



**Parsons
Brinckerhoff**

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503-274-8772
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June 21, 2010

Tom Soppe, Associate Planner
West Linn Planning Department
22500 Salamo Road
West Linn, OR 97068

RE: DR-10-08 West Linn High School

Dear Tom,

In response to your June 3rd letter indicating the above Design Review application was incomplete, we made the requested changes. As we agreed, the original sheets, which did not require modification, have not been resubmitted. I have attached:

- Four sets of the revised narrative, revised civil and architecture plan sheets (WL-C0 through WL-C8 and A3.00), and reduced 11X17-inch versions of the revised plan sheets;
- Four copies of the revised Stormwater Drainage Design Memorandum from Winzler & Kelly; and
- A CD of the entire application including revised and originally submitted materials.

The information related to the Community Development Code sections in your letter has been provided in the following manner:

- **55.070(E) and 55.140(B)** - An exterior color sample is provided, and the proposed building color is now shown on Sheet A3.00. The exterior color for the storage building restroom/concession addition and announcers booth will match the color of the existing storage building.
- **55.120(C)** - The civil plan sheets have been modified to make the contour elevations more legible at the 11X17-inch size. As noted above, a revised set is attached.
- **55.120(D)** - The stream location is shown on Sheet WL-C1 plus other civil sheets.
- **55.120(F)(2)** - The tree conservation easement is shown on Sheet WL-C0.
- **55.100(A)(1)** - Responses to the applicable review criteria in CDC 33.040 are included in the application narrative.
- **55.100(B)(6)(j)** - A response to this criterion is included in the application narrative.

- **55.120(G)(1)** - The district requests a waiver to this requirement because the entire school site and the adjoining property to the west are quite large, and the improvements within the baseball field and track area are a significant distance away from buildings or structures on adjoining properties. A waiver is requested in the application narrative. A revised existing conditions exhibit (Sheet WL-C0) shows the location of surrounding properties to give some context, but not all of the detail normally required by the CDC.
- **55.120(H)(3)** - The application narrative includes a waiver to this requirement because the trash disposal and recycling areas are some distance from the proposed improvements, and they will not be changed or affected in any way by the baseball field and track improvements. The location of the existing facilities is shown on Sheet WL-C0.
- **Engineering Department** - The district discussed the right-off-way dedication and sidewalk improvements with Khoi Le on June 15th. It was agreed that these items would be considered with a future 2008 Capital Bond project to improve the upper and lower parking lots on A Street and Skyline Drive. This project is scheduled for construction in June 2011. Based on this agreement, the district has no additional information to submit on this topic.

I trust this revised information will be sufficient to find the application complete. Please contact me if you need anything further.

Sincerely,



Keith S. Liden, AICP

cc: Remo Douglas, WLWV School District
Tim Woodley, WLWV School District
Steve Winkle, DOWA
Pat Tortora, Winzler & Kelly
Gary Datka, Walker Macy

West Linn High School (DR-10-08)
Building Finish Material and Color Sample
To match existing (see Sheet A3.00)



WEST LINN HIGH SCHOOL
Class I Design Review
June 21, 2010

APPLICATION SUMMARY

For Class I Design Review approval to replace or remodel portions of existing support facilities adjacent to the baseball field at West Linn High School located on a 42-acre site.

GENERAL INFORMATION

Location

5464 West "A" Street (2S 2E Section 30, Tax Lot 800 and Section 30CD Tax Lots 4500, 4501, 4502, and 4502E1). Its location is shown in Figure 1.

Comprehensive Plan and Zoning Designations

The Comprehensive Plan designations are Low Density for the northern portion of the property and Commercial for the southern section.

Consistent with the Comprehensive Plan, the property is zoned Single Family Residential Detached (R10) and Office Business Center (OBC).

Applicant and Owner

Tim Woodley, Director of Operations
West Linn-Wilsonville School District
P. O. Box 35
West Linn, OR 97068
Phone: 503-673-7976
Fax: 503-638-9360
E-mail: woodleyt@wlwv.k12.or.us

Applicant's Representatives

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E-mail: steview@dowa.com

Attachments and Plan Sheets

Cover Sheet

WL-C0	Existing Conditions
WL-C1	Existing Conditions
WL-C2	Demolition Plan
WL-C3	Site Plan
WL-C4	Grading Plan
WL-C5	Erosion Control Plan
WL-C6	Utility Plan
WL-C7	Notes and Details
WL-C8	Details
A1.00	Overall Site Plan
A1.01	Site Plan
A2.00	Concession Plans
A2.01	Announcer Booth Plans
A2.02	Seating Plan
A3.00	Elevation
A3.01	Section
A3.02	Section/Elevation Details
A3.03	Section/Elevation Details
A4.00	Interior Elevation
S0.2	General Structural Notes
S1.1	Site Plan and Framing Plans
S2.1	Concrete Details
S3.1	Wood Details
M001	Symbols, Legends and Abbreviations - Mechanical
M201	Floor Plans – Mechanical
M601	Details - Mechanical
E001	Symbols, Legends and Abbreviations - Electrical
E010	Site Plans-Demolition Electrical
E020	Site Plan – Electrical
E201	Floor Plans – Electrical
E501	One-Line Diagrams - Electrical
E601	Details and Schedules – Electrical

Waivers

The applicant is requesting the following waivers:

- Requirement to provide topographic information for the entire project property (CDC 55.120 A). In this case, no topographic survey information is available for the undeveloped portion of the school district property to the west of the football and baseball fields. In addition, the improvements are focused solely around the baseball field. Because no construction activity of any kind is proposed outside of this area, the district requests a waiver from this submittal requirement and to provide this information for the project area only.
- Requirement to provide information regarding the location of structures, improvements, utilities and easements on adjoining properties (CDC 55.120 G 1). The entire school site and the adjoining property to the west are quite large, and the improvements within the baseball field and track area are a significant distance away from buildings of structures on adjoining properties. The high school buildings lie between the residential properties to the east and the baseball field.

Therefore, showing the improvements and easements on this portion of the school site is not relevant to the scope of this application. To provide context, the existing conditions sheet (WL-C0) shows the location of adjoining properties.

- The acoustic study requirement (CDC 55.120 M) is requested. The remodeling and renovation work will not expand the school capacity or intensity of use and therefore, the noise generated from the site will not change.
- The location of the existing trash disposal and recycling area will well removed from the area of the proposed improvements (55.120 H 3). The trash disposal and recycling area will not be changed, and the proposed improvements will have no affect on them.

Figure 1: Aerial Photo



Source: Google

BACKGROUND INFORMATION

Site Description

The site is developed with West Linn High School, including the school buildings, driveways, parking, and athletic fields as shown in Figure 1. The entire site is approximately 42 acres, including the wooded portion of the property, which is west of the school. A football stadium, baseball field, and tennis courts are located on the southwest side of the property. There are no known historic or archaeological resources on the property.

Surrounding Area Description

The zoning designations and current land use of the surrounding area are summarized in Table 1.

**Table 1
Land Use Summary**

<i>Properties in the Vicinity</i>	<i>Zone Designation</i>	<i>Land Use</i>
<u>Subject Property</u> 2S 2E 30, TL 800 and 30CD, TL 4500, 4501 4502 and 4502E1(42 acre school site owned by school district	R10 and OBC (southern parking lot)	High School building, ancillary facilities, and parking
<u>Surrounding Properties</u>		
Northwest	R10	Single family residences and Wilderness Park
East/Northeast	R5 and R4.5	Single family residences
South	R10	Camassia Natural Area and I-205
West	R10	Single family residences and Wilderness Park

Primary access to the school is provided by West "A" Street, which runs along the eastern side of the site. One driveway exists on the south end of the site, providing access to the southern parking lot, tennis courts, and baseball field. A pick-up and drop-off driveway is located in front of the school. A secondary driveway on Skyline Drive provides access to the rear of the northern section of the school and the football stadium.

BASEBALL FIELD IMPROVEMENTS

The improvements to baseball field include:

- Eliminating overhead power lines, transformers, and power poles, while retaining the existing field lights and poles.
- Installing replacement underground electrical service.
- Expanding the existing track equipment shed to provide an ADA restroom and concession stand.
- Replacing the existing bleachers with new bleachers that will continue to seat approximately 300 people.
- Providing access from the upper track level to the new ADA restroom, concessions, and bleachers.

- Providing a new screen to prevent foul balls from landing in the adjacent park to the west.
- Providing a new backstop screen to protect the spectators in the bleacher area.
- Modifying the existing concrete wall at the backstop to start the first row of bleachers 14 feet above the field instead of 10 feet this brings the top of the seating area level with the track area.
- Installing the announcer's booth behind the seating area.
- Improving the pathway between the southern parking lot and the baseball field to be ADA accessible.
- Installation of one planter and two bioswales, designed to the City of Portland Storm Water Management Manual.

DESIGN REVIEW CRITERIA

The Class I Design Review requirements include compliance with Chapter 55 Design Review. Section 55.090 contains the applicable approval standards for a Class I Design Review. Section 55.090(A) refers to specific portions of Section 55.100 that apply to Class I Design Review applications. The applicable portions of Section 55.100 are addressed below, including CDC Sections 55.100 J. and K. identified by the city staff.

Section 55.090(B) states that adequate public facilities must be available. This criterion is satisfied because the school is currently served by a full range of public utilities and streets. The remaining criteria are addressed below.

55.090 A. The provisions of the following sections shall be met:

1. Section 55.100 B. (1-4) Relationship to the Natural Physical Environment

Section 55.100 B. 1. and 2. Do not apply because no significant or heritage trees will be affected. The project involves improvements to portions of the high school property that are presently developed. There are no trees within the area to be improved.

Section 55.100 B. 3. is not relevant because no grading is proposed. The existing grades on the site will remain.

Section 55.100 B. 4. is satisfied because the property is geologically stable. Furthermore, the construction proposed is within an area that is currently developed.

2. Section 55.100 B. (5-6) Architecture

Section 55.100 B. 5. is satisfied because the modest expansion of the track shed building and the new announcer's booth comply with all of the building height and setback requirements of the R 10 Zone. The buildings will be well under the 35-foot height limit and they will be located well beyond the minimum setback requirements of the R-10 Zone.

Section 55.100 B. 6. is met based on the findings below:

- a. The modest buildings proposed either represent replacement improvements or an expansion for restrooms and a small concession stand. The fencing, screens, walkways, and lighting are presently provided and the replacement

facilities will continue to be consistent with the sports field function. Natural exterior colors will be used, and the improvements will not be visible from surrounding properties.

- b/c. These subsections pertaining to building scale and transition is not relevant because the buildings are very small and well removed from any other buildings in the area. The high school building and auditorium, which are over 100 feet to the east are the closest buildings in the area.
- d. As noted above, the proposed site is large enough to displace any contrasting architectural styles that the proposed building might add to the surrounding area.
- e. The proposed improvements will enhance the human scale of the baseball field spectator area by providing a more comfortable walking environment, improved safety, restrooms, and concessions.
- f. For security reasons, the restroom, concession stand, and announcer's booth will not be very transparent with multiple openings and windows. However, these buildings will be open when spectators are present. Because of their small size, the site will continue to be transparent and easily surveyed from many different vantage points.
- g. The buildings will avoid expansive blank wall elevations.
- h. There will not be any additional weather protection compared to the current improvements. Spectators expect to come prepared for the varied climatic conditions of the Northwest.
- i. As noted above the improvements are designed to enhance the comfort, safety, and enjoyment of the spectators.
- j. This subsection primarily deals with public street sidewalks. It calls for clear sidewalk widths of at least 4 feet. All proposed walkways will meet this standard.

55.090 A. (3) In addition, the provisions of the following sections shall be met:

3. Section 55.100 J. Crime Prevention

Access, pedestrian circulation, and lighting will be provided and arranged to maximize spectator safety. The baseball field and adjoining sports facilities will continue to be secured by the district to minimize the potential for crime and vandalism on the school grounds and the surrounding neighborhood.

4. Section 55.100 K. ADA Accessibility

City code criteria and ADA requirements will be satisfied during the final building and facility design. The restroom will be ADA accessible, and the existing gravel pathway from the southern parking lot will be improved to be ADA accessible

55.100 A. (1) Chapter 33, Storm Water Quality and Detention:

Because a minor modification is proposed for an existing storm drainage line, Chapter 33 applies. The approval criteria are found in Section 33.040.

Section 33.040 Approval Criteria

- A. *Stormwater quality facilities shall meet non-point source pollution control standards.*

The proposed storm drainage system work only involves replacing a small portion of an existing underground pipe. The proposed storm drainage system improvement is designed using the City of Portland Storm Water Management Manual. Bioswales and a planter have been designed using the simplified approach.

- B. *Design of stormwater detention and pollution reduction facilities and related detention and water quality calculations shall meet Public Works Design Standards and shall be prepared by a professional engineer licensed to practice in the state of Oregon.*

The existing facilities and the proposed storm line improvement have all been designed by a licensed engineer. This criterion is satisfied. The proposed storm drainage system is designed using the City of Portland Storm Water Management Manual. Bioswales and a flow thru-planter have been designed using the simplified approach to achieve pollution reduction and flow control requirements (per Chapter 2.2).

- C. *Soil stabilization techniques, erosion control, and adequate improvements to accommodate the intended drainage through the drainage basin shall be used. Storm drainage shall not be diverted from its natural watercourse unless no feasible alternatives exist. Interbasin transfers of storm drainage will not be permitted.*

The project will involve only a minimal amount of disturbance to existing gravel and paved areas. This project will not alter a water course location or involve an inter-basin water transfer. This criterion is satisfied.

- D. *Stormwater detention and treatment facilities shall encroach no further than 25 feet into the outside boundary of a water quality resource area. The area of encroachment must be replaced by adding an equal area to the water quality resource area on the subject property.*

This is not applicable because detention and treatment is not proposed as part of this minor line improvement. The proposed facilities are not within the 25-foot setback of the water quality resource area.

- E. *Stormwater detention and treatment facilities shall be vegetated with plants from the Metro's native plant list as described in Section 33.070.*

The storm water facilities are planted per the requirements of the City of Portland Storm Water Management Manual as shown in the landscape plan.

F. Projects must either stockpile existing topsoil for re-use on the site or import topsoil, rather than amend subsoils.

This is not applicable because the disturbed construction area will only involve existing gravel and paved surfaces, which are of no environmental value, and it will be resurfaced once the new drainage improvements are made.

G. Interim erosion control measures, such as mulching, shall be placed immediately upon completion of grading of the facilities.

Erosion control measures are being proposed as shown in the erosion control plan. These measures consist of silt fencing, wattles, bio-bags, and inlet protection. Erosion control measures are consistent with City of West Linn design standards.

3. Section 55.100 J. Crime Prevention

Access, pedestrian circulation, and lighting will be provided and arranged to maximize spectator safety. The baseball field and adjoining sports facilities will continue to be secured by the district to minimize the potential for crime and vandalism on the school grounds and the surrounding neighborhood.

CONCLUSION

The proposed baseball field improvements satisfy all of the relevant criteria as demonstrated above.



WINZLER & KELLY

15575 SW Sequoia Pkwy, Ste. 140
Portland, OR 97224-7233

Date: 6-7-10

MEMORANDUM

Project No.: 10884-09007 Project Name: WLHS Baseball Seating
To: Khoi Le, P.E., City of West Linn
From: Patrick Tortora, P.E.
Copies To: M. Wharry, P.E.
Subject: Stormwater Drainage Design Memorandum

This memorandum is to address the proposed storm drainage improvement related to the proposed pedestrian infrastructure and seating upgrades at the WLHS baseball field.

Project Description:

Improvements to pedestrian infrastructure and spectator seating are proposed at the baseball field. The proposed improvements include a new hardscape path from the existing parking lot to the seating area, a new built-in spectator seating area, new hardscape pedestrian plaza, and new bathroom facilities. See Site Plan.

New impervious area summary (approximate): 7,200 sf

Existing Conditions:

The existing site includes a gravel path and spectator seating area with portable metal bleachers. There is an existing storm pipe network that consists of a series of catch basins and storm pipe that collect and convey runoff from the site as well as a large off-site tributary area of about 83 acres. The calculated peak flows from the off-site tributary area are summarized below:

Design Storm Event	Peak Flow
2-Year	4.8 cfs
5-Year	8.1 cfs
10-Year	12.3 cfs
25-Year	16.8 cfs
100-Year	21.7 cfs

The pipe network consists mostly of 24" pipe, although there is a 12" section of pipe at the upstream end of the system that restricts the amount of flow that the system can accept. It was determined that the 24" pipe has the capacity to convey the 10-year peak flow.

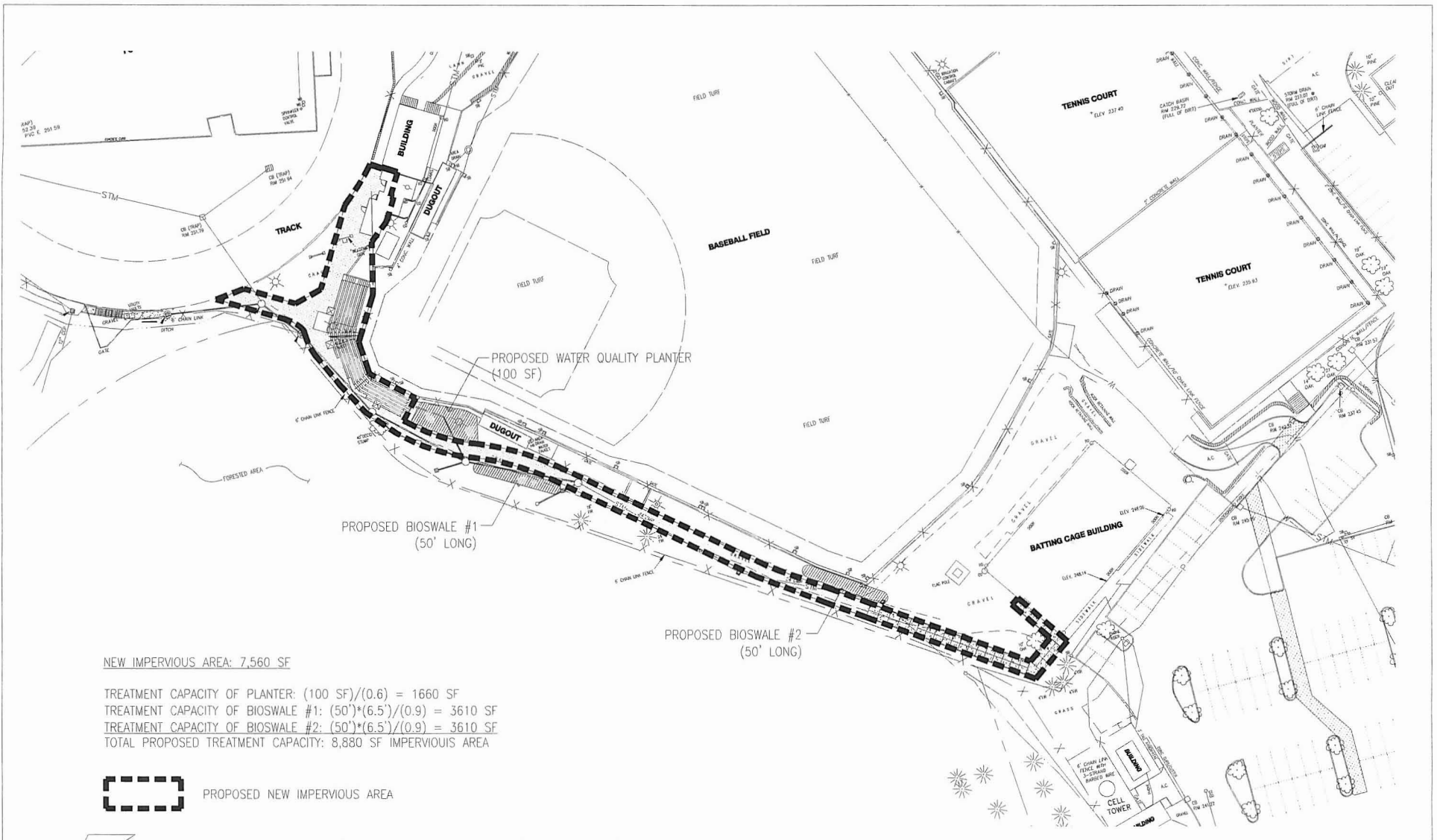
The baseball field area is located at the downstream end of the pipe network, just upstream of its point of discharge into a drainage that ultimately outlets into the Willamette River.

Proposed Storm System:

The proposed improvements to the storm system include upsizing the existing 12" section of pipe with 24" pipe. A portion of the storm pipe network will be relocated to avoid the new spectator seating.

Detention is not proposed for the new impervious area. An analysis showed that the proposed impervious area will increase the peak 25-year flow leaving the site by about 0.03 cfs from its existing condition. This increase is considered negligible compared to the off-site flow that is routed through the system (16.8 cfs for 25-year design storm).

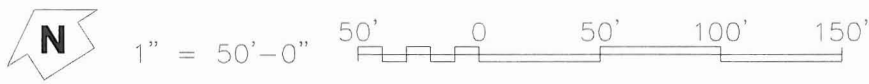
Stormwater treatment is planned to remove pollutants from the majority of the proposed impervious area. The proposed stormwater quality features include a planter to accept runoff from the new bleacher area, and two bioswales to accept runoff from the proposed pedestrian hardscape areas. These features have been designed using the City of Portland Stormwater Management Manual Simplified Approach – see attached Drainage Map. Per Chapter 2.2 these facilities provide both pollution reduction and flow control (detention).




NEW IMPERVIOUS AREA: 7,560 SF

TREATMENT CAPACITY OF PLANTER: $(100 \text{ SF}) / (0.6) = 1660 \text{ SF}$
 TREATMENT CAPACITY OF BIOSWALE #1: $(50') * (6.5') / (0.9) = 3610 \text{ SF}$
 TREATMENT CAPACITY OF BIOSWALE #2: $(50') * (6.5') / (0.9) = 3610 \text{ SF}$
 TOTAL PROPOSED TREATMENT CAPACITY: 8,880 SF IMPERVIOUS AREA

 PROPOSED NEW IMPERVIOUS AREA

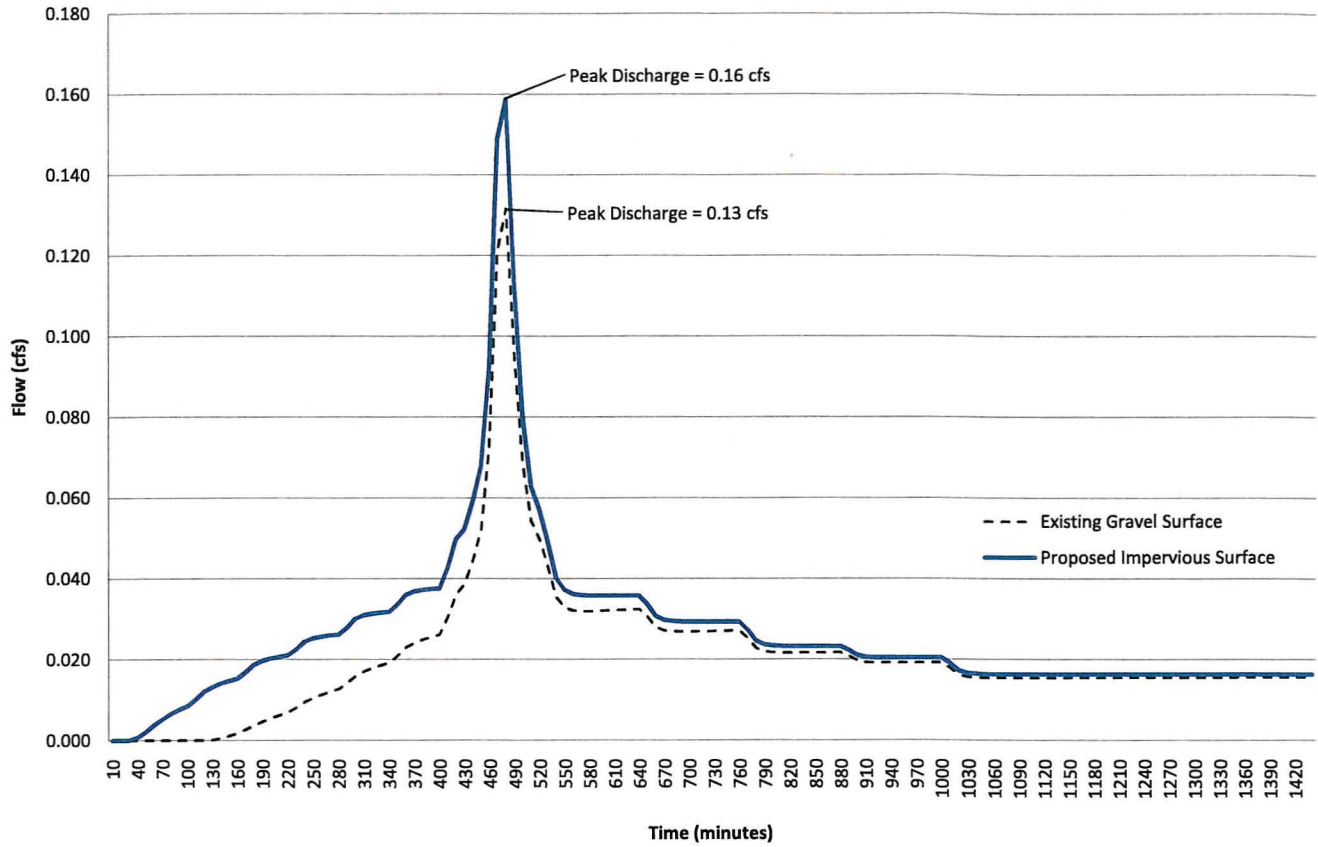


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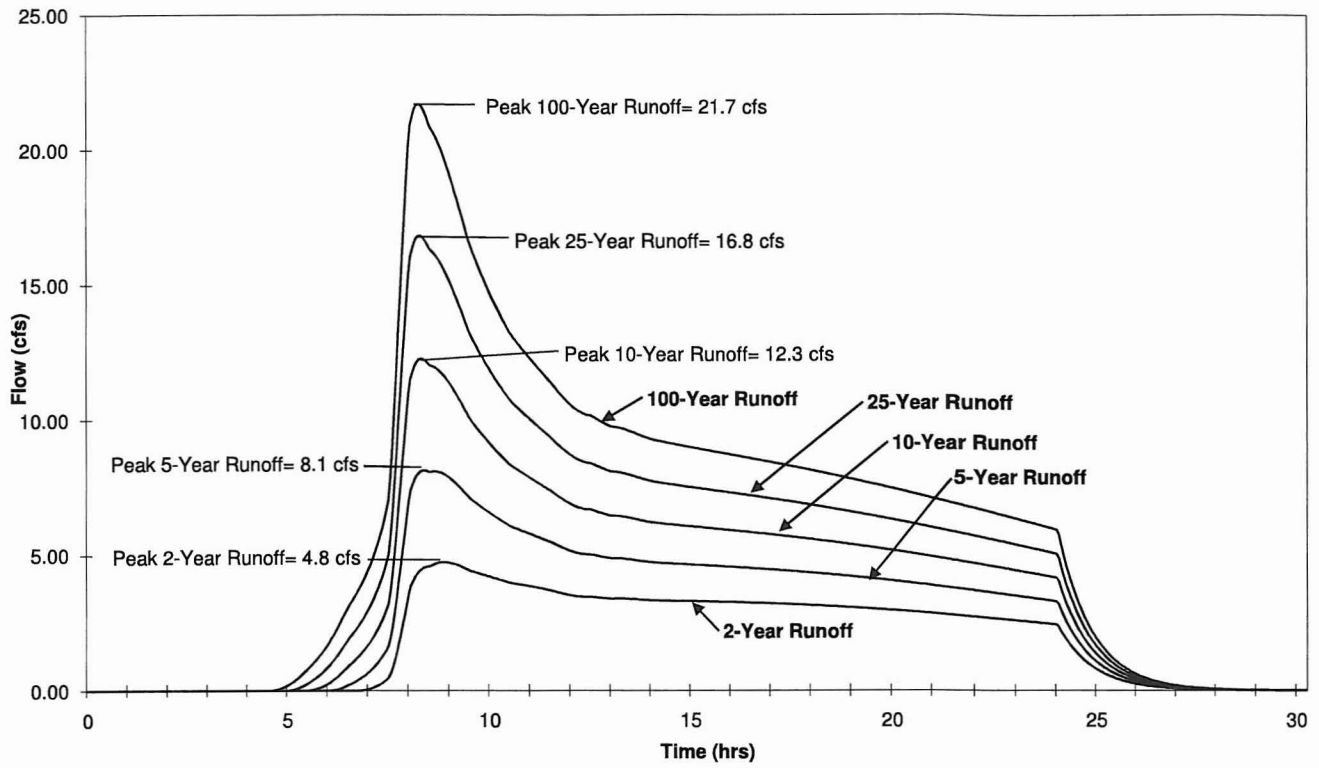
 **WINZLER & KELLY**
 15575 SW SEQUOIA PKWY, SUITE 140
 PORTLAND, OR 97224
 PH: 503-226-3921 FAX: 503-226-3926

PROJECT		WLHS BASEBALL SEATING			
TITLE		DRAINAGE MAP - PROPOSED CONDITIONS			
DESIGNED	DRAWN	APPROVED	DATE	PROJECT NO.	DWG NO.
—	—	—	3/31/10	10884-09007	FIGURE 1

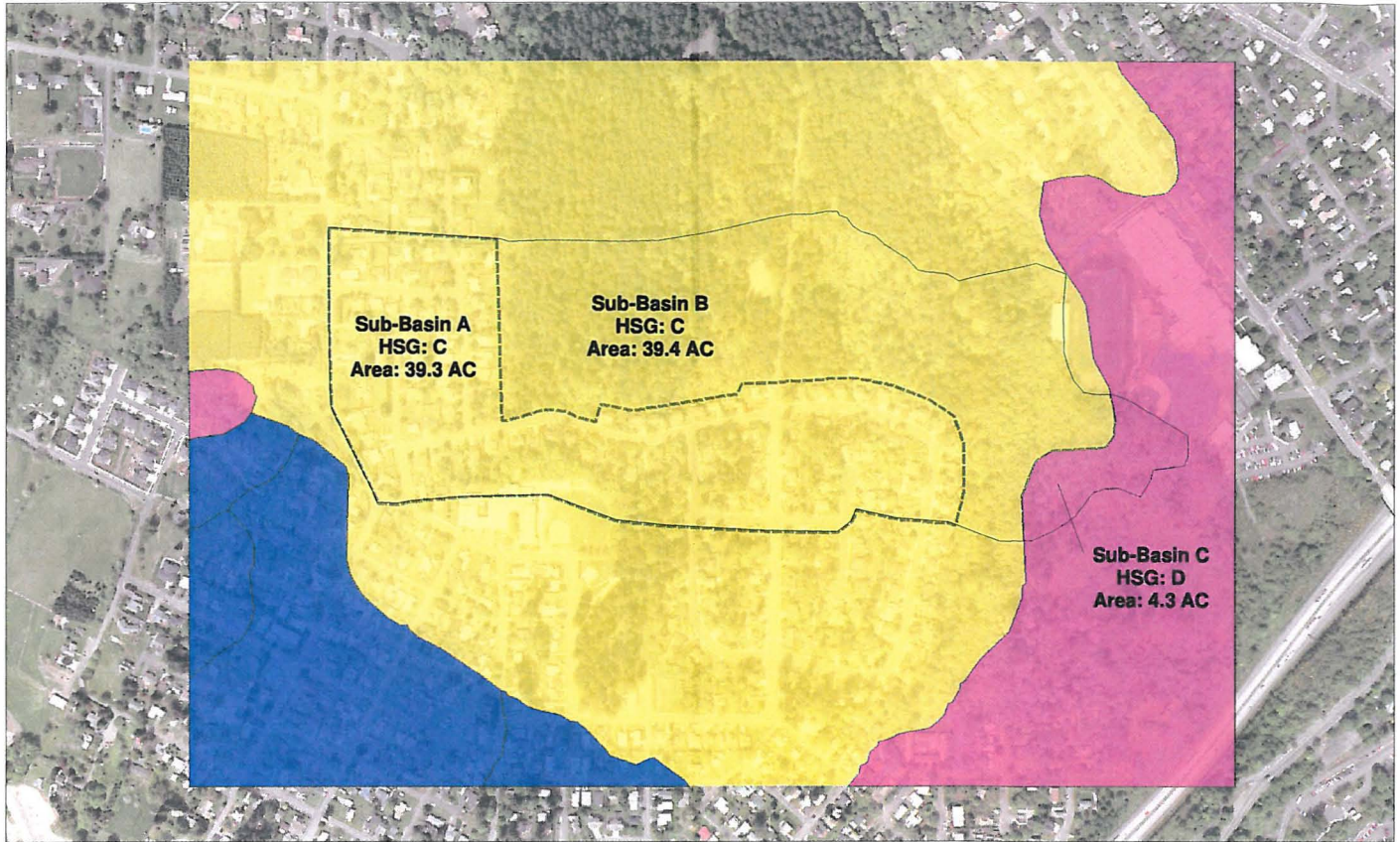
WLHS Baseball Seating 25-Year Runoff Hydrograph for Proposed Impervious Area



WLHS Storm Pipe Analysis
Runoff Hydrographs



Hydrologic Soil Group



Hydrologic Soil Group



0 250 500 1,000 Feet

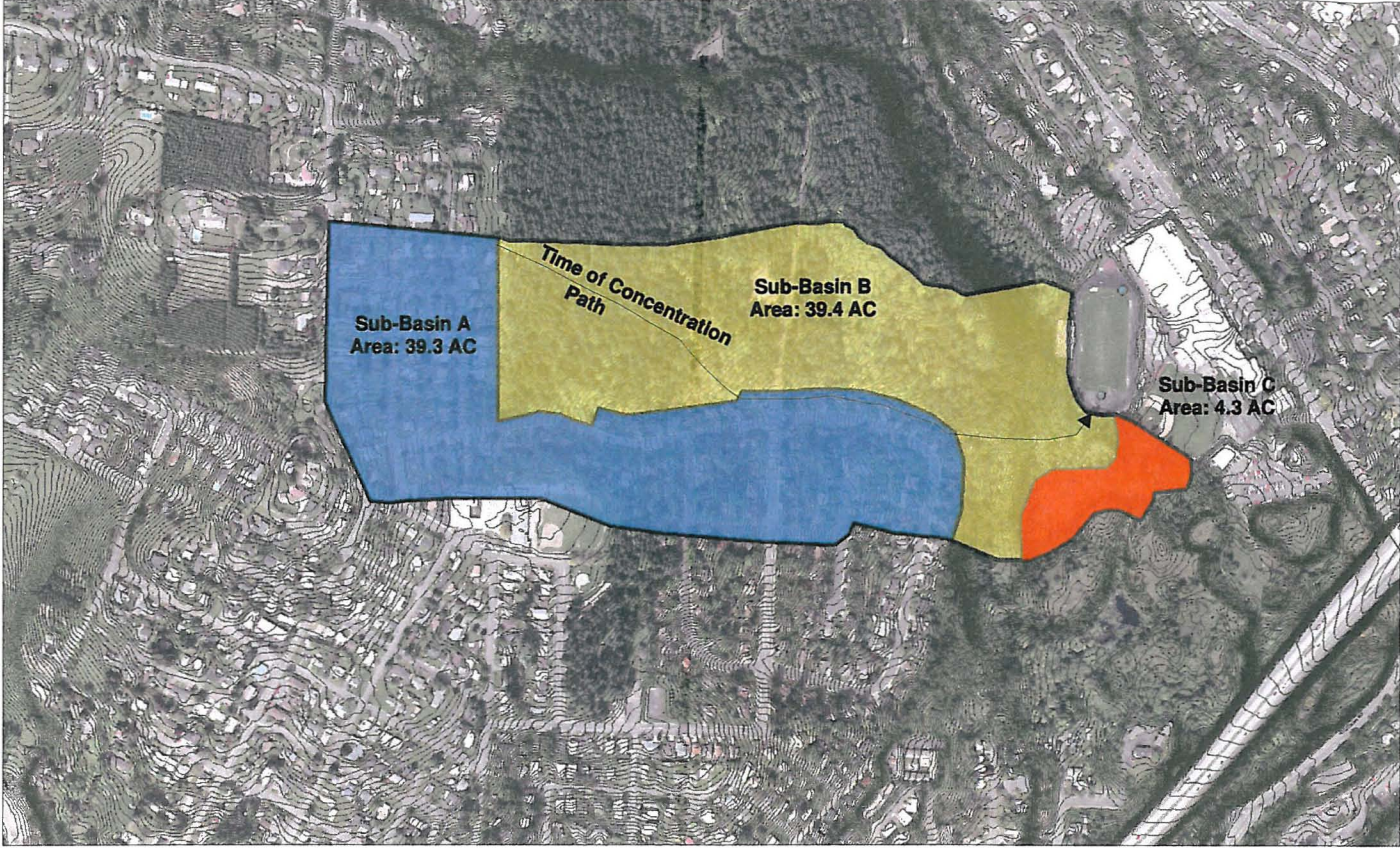
-  HSG_B
-  HSG_C
-  HSG_D

Data Source: NRCS Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/>)

January 22, 2010

 WINZLER & KELLY

Watershed for WLHS Storm Pipe



0 237.5 475 950 Feet

Data Source: Topography - City of West Linn 2 ft. Contours (2004) Received January 22, 2010


















January 22, 2010



Hydrologic Soil Group—Clackamas County Area, Oregon
(Soil Map for WLHS Area)



MAP LEGEND

- Area of Interest (AOI)**
 Area of Interest (AOI)
- Soils**
Soil Map Units
- Soil Ratings**
-  A
 -  A/D
 -  B
 -  B/D
 -  C
 -  C/D
 -  D
 -  Not rated or not available
- Political Features**
 Cities
- Water Features**
 Oceans
 Streams and Canals
- Transportation**
 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

MAP INFORMATION

Map Scale: 1:8,030 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 10N NAD83

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

Soil Survey Area: Clackamas County Area, Oregon
Survey Area Data: Version 5, Aug 12, 2009

Date(s) aerial images were photographed: 8/3/2005

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.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Clackamas County Area, Oregon				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1B	Aloha silt loam, 3 to 6 percent slopes	C	6.6	2.2%
13B	Cascade silt loam, 3 to 8 percent slopes	C	52.9	17.7%
23B	Cornelius silt loam, 3 to 8 percent slopes	C	45.6	15.2%
23C	Cornelius silt loam, 8 to 15 percent slopes	C	78.6	26.2%
30C	Delena silt loam, 3 to 12 percent slopes	D	1.5	0.5%
64B	Nekia silty clay loam, 2 to 8 percent slopes	B	3.3	1.1%
78B	Saum silt loam, 3 to 8 percent slopes	B	25.0	8.4%
78C	Saum silt loam, 8 to 15 percent slopes	B	3.7	1.2%
78D	Saum silt loam, 15 to 30 percent slopes	B	2.9	1.0%
89D	Witzel very stony silt loam, 3 to 40 percent slopes	D	53.8	17.9%
92F	Xerochrepts and Haploxerolls, very steep	C	25.6	8.5%
Totals for Area of Interest			299.5	100.0%

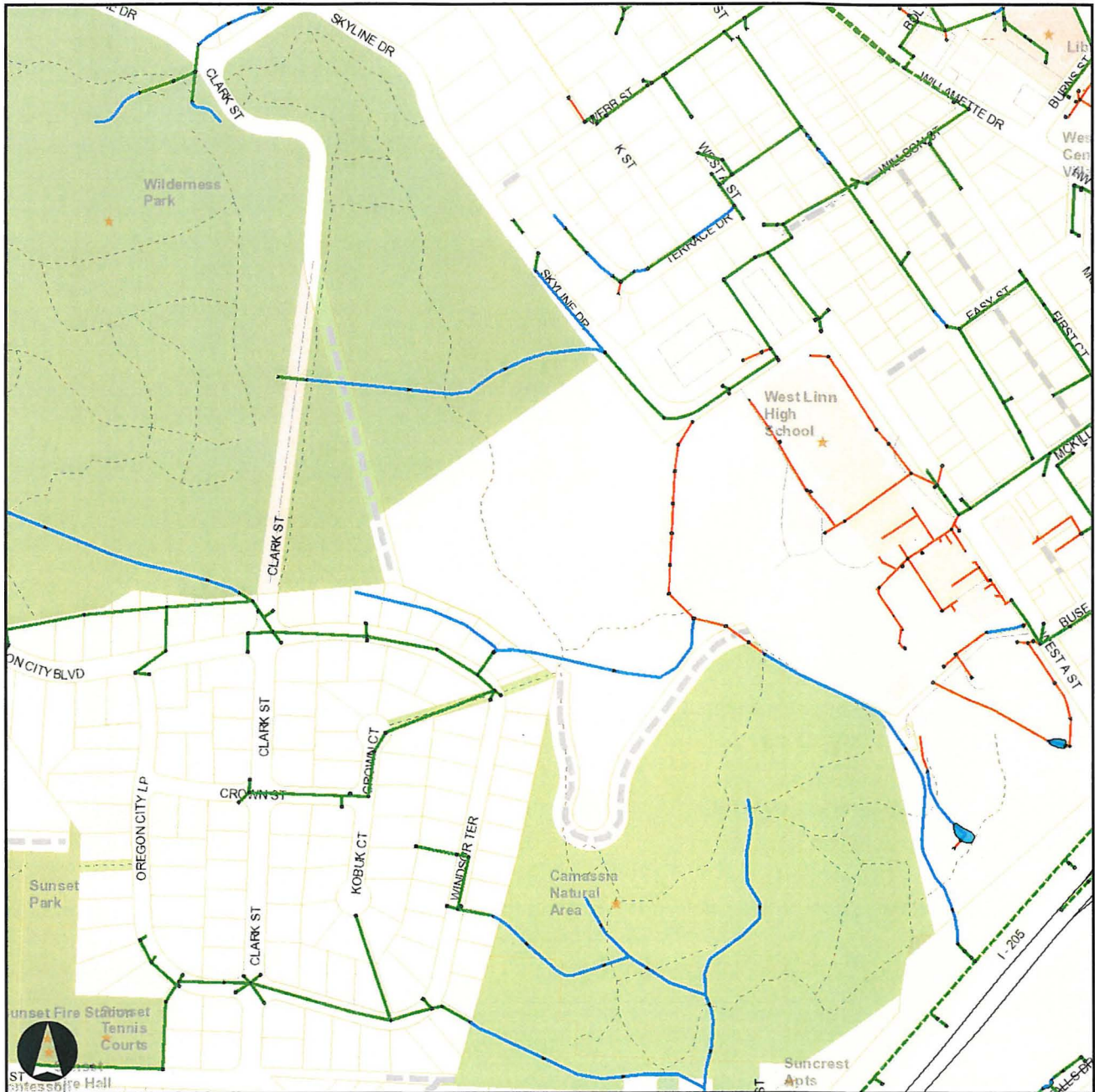
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

WLHS Drainage



2009 West Linn GIS Map Disclaimer, [click here](#)

WestLinnBaseMap_ex911v1

West Linn GIS Map Disclaimer: This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

WLHS Drainage 2



2009 West Linn GIS Map Disclaimer, [click here](#)

WestLinnBaseMap_ex911v1

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WINZLER & KELLY

DATE: 1/21/2010
 JOB No: 10884-09007
 JOB NAME: West Linn High School
 CALC BY: STS

Time of Concentration

The following calculations are based on the procedures presented in the NRCS publication TR-55: *Urban Hydrology for Small Watersheds* (June 1986 edition)

Sheet Flow

$$T_{SF} = \frac{0.007(nL)^{0.8}}{(l_2)^{0.5}s^{0.4}} \text{ (60 min/hr)}$$

T_{SF} = Travel Time for Sheet Flow (min)
 n = Manning's Roughness Coefficient (From Table 3-1)
 l_2 = 2-year, 24-hour rainfall (in)
 L = Flow Length (ft) - 300 ft maximum
 s = Land Slope (ft/ft)

Parameters

n: 0.6
 l_2 : 2.4 in
 L: 300 ft
 s: 0.09 ft/ft

$T_{SF} = 45 \text{ min}$

Table 3-1 Roughness coefficients (Manning's n) for sheet flow

Surface description	n ^{1/}
Smooth surfaces (concrete, asphalt, gravel, or bare soil)	0.011
Fallow (no residue)	0.05
Cultivated soils:	
Residue cover ≤20%	0.06
Residue cover >20%	0.17
Grass:	
Short grass prairie	0.15
Dense grasses ^{2/}	0.24
Bermudagrass	0.41
Range (natural)	0.13
Woods: ^{3/}	
Light underbrush	0.40
Dense underbrush	0.80



¹ The n values are a composite of information compiled by Engman (1986).
² Includes species such as weeping lovegrass, bluegrass, buffalo grass, blue grama grass, and native grass mixtures.
³ When selecting n, consider cover to a height of about 0.1 ft. This is the only part of the plant cover that will obstruct sheet flow.

Time of Concentration

Shallow Concentrated Flow

$$T_{SCF} = \frac{L}{3600V} \text{ (60 min/hr)}$$

T_{SCF} = Travel Time for Shallow Concentrated Flow (min)

L = Flow Length (ft)

V = Velocity (ft/s) (From Figure 3-1)

Parameters

L: 2400 ft

V: 6. ft/s

$$T_{SCF} = 7 \text{ min}$$

Total Time of Concentration

$$T_C = T_{SF} + T_{SCF}$$

$$T_C = 52 \text{ min}$$

Figure 3-1 from TR-55

Figure 3-1 Average velocities for estimating travel time for shallow concentrated flow

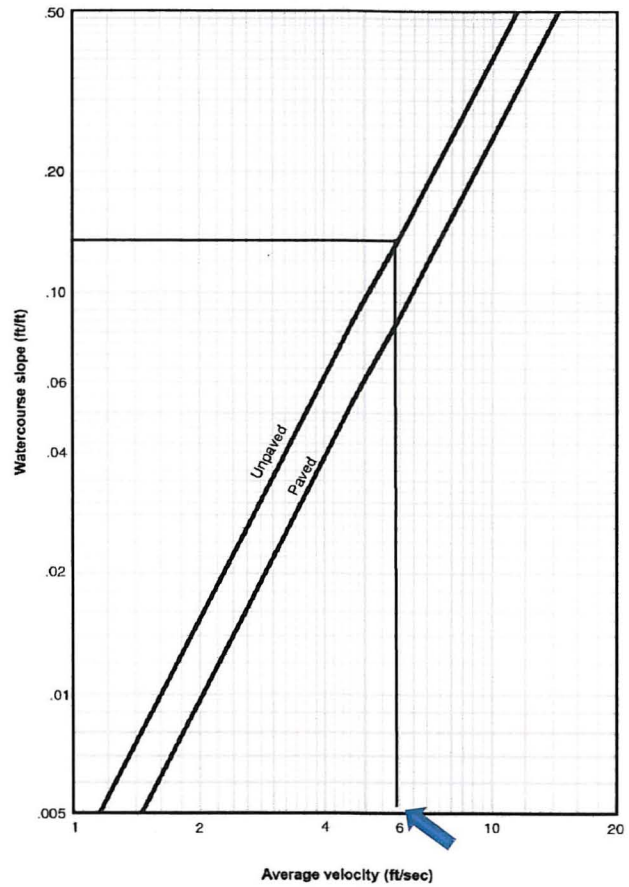


Table 2-2a Runoff curve numbers for urban areas ^{1/}

Cover description	Average percent impervious area ^{2/}	Curve numbers for hydrologic soil group			
		A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) ^{3/} :					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ^{4/}		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas					
(pervious areas only, no vegetation) ^{5/}		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

¹ Average runoff condition, and $I_a = 0.2S$.² The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.³ CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.⁴ Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.⁵ Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Table 2-2c Runoff curve numbers for other agricultural lands ^{1/}

Cover description	Hydrologic condition	Curve numbers for hydrologic soil group			
		A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. ^{2/}	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. ^{3/}	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 ^{4/}	48	65	73
Woods—grass combination (orchard or tree farm). ^{5/}	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. ^{6/}	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 ^{4/}	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

¹ Average runoff condition, and $I_a = 0.2S$.

² *Poor*: <50% ground cover or heavily grazed with no mulch.

Fair: 50 to 75% ground cover and not heavily grazed.

Good: > 75% ground cover and lightly or only occasionally grazed.

³ *Poor*: <50% ground cover.

Fair: 50 to 75% ground cover.

Good: >75% ground cover.

⁴ Actual curve number is less than 30; use CN = 30 for runoff computations.

⁵ CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

⁶ *Poor*: Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.

Fair: Woods are grazed but not burned, and some forest litter covers the soil.

Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

Full Flow Capacity for 24" CMP Pipe, S=1%

Project Description

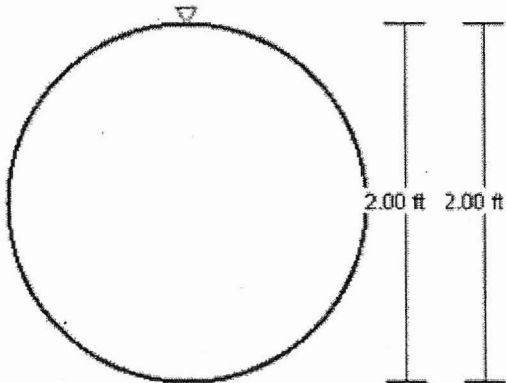
Friction Method	Manning Formula
Solve For	Full Flow Capacity


Input Data

Roughness Coefficient	0.024	
Channel Slope	0.01000	ft/ft
Normal Depth	2.00	ft
Diameter	2.00	ft
Discharge	12.25	ft ³ /s

CAPACITY =

Cross Section Image



V:1 
H:1

24" HDPE, S=1%, 100-yr Peak Flow

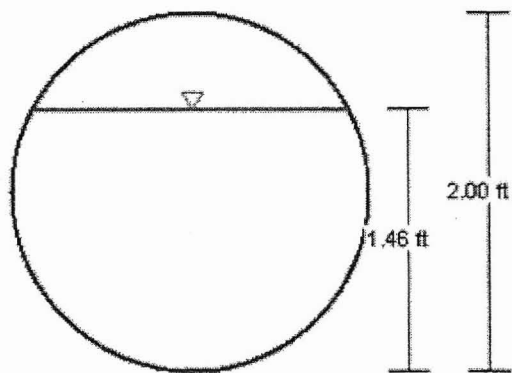
Project Description


Friction Method Manning Formula
Solve For Normal Depth

Input Data

Roughness Coefficient	0.012	
Channel Slope	0.01000	ft/ft
Normal Depth	1.46	ft
Diameter	2.00	ft
Discharge	21.70	ft ³ /s CAPACITY = 25 cfs

Cross Section Image



V:1 
H:1

WLHS Storm Pipe Analysis
Hydrologic Summary

Sub-Basin	Land Use	Area (Acres)	Hydroloic Condition	Hydrologic Soil Group	CN
A	Residential (1/4 Acre Lots)	39.3	N/A	C	83
B	Woods	39.4	Good	C	70
C	Woods	4.3	Good	D	77
Total:		83.0		Composite CN:	77

Reference: "Urban Hydrology for Small Watersheds", NRCS Technical Release 55, Second Edition, June 1986



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key plan

phase | design review

date | April 12, 2010

revisions

project # | 09001

EXISTING CONDITIONS

WL-C0

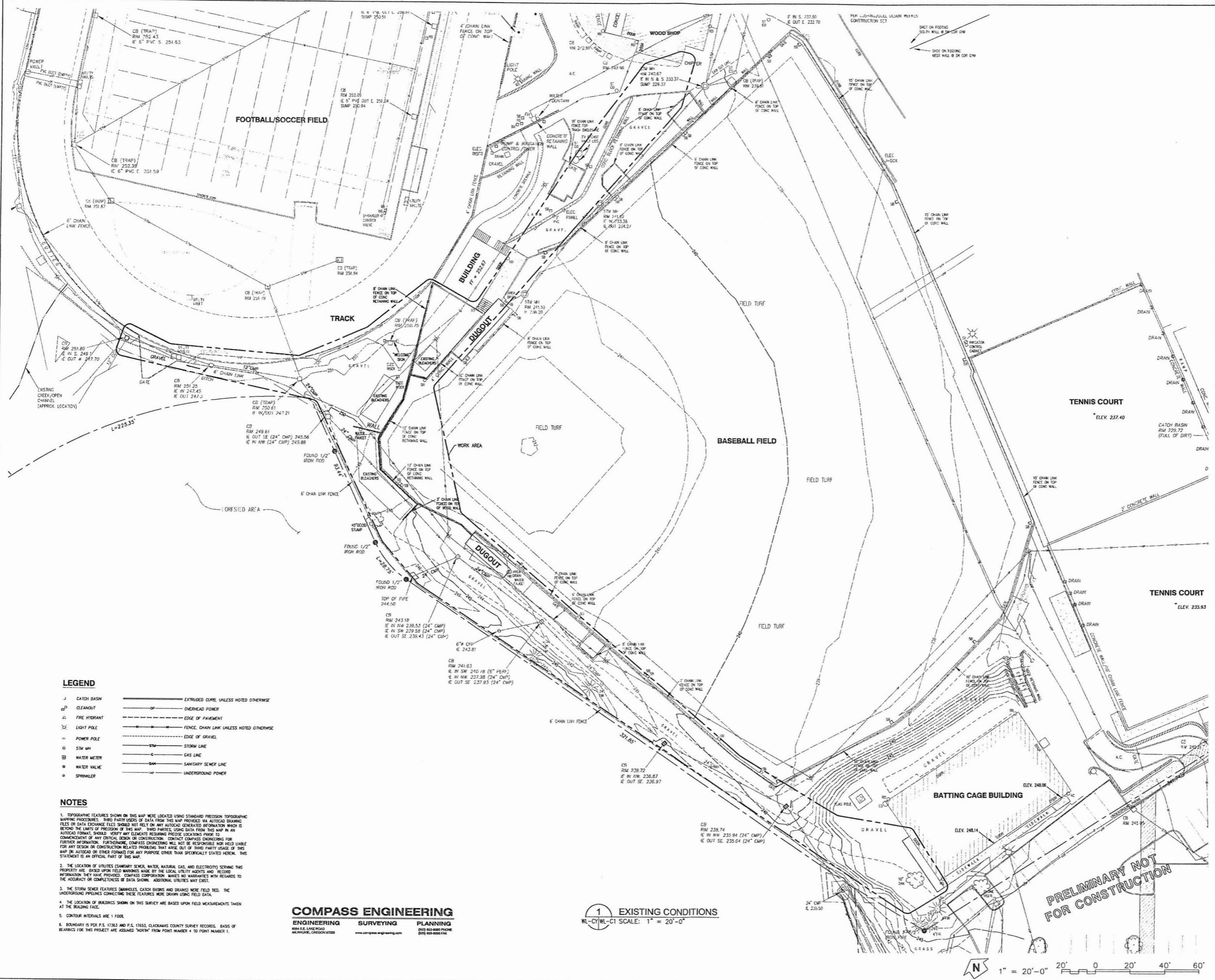


EXISTING CONDITIONS
SCALE: 1" = 80' - 0"

1" = 80'-0" 80' 0 80' 160' 240'

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LEGEND

⊠	CATCH BASIN	—	EXTENDED CURB, UNLESS NOTED OTHERWISE
⊡	CLEANOUT	—	OVERHEAD POWER
⊢	FIRE HYDRANT	—	EDGE OF PAVEMENT
⊣	LIGHT POLE	—	FENCE, CHAIN LINK UNLESS NOTED OTHERWISE
⊤	POWER POLE	—	EDGE OF GRAVEL
⊥	STW MH	—	STORM LINE
⊦	WATER METER	—	GAS LINE
⊧	WATER VALVE	—	SANITARY SEWER LINE
⊨	SPRINKLER	—	UNDERGROUND POWER

- NOTES**
1. TOPOGRAPHIC FEATURES SHOWN ON THIS MAP WERE LOCATED USING STANDARD PRECISION TOPOGRAPHIC MAPPING PROCEDURES. THIRD PARTY USERS OF DATA FROM THIS MAP PROVIDED VIA AUTOCAD DRAWING FILES OR DATA EXCHANGE FILES SHOULD NOT RELY ON ANY AUTOCAD GENERATED INFORMATION WHICH IS BEYOND THE LIMITS OF PRECISION OF THIS MAP. THIRD PARTIES, USING DATA FROM THIS MAP IN AN AUTOCAD FORMAT, SHOULD VERIFY ANY ELEMENTS REQUIRING PRECISE LOCATIONS PRIOR TO COMMENCEMENT OF ANY CRITICAL DESIGN OR CONSTRUCTION. COMPASS ENGINEERING FOR FURTHER INFORMATION. FURTHERMORE, COMPASS ENGINEERING WILL NOT BE RESPONSIBLE NOR HELD LIABLE FOR ANY DESIGN OR CONSTRUCTION RELATED PROBLEMS THAT ARISE OUT OF THIRD PARTY USAGE OF THIS MAP (IN AUTOCAD OR OTHER FORMATS) FOR ANY PURPOSE OTHER THAN SPECIFICALLY STATED HEREIN. THIS STATEMENT IS AN OFFICIAL PART OF THIS MAP.
 2. THE LOCATION OF UTILITIES (SANITARY SEWER, WATER, NATURAL GAS, AND ELECTRICITY) SERVING THIS PROPERTY ARE BASED UPON FIELD WORKINGS MADE BY THE LOCAL UTILITY AGENCIES AND RECORD INFORMATION THEY HAVE PROVIDED. COMPASS ENGINEERING MAKES NO WARRANTIES WITH REGARD TO THE ACCURACY OR COMPLETENESS OF DATA SHOWN. ADDITIONAL UTILITIES MAY EXIST.
 3. THE STORM SEWER FEATURES (MANHOLES, CATCH BASINS AND DRAINS) WERE FIELD TIED. THE UNDERGROUND PIPESLINE CONNECTING THESE FEATURES WERE DRAWN USING FIELD DATA.
 4. THE LOCATION OF BUILDINGS SHOWN ON THIS SURVEY ARE BASED UPON FIELD MEASUREMENTS TAKEN AT THE BUILDING FACE.
 5. CONTOUR INTERVALS ARE 1 FOOT.
 6. BOUNDARY IS PER P.S. 1763 AND P.S. 17633, CLATSOP COUNTY SURVEY RECORDS. BASIS OF BEARINGS FOR THIS PROJECT ARE ASSUMED "NORTH" FROM POINT NUMBER 1.

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1 EXISTING CONDITIONS
 WL-CY-WL-C1 SCALE: 1" = 20'-0"



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phase	design review
date	April 12, 2010
revisions	
project #	09001
EXISTING CONDITIONS	
WL-C1	

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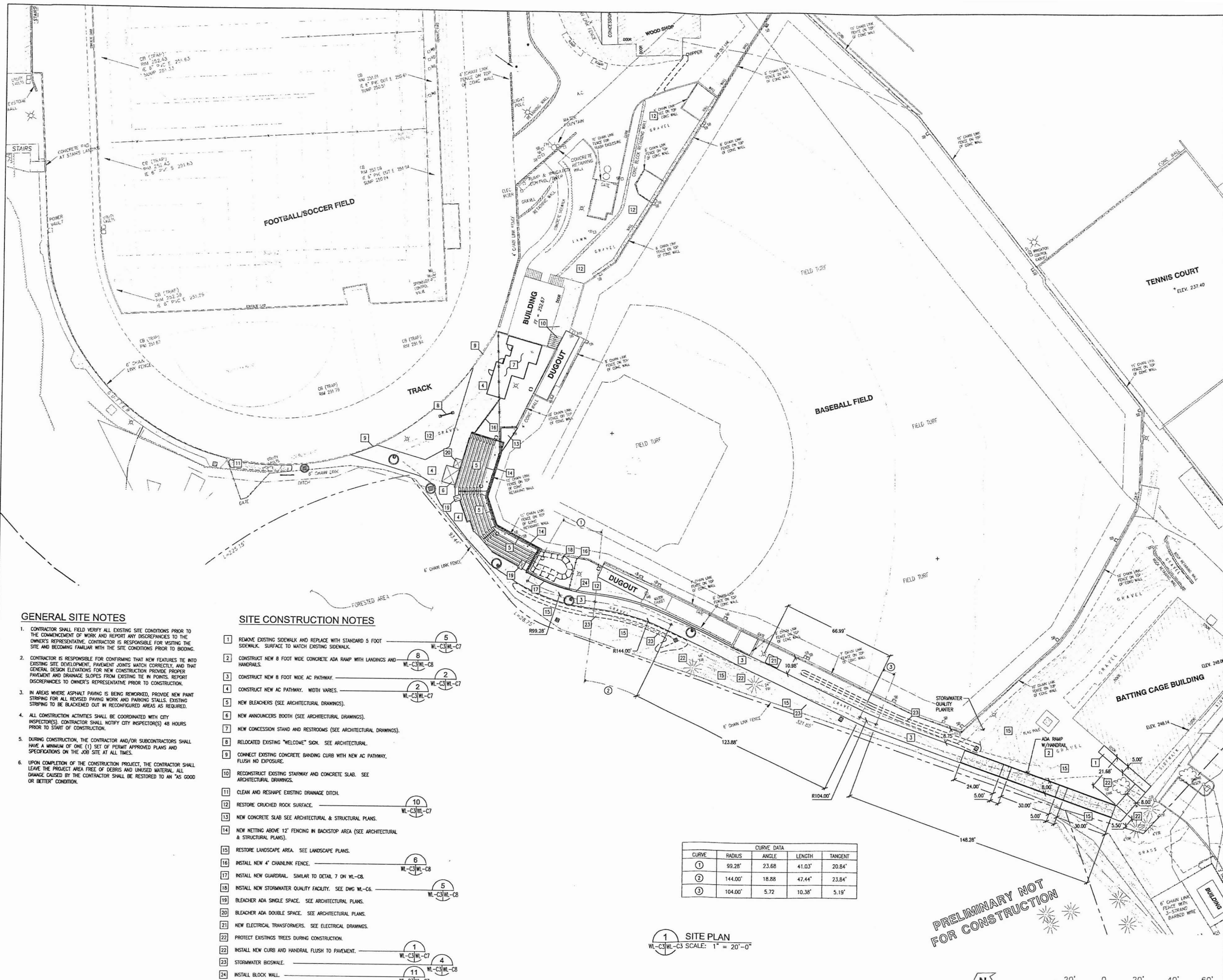
date April 12, 2010

revisions

project # 09001

SITE PLAN

WL-C3



GENERAL SITE NOTES

- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE. CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE AND BECOMING FAMILIAR WITH THE SITE CONDITIONS PRIOR TO BIDDING.
- CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THAT NEW FEATURES FIT INTO EXISTING SITE DEVELOPMENT, PAVEMENT JOINTS MATCH CORRECTLY, AND THAT GENERAL DESIGN ELEVATIONS FOR NEW CONSTRUCTION PROVIDE PROPER PAVERMENT AND DRAINAGE SLOPES FROM EXISTING TIE IN POINTS. REPORT DISCREPANCIES TO OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
- IN AREAS WHERE ASPHALT PAVING IS BEING REWORKED, PROVIDE NEW PAINT STRIPING FOR ALL REVISED PAVING WORK AND PARKING STALLS. EXISTING STRIPING TO BE BLACKENED OUT IN RECONFIGURED AREAS AS REQUIRED.
- ALL CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH CITY INSPECTOR(S). CONTRACTOR SHALL NOTIFY CITY INSPECTOR(S) 48 HOURS PRIOR TO START OF CONSTRUCTION.
- DURING CONSTRUCTION, THE CONTRACTOR AND/OR SUBCONTRACTORS SHALL HAVE A MINIMUM OF ONE (1) SET OF PERMIT APPROVED PLANS AND SPECIFICATIONS ON THE JOB SITE AT ALL TIMES.
- UPON COMPLETION OF THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL LEAVE THE PROJECT AREA FREE OF DEBRIS AND UNUSED MATERIAL. ALL DAMAGE CAUSED BY THE CONTRACTOR SHALL BE RESTORED TO AN "AS GOOD OR BETTER" CONDITION.

SITE CONSTRUCTION NOTES

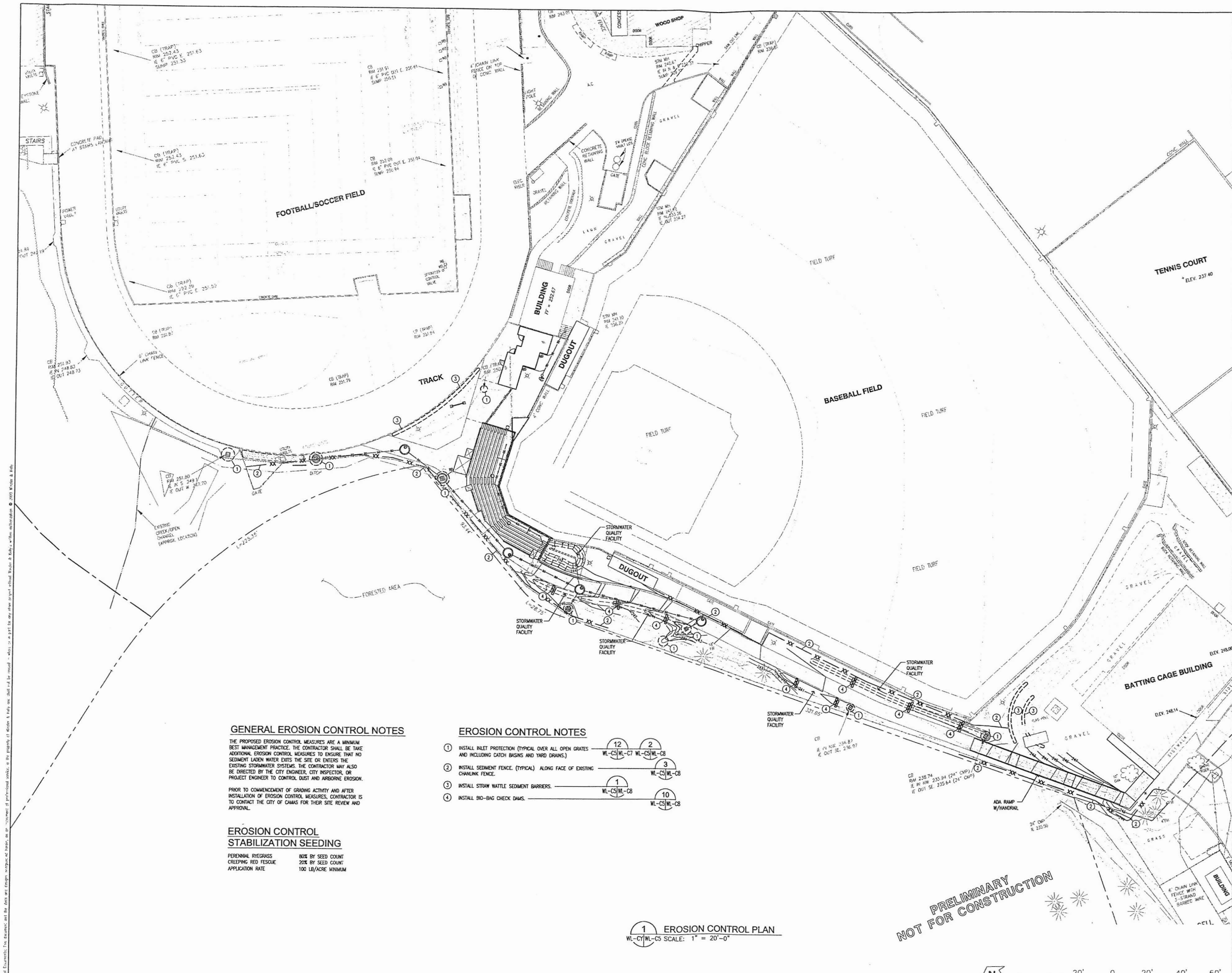
- REMOVE EXISTING SIDEWALK AND REPLACE WITH STANDARD 5 FOOT SIDEWALK. SURFACE TO MATCH EXISTING SIDEWALK.
- CONSTRUCT NEW 8 FOOT WIDE CONCRETE ADA RAMP WITH LANDINGS AND HANDRAILS.
- CONSTRUCT NEW 8 FOOT WIDE AC PATHWAY.
- CONSTRUCT NEW AC PATHWAY. WIDTH VARIES.
- NEW BLEACHERS (SEE ARCHITECTURAL DRAWINGS).
- NEW ANNOUNCERS BOOTH (SEE ARCHITECTURAL DRAWINGS).
- NEW CONCESSION STAND AND RESTROOMS (SEE ARCHITECTURAL DRAWINGS).
- RELOCATED EXISTING "WELCOME" SIGN. SEE ARCHITECTURAL.
- CONNECT EXISTING CONCRETE BANDING CURB WITH NEW AC PATHWAY. FLUSH NO EXPOSURE.
- RECONSTRUCT EXISTING STAIRWAY AND CONCRETE SLAB. SEE ARCHITECTURAL DRAWINGS.
- CLEAN AND RESHAPE EXISTING DRAINAGE DITCH.
- RESTORE CRUSHED ROCK SURFACE.
- NEW CONCRETE SLAB SEE ARCHITECTURAL & STRUCTURAL PLANS.
- NEW NETTING ABOVE 12' FENCING IN BACKSTOP AREA (SEE ARCHITECTURAL & STRUCTURAL PLANS).
- RESTORE LANDSCAPE AREA. SEE LANDSCAPE PLANS.
- INSTALL NEW 4" CHAINLINK FENCE.
- INSTALL NEW GUARDRAIL. SIMILAR TO DETAIL 7 ON WL-C8.
- INSTALL NEW STORMWATER QUALITY FACILITY. SEE DWG WL-C6.
- BLEACHER ADA SINGLE SPACE. SEE ARCHITECTURAL PLANS.
- BLEACHER ADA DOUBLE SPACE. SEE ARCHITECTURAL PLANS.
- NEW ELECTRICAL TRANSFORMERS. SEE ELECTRICAL DRAWINGS.
- PROTECT EXISTING TREES DURING CONSTRUCTION.
- INSTALL NEW CURB AND HANDRAIL FLUSH TO PAVEMENT.
- STORMWATER BIOSWALE.
- INSTALL BLOCK WALL.

CURVE DATA				
CURVE	RADIUS	ANGLE	LENGTH	TANGENT
①	99.28'	23.68°	41.03'	20.84'
②	144.00'	18.88°	47.44'	23.84'
③	104.00'	5.72°	10.38'	5.19'

① SITE PLAN
WL-C3/WL-C3 SCALE: 1" = 20'-0"

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GENERAL EROSION CONTROL NOTES

THE PROPOSED EROSION CONTROL MEASURES ARE A MINIMUM BEST MANAGEMENT PRACTICE. THE CONTRACTOR SHALL TAKE ADDITIONAL EROSION CONTROL MEASURES TO ENSURE THAT NO SEDIMENT LADEN WATER EXISTS THE SITE OR ENTERS THE EXISTING STORMWATER SYSTEMS. THE CONTRACTOR MAY ALSO BE DIRECTED BY THE CITY ENGINEER, CITY INSPECTOR, OR PROJECT ENGINEER TO CONTROL DUST AND AIRBORNE EROSION. PRIOR TO COMMENCEMENT OF GRADING ACTIVITY AND AFTER INSTALLATION OF EROSION CONTROL MEASURES, CONTRACTOR IS TO CONTACT THE CITY OF CANAS FOR THEIR SITE REVIEW AND APPROVAL.

EROSION CONTROL STABILIZATION SEEDING

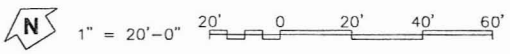
PERENNIAL RYEGRASS 80% BY SEED COUNT
CREEPING RED FESCUE 20% BY SEED COUNT
APPLICATION RATE 100 LB/ACRE MINIMUM

EROSION CONTROL NOTES

- 1 INSTALL INLET PROTECTION (TYPICAL OVER ALL OPEN GRATES AND INCLUDING CATCH BASINS AND YARD DRAINS)
- 2 INSTALL SEDIMENT FENCE (TYPICAL) ALONG FACE OF EXISTING CHAINLINK FENCE.
- 3 INSTALL STRAW BATTLE SEDIMENT BARRIERS.
- 4 INSTALL BIO-BAG CHECK DAMS.

1 EROSION CONTROL PLAN
WL-CY/WL-CS SCALE: 1" = 20'-0"

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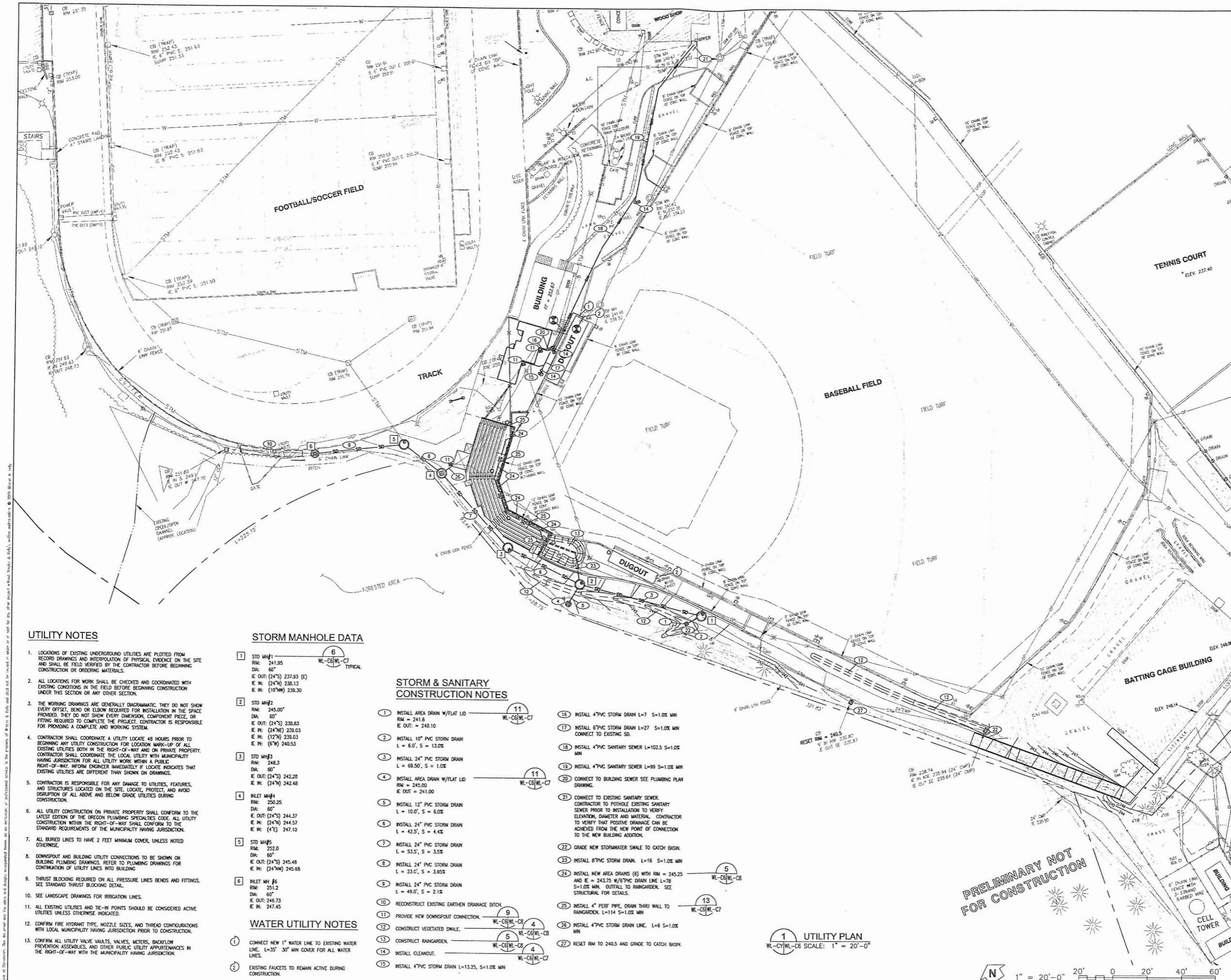
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project # | 09001

EROSION CONTROL PLAN

WL-C5

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UTILITY NOTES

- LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE PLOTTED FROM RECORD DRAWINGS AND INTERPOLATION OF PHYSICAL EVIDENCE ON THE SITE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR BEFORE BEGINNING CONSTRUCTION OR ORDERING MATERIALS.
- ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION UNDER THIS SECTION OR ANY OTHER SECTION.
- THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, OR FITTING REQUIRED TO COMPLETE THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND WORKING SYSTEM.
- CONTRACTOR SHALL COORDINATE A UTILITY LOCATE 48 HOURS PRIOR TO BEGINNING ANY UTILITY CONSTRUCTION FOR LOCATION MARK-UP OF ALL EXISTING UTILITIES BOTH IN THE RIGHT-OF-WAY AND ON PRIVATE PROPERTY. CONTRACTOR SHALL COORDINATE THE LOCAL UTILITY WITH MUNICIPALITY HAVING JURISDICTION FOR ALL UTILITY WORK WITHIN A PUBLIC RIGHT-OF-WAY. NOTIFY ENGINEER IMMEDIATELY IF LOCATE INDICATES THAT EXISTING UTILITIES ARE DIFFERENT THAN SHOWN ON DRAWINGS.
- CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES, FEATURES, AND STRUCTURES LOCATED ON THE SITE. LOCATE, PROTECT, AND AVOID DISRUPTION OF ALL ABOVE AND BELOW GRADE UTILITIES DURING CONSTRUCTION.
- ALL UTILITY CONSTRUCTION ON PRIVATE PROPERTY SHALL CONFORM TO THE LATEST EDITION OF THE OREGON PLUMBING SPECIALTIES CODE. ALL UTILITY CONSTRUCTION WITHIN THE RIGHT-OF-WAY SHALL CONFORM TO THE STANDARD REQUIREMENTS OF THE MUNICIPALITY HAVING JURISDICTION.
- ALL BURIED LINES TO HAVE 2 FEET MINIMUM COVER, UNLESS NOTED OTHERWISE.
- DOWNSPOUT AND BUILDING UTILITY CONNECTIONS TO BE SHOWN ON BUILDING PLUMBING DRAWINGS. REFER TO PLUMBING DRAWINGS FOR CONTINUATION OF UTILITY LINES INTO BUILDING.
- THRUST BLOCKING REQUIRED ON ALL PRESSURE LINES BENDS AND FITTINGS. SEE STANDARD THRUST BLOCKING DETAIL.
- SEE LANDSCAPE DRAWINGS FOR IRRIGATION LINES.
- ALL EXISTING UTILITIES AND THE-IN POINTS SHOULD BE CONSIDERED ACTIVE UTILITIES UNLESS OTHERWISE INDICATED.
- CONFIRM FIRE HYDRANT TYPE, NOZZLE SIZES, AND THREAD CONFIGURATIONS WITH LOCAL MUNICIPALITY HAVING JURISDICTION PRIOR TO CONSTRUCTION.
- CONFIRM ALL UTILITY VALVE VAULTS, VALVES, METERS, BACKFLOW PREVENTION ASSEMBLIES, AND OTHER PUBLIC UTILITY APPURTENANCES IN THE RIGHT-OF-WAY WITH THE MUNICIPALITY HAVING JURISDICTION.

STORM MANHOLE DATA

- | | |
|---|--|
| 1 | STD MH#1
RM: 241.95
DA: 60"
E OUT: (24"S) 237.93 (E)
E IN: (24"N) 238.13
E IN: (10"NW) 239.30 |
| 2 | STD MH#2
RM: 245.00"
DA: 60"
E OUT: (24"S) 238.83
E IN: (24"NE) 239.03
E IN: (6"NE) 240.53 |
| 3 | STD MH#3
RM: 248.3
DA: 60"
E OUT: (24"S) 242.28
E IN: (24"NW) 242.48 |
| 4 | INLET MH#4
RM: 250.25
DA: 60"
E OUT: (24"S) 244.37
E IN: (24"NW) 244.57
E IN: (4"E) 247.10 |
| 5 | STD MH#5
RM: 252.0
DA: 60"
E OUT: (24"S) 245.48
E IN: (24"NW) 245.68 |
| 6 | INLET MH#6
RM: 251.2
DA: 60"
E OUT: 246.73
E IN: 247.45 |

WATER UTILITY NOTES

- CONNECT NEW 1" WATER LINE TO EXISTING WATER LINE. L=35' 30" MIN COVER FOR ALL WATER LINES.
- EXISTING FAUCETS TO REMAIN ACTIVE DURING CONSTRUCTION.

STORM & SANITARY CONSTRUCTION NOTES

- INSTALL AREA DRAIN W/FLAT LID RM = 241.8 E OUT = 240.10
- INSTALL 10" PVC STORM DRAIN L = 6.0', S = 1.0%
- INSTALL 24" PVC STORM DRAIN L = 69.50', S = 1.0%
- INSTALL AREA DRAIN W/FLAT LID RM = 245.00 E OUT = 241.00
- INSTALL 12" PVC STORM DRAIN L = 10.0', S = 6.0%
- INSTALL 24" PVC STORM DRAIN L = 42.5', S = 4.4%
- INSTALL 24" PVC STORM DRAIN L = 53.5', S = 3.5%
- INSTALL 24" PVC STORM DRAIN L = 23.0', S = 3.95%
- INSTALL 24" PVC STORM DRAIN L = 49.0', S = 2.1%
- RECONSTRUCT EXISTING EARTHEN DRAINAGE DITCH.
- PROVIDE NEW DOWNSPOUT CONNECTION.
- CONSTRUCT VEGETATED SWALE.
- CONSTRUCT RANGARDEN.
- INSTALL CLEANDOT.
- INSTALL 4" PVC STORM DRAIN L=13.25, S=1.0% MIN
- INSTALL 4" PVC STORM DRAIN L=7 S=1.0% MIN
- INSTALL 6" PVC STORM DRAIN L=27 S=1.0% MIN CONNECT TO EXISTING SD.
- INSTALL 4" PVC SANITARY SEWER L=102.5 S=1.0% MIN
- INSTALL 4" PVC SANITARY SEWER L=99 S=1.0% MIN
- CONNECT TO BUILDING SEWER SEE PLUMBING PLAN DRAWING.
- CONNECT TO EXISTING SANITARY SEWER. CONTRACTOR TO POTHOLE EXISTING SANITARY SEWER PRIOR TO INSTALLATION TO VERIFY ELEVATION, DIAMETER AND MATERIAL. CONTRACTOR TO VERIFY THAT POSITIVE DRAINAGE CAN BE ACHIEVED FROM THE NEW POINT OF CONNECTION TO THE NEW BUILDING ADDITION.
- GRADE NEW STORMWATER SWALE TO CATCH BASIN.
- INSTALL 8" PVC STORM DRAIN. L=16 S=1.0% MIN
- INSTALL NEW AREA DRAINS (5) WITH RM = 245.25 AND IE = 243.75 W/6" PVC DRAIN LINE L=78 S=1.0% MIN. OUTFALL TO RANGARDEN. SEE STRUCTURAL FOR DETAILS.
- INSTALL 4" PERF PIPE DRAIN THRU WALL TO RANGARDEN. L=114 S=1.0% MIN
- INSTALL 4" PVC STORM DRAIN LINE. L=6 S=1.0% MIN
- RESET RM TO 240.5 AND GRADE TO CATCH BASIN.

UTILITY PLAN
WL-C6/WL-C6 SCALE: 1" = 20'-0"

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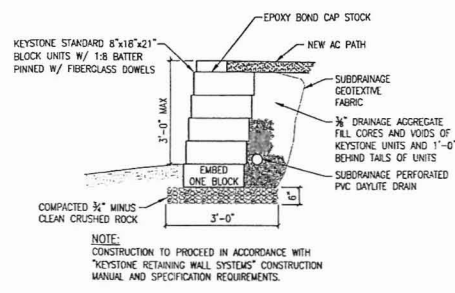
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15575 SW SEQUOIA PARKWAY, SUITE 140
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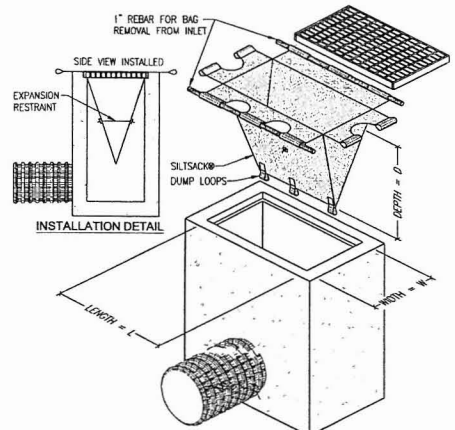
KEY PLAN

phase	design review
date	April 12, 2010
revisions	
project #	09001
UTILITY PLAN	
WL-C6	

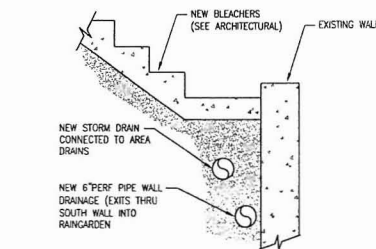
Date of Document: This document and the design and drawings incorporated herein are an integral part of the contract for the design and construction of the project. The design and drawings are the property of the architect and shall not be used for any other project without the written authorization of the architect.



11 BLOCK WALL DETAIL
WL-C3/WL-C7 SCALE: N.T.S.

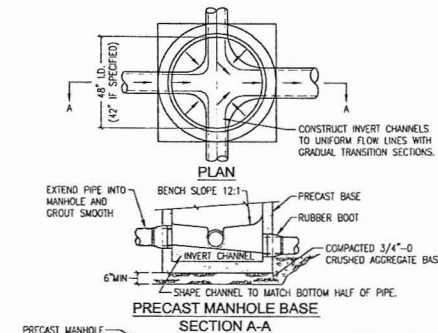


12 INLET PROTECTION
WL-C3/WL-C7 SCALE: N.T.S.

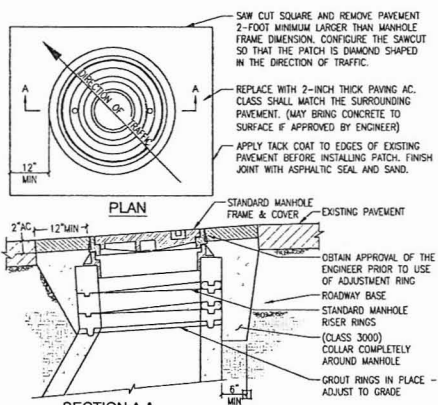


13 PERF PIPE WALL DRAIN
WL-C6/WL-C7 SCALE: N.T.S.

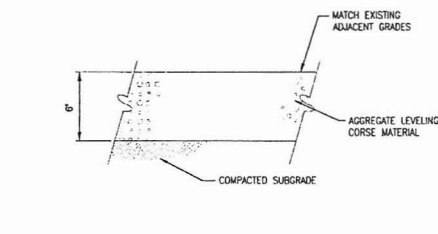
14 NOT USED
WL-C3/WL-C7 SCALE: N.T.S.



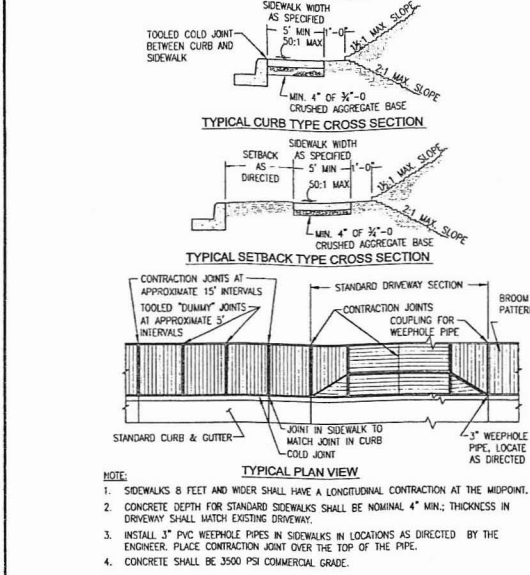
8 MANHOLE BASE SECTION DETAIL
WL-C6/WL-C7 SCALE: N.T.S.



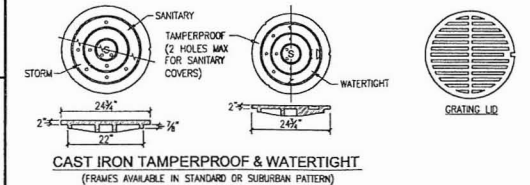
9 MANHOLE ADJUSTMENT DETAIL
WL-C6/WL-C7 SCALE: N.T.S.



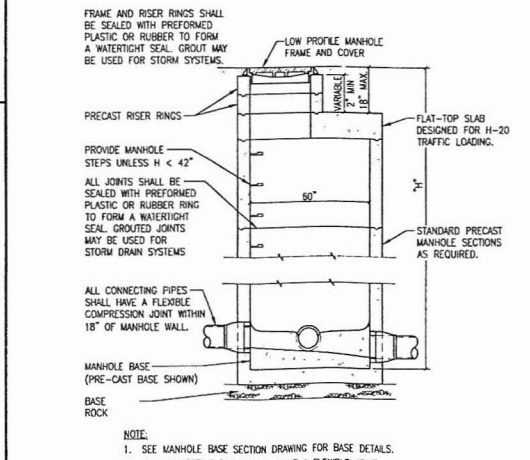
10 CRUSHED ROCK RESTORATION
WL-C3/WL-C7 SCALE: N.T.S.



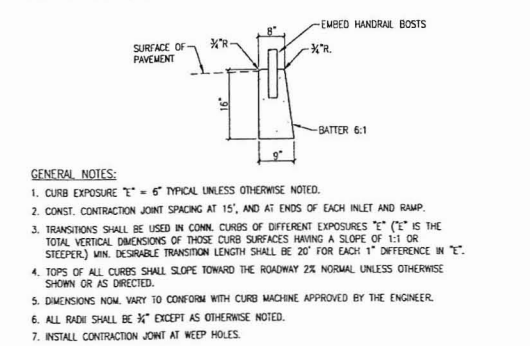
5 SIDEWALK
WL-C3/WL-C7 SCALE: N.T.S.



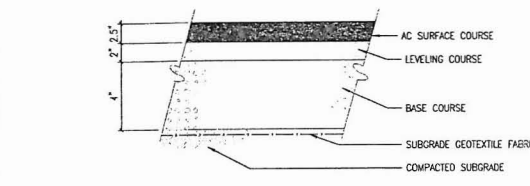
6 MANHOLE COVER & FRAME DETAIL
WL-C6/WL-C7 SCALE: N.T.S.



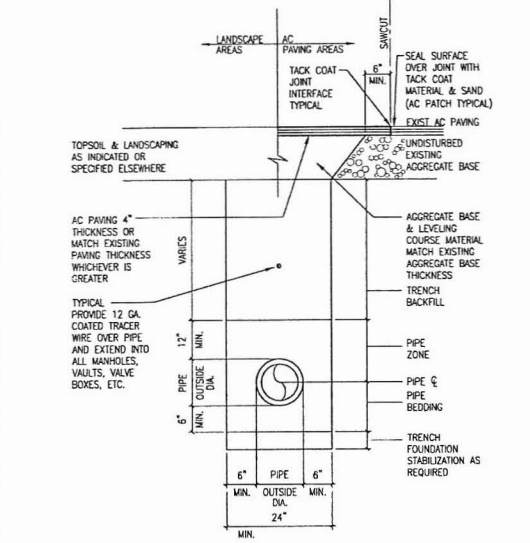
7 FLAT-TOP MANHOLE DETAIL
WL-C6/WL-C7 SCALE: N.T.S.



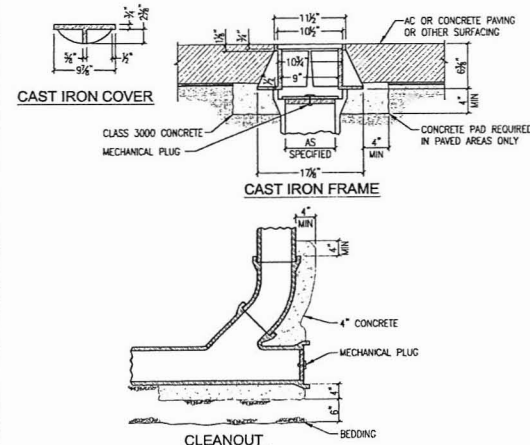
1 STANDARD CURB
WL-C3/WL-C7 SCALE: N.T.S.



2 TYPICAL PAVING SECTION-LIGHT
WL-C3/WL-C7 SCALE: N.T.S.



3 UTILITY TRENCH SECTION
WL-C6/WL-C7 SCALE: N.T.S.



4 TYPICAL CLEANOUT
WL-C6/WL-C7 SCALE: N.T.S.

CIVIL ABBREVIATIONS

Table of civil abbreviations including symbols and full names for items such as ANCHOR BOLT, ASPHALTIC CONCRETE, BUILDING, BOTTOM OF TRENCH, etc.

CIVIL SYMBOLS

Table of civil symbols showing symbols for items like CATCH BASIN, STANDARD MANHOLE, INLET MANHOLE, etc.



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key plan

phase | design review

date | April 12, 2010

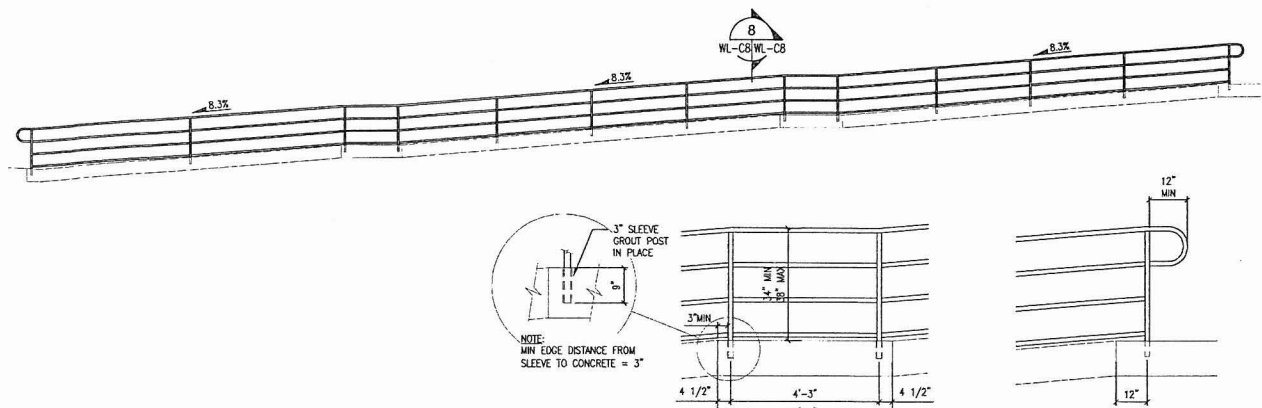
revisions

project # | 09001

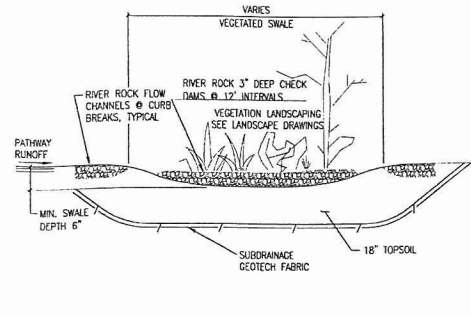
NOTES & DETAILS

WL-C7

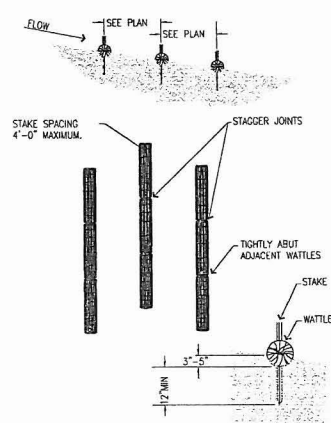
PRELIMINARY NOT FOR CONSTRUCTION



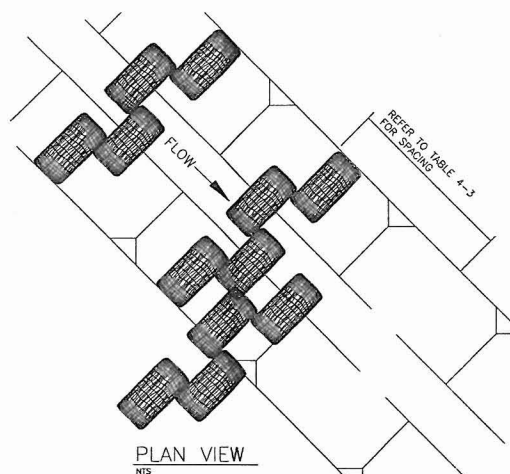
7 HANDRAIL DETAIL
WL-C3WL-C8 SCALE: N.T.S.



4 VEGETATED SWALE
WL-C3WL-C8 SCALE: N.T.S.



1 STRAW WATTLE SEDIMENT BARRIER
WL-C5WL-C8 SCALE: N.T.S.

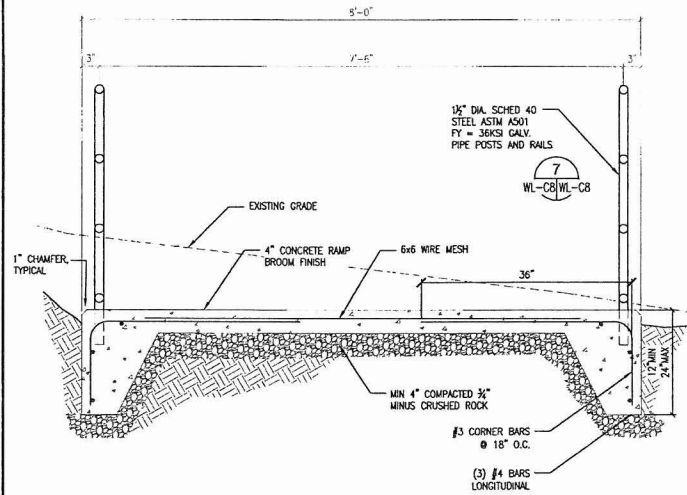


PLAN VIEW
NTS

PROFILE
NTS

- NOTES:**
1. STAKING OF BAGS REQUIRED USING (2) 1"x2" WOOD STAKES OR APPROVED EQUAL PER BAG. SURFACE MUST BE SMOOTH BEFORE APPLICATION.

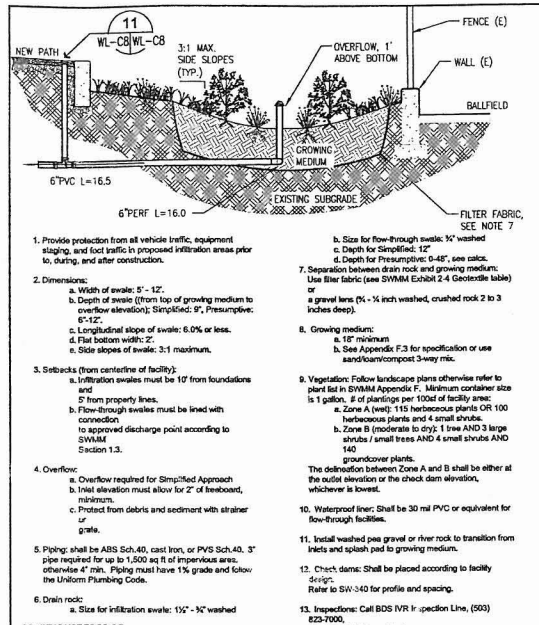
10 CHECK DAM BIO FILTER BAG
WL-C5WL-C8 SCALE: NONE



8 CONCRETE ADA RAMP WITH HANDRAIL
WL-C3WL-C8 SCALE: N.T.S.

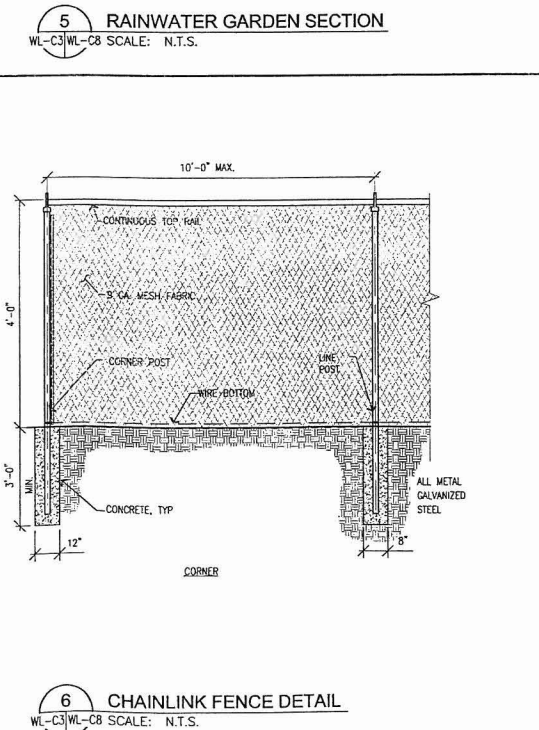
DOWNSPOUT SIZE	PVC STORM LATERAL	(A) CP DOWNSPOUT PIPING	(B) FERRICO COUPLING	(C) FERRICO DOWNSPOUT CONNECTOR
2"x3"	6"	4"	4x6 CP-PVC REDUCING COUPLING	FLEXIBLE DOWNSPOUT CONNECTOR
3"x4"	6"	4"	4x6 REDUCING COUPLING	FLEXIBLE DOWNSPOUT CONNECTOR
3"x6"	6"	4"	4x6 REDUCING COUPLING	FLEXIBLE DOWNSPOUT CONNECTOR
4"x6"	6"	6"	6x6 CP-PVC REDUCING COUPLING	UNIVERSAL DOWNSPOUT CONNECTOR
3"x5"	6"	6"	6x6 CP-PVC REDUCING COUPLING	UNIVERSAL DOWNSPOUT CONNECTOR
6"x6"	6"	6"	6x6 CP-PVC REDUCING COUPLING	UNIVERSAL DOWNSPOUT CONNECTOR

9 DOWNSPOUT CONNECTION
WL-C6WL-C8 SCALE: N.T.S.

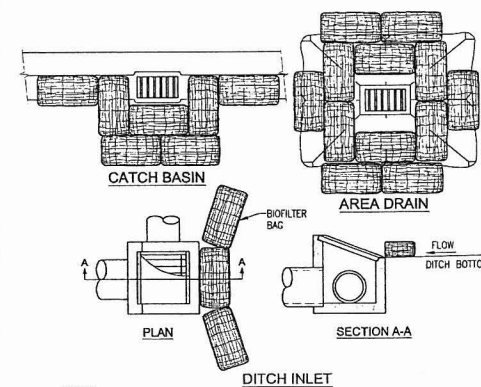


5 RAINWATER GARDEN SECTION
WL-C3WL-C8 SCALE: N.T.S.

STORMWATER MANAGEMENT MANUAL TYPICAL DETAILS
- Simplified / Presumptive Design Approach -
Swale
LAYOUT1
Bureau of Environmental Services

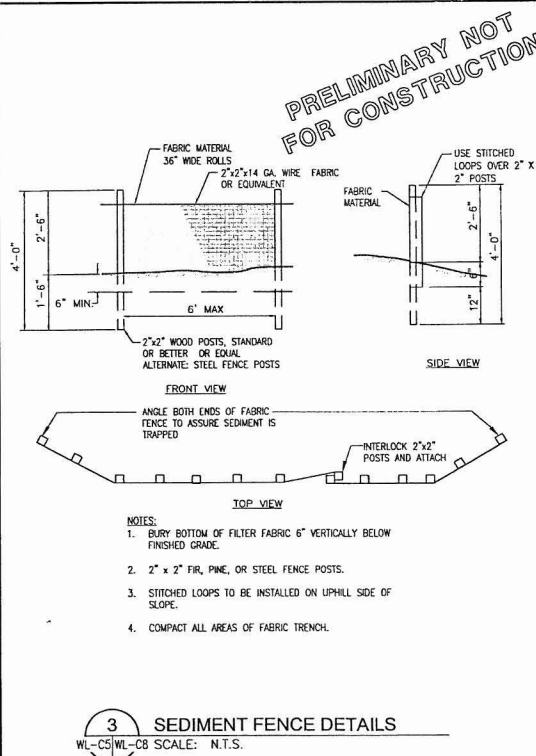


6 CHAINLINK FENCE DETAIL
WL-C3WL-C8 SCALE: N.T.S.



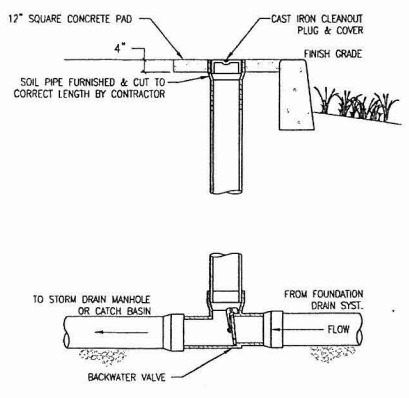
- NOTES:**
1. DRIVE STAKES FLUSH WITH TOP OF BAG AND INTO UNDISTURBED GROUND A MIN. OF 12" STAKE MAY BE OMITTED IF BAGS ARE PLACED ON PAVED SURFACE.
2. INSPECT INLET PROTECTION ON A REGULAR BASIS BIOBAGS SHALL BE REPLACED ONCE THEY BECOME CLOSED.
3. REPAIR ANY DAMAGED BALES, AREAS OF END RUNS, AND UNDERCUTTING BENEATH BALES. REPAIRS TO BALES OR BARRIERS SHALL BE MADE AS SOON AS POSSIBLE.
4. REMOVE SEDIMENT DEPOSITS WHEN THEY REACH APPROXIMATELY ONE THIRD THE HEIGHT OF THE BARRIER.
5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE AND SEEDED.

2 BIO-FILTER FOR TEMPORARY INLET PROTECTION
WL-C5WL-C8 SCALE: N.T.S.

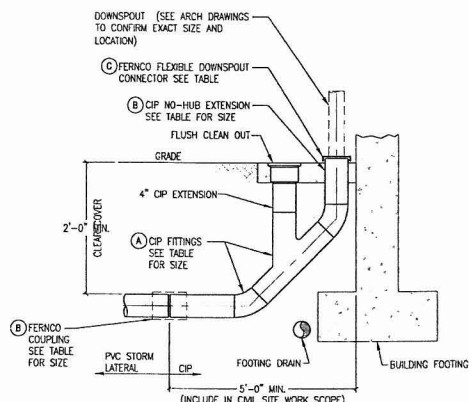


- NOTES:**
1. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
2. 2" x 2" FR, PNE, OR STEEL FENCE POSTS.
3. STITCHED LOOPS TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
4. COMPACT ALL AREAS OF FABRIC TRENCH.

3 SEDIMENT FENCE DETAILS
WL-C5WL-C8 SCALE: N.T.S.



11 BACKWATER VALVE
WL-C8WL-C8 SCALE: N.T.S.



9 DOWNSPOUT CONNECTION
WL-C6WL-C8 SCALE: N.T.S.



phase	design review
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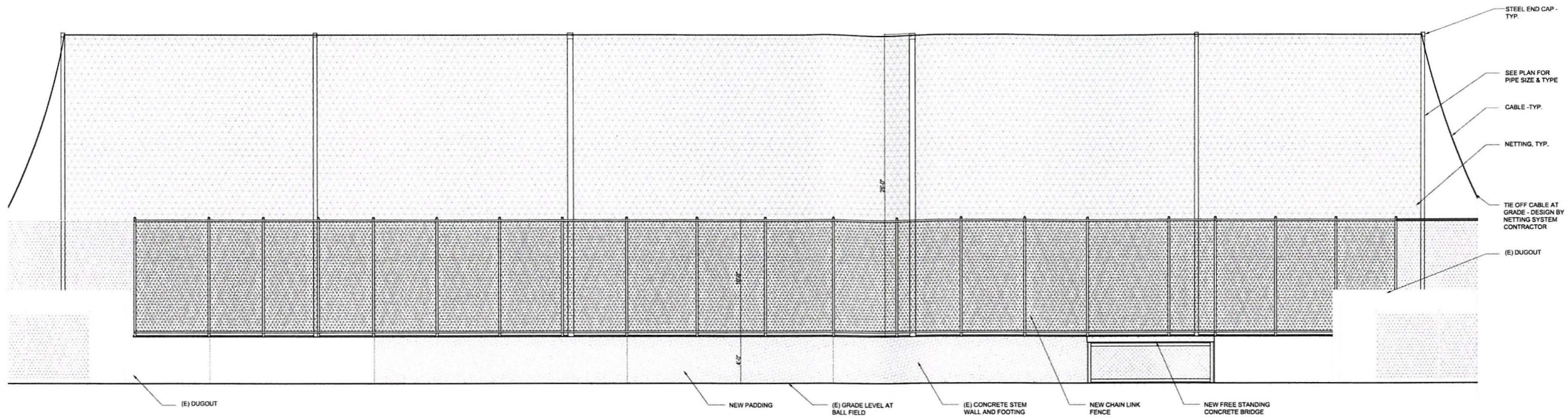


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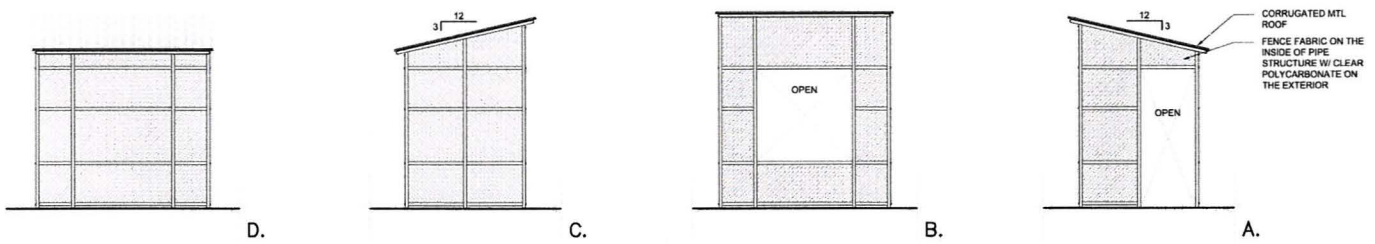
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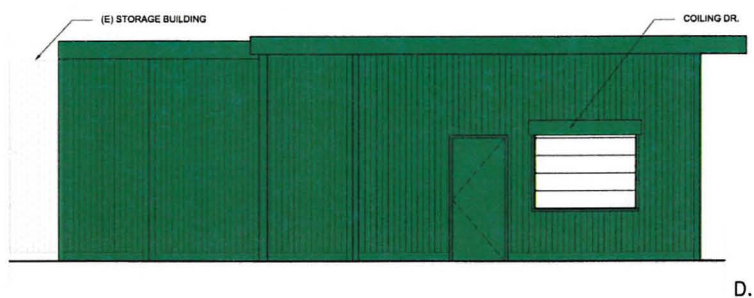
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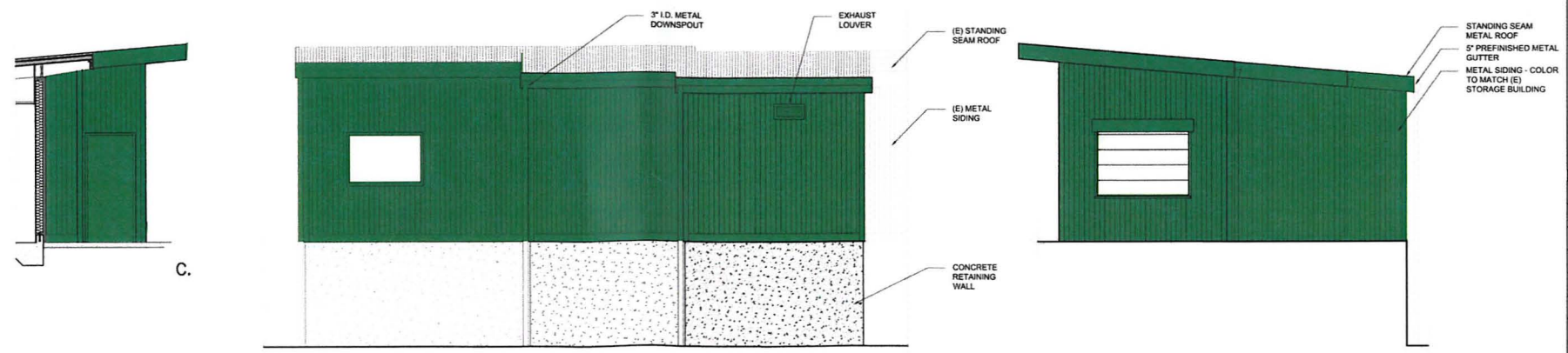
PROTECTIVE NETTING ELEVATION 3
SCALE 1/4" = 1'-0"



ANNOUNCER BUILDING ELEVATION 2
SCALE 1/4" = 1'-0"



CONSESSION BUILDING ELEVATION CONT. 1
SCALE 1/4" = 1'-0"



CONSESSION BUILDING ELEVATION 1
SCALE 1/4" = 1'-0"

key plan

phase	permit review
date	June 3, 2010
revisions	

project # 09001
district project # 10054.001

ELEVATION

A3.00

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