30% Design Report

3rd Street Improvement Project

Project #14044

October 2014

City of McCleary

100 S 3rd Street
McCleary, Wa 98557

Prepared By:

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Table of Contents

PROJECT OVERVIEW 3

DESIGN REFERENCES 3

PLAN AND PROFILE 4

DESIGN STANDARDS 4

SECOND STREET 4

STORMWATER 4

WATERLINE 5

SANITARY SEWER 5

RETAINING WALLS 5

LIST OF PERMITS 5

COST ESTIMATE 6

Selected Roadway Sections	Appendix A
30% Plan and Profile Sheets	Appendix B
Designer Notes	Appendix C
Draft Stormwater Site Plan	Appendix D
Cost Estimate Item Breakdown	Appendix E

Project Overview

The City of McCleary is proposing Improvements to the 3rd Street corridor from the intersections with Mox Chehalis Rd to East Oak St. This project includes the rubbelization of the existing concrete panels, realignment of the roadway, reconstruction of the roadway including intersections, new utilities, new sidewalks and bulbouts. The City has chosen the improvements to better facilitate pedestrian traffic near the McCleary School as well as improve sight distance and safety of the roadway

The purpose of this report is to explain and document the design decisions made up to this point, the 30% design.

Design References

City of McCleary Road Standards
City of McCleary Municipal Code
City of McCleary Comprehensive plan
City of McCleary Land Use and Development Procedures
City of McCleary Critical Area Ordinance
WSDOT Design Mannual
WSDOT Standard Specifications, 2014
WSDOT Local Agency Guidelines
WSDOT Construction Manual
AASHTO Roadside Design Guide, 4th Edition
MUTCD
Department of Ecology's Western Washington Stormwater Manual

Plan and Profile

The City selected options A2 and B2 as presented at the city council meeting on October 27, 2014. A2 begins at Hemlock street and runs to E. Oak Street. This section matches the back of sidewalk along the western side of Third Street. It consist of 5' sidewalk, curb and gutter, (2) 8' parking lanes (including the gutter) along each side of (2) 11' foot travel lanes (See Appendix A). This option eliminates the planter strip on the west side of the Third and allows the back of the new sidewalk on the east side of Third to be where the curb is currently located. Third will not be centered in the right-of-way, but this option reduces extensive retaining walls and stair adjustments along the east side at third. B2 generally matches the existing centerline of Third Street and is laid out symmetrically with 13.5' travel lane, 8' planter strip and 5' sidewalk (See Appendix A.) The horizontal curve radius between Mox Chehalis Rd and Hemlock Street was increased to allow for greater site distance and to minimize impacts to the steep slope and existing trees in the vicinity of Second Street. Main Street was realigned through the existing City owned "triangle" area to allow for greater site distance and improve safety.

The proposed profile of Third Street will generally match the existing road. For the property owners on either side of Third Street the change of grade at their property line should be minimal. The final design will reduce the elevation differences between the right-of-way and the abutting properties.

Design Standards

The 30% design has been designed to the references listed in the "design references" section of this report. At this time there have been no identified design deviations. It should be noted that the curve for realignment of Main Street is designed to a 25 MPH standard because it is a stop condition. (See Appendix B)

Second Street

The sight distance at the intersection of Third Street and Second Street does not currently meet standards. The 30% design will meet the 35 MPH city design standards for site distance . As part of the 30% design process a cul-da-sac and hammerhead were also evaluated. It was determined that without additional right-of-way neither of these options would allow the City's firetruck to be able successfully turn around.

There is an outstanding design decision on whether to keep Second Street closed or to open it and allow one way traffic.

Stormwater

There are three Threshold Discharge Areas (TDA) on this project. Minimum requirements 1-5 of the Western Washington Stormwater Manual are required to be met for each TDA. TDA 3, which is located along the Main Street realignment, may require meeting minimum requirement 6, treatment. If treatment is required we will look at locating a bioinfiltration facility on one or both sides of new Main

Street alignment. If that option is not feasible, we would then recommend a standard Filterra unit to meet minimum requirement 6.

Waterline

The current watermain along the west side of Third Street is asbestos cement and undersized, This line will be replaced by a 10 inch ductile iron or PVC line. To avoid conflicting with the existing watermain, the new watermain will be located under the parking lane on the east side of Third Street.

It is the City's preference to keep the new hydrants located in approximately the same locations as they are now. The distance from the mainline to the hydrants on Hemlock and W. Oak are approximately 35', the City's code requires that hydrants be located within 17' of the mainline. This variance was approved by The City.

Sanitary Sewer

As part of the scope of this project, the existing sanitary sewerline was to be extended northerly from the existing cleanout on the east side of Third Street to serve additional parcels near/along East hemlock street. Service would also have been extended from the manhole near McCleary School easterly along Main and Third Streets to serve four parcels in the southwest corner of Mox Chehalis and Third Street Intersections.

City deleted the scope to extend the sewer line to E. Hemlock. Upon investigating the invert elevation at the manhole near the McCleary School and the finished floor elevation at the four parcels where service was proposed a gravity line was not feasible. The City deleted the sewer extension from the scope of this project.

Retaining Walls

The existing retaining rockery wall along Third Street north of Hemlock is to be replaced. The existing rockery wall impairs sight distance for travel west bound on Hemlock approaching Third. A new retaining wall is to be designed and located to improve the limited sight distance. The type and finish of the wall will be determined by the City based on feedback from the open house.

List of Permits

The following permits are anticipated to be required for this project:
ESA Section 7 Permit
Determination of Non-Significance
Documented Categorical Exclusion

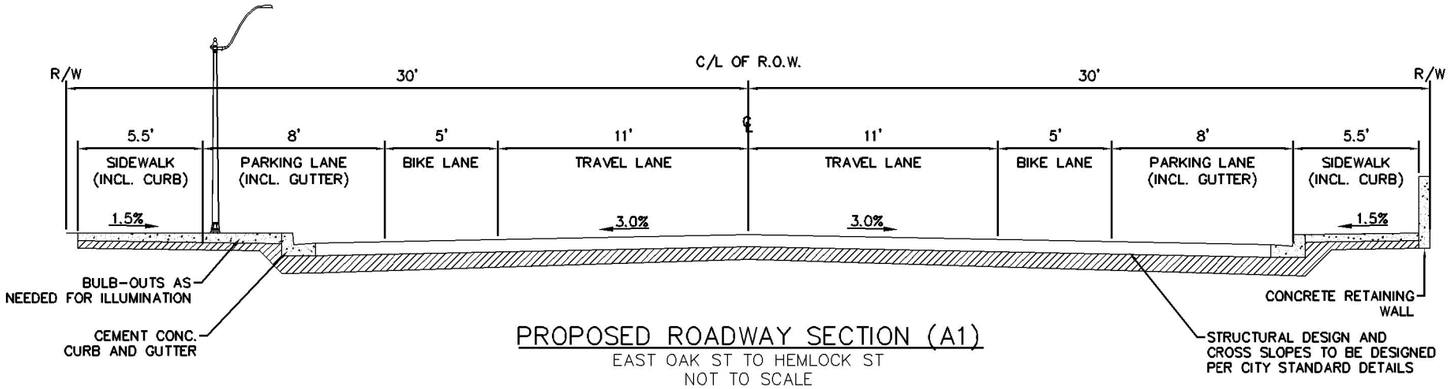
Cost Estimate

The 30% cost estimate is approximately 2.5 million. This is a reduction in estimated cost from the grant application estimate of approximately 700,000 dollars. The cost reduction is due to the assumption that 2 gravity block walls can be used instead of a solider pile wall at E. Hemlock Street and Third Street. And the elimination of the gravity block wall in the vicinity of Second Street.

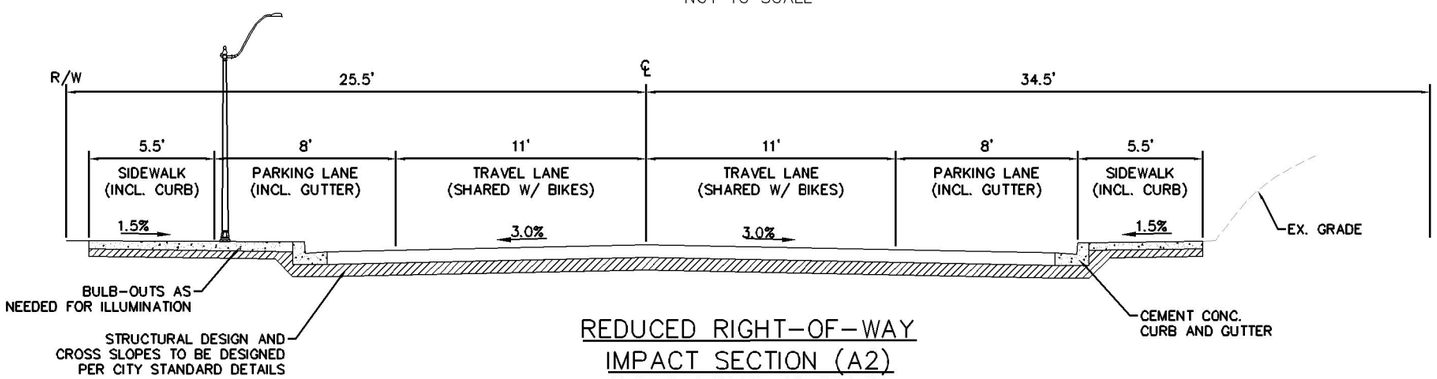
APPENDIX A

Selected Roadway Sections

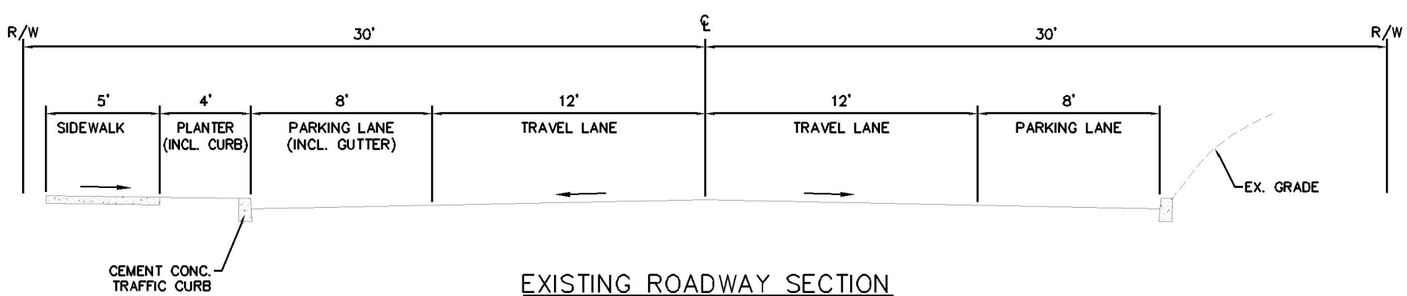
ROADWAY SECTION GROUP A



PROPOSED ROADWAY SECTION (A1)
EAST OAK ST TO HEMLOCK ST
NOT TO SCALE



REDUCED RIGHT-OF-WAY IMPACT SECTION (A2)
EAST OAK ST TO HEMLOCK ST
NOT TO SCALE



EXISTING ROADWAY SECTION (HEMLOCK TO OAK)
NOT TO SCALE

ADDITIONAL COMMUNITY IMPACTS FOR PROPOSED ROADWAY SECTION A1

RIGHT-OF-WAY CONSIDERATIONS
- ACQUIRE MORE RIGHT-OF-WAY.
- ADDITIONAL TIME TO COMPLETE THE REAL ESTATE PROCESS DUE TO INCREASED NUMBER OF EFFECTED PROPERTIES.
- INCREASED ACQUISITION COST DUE TO THE INCREASED NUMBER OF EFFECTED PROPERTIES.
- ADDED PROJECT RISK FOR REAL ESTATE (i.e. CONDEMNATION, PROPERTY SPECIFIC REQUESTS)

ROADWAY ACCESS
- REPLACE AND UPGRADE EXISTING STAIRS TO MEET CURRENT ADA STANDARDS
- DRIVEWAY CONNECTIONS WILL INCREASE IN COMPLEXITY
- PROPERTY OWNERS MAY BE UNHAPPY WITH STEEPER DRIVEWAYS
- ADDITIONAL DESIGN TIME AND COST FOR DRIVEWAYS
- ADDITIONAL CONSTRUCTION COSTS

RETAINING WALLS
- SEVERAL ADDITIONAL SMALL RETAINING WALLS
- CURRENTLY PROGRAMMED WALL WILL INCREASE IN HEIGHT
- FALL PROTECTION WILL BE REQUIRED IN MORE AREAS
- ADDITIONAL CONSTRUCTION TIME AND SCHEDULE RISK FOR CONSTRUCTION

STORMWATER
- ADDITIONAL IMPERVIOUS SURFACES WILL REQUIRE MORE STORAGE AND TREATMENT
- THE PROJECT WILL RECEIVE ADDITIONAL STORMWATER FROM PRIVATE RESIDENCES

OTHER ITEMS TO CONSIDER
- BICYCLE AND PEDESTRIAN SAFETY
- COMMUNITY EXPECTATIONS
- PROJECT FUNDING
- OVERALL INCREASED PROJECT SCHEDULE, COST AND RISK FOR ALL PHASES (DESIGN, RIGHT-OF-WAY, AND CONSTRUCTION)

	DATE	REVISIONS		
DESIGNED BY: T. HORTON	8/14/14	NO.	DATE	
ENTERED BY: J. BECKER	8/14/14			
CHECKED BY:				
PROJ. ENGR.: J. BRUHN	8/14/14			

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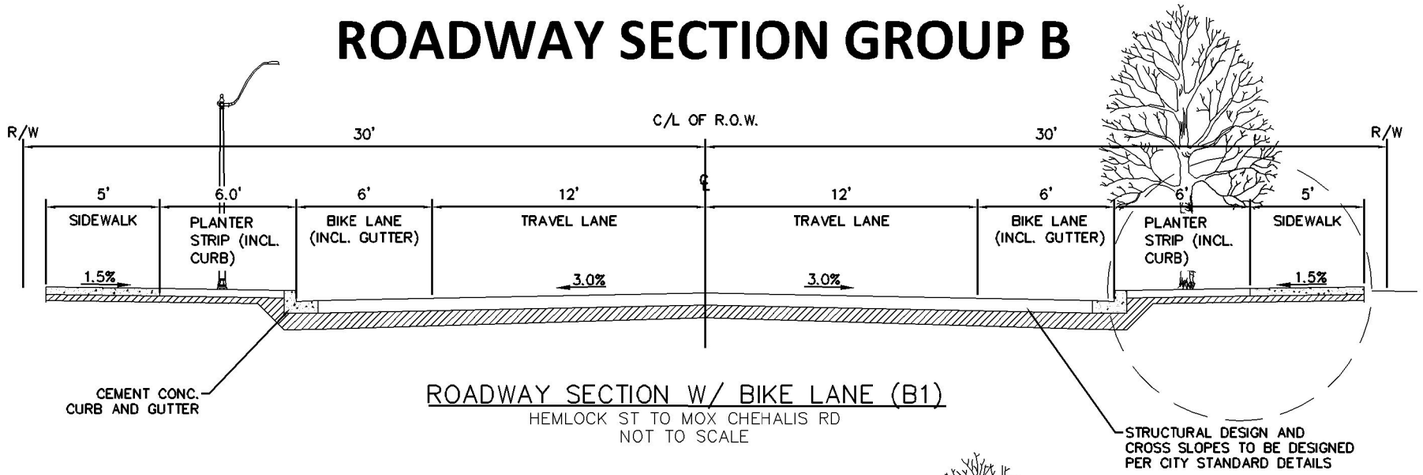
3RD STREET IMPROVEMENT PROJECT
CITY OF MCCLEARY
MCCLEARY WASHINGTON

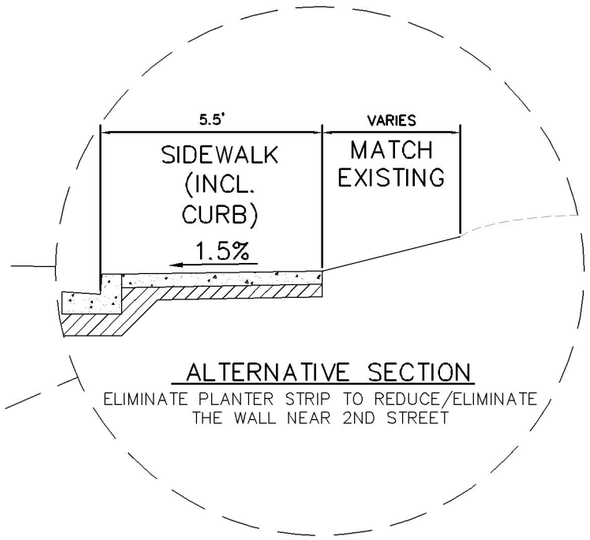
ROADWAY SECTION A
EAST OAK TO HEMLOCK ST

JOB NUMBER 14044

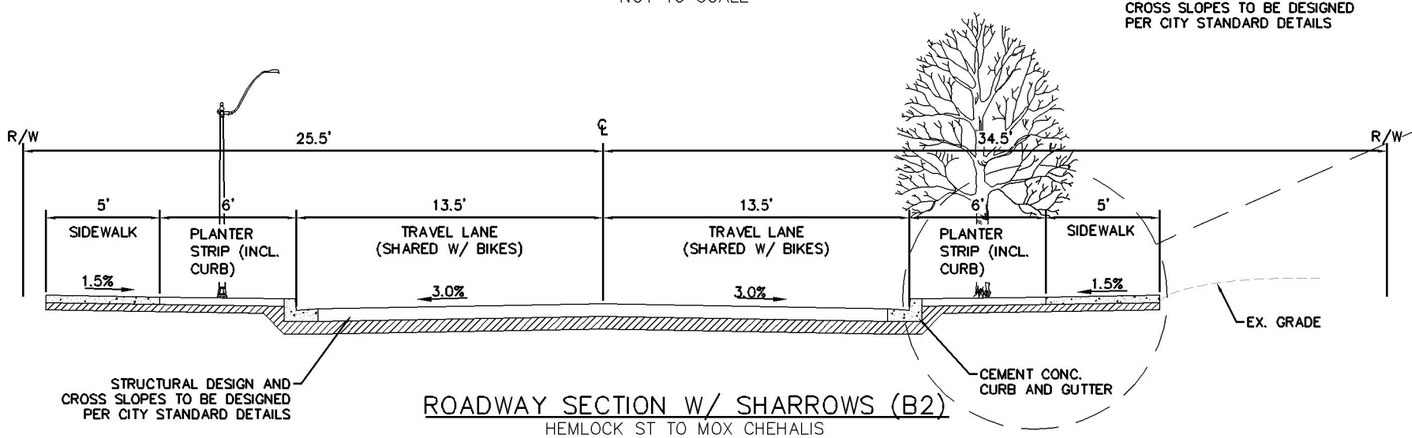
ROADWAY SECTION GROUP B



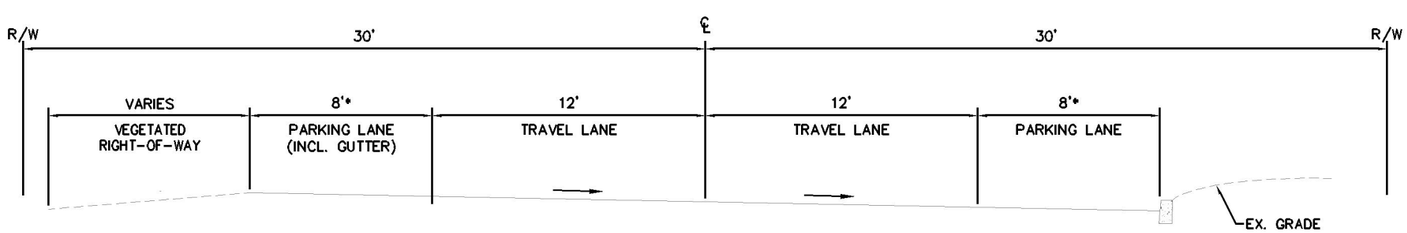
ROADWAY SECTION W/ BIKE LANE (B1)
HEMLOCK ST TO MOX CHEHALIS RD
NOT TO SCALE



ALTERNATIVE SECTION
ELIMINATE PLANTER STRIP TO REDUCE/ELIMINATE THE WALL NEAR 2ND STREET



ROADWAY SECTION W/ SHARROWS (B2)
HEMLOCK ST TO MOX CHEHALIS
NOT TO SCALE



EXISTING ROADWAY SECTION
(HEMLOCK TO MOX CHEHALIS)
NOT TO SCALE
*SHOULDER WIDTH IS 2' BETWEEN MAIN STREET AND MOX CHEHALIS RD

ADDITIONAL COMMUNITY IMPACTS FOR PROPOSED ROADWAY SECTION WITH BIKE LANE (B1)

RIGHT-OF-WAY CONSIDERATIONS
- POSSIBLE RIGHT-OF-WAY ACQUISITION FOR WALL CONSTRUCTION.
- ADDITIONAL TIME TO COMPLETE THE REAL ESTATE PROCESS.
- INCREASED ACQUISITION COST.
- ADDED PROJECT RISK FOR REAL ESTATE (i.e. CONDEMNATION, PROPERTY SPECIFIC REQUESTS)

RETAINING WALLS
- A RETAINING WALL WILL BE REQUIRED TO PROVIDE ADEQUATE SIGHT DISTANCE FOR 2ND STREET
- FALL PROTECTION MAY BE REQUIRED
- ADDITIONAL CONSTRUCTION TIME AND SCHEDULE RISK FOR CONSTRUCTION

STORMWATER
- ADDITIONAL IMPERVIOUS SURFACES WILL REQUIRE MORE STORAGE AND TREATMENT

OTHER ITEMS TO CONSIDER
- BICYCLE AND PEDESTRIAN SAFETY
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3RD STREET IMPROVEMENT PROJECT
CITY OF MCCLEARY
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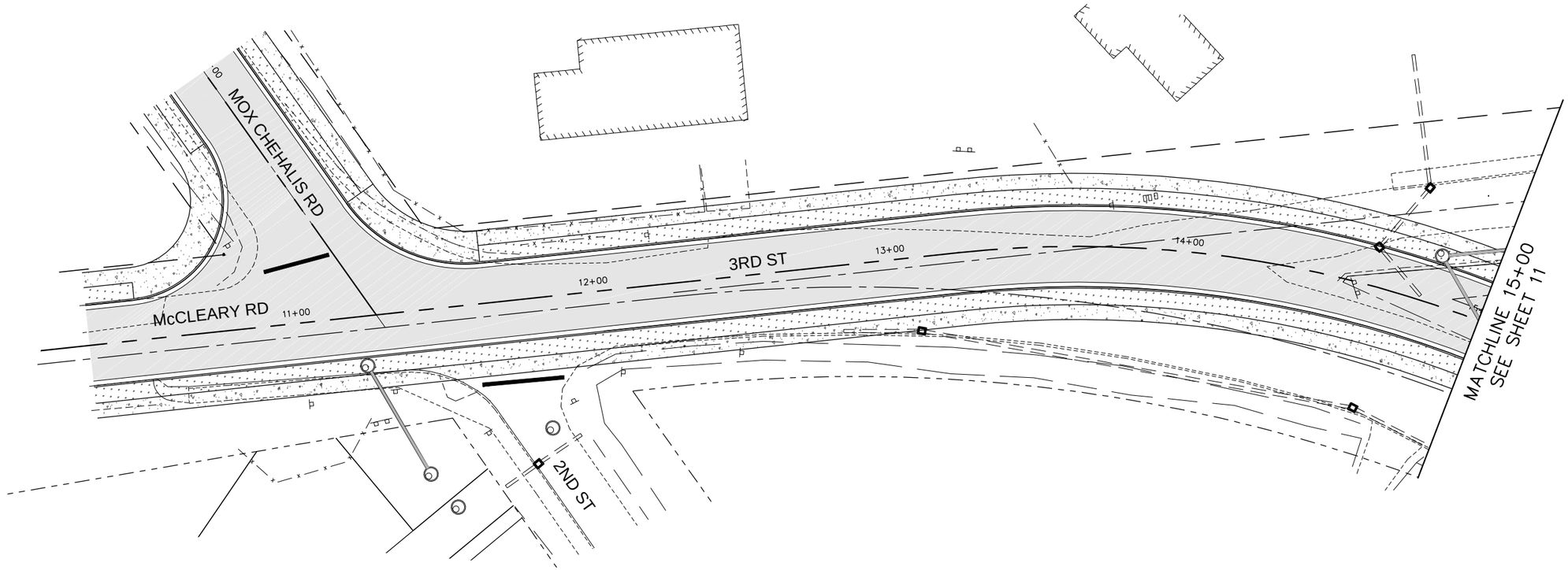
ROADWAY SECTION B
HEMLOCK ST TO MOX CHEHALIS ROAD

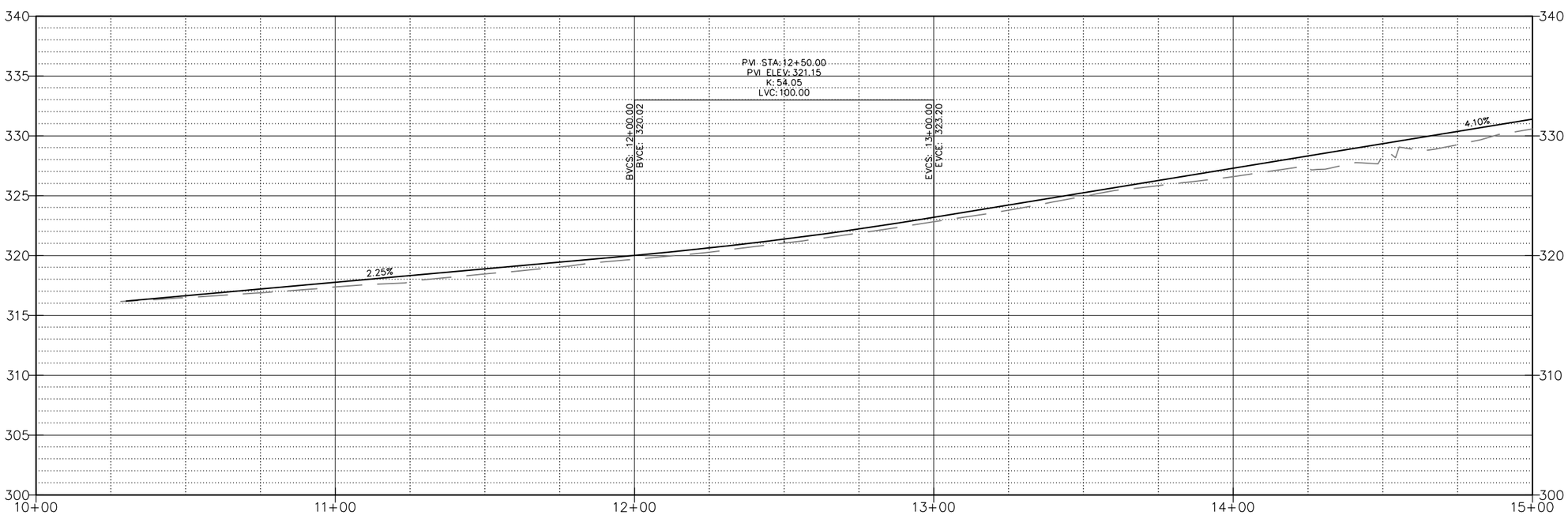
JOB NUMBER 14044

SHEET 1 OF 3 SHEETS

APPENDIX B

30% Plan and Profile Sheets





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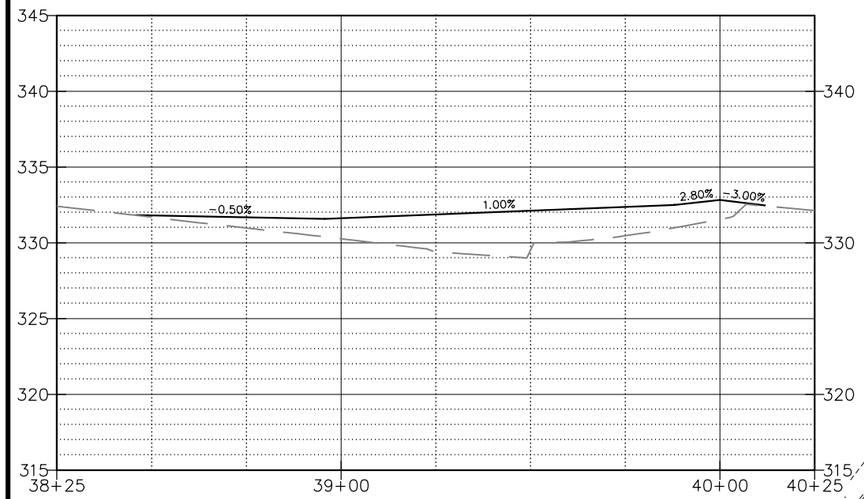
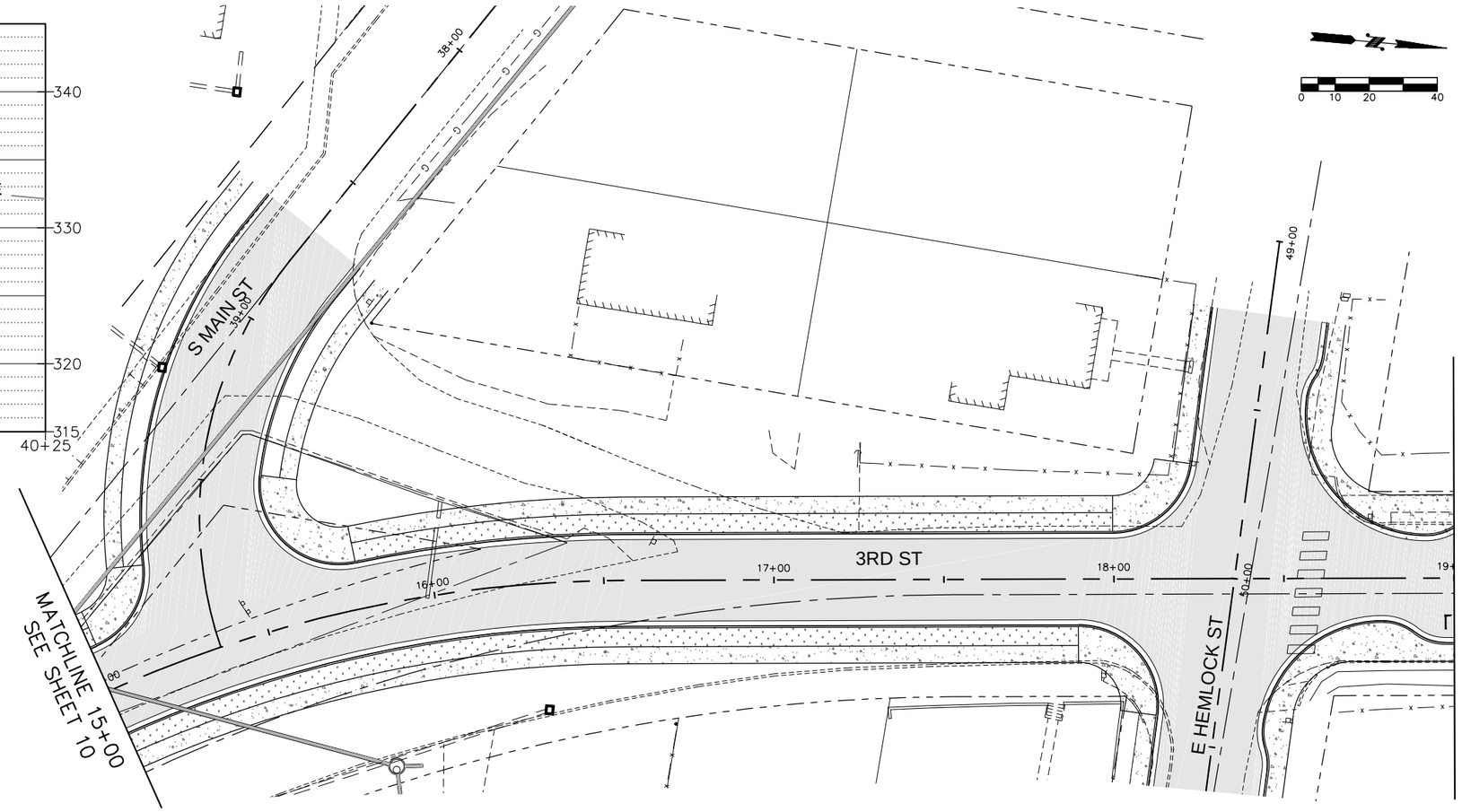
3RD STREET IMPROVEMENTS

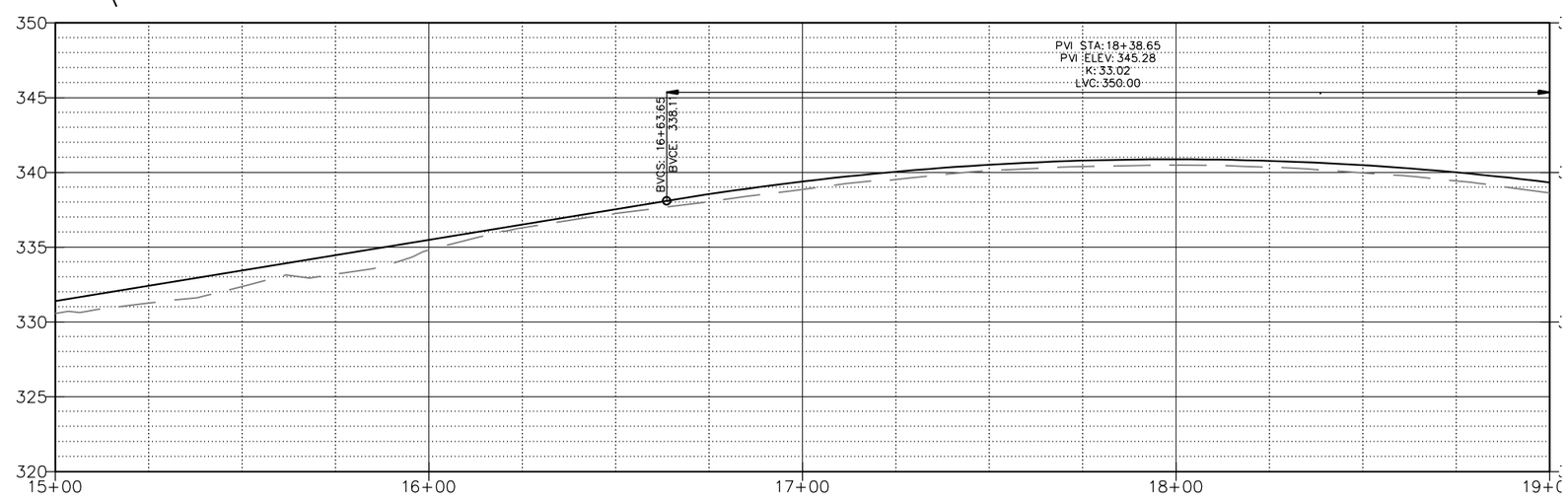
McCLEARY WA

ROADWAY PLAN AND PROFILE

JOB 14







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3RD STREET IMPROVEMENTS

McCLEARY WA

ROADWAY PLAN AND PROFILE

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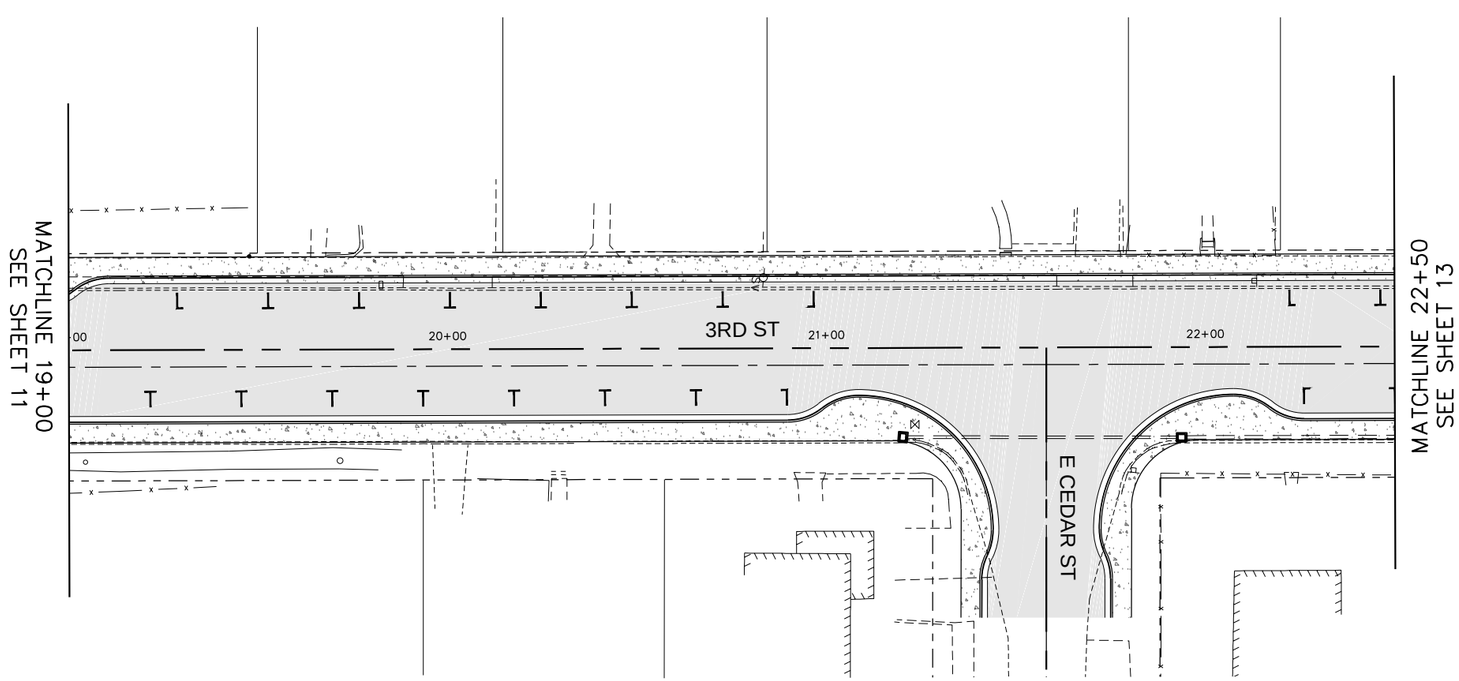

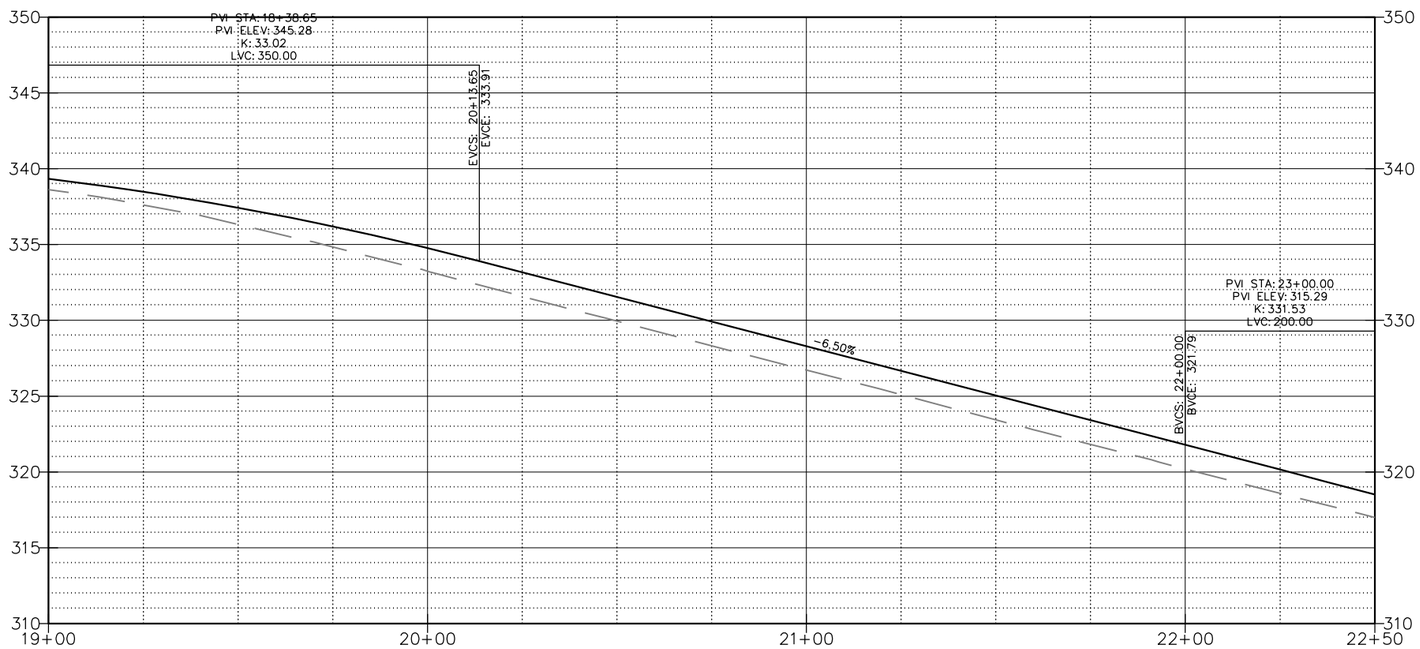

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McCLEARY WA

ROADWAY PLAN AND PROFILE

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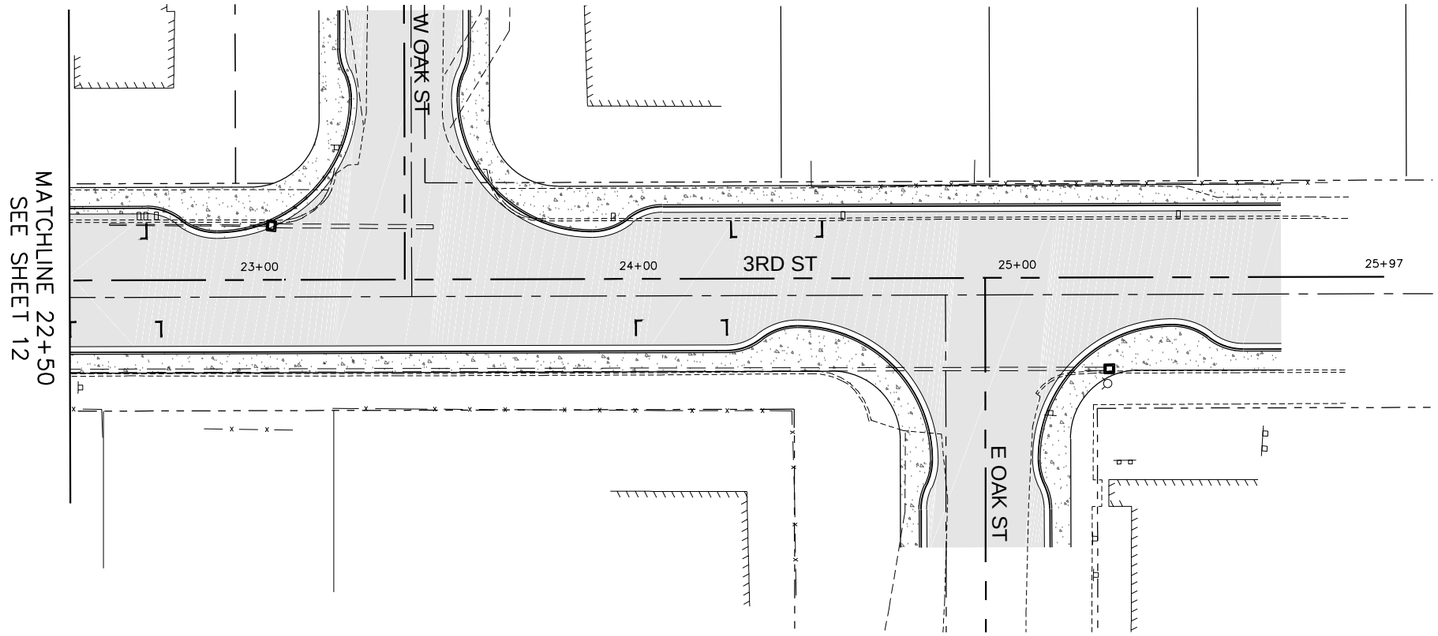

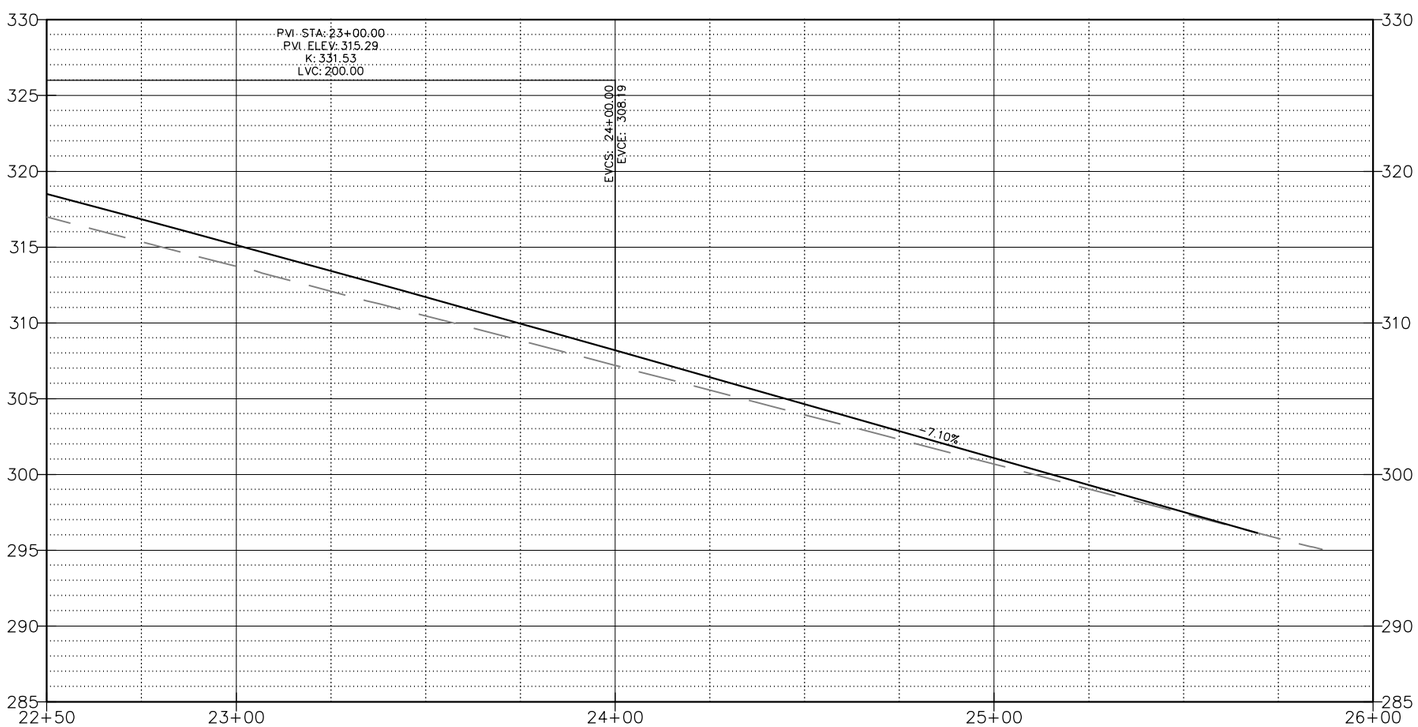

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3RD STREET IMPROVEMENTS

McCLEARY WA

ROADWAY PLAN AND PROFILE

JOB 14

APPENDIX C

Designer Notes

Third Street Improvements
Designer Notes

Road Category

3rd Street and Mox Chehalis Rd. are designated Rural Major Collector by WSDOT.

S. Main St., E. Hemlock St., E. Cedar St., W Oak St. and E. Oak St. are assumed to be Residential Streets (120 plus DU), because of the Right of Way being 60 feet (City of McCleary Public Roadway Cross Section Standard Detail 110.1).

Design Speed

Design speed for 3rd Street and Mox Chehalis Rd is 35 MPH, from "Table 100-2: Roadway Geometric Design Criteria", City of McCleary Standards, pg. 24.

Design speed for S. Main St., E. Hemlock St., E. Cedar St., W Oak St. and E. Oak St. are 35 MPH. "Table 100-2: Roadway Geometric Design Criteria", City of McCleary Standards, pg. 24.

S. Main St. realignment 25 MPH, see description in Horizontal Curves.

Horizontal Curves

For the horizontal curve on 3rd Street, minimum radius of 371 feet for a 4% super elevation (Table 3-7, AASHTO "Green Book," 2011, 6th ed.), used radius is 375 feet.

The proposed curve is to create more sight distance for vehicles stopped at the Mox Chehalis Rd and 3rd street intersection and S. Main St. and 3rd St. intersection.

S. Main St. curves to intersect with 3rd St. at a 90 degree angle. The proposed curve has a 200 foot radius to make the 90 degree angle with 3rd Street; a larger radius will not fit within the Right-of-Way. This radius is designed for 25 MPH with no super elevation ("Table 3-13b. Minimum Radii and Superelevation for Low-Speed Urban Streets", AASHTO "Green Book" 2011, 6th Ed.). The curve is at a stop condition, assuming vehicles will be reducing speed as they approach the stop condition and slowing down to 17 to 18 MPH as they approach the curve, this allows for use of a 25 MPH design.

Vertical Curve

Vertical curves on 3rd Street, the minimum K value is 49 for a sag curve (Table 3-36, AASHTO "Green Book," 2011, 6th ed.). The minimum K value is 29 for a crest curve (Table 3-34, AASHTO "Green Book," 2011, 6th ed.).

Road Sections

The road section for 3rd Street has two different sections. North of E. Hemlock St the road section includes an 11 foot travel lane, 8 foot parking, and a 5.5 foot sidewalk. At intersections there are bulb outs.

South of E. Hemlock St the road sections is a 13.5 foot travel lane, 6 foot planter strip and a 5 foot walk. There are no bulb outs for this section of road. The road section will also be used for Mox Chehalis Rd as it is the same designation as 3rd St.

S. Main St., E. Hemlock St., E. Cedar St., W Oak St. and E. Oak St. the road section from City of McCleary Public Roadway Cross Section Standard Detail 110.1 was used. Matching existing road section where possible.

Intersections

Standard intersection radius is 35 feet for collectors and arterial streets and 25 feet for residential streets (Section "101.9 Curb and Gutter", City of McCleary Development Standards, pg. 12, 2007).

Bulb outs have a radius of 35 feet (City of McCleary Traffic bulb with Curb Ramp Type A-1 Standard Detail 116.3 & Type A-2 standard Detail 116.4).

After a meeting with Todd from the City of McCleary on October 6th, 2014, he gave verbal permission to deviate from the standard plans for bulb outs. The standard plane called for 7 foot and 9 foot radii for tying into the 35 foot radius going around the intersection (City of McCleary Traffic bulb with Curb Ramp Type A-1 Standard Detail 116.3 & Type A-2 standard Detail 116.4), it has been experienced a 15 foot radius works better with the standard WSDOT street sweepers to reach into the corners of the bulb outs.

3rd Street and Mox Chehalis Rd the radius used at intersection are 35 feet on the west side of intersection and 50 feet on east side of intersection. The 50 foot radius used because of the angle at the intersection.

The intersections of S. Main St. and the south side of E. Hemlock St with 3rd St. the radius is 25 feet.

The intersections of north side E. Hemlock St., E. Cedar St., W Oak St. and E. Oak St. with 3rd St. are all bulb outs. The radii are 35 feet.

Road Modeling

The depth of pavement of 4 inches per City of McCleary Public Roadway Cross Section Standard Detail 110.1, no sub-base as it is assumed that the existing road will be rubbled in place and used as sub-base.

Tying into existing ground at a 4:1 slope.

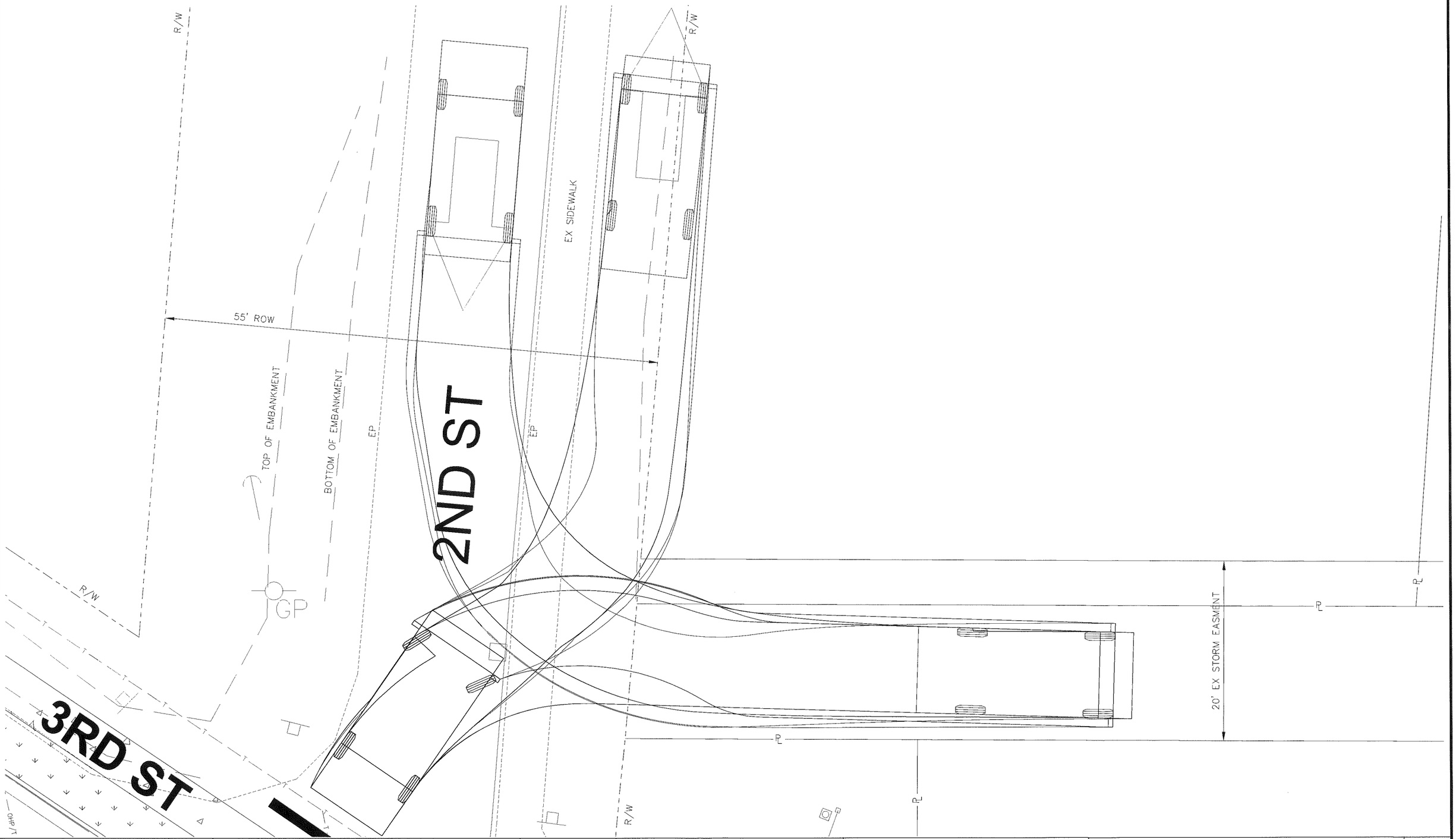
HWA will provide roadwork section for 60% design.

Fire Truck Turn Around on 2nd St.

2nd Street was evaluated to for the feasibility of a fire truck being able to turn around with the closure of 2nd Street at the intersection of 3rd Street.

A hammer head was evaluated to have the fire truck turn around. It was found to have not enough room with the Right of Way and the earth embankment on the west side of 2nd St.

The Storm Easement access road located on the east side of 2nd Street near the intersection with 3rd Street was evaluated as a possible fire truck turn around location. It was found that there was not enough room to back out and would end up on 3rd Street or backing into the earth embankment on the west side of 2nd Street. See attached.



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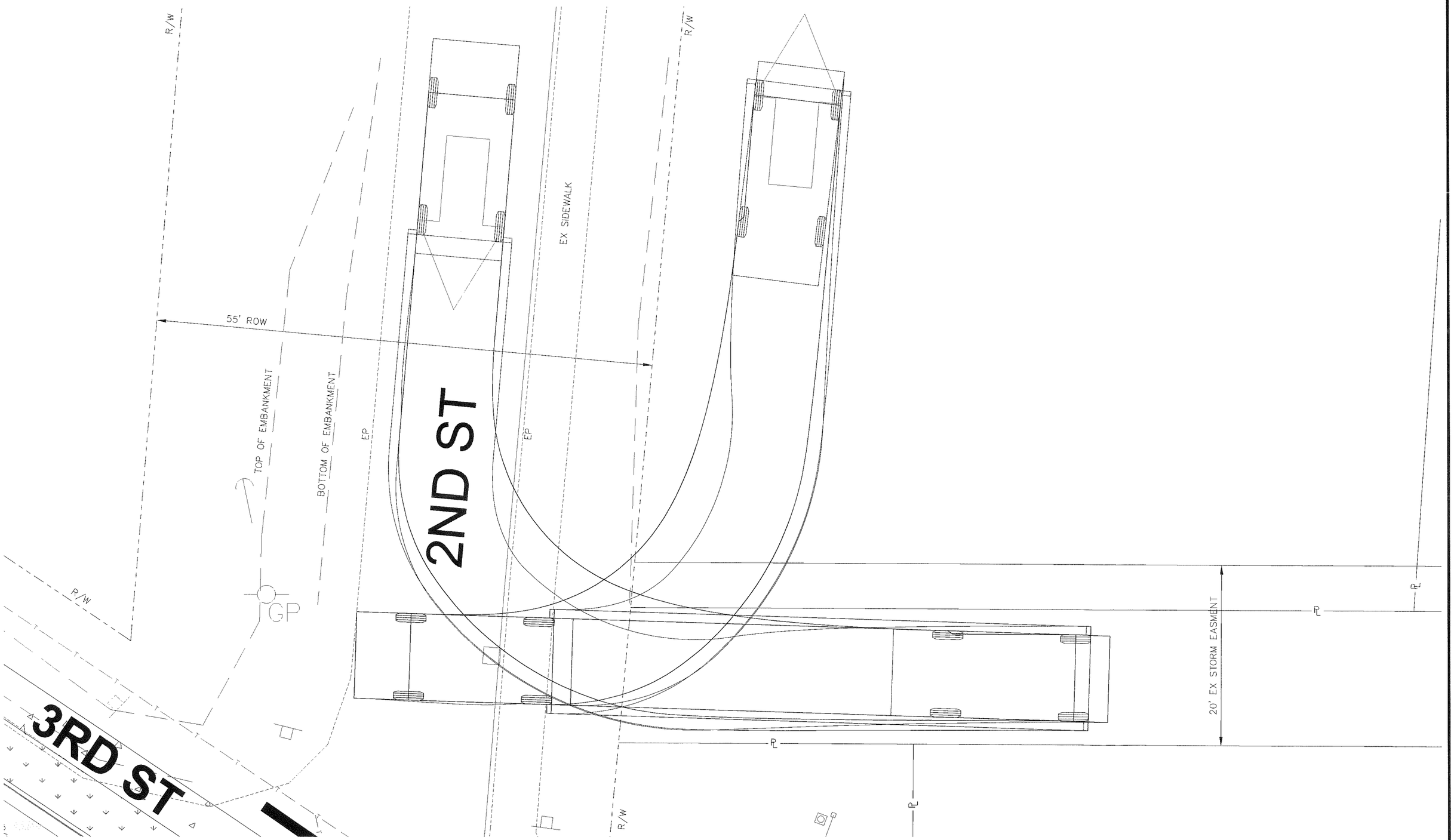
CITY OF McCLEARY
3RD STREET IMPROVEMENTS

FIRE TRUCK TURN AROUND
OPTION 1
STORM POND EASEMENT

JOB NUMBER 14044

SHEET 1 OF 2 SHEETS



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CITY OF McCLEARY
3RD STREET IMPROVEMENTS

FIRE TRUCK TURN AROUND
OPTION 2
STORM POND EASEMENT

JOB NUMBER 14044

SHEET 2 OF 2 SHEETS

Project Design Criteria
3rd Street

Minor Arterial

This checklist is to confirm interpretation of standards. Your project may require that additional/different/or fewer Design Elements be addressed.

Design Class	Rural Major Collector by WSDOT
Functional Class	
Design Year	2035 (Project Scope)
Design Vehicle	Single unit Truck 40, SU 40 AASHTO 2011 Table 2-1, pg 2-4
Design Speed	35 MPH Table 100-2 City Standards pg 24 (DEC 2012)
Posted Speed	25 MPH Observed
ADT	
Truck Percentage	
Right of Way Width	
Terrain	
Access Control	

DESIGN ELEMENT	**Design Level (B/M/F)**	**Standard**	**Dev. EU or DE**	***REFERENCE & DATE / COMMENTS***
Horizontal Alignment				
Stopping Sight Distance		250		
Max. Superelevation		N/A		Super elevations not Allowed, City Standards Table 100-2, pg 24 (DEC 2012)
Vertical Alignment				
Maximum Grade		10%		City Standards Table 100-2, pg 24 (DEC 2012)
Minimum Grade		0.5%		City Standards Table 100-2, pg 24 (DEC 2012)
Stopping Sight Distance		± 3%		DM Exhibit 1260-1, For grades Greater than ± 3% See DM Exhibit 1260-2,3,4,5,6,7,8 (Jun-09)
Passing Sight Distance		1280		DM Exhibit 1260-14 (Jun-09)
Decision Sight Distance		720		DM Exhibit 1260-16, (Urban speed/path/direction Change) (Jun-09)
Lane Width				
Number of Lanes	F	2		
Lane Width	F	11’		
Turning Roadway Width	F	12’		City Standards Table 100-2, pg 24 (DEC 2012)

DESIGN ELEMENT	**Design Level (B/M/F)**	**Standard**	**Dev. EU or DE**	***REFERENCE & DATE / COMMENTS***
Shoulder Width				
Shoulder Width-Left	F	N/A		Two Lane Road
Shoulder Width-Right	F	8’		Parking
Lane Transition				
Channelization Tapers	F	25:1		DM 1210.07 (1) (a) (Jun-09)
Reduce The # of Lanes	F	$L = \frac{WV^2}{60}$		City Standards 101.16 Roadway widening pg 14
On/Off Conn.	F	N/A		
Median Width	F	N/A		
Cross Slope Lane	F	3%		City Standards Table 100-2, pg 24 (DEC 2012)
Cross Slope Shoulder	F	3%		Match Lane Cross Slope DM 1230.04 (3) (Jun-09)
Fill/Ditch Slopes				
Fill Slopes	F	Varies		Roadside design guide section 3.3
Ditch In-slopes	F	Varies		Roadside design guide section 3.3
Access	F	Managed		
Clear Zone	F	7-10’		Roadside Design Guide Table 3-1, pg 3-3
Sign, Del., Illumin.	F			City Standards 102
Basic Safety	N/A			
Bike	F	5’		DM Exhibit 1140-3 Note [3] (Dec-09), DM Exhibit 1520-5 (Jul-10)
Ped	F	5’		City Standards 101.8 Single family Residential
Intersections 2nd ST/Mox Chehalis RD				City Standards 101.4.3 Intersection Geometry pg 11 Assumed: 2nd ST/Mox Chehalis is Collector/Arterial

DESIGN ELEMENT	**Design Level (B/M/F)**	**Standard**	**Dev. EU or DE**	***REFERENCE & DATE / COMMENTS***
Turn Radii				
Intersection Radii - Left	F	35’		City Standards 101.9 Curb and Gutter pg 12
Intersection Radii - Right	F	35’		City Standards 101.9 Curb and Gutter pg 12
Angle	F	75^ to 105^		DM 1310.05 (2) (Jul-10), Intersections Between 60^ and 120^ may remain in place existing intersection is 119.8^
I/S Sight Distance	F	300’ Left 300’ Right		City Table 100-2, pg 24
Intersections Main Street				City Standards 101.4.3 Intersection Geometry pg 11 Assumed: Main Street is Residential
Turn Radii				
Intersection Radii - Left	F	25’		City Standards 101.9 Curb and Gutter pg 12
Intersection Radii - Right	F	25’		City Standards 101.9 Curb and Gutter pg 12
Angle	F	75^ to 105^		DM 1310.05 (2) (Jul-10), Intersections Between 60^ and 120^ may remain in place
I/S Sight Distance	F	300’ Left 300’ Right		City Table 100-2, pg 24
Intersections Hemlock				City Standards 101.4.3 Intersection Geometry pg 11 Assumed: Hemlock is residential
Turn Radii				
Intersection Radii - Left	F	25’		City Standards 101.9 Curb and Gutter pg 12
Intersection Radii - Right	F	25’		City Standards 101.9 Curb and Gutter pg 12
Angle	F	75^ to 105^		DM 1310.05 (2) (Jul-10), Intersections Between 60^ and 120^ may remain in place
I/S Sight Distance	F	300’ Left 300’ Right		City Table 100-2, pg 24

DESIGN ELEMENT	**Design Level (B/M/F)**	**Standard**	**Dev. EU or DE**	***REFERENCE & DATE / COMMENTS***
Intersections E Cedar ST				City Standards 101.4.3 Intersection Geometry pg 11 Assumed: Cedar is residential
Turn Radii				
Intersection Radii - Left	F	25’		City Standards 101.9 Curb and Gutter pg 12
Intersection Radii - Right	F	25’		City Standards 101.9 Curb and Gutter pg 12
Angle	F	75^ to 105^		DM 1310.05 (2) (Jul-10), Intersections Between 60^ and 120^ may remain in place
I/S Sight Distance	F	300’ Left 300’ Right		City Table 100-2, pg 24
Intersections W Oak ST				City Standards 101.4.3 Intersection Geometry pg 11 Assumed: W Oak is residential
Turn Radii				
Intersection Radii - Left	F	25’		City Standards 101.9 Curb and Gutter pg 12
Intersection Radii - Right	F	25’		City Standards 101.9 Curb and Gutter pg 12
Angle	F	75^ to 105^		DM 1310.05 (2) (Jul-10), Intersections Between 60^ and 120^ may remain in place
I/S Sight Distance	F	300’ Left 300’ Right		City Table 100-2, pg 24
Intersections E. Oak Street				City Standards 101.4.3 Intersection Geometry pg 11 Assumed: E Oak is residential
Turn Radii				
Intersection Radii - Left	F	25’		City Standards 101.9 Curb and Gutter pg 12
Intersection Radii - Right	F	25’		City Standards 101.9 Curb and Gutter pg 12
Angle	F	75^ to 105^		DM 1310.05 (2) (Jul-10), Intersections Between 60^ and 120^ may remain in place

DESIGN ELEMENT	**Design Level (B/M/F)**	**Standard**	**Dev. EU or DE**	***REFERENCE & DATE / COMMENTS***
I/S Sight Distance	F	300' Left 300' Right		City Table 100-2, pg 24
Barriers				
Terminals & Transition Sections	F			None proposed
Standard Run	F			None proposed

DM – WSDOT Design Manual
Roadside design Guide - AASHTO

APPENDIX D

Draft Stormwater Site Plan

DRAFT STORMWATER SITE PLAN

3rd Street Improvement Project

Project #14044

October 2014

City of McCleary

100 S 3rd Street
McCleary, Wa 98557

Prepared By:

SKILLINGS CONNOLLY
5016 Lacey Blvd SE, Lacey, WA 98503
(360) 491-3399 / www.skillings.com

TABLE OF CONTENTS

Project Overview 1
Existing Conditions Summary (Section 3.1.1) 1
Off-Site Analysis Report (Sections 2.6.2 & 3.1.3) 1
Minimum Requirements (Sections 2.5 & 3.1.4) 1
Permanent Stormwater Control Plan (Section 3.1.5) 3
  Existing Site Hydrology 3
  Developed Site Hydrology 4
  Performance Standards and Goals 4
  Flow Control System 4
  Water Quality System 4
  Conveyance System Analysis and Design 4
  Emergency Overflow 4
  Contingency Planning 4
Construction Stormwater Pollution Prevention Plan (Section 3.1.6) 4
Special Reports and Studies (Section 3.1.7) 4
Other Permits (Section 3.1.7) 4
Operation and Maintenance Manual (section 3.1.7) 5
Maintenance Agreement (Section 3.1.7) 5
Bond Quantities Worksheet 5

Appendices

A. Project Maps
  Vicinity Map
  Threshold Discharge Area Map
  Converted Surfaces Map
  Construction Plans

B. Water Quality Calculations
  Minimum Requirements Flow Chart

C. Supporting Data
  NRCS Soils Map
  Soils Data
  NRCS Soil Description

D. Maintenance Manuals

E. Construction Stormwater Pollution Prevention Plan (SWPPP)

Project Overview

The City of McCleary is proposing Improvements to the 3rd Street corridor from the intersections with Mox Chehalis Rd to East Oak St. This project includes the rubbelization of the existing concrete panels, realignment of the roadway, reconstruction of the roadway including intersections, new utilities, new sidewalks and bulbouts. The City has chosen the improvements to better facilitate pedestrian traffic near the McCleary School as well as improve sight distance and safety of the roadway. This project was designed using the Department of Ecology's 2012 Stormwater Management Manual for Western Washington (SWMMWW).

Existing Conditions Summary (Section 3.1.1)

The existing site of the project consists of a two lane road with parking on each shoulder. The roadway runoff is contained by curbs, which channelize the runoff in to catch basins. A sidewalk is located along the western side of the road for pedestrian traffic. Adjacent properties and side streets contribute to the stormwater runoff. The existing stormwater drainage system collects and conveys runoff to 3 separate discharge locations. These Threshold Discharge Areas (TDA) are shown on the basin map of Appendix A

The NRCS soils information for the project site consists of primarily of Olympic Clay Loam and Tebo Silt Loam. The approximate slopes of the project site are between 5 and 30 percent. Olympic Clay Loam is a type C soil and is considered well drained. Tebo Silt Loam is a type B soil and is also considered well drained. Additional soils investigations will be performed by HWA Geosciences as the project develops. See appendix D for the NRCS Soils information.

No wells, septic systems or fuel tanks were observed on the site.

Off-Site Analysis Report (Sections 2.6.2 & 3.1.3)

A site visit was conducted to determine the limits of the projects 3 TDA's and offsite flows within the project area that contribute to each TDA. These areas are illustrated in the Drainage Basin Map of Appendix A.

Minimum Requirements (Sections 2.5 & 3.1.4)

The proposed project is compromised of three TDA's. Each TDA has been analyzed separately in the following paragraphs.

TDA 1 – East Hemlock Street to the intersection with Mox Chehalis Rd.
The proposed revisions of realigning the road, adding sidewalks and improvements to intersections with both Main St and Mox Chehalis Rd include a total of approximately 20,700 square feet of new plus replaced hard surfaces. The amount of new plus replaced hard surfaces is above the 2,000 square foot threshold of section 2.4.2 of volume I, therefore minimum requirements 1-5 apply. The quantity of new hard surfaces is approximately 7,500 square feet. This is above the 5,000 square foot limit and therefore all minimum requirements apply to the new hard surfaces. The 3rd Street Improvement project is a roadway project that adds over 5,000 square feet of new hard surfaces. However, the new hard surfaces are less than 50% of the existing hard surfaces and does not trigger any additional requirements. This TDA ultimately discharges to a wetland located along the northern side of Willim McCleary Rd, just east of the project limits.

TDA 2 – East Hemlock Street to East Oak Street.
The proposed revisions of reconstructing the road, adding sidewalks and pedestrian improvements a total of approximately 38,510 square feet of new plus replaced hard surfaces are included within the TDA. The amount of new plus replaced hard surfaces is above the 2,000 square foot threshold of section 2.4.2 of volume I, therefore minimum requirements 1-5 apply. The quantity of new hard surfaces is approximately 5,500 square feet. This is above the 5,000 square foot limit and therefore all minimum requirements apply to the new hard surfaces. The 3rd Street Improvement project is a roadway project that adds over 5,000 square feet of new hard surfaces. However, the new hard surfaces are less than 50% of the existing hard surfaces and does not trigger any additional requirements. The TDA will discharge into the existing storm sewer, which ultimatel is conveyed to the ditch along W Maple Street.

TDA 3 - Southwest corner of project along Main Street near McCleary School.
The proposed revisions of realigning Main Street, adding sidewalks and pedestrian improvements a total of approximately 15,730 square feet of new plus replaced hard surfaces are included within the TDA. The amount of new plus replaced hard surfaces is above the 2,000 square foot threshold of section 2.4.2 of volume I, therefore minimum requirements 1-5 apply. The quantity of new hard surfaces is approximately 5,950 square feet. This is above the 5,000 square foot limit and therefore all minimum requirements apply to the new hard surfaces. The 3rd Street Improvement project is a roadway project that adds over 5,000 square feet of new hard surfaces. However, the new hard surfaces are less than 50% of the existing hard surfaces and does not trigger any additional requirements. This TDA is within the contributory area of the McCleary Schools storm sewer system.

Minimum Requirement #1
Preparation of Stormwater Site Plans:
Minimum Requirement number one is addressed by this Stormwater Site Plan and the contents contained within.

Minimum Requirement #2
Construction Stormwater Pollution Prevention Plan (SWPPP):
A SWPPP will be prepared for the 90% submittal

Minimum Requirement #3
Source Control of Pollution:
A project Specific Source Control Plan is not required. Source control will be applied within the roadways right of way to the post construction site and shall be consistent with the City's Stormwater Management Program.

Minimum Requirement #4
Preservation of Natural Drainage Systems and Outfalls:
The existing stormwater generated from the roadway will continue to be contained by curb and conveyed through catch basins and storm sewer pipe to the existing outfalls. The reconstruction of the stormsewer system will not change the natural drainage system of the site.

Minimum Requirements #5

Onsite Stormwater Management, including Easements and Setbacks:

The stormwater generated by the site including offsite flows as delineated in the basin map will be collected and conveyed through the new storm sewer system. Post-Construction Soil Quality and Depth, BMP T5.13, will be utilized and place compost amended soils on all disturbed pervious surfaces to retain stormwater infiltration functions in the post developed landscape. As well as provide increased treatment of pollutants and sediments that result from development and habitation. All easements and setbacks will be verified as the design progresses.

Minimum Requirement #6

Runoff Treatment:

TDA's 1 and 2 add less than 5,000 square feet each of new Pollution Generating Impervious Surface (PGIS). Per the thresholds defined in section 2.5.6 projects in which the total of new PGIS is less than 5,000 square feet per TDA, runoff treatment is not required.

TDA 3 has approximately 4900 square feet of new PGIS. This is less than the threshold of 5,000 square feet, but due to the preliminary nature of the design it is being planned that runoff treatment will be required. This conservative assumption will be revised as the design progresses.

Minimum Requirement #7

Flow Control:

The flow control thresholds as defined in section 2.5.7 applied to the hard surfaces that are subject to the minimum requirements determines that flow control will not need to be provided. TDA's 1, 2 and 3 contain approximately 7,500, 5,500 and 5,950 square feet of hard surfaces subject to minimum requirement Number 7. These quantities are less than the 10,000 square foot threshold and therefore flow control will not be required.

Minimum Requirement #8

Wetland Protection:

TDA #1 discharges to a wetland located along the northern side of William McCleary Road, just east of the project limits. Per section 2.5.8, The thresholds identified in Minimum Requirment #6 – Runoff Treatment, and Minimum Requirement #7 – Flow Control shall also be applied to determine the applicability of this requirement to discharge to wetlands. Minimum Requirements 6 and 7 are not applicable to TDA #1. Therefore the wetland protection requirements detailed in appendix I-D do not apply.

Minimum Requirement #9

Operations and Maintenance:

An Operations and Maintenance Manual will be completed for the proposed stormwater BMP's that are selected as the design progresses.

Permanent Stormwater Control Plan (Section 3.1.5)

Existing Site Hydrology

The existing site hydrology consists of three TDA's where the runoff generated by the roadway, sidewalks and adjacent properties collects against the curb of the roadway. Existing catch basins intercept the gutter flow and convey it through the existing storm sewer system to the different outfalls. Please see the Basin Map for areas contributing to each inlet.

Developed Site Hydrology

The developed site hydrology will remain very similar to the existing site hydrology. TDA number 1 will contain new impervious surfaces from the addition of new sidewalks as well as new PGIS from the re-alignment of the roadway. The outfall of the new storm sewer system will remain in the same location. TDA number 2 will contain new impervious surfaces from new and replaced sidewalks. The new storm sewer system will connect to the existing system at the northern limits of the project. TDA number 3 contains new impervious surfaces from the new and replaced sidewalk. This TDA also has approximately 4,900 square feet of new PGIS from the re-alignment of Main St to improve the intersection site distance.

Performance Standards and Goals

The Performance standard for the water quality treatment is to provide basic treatment where runoff treatment is required. The goal of basic treatment is to reduce the total suspended solids by approximately 80%. Basic treatment is being provided due to an assumed ADT of less than 7,500.

Flow Control System

Flow control is not required as shown above per the thresholds of volume 1, section 2.4.2 of the SWMMWW. The project adds less than 10,000 square feet of new impervious surfaces in each TDA and therefore flow control is not required.

Water Quality System

As shown in the minimum requirements above, water quality treatment is only anticipated to be required for TDA number 3. TDA's 1 and 2 add less than 5,000 square feet of new PGIS and therefore do not require runoff treatment. The water quality system has not been selected at this stage in the design process. Factors that will influence the selection will be if infiltration is practicable, available space, topography of selected location and input from the City of McCleary on desired type of maintenance. Possible treatment facilities are sand filters, bioretention areas, media filter drains or other emerging technologies.

Conveyance System Analysis and Design

Conveyance sizing and design has been performed at this stage in the design. The existing stormwater system consists of catch basins 8 and 12 inch pipes. It is anticipated that the proposed system will consist of 12 inch pipes. The conveyance design will be performed using Autodesk Storm and Sanitary.

Emergency Overflow

Emergency overflow design has not been performed. This will be completed upon selection of the treatment facility.

Contingency Planning

A contingency plan is not applicable to this project. Contingency plans are only applicable to flow control facilities. No flow control facilities will be included in this project.

Construction Stormwater Pollution Prevention Plan (Section 3.1.6)

A SWPPP will be provided at the 90% design phase (See appendix E).

Special Reports and Studies (Section 3.1.7)

A geotechnical report will be performed for this project. This report will include site investigation for wall design, pavement section and the applicability of infiltration. This report will be included as an attachment upon its completion.

Other Permits (Section 3.1.7)

Applicable permits to be determined

Operation and Maintenance Manual (section 3.1.7)

An operations and maintenance manual will be provided upon the selection of a treatment system.

Maintenance Agreement (Section 3.1.7)

A maintenance agreement will be provided if necessary. It is assumed that City staff will provide the required maintenance and therefore an agreement will not be applicable.

Bond Quantities Worksheet

Bond Quantities worksheets are not applicable for City owned projects.

APPENDIX A - Project Maps

Vicinity Map
Threshold Discharge Area Map
Converted surfaces Map
Construction Plans

SKILLINGS CONNOLLY

VICINITY MAP

	DATE	REVISIONS		
DESIGNED BY: J. BECKER	8/15/2014	NO.	DATE	
ENTERED BY: J.BECKER	8/15/2014			
CHECKED BY:				
PROJ. ENGR.: G. SMITH	8/15/2014			

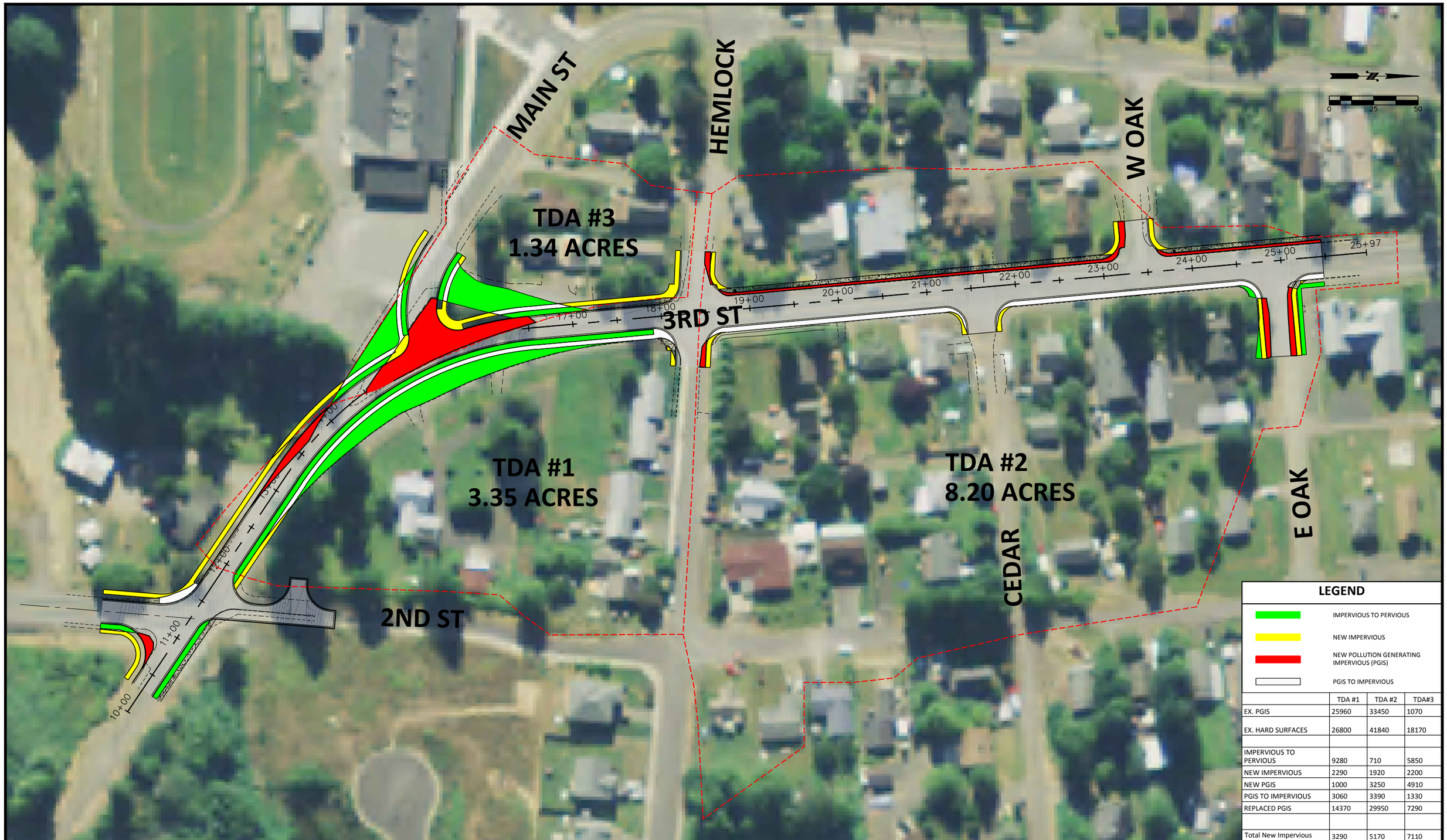
SKILLINGS CONNOLLY
5016 Lacey Boulevard SE, Lacey, WA 98503
Ph.: (360) 491-3399 www.skillings.com

McCLEARY 3RD STREET IMPROVEMENT PROJECT
McCLEARY WA

THRESHOLD DISCHARGE AREA MAP

JOB NUMBER 14044

SHEET 1 OF 1 SHEETS



LEGEND

- IMPERVIOUS TO PERVIOUS
- NEW IMPERVIOUS
- NEW POLLUTION GENERATING IMPERVIOUS (PGIS)
- PGIS TO IMPERVIOUS

	TDA #1	TDA #2	TDA#3
EX. PGIS	25960	33450	1070
EX. HARD SURFACES	26800	41840	18170
IMPERVIOUS TO PERVIOUS	9280	710	5850
NEW IMPERVIOUS	2290	1920	2200
NEW PGIS	1000	3250	4910
PGIS TO IMPERVIOUS	3060	3390	1330
REPLACED PGIS	14370	29950	7290
Total New Impervious	3290	5170	7110

	DATE
DESIGNED BY: J. BECKER	10/2014
ENTERED BY: J. BECKER	10/2014
CHECKED BY:	
PROJ. ENGR.: G. SMITH	10/2014

REVISIONS		
NO.	DATE	

SKILLINGS CONNOLLY
5016 Lacey Boulevard SE, Lacey, WA 98503
Ph.: (360) 491-3399 www.skillings.com

McCLEARY WA

CONVERTED SURFACES MAP

JOB NUMBER 14044

SHEET 1 OF 1 SHEETS

Construction Plans

To be provided at 60 Percent Design

APPENDIX B – Water Quality Calculations

Minimum requirements Flow Chart

14044
TDA NORTH
J. BECKER
7/28/14

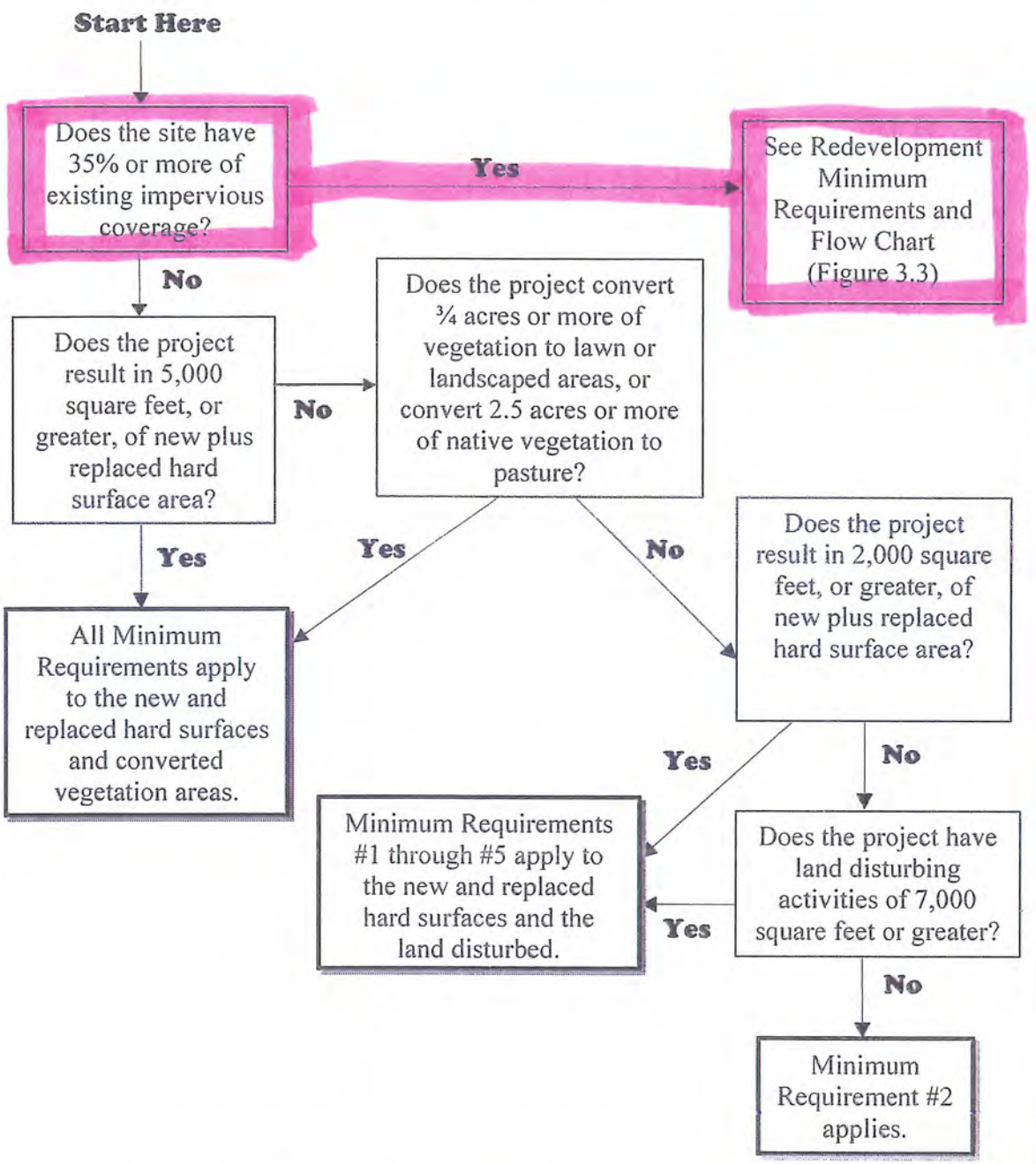


Figure 2.4.1 – Flow Chart for Determining Requirements for New Development

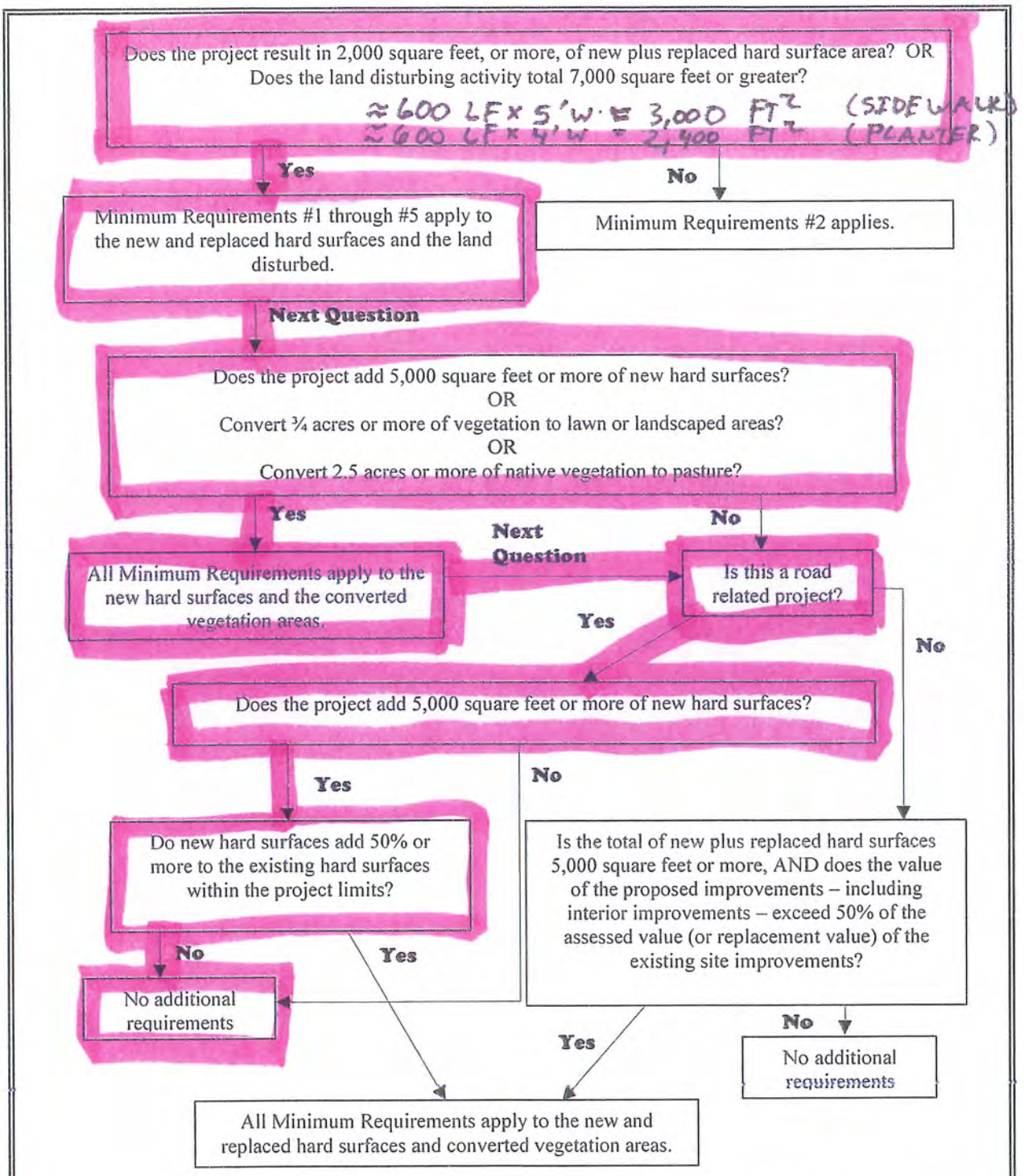


Figure 2.4.2 – Flow Chart for Determining Requirements for Redevelopment

14044
TDA SOUTH
J. BECKER
7/28/14

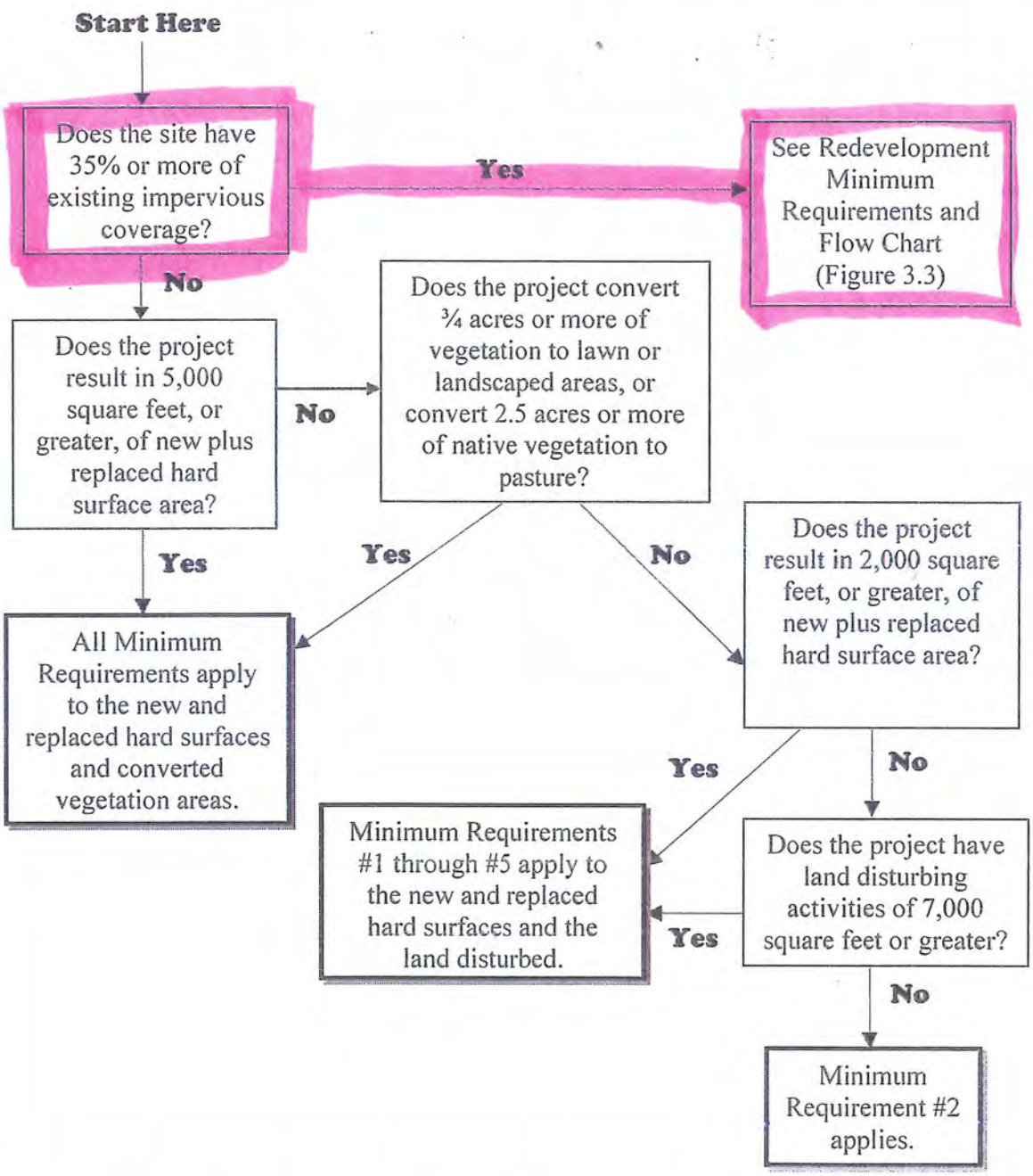


Figure 2.4.1 – Flow Chart for Determining Requirements for New Development

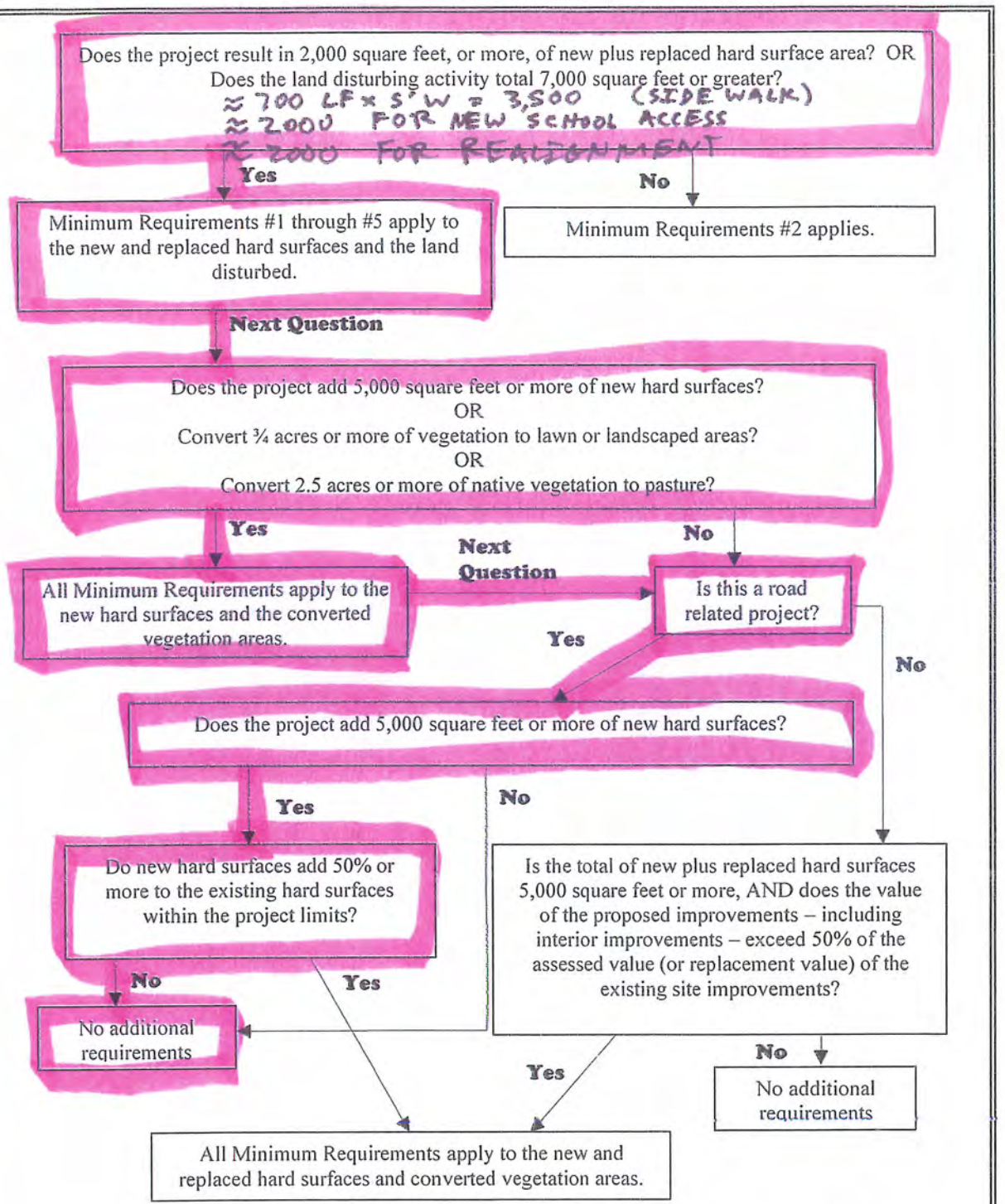


Figure 2.4.2 – Flow Chart for Determining Requirements for Redevelopment

14044
TDA #3
S. BECKER
9/29/14

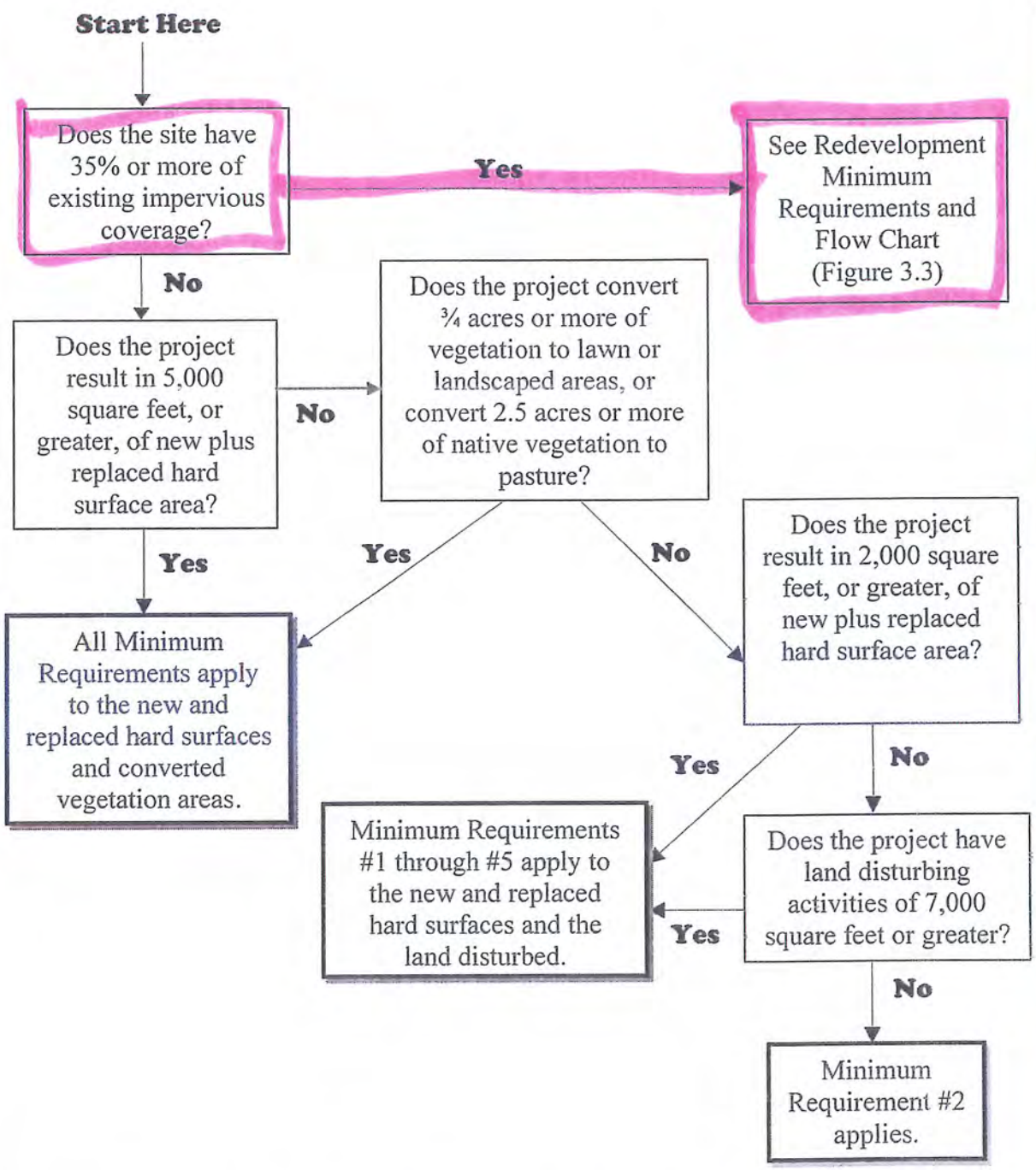


Figure 2.4.1 – Flow Chart for Determining Requirements for New Development

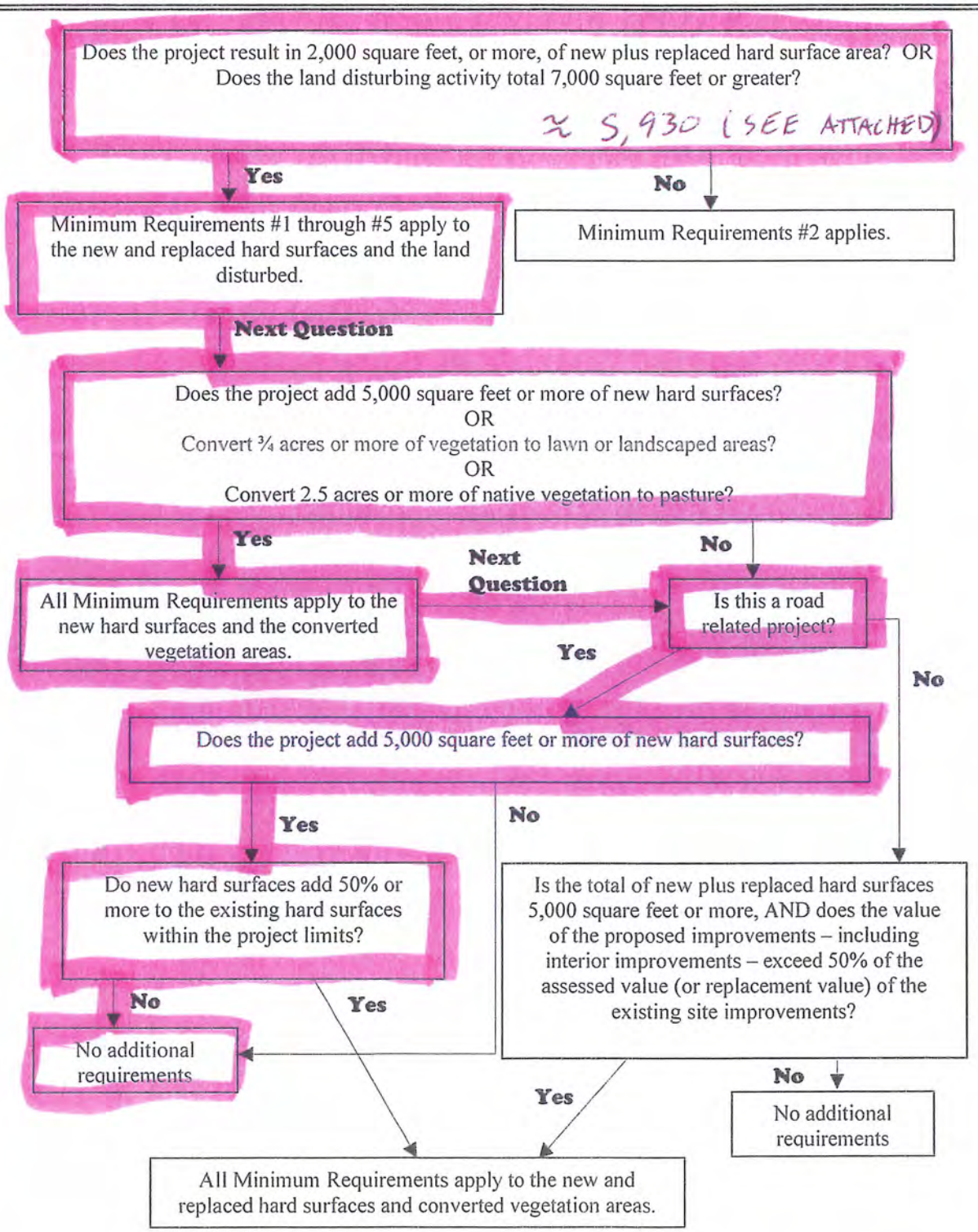


Figure 2.4.2 – Flow Chart for Determining Requirements for Redevelopment

14044	Drainage	SA 9/26/14

Asphalt – 4393.26 SF (to trailed wing. FL to FL)
4395 SF

Sidewalk – 1534.93 = 1535 SF
Total Hard Surface = 5,930

Ex Asphalt + Sidewalk Area = 9,500 SF

Ex Gravel = 2140 + 640 + 3090 = 5370 SF

Ex Pervious (Triangle area) = 7000 SF

Existing Hard Surface = 14,870 SF = 9,500 + 5370

Convert Impervious to pervious
90 + 1760 + 870 + 1790 = 4510 SF

Convert Pervious to Impervious
3000 SF

50% of Existing Hard Surface = 7,435 SF
New Hard Surface = 5,930 SF
∴ Not adding 50% or more to what is there.

Therefore All minimum requirements apply to McCleary 3rd St Improvements.

All areas from CAD drawings (S 14044, Z_14044_BM)

3-0235 — 50 SHEETS — 5 SQUARES
3-0236 — 100 SHEETS — 5 SQUARES
3-0237 — 200 SHEETS — 5 SQUARES
3-0137 — 200 SHEETS — FILLER
COMET

TDA #3

Step 1: Identify Pollutants of Concern and Perform Off-site Analysis to Determine Receiving Waters

Step 2: Determine if an Oil Control Facility is Required ADT < 25,000

Yes →

Apply Oil Control Facility
- API Separator
- CP Separator
- Linear Sand Filter
- Emerging Tech.

No ↓

Step 3: Determine if Infiltration for Pollutant Removal is Practicable GET INFO FROM GEOTECH

Yes →

Apply Pretreatment
- Presettling Basin
- Any Basic Treatment BMP
- Emerging Tech.

→

Apply Infiltration
- Infiltration Basin
- Infiltration Trench
- Bioretention

No ↓

Step 4: Determine if Phosphorus Control is Required NONE AT PROJECT SITE

Yes →

Apply Phosphorus Control Facility
- Large Sand Filter
- Large Wetpond*
- Media Filter
- Two Facility Treatment Train
- Emerging Tech.*

No ↓

Step 5: Determine if Enhanced Treatment is Required ADT < 7,500

Yes →

Apply an Enhanced Treatment Facility
- Large Sand Filter
- Treatment Wetland
- Compost-amended Vegetated Filter Strip
- Two Facility Treatment Train
- Bioretention
- Media Filter Drain
- Emerging Tech.

No ↓

Step 6: Apply a Basic Treatment Facility
- ~~Biofiltration Swales~~ LIMITED ROW
- ~~Filter Strip~~
- ~~Basic Wetpond~~ LIMITED ROW
- ~~Wetvault~~
- ~~Treatment Wetlands~~
- ~~Combined Detention/Wetpool~~
- Sand Filters
- Bioretention
- Media Filter Drain
- Emerging Tech.

*When **Phosphorous Control and Enhanced** treatment are required, the Large Wetpond and certain types of emerging technologies will not meet both types of treatment requirements. A different or an additional treatment facility will be required to meet Enhanced treatment.

Figure 2.1.1 – Treatment Facility Selection Flow Chart

APPENDIX C - Supporting Data

NRCS Soils Map
Soils Data
NRCS Soil Description

Map Scale: 1:2,980 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Grays Harbor County Area, Pacific and Wahkiakum Counties, Washington
Survey Area Data: Version 10, Dec 9, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Grays Harbor County Area, Pacific and Wahkiakum Counties, Washington (WA627)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
106	Olympic clay loam, 8 to 30 percent slopes	23.9	54.2%
131	Schneider very gravelly silt loam, very deep, 30 to 65 percent slopes	0.2	0.4%
142	Tebo silt loam, 5 to 30 percent slopes	20.0	45.4%
Totals for Area of Interest		**44.1**	**100.0%**

Grays Harbor County Area, Pacific and Wahkiakum Counties, Washington

106—Olympic clay loam, 8 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2gj8
Elevation: 200 to 2,000 feet
Mean annual precipitation: 40 to 70 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Olympic and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Olympic

Setting

Landform: Hillslopes
Parent material: Residuum weathered from basalt

Typical profile

H1 - 0 to 7 inches: clay loam
H2 - 7 to 22 inches: silty clay loam
H3 - 22 to 60 inches: silty clay

Properties and qualities

Slope: 8 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Other vegetative classification: Unnamed (G001XF603WA)

Data Source Information

Soil Survey Area: Grays Harbor County Area, Pacific and Wahkiakum Counties, Washington
Survey Area Data: Version 10, Dec 9, 2013

Grays Harbor County Area, Pacific and Wahkiakum Counties, Washington

142—Tebo silt loam, 5 to 30 percent slopes

Map Unit Setting

National map unit symbol: 2gkk
Elevation: 200 to 800 feet
Mean annual precipitation: 50 to 70 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 200 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Tebo and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tebo

Setting

Parent material: Glacial drift derived from basalt

Typical profile

H1 - 0 to 9 inches: medial silt loam
H2 - 9 to 60 inches: gravelly clay loam

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Other vegetative classification: Unnamed (G001XY602WA)

Data Source Information

Soil Survey Area: Grays Harbor County Area, Pacific and Wahkiakum Counties, Washington
Survey Area Data: Version 10, Dec 9, 2013

Grays Harbor County Area, Pacific and Wahkiakum Counties, Washington

131—Schneider very gravelly silt loam, very deep, 30 to 65 percent slopes

Map Unit Setting

National map unit symbol: 2gk5
Elevation: 50 to 1,800 feet
Mean annual precipitation: 50 to 75 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Schneider and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Schneider

Setting

Landform: Hills
Parent material: Colluvium derived from basalt

Typical profile

H1 - 0 to 10 inches: very gravelly medial silt loam
H2 - 10 to 51 inches: extremely gravelly silt loam
H3 - 51 to 60 inches: extremely gravelly silt loam

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

Data Source Information

Soil Survey Area: Grays Harbor County Area, Pacific and Wahkiakum Counties, Washington
Survey Area Data: Version 10, Dec 9, 2013

APPENDIX D – Maintenance Manual

APPENDIX E – Construction Stormwater Pollution Prevention Plan (SWPPP)

To be completed at 90 Percent Design

APPENDIX E

Cost Estimate Breakdown

SKILLINGS CONNOLLY
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(360) 491-3399 (800) 454-7545 Fax (360) 491-3857
www.skillings.com

ENGINEER'S OPINION OF PROBABLE TOTAL COST

Skillings Connolly, Inc.
Preliminary Estimate

Project No. 14044
Alternative No. 1
Station 10+00. to 26+00.

Client No.
Length 1,600.00

Estimate Run Date 10/20/2014
Time 11:54 AM
Estimate Created 10/18/2014
ENR Cost Index
Date of Cost Index

Project Title Third Street Improvements
Description The City of McCleary is Proposing improvements to the Third Street corrider from the intersection with Mox Chehalis Rd to East Oak Street. This project includes the rubbelization of the existing concrete panels, realignment of the roadway, reconstruction of the roadway, including intersections and utilities, new sidewalks and bulbouts.

Project Engineer G. Smith
Current Ad Date

Estimate Compiled By S. Rosewell
Checked By T. Horton
Estimated Working Days 0

Notes 30% Design Estimate

1. Preliminary Engineering			$0.00
2. Right of Way	Before Inflation	$0.00	
			$0.00
3. Construction			
Item Total (see following pages)		$1,519,932.45	
Design Contingencies 30%		$450,123.73	
Work Done by Contractor	with Design Contingencies	$1,970,056.19	
Sales Tax		$0.00	
Engineering	15.00%	$295,508.43	
Contingencies	10.00%	$197,005.62	
Local Forces Work		$0.00	
Construction Total	Before Inflation	$2,462,570.23	
			$2,462,570.23
Estimated Project Total			$2,462,570.23

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ENGINEER'S OPINION OF PROBABLE TOTAL COST

Run Date: 10/20/2014
Time: 11:54 AM

Project: Third Street Improvements **Number:** 14044 **Client #:**

Bid Item #	Std. Item #	Description	Group	Quantity	Unit	Unit Price	Amount
		Bid Items					
		PREPARATION					
1	1	MOBILIZATION	1	1.00	L.S.	$130,000.00	$130,000.00
2	25	CLEARING AND GRUBBING	1	1.00	ACRE	$4,500.00	$4,500.00
3	50	REMOVAL OF STRUCTURE AND OBSTRUCTION	1	1.00	L.S.	$20,000.00	$20,000.00
		GRADING					
4	n/std	RUBBLIZE/GRADE/COMPACT CONCRETE PANELS	1	8,710.00	S.Y.	$10.00	$87,100.00
5	310	ROADWAY EXCAVATION INCL. HAUL	1	1,482.00	C.Y.	$14.60	$21,637.20
6	408	SELECT BORROW INCL. HAUL	1	2,706.00	TON	$20.00	$54,120.00
		STORM SEWER					
7	n/std	FILTERRA	1	1.00	EACH	$12,000.00	$12,000.00
8	3105	CATCH BASIN TYPE 2 48 IN. DIAM.	1	14.00	EACH	$2,500.00	$35,000.00
9	3151	TESTING STORM SEWER PIPE	1	860.00	L.F.	$3.00	$2,580.00
10	3541	SCHEDULE A STORM SEWER PIPE 12 IN. DIAM.	1	860.00	L.F.	$33.80	$29,068.00
		WATER LINES					
11	3838	BLOWOFF ASSEMBLY	1	1.00	EACH	$3,200.00	$3,200.00
12	3846	HYDRANT ASSEMBLY	1	3.00	EACH	$6,000.00	$18,000.00
13	3848	RESETTING EXISTING HYDRANTS	1	1.00	EACH	$3,200.00	$3,200.00
14	3857	SERVICE CONNECTION 3/4 IN. DIAM.	1	14.00	EACH	$1,485.00	$20,790.00
15	3868	DUCTILE IRON PIPE FOR WATER MAIN 10 IN. DIAM.	1	1,150.00	L.F.	$63.00	$72,450.00
16	6162	GATE VALVE 10 IN.	1	6.00	EACH	$1,900.00	$11,400.00
		STRUCTURE					
17	4006	STRUCTURE EXCAVATION CLASS A INCL. HAUL	1	240.00	C.Y.	$18.00	$4,320.00
18	4013	SHORING OR EXTRA EXCAVATION CL. A	1	1.00	L.S.	$5,000.00	$5,000.00
19	4025	GRAVEL BACKFILL FOR WALL	1	250.00	C.Y.	$31.00	$7,750.00
		SURFACING					
20	5100	CRUSHED SURFACING BASE COURSE	1	1,850.00	TON	$35.00	$64,750.00
		HOT MIX ASPHALT					
21	5767	HMA CL. 1/2 IN. PG	1	2,450.00	TON	$110.00	$269,500.00
		IRRIGATION AND WATER DISTRIBUTION					

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ENGINEER'S OPINION OF PROBABLE TOTAL COST

Run Date: 10/20/2014
Time: 11:54 AM

Project: Third Street Improvements **Number:** 14044 **Client #:**

Bid Item #	Std. Item #	Description	Group	Quantity	Unit	Unit Price	Amount
22	6071	IRRIGATION SYSTEM	1	1.00	L.S.	$5,000.00	$5,000.00
		EROSION CONTROL AND PLANTING					
23	6373	SILT FENCE	1	700.00	L.F.	$5.00	$3,500.00
24	6403	ESC LEAD	1	90.00	DAY	$120.00	$10,800.00
25	6414	SEEDING, FERTILIZING, AND MULCHING	1	1.00	ACRE	$4,000.00	$4,000.00
26	6455	BIODEGRADABLE EROSION CONTROL BLANKET	1	2,260.00	S.Y.	$3.00	$6,780.00
27	6471	INLET PROTECTION	1	27.00	EACH	$90.50	$2,443.50
28	6490	EROSION/WATER POLLUTION CONTROL	1	5,000.00	DOLLAR	$1.00	$5,000.00
29	6630	HIGH VISIBILITY FENCE	1	90.00	L.F.	$5.00	$450.00
		TRAFFIC					
30	n/std	PLASTIC PARALLEL PARKING LINES	1	165.00	L.F.	$8.25	$1,361.25
31	6700	CEMENT CONC. TRAFFIC CURB AND GUTTER	1	3,700.00	L.F.	$20.25	$74,925.00
33	6806	PAINT LINE	1	4,250.00	L.F.	$1.00	$4,250.00
34	6857	PLASTIC CROSSWALK LINE	1	1,500.00	S.F.	$6.00	$9,000.00
35	6859	PLASTIC STOP LINE	1	130.00	L.F.	$8.25	$1,072.50
36	6867	PLASTIC BICYCLE LANE SYMBOL	1	14.00	EACH	$175.00	$2,450.00
37	6890	PERMANENT SIGNING	1	1.00	L.S.	$10,000.00	$10,000.00
38	6904	ILLUMINATION SYSTEM	1	1.00	L.S.	$100,000.00	$100,000.00
39	6971	PROJECT TEMPORARY TRAFFIC CONTROL	1	1.00	L.S.	$50,000.00	$50,000.00
		OTHER ITEMS					
41	n/std	CITY ENTERANCE LANDSCAPING AND SIGN	1	1.00	L.S.	$20,000.00	$20,000.00
42	n/std	UNDER GROUNDING OF ELECTRICAL	1	1.00	L.S.	$100,000.00	$100,000.00
43	n/std	RETAINING WALL	1	1,280.00	S.F.	$30.00	$38,400.00
44	3080	ADJUST MANHOLE	1	3.00	EACH	$900.00	$2,700.00
45	3100	ADJUST CATCH BASIN	1	3.00	EACH	$640.00	$1,920.00
46	3110	LOCKING SOLID METAL COVER AND FRAME FOR CATCH BASIN	1	1.00	EACH	$700.00	$700.00
47	6243	ADJUST VALVE BOX	1	2.00	EACH	$685.00	$1,370.00
48	7006	STRUCTURE EXCAVATION CLASS B INCL. HAUL	1	660.00	C.Y.	$14.50	$9,570.00
49	7008	SHORING OR EXTRA EXCAVATION CLASS B	1	1,200.00	S.F.	$1.00	$1,200.00
50	7038	ROADWAY SURVEYING	1	1.00	L.S.	$25,000.00	$25,000.00
51	7055	CEMENT CONC. SIDEWALK	1	2,425.00	S.Y.	$35.00	$84,875.00

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ENGINEER'S OPINION OF PROBABLE TOTAL COST

Run Date: 10/20/2014
Time: 11:54 AM

Project: Third Street Improvements **Number:** 14044 **Client #:**

Bid Item #	Std. Item #	Description	Group	Quantity	Unit	Unit Price	Amount
52	7058	CEMENT CONC. CURB RAMP TYPE	1	28.00	EACH	$2,000.00	$56,000.00
53	7059	CEMENT CONC. DRIVEWAY ENTRANCE TYPE	1	240.00	S.Y.	$45.00	$10,800.00

		Group Subtotal	$1,519,932.45
Group: 1 ***Bid Items***	0.0000%	**Group Sales Tax**	$0.00
		Group Total	$1,519,932.45
		Grand Subtotal	$1,519,932.45
		Grand Sales Tax	$0.00
		Grand Total	$1,519,932.45

Data File: G:\Project\2014\14044 McCleary Third Street Improvements\PESDAT40-30pct.MDB