All frames and grates for standard catch basin inlets on this project shall be "vaned" type and shall conform to that shown on WSDOT Standard Plan No. B-30.30-01 and B-30.40-01.
- H. Where existing catch basins are modified, grates may be required to be replaced with vaned grates. Environmental Services will make the final determination based on the condition of the existing grate and structure.
- I. Recycled concrete shall not be used for pipe zone backfill.
- J. New connections to brick manholes may be allowed on a case by case basis. Manhole replacement may be required by the Environmental Services Department based upon the condition of the existing manhole.

MISCELLANEOUS

- A. Any fence or structure replaced and/or relocated shall be maintained to remain functional.
- B. Independent quality assurance sampling and testing will be provided by a certified independent laboratory for all improvements within the right-of-way. All special inspection reports shall be forwarded to the Site Development Group on a monthly basis, and / or as requested by the City of Tacoma Inspector.
- C. The Contractor shall only use those hydrants designated by the agency in charge of water distribution and in strict accordance with its requirements for hydrant use. Water applied by the Contractor shall not be from residential sources.

GRADING, EXCAVATION, AND EROSION CONTROL NOTES

- A. All work is to be done in accordance with the approved grading plan, soils report, the most current WSDOT Standard Specifications For Road, Bridge And Municipal Construction and the current City of Tacoma Stormwater Management Manual.
- B. When construction operations are such that debris from the work is deposited on the streets, the Contractor shall immediately remove any deposits or debris which may accumulate on the roadway surface. If the Contractor fails to keep the streets free from deposits and debris resulting from the work, the Contractor shall, upon order of the City of Tacoma Inspector, provide facilities for, and remove all clay, dirt, or other deposits from the tires or between wheels before trucks or other equipment will be allowed to travel over paved streets. Should the Contractor fail or refuse to clean the streets in question, or the trucks or equipment in question, the City of Tacoma Inspector may order the work suspended at the Contractor's risk until compliance with the Contractor's obligations is assured, or the City of Tacoma Inspector may order the streets in question cleaned by others and such costs incurred by the City in achieving compliance with these requirements, including cleaning of the streets, shall be deducted from the work order account.
- C. The Contractor shall protect existing drainage structures using acceptable methods and materials as shown on this plan. If the methods and materials as shown on this plan are not adequate, the City of Tacoma Inspector may require additional/alternative methods for erosion control and/or protection of existing drainage structures. Additional or alternative methods shall be submitted by the design engineer and accepted by the City of Tacoma Inspector. Any damage caused to the City of Tacoma stormwater system as a result of the work outlined on this plan shall be the sole responsibility of the Contractor. Resolving said damage may include, but not be limited to, the cleaning of the drainage system in question by the Contractor.
- D. Watering provisions when applicable must be in place to prevent dust from becoming air borne. Violation of this condition will result in a stop work order until corrected.
- E. Fill that will support a street section or other structures shall be placed under the inspection of a Washington State licensed Geotechnical Engineer. Soil to be placed shall be tested and compacted to 95 percent of its maximum density. Engineer shall document existing site conditions, soil and its placement and allowable bearing capacity submitted. Standard requirements for cuts and fill are contained in the WSDOT Standard Specifications For Road, Bridges, and Municipal Construction.
- F. A stormwater pollution prevention plan (SWPPP) is required for all work order projects. The plan must be in accordance with the current City Tacoma Stormwater Management Manual.

HYDROSEEDING

- A. All areas that are cleared and grubbed, graded, excavated or filled are subject to stabilization. Any of these areas that are left unpaved or unlandscaped shall be hydroseeded or otherwise fully stabilized under the direction and approval of the Construction Inspector.
- B. Hydroseeding may occur only during the periods of April 1 through May 31 or September 1 through October 15. Hydroseeding may be allowed during the months of June through August if irrigation is provided.
- C. Monitor and maintain hydroseeded areas throughout the winter wet season to ensure that no erosion occurs.

EROSION CONTROL MEASURES

- A. Minimum Erosion Control measures shall include:
1. Construction entrance.
  2. Perimeter erosion/sedimentation control.
  3. Protection of catch basins.
  4. Stabilization of exposed soils.
- B. All erosion control shall be in place prior to clearing. The contractor shall call the City of Tacoma Inspector for initial erosion control inspection prior to start of work, per item F. below.
- C. Erosion control measures shall be maintained at all times to the approval of the City of Tacoma Inspector.
- D. Should temporary erosion and sedimentation control measures, as shown on plans become inadequate, the contractor shall install facilities as necessary to protect adjacent properties and the City of Tacoma drainage system, meeting approval of the City of Tacoma Inspector.
- E. No permits to perform grading, excavation, or filling during the period from October 1st through March 31 shall be issued. EXCEPTION: The City may approve a grading, excavation, or filling plan prepared by a licensed Civil or Geotechnical Engineer which specifically addresses the winter rain season and the associated erosion problems, and issue a permit based on such plan.
- F. Call for inspection of the City of Tacoma Inspector upon completion of:
1. Staking of clearing limits.
  2. Installation of erosion control and prior to site grading.
  3. Prior to removal of erosion control devices.
- G. All material removed from site shall be placed only at a permitted site. Verify location of destination of material prior to exportation.
- H. Traffic control provisions as approved by the City Traffic Engineer shall be adhered to at all times.
- I. Trees to be removed shall be clearly marked for removal. Trees to be saved shall be fenced with barricade fence at the drip line (outer edge of tree branches) to keep construction vehicles from compacting root zone and killing trees. This fencing shall be maintained until construction ends.
- J. Tree protection measures to be installed with initial TESC measure and shall be maintained throughout the duration of the site work. Refer to City of Tacoma Std. Plans LS-08 through LS-11.

RECORD DRAWINGS CRITERIA FOR ACCEPTANCE OF ALL PRIVATE WORK ORDERS

- A. All revisions to the approved plans must be approved by the City of Tacoma prior to implementation of the changes.
- B. A determination at the time of proposal shall be made whether the revision can be addressed with red line drawings submitted as a part of the record drawings or will require formal submission for approval.
- C. Record drawings shall show the station, offset, centerline and gutter flowline elevations, to nearest 0.01 foot, for all horizontal and vertical roadway alignment changes, at the intersection end of radius points and at the beginning and end of new paving.
- D. Record drawings shall show the station, offset, invert, and rim elevations to the nearest 0.01 foot for all stormwater and wastewater structures. (i.e.: manholes, catch basins, etc.)
- E. After any new stormwater and/or wastewater pipes have been cleaned and the manholes channeled, the main(s) shall be televised for video inspection to provide a record of the constructed conditions and for the wastewater system to verify side sewer connection locations. The City of Tacoma will coordinate this inspection.
- F. The property side ends of the side sewers shall be marked in the field by means of a 2-inch by 4-inch board and locate wire that extends from the flow line of the side sewer to at least 1 foot above the finished lot grade. Record drawings shall show all side sewers and shall locate them by measurements from permanent objects. (i.e.: curb, property corner, etc.) In addition, the depth of all side sewers shall be noted on the record drawings and locate board.
- G. Record drawings shall be received and accepted prior to issuing utility connection permits or release of performance bonds.
- H. Record drawings shall show vertical and horizontal datum for survey monuments (existing or new construction) within the limits of the project.
- I. Record drawings shall consist of a clean set of approved work order drawings with all changes noted above shown in red ink.
- J. Record drawings, including the Engineer's Certification, as applicable, must be submitted within 30 days of substantial completion or City survey crews will collect the necessary data and bill against the work order.

MONUMENT REMOVAL PERMIT PROCESS

"No survey monument shall be removed or destroyed (the physical disturbance or covering of a monument such that the survey point is no longer visible or readily accessible) before a permit is obtained from the Department of Natural Resources (DNR)." WAC 332-120-030(2) states "It shall be the responsibility of those performing construction work or other activity (including road and street resurfacing projects) to adequately search the records and the physical area of the proposed construction work or other activity for the purpose of locating and referencing any known or existing survey monuments." Construction shall not commence until WAC outlined in Chapter 332-120 is complied with.

STAKING REQUIREMENTS

WASTEWATER AND STORMWATER

- A. Clearing stakes if needed.
- B. Stakes every 50 feet plus grade breaks. Try to maintain 12 foot offsets in streets and 8 foot offsets in alleys.
- C. Double offsets at manholes and catch basins (ahead and back stakes at angle points).
- D. Catch basin station shall be to the centerline of the basin. Catch basin offsets shall be to the face of the curb.

RESIDENTIAL STREETS

- A. Clearing stakes as needed.
- B. Slope stakes every 50 feet and grade breaks if cuts or fills exceed 2 feet.
- C. Curb stakes every 50 feet and grade breaks, on 4 foot offset to the face of curb. Curb stakes are set to the top of curb grade (Blue Tape).
- D. Also stake the beginning and end of all approaches.
- E. No centerline of street grades unless the street grade is warped. If street grades are needed, set blue tops for each course.

ARTERIAL STREETS

- A. Clearing stakes as needed.
- B. Slope stakes every 50 feet and grade breaks if cuts or fills exceed 2 feet.
- C. Curb stakes every 50 feet and grade breaks, on 4 foot offset to the face of curb.
- D. Curb stakes are set to the top of curb grade (Blue Tape). Also stake the beginning and end of all approaches.
- E. Stake centerline and quarterline grade every 50 feet and grade breaks at grade for each course.

ALLEYS

- A. Stake both sides every 50 feet and grade breaks, on a 2 foot offset to the edge of paving, with a cut of fill to edge of paving on high side and flow line on low side.

SIDEWALKS

- A. Offsets for walks are set on 50' intervals and grade breaks normally at 2 foot to edge of walk and at edge of walk grade (Blue Tape).
- B. Sidewalk alignment is normally at 5 feet from the face of curb. No walk grades are needed if curbs are built.

HORIZONTAL AND VERTICAL CURVES

- A. Grade stakes must be set every 25 feet and grade breaks with a minimum of 3 stakes for each curve. Radius points on street Returns.

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